Howard T. Phillips, Jr.
Chairman

Gerard M. Damiani, Jr.
Executive Director

Rockland County Solid Waste Management Authority

RFP 2024-01
REQUEST FOR PROPOSALS
FOR THE
BUILD-OUT OF A NEW ANIMAL SHELTER
LOCATED AT
427 BEACH ROAD IN HAVERSTRAW, NY
ISSUED JULY 25, 2024

To: All Potential Proposers
From: Rockland Green
Subject: Addendum Number 2
Project: Build-Out of a New Animal Shelter Located at 427 Beach Road in Haverstraw, NY
RFP No.: RFP 2024-01
Date: September 13, 2024

This Addendum Number 2 modifies and shall be a part of the Requests for Proposals for the Build-Out of a New Animal Shelter Located at 427 Beach Road in Haverstraw, NY, as amended by Addendum Number 1 issued on August 27, 2024 (the "RFP"), and provides the following:

1. Civil Specifications and Civil Drawings;
2. Answers to requests for information and corresponding revised Specifications and Contract Drawings;
3. Appendix H to the RFP (the Contract);
4. Information regarding a new lift station that is required for the Project;
5. Reformatted Proposal Forms 3-5; and
6. A list of the parties who attended the Site visit and meeting on August 7, 2024.

This Addendum Number 2 also creates a deadline of September 18, 2024, for questions regarding the Civil Specifications, the Civil Drawings, and the Contract; and extends the due date for Proposals until October 7, 2024.

---

1. Civil Specifications and Civil Drawings

Rockland Green hereby issues the Civil Specifications and Civil Drawings for the Project, which were not issued with the original RFP. As such, Appendix B to the RFP, Specifications and Appendix C to the RFP, Contract Drawings are hereby modified to include the Civil Specifications and Civil Drawings. The Civil Specifications and Civil Drawings are attached hereto as Attachments 1 and 2, respectively.

2. Answers to Requests for Information

Rockland Green hereby provides as Attachment 3 to this Addendum, answers to most of the requests for information that it has received in connection with the RFP. Rockland Green will answer any outstanding requests for information in a subsequent Addendum. In certain instances Rockland Green's answers have resulted in corresponding modifications to the Specifications, Contract Drawings or both. Therefore, revised Specifications and Contract Drawings are also included in Attachment 3 to this Addendum. The revised Specifications and Contract Drawings supersede those previously issued and as such Proposers are instructed to replace the Contract Drawings and Specifications that were previously issued with the RFP with the Specifications and Contract Drawings that are included in Attachment 3 to this addendum.

Potential Proposers are reminded that this Addendum and the responses to the requests for information that are included herein constitute a part of the RFP. All responses to the RFP shall be prepared with full consideration of all addenda issued prior to the Proposal due date, including the responses to requests for information.

3. The Contract

Rockland Green hereby issues as Attachment 4 hereto, the Contract for the Project (which is Appendix H to the RFP). Potential Proposers are reminded that the Contract is the definitive statement of the mutual responsibility and liability of Rockland Green and the selected Proposer for the Project.

As indicated in the RFP, Proposers are required to include in their Proposals their comments to the Contract, if any, in the form of a mark-up. (See Proposal Form 7 to the RFP). The final Contract will include appendices that will be modified to include the details of the selected Proposer's Proposal.

4. Lift Station

Rockland Green has determined that a new lift station is necessary for the Project. As such, Rockland Green has incorporated the new lift station into the scope of the work for this Project, and intends to issue plans, details and specifications for the lift station via an addendum to the RFP.

5. Site Visit and Meeting Attendance List

A list of the parties who attended the Site visit and meeting that Rockland Green held on August 7, 20204, is included as Attachment 5 hereto.

6. Proposal Forms

Rockland Green hereby provides as Attachment 6 hereto, reformatted Proposal Forms 3-5 (Proposal Form 3: Qualifications Form, Proposal Form 4: Affidavit of Non-Conclusion; and Proposal Form 5: Disclosure Affidavit). These Proposal Forms replace the Proposal Forms that were issued with the RFP. Proposers are instructed submit completed versions of these reformatted forms with their Proposals. All other Proposal Forms included in RFP remain unchanged.

7. Procurement Schedule

Rockland Green has decided to offer potential Proposers the opportunity to submit questions regarding the Civil Specifications, the Civil Drawings, and the Contract, and to extend the due date for Proposals.

As such, Rockland Green hereby revises the procurement schedule to create a deadline of September 18, 2024 for questions regarding the Civil Specifications, the Civil Drawings, and the Contract; and to extend the Proposal due date until October 7, 2024.

Accordingly, Section III(b) of the RFP, the Procurement Schedule is hereby revised as follows:

b. Procurement Schedule

The schedule for this procurement is as follows:

Activity	**Date**
Issue RFP	July 25, 2024
~~Mandatory~~ Site Visit & Meeting	August 7, 2024 @ 11 AM
Deadline for receipt of questions concerning RFP	August 30, 2024
Deadline for receipt of questions concerning Civil Specifications, and Civil Drawings, Appendix H	**September 18, 2024**
Proposal submission date	~~September 30, 2024~~ **October 7, 2024 at 2 PM local time**
Proposal evaluation period	October-November 2024
Contract Award	December 10, 2024

ATTACHMENT 1
TO
ADDENDUM 2 TO RFP 2024-01

CIVIL SPECIFICATIONS

The Civil Specifications were not included in the original RFP. As such, the Civil Specifications are included as a part of this Addendum, and are being uploaded to Rockland Green's website as a separate file. The Civil Specifications and are hereby added to Appendix B, Specifications of the RFP.

ATTACHMENT 2
TO
ADDENDUM 2 TO RFP 2024-01

CIVIL DRAWINGS

The Civil Drawings were not included in the original RFP. As such, the Civil Drawings are included as a part of this Addendum, and are being uploaded to Rockland Green's website as a separate file. The Civil Drawings and are hereby added to Appendix C, Contract Drawings of the RFP.

ATTACHMENT 3
TO
ADDENDUM 2 TO RFP 2024-01

ANSWERS TO REQUESTS FOR INFORMATION

Attached hereto are Rockland Green's answers to most of the requests for information that it has received in connection with the RFP, as well as corresponding documents. In certain instances, Rockland Green's answers have resulted in corresponding modifications to the Contract Drawings. Therefore, revised Contract Drawings are also included as Attachment 3 to this Addendum, and are being uploaded to Rockland Green's website as separate files. The revised Contract Drawings supersede those previously issued and Proposers are instructed to replace the Contract Drawings that were previously issued with the RFP with the Contract Drawings that are included as Attachment 3 to this addendum.

The remaining outstanding RFI's will be addressed via another Addendum.

Project Name: Rockland Green RFP 2024-01

RFI Log #1

9/13/2024

Bid Question #	Date Submitted	Clarification Requested/Question	Responded By	Response Date	Response
001	8/14/2024	Ref. Elevation J1 on A202: Is item R FILE 15 a millwork or furniture item?	BDA	9/9/2024	Millwork
002	8/14/2024	Please provide dimensions(sizes) of the wood truss top / bottom cords and the web members.	BDA	9/9/2024	Unkown at this time.
003	8/14/2024	Elevation G6 on A208 calls for a plastic laminate counter & backsplash while A101 calls for solid surface. Which is correct?	BDA	9/9/2024	Solid surface
004	8/14/2024	What is the correct ceiling type in Room #116? It has 2x2 ceilings drawn but also has the hash marks as shown for gypsum board ceiling?	BDA	9/9/2024	Gypsum board ceiling.
005	8/14/2024	The finish schedule on A602 calls for painted gypsum board walls in almost every room (with a few exceptions) however the construction plans do not call for new gypsum board partitions in some of these rooms (ie food storage room #178). Is the intention to cover all the existing masonry walls with gypsum board, or just paint the existing CMU walls?	BDA	9/9/2024	Schedule updated for PGB and CMU locations on exterior walls.
006	8/14/2024	The finish schedule on A602 & finish drawings I-103 & I-104 call for sealed concrete in select rooms on the 2nd floor. The structural drawings only show a layer of wood sheathing on the 2nd floor. Please confirm concrete sealer is not required in these locations.	BDA	9/9/2024	Structural has included light weight concrete on the second floor, sealed concrete to remain.
007	8/14/2024	Room #157 on A106 shows the Clean Room tile but is drawn in 2x2. Should this be a 2x2 or 2x4 tile to match other areas?	BDA	9/9/2024	2x4 ceiling tile
008	8/14/2024	Vinyl Wallcovering on the Room finish schedule is called out to be 5'4" high and references detail D6/1202. D6/1202 shows it to be 4'6" high. Which is correct?	BDA	9/9/2024	The room finish schedule calls for +54"
009	8/14/2024	Drawing A101 Equipment schedule indicates that the Microwaves are Contractor Furnished/Contractor Installed, yet in section 119400 page 6 of the specifications, it indicates "Source: By Owner", please clarify the model and manufacturer of the microwaves if Contractor is to furnish.	BDA	9/9/2024	Owner furnished
010	8/14/2024	Is the bench in detail C5/A502 to be furnished and installed by the GC?	BDA	9/9/2024	Yes
011	8/14/2024	Drawing M102 indicates an air devise at room 121 Adoption Hallway, yet there is no ductwork indicating whether it is supply or return air, see below for condition, please clarify.	TEG	9/9/2024	Please see screenshot below (dwg M102) which indicates how this supply air diffuser should be connected to the AHU-2 supply air branch line.
012	8/14/2024	Drawing E100 indicates Light poles, yet there is no specification or model number, please clarify.	TEG	9/9/2024	Type "OA" - LIGMAN LIGHTING USA #ULH-10675-27W-W40-02-120/277 FIXTURE. 1050 LM, 4000K for ground mounted bollards. Type "OB" - LITHONIA LIGHTING DSX0-LED-P3-40K-70CRI-TFTM-120-HS FIXTURE. 6607 LM, 4000K, FORWARD THROW MEDIUM DISTRIBUTION, @ 16' MH. THE POLE WAS EQUAL TO: 16' HEIGHT 4" SQUARE STRAIGHT ALUMINUM POLE.
013	8/14/2024	Drawing E101 indicates a designated fixture 'ETR' on the west exterior of the building, and is not indicated on drawing E002, please clarify the type and model.	TEG	9/9/2024	"ETR" is existing to remain lighting fixture.
014	8/14/2024	Drawing E101, Janitor Closet room 173, indicates a type 'K' light fixture, and is not indicated on drawing E002. Please clarify the type and model numbers and manufacturers.	TEG	9/9/2024	Type "K" to be replaced with type "C" with a flange fit for hard ceiling.
015	8/14/2024	Drawing E102, room #118 Feline Condos #1, indicates a row of downlights designated to be 'B' or maybe an '8' on the drawing, yet the 'B' fixture on drawing E002 is a 1' x 4' LED fixture, please clarify if this is a 'C' fixture or an entirely different fixture.	TEG	9/9/2024	Feline Condo #1 is room #116 and has type "C" downlights.
016	8/14/2024	Drawing E104, room 202 Open Atrium, indicates two fixtures and a fan (designation Q), yet there is no designation for these fixtures on the drawing nor on drawing E002. Please clarify types, model numbers and manufacturers.	TEG	9/9/2024	The two type "M" fixtures are to be Corso 43in LED Pendant 3000K in Black. See spec 23 3400 HVAC Fans for fan type "Q".
017	8/14/2024	Drawing E201, room 180 Elevator, indicates vapor proof lights, please confirm that these are Fixture Type P, as specified on drawing E002.	TEG	9/9/2024	ee Elevator Note 2, Model # CREE # C-VT-A-SMWL or Canlet #20801-VTWM as indicated detail #1 Sheet #E401.

The remaining outstanding RFI's will be addressed via another Addendum.

Project Name: Rockland Green RFP 2024-01

RFI Log #1

9/13/2024

Bid Question #	Date Submitted	Clarification Requested/Question	Responded By	Response Date	Response
018	8/14/2024	Drawing E201, room 153 Treatment Recovery, indicates a hardwired GFCI connection for the Sterilizer (Owner Furnished, Owner Installed), which is 70 amps per the panel schedule on drawing E302, please provide the specification for the sterilizer, and the type and manufacturer that can meet the amperage required for the hardwired GFCI device. Please note that larger rated equipment may provide their own internal GFCI protection and will not work by doubling up protection.	TEG	9/9/2024	Provide a "GFCI" breaker for circuit "C-(6,8,10). Verify breaker and wire size with Equipment supplier.
019	8/14/2024	Proposal Form(s) #1-17 show form headers at the bottom of the previous page (See Page 364 of RFP for Form #4 Error). [This error impacts the following forms: Proposal Form #3 (continued), #4, #5]. This creates difficulty in obtaining multiple hard-copy signatures for proposal preparation. Please kindly re-issue the proposal form to show each form header/title at the top of the relevant page.	WGL	9/9/2024	Reformatted Proposal Forms 3-5 are included as Attachment 6 to Addendum Number 2 to the RFP.
020	8/14/2024	Civil Drawing Set (C-Series) is indicated on the Drawing Index. As discussed at the site meeting, these drawings will soon be issued via amendment. It is our assumption that amendments will be posted to https://www.rocklandgreen.com/businesses/contracting opportunities/ . Please confirm.	WGL	9/9/2024	Rockland Green is issuing the Civil Specifications and the Civil Drawings with this Addendum 2 to the RFP. They will be posted to https://www.rocklandgreen.com/businesses/contractingopportunities/.
021	8/14/2024	Appendix H contains the contract for the project, however, this appendix states "to be provided by Addendum". Please advise if the contract will be issued with Amendment #1.	WGL	9/9/2024	Rockland Green is issuing Appendix H, the Contract, as Attachment 3 to this Addendum Number 2 to the RFP.
022	8/14/2024	Please confirm if this project is Tax Exempt or Capital Improvement.	WGL	9/9/2024	Assuming this question refers to exemption from sales tax, yes, Rockland Green is an exempt organization under Articles 28 and 29 of the New York State Tax Law, and as such Proposers should not include sales tax and use tax in their Proposals.
023	8/14/2024	Please confirm if this project includes any Fire Spinkler/Protection Scope of work.	TEG	9/9/2024	Yes fire protection scope is required and should be provided by a fire protection contractor as a deferred submittal.
024	8/14/2024	The following 15 doors show sidelites on the floor plans but the A601 schedule calls for frame types A, B, D, L or N which do not have sidelites. Please advise the correct frame type for these doors [119, 120, 127, 128, 147, 149, 182, 183, 107B, 117A, 118A, 124A, 124B, 125B, 139A]	BDA	9/9/2024	Frame types have been corrected, see door schedule A601.
025	8/14/2024	There are no fire ratings shown on the door schedule. Which doors and frames are rated? What are the ratings?	BDA	9/9/2024	The interior doors for Stair 2 and the Oxygen room sould have a 45 min. rating
026	8/14/2024	Floor Plan of the Upper Floor calls out section 05 73 00.01 for the railing overlooking the Adoption Lobby. Section A9/A304 at the same railing calls out section 05 52 00.01. Which section does this railing belong to?	BDA	9/9/2024	05 52 00.01 is for the Adoption Lobby, 05 73 00.01 is for the Exterior Canine Hold and Isolation Yards.
027	8/14/2024	Lighting Fixture Schedule E002 shows fixture type(s) P, U, EO. These cannot be located on plans. Please clarify if these fixtures are included in the scope of work, and if so, please locate them.	TEG	9/9/2024	(4) - "EO" are required on outside exit doors. "P" for room 155.
028	8/14/2024	Lighting Fixture Schedule E002 shows fixture type(s) K, Q. Please provide the manufacturer and catalog number for these fixtures.	TEG	9/9/2024	Replace type "K" with a type "C". Ceiling fan labeled "Q" is to selected by architect with a $1,000 allawance
029	8/14/2024	Interior Schedule I001 identifies two types of Rubber Flooring. Section 09 65 66 only identifies the "Ramflex by Mondo" product. Please provide full specifications for flooring type(s) F4/F5, Advance Series by Mondo (per Schedule).	BDA	9/9/2024	F4 and F5 are the same product but different colors intended to create a pattern on the floor. Please refer to I103 room 230 for pattern layout, and Interior Finishes key ledgend for color refrence.
030	8/14/2024	Interior Plans indicate a Flash Cove Base at all Epoxy Flooring. This base is not located on Schedule I001. Please provide information regarding this base if product is different from B1 or B2.	BDA	9/9/2024	a B3 specification has been added to reflect the correct flash coving for the Epoxy Flooring.
031	8/14/2024	Sheet A-106/E-104, Room 202, shows un-marked circular symbols in the ceiling. Are these intended to be a light fixture? Please identify these symbols.	BDA	9/9/2024	These circle are "M" fixtures to be selected by architect with $1,000 allowance
032	8/14/2024	Glazing Specs Calls for 20 and 45 min rated glass for wall type WT8, however now wall with this description is found other than a O2 closet #155 (see below snapshot). Please confirm there are no other areas.	BDA	9/9/2024	WT8 is only at the O2 Closet.
033	8/14/2024	On frame type C and F schedule calls out are for Hollow Metal frames but in details page A506 it calls out for Aluminum. Which is correct ? If the frames are Aluminum should doors also be quoted to match?	BDA	9/9/2024	Window types on A601 and details on A506 both call out for hollow metal.

	A	B	C	D	E	F	G
1							
2							
3							
4				The remaining outstanding RFI's will be addressed via another Addendum.			
5							
6		**Project Name: Rockland Green RFP 2024-01**					
7		**RFI Log #1**					
8		**9/13/2024**					
9							
10		**Bid Question #**	**Date Submitted**	**Clarification Requested/Question**	**Responded By**	**Response Date**	**Response**
44		034	8/19/2024	There are multiple instances where the spec section referenced on the drawings are not included within the project manual. Examples: 1. Dwg. A304 section A4 reference spec sections 06 16 33, 06 11 19, 06 11 00, 06 44 39, 06 17 53. 2. Dwg. A101 / A1 refers to spec 32 31 19. 3. Drw. A304 / A1 refers to spec 04 40 13.01 Please review all instances where this occurs and provide the missing documents.	BDA	9/9/2024	Specs have been updated.
45		035	8/19/2024	The following specification sections are listed on the Table of Contents but are not included in the project manual. Please provide 08 14 73 Sliding Wood Framed Glass Doors 08 34 13 Cold Storage Doors 08 34 56 Security Gates 08 34 73.13 Metal Sound Control Door Assemblies 08 42 29 Swinging Automatic Entrances 08 74 00 Non-Integrated Access Control Hardware 08 75 00 Window Hardware 08 78 00 Special Function Hardware 08 91 19 Louvers and Vents	BDA	9/9/2024	Specifications TOC has been updated.
46		036	8/19/2024	The following specifications are included in the manual but not list on the Table of Contents. Please confirm these specifications apply to this project. 06 80 00 Composite Fabrications 08 30 06 Interior Sliding Doors 08 14 16 Flush Wood Doors	BDA	9/9/2024	Specifications TOC has been updated.
47		037	8/19/2024	Dwg. I101 Interior finish refer to A10 / I101 for Tile Pattern, however A10 on Dr. I101 not showing. Please advice.	BDA	9/9/2024	Drawing has been updated to reference dtl. J7/I01
48		038	8/19/2024	Door Schedule A601 shows Frame type "D" for multiple doors (frame elevations shows frame "D" is for sliding doors) however floor plans showing only one door # 103 which is sliding door. All others are swing doors. Please clarify frame type.	BDA	9/9/2024	Frame types have been corrected, see door schedule A601.
49		039	8/19/2024	Please advise partition type on exterior wall / interior side. A504 shows WT9, WT10, and WT11. Which one we have to install? Please advise.	BDA	9/9/2024	Wall types have been added to the dimension plans.
50		040	8/19/2024	South Exterior Elevation dr.A201/A1 shows door w/ transom – 08 10 00.05 as scheduled, door 177A is not included in door schedule.	BDA	9/9/2024	Door 177A has been added to the door schedule A601.
51		041	8/19/2024	Please provide Interior Panel Signs Schedule.	TEG		
52		042	8/19/2024	In the Equipment schedule (I19400-6) it stated that Microwaves are contractor furnished, contractor install. But, Source: By Owner. Please advise.	BDA	9/9/2024	Owner furnished
53		043					
54		044	8/20/2024	As per 01 23 00 Alternate No. 1 calls for "Mondo Rubber Floor" in lieu of Porcelain. Rubber / Mondo flooring has variety of options thickness, color etc. Dr. A602 Room Finish Legend calls for "R" 2 mill or 3 mill. "Mondo Rubber" floor sheet thickness is min. 6 mill. Please provide specifications.	BDA	9/9/2024	The thickness is to be 6mm.
55		045	8/20/2024	We have identified a conflict on Sheet M-001. Sheet Metal/Insulation Note #1 specifies that the spiral duct is to be double-wall type. However, the following sentence states that all duct runouts to GRD air terminal devices should be round spiral duct with external wrap. Could you please clarify which specification is correct?	TEG	9/9/2024	The sheet metal/insulation note #1 is referring to hard duct spiral duct that would be used for main branch runs (where applicable). The duct runouts to GRD air terminal devices sentence is referring to flexible duct connections from the main branch runs to the GRDs.

	A	B	C	D	E	F	G
1							
2							
3							
4				The remaining outstanding RFI's will be addressed via another Addendum.			
5							
6		**Project Name: Rockland Green RFP 2024-01**					
7		**RFI Log #1**					
8		**9/13/2024**					
9							
10		**Bid Question #**	**Date Submitted**	**Clarification Requested/Question**	**Responded By**	**Response Date**	**Response**
56		046	8/22/2024	Mechanical drawing M103 Note 3 states to route condensate drain line from AHU-1, AHU-2, AHU-3, AHU-4, AHU-14, AHU-15 to nearest Floor/Hub Drain in Room, Mech.3 Room 232, However, when you refer to Plumbing Drawing P103 there are no floor drains shown in this room. Please advise where to route the condensate drain lines from these AHU's.	TEG	9/9/2024	Plumbing plans have been updated to show missing drains in attic area(s).
57		047	8/22/2024	Plumbing Drawing P201, P202 call for a TWDS-1 Trench Wash-Down System to be provided with Valor SV-16 (1/2") Solenoid Valve or Equal, please advise if a standard ASCO 2 Watt ½" Solenoid Valve can be used in-lieu of the SV-16 (1/2") Solenoid Valve.	TEG	9/9/2024	Trench wash-down system specification provided by owner/architect. Substitutions must be approved by the owner/architect.
58		048	8/22/2024	Dr. S2.1 General Notes are referring to details on dr. S05.A which is not provided. Please clarify.	JJK	9/9/2024	REMOVED GENERAL NOTE #3
59		049	8/22/2024	Dr. AD101 keynote 2 refers to dr. S401 which is not provided. Please clarify.	BDA	9/9/2024	See sheet S4.0
60		050	8/22/2024	Notes on Dr. S1.0 & S1.1 stated "existing concrete slab on grade is to be removed and replace with new concrete slab", however dr. AD101 shows portion of slab on grade to be removed. Keynote 1 stated "saw cut and remove slab where needed" Please clarify.	JJK	9/9/2024	ALL INTERIOR SLAB IS TO BE REMOVED - CONTRACTOR TO VERIFY.
61		051	8/22/2024	Benchmark Designwall 2000 specified. Please advise size of the panels, since there are variety of options (from 24"x 12" to 42"x 288") & application (vertical or horizontal) since, as per subcontractor, it has an effect on price.	BDA	9/9/2024	42" wide panels
62		052	8/23/2024	Spec 06 80 00 Composite Fabrications: FRP Column Wraps specified. Please advise locations. Drawings S06.B shows "Wood Columns". Dr. A101 calls for 06 13 23.02 – Rough Swan Column. Dr. A301 calls for 06 11 19.08 –Wood Column. Please clarify.	BDA	9/9/2024	06 11 19.08-Wood Columns
63		053	8/23/2024	Dr. A503 / G5 second floor detail call for 03 31 16.01 – Light Weight Concrete Slab –see structural. Structural details S5.0 not showing any details for concrete slab on second floor. Please provide spec or detail.	JJK	9/9/2024	LIGHT WEIGHT CONCRETE IS TO BE USED.
64		054	8/26/2024	Is there an estimated project budget available for this project?	RG		Proposers should present a competitive proposal
65		055	8/26/2024	Will a list of the General Contractors who attended the pre-bid meeting be provided?	WGL	9/9/2024	Yes, a list of the parties who attend the pre-proposal conference is included in this Addendum 2.
66		056	8/26/2024	Will more detailed Specifications for Equipment, besides the ones listed on E001, be provided for the bid?	TEG		
67		057					
68		058	8/26/2024	Who is responsible for furnishing the Diesel Fuel for the Generator?	RG	9/10/2024	Rockland Green will furnish engine -generator unit, automatic transfer switch and diesel fuel. The contractor is responsible for all appurtenances included for a complete operational system including but not limited to underground conduits, above ground conduits, conductors, communication wiring, grounding wires and accessories, concrete pads, disconnect switches, enclosures, seal offs, excavation and backfill in accordance with the contract documents.
69		059	8/26/2024	Who is responsible for furnishing & installing concrete pole bases & pads (housekeeping, generator etc.)?	BDA	9/9/2024	General contractor
70		060					
71		061	8/26/2024	Who will be responsible for the Demo of the existing electrical conditions, exterior service and interior panels, ETC?	BDA	9/9/2024	General contractor
72		062	8/26/2024	Drawing E301 Power Riser Diagram shows, 4 - 4" riser conduits on the utility pole, O&R does not allow more than 2 conduits. Please advise.	TEG		
73		063	8/26/2024	Drawing E100 Site Plan shows new Pole Lights & new Ground Light, there is no spec for either Fixtures. Please provide spec for pricing.	BDA		The ground lights have been removed. See CL-101 Exterior Lighting Plan for the pole light locations. See Type L-1 for the light spec.
74		064	8/27/2024	**Roof Rafters at Rear Covered Area (Sheet A2.1):** Could you please confirm whether the roof rafters at the rear covered area, as depicted on Sheet A2.1, are specified to be 9 ½" TJI210?	JJK	9/9/2024	CLARIFICATIONS HAVE BEEN MADE ON PLANS

	A	B	C	D	E	F	G
1							
2							
3							
4				The remaining outstanding RFI's will be addressed via another Addendum.			
5							
6		**Project Name: Rockland Green RFP 2024-01**					
7		**RFI Log #1**					
8		**9/13/2024**					
9							
10		**Bid Question #**	**Date Submitted**	**Clarification Requested/Question**	**Responded By**	**Response Date**	**Response**
75		065	8/27/2024	**Post Sizes at Front Covered Area (Sheets S2.0 and S1.0):** Sheet S2.0 at the front covered area references note #8, which specifies 4x12 DF Posts. However, Sheet S1.0 in the same post area calls for 3 ½"x11 7/8" column posts. Could you please clarify the required post size?	JJK	9/9/2024	4X12 DF#2 WOOD POSTS
76		066	8/27/2024	**Pre-Engineered Floor Trusses (Sheets S2.0, S2.1, and S5.0):** We are unable to locate the size of the pre-engineered floor trusses referenced in the details on Sheet S5.0. Could you kindly clarify the specified size of the floor joists on Sheets S2.0 and S2.1?	JJK	9/9/2024	PRE-ENGINEERED TRUSS MANUF. IS TO PROVIDE DEPTH
77		067	8/27/2024	**Holdown Type #3 (Sheet S3.0):** Sheet S3.0 indicates a holdown type #3, however, Sheet S06.E does not list a type #3. Could you please confirm which type of holdown is required?	JJK	9/9/2024	SCHEDULE IS MODIFIED ON PLANS
78		068	8/27/2024	**Decorative Brace/Beam in Covered Areas (Section Detail 5/S5.0 and Architectural Drawing A4/A304):** Section Detail 5/S5.0 shows the covered areas without an extra decorative brace/beam passing through the area, whereas the architectural drawing/detail A4/A304 indicates a 06 44 39.02. Could you please confirm if this decorative element is required, and if so, what size is needed? Should it only be installed at every post area?	JJK	9/9/2024	THIS IS A NON-STRUCTURAL ELEMENT. PLEASE REFER ARCH.
79		069	8/27/2024	**Ceiling Repair in Mechanical Room and Upper Lobby Area (Sheet A4/A301 and A7/A301):** Sheet A4/A301 in the mechanical room includes note #02 25 36.57, which states "repair existing ceiling as necessary," and Sheet A7/A301 contains a similar note for the upper lobby area. Could you please advise if we are required to account for any repairs in these areas? If so, could you provide details regarding the ceiling type, the square footage involved, and any other relevant specifications?	BDA	9/9/2024	The general contractor is responsible for any damage to existing ceilings.
80		070	8/27/2024	**Wall Blocking for Tag #E57 & E58 (Sheet A101):** Could you please confirm if in-wall blocking is required for tags #E57 and #E58 as shown on Sheet A101?	BDA	9/9/2024	Add a sheet of 1/2" plywood sheathing behind GWB to support cat wall system.
81		071	8/27/2024	**Ceiling Type in Room #157 (Sheet A106):** Sheet A106 shows room #157 with a 2x2 ceiling, however, this room is specified to receive ceiling type AT3, which is a 2x4 configuration. Could you kindly confirm that a 2x4, type AT3 ceiling is indeed required for this room?	BDA	9/9/2024	2x4 ceiling tile
82		072	8/27/2024	**Bump-Out in Rooms #227 & #222 (Sheet A106):** On Sheet A106, rooms #227 and #222 have bump-outs at the corners. Could you please clarify the purpose of these bump-outs? Are they intended to be diffusers or another feature?	BDA	9/9/2024	There are no bump-outs, just the wall mounted light symbol over the vanity.
83		073	8/27/2024	**Anticipated Schedule - Start & Finish:** Could you kindly provide the anticipated project schedule, including both the projected start and finish dates?	RG	9/11/2024	Rockland Green anticipates project to achieve Substantial Competition within Q4 of 2025
84		074	8/27/2024	**Partition Type #WT6 (Sheet A504):** Regarding Partition Type #WT6 on Sheet A504, could you please clarify what is meant by "1 layer ¼" MLV"?	BDA	9/9/2024	Remove MLV, replace (2) layers 5/8" gyp. Bd. with (2) layers 5/8" soundboard.
85		075	8/27/2024	**Use of 5/8" DensArmor Plus (Spec Section 092900-2.2-C-3):** In reference to spec section 092900-2.2-C-3, can the 5/8" DensArmor Plus specified for certain areas extend above the finished ceiling and then be topped out with Type 'X' sheetrock? Please confirm if this approach is acceptable.	BDA	9/9/2024	Yes
86		076	8/27/2024	**Refrigeration Pipe Drawings:** Given the scope of this project involving a significant amount of refrigeration piping, we kindly request that you provide more detailed pipe drawings at your earliest convenience.	TEG	9/9/2024	We will work on getting some refrigerant piping plans assembled. These may have to be issued as part of the next addendum.
87		077					
88		078	8/27/2024	Insulation Board Thickness (Spec: 072113-2.2-A-1): Could you confirm the required thickness for the Rockwool CavityRock insulation board?	BDA	9/9/2024	4 1/2" total thickness
89		079	8/27/2024	Weather Resistant Barrier (Detail H9/A503, Spec: 072700-2.2-A-1): The specification calls for CertainTeed MemBrain, which is not recommended for exterior use. Could you clarify what type of weather-resistant barrier is intended for this application?	BDA	9/9/2024	Use a Tyvek fluid applied weather barrier
90		080	8/27/2024	Stainless Steel Bracket (Detail H9/A503, Tag #07 77 19.01): Please provide further information regarding the stainless steel bracket with thermal blocking as specified.	BDA	9/9/2024	StoVentro-SS 120mm bracket, StoVentro Thermal Blocking, StoVentro T-Profile

The remaining outstanding RFI's will be addressed via another Addendum.

Project Name: Rockland Green RFP 2024-01

RFI Log #1

9/13/2024

Bid Question #	Date Submitted	Clarification Requested/Question	Responded By	Response Date	Response
081	8/27/2024	Airspace Thickness (Detail H9/A503, Tag #07 27 13.01): Could you specify the required thickness of the airspace?	BDA	9/9/2024	1" Airspace
082	8/27/2024	Fiber Cement Siding Trim Thickness (Spec: 074646-2.2-A-7): The specification lists multiple thicknesses for trim. Could you confirm which thicknesses are to be used around openings, corners, and similar areas?	BDA	9/9/2024	Corners will use a Fry Reglet OC3 Integral Outside Corner in place of trim board.
083	8/27/2024	Horizontal vs. Vertical Siding (Spec: 074646, Elevations on A201): The specification calls for horizontal siding, but the elevations on sheet A201 indicate vertical siding. Could you clarify which type of siding is required?	BDA	9/9/2024	Board and batten fiber cement panels.Vertical battens at 12" o.c.
084	8/27/2024	Fiber Cement Colors: The specifications mention multiple colors for the fiber cement siding. Could you clarify where each color is to be applied?	BDA	9/9/2024	Dimensions added to the Exterior elevations A201
085					
086	8/28/2024	Drawing S1.0 & S1.1 indicate section #1/S4.0, whereby, on this section it indicates a thickened perimeter edge slab, please clarify if the existing slab is to receive this thickened condition throughout or if it is to occur only where the slab is removed for the new work.	JJK	9/9/2024	IF NEW SLAB TURNDOWN IS USED PER 1/S4.0
087	8/28/2024	Drawing A102 & A103 indicates square/rectangular shapes at exit doors on the outside, are we to assume that these are 4" sidewalk pads, please clarify.	BDA	9/9/2024	Yes, these are sidewalk pads.
088	8/28/2024	Please confirm if the CMU block at the Generator enclosure is 6" or 8".	BDA	9/9/2024	6" block at generator.
089	8/28/2024	Drawing A304, section A1, indicates a miscellaneous metal wall on top of the exterior wall, and references 05 73 00 01 & 05, yet that specification is not noted on the drawing, please clarify.	BDA	9/9/2024	Woven metal screen with steel tube frame, see spec 057300.
090	8/28/2024	Drawing A303, section A11 indicates details C11, J7 and A11 on drawing A502, yet these details for the head and sills for the elevator openings are not on the drawing, please clarify these conditions.	BDA	9/9/2024	Details have been added to sheet A502
091	8/28/2024	Where is detail H5/A502 to be used?	BDA	9/9/2024	For the divider panel in Canine Hold #172.
092	8/28/2024	Detail A8 on drawing AS501 references G4 on AS502; however, we do not have drawing AS502.	BDA	9/9/2024	Reference revised for dtl. C11/AS501
093	8/28/2024	What is the spec for the decorative wood beams as shown on A304 (06 44 39.02)? How often/ what spacing are these beams at?	BDA	9/9/2024	6x8 wood beam, mounted between wood columns.
094	8/28/2024	Drawing A402 calls for 06 44 29.05 1X Wood Column Wrap? Is there a spec on this material and what is the finish on it?	BDA	9/9/2024	Call-out has been changed to 06 11 19.08-Wood Columns
096	8/28/2024	Please provide details for exterior metal wall panels. The drawings only show the fiber cement areas.	BDA	9/9/2024	Wall section added to A305 and window details to A506
097	8/28/2024	Who is the current roof manufacturer for patching/flashing at new plumbing vent pipes?	BDA	9/9/2024	Unknown
098	8/28/2024	Rigid insulation is called out to be 5.5" on construction plans A102 – A105 but details on drawing A505 & A506 call for it to be a total of 4.5" – which is correct?	BDA	9/9/2024	4 1/2" total thickness
099	8/28/2024	Door 177A is not listed on the door schedule, please provide details.	BDA	9/9/2024	Door 177A has been added to the door schedule A601.
100	8/28/2024	There are many interior doors (ie door #139A) shown to have door frame Type D which is listed as a sliding door frame. The associated hardware group is shown to have butt hinges and are shown as swing doors on the floor plans. Which would be the correct door frame to use in these instances?	BDA	9/9/2024	Frame types have been corrected, see door schedule A601.
101	8/28/2024	The specifications table of contents under "Division 08 – Openings" lists sliding wood-framed glass doors, cold storage doors, security gates, metal sound control door assemblies, swinging automatic entrances, non-integrated access control hardware, window hardware, and special function hardware. However, none of these items are actually present in the specifications. Could you please clarify?	BDA	9/9/2024	Specifications TOC has been updated.
102	8/28/2024	Regarding Window Type G on Sheet A601, the section cut references Detail C5 on Sheet A506. However, Detail C5 is not present on that sheet.	BDA	9/9/2024	Call-out for dtl. C5 has been corrected to dtl. C1.
103	8/28/2024	Please confirm which type of doors specified for the Exterior Canine Hold Exercise Yard E-12A and E-12B.	BDA	9/9/2024	Solid vinyl gates
104	8/28/2024	Please confirm hardware quantities referenced on drawing A601.	BDA	9/9/2024	Quantities are the responsibility of the proposer.

The remaining outstanding RFI's will be addressed via another Addendum.

Project Name: Rockland Green RFP 2024-01

RFI Log #1

9/13/2024

Bid Question #	Date Submitted	Clarification Requested/Question	Responded By	Response Date	Response
105	8/28/2024	Drawing A503 calls for 09 54 26.01 Tongue and Groove Wood Ceiling but we do not have spec section 09 54 26. Please advise on what the material will be.	BDA	9/9/2024	See structural drawings for the T&G sizes.
106	8/28/2024	Drawing A602 indicates in Stair #2, room 181, the flooring is rubber treads/ riser and rubber base, yet room #140, Stair #1, there is no flooring or base, please clarify.	BDA	9/9/2024	Stair #1 will be the same as Stair #2, rubber treads/riser and rubber base.
107	8/28/2024	General Note G on A202 specifies corner guards at a height of 48", while the specifications indicate a height of 36". Please clarify which height is required	BDA	9/9/2024	Corner guards are to 48" high.
108	8/28/2024	Drawing A101 calls for the animal cages (as well as the respective specification section) to be contractor furnish & contractor installed. However detail E1/A502 calls for the cages to be owner furnished. Please confirm which is correct	BDA	9/9/2024	Dtl. E1/A502 has been updated to be contractor furnished.
109	8/28/2024	Please confirm which model is preferred for the decorative bench seating in the Adoption Lobby 102.	BDA	9/9/2024	Knoll K. Lounge 60degree bench.
110	8/28/2024	Please confirm which model is preferred for equipment item E4 Employee Lockers.	BDA	9/9/2024	Ideal 2000 series
111	8/28/2024	Please confirm which model is preferred for equipment item E17 Walk in Freezer.	BDA	9/9/2024	Restaurant freezer with indoor conditioning unit,
112	8/28/2024	Please confirm which model is preferred for equipment item E9 Pet Waste Eliminator.	BDA	9/9/2024	Low profile skue48
113					
114	8/28/2024	Drawing P103 indicates in room 233, Indoor Exercise Room, a FD (floor drain on the east wall without any piping run to the drain, as illustrated below, please clarify.	TEG	9/9/2024	Errant note tag. Floor drain not required.
115	8/28/2024	Drawing P201 indicates in room 131 Canine Adopt. #5 – Staff, a 1-1/4" domestic pipe that just ends at a door to room 132, is there a continuation of this pipe.	TEG	9/9/2024	No the 1.25" line route plan south to the washers, only a .5" line is required route to the .5" HW/CW turn ups to the hoe station on the 2nd Fl.
116	8/28/2024	Drawing P201 indicates piping to the hose station at room 174 Hallway across from the elevator with no designation for the pipe size.	TEG	9/9/2024	.5" pipe size. Typical for all hose stations.
117	8/28/2024	Drawing A101, Equipment schedule, item E18 indicates the Oxygen Manifold and Tanks, please clarify the size of the tanks.	BDA	9/9/2024	H-tanks
118	8/28/2024	Drawing M104 indicates an AHU-12, in Mechanical Room 215, we assume that this is AHU-11, since there is no AHU-12 on the drawing M-002 equipment schedule, please clarify.	TEG	9/9/2024	This is erroneous. Please double check which set of documents are being referenced. Current plans utilize fifteen (15) split systems.
119	8/28/2024	Drawing M001, SHEETMETAL/INSULATION NOTES, note #1 indicates that all spiral round duct is to be double walled, and in the next sentence it states, "ALL DUCT RUNOUTS TO GRD AIR TERMINAL DEVICES TO BE PROVIDED AS ROUND SPIRAL DUCT WITH EXTERNAL WRAP", please clarify which is correct.	TEG	9/9/2024	The sheet metal/insulation note #1 is referring to hard duct spiral duct that would be used for main branch runs (where applicable). The duct runouts to GRD air terminal devices sentence is referring to flexible duct connections from the main branch runs to the GRDs.
120	8/28/2024	Drawing M001, INSTALLATION/MATERIALS NOTES, note #7, indicates that there is to be a minimum of 10'-0" from the edge of the roof, yet the equipment is approximately 8'-3" from the edge, please clarify.	TEG	9/9/2024	The sheet metal/insulation note #1 is referring to hard duct spiral duct that would be used for main branch runs (where applicable). The duct runouts to GRD air terminal devices sentence is referring to flexible duct connections from the main branch runs to the GRDs.
121	8/28/2024	Detail C7 on A502 shows exhaust fans in the Avian/Exotics room 213 but the HVAC drawings make no mention of this, please advise.	TEG		
122	8/28/2024	Drawing E002, Light fixture schedule indicates Type U fixture on the schedule, and references drawings A201 and A202, yet these fixtures are not shown on those drawings, it also references drawings C900 & C910, which are not indicated on drawing #2246, in the Index To Drawings. Will these drawings be issued with the other Civil drawings, please clarify if this fixture is relevant.	TEG		
123	8/28/2024	Drawing E301 indicates that the E.C. is to provide a Meter and CT cabinet per Utility Company Requirements, please provide the Utility Company's description of these requirements.	TEG		
124	8/28/2024	Drawing E403, detail #2, "Emergency Diesel Generator System Interlocking Diagram" indicates a receptacle and Lights in the generator room, since the generator is outdoors with a masonry wall surrounding the generator is the receptacle and lighting required and if so please provide a specification for the light fixtures, and quantity/location.	TEG		

The remaining outstanding RFI's will be addressed via another Addendum.

Project Name: Rockland Green RFP 2024-01

RFI Log #1

9/13/2024

Bid Question #	Date Submitted	Clarification Requested/Question	Responded By	Response Date	Response
125	8/29/2024	Plumbing Drawing P002 lists Medical Gases Fixture Schedule, when you refer to drawing P301 Med Gas Floor Plan Notes for this sheet it lists #2 Owner Provided Ceiling Mounted O2 Outlet, #4 Owner Provided Anesthesia Evacuation Drop and #5 Owner Provided Scavenger Unit Please advise if Owner is Providing Medical Equipment scheduled on P301 or if the Plumbing. Contractor is to provide.	TEG	9/9/2024	Equipment provided as part of med gas suppliers' equipment. Confirm with owner/architect.
126	8/29/2024	Drawing A601 calls for exterior windows to be hollow metal, drawing A201 lists aluminum. Please clarify.	BDA	9/9/2024	Drawings have been corrected to show hollow metal.
127	8/29/2024	Please provide a specification for the entry storefront system as shown on drawing A201 at note 084313.05.	BDA	9/9/2024	Drawings have been corrected to show hollow metal.
128	8/29/2024	The product specified in section 085113 is for interior applications only. Please provide an exterior window basis of design if they are to be aluminum.	BDA	9/9/2024	Drawings have been corrected to show hollow metal.
129	8/29/2024	There is a conflict on M-001. Sheetmetal/Insulation note #1 says spiral duct to be double wall type. The next sentence says all duct runouts to GDR terminal devices to be provided as round spiral duct with external wrap. Please clarify.	TEG	9/9/2024	The sheet metal/insulation note #1 is referring to hard duct spiral duct that would be used for main branch runs (where applicable). The duct runouts to GRD air terminal devices sentence is referring to flexible duct connections from the main branch runs to the GRDs.
130	8/29/2024	Floorplans do not indicate any wall furring at the interior side of the exterior walls. Please confirm if this is the intent.	BDA	9/9/2024	Wall types have been added to the dimension plans. Room schedule A602 has been updated.
131	8/29/2024	The underside of the proposed floor trusses do not show drywall for fire rating. Please confirm if this is the intent.	BDA	9/9/2024	Not needed
132	8/29/2024	The roof sections shown on A305 show tectum ceiling finish directly applied to the underside of the rafters. Please confirm if this is the intent.	BDA	9/9/2024	Yes
133	8/22/2024	Plumbing Drawing P002 lists Medical Gases Fixture Schedule, when you refer to drawing P301 Med Gas Floor Plan Notes for this sheet it lists #2 Owner Provided Ceiling Mounted O2 Outlet, #4 Owner Provided Anesthesia Evacuation Drop and #5 Owner Provided Scavenger Unit. Please advise if Owner is Providing Medical Equipment scheduled on P301 or if the Plumbing. Contractor is to provide.	TEG	9/9/2024	Equipment provided as part of med gas suppliers' equipment. Confirm with owner/architect.
134	8/29/2024	We have reviewed the available plans and noticed that while there are specifications for signage, section 10 14 19.11 on Division 10 is missing from the Specifications. Additionally, we have observed that there are no specific signage location and details on the floor plan. May we inquire about the availability of a signage schedule and plan for this project?	BDA	9/9/2024	A signage schedule is included with addendum #2, showing which doors signs are the responsibility of the GC.
135	8/30/2024	Is room 153 the only room that has the melamine top w/ RAKKS brackets on the cages per A5/A205. Detail E1/A502?	BDA	9/9/2024	Yes
136	8/30/2024	Is the base of the bench... millwork or metal framing w/ drywall. Refer to C5/A502	BDA	9/9/2024	Millwork
137	8/30/2024	Detail C1/A502 shows a 'Keypad tied to security system", is that to be supplied with the casework vendor or the security systems contractor? If it is to be supplied by casework vendor, is there a Manufacturer and model number?	BDA	9/9/2024	Dtl. Has been revised to remove the keypad, replace with a double lock.
138	8/30/2024	What specification are the upholstered foam cushion for the millwork benches per C5/A502 in? Are they to be supplied with the millwork bench or by others?	BDA	9/9/2024	By the general contractor
139	8/30/2024	Is there a Division 12 specification included in the documents?	BDA	9/9/2024	No, Rockland Green will purchase furniturefor the offices.
140	8/30/2024	On A6/A202 there is a wood canopy with a 064423.10 specification, is this to be solid wood, plastic laminate or paint grade? I would like clarification on the construction method of the canopy.	BDA	9/9/2024	Solid wood, per the rendering A7/I203 the wood will be stained.
141	8/30/2024	Detail F7/A502 shows unistrut, plywood, and melamine to mount the Surgery Light, Is the unistrut, plywood, and melamine ceiling tile by the light supplier or is this a Division 6 millwork item?	BDA	9/9/2024	General contractors decision.
142	8/30/2024	Is there a detail for the wood column wraps per E1/A402…064429.05. What specification are they to be included in?	BDA	9/9/2024	Per structural, they will be wood columns, not wrapped. E1/A402 has been revised.

	A	B	C	D	E	F	G
1							
2							
3							
4				The remaining outstanding RFI's will be addressed via another Addendum.			
5							
6		**Project Name: Rockland Green RFP 2024-01**					
7		**RFI Log #1**					
8		**9/13/2024**					
9							
10		**Bid Question #**	**Date Submitted**	**Clarification Requested/Question**	**Responded By**	**Response Date**	**Response**
153		143	8/30/2024	Are melamine interiors for the semi exposed casework and shelves an acceptable interior finish? Are 1 1/8" thick particleboard countertops with a PVC edgebanding acceptable at Plam countertop locations?	BDA	9/9/2024	Melamine for interiors is acceptable. 1 1/8" countertops is not acceptable.
154		144					
155		145	8/30/2024	Please confirm the existing roof on the building is to remian. No new roof.	BDA	9/9/2024	Comfirmed, existing to remain.
156		146	8/30/2024	The new Elevator pit is illustrated as CMU block. Please confirm that this is the intention of construction as typically CIP concrete is used for elevator pits. Will Crystalline Waterproofing be required at the interior walls of the elevator pit?	BDA	9/9/2024	CIP is acceptible
157							
158							
159		149	8/30/2024	Please provide more information regarding the Walk-In Freezer. See below for specific questions. 1.) The architectural drawings do not call out the width, depth and height of the freezer – please provide. 2.) What is the target temperature of the freezer? 3.) Is there a preference on internal / external finish – i.e. unpainted mill finish (silver) or white? 4.) Will the freezer sit in a 4" recessed pit or will it sit ground level and require an external ramp? 5.) What is the freezer door width / height requirement? 6.) Does the freezer need to connect into a building management system for remote monitoring? 7.) What type of "products" are coming into each room 8.) How much product is coming in? 9.) How quickly does it need to be brought down to temp. or if there is a requirement at all? 10.) How often is new product being brought in? 11.) Where will the compressor be located and roughly how far from the freezer? On top of the freezer? Remote indoors/outdoors? 12.) Does the freezer need redundancy, i.e. a backup refrigeration system, resulting in 2 compressors and 2 evaporators 13.) What electrical service is available at the site for the freezer equipment? 14.) Will this freezer be required to record or retain historical temperature data? i.e. with a control panel and/or paper chart recorder?	BDA	9/9/2024	1.) See A101 for freezer exterior dimensions. 2.) 0degrees F 3.) Galvanized 4.) Internal ramp 5.) 3' wide x manufacturers standard height 6.) No 7.) Animal cadavers 8.) Varies 9.) 10.) 11.) Top of freezer 12.) No 13.) 14.) No
160							
161		151	8/30/2024	Please advise on the installation/mounting method of Exterior Aluminum Lettering (SURRENDER; ADOPTION; RG C.A.R.E.S.)	BDA		
162		152	8/30/2024	We noticed that the Reference Key Notes on each page do not align with the Specification Manual povided. Do these Reference Key Notes correspond to the Spec Manual or are they call outs to identify an item? Please provide all specifications and finishes.	BDA	9/9/2024	The first 4 numbers of reference keynote align with the spec section, the last 4 numbers are BDA item specific.
163		153	9/3/2024	Plumbing Drawing P101 Note 3 states for plumbing contractor shall tie the dog pen drains together and route above slab to floor sink. Please confirm if this is required, there are no Floor Sinks in these areas to route dog pen drain to, all dog pens sit over a sloped slab to TDs Trench Drains. If individual drains are required for each dog pen, please provide what sizes are required and how to route them to trench drains.	TEG	9/9/2024	Note #3 is not required on this plan.
164		154					

	A	B	C	D	E	F	G
1							
2							
3							
4				The remaining outstanding RFI's will be addressed via another Addendum.			
5							
6		**Project Name: Rockland Green RFP 2024-01**					
7		**RFI Log #1**					
8		**9/13/2024**					
9							
10		**Bid Question #**	**Date Submitted**	**Clarification Requested/Question**	**Responded By**	**Response Date**	**Response**
165		155	9/3/2024	Who is paying for permits and filing/engineering fees etc.?	RG	9/10/2024	Rockland Green has jurisdiction adminstering / enforcment of the Uniform Code and the issuance of building permits, permit fees will not apply .Rockland Green contracts directly with entities to perform building safety inspections and official enforcement activities. Rockland Green will provide third party material testing and compaction testing for the contractors work. The contractor is responsible to coordinate with Rockland Green's testing company to schedule the appropriate tests for the work being conducted.
166		156	9/3/2024	Is there a geotechnical /soils report and boring report , a more complete civil plan(marsh/wet plan marking, curbs, sidewalk drainage/sewer etc.)/report from the prior owner , landscaping plans. Site clearing plan, a more complete site plan etc.	RG	9/10/2024	No geotechnical/soils report or boring report available. Complete Civil Drawing is included within Addendum No.2
167		157	9/3/2024	Will the fire alarm be monitored ?	RG	9/10/2024	Yes
168		158	9/3/2024	Is there a low voltage plan (data /conduit /back boxes/speakers /layout) ?	TEG		
169							
170		160	9/3/2024	Refrigerant A410A will be obsolete after Jan 1, 2025. Is this an issue with your project?	TEG	9/9/2024	There is potential for unit selections to vary in performance based on the new stricter DOE requirements. Assuming we will analyze at time of shop drawing submittals.
171		161	9/3/2024	Does the existing roof have any warranty ?	BDA	9/9/2024	Unknown
172		162	9/4/2024	Piping (Refrigeration & Drain) are NOT shown. Please confirm if assumptions are to be made for Bid purposes.	TEG		
173		163	9/4/2024	Please confirm where Condensate Drain from DAH-1 (Surgery Rm AC) is to terminate.	TEG	9/9/2024	Per sheet M101, Note #5 - ROUTE CONDENSATE DRAIN LINE TO AUXILIARY DRAIN BOX BELOW CABINET NEAR SINK "S-4" IN 153 TREATMENT/RECOVERY AREA. SPILL WITH CODE APPROVED AIR GAP.
174		164	9/4/2024	Plumbing drawings indicate locations for Floor Drains for Upper Level Mech Rooms (MECH.1 (212) &MECH.2 (215)) MECH.3 (230) does NOT indicate Floor Drains. Please identify Floor Drains in MECH.3 for Condensate from (AHU-1,2,3,14,15)? or where Drains should terminate ?	TEG	9/9/2024	Drains added. See revised drawing P103: Rev.1 "Addendum 2" 09/09/2024.
175		165	9/4/2024	AC Unit DAH-1 is shown. ACCU Condenser DHP-1 location is NOT INDICATED. Please provide location of Air Cooled Condenser DHP-1?	TEG	9/9/2024	DHP-1 has been added to the canopy roof along rear of building with other heat pump units. Sheet M105 has been amended to show DHP-1 location.
176		166	9/4/2024	It appears from Arch drawings that East & West Air Cooled Condensers are located on North Side of Building (between 9'-0" & 11'-0") and not on Roof per Mechanical Dwgs. It is not clear from Structural or Architectural Drawings how the Condensers are to be Supported. Please advise of Support Details for Condensers ? and responsibility between Structural & Mechanical ??	TEG		
177		167	9/4/2024	Drawing E201, room 144 Hallway, indicates one Smoke Detector near room 180 Elevator, yet there is no indication of any other Fire Alarm devices shown on any the other plans except drawing E203 room 180 Elevator indicates a Smoke Detector and Thermal detector, please clarify if Fire Alarm drawings will be provided or drawings will be amended to indicate the required devices.	TEG	9/9/2024	Smoke detectors are required for elevator recall system as indicated detail #2 Sheet #E401.
178		168	9/4/2024	Please confirm the size of the manufactured stone veneer.	BDA	9/9/2024	Virginia Ledgestone Coronado Products Inc.
179		169	9/4/2024	Drawing A503, section D11, indicates the head detail (see illustration below), for the existing garage doors. There are existing structural steel frames (see below site photo) that wrap the existing masonry please clarify if we are to reuse the existing structural steel frames or if they are to be removed for a new structural steel head fame, as shown on section D11.	JJK	9/9/2024	EXISTING STEEL FRAME TO BE LEFT IN PLACE..CONTRACTOR TO FIELD VERIFY EA. CONDITION.
180		170	9/4/2024	Please provide a specification for the awnings displayed on the drawings.	BDA	9/9/2024	See spec. 107313 Exterior Sun Control Devices
181		171	9/4/2024	Please clarify the location of the exterior sun control devices. They are included in the specifications but are not currently shown on the drawings.	BDA	9/9/2024	Shown on A107 Roof Plan and A201 Exterior Elevations
182		172	9/4/2024	Please refer to equipment item E10 on drawing A101. The hose lengths associated with the Reelcraft garden hose reels are not noted at all locations. Could you please provide clarification?	BDA	9/9/2024	Hose lengths have been updated on A101

The remaining outstanding RFI's will be addressed via another Addendum.

Project Name: Rockland Green RFP 2024-01

RFI Log #1

9/13/2024

Bid Question #	Date Submitted	Clarification Requested/Question	Responded By	Response Date	Response
173	9/4/2024	Drawing M004 indicates the Mini Split System/Heat Pump Schedule, with the DHP-1, yet this unit is not shown on drawing M101, M103 or M105, please clarify where this unit is to be located.	TEG	9/9/2024	DHP-1 has been added to the canopy roof along rear of building with other heat pump units. Sheet M105 has been amended to show DHP-1 location.
174	9/4/2024	Drawing P103, does not indicate a floor drain for any condensate drain piping discharge in Mechanical Room 3, room 230, please clarify if we are to discharge the condensate to the adjacent Janitor Closet, Room 223.	TEG	9/9/2024	See response to RFI-164
175	9/4/2024	Please provide support/attachment details for all condensing units on the north side exterior roof and any additional structural framing required for the weight of the units.	TEG	9/9/2024	Sheet M007 has a generic installation detail. Structural engineer input may be required to determine best method of connecting units to structural canopy roof system.

SECTION -0 0004

TABLE OF CONTENTS

GENERAL INFORMATION

-0 0001 Cover page
-0 0002 Certification Page
-0 0003 Project Directory
-0 0004 Table of Contents
-0 0005 List of Drawing Sheets

PROCUREMENT AND CONTRACTING REQUIREMENTS GROUP

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS (not used)

00 0000 (not used) (Instructional Documents provided by Owner)

GENERAL REQUIREMENTS SUBGROUP

DIVISION 01 - GENERAL REQUIREMENTS

01 1100 Summary of Work
01 2300 Alternates
01 2500 Substitution Procedures
01 2519 Substitution Request Form
01 2600 Contract Modification Procedures
01 2613 Requests for Information
01 2900 Payment Procedures
01 3100 Project Management and Coordination
01 3216 Construction Progress Schedule
01 3300 Submittal Procedures
01 4000 Quality Requirements
01 4523 Testing and Inspection Services
01 5000 Temporary Facilities and Controls
01 6000 Product Requirements
01 7700 Closeout Procedures

FACILITY CONSTRUCTION SUBGROUP

DIVISION 02 - EXISTING CONDITIONS

02 4119 Selective Demolition

DIVISION 03 - CONCRETE (***"ALSO"*** refer to structural drawings & specifications)
Unless noted otherwise Structural drawings and specifications shall override any specifications listed herein.

03 1000 Concrete Forming
03 2000 Concrete Reinforcing
03 3000 Cast-In-Place Concrete (CIVIL)
03 3000 Cast-In-Place Concrete\
03 3500 Concrete Finishing and Curing
03 5113 Cementitious Roof Panels

DIVISION 04 - MASONRY (***"ALSO"*** refer to structural drawings & specifications)
Unless noted otherwise Structural drawings and specifications shall override any specifications listed herein.

04 2000 Unit Masonry
04 7300 Manufactured Stone Masonry

DIVISION 05 - METALS (***"ALSO"*** refer to structural drawings & specifications)
Unless noted otherwise Structural drawings and specifications shall override any specifications listed herein.

05 5000 Metal Fabrications
05 5100 Metal Stairs
05 5200 Metal Railing System
05 7300 Decorative Metal Railing and Screen

DIVISION 06 - WOOD, PLASTICS AND COMPOSITES (***"ALSO"*** refer to structural drawings & specifications)
Unless noted otherwise Structural drawings and specifications shall override any specifications listed herein.

06 1000 Rough Carpentry
06 4100 Architectural Wood Casework
06 4600 Wood Trim
06 6116 Solid Surfacing Fabrications

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 0543 Cladding Support Systems
07 1419 Cold Fluid Applied Waterproofing
07 2113 Board Insulation
07 2116 Blanket Insulation
07 2600 Vapor Retarders
07 2700 Air Barriers
07 4113 Metal Roof Panels
07 5213 Metal Wall Panels
07 4646 Fiber Cement Siding
07 6200 Sheet Metal Flashing and Trim
07 6500 Flexible Flashing
07 8400 Firestopping
07 9200 Joint Sealers

DIVISION 08 - OPENINGS

08 1113 Hollow Metal Doors and Frames
08 1416 Flush Wood Doors
08 3006 Interior Sliding Doors
08 3100 Access Doors and Panels
08 3800 Traffic Doors
08 5113 Aluminum Windows and Glass Doors
08 7100 Door Hardware
08 8000 Glazing

DIVISION 09 – FINISHES (***"ALSO"*** refer to ***"Interior Design"*** drawings & specifications)
Unless noted otherwise Interior Design drawings and specifications shall override any specifications listed herein.

09 2200 Metal Support Assemblies
09 2900 Gypsum Board
09 3000 Tiling
09 5100 Acoustical Ceilings
09 6513 Resilient Base and Accessories
09 6566 Resilient Athletic Flooring
09 6723 Resinous Flooring
09 7200 Wall Coverings
09 8400 Acoustic Flooring Mat
09 9100 Painting

DIVISION 10 - SPECIALTIES

10 1423 Interior Panel Signs
10 1429 Dimensional Letters
10 2123 Cubicle Track and Hardware
10 2600 Wall Protection
10 2813 Toilet Accessories
10 4416 Fire Extinguishers
10 7313 Exterior Sun Control Devices

DIVISION 11 - EQUIPMENT

11 9400 Equipment

DIVISION 12 - FURNISHINGS (not used)

00 0000 (not used)

DIVISION 13 - SPECIAL CONSTRUCTION

00 0000 (not used)

DIVISION 14 - CONVEYING EQUIPMENT

14 2000 Machine Room-Less Hydraulic Elevators

FACILITY SERVICES SUBGROUP

DIVISION 21 – FIRE SUPPRESION (refer to Fire Sprinkler Contractor's approved drawings & calculations)

21 0000 (refer also to Fire Sprinkler Contractor's approved drawings & calculations)

DIVISION 22 - PLUMBING (refer to Plumbing drawings & specifications)

22 0000 (See Plumbing Drawings Sheet P001)

DIVISION 23 - HEATING VENTILATING & AIR CONDITIONING (refer to Mechanical drawings & specifications)

23 0000 (See Mechanical Drawings Sheet M002)
23 3400 HVAC Fans

DIVISION 25 – INTEGRATED AUTOMATION (not used)

25 0000 (not used)

DIVISION 26 – ELECTRICAL (refer to Electrical drawings & specifications)

26 0000 (See Electrical Drawings Sheet E001)

DIVISION 27 – COMMUNICATIONS (refer to Electrical drawings & specifications)

27 0000 (See Electrical Drawings Sheet E001)

SITE AND INFRASTRUCTURE SUBGROUP

DIVISION 31 - EARTHWORK (***"ALSO"*** refer also to civil drawings & specifications)

31 0000 (See Civil drawings)
31 3119 Termite Control

DIVISION 32 - EXTERIOR IMPROVEMENTS (refer also to civil drawings & specifications)

32 1813	Synthetic Grass Surfacing
32 3100	Welded Wire Fences and Gates
32 3123	Plastic Fences and Gates

DIVISION 33 - UTILITIES (refer to civil drawings & specifications)

33 4000	(See Civil Drawings)

EQUIPMENT SUBGROUP

DIVISION 48- ELECTRICAL POWER GENERATION (***"ALSO"*** refer also to Electrical drawings & specifications)

END OF SECTION

ROOM / DOOR SIGNAGE

DOOR NO	ROOM NAME	SIGN TEXT	GC	BY Owner
101A	ADOPTION VESTIBULE	<none>		
101B	ADOPTION VESTIBULE	<none>		
103	ADOPTION RECEPTION	<none>		
104	CLOSET	STORAGE	X	
106	CONGREGATE FELINE RM #1			X
107A	CONGREGATE FELINE RM #2			X
107B	CONGREGATE FELINE RM #2			X
108	CONGREGATE FELINE RM #3			X
112	FELINE CONDOS #2			X
113	FELINE FOOD/ PREP			X
114A	CONGREGATE FELINE RM #4			X
114B	CONGREGATE FELINE RM #4			X
115A	CONGREGATE FELINE RM #5			X
115B	CONGREGATE FELINE RM #5			X
116	FELINE CONDOS #1			X
117A	FELINE M&G #2			X
117B	FELINE M&G #2			X
118A	FELINE M&G #1			X
118B	FELINE M&G #1			X
119	REAL LIFE RM # 1			X
120	REAL LIFE RM #2			X
122	CANINE M&G #2			X
123	CANINE M&G #1			X
124A	CANINE ADOPT. #1 - PUBLIC			X
124B	CANINE ADOPT. #1 - PUBLIC			X
125	CANINE ADOPT. #2 - PUBLIC			X
125B	CANINE ADOPT. #2 - PUBLIC			X
126	JANITOR	JANITORIAL	X	
127	CANINE ADOPT. #3 - PUBLIC			X
128	CANINE ADOPT. #4- PUBLIC			X
129	JANITOR	JANITORIAL		
130	CANINE ADOPT. #5 - PUBLIC			X
131A	CANINE ADOPT. #5 - STAFF	<none>		
131B	CANINE ADOPT. #5 - STAFF	CANINE ADOPTION #5	X	
132	CANINE ADOPT. #4 - STAFF	CANINE ADOPTION #4	X	
133A	CANINE ADOPT. #3 - STAFF	<none>		
133B	CANINE ADOPT. #3 - STAFF	CANINE ADOPTION #3	X	
133C	CANINE ADOPT. #3 - STAFF	<none>		
134	JANITOR	JANITORIAL	X	
135A	CANINE ADOPT. #2- STAFF	<none>		
135B	CANINE ADOPT. #2- STAFF	CANINE ADOPTION #2	X	
136A	CANINE ADOPT. #1 - STAFF	STAFF ONLY	X	

136B	CANINE ADOPT. #1 - STAFF	CANINE ADOPTION #1	X	
137	JANITOR	JANITORIAL	X	
139A	HALL			X
139B	HALL	STAFF ONLY	X	
141	MENS REST.	REST ROOM		
142	WOMANS REST.	REST ROOM		
143	JANITOR	JANITORIAL		
144	HALLWAY	STAFF ONLY	X	
147	CONFRENCE ROOM			X
148	CLOSET	<none>		
149	STAFF LOUNGE	BREAK ROOM	X	
150	MARKETING OFFICE	MARKETING	X	
151	DIRECTORS OFFICE	DIRECTOR	X	
153A	TREATMENT/ RECOVERY	STAFF ONLY	X	
153B	TREATMENT/ RECOVERY	VETERINARY CLINIC	X	
154	DBL. SURGERY	<none>		
155	O2 CLOSET	OXYGEN	X	
157A	CANINE ISO.	ISOLATION	X	
157B	CANINE ISO.	ISOLATION	X	
158	CANINE ISO.	CANINE ISOLATION	X	
159	FELINE ISO.	FELINE ISOLATION	X	
160A	SURRENDER VESTIBULE	<none>		
160B	SURRENDER VESTIBULE	<none>		
162	PUBLIC REST.	REST ROOM	X	
163	STORAGE	STORAGE	X	
164A	INTAKE #1			X
164B	INTAKE #1	INTAKE 1		
165A	INTAKE #2			X
165B	INTAKE #2	INTAKE 2	X	
166A	INTAKE EXAM			X
166B	INTAKE EXAM	EXAM ROOM	X	
166C	INTAKE EXAM	EXAM ROOM	X	
167A	DVM OFFICE	OFFICE	X	
167B	DVM OFFICE	OFFICE	X	
170	FOOD PREP / LAUN. & BATHE	LAUNDRY, BATHE & FOOD PREP.	X	
171	FELINE HOLD	FELINE HOLD	X	
172	CANINE HOLD	CANINE HOLD	X	
173	JANITOR	JANITORIAL	X	
175A	INTAKE HOLD	INTAKE HOLD	X	
175B	INTAKE HOLD	INTAKE 1	X	
175C	INTAKE HOLD	INTAKE 2	X	
177A	RECEIVING	RECEIVING	X	
177B	RECEIVING	RECEIVING	X	
178A	FOOD STORAGE	STORAGE 1	X	
178B	FOOD STORAGE	STORAGE	X	
179	CENTRAL STORAGE	STORAGE 2	X	
181A	STAIR #2	<none>		

181B	STAIR #2	<none>		
181C	STAIR #2			
182	FELINE HALLWAY 3			X
183	FELINE HALLWAY 1			X
201	UPPER LOBBY			X
203	FELINE INDOOR PLAY			X
204	CONGREGATE FELINE RM. #7			X
205	CONGREGATE FELINE RM. #8			X
206	CONGREGATE FELINE RM. #9			X
207	CONGREGATE FELINE RM. #10			X
208	CONGREGATE FELINE RM. #11			X
209	CONGREGATE FELINE RM. #12			X
210	CONGREGATE FELINE RM. #13			X
211	UPPER FELINE FOOD PREP	FOOD PREP	X	
212	MECH. 1	MECHANICAL 1	X	
213	EXOTICS/ AVIAN			X
214	HALLWAY (EAST)			X
215A	LEVEL 2 CANINE ADOPT (EAST)			X
215B	LEVEL 2 CANINE ADOPT (EAST)			X
216	CANINE JAN. (EAST)	JANITORIAL	X	
217A	⌐EVEL 2 CANINE ADOPT (WEST)			X
217B	⌐EVEL 2 CANINE ADOPT (WEST	STAFF ONLY	X	
217C	⌐EVEL 2 CANINE ADOPT (WEST	<none>		
218	CANINE JAN. (WEST)	JANITORIAL	X	
219A	WHELPING/ PARTURITION	WHELPING	X	
219B	WHELPING/ PARTURITION	<none>		
220	HALLWAY (WEST)	STAFF ONLY	X	
222	WOMEN'S LAVATORY	WOMAN'S REST ROOM & SHOWER	X	
223	WOMEN'S RESTROOM	REST ROOM	X	
224	WOMEN'S SHOWER	SHOWER	X	
225	JANITOR	JANITORIAL	X	
226	MENS SHOWER	SHOWER	X	
227	MEN'S LAVATORY	MEN'S REST ROOM & SHOWER	X	
228	MENS RESTROOM	REST ROOM	X	
229	ELEVATOR LEVEL 2	<none>		
230A	INDOOR EXERCISE RM.	EXERCISE AND ENRICHMENT		X
230B	INDOOR EXERCISE RM.	EXERCISE AND ENRICHMENT		X
231	FELINE HOLD #2	FELINE HOLD 2	X	
232	MECH. 3	MECHANICAL 3	X	
233	(FUTURE BUILD-OUT)	<none>		
234	MECH. 2	MECHANICAL 2	X	

D-Series Size 0
LED Area Luminaire

Catalog Number

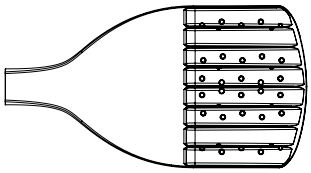
Notes

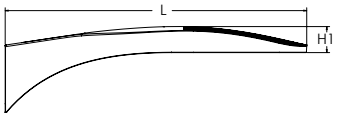
Type L-1

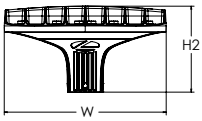
Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)







Design Select options indicated by this color background.

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

design select

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED	P1	40K	70CRI	T3LG		MVOLT	TBD
Series	**LEDs**	**Color temperature** [2]	**Color Rendering Index** [2]	**Distribution**		**Voltage**	**Mounting**
DSX0 LED	**Forward optics** P1 P5 P2 P6 P3 P7 P4 **Rotated optics** P10 [1] P12 [1] P11 [1] P13 [1]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare [3] T4M Type IV medium T4LG Type IV low glare [3] TFTM Forward throw medium	T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control [3] BLC4 Type IV backlight control [3] LCCO Left corner cutoff [3] RCCO Right corner cutoff [3]	MVOLT (120V-277V) [4] HVOLT (347V-480V) [5,6] XVOLT (277V-480V) [7,8] 120 [16,24] 208 [16,24] 240 [16,24] 277 [16,24] 347 [16,24] 480 [16,24]	**Shipped included** SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole) RPA Round pole mounting (#8 drilling, 3" min. RND pole) SPA5 Square pole mounting (#5 drilling. 3" min. SQ pole) [9] RPA5 Round pole mounting (#5 drilling, 3" min. RND pole) [9] SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole) WBA Wall bracket [10] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

PIR			TBD
Control options		**Other options**	**Finish** *(required)*

Shipped installed

NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc. [11,12,18,19]
PIR	High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc [13,18,19]
PER	NEMA twist-lock receptacle only (controls ordered separate) [14]
PER5	Five-pin receptacle only (controls ordered separate) [14,19]
PER7	Seven-pin receptacle only (controls ordered separate) [14,19]
FAO	Field adjustable output [15,19]
BL30	Bi-level switched dimming, 30% [16,19]
BL50	Bi-level switched dimming, 50% [16,19]
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) [17]

Shipped installed

HS	Houseside shield (black finish standard) [20]
L90	Left rotated optics [1]
R90	Right rotated optics [1]
CCE	Coastal Construction [21]
HA	50°C ambient operation [22]
BAA	Buy America(n) Act Compliant
SF	Single fuse (120, 277, 347V) [24]
DF	Double fuse (208, 240, 480V) [24]

Shipped separately

EGSR	External Glare Shield (reversible, field install required, matches housing finish)
BSDB	Bird Spikes (field install required)

DDBXD	Dark Bronze
DBLXD	Black
DNAXD	Natural Aluminum
DWHXD	White
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white

Ordering Information

Accessories

Ordered and shipped separately.

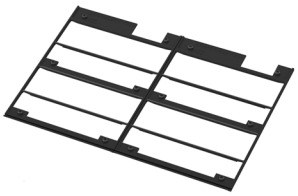
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [23]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [23]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [23]
DSHORT SBK	Shorting cap [23]
DSX0HS P#	House-side shield (enter package number P1-7, P10-13 in place of #)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXRPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSX0EGSR (FINISH)	External glare shield (specify finish)
DSX0BSDB (FINISH)	Bird spike deterrent bracket (specify finish)

NOTES

1 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
2 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
3 T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
5 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
6 HVOLT not available with package P1, P2 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
7 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
8 XVOLT not available in packages P1, P2 or P10. XVOLT not available with fusing (SF or DF).
9 SPA5 and RPA5 for use with #5 drilling only (Not for use with #8 drilling).
10 WBA cannot be combined with Type 5 distributions plus photocell (PER).
11 NLTAIR2 and PIRHN must be ordered together. For more information on nLight Air 2.
12 NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1, P2 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1, P2 and P10 using XVOLT. NLTAIR2 PIRHN not available with P1 using MVOLT.
13 PIR not available with NLTAIR2, PER, PER5, PER7, FAO BL30, BL50 and DMG. PIR not available with P1, P2 and P10 using HVOLT. PIR not available with P1, P2 and P10 using XVOLT. PIR not available with P1 using MVOLT.
14 PER/PER5/PER7 not available with NLTAIR2, PIR, BL30, BL50. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
15 FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, or DMG.
16 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO and DMG. BL30 or BL50 must specify 120, 277 or 347V. Consult tech support for 208, 240 or 480V.
17 DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50 and FAO.
18 Reference Motion Sensor Default Settings table on page 4 to see functionality.
19 Reference Controls Options table on page 4.
20 Option HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
21 CCE option not available with option BS and EGSR. Contact Technical Support for availability.
22 Option HA not available with performance packages P6, P7, P12 and P13.
23 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
24 Single fuse (SF) requires 120V, 277V, or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).

Shield Accessories

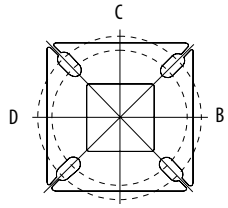
External Glare Shield (EGSR)

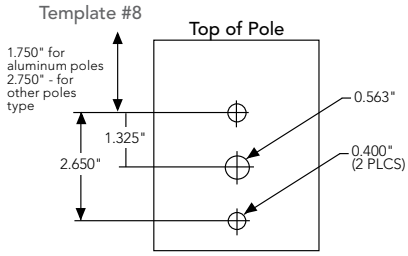


House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION
(from top of pole)





Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
		Minimum Acceptable Outside Pole Dimension					
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX0 with SPA	0.44	0.88	0.96	1.18	---	1.16
DSX0 with SPA5, SPA8N	0.51	1.02	1.06	1.26	---	1.29
DSX0 with RPA, RPA5	0.51	1.02	1.06	1.26	1.24	1.29
DSX0 with MA	0.64	1.28	1.24	1.67	1.70	1.93

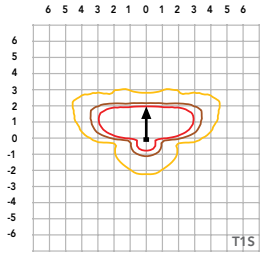
Photometric Diagrams

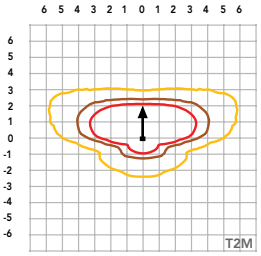
To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's homepage.

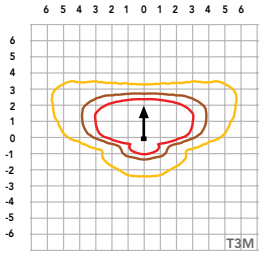
Isofootcandle plots for the DSX0 LED P7 40K 70CRI. Distances are in units of mounting height (20').

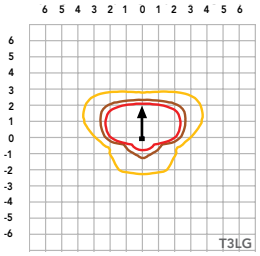
LEGEND

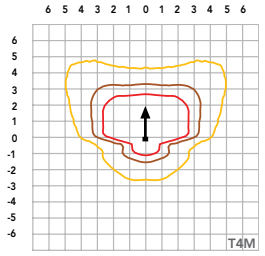
- 0.1 fc
- 0.5 fc
- 1.0 fc

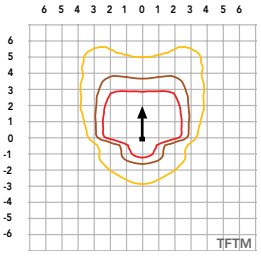


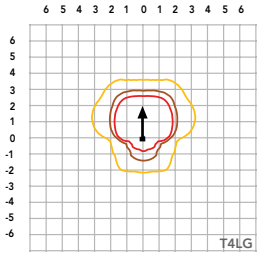


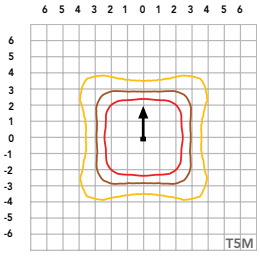


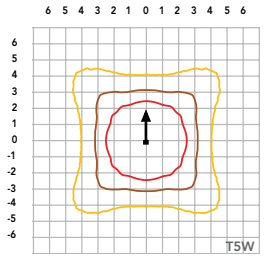


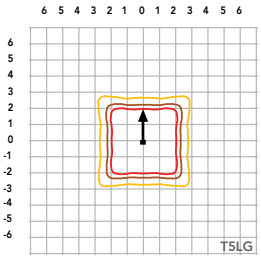


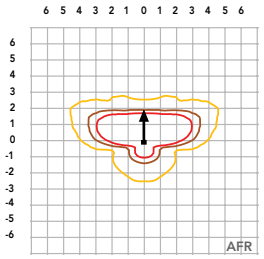


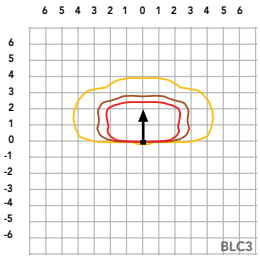


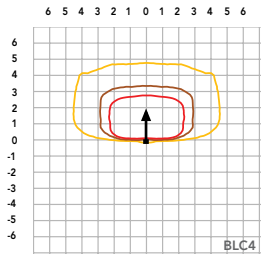


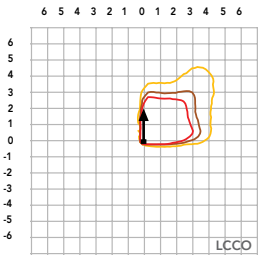


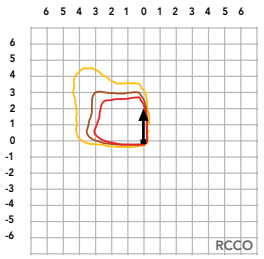












Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	50°F	1.02
20°C	68°F	1.01
25°C	**77°C**	**1.00**
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.94
50,000	0.89
100,000	0.80

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use published values for each package based on input watts and lumens by optic type.

Electrical Load

	Performance Package	LED Count	Drive Current (mA)	Wattage	Current (A) 120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	P1	20	530	34	0.28	0.16	0.14	0.12	0.10	0.07
	P2	20	700	45	0.38	0.22	0.19	0.16	0.13	0.09
	P3	20	1050	69	0.57	0.33	0.29	0.25	0.20	0.14
	P4	20	1400	94	0.78	0.45	0.39	0.34	0.27	0.19
	P5	40	700	89	0.75	0.43	0.38	0.33	0.26	0.19
	P6	40	1050	136	1.14	0.66	0.57	0.49	0.39	0.29
	P7	40	1300	170	1.42	0.82	0.71	0.62	0.49	0.36
Rotated Optics (Requires L90 or R90)	P10	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P11	30	700	67	0.57	0.33	0.28	0.25	0.20	0.14
	P12	30	1050	103	0.86	0.50	0.43	0.37	0.30	0.22
	P13	30	1300	129	1.07	0.62	0.54	0.46	0.37	0.27

LED Color Temperature / Color Rendering Multipliers

	70 CRI		80CRI		90CRI	
	Lumen Multiplier	Availability	Lumen Multiplier	Availability	Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Phototcell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS (not available on DSX0)	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PER5 or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclypse.	nLight Air rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	33W	20	530	T1S	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
				T2M	4,545	1	0	2	137	4,736	1	0	2	143	4,829	1	0	2	145
				T3M	4,597	1	0	2	138	4,791	1	0	2	144	4,885	1	0	2	147
				T3LG	4,107	1	0	1	124	4,280	1	0	1	129	4,363	1	0	1	131
				T4M	4,666	1	0	2	141	4,863	1	0	2	146	4,957	1	0	2	149
				T4LG	4,244	1	0	1	128	4,423	1	0	1	133	4,509	1	0	1	136
				TFTM	4,698	1	0	2	141	4,896	1	0	2	147	4,992	1	0	2	150
				T5M	4,801	3	0	1	145	5,003	3	0	1	151	5,101	3	0	1	154
				T5W	4,878	3	0	1	147	5,084	3	0	2	153	5,183	3	0	2	156
				T5LG	4,814	2	0	1	145	5,018	2	0	1	151	5,115	2	0	1	154
				BLC3	3,344	0	0	1	101	3,485	0	0	1	105	3,553	0	0	1	107
				BLC4	3,454	0	0	2	104	3,599	0	0	2	108	3,670	0	0	2	111
				RCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				LCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				AFR	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
P2	45W	20	700	T1S	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
				T2M	5,862	1	0	2	130	6,109	1	0	2	135	6,228	1	0	2	138
				T3M	5,930	1	0	3	131	6,180	1	0	3	137	6,301	1	0	3	140
				T3LG	5,297	1	0	1	117	5,521	1	0	1	122	5,628	1	0	1	125
				T4M	6,018	1	0	3	133	6,272	1	0	3	139	6,395	1	0	3	142
				T4LG	5,474	1	0	1	121	5,705	1	0	1	126	5,816	1	0	1	129
				TFTM	6,060	1	0	3	134	6,316	1	0	3	140	6,439	1	0	3	143
				T5M	6,192	3	0	1	137	6,453	3	0	2	143	6,579	3	0	2	146
				T5W	6,293	3	0	2	139	6,558	3	0	2	145	6,686	3	0	2	148
				T5LG	6,210	2	0	1	138	6,472	3	0	1	143	6,598	3	0	1	146
				BLC3	4,313	0	0	2	96	4,495	0	0	2	100	4,583	0	0	2	102
				BLC4	4,455	0	0	2	99	4,643	0	0	2	103	4,733	0	0	2	105
				RCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				LCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				AFR	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
P3	69W	20	1050	T1S	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
				T2M	8,343	2	0	3	121	8,694	2	0	3	126	8,864	2	0	3	129
				T3M	8,439	2	0	3	122	8,795	2	0	3	128	8,967	2	0	3	130
				T3LG	7,539	1	0	2	109	7,857	1	0	2	114	8,010	1	0	2	116
				T4M	8,565	2	0	3	124	8,926	2	0	3	129	9,100	2	0	3	132
				T4LG	7,790	1	0	2	113	8,119	1	0	2	118	8,277	1	0	2	120
				TFTM	8,624	1	0	3	125	8,988	1	0	3	130	9,163	2	0	3	133
				T5M	8,812	3	0	2	128	9,184	4	0	2	133	9,363	4	0	2	136
				T5W	8,955	4	0	2	130	9,333	4	0	2	135	9,515	4	0	2	138
				T5LG	8,838	3	0	1	128	9,211	3	0	1	134	9,390	3	0	1	136
				BLC3	6,139	0	0	2	89	6,398	0	0	2	93	6,522	0	0	2	95
				BLC4	6,340	0	0	3	92	6,607	0	0	3	96	6,736	0	0	3	98
				RCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				LCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				AFR	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
P4	93W	20	1400	T1S	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130
				T2M	10,557	2	0	3	113	11,003	2	0	3	118	11,217	2	0	3	121
				T3M	10,680	2	0	3	115	11,130	2	0	3	120	11,347	2	0	3	122
				T3LG	9,540	1	0	2	103	9,942	1	0	2	107	10,136	1	0	2	109
				T4M	10,839	2	0	3	117	11,296	2	0	3	121	11,516	2	0	4	124
				T4LG	9,858	1	0	2	106	10,274	1	0	2	110	10,474	1	0	2	113
				TFTM	10,914	2	0	3	117	11,374	2	0	3	122	11,596	2	0	3	125
				T5M	11,152	4	0	2	120	11,622	4	0	2	125	11,849	4	0	2	127
				T5W	11,332	4	0	3	122	11,811	4	0	3	127	12,041	4	0	3	129
				T5LG	11,184	3	0	1	120	11,656	3	0	2	125	11,883	3	0	2	128
				BLC3	7,768	0	0	2	83	8,096	0	0	2	87	8,254	0	0	2	89
				BLC4	8,023	0	0	3	86	8,362	0	0	3	90	8,524	0	0	3	92
				RCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				LCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				AFR	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P5	90W	40	700	T1S	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
				T2M	11,468	2	0	3	127	11,952	2	0	3	133	12,185	2	0	3	135
				T3M	11,601	2	0	3	129	12,091	2	0	3	134	12,326	2	0	4	137
				T3LG	10,363	2	0	2	115	10,800	2	0	2	120	11,011	2	0	2	122
				T4M	11,774	2	0	4	131	12,271	2	0	4	136	12,510	2	0	4	139
				T4LG	10,709	1	0	2	119	11,160	2	0	2	124	11,378	2	0	2	126
				TFTM	11,856	2	0	3	132	12,356	2	0	4	137	12,596	2	0	4	140
				T5M	12,114	4	0	2	134	12,625	4	0	2	140	12,871	4	0	2	143
				T5W	12,310	4	0	3	137	12,830	4	0	3	142	13,080	4	0	3	145
				T5LG	12,149	3	0	2	135	12,662	3	0	2	141	12,908	3	0	2	143
				BLC3	8,438	0	0	2	94	8,794	0	0	2	98	8,966	0	0	2	99
				BLC4	8,715	0	0	3	97	9,083	0	0	3	101	9,260	0	0	3	103
				RCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				LCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				AFR	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
P6	137W	40	1050	T1S	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
				T2M	16,253	3	0	4	119	16,939	3	0	4	124	17,269	3	0	4	126
				T3M	16,442	2	0	4	120	17,135	3	0	4	125	17,469	3	0	4	128
				T3LG	14,687	2	0	2	107	15,306	2	0	2	112	15,605	2	0	2	114
				T4M	16,687	2	0	4	122	17,391	3	0	5	127	17,730	3	0	5	129
				T4LG	15,177	2	0	2	111	15,817	2	0	2	115	16,125	2	0	2	118
				TFTM	16,802	2	0	4	123	17,511	2	0	4	128	17,852	2	0	5	130
				T5M	17,168	4	0	2	125	17,893	5	0	3	131	18,241	5	0	3	133
				T5W	17,447	5	0	3	127	18,183	5	0	3	133	18,537	5	0	3	135
				T5LG	17,218	4	0	2	126	17,944	4	0	2	131	18,294	4	0	2	134
				BLC3	11,959	0	0	3	87	12,464	0	0	3	91	12,707	0	0	3	93
				BLC4	12,352	0	0	4	90	12,873	0	0	4	94	13,124	0	0	4	96
				RCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				LCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				AFR	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
P7	171W	40	1300	T1S	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129
				T2M	19,273	3	0	4	113	20,086	3	0	4	118	20,478	3	0	4	120
				T3M	19,497	3	0	5	114	20,319	3	0	5	119	20,715	3	0	5	121
				T3LG	17,416	2	0	2	102	18,151	2	0	2	106	18,504	2	0	2	108
				T4M	19,787	3	0	5	116	20,622	3	0	5	121	21,024	3	0	5	123
				T4LG	17,997	2	0	2	105	18,756	2	0	2	110	19,121	2	0	2	112
				TFTM	19,924	3	0	5	117	20,765	3	0	5	122	21,170	3	0	5	124
				T5M	20,359	5	0	3	119	21,217	5	0	3	124	21,631	5	0	3	127
				T5W	20,689	5	0	3	121	21,561	5	0	3	126	21,982	5	0	3	129
				T5LG	20,418	4	0	2	120	21,279	4	0	2	125	21,694	4	0	2	127
				BLC3	14,182	0	0	3	83	14,780	0	0	3	87	15,068	0	0	3	88
				BLC4	14,647	0	0	4	86	15,265	0	0	4	89	15,562	0	0	4	91
				RCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				LCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				AFR	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129

Performance Data

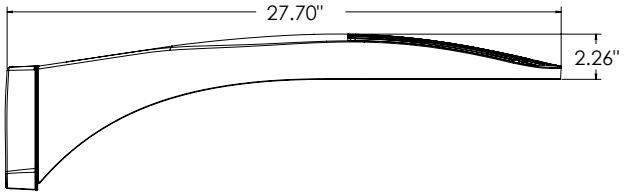
Lumen Output

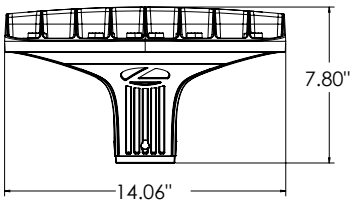
Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Rotated Optics

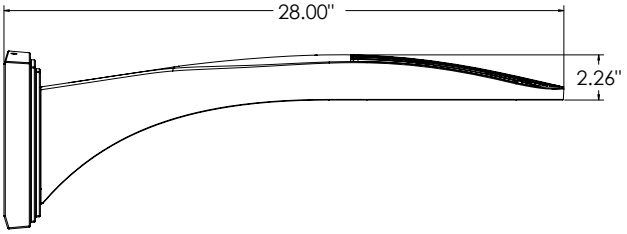
Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P10	51W	30	530	T1S	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
				T2M	6,854	3	0	3	135	7,144	3	0	3	140	7,283	3	0	3	143
				T3M	6,933	3	0	3	136	7,225	3	0	3	142	7,366	3	0	3	145
				T3LG	6,194	2	0	2	122	6,455	2	0	2	127	6,581	2	0	2	129
				T4M	7,036	3	0	3	138	7,333	3	0	3	144	7,476	3	0	3	147
				T4LG	6,399	2	0	2	126	6,669	2	0	2	131	6,799	2	0	2	134
				TFTM	7,086	3	0	3	139	7,385	3	0	3	145	7,529	3	0	3	148
				T5M	7,239	3	0	2	142	7,545	3	0	2	148	7,692	3	0	2	151
				T5W	7,357	3	0	2	145	7,667	3	0	2	151	7,816	4	0	2	154
				T5LG	7,260	3	0	1	143	7,567	3	0	1	149	7,714	3	0	1	152
				BLC3	5,043	3	0	3	99	5,256	3	0	3	103	5,358	3	0	3	105
				BLC4	5,208	3	0	3	102	5,428	3	0	3	107	5,534	3	0	3	109
				RCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				LCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				AFR	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
P11	68W	30	700	T1S	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
				T2M	8,669	3	0	3	127	9,034	3	0	3	133	9,211	3	0	3	135
				T3M	8,768	3	0	3	129	9,138	3	0	3	134	9,316	3	0	3	137
				T3LG	7,833	3	0	3	115	8,164	3	0	3	120	8,323	3	0	3	122
				T4M	8,899	3	0	3	131	9,274	3	0	3	136	9,455	3	0	3	139
				T4LG	8,093	3	0	3	119	8,435	3	0	3	124	8,599	3	0	3	126
				TFTM	8,962	3	0	3	132	9,340	3	0	3	137	9,522	3	0	3	140
				T5M	9,156	4	0	2	135	9,542	4	0	2	140	9,728	4	0	2	143
				T5W	9,304	4	0	2	137	9,696	4	0	2	143	9,885	4	0	2	145
				T5LG	9,182	3	0	1	135	9,569	3	0	1	141	9,756	3	0	1	143
				BLC3	6,378	3	0	3	94	6,647	3	0	3	98	6,777	3	0	3	100
				BLC4	6,587	3	0	3	97	6,865	3	0	3	101	6,999	3	0	3	103
				RCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				LCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				AFR	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
P12	103W	30	1050	T1S	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
				T2M	12,271	4	0	4	119	12,789	4	0	4	124	13,038	4	0	4	126
				T3M	12,412	4	0	4	120	12,935	4	0	4	125	13,187	4	0	4	128
				T3LG	11,089	3	0	3	107	11,556	3	0	3	112	11,782	3	0	3	114
				T4M	12,597	4	0	4	122	13,128	4	0	4	127	13,384	4	0	4	129
				T4LG	11,457	3	0	3	111	11,940	3	0	3	116	12,173	3	0	3	118
				TFTM	12,686	4	0	4	123	13,221	4	0	4	128	13,479	4	0	4	130
				T5M	12,960	4	0	2	125	13,507	4	0	2	131	13,770	4	0	2	133
				T5W	13,170	4	0	3	127	13,726	4	0	3	133	13,994	4	0	3	135
				T5LG	12,998	3	0	2	126	13,546	3	0	2	131	13,810	3	0	2	134
				BLC3	9,029	3	0	3	87	9,409	3	0	3	91	9,593	3	0	3	93
				BLC4	9,324	4	0	4	90	9,718	4	0	4	94	9,907	4	0	4	96
				RCCO	9,110	1	0	2	88	9,495	1	0	2	92	9,680	1	0	2	94
				LCCO	9,110	1	0	2	88	9,494	1	0	2	92	9,680	1	0	2	94
				AFR	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
P13	129W	30	1300	T1S	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130
				T2M	14,547	4	0	4	113	15,161	4	0	4	118	15,457	4	0	4	120
				T3M	14,714	4	0	4	114	15,335	4	0	4	119	15,634	4	0	4	121
				T3LG	13,145	3	0	3	102	13,700	3	0	3	106	13,967	3	0	3	108
				T4M	14,933	4	0	4	116	15,563	4	0	4	121	15,867	4	0	4	123
				T4LG	13,582	3	0	3	105	14,155	3	0	3	110	14,431	3	0	3	112
				TFTM	15,039	4	0	4	117	15,673	4	0	4	122	15,979	4	0	4	124
				T5M	15,364	4	0	2	119	16,013	4	0	2	124	16,325	4	0	2	127
				T5W	15,613	5	0	3	121	16,272	5	0	3	126	16,589	5	0	3	129
				T5LG	15,409	3	0	2	120	16,059	3	0	2	125	16,372	4	0	2	127
				BLC3	10,703	4	0	4	83	11,155	4	0	4	87	11,372	4	0	4	88
				BLC4	11,054	4	0	4	86	11,520	4	0	4	89	11,745	4	0	4	91
				RCCO	10,800	1	0	2	84	11,256	1	0	2	87	11,475	1	0	3	89
				LCCO	10,800	1	0	2	84	11,255	1	0	2	87	11,475	1	0	3	89
				AFR	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130

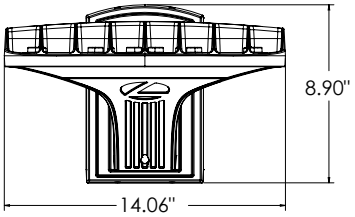
Dimensions



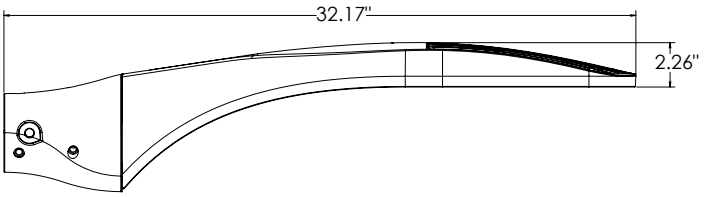


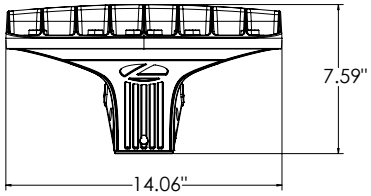
DSX0 with RPA, RPA5, SPA5, SPA8N mount
Weight: 25 lbs





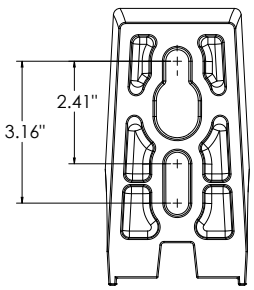
DSX0 with WBA mount
Weight: 27 lb



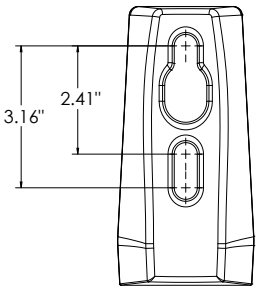


DSX0 with MA mount
Weight: 28 lbs

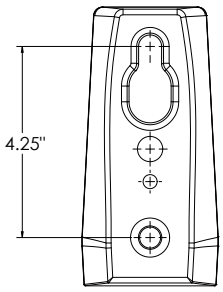
SPA (STANDARD ARM)



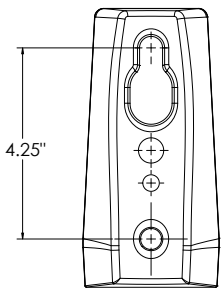
RPA



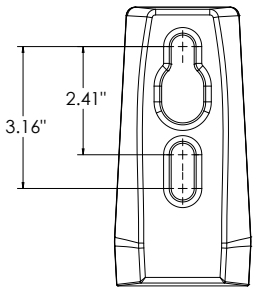
SPA5



RPA5



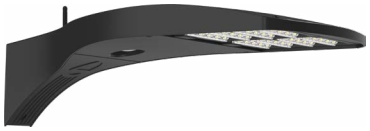
SPA8N

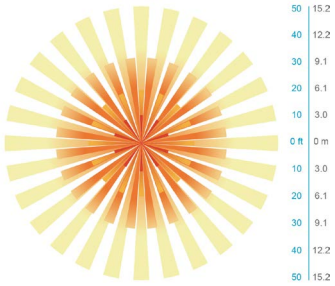


nLight Control - Sensor Coverage and Settings

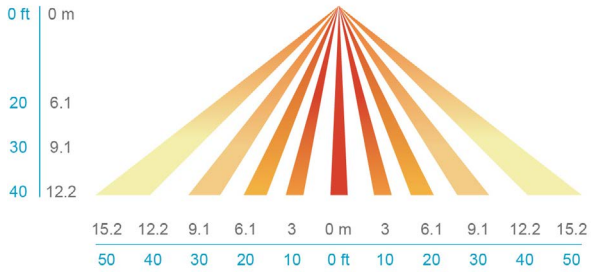
nLight Sensor Coverage Pattern

NLTAIR2 PIRHN





Top



Side

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 3G. Low EPA (0.44 ft²) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

COASTAL CONSTRUCTION (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Precision-molded proprietary silicone lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. 80CRI configurations are also available. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L80/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. PIR integrated motion sensor with on-board photocell feature field-adjustable programing and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION

Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

GOVERNMENT PROCUREMENT

BAA – Buy America(n) Act: Product with the BAA option qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product with the BAA option also qualifies as manufactured in the United States under DOT Buy America regulations.
BABA – Build America Buy America: Product with the BAA option also qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

ATTACHMENT 4
TO
ADDENDUM 2 TO RFP 2024-01

APPENDIX H TO THE RFP

THE CONTRACT

Rockland Green hereby issues the Contract (which is Appendix H to the RFP). Potential Proposers are reminded that the Contract is the definitive statement of the mutual responsibility and liability of Rockland Green and the selected Proposer for the Project.

Proposers are required to include in their Proposals their comments to the Contract, if any, in the form of a mark-up thereto. (See Proposal Form 7 to the RFP). The final Contract will include appendices that will be modified to include the details of the selected Proposer's Proposal.

CONTRACT
FOR THE
BUILD-OUT OF A NEW ANIMAL SHELTER
LOCATED AT
427 BEACH ROAD IN HAVERSTRAW, NY

BETWEEN

ROCKLAND GREEN

and

[ ]

Dated as of [ ], 2024

TABLE OF CONTENTS

ARTICLE I. DEFINITIONS AND INTERPRETATION 5
SECTION 1.1 DEFINITIONS 5
SECTION 1.2 INTERPRETATION 13

ARTICLE II. REPRESENTATIONS AND WARRANTIES 16
SECTION 2.1 REPRESENTATIONS AND WARRANTIES OF ROCKLAND GREEN 16
SECTION 2.2 REPRESENTATIONS AND WARRANTIES OF THE CONTRACTOR 17

ARTICLE III. THE WORK AND CONTRACTOR'S OBLIGATIONS 18
SECTION 3.1 PERFORMANCE OF THE WORK 18
SECTION 3.2 NOTICE TO PROCEED 19
SECTION 3.3 CONTRACT TIME 19
SECTION 3.4 DELAY LIQUIDATED DAMAGES 19
SECTION 3.5 PROVISIONS AND PAYMENT OF LABOR, MATERIALS, EQUIPMENT 20
SECTION 3.6 MAINTENANCE OF RECORDS AND OTHER DOCUMENTS AND DRAWINGS 20
SECTION 3.7 DUTY TO EXAMINE CONTRACT DOCUMENTS 20
SECTION 3.8 QUALIFICATIONS OF PERSONNEL 21
SECTION 3.9 SUBCONTRACTORS 21
SECTION 3.10 CHANGES IN THE WORK 22
SECTION 3.11 COMPLIANCE WITH APPLICABLE LAW 22
SECTION 3.12 PERFORMANCE, INFORMATION, AND SITE CONDITION 23
SECTION 3.13 PROTECTION OF PERSONS AND PROPERTY 24
SECTION 3.14 SUPERVISION OF THE WORK. 24
SECTION 3.15 COORDINATION OF OTHER WORK 25

ARTICLE IV. COMPLETION 25
SECTION 4.1 SUBSTANTIAL COMPLETION. 25
SECTION 4.2 FINAL COMPLETION 26

ARTICLE V. CONTRACT PAYMENTS 26
SECTION 5.1 CONTRACT PRICE 26
SECTION 5.2 SCHEDULE OF VALUES 27
SECTION 5.3 APPLICATIONS FOR PAYMENT AND RETAINAGE 27
SECTION 5.4 COSTS AND COST SUBSTANTIATION 29
SECTION 5.5 CONTRACTOR PROJECT SCHEDULE AS A CONDITION OF PAYMENT 29
SECTION 5.6 PROMPT PAYMENT 29
SECTION 5.7 NO APPROVALS, CONSENTS OR WAIVERS IMPLIED IN PAYMENTS 29

SECTION 5.8 PAYMENT WITHHOLDING 30
SECTION 5.9 PAYMENT UPON FINAL COMPLETION 30
SECTION 5.10 FINAL PAYMENT 31

ARTICLE VI. CONTRACT ADMINISTRATION 31
SECTION 6.1 CONTRACT ADMINISTRATION 31
SECTION 6.2 SITE VISITS 31
SECTION 6.3 FAILURE TO PERFORM 31
SECTION 6.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION 32
SECTION 6.5 MEETINGS 32
SECTION 6.6 REVIEW OF SUBMITTALS 32
SECTION 6.7 REJECTION OF WORK 32
SECTION 6.8 PREPARATION OF CHANGE ORDERS 32
SECTION 6.9 INSPECTIONS 32

ARTICLE VII. TERM 33
SECTION 7.1 EFFECTIVE DATE AND TERM 33

ARTICLE VIII. CHANGES TO THE WORK 33
SECTION 8.1 CHANGES TO THE WORK 33
SECTION 8.2 CHANGE ORDERS 33
SECTION 8.3 CONSTRUCTION CHANGE DIRECTIVES 33
SECTION 8.4 MINOR CHANGES IN THE WORK. 35
SECTION 8.5 CONTRACTOR'S PROPOSAL FOR CHANGE ORDERS 35
SECTION 8.6 EXECUTION OF CHANGE ORDER AS WAIVER OF CLAIM 35
SECTION 8.7 NOTIFICATION TO SURETY AS OTHERWISE REQUIRED 35
SECTION 8.8 ADDITIONAL COST FACTORS IN PRICING CHANGE ORDERS OR CONSTRUCTION CHANGE DIRECTIVES 35

ARTICLE IX. CLAIMS 36
SECTION 9.1 PROCEDURES FOR CONTRACT CLAIMS 36
SECTION 9.2 CONTRACTOR PROHIBITED FROM WITHHOLDING SERVICES 37
SECTION 9.3 CLAIMS RELATED TO SITE CONDITIONS 37
SECTION 9.4 CONDITION PRECEDENT TO LIABILITY 37
SECTION 9.5 LIMITATION OF ROCKLAND GREEN'S OBLIGATIONS FOR CLAIMS 37

ARTICLE X. EVENTS OF DEFAULT AND TERMINATION 38
SECTION 10.1 ROCKLAND GREEN'S RIGHT TO TERMINATE FOR CAUSE 38
SECTION 10.2 GROUNDS FOR TERMINATION 38
SECTION 10.3 NOTICE OF TERMINATION 39
SECTION 10.4 TERMINATION BY ROCKLAND GREEN FOR CONVENIENCE. 39
SECTION 10.5 ACTION BY CONTRACTOR AND ROCKLAND GREEN 40

ARTICLE XI. DISPUTE RESOLUTION AND LITIGATION 41
SECTION 11.1 MEDIATION. 41
SECTION 11.2 FORUM SELECTION AND CONSENT TO JURISDICTION, WAIVER OF RIGHT TO REMOVE 41

ARTICLE XII. INSURANCE, SECURITY FOR PERFORMANCE, INDEMNIFICATION, AND UNCONTROLLABLE CIRCUMSTANCES 41
SECTION 12.1 REQUIRED INSURANCE 41
SECTION 12.2 SECURITY FOR PERFORMANCE 41
SECTION 12.3 INDEMNIFICATION BY THE CONTRACTOR 42
SECTION 12.4 UNCONTROLLABLE CIRCUMSTANCES 42

ARTICLE XIII. WARRANTY 44
SECTION 13.1 WARRANTY 44

ARTICLE XIV. MISCELLANEOUS PROVISIONS 45
SECTION 14.1 RELATIONSHIP OF THE PARTIES 45
SECTION 14.2 CERTAIN OBLIGATIONS TO SURVIVE TERMINATION 46
SECTION 14.3 NO WAIVERS 46
SECTION 14.4 ACTIONS OF ROCKLAND GREEN IN ITS GOVERNMENTAL CAPACITY 46
SECTION 14.5 ASSIGNMENT 46
SECTION 14.6 CHANGE IN OWNERSHIP OF CONTRACTOR OR A PARENT COMPANY 47
SECTION 14.7 BINDING EFFECT 47
SECTION 14.8 AMENDMENT AND WAIVER 47
SECTION 14.9 NON-DISCRIMINATION 47
SECTION 14.10 NO THIRD PARTY RIGHTS CREATED 47
SECTION 14.11 NOTICES 48
SECTION 14.12 NOTICE OF LITIGATION 48
SECTION 14.13 COUNTERPARTS 49
SECTION 14.14 FURTHER ASSURANCES 49

APPENDICES

APPENDIX A CONTRACT DRAWINGS 1
APPENDIX B SPECIFICATIONS 1
APPENDIX C CONTRACT PRICE 1
APPENDIX D REQUIRED INSURANCE 1
APPENDIX E PREVAILING WAGE SCHEDULE 1
APPENDIX F PROJECT SCHEDULE 1

Transaction Agreements

1. Performance Bond
2. Payment Bond
3. Project Labor Agreement

CONTRACT
FOR THE
BUILD-OUT OF A NEW ANIMAL SHELTER
LOCATED AT 427 BEACH ROAD IN HAVERSTRAW, NY

This Contract for the Build-Out of a new Animal Shelter, located at 427 Beach Road in Haverstraw, NY (hereinafter, the "Contract" or the "Agreement"), is made and entered into as of [ ], between the Rockland County Solid Waste Management Authority, also known as, Rockland Green, a body corporate and politic constituting a public benefit corporation of the State of New York ("Rockland Green"), and [ ], a [ ] organized and existing under the laws of the State of [ ] and duly licensed and registered with the State of New York and in accordance with Applicable Law (the "Contractor"). Capitalized terms used herein after defined in Section 1.1 hereof.

R E C I T A L S

WHEREAS, Rockland Green owns the large warehouse located at 427 Beach Road, Haverstraw, New York 10993, and intends to transform the warehouse into a state-of-the-art Animal Shelter;

WHEREAS, Rockland Green requires improvements and renovations to the warehouse in order to transform it into an Animal Shelter, including, site construction, landscaping, general exterior building construction and alterations, general interior building construction and alterations (including construction of an interior second floor level with associated elevator and stair access), interior and exterior finishes, equipment purchase and installation (including animal housing units and veterinary equipment), fire protection, plumbing, medical gas, mechanical HVAC, and electrical, all as indicated in the Drawings and Specifications attached hereto (collectively the "Project");

WHEREAS, Rockland Green issued Request for Proposals No. 2024-01 on July 25, 2024, as modified by addenda (the "RFP"), soliciting proposals from firms qualified to perform the Work covered by this Contract as requested in the RFP;

WHEREAS, Rockland Green held a Site visit in connection with RFP, and Rockland Green provided potential Proposers with reasonable access to the Site to allow them the opportunity to conduct such inspections and reviews they deemed necessary to become familiar with the Site and to review related documentation prior to submission of the Proposals;

WHEREAS, on [ ], Rockland Green received [ ] proposals in response to the RFP; and

WHEREAS, on [ ], Rockland Green selected the Contractor, as having submitted the most advantageous proposal, to enter into this Contract; and

WHEREAS, the Contractor will be responsible for Work detailed herein in accordance with the terms hereof; and

NOW, THEREFORE, in consideration of the mutual covenants contained in this Contract, the Parties hereto, intending to be legally bound, agree as follows:

ARTICLE I.
DEFINITIONS AND INTERPRETATION

SECTION 1.1 DEFINITIONS. As used in this Contract the following terms shall have the meanings set forth below:

"Affiliate" means any person, corporation or other entity directly or indirectly controlling or controlled by another person, corporation or other entity or under direct or indirect common control with such person, corporation or other entity.

"Animal Management Services" means any and all services provided to promote animal care and to protect public health and safety, including, but not limited to, the following services: providing housing and care for stray, abandoned, abused, seized, impounded, owner-surrendered or otherwise unwanted animals in an animal shelter; the processing and disposal of animal waste; the disposal of dead wildlife removed from roadways following wildlife-vehicle collisions; providing animal control; and any other similar service related thereto.

"Animal Shelter" means any facility, building, or structure, where temporary or permanent housing and care is provided to stray, abandoned, abused, seized, impounded, owner-surrendered or otherwise unwanted animals.

"Applicable Law" means those building codes referenced in the Drawings, the reference codes and standards and regulatory requirements specifically noted in the Specifications, as well as any law, rule, codes, standards, regulation, requirement, policy, consent decree, consent order, consent agreement, permit, guideline, action, determination or order of, or Governmental Approval issued by, any Governmental Body having jurisdiction, applicable from time to time to any activities associated with the subject matter of this Contract, or any other transaction or matter contemplated hereby (including, but not limited to, any of the foregoing which concern health, safety, fire, environmental protection, labor relations, mitigation monitoring plans, building codes, non-discrimination and the payment of prevailing wages), including but not limited to the provisions of the State Agriculture and Markets Law applicable to Animal Shelters.

"Application for Payment" shall have the meaning set forth in Article V hereof.

"Architect" means an architect duly designated by Rockland Green to act as such, with the powers and duties as defined in the Contract Documents for the Architect.

"Certificate of Final Completion" shall mean a document prepared by the Contractor and approved by Rockland Green, certifying that all requirements of the Contract have been satisfied and all punch list items have been resolved, and that Final Completion has been achieved.

"Change in Law" means any of the following events or conditions which has a material and adverse effect on the performance by the parties of their respective obligations under this Contract (except for payment obligations):

(A) Inclusions: A "Change in Law" shall include:

(1) the enactment, adoption, promulgation, issuance, modification or written change in administrative or judicial interpretation on or after the effective date of this Contract of any federal, State or local law (except as set forth in the exclusions in (B) below), regulation, rule, requirement, guideline, ruling or ordinance, unless such law, regulation, rule, requirement, ruling or ordinance was, on or prior to the effective date of this Contract, proposed and published in the Federal or New York Register or was duly adopted, promulgated, issued or otherwise officially modified or changed in interpretation;

(2) the order or judgment of any federal, State or local court, administrative agency or Governmental Body, on or after the effective date of this Contract, to the extent such order or judgment is not the result of willful or negligent action, error or omission or lack of reasonable diligence of the Contractor or of Rockland Green, whichever is asserting the occurrence of a Change in Law; provided, however, that the contesting in good faith or the failure in good faith to contest any such order or judgment shall not constitute or be construed as such a willful or negligent action, error or omission or lack of reasonable diligence; or

(3) the denial of an application for, delay in the review, issuance or renewal of, or suspension, termination, interruption, imposition of a term, condition or requirement which is more stringent or burdensome in connection with the issuance, renewal or failure of issuance or renewal on or after the effective date of this Contract or any Governmental Approval to the extent that such denial, delay, suspension, termination, interruption or imposition materially and adversely affects the performance of this Contract, if and to the extent that such denial, delay, suspension, termination, interruption or imposition is not the result of willful or negligent action, error or omission or a lack of reasonable diligence of the Contractor or of Rockland Green, whichever is asserting the occurrence of a Change in Law; provided, however, that the contesting in good faith or the failure in good faith to contest any such denial, delay, suspension, termination, interruption or imposition shall not be construed as such a willful or negligent action, error or omission or lack of reasonable diligence.

(B) Exclusions: A "Change in Law" shall not include:

(1) a change in Applicable Law pertaining to taxes;

(2) a change in the law of any foreign country;

(3) any Change in Law (including the issuance of any Governmental Approval, the enactment of any statute, or the promulgation of any regulation) the terms and conditions of which do not impose more stringent or burdensome requirements on the Contractor than those set forth in the obligations contained herein;

(4) any change in interpretation, however stringent, by a Governmental Body of the meaning of the terms and conditions of the Governmental Approvals in force as of the effective date of this Contract;

(5) union work rules, demands or requirements, which modify the number of employees required to be employed and causes an increase in Contractor's projected or actual cost of providing the Contract Services; or

(6) a change in law pertaining to prevailing wages including the Prevailing Wage Law.

"Change Order" is a written instrument prepared by Rockland Green and signed by Rockland Green and Contractor stating their agreement upon all of the following: (1) a detailed description of the change in the Work which is subject of the Change Order; (2) the amount of adjustment, if any, in the Contract Price; and (3) the extent of the adjustment, if any in the Contract Time.

"Claim" is a demand or assertion by the Contractor seeking, as a matter of right, payment of money, or other relief with respect to the terms of this Contract.

"Construction Change Directive" is a written order prepared by Rockland Green, directing a change in the Work prior to agreement with the Contractor on adjustment, if any, in the Contract Price or Contract Time, or both.

"Construction and Demolition Debris" means wastes which are generated as a result of construction, remodeling or demolition activities and includes, but is not limited to, dirt, tree stumps, tree trunks, rock, brick, concrete, asphalt, drywall, roofing materials, lumber, ceiling tiles, and insulation.

"Contract" means this contract for the Build-Out of the Animal Shelter, together with all appendices and any Contract Modifications thereto.

"Contract Amendment" means modification of the terms of this Contract as approved by the Rockland Green Board and signed by both Parties.

"Contract Award" means the date upon which this Contract is awarded to the Contractor, as selected pursuant to the RFP.

"Contract Date" means the date this Contract has been executed and delivered by the Parties.

"Contract Documents" means the Contract and all of its appendices, exhibits and attachments, and any Contract Modifications thereto.

"Contract Drawings" or "Drawings" means the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams, as set forth in Appendix A.

"Contract Modification" means a (1) Contract Amendment, (2) Change Order, (3) Contract Change Directive, or (4) other written alteration in provisions of the Contract that is accomplished by mutual action of the Parties to the Contract.

"Contract Price" or "Contract Sum" means the price to be paid by Rockland Green to the Contractor for the performance of the Contract Services, as set forth in Appendix C.

"Contract Services" means everything required to be furnished and completed for and relating to the services to be provided by the Contractor pursuant to this Contract, including, but not limited to, the Work and the provision of security for performance.

"Contract Standards" means the standards, terms, conditions, methods, techniques and practices imposed or required by: (i) Applicable Law, (ii) the Specifications, (iii) the Drawings, (iv) Good Engineering and Construction Practice, (v) Good Industry Practice, (vi) applicable equipment manufacturers' specifications, (vii) applicable Insurance Requirements, and (viii) any other standard, term, condition or requirement specifically provided herein to be observed by the Contractor.

"Contract Time" means the period of time, including authorized adjustments as addressed herein, allotted in the Contract Documents for completion of the Work.

"Contractor" means [ ].

"Contractor Fault" means the falsity of any material representation made by the Contractor under this Contract or any breach, failure, non-performance or non-compliance by the Contractor with its obligations hereunder caused by any willful or negligent act, error or omission by the Contractor, its officials, agents, employees, representatives or independent contractors or Subcontractors.

"County" means the County of Rockland, New York.

"Fees and Costs" means reasonable fees and expenses of attorneys, expert witnesses, consultants and other persons, and costs of transcripts, printing of briefs and records on appeal, copying and other reimbursed expenses, and expenses reasonably incurred in connection with any Legal Proceeding.

"Final Completion" means the date on which the Work is complete in accordance with the Contract Documents, including, but not limited to, any punch list items, start-up or commissioning services, and the submission of all documentation required by the Contract Documents.

"Good Engineering and Construction Practice" means those methods, techniques, standards and practices which, at the time they are to be employed and in light of the circumstances known or reasonably believed to exist at such time, are generally accepted as good engineering and construction practices for the engineering and construction industries as followed in the Northeast region of the United States.

"Good Industry Practice" means those methods, techniques, standards and practices which, at the time they are to be employed and in light of the circumstances known or reasonably believed to exist at such time, are generally accepted as good in the industry.

"Governmental Approval" means all approvals, permits, licenses, authorizations, consents, certifications, registrations, endorsements, exemptions, rulings, and entitlements issued by a Governmental Body of whatever kind and however described which are required under Applicable Law to be obtained or maintained by any person with respect to the Contract Services.

"Governmental Body" means any federal, state, regional or local legislative, executive, judicial or other governmental board, agency, authority, commission, administration, court or other body, or any official thereof having jurisdiction over the Site, the Contractor, the Work, or the Project.

"Hazardous Materials" means (a) any waste which is defined or regulated as a hazardous waste, toxic substance, hazardous chemical substance or mixture, or asbestos under Applicable Law, as amended from time to time, including, but not limited to: (1) the Resource Conservation and Recovery Act and the regulations contained in 40 CFR Parts 260-281; (2) the Toxic Substance Control Act (15 U.S.C. Section 2601 et seq.) and the regulations contained in 40 CFR Parts 761-766; and (3) future additional or substitute federal, state or local laws pertaining to the identification, treatment, storage or disposal of toxic substances or hazardous wastes; and (b) radioactive materials which are source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954 (42 U.S.C. Section 2011 et seq.) and the regulations contained in 10 CFR Part 40.

"Insurance Requirement" means any rule, regulation, code, or requirement issued by any fire insurance rating bureau or any body having similar functions or by any insurance company which has issued an insurance policy as required under this Contract, as in effect during the Term of the Contract, compliance with which is a condition to the effectiveness of such policy.

"Legal Proceeding" means every action, suit, litigation, administrative proceeding, and other legal or equitable proceeding arising out of the obligations of the parties under this Contract.

"Liquidated Damages" has the meaning set forth in Section 3.4 hereof.

"Loss-and-Expense" means any and all actual losses, liabilities, forfeitures, obligations, damages, fines, penalties, judgments, deposits, costs, expenses, charges, or Taxes, including all Fees and Costs, except as explicitly excluded or limited under any provision of this Contract.

"Notice to Proceed" means a notice issued by Rockland Green for the Contractor to commence the Work as set forth in Section 3.2 hereof.

"Owner" means Rockland Green.

"Party" means Rockland Green and/or the Contractor as applicable.

"Payment Bond" means the labor and materials payment bond required under Section 12.2 hereof.

"Performance Bond" means a performance bond required under Section 12.2 hereof.

"Prevailing Wage Law" means Articles 8 and 9 of the New York Labor Law, as amended.

"Progress Schedule" means those updates to the Project Schedule provided by Contractor with each Application for Payment, and as otherwise required by Rockland Green or the Contract Documents.

"Project" means all of the collective Work covered under this Contract, performed by the Contractor and its Subcontractors to complete the build-out of the Animal Shelter.

"Project Labor Agreement" means the agreement between Rockland Green, the Contractor, the labor unions representing Subcontractors, and non-unionized Subcontractors, governing the terms and conditions of employment for all workers on the Project, a copy of which shall be attached hereto as Transaction Agreement 3.

"Project Schedule" means the schedule set forth in Appendix F.

"Proposal" means the Contractor's response to the RFP.

"Request for Proposals" or "RFP" means Rockland Green's Request for Proposals No. 2024-01 issued July 25, 2024, for proposals for the Build Out of a New Animal Shelter, including any addenda thereto.

"Required Insurance" has the meaning specified in Appendix D.

"Rockland Green" means the Rockland County Solid Waste Management Authority.

"Rockland Green Board" means the seventeen member board in which the powers of the Rockland Green Solid Waste Management Authority are vested in accordance with the New York Public Authorities Law § 2053-c, NY CLS Pub A § 2053-c.

"Rockland Green Fault" means any breach (including the falsity of any material representation made by Rockland Green under this Contract), failure, non-performance or non-compliance by Rockland Green with its obligations under this Contract to the extent not directly

attributable to any Uncontrollable Circumstance or Contractor Fault that materially and adversely affects the Contractor's performance or rights or obligations under this Contract.

"Rockland Green Indemnitee" has the meaning specified in Section 12.3 hereof.

"Schedule of Values" has the meaning set forth in Section 5.2.

"Scheduled Substantial Completion Date" shall mean the date set for Substantial Completion, in the Project Schedule attached hereto as Appendix F, and adjusted only as set forth in this Contract.

"Security Instruments" means the Proposal Bond, Performance Bond, Labor and Materials Payment Bond and Required Insurance.

"Site" means the real property owned by Rockland Green, located at 427 Beach Road, Haverstraw, and all ancillary property up to and including the fence line, as more specifically described in Appendix A.

"Specifications" means those technical specifications for the Work set forth in Appendix B.

"Standard of Care Act" means New York Senate Bill 6870 of 2022 approved on December 15, 2022 and codified as Article 26-C of the New York Consolidated Laws Service Agriculture and Markets Law. This law takes effect in December 2025.

"State" means the State of New York.

"Subcontract" means an agreement between the Contractor and a Subcontractor, or between a Subcontractor and a sub-subcontractor, as applicable.

"Subcontractor" means every person (other than employees of the Contractor) employed or engaged by the Contractor or any person directly or indirectly in privity with the Contractor (including all subcontractors and every sub-subcontractor of whatever tier) for any portion of the Work, whether for the furnishing of labor, materials, equipment, supplies, services or otherwise.

"Submittals" means sketches, working drawings, shop drawings, studies and analysis, specifications, and calculations as required to adequately perform the Contract Services.

"Substantial Completion" means the date upon which the Work is sufficiently complete in accordance with the Contract Documents.

"Tax" or "Taxes" means any tax, fee, levy, duty, impost, charge, surcharge, assessment or withholding, or any payment-in-lieu thereof, and any related interest, penalty or addition to tax.

"Term" means the term of this Contract as set forth in Section 7.1 hereof.

"Uncontrollable Circumstance" means any act, event or condition that is beyond the reasonable control of the Party relying thereon as justification for not performing an obligation or complying with any condition required of such Party under this Contract, and that materially interferes with or materially increases the time required for performing its obligations thereunder (other than payment obligations), to the extent that such act, event or condition is not the result of the willful or negligent act, error or omission, failure to exercise reasonable diligence, or breach of this Contract on the part of such Party.

(A) Inclusions: Subject to the foregoing, Uncontrollable Circumstances shall include the following:

(1) a Change in Law;

(2) naturally occurring events (except weather conditions normal for the northeast region of the United States) such as landslides, underground movement, earthquakes, fires, tornadoes, floods, epidemics, and other acts of God;

(3) explosion, sabotage or similar occurrence, acts of a declared public enemy, extortion, war, terrorism, blockade or insurrection, riot or civil disturbance;

(4) the failure of any appropriate federal, State, Authority or local public agency or private utility having operational jurisdiction in the area in which the Contract Services are being provided; and

(5) acts of terror of a public enemy.

(B) Exclusions: It is specifically understood that none of the following acts, events or circumstances shall constitute Uncontrollable Circumstances:

(1) any act, event, or circumstance that would not have occurred if the affected Party had complied with its obligations hereunder;

(2) general economic conditions, interest or inflation rates, or currency fluctuation;

(3) with respect to Rockland Green, any changes in the financial condition of Rockland Green and with respect to the Contractor, any changes in the financial condition of the Contractor, or their Affiliates or Subcontractors affecting their ability to perform their respective obligations;

(4) the consequences of error, neglect or omissions by the Contractor or any of its employees, agents, suppliers, Subcontractors or Affiliates in the performance of the Contract Services;

(5) the failure of the Contractor to secure patents or licenses or similar authorizations in connection with any technology or machinery necessary to perform its obligations hereunder;

(6) strikes;

(7) labor disputes involving employees of the Contractor, its Affiliates or Subcontractors;

(8) any increase for any reason in premiums charged by the Contractor's insurers or the insurance markets generally for the Required Insurance; and

(9) any impact of prevailing wages, laws or rates on the Contractor's costs with respect to wages and benefits.

"Warranty" means any original equipment manufacturer's warranty, any express or implied warranty provided by Applicable Law or common application and usage in the construction industry, and the one-year warranty on workmanship provided by the Contractor for the Work, as further detailed in Article XIII.

"Warranty Period" means the period commencing on the date of Final Completion and continuing through one-year unless otherwise extended as provided herein.

"Work" means all of the work required to be performed by the Contractor under this Contract, all in accordance with the Contract Documents.

SECTION 1.2 INTERPRETATION. In this Contract, unless the context otherwise requires:

A. References Hereto. The terms "hereby," "hereof," "herein," "hereunder" and any similar terms refer to this Contract, and the term "hereafter" means after, and the term "heretofore" means before the Contract Date.

B. Gender and Plurality. Words of the masculine gender mean and include correlative words of the feminine and neuter genders and words importing the singular number mean and include the plural number and vice versa.

C. Persons. Words importing persons include firms, companies, associations, general partnerships, limited partnerships, trusts, business trusts, corporations and other legal entities, including public bodies, as well as individuals.

D. Headings. Any headings preceding the text of the sections and subsections of this Contract shall be solely for convenience of reference and shall not constitute a part of this Contract, nor shall they affect its meaning, construction or effect.

E. Entire Agreement. This Contract contains the entire agreement between the parties hereto with respect to the transactions contemplated by this Contract and nothing in this Contract is intended to confer on any person other than the parties hereto and their respective permitted successors and assigns hereunder any rights or remedies under or by reason of this

Contract. Without limiting the generality of the foregoing, this Contract shall completely and fully supersede all other understandings and agreements among the parties with respect to such transactions.

F. Standards of Workmanship and Materials. Any reference in this Contract to materials, equipment, systems or supplies (whether such references are in lists, notes, design requirements, schedules, or otherwise) shall be construed to require the Contractor to furnish the same in accordance with the grades and standards indicated in this Contract. Where this Contract does not specify any explicit quality or standard for materials or workmanship, the Contractor shall use only workmanship and new materials of a quality consistent with that of the requirements for workmanship and materials specified in this Contract.

G. Technical Standards and Codes. References in this Contract, including the Specifications in particular, to all professional and technical standards and codes are to the most recent published professional and technical standards and codes of the institute, organization, association, authority or society specified, all as in effect as of the Contract Date. Unless otherwise specified to the contrary, (1) all such professional and technical standards and codes shall apply as if incorporated herein, and (2) if any material revision occurs, to the Contractor's knowledge, after the Contract Date, the Contractor shall notify Rockland Green.

H. Governing Law. This Contract shall be governed by and construed in accordance with the applicable laws of the State of New York, and disputes between the parties shall be handled in the manner provided herein.

I. **S**everability. If any clause, provision, subsection, or Section or Article of this Contract shall be ruled invalid by any court of competent jurisdiction, then the parties shall: (1) promptly meet and negotiate a substitute for such clause, provision, subsection, Section or Article, (2) if necessary or desirable to accomplish item (1) above, apply to the court having declared such invalidity for a judicial construction of the invalidated portion of this Contract; and (3) negotiate such changes in, substitutions for or additions to the remaining provisions of this Contract as may be necessary in addition to and in conjunction with items (1) and (2) above to effect the intent of the parties in the invalid provision. The invalidity of such clause, provision, subsection, Section or Article shall not affect any of the remaining provisions hereof and this Service Contract shall be construed and enforced as if such invalid portion did not exist.

J. Causing Performance. A party shall itself perform, or shall cause to be performed, subject to any limitations specifically imposed hereby with respect to Subcontractors or otherwise, the obligations affirmatively undertaken by such party under this Contract.

K. Party Bearing Cost of Performance. All obligations undertaken by each Party hereto shall be performed at the cost of the Party undertaking the obligation or responsibility, unless the other Party has explicitly agreed herein to bear all or a portion of the cost either directly, by reimbursement to the other party or through an adjustment to the Contract Price.

L. Cost of Performing Excludes Cost from Legal Proceeding. The "cost of performing" a Party's obligations hereunder, when used with respect to one Party's obligation to pay additional costs incurred by the other Party, shall not include any Loss-and-Expense incurred by the Party resulting from any third-party Legal Proceeding. Notwithstanding the foregoing, each Party retains its rights to bring any Legal Proceeding or to implead the other Party as to any matter arising hereunder.

M. Assistance. The obligations of a Party to cooperate with, to assist or to provide assistance to the other Party hereunder shall be construed as an obligation to use the Party's personnel resources to the extent reasonably available in the context of performance of their normal duties, and not incur material additional overtime or third party expense unless requested and reimbursed by the assisted Party.

N. Interpolation. If any calculation hereunder is to be made by reference to a chart or table of values, and the reference calculation falls between two stated values, the calculation shall be made on the basis of linear interpolation.

O. Delivery of Documents in Digital Format. The Contractor agrees that all documents required to be delivered under this Contract shall be submitted to Rockland Green both in printed form (in the number of copies indicated) and, at Rockland Green's request, in digital form.

P. References to Including. All references to "including" herein shall be interpreted as meaning "including without limitation."

Q. References to Days. All references to days herein are to calendar days, including Saturdays, Sundays and holidays, except as otherwise specifically provided.

R. References to Knowledge. All references to "acknowledge," "knowing," "know" or "knew" shall be interpreted as references to a party having actual knowledge.

S. Contract Documents and Conflicts. The Contract Documents, including any subsequent, duly authorized modification of the Contract Documents, comprise the entire and exclusive agreement between the Parties with reference to the Contract Services, and said Contract Documents supersede any and all prior discussions, communications, representations, understandings, negotiations, or agreements. With respect to a conflict, error, or discrepancy within or amongst the Contract Documents, the interpretation most favorable to Rockland Green shall apply.

T. Anything that may be required, implied or reasonably inferred by the Contract Documents which make up this Contract, or any one or more of them, shall be provided by the Contractor for the Contract Price.

U. Nothing contained in the Contract Documents shall create, nor be interpreted to create, privity or any other relationship whatsoever between Rockland Green and any person except the Contractor.

V. When a word, term, or phrase is used in this Contract, it shall be interpreted or construed first, as defined herein; second, if not defined, according to its generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage.

W. Wherever this Contract calls for "strict" compliance or conformance with the Contract Documents as to matters other than compliance with time limits, providing an updated Project Schedule, and Claim and Change Order procedures, the term shall mean within tolerances as described specifically in the Contract Documents, or if not specifically described, within industry standards and tolerances for deviation for the specific item or procedure in question.

X. The listing herein of any items as constituting a material breach of this Contract shall not imply that any other, non-listed item will not constitute a material breach of this Contract.

Y. Each and every provision of law and clauses required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein, and if through mistake, or otherwise, any such provision is not inserted, or is not correctly inserted, then upon the application of either Party, the Contract shall forthwith be physically amended to make such insertion.

ARTICLE II.
REPRESENTATIONS AND WARRANTIES

SECTION 2.1 REPRESENTATIONS AND WARRANTIES OF ROCKLAND GREEN. Rockland Green represents and warrants that:

A. Existence and Powers. Rockland Green is a body politic and corporate constituting a public benefit corporation of the State, with full legal right, power and authority to enter into and perform its obligations under this Contract.

B. Due Authorization and Binding Obligation. Rockland Green and the Rockland Green Board have duly authorized the execution and delivery of this Contract. This Contract has been duly executed and delivered by Rockland Green and constitutes a legal, valid and binding obligation of Rockland Green, enforceable against Rockland Green in accordance with its terms except insofar as such enforcement may be limited by bankruptcy, insolvency, or other similar laws affecting creditors' rights in effect and by equitable principles of general application.

C. No Conflict. The execution, delivery or performance by Rockland Green of this Contract does not conflict with, violate or result in a breach of any law or governmental regulation currently in effect applicable to Rockland Green or any term or condition of any judgment, decree, agreement or instrument to which Rockland Green is a party or by which Rockland Green or any of its properties or assets are bound or constitutes a default under any of the foregoing.

D. No Approvals Required. No approval, authorization, order or consent of, or declaration, registration or filing with, any Governmental Body is required for the valid execution and delivery of this Contract by Rockland Green or the performance of its payment obligations hereunder except as such have been duly obtained or made.

E. No Legal Prohibition. Rockland Green has no knowledge of any Applicable Law in effect on the date as of which this representation is being made which would prohibit the performance by Rockland Green of this Contract and the transactions contemplated hereby.

F. Information Pertaining to the Site. To the best of its knowledge, Rockland Green has made available to the Contractor significant studies, reports and other information pertaining to the Site which Rockland Green has developed in connection with its planning and preparation work with respect to the RFP and which, in Rockland Green's opinion, may reasonably be material to the performance by the Contractor of the Contract Services. Rockland Green makes no representation, however as to the accuracy or completeness of any such information.

G. Title to the Site. Rockland Green owns, or is expressly authorized to use, all of the assets, improvements and other interests comprising the Site, and has all necessary right, power and authority to provide Contractor access thereto as provided in this Contract for the purpose of performing the Contract Services.

SECTION 2.2 REPRESENTATIONS AND WARRANTIES OF THE CONTRACTOR. Contractor hereby represents and warrants that:

A. Qualification. The Contractor is fully qualified to act as the general contractor for the Contract Services and it has and its employees and Subcontractors have, and shall maintain, any and all licenses, permits or other authorizations necessary to perform the Work.

B. Site Familiarity. The Contractor has become familiar with the Site and facilities and the local conditions under which the Work is to be constructed and operated and the Contractor represents that the Work can be performed as described in the Contract Documents and for the Contract Price.

C. Existence and Powers. The Contractor is duly organized and validly existing as a [ ] under the laws of [ ], with full legal right, power and authority to enter into and perform its obligations under this Contract, and duly licensed and registered with the State of New York and in accordance with Applicable Law.

D. Contract Documents. The Contractor has received, reviewed, and examined all of the documents which make up the Contract Documents, and has found them to the best of its knowledge, to be complete, accurate, adequate, consistent, coordinated and sufficient for the Project and Contractor has based its Contract Price for the Work upon its complete understanding of the requirements of the Contract Documents. The Contractor acknowledges that with respect to any conflict, error or discrepancy within or amongst the Contract Documents, the interpretation most favorable to Rockland Geren shall apply.

E. Due Authorization and Binding Obligation. The Contractor has duly authorized the execution and delivery of this Contract. This Contract has been duly executed and delivered by the Contractor and constitutes the legal, valid and binding obligation of the Contractor, enforceable against the Contractor in accordance with its terms except insofar as such enforcement may be affected by bankruptcy, insolvency, moratorium and other laws affecting creditors' rights generally.

F. No Conflict. The execution, delivery and performance by the Contractor of this Contract does not conflict with, violate or result in a breach of any law or governmental regulation applicable to the Contractor or any term condition of any judgment, decree, agreement (including, without limitation, the Contractor's certificate of incorporation) or instrument to which the Contractor is a party or by which the Contractor or any of its properties or assets are bound, or constitutes a default under any of the foregoing.

G. No Approvals Required. No approval, authorization, order or consent of, or declaration, registration or filing with, any Governmental Body is required for the valid execution and delivery of this Contract by the Contractor or the performance of its payment or other obligations hereunder except as such have been duly obtained or made.

H. No Litigation. There is no legal proceeding, at law or in equity, before or by any court, pending or, to the Contractor's knowledge, threatened against the Contractor which

could reasonably be expected to have a material and adverse effect on the execution or delivery of this Contract or the validity or enforceability of this Contract or on the ability by the Contractor to perform any of its obligations hereunder.

I. No Legal Prohibition. The Contractor has no knowledge of any Applicable Law in effect on the date as of which this representation is being made which would prohibit the performance by the Contractor of this Contract and the transactions contemplated hereby.

J. Patents and Licenses. The Contractor owns, or is expressly authorized to use under patent rights, licenses, franchises, trademarks or copyrights, the technology necessary for the Contract Services without any known material conflict with the rights of others.

K. Information Supplied by the Contractor. The information supplied and representations and warranties made by the Contractor in all submittals made in response to the RFP and in all post-proposal submittals, if any, with respect to the Contractor (and to the best of its knowledge, all information supplied in such submittals with respect to any Subcontractor) are true, correct and complete in all material respects.

L. Compliance. The Contractor represents and warrants that as of the Contract Date the Contractor is in compliance with all laws, regulations, rules and orders applicable to its respective business, noncompliance with which would have a material and adverse effect upon its business or its ability to perform its respective obligations under this Contract.

M. Notice of Default. The Contractor shall provide to Rockland Green, promptly following the receipt thereof, copies of any notice of default, breach or noncompliance received under or in connection with any Applicable Law, Governmental Approval, or Subcontract pertaining to this Contract.

N. Familiarity with Applicable Law. The Contractor is familiar with and is satisfied as to all Applicable Law, including federal, state, and local laws and regulations that may affect cost, progress, and performance of the Contract Services.

O. Provision of Conflicts, Errors, Ambiguities and Discrepancies. As further described in Section 3.7 hereof, the Contractor shall have a continuing duty to read, examine, review, compare and contrast each of the documents comprising the Contract (including Drawings and other Submittals). The Contractor has given Rockland Green written notice of all conflicts, errors, omissions, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Rockland Green is acceptable to Contractor. If Contractor discovers any conflicts, errors, omissions, ambiguities, or discrepancies in the Contract Documents while performing the Contract Services, Contractor warrants that it shall immediately bring such conflict, error, omission, ambiguity or discrepancy to Rockland Green's attention in writing. The express or implied approval by Rockland Green of any Submittals shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract.

ARTICLE III.
THE WORK AND CONTRACTOR'S OBLIGATIONS

SECTION 3.1 PERFORMANCE OF THE WORK. The Contractor shall perform all of the Work required, implied or reasonably inferable from the Contract Documents. The Contractor will complete the Work described in the Contract Documents, in accordance with the

terms herein, as may be amended by written agreement of the Parties from time to time, for the Contract Price. All Work shall strictly conform to the requirements of the Contract Documents. The Contractor shall be solely responsible for and have control over means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work. The Contractor shall also be responsible, in accordance with Section 3.13, for developing a Site safety plan, and in accordance with Section 3.15, for coordinating all Work performed on the Project, and for updating and maintaining the Project Schedule.

SECTION 3.2 NOTICE TO PROCEED.

A. Conditions Precedent to Notice to Proceed. The Notice to Proceed will be issued on or within five (5) days of the Contract Date by Rockland Green, provided that the Contractor has satisfied the following conditions:

(i) executed the Project Labor Agreement;

(ii) provided proof of Required Insurance to Rockland Green;

(iii) provided the Security Instruments to Rockland Green;

(iv) submitted a final Project Schedule that is agreed upon by the Parties;

(v) provided any other Submittals required by the Contract Documents as a condition to the Notice to Proceed; and

(vi) provided evidence to Rockland Green's satisfaction, that it has placed any advance orders as directed by Rockland Green.

SECTION 3.3 CONTRACT TIME. The Contractor shall commence work on the day specified in the Notice to Proceed and shall accomplish Substantial Completion by the Scheduled Substantial Completion Date, as adjusted only in accordance with this Contract. By signing this Contract, the Contractor agrees that the Contract Time is a reasonable time for accomplishing completion of the Work. The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time. The Contract Time shall not be adjusted for increases in the Contract Time caused by Rockland Green's suspension, delay or interruption if the performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible or if the adjustment is made or denied under another provision of this Contract. The Contractor shall in no event be entitled to any damages or other compensation, recovery or relief due or related to any delay or suspension of the Project or component thereof, except only for a reasonable extension of Contract Time for performance, which shall be the Contractor's sole and exclusive remedy in the event of any such delay or suspension.

SECTION 3.4 DELAY LIQUIDATED DAMAGES. Time is of the essence in the performance and completion of the Work and the Contractor shall work diligently, using such means and methods of construction as will assure Substantial Completion is achieved by the Scheduled Substantial Completion Date and that Final Completion is achieved by the date agreed upon therefore in the Project Schedule. Except as otherwise excused due to Uncontrollable

Circumstances or Rockland Green Fault, the Contractor shall pay daily Liquidated Damages to Rockland Green commencing on the 45th day after the Scheduled Substantial Completion Date, if Substantial Completion has not been achieved by then. Such Liquidated Damages shall be two thousand dollars ($2,000/day). Except as otherwise excused due to Uncontrollable Circumstances or Rockland Green Fault, the Contractor shall pay an additional one thousand dollars per day ($1,000/day) in daily Liquidated Damages to Rockland Green commencing on the 45th day after the date set for Final Completion in the Project Schedule, for each day after that date, if Final Completion has not been achieved by then. The Contractor shall also indemnify Rockland Green in accordance with and subject to the limitations set forth in Section 12.3 hereof against all Loss-and-Expense resulting from any Legal Proceeding originated by any third-party arising from such failure to complete the Work except to the extent such failure is caused by an Uncontrollable Circumstance. The amount of Liquidated Damages owed by the Contractor may be retained by Rockland Green out of monies which are or may become due hereunder.

SECTION 3.5 PROVISIONS AND PAYMENT OF LABOR, MATERIALS, EQUIPMENT AND GOVERNMENTAL APPROVALS. The Contractor shall provide and pay for all labor, supervision, services, materials, supplies, equipment, machinery, fixtures, appliances, facilities, tools, transportation, storage, disposal, power, fuel, heat, light, cooling, or other utilities, required for performance of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. Contractor shall obtain, at its sole cost, all Governmental Approvals that are required for the Work and ensure the prompt payment for each of these obligations.

SECTION 3.6 MAINTENANCE OF RECORDS AND OTHER DOCUMENTS AND DRAWINGS.

A. Maintenance of Updated Contract Documents at Site. The Contractor shall keep an updated copy of the Contract Documents at the Site. Additionally, the Contractor shall keep a copy of approved Drawings and other Submittals at the Site. All of these items shall be available to Rockland Green during all regular business hours. The Contractor shall ensure the creation and maintenance of a detailed and comprehensive copy of the Drawings, Specifications, addenda, Change Orders and other modifications depicting the Work. Said items shall be submitted to Rockland Green, along with other required Submittals upon Final Completion of the Work, or as otherwise provided in the Contract Documents, and receipt of same by Rockland Green shall be a condition precedent to final payment to the Contractor.

B. Review and Delivery of Submittals. The Contractor shall have the duty to carefully review, inspect, examine, and physically stamp and sign any and all Submittals before submission of same to Rockland Green. The delivery of Submittals shall constitute a representation by the Contractor that it has verified that such Submittals meet the requirements of the Contract Documents, including field measurements, materials, and field construction criteria related thereto. Rockland Green's approval of any Submittal shall not relieve the Contractor of its responsibility and liability for errors or omissions set forth in Submittals. The Contractor shall not perform any Work for which the Contract Documents require a Submittal unless the respective Submittal has been approved in writing by Rockland Green.

SECTION 3.7 DUTY TO EXAMINE CONTRACT DOCUMENTS. The Contractor has a continuing duty to, and shall carefully, examine all figures and dimensions on the Contract

Drawings and Specifications and shall note all conflicts, errors, omissions, ambiguities or discrepancies. The Contractor will be held responsible for any conflict, error or discrepancy not discovered before the Work is executed, unless the Contractor could not have reasonably known about the conflict, error or discrepancy. The Contractor has given Rockland Green written notice of all conflicts, errors, omissions, ambiguities or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Rockland Green is acceptable to Contractor. If the Contractor discovers any conflicts, errors, omissions, ambiguities or discrepancies in the Contract Documents while performing the Contract Services, the Contractor warrants that it shall immediately bring such conflict, error, omission ambiguity or discrepancy to the Rockland Green's attention in writing. The express or implied approval by Rockland Green of any drawings or other Submittals shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract. The Contractor shall not alter Specifications, Contract Drawings or figures, or make any alterations in or additions to the quantity, character or arrangement of the materials or Work, whether same shall involve additional expense or not, unless same shall be agreed upon first, in writing, as a Change Order or is included in a Construction Change Directive. This provision, however, shall not abridge in any way Rockland Green's rights as to the interpretation of the Specifications, plans and figures thereon. The divisions and sections of the Specifications and the identification of any Drawings shall not control the Work of the Contractor in dividing the Work among Subcontractors or suppliers or delineating the Work to be performed by any specific trade. The division of the Specifications are complementary and anything mentioned or shown in a division of the Specifications or in a specific trade drawing shall be of like effect as if shown in all divisions of the Specifications and in all drawings. In all cases figured dimensions shall govern over scaled dimensions, detail drawings shall govern over general drawings, larger scale details take precedence over smaller scale drawings, change order drawings govern Contract Drawings, and Contract Drawings govern over standard or shop drawings. Further, in all cases where details in two drawings conflict or where drawings and Specifications conflict, the more restrictive or stringent requirement shall be binding upon the Contractor except as otherwise authorized by Rockland Green in writing.

SECTION 3.8 QUALIFICATIONS OF PERSONNEL. The Contractor shall provide experienced and qualified personnel to provide the Contract Services, and all persons engaged by the Contractor, including any Subcontractors, for the Work shall have requisite skills, licensing and training for the tasks assigned. The Contractor shall provide Rockland Green documentation that its employees, and its Subcontractors, are properly trained in performing the Work, including, but not limited to, certificates, and licenses to operate specific classes of vehicles, machinery, equipment, tools and safety protection. The Contractor shall enforce discipline and good order at all times among the Contractor's employees and all Subcontractors.

SECTION 3.9 SUBCONTRACTORS. Contractor and its Subcontractors must execute the Project Labor Agreement (which shall be attached hereto as Transaction Agreement 3), and remain subject to the Project Labor Agreement during the Term of this Contract. Rockland Green shall have the right to approve any and all Subcontractors. Contractor must submit all information regarding Subcontractors as required by Rockland Green and obtain Rockland Green's written approval prior to the Subcontractor performing any portion of the Work. Rockland Green's approval process for Subcontractors shall not constitute a reason for any delay in Contractor's performance of the Work. The Contractor shall require all of its Subcontractors working at the

Site to secure and maintain the Required Insurance and other financial sureties required by Applicable Law in connection with their presence at the Site and the performance of their duties. The Contractor shall negotiate and execute any and all Subcontracts with Subcontractors as may be necessary for the Contractor to fulfill its obligations under this Contract and as are approved by Rockland Green in writing. Subcontracts with Subcontractors and purchase orders shall include language that makes them assignable, upon Rockland Green's election, to Rockland Green upon termination of this Contract. The Contractor shall not enter into a Subcontract with any Subcontractor to whom Rockland Green reasonably objects. The basis of Rockland Green's reasonable objection to a proposed Subcontractor includes, but is not limited to, evidence existing or arising that the proposed Subcontractor is unable or unwilling to comply with the Contract Documents or Rockland Green's conclusion that the proposed Subcontractor does not have the requisite experience or is unqualified to complete the work proposed to be performed by such entity. If at any time Rockland Green objects to a Subcontractor, the Contractor shall solicit proposals from potential replacements and shall submit the names of the replacement Subcontractor to Rockland Green for approval without an increase in the Contract Price or change in Contract Time. The Contractor shall retain full responsibility to Rockland Green under this Contract for all matters notwithstanding the execution or terms and conditions of any Subcontract. No failure of any Subcontractor used by the Contractor in connection with the provision of the Work shall relieve the Contractor from its obligations hereunder. The Contractor shall pay or cause to be paid to all direct Subcontractors all amounts due in accordance with their respective Subcontracts and Applicable Law. No Subcontractor shall have any right against Rockland Green for labor, services, materials or equipment furnished. The approval or withholding thereof by Rockland Green of any Subcontractor shall not create any liability of Rockland Green to the Contractor, to third parties or otherwise.

SECTION 3.10 CHANGES IN THE WORK. Changes in the Work may be accomplished after execution of this Contract, and without invalidating this Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, as detailed in Article VIII and subject to the limitations stated in the Contract Documents.

SECTION 3.11 COMPLIANCE WITH APPLICABLE LAW.

A. Compliance with Contract Standards. The Contractor shall perform the Contract Services in accordance with the Contract Standards.

B. Governmental Approvals Necessary for Contract Services. The Contractor shall, at its sole cost and expense, make all filings, applications and reports necessary to obtain and maintain all Governmental Approvals required to be made, obtained or maintained under Applicable Law in connection with the performance of the Contract Services and shall comply with all conditions and requirements of all Governmental Approvals. Rockland Green shall cooperate with the Contractor in connection with the foregoing undertaking, and shall provide the Contractor with such relevant data or documents as are within its control, which are reasonably required for such purpose.

C. Prevailing Wage Law. All Work shall be subject to the Project Labor Agreement and performed in accordance the Prevailing Wage Law. The prevailing wage schedule contained in Appendix E sets forth the prevailing wage and benefits schedule for the Work as of the Contract Date. It shall be the Contractor's responsibility to ensure that prevailing wages and

benefits are paid as required pursuant to the Prevailing Wage Law throughout the Term and to ensure that all Subcontractors comply with the Prevailing Wage Law. Any increase to wages and benefits pursuant to the Prevailing Wage Law which the Contractor is required to pay during the Term shall not affect the Contract Price. Certified payrolls and other relevant information shall be furnished to Rockland Green with each Application for Payment in compliance with the Prevailing Wage Law.

D. NYHRL. Contractor shall have in place sexual harassment policies that are compliant with the New York Human Rights Law ("NYHRL"), and shall provide annual training to all of their employees in accordance with the NYHRL.

SECTION 3.12 PERFORMANCE, INFORMATION, AND SITE CONDITION.

A. Practicability of Performance. The Contractor, in the performance of the Contract Services set forth herein, shall have exclusive responsibility for compliance with the Contract Standards. The Contractor assumes the risk of the practicability and possibility of performance of the Contract Services. No impracticability or impossibility of any of the foregoing shall be deemed to constitute an Uncontrollable Circumstance. The Contractor acknowledges that the Contractor's agents and representatives have visited, inspected and are familiar with the Site and that the Contractor is familiar with all local and other conditions which may be material to the Contractor's performance of its obligations under this Contract. The execution of this Contract shall be deemed to constitute the granting of a license to the Contractor to access the Site for the purposes of preparing for any and all obligations hereunder.

B. Rockland Green-Supplied Information. The Contractor shall be responsible for the independent verification and confirmation of all information supplied to it by or on behalf of Rockland Green. No error or omission in any such information shall constitute an Uncontrollable Circumstance or relieve the Contractor from any of its obligations or entitle the Contractor to any increase in compensation or extension of time hereunder. Any information supplied by Rockland Green is only for the Contractor's convenience, and Rockland Green makes no representations as to the accuracy or completeness thereof.

C. Site Conditions. The Contractor has conducted analyses of the Site as necessary to prepare for and perform the Work in accordance with this Contract.

D. Rockland Green Monitoring. Rockland Green shall have the right, but not the obligation, to monitor the Contractor's performance of the Work during the Term of this Contract; provided, however, such monitoring shall not relieve the Contractor of any of its obligations under this Contract.

E. Hazardous Materials. The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding Hazardous Materials. If the Contractor encounters a Hazardous Material not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a Hazardous Material, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Rockland Green of the condition. Rockland Green shall not be responsible for Hazardous Materials the Contractor brings to the Site. The Contractor shall reimburse Rockland Green for the cost and expense Rockland

Green incurs (1) for remediation of Hazardous Materials the Contractor brings to the Site and negligently handles, or (2) where the Contractor fails to perform its obligations under this section.

F. Hours of Work. Hours of work will be set forth in the Project Labor Agreement. No delays resulting from compliance with the Contract Standards, including Applicable Laws or regulations or conditions of any Governmental Approvals may form the basis for any Claim by the Contractor for delay damages or additional compensation or for any increase in the Contract Time. Any delays arising from restrictions related to the use of occupied facilities are non-compensable and any requests for an increase in the Contract Time relating to them must be filed in accordance with Article VIII (Change Orders) or the same will be conclusively deemed to have been waived. Notwithstanding any other provisions of this Contract, Rockland Green may order the Contractor to suspend work for any continuing violation of this section.

SECTION 3.13 PROTECTION OF PERSONS AND PROPERTY.

A. Safety Programs and Precautions. It shall be the sole responsibility of the Contractor to develop, initiate, continue and supervise all safety programs and precautions in the performance of the Work under this Contract at all times. The Contractor shall also prepare and maintain a Site safety plan in connection with its duties hereunder. The Contractor shall take full, reasonable and necessary precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to its employees, Subcontractors' employees, employees of Rockland Green, and members of the public, the Work itself, and other property and work at the Project Site or adjacent thereto. As part of the Contractor's obligations hereunder, the Contractor shall erect and maintain reasonable safeguards, barriers, signs, warnings, and any other safety measure required by Applicable Law and in accordance with Good Engineering and Construction Practice, Good Industry Practice, and any other Contract Standards. The Contractor shall also implement appropriate protective institutional controls during construction for the marshy/wetland area that is identified in the Drawings.

B. Contractor Remedies. The Contractor shall promptly remedy loss or damage to the Work or any person or property described herein caused in whole or in part by the acts of the Contractor or any Subcontractor, sub-subcontractor or material man, which shall include repair or replacement at Rockland Green's direction. Rockland Green may direct the Contractor to remedy violations of Applicable Law related to safety when and if observed on the Site. However, through exercising this authority Rockland Green shall not incur any obligations to monitor, initiate, continue, or supervise safety programs and precautions such to diminish the Contractor's exclusive role in same. Rockland Green shall have the right to report suspected safety violations to the Occupational Safety and Health Administration.

SECTION 3.14 SUPERVISION OF THE WORK.

A. Contractor Responsibility. The Contractor shall strictly and constantly supervise the Work and bear full responsibility for any and all acts, errors or omissions of those engaged in the Work on behalf of the Contractor, including, but not limited to, all Subcontractors and their employees. The Contractor shall be responsible to Rockland Green for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of the Contractor or any of its Subcontractors.

B. Supervisory Personnel. The Contractor shall maintain an on-Site superintendent at all times while any portion of the Work is being performed. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. The Contractor shall not change the superintendent without Rockland Green's written consent, which shall not unreasonably be withheld or delayed. The Contractor shall employ and maintain at the Site only competent, qualified full-time supervisory personnel, augmented with part-time and offsite supervision, approved by Rockland Green in writing.

SECTION 3.15 COORDINATION OF OTHER WORK. The Contractor shall coordinate the work performed on the Site for the Project, in accordance with the Specifications, and shall be responsible for updating and maintaining the Project Schedule and Site safety plan. Such coordination includes: (1) providing a Progress Schedule with each Application for Payment; (2) coordinating activities on the Project Site (including parking, movement of traffic, deliveries, and laydown areas); and (3) ensuring Project safety and supervision as set forth in Sections 3.13 and 3.14 above. The Contractor must also cooperate in coordinating its Work with the work of Rockland Green, its operators, subcontractors, other contractors, and any other forces permitted by Rockland Green to perform work at the Site, or enter the Site, without an increase in the Contract Time or the Contract Price. The Contractor must provide written notice to Rockland Green of any conflicts and disputes in the coordination or scheduling of work in accordance with the provisions set forth in Section 6.4 hereof. The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent work.

ARTICLE IV.
COMPLETION

SECTION 4.1 SUBSTANTIAL COMPLETION.

A. Substantial Completion. Substantial Completion shall be achieved when all of the following conditions have been satisfied as determined by Rockland Green:

(i) Rockland Green confirms in writing that the Contractor has substantially completed its Work in conformance with the Specifications;

(ii) The Contractor has completed the Contract Services to the point where Rockland Green can take beneficial use of the area described in the Contact Documents;

(iii) The Contractor has obtained any approvals required by the Contract Documents and such approvals have not been withdrawn, revoked, superseded, suspended, or materially impaired or amended;

(iv) The Contractor and Rockland Green have developed a written punch list in accordance with the Specifications;

(v) Rockland Green has received and indicated, in writing, that it has no objection to the certification by the Contractor that all Contract Services, excepting the items on the punch list, are complete and in all respects are in compliance with the Contract;

(vi) The Contractor has delivered to Rockland Green a Claims statement setting forth in detail all Claims of every kind whatsoever of the Contractor connected with, or arising out of, the Contract Services pertaining to the Work, and arising out of or based on events prior to the date when the Contractor provides such statement to Rockland Green;

(vii) The Contractor shall certify that all Subcontractors and material suppliers have been paid in full and upon Rockland Green's request will provide any discharge or other proof of satisfaction of liens or wage claims; and

(viii) The Contractor has submitted written certification that all of the foregoing conditions have been satisfied and Rockland Green has received and indicated, in writing, that it has no objection to the Contractor's certification.

B. Alternative Substantial Completion. Alternatively, Substantial Completion shall occur on any date certified by Rockland Green in writing, which shall have discretion to waive any of the foregoing conditions. Waiver of any conditions for Substantial Completion shall not relieve the Contractor from its obligation to complete the Work in accordance with the Contract Standards prior to Final Completion and shall not be deemed a waiver of any Claim by Rockland Green.

C. When the Work or designated portion thereof if substantially complete, Rockland Green will prepare a certificate of Substantial Completion that shall establish the date of Substantial Completion.

SECTION 4.2 FINAL COMPLETION. Contractor shall complete all of the Work and all punch list by the date set forth in the Project Schedule for Final Completion The Contractor shall notify Rockland Green in writing when it believes it has achieved Final Completion. Thereupon, Rockland Green will perform a final inspection of the Work in accordance with the Specifications. If Rockland Green concurs that (i) the Work is complete and in full accordance with the Contract Documents, and (ii) the Contractor has performed all of its obligations to Rockland Green hereunder, Rockland Green will direct the Contractor to furnish a Certificate of Final Completion and a final Application for Payment for Rockland Green's written approval. The final Application for Payment to Rockland Green shall certify to Rockland Green that the Work is complete and the Contractor is entitled to the remainder of the unpaid Contract Price, less any amount withheld pursuant to the Contract Documents. If Rockland Green reasonably determines that final approval for payment should not be issued and is required to repeat the final inspection of the Work, the Contractor shall bear the cost of such repeat inspection(s), which costs may be deducted by Rockland Green from the Contractor's final payment. No Claim by the Contractor for an adjustment hereunder shall be allowed if asserted after final payment under this Contract.

ARTICLE V.
CONTRACT PAYMENTS

SECTION 5.1 CONTRACT PRICE. Rockland Green will pay the Contractor the Contract Price set forth in Appendix C hereto, in exchange for the Contractor's complete performance of the Contract Services, in accordance with this Contract. The Contractor agrees that the Contract Price shall be the Contractor's entire compensation for the performance of the Work.

SECTION 5.2 SCHEDULE OF VALUES. At least 20 days prior to submitting the first Application for Payment, the Contractor must submit a Schedule of Values to Rockland Green's approval, apportioning the entire Contract Price among the different elements of the Work (the "Schedule of Values"). The Contractor shall present the Schedule of Values in the format that Rockland Green requires and include the level of detail and backup required by Rockland Green, as referenced in the Specifications. The Contractor shall not imbalance the Schedule of Values nor artificially inflate any element thereof. Upon request of Rockland Green, the Contractor shall furnish additional data to support values given that will substantiate their correctness. The Schedule of Values that is approved by Rockland Green will be used as basis for reviewing Contractor's Applications for Payment. The violation of this provision by the Contractor shall constitute a material breach of this Contract. The Schedule of Values will be utilized for the Contractor's Applications for Payment but shall only be so utilized after it has been approved in writing by Rockland Green.

SECTION 5.3 APPLICATIONS FOR PAYMENT AND RETAINAGE.

A. Application for Payments. After the Schedule of Values is approved, the Contractor may submit monthly Applications for Payment to Rockland Green in accordance with the Schedule of Values. Each Application for Payment shall be on the form required by the Specifications, and accompanied by a certificate from an authorized representative of the Contractor certifying: (1) the portion of the Contract Price which is payable to the Contractor, (2) that the Contractor is neither in default under this Contract nor in breach of any material provision of this Contract such that the breach would, with the giving of notice or passage of time, constitute an Event of Default, and (3) that all items applicable to the Schedule of Values entitling the Contractor to request payment have been completed in accordance with this Contract.

Each Application for Payment shall include the following supporting documentation to substantiate such Application for Payment (in the form and level of detail determined acceptable by Rockland Green), as applicable to the Work performed for which the Contractor is submitting such Application for Payment:

(1) a reasonably detailed description of all Work actually completed to date;

(2) a revised Project Schedule/Progress Schedule which shall reflect changes since the date of the last Application for Payment;

(3) notice of any Liens or Encumbrances which have been filed, together with evidence that the Contractor has bonded or discharged such Liens or Encumbrances;

(4) written acknowledgement from Subcontractors that an agreement has been signed and accepted for the work to be performed by such Subcontractor;

(5) submittal logs;

(6) written reports;

(7) a letter of transmittal corresponding to the submittals associated with such payment;

(8) a verified statement setting forth the information required under any Applicable Law pertaining to prevailing wages;

(9) certified payroll reports to the extent required pursuant to the Prevailing Wage Law;

(10) such additional specific information required for the applicable payment as required by the Specifications or as reasonably required by Rockland Green; and

(11) any other documents or information relating to the Work or this Contract reasonably requested by Rockland Green or as may be required by Applicable Law, this Contract, or generally accepted accounting principles in connection with the financing of the Project.

B. Change Orders and Applications for Payments. Amounts reflected in Change Orders may be included in Application for Payments to the extent they are not in dispute and subject to final approval of cost to Rockland Green for such changes in the Work.

C. Certification by Contractor. Each Application for Payment shall be signed by the Contractor and shall constitute the Contractor's representation that the quantity of Work has reached the level for which payment is requested, that the Work has been properly performed in strict compliance with the Contract Documents, that the Contractor knows of no reason why payment should not be made as requested, and the Contractor will promptly pay its Subcontractors, suppliers, vendors and any other party for their portion of the Work covered by the Application for Payment.

D. Retainage. For each payment made prior to Final Completion of the Work, Rockland Green may withhold 10% of the payment, as retainage, from the payment otherwise due. Upon Final Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section.

E. Rockland Green Review and Payment. Upon receipt of a properly completed Application for Payment, Rockland Green shall review the Application for Payment and may also review the Work at the Site or elsewhere to determine whether the quantity and quality of the Work is as represented in the Application for Payment and is as required by this Contract. Such review of the Application for Payment and any related work shall be performed by Rockland Green within fourteen (14) days from the date Rockland Green receives such Application for Payment. The amount of each such payment shall be the amount approved for payment by Rockland Green, less a ten percent (10%) retainage, and such amounts, if any, otherwise owing by the Contractor to Rockland Green or which Rockland Green has the right to withhold as authorized by the Contract Documents. Rockland Green shall make payment of the approved Application for Payment within thirty (30) days from the date of such approved Application for Payment. Approval of the Contractor's Application for Payment shall not preclude Rockland Green from the exercise of any of its rights, including those related to authorized withholdings, offsets and reclamation.

F. Application for Payment as Representation and Warranty of Work. The submission by the Contractor of an Application for Payment also constitutes an affirmative representation and warranty that all work for which Rockland Green has previously paid is free and clear of any lien, claim, or other encumbrance of any person whatsoever. As a condition precedent to payment, the Contractor shall, when required by Rockland Green, also furnish to Rockland Green properly executed waivers of lien or claim, in a form acceptable to Rockland Green, from all Subcontractors, materialmen, suppliers or others having lien or claim rights, wherein said subcontractors, materialmen, suppliers or others having lien or claim rights, shall

acknowledge receipt of all sums due pursuant to all prior Applications for Payment and waive and relinquish any liens, lien rights or other claims relating to the Work and the Project Site. Furthermore, the Contractor warrants and represents that, upon payment of the Application for Payment submitted, title to all Work included in such payment shall be vested in Rockland Green, even though responsibility for the care and maintenance of said Work rests with Contractor until Final Completion of the Work has been achieved.

SECTION 5.4 COSTS AND COST SUBSTANTIATION.

A. Costs. The Contract Price has been negotiated by the Parties and fixed by the terms of this Contract. Any other cost shall only be permitted in the event of a Change Order or Construction Change Directive. Any such cost proposed or incurred by the Contractor, which is directly or indirectly chargeable to Rockland Green in whole or in part hereunder, shall be (i) calculated in accordance with Section 8.8 or, if such cost is not calculable in accordance with the provisions of Section 8.8, then (ii) the fair market price for the good or service provided, or, if there is no market, shall be a just and reasonable price agreed upon by the Parties.

B. Cost Substantiation. To substantiate any costs, other than the Contract Price, the Contractor shall supply Rockland Green with a certificate signed by a senior management officer of the Contractor, which (1) shall state the amount of such cost and the provisions of this Contract under which such cost is properly chargeable to Rockland Green, and (2) if not calculable pursuant to Section 8.8 hereof, than Contractor, shall describe the competitive or other process utilized by the Contractor to obtain a fair market price, and shall state that such cost is a fair market price for the service or materials to be supplied (or, if there is no market, that such cost is commercially reasonable) and that such services and materials are reasonably required pursuant to this Contract. The certificate shall be accompanied by copies of such documentation as shall be reasonably required by Rockland Green which shall include reasonably detailed information necessary to substantiate any cost described in this subsection. Upon Rockland Green's request, to confirm direct costs required to be cost substantiated, Contractor shall provide copies of timesheets, invoices, canceled checks, expense reports, receipts and any other documents requested by Rockland Green.

SECTION 5.5 CONTRACTOR PROJECT SCHEDULE AS A CONDITION OF PAYMENT. The Contractor's Project Schedule shall be updated as required by Rockland Green and shall be updated to reflect conditions encountered from time to time. Each such revision shall be furnished to Rockland Green with each Application for Payment. Strict compliance with the requirements of this Section shall be a condition precedent to payment to the Contractor and failure by the Contractor to strictly comply with said requirements shall constitute a material breach of this Contract. No update to the Project Schedule can alter the Contract Time without the express, written approval of Rockland Green.

SECTION 5.6 PROMPT PAYMENT TO SUBCONTRACTORS. When payment is received from Rockland Green, the Contractor shall promptly pay all Subcontractors, materialmen, laborers and suppliers the amounts they are due for the work covered by such payment.

SECTION 5.7 NO APPROVALS, CONSENTS OR WAIVERS IMPLIED IN PAYMENTS. Neither payment to the Contractor, utilization of the Site for any purpose by Rockland Green, nor any other act or omission by Rockland Green shall be interpreted or construed

as an acceptance of any Work of the Contractor not strictly in compliance with the Contract Documents or deemed to be a waiver of Rockland Green's right and remedies provided for in this Contract.

SECTION 5.8 PAYMENT WITHHOLDING. After written notice to the Contractor and a reasonable opportunity to cure, Rockland Green shall have the right to refuse to make payment, in whole or in part, and, if necessary, may demand the return of a portion or the entire amount previously paid to the Contractor due to:

(i) The quality of a portion, or all, of the Contractor's Work not being in compliance with the requirements of the Contract Documents;

(ii) The quantity of the Contractor's work not being as represented in the Contractor's Application for Payment, or otherwise;

(iii) The Contractor's rate of progress being such that, in the reasonable opinion of Rockland Green, Final Completion may be inexcusably delayed;

(iv) The Contractor's failure to use Contract funds, previously paid the Contractor by Rockland Green to pay Contractor's project-related obligations including, but not limited to, Subcontractors, laborers and material and equipment suppliers;

(v) Claims made, or claims likely to be made as evidenced by a claimant filing a demand, notice of intent to file a claim, including a duly filed mechanic's lien for labor or materials provided or a notice of intent to file a mechanic's lien, against Rockland Green or its property for which the Contractor or its agents or Subcontractors or others for whom it is responsible are, or reasonably appear to be at fault;

(vi) Loss caused by the Contractor; or

(vii) The Contractor's failure or refusal to perform any of its obligations to Rockland Green after written notice and a reasonable opportunity to cure as set forth above.

In the event that Rockland Green makes written demand upon the Contractor for amounts previously paid by Rockland Green as contemplated in this Section, the Contractor shall promptly comply with such demand. Rockland Green's rights hereunder survive the term of this Contract, are not waived by final payment and/or approval of the Certificate of Final Completion, and are in addition to Contractor's obligations elsewhere in this Contract.

SECTION 5.9 PAYMENT UPON FINAL COMPLETION. Upon Final Completion, Rockland Green shall pay the Contractor, in accordance with Section 5.10 below, an amount sufficient to increase total payments to the Contractor to one hundred percent (100%) of the Contract Price, less any amounts attributable to damages, and less one hundred fifty percent (150%) of the costs, as reasonably determined by Rockland Green for completing all incomplete work, correcting and bringing into conformance all defective and nonconforming work, and handling any outstanding or threatened claims. Such a calculation by Rockland Green of costs for completing all incomplete work, correcting and bringing into conformance all defective and

nonconforming work, and handling any outstanding or threatened claims shall not bar Rockland Green from exercise of its rights elsewhere herein, or otherwise as provided by law for any incomplete, defective or nonconforming work or claims which are discovered by Rockland Green after the date of making such calculation or after the date of any partial or final payment, whether or not such incomplete, defective or nonconforming work or claims were obvious or should have been discovered earlier. Final payment shall be made only upon completion of the final inspection and approval of a Certificate of Final Completion in accordance with Section 4.2 and the delivery and approval of information, as required herein.

SECTION 5.10 FINAL PAYMENT. Rockland Green shall endeavor to make final payment of all sums due the Contractor within thirty (30) days of the final Application for Payment, after deduction of all previous payments and all percentages and amounts to be kept and retained under provisions of this Contract, and with the exception of items disputed in good faith or concerning which Rockland Green has reasonably exercised any of its rights to investigate. The acceptance by the Contractor of the final payment shall operate as and shall be a release to Rockland Green and every employee, officer and agent thereof, from any and all Claims and all liability to the Contractor for anything done or furnished in connection with the Work and for any act or neglect of Rockland Green or of any others relating to or affecting the Work. Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract or the Performance Bond.

ARTICLE VI.
CONTRACT ADMINISTRATION

SECTION 6.1 CONTRACT ADMINISTRATION. Rockland Green will provide administration of the Contract as described in the Contract Documents.

SECTION 6.2 SITE VISITS. Rockland Green will visit the Site at intervals appropriate to the stage of the Contractor's Work (1) to become generally familiar with and to keep informed about the progress and quality of the portion of the Work completed, (2) to guard against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, Rockland Green will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. Rockland Green will neither have control over or charge of, nor be responsible for, the means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as otherwise provided.

SECTION 6.3 FAILURE TO PERFORM. Rockland Green will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Rockland Green will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractor, or their agents or employees or any other persons or entities performing portions of the Work.

SECTION 6.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION. The Contractor shall communicate with Rockland Green about matters arising out of or relating to this Contract, as well as the Project. Rockland Green's communications by and with Subcontractors and material suppliers shall be through the Contractor. The Contractor is responsible for updating the Project Schedule, and shall report immediately in writing to Rockland Green any and all conflicts or disputes that it encounters or becomes aware of during the Project that have the potential to delay any aspect of the Project. The Contractor shall provide the report on any such conflict or dispute in writing immediately to Rockland Green. The failure to report such a conflict or dispute in writing to Rockland Green as set forth herein shall constitute a waiver by the Contractor of any potential relief provided for hereunder in connection with such conflict or dispute.

SECTION 6.5 MEETINGS. The Contractor shall conduct meetings in accordance with the Specifications or as reasonably requested by Rockland Green.

SECTION 6.6 REVIEW OF SUBMITTALS. Rockland Green will take appropriate action upon the Contractor's Submittals, but only for the limited purpose of checking for conformance with information given and the Work expressed in the Contract Documents. Rockland Green's review will be in accordance with the Specifications, while allowing sufficient time in Rockland Green's judgment to permit adequate review. Review of such documents is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions or quantities or for substantiating instructions for equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. Rockland Green's review shall not constitute approval of safety precautions or of any means, methods, techniques, sequences, or procedures.

SECTION 6.7 REJECTION OF WORK. Rockland Green will have authority to reject Work that does not conform to the Contract Documents. Whenever Rockland Green considers it necessary or advisable, Rockland Green will have authority to require inspection or testing of the Work. However, neither this authority of Rockland Green nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of Rockland Green to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

SECTION 6.8 PREPARATION OF CHANGE ORDERS AND CONSTRUCTION CHANGE DIRECTIVES. Rockland Green will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work in accordance with Article VIII hereof.

SECTION 6.9 INSPECTIONS. Rockland Green will conduct inspections to determine the date of Substantial Completion and the date of Final Completion. The Contractor shall assemble and forward to Rockland Green, for Rockland Green's review and records, written warranties and related documents required by the Contract Documents. Observation or inspection of the Work by Rockland Green shall not relieve the Contractor of its responsibility to complete the Work in accordance with the Contract Documents. Work performed without direct observation by Rockland Green shall not relieve the Contractor of full responsibility for completing the Work in accordance with the Contract Documents.

ARTICLE VII.
TERM

SECTION 7.1 EFFECTIVE DATE AND TERM. This Contract shall become effective on the Contract Date and shall continue in effect until all Contract Services have been completed, or this Contract is earlier terminated, as applicable (the "Term"). All rights, obligations and liabilities of the Parties hereto shall commence on the Contract Date, subject to the terms and conditions hereto.

ARTICLE VIII.
CHANGES TO THE WORK

SECTION 8.1 CHANGES TO THE WORK. Changes in the Work may be accomplished after execution of this Contract, and without invalidating this Contract, by Change Order, Construction Change Directive or order for a minor change in the Work. A Change Order shall be based upon agreement between Rockland Green and the Contractor. A Construction Change Directive may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by Rockland Green. The Contractor shall proceed with any such Change Orders, Construction Change Directives and minor changes without delay and in a diligent manner, and same shall be accomplished in strict accordance with the following terms and conditions.

SECTION 8.2 CHANGE ORDERS.

A. A Change Order is a written instrument prepared by Rockland Green and signed by Rockland Green and Contractor stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of adjustment, if any, in the Contract Price; and (3) the extent of the adjustment, if any in the Contract Time.

B. The cost of any change in the Work shall be determined in accordance with Section 5.4 hereof, the requirements of this Article and consistent with the Contract Documents.

C. In accordance with the Specifications, Rockland Green may issue a proposal request that includes a detailed description of a proposed change in the Work with supplemental or revised Drawings and Specifications. The Contractor shall prepare and submit an estimate of any change to Contract Price or Contract Time within 7 days after receipt of a proposal request. The Contractor shall include quantities and unit costs, with total cost or credit to Rockland Green. If requested by Rockland Green, the Contactor shall also furnish documentation of quantities, Taxes, delivery charges, equipment rentals, and trade discounts as applicable. If a change in Contract Time is involved, the Contractor shall provide an updated Progress Schedule. Contractor shall not stop work or initiate changes in response to a proposal request. If approved, Rockland Green will prepare and issue a Change Order.

SECTION 8.3 CONSTRUCTION CHANGE DIRECTIVES.

A. A Construction Change Directive is a written order prepared by Rockland Green and signed by Rockland Green, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Price or Contract Time, or both. A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

B. Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the changes in the Work involved, regardless of whether the Contractor agrees with the proposed adjustment in Contract Price or Contract Time, if any. Contractor shall also promptly advise Rockland Green in writing of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Price or Contract Time.

C. If the Construction Change Directive provides for an adjustment to the Contract Price, the adjustment shall be based on one of the following methods:

1. If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Price, Rockland Green shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Price, a reasonable amount for overhead and profit.

2. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

3. Unit prices stated in the Contract Documents or subsequently agreed upon in writing; or

4. Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee.

D. The Contractor shall keep and present, in such form as Rockland Green may require, an itemized accounting together with appropriate supporting data. Costs for purposes of this Section shall be limited to those costs set forth in Section 8.8 below.

E. A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith. Such agreement shall be effective immediately and shall be recorded as a Change Order.

F. The amount of credit to be allowed by the Contractor to Rockland Green for a deletion or change that results in a net decrease in the Contract Price shall be actual net cost as determined by Rockland Green.

G. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. Rockland Green will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that Rockland Green determines, in Rockland Green's judgment, to be reasonably justified. Rockland Green's interim determination of cost shall adjust the Contract Price on the same basis as a Change Order, subject to the right of either Party to disagree and assert a Claim in accordance with this Contract.

I. If Rockland Green and the Contractor agree concerning adjustments in the Contract Price and Contract Time, or otherwise reach agreement upon the adjustment, such agreement shall be effective immediately and Rockland Green will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

SECTION 8.4 MINOR CHANGES IN THE WORK. Rockland Green has authority to order minor changes in the Work not involving adjustment in the Contract Price or extension or reduction of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be affected by written order signed by Rockland Green and shall be binding on Rockland Green and the Contractor.

SECTION 8.5 CONTRACTOR'S PROPOSAL FOR CHANGE ORDERS.

A. The Contractor was provided the opportunity to propose Proposed Alterations in its Proposal in response to the RFP, and the Specifications include a process for substitutions, therefore the Contractor acknowledges that there should not be any reason why the Contractor may need to request a Change Order. However, if for any reason, the Contractor believes a Change Order is necessary, the Contractor shall furnish a written proposal for a Change Order that includes a description of the change and the reason and justification therefor, an itemized price breakdown and proposed change to the Contract Price, and the proposed change in Contract Time. The price breakdown must be in accordance with this Article, and include sufficient detail to permit an analysis of all costs for material, labor, equipment, and Subcontracts, and must cover all Work involved in the modification, whether the Work was deleted, added or changed. The Contractor shall include quantities and unit costs, with total cost or credit to Rockland Green. The Contactor shall also furnish documentation of quantities, Taxes, delivery charges, equipment rentals, and trade discounts as applicable. If a change in Contract Time is involved, the Contractor shall provide an updated Progress Schedule

SECTION 8.6 EXECUTION OF CHANGE ORDER AS WAIVER OF CLAIM. The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work, this Contract as thus amended, the Contract Price and the time for performance by the Contractor. The Contractor, by executing the Change Order, waives and forever releases any claim against Rockland Green for additional time or compensation for matters relating to, arising out of or resulting from the Work included within or affected by the executed Change Order.

SECTION 8.7 NOTIFICATION TO SURETY AS OTHERWISE REQUIRED. The Contractor shall notify the Contractor's surety with reference to all Change Orders and Construction Change Directives if such notice, consent or approval are required by law. The Contractor's execution of the Change Order or Construction Change Directive shall constitute the Contractor's warranty to Rockland Green that, if required, the surety has been notified of, and consents to, such Change Order or Construction Change Directive and the surety shall be conclusively deemed to have been notified of such Change Order or Construction Change Directive and to have expressly consented thereto.

SECTION 8.8 ADDITIONAL COST FACTORS IN PRICING CHANGE ORDERS OR CONSTRUCTION CHANGE DIRECTIVES. For the purpose of Change Orders or Construction Change Directives, the following additional definitions and requirements apply:

A. Materials, Supplies and Equipment. The costs of Contractor's or Subcontractor's materials, supplies, and equipment includes the cost for rentals of machinery and equipment, exclusive of hand tools, the cost for transportation, and does not include sales tax from which Rockland Green is exempt. Indirect costs not specifically related to the Change Order or Construction Change Directive shall not be considered.

B. Direct Labor Cost. Contractor's or Subcontractor's direct labor cost shall be pursuant to the Project Labor Agreement, and limited to the hourly rate of directly involved workers, employer contributions towards bona fide employee benefits, employee benefit funds, unemployment insurance, social security, and workers' compensation insurance.

C. Overhead. Contractor's or Subcontractor's overhead shall include bond premiums, license fees, supervision, and field office expense.

D. Overhead and Profit Fee. The fee for overhead and profit shall be limited to the following schedule:

(i) For the Contractor, for any work performed by the Contractor's own forces, 10% of the subtotal of direct labor costs and materials, supplies and equipment costs.

(ii) For the Contractor, for any work performed by his Subcontractor, 5% of the amount due the Subcontractor.

(iii) For each Subcontractor or sub-subcontractor involved, for any work performed by their own forces, 10% of their materials and direct labor costs.

(iv) For each Subcontractor, for work performed by his sub-subcontractor(s), 5% of the amount due the sub-subcontractor.

ARTICLE IX.
CLAIMS

SECTION 9.1 PROCEDURES FOR CONTRACT CLAIMS.

A. All Claims against Rockland Green shall be initiated by a written Claim submitted to Rockland Green.

B. The responsibility to substantiate Claims shall rest with the party making the Claim.

C. Notice of such Claim shall be received by Rockland Green no later than either ten (10) days after the event, or ten (10) days after the first appearance of the circumstances causing the Claim, whichever is sooner, and same shall set forth in detail all known facts and circumstances supporting the claim.

D. Final costs associated with any Claim upon which notice has been filed must be submitted in writing to Rockland Green within thirty (30) days after notice has been received.

E. Any Claim not filed with Rockland Green within such time and in compliance with the preceding provisions shall be deemed conclusively to have been waived and shall be dismissed.

F. Claims shall be referred to the Architect for an initial determination. An initial decision is a condition precedent to mediation of any Claim arising prior to the date final payment is due. The Architect will review Claims and within 10 days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data; (2) reject the Claim in whole or in part; (3) approve the Claim; or (4) suggest a compromise. If the Architect requests additional supporting data, such data shall be provided within 10 days after receipt of such request. The Architect will render an initial decision approving or rejecting the Claim or suggesting a compromise. This initial decision shall (1) be in writing; (2) state the reasons therefore; and (3) notify the Parties of any change in the Contract Price or Contract Time or both. The initial decision shall be final and binding on the Parties, but subject to mediation if the Parties agree to mediate, and if the Parties fail to resolve the dispute through mediation, to binding dispute resolution, in accordance with Article XI.

SECTION 9.2 CONTRACTOR PROHIBITED FROM WITHHOLDING SERVICES. The Contractor shall proceed diligently with performance of the Contract Services and Rockland Green will continue to make payments in accordance with the Contract Documents, regardless of the existence any disputes regarding change in the Work or of any Claims submitted by the Contractor.

SECTION 9.3 CLAIMS RELATED TO SITE CONDITIONS. In the event the Contractor discovers previously concealed, hidden, and/or subsurface Site conditions which materially vary from those typically and ordinarily encountered in the general geographical location of the Project Site and the Contract Documents, the Contract Price may, with the approval of Rockland Green, be modified, either upward or downward, upon the written notice of Claim made by either Party. Final costs must be submitted within thirty (30) days after such notice is received by Rockland Green, unless extended by written agreement of the Parties. As a condition precedent to Rockland Green having any liability to the Contractor due to concealed and unknown conditions, the Contractor must give Rockland Green written notice of, and an opportunity to observe, such condition prior to disturbing the condition. The failure by the Contractor to give the written notice and make the Claim as provided by this section shall constitute a waiver by the Contractor of any rights arising out of or relating to such concealed and unknown condition.

SECTION 9.4 CONDITION PRECEDENT TO LIABILITY. In the event the Contractor seeks to make a Claim for an increase in the Contract Price, as a condition precedent to any liability of Rockland Green therefor, unless emergency conditions exist, the Contractor shall strictly comply with the requirements of Section 9.1 and such Claim shall be made by the Contractor before proceeding to execute any Work for which a Claim is made. Failure to comply with this condition precedent shall constitute a waiver by the Contractor of any Claim for additional compensation.

SECTION 9.5 LIMITATION OF ROCKLAND GREEN'S OBLIGATIONS FOR CLAIMS. In a Claim by the Contractor against Rockland Green for compensation in excess of the Contract Price, any liability of Rockland Green to the Contractor shall be strictly limited and

computed in accordance with the Contract Documents and shall in no event include consequential damages of the Contractor or any estimated costs or damages.

ARTICLE X.
EVENTS OF DEFAULT AND TERMINATION

SECTION 10.1 ROCKLAND GREEN'S RIGHT TO TERMINATE FOR CAUSE. Rockland Green may terminate the Contract for cause for any of the reasons set forth in this Article, or for any other material breach of this Contract, whether or not the act, omission, or conduct resulting in the Contractor's material breach is enumerated in this Article. When Rockland Green terminates this Contract for any cause due to the fault of or breach by the Contractor, the Contractor shall not be entitled to receive further payment until the Work is finished. If Rockland Green's costs to complete the work in accordance with the Contract Standards and other damages incurred by Rockland Green as a result of the Contractor's fault and or breach exceed the unpaid balance of the Contract Price, the Contractor shall pay the difference to Rockland Green. This obligation for payment shall survive termination of this Contract.

SECTION 10.2 GROUNDS FOR TERMINATION. Rockland Green may terminate this Contract for cause if the Contractor:

A. Refuses or fails to supply enough properly skilled workers or proper materials;

B. Fails to make payment to Subcontractors or suppliers for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;

C. Fails to comply with Applicable Law;

D. Fails to perform the Work in accordance with the Contract Documents or otherwise breaches any provision of the Contract Documents;

E. Is insolvent as determined under the United States Bankruptcy Code;

F. Pursuant to the issuance of an order of a court of competent jurisdiction, a receiver, liquidator, custodian or trustee of the Contractor is appointed or of a major part of the Contractor's property, respectively, or the filing against the Contractor of a petition to reorganize the Contractor pursuant to the United States Bankruptcy Code, which order shall not have been discharged or which filing shall not have been dismissed within ninety (90) days after such issuance or filing, respectively;

G. Fails to provide adequate assurances after notice of an anticipatory breach or repudiation of this Contract;

H. Fails to make satisfactory progress in the prosecution of this Contract;

I. Endangers the performance of this Contract;

J. Fails, after notice, to implement Construction Change Directive or Change Order;

K. Ceases performance of the Work in violation of the Contract Standards;

L. Fails to obtain and maintain the Performance Bond, Payment Bond, or Required Insurance as required herein;

M. Intentionally misrepresents information and facts relating to the Contractor's performance of its obligations hereunder;

N. Assigns this Contract or any funds due hereunder without prior written approval by Rockland Green;

O. Experiences a change in ownership in violation of Section 14.6;

P. Makes a false representation or warranty in any material respect when made, and the legality of this Contract or the ability of the Contractor to carry out its obligations hereunder is adversely affected;

Q. Fails to supply complete and accurate information, records or accounts as provided herein; or

R. Fails to achieve Substantial Completion by the Scheduled Substantial Completion Date or fails to achieve Final Completion by the date agreed to therefor, except for excuse by Uncontrollable Circumstances.

SECTION 10.3 NOTICE OF TERMINATION. If Rockland Green determines pursuant to Section 10.2 that it has cause to terminate this Contract, Rockland Green will provide the Contractor with a written notice of and opportunity to cure the default. If the default is not cured within seven (7) days of the Contractor's receipt of the notice, the termination for default is effective on the date specified in Rockland Green's written notice. If, however, Rockland Green determines that default contributes to the curtailment of an essential service or poses an immediate threat to life, health, or property, the Executive Director may terminate this Contract immediately upon issuing oral or written notice to the Contractor without any prior notice or opportunity to cure. In addition to any other remedies provided by law or this Contract, the Contractor must compensate Rockland Green for additional costs that foreseeably would be incurred by Rockland Green, whether the costs are actually incurred or not, to obtain substitute performance. Rockland Green's expense incurred in completion of the Work, including the cost of re-letting, shall be deducted and paid by the Contractor out of the monies due or to become due to the Contractor under this Contract. If the expense is more than the sum remaining unpaid, the Contractor and its sureties shall pay the amount of such deficiency to Rockland Green.

SECTION 10.4 TERMINATION BY ROCKLAND GREEN FOR CONVENIENCE.

Rockland Green may, at any time, terminate this Contract for Rockland Green's convenience and without cause. In case of such termination, the Contractor shall be entitled to receive payment for Work executed, and reasonable costs incurred by reason of such termination.

SECTION 10.5 ACTION BY CONTRACTOR AND ROCKLAND GREEN.

A. Action by Contractor upon Notice of Termination. Upon receipt of written notice from Rockland Green of termination pursuant to this Article, the Contractor shall:

(i) Cease operations as directed by Rockland Green in the notice and, if required by Rockland Green, participate in an inspection of the Work with Rockland Green to record the extent of completion thereof, to identify the Work remaining to be completed or corrected, and to determine what temporary facilities, tools, equipment and construction machinery are required and authorized to remain at the Site pending completion of the Work.

(ii) Following such initial inspection of the Work with Rockland Green described in Section 10.5 A(i), above, the Contractor shall:

(a) Complete or correct the items directed by Rockland Green, and take actions necessary, or that Rockland Green may direct, for the protection and preservation of any stored materials and equipment and completed Work;

(b) Unless otherwise directed by Rockland Green pursuant to Section 10.5 (B)(i) below, remove its tools, equipment and construction machinery from the Site, and

(c) Except as directed by Rockland Green in Section 10.5 (B) (ii) below, terminate all existing Subcontracts and purchase orders related to the Work and enter into no further Subcontracts or purchase orders therefor. To the extent that Rockland Green elects to take legal assignment of Subcontracts and purchase orders as set forth in 10.5(B)(ii), the Contractor shall execute and deliver all such papers and take all such steps, including the legal assignment of such Subcontracts and other contractual rights of the Contractor, as Rockland Green may require for the purpose of fully vesting in Rockland Green the rights and benefits of the Contractor under such Subcontracts or purchase orders. All Subcontracts and purchase orders entered into by the Contractor shall contain provisions allowing for assignment to Rockland Green as described herein.

B. Action by Rockland Green Following Notice. Following written notice from Rockland Green of termination, Rockland Green may:

(i) Take possession of the Site and of all materials and equipment thereon;

(ii) Accept assignment of Subcontracts and purchase orders that are elected by Rockland Green to be assigned to it;

(iii) Complete the Work by whatever reasonable method Rockland Green may deem expedient; and

(iv) Exercise any rights under the Contractor's Performance Bond, Payment Bond, and any other applicable security instrument of the Contractor.

C. Cost of Terminating Subcontracts. Rockland Green shall not compensate the Contractor for the cost of terminating Subcontracts if this Contract is terminated.

ARTICLE XI.
DISPUTE RESOLUTION AND LITIGATION

SECTION 11.1 MEDIATION. Claims or other matters in controversy arising out of or related to this Contract may be subject to non-binding mediation prior to binding dispute resolution, if the Parties agree in writing to mediate. Unless the Parties agree otherwise, mediation shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect at the time of the mediation. A request by a Party for mediation shall be made in writing to the other Party. The Parties shall share the mediator's fee and any filing fees equally. Agreements reached in mediation shall be enforceable as settlement agreement in any court having jurisdiction thereof.

SECTION 11.2 FORUM SELECTION AND CONSENT TO JURISDICTION, WAIVER OF RIGHT TO REMOVE. All Legal Proceedings related to this Contract or to the Project or to any rights or any relationship between the parties arising therefrom shall be solely and exclusively filed, tried and maintained in the New York State Supreme Court located in Rockland County, New York. The Contractor and Rockland Green each expressly and irrevocably waive any right otherwise provided by any Applicable Law to remove the matter to any other state or federal venue, consents to the jurisdiction of such courts in any such Legal Proceeding, waive any objection it may have to the laying of the jurisdiction of any such Legal Proceeding, and waive its right to a trial by jury. Each party shall bear its own costs of such litigation, except as otherwise provided herein or by law. Neither party shall be compelled to participate in any form of arbitration, whether commenced by the other party or by a third party such as a Subcontractor, supplier or consultant.

ARTICLE XII.
INSURANCE, SECURITY FOR PERFORMANCE, INDEMNIFICATION, AND UNCONTROLLABLE CIRCUMSTANCES

SECTION 12.1 REQUIRED INSURANCE. At all times during the Term, the Contractor shall obtain and maintain the Required Insurance in accordance with Appendix D hereto and shall pay all premiums and deductibles with respect thereto as the same become due and payable. The Contractor shall also require all of its Subcontractors working at the Site to secure and maintain the Required Insurance and other financial sureties required by Applicable Law in connection with their presence at the Site and the performance of their duties. The failure of the Contractor to obtain and maintain any Required Insurance shall not relieve the Contractor of its liability for any losses intended to be insured thereby. Should any failure to provide continuous insurance coverage occur, the Contractor shall indemnify and hold harmless Rockland Green in the manner provided in Section 12.3 hereof, from and against any Loss-and-Expense arising out of such failure.

SECTION 12.2 SECURITY FOR PERFORMANCE.

A. Performance and Payment Bonds. The Contractor shall provide financial security for the performance of its obligations and prompt payment of moneys that are due to all persons furnishing labor and materials hereunder through a Performance Bond and a Payment Bond each issued by a surety company: (1) approved by Rockland Green having a rating of "A" in the latest revision of the A.M. Best Company's Insurance Report; (2) listed in the United States

Treasury Department's Circular 570, "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsurance Companies"; and (3) properly registered and licensed to conduct business in the State of New York. The Performance Bond and the Payment Bond shall each be issued in the amount of the Contract Price. The Performance Bond and the Payment Bond shall be substantially in the applicable form prescribed by Rockland Green and will be attached hereto as Transaction Agreements 1 and 2, respectively, to this Contract. A copy of the Performance Bond and the Payment Bond shall be kept by Rockland Green and shall be open to public inspection. The penal sum of each bond required under this Section shall be in the full amount of the Contract Price.

SECTION 12.3 INDEMNIFICATION BY THE CONTRACTOR.

A. To the full extent permitted by law, the Contractor shall indemnify and hold harmless Rockland Green and its directors, employees, representatives, agents, contractors, (each, a "Rockland Green Indemnitee"), from and against (and pay the full amount of) any and all Loss-and-Expense incurred by a Rockland Green Indemnitee to third-parties arising from or in connection with (or alleged to arise from or in connection with): (1) any failure by the Contractor to perform its obligations under this Contract; (2) the negligent acts, errors or omissions or willful misconduct of the Contractor or any of its officers, directors, employees, agents, representatives or Subcontractors in connection this Contract; and (3) to the extent provided elsewhere in this Contract.

B. The Contractor's indemnity obligations hereunder shall not be limited by any coverage exclusions or other provisions in any insurance policy maintained by the Contractor which is intended to respond to such events.

C. A Rockland Green Indemnitee shall promptly notify the Contractor of the assertion of any claim against it for which it is entitled to be indemnified hereunder. These indemnification provisions are for the protection of Rockland Green and any Rockland Green Indemnitee only and shall not establish, of themselves, any liability to third parties. This indemnification obligation shall include, but is not limited to, all claims against Rockland Green by an employee or former employee of the Contractor or any Subcontractor, and the Contractor expressly waives all immunity and limitation on liability under any industrial insurance act, other workers' compensation act, disability benefit act, or other employee benefit act of any jurisdiction which would otherwise be applicable in the case of such a claim. The provisions of this Section shall survive termination of this Contract.

D. The Contractor shall also ensure that all of its Subcontracts include the Subcontractor Indemnification language that is included in Appendix D, Required Insurance hereto.

SECTION 12.4 UNCONTROLLABLE CIRCUMSTANCES. Except as otherwise provided herein, neither party shall be liable to the other for any failure or delay in the performance of any obligation under this Contract to the extent such failure or delay is resulting from the occurrence of an Uncontrollable Circumstance.

A. Notice and Mitigation. The party that asserts the occurrence of an Uncontrollable Circumstance shall notify the other party immediately by electronic mail upon first knowledge of the occurrence of the Uncontrollable Circumstance, followed within three (3) days

by a complete written description of: (1) the Uncontrollable Circumstance and the cause thereto (to the extent known); and (2) the date the Uncontrollable Circumstance began, its estimated duration, the estimated time during which the performance of such party's obligations hereunder will be delayed, or otherwise affected. As soon as practicable after the occurrence of an Uncontrollable Circumstance, the affected party shall also provide the other party with a description of: (1) the amount, if any, by which the Project Schedule is proposed to be adjusted as a result of such Uncontrollable Circumstance; (2) its estimated impact on the other obligations of such party under this Contract and on the obligations of any Subcontractors; and (3) potential mitigating actions which might be taken by the Contractor or Rockland Green. The affected party shall also provide prompt written notice of the cessation of such Uncontrollable Circumstance. Whenever such act, event or condition shall occur, the party claiming to be adversely affected thereby shall, as promptly as practicable, use all reasonable efforts to eliminate the cause therefor, reduce costs and resume performance under this Contract. While the Uncontrollable Circumstance continues, the affected party shall give notice to the other party, before the first day of each succeeding week, updating the information previously submitted. The party claiming to be adversely affected by an Uncontrollable Circumstance shall bear the burden of proof, and shall furnish promptly any additional documents or other information relating to the Uncontrollable Circumstance reasonably requested by the other party.

B. Conditions to Schedule Relief. In the event that the Contractor believes it is entitled to any schedule relief on account of any Uncontrollable Circumstance, it shall furnish Rockland Green written notice of the specific schedule relief requested and detailing the event giving rise to the claim within fifteen (15) days after the giving of notice of the first knowledge of the Uncontrollable Circumstance, or if the specific schedule relief cannot reasonably be ascertained and such event detailed, with such fifteen (15) day period, then within such longer period with which it is reasonably possible to detail the event and ascertain such relief. Within thirty (30) days after receipt of such a timely submission from the Contractor, Rockland Green shall issue a written determination as to the extent, if any, it concurs with the Contractor's claim for performance or schedule relief, and the reasons therefor. The Contractor acknowledges that its failure to give reasonable and timely notice pertaining to an Uncontrollable Circumstance as required under this Section may increase the cost of the Uncontrollable Circumstance to Rockland Green. To the extent the Contractor's failure to give reasonable and timely notice to Rockland Green causes Rockland Green to incur additional costs related to the Uncontrollable Circumstance, the Contractor shall be responsible for such additional cost. The Contractor shall have the affirmative burden of refuting Rockland Green's assertion. Absent such refutation, Rockland Green's additional costs shall immediately become due from the Contractor.

C. Acceptance of Relief Constitutes Release. The Contractor's acceptance of any performance or schedule relief under this Section shall be construed as a release of Rockland Green by the Contractor (and all persons claiming by, through, or under the Contractor) of any and all Loss-and-Expense resulting from, or otherwise attributable to, the event giving rise to the relief claimed.

ARTICLE XIII.
WARRANTY

SECTION 13.1 WARRANTY. The Contractor warrants to Rockland Green that the Work, and all materials, equipment, and structures furnished or fabricated, shall (i) be new, of recent manufacture and of high quality, (ii) conform to the requirements of this Contract, (iii) be free of defects in materials, equipment, and workmanship, and (iv) meet the Specifications during the Warranty Period (the "Warranty"). The Warranty Period is the period commencing on the date of Final Completion and continuing through one-year unless otherwise extended as provided herein.

A. Call-Back Obligations. If, at any time during the Warranty Period, any of the Work is found to be malfunctioning, defective or otherwise not in accordance with the requirements of this Contract, the Contractor or its Subcontractor shall correct it promptly after receipt of written notice from Rockland Green to do so. Rockland Green shall give such notice promptly after discovery of the condition. The Contractor shall respond to service calls from Rockland Green within three (3) business days. Such response shall require that a competent representative or representatives of the Contractor, inspect the Site and, while on Site, either correct the problem or initiate a course of action that will fully correct the problem within a reasonable period of time in accordance with Good Engineering and Construction Practice and the specific requirements of this Article. The time period for correction shall not exceed ten (10) days; provided, however, that if such time periods are not practicable in accordance with Good Engineering and Construction Practice, then the time period for correction shall be the minimum amount of time required in accordance with Good Engineering and Construction Practice. Before any necessary correction, repair or replacement of facilities is initiated by the Contractor, a plan indicating the scope and schedule for such work shall be approved by Rockland Green. In the event of a latent, hidden, or not readily observable defect in the design, materials or workmanship or deviation from this Contract, the Warranty shall extend for an additional one (1) year from the date of discovery of such defect, deviation or condition.

B. Full-Scale Inspection. The one-year warranty on workmanship set forth in Section A above includes a full-scale inspection by the Contractor at the end of the Warranty Period, as well as any required work identified during the inspection, including labor and materials.

C. Right of Rockland Green to Proceed with Corrective Action; Contractor Liability. If the Contractor fails to commence and complete the steps set forth in subsections (A) or (B) of this Section within the required time frames, in addition to any other remedies provided under this Contract, the Security Instruments or Applicable Law, Rockland Green may commence and complete the full-scale inspection and the correction of any nonconforming Work with its own forces or with third party contractors.

D. Subcontractors. The Contractor shall obtain from all Subcontractors, vendors, suppliers and other persons from which the Contractor procures structures, improvements, fixtures, machinery, equipment and materials to be incorporated in the Work such warranties and guarantees as are normally provided with respect thereto and as are specifically required in the Specifications, each of which shall be assigned to Rockland Green to the full extent of the terms thereof.

E. Manufacturers' Warranties. Nothing in this warranty is intended to limit any manufacturer's warranty which provides Rockland Green with greater warranty rights than set forth in this Article or the Contract Documents. The Contactor will provide Rockland Green with all manufacturers' warranties upon Final Completion. All warranties and guarantees shall commence on the date of Final Completion. Any manufacturer's warranties extending longer than one year shall remain in effect for the full warranty period.

F. No Period of Limitation on Other Obligations. Nothing contained in this Article shall be construed to establish a period of limitation with respect to other obligations that the Contractor has under this Contract or under Applicable Law with respect to the Work. The Warranty is not intended to constitute a period of limitations for any other rights or remedies Rockland Green may have regarding Contractor's other obligations under the Contract Documents.

G. Extension of Warranty. The "call-back" obligations set forth in this Section shall apply to all Work re-done or corrected pursuant to this Contract. The "call-back" obligations for re-done or corrected elements of the Work shall extend beyond the Warranty Period, if necessary, to provide a one (1) year period following acceptance by Rockland Green of such re-done or corrected Work.

H. Contractor Reliance on Manufacturers' Warranties During Call-Back Period. During the period in which the call-back obligations set forth in this Section are in effect, the Contractor (or Rockland Green) shall be permitted to enforce all warranties provided by manufacturers, suppliers and other third parties, if any. Notwithstanding the applicability or effectiveness of such warranties, the Contractor shall be required to comply with all the requirements set forth in this Section.

I. Compensation. The Contractor acknowledges that the Contract Price contains the entire compensation due the Contractor for any and all warranty work to be performed by the Contractor or its Subcontractors or agents pursuant to this Article including overhead and profit, except as otherwise provided. In the event any amounts are required to be paid to third-parties to perform warranty work pursuant to this Article, payment of such amounts shall be the responsibility of the Contractor.

J. Warranty not Exclusive. The warranty set forth in this Article is in addition to, and not in limitation of, any other warranties, rights and remedies available under this Contract or Applicable Law, and shall not limit the Contractor's liability or responsibility imposed by this Contract or Applicable Law with respect to the Work, including liability for design defects, latent construction defects, strict liability, negligence or fraud. The provisions of this Article shall survive the termination of this Contract.

K. No Limitation of Third Party Warranties. Nothing in this Contract is intended to limit any third party warranty that provides Rockland Green with greater warranty rights than those provided under this Article.

ARTICLE XIV.
MISCELLANEOUS PROVISIONS

SECTION 14.1 RELATIONSHIP OF THE PARTIES. The Contractor is an independent contractor of Rockland Green and the relationship between the Parties shall be limited

to performance of this Contract in accordance with its terms. Neither Party shall have any responsibility with respect to the services to be provided or contractual benefits assumed by the other Party. Rockland Green has no responsibility for performing any of the Contract Services and has no responsibility for means, methods or approaches used in connection with performance of any of the Contract Services by the Contractor or others. Rockland Green has no responsibility for any construction safety plans or safety inspections, including the enforcement of safety precautions associated with the Contractor's Work. Nothing in this Contract shall be deemed to constitute either Party a partner, agent or legal representative of the other Party. No liability or benefits, such as workers' compensation, pension rights or liabilities, or other provisions or liabilities arising out of or related to a contract for hire or employer/employee relationship, shall arise or accrue to any Party's agent or employee as a result of this Contract or the performance thereto.

SECTION 14.2 CERTAIN OBLIGATIONS TO SURVIVE TERMINATION. Warranties, representations, indemnification obligations and other continuing obligations explicitly stated herein, survive acceptance of the Work under this Contract and termination of this Contract; and do not relieve the Contractor of the Contractor's obligations hereunder.

SECTION 14.3 NO WAIVERS. No action of Rockland Green or Contractor pursuant to this Contract (including, but not limited to, any investigation or payment), and no failure to act, shall constitute a waiver by either party of the other party's compliance with any term or provision of this Contract. No course of dealing or delay by Rockland Green or Contractor in exercising any right, power or remedy under this Contract shall operate as a waiver thereto or otherwise prejudice such party's rights, powers and remedies. No single or partial exercise of (or failure to exercise) any right, power or remedy of Rockland Green or the Contractor under this Contract shall preclude any other or further exercise thereto or the exercise of any other right, power or remedy. The above notwithstanding, any of the terms, covenants, and conditions of this Contract may be waived at any time by the party entitled to the benefit of such term, covenant or condition if such waiver is in writing and executed by the party against whom such waiver is asserted.

SECTION 14.4 ACTIONS OF ROCKLAND GREEN IN ITS GOVERNMENTAL CAPACITY. Nothing in this Contract shall be interpreted as limiting the rights and obligations of Rockland Green in its governmental or regulatory capacity.

SECTION 14.5 ASSIGNMENT. The Contractor shall not assign, transfer, convey, sublet or otherwise dispose of this Contract, or of the Contractor's right, title, or interest herein, (including without limitation through a sale of assets or ownership interest, merger, consolidation or other change of control) to any third party, or assign all or any of the portion of compensation that may be due or become due under the terms hereof to any other person or corporation, without the previous consent in writing of Rockland Green. If the Contractor violates this Section, Rockland Green shall have the right, in its sole discretion, to terminate this Contract without prior notice and without a cure period, and in the event of such termination, the Contractor shall forfeit all monies earned hereunder. Rockland Green may, without the consent of the Contractor, make assignments, create such security interests in its rights hereunder and pledge such monies receivable hereunder as may be required in connection with the issuance of bonds.

SECTION 14.6 CHANGE IN OWNERSHIP OF CONTRACTOR OR A PARENT COMPANY. The Contractor shall provide Rockland Green with five (5) days' prior written notice of any change of any nature in the ownership (which includes the ownership structure) of the Contractor or any parent, subsidiary or Affiliate thereof, including without limitation any transfers of shares of stock, membership or other ownership units of the Contractor, parent subsidiary or Affiliate. In addition, if the Contractor is a privately held company, the Contractor shall provide Rockland Green with five (5) days' prior written notice of any changes in the officers, principals or directors of the Contractor. Subsequent to any such notices, the Contractor shall provide upon request of Rockland Green any reasonable information requested by Rockland Green related to such change in ownership (which includes the ownership structure), officers, principals or directors. At any time within five (5) days following Rockland Green's receipt of such supporting information, Rockland Green shall have the right to terminate this Contract upon thirty (30) days' notice to the Contractor. In the event of a violation of this Section by the Contractor, Rockland Green shall have the right in its sole discretion to terminate this Contract without prior notice or cure period, and in the event of such termination, the Contractor shall forfeit all monies earned hereunder.

SECTION 14.7 BINDING EFFECT. This Contract shall inure to the benefit of and shall be binding upon Rockland Green and the Contractor and any assignee acquiring an interest hereunder consistent with Section 14.5 hereof.

SECTION 14.8 AMENDMENT AND WAIVER. This Contract may not be amended except by a written agreement signed by the Parties. Any of the terms, covenants, and conditions of this Contract may be waived at any time by the Party entitled to the benefit of such term, covenant or condition if such waiver is in writing and executed by the Party against whom such waiver is asserted.

SECTION 14.9 NON-DISCRIMINATION. The Contractor, a Subcontractor or a supplier, shall not discriminate nor permit discrimination by any of their respective officers, employees, Subcontractors, agents and representatives against any person because of age, race, color, religion, gender, national origin, sexual orientation, or, with respect to otherwise qualified individuals, handicap. The Contractor will take all actions reasonably necessary to ensure that qualified applicants are employed, and that employees are treated during employment, without regard to their age, race, color, gender, religion, sexual orientation, national origin or, with respect to otherwise qualified individuals, handicap. Such action shall include, without limitation, recruitment and recruitment advertising; layoff or termination; upgrading, demotion, transfer, rates of pay or other form of compensation; and selection for training, including apprenticeship. The Contractor shall impose the non-discrimination provisions of this Section by contract on all Subcontractors hired to perform work related to the Contract Services and shall take all reasonable actions necessary to enforce such provisions. The Contractor will post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

SECTION 14.10 NO THIRD PARTY RIGHTS CREATED. The Contract Documents are not to be construed to create a contractual relationship of any kind other than between Rockland Green and the Contractor. No third-party rights are intended, created, or provided, either expressly

or by implication by the terms and conditions of this Contract. The terms and conditions of this Contract are expressly limited to benefit the parties hereto.

SECTION 14.11 NOTICES.

A. Procedure. Unless otherwise specifically provided for elsewhere in this Contract, all notices, requests, approvals and other communications required or permitted under this Contract shall be in writing and shall be deemed to have been duly given: (1) when delivered personally; (2) when sent by a nationally-recognized overnight courier service; (3) when mailed by certified or registered mail, return, receipt requested, postage prepaid; or (4) when sent by email, provided that a copy of the email is also sent by one of the methods listed above (except that email shall be sufficient if the recipient confirms receipt in writing, including by return email). Notice sent by email shall be deemed to have been given on the date sent if sent during normal business hours of the recipient, or on the next business day if sent after normal business hours. Notices shall be deemed given only when actually received. Either Party may, by like notice, designate further or different addresses to which subsequent notices shall be sent.

B. Contractor Notice Address. Notices required to be given to the Contractor shall be addressed as follows:

[ ]
[ ]
[ ]
[ ]

C. Rockland Green Notice Address. Notices required to be given to Rockland Green shall be addressed as follows:

Executive Director
Rockland Green
172 Main Street
Nanuet, New York 10954

With a copies to:

General Counsel
Rockland Green
172 Main Street
Nanuet, New York 10954

West Group Law PLLC
81 Main Street, Suite 510
White Plains, NY 10601
Attn: Stephanie Kosmos, Esq.

SECTION 14.12 NOTICE OF LITIGATION. In the event the Contractor or Rockland Green receives notice of or undertakes the defense or the prosecution of any Legal Proceedings, claims, or investigations in connection with the Project, the Party receiving such notice or undertaking such prosecution shall give the other Party timely notice of such proceedings and shall inform the other Party in advance of all hearings regarding such proceedings.

SECTION 14.13 COUNTERPARTS. This Contract may be executed in any number of original counterparts. All such counterparts shall constitute but one and the same agreement.

SECTION 14.14 FURTHER ASSURANCES. Rockland Green and Contractor each agree to execute and deliver such further instruments and to perform any acts that may be necessary or reasonably requested in order to give full effect to this Contract. Rockland Green and the Contractor, in order to carry out this Contract, each shall use all commercially reasonable efforts to provide such information, execute such further instruments and documents and take such actions as may be reasonably requested by the other and not inconsistent with the provisions of this Contract and not involving the assumption of obligations or liabilities different from or in excess of or in addition to those expressly provided for this Contract. By way of example and not limitation, upon reasonable request of Rockland Green, the Contractor shall supply an affidavit that the Work and/or Site is free of all liens and encumbrances, including liens for any taxes which are due and required to be paid by the Contractor (other than liens required or contemplated by this Contract).

[*signature page follows*]

IN WITNESS WHERETO, the Parties have caused this Contract to be executed by their duly authorized representatives as of the day and year first above written.

ROCKLAND GREEN

By: _____
Gerard M. Damiani, Jr.
Executive Director

[ ]

By: _____
Name:
Title:

APPENDICES TO THE CONTRACT FOR THE BUILD-OUT OF A NEW ANIMAL SHELTER LOCATED AT 427 BEACH ROAD, HAVERSTRAW, NEW YORK

APPENDIX A	CONTRACT DRAWINGS
APPENDIX B	SPECIFICATIONS
APPENDIX C	CONTRACT PRICE
APPENDIX D	REQUIRED INSURANCE
APPENDIX E	PREVAILING WAGE SCHEDULE
APPENDIX F	PROJECT SCHEDULE

APPENDIX A
CONTRACT DRAWINGS

[*To be included*]

APPENDIX B
SPECIFICATIONS

[*To be included*]

APPENDIX C
CONTRACT PRICE

[*To be developed*]

APPENDIX D
REQUIRED INSURANCE

Prior to the Notice to Proceed and throughout the term of the Contract, the Contractor shall maintain insurance issued by an insurance carrier satisfactory to Rockland Green to protect the parties hereto from and against any and all claims, demands, actions, judgments, costs, expenses and liabilities of every kind and nature which may arise or result, directly or indirectly, from or by reason of such loss, injury, including injury to the applicable Contractor's employees or employees of such Contractor's Subcontractors, or damage. Such insurance shall be maintained at the Contractor's sole expense.

The Contractor shall obtain and maintain throughout the term of the Contract the following types and minimum amounts, not including deductible, of insurance:

- Commercial general liability and property damage insurance with broad form blanket contractual liability and products and completed operations coverage, shall be not less than $1,000,000 per occurrence and $2,000,000 general aggregate
    - Prohibited exclusion(s), including but not limited to (1) 'gravity related' injuries; (2) injuries sustained by an employee of an/any insured; (3) liability assumed by contract (4) height limitation or (5) territory restriction; and
    - Insurance must apply on a Per-Project basis; and
    - No Labor Law or Third-Party Action Over Exclusions;
- Commercial comprehensive automobile liability endorsed for any automobile (owned and non-owned) with minimum limits for combined property damage and bodily injury of $1,000,000 per occurrence
- Worker's compensation coverage in the statutory amounts required by New York State Law;
- Employer's liability insurance required by New York State law covering all of the employees of the Contractor at Rockland Green 's facility;
- Excess liability above the commercial general liability and automobile liability shall not be less than $10,000,000 per occurrence and $10,000,000 general aggregate, the Umbrella must be excess over the General Liability, Automobile Liability and Employers Liability and
- Pollution liability, if applicable, shall not be less than $5,000,000.
- Professional liability, if applicable, shall not be less than $5,000,000.

1. The commercial general liability, excess liability, professional liability, and pollution liability shall be kept in force for a period of one (1) year following the end of the contract period.

2. Additional Insureds. The Contractor will name Rockland Green, the County, and their officers, agents, employees, and consultants as additional named insureds on a primary, non-contributory basis (the "Additional Insureds") for Ongoing and Completed Operations on all insurance policies required herein, other than workers' compensation and employer liability coverage. Such coverage must be provided using the 04/13 versions of ISO Form CG 20 10 and CG 20 37 or equivalent. The Contractor will waive the subrogation rights of its various insurance carriers in favor of Rockland Green via CG 20 04 or equivalent.

3. Insurance Certificates and Policies. Insurance and any renewals thereof will be evidenced by certificates of insurance (the "Certificates") and copies of all insurance policies and endorsements issued or countersigned by a duly authorized representative of the issuer and delivered to Rockland Green for its approval thirty (30) days prior to the Contract commencement. The Certificates will require thirty (30) days written notice to Rockland Green, of cancellation, intent not to renew, or reduction in its coverage by the insurance company for all policies.

4. Non-Recourse Provision. All insurance policies will provide that the insurers will have no recourse against the Additional Insureds for payment of any premium or assessment and will contain a severability of interest provision in regard to mutual coverage liability policies. The coverages will be the primary source of any restitution or other recovery for any injuries to, or death of persons, or loss or damage to property incurred as a result of an action or inaction of the Contractor or its Subcontractors, of their respective suppliers, employees, agents, representatives, or invitees, that fall within these coverages and also within the coverages of any liability insurance or self-insurance program maintained by Rockland Green.

5. Deductibles. Deductibles shall not exceed $10,000.

6. Subcontractors. The Contractor will be responsible for ensuring that all Subcontractors which are working at the Site secure and maintain all insurance coverages hereunder and other financial sureties required by Applicable Law in connection with their presence and the performance of their duties at or concerning the Work. The Contractor will furnish Rockland Green with Subcontractors' Certificates and policies for review and approval prior to beginning.

7. Specific Provisions for Comprehensive General Liability Insurance. Comprehensive General Liability insurance, as required hereunder, will include premises-operations, blanket contractual, products and completed operations, personal injury, host liquor liability, explosion, collapse, underground hazards, and broad form property damage, including completed operations and independent contractor's coverages.

8. Specific Provisions for Worker's Compensation Coverage. Worker's Compensation insurance must be in accordance with the requirements of New York law, as amended from time to time. The required worker's compensation insurance will include other State's coverage, voluntary compensation coverage, and federal longshoreman and harbor worker's coverage.

9. Changes in Insurance Coverage. The insurance listed herein are the minimum coverages permitted, except that Rockland Green may decrease or omit the coverages specified at any time in its sole discretion. If Rockland Green decreases such coverage, any cost savings will be credited to the benefit of Rockland Green.

10. Qualifications of Insurers. The Contractor is required to obtain the insurance set forth in this Appendix with insurance companies that carry a Best's "A" or equivalent rating. In addition, insurance must be obtained and maintained with insurers authorized to do business in the State of New York.

11. Subcontractor Indemnification. The Contractor shall include the following language in all Subcontracts.

> To the fullest extent permitted by law, the Subcontractor agrees to indemnify, defend and hold harmless the Contractor as well as all parties listed below as additional insureds, their officers, directors, agents, employees and partners (hereafter collectively "Indemnitees") from any and all claims, suits, damages, liabilities, professional fees, including attorneys' fees, costs, court costs, expenses and disbursements related to death, personal injuries or property damage (including loss of use thereof brought against any of the Indemnitees by any person or entity, arising out of or in connection with or as a result or consequence of the performance of the Work of the Subcontractor, as well as any additional work, extra work or add-on work, whether or not caused in whole or in part by the Subcontractor or any person or entity employed, either directly or indirectly by the Subcontractor including any subcontractors thereof and their employees. The parties expressly agree that this indemnification agreement contemplates 1) full indemnity in the event of liability imposed against the Indemnitees without negligence; and 2) partial indemnity in the event of any actual negligence on the part of the Indemnitees either causing or contributing to the underlying claim which negligence is expressly excepted from the Subcontractor's obligation to indemnify. Attorneys' fees, court costs, expenses and disbursements shall be defined without limit to include those fees, costs, etc. incurred

in defending the underlying claim and those fees, costs, etc. incurred in connection with the enforcement of this Subcontract Agreement. Indemnification under this Agreement shall operate whether or not Contractor has placed and maintained the insurance required under this agreement. The Subcontractor shall cause all subcontract agreements it enters into to include this indemnification clause so as to ensure that Contractor and all Indemnitees hereunder shall have the same protection from sub-subcontractors as is afforded by the Subcontractor.

APPENDIX E
PREVAILING WAGE SCHEDULE

[*To be included*]

APPENDIX F
PROJECT SCHEDULE

[*To be developed*]

TRANSACTION AGREEMENTS

1. Performance Bond
2. Payment Bond
3. Project Labor Agreement

TRANSACTION AGREEMENT 1

[PERFORMANCE BOND FORM]

Bond No. _____

KNOW ALL MEN BY THESE PRESENT, that we, [CONTRACTOR] with a place of business at as principal (the "Principal"), and[ ], a [ ] qualified to do business in the State of New York, with a place of business at [ ] as Surety (the "Surety"), are held and firmly bound unto the Rockland County Solid Waste Management Authority a/k/a Rockland Green as Obligee (the "Obligee"), in the sum of [dollars ($)] lawful money of the United States of America, to be paid to the Obligee, for which payment, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these present.

WHEREAS, the Principal has assumed and made a contract with the Obligee, bearing the date of [ ], and entitled the Contract for the Build Out of a New Animal Shelter located at 427 Beach Road, Haverstraw, NY (the "Contract").

NOW THE CONDITIONS of this obligation are such that if the Principal and all Subcontractors or suppliers under said Contract shall well and truly keep and perform all the undertakings, covenants, agreement, terms, and conditions of said Contract on their part to be kept and performed during the original term of said Contract and any extensions thereof that may be granted by the Obligee, with or without notice to the Surety, and shall also well and truly keep and perform all the undertakings, covenants, agreements, terms and conditions of any and all duly authorized modifications, alterations, changes or additions to said Contract, (notice to the Surety of such modifications, alterations, changes or additions being hereby waived), the obligations of the Surety set forth herein shall become null and void only if such completion of the Contract is expressly acknowledged in writing by the Obligee; otherwise such obligations shall remain in full force and virtue.

WHENEVER the Principal shall be declared by the Obligee to be in default under the Contract, the Obligee having performed the Obligee's material obligations thereunder, at the Obligee's option as declared in writing, the Surety shall promptly remedy the default whatever it may be or shall promptly perform the Contract in accordance with all of its terms and conditions. To the extent that the Obligee elects to not have the Surety remedy the default nor promptly perform the Contract, the Surety shall make payment to the Obligee up to the Penal Sum of this instrument.

IN THE EVENT the Contract is abandoned by the Principal, or is terminated by the Obligee under the applicable provisions of the Contract, the Surety hereby further agrees that the Surety shall, if requested in writing by the Obligee promptly take all such actions as is necessary to complete said Contract in accordance with its terms and conditions. To the extent that the Obligee elects not to require the Surety to take all such actions as are necessary to complete said Contract, the Surety shall make payment to the Obligee up to the Penal Sum of this instrument.

IN WITNESS WHEREOF, the Principal and Surety have hereto set their hands and seals this _____ day of _____, 2024.

PRINCIPAL	SURETY
_____	_____
_____	_____
[Name and Seal]	[Name and Seal]
_____	_____
[Title]	[Title]
_____	_____
[Address]	[Address]
_____	_____
[Phone]	[Phone]
Attest:_____	Attest:_____

The rate of the Bond is _____% of the first $_____ and _____% for the next $_____. The total premium for this Bond is $_____.

TRANSACTION AGREEMENT 2

[PAYMENT BOND FORM]

Bond No. _____

KNOW ALL MEN BY THESE PRESENT, that we [CONTRACTOR] with a place of business at as principal (the "Principal"), and [ ], a [ ] qualified to do business in the State of New York, with a place of business at [ ] as Surety (the "Surety"), are held and firmly bound unto Rockland County Solid Waste Management Authority a/k/a Rockland Green as Obligee (the "Obligee"), in the sum of [Dollars ($)] lawful money of the United States of America, to be paid to the Obligee, for which payment, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these present.

WHEREAS, the Principal has assumed and made a contract with the Obligee, bearing the date of [ ], and entitled the Contract for the Build Out of a New Animal Shelter located at 427 Beach Road, Haverstraw, NY (the "Contract").

NOW, THE CONDITIONS of this obligation are such that if the Principal and all Subcontractors under said Contract shall promptly pay for all labor performed or furnished and for all materials used or employed in said Contract (including any amendments or modifications thereto, notice to the Surety of such amendments or modifications being hereby waived) and defends, indemnifies and holds harmless the Obligee from claims, demands, liens or suites by any person or entity seeking payment for labor, materials or equipment furnished for use in performance of the Contract, then this obligation shall become null and void; otherwise, it shall remain in full force and effect.

The Surety's obligation to the Obligee under this Bond shall arise after the Obligee provides notice to the Principal and Surety of claims, demands, liens or suits against the Obligee or the Obligee's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Contract.

The Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Obligee against any duly tendered claim, demand, lien or suit against the Obligee or the Obligee's property.

IN WITNESS WHEREFORE, the Principal and Surety have hereto set their hands and seals this _____ day of _____, 2024.

PRINCIPAL SURETY

_____	_____
_____	_____
[Name and Seal]	[Name and Seal]
_____	_____
[Title]	[Title]
_____	_____
[Address]	[Address]
_____	_____
[Phone]	[Phone]……
Attest:_____	Attest:_____

The rate of the Bond is _____% of the first $_____ and _____% for the next $_____. The total premium for this Bond is $_____.

TRANSACTION AGREEMENT 3

PROJECT LABOR AGREEMENT

ATTACHMENT 5
TO
ADDENDUM 2 TO RFP 2024-01

SITE VISIT AND MEETING ATTENDANCE LIST

Attached hereto is a list of the parties who attended the Site visit and meeting that Rockland Green held on August 7, 2024

Rockland Green/ RCSWMA
RFP # 2024-01 For The Build-Out Of A New Animal Shelter
Mandatory Site Visit 10:00 a.m.

Contact Name & Title	Company	Phone Number & E-mail
Terry Quinonni	Rockland & Green	
[illegible]	Rockland Green	
[illegible] F Rodriguez	ACS	347-607-8919 JesusRodriguez@acssystem[illegible]
Jeremy Apotheker	Rockland Green	
Paul Gladysz	BDA Architecture	
Joseph Furtado	Joe Lombardo P.E.H	joe@josephlombardo.com 845-357-6537
Jimmy John	A&J Const of NY, Inc	JIMMYJOHNP1@GMAIL.com
M. Sandhu	Olympic contracting	Westh22840@aol.com
Bhandari K.	Neelam Const	INFOroofUSA@gmail.com

Joe Piazza	Piazza Inc	914·741·4435 Frances@Piazzabrothers.com
Bill Winchester	HUSH ELECTRIC	WINCHESTERW@HUSHCORP.com
Tony Cimahosky	KEY CONST.	TCIMAHOSKY@CONTACTKCS.COM
Al Torreggiani	Key Constr	adte contactkcs.com
YUGSRESTHA DAS	OCS INDUSTRIES, INC.	ydas@ocsindustries.com estimating@ocsindustries.com
Noel Vaz	North Star Corp	Infocleanusa@gmail.com
Keith Ackerson	Icon Const. Gr. Inc.	KACKERSON@iconcg.hc.com
PETER GIFFORD	ANDRON CONST. CORP	914-301-9113 PGIFFORD@ANDRONCC.COM
JIM PONDERLY	NORCO CONSTRUCTN	917-572-6663 JAMES@NORCONY.COM

Sign-In Sheet
Rockland County Solid Waste Management Authority d/b/a Rockland Green
Pre-Bid-RFP-2024-01-THE BUILD-OUT OF A NEW ANIMAL SHELTER
August 7, 2024 @ 11AM

Name	Company	e-mail/ phone number
Mark Pukhovich	Worth Construction	chiefestimator@worthconstruction.com
Jeff Heath	EDR	jheath@edrdpc.com
Ty Stein	E-J Electric Installation Co.	tstein@ej1899.com
Chad Winter	Andron Construction	CaWinter@androncc.com
Robert McCarthy	Hevesi & Co.	RMccarthy@hevesiandcompany.com
Sanjiv Patel	K G Construction Services	SPatel@kgconstruction.net
Jacob Jordan	Butler Construction	Estimating@butlerconstructiongroup.com 716-374-3055
Paul Imbriale	EW Howell Co., LLC	pimbriale@ewhowell.com

ATTACHMENT 6
TO
ADDENDUM 2 TO RFP 2024-01

REFORMATTED PROPOSAL FORMS 3-5

Rockland Green hereby provides reformatted Proposal Forms 3-5 to the RFP (Proposal Form 3: Qualifications Form, Proposal Form 4: Affidavit of Non-Conclusion, and Proposal Form 5: Disclosure Affidavit)
Proposers must submit these reformatted Proposal Forms with their Proposals.
All other Proposal Forms remain unchanged.

PROPOSAL FORM 3
QUALIFICATIONS FORM

Contractor and all Subcontractors must complete this Qualifications Form in its entirety. Failure to complete and submit this Qualifications Form may result in the Contractor being deemed non-responsive and, consequently, not eligible to participate further.

A. General Information

1. Company Name: _____

2. Address: _____

3. Telephone: _____

4. Contact Person: _____

Contact person's contact information:

Title: _____

Telephone Number: _____

Fax Number: _____

Email address: _____

5. Type of Organization (e.g., a corporation; limited liability company; joint venture; partnership; and individual): _____

6. Name of Parent Company, if any: _____

7. Name of Affiliate Companies, if any: _____

8. Identity of Joint Venture Partners, if any: _____

9. Financial References: _____

10. New York Surety: _____

PROPOSAL FORM 3 (Continued)
QUALIFICATIONS FORM

B. Business Information

1. Brief history of Company (attach additional sheets as necessary):
_____
_____

2. Number of Years in Business: _____Years

3. Annual Value of contracting work (Range): $_____

4. Value of contracts normally accepted: Minimum_____ Maximum _____

5. Current Backlog: _____

6. Number of Employees (Range). _____

7. Type of work (approximate): Industrial _____ % Commercial_____ % Residential_____ %

8. Do you hold a license for the work (as the work requires) † Yes † No † N/A

9. Labor relations: Open Union - If Union, local or national agreement? _____

10. Name and address of all partners, key shareholders, principals and/or owners:_____
_____
_____

11. Has Company ever failed to complete any contract awarded to it? _____

If so, where and why for each contract not completed on time:
_____
_____

12. Has any officer or partner of Company ever been an officer or partner of some other organization that failed to complete a contract? _____

PROPOSAL FORM 3 (Continued)
QUALIFICATIONS FORM

13. If yes to #12, state name of individual, other organization, reason, and bonding company: _____

14. In what other lines of business is Company directly or indirectly involved? _____
_____

15. With what individual or entities have you been associated as partner or otherwise during the past five (5) years? _____
_____

16. Describe the principal and any secondary nature of your current business: _____
_____

17. State the length of time you have been in that business under your present name and identify all other names under which you have done business: _____
_____

18. Has any individual, partner, shareholder, principal, owner or Affiliate of your firm been the subject of administrative or judicial action for an alleged violation of state or federal laws or regulations? If so state the details and disposition. _____
_____

19. Are you, your partners, joint venturers, parent corporation or subsidiaries a party to any legal actions that may be relevant to your performance of the obligations described in the Proposal? If so, identify these actions: _____
_____

20. Have you, any partner, key shareholder, principal, owner or Affiliate of your firm been the subject of any criminal conviction(s) indictment(s) or investigation(s)? If so, state the details: _____
_____

21. List any and all civil penalties, judgments, consent decrees or other sanctions within the last five (5) years, as a result of a violation of any law, rule, regulation or ordinance in connection with its business activities, by the Company, any Affiliate of the Company, or any key shareholder, officer or director of the Company or any Affiliate thereof. _____
_____

PROPOSAL FORM 3 (Continued)
QUALIFICATIONS FORM

22. List any and all current investigations, indictments or pending litigation by any Federal, State or local jurisdiction of the Company, any Affiliate of the Company or any key shareholder, officer or director of the Company or any Affiliate thereof.

_____

_____

23. List any and all actions occurring within the last five (5) years which have resulted in revocation or suspension of any permit or authority to do business in any Federal, State or local jurisdiction, by the Company, any Affiliate of the Company, or any key shareholder, officer or director of the Company or any Affiliate thereof.

_____

_____

24. List any and all actions occurring in the past five (5) years that have resulted in the barring from public bidding by the Company, any Affiliate of the Company, or any key shareholder, officer or director of the Company or any Affiliate thereof._____

_____

25. List any bankruptcy proceedings in the past five (5) years by the Company, any Affiliate of the Company, or any shareholder, officer or director of the Company or any Affiliate thereof._____

_____

26. Are there any judgments, claims, arbitration proceedings or suits pending, current, or outstanding against your organization or its officers? † Yes † No

27. Has your organization filed any lawsuits or requested arbitration with regard to construction contracts within the last five years? † Yes † No

C. Safety Information

28. Workers Compensation Employer Modification Rate for current year and three previous years.

_____ 2024 _____ 2023 _____ 2022 _____2021

29. If you keep OSHA 300 logs please attach a copy of the three most recent years of OSHA 300 logs.

30. Total Recordable Incident Rate (TRIR Rate) for current year and three previous years.

_____ 2024 _____ 2023 _____ 2022 _____2021

PROPOSAL FORM 3 (Continued)
QUALIFICATIONS FORM

31. Company Safety Contract:_____

32. Has your company been cited with any regulatory (EPA, OSHA, DOH, etc.) citations, violations, or fines within the past three years? (If Yes, then include a copy of the actual citation and provide a detailed explanation of violation with final findings. Attach additional pages as needed.)

    † Yes

    † No

33. Do you have a Health & Safety Orientation Program for new hires?

    † Yes

    † No

34. Do you hold daily/weekly Health & Safety meetings?

    † Yes † No

35. Do you have a Substance Abuse and Firearms Policy in effect? † Yes † No

36. If you use a subcontractor are they required to adhere to your company's safety policies and practices?

    † Yes † No

37. Does your company meet the Project Insurance Requirements? † Yes † No

    If No, then why not?

    _____

The undersigned warrants the truth and accuracy of all statements and answers herein contained. Include additional sheets if necessary.

_____ _____
Authorized Signature Date

_____
Name & Title

PROPOSAL FORM 3 (Continued)
QUALIFICATIONS FORM

D. Financial Information (To be signed before a Notary Public)

Attach financial statements, prepared on an accrual basis, in a form which clearly indicates the Company's assets, liabilities and net worth over the most recent three (3) year period or as many years as your firm has been in business if less than three (3) years.

Dates of financial statements: _____

Name(s) of firms(s) preparing statements: _____

Dated this ___ day of _____, 20___

_____
(Print or Type Name of Company)

By:_____

Title:_____

_____ being duly sworn, deposes and says that the financial statement(s) referenced above are a true and accurate statement of Company's financial condition as of the date hereof; and all of the foregoing qualification information is true, complete and accurate.

Sworn to before me this _____ day of _____, _____

_____
Notary Public

PROPOSAL FORM 4
AFFIDAVIT OF NON COLLUSION

NAME OF PROPOSER:_____

BUSINESS ADDRESS:_____

E-MAIL ADDRESS:_____

CERTIFICATION AND SIGNATURE FORM

I hereby attest that I am the person responsible within my firm for the final decision as to the prices(s) and amount of this Proposal or, if not, that I have written authorization, enclosed herewith, from that person to make the statements set out below on his or her behalf and on behalf of my firm.

I further attest that:

1. The price(s) and amount of this proposal have been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition with any other contractor, proposer or potential proposer.
2. Neither the price(s), nor the amount of this proposal, have been disclosed to any other firm or person who is a proposer or potential proposer on this project, and will not be so disclosed prior to proposal opening.
3. No attempt has been made or will be made to solicit, cause or induce any firm or person to refrain from proposing on this project, or to submit a proposal higher than the proposal of this firm, or any intentionally high or non-competitive proposal or other form of complementary proposal.
4. The proposal of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from any firm or person to submit a complementary proposal.
5. My firm has not offered or entered into a subcontract or agreement regarding the purchase of materials or services from any other firm or person, or offered, promised or paid cash or anything of value to any firm or person, whether in connection with this or any other project, in consideration for an agreement or promise by any firm or person to refrain from proposing or to submit a complementary proposal on this project.
6. My firm has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any firm or person, and has not been promised or paid cash or anything of value by any firm or person, whether in connection with this or any project, in consideration for my firm's submitting a complementary proposal, or agreeing to do so, on this project.
7. I have made a diligent inquiry of all members, officers, employees, and agents of my firm with responsibilities relating to the preparation, approval or submission of my firm's proposal on this project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, act or other conduct inconsistent with any of the statements and representations made in this affidavit.

The person signing this proposal, under the penalties of perjury, affirms the truth thereof.

_____
Signature

_____
Name & Company Position

_____
Company Name

_____
Date Signed

SWORN TO BEFORE ME THIS

_____ DAY OF _____ 2024

_____
NOTARY PUBLIC

PROPOSAL FORM 5
DISCLOSURE AFFIDAVIT

(Proposer must sign this form before a Notary Public)

STATE OF NEW YORK)

) ss

COUNTY OF _____)

I, _____,_____
(NAME) (TITLE - Officer, Partner or Principal)

being duly sworn depose and swear under the penalties of perjury:

1. That, in connection with the Proposal in response to the Request for Proposals for Build-Out of a New Animal Shelter located at 427 Beach Road in Haverstraw, NY no other person will have any direct or indirect interest in this Proposal except:

   _____
   (In case of corporations, all officers of the corporation and stockholders owning more than 5% of the corporation stock must be listed. Use attached sheet if necessary.)

2. That _____related to any officer
   (I am not) (none of the officers or stockholders are)

   or employee of Rockland Green except _____

3. There is not any State or local officer or employee or a member of Rockland Green interested in such application.

_____
Signature, Name and Title

Sworn to before me this _____ day of _____, _____

_____
Notary Public

Site Work Technical Specifications
For
Rockland Green
RFP 2024-01: Build-Out of a New Animal Shelter
(RG C.A.R.E.S.)
Haverstraw, New York

PREPARED BY:

Environmental Design & Research, Landscape Architecture,
Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202

2024

TABLE OF CONTENTS

SITE TECHNICAL PROVISIONS

Section	Title	Page
DIVISION 3 – CONCRETE		
03 #000	Cast-in-Place Concrete (Retaining Wall)	1 thru 10
DIVISION 31 – EARTHWORK		
31 2305	Subgrade Preparation	1 thru 4
31 2310	Excavation	1 thru 3
31 2319	Dewatering	1 thru 4
31 2325	Backfill	1 thru 6
31 2327	Geotextiles for Earthwork	1 thru 5
31 2230	Compaction	1 thru 5
31 2500	Erosion and Sediment Controls	1 thru 7
DIVISION 32 – EXTERIOR IMPROVEMENTS		
32 1216	Asphalt Paving	1 thru 10
32 1313	Concrete Paving	1 thru 12
32 1723	Pavement Markings	1 thru 3
32 1726	Tactile Warning Surfacing	1 thru 4
32 9200	Turf and Grasses	1 thru 6
DIVISION 33 – UTILITIES		
33 4200	Stormwater Conveyance	1 thru 5

CONTRACT DRAWINGS

Drawing No.	Drawing Title
CG-001	Notes, Abbreviations, Drawing List, and Legend
C-100	Existing Site Plan
C-101	Site Removals Plan
C-102	Site Plan
C-103	Drainage Plan
C-201	Erosion and Sediment Control Plan
C-601	Erosion Control Details
C-602	Civil Site Details I
C-603	Civil Site Details II
C-604	NYSDOT Pedestrian Facilities and ADA Details
CL-101	Exterior Parking Lighting Plan
CS-101	Cast-in-Place Concrete Retaining Wall

SECTION 033000

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.

C. Concrete reinforcement.

D. Joint devices associated with concrete work.

E. Miscellaneous concrete elements, including equipment pads and equipment pits.

F. Concrete curing.

1.02 REFERENCE STANDARDS

A. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).

C. ACI 301 - Specifications for Structural Concrete; 2016.

D. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.

E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

F. ACI 305R - Guide to Hot Weather Concreting; 2010.

G. ACI 306R - Guide to Cold Weather Concreting; 2016.

H. ACI 308R - Guide to External Curing of Concrete; 2016.

I. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2014 (Errata 2018).

J. ACI 347R - Guide to Formwork for Concrete; 2014, with Errata (2017).

K. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2020.

L. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2018a.

M. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.

N. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.
O. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2020.

P. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2020.

Q. ASTM C150/C150M - Standard Specification for Portland Cement; 2020.

R. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2016.

S. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2016.

T. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).

U. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete; 2017a.

V. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019.

W. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2019.

X. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2018.

Y. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.

Z. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017.

1.03 SUBMITTALS

A. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

B. Mix Design: Submit proposed concrete mix design.

C. Test Reports: Submit a report for each test or series of tests specified.

1.04 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

1. Maintain one copy of each document on site.

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.

B. Form Materials: Proposer's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.

1. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.

2. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).

1. Type: Deformed billet-steel bars.

2. Finish: Unfinished, unless otherwise indicated.

B. Steel Welded Wire Reinforcement (WWR): Plain type, ASTM A1064/A1064M.

1. Form: Flat Sheets.

2. WWR Style: As indicated on drawings.

C. Reinforcement Accessories:

1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch.

2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

3. Provide galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches of weathering surfaces.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type III – High Early Strength Cement.

1. Acquire cement for entire project from same source.

B. Fine and Coarse Aggregates: ASTM C33/C33M.

1. Acquire aggregates for entire project from same source.

2. Coarse aggregates shall be strong, clean crushed limestone complying with ASTM C33/C33M, size no. 67 provided from one source.

3. Sand: Clean sharp, natural sand, graded in accordance with ASTM C33.

C. Fly Ash: ASTM C618, Class C or F.
D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Air Entrainment Admixture: ASTM C260/C260M.

C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.

D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.

1. Manufacturers:

a. Euclid Chemical Company; PLASTOL 6420: www.euclidchemical.com/#sle.

E. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.

1. Manufacturers:

a. Euclid Chemical Company; ACCELGUARD 80: www.euclidchemical.com/#sle.

F. Accelerating Admixture: ASTM C494/C494M Type C.

1. Manufacturers:

a. W. R. Meadows, Inc; Hydraset: www.wrmeadows.com/#sle.

G. Retarding Admixture: ASTM C494/C494M Type B.

H. Water Reducing Admixture: ASTM C494/C494M Type A.

2.06 BONDING AND JOINTING PRODUCTS

A. Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.

1. Material: ASTM D1751, cellulose fiber.

2. Manufacturers:

a. W. R. Meadows, Inc; Fiber Expansion Joint Filler with Snap-Cap: www.wrmeadows.com/#sle.

b. or approved equal.

B. Epoxy Bonding Adhesive with integrated Anti-Corrosion Primer: ASTMC 881, three-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2. Manufacturers:

a. Sika, Corp; Sika Armatec-110 EpoCem

b. or approved equal.

2.07 CURING MATERIALS

A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

B. Moisture-Retaining Sheet: ASTM C171.

1. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch.

2. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard.

C. Water: Potable, not detrimental to concrete.

2.08 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

C. Normal Weight Concrete:

1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days as follows:

a. All general uses not otherwise specified: 5,000 psi at 28 days

2. Water-Cement Ratio:

a. General Use: 0.42 max

3. Total Air Content: as determined in accordance with ASTM C173/C173M.

a. General Use: 6.0% (+/- 1.5%)

4. Maximum Slump: 5 inches (+/-1") inches.

5. Maximum Aggregate Size: 3/4 inch.

2.09 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.

B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

C. All concrete shall be mixed until there is uniform distribution of materials and shall be discharged completely before mixer is recharged.

D. If concrete is not placed within 90 minutes after batched or if the concrete has become partially set, the concrete will be rejected and shall be disposed of off-site.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent.

C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent according to bonding agent manufacturer's instructions.

E. In locations where new concrete is doweled into hardened concrete, drill holes in existing concrete, and utilize chemical adhesive system.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Place concrete for floor slabs in accordance with ACI 302.1R.

C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

D. Ensure reinforcement, inserts, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

F. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.

2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

G. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

H. Deposit and consolidate concrete for slabs in a continuous operation until placement of a panel or section is complete.

1. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Maintain reinforcement in position on chairs during concrete placement.

3. Screed slab surfaces with a straightedge and strike off to correct elevations.

4. Slope surfaces uniformly to drains where required.

5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

I. Cold Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

K. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Proposer's option.

2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.05 SLAB JOINTING

A. Locate joints as indicated on drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.

3.07 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch (6 mm) or more in height. Provide finish as follows:

1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.08 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

1. Normal concrete: Not less than seven days, or approved by Engineer.

C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.

D. Surfaces Not in Contact with Forms:

1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days, or approved by Engineer, by water ponding, water-saturated sand, water-fog spray, or saturated burlap.

a. Ponding: Maintain 100 percent coverage of water over floor slab areas, continuously for 4 days.

b. Spraying: Spray water over floor slab areas and maintain wet.

c. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.

2. Final Curing: Begin after initial curing but before surface is dry.

a. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges.

b. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.09 FIELD QUALITY CONTROL

A. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

B. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

C. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure (6) 6" diameter cylinders or (9) 4" diameter cylinders. Break, 1 set (2 cylinders if 6" or 3 cylinders if 4") of cylinders at 7 days, 1 set at 28 days and remaining set for reserve. Obtain test samples for every 50 cubic yards or less of each class of concrete placed.

D. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

E. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

F. Perform one air content test for each set of test cylinders taken following procedures of ASTM C231 or ASTM C173.

3.10 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Engineer and Rockland Green within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Engineer. The cost of additional testing shall be borne by Proposer when defective concrete is identified.

D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.

E. Patching: Repair defective areas and fill form-tie holes and similar defects in accordance with Chapter 9 of ACI 301. Where, in the opinion of the Engineer, surface defects such as honeycomb occur, repair the defective areas as directed by the Engineer.

3.11 PROTECTION

A. Do not permit traffic or backfill over or against concrete surfaces until fully cured and cylinders indicate design strength has been achieved.

END OF SECTION

SECTION 312305

SUBGRADE PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Subgrade preparation, below either pavement system or gravel access roads.
2. Furnishing natural soils.
3. Furnishing select borrow material.
4. Temporary drainage.
5. Compaction.
6. Proof rolling.
7. Removal and replacement of unacceptable materials.
8. Grading.
9. Install geotextile fabric.

1.2 REFERENCES

A. ASTM D698 - Moisture/Density Relations of Soil/Aggregate Mixtures Using 5.5-Lb. Rammer and 12-Inch Drop

B. ASTM D1557 - Moisture/Density Relations of Soils and Soil/Aggregate Mixtures Using 10-Lb. Rammer and 18-Inch Drop

C. NYSDOT - Manual of Uniform Traffic Control Devices

1.3 DEFINITIONS

A. “Subgrade” shall be defined as the foundation layer of natural soils or select material that supports the pavement or gravel access road layers.

1.4 PERFORMANCE AND TESTING REQUIREMENTS

A. Compaction of subgrade shall meet the requirements for compaction as stated in Table 1 of Section 312330 - Compaction.

1. Compaction curves shall be developed for each type of subgrade material when “in-place density” tests are required by the Engineer.

2. The cost of failed compaction tests will be reimbursed by the Proposer to Rockland Green.

1.5 SUBMITTALS

A. Submit under Contract Provisions – Submittal Procedures.

B. Granular Materials - Refer to Section 312325 - Backfilling.

1.6 REGULATORY REQUIREMENTS

A. Conform to regulatory agencies having jurisdiction over the work.

B. Occupational Safety and Health Administration Act (OSHA) of 1970 and its amendments and regulations or to the New York State Industrial Code Rule 23 entitled, “Protection in Construction, Demolition and Excavation Operations” as issued by New York State Department of Labor, Board of Standards and Appeals.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Provide erosion and sediment controls in accordance with NY State Guidance and the Erosion and Sediment Control Drawing to prevent debris, stones, and silt from entering drainage systems.

1.8 FIELD MEASUREMENTS

A. Prior to start of construction, verify by field measurements that existing conditions are as shown on Drawings, notify Engineer of specific differences.

B. Prior to start of construction, where required, verify by exploratory excavations that existing underground utility locations and elevations are as shown on the Drawings or to confirm marked location and elevation of underground utilities by the Underground Utility Protection Organization applicable to the project location and protect utilities in accordance with requirements of this contract.

1.9 COORDINATION

A. Coordinate field work under provisions of Section 013100 and the terms and conditions of this Request for Proposal.

B. Coordinate work with local utility companies (private and municipal), as applicable.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Natural on-site soil, if suitable, shall be utilized if approved by the Engineer.

B. Granular materials, if required, shall be as specified in Section 312325 – Backfill or shown on the drawings. The type, size and quantity of granular material shall be that required to prepare a compacted subgrade approved by the Engineer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine spaces to be filled beforehand and remove all unsuitable materials and debris including sheeting, forms, trash, stumps, plant life, etc.

B. Inspect backfill and fill materials beforehand and remove all roots, vegetation, organic matter, or other foreign debris.

C. No backfill or fill material shall be placed on frozen ground nor shall the material itself be frozen or contain frozen soil fragments.

D. Spaces to be filled shall be free from standing water so that placement and compaction of the fill materials can be accomplished in “dry” conditions.

E. All underground utility installations, including pipes, shall be completed, backfilled and compacted prior to completion of subgrade.

F. Verify that traffic controls and erosion and sediment controls are in place.

3.2 PREPARATION

A. Temporary erosion and sediment controls shall be installed prior to start of construction.

B. Temporary surface diversion and ditches shall be constructed as necessary to remove water from the subgrade area.

1. Proposer to prevent the entrance of debris, stones, and silt from entering existing drainage systems, including the use of filter socks, screens, and other desilting methods as shown on the Erosion and Sedimentation Control Plan details.

C. Backfilled areas shall be retested at the discretion of the Engineer.

3.3 INSTALLATION

A. Construct the subgrade by cutting or filling with material as required.

1. The final subgrade surface below the roadway surface shall be fine graded, rolled and compacted to form a smooth, even surface.

B. The subgrade in fill section shall be placed in maximum 12-inch layers before compaction and compacted before the next layer is spread.

C. The subgrade surface shall drain to the road edges, be free from holes, bumps, wheel ruts and of standing water, snow, frozen material and organic materials prior to the placement of the next course.

1. Soft or otherwise unacceptable subgrade materials shall be removed and replaced with select on-site material acceptable to the Engineer.

2. Where no suitable on-site material is available, granular materials shall be installed and compacted at no cost to the Rockland Green.

3.4 FIELD QUALITY CONTROL

A. For compaction requirements, refer to Section 312330, Table 1.

B. Tolerances - The final subgrade surface shall not vary more than +1/2 inch from the design grade elevation at any location, parallel to the final road surface as defined by the total roadway thickness.

C. Proof Rolled - Prior to the placement of the next pavement course, the subgrade surface shall be proof rolled to locate areas of inadequate compaction or defections or soft or rutting areas requiring undercutting, with 8- to 10-ton pneumatic tire compactors.

1. Areas of inadequate compaction to be re-compacted.

2. If additional rolling does not correct an area of unstable condition, then this area and soft or rutted areas shall be removed and replaced with select material and compacted.

3. Where no suitable on-site material is available, granular materials shall be installed and compacted; areas inaccessible to rollers to be compacted by mechanical methods.

3.5 DUST CONTROL

A. Dust control shall be accomplished by using water, brooming, and cleaning methods.

1. Dust control shall be carried out daily.

END OF SECTION

SECTION 312310

EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavation for site structures.
2. Excavating trenches for utilities.
3. Pipe foundations and bedding.

1.2 FIELD MEASUREMENTS

A. Verify that survey benchmark and intended elevations for the work are as indicated.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 EXECUTION

A. Identify required lines, levels, contours, and datum.

B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.

C. Notify utility companies.

D. Protect above- and below-grade utilities which are to remain.

E. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.

F. Protect benchmarks, right-of-way markers, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.

G. Excavations shall be in completed in accordance with all details of applicable codes, rules, and regulations including all local, state, and federal regulations including the Occupational Safety and Health Administration (OSHA) Title 29 Code of Federal Regulations Part 1926, Subpart P - Excavations and Trenching Standards.

3.2 CLASSIFICATION OF EXCAVATED MATERIALS

A. Classifications of excavated materials are as follows:

1. Unclassified Excavation - “Unclassified excavation” shall include all material excavated within the authorized lines and grades prescribed in the Drawings. Unclassified excavation shall include “rock excavation” as well as “common excavation” as defined herein.

2. Common Excavation - “Common excavation” shall include all excavation except “rock excavation.” All unconsolidated and non-indurated material, rippable rock, loose rock, soft mineral matter, weathered rock or saprolite, and soft or friable shale which is removable with normal earth excavation equipment shall be considered “common excavation.” All boulders and detached pieces of solid rock or concrete or masonry less than 1 cubic yard in volume shall be classified as “common excavation.”

3. Rock Excavation - “Rock excavation” shall include all sound solid masses, layers and ledges of consolidated and indurated rock or mineral matter of such hardness, durability and/or texture that it is not rippable or cannot be excavated with normal earth excavation equipment.

3.3 EXCAVATING

A. Underpin adjacent structures which may be damaged by excavation work, including utilities and pipe chases.

B. Excavate subsoil required to accommodate building foundations, slabs-on-grade, paving, and site structures.

C. Machine-slope banks to angle of repose or less, until shored.

D. Excavation cut not to interfere with normal 45-degree bearing splay of foundation. Undercutting of excavation faces will not be permitted.

E. Grade top perimeter of excavation to prevent surface water from draining into excavation.

F. Hand trim excavation to required undisturbed subgrade. Remove loose matter.

G. Remove lumped subsoil, boulders, and rock under 1 cubic yard, measured by volume. Refill voids with Mix “C” concrete or compacted gravel/crushed stone.

H. Notify Engineer of unexpected subsurface conditions, or of questionable soils encountered at required subgrade elevations, and discontinue work in area until notified to resume operations.

I. Should the Proposer, through negligence or otherwise carry his excavation below the designated subgrade, granular material used for backfilling shall be spread and compacted in conformance with the requirements of Sections 312325 - Backfilling and 312330 - Compaction. The cost of this refilling operation, including any tests associated therewith, shall be borne by Proposer.

J. Stockpile excavated material to be re-used in area designated by Rockland Green on site and remove excess material not being reused from site.

3.4 DISPOSAL OF MATERIAL

A. All excavated material except reusable topsoil or reusable fill shall be classified as surplus material and disposed of off-site unless Rockland Green designates an on-site location.

B. Reuse of excavated material as on-site fill shall conform with Section 312325 - Backfilling.

3.5 FIELD QUALITY CONTROL

A. Field inspection will be performed under provisions of Section 014000 - Quality Requirements.

B. Provide for visual inspection of bearing surfaces.

3.6 PROTECTION

A. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

C. Exposed subgrade surfaces shall remain undisturbed, drained, and maintained as uniform, plane areas, shaped to receive the foundation components of the building, structure or new underground pipe.

END OF SECTION

SECTION 312315 - TRENCHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating trenches for utilities.
2. Pipe foundations and bedding.
3. Backfilling and compaction.
4. Materials

1.2 REFERENCES

A. Standard Material Specifications for gravel, sand, crushed stone and gravel-cement mixtures published by the New York State Department of Transportation (DOT).

B. Occupational Safety and Health Administration (OSHA).

1.3 SUBMITTALS

A. Submittals for granular material shall be in accordance with Section 312325 – Backfilling.

1.4 FIELD MEASUREMENTS

A. Verify that survey benchmark and intended elevations for the work are as indicated.

PART 2 - PRODUCTS

2.1 ON-SITE MATERIALS

A. On-site material shall be in accordance with Section 312325 - Backfilling.

2.2 OFF-SITE MATERIALS

A. Off-site material shall be in accordance with Section 312325 - Backfilling.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify fill materials to be used are approved.

B. Verify that all subsurface excavations for the project have been compacted, approved, and are ready for backfilling (including installation of geotextiles where required).

3.2 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Prior to start of construction, notify utility and have staked or marked all underground utilities. Utilities include water, gas, electrical, telephone, cable, storm sewer, sanitary sewers, laterals, and services. In the event such locations indicate a possible interference, or when needed to locate points of connection to existing facilities, perform exploratory excavations to determine the utilities' location and elevation. Provide the Engineer with the results of the exploratory excavations for his review. Allow the Engineer sufficient time to determine any changes required as a result of such exploratory excavations prior to start of construction.

C. Abandoned pipes and laterals shall be plugged per Contract Documents.

D. Conduct the operations such that no interruptions to the existing utility system shall occur.

E. Protect plant life, lawns, rock outcropping, and other features remaining as a portion of final landscaping.

F. Protect control points, bench marks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic. Preserve the control points as provided throughout the life of the project, and accurately replace any such point, which is damaged or moved, at Proposer's expense.

G. Cut out soft areas of subgrade not capable of in-situ compaction. Backfill with specified pipe foundation and compact to density equal to or greater than requirements for subsequent backfill material.

H. Brace walls and slabs of structures to support surcharge loads and construction loads imposed by backfilling operations.

I. Maintain a stable, dry backfill area.

J. Remove all water, snow, ice and debris from surfaces to accept fill materials and from the backfill material. No calcium chloride or other chemicals shall be used to prevent freezing.

K. Areas to receive compacted fill shall be graded to prevent ponding and to provide surface runoff.

L. Only approved backfill material shall be used.

M. Only approved geotextile fabrics shall be used.

N. Backfill operations shall be started at the lowest elevation in the area to be backfilled, and continue, in horizontal layers, upward to the limits specified.

O. Any crushed gravel stockpiles which have undergone excessive particle segregation shall be remixed.

3.3 TRENCH EXCAVATION

A. Trench widths shall be held to minimize restoration. If a prefabricated, mobile shield is utilized in lieu of conventional sheeting and bracing in trenches, the bottom of the shield shall be positioned so as to prevent disturbance of the pipe foundation material and to avoid forces which would tend to pull pipe joints apart when the shield is dragged forward.

B. Gouged openings or troughs left by the shield shall be filled with additional pipe foundation material and compacted. Installation of sheeting and bracing and use of mobile shields shall be in accordance with details of applicable safety codes, rules and regulations including applicable local, state, federal, and OSHA.

C. Excavation shall be such that a flat bottom trench of allowable width is established at the required subgrade elevation for subsequent installation of pipe foundation material.

D. If indicated on the Drawings or when required as a result of unsuitable soil conditions, trench excavation shall be carried below the required subgrade and a special backfill installed in conformance with the Contract Documents. In any event, operations shall result in stable trench walls and a stable base free from standing water, consistent with trench width requirements.

E. Bedrock, boulders and cobbles greater than 6 inches shall be trimmed back or removed on each side of the trench so that no rock protrudes within 6 inches of the installed pipe. Rock shall also be trimmed back across the bottom of the trench so that no rock, boulder or cobble protrudes within 4 inches of the installed pipe.

F. In general, trenches shall not be opened for more than 50 feet in advance of installed pipe. Excavation of the trench shall be fully completed at least 5 feet in advance of pipe laying operations. Trenches left open overnight shall be protected as specified within this section and to the satisfaction of Rockland Green. Trenches shall not be left open overnight unless prior approval is granted from Rockland Green.

3.4 EXCAVATION CLASSIFICATION

A. All material excavation shall be classified in accordance with Section 312310 - Excavation.

3.5 UNAUTHORIZED EXCAVATION

A. The Proposer shall not be entitled to additional compensation for unauthorized excavations carried beyond or below the lines and subgrades prescribed in the Contract Documents. The Proposer shall refill such unauthorized excavations at his own expense, and in conformance with the following provisions:

B. Should the Proposer, through negligence or for reasons of his own, carry excavations below the designated subgrade, backfill in accordance with Section 31 2325 - Backfilling, in sufficient quantities to reestablish the designated subgrade surface. Granular material used for backfilling shall be spread and compacted. The cost of tests associated with this refilling operation shall be borne by the Proposer.

C. If the maximum widths of pipe trenches are exceeded, the installed pipes shall be fully cradled using the specified bedding material at the Proposer's expense.

D. Excavation below subgrade which is ordered by the Engineer because the normal subgrade has been disturbed by the Proposer's operations shall be considered as unauthorized excavation.

3.6 MAINTENANCE OF EXCAVATIONS

A. All excavations shall be properly and legally maintained while they are open and exposed. Sufficient and suitable barricades, warning lights, flood lights, signs, etc., to protect life and property shall be installed and maintained at all times until the excavation has been backfilled and graded to a safe and satisfactory condition. All signs, markers, barricades shall conform to the requirements of the Manual of Uniform Traffic Control Devices. All barricades, signs and markers shall be reflectorized.

B. To maintain traffic and safety, temporary plating over trenches consisting of steel plates shall be used to temporarily bridge trench excavations. Plates shall be of size and positioned to provide adequate bearing at plate edges, shall be securely anchored, and shall be fitted in place in a manner to minimize noise when crossed by traffic. Plates shall be of sufficient thickness to safely carry heavy traffic without detrimental deflection; however, unless otherwise specified, the minimum thickness of plates shall be 1-inch.

C. Plate edges exposed to traffic shall be feathered with asphalt mix as part of trench excavation work. Work includes surveillance and adjustment of plating over trenches which shall be provided by the Proposer during non-working hours, weekends, and holidays.

3.7 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 014000 - Quality Requirements.

B. Tests and analysis of fill material will be performed in accordance with Section 312325 - Backfilling.

C. Compaction testing will be performed in accordance with Section 312330 - Compaction.

3.8 PROTECTION OF FINISHED WORK

A. Protect finished work.

B. Re-grade and re-compact disturbed fill areas subjected to vehicular traffic.

END OF SECTION

SECTION 312325

BACKFILL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Granular materials for backfilling.

2. Classification of materials.

3. Backfilling trenches for utilities.

4. Consolidation and compaction.

1.2 REFERENCES

A. ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates

B. ASTM D1556 - Density of Soil in Place by Sand-Cone Method

C. ASTM D1557 - Laboratory Compaction of Soil Using Modified Effort

D. ASTM D2922 - Density of Soil in Place by Nuclear Methods

E. ASTM D3017 - Water Content of Soil in Place by Nuclear Methods

1.3 SUBMITTALS

A. Granular Materials

1. Granular materials required for filling, backfilling, subbase, and other purposes shall be as shown on the Drawings. Prior to bidding, prospective Proposers shall familiarize themselves with the available quantities of approved on-site and off-site materials.

2. For each on-site and off-site material proposed, notify the Engineer of the source of the material and furnish to the Engineer for approval a certified gradation analysis (ASTM C136) and a Modified Compaction Test (ASTM D1557) at least 15 days prior to date of anticipated use of such material that has been tested within the last 6 months.

3. The Engineer reserves the right to inspect proposed source of off-site granular material and to order such tests of the materials as he deems necessary to ascertain its quality and graduation of particle size. The Proposer shall, at his own expense, engage an approved testing laboratory to perform such test, and submit certified test results to the Engineer. If similar tests of the material

from a particular source were performed previously (within 6 months), submit results of these tests to the Engineer for consideration.

4. No granular materials shall be used on this project for fill, backfill, subbase, or other purpose until approval is obtained from the Engineer, and only material from approved sources shall be used.

PART 2 - PRODUCTS

2.1 GENERAL

A. Approvals- All materials to be utilized on the project shall be subject to testing, examination, and the approval of the Engineer. The Engineer and Rockland Green shall determine whether a material is suitable or unsuitable for the use intended. It is the intent of these Specifications that use shall be made of existing material excavated during the construction work, provided it meets the requirements for backfill included in this section, or unless otherwise specified or indicated on the Contract Drawings. Rockland Green makes no guarantee that the existing material will meet the requirements of the specifications for use as backfill. Only when sufficient on-site suitable material does not exist, shall the Proposer import suitable material from off-site. Costs of importing off-site material for normal backfilling purposes shall be the responsibility of the Proposer.

B. Suitable Material- In general, mineral (inorganic) soil, blasted or broken rock (if it meets backfill specifications) and similar materials of natural or manmade origin, including mixtures thereof, are considered as suitable materials, as determined by the Engineer to be suitable for filling, backfilling, as a base for placement of pipe, structures, or fill, or other uses.

C. Unsuitable Material- Any material containing chunks of cinders, earth or clay, vegetable or organic matter, such as muck, peat, organic silt, roots, stumps, topsoil or sod, shale or other soft, poor durability particles that is not satisfactory for the use intended, as determined by the Engineer, is designated as an unsuitable material.

2.2 ON-SITE MATERIALS

A. Type A, Excavated Material - Material under this classification shall be derived solely from excavations necessary to construct the project to the lines and grades specified. If the excavated material on-site is approved for reuse and is suitable, it shall be used for filling or backfilling purposes. If the Proposer so elects, the Proposer may, at their own expense, substitute other types of material in place of Type A material, provided such substitution is approved in advance by the Engineer. All replaced or surplus material shall be disposed of per Specification Section 312310.

B. Type A material shall not have any larger aggregate larger than 4-inches in any dimension and shall meet the specified compaction requirement per Specification 312330. The material shall be screened to meet these requirements and any remaining material which does not shall be removed and disposed of off-site at the Proposer's expense. In no case the top 12-inches nearest the final subgrade below the topsoil layer or pavement in local roads shall contain any aggregate larger than 2-inches.

2.3 OFF-SITE MATERIALS

A. Within the following specifications where grain size distribution requires a maximum of 10 percent or less material capable of passing the #200 mesh sieve, the percentage of material finer (than the #200 sieve) by weight shall be determined by wet screening in accordance with ASTM D1140. It is the intent of the specifications to allow the use of granular materials from local suppliers. Material specifications shall conform to the requirements of the New York State Department of Transportation, (NYSDOT) and shall conform to the latest NYSDOT Standard Specification.

B. No crushed stone or run-of-crusher material shall be used for this project until approval is obtained from the Engineer, and only material from approved sources shall be used. A certified sieve analysis from the supplier shall be submitted for the Engineer's approval prior to the use of any materials specified in this specification section.

C. Required Materials

1. Trench backfill (Green Areas Only) Above Pipe Backfill Material– Type A

2. Pavement subbase - NYSDOT subbase course 733-0402, Type 2.

3. Trench special bedding - NYSDOT 733-0201, Type 3A stone.

4. Pipe Bedding - NYSDOT subbase course 733-0402, Type 2.

5. Backfill adjacent to, and under, structures - NYSDOT subbase course 733-0402, Type 2.

6. Impervious Fill: Naturally occurring or manufactured mixture of clayey gravel and sand capable of compacting to a dense state.

a. Maximum Particle Size: 1 inch

Sieve Size	Percent Passing by Weight
¾ inch	50-100
No. 4	40-90
No. 40	30-85
No. 200	25-75

b. Plasticity index of portion finer than #200 sieve greater than 15 and less than 20.

PART 3 - EXECUTION

3.1 PIPE FOUNDATIONS

A. All pipes, fittings, or specials which are to be installed in the open trench excavation shall be properly bedded in, and uniformly supported on pipe foundations of the various types as specified and shown on the Drawings. Flat-bottom trenches of required width shall be excavated to the necessary depth shown on the Drawings and maintained in accordance with this section prior to installing the foundation. Trenches shall be dewatered and all work performed in a dry trench and free of rocks.

B. Bedding material shall be spread in maximum of 8-inch layers to the midpoint (spring line) of the pipe and each layer shall be compacted until the required total depth of the bedding has been built up. The

Proposer shall perform his bedding operations with care to maintain line and grade. Compaction shall achieve a modified proctor value of 95%.

C. The pipe foundation above the midpoint of the pipe shall be spread and then compacted after foundation is 24-inches above the top of the pipe.

D. Type I - Normal Soil Conditions - Unless shown otherwise in the Drawings, all pipe shall be supported on Type I foundation. The trench shall be excavated 4 inches deeper than the bottom of the pipe. Acceptable bedding as described in the Contract Specifications shall be furnished, placed and compacted in the trench for its full width such that, after the pipe has been uniformly bedded in this material, the required minimum depth of material remains between pipe and undisturbed trench bottom. Suitable depressions shall be provided in the trench bottom to permit adequate bedding of bells, couplings, or similar projections. The bedding shall extend upward to be 24-inches over the top of the pipe. Minimum width of pipe foundation shall be outside diameter of pipe plus 2 feet 0 inches. The pipe centerline shall be longitudinally centered within the pipe bedding per the detail.

E. Type II - Moderately Unstable Soil Conditions - When specifically called for on the Drawings, or when ordered by the Engineer as existing conditions dictate, and as approved by the Engineer, the pipe shall be supported on Type II foundation. The foundation shall be installed where a suitable supporting soil or rock stratum occurs within 2 feet, more or less of the bottom of the pipe. The trench shall be excavated to the depth necessary to reach the suitable supporting stratum. Install a reinforcing geotextile in accordance with Section 02420 - Backfilling, followed by trench special bedding which is then furnished and placed in the trench for its full width. The material shall be spread in 12-inch layers and each layer shall be compacted to achieve a modified proctor value of 95%. Trench special bedding shall extend from the supporting stratum up to the bottom of the Type I pipe foundation.

F. Type III – Unstable Soil Conditions – As conditions dictate, and as determined by the Engineer, the pipe bedding shall be supported on a Type III foundation. The trench shall be excavated to the depth necessary to reach the suitable supporting stratum. Backfilling with a loosely compacted NYSDOT 703-0201 Type 3A stone bedding material shall be provided. This shall be followed by the bedding material as shown in the Type II and Type I pipe foundations.

3.2 GENERAL BACKFILLING REQUIREMENTS

A. Follow requirements of 312330 - Compaction.

B. Backfilling shall be started as soon as practicable and after structures or pipe installations have been completed and inspected, and concrete has acquired a suitable degree of strength. Backfilling shall be carried on expeditiously thereafter. Backfill shall be started at the lowest section of the area to be backfilled. Natural drainage shall not be obstructed at any time.

C. Backfill spaces shall be inspected prior to backfilling operations and all unsuitable materials, including sheeting, bracing forms and debris, shall be removed. No backfill shall be placed against foundation walls on structural members unless they are properly shored and braced or of sufficient strengths to withstand lateral soil pressures.

D. No backfill material shall be placed on frozen ground nor shall the material itself be frozen or contain frozen soil fragments when placed. No calcium chloride or other chemicals shall be added to prevent freezing. Material incorporated in the backfilling operation which is not in satisfactory condition shall be subject to rejection and removal at the Proposer's expense.

E. If the Proposer fails to stockpile and protect on-site excavated material acceptable for backfill, then the Proposer shall provide an equal quantity of acceptable off-site material at no expense to Rockland Green.

F. Remove surplus backfill material from site.

G. Backfill areas to contours, grades, and elevations shown on the drawings, using unfrozen materials.

H. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

I. Backfill material shall be inspected prior to placement and all roots, vegetation, organic matter, or other foreign debris shall be removed.

J. Backfill material shall not be placed when moisture content is more than two percent above optimum or is otherwise too high to allow proper compaction. When material is too dry for adequate compaction, water shall be added to the extent necessary.

K. Hydraulic compaction by ponding or jetting is not permitted.

L. Employ a placement and compaction method consistent with Section 312330 - Compaction, that does not disturb or damage adjacent walls, drainage systems, damp proofing, waterproofing, protective coverings, utilities in trenches, underground conduits, or tanks.

M. Maintain optimum moisture content of backfill materials to attain required compaction density.

N. Rough grade all backfilled and filled areas to meet subsequent topsoiling or paving requirements. Make grade changes gradually. Blend slopes into level areas.

O. Remove surplus backfill materials from site.

3.3 PERIODIC CLEAN-UP AND BASIC RESTORATION

A. Perform clean-up work on a regular basis and as frequently as required. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished if partially completed facilities must remain incomplete for some time due to unforeseen circumstances.

B. Upon failure of the Proposer to perform periodic clean-up and basic restoration of the site, Rockland Green may, upon five days prior written notice to the Proposer, without prejudice to any other rights to remedies of the Rockland Green, cause such work for which the Proposer is responsible to be accomplished to the extent deemed necessary by the Contract Documents, and all costs resulting therefrom shall be charged to the Proposer and deducted from the amounts of money that may be due him.

3.4 EXAMINATION

A. Verify fill materials to be used are acceptable.

B. Verify that all subsurface installations for the project have been inspected and are ready for backfilling.

3.5 PREPARATION

A. Generally, compact subgrade to density requirements for subsequent backfill materials.

B. Cut out soft areas of subgrade not capable of in situ compaction. Compact soil to a density equal to or greater than the requirements for subsequent backfill material.

3.6 TOLERANCES

A. Top Surface of Backfilling Under Pavement Subgrade - ±1 inch from required elevations.

B. Top Surface of Backfilling Under Paved Areas- ±1/2 inch from required elevations.

C. Top Surface of General Backfilling - ±1 inch from required elevations.

3.7 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 014000 - Quality Requirements.

B. Tests and analysis of fill material will be performed in accordance with ASTM D1557 and with Section 312330 - Compaction.

C. Compaction testing will be performed in accordance with ASTM D1556, ASTM D2922, and with Section 014000 - Quality Requirements.

D. If tests indicate work does not meet specified requirements, remove work, replace, and retest at no cost to Rockland Green.

3.8 PROTECTION OF FINISHED WORK

A. Protect finished work.

B. Regrade and re-compact fills subjected to vehicular traffic.

END OF SECTION

SECTION 312327

GEOTEXTILES FOR EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cushion geotextile.

2. Reinforcement geotextile.

1.2 REFERENCES

A. Quality Control Testing Standards

B. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

C. ASTM D4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles

D. ASTM D4595 - Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method

E. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

F. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile.

G. ASTM D6241 - Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

H. ASTM D4873 - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples.

I. ASTM D-5261 - Standard Test Method for Measuring Mass Per Unit Area of Geotextiles.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 SUBMITTALS

A. Product Data:

1. Submit product data sheet for each geotextile proposed for use on this project.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Geotextiles labeling, shipment, and storage shall follow ASTM D4873. Product labels shall clearly show the manufacturer or supplier name, style name, and roll number.

B. Each geotextile roll shall be wrapped with a material that will protect the geotextile from damage due to shipment, water, sunlight, and contaminants.

C. During storage, geotextile rolls shall be elevated off the ground and adequately covered to protect them from the following: site construction damage, precipitation, extended ultraviolet radiation including sunlight, chemicals that are strong acids or strong bases, flames including welding sparks, excess temperatures, and any other environmental conditions that may damage the physical property values of the geotextile.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Cushion Geotextile

1. Shall be needle-punched, nonwoven geotextile specifically designed for cushion applications.

2. Shall be composed of polyester and/or polypropylene polymers.

3. Documentation shall be provided by the manufacturer indicating that each roll was inspected at the point of manufacturing for the presence of broken needles using an in-line metal detector

4. Shall meet the criteria listed in Table 312327-1.

B. Reinforcement Geotextile

1. Shall be a woven geotextile specifically designed for reinforcement applications.

2. Shall be composed of polyester and/or polypropylene polymers.

C. Shall meet the criteria listed in Table 312327-1.

TABLE 312327-1

MINIMUM ACCEPTANCE CRITERIA GEOTEXTILE

Test Description	Test Method	Criteria
Separation		
Mass per unit area	ASTM D5261	≥8 oz/SY
Apparent opening size	ASTM D4751	≤No. 70 sieve
Puncture resistance	ASTM D6241	≥110 lb.*
Tensile strength	ASTM D4632	≥160 lb.*
Trapezoid tearing strength	ASTM D4533	≥80 lb*
Permittivity	ASTM D4491	≥1.1 cm/sec
Reinforcement		
Mass per unit area	ASTM D5261	≥8 oz/SY
Puncture resistance	ASTM D4833	≥150 lb.
Tensile strength	ASTM D4595	≥160 lb.*
Trapezoid tearing strength	ASTM D4533	≥120 lb.*
Apparent opening size	ASTM D4751	≤40 sieve
Cushion		
Mass per unit area	ASTM D5261	24 oz/SY
Puncture Resistance	ASTM D4833	225 lb.

*Minimum acceptance criteria shall apply to both the machine direction (MD) and the cross machine direction (XMD).

2.2 PRODUCTS

A. Separation Geotextile - The following is a list of materials that meet the specifications in this section:

1. Carthage Mills FX-80 HS.

2. Propex Geotex 861.

3. Skaps GE 180.

4. Or equal.

B. Reinforcement Geotextile - The following is a list of materials that meet the specifications in this section:

1. TenCate Mirafi FW 403.

2. Propex Geotex 4x4.

3. Carthage Mills FX-400MF.

4. Or equal.

C. Cushion Geotextile - The following is a list of materials that meet the specifications in this section:

1. TenCate Mirafi S2400

2. Or equal.

PART 3 - EXECUTION

3.1 INSPECTION

A. The Contractor shall inspect all geotextile upon delivery and verify that the proper materials and quantities have been supplied.

B. The Contractor shall inspect the subgrade for protrusions or other unacceptable conditions prior to installation of geotextiles.

C. The Contractor shall continuously inspect needle-punched geotextiles during deployment for broken needles remaining from needle-punching operations.

3.2 PREPARATION

A. Subgrade shall be prepared as indicated in the specifications.

3.3 PROTECTION

A. Protect all geotextile materials from damage due to exposure to sunlight, dirt, dust and other hazards.

B. Maintain the protective wrapping on geotextile rolls at all times.

C. The geotextiles shall be covered after installation within a 10-day period.

D. During spreading operations of backfill, a minimum depth of 12 inches of aggregate shall be maintained over the geotextiles when possible. Construction equipment shall not operate directly on the geotextile.

3.4 INSTALLATION

A. Geotextile rolls shall be positioned as required and unrolled.

B. When placed on prepared subgrades, geotextile shall be overlapped a minimum of 1.0 feet on all edges.

C. When geotextile is placed in trenches, the material shall be overlapped a minimum of 1 foot over the top of the trench. Longitudinal seams between adjacent rolls of material shall be overlapped a minimum of 2 feet.

D. Geotextile rolls shall be cut and laid flat such that buckling of the roll does not occur.

E. If geotextiles are damaged during any phase of construction or installation, a new piece of the same type shall be cut and placed over the damaged area with a 2-foot minimum overlap and sewn.

F. Aggregate shall be spread in the direction of overlap wherever possible.

3.5 MAINTENANCE

3.6 Maintain geotextile rolls until backfilling operations have completed one lift.

END OF SECTION

SECTION 312230

COMPACTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Compaction requirements and test methods.

2. Compact all subgrades, foundations, embankments, trench backfills, filled and backfilled material as specified.

1.2 REFERENCES

A. ASTM D698 - Laboratory Compaction of Soil Using Standard Effort

B. ASTM D1556 - Density of Soil in Place by the Sand-Cone Method

C. ASTM D1557 - Laboratory Compaction of Soil Using Modified Effort

D. ASTM D2922 - Density of Soil in Place by Nuclear Methods

E. ASTM D3017 - Water Content of Soil in Place by Nuclear Methods

1.3 SUBMITTAL

A. Submit compaction plan including the specific equipment and detailed methods proposed to be used for compaction in accordance with Section 013300- Submittals.

B. Rockland Green will use an independent testing firm for compaction tests.

1.4 QUALITY ASSURANCE

A. The Proposer shall adopt compaction methods which will produce the degree of compaction specified herein, prevent subsequent settlement, and provide adequate support for the surface treatment, pavement, structure, and piping to be placed thereon, or therein, without damage to the new or existing facilities.

B. The natural subgrade for all footing, mats, slabs-on-grade for structures or pipes shall consist of firm undisturbed natural soil, at the grades shown on the Drawings.

C. After excavation to subgrade is completed, the subgrade shall be compacted if it consists of loose granular soil or if its surface is disturbed by the teeth of excavating equipment.

D. This compaction shall be limited to that required to compact loose surface material and shall be terminated if it causes disturbance to underlying fine-grained soils, as revealed by weaving or deflection of the subgrade under the compaction equipment.

E. If the subgrade soils consist of saturated fine or silty sands, silts, or clay or varved clays, no compaction shall be applied.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials to be compacted shall be as specified in Section 312325 - Backfilling.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine spaces to be filled beforehand and remove all unsuitable materials and debris including sheeting, forms, trash, stumps, plant life, etc.

B. Inspect backfill and fill materials beforehand and remove all roots, vegetation, organic matter, or other foreign debris.

C. No backfill or fill material shall be placed on frozen ground nor shall the material itself be frozen or contain frozen soil fragments.

D. Spaces to be filled shall be free from standing water so that placement and compaction of the fill materials can be accomplished in “dry” conditions.

3.2 PREPARATION

A. Brace walls and slabs of structures to support surcharge loads and construction loads imposed by compaction operations.

B. Proof-roll all subgrade surfaces to accept fill material.

C. Each layer of fill shall be compacted to the specified density the same day it is placed.

1. The moisture content of backfill or fill material shall be adjusted, if necessary, to achieve the required degree of compaction.

D. Compact each lift in accordance with Table 1.

E. Match compaction equipment and methods to the material and location being compacted to obtain specified compaction, with consideration of the following guidelines:

1. Rubber-tired rollers are preferred for most areas to prevent bridging of softer materials.

2. Double smooth drum rollers may be used provided that careful inspection can prevent bridging.

3. Compaction roller should be lighter in weight than proof-rolling equipment, with a minimum compaction force of 350 lbs. per linear inch (PLI).

4. Vibratory compaction is preferred for dry, granular materials.

5. Hand compaction equipment such as impact rammers, plate or small drum vibrators, or pneumatic buttonhead compactors should be used in confined areas.

6. Hydraulic compaction by ponding or jetting will not be permitted.

7. Backhoe-mounted hydraulic or vibratory tampers are preferred for compaction of backfill in trenches under pavements over 4 feet in depth. The upper 4 feet shall be compacted as detailed above or with hand-guided or self-propelled vibratory compactors or static roller.

TABLE 1
COMPACTION REQUIREMENTS

Construction Element	Maximum Compaction Layer Thickness (Inches)	ASTM	Minimum Compaction
I. STRUCTURES*			
a. Fill beneath foundation elements and under slabs-on-grade - hand-guided compaction	6	D1557	95%
b. Fill beneath foundation elements and under slabs-on-grade - self-propelled or tractor-drawn compaction	8	D1557	95%
c. Fill around structures and above footings	12	D1557	95%
II. TRENCHES**			
a. Fill under pipelines and pipe bedding	8	D1557	95%
b. Pipe sidefills and top 4 feet of pipe backfill under pavements	12	D1557	95%
c. Backfill below 4 feet under pavement	12	D1557	90%
d. Backfill under lawns, gardens and cultivated fields	12	D1557	90%
III. EMBANKMENTS AND FILLS			
a. Fill under streets, parking lots, and other paved areas	12	D1557	95%
b. Embankments not supporting pavement or structures	12	D1557	90%
c. Rough site grading	12	D698	85%
IV. TRENCH PLUGS	6	D1557	93% or 95%

*Where structural loads are carried by piles, caissons or other deep foundations, minimum compaction may be reduced to 92 percent.

**The first foot above non-plastic pipelines shall have a compacted thickness of 12 inches.

*** Compact impervious soil to at least 95% of standard Proctor maximum density. If more than 50% passes the 200 sieve, compact to at least 93% of the modified Proctor density if less than 50% passes the #200 sieve.

3.3 FIELD QUALITY CONTROL

A. Material Testing
   1. Testing will be done by a qualified, independent testing laboratory in accordance with this section and Section 014000 - Quality Requirements.
   2. The Proposer shall aid the third-party testing company in obtaining representative material samples to be used in testing.
   3. For each material which does not meet specifications, the Proposer shall reimburse Rockland Green for the cost of the test and shall supply an equal quantity of acceptable material, at no additional compensation.
   4. The Proposer shall anticipate these tests and incorporate the time and effort into procedure.

B. Compaction Testing

   1. Rockland Green reserves the right to order the qualified independent testing laboratory to conduct in-place density tests of compacted lifts at any time and at any location to confirm that specified compaction is being met..

   2. Testing shall be conducted for every 200 cubic yards of fill or backfill, or every 100 linear feet of trench backfill is placed, whichever is less. Tests are required for each lift of fill or backfill placed.

   3. The Proposer shall dig test holes and provide access to all backfill areas at no additional compensation when requested by the Engineer.

   4. For each test which does not meet specifications, the Proposer shall retest at his cost. If the retest does not meet specifications, the Proposer shall replace and recompact material to the specifications at no additional cost to Rockland Green.

   5. The Proposer shall anticipate these tests and incorporate the time and effort into procedures.

   6. Nuclear moisture density testing by “probe” methods will be acceptable for compacted layers not exceeding 12 inches in thickness.

      a. Nuclear “backscatter” methods will be acceptable only for testing asphalt paving layers not less than 3 inches in thickness.

      b. Only certified personnel will conduct nuclear testing.

      c. If the nuclear method is utilized, the results shall be checked by at least one in-place density test method described above.

C. Unacceptable Stockpiled Material - Stockpiled material may be tested according to material testing materials.

D. Alternate Methods of Compaction - The Proposer may employ alternate methods of compaction if the desired degree of compaction can be successfully demonstrated to the Engineer’s satisfaction.

E. Select Material - On-Site

   1. Any on-site material may be used for select fill material provided it meets all the requirements of the equivalent off-site material.

2. No on-site material shall be used without prior review and approval of Rockland Green.

F. Systematic Compaction - Compaction shall be done systematically, and no consideration shall be given to incidental coverage due to construction vehicle traffic.

3.4 PROTECTION

A. Prior to terminating work for the day, the final layer of compacted fill, after compaction, shall be rolled with a smooth-wheel roller if necessary to eliminate ridges of soil left by tractors or equipment used for compaction or installing the material.

B. As backfill progresses, the surface shall be graded to drain off during incidence of rain such that no ponding of water shall occur on the surface of the fill.

C. The Proposer shall not place a layer of fill on snow, ice or soil that was permitted to freeze prior to compaction. These unsatisfactory materials shall be removed prior to fill placement.

END OF SECTION

SECTION 312500

EROSION AND SEDIMENT CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes;
   1. Compliance with the Storm Water Pollution Prevention Plan (SWPPP) developed for this work, if applicable and included with this Project manual.
   2. Temporary filter fabric
   3. Temporary silt fence
   4. Temporary compost filter sock
   5. Temporary drainage inlet protection
   6. Temporary stabilized construction entrance
   7. Temporary dust control
   8. Submittals as required
   9. Cleanup and repair

B. Related Requirements:
   1. Section 015000 “Temporary Facilities and Control”.
   2. Section 329200 “Turf and Grasses”.
   3. Section 334200 “Stormwater Conveyance”.

1.3 DEFINITIONS

A. Temporary erosion and sediment control practices shall be understood to mean temporary structures and practices designed to minimize the changes in the quality and quantity of water discharged from a location during construction activities.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for all items listed in the section 1.2 SUMMARY above .

1.6 QUALITY ASSURANCE

A. All construction materials specified with NYSDOT Item numbers shall appear on the current NYSDOT approved List.

B. Comply with all applicable local, state, and federal requirements regarding materials, methods of work, and disposal of excess and waste materials.

C. Obtain and pay for all required inspections, permits, and fees. Provide timely notices required by governing authorities.

D. Codes and standards: This work shall conform to all rules, regulations, specifications and requirements that pertain to soil and water conservation practices of all agencies of government having jurisdiction.

E. Perform excavation work in compliance with applicable requirements of authorities having jurisdiction, and in accordance with the current Occupational Safety and Health Administration (OSHA) Standards of Excavation.

F. The Proposer shall refer to the Stormwater Pollution Prevention Plan (SWPPP) for the required Standards and Specifications for the approved stormwater management practices

G. Erosion and sediment control practices as may be required must meet the requirements of the New York State Standards and Specifications for Erosion and Sediment Control and the New York State Stormwater Management Design Manual, and the Contract Documents.

H. Wheels of construction vehicles shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, the Proposer shall provide an area stabilized with stone, which drains into a sediment-trapping device. The Proposer shall be required to maintain public and private roadways adjacent to the project site in a clean condition.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials properly to prevent damage, deterioration and contamination.

B. Aggregates shall be stockpiled in well-drained locations.

C. Packaged materials shall be delivered in their original unopened containers that identify the material name and type and stored in a weatherproof enclosure.

D. Aggregates, earth fill, and topsoil that are muddy or frozen shall not be handled, delivered to the site, stockpiled or spread.

1.8 FIELD CONDITIONS

A. Utility Locator Service: Notify Dig Safely New York at **1-800-962-7962** for area where Project is located before site clearing.

B. Prior to performing any topsoil stripping or other earthwork activities on the site, the Proposer shall mark out with surveyor's flagging the limits of all areas to be disturbed and install all required temporary erosion and sediment control measures.
   1. The Proposer shall adhere to all erosion and sediment control policies of the agencies of government having jurisdiction.

C. Coordinate with Section 015000 – Temporary Facilities and Controls for timely installation of the site enclosure fence.

D. Discrepancies: Prior to the start of any construction work, immediately report to Rockland Green's Representative any discrepancies found on the site between actual conditions and those indicated in the Contract Drawings and confirm in writing. Where applicable, provide field information specific to the discrepancy to expedite resolution.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Temporary filter fabric: Non-woven, continuous-filament fibers of polypropylene with apparent opening size meeting ASTM D4751; Mirafi 140N as manufactured by TenCate Geosynthetics of Pendergrass, GA, or equal. Material shall have a needle-punched non-woven structure, appear on the current NYSDOT Approved List, Geosynthetics for Highway Construction, and be approved for drainage, separation and turbidity curtain applications.

B. Temporary silt fence:
   1. Silt fence fabric and posts: NYSDOT 209-2.08 Silt Fence, Item No. 209.13.
   2. Fabric shall meet the following requirements.
      a. Grab tensile strength 110 lbs.
      b. Elongation at failure 20%
      c. Mullen Burst Strength 300 PSI
      d. Puncture Strength 60 lbs
      e. Slurry Flow Rate 8 gal/min/sf
      f. Trapezoidal Tear Strength 50 lbs
      g. Equivalent opening size 40-80
      h. Ultraviolet radiation stability 70%

   3. Prefabricated units may be used providing the units are installed in accordance with New York Guidelines for Urban Erosion and Sediment Control; Mirafi® Envirofence by TenCate Geosynthetics of Pendergrass, GA, BioFence by ERC/Biomass Farms of Lakeville, MA, Geofab or equal.
   4. Fence posts for prefabricated units. Size as recommended by manufacturer of units. If no recommendation, material and size as necessary to support the units for the duration of project construction.
   5. Fence Posts for fabricated units. Wood posts shall be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. The length of the posts shall be a minimum of 36" long.
   6. Wire fence for fabricated units. Wire fencing shall be a minimum of 14 gage with a maximum of 6 inch mesh opening.

C. Temporary Compost Filter Sock

   1. Fabric
      a. Multi-filament polypropolyene
      b. Photodegradable
      c. 12" Diameter
      d. Mesh opening = 3/8"
      e. Tensile strength = 44 psi
      f. Ultraviolet stability% original strength (ASTM G-155)= 100% at 1,000 Hr.
      g. Minimum functional longevity= 1 year

2. Compost filter media
    a. Organic matter content = 25%-100% Dry weight
    b. Organic portion= Fibrous and elongated
    c. PH=6.0-8.0
    d. Moisture content= 30%-60%
    e. Partcile size= 100% passing a 1” screen and 10-15% passing a 3/8” screen.
    f. Soluble salt concentration= 5.0 ds/m (mmhos/cm) Maximum

3. Compost infill.
    a. The compost infill shall be well decomposed (matured at least 3 months), weed-free, organic matter. it shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed above. Note all biosolids compost produced in New York State (or approved for importation) must meet NYSDEC’s 6 NYCRR Part 363 (organics recycling) requirements. The NY State requirements are equal to, or more stringent than 40 CFR Part 503 regulations for pathogen reduction and heavy metals content. When using compost filter socks adjacent to surface water, the compost shall have a low nutrient level.

D. Temporary drainage inlet protection:
1. Paved areas
    a. Snake Bag manufactured by Sacramento Bag Manufacturing Company of Sacramento, California, or equal.
    b. Fiber roll – field constructed rolled tube of erosion control blanket, or BioD-Watl™ coir wattle as manufactured by RoLanka International, Inc. 55 Andrew Drive, Stockbridge, GA 30281, (800) 760-3215, or equal.
    c. Ultra DrainGuard™ oil and sediment model – Part No. 9217, as manufactured by P.E.P. Products, Branchburg, NJ, 1 (800) 407-3726, or equal.
2. Non paved areas
    a. Silt fence as indicated in “Temporary Silt Fence” above.
    b. Stake material shall be standard 2 x 4 pressure treated wood or equivalent metal with a minimum length of 3 feet.

E. Temporary stabilized construction entrance:
1. Geotextile fabric: Fabric woven from monofilaments of polypropylene: Mirafi 600X as manufactured by TenCate Geosynthetics, Pendergrass, GA, or equal. Material shall have a woven structure, appear on the current NYSDOT Approved List, Geosynthetics for Highway Construction, and be approved for stabilization and separation applications.
2. Crushed stone: Clean 1” and/or 2” crushed stone.
    a. Crushed stone meeting NYSDOT 703-0201, #2 stone and or #1 stone.

F. Dust control
1. Non-driving areas
    a. Vegetative cover see section 32 9200 TURF AND GRASSES
    b. Mulch
        1) Wood mulch, see section 32 9300 PLANTS
        2) Gravel mulch, Clean 2” crushed stone, meeting NYSDOT 703-0201, #2 stone
    c. Spray adhesives
        1) Earthbind™ 100, manufactured by Enviroad http://www.enviroad.com/index.shtml or equal.
2. Driving areas
    a. Water
    b. Polymer additives.
        1) Earthbind™, Stabilizer, manufactured by Enviroad http://www.enviroad.com/index.shtml or equal.

c. Barriers
    1) Woven geotextiles - see Temporary stabilized construction area in this section
    2) Stone - see Temporary stabilized construction area in this section

d. Wind breaks - see temporary silt fence in this section.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. The Proposer shall contact Rockland Green's Representative immediately if clarification or interpretation of the Contract Documents, or any other aspect of the project, is required.

B. Before commencing with other site operations including demolition, site clearing and earthwork – related activities, the Proposer shall erect site perimeter erosion control measures.
    1. Coordinate with installation of temporary construction fencing and Temporary vegetation protection fencing

3.3 GENERAL INSTALLATION

A. In the event of conflict between these specification requirements and regulations by governmental agencies having jurisdiction, the more restrictive laws, rules or regulations apply.

B. The Proposer's schedules and methods shall be consistent with the project erosion and sediment control plan as shown on the drawings and in the Contract Documents.

C. To control erosion and sedimentation on the project site and to protect adjoining sites and watercourses, the Proposer shall take all necessary precautions including, but not limited to, the following:
    1. The Proposer shall erect the site perimeter erosion control measures before commencing the demolition operation, site clearing or earthwork.
    2. The Proposer shall limit the area of clearing and grubbing, excavation, borrow and embankment operations commensurate with their capability and progress in keeping the finish grading, mulching, seeding and other temporary and/or permanent control measures installed and maintained to the satisfaction of Rockland Green's Representative.
    3. In areas where soil disturbance has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within 7 days from the date the soil disturbance ceased.
    4. Control dust by standard water spray methods. Road dust shall be controlled by the use of water or other allowed materials.
    5. Keep paved roads adjacent to the project site clean. Sweep frequently and do not allow soil and debris to accumulate.

6. Refer to the Erosion and Sediment Control Plan(s) and/or the project Stormwater Pollution Prevention Plan (SWPPP) for additional requirements.
7. All mulch placed atop permanent seeding on slopes steeper than 3:1 (run:rise) shall be anchored with a biodegradable rolled erosion control product installed according to manufacturer's directions.

3.4 INSTALLATION

A. Install all temporary sediment control practices as per the current edition of the New York State Department of Environmental Conservation, New York State Standards and Specifications for Erosion and Sediment Control unless otherwise modified by the site specific SWPPP.

3.5 FIELD QUALITY CONTROL

A. Refer to section 014000 – QUALITY REQUIREMENTS for special inspection requirements.

3.6 MAINTENANCE SERVICE

A. Maintenance Service: Beginning at start of construction, maintenance service shall include full maintenance by skilled employees of erosion and sediment controls Installer. Include weekly preventive maintenance, repair or replacement of worn or defective components, as required for proper operation.

B. Maintain all temporary erosion control measures in proper working order at all times during the construction period. They shall remain in place until the permanent surface treatments have been sufficiently established to prevent soil erosion and the Rockland Green's Representative has authorized removal.
   1. Check all erosion and sediment control practices for stability and operation following every ½ inch rainfall but in all cases at least once every week. Immediately make repairs as needed.
   2. The Proposer shall be responsible for maintenance and inspection of erosion and sediment control and stormwater quality facilities for the duration of the project, including winter or other shutdowns.
   3. Remove sediment from behind silt fences when the capacity has been reduced by 50%. Repair silt fences as necessary to maintain an effective barrier.
   4. Clean out sediment traps when the capacity has been reduced by 50%.
   5. Inspect check dams for stability and operation following every ½ inch rainfall, but in all cases at least once every week, remove accumulated sediment when capacity has been reduced by 50%.
      a. If erosion has occurred between structures, install a temporary layer of a rolled erosion control product, stone or other suitable material to stabilize that portion of the channel until permanent surface treatments are established and the stormwater collection system is in place.
   6. Remove sediment from inlet protection devices when the storage capacity is reduced to 50% of the inlet protection device capacity.

3.7 CLEANUP & RESTORATION

A. Promptly remove soil and debris created by work described in this Section. Clean wheels of vehicles before leaving the site to avoid tracking soil and asphalt material onto adjacent pavements.

B. At the completion of the site work described in this Section, the site shall be left in a neat and orderly condition. Remove all resultant miscellaneous materials and debris from the site.

C. Turf areas, pavements and all other site amenities that were damaged during the work described in this Section shall be restored to their original condition prior to this construction at the Proposer's expense, and to the Rockland Green's satisfaction.

D. When temporary erosion and sediment control practices are no longer needed as determined by the Rockland Green's Representative and the agency of government having jurisdiction, the Proposer shall remove and return the area to a condition similar to that which existed before construction. Areas where temporary erosion and sediment control practices were located shall be graded with no obstruction to natural surface water flows or the proper functioning and access to the works of improvement installed. The Proposer shall exercise extreme care during the removal stages to minimize the loss of soil sediment and debris that was trapped during construction.

END OF SECTION

SECTION 321216

ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Asphalt paving; top course, binder, and base course.

2. Driveways and parking areas.

3. Compaction.

4. Tolerances.

5. Field quality control.

B. REFERENCES

1. New York State Department of Transportation (NYSDOT) Standard Specifications, dated May 1, 2018.

2. NYSDOT - Manual of Uniform Traffic Control Devices.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:

a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.

1.4 PERFORMANCE REQUIREMENTS

A. Where pavement replacement is being accomplished, match the sectional profiles of the existing pavement unless otherwise stated herein or shown on the Drawings.

B. All thicknesses of pavement courses described herein or shown on the Drawings are after completion of compaction.

1.5 SUBMITTALS

A. Submit under provisions of Section 013300 – Submittals, including asphalt materials, equipment and paving methods.

B. Submit certification of plant job mix formulas that have been approved by the NYSDOT.

1.6 QUALITY ASSURANCE

A. Perform work in accordance with the NYSDOT Standard Specifications, dated May 1, 2028, as amended to date and as they apply to the following:

1. Materials and batch plant requirements.

2. Construction procedures except as modified herein.

3. Weather and seasonal limitations except as modified herein.

B. Paving work shall be performed by a qualified paving contractor or subcontractor with minimum 10 years of documented experience acceptable to Rockland Green and Engineer. Supporting documentation for the paving contractor or subcontractor stating years in service with three references shall be submitted to the Engineer for review and approval prior to start of work.

1.7 ENVIRONMENTAL LIMITATIONS

A. Weather and Seasonal Limitations - Asphalt concrete and bituminous surface treatments shall not be placed on wet surfaces or when it is raining or when conditions prevent the proper handling, compacting or finishing of the asphalt concrete or when the surface temperature is less than specified in the following table:

Nominal Compacted Lift Thickness	**Surface Temperature Minimum** (Note 1)	**Seasonal Lim-its**
3" or Greater	40°F	None
Greater than 1" but less than 3"	45°F	Notes 2 and 3
0.1" or less	50°F	Notes 2 and 3
Bituminous Surface Treatments (Note 3)	70°F or greater	Note 4

NOTES:

1. All temperatures shall be measured on the surfaces (lay glass thermometer on surface and read after temperature has stabilized) where the paving is to be placed and the controlling temperature shall be the average of three temperature readings taken at locations +25 feet apart.

2. Top course shall be placed only during the period of April 1 to November 15. In addition, when top course is placed between September 15 and November 15, not less than two rollers shall be furnished and operated by the Contractor.

3. Surface treatments shall be placed during the period of May 1 up to and including the first Saturday after Labor Day.

4. The ambient temperature shall be not less than 50 degrees F in the shade and not more than 95 degrees F.

5. Bituminous paving mixtures for curbs, driveways, sidewalks, gutters and other incidental construction shall be placed on surfaces having a temperature of 45 degrees F or greater. Installation of these items is not subject to seasonal limitations.

6. When work is halted because of weather conditions, limited tonnage enroute to the project may be placed, if permitted, and the mixture is within the temperature requirements.

1.8 COORDINATION

A. Coordinate field work including maintenance of traffic, access to private driveways, and emergency vehicle access.

1.9 SCHEDULING

A. Schedule the paving operations such that all paving necessary to provide safe and adequate maintenance and protection of traffic or for protection of previously laid courses is completed within the weather and seasonal limitations.

1. Such scheduling shall include expediting construction operations to permit paving before the seasonal limitations or by limiting the length of work to that which can be completed before the seasonal shutdown.

2. The cost of scheduling and sequencing of work to conform with the seasonal limitations shall be reflected in the bid prices for the related contract items.

1.10 MAINTENANCE

A. The Proposer shall maintain driving surfaces, free of ruts and potholes, for maintenance of traffic until temporary paving or permanent paving is installed.

1. All temporary paving and pavement replacement shall be maintained in a safe, drivable condition until the pavement wearing course is installed.

2. All subgrade, subbase and base courses shall also be maintained in their specific finish condition prior to placement of the next course.

B. If the Proposer fails to complete the necessary paving operations prior to weather and seasonal limitations, all temporary materials and work which become necessary as a result of such failure, such as the lowering or shimming of castings and protrusions, drainage of the roadway, providing acceptable rideability, and other work needed for the adequate maintenance and

protection of traffic until paving operations can be completed the following paving season, shall be at the Proposer's expense.

C. For a period of one year after issuance of the Certificate of Substantial Completion, the Proposer shall promptly patch, maintain, repair, and/or replace any pavement that settles or becomes damaged due to settlement or defective materials or workmanship.

1. Areas to be repaired shall be cut out in a square or rectangular shape to the depth matching the top course.

2. The vertical face of asphalt to be painted with asphalt emulsion prior to placing the asphalt concrete.

3. If more than top course depth of 1-1/2-inch settlement has occurred, the pavement shall be removed to the subbase and subbase and/or binder and base course restored to proper grade before restoration of the wearing course.

4. The finished grade, in any case, shall be as shown on the Contract Drawings.

PART 2 - PRODUCTS

2.1 ASPHALT

A. All asphalt pavement courses shall be hot mix asphalt pavement conforming to material requirements of the following:

1. Top Course – NYSDOT 9.5 F1, Top Course HMA 80 series compaction.

2. Binder Course – NYSDOT 19 F9, Binder Course HMA 80 series compaction.

3. Pavement Subbase - NYSDOT Type 1 F9, Asphalt-Treated Permeable Base Course.

4. Tack Coat - New York State Item No. 407.0103, tack coat, emulsified asphalt.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Permanent restoration of pavements shall not begin until 30 days after trench or structure backfill has been completed in accordance with the applicable specifications or until testing of the installed utility has been completed in accordance with the specifications (whichever is the longest period after completion of trench or structural backfill).

1. Completion of backfill shall include compaction tests to ascertain compliance with degree of compaction required as described in Section 312330 - Compaction.

a. Verify base conditions

b. Verify that compacted subgrade is dry and ready to support paving.

c. Verify gradients and elevations of base are correct.

B. If painted traffic markings on the pavement are to be interrupted by the new pavement replacement, they are to be restored using an approved traffic paint.

C. Driveway and Parking Areas

1. Driveways and parking areas that are disturbed or damaged by the Proposer's operations shall be restored equal to a new condition.

2. Driveway or parking area aprons which do not meet the elevation of the edge of new road pavement installed under this project shall be adjusted to meet the new pavement at a slope not to exceed 1 inch per foot with top course material of the new pavement, so that the apron conforms to the elevation of the road pavement at each location.

3. New driveways or parking areas shall be constructed as described herein and as shown on the Drawings.

3.2 PREPARATION

A. Where project consists of reconstructing existing streets, lower valve boxes and existing manholes to subgrade level by removing frame and cover and brick masonry.

1. Cover valve boxes and manholes with steel plates and locate with measured ties.

2. After constructing the subbases and pavement courses, and prior to placing the final top course, recover valve boxes and manholes and raise to finished grade.

B. All existing and new manholes, frames and covers, valve boxes, curb boxes, etc., shall be raised or lowered to be 1/2 inch below the new pavement grade.

1. No manhole covers or valve box covers shall be covered with paving material or be exposed in a depression in the pavement greater than 1/2 inch.

C. Catch basin frames and grates shall be raised or lowered to be 1 inch below the new pavement finished grade.

D. Pavement Cuts

1. Pavement cuts for final pavement replacement shall be made as described herein.

2. Pavement cuts shall be made parallel to the centerline of the trench, shall be located a minimum of 12 inches outside the backfilled trench on undisturbed subgrade in a straight line between those stations where changes in direction of the installed piping were made.

3. Loose, torn, cut, marked up or damaged pavement outside the cutback areas shall be removed and replaced at the Proposer's expense and match the proposed permanent paving.

4. Pavement cuts in driveways shall be cut back 12 inches and made in a straight alignment perpendicular or parallel to the driveway and for its full width.

5. Pavement cuts in parking areas shall be cut back 12 inches and made in a straight alignment parallel to the centerline of trench.

E. Preparation of Existing Surfaces

1. Prior to placing of asphalt concrete, the existing pavement surfaces shall be cleaned including brooming, mechanical sweeping, and flushing with water such that no dust or foreign material remains on the existing surface and in accordance with NYSDOT Specification Section 633 “Conditioning Existing Pavement Prior to Hot Mix Asphalt (HMA) Overlay”.

2. After cleaning of surface, all unsealed or inadequately sealed cracks and joints shall be cleaned with compressed air and then sealed as required under NYSDOT Specification “633-3.02 Cleaning, Sealing and Filling Joints and Cracks.”

3. Prior to placing of asphalt concrete, vertical faces of existing pavement, structures, curbs and gutters shall receive a tack coat as described in NYSDOT Specification “407 Tack Coat.” Curbs and gutter faces to be sprayed only to the extent to be covered by the asphalt concrete.

F. All new pavement where meeting existing pavement shall be butted up against a vertical face in the existing pavement.

1. This vertical face to be cut to the depth of the new pavement.

2. Where the new pavement is an overlay, the beginning and end of the top course shall be similarly butted against a vertical face.

3. The existing pavement shall be removed for a minimum length of 2 feet, as measured parallel to the direction of paving, or greater if required to eliminate any noticeable bump or to provide adequate drainage away from structures, and to the width of new pavement.

G. Removal of Existing Pavement

1. Where shown on the Contract Drawings, the Proposer shall remove a portion of an existing pavement to the limits and profile specified.

3.3 PREPARATION - TACK COAT

A. Apply tack coat in accordance with manufacturer's instructions

1. Tack coat temperature to be not less than 120 degrees F.

2. The tack coat shall be applied no more than four hours prior to paving of the asphalt concrete course.

a. No traffic will be allowed on the freshly applied tack coat.

B. Apply tack coat to contact surfaces of curbs, gutters, and existing vertical surfaces.

3.4 PREPARATION - RESET MANHOLE FRAMES

A. Prior to placing wearing (top) course, make final adjustments of manhole frames, catch basin frames, valve boxes and any other utility structures located in the pavement in relation to finished grade.

1. Manhole frames, valve boxes, etc. to set 1/2 inch below finished grade and parallel to finished crown.

2. Catch basin frames to set 1 inch below finished grade and parallel to finished crown.

    a. Bevel slope of wearing course (for 6-inch width) around catch basin frame.

3.5 INSTALLATION

A. Install work in accordance with NYSDOT standards.

B. Place asphalt within four hours of applying tack coat.

C. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact with vibratory pans and hand tamps in area inaccessible to rolling equipment.

D. Develop rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.6 PLACING AND COMPACTING

A. Placing mix in an appropriate ambient temperature and on a surface sufficiently warm to minimize the risk of excessive cooling before completion of rolling is of paramount importance. Holding the aggregate particles in place is solely the function of the film of asphalt. The asphalt cannot perform this function properly if the mix is too cool when rolled.

1. A thin course compresses very little under the roller and, as it cools quickly, it must be rolled as soon as possible.

2. The Proposer shall supply sufficient number of rollers to perform the required compaction while asphalt concrete is still hot and in a workable condition and coordinate speed of paver with rollers such that the degree of compaction required is obtained.

3. A high degree of densification is not the goal with this type of mix -- the aim is firm seating and contact of the aggregate particles.

4. One or two coverages (see Table 1) with a steel-wheeled roller weighing 8 to 10 tons is sufficient. Additional rolling may be excessive, causing a break in the bond of asphalt between aggregate particles, particularly after the mix has cooled.

5. When overtaken by sudden storms, the Engineer may permit work to continue up to the amount which may be in transit from the plant at the time, provided the mixture is within temperature limits specified.

B. Paving - All asphalt concrete shall be installed using self-powered units in accordance with the NYSDOT Specification “402-3.02 HMA Pavers and 402-3.06 Spreading and Finishing".

1. A self-powered paving unit shall be provided except where hand methods are permitted by the Engineer in small areas or areas inaccessible to a paving unit. For such areas, the mixture shall be dumped, spread, screened and compacted to give the required section and compaction thickness.

C. Compaction - Asphalt concrete shall be compacted in accordance with NYSDOT Specification “402-3.07 Compaction and 402-3.09 Joints” using either option as follows:

1. Option A - Tandem roller (static or vibratory) 8 to 10 ton size.

2. Option B - Vibratory compaction.

D. The required number of passes for either vibratory or static rollers, listed in Table 1, are minimum and may be increased by the Engineer. One pass shall be defined as one movement of the roller over any point of the pavement in either direction. Static roller passes shall continue until all ruts, ridges, roller marks or other irregularities are removed from the surface. The Engineer may alter the compaction procedures for small areas where the specified procedures are not practical.

TABLE 1

REQUIRED NUMBER OF PASSES (MINIMUM)

Pavement Courses	Vibratory Roller		Steel-Wheel Tandem Finish Roller
	Vibrating Passes*	Static Passes**	Static Passes
Base (open graded each lift)	4	2	5
Base (dense graded)	4	2	5
Binder (dense graded)	4	Not required	5
Top (dense graded all types)	2	Not required	2

*The required number of vibrating passes shall be reduced by one half (1/2) for dual vibrating drum rollers when the drums are tandem and are both in the vibrating mode.

**The required number of static passes may be completed by the vibratory roller operating in the static mode.

E. Unless otherwise directed by the Engineer, vibratory rollers having pneumatic drive wheels shall compact the longitudinal joint by using one of the pneumatic drive wheels to overlap the joint in two passes with the drum operating static. Unless otherwise directed by the Engineer, dual vibrating drum rollers shall compact the joint by overlapping the joints in two passes with both drums operating static.

F. To prevent adhesion of the mixture to the drum(s), the drum(s) shall be kept properly moistened with water, or water mixed with small quantities of detergent. If required to prevent pneumatic tire pickup, the pneumatic drive wheels may be coated with a fine mist spray of fuel oil or other similar material. In all instances, the surface of the pavement shall be protected from drippings of fuel oil or any other solvents used in paving, compaction or cleaning operations.

G. If the Engineer determines that unsatisfactory compaction is being obtained or damage to highway components and/or adjacent property is occurring using vibratory compaction equipment, the Proposer shall immediately cease using this equipment and proceed with the work in accordance with the conventional static compaction procedures at no additional cost.

H. The Proposer should note that if he elects to use vibratory compaction equipment, he assumes full responsibility for the cost of repairing all damage that may occur to highway components and adjacent property or underground utilities.

3.7 DRIVEWAYS AND PARKING REAS

A. Paving materials, type of paving, depth of various courses, etc., shall be as shown on the Drawings.

1. The driveways and parking areas shall be cut back 12 inches from outside disturbed or damaged areas as described above.

2. The work shall include proper compaction of any necessary subbase, base course and paving courses, in accordance with Section 312330 - Compaction.

3.8 TOLERANCES

A. Surface Tolerance - The pavement surface shall be constructed to a 1/4-inch tolerance. If, in the opinion of the Engineer, the pavement surface is not being constructed or has not been constructed to this tolerance based upon visual observation or upon riding quality, he may test the surface with a 16-foot straight edge (furnished by the Proposer) or string line placed parallel to the centerline of the pavement and with a 10-foot straight edge or string line placed transversely to the centerline of the pavement on any portion of the pavement.

1. Variations exceeding 1/4-inch shall be satisfactorily corrected or the pavement relayed at no additional cost as ordered by the Engineer.

B. Thickness Tolerance - The thickness indicated for each of the various courses of bituminous pavement is the nominal thickness. The pavement shall be so constructed that the final compacted thickness is as near to the nominal thickness as is practical, and within the tolerances specified below.

1. Material which is part of a trueing or leveling course or shim course will not be considered in pavement thickness determinations.

2. A tolerance not to exceed 1/4-inch from the nominal thickness required for the course specified under one pay item will be acceptable where the required nominal thickness is 4 inches or less. A tolerance not to exceed 1/2-inch from the nominal thickness required for the course or courses specified under one pay item will be acceptable where the required nominal thickness is over 4 inches. In addition, the sum total thickness of all bituminous mixture courses shall not vary from the total of the nominal thickness indicated on the plans by more than 1/4 inch where the total nominal thickness is 4 inches or less; or more than 1/2-inch where the total nominal thickness is over 4 inches but not more than 8 inches; and by not more than 5/8-inch where the total nominal thickness is more than 8 inches.

3.9 FIELD QUALITY CONTROL

A. The required degree of compaction for wearing or top courses and shim course is a finished product having not more than 7 percent air voids.

B. Rockland Green reserves the right to order testing of materials at any time during the work. The Proposer shall provide testing at no additional cost to Rockland Green.

3.10 PROTECTION

A. Any pavement, constructed or reconstructed, which is subsequently damaged due to activity of work under this contract, shall be removed and replaced by the Proposer at no additional cost to Rockland Green.

B. Protect pavement from vehicular traffic until compaction is completed.

END OF SECTION 32 1216

SECTION 321313

CONCRETE PAVING

1.1 SUMMARY

A. Section includes the following:
   1. Parking lots.
   2. Curbs.
   3. Walks.

B. Related Requirements:

   1. Section 033000 "Cast-in-Place Concrete" for general building applications of concrete.
   2. Section 321713 "Parking Bumpers."
   3. Section 321723 "Pavement Markings."
   4. Section 321726 "Tactile Warning Surfacing"

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates: For the following, from manufacturer:

   1. Cementitious materials.
   2. Steel reinforcement and reinforcement accessories.
   3. Fiber reinforcement.
   4. Admixtures.
   5. Curing compounds.
   6. Applied finish materials.
   7. Bonding agent or epoxy adhesive.
   8. Joint fillers.

B. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

2. Personnel conducting field tests must be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

1.7 FIELD CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

C. Hot-Weather Concrete Placement: Comply with ACI 301 (ACI 301M) and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water.
2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms**,** steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

2.2 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet (30.5 m) or less.Do not use notched and bent forms.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

A. Plain-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, fabricated from steel wire into flat sheets.

B. Deformed-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, flat sheet.

C. Epoxy-Coated Welded-Wire Reinforcement: ASTM A884/A884M, Class A, plain steel.

D. Reinforcing Bars: ASTM A615/A615M, Grade 60 (Grade 420); deformed.

E. Galvanized Reinforcing Bars: ASTM A767/A767M, Class II zinc coated, hot-dip galvanized after fabrication and bending; with ASTM A615/A615M, Grade 60 (Grade 420) deformed bars.

F. Epoxy-Coated Reinforcing Bars: ASTM A775/A775M or ASTM A934/A934M; with ASTM A615/A615M, Grade 60 (Grade 420) deformed bars.

G. Steel Bar Mats: ASTM A184/A184M; with ASTM A615/A615M, Grade 60 (Grade 420) deformed bars; assembled with clips.

H. Plain-Steel Wire: ASTM A1064/A1064M, as drawn.

I. Deformed-Steel Wire: ASTM A1064/A1064M.

J. Epoxy-Coated-Steel Wire: ASTM A884/A884M, Class A; coated.

K. Epoxy-Coated, Joint Dowel Bars: ASTM A775/A775M; with ASTM A615/A615M, Grade 60 (Grade 420) plain-steel bars.

Retain "Tie Bars" or "Hook Bolts" Paragraph below. Tie bars or hook bolts may be used for connection between new and existing paving and between paving and gutters.

L. Tie Bars: ASTM A615/A615M, Grade 60 (Grade 420); deformed.

M. Hook Bolts: ASTM A307, Grade A (ASTM F568M, Property Class 4.6), internally and externally threaded. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

N. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

O. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.

P. Zinc Repair Material: ASTM A780/A780M.

2.4 CONCRETE MATERIALS

A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C150/C150M, gray portland cement Type II.

B. Normal-Weight Aggregates: ASTM C33/C33M, Class 3S, uniformly graded. Provide aggregates from a single source

1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Air-Entraining Admixture: ASTM C260/C260M.

D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C494/C494M, Type A.
2. Retarding Admixture: ASTM C494/C494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II.

E. Water: Potable and complying with ASTM C94/C94M.

2.5 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd.

B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. ChemMasters, Inc.
b. Sika Corporation.
c. SpecChem, LLC.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B, dissipating.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. ChemMasters, Inc.
b. SpecChem, LLC.
c. W. R. Meadows, Inc.

2.6 RELATED MATERIALS

A. Expansion joint fillers: ½ inch thick Sonolastic® polyethylene closed-cell joint filler as manufactured by Sonneborn Building Products Division, ChemRex, Inc., or equal.

B. Expansion joint sealant for all concrete pavement: Pour grade one-part elastomeric self-leveling polyurethane sealant, light gray in color to match concrete color, meeting ASTM C920, Type S, Grade P, Class 25; Sonolastic® SL 1 as manufactured by Sonneborn Building Products Division, ChemRex, Inc., or equal. Use compatible primer if sealant manufacturer recommends.

C. Expansion joint sealant primer: Material recommended by the joint sealant manufacturer for adhesion to joint substrates indicated.

D. Surface sealer: Transparent penetrating silane, water repellent and anti-spalling sealer specifically formulated to protect the concrete from moisture, salts and deicing chemicals; Provide sealer by one of the following manufacturers;
1. Certi-Vex ® Penseal 244 100% as manufactured by Vexcon Chemicals, Inc.,
2. ChemMasters, AquanilTM Plus 55
3. Sealkrete, SS-10 Clear Silane-Siloxane waterproofer.

E. Chemical Surface Retarder: Water-soluble, liquid, set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of 1/8 to 1/4 inch.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. ChemMasters, Inc.
b. Euclid Chemical Company (The); an RPM company.
c. Sika Corporation.

2.7 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that comply with or exceed requirements.

B. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

Optional percentages in three subparagraphs below are based on ACI 301 (ACI 301M) for exposure severity and aggregate size. Retain first option in each subparagraph for severe exposure, second option for moderate exposure, and third option for mild exposure. See the Evaluations for exposure definitions.

1. Air Content, 1-inch Nominal Maximum Aggregate Size: 6 percent plus or minus 1-1/2 percent.

Retain first option in first paragraph below if reinforced concrete paving will be exposed to chlorides in service; retain second option for reinforced concrete paving that will not be exposed to chlorides but will be exposed to moisture in service. Percentages are derived from ACI 301 (ACI 301M).

C. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

Retain both subparagraphs below if required; revise to suit Project.

1. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

Synthetic-fiber dosage rates in "Synthetic Fiber" Paragraph below reflect typical recommendations of manufacturers. Retain first option below for synthetic fiber used for reducing plastic shrinkage cracking; retain second option for synthetic fiber used for improving hardened concrete properties. Revise dosage if required.

D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Fly Ash or Pozzolan: 25 percent

E. Color Pigment: If shown on the drawings, add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

F. Concrete Mixtures: Normal-weight concrete.

Higher strengths than those in options in "Compressive Strength (28 Days)" Subparagraph below may be needed for durability in severe exposure conditions. Consult concrete paving contractors for regional practices.

A. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

Optional percentages in three subparagraphs below are based on ACI 301 (ACI 301M) for exposure severity and aggregate size. Retain first option in each subparagraph for severe exposure, second option for moderate exposure, and third option for mild exposure. See the Evaluations for exposure definitions.

1. Air Content, 1-inch Nominal Maximum Aggregate Size: 6 percent plus or minus 1-1/2 percent.

Retain first option in first paragraph below if reinforced concrete paving will be exposed to chlorides in service; retain second option for reinforced concrete paving that will not be exposed to chlorides but will be exposed to moisture in service. Percentages are derived from ACI 301 (ACI 301M).

B. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

Retain both subparagraphs below if required; revise to suit Project.

1. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

Synthetic-fiber dosage rates in "Synthetic Fiber" Paragraph below reflect typical recommendations of manufacturers. Retain first option below for synthetic fiber used for reducing plastic shrinkage cracking; retain second option for synthetic fiber used for improving hardened concrete properties. Revise dosage if required.

C. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
   1. Fly Ash or Pozzolan: 25 percent

D. Color Pigment: If shown on the drawings, add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

E. Concrete Mixtures: Normal-weight concrete.

   1. Compressive Strength (28 Days): 5,000 psi.
   2. Maximum W/C Ratio at Point of Placement: 0.40.
   3. Slump Limit: 4 inches, plus or minus 1 inch.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M. Furnish batch certificates for each batch discharged and used in the Work.

   1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 INSTALLATION OF STEEL REINFORCEMENT

Retain this article if steel-reinforced concrete paving is required; revise to suit Project.

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded-wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
2. Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
3. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of **50 feet** unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.

4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

    a. Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.

2. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation[**, steel reinforcement,**] and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface[**and steel reinforcement**] before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies**,** reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

Retain one or more options in "Curing Methods" Paragraph below. Do not use curing compound on surfaces to be covered by unit pavers, tiles, or other materials set in mortar.

E. Curing Methods: Cure concrete by moisture-retaining-cover curing or curing compound as follows:

1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 (ACI 117M) and as follows:

ACI 117 (ACI 117M) establishes few paving tolerances; those in subparagraphs below are based on ACI 330.1. Revise to suit Project.

1. Elevation: 3/4 inch
2. Thickness: Plus 3/8 inch minus, 1/4 inch
3. Surface: Gap below 10-feet- long; unleveled straightedge not to exceed 1/2 inch.
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.
6. Vertical Alignment of Dowels: 1/4 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Rockland Green will engage a qualified testing agency to perform tests and inspections.

B. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C172/C172M will be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each **50 cu. yd.** or fraction thereof of each concrete mixture placed each day.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing to be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C231/C231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C1064/C1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C31/C31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C39/C39M; test one specimen at seven days and two specimens at 28 days.

    a. A compressive-strength test to be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no

compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results to be reported in writing to Architect, concrete manufacturer, and Proposer within 48 hours of testing. Reports of compressive-strength tests to contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency will make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.

G. Concrete paving will be considered defective if it does not pass tests and inspections.

H. Additional testing and inspecting, at Proposer's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

I. Prepare test and inspection reports.

3.11 REPAIR AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 321723

PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Painted markings applied to asphalt paving.
2. Painted markings applied to concrete surfaces.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to marking asphalt paving or concrete surfaces including, but not limited to, the following:

a. Asphalt-paving or concrete-surface aging period before application of pavement markings.
b. Review requirements for protecting pavement markings, including restriction of traffic during installation period.

1.4 ACTION SUBMITTALS

A. Product Data: Include technical data and tested physical and performance properties.

1. Pavement-marking paint, latex.

B. Shop Drawings:

1. Indicate pavement markings, colors, lane separations, defined parking spaces, and dimensions to adjacent work.
2. Indicate, with NYS Dynamic symbol of accessibility, spaces allocated for people with disabilities.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of NYSDOT for pavement-marking work.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for alkyd materials 55 deg F for water-based materials, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Ennis-Flint, Inc.
2. Rust-Oleum Corporation; a subsidiary of RPM International, Inc.
3. Sherwin-Williams Company (The).

B. Source Limitations: Obtain pavement-marking paints from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design".

2.3 PAVEMENT-MARKING PAINT

A. Pavement-Marking Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952, Type II, with drying time of less than ten minutes.
   1. Color: As indicated on drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that pavement-marking substrate is dry and in suitable condition to begin pavement marking in accordance with manufacturer's written instructions.

B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Engineer.

B. Allow asphalt paving or concrete surfaces to age for a minimum of 30 days before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to asphalt paving or concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.

3.3 PROTECTING AND CLEANING

A. Protect pavement markings from damage and wear during remainder of construction period.

B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

SECTION 32 1726

TACTILE WARNING SURFACING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Cast-in-place detectable warning plates.

B. Related Requirements:

1. Section 321313 "Concrete Paving" for concrete walkways serving as substrates for tactile warning surfacing.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Initial Selection: For each type of exposed finish requiring color selection.

C. Samples for Verification: For each type of tactile warning surface, in manufacturer's standard sizes unless otherwise indicated, showing edge condition, truncated-dome pattern, texture, color, and cross section; with fasteners and anchors.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For tactile warning surfacing, to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 PROJECT CONDITIONS

A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

1. Apply adhesive only when ambient temperature is above 50 deg F and when temperature has not been below 35 deg F for 12 hours immediately before application. Do not apply when substrate is wet or contains excess moisture.

B. Weather Limitations for Mortar and Grout:

1. Cold-Weather Requirements: Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
2. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602. Provide artificial shade and windbreaks, and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F and higher.

a. When ambient temperature exceeds 100 deg F, or when wind velocity exceeds 8 mph and ambient temperature exceeds 90 deg F, set unit pavers within 1 minute of spreading setting-bed mortar.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of tactile warning surfaces that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering and wear.
b. Separation or delamination of materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TACTILE WARNING SURFACING, GENERAL

A. Accessibility Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for tactile warning surfaces.

1. For tactile warning surfaces composed of multiple units, provide units that when installed provide consistent side-to-side and end-to-end dome spacing that complies with requirements.

2.2 DETECTABLE WARNING TILES

A. Cast-in-Place Detectable Warning Tiles: Accessible truncated-dome detectable warning tiles with replaceable surface configured for setting flush in new concrete walkway surfaces, with slip-resistant surface treatment on domes and field of tile.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. ADA Solutions, LLC.
    b. EJ.
    c. Neenah Foundry Company.

2. Material:
    a. Cast Iron: Gray iron, ASTM A 48/A 48M, CL 35.

3. Shapes and Sizes:
    a. 24 inches deep by width shown in drawings

4. Dome Spacing and Configuration: Manufacturer's standard compliant spacing, in pattern.

5. Mounting:
    a. Replaceable detectable warning tile wet-set into freshly poured concrete and surface-fastened to permanently embedded anchors.

2.3 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of tactile warning surfaces, noncorrosive and compatible with each material joined, and complying with the following:

1. Furnish Type 304 stainless-steel fasteners for exterior use.
2. Fastener Heads: For nonstructural connections, use flathead or oval countersunk screws and bolts with tamper-resistant heads, colored to match tile.

B. Adhesive: As recommended by manufacturer for adhering tactile warning surfacing unit to pavement.

C. Sealant: As recommended by manufacturer for sealing perimeter of tactile warning surfacing unit.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that pavement is in suitable condition to begin installation according to manufacturer's written instructions. Verify that installation of tactile warning surfacing will comply with accessibility requirements upon completion.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF TACTILE WARNING SURFACING

A. General: Prepare substrate and install tactile warning surfacing according to manufacturer's written instructions unless otherwise indicated.

B. Place tactile warning surfacing units in dimensions and orientation indicated. Comply with location requirements of AASHTO MP 12.

3.3 INSTALLATION OF DETECTABLE WARNING TILES

A. Cast-in-Place Detectable Warning Tiles:

1. Concrete Paving Installation: Comply with installation requirements in Section 321313 "Concrete Paving." Mix, place, and finish concrete to conditions complying with detectable warning tile manufacturer's written requirements for satisfactory embedment of tile.

2. Set each detectable warning tile accurately and firmly in place and completely set tile back and embedments in wet concrete by tamping or vibrating. If necessary, temporarily apply weight to tiles to ensure full contact with concrete.

3. Set surface of tile flush with surrounding concrete and adjacent tiles, with variations between tiles and between concrete and tiles not exceeding plus or minus 1/8 inch from flush.

4. Protect exposed surfaces of installed tiles from contact with wet concrete. Complete finishing of concrete paving surrounding tiles. Remove concrete from tile surfaces.

5. Clean tiles using methods recommended in writing by manufacturer.

3.4 CLEANING AND PROTECTION

A. Remove and replace tactile warning surfacing that is broken or damaged or does not comply with requirements in this Section. Remove in complete sections from joint to joint unless otherwise approved by Engineer. Replace using tactile warning surfacing installation methods acceptable to Engineer.

B. Protect tactile warning surfacing from damage and maintain free of stains, discoloration, dirt, and other foreign material.

END OF SECTION

SECTION 329200

TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Hydroseeding.

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 32 9113 "Soil Preparation” and drawing designations for planting soils.

E. CU Soil: See Section 31 2000 – “Earth Moving” specification.

F. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil/reinforced turf soil is placed.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and

percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.

C. Product Certificates: For fertilizers, from manufacturer.

D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.

1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals.
2. Experience: Five years' experience in turf installation.
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personnel Certifications: Installer's shall have certification in one of the following categories from the National Association of Landscape Professionals (NSNLA):

    a. Landscape Industry Certified Technician - Exterior.
    b. Landscape Industry Certified Lawn Care Manager.
    c. Landscape Industry Certified Lawn Care Technician.

5. Pesticide Applicator: State licensed, commercial.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

1.9 FIELD CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.

1. Spring Planting: April 1 – May 30.
2. Fall Planting: August 16 – October 15.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species:

1. Quality, State Certified: State-certified seed of grass species as listed below.
2. Sun and Partial Shade, Cool-Season Grass: Proportioned by weight as follows:

a. 50 percent Kentucky bluegrass (Poa pratensis).
b. 30 percent chewings red fescue (Festuca rubra variety).
c. 10 percent perennial ryegrass (Lolium perenne).
d. 10 percent redtop (Agrostis alba).

2.2 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition:

a. 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
b. Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition:

a. 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
b. Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.3 MULCHES

A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

B. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Engineer and replace with new planting soil.

3.2 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil according to Section 32 9113 "Soil Preparation."

B. Placing Planting Soil: Place and mix planting soil a in place over exposed subgrade

C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, obtain Engineer's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 HYDROSEEDING

A. Hydroseeding: Mix specified seed, commercial fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
2. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.
3. Spray-apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than dry weight, and seed component is deposited at not less than the specified seed-sowing rate. Apply slurry cover coat of fiber mulch (hydromulching) at a rate of 1000 lb/acre.

3.5 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow Kentucky bluegrass annual ryegrass chewings red fescue to a height of 1-1/2 to 2 inches.

D. Turf Postfertilization: Apply slow-release fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that provides actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.

3.6 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Engineer:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
3. Satisfactory Plugged Turf: At end of maintenance period, the required number of plugs has been established as well-rooted, viable patches of grass, and areas between plugs are free of weeds and other undesirable vegetation.
4. Satisfactory Sprigged Turf: At end of maintenance period, the required number of sprigs has been established as well-rooted, viable plants, and areas between sprigs are free of weeds and other undesirable vegetation.

B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.7 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

D. Remove nondegradable erosion-control measures after grass establishment period.

3.8 MAINTENANCE SERVICE

A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:

1. Seeded Turf: 60 days from date of planting completion.

    a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

END OF SECTION

SECTION 334200
STORMWATER CONVEYANCE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Stormwater pipe and fittings.
   2. Catch basins, including frames and grates.
   3. Refer to drawings for details and specifications for new storwater chambers and specifications (ADS Stormtech system or approved equal).

1.2 REFERENCES

A. Abbreviations & Acronyms
   1. AASHTO - American Association of State Highway and Transportation Officials
   2. ACI – American Concrete Institute
   3. ASTM – American Society for Testing and Materials
   4. HDPE – High Density Polyethylene
   5. NYSDOT – New York State Department of Transportation
   6. PVC – Polyvinyl Chloride

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Shop Drawings:
   1. Catch basins:
      a. Include plans, elevations, sections, and details.
   2. Storm sewer pipe and fittings:
      a. Include product data fro each type of product.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Plastic pipe shall be protected from exposure to direct sunlight prior to laying, if necessary to maintain adequate pipe stiffness and meet installation deflection requirements.
B. Store pipes, fittings and accessories out of the way of active work areas.
C. Protect pipe from construction traffic and machinery.

PART 2 - PRODUCTS

2.1 STORM SEWER PIPE AND FITTINGS

A. Corrugated HDPE:
   1. Pipe: Dual wall, smooth interior, integral bell, corrugated HDPE, AASHTO M252 or M294, Type S
   2. Joints: soil tight, bell and spigot, AASHTO M252 or M294, Type S

3. Fittings: soil tight, bell and spigot, AASHTO M252 or M294, Type S

B. Type (PP) Polypropylene Pipe:

1. ASTM F2881, bell and spigot style with rubber gasket conforming to ASTM F477. Structural strength to support HS-25 loads with 15 inches of cover, minimum pipe stiffness of 46 psi. “HP Storm” pipe by ADS or approved equal.

2.2 END SECTIONS

A. Galvanized Steel: conforming to AASHTO M218

2.3 CATCH BASINS

A. Precast Concrete Catch Basins: ASTM C913, precast, reinforced concrete; designed in accordance with ASTM C890 for A-16 (ASSHTO HS20-44), heavy-traffic, structural loading; of depth, shape, and dimensions indicated on Drawings, with provision for joint sealants. Minimum wall thickness – 5 inches.
   1. Joint Sealants: ASTM C990, bitumen or butyl rubber.
   2. Adjusting Rings: Interlocking rings with level or sloped edge in thickness and shape matching catch basin frame and grate. Include sealant recommended by ring manufacturer.
   3. Grade Rings: Include two or three reinforced-concrete rings, of 6- to 9-inch total thickness, that match frame and grate.
   4. Pipe Connectors: ASTM C923, resilient, of size required, for each pipe connecting to base section and suited for the type of pipe being installed.
   5. Structures shall be manfucatured by an approved NYSDOT facility.
B. Frames and Grates: ASTM A536, Grade 60-40-18, ductile iron designed for A-16 (AASHTO HS20-44), structural loading. Include flat grate with small square or short-slotted drainage openings.
   1. Frame Size: Full bearing on minimum 5” catch basin wall thickness. Refer to drawings for catch basin sizes.
   2. Grate Size: 24 by 24 inches minimum unless otherwise indicated on Drawings.
   3. Grate Free Area: Approximately 50 percent unless otherwise indicated on Drawings.

2.4 MORTAR

A. General: Portland cement mortar for use in frame adjustment, ASTM C270
   1. Type M, Mortar for unit masonry

2.5 BRICK

A. General: first quality, sound, hard-burned common brick, culled of all irregular, unsound or damaged brick, ASTM C32
   1. Grade MS, for frame adjustment
   2. Grade SS, for pipe connections

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine delivered materials, structures, pipes and castings for damage. Remove defective products from site.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Perform trenching and backfilling in accordance with Specification Section 312000.

B. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by Rockland Green or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:

1. Notify Rockland Green no fewer than two days in advance of proposed interruption of service.

2. Do not proceed with interruption of service without Rockland Green’s written permission.

3.3 PIPE HANDLING

A. Follow all applicable safety regulations when handling pipe.

B. During cold weather, extra care should be used in handling to avoid any type of impact to the pipe to prevent damage.

C. Each pipe shall be thoroughly examined before being laid; defective or damaged pipe shall not be used.

D. Care should be taken when moving pipes

1. Avoid dragging or striking the pipe against another pipe or object.

2. Avoid dragging the pipe across the ground.

3. Do not drive over the pipe prior to installation.

E. In staging pipe along a trench, place pipe as near to the trench as possible to avoid excessive handling. Where practicable, stage pipe on opposite side of trench spoils pile, so that the pipe can be moved easily to the edge of the trench for lowering into position.

3.4 PIPE INSTALLATION

A. General

B. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.

C. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

D. Install manholes/catch basins for changes in direction unless fittings are indicated. Use fittings for branch connections unless direct tap into existing sewer is indicated.

E. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

F. When installing pipe under streets or other obstructions that cannot be disturbed, use pipe-jacking process of microtunneling.

G. Install gravity-flow, nonpressure drainage piping in accordance with the following:

1. Install piping pitched down in direction of flow.

2. Install PE corrugated sewer piping in accordance with ASTM D2321.

3.5 PIPE JOINT CONSTRUCTION

A. Join gravity-flow, nonpressure drainage piping in accordance with the following:

1. Join corrugated-PE piping in accordance with ASTM D3212 for push-on joints.

2. Join dissimilar pipe materials with nonpressure-type flexible couplings.

3.6 CONNECTIONS

A. Make connections to existing piping and underground manholes.

3.7 IDENTIFICATION

A. Materials and their installation are specified in Section 31 2000 "Earth Moving." Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.

1. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.8 FIELD QUALITY CONTROL

A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.

1. Submit separate reports for each system inspection.

2. Defects requiring correction include the following:

a. Alignment: Less than full diameter of inside of pipe is visible between structures.

b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 95 percent of piping diameter.

c. Damage: Crushed, broken, cracked, or otherwise damaged piping.

d. Infiltration: Water leakage into piping.

e. Exfiltration: Water leakage from or around piping.

3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
4. Reinspect and repeat procedure until results are satisfactory.

3.9 CLEANING

A. Clean interior of piping of dirt and superfluous materials.

END OF SECTION

GENERAL NOTES:

1. REFER TO PROJECT SPECIFICATIONS FOR DETAILED INFORMATION AND COORDINATE WITH PROJECT DRAWINGS.
2. THE CONTRACTOR SHALL USE THE WRITTEN DIMENSIONS PROVIDED WITHIN THE CONTRACT DRAWINGS. SCALED DIMENSIONS SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.
3. THE CONTRACTOR SHALL CONTACT OWNER'S REPRESENTATIVE IMMEDIATELY IF CLARIFICATION OR INTERPRETATION OF THE CONTRACT DOCUMENTS, OR ANY OTHER ASPECTS OF THE PROJECT, IS REQUIRED.
4. LEGEND REPRESENTS STANDARD LINE TYPES AND HATCHING UNLESS INDICATED ON SPECIFIC DRAWINGS.
5. THE ABBREVIATIONS AND SYMBOLS HEREIN ARE STANDARD OF THIS OFFICE AND APPLY TO A VARIETY OF PROJECTS. ONLY A PORTION OF THEM WILL NECESSARILY APPLY TO ANY GIVEN PROJECT. SEE THE LISTINGS IN OTHER SECTIONS OF THIS PROJECT FOR ADDITIONAL SYMBOLS AND ABBREVIATIONS.
6. EDR IS NOT RESPONSIBLE FOR SITE SECURITY AND SAFETY, OR CONSTRUCTION MEANS AND METHODS.
7. EDR IS NOT RESPONSIBLE FOR THE SEQUENCING OF CONSTRUCTION UNLESS A SEQUENCE OF CONSTRUCTION IS PROVIDED IN THE CONTRACT DOCUMENTS.

SITE CIVIL NOTES:

1. THE CONTRACTOR SHALL APPLY FOR ALL REQUIRED PERMITS, PAY ALL FEES REQUIRED BY GOVERNING AGENCIES HAVING JURISDICTION OVER THE FACILITIES AND NATURAL FEATURES FOUND ON SITE, AND FURNISH COPIES TO THE OWNER PRIOR TO COMMENCING WORK.
2. THE CONTRACTOR'S WORK AREA SHALL BE CONFINED TO THE CONTRACT LIMIT LINES. THE CONTRACTOR SHALL OBTAIN ANY ADDITIONAL EASEMENTS OR WORK RELEASES SHOULD THE CONTRACTOR REQUIRE ADDITIONAL AREA TO ACCOMMODATE HIS OPERATIONS.
3. SITE ACCESS IS RESTRICTED TO THE LOCATIONS DESIGNATED ON PLAN.
4. THE CONTRACTOR SHALL ADHERE TO ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), STATE AND LOCAL SAFETY REGULATIONS.
5. CONTRACTOR SHALL PROMPTLY REPORT TO THE OWNER'S REPRESENTATIVE ANY DISCREPANCIES FOUND ON THE SITE OR IN THE CONTRACT DOCUMENTS FOR REVIEW AND RESOLUTION BEFORE PROCEEDING WITH THE WORK IN THE AREA IN QUESTION. PROVIDE FIELD INFORMATION SPECIFIC TO THE DISCREPANCY TO EXPEDITE RESOLUTION.
6. THE TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN WAS PREPARED BY HULBERT ENGINEERING AND LAND SURVEYING, DPC 33 LEWIS ROAD BINGHAMPTON, NY 13095.
7. THE START OF ANY ON-SITE CONSTRUCTION INCLUDING STRIPPING TOPSOIL, REMOVING CUT OR PLACING FILL MATERIAL ESTABLISHES THAT THE CONTRACTOR ACCEPTS THE CONTRACT DOCUMENTS AS ACCURATELY REPRESENTING THE EXISTING SITE CONDITIONS.
8. DURING SALVAGE OPERATIONS FOR MATERIAL INTENDED FOR REUSE ON SITE, MATERIAL MAY BE DAMAGED AND OR NOT SUITABLE FOR REUSE. THE CONTRACTOR SHALL VERIFY QUANTITY AND QUALITY OF SALVAGED MATERIAL AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DEFICIENCIES.
9. ALL FACILITIES TO BE CONSTRUCTED OR INSTALLED SHALL COMPLY WITH ALL SECTIONS AND LATEST REVISIONS OF THE REQUIREMENTS OF ALL AGENCIES OF GOVERNMENT HAVING JURISDICTION.
10. LONG LEAD AND SCARCE MATERIALS SHALL BE ORDERED IN A TIMELY MANNER TO PREVENT AVOIDABLE CONSTRUCTION DELAYS.
11. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE CAUSED BY CONSTRUCTION TO EXISTING UTILITIES AND FACILITIES WHICH ARE NOT INCLUDED AS PART OF THE INTENDED WORK. THE CONTRACTOR SHALL REPAIR, RESTORE AND/OR REPLACE ALL DAMAGE TO THE SATISFACTION OF OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
12. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION EQUAL TO THAT WHICH EXISTED PRIOR TO CONSTRUCTION IN ACCORDANCE WITH SPECIFICATIONS.
13. THE CONTRACTOR SHALL RESTORE ALL DISTURBED SURFACES TO ORIGINAL OR BETTER CONDITION INCLUDING 6 INCHES OF TOPSOIL, SEED, FERTILIZER, AND MULCH. OTHER SURFACES SHALL BE RESTORED AS SHOWN ON THE DETAILS.
14. CONTRACTOR SHALL PROVIDE POSITIVE SITE DRAINAGE DURING CONSTRUCTION OPERATIONS. ALL FINAL LINES AND GRADES SHALL BE CONSTRUCTED TO MAINTAIN POSITIVE SITE DRAINAGE TO EXISTING DRAINAGE STRUCTURES.
15. ALL PAVEMENT SHALL BE SAW CUT PRIOR TO RESTORATION.
16. CONTRACTOR SHALL COORDINATE STAGING AREAS WITH OWNER.
17. CONTRACTOR SHALL VISIT AND EXAMINE THE SITE TO FULLY UNDERSTAND ALL THE CONDITIONS PERTAINING TO THE SCOPE OF WORK, UNDERSTAND DIFFICULTIES TO BE ENCOUNTERED AND MATERIALS REQUIRED FOR THE COMPLETE INSTALLATION OF THE WORK SHOWN ON THE DRAWINGS AND OR SPECIFIED AT NO ADDITIONAL COST TO THE OWNER. THE EXACT LOCATION, CONDITION, SIZE, AND RIM/INVERT ELEVATIONS OF THE EXISTING PIPING, EQUIPMENT, SERVICES, ETC. SHALL BE FIELD VERIFIED. CONTRACTOR SHALL MODIFY LAYOUT WITH THE APPROVAL OF THE ENGINEER WHERE REQUIRED TO CLEAR OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER.
18. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS AND MAKE ALL NECESSARY PROVISIONS FOR PROTECTION OF THE PUBLIC, THE WORKERS AND THE WORK, AND FOR MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC AS REQUIRED BY THE AGENCIES OF GOVERNMENT HAVING JURISDICTION.
19. LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS.
20. COMPLY WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS REGARDING MATERIALS, METHODS OF WORK AND DISPOSAL OF EXCESS AND WASTE MATERIALS.
21. BURNING OF MATERIALS OF ANY DESCRIPTION ON THE SITE IS PROHIBITED.
22. PRIOR TO PERFORMING ANY EXCAVATION WITHIN THE CONSTRUCTION AREA, CONFIRM WITH DIG SAFELY NEW YORK AT 1-800-962-7962 THAT ALL EXISTING UNDERGROUND UTILITY LOCATIONS ARE CURRENTLY VERIFIED, OR ARRANGE FOR VERIFICATION.

UTILITIES NOTES:

1. EXISTING UTILITIES (PIPE/STRUCTURE LOCATIONS, SIZES, AND INVERT ELEVATIONS) SHOWN ON THESE PLANS HAVE BEEN PLOTTED FROM FIELD SURVEYS AND RECORDED MAPS AND SHALL BE INTERPRETED AS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND FIELD VERIFYING ALL EXISTING INFORMATION AT ALL LOCATIONS IN CLOSE PROXIMITY TO THE UTILITIES AND WORK UNDER CONSTRUCTION. THIS INFORMATION INCLUDES BUT IS NOT LIMITED TO EXISTING PIPE AND STRUCTURE SIZES, PIPE AND STRUCTURE LOCATIONS, PIPE SLOPES, STRUCTURE RIM AND INVERT ELEVATIONS, PIPE MATERIALS AND PIPE CONDITIONS. THIS SHALL INCLUDE PIPE INVERTS, MATERIALS AND SIZES FOR UTILITIES CONNECTING TO DOWNSTREAM STRUCTURES. THIS VERIFICATION SHALL BE COMPLETED PRIOR TO THE COMMENCEMENT OF SHOP DRAWING SUBMITTALS, ORDERING OF MATERIALS, AND THE START OF ANY REMOVALS FOR THIS PROJECT. ANY PROPOSED MODIFICATIONS TO THE DESIGN SHALL BE SUBMITTED AS SHOP DRAWINGS INCLUDING BUT NOT LIMITED TO DESIGN DRAWINGS AND UTILITY PROFILES INCLUDING PIPE AND STRUCTURE LAYOUT, STRUCTURE RIM AND INVERT ELEVATIONS, AND PIPE SIZES, MATERIALS AND SLOPES.
2. THE OWNER'S REPRESENTATIVE SHALL REVIEW THE LAYOUT OF ALL PAVEMENTS, UTILITIES, AND PLANTINGS IN THE FIELD BEFORE INSTALLATION. THE CONTRACTOR SHALL SCHEDULE ADVANCED NOTIFICATION TO THE OWNER'S REPRESENTATIVE TO FACILITATE TIMELY REVIEW.
3. THE OWNER ONLY SHALL OPERATE EXISTING VALVES AND FIRE HYDRANTS, INCLUDING NEWLY INSTALLED VALVES AND FIRE HYDRANTS THAT HAVE BEEN PLACED INTO SERVICE. THE CONTRACTOR IS ADVISED THAT WATERTIGHT CONDITIONS MAY NOT EXIST WHEN EXISTING VALVES ARE CLOSED.
4. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY EXCAVATION WORK WITHIN 10 FEET OF UTILITY POLES. THE CONTRACTOR SHALL INCLUDE THE COST OF TEMPORARY POLE SUPPORT IN THE APPROPRIATE BID ITEM. WHERE UTILITY POLES ARE REQUIRED TO BE SUPPORTED DURING CONSTRUCTION, THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH THE UTILITY COMPANY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND MAINTENANCE OF SURFACE WATER AND/OR GROUNDWATER ENCOUNTERED DURING THE COURSE OF WORK.
6. PRIOR TO START OF WORK, THE CONTRACTOR SHALL PROVIDE EXPLORATORY EXCAVATIONS AND COORDINATE ALL PIPING LAYOUTS WITH THE OWNER'S REPRESENTATIVE TO ELIMINATE ALL CONFLICTS WITH EXISTING UTILITIES.
7. THE USE OF EXPLOSIVES OF ANY DESCRIPTION ON THE SITE IS PROHIBITED.
8. CONSTRUCTION DEBRIS AND DEMOLISHED MATERIALS SHALL BE REMOVED FROM THE SITE AT REGULAR INTERVALS AS DETERMINED BY THE OWNER'S REPRESENTATIVE AND SHALL NOT BE ALLOWED TO ACCUMULATE. EMPLOY APPROPRIATE MEASURES TO PREVENT LOOSE DEBRIS FROM LEAVING THE CONSTRUCTION AREA.
9. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE CAUSED BY CONSTRUCTION TO EXISTING UTILITIES AND FACILITIES WHICH ARE NOT INCLUDED AS PART OF THE INTENDED WORK. THE CONTRACTOR SHALL REPAIR, RESTORE AND/OR REPLACE ALL DAMAGE TO THE SATISFACTION OF UTILITY'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
10. PERFORM WORK AND PROVIDE ALL MATERIALS NECESSARY TO DISCONNECT OR RELOCATE EXISTING UTILITIES. COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES FOR SHUTOFF AND RECONNECTION OF ACTIVE SERVICES. RECORD EXISTING UTILITY TERMINATION POINTS BEFORE DISCONNECTION.
11. ADJUST THE RIM ELEVATIONS OF EXISTING UTILITY STRUCTURES SCHEDULED TO REMAIN WITH THE FINISHED GRADE ELEVATIONS.
12. THE CONTRACTOR SHALL MAINTAIN EXISTING SANITARY SEWER AND WATER SERVICES AT ALL TIMES, EXCEPT DURING APPROVED AND SCHEDULED INTERRUPTIONS. THE CONTRACTOR SHALL SUBMIT A PROPOSED WORK SCHEDULE AND A DETAILED SANITARY SEWER BY-PASS PROCEDURE TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. THE CONTRACTOR SHALL RESTORE GRAVITY SANITARY SEWER SERVICE AT THE END OF EACH WORKDAY. SHOULD THIS NOT BE POSSIBLE, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY BY-PASS PUMPING OPERATIONS UNTIL NORMAL GRAVITY FLOWS CAN BE RE-ESTABLISHED AT NO ADDITIONAL COST TO THE OWNER.
13. ALL STRUCTURES SHALL MEET THE AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO) H20 LOADING REQUIREMENTS.
14. ALL NEW UTILITY LATERALS SHALL BE INSTALLED WITH A MINIMUM 1/4" PER FOOT SLOPE UNLESS OTHERWISE DIRECTED ON THE DRAWINGS OR IN TECHNICAL SPECIFICATIONS.
15. ALL CATCH BASIN GRATES SHALL INCLUDE THE LETTERING, "NO DUMPING".
16. ALL EXISTING DRAINAGE FACILITIES SHALL BE MAINTAINED FREE OF DEBRIS AND FOREIGN MATTER AND BE IN OPERATION THROUGHOUT CONSTRUCTION.
17. ALL PROPOSED WATER MAIN PIPING SHALL BE INSTALLED WITH A MINIMUM OF 5-FOOT OF COVER UNLESS OTHERWISE DIRECTED ON THE DRAWINGS OR IN TECHNICAL SPECIFICATIONS.
18. THE CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE OWNER FOR THE WYE DIRECTION (UPSTREAM OR DOWNSTREAM), FOR STORM AND SANITARY SYSTEMS BASED ON THE OWNER'S INFRASTRUCTURE REQUIREMENTS.
19. DISTANCES SHOWN ON PIPING ARE HORIZONTAL DISTANCES FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, UNLESS OTHERWISE NOTED.

EROSION & SEDIMENT CONTROL & POLLUTION PREVENTION NOTES

1. AVOID ANY DISTURBANCE OF EXISTING VEGETATION ON THE SITE EXCEPT THE VEGETATION SPECIFICALLY DESIGNATED TO BE REMOVED.
2. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EROSION AND CONTROL SEDIMENTATION AS REQUIRED BY THE AGENCIES OF GOVERNMENT HAVING JURISDICTION.
3. TOP DRESS, SEED, AND MULCH OR SOD ALL LAWN AREAS DISTURBED BY THE CONSTRUCTION AS SOON AS THE FINISHED GRADING OPERATION IS COMPLETED.
4. MAINTAIN AN ADEQUATE SUPPLY OF EROSION AND SEDIMENT CONTROL MATERIALS AT THE CONSTRUCTION SITE AT ALL TIMES TO BE USED FOR URGENT SITUATIONS, SUCH AS UNEXPECTED HEAVY RAINFALL.
5. MAINTENANCE AND REPAIR OF ALL EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM AND FUEL TANK DRAIN DOWN, DEGREASING OPERATIONS AND OTHER ACTIVITIES THAT MAY RESULT IN THE ACCIDENTAL RELEASE OF CONTAMINANTS MUST BE CONDUCTED OFF-SITE. ACCIDENTAL SPILLS MUST BE CLEANED UP IMMEDIATELY AND CONTAMINANTS DISPOSED OF PROPERLY.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING SOIL AND EXCESS EXCAVATED EARTH STOCKPILES AT A STABLE LOCATION. STOCKPILES SHALL BE STABILIZED PER THE DETAIL.
7. CONSTRUCTION ROUTES SHALL BE STABILIZED PER THE NYS STANDARDS FOR EROSION AND SEDIMENT CONTROL, AS NECESSARY BASED ON SITE CONDITIONS.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE PLACEMENT, DESIGN, APPROVAL, AND OPERATION OF THE CONCRETE WASHOUTS. THE CONCRETE WASHOUTS SHALL BE INSTALLED A MINIMUM OF 50' FROM STORM DRAINAGE OR SURFACE WATER. CONCRETE WASTE MATERIAL SHALL NOT BE ALLOWED TO ESCAPE FROM THE CONCRETE WASHOUT.
9. SOLID WASTE SHALL BE STORED IN COVERED DUMPSTERS OR OTHER APPROPRIATE CONTAINERS. WASTE IS TO BE DISPOSED OF REGULARLY AND PROPERLY IN ACCORDANCE WITH LOCAL, STATE, AND/OR FEDERAL REGULATIONS.
10. THE EROSION AND SEDIMENT CONTROLS ARE SHOWN FOR A CONDITION WHEN ALL WORK IS OCCURRING SIMULTANEOUSLY. ACTUAL INSTALLATIONS SHALL BE ADJUSTED BASED ON CURRENT CONSTRUCTION ACTIVITY AND SITE CONDITIONS.

DRAWING LIST

DWG No.	DRAWING NAME
CG-001	NOTES ABBREVIATIONS AND DRAWING LIST
C-100	EXISTING SITE CONDITIONS
C-101	SITE REMOVALS PLAN
C-102	SITE - PLAN
C-103	DRAINAGE - PLAN
C-201	EROSION AND SEDIMENTATION CONTROL PAN
C-601	EROSION CONTROL AND ASPHALT PAVEMENT DETAILS
C-602	CIVIL SITE DETAILS I
C-603	CIVIL SITE DETAILS II
C-604	NEW YORK D.O.T. PEDESTRIAN FACILITIES AND ADA DETAILS
CL-101	EXTERIOR LIGHTING - PLAN
CS-101	CAST IN PLACE CONCRETE RETAINING WALL GENERAL NOTES, DETAILS, PLAN AND SECTION

LEGEND:

- EC — EROSION CONTROL / SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL AT CATCH BASIN
- STABILIZED SOIL STOCKPILE
- D — D — HDPE STORM DRAIN PIPE
- 8.05 — SPOT ELEVATION
- CO — STORMWATER CLEANOUT
- 10 — PROPOSED MAJOR CONTOUR
- 9 — PROPOSED MINOR CONTOUR
- ADA PARKING PACE
- PAVED
- RETAINING WALL

ABBREVIATIONS

AL	ALUMINUM	DMH	DROP MANHOLE	IN	INCH/INCHES	PC	POINT OF CURVATURE
ACT	ACTUAL	DWG	DRAWING	INL	INLET	PL	PROPERTY LINE
APPR	APPROXIMATE/ APPROXIMATELY			INV	INVERT	PT	POINT OF TANGENT/ PERCOLATION TEST LOCATION
		E	EAST	IP	IRON PIPE		
BC	BOTTOM OF CURB	EA	EACH			PVC	POLYVINYL CHLORIDE
BLDG	BUILDING	EJ	EXPANSION JOINT	JB	JUNCTION BOX		
BM	BENCHMARK	EL	ELEVATION			R	RADIUS
BOS	BOTTOM OF SLOPE	EQ	EQUAL	L	LENGTH/LONG	RCP	REINFORCED CONCRETE PIPE
BS	BOTTOM OF STAIR	ES	END SECTION	LA	LANDSCAPE ARCHITECT		
BW	BOTTOM OF WALL	EX	EXISTING	LAT	LATITUDE	REINF	REINFORCING
B&B	BALLED AND BURLAPPED	EXP	EXPANSION	LF	LINEAR FEET	REQD	REQUIRED
		FFE	FINISHED FLOOR ELEVATION	LFT	LEFT	REV	REVISION
CAL	CALIPER	FG	FINISHED GRADE	LIN	LINEAR	ROW	RIGHT OF WAY
CB	CATCH BASIN	FIN	FINISH	LP	LOW POINT	RT	RIGHT
CF	CUBIC FEET	FL	FLOOR	M	METER		
CI	CAST IRON	FTG	FOOTING	MAX	MAXIMUM	S	SOUTH
CIP	CAST IN PLACE	FT	FOOT/FEET	MH	MANHOLE	SAN	SANITARY
CIR	CIRCLE/CIRCULAR			MIN	MINIMUM	SECT	SECTION
CJ	CONTROL JOINT	GA	GAUGE	MISC	MISCELLANEOUS	SF	SQUARE FOOT
CLF	CHAIN-LINK FENCE	GAL	GALLON	MON	MONUMENT	SG	SUB GRADE
CLL	CONTRACT LIMIT LINE	GALV	GALVANIZED			SH	SHEET
CLR	CLEAR	GC	GENERAL CONTRACTOR	N	NORTH	SI	STORM INLET
CMP	CORRUGATED METAL PIPE	GR	GUARDRAIL	NIC	NOT IN CONTRACT	SL	STREET LIGHT
CO	CLEANOUT	GV	GAS VALVE	NOM	NOMINAL	SPEC	SPECIFICATIONS/ SPECIFIED
COL	COLUMN			NTS	NOT TO SCALE		
CONC	CONCRETE	HOR	HORIZONTAL	NUM	NUMBER	SQ	SQUARE
CONT	CONTAINER	HP	HIGH POINT			SS	STAINLESS STEEL
CONTR	CONTRACTOR	HT	HEIGHT	OC	ON CENTER	STA	STATION
CY	CUBIC YARDS	HW	HEAD WALL	OCEW	ON CENTER EACH WAY	STL	STEEL
		HWY	HIGHWAY	OD	OUTSIDE DIAMETER	SY	SQUARE YARD
DET	DETAIL	HYD	HYDRANT	OP	OUTLET PROTECTION		
DIM	DIMENSION					T	TANGENT
DIA	DIAMETER	ID	INSIDE DIAMETER	PA	PLANTING AREA	TB	TEST BORING

TC	TOP OF CURB		
TOS	TOP OF SLOPE		
TS	TOP OF STAIR		
TW	TOP OF WALL		
TYP	TYPICAL		
T&G	TONGUE AND GROOVE		
UD	UNDERDRAIN		
USGS	UNITED STATES GEOLOGICAL SURVEY		
VAR	VARIES/VARIABLE		
VCP	VITRIFIED CLAY PIPE		
VERT	VERTICAL		
W	WEST		
WE	WATER ELEVATION		
WL	WALK LIGHT		
WV	WATER VALVE		
WWM	WOVEN WIRE MESH		
W/	WITH		
W/O	WITHOUT		
YD	YARD DRAIN		
℄	CENTER LINE		
±	PLUS OR MINUS		
Δ	CHANGE IN VALUE		
<	LESS THAN		
>	GREATER THAN		

STATE OF NEW YORK · MICHAEL E. TAMBLYN · 073737 · LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:
RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**

CLIENT: **ROCKLAND GREEN**

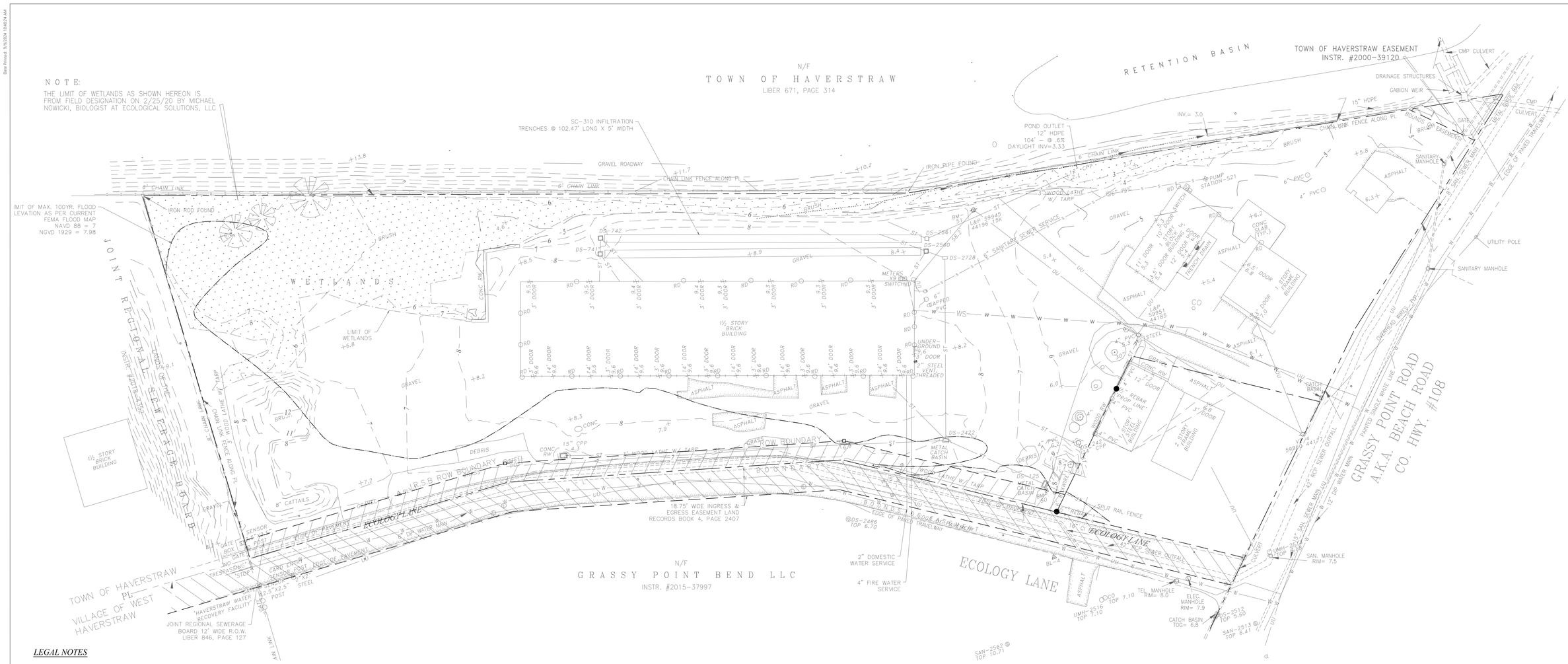
DRAWING TITLE: **NOTES, ABBREVIATIONS, DRAWING LIST AND LEGEND**

CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **NOT TO SCALE**
DRAWN BY: **JJO**
CHECKED BY: **JHH**
DRAWING NUMBER:
CG-001



LEGAL NOTES

1. *THE TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN WAS PREPARED BY HULBERT ENGINEERING AND LAND SURVEYING, DPC 33 LEWIS ROAD BINGHAMPTON, NY 13095.*
2. *ONLY BOUNDARY SURVEY MAPS WITH THE SURVEYOR'S EMBOSSED SEAL ARE GENUINE TRUE AND CORRECT COPIES OF THE SURVEYOR'S ORIGINAL WORK AND OPINION.*
3. *THE CERTIFICATION IS LIMITED TO PERSONS FOR WHOM THE BOUNDARY SURVEY MAP IS PREPARED.*
4. *THE CERTIFICATIONS HEREON ARE NOT TRANSFERABLE.*
5. *THE LOCATION OF UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS ARE NOT ALWAYS KNOWN AND OFTEN MUST BE ESTIMATED. UNDER-GROUND IMPROVEMENTS OR ENCROACHMENTS ARE NOT COVERED BY THIS CERTIFICATE.*
6. *UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES WHETHER FUNCTIONAL OR ABANDONED WITHIN THE PROJECT AREA ARE SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BY CONTACTING DIG SAFELY, NEW YORK AT 1-800-962-7962, IN ACCORDANCE WITH 16 NYCRR PART 753, (ALSO CITED AS INDUSTRIAL CODE 53 OR CODE RULE 53) BEFORE STARTING WORK AND SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM HIS OR HER WORK. TICKET NO. 07244-000-735.*

ALL COORDINATES AND BEARINGS ARE BASED ON NEW YORK STATE PLANE EASTERN ZONE NAD83(CORS2011) NAVD88 US SURVEY FEET

FIELD SURVEY COMPLETED AUGUST 2, 2024

DS-125
TOP 6.76
SE 5.3 4" CPP
NW 3.4 12" CPP
SUMP 6.76

DS-242
TOP 8.36
S 3.0 6" PVC
SUMP -4.0

TRENCH_DRAIN-425
TOP 5.32
SUMP 4.8

DS-741
TOP 7.54
NE 2.5 15" CPP
SE 2.5 12" CPP
SW 2.8 12" RCP
SUMP 1.3

DS-742
TOP 6.88
SE 2.4 12" CPP
SW 2.5 15" CPP
SUMP 0.6

DS-2422
TOP 6.96
N 3.0 15" CSP
SE 3.2 12" CPP
NW 3.3 12" CPP
SUMP 3.2

DS-2560
TOP 8.49
SE 2.5 15" CPP
SW 2.8 12" RCP
NW 2.6 12" CPP
SUMP 1.3

DS-2561
TOP 7.85
E 2.6 12" CPP
NW 2.6 12" CPP
SUMP 0.7

DS-2728
TOP 7.10
S 2.8 12" CPP
NW 2.8 15" CPP
SUMP 2.7

PUMP STATION-521
TOP 5.75
ELEC. PUMP 0.5
ELBOW 2.4 2" PVC
ELEC. OUTLET BOX 2.8
W 1.4 6" PVC
SUMP -0.7

EXISTING SITE - PLAN

SCALE: 1" = 30'

BASELINE 3
1#2 REBAR W/CAP "BASELINE"
N: 867,076.236
E: 637,160.641

BASELINE 4
1#2 REBAR W/CAP "BASELINE"
N: 866,912.925
E: 637,545.061

BM-50
A ½" REBAR WITH A CAP 'BASELINE' SET IN CONCRETE ON THE EASTERLY EDGE OF THE GRAVEL PARKING LOT LOCATED 4.0 FEET SOUTHERLY OF A METAL CATCH BASIN (DS-125) AND 14.8 FEET NORTHWESTERLY OF A FOUND ½ INCH REBAR.

ELEVATION: 6.46

BM-51
A BENCH TIE ON THE SOUTH SIDE OF A UTILITY POLE (L&P 59945 44196 15K) ON THE NORTHERLY EDGE OF A GRAVEL PARKING LOT LOCATED 58.2 FEET NORTHEASTERLY FROM THE NORTHEAST CORNER OF A 1½ STORY BRICK BUILDING.

ELEVATION: 7.97

NOTE:
PROPERTY BOUNDARY AND EASEMENT INFORMATION TAKEN FROM FROM CORLESS AND ASSOCIATES, ENVIRONMENTAL ENGINEERS - LAND SURVEYORS 48 MICHAEL ROBERT CT. PEARL RIVER, NEW YORK 10965. PLAN DATED 6/07/2022 CALLED "EXISTING CONDITIONS PLAN FOR BEACH ROAD INDUSTRIAL, LLC.LOCATED IN TOWN OF HAVERSTRAW, ROCKLAND COUNTY, NY.

EXISTING LEGEND

●	MONUMENTATION FOUND (AS NOTED)	○	BUSH DECIDUOUS	AC	AIR CONDITIONING UNIT
△	BASELINE POINT	⊙	DECIDUOUS TREE (AS NOTED)	+	SPOT ELEVATION
⊡	BENCH MARK	⊙	UTILITY POLE		WATER HOSE HOOK-UP
58.2'	TIE LINE	>	GUY WIRE		FIRE HYDRANT
OU	OVERHEAD UTILITIES	E	ELECTRIC (AS NOTED)	⊗	WATER VALVE
UU	UNDERGROUND UTILITIES PAINT	E	ELECTRIC MANHOLE	+	PIPE INVERT
UU	UNDERGROUND UTILITIES PLANS	○	MISCELLANEOUS MANHOLE	CPP	CORRUGATED PLASTIC PIPE
W	WATER LINE PAINT	□	DRAINAGE STRUCTURE	PVC	POLYVINYL CHLORIDE PIPE
ST	STORM DRAINAGE LINE	▭	DRAINAGE STRUCTURE AT EP	RW	RETAINING WALL
	BRUSH LINE	○	DRAINAGE STRUCTURE	⊕	MISCELLANEOUS UTILITY
	FENCE LINE (AS NOTED)	◎	STORM DRAINAGE MANHOLE		
	GRAVEL OUTLINE	S	SANITARY MANHOLE		
	STONE-DIRT PILE	○CO	CLEANOUT		
	DRIP LINE	○	POST (AS NOTED)		
6 5 4	1' CONTOUR INTERVAL	○RD	ROOF DRAIN		
		◒	BOLLARD		

30 0 10 30 60
GRAPHIC SCALE (IN FEET)

STATE OF NEW YORK · MICHAEL E. TAMBLIN · 073737 · LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

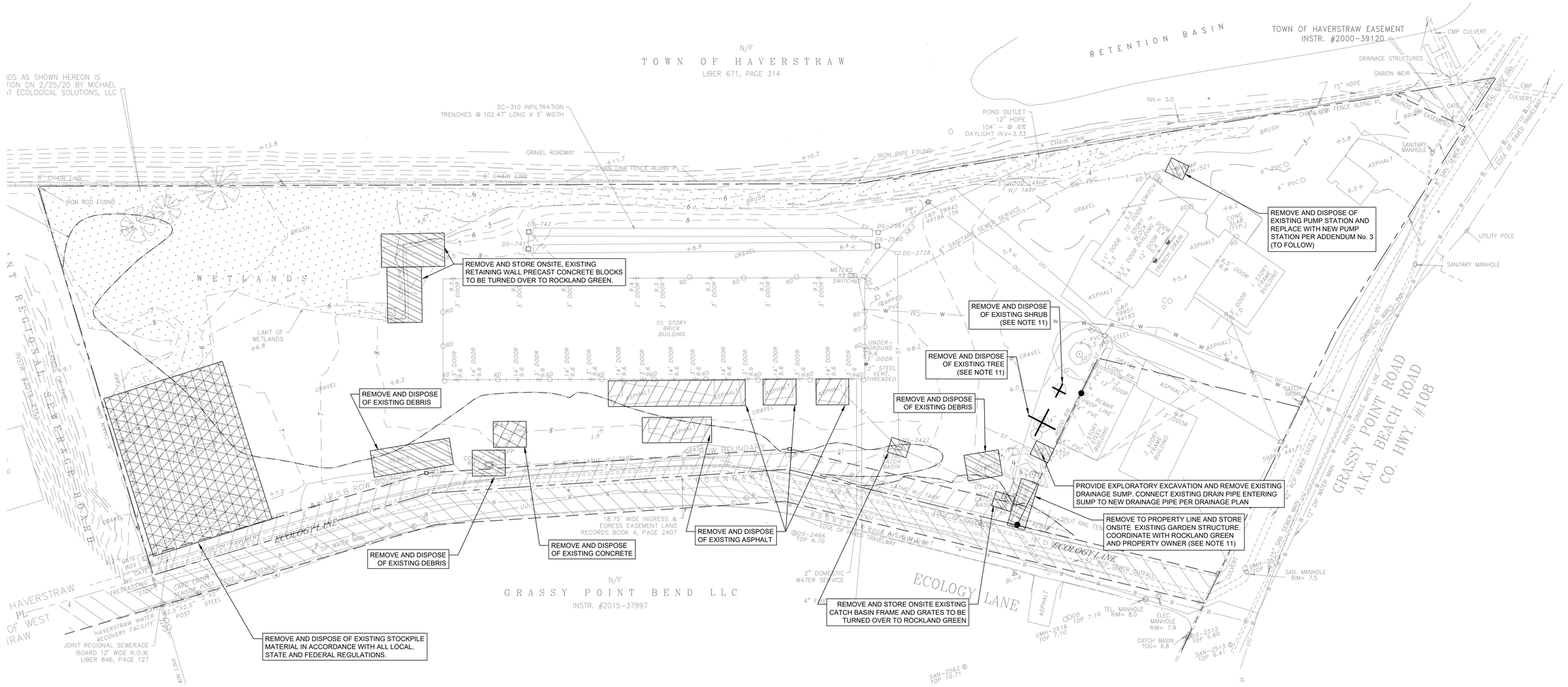
PROJECT TITLE:
RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**
CLIENT: **ROCKLAND GREEN**
DRAWING TITLE: **EXISTING SITE PLAN**
CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **1" = 30'**
DRAWN BY: **JJO**
CHECKED BY: **JHH**
DRAWING NUMBER:
C-100



SITE REMOVAL PLAN

SCALE: 1" = 30'

DEMOLITION PLAN NOTES

1. REFER TO GENERAL NOTES.
2. UNLESS INDICATED "REMOVE AND SALVAGE" OR "REMOVE AND REUSE," ALL ITEMS INDICATED "REMOVE" SHALL BE DEMOLISHED, HAULED OFF-SITE AND DISPOSED OF IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF ALL AGENCIES OF GOVERNMENT HAVING JURISDICTION.
3. EXERCISE ALL REASONABLE CARE IN REMOVING AND HANDLING EXISTING ON-SITE MATERIALS INDICATED FOR SALVAGE TO THE OWNER OR FOR REUSE ON THE SITE.
4. FLAG OR OTHERWISE MARK IN A NON-PERMANENT MANNER ALL TREES SHOWN FOR REMOVAL ADJACENT TO OR IN CLOSE PROXIMITY TO THE LIMITS OF WORK FOR REVIEW BY THE OWNER'S REPRESENTATIVE PRIOR TO ANY REMOVAL. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO ADJUST THE CLEARING LIMITS.
5. PERFORM WORK AND PROVIDE ALL MATERIALS NECESSARY TO DISCONNECT OR RELOCATE EXISTING UTILITIES. COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES FOR SHUTOFF AND RECONNECTION OF ACTIVE SERVICES. RECORD EXISTING UTILITY TERMINATION POINTS BEFORE DISCONNECTION.
6. WHERE EXISTING PAVEMENT IS TO BE REMOVED, SAW CUT THE PAVEMENT EDGE TO PROVIDE A TRUE, NEAT AND CLEAN EDGE AGAINST WHICH TO ABUT WORK OF THIS CONTRACT.
7. ALL ABANDONED PIPES ARE TO BE FILLED WITH CONTROLLED LOW STRENGTH CONCRETE.
8. THE CONTRACTOR IS PERMITTED TO SALVAGE ALL MATERIALS AND EQUIPMENT FROM THE DEMOLITION WORK EXCEPT FOR MATERIALS AND EQUIPMENT SHOWN OR SPECIFIED TO BE REMOVED AND DELIVERED TO AN ON-SITE LOCATION TO BE NAMED BY THE OWNERS REPRESENTATIVE.
9. ALL SALVAGED MATERIALS AND EQUIPMENT SHALL BE TAKEN OFF-SITE IMMEDIATELY UPON REMOVAL. NO ON-SITE STORAGE IS ALLOWED. NO RE-USE OF SALVAGED MATERIALS IS ALLOWED IN THIS CONTRACT. NO SALE OF SALVAGED ITEMS IS ALLOWED ON THE PROJECT SITE.
10. ROCKLAND GREEN ENCOURAGES RECYCLING OF ALL MATERIALS TO THE GREATEST EXTENT POSSIBLE. ASPHALT AND CONCRETE (A/C) DEBRIS SHALL BE LOADED AND HAULED TO THE CLARKSTOWN TRANSFER STATION IN WEST NYACK NY FOR PROCESSING AND REUSE. CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, LOADING, AND HAULING OF ALL A/C TO THE TRANSFER STATION. MATERIAL SHALL BE WEIGHED AT THE TRANSFER STATION TRUCK SCALE AND ROCKLAND GREEN WILL WAIVE ALL TIP FEES. SPECIFIC REQUIREMENTS FOR A/C RECYCLING MAY BE FOUND ON ROCKLAND GREEN'S WEBSITE (WWW.ROCKLANDGREEN.COM)
11. ADVISE ROCKLAND GREEN PRIOR TO REMOVAL AND DISPOSAL OF NOTED TREE AND PLANTS. ROCKLAND GREEN WILL COORDINATE WITH ADJACENT PROPERTY OWNER TO DETERMINE IF THESE PLANTINGS WILL BE RELOCATED TO THE ADJACENT PROPERTY.

DEMOLITION LEGEND

SYMBOL	ITEM
	OWNER SHALL REMOVE PRIOR TO CONSTRUCTION
	REMOVE EXISTING CONCRETE PAVEMENT
	REMOVE EXISTING ASPHALT PAVEMENT
	REMOVE EXISTING SITE FEATURES AND SURFACE FEATURES
	REMOVE EXISTING CURB
	REMOVE EXISTING TREE OR SHRUB
	REMOVE EXISTING UTILITY LINE
	REMOVE EXISTING FENCE

EXISTING LEGEND

●	MONUMENTATION FOUND (AS NOTED)	ST	STORM DRAINAGE LINE
△	BASELINE POINT		BRUSH LINE
⊡	BENCH MARK		FENCE LINE (AS NOTED)
58.2'	TIE LINE		GRAVEL OUTLINE
OU	OVERHEAD UTILITIES		STONE-DIRT PILE
UU	UNDERGROUND UTILITIES PAINT		DRIP LINE
UU	UNDERGROUND UTILITIES PLANS	6	1' CONTOUR INTERVAL
W	WATER LINE PAINT	5 4	
⌀	BUSH DECIDUOUS	○	POST (AS NOTED)
⊙	DECIDUOUS TREE (AS NOTED)	○RD	ROOF DRAIN
-○-	UTILITY POLE	◒	BOLLARD
>—	GUY WIRE	AC	AIR CONDITIONING UNIT
E	ELECTRIC (AS NOTED)	+	SPOT ELEVATION
E	ELECTRIC MANHOLE	⚘	WATER HOSE HOOK-UP
○	MISCELLANEOUS MANHOLE	⍝	FIRE HYDRANT
□	DRAINAGE STRUCTURE	⊗	WATER VALVE
▭	DRAINAGE STRUCTURE AT EP	+	PIPE INVERT
○	DRAINAGE STRUCTURE	CPP	CORRUGATED PLASTIC PIPE
Ⓓ	STORM DRAINAGE MANHOLE	PVC	POLYVINYL CHLORIDE PIPE
Ⓢ	SANITARY MANHOLE	RW	RETAINING WALL
○CO	CLEANOUT	⊕	MISCELLANEOUS UTILITY

GRAPHIC SCALE (IN FEET): 30 0 10 30 60

STATE OF NEW YORK · MICHAEL E. TAMBLIN · 073737 · LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:

RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**

CLIENT: **ROCKLAND GREEN**

DRAWING TITLE: **SITE REMOVALS PLAN**

CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **1" = 30'**
DRAWN BY: **JJO**
CHECKED BY:
DRAWING NUMBER:
C-101

Date Printed: 9/9/2024 10:45:57 AM

NOTE:
THE LIMIT OF WETLANDS AS SHOWN HEREON IS FROM FIELD DESIGNATION ON 2/25/20 BY MICHAEL NOWICKI, BIOLOGIST AT ECOLOGICAL SOLUTIONS, LLC

N/F
TOWN OF HAVERSTRAW
LIBER 671, PAGE 314

TOWN OF HAVERSTRAW EASEMENT
INSTR. #2000-39120

RETENTION BASIN

DS-2728
TOP 7.10
S 2.8 12" CPP
NW 2.8 15" CPP
SUMP 2.7

DUMPSTER LOCATION

PAVED PARKING AREA
(2 SPACES)

CONCRETE CURBING

DRAINAGE STRUCTURES

GABION WEIR

POND OUTLET
12" HDPE
104' - @ .6%
DAYLIGHT INV=3.33

INV.= 5.0

15" HDPE

SC-310 INFILTRATION
TRENCHES @ 102.47' LONG X 5' WIDTH

PROPOSED CONTOUR (TYP)

GRASSED AREA (TYP)

GRAVEL ROADWAY

CHAIN LINK FENCE ALONG PL

IRON PIPE FOUND

CB-4

CONCRETE RETAINING WALL
T.O.W.10.5'

REMOVE AND REPLACE
EXISTING CONC.
RETAINING WALL SEE
DWG CS-101

LIMIT OF WETLANDS'

W E T L A N D S

ADA PARKING SIGN

PAVED PARKING AREA
10 SPACES TOTAL - 2 ADA

CONCRETE CURB (TYP)

LIMIT OF MAX. 100YR. FLOOD
ELEVATION AS PER CURRENT
FEMA FLOOD MAP
NAVD 88 = 7
NGVD 1929 = 7.98

JOINT REGIONAL SEWERAGE BOARD 12" WIDE R.O.W. LIBER 846, PAGE 127

DEBRI TO BE MOVED BY OWNER

1½ STORY BRICK BUILDING

PAVED PARKING AREA
(4 SPACES TOTAL - 2 ADA)

ADA PARKING SIGN

DMH-1

DMH-3

DMH-2

ADA WALKWAY (SEE
DETAIL DWG C-602)

PAVED PARKING AREA
(10 SPACES TOTAL)

CB-3

EXCB DS-2422

STRIPING

CONCRETE CURB (TYP)

100 YR FLOOD ZONE BOUNDARY

ASPHALT PAVEMENT

RESET RIM TO EL 7.9

RESET RIM TO EL 6.8

EXCB DS-125

PAVED PARKING AREA
9 SPACES

CB-1

CB-2

CONCRETE CURBING (TYP)

ADA WALKWAY (SEE
DETAIL DWG C-602)

CONCRETE CURBING

N/F
GRASSY POINT BEND LLC
INSTR. #2015-37997

18.75' WIDE INGRESS &
EGRESS EASEMENT LAND
RECORDS BOOK 4, PAGE 2407

2" DOMESTIC
WATER SERVICE

4" FIRE WATER
SERVICE

DS-2422
TOP 6.96
N 3.0 15" CSP
SE 3.2 12" CPP
NW 3.3 12" CPP
SUMP 3.2

DS-125
TOP 6.76
SE 5.3 4" CPP
NW 3.4 12" CPP
SUMP 6.76

ECOLOGY LANE

GRASSY POINT ROAD
A.K.A. BEACH ROAD
CO. HWY. #108

SAN. MANHOLE
RIM= 7.5

TOWN OF HAVERSTRAW
VILLAGE OF WEST
HAVERSTRAW

"HAVERSTRAW WATER
RECOVERY FACILITY"

SITE - PLAN
SCALE: 1" = 30'

SCALE 1" = 40'

30 0 10 30 60

GRAPHIC SCALE (IN FEET)

ORIGINAL DRAWING SIZE: ARCH D (24" X 36")

J:\20098 Rockland Greens\Cad\Working Drawings\animal shelter\Cad\20098-C-102.dwg

STATE OF NEW YORK
MICHAEL E. TAMBLIN
073737
LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR
a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:
RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**

CLIENT: **ROCKLAND GREEN**

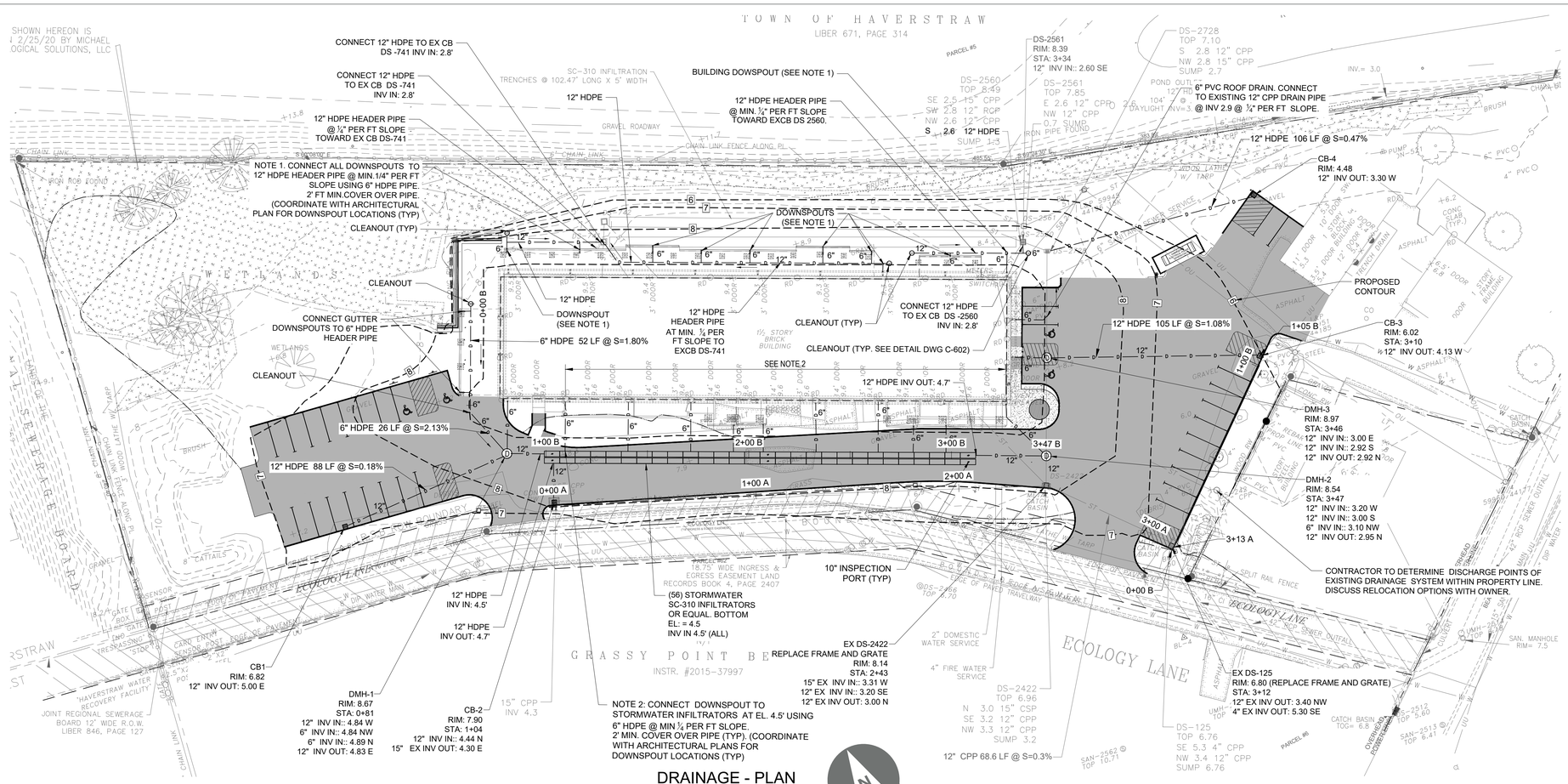
DRAWING TITLE: **SITE PLAN**

CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

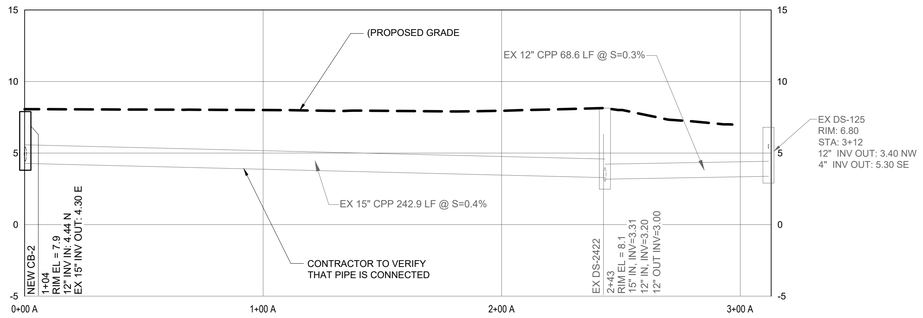
NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **1" = 30'**
DRAWN BY: **JJO**
CHECKED BY: **JHH**
DRAWING NUMBER:
C-102



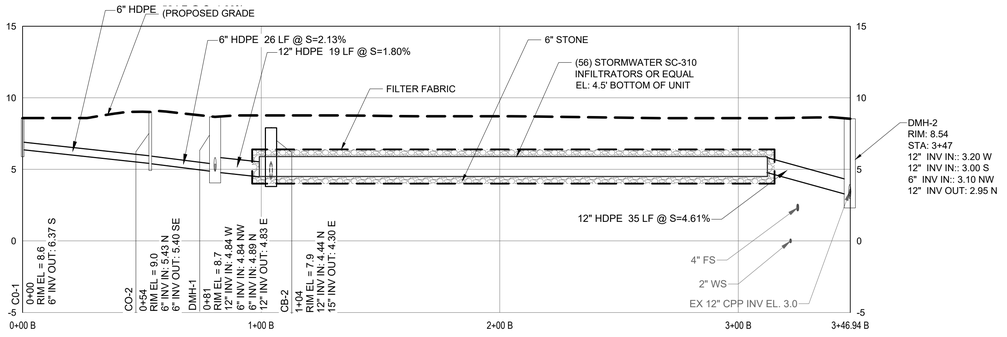
DRAINAGE - PLAN

SCALE: 1" = 30'



ALIGN A - PROFILE

SCALE: 1" = 30' HORIZONTAL
1" = 5' VERTICAL



ALIGN B - PROFILE

SCALE: 1" = 30' HORIZONTAL
1" = 5' VERTICAL

SCALE 1" = 30'

30 0 10 30 60
GRAPHIC SCALE (IN FEET)

5 0 5 10
GRAPHIC SCALE (IN FEET)

STATE OF NEW YORK
MICHAEL E. TAMBLYN
073737
LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR
a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:
RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

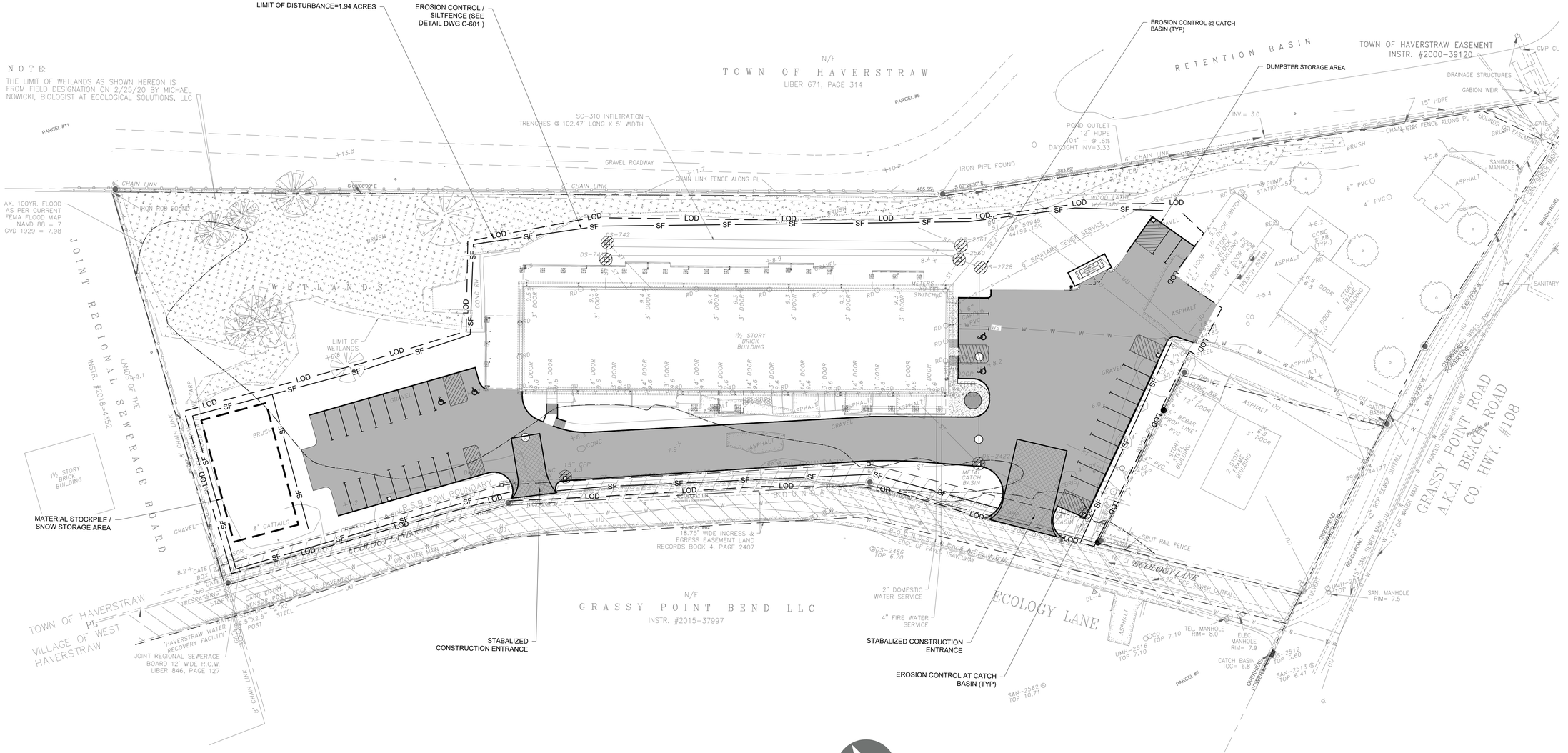
PROJECT LOCATION: **HAVERSTRAW, NEW YORK**
CLIENT: **ROCKLAND GREEN**
DRAWING TITLE: **DRAINAGE PLAN**
CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **1" = 30'**
DRAWN BY: **JJO**
CHECKED BY: **JHH**
DRAWING NUMBER:
C-103

Date Printed: 9/9/2024 11:07:23 AM
J:\20098 Rockland Green\Cad\Working Drawings\animal shelter\Civil\20098_C-103.dwg
ORIGINAL DRAWING SIZE: ARCH D (24" X 36")



EROSION CONTROL- PLAN

SCALE: 1" = 30'

GRAPHIC SCALE (IN FEET): 30 0 10 30 60

LEGAL NOTES

STATE OF NEW YORK · MICHAEL E. TAMBLIN · 073737 · LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:

RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**

CLIENT: **ROCKLAND GREEN**

DRAWING TITLE: **EROSION AND SEDIMENTION CONTROL PLAN**

CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

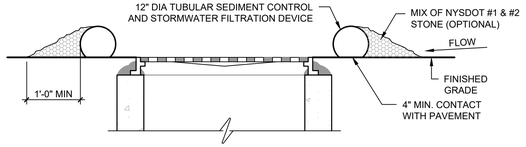
NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **NOT TO SCALE**
DRAWN BY: **JJO**
CHECKED BY: **JHH**
DRAWING NUMBER:

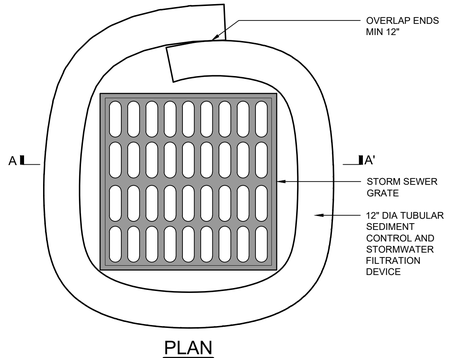
C-201

NOTES:

1. AVOID ANY DISTURBANCE OF EXISTING VEGETATION ON THE SITE EXCEPT THE VEGETATION SPECIFICALLY DESIGNATED TO BE REMOVED.
2. DISTURBED AREAS SHALL BE AS SMALL AS PRACTICAL, AND SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED.
3. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EROSION AND CONTROL SEDIMENTATION AS REQUIRED BY THE AGENCIES OF GOVERNMENT HAVING JURISDICTION.
4. THE START OF ANY ON-SITE CONSTRUCTION INCLUDING STRIPPING TOPSOIL, REMOVING CUT OR PLACING FILL MATERIAL ESTABLISHES THAT THE CONTRACTOR ACCEPTS THE CONTRACT DOCUMENTS AS ACCURATELY REPRESENTING THE EXISTING SITE CONDITIONS.
5. ALL FACILITIES TO BE CONSTRUCTED OR INSTALLED SHALL COMPLY WITH ALL SECTIONS AND LATEST REVISIONS OF THE REQUIREMENTS OF ALL AGENCIES OF GOVERNMENT HAVING JURISDICTION.
6. TOP DRESS, SEED AND MULCH ALL LAWN AREAS DISTURBED BY THE CONSTRUCTION AS SOON AS THE FINISHED GRADING OPERATION IS COMPLETED.
7. ADJUST THE RIM ELEVATIONS OF EXISTING UTILITY STRUCTURES SCHEDULED TO REMAIN TO BE FLUSH WITH THE FINISHED GRADE ELEVATIONS.
8. MAINTAIN AN ADEQUATE SUPPLY OF EROSION AND SEDIMENT CONTROL MATERIALS AT THE CONSTRUCTION SITE AT ALL TIMES TO BE USED FOR URGENT SITUATIONS, SUCH AS UNEXPECTED HEAVY RAINFALL.
9. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING SOIL AND EXCESS EXCAVATED EARTH STOCK PILES AT A STABLE LOCATION. STOCK PILES SHALL BE STABILIZED PER THE DETAIL.
10. CONSTRUCTION ROUTES SHALL BE STABILIZED PER THE NYS STANDARDS FOR EROSION AND SEDIMENT CONTROL, AS NECESSARY BASED ON SITE CONDITIONS.
11. THE EROSION AND SEDIMENT CONTROLS ARE SHOWN FOR A CONDITION WHEN ALL WORK IS OCCURRING SIMULTANEOUSLY. ACTUAL INSTALLATIONS SHALL BE ADJUSTED BASED ON CURRENT CONSTRUCTION ACTIVITY AND SITE CONDITIONS.
12. EROSION CONTROL MEASURES INCLUDING BUT NOT LIMITED TO A STABILIZED CONSTRUCTION ENTRANCE, STABILIZED CONSTRUCTION STAGING AREA AND SILT FENCE SHALL BE THE FIRST ITEMS CONSTRUCTED WHEN SITE WORK BEGINS, AND MUST BE COMPLETELY FUNCTIONAL BEFORE DOWN SLOPE LAND DISTURBANCE BEGINS.
13. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND OPERATED IN ACCORDANCE WITH THEIR DESIGN. ANY NEED FOR REPAIRS OR MAINTENANCE SHALL BE ADDRESSED IMMEDIATELY TO ASSURE THE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION THROUGHOUT THE CONSTRUCTION PROCESS.
14. MAINTENANCE AND REPAIR OF ALL EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM AND FUEL TANK DRAIN DOWN, DEGREASING OPERATIONS AND OTHER ACTIVITIES THAT MAY RESULT IN THE ACCIDENTAL RELEASE OF CONTAMINANTS MUST BE CONDUCTED OFF-SITE. ACCIDENTAL SPILLS MUST BE CLEANED UP IMMEDIATELY AND CONTAMINANTS DISPOSED OF PROPERLY.
15. THE CONTRACTOR SHALL TAKE THE NECESSARY MEASURES, INCLUDING WATER SPRINKLING TO PROVIDE DUST CONTROL DURING CONSTRUCTION.
16. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL PRACTICES, AS SHOWN ON THE DETAIL SHEETS, AS NECESSARY DURING THE COURSE OF CONSTRUCTION AT NO COST TO THE OWNER.
17. THE CONTRACTOR SHALL INSTALL AND MAINTAIN STABILIZED CONSTRUCTION ENTRANCE TO PREVENT THE TRANSPORT OF SEDIMENT ONTO PUBLIC ROADS AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
18. IF SEDIMENT IS TRANSPORTED ONTO ROADS, IT MUST BE REMOVED FROM THE ROAD SURFACE ON A DAILY BASIS AND PRIOR TO RAIN EVENTS. SEDIMENT SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTAMINATION OF STORMWATER AND SURFACE WATER.
19. VEGETATION SHALL BE PROTECTED OUTSIDE OF THE LIMITS OF DISTURBANCE.
20. ALL EXISTING TOPSOIL SHALL BE STOCKPILED TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS FOR THE ESTABLISHMENT OF VEGETATION.
21. IF MEASURES ARE NEEDED, THE CONTRACTOR IS RESPONSIBLE FOR THE PLACEMENT, DESIGN, APPROVAL, AND OPERATION OF THE CONCRETE WASHOUTS. THE CONCRETE WASHOUTS SHALL BE INSTALLED A MINIMUM OF 50' FROM STORM DRAINAGE OR SURFACE WATER. CONCRETE WASTE MATERIAL SHALL NOT BE ALLOWED TO ESCAPE FROM THE CONCRETE WASHOUT.
22. FOR INSTALLED SEDIMENT CONTROL PRACTICES, REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS WHEN THE ACCUMULATION HAS REACHED A DEPTH OF 25% OF THE HEIGHT AND/OR VOLUME OF THE PRACTICE'S CAPACITY, OR MORE FREQUENTLY AS REQUIRED BY THE DETAILS.
23. THE CONTRACTOR SHALL PROVIDE PORTABLE HANDWASHING AND SANITARY FACILITIES, THESE FACILITIES SHALL BE SERVICED REGULARLY BY AN APPROVED SERVICE PROVIDER.
24. SOLID WASTE SHALL BE STORED IN COVERED DUMPSTERS OR OTHER APPROPRIATE CONTAINERS. WASTE IS TO BE DISPOSED OF REGULARLY AND PROPERLY IN ACCORDANCE WITH LOCAL, STATE, AND/OR FEDERAL REGULATIONS.
25. DURING ROUGH GRADING, LEAVE SLOPE SURFACES SLIGHTLY ROUGHENED TO A DEPTH OF 1-2 INCHES - DO NOT BACK BLADE SLOPES.



SECTION A-A'



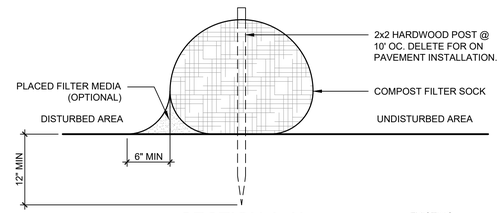
PLAN

NOTES:

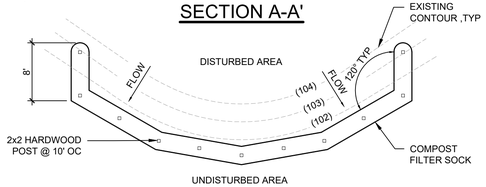
1. TUBLAR SEDIMENT CONTROL AND STORMWATER FILTRATION DEVICE SHALL BE FILTREXX FILTERSOXX, OR EQUIVALENT.
2. REPLACE AND DISPOSE OF PER MANUFACTURERS SPECIFICATIONS.
3. MAXIMUM CONTRIBUTING DRAINAGE AREA SHALL BE 1.0 ACRES.

INLET PROTECTION

NOT TO SCALE



SECTION A-A'



PLAN

NOTE:

1. COMPOST FILTER SOCKS SHALL BE PLACED ON THE CONTOUR WITH BOTH TERMINAL ENDS OF THE SOCK EXTENDED 8 FEET UPSLOPE AT A 45° ANGLE TO PREVENT BYPASS FLOW.
2. DIAMETERS DESIGNED FOR USE SHALL BE 12"-32".
3. THE FLAT DIMENSION OF THE SOCK SHALL BE AT LEAST 1.5 TIMES THE NOMINAL DIAMETER.
4. THE MAXIMUM SLOPE LENGTH (IN FEET) ABOVE A COMPOST FILTER SOCK SHALL NOT EXCEED THE FOLLOWING LIMITS:
5. THE COMPOST INFILL SHALL BE WELL DECOMPOSED (MATURED AT LEAST 3 MONTHS), WEED-FREE, ORGANIC MATTER. IT SHALL BE AEROBICALLY COMPOSTED, POSSESS NO OBJECTIONABLE ODORS, AND CONTAIN LESS THAN 1%, BY DRY WEIGHT, OF MAN-MADE FOREIGN MATTER. THE PHYSICAL PARAMETERS OF THE COMPOST SHALL MEET THE STANDARDS LISTED IN TABLE 5.2-COMPOST FILTER MEDIA STANDARDS TABLE*. NOTE ALL BIOSOLIDS COMPOST PRODUCED IN NEW YORK STATE (OR APPROVED FOR IMPORTATION) MUST MEET NYS DEC'S 6 NYCRR PART 360 (SOLIDS WASTE MANAGEMENT FACILITIES) REQUIREMENTS. THE PART 360 REQUIREMENTS ARE EQUAL TO OR MORE STRINGENT THAN 40 CFR PART 503 WHICH ENSURE SAFE STANDARDS FOR PATHOGEN REDUCTION AND HEAVY METALS CONTENT. WHEN USING COMPOST FILTER SOCKS ADJACENT TO SURFACE WATER, THE COMPOST SHOULD HAVE A LOW NUTRIENT VALUE.
6. THE COMPOST FILTER SOCK FABRIC MATERIAL SHALL MEET THE MINIMUM SPECIFICATIONS GIVEN IN TABLE 5.3-COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS TABLE*.
7. COMPOST FILTER SOCKS SHALL BE ANCHORED IN EARTH WITH 2X2 WOODEN STAKES DRIVEN 12" INTO THE SOIL ON 10 FOOT CENTER ON THE CENTERLINE OF THE SOCK. ON UNEVEN TERRAIN, EFFECTIVE GROUND CONTACT CAN BE ENHANCED BY THE PLACEMENT OF A FILLET OR FILTER MEDIA ON THE DISTURBED AREA SIDE OF THE COMPOST SOCK.
8. ALL SPECIFIC CONSTRUCTION DETAILS AND MATERIAL SPECIFICATIONS SHALL APPEAR ON THE EROSION AND SEDIMENT CONTROL CONSTRUCTIONS DRAWINGS WHEN COMPOST FILTER SOCKS ARE INCLUDED IN THE PLAN.

*TABLE FROM THE 2016 NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.

TABLE 1 - MAXIMUM SLOPE LENGTH ABOVE COMPOST FILTER SOCK (FEET)

DIA (IN)	SLOPE %						
	2	5	10	20	25	33	50
8	225	200	100	5	20	-	-
12	250	225	125	65	50	40	25
18	275	250	150	70	55	45	30
24	350	275	200	130	100	60	35
32	450	325	275	150	120	75	50

TABLE 2 - COMPOST FILTER MEDIA STANDARDS

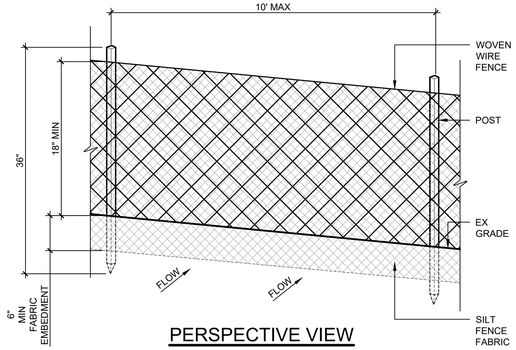
ORGANIC MATTER CONTENT	25% - 100% DRY WEIGHT
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	6.0 - 8.0
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	100% PASSING A 1" SCREEN AND 10-50% PASSING A 3/8" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

TABLE 3 - COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

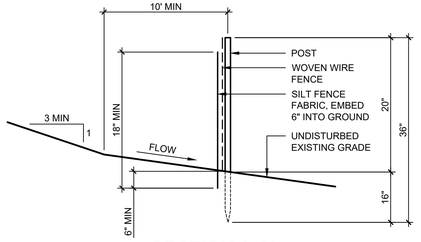
MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MILTI-FILAMENT POLYPROPYLENE	HEAVY DUTY MILTI-FILAMENT POLYPROPYLENE
MATERIAL CHARACTERISTICS	PHOTODEGRAD-ABLE	PHOTODEGRAD-ABLE	BIODEGRAD-ABLE	PHOTODEGRAD-ABLE	PHOTODEGRAD-ABLE
SOCK DIAMETERS	12", 18"	12", 18", 24", 32"	12", 18", 24", 32"	12", 18", 24", 32"	12", 18", 24", 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS

COMPOST FILTER SOCK

NOT TO SCALE



PERSPECTIVE VIEW



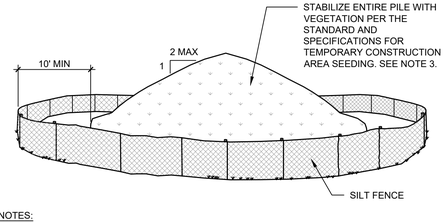
SECTION A-A'

NOTES:

1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE EITHER STEEL "T" OR 'U' TYPE, OR HARDWOOD.
2. SILT FENCE FABRIC SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WOVEN WIRE FENCE SHALL BE MINIMUM 14 GAUGE, WITH MAXIMUM 6" MESH SPACING.
4. WHEN TWO SECTIONS OF SILT FENCE FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED. FILTER CLOTH SHALL BE MIRAFI 100X OR APPROVED EQUAL.
5. PREFABRICATED UNITS SHALL MEET THE MINIMUM REQUIREMENTS SHOWN.
6. MAINTENANCE SHALL BE PERFORMED IMMEDIATELY AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

REINFORCED SILT FENCE

NOT TO SCALE

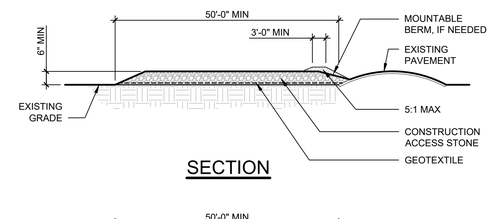


NOTES:

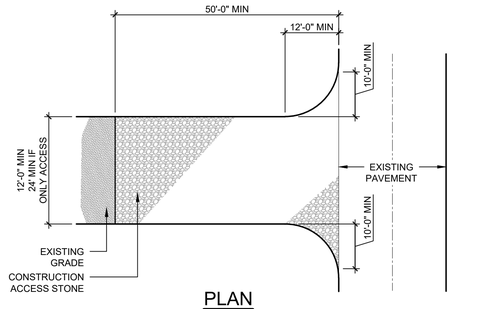
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY, STABILIZED AND LOCATED AWAY FROM KNOWN WORK AREAS TO PREVENT RELOCATION.
2. MAXIMUM STOCKPILE HEIGHT SHALL BE 12 FEET.
3. EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, INSTALLED PER SILT FENCE DETAIL, THEN STABILIZED IN ACCORDANCE WITH THE NYSDEC STANDARD AND SPECIFICATIONS FOR TEMPORARY CONSTRUCTION AREA SEEDING WITHIN 7 DAYS OF COMPLETION.
4. A PERIMETER DIKE/SWALE SHALL BE LOCATED UP-SLOPE OF THE TOPSOIL STOCKPILE TO DIVERT STORMWATER AROUND THE STOCKPILE.

STABILIZED SOIL STOCKPLIE

Scale: NTS TEMPORARY



SECTION



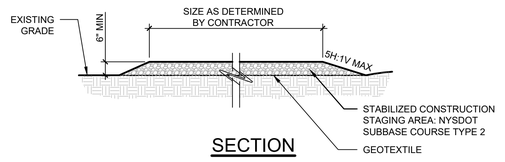
PLAN

NOTES:

1. CONSTRUCTION ACCESS STONE SIZE - USE A 50% TO 50% MIX OF NYSDOT #4 AND #5 STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. GEOTEXTILE:
   2.A. MIRAFI 500X OR APPROVED EQUAL.
   2.B. SHALL BE PLACED UNDER THE ENTIRE STABILIZED CONSTRUCTION ENTRANCE PRIOR TO PLACING OF STONE.
3. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED ACROSS THE STABILIZED CONSTRUCTION ACCESS. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM SHALL BE USED.
4. MAINTENANCE - THE CONSTRUCTION ACCESS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
5. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ACCESS ONTO PUBLIC RIGHT-OF-WAYS. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO A NYSDEC APPROVED SEDIMENT TRAPPING DEVICE.
6. TRAINED CONTRACTOR SHALL PROVIDE DAILY INSPECTIONS.

STABILIZED CONSTRUCTION ACCESS

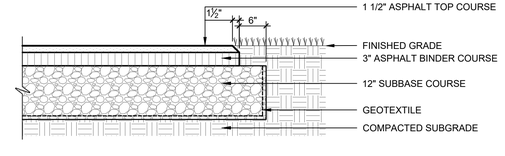
Scale: NTS TEMPORARY



SECTION

STABILIZED CONST STAGING AREA

Scale: NTS TEMPORARY



ASPHALT - PAVEMENT

Scale: NTS

STATE OF NEW YORK · MICHAEL E. TAMOLIN · 073737 · LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR a better environment

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:

RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**

CLIENT: **ROCKLAND GREEN**

DRAWING TITLE: **EROSION CONTROL AND ASPHALT PAVEMENT DETAILS**

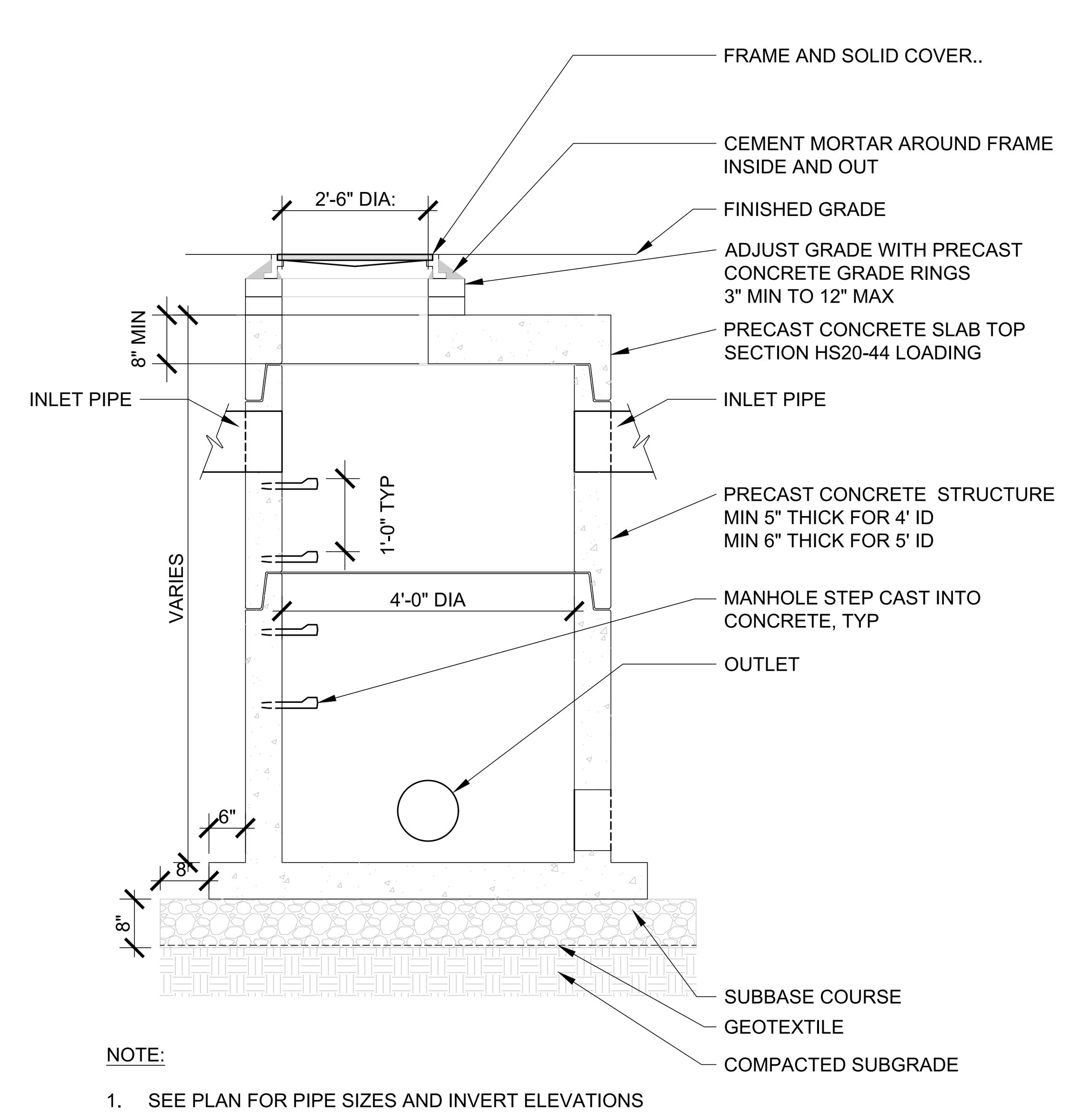
CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **NOT TO SCALE**
DRAWN BY: **JJO**
CHECKED BY: **JHH**
DRAWING NUMBER:

C-601

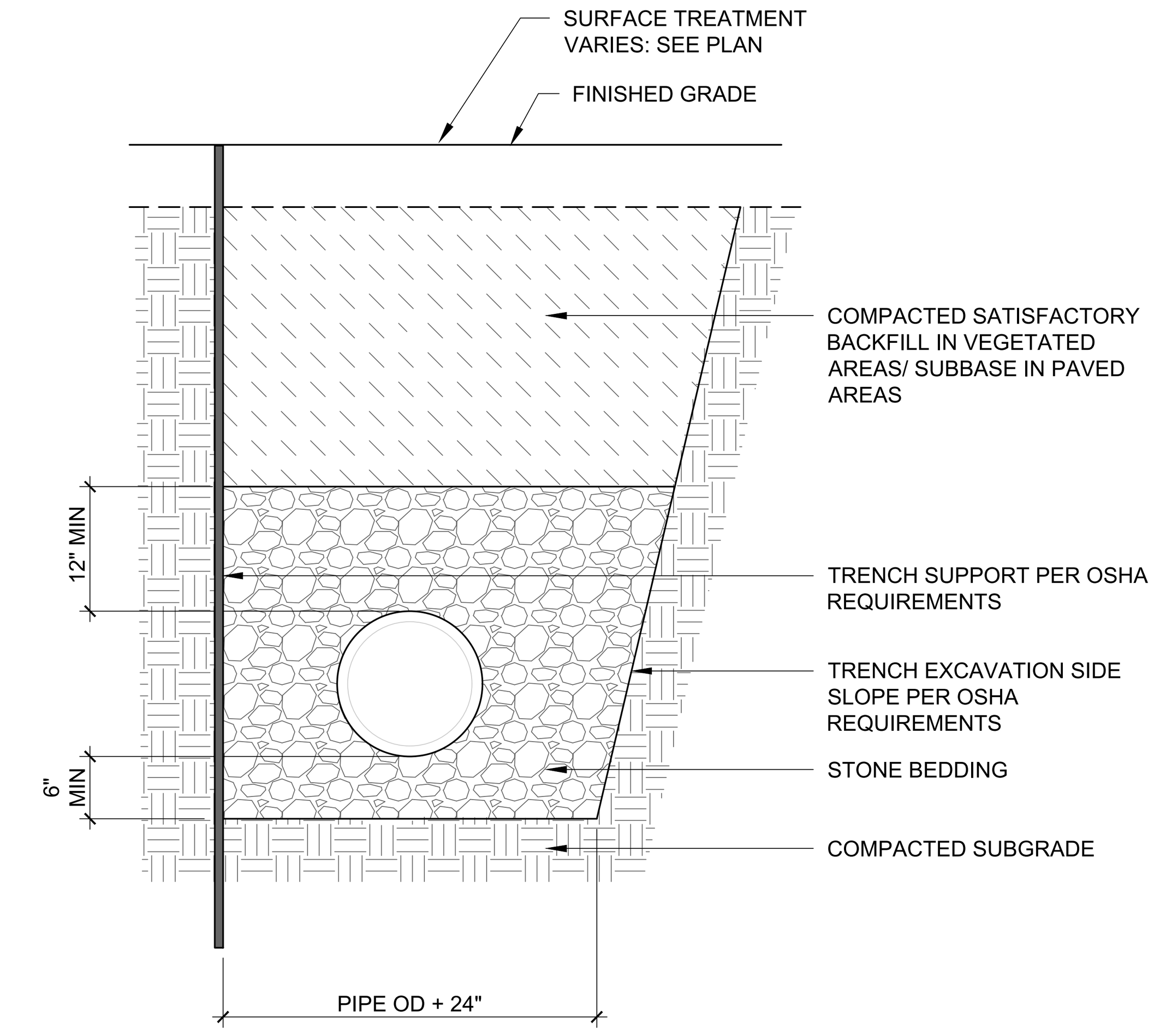


NOTE:

1. SEE PLAN FOR PIPE SIZES AND INVERT ELEVATIONS

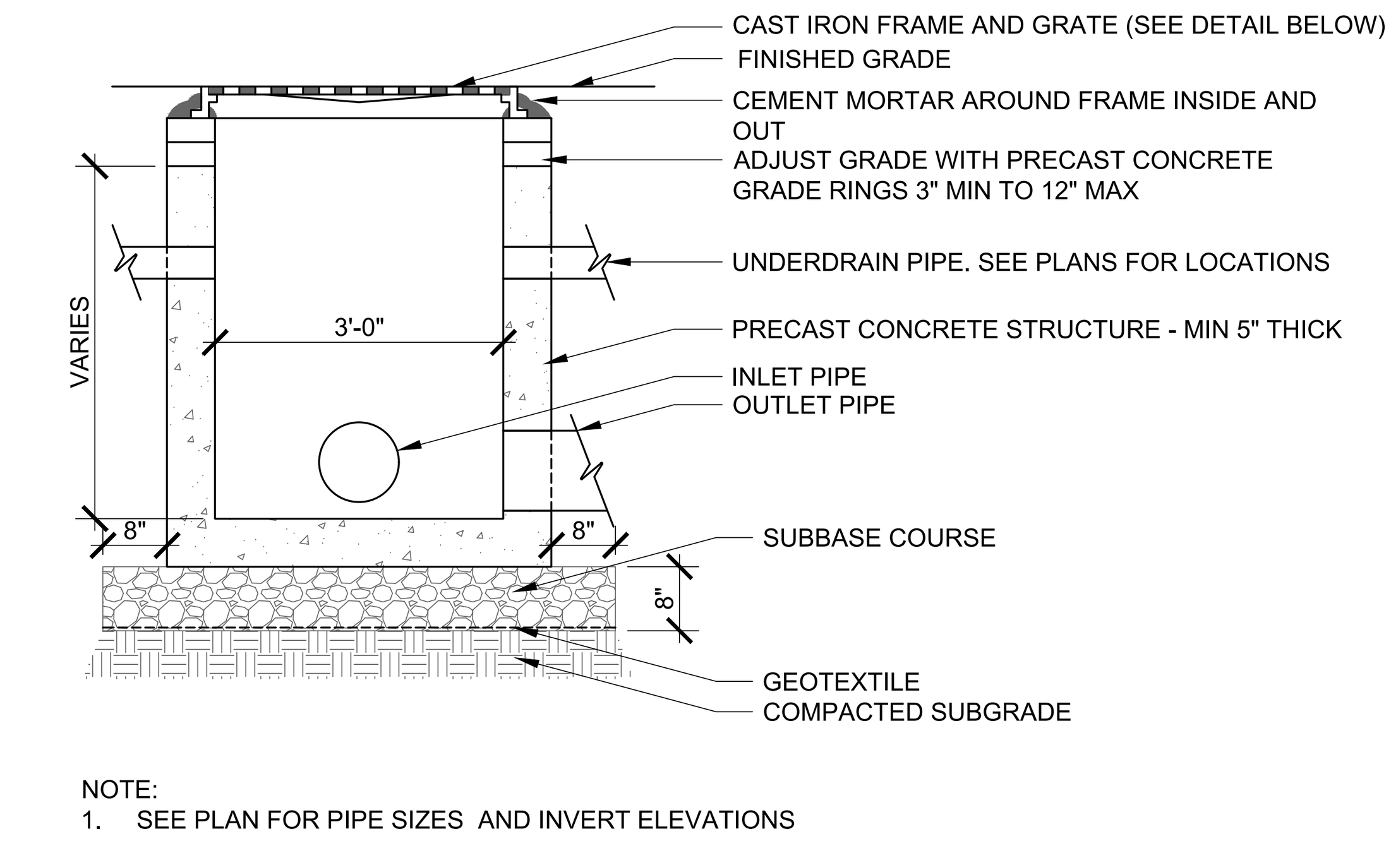
STORM - MANHOLE

Scale: NTS — WITH TOP SLAB



STORMPIPE TRENCH

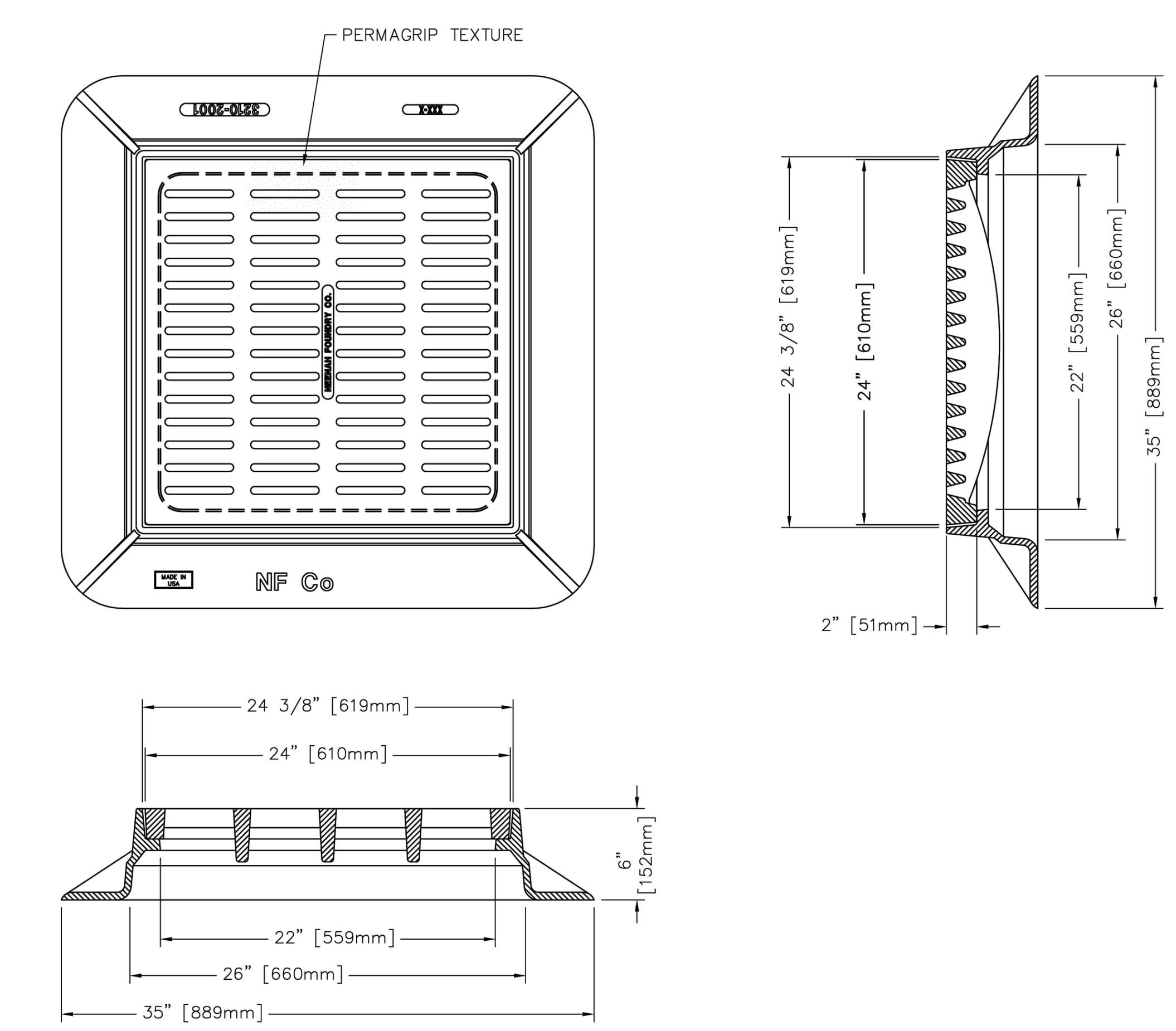
Scale: NTS — WITH STONE BEDDING



NOTE:
1. SEE PLAN FOR PIPE SIZES AND INVERT ELEVATIONS

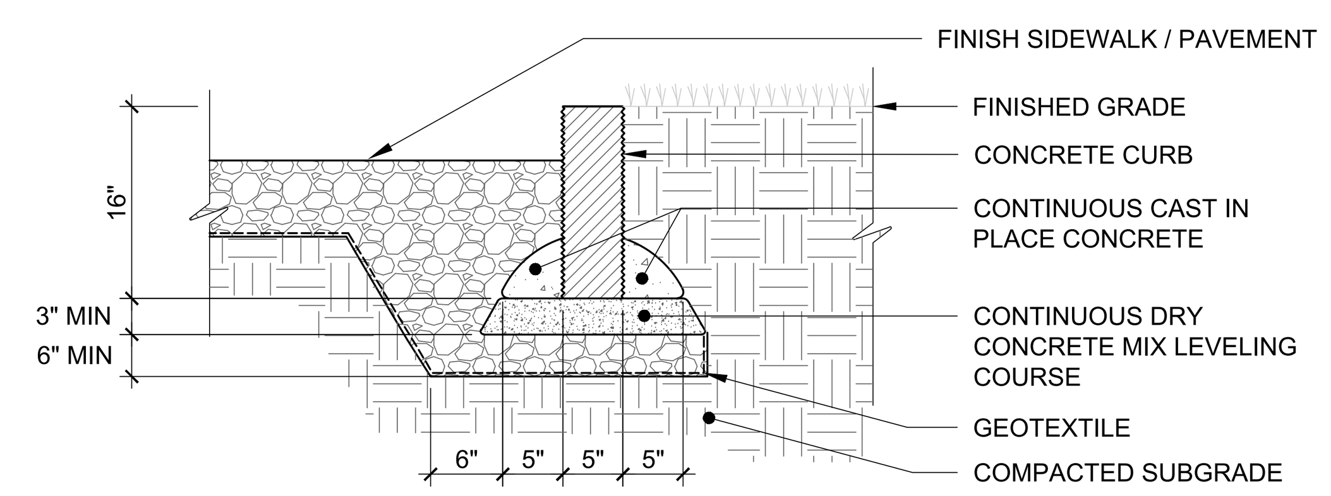
STORM - CATCH BASIN DETAIL

Scale: NTS



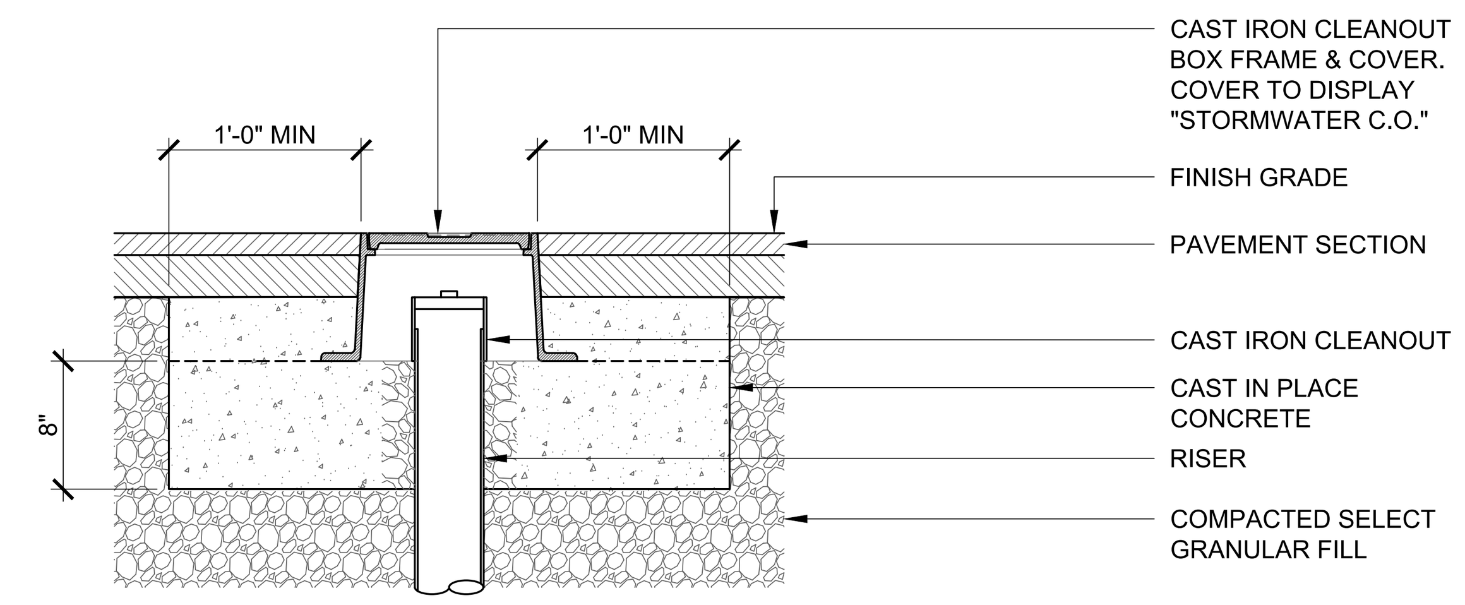
STORM - NEENAH FOUNDARY R-3210 -Q CATCH BASIN

Scale: NTS — FRAME AND TYPE Q GRATE

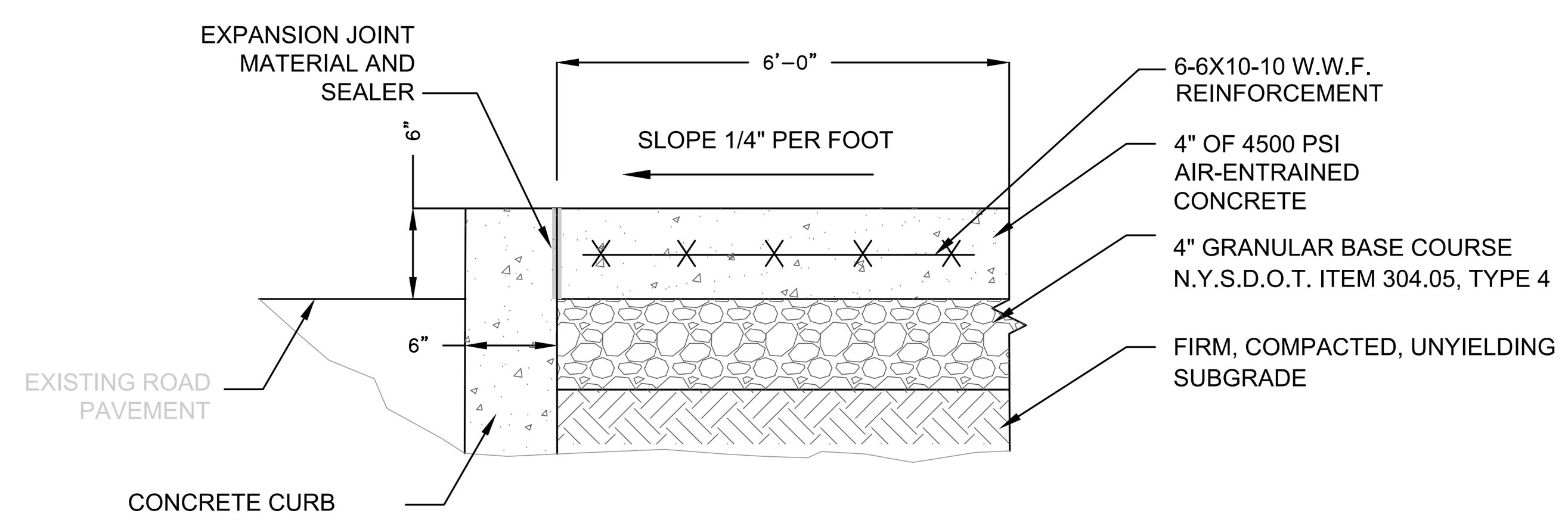


CONCRETE CURB - FLUSH

Scale: NTS

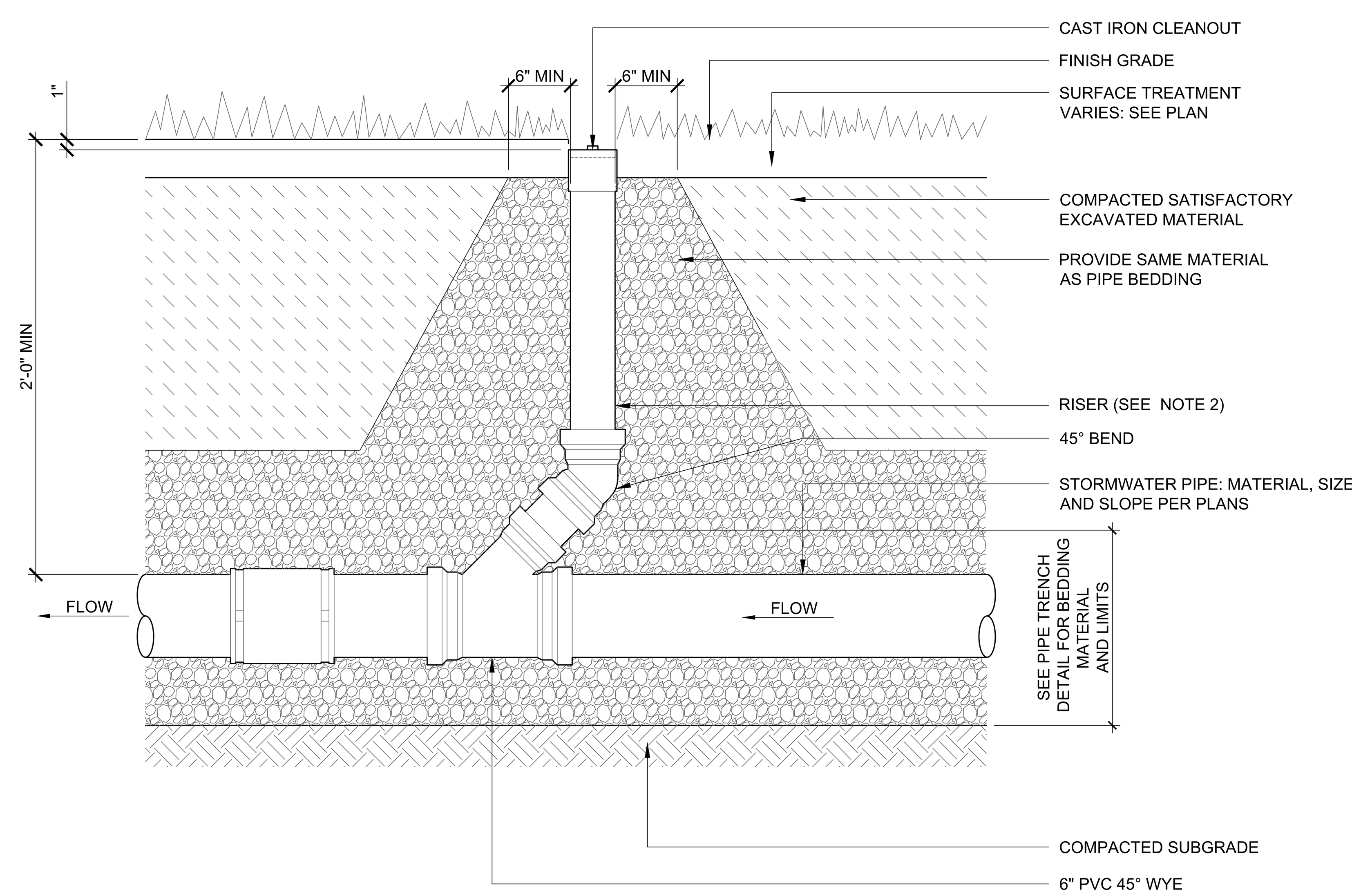


SECTION @ PAVED AREA



FLUSH CONCRETE CURB / SIDEWALK DETAIL

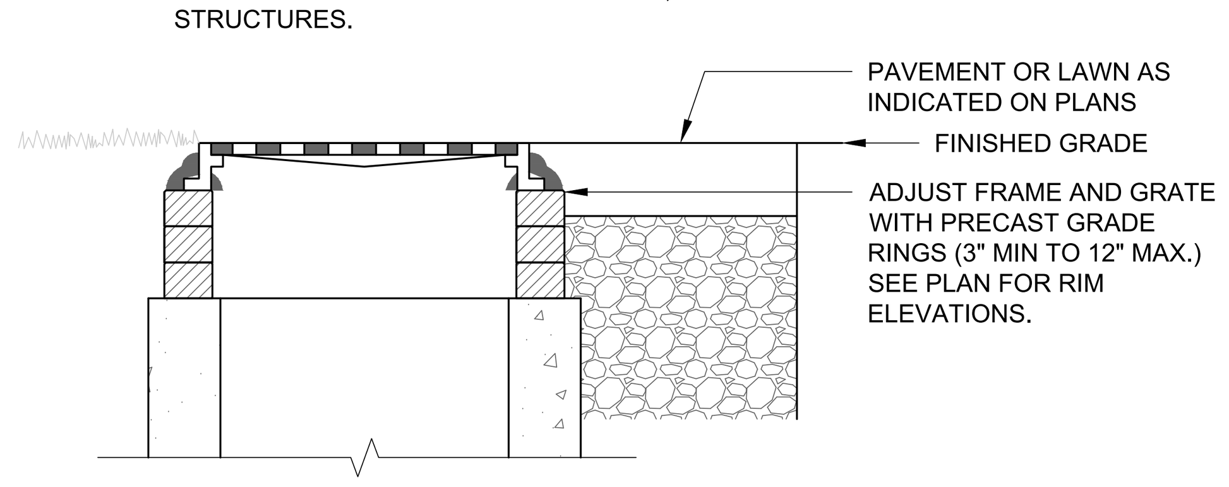
Scale: NTS



SIDE VIEW/SECTION @ LAWN AREA

NOTES:

1. INSTALL 1/2" PRE-MOLDED EXPANSION JOINT FILLER AT 24' O.C. MAX. AND AGAINST CONCRETE CURBS, BUILDINGS AND OTHER STRUCTURES.

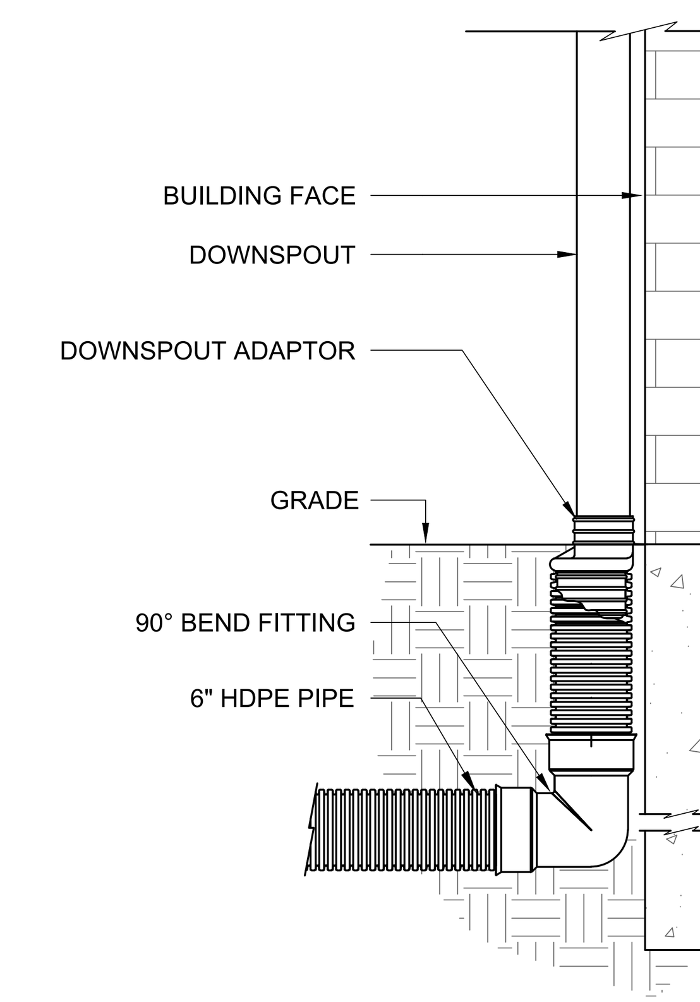


STORM/SANITARY CLEANOUT

Scale: NTS

ADJUST STORM/SANITARY FRAME ELEV

Scale: NTS



STORM - DOWNSPOUT CONNECTION

Scale: NTS — COMMERCIAL

STATE OF NEW YORK — MICHAEL E. TAMBLIN — 073737 — LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR — a better environment

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:
RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: HAVERSTRAW, NEW YORK

CLIENT: ROCKLAND GREEN

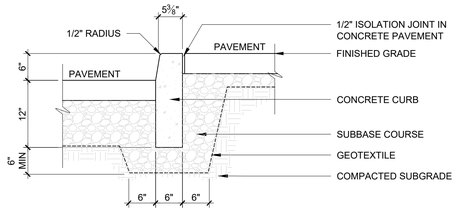
DRAWING TITLE: **CIVIL SITE DETAILS I**

CONTRACT NO.

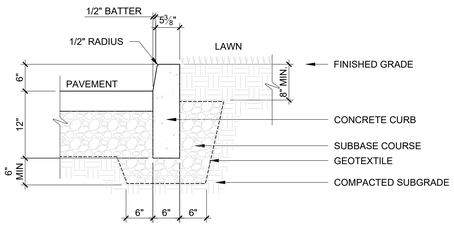
DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: 20098
DATE: 09/09/2024
SCALE: NOT TO SCALE
DRAWN BY: JJO
CHECKED BY: JHH
DRAWING NUMBER:
C-602



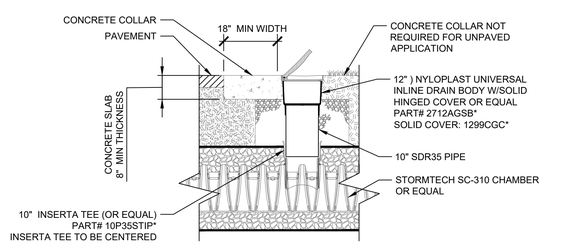
IN PAVEMENT



IN LAWN

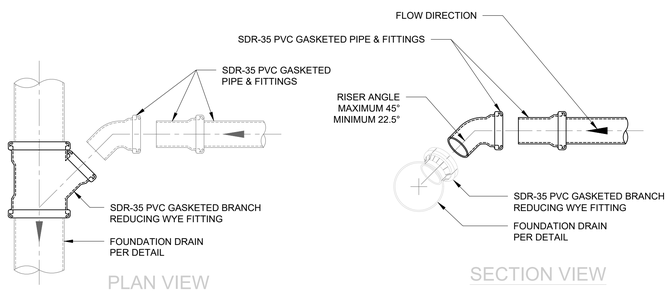
CONCRETE - CURB

Scale: NTS



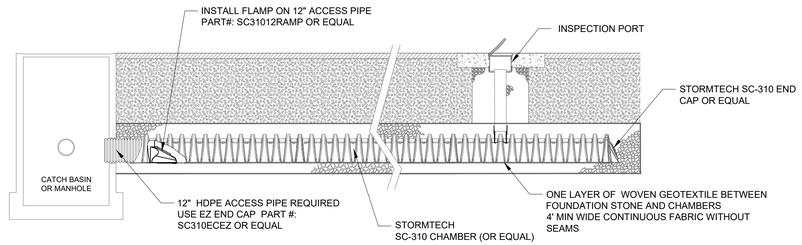
10" SC-310 (OR EQUAL) INSPECTION PORT DETAIL

Scale: NTS



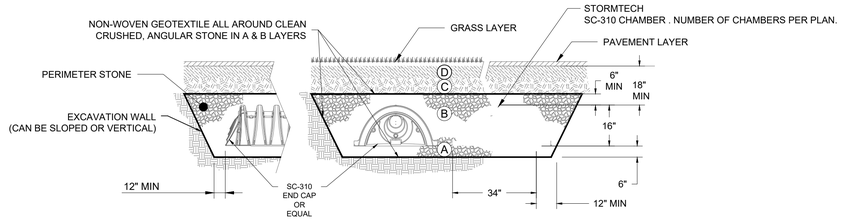
STORM LATERAL

Scale: NTS WYE CONNECTION



STORMTECH SC-310 (OR EQUAL) ISOLATOR ROW

Scale: NTS



STORMTECH SC-310 (OR EQUAL) SECTION VIEW

Scale: NTS

ACCEPTABLE FILL MATERIALS:

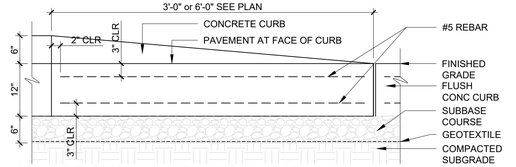
MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

NOTE:

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' .

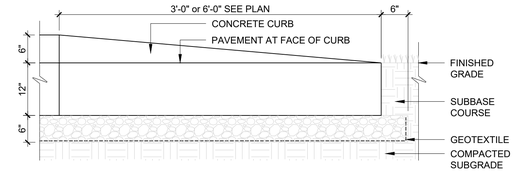
1. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.
   STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2"
6. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
7. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED.
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD.



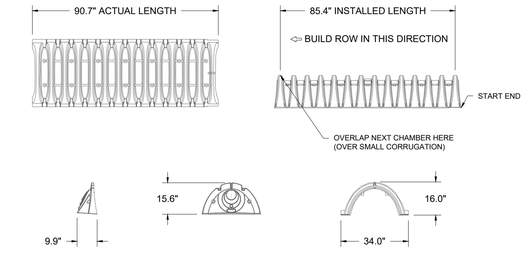
CONCRETE - CURB TRANSITION

Scale: NTS



CONCRETE CURB - END

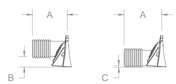
Scale: NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"
CHAMBER STORAGE	14.7 CUBIC FEET
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET
WEIGHT	35.0 lbs.

*ASSUMES 6"ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6"	9.6"	5.8"	---
SC310EPE06B / SC310EPE06BPC			---	0.5"
SC310ECEZ*	12"	13.5"	---	0.9"

ALL STUBS, EXCEPT FOR THE SC310ECEZ OR EQUAL ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP.

* FOR THE SC310ECEZ OR EQUAL THE 12" STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" . BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

TECHNICAL SPECIFICATIONS

Scale: NTS

STATE OF NEW YORK · MICHAEL E. TAMBINI · 073737 · LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:

RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**

CLIENT: **ROCKLAND GREEN**

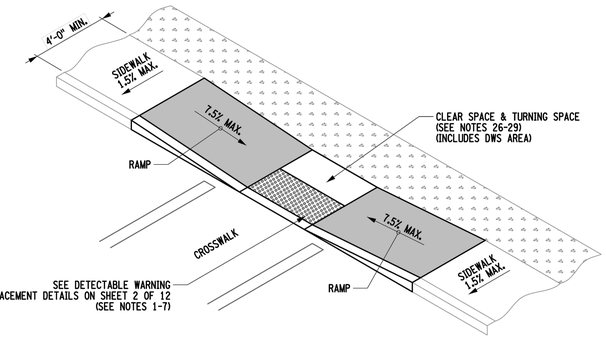
DRAWING TITLE: **CIVIL SITE DETAILS II**

CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

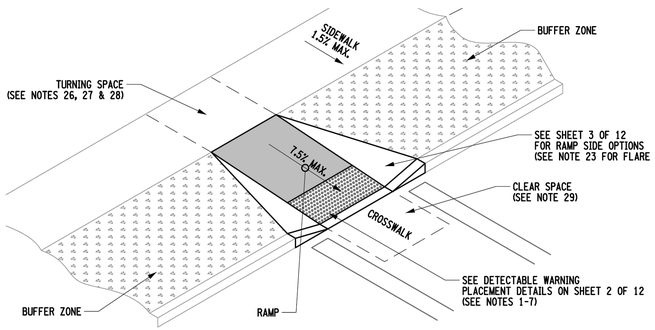
EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **NOT TO SCALE**
DRAWN BY: **JJO**
CHECKED BY: **JHH**
DRAWING NUMBER:
C-603



CURB RAMP CONFIGURATION: TYPE 9 MID BLOCK CROSSING OR T INTERSECTION

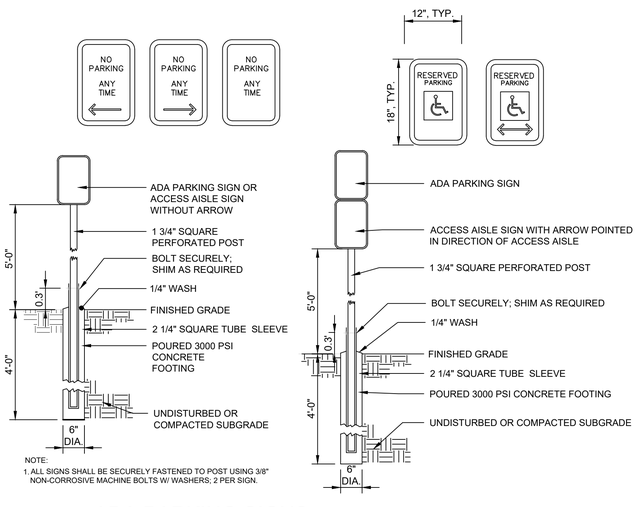
CURB RAMP CONFIGURATION -TYPE 9

Scale: NTS NYS DOT



CURB RAMP CONFIGURATION -TYPE 11

Scale: NTS NYS DOT



NOTE:
1. ALL SIGNS SHALL BE SECURELY FASTENED TO POST USING 3/8" NON-CORROSIVE MACHINE BOLTS W/ WASHERS; 2 PER SIGN.

ADA PARKING SIGNS

Scale: NTS

GENERAL NOTES:

1. THESE SHEETS ARE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA), AND THE REQUIREMENTS OF THE 2013 PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT OF WAY (PROWAG).
2. THE DIMENSIONS SHOWN IN THE DETAILS AS MINIMUMS AND MAXIMUMS ARE THE LIMITS FOR DESIGN AND FIELD LAYOUT. FOR WORK ACCEPTANCE VALUES SEE "CRITICAL ELEMENTS FOR THE DESIGN, LAYOUT, AND ACCEPTANCE OF PEDESTRIAN FACILITIES" ON SHEET 11 OF 12 AND SHEET 12 OF 12.
   A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL ELEVATIONS AND DIMENSIONS TO ENSURE THAT THE FINAL LAYOUT OF PEDESTRIAN FACILITIES MEETS ADA REQUIREMENTS. ANY SURVEY WORK NECESSARY TO MEET THESE REQUIREMENTS SHALL BE PAID FOR UNDER ITEM 625.01 - SURVEY OPERATIONS. A CONTRACT CONTROL PLAN IS NOT NECESSARY FOR WORK LIMITED TO SIDEWALKS AND CURB RAMPS.
3. FACILITIES THAT CANNOT BE CONSTRUCTED TO MEET THE DESIGN STANDARDS, DUE TO DESIGN CONSTRAINTS, SHALL BE CONSTRUCTED TO MEET THE STANDARDS TO THE GREATEST EXTENT PRACTICABLE. FEATURES THAT CANNOT MEET THE VALUES FOR WORK ACCEPTANCE SHALL BE JUSTIFIED AS NONSTANDARD PER HIGHWAY DESIGN MANUAL CHAPTER 2.
4. TO CHECK FIELD LAYOUT AND TO VERIFY WORK ACCEPTANCE, ALL MEASUREMENTS SHALL BE MADE IN ACCORDANCE WITH THE "NOTES ON INSPECTION METHODS (MEASUREMENT)" ON SHEET 11 OF 12.
5. JOINTS BETWEEN SIDEWALKS, CURB RAMPS, TURNING SPACES AND ROADWAYS SHALL BE FLUSH AND FREE FROM ABRUPT VERTICAL CHANGES GREATER THAN ¼". VERTICAL SURFACE DISCONTINUITIES BETWEEN ¼" AND ½" SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1:2. THE BEVEL SHALL BE APPLIED ACROSS THE ENTIRE JOINT. SEE "VERTICAL SURFACE DISCONTINUITIES" DETAIL ON SHEET 2 OF 12.
6. SIDEWALKS ARE CONNECTED TO ROADWAYS BY BLENDED TRANSITIONS OR CURB RAMPS. BLENDED TRANSITIONS ARE CONNECTIONS BETWEEN THE SIDEWALK LEVEL AND THE ROADWAY LEVEL THAT HAVE A MAXIMUM GRADE (RUNNING SLOPE) OF 5%. CONNECTIONS WITH A MAXIMUM GRADE (RUNNING SLOPE) GREATER THAN 5% ARE CONSIDERED CURB RAMPS.
7. CURB RAMPS AND BLENDED TRANSITIONS MAY REQUIRE THE INSTALLATION OF DETECTABLE WARNINGS. SEE ADDITIONAL "DETECTABLE WARNING NOTES" AND THE DETAILS ON DIMENSIONS AND ORIENTATION ON SHEET 2 OF 12.
8. GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE SHOULD BE PERPENDICULAR TO THE DIRECTION OF TRAVEL AND SHALL NOT BE ROUNDED. VERTICAL ALIGNMENT SHALL BE GENERALLY PLANAR.
9. MATERIAL DEPTHS SHOWN ON THESE SHEETS ARE TYPICAL MINIMUM VALUES AND MAY BE DIFFERENT IN THE CONTRACT DOCUMENTS.
10. SIDEWALK GRADE (RUNNING SLOPE) SHALL NOT EXCEED 4.5% FOR DESIGN AND LAYOUT OR 5% FOR WORK ACCEPTANCE, EXCEPT WHEN MATCHING INTO EXISTING SIDEWALK OR WHEN THE ADJACENT HIGHWAY GRADE IS STEEPER THAN 5%. WHEN THE ADJACENT HIGHWAY GRADE IS GREATER THAN 5%, THE SIDEWALK GRADE SHALL NOT EXCEED THE HIGHWAY GRADE.
11. THE CROSS SLOPE OF PEDESTRIAN ACCESS ROUTES SHALL BE 1.5% MAXIMUM FOR DESIGN AND LAYOUT, AND 2% MAXIMUM FOR WORK ACCEPTANCE. THE FOLLOWING EXCEPTIONS ARE ALLOWED:
   A. WHERE PEDESTRIAN STREET CROSSINGS ARE PROVIDED AT INTERSECTIONS WHERE THERE IS NO YIELD OR STOP SIGN, OR WHERE THERE IS A TRAFFIC SIGNAL THAT IS DESIGNED FOR THE GREEN PHASE, THE CROSS SLOPE OF A PEDESTRIAN ACCESS ROUTE CONTAINED WITHIN A STREET CROSSING (CROSSWALK) SHALL BE 4.5% MAXIMUM FOR DESIGN AND LAYOUT, AND 5% MAXIMUM FOR WORK ACCEPTANCE.
   B. WHERE MIDBLOCK PEDESTRIAN STREET CROSSINGS ARE PROVIDED, THE CROSS SLOPE OF A PEDESTRIAN ACCESS ROUTE CONTAINED WITHIN A MIDBLOCK STREET CROSSING SHALL BE PERMITTED TO EQUAL THE STREET OR HIGHWAY GRADE.
12. THE MINIMUM CLEAR WIDTH FOR PEDESTRIAN ACCESS ROUTES IS 4'-0". EXCLUSIVE OF THE CURB. THE DEPARTMENT'S PREFERRED CLEAR WIDTH IS 5'-0". WHEN WALKWAY WIDTHS ARE LESS THAN 5'-0", 5'-0" x 5'-0" PASSING SPACES (SHOWN IN DETAIL A OR B ON THIS SHEET), OR A FEATURE OF EQUAL OR GREATER DIMENSIONS THAT MEETS THE SLOPE AND SURFACE CRITERIA, SHALL BE PROVIDED AT A MAXIMUM INTERVAL OF 200'. EXISTING DRIVEWAYS AND STREET CROSSINGS MAY SERVE AS PASSING SPACES, PROVIDED THEY MEET SLOPE AND SURFACE REQUIREMENTS FOR A PEDESTRIAN ACCESS ROUTE.
13. THE BUFFER ZONE IS A PHYSICAL DISTANCE SEPARATING THE PEDESTRIAN ACCESS ROUTE FROM THE VEHICLE TRAVELED WAY. THE BUFFER ZONE MAY BE PLANTED OR PAVED. WHERE THE BUFFER ZONE WIDTH, EXCLUSIVE OF CURB, IS LESS THAN 3'-0", THE SURFACE SHOULD BE PAVED OR CONSTRUCTED WITH HARDSCAPE MATERIALS.
14. THE MAXIMUM RECOMMENDED CROSS SLOPE OF A TURF BUFFER ZONE OR SLOPE TRANSITION BEHIND SIDEWALK IS 25%. BUFFER ZONES WITH A CROSS SLOPE GREATER THAN 25% SHOULD BE PAVED, PLANTED OR CONSTRUCTED WITH HARDSCAPE MATERIALS.
15. WHEN CROSSING DRIVEWAYS, THE WORK SHALL BE IN CONFORMANCE WITH STANDARD SHEET 608-03.
16. FOR PEDESTRIAN SIGNALS AND PEDESTRIAN PUSH BUTTONS, REFER TO SHEET 12 OF 12 AND STANDARD SHEET 680-10 FOR DETAILS.
17. WHERE EXISTING ROADWAYS ARE SAWCUT TO INSTALL CURBING AND/OR SIDEWALK, THE ROADWAY SHOULD BE SAWCUT AT LEAST 2'-0" FROM THE PROPOSED CURB LINE TO ALLOW FOR ADEQUATE COMPACTION OF ASPHALT. IF THE SAWCUT IS LESS THAN 2'-0" FROM THE PROPOSED CURB LINE, THE ROADWAY SHALL BE REBUILT USING CLASS A, C, OR D CONCRETE. SEE DETAILS ON SHEET 9 OF 12.

CURB RAMP NOTES:

18. THE MINIMUM CLEAR WIDTH OF A CURB RAMP SHALL BE 4'-0". THE DEPARTMENT'S PREFERRED CLEAR WIDTH IS 5'-0".
19. THE MAXIMUM GRADE (RUNNING SLOPE) FOR DESIGN AND LAYOUT OF A CURB RAMP SHALL BE 7.5%. THE GRADE FOR WORK ACCEPTANCE SHALL BE A MAXIMUM OF 8.3%.
20. WHERE THE TERRAIN DOES NOT ALLOW CONSTRUCTION OF A CURB RAMP WITH A GRADE (RUNNING SLOPE) OF 8.3% OR LESS WITHIN 15'-0", THE RAMP LENGTH SHALL NOT BE REQUIRED TO EXCEED 15'-1" FOR DESIGN AND LAYOUT OR 15'-0" FOR WORK ACCEPTANCE.
21. THE CROSS SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS POSSIBLE AND STILL PROVIDE POSITIVE DRAINAGE. THE CROSS SLOPE OF A CURB RAMP SHALL BE 1.5% MAXIMUM FOR DESIGN AND LAYOUT, AND 2% MAXIMUM FOR WORK ACCEPTANCE. THE FOLLOWING EXCEPTIONS ARE ALLOWED:
   A. WHERE PEDESTRIAN STREET CROSSINGS ARE PROVIDED AT INTERSECTIONS WHERE THERE IS NO YIELD OR STOP SIGN, OR WHERE THERE IS A TRAFFIC SIGNAL THAT IS DESIGNED FOR THE GREEN PHASE, AND AT MIDBLOCK CROSSINGS, THE CROSS SLOPE OF THE CURB RAMP SHALL BE PERMITTED TO EQUAL THE STREET OR HIGHWAY GRADE.
22. WHERE THE EXISTING ROADWAY GRADE EXCEEDS THE MAXIMUM ALLOWABLE CROSS SLOPE FOR A CURB RAMP, AND CANNOT BE CORRECTED WITHIN THE SCOPE OF THE PROJECT, THE RAMP SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE "CURB RAMP CROSS SLOPE TRANSITION" DETAIL ON SHEET 8 OF 12. THE RAMP MAY NEED TO BE JUSTIFIED AS A NONSTANDARD FEATURE. SEE NOTE 3 ON THIS SHEET.
23. RAMP SIDE OPTIONS ARE DETAILED ON SHEET 3 OF 12. WHERE A PEDESTRIAN CIRCULATION PATH CROSSES THE CURB RAMP, FLARED SIDES SHALL BE INSTALLED WITH A MAXIMUM SLOPE OF 9.5% FOR DESIGN AND LAYOUT, AND 10% MAXIMUM FOR WORK ACCEPTANCE. A PEDESTRIAN CIRCULATION PATH IS ASSUMED TO CROSS THE CURB RAMP WHEN AREA ADJACENT TO THE RAMP IS PAVED AND FREE OF VERTICAL OBSTRUCTIONS THAT WOULD PREVENT PEDESTRIAN PASSAGE. THERE IS NO MAXIMUM FLARE SLOPE FOR A RAMP THAT IS NOT CROSSED BY A PEDESTRIAN CIRCULATION PATH.
24. THE BACK SIDE OF A PARALLEL RAMP SHOULD BE GRADED TO A MAXIMUM SLOPE OF 25% TO MATCH EXISTING TERRAIN, UNLESS OTHERWISE SHOWN IN THE CONTRACT DOCUMENTS. WHERE GRADING IS NOT FEASIBLE DUE TO LIMITED ROW OR PHYSICAL CONSTRAINTS, A BACK CURB MAY BE INSTALLED. SEE DETAILS ON SHEET 3 OF 12 AND SHEET 9 OF 12.
25. THE DEPARTMENT'S PREFERENCE IS TO INSTALL TWO SEPARATE CURB RAMPS AT A STREET CORNER THAT SERVES TWO SEPARATE PEDESTRIAN CROSSINGS, WITH EACH RAMP ALIGNED TO THE CROSSING THAT IT SERVES. WHERE EXISTING PHYSICAL CONSTRAINTS PREVENT SEPARATE RAMPS, A SINGLE CURB RAMP (I.E., A DIAGONAL CURB RAMP) IS PERMITTED TO SERVE BOTH PEDESTRIAN CROSSINGS.

TURNING SPACE AND CLEAR SPACE NOTES:

26. WHERE A CHANGE IN DIRECTION IS REQUIRED TO UTILIZE A CURB RAMP, A TURNING SPACE SHALL BE PROVIDED AT THE BASE OR THE TOP OF CURB RAMP, AS APPLICABLE. TURNING SPACES SHALL BE PERMITTED TO OVERLAP CLEAR SPACES.
27. WHERE THERE ARE NO VERTICAL CONSTRAINTS AT THE BACK OF SIDEWALK, (E.G., VERTICAL CURBS, BUILDINGS, FENCES) THE TURNING SPACE DIMENSIONS SHALL BE 4'-0" x 4'-0" MINIMUM. WHERE THE TURNING SPACE IS CONSTRAINED AT THE BACK OF SIDEWALK, THE TURNING SPACE SHALL BE 4'-0" X 5'-0" MINIMUM. THE 5'-0" DIMENSION SHALL BE IN THE DIRECTION OF THE RAMP RUN.
28. TURNING SPACES SHALL NOT BE DESIGNED WITH A SLOPE GREATER THAN 1.5% IN ANY DIRECTION, WHILE PROVIDING POSITIVE DRAINAGE. THE MAXIMUM SLOPE FOR WORK ACCEPTANCE IS 2.0%.THE FOLLOWING EXCEPTIONS ARE ALLOWED:
   A. WHERE PEDESTRIAN STREET CROSSINGS ARE PROVIDED AT INTERSECTIONS WHERE THERE IS NO YIELD OR STOP SIGN, OR WHERE THERE IS A TRAFFIC SIGNAL THAT IS DESIGNED FOR THE GREEN PHASE, AND AT MIDBLOCK CROSSINGS, THE CROSS SLOPE OF THE TURNING SPACE SHALL BE PERMITTED TO EQUAL THE STREET OR HIGHWAY GRADE. WHEN A RAMP EXISTS BETWEEN THE TURNING SPACE AND THE CURB, THE CROSS SLOPE OF THE TURNING SPACE SHOULD BE LESS STEEP THAN THE ROADWAY GRADE AND AS FLAT AS PRACTICABLE WHENEVER POSSIBLE.
29. BELOW THE BOTTOM GRADE BREAK OF A CURB RAMP, A CLEAR SPACE OF 4'-0" x 4'-0" MINIMUM SHALL BE PROVIDED WITHIN THE WIDTH OF THE PEDESTRIAN CROSSWALK, AND OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE. THE CLEAR SPACE MAY OVERLAP TURNING SPACES, DETECTABLE WARNING SURFACES, AND DROP CURBS.

DETECTABLE WARNING NOTES:

1. DETECTABLE WARNING SURFACES (DWS) SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS ON PEDESTRIAN ACCESS ROUTES:
   A. CURB RAMPS AND BLENDED TRANSITIONS AT PEDESTRIAN STREET CROSSINGS.
   B. PEDESTRIAN REFUGE ISLANDS (WHERE THE LENGTH OF THE PEDESTRIAN ACCESS ROUTE ACROSS THE REFUGE ISLAND IS GREATER THAN OR EQUAL TO 6').
   C. PEDESTRIAN AT-GRADE RAIL CROSSINGS NOT LOCATED WITHIN A STREET OR HIGHWAY.
2. DETECTABLE WARNING SURFACES SHALL BE PROVIDED WHERE THE PESESTRIAN ACCESS ROUTE CROSSES DRIVEWAYS WITH SIGNAL, YIELD OR STOP CONTROL. DETECTABLE WARNING SURFACES SHALL NOT BE PROVIDED AT CROSSINGS OF UNCONTROLLED DRIVEWAYS.
3. WITH THE EXCEPTION OF THE "DETECTABLE WARNING SURFACE TRUNCATED DOME DETAILS" DETECTABLE WARNING DOMES ON THIS SHEET ARE NOT DEPICTED TO SCALE.
4. DETECTABLE WARNING FIELDS SHALL EXTEND 24" MINIMUM IN THE DIRECTION OF PEDTRIAN TRAVEL ACROSS THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE, EXCLUDING ANY FLARED SIDES.
5. SOME DETECTABLE WARNING PRODUCTS REQUIRE A CONCRETE BORDER FOR PROPER INSTALLATION. BORDERS CANNOT BE INCLUDED AS PART OF THE 24" MINIMUM DIMENSION DESCRIBED IN NOTE 4.
   A. WHEN PLACED AT THE BACK OF CURB, DETECTABLE WARNING FIELDS SHOULD BE PLACED AS CLOSE TO THE BACK OF CURB AS PRACTICABLE. BOTH FRONT CORNERS OF THE DETECTABLE WARNING FIELD SHALL NOT BE LOCATED MORE THAN 2" FROM THE BACK OF CURB. WHERE THE BACK OF THE CURB EDGE IS TOOLED TO PROVIDE A RADIUS, THE BORDER DIMENSION SHALL BE MEASURED FROM THE INSIDE EDGE OF THE CURB RADIUS. WHERE CURB IS NOT USED, THE EDGE OF PAVEMENT SHALL BE SUBSTITUTED FOR THE BACK OF CURB FOR PLACEMENT OF DETECTABLE WARNINGS.
   B. WHEN PLACED ABOVE THE LOWER GRADE BREAK OF A CURB RAMP, DETECTABLE WARNING UNITS SHOULD BE PLACED AS CLOSE TO THE JOINT AS PRACTICABLE. BOTH FRONT CORNERS OF RECTILINEAR DETECTABLE WARNING FIELDS SHALL NOT BE LOCATED MORE THAN 2" FROM THE JOINT.
   C. WHEN RADIAL DWS UNITS ARE PLACED AT THE BACK OF CURB, THE FRONT EDGE OF THE DWS FIELD SHOULD BE AS CLOSE AS POSSIBLE TO THE BACK OF CURB, I.E., THE RADIUS OF THE FRONT OF THE DWS FIELD SHOULD MATCH THE RADIUS ALONG THE BACK OF CURB AS CLOSELY AS POSSIBLE. THE OUTSIDE CORNERS OF THE DWS FIELD MUST BE LOCATED NO MORE THAN 2 INCHES FROM THE BACK OF CURB.
6. ON SLOPES OF 5% OR GREATER, THE ROWS OF DOMES SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE LOWER GRADE BREAK ON THE RAMP RUN. WHERE DOMES ARE ARRAYED RADIALLY, THEY MAY DIFFER IN DIAMETER AND CENTER-TO-CENTER SPACING WITHIN THE RANGES SPECIFIED ON THIS SHEET. DOME ALIGNMENT THAT IS PERPENDICULAR OR RADIAL TO THE LOWER GRADE BREAK IS NOT REQUIRED ON SLOPES OF LESS THAN 5%.
7. THE DETECTABLE WARNING FIELD SHALL BE THE COLOR SPECIFIED IN THE CONTRACT DOCUMENTS OR MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. DETECTABLE WARNING SURFACES CONTRAST VISUALLY WITH ADJACENT GUTTER, STREET OR HIGHWAY, OR PEDESTRIAN ACCESS ROUTE SURFACE, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT.

DEFINITION OF TERMS:

ACCESSIBLE ROUTE. SEE "PEDESTRIAN ACCESS ROUTE", BELOW.

CLEAR SPACE. AN UNOBSTRUCTED FLOOR OR GROUND SPACE THAT WILL ACCOMODATE A SINGLE, STATIONARY WHEELCHAIR AND OCCUPANT.

CROSS SLOPE. THE GRADE THAT IS PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL. IN REGARDS TO NOTES 21 AND 28, CROSS SLOPE PERMITTED TO EQUAL STREET OR HIGHWAY GRADE IS THE SLOPE PARALLEL TO THE HIGHWAY. THE SLOPE PERPENDICULAR TO THE HIGHWAY SHALL BE 1.5% MAXIMUM FOR DESIGN AND 2% MAXIMUM FOR WORK ACCEPTANCE.

PARALLEL CURB RAMP. A CURB RAMP WITH THE RAMP SLOPE ORIENTED PARALLEL TO THE CURB OR EDGE OF PAVEMENT.

PEDESTRIAN ACCESS ROUTE (PAR). A CONTINUOUS AND UNOBSTRUCTED PATH OF TRAVEL PROVIDED FOR PEDESTRIANS WITH DISABILITIES WITHIN OR COINCIDING WITH A PEDESTRIAN CIRCULATION PATH.

PEDESTRIAN CIRCULATION PATH. A PREPARED EXTERIOR OR INTERIOR SURFACE PROVIDED FOR PEDESTRIAN TRAVEL IN THE PUBLIC RIGHT-OFWAY.

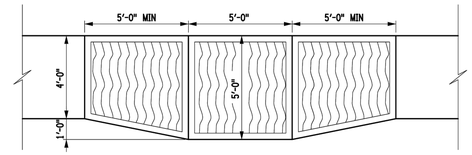
PERPENDICULAR CURB RAMP. A CURB RAMP WITH THE RAMP SLOPE ORIENTED PERPENDICULAR TO THE CURB OR EDGE OF PAVEMENT.

RUNNING SLOPE. THE GRADE THAT IS PARALLEL TO THE DIRECTION OF PEDESTRIAN TRAVEL.

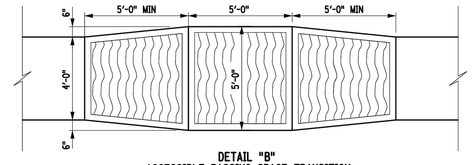
STOP- OR YIELD-CONTROLLED LOCATION. AN INTERSECTION, DRIVEWAY OR PEDESTRIAN CROSSING WHERE VEHICULAR TRAFFIC IS CONTROLLED BY A YIELD SIGN, A STOP SIGN, OR A TRAFFIC SIGNAL THAT FLASHES RED. VEHICULAR TRAFFIC DOES NOT PASS THROUGH A STOP- OR YIELD-CONTROLLED LOCATION WITHOUT STOPPING OR SLOWING.

TRAFFIC SIGNAL THAT IS DESIGNED FOR THE GREEN PHASE. A TRAFFIC SIGNAL OTHER THAN A FLASHING RED OR FLASHING YELLOW.

TURNING SPACE. A RELATIVELY LEVEL SPACE PROVIDED WHERE A TURNING MANUEVER IS REQUIRED FOR A PEDESTRIAN TO ORIENT TO A CURB RAMP OR STREET CROSSING.



DETAIL "A"
ACCESSIBLE PASSING SPACE TRANSITION
ONE SIDE TAPERS



DETAIL "B"
ACCESSIBLE PASSING SPACE TRANSITION
BOTH SIDES TAPER

NEW YORK STATE OF OPPORTUNITY. **Department of Transportation**

U.S. CUSTOMARY STANDARD SHEET

PEDESTRIAN FACILITIES
(SHEET 1 OF 12)

APPROVED AUGUST 18, 2021	ISSUED UNDER EI 21-024
/S/ RICHARD WILDER, P.E.	608-01
DEPUTY CHIEF ENGINEER (DESIGN)	

STATE OF NEW YORK · MICHAEL E. TAMKUN · 073737 · LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:
RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

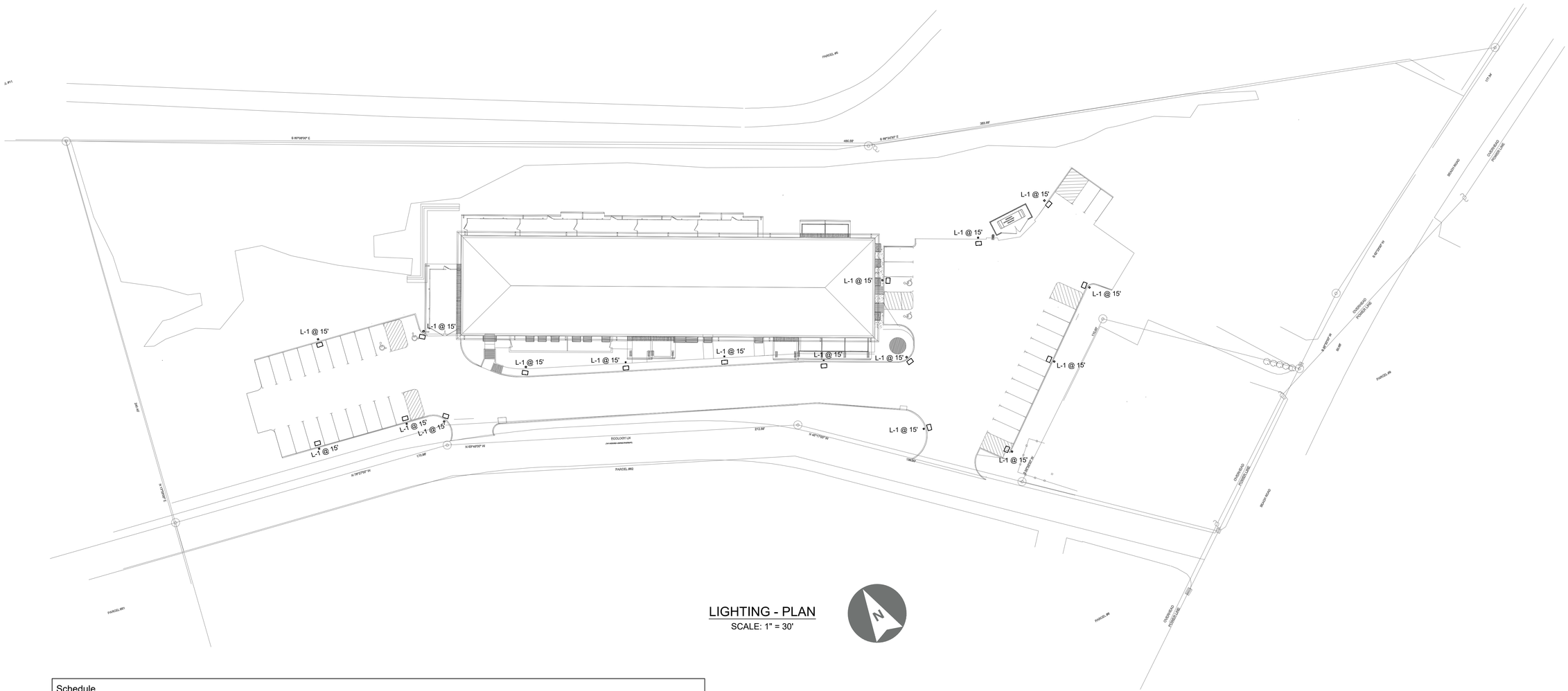
PROJECT LOCATION: **HAVERSTRAW, NEW YORK**
CLIENT: **ROCKLAND GREEN**
DRAWING TITLE: **NEW YORK D.O.T PEDESTRIAN FACILITIES AND ADA DETAILS.**
CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **NOT TO SCALE**
DRAWN BY: **JJO**
CHECKED BY: **JHH**
DRAWING NUMBER:
C-604

Date Printed: 9/9/2024 1:42:09 PM



LIGHTING - PLAN

SCALE: 1" = 30'

Schedule

Symbol	Label	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power
▭ ▫	L-1	LITHONIA LIGHTING	DSX0 LED P1 40K 70CRI T3LG PIR	D-Series Size 0 Area Luminaire P1 Performance Package 4000K CCT 70 CRI TYPE 3 LOW G RATING. 4" S POLE, DARK BRONZE, HIGH/LOW MOTION AMBIENT SENSOR.	1	4280	0.9	33.21

J:\20098 Rockland Green\Cad\Working Drawings\animal shelter\Lighting\20098-L101.dwg

ORIGINAL DRAWING SIZE: ARCH D (24" X 36")

The following is paraphrased from the New York Education Law, Article 145, Section 7209, and Chapter II, Section 79-1.4, and applies to this drawing: "It is a violation of this law for any person unless he is acting under the direction of a licensed professional engineer, licensed landscape architect or licensed land surveyor to alter an item in any way. If an item bearing the seal of an engineer, landscape architect or land surveyor is altered, the altering engineer, landscape architect or land surveyor shall affix to the item his seal and the notation "altered by" followed by his signature and the date of such alteration and a specific description of the alteration".

MICHAEL E. TAMBLIN
073737

CLIENT / SUBCONSULTANT:

EDR
a better environment

Environmental
Design & Research,
Landscape Architecture, Engineering
& Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:
RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**

CLIENT: **ROCKLAND GREEN**

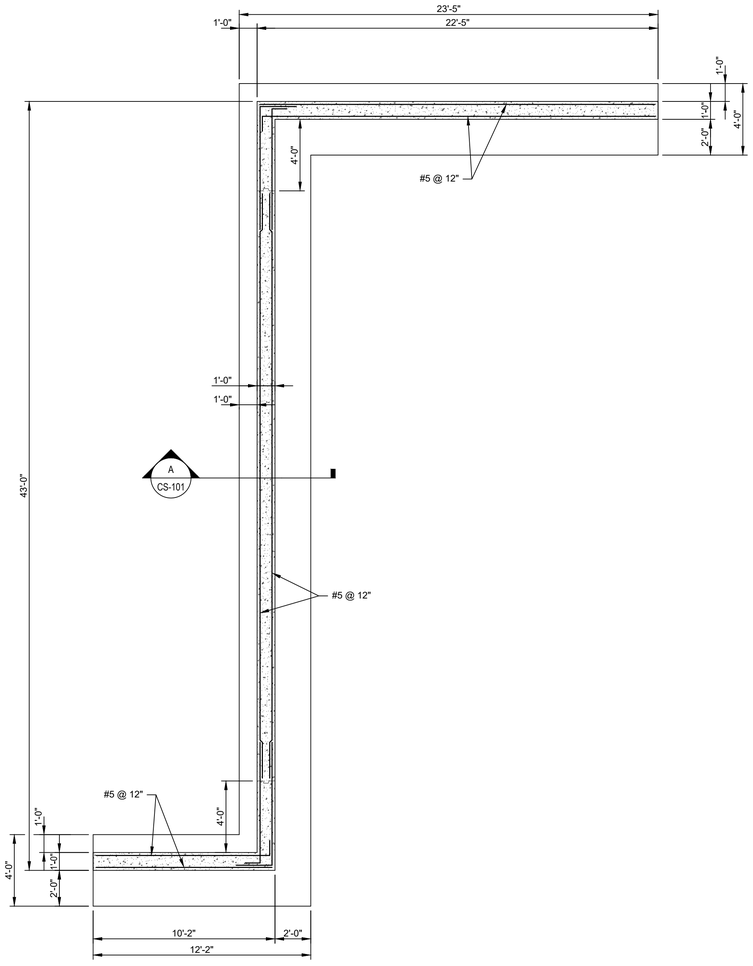
DRAWING TITLE: **EXTERIOR LIGHTING - PLAN**

CONTRACT NO.

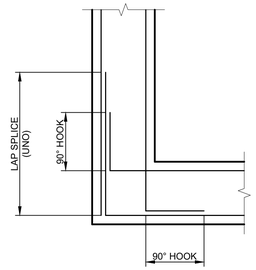
DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **1" = 30'**
DRAWN BY: **JHH**
CHECKED BY:
DRAWING NUMBER:
CL-101



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



1 — CORNER WALL REINFORCEMENT DETAIL
NO SCALE

BAR SIZE	MIN LAP SPLICE LENGTH (INCHES)		MIN EMBEDMENT LENGTH (INCHES)	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
3	18	16	14	12
4	24	20	20	15
5	30	24	24	18
6	36	28	28	22
7	45	36	36	27
8	57	45	45	36
9	72	56	56	45
10	90	69	69	54
11	108	84	84	64

NOTES:

A. F'c = 5,000 PSI (NORMAL WEIGHT CONCRETE), F_y = 60,000 PSI.
B. TOP BARS ARE HORIZONTAL BARS WITH MORE THEN 12" DEPTH OF CONCRETE CAST BELOW THE REINFORCEMENT.
C. LAP SPLICES SHOWN ARE TENSION LAPS, CLASS B.
D. MINIMUM CLEAR COVER IS 1.5 INCHES. MINIMUM SPACING IS 4 INCHES.

2 — SPLICE AND EMBEDMENT CHART

GENERAL CONCRETE CONSTRUCTION NOTES

A. Reinforced concrete design follows ACI 318-14.

B. Unless noted otherwise, all concrete shown is structural concrete with a 5000 psi 28-day compressive strength and Type III Portland Cement. Refer to Section 033000 of specifications.

C. Reinforcement will be new Billet Steel, conforming to ASTM A-615 Grade 60, deformed.

D. Detail, fabricate and erect reinforcing bars in accordance with "Details and Detailing Concrete Reinforcement," (ACI 315-99).

E. Unless otherwise shown, all reinforcing steel shall be provided with minimum concrete cover as follows:

Slabs on grade:	- top reinf. (interior)	1 ½"
	- top reinf. (exterior)	2"
	- bottom reinf.	3"
Foundation slab/footing	- top reinf.	2"
	- bottom reinf.	3"
Beams and columns	-	2"
Walls	-	2"

F. Lap splices and embedments for reinforcement shall follow the chart shown on this drawing unless otherwise indicated on the drawings.

G. Any revisions to joint placement, pour sequencing or reinforcing splices must be submitted to the engineer for review and approval prior to submittal of reinforcing steel shop drawings.

H. Cure concrete at a minimum temperature of 50° F for seven days, following the criteria of ACI 308-R01.

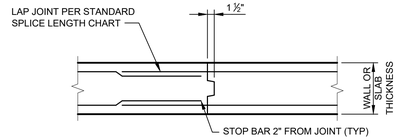
I. Concrete surfaces shall be finished per Section 033000 of the specifications.

J. Chamfer exposed concrete edges ¾" x ¾" unless otherwise noted.

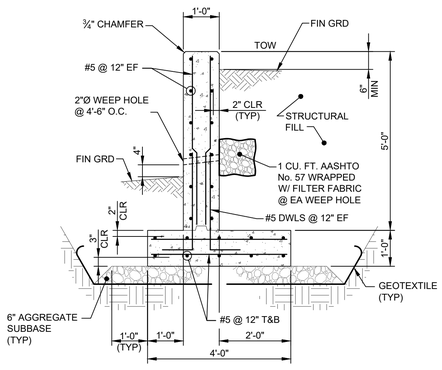
K. Equipment pad dimensions, housekeeping pad dimensions and openings for hatches, ducts and pipes must be coordinated with approved equipment shop drawings, and with the requirements shown on other drawings, this project set.

L. Minimum foundation allowable bearing pressure required = 2,000 psf.

CONCRETE CONSTRUCTION NOTES



3 — KEYED CONSTRUCTION JOINT DETAIL
NO SCALE



A / CS-101 — TYPICAL SECTION
Scale: 1/2" = 1'-0"

STATE OF NEW YORK · MICHAEL E. TAMDIN · 073737 · LICENSED PROFESSIONAL ENGINEER

CLIENT / SUBCONSULTANT:

EDR — a better environment
Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
P. 315.471.0688

PROJECT TITLE:
RFP 2024-01: BUILD-OUT OF NEW ANIMAL SHELTER

PROJECT LOCATION: **HAVERSTRAW, NEW YORK**

CLIENT: **ROCKLAND GREEN**

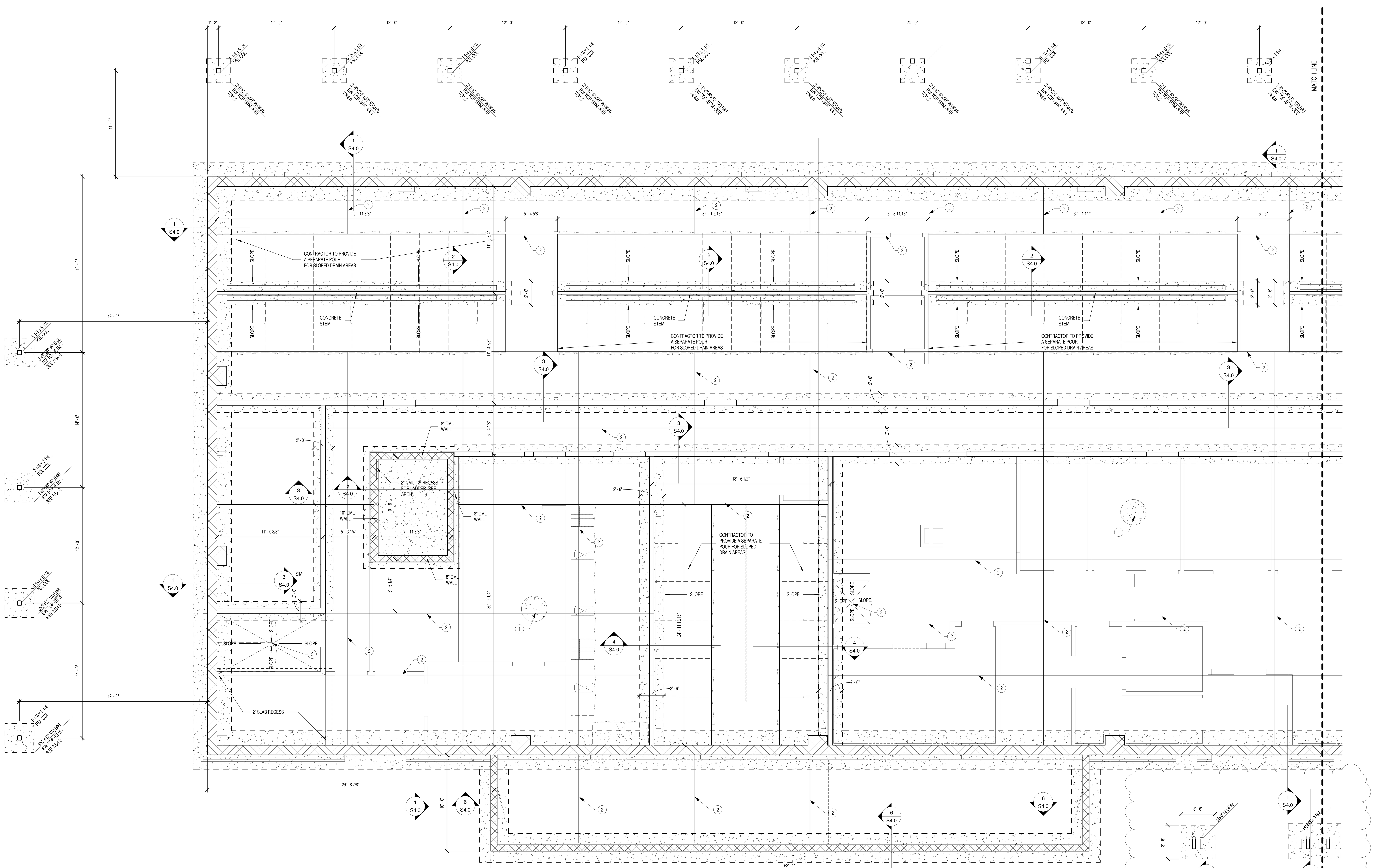
DRAWING TITLE: **CAST-IN-PLACE CONCRETE RETAINING WALL GENERAL NOTES, DETAILS, PLAN AND SECTION**

CONTRACT NO.

DRAWINGS ISSUED FOR / REVISIONS

NO.	DATE	ISSUED FOR / REVISION	BY	CHK	APP
1	09/09/2024	ADDENDUM No.2	JJO	JHH	MET
2					
3					
4					
5					
6					

EDR JOB#: **20098**
DATE: **09/09/2024**
SCALE: **AS NOTED**
DRAWN BY: **KAD**
CHECKED BY: **MSD**
DRAWING NUMBER:
CS-101



1 S1.0 FOUNDATION AND CONTROL JOINT PLAN WEST

1/4" = 1'-0"

GENERAL NOTES :

1. REFER TO GENERAL NOTES SHEETS FOR ALL REQUIREMENTS.
2. REFER TO MECH./ELEC. FOR ALL INSERTS AND DRAIN LOCATIONS.
3. REFER TO ARCH. FOR LOCATION OF FLOOR RECESSES, VERIFY ALL DIMENSIONS W/ARCH.

KEYED NOTES :

1. NEW 4" CONCRETE SLAB-ON-GRADE W/#4@18" O.C. EW @2" FROM TOP OVER PREPARED SUBGRADE REFER TO SOILS NOTE ON FOUNDATION PLANS
2. CONTROL JOINT -SEE S0.3B (12' MAX EW).
3. SEE PLUMBING FOR LOCATION OF FLOOR DRAINS.

LEGEND :

NEW CONCRETE SLAB ON GRADE

CMU WALLS -AS NOTED

THE EXISTING CONCRETE SLAB ON GRADE IS TO BE REMOVED AND REPLACED WITH A NEW CONCRETE SLAB ON GRADE ALONG WITH THE NEW BEARING AND SHEARWALL FOOTINGS AS SHOWN ON THE FOUNDATION PLAN. THE ORIGINAL STRUCTURAL PLANS INDICATED AN ASSUMED BEARING CAPACITY OF 1500 POUNDS PER SQUARE FOOT. THIS WAS FOLLOWED THROUGHOUT THE DESIGN OF NEW BEARING AND SHEAR WALL FOOTINGS. HOWEVER, IT IS NOT CLEAR IF AN ORIGINAL GEOTECHNICAL REPORT EXISTS OF A NEW GEOTECHNICAL REPORT HAS BEEN CONDUCTED AND THEREFORE THE FOLLOWING IS NOTED:

ASSUME: SOIL PRESSURE =1500psf (W/COMPETENT MAT'L)
NO SOILS REPORT WAS PROVIDED TO JJK GROUP, INC DURING THE FOUNDATION DESIGN AS A RESULT IT IS NOT KNOWN WHETHER OR NOT THE SUBSURFACE SOIL CONDITIONS ARE STABLE WHICH MAY IMPACT THE PERFORMANCE OF THIS DESIGN. THEREFORE, JJK GROUP, INC CANNOT BE RESPONSIBLE FOR THE PERFORMANCE OF THE FOUNDATION BASED ON HIDDEN SOIL CONDITIONS NOT DISCOVERABLE WITHOUT SOILS INVESTIGATION.

JJK

JJK Group, Inc.
Consulting Structural Engineers
3240 Juan Tabo Bldg. C Albuquerque, New Mexico 87111 · tel. 505 296 5706 · fax 505 296 1672 · www.jjkgroup.com

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

FOUNDATION AND CONTROL JOINT PLAN WEST

	REV #	DATE	COMMENTS
REVISION	2	9/9/24	ADDENDUM
REVISION			
REVISION			
REVISION			

REVIEWS

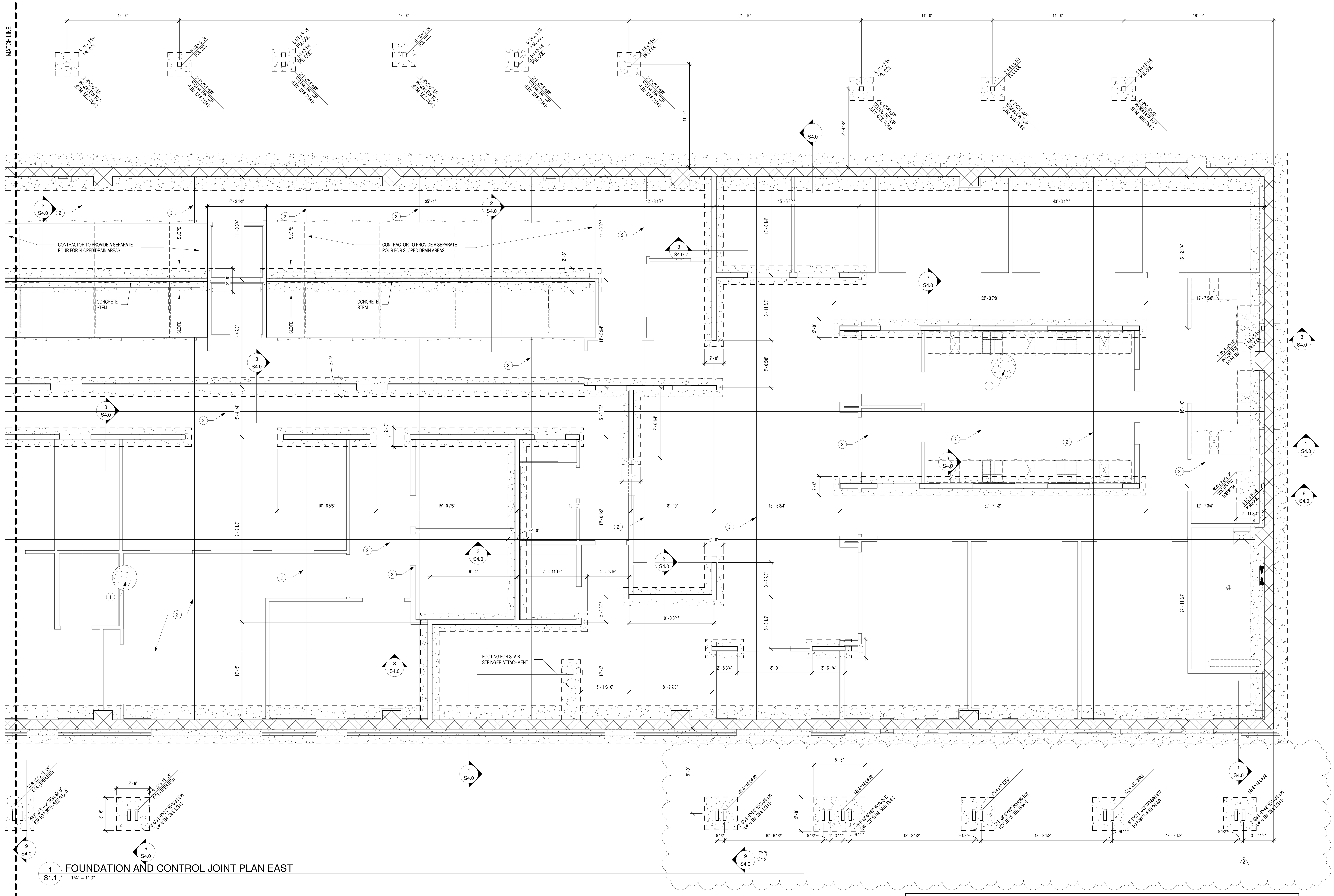
INITIALS	

RGAS

Project Number 2246
Drawn By JJR
Date 3/11/2024

S1.0

X:\Projects\C23\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL 7-2-24.rvt
9/9/2024 2:34:17 PM



FOUNDATION AND CONTROL JOINT PLAN EAST

1 / S1.1 — 1/4" = 1'-0"

GENERAL NOTES :

1. REFER TO GENERAL NOTES SHEETS FOR ALL REQUIREMENTS.
2. REFER TO MECH./ELEC. FOR ALL INSERTS AND DRAIN LOCATIONS.
3. REFER TO ARCH. FOR LOCATION OF FLOOR RECESSES, VERIFY ALL DIMENSIONS W/ARCH.

KEYED NOTES :

1. NEW 4" CONCRETE SLAB-ON-GRADE W/#4@18" O.C. EW @2" FROM TOP OVER PREPARED SUBGRADE REFER TO SOILS NOTE ON FOUNDATION PLANS
2. CONTROL JOINT -SEE S0.3B (12' MAX EW).
3. SEE PLUMBING FOR LOCATION OF FLOOR DRAINS.

LEGEND :

NEW CONCRETE SLAB ON GRADE

CMU WALLS -AS NOTED

THE EXISTING CONCRETE SLAB ON GRADE IS TO BE REMOVED AND REPLACED WITH A NEW CONCRETE SLAB ON GRADE ALONG WITH THE NEW BEARING AND SHEARWALL FOOTINGS AS SHOWN ON THE FOUNDATION PLAN. THE ORIGINAL STRUCTURAL PLANS INDICATED AN ASSUMED BEARING CAPACITY OF 1500 POUNDS PER SQUARE FOOT. THIS WAS FOLLOWED THROUGHOUT THE DESIGN OF NEW BEARING AND SHEAR WALL FOOTINGS. HOWEVER, IT IS NOT CLEAR IF AN ORIGINAL GEOTECHNICAL REPORT EXISTS OF A NEW GEOTECHNICAL REPORT HAS BEEN CONDUCTED AND THEREFORE THE FOLLOWING IS NOTED:

ASSUME: SOIL PRESSURE =1500psf (W/COMPETENT MAT'L)
NO SOILS REPORT WAS PROVIDED TO JJK GROUP, INC DURING THE FOUNDATION DESIGN AS A RESULT IT IS NOT KNOWN WHETHER OR NOT THE SUBSURFACE SOIL CONDITIONS ARE STABLE WHICH MAY IMPACT THE PERFORMANCE OF THIS DESIGN. THEREFORE, JJK GROUP, INC CANNOT BE RESPONSIBLE FOR THE PERFORMANCE OF THE FOUNDATION BASED ON HIDDEN SOIL CONDITIONS NOT DISCOVERABLE WITHOUT SOILS INVESTIGATION.

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

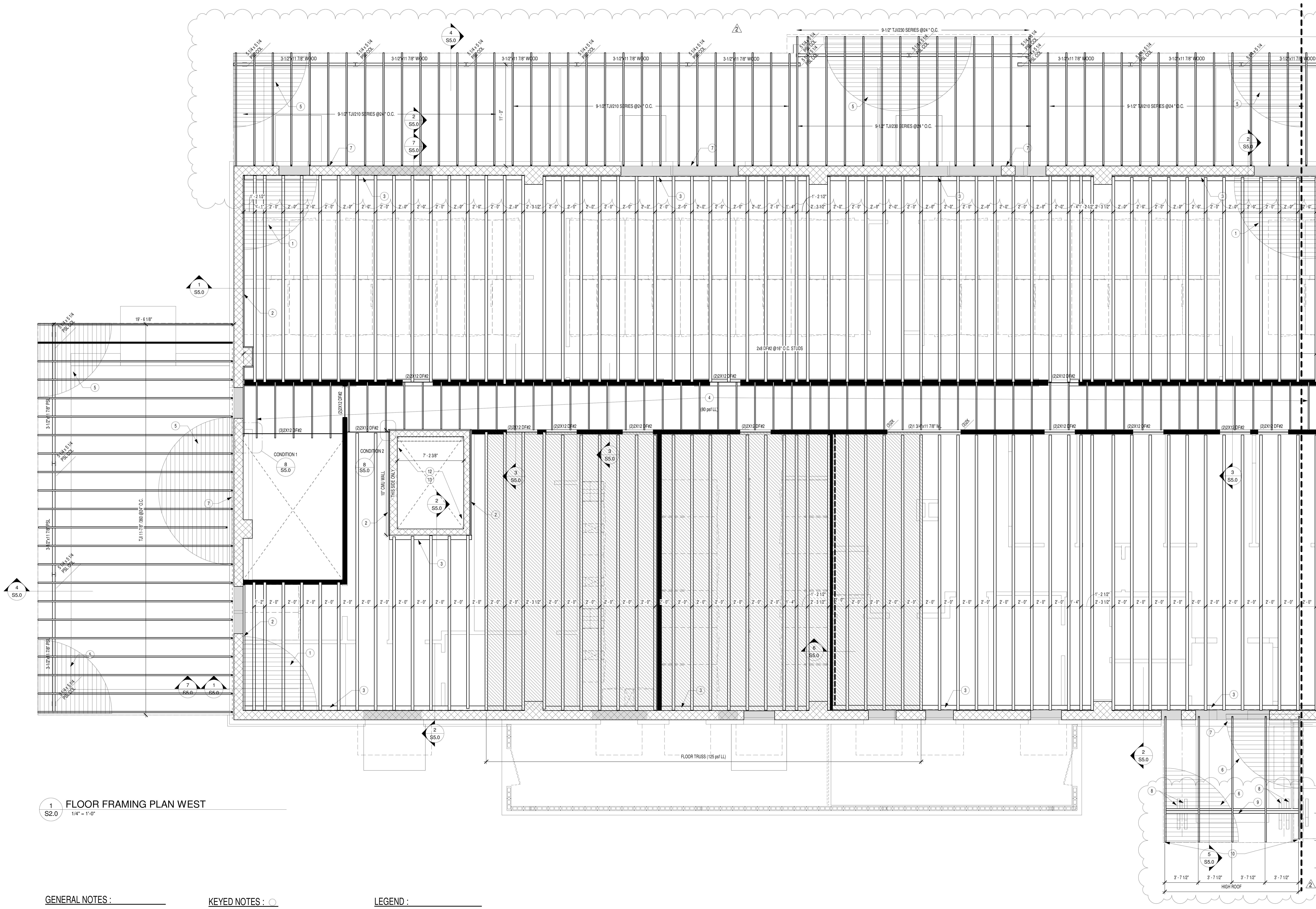
FOUNDATION AND CONTROL JOINT PLAN EAST

	REV #	DATE	COMMENTS
REVISION	2	9/9/24	ADDENDUM
REVISION			
REVISION			
REVISION			

REVIEWS
INITIALS

RGAS
Project Number 2246
Drawn By JJR
Date 3/11/2024

S1.1



1 S2.0 FLOOR FRAMING PLAN WEST
1/4" = 1'-0"

GENERAL NOTES :

1. REFER TO GENERAL NOTES SHEETS FOR ALL REQUIREMENTS.
2. REFER TO ARCH. FOR ALL BEARING HEIGHTS.
3. REFER TO MECH. FOR ALL ROOF OPENINGS
4. PROVIDE DOUBLE CRIPPLE (1) KING STUD FULL HEIGHT EA. NEW WOOD HEADER U.O.N.

KEYED NOTES : ◯

1. 3/4" APA RATED WOOD FLOOR SHEATHING -SEE WS-1 SHT S06.A
2. 3x8 DF#2 WOOD LEDGER W/3/4"Øx5 1/2" SIMPSON TITEN HD @16" O.C. (INTO SOLID FILLED CMU) -REQUIRES SPECIAL INSPECTION
3. L6x6x5/8 CONT. LEDGER -SEE 2/S5.0
4. 2x10 DF#2 CORRIDOR FLOOR JOISTS @24"O.C.
5. 5/8" APA RATED ROOF SHEATHING -SEE TABLE WS-1 SHEET S06.A
6. FLAT 2x8 DF#2 ROOF DECKING
7. 3x8 DF#2 LEDGER W/(1) 5/8"Øx(6" EMBED) DRILLED /EPOXY ANCHOR INTO FULLY GROUTED CELL @16" O.C..
8. 4 x12 DF#2 -SEE ARCH (SKEWED) -SEE ARCH
9. 4 x16 DF#2 BEAM
10. 2x12 DF#2 JOISTS @42" O.C.
11. PROVIDE DOUBLE CRIPPLE (1) KING STUD -FULL HEIGHT EA. NEW WOOD HEADER U.O.N.
12. ELEVATOR SHAFT PENETRATES THRU EXISTING ROOF TRUSSES-REFER TO 7/S06.B FOR TYPICAL OPENINGS IN ROOF TRUSSES -FIELD VERIFY EXISTING CONDITION AND LOCATION OF TRUSSES. MANUF. OF PRE-ENGINEERED ROOF TRUSSES MUST PROVIDE STRUCTURAL DETAILS FOR POSSIBLE RE-CONFIGURATION OF EXISTING TRUSSES.
13. W8x21 HOIST BEAM MINIMUM. ELEVATOR MANUF TO PROVIDE ENGINEER OF RECORD WITH CONNECTION DETAILS FOR APPROVAL.

LEGEND :

- EXISTING /NEW CMU WALL
- STEEL ANGLE SUPPORT LINTEL CMU LINTEL -SEE 4/S04.A
- 2X6 DF#2 WOOD BEARING STUDS @16" O.C (U.O.N.).
- SHEARWALL -SEE SHEET S3.0

X:\Projects\C23\2024-2319\Drawings\JJK ROCKLAND FINAL 7-2-24.rvt
9/9/2024 2:34:18 PM

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

FLOOR /ROOF FRAMING PLAN WEST

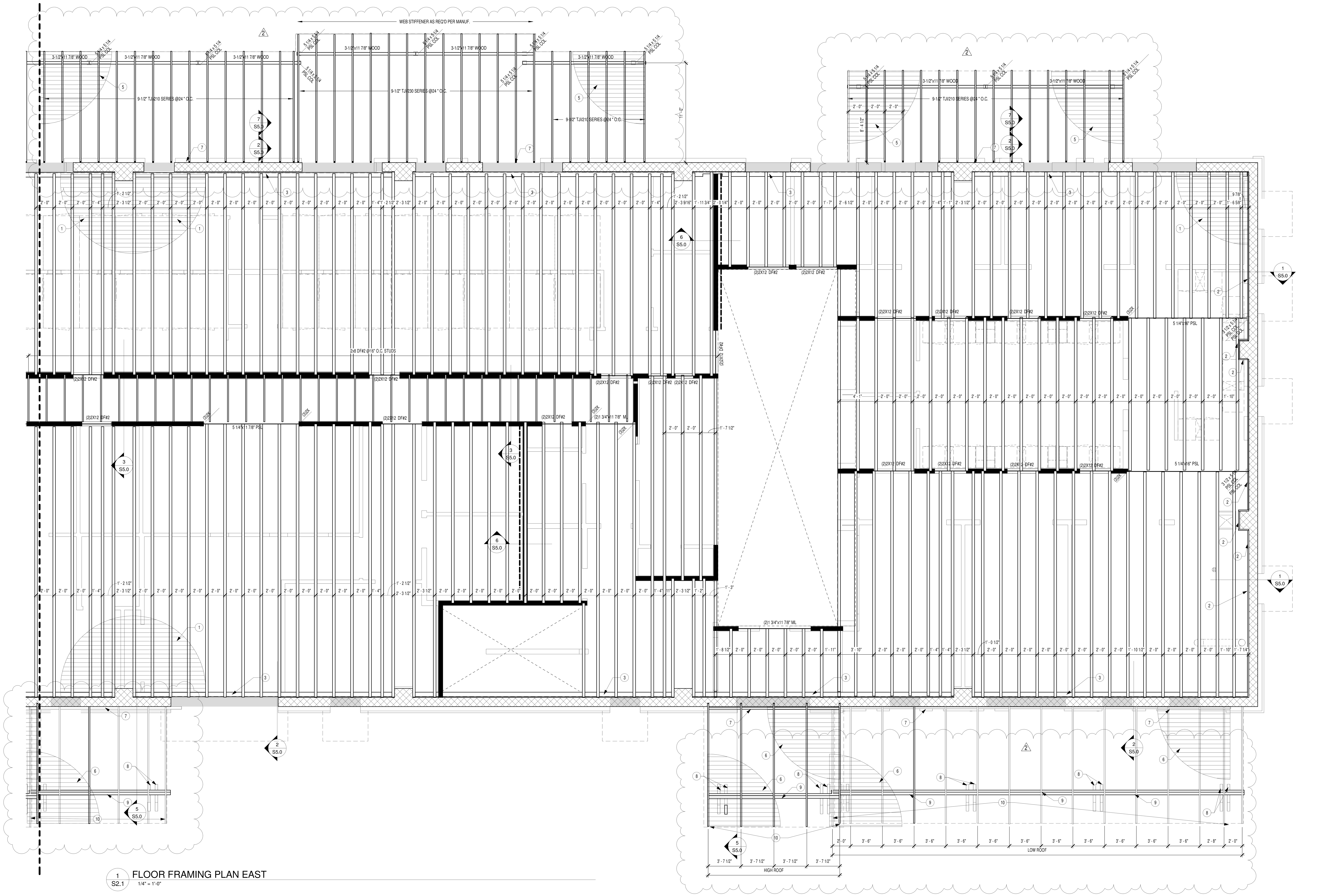
	REV #	DATE	COMMENTS
REVISION	2	9/9/24	ADDENDUM
REVISION			
REVISION			
REVISION			

REVIEWS	
INITIALS	

RGAS

Project Number 2246
Drawn By JJR
Date 3/11/2024

S2.0



1 S2.1 FLOOR FRAMING PLAN EAST

1/4" = 1'-0"

GENERAL NOTES :

1. REFER TO GENERAL NOTES SHEETS FOR ALL REQUIREMENTS.
2. REFER TO ARCH. FOR ALL BEARING HEIGHTS.
3. REFER TO MECH. FOR ALL ROOF OPENINGS
4. PROVIDE DOUBLE CRIPPLE (1) KING STUD FULL HEIGHT EA. NEW WOOD HEADER U.O.N.

KEYED NOTES :

1. 3/4" APA RATED WOOD FLOOR SHEATHING -SEE WS-1 SHT S06.A
2. 3x8 DF#2 WOOD LEDGER W/3/4"Øx5 1/2" SIMPSON TITEN HD @16" O.C. (INTO SOLID FILLED CMU) -REQUIRES SPECIAL INSPECTION
3. L6x6x5/8 CONT. LEDGER -SEE 2/S5.0
4. 2x10 DF#2 CORRIDOR FLOOR JOISTS @24"O.C.
5. 5/8" APA RATED ROOF SHEATHING -SEE TABLE WS-1 SHEET S06.A
6. FLAT 2x8 DF#2 ROOF DECKING
7. 3x8 DF#2 LEDGER W/(1) 5/8"Øx(6" EMBED) DRILLED /EPOXY ANCHOR INTO FULLY GROUTED CELL @16" O.C..
8. 4 x12 DF#2 -SEE ARCH (SKEWED) -SEE ARCH
9. 4 x16 DF#2 BEAM
10. 2x12 DF#2 JOISTS @42" O.C.
11. PROVIDE DOUBLE CRIPPLE (1) KING STUD -FULL HEIGHT EA. NEW WOOD HEADER U.O.N.
12. ELEVATOR SHAFT PENETRATES THRU EXISTING ROOF TRUSSES- REFER TO 7/S06.B FOR TYPICAL OPENINGS IN ROOF TRUSSES -FIELD VERIFY EXISTING CONDITION AND LOCATION OF TRUSSES. MANUF. OF PRE-ENGINEERED ROOF TRUSSES MUST PROVIDE STRUCTURAL DETAILS FOR POSSIBLE RE-CONFIGURATION OF EXISTING TRUSSES.
13. W8x21 HOIST BEAM MINIMUM. ELEVATOR MANUF TO PROVIDE ENGINEER OF RECORD WITH CONNECTION DETAILS FOR APPROVAL.

LEGEND :

- EXISTING /NEW CMU WALL
- STEEL ANGLE SUPPORT LINTEL CMU LINTEL -SEE 4/S04.A
- 2X6 DF#2 WOOD BEARING STUDS @16" O.C (U.O.N.).
- SHEARWALL -SEE SHEET S3.0

X:\Projects\C23\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL 7-2-24.rvt
9/9/2024 2:34:19 PM

JJK Group, Inc.
Consulting Structural Engineers

STATE OF NEW YORK · JIM J. KAPIRANIS · LICENSED PROFESSIONAL ENGINEER

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

FLOOR /ROOF FRAMING PLAN EAST

	REV #	DATE	COMMENTS
REVISION	2	9/9/24	ADDENDUM
REVISION			
REVISION			
REVISION			

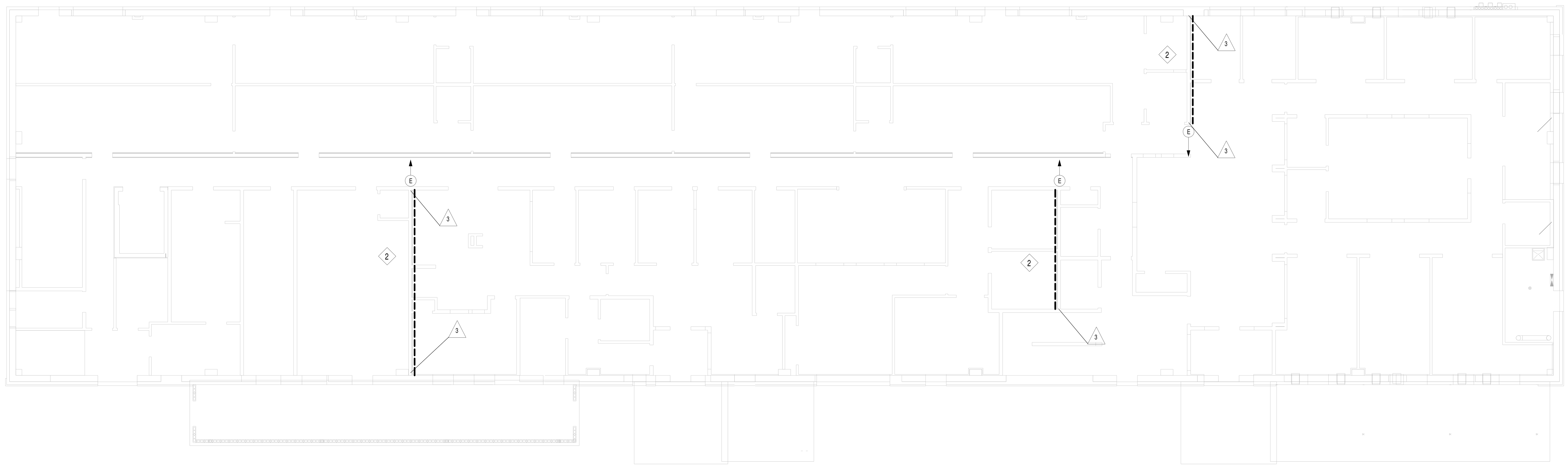
REVIEWS

INITIALS	

RGAS

Project Number 2246
Drawn By JJR
Date 3/11/2024

S2.1



MAIN LEVEL SHEARWALL PLAN

1 / S3.0 — 1/8" = 1'-0"

SHEARWALL LEGEND

- SHEARWALL TYPE -SEE S06.E FOR SCHED. DETAILS
- HOLDOWN TYPE -SEE S06.E FOR SCHED. DETAILS
- WOOD, SHEARWALL LOCATION
- DRAG FORCE

JJK GROUP, INC PERFORMED A LATERAL FORCE ANALYSIS TO THE EXISTING STRUCTURE DUE TO THE ADDED SEISMIC FORCES. THESE ADDED SEISMIC FORCES ARE DUE TO THE ADDITION OF A SECOND FLOOR SYSTEM DESIGNED BY JJK GROUP, INC. IN ORDER TO RESIST THESE ADDITIONAL SEISMIC FORCES, INTERIOR WOOD SHEARWALLS WERE STRATEGICALLY PLACED AS SHOWN ON THE ABOVE SHEARWALL PLAN LAYOUT. THE EXISTING STRUCTURE WAS DESIGNED BY OTHERS, INCLUDING THE LATERAL FORCE RESISTING SYSTEM AND ASSUMED TO BE PERFORMING SATISFACTORY. THEREFORE, NO ADDITIONAL ANALYSIS WAS PROVIDED FOR THE EXISTING LATERAL FORCE SYSTEM BY JJK GROUP, INC.

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

SHEARWALL PLAN

REV #	DATE	COMMENTS
REVISION		
REVISION		
REVISION		
REVISION		

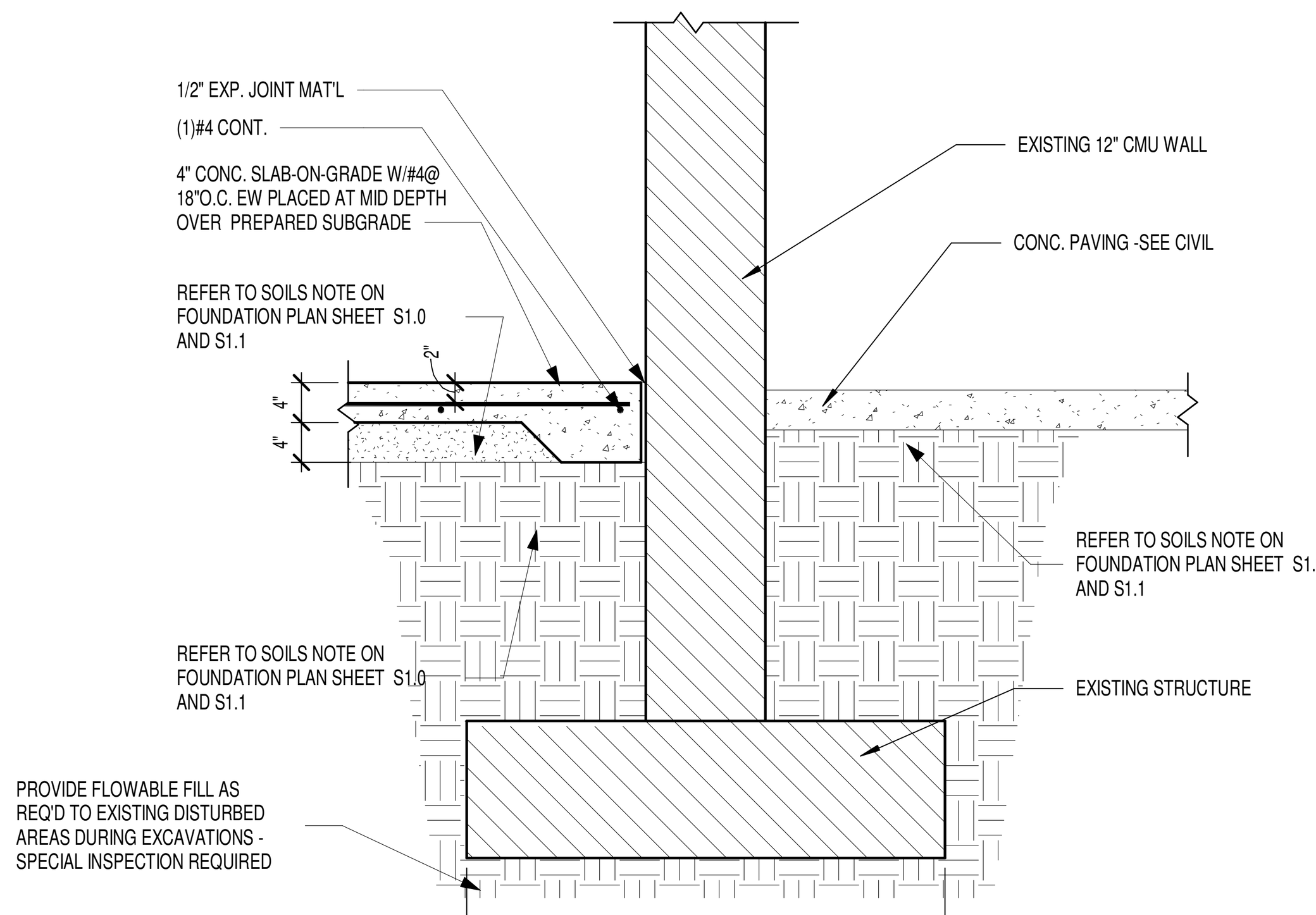
REVIEWS

INITIALS

RGAS

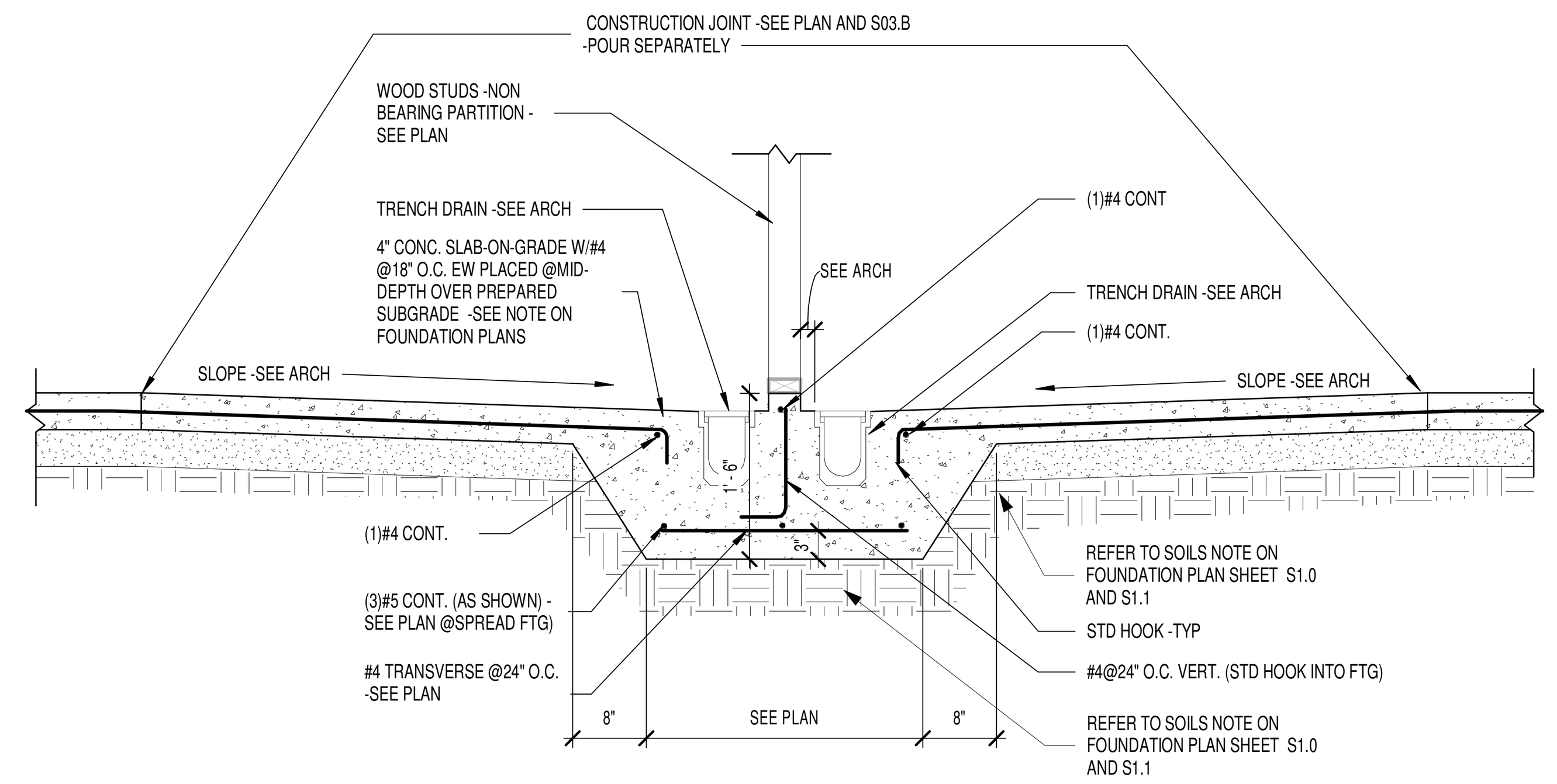
Project Number 2246
Drawn By Author
Date 3/11/2024

S3.0

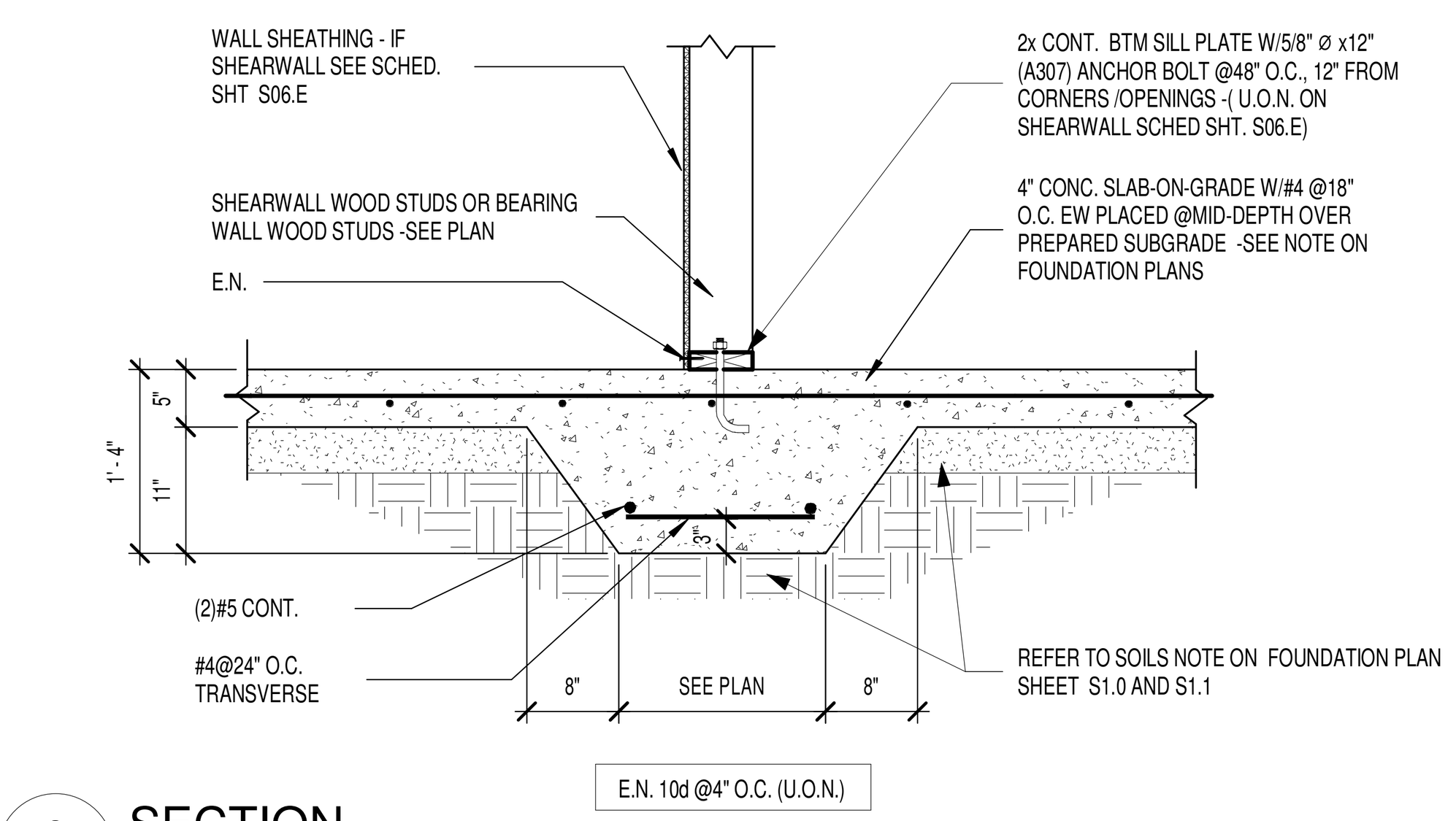


1 S4.0 SECTION
3/4" = 1'-0"

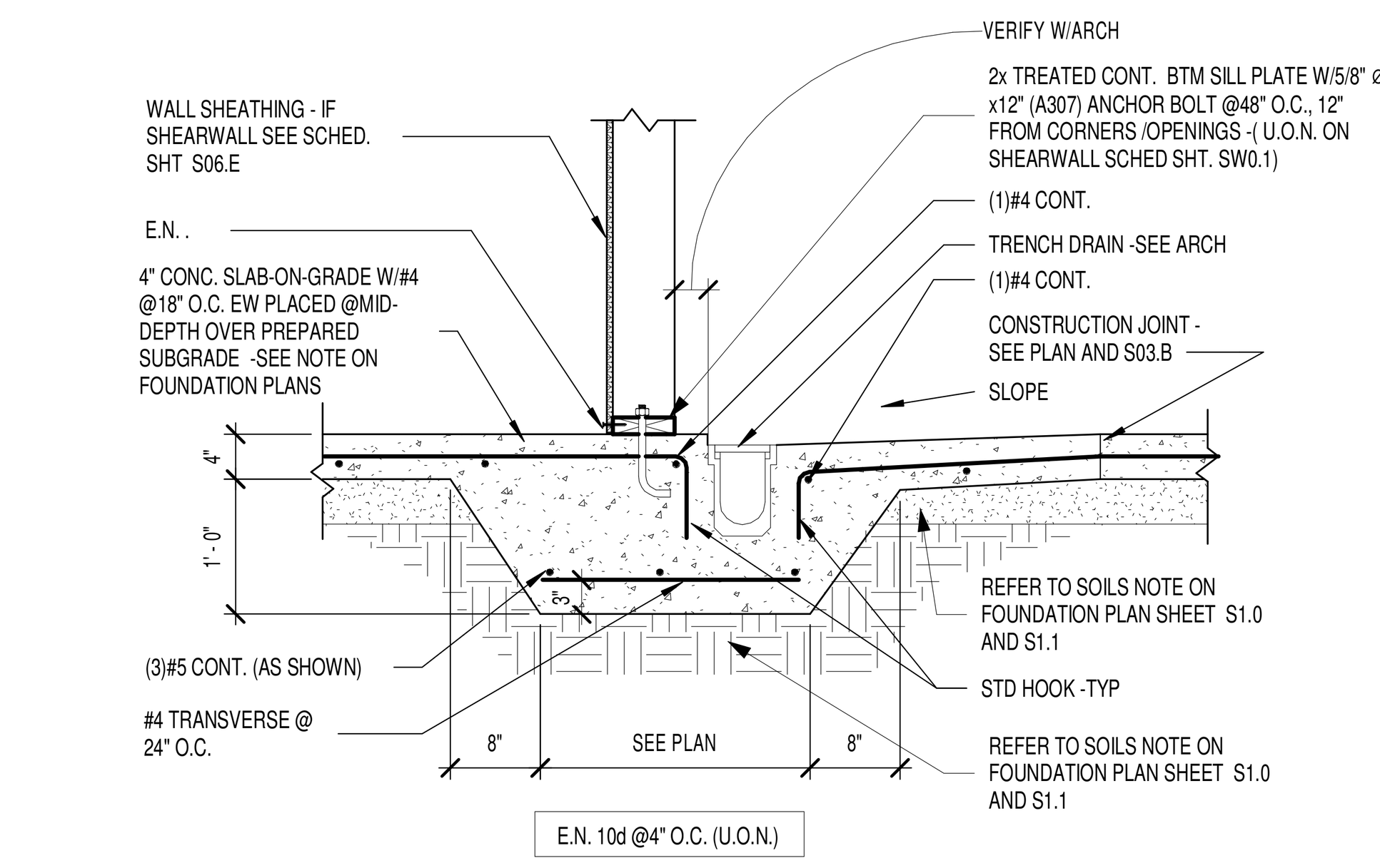
POST INSTALLED ANCHORS ASSUME THE EXISTING MASONRY WALL IS UNCRACKED AND IN GOOD CONDITION AND FULLY GROUTED / REINFORCED. THIS EXISTING MASONRY WALL HAS NOT BEEN VISUALLY INSPECTED BY JJK GROUP, INC. AND SOLEY RELIES ON THIRD - PARTY SPECIAL INSPECTIONS DURING THE INSTALLATION OF THE POST INSTALLED ANCHORS ALONG WITH THE CONDITION OF THE EXISTING MASONRY WALL AND MUST REPORT TO JJK GROUP, INC. FOR ANY DISCREPANCIES.



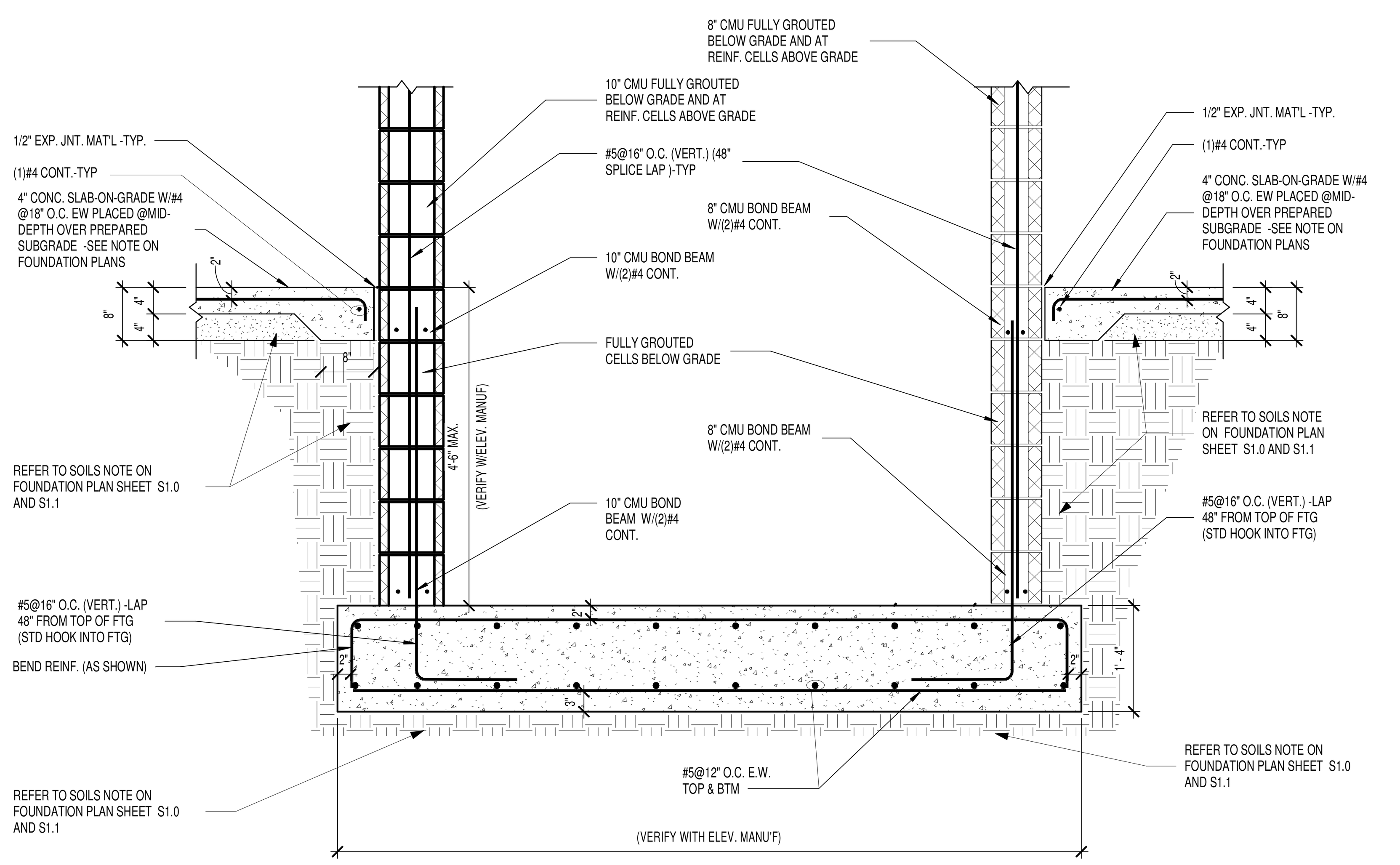
2 S4.0 SECTION
3/4" = 1'-0"



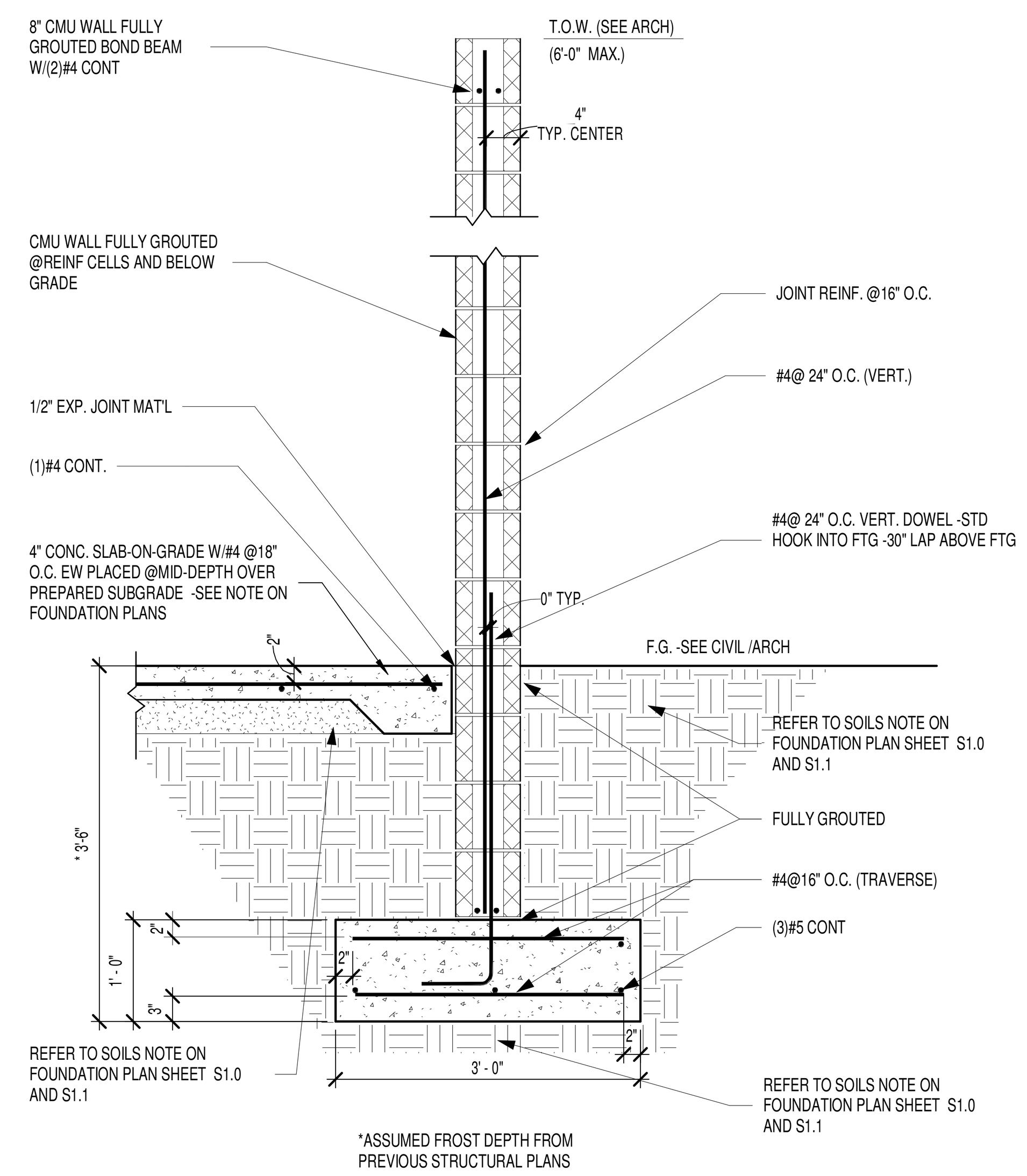
3 S4.0 SECTION
3/4" = 1'-0"



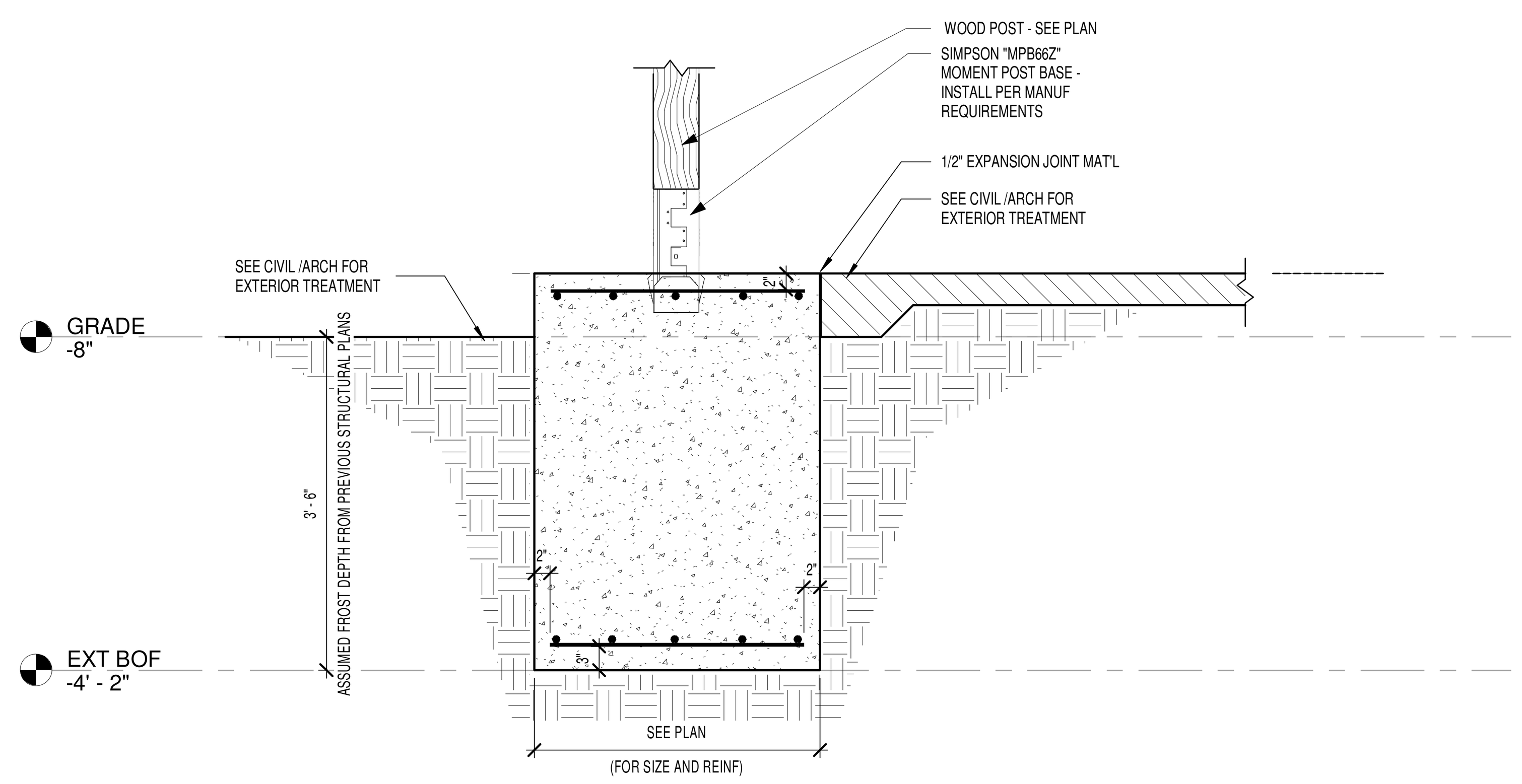
4 S4.0 SECTION
3/4" = 1'-0"



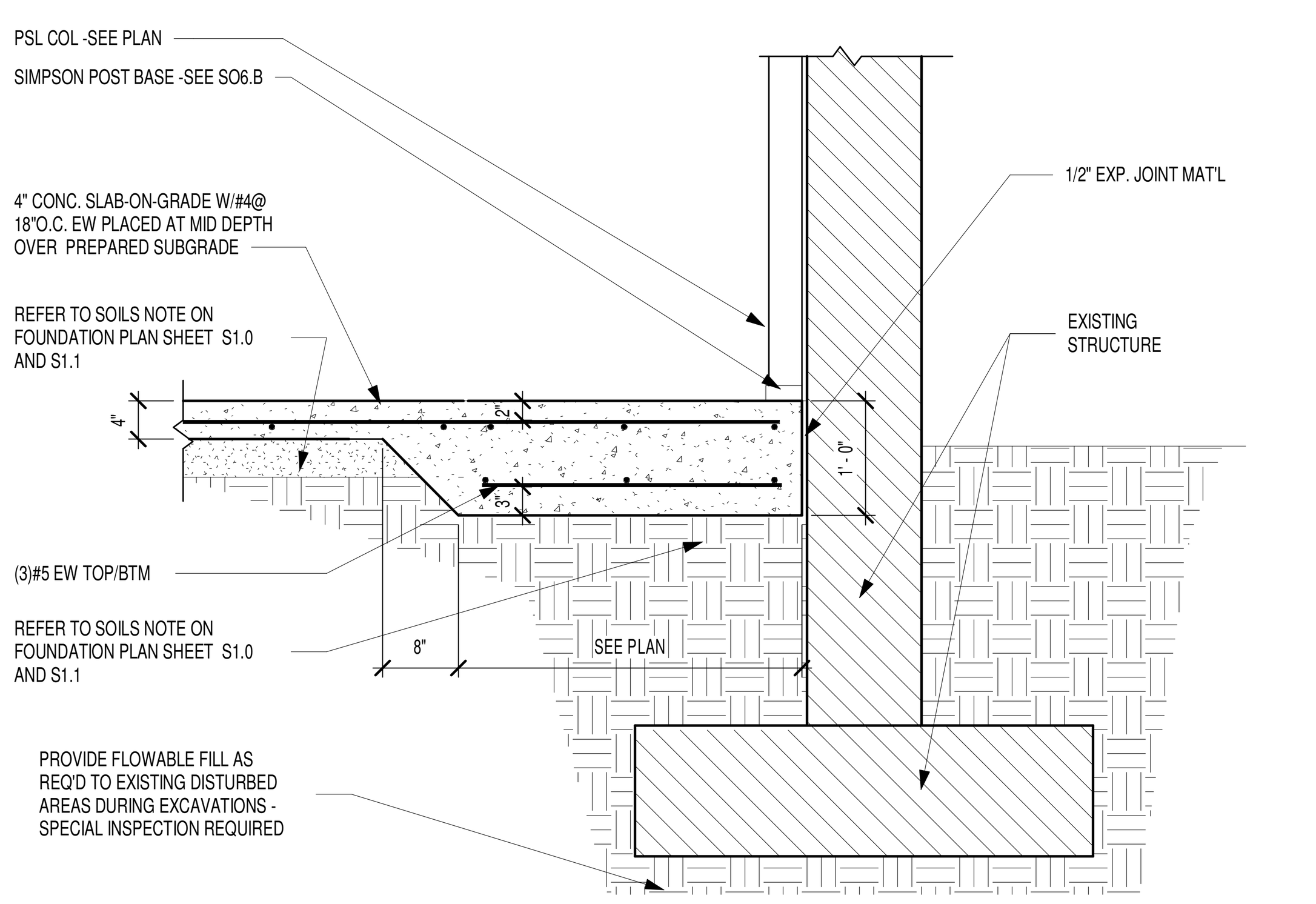
5 S4.0 SECTION
3/4" = 1'-0"



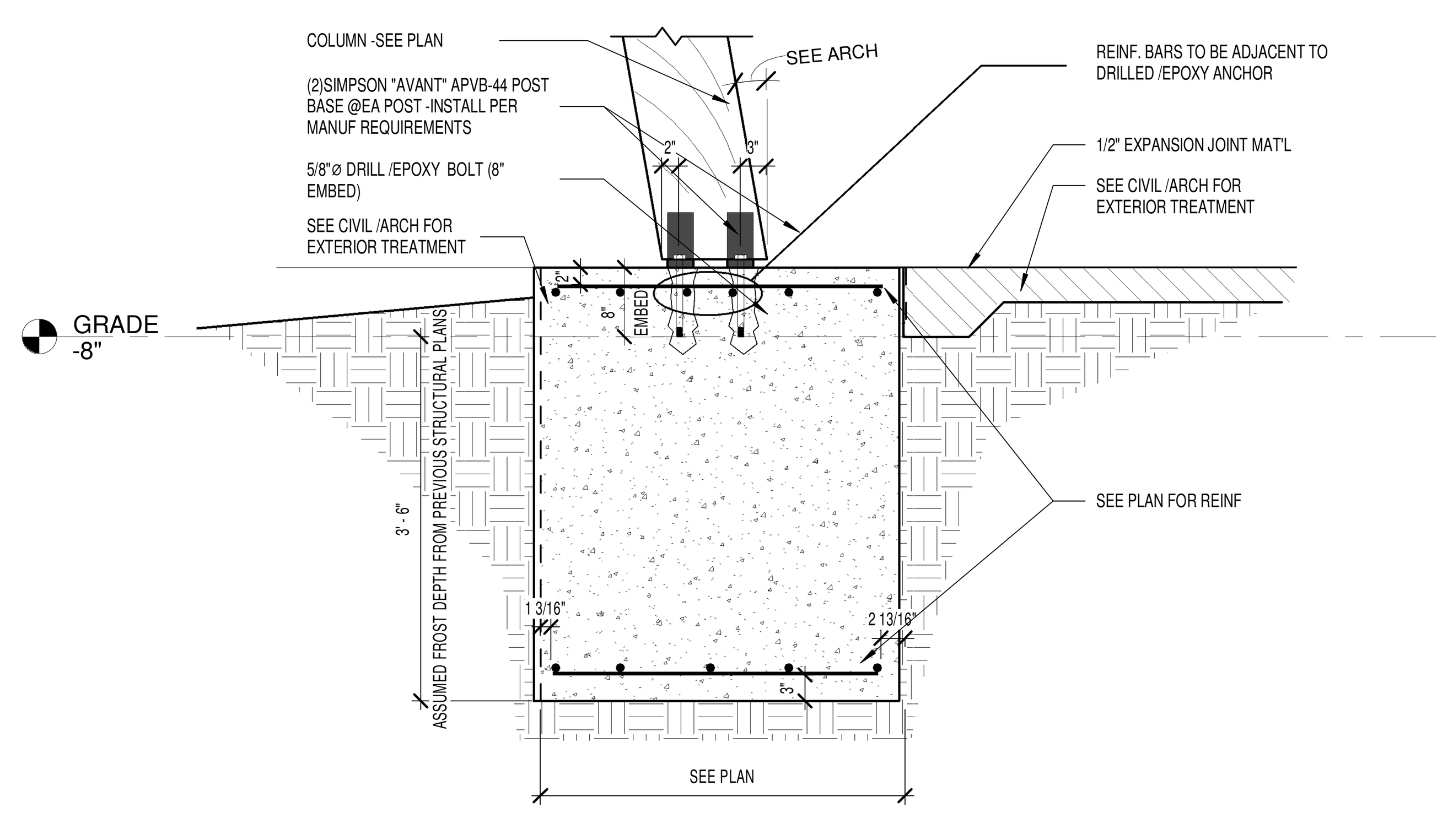
6 S4.0 SECTION
3/4" = 1'-0"



7 S4.0 SECTION
3/4" = 1'-0"



8 S4.0 SECTION
3/4" = 1'-0"



9 S4.0 SECTION
3/4" = 1'-0"

X:\Projects\C23\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL 7-2-24.rvt
9/9/2024 2:34:22 PM

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

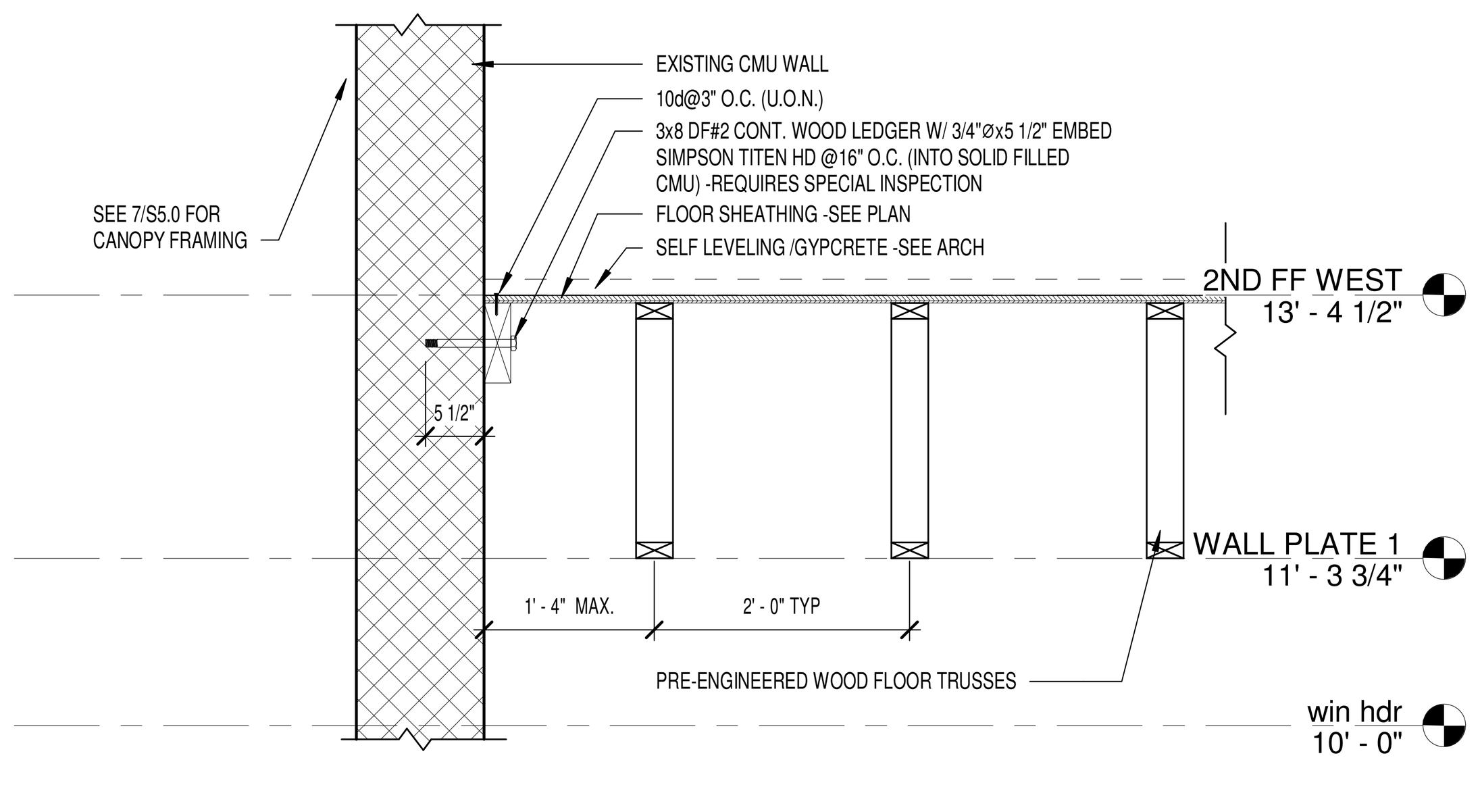
FOUNDATION SECTIONS

REV #	DATE	COMMENTS
REVISION		
REVISION		
REVISION		
REVISION		

REVIEWS	
INITIALS	

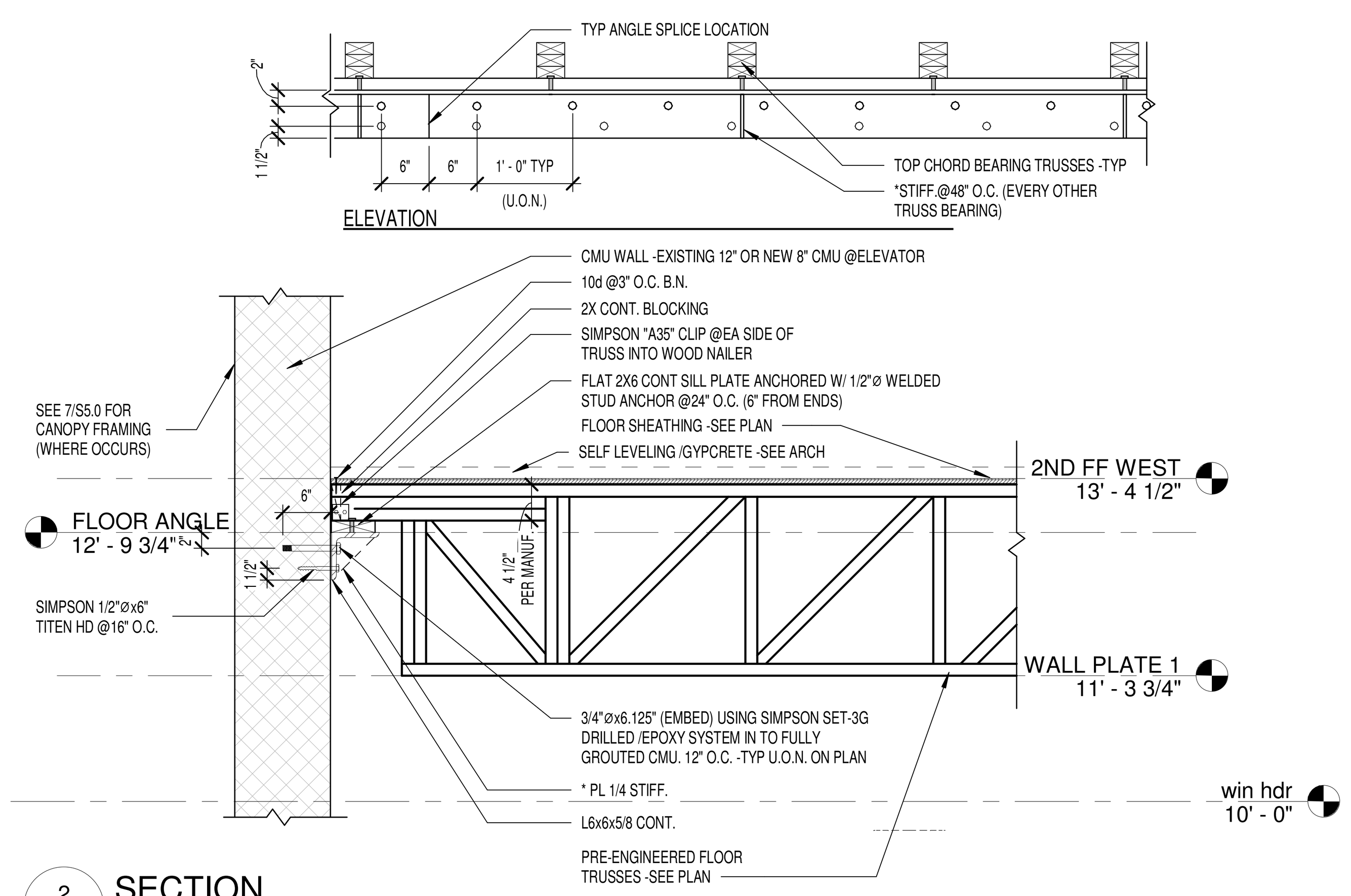
RGAS
Project Number 2246
Drawn By Author
Date 3/11/2024

S4.0



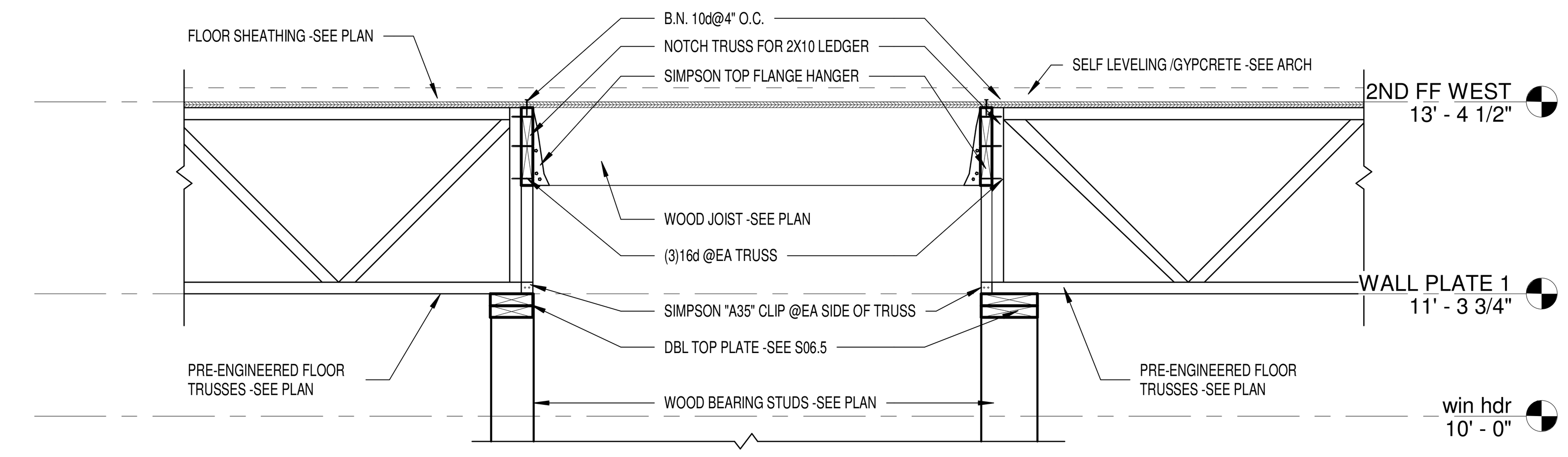
1 S5.0 SECTION
3/4" = 1'-0"

POST INSTALLED ANCHORS ASSUME THE EXISTING MASONRY WALL IS UNCRACKED AND IN GOOD CONDITION AND FULLY GROUTED / REINFORCED. THIS EXISTING MASONRY WALL HAS NOT BEEN VISUALLY INSPECTED BY JJK GROUP, INC. AND SOLEY RELIES ON THIRD - PARTY SPECIAL INSPECTIONS DURING THE INSTALLATION OF THE POST INSTALLED ANCHORS ALONG WITH THE CONDITION OF THE EXISTING MASONRY WALL AND MUST REPORT TO JJK GROUP, INC. FOR ANY DISCREPANCIES.

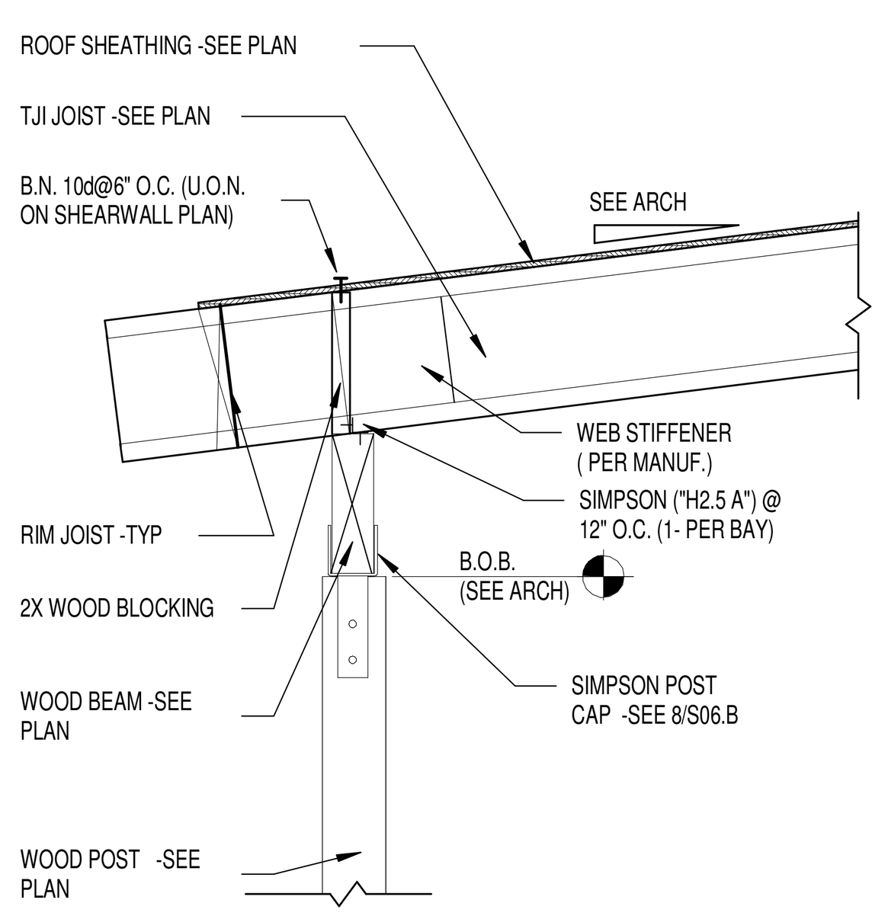


2 S5.0 SECTION
3/4" = 1'-0"

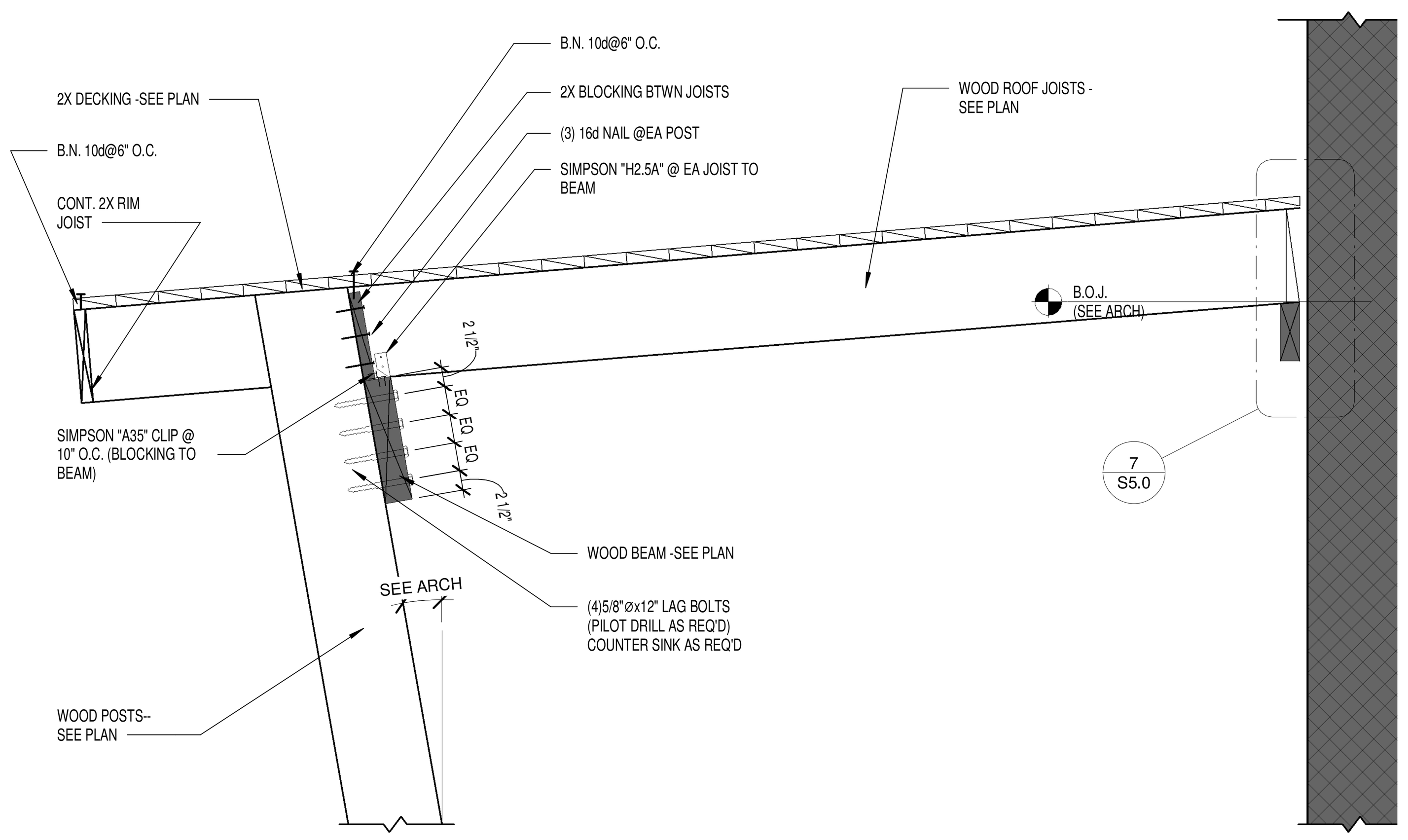
POST INSTALLED ANCHORS ASSUME THE EXISTING MASONRY WALL IS UNCRACKED AND IN GOOD CONDITION AND FULLY GROUTED / REINFORCED. THIS EXISTING MASONRY WALL HAS NOT BEEN VISUALLY INSPECTED BY JJK GROUP, INC. AND SOLEY RELIES ON THIRD - PARTY SPECIAL INSPECTIONS DURING THE INSTALLATION OF THE POST INSTALLED ANCHORS ALONG WITH THE CONDITION OF THE EXISTING MASONRY WALL AND MUST REPORT TO JJK GROUP, INC. FOR ANY DISCREPANCIES.



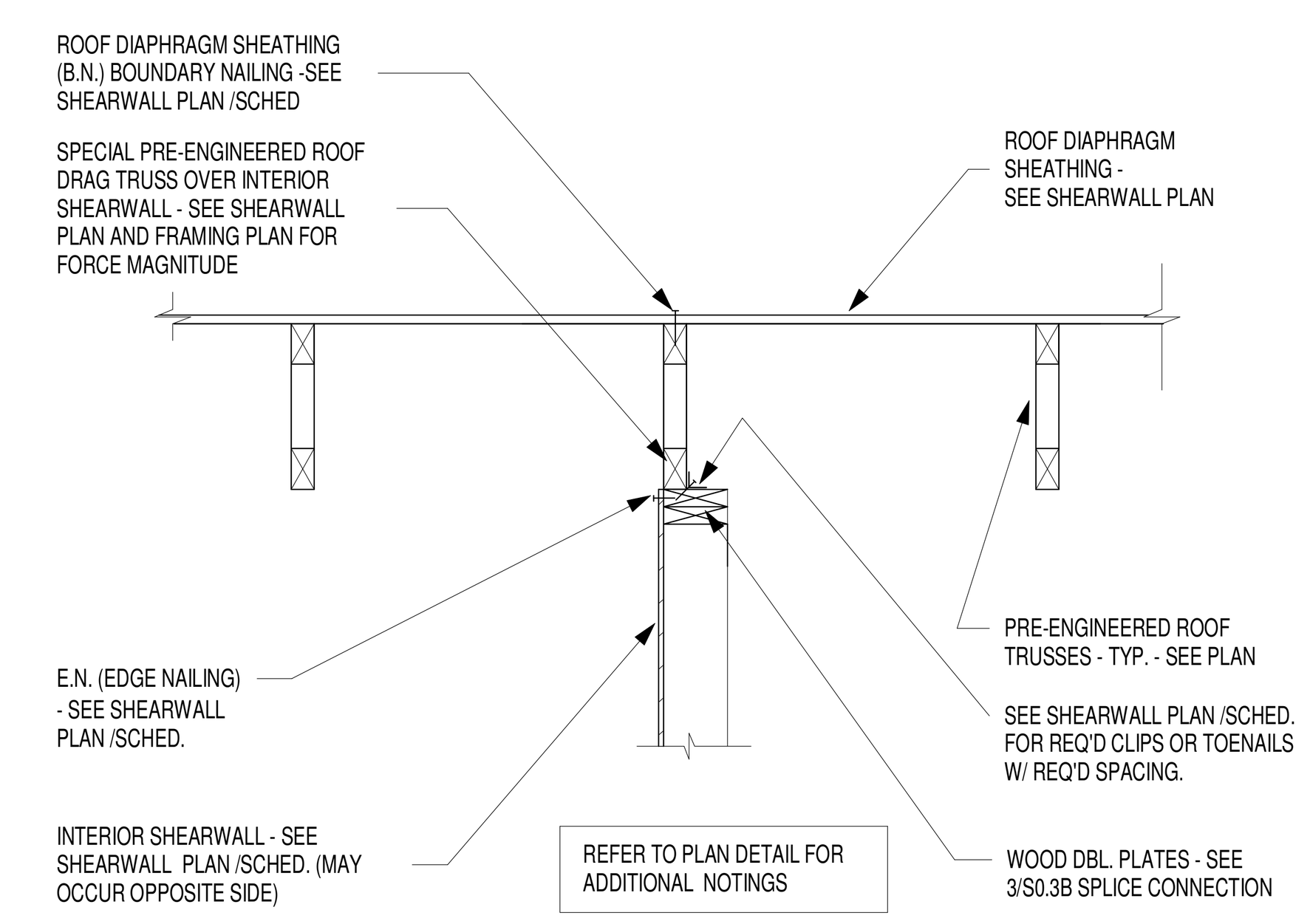
3 S5.0 SECTION
3/4" = 1'-0"



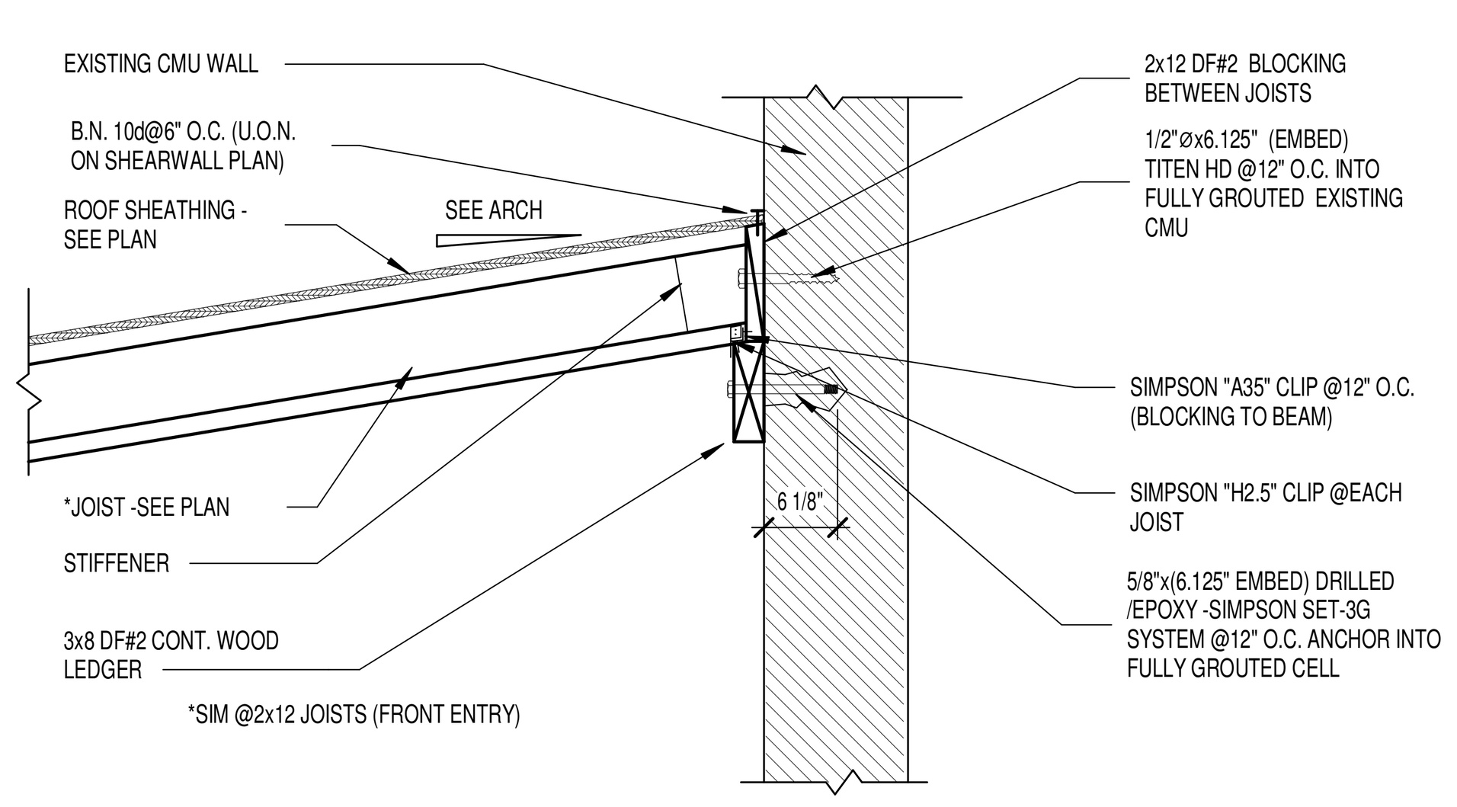
4 S5.0 SECTION
3/4" = 1'-0"



5 S5.0 SECTION
3/4" = 1'-0"

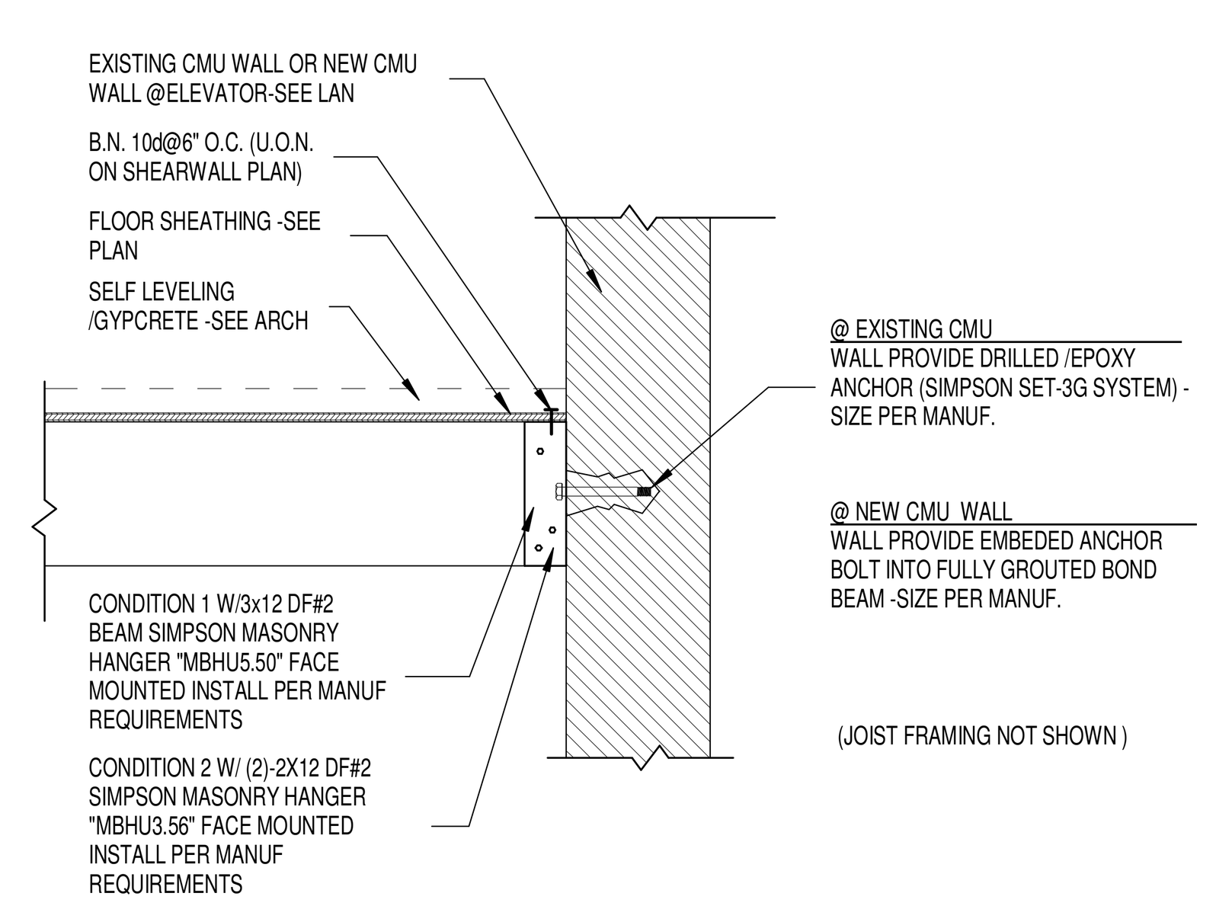


6 S5.0 SECTION
3/4" = 1'-0"



7 S5.0 SECTION
3/4" = 1'-0"

POST INSTALLED ANCHORS ASSUME THE EXISTING MASONRY WALL IS UNCRACKED AND IN GOOD CONDITION AND FULLY GROUTED / REINFORCED. THIS EXISTING MASONRY WALL HAS NOT BEEN VISUALLY INSPECTED BY JJK GROUP, INC. AND SOLEY RELIES ON THIRD - PARTY SPECIAL INSPECTIONS DURING THE INSTALLATION OF THE POST INSTALLED ANCHORS ALONG WITH THE CONDITION OF THE EXISTING MASONRY WALL AND MUST REPORT TO JJK GROUP, INC. FOR ANY DISCREPANCIES.



8 S5.0 SECTION
3/4" = 1'-0"

@EXISTING CMU WALL:

POST INSTALLED ANCHORS ASSUME THE EXISTING MASONRY WALL IS UNCRACKED AND IN GOOD CONDITION AND FULLY GROUTED / REINFORCED. THIS EXISTING MASONRY WALL HAS NOT BEEN VISUALLY INSPECTED BY JJK GROUP, INC. AND SOLEY RELIES ON THIRD - PARTY SPECIAL INSPECTIONS DURING THE INSTALLATION OF THE POST INSTALLED ANCHORS ALONG WITH THE CONDITION OF THE EXISTING MASONRY WALL AND MUST REPORT TO JJK GROUP, INC. FOR ANY DISCREPANCIES.

X:\Projects\C23\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL 7-2-24.rvt
9/9/2024 2:34:24 PM

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

FLOOR/ROOF FRAMING SECTIONS

REV #	DATE	COMMENTS
2	9/9/24	ADDENDUM

REVIEWS
INITIALS

RGAS

Project Number	2246
Drawn By	JJR
Date	3/11/2024

S5.0

SHEARWALL SCHEDULE -16" O.C. MAX. SPACING OF STUDS								
SW ◇	SHEARWALL SHEATHING (THICK SIDE)	EDGE NAILING (IN O.C.)	ANCHOR BOLTS @ FND. (IN O.C.)	BOTTOM PLATE (IN O.C.)	RIM/BLK TP DBL TOP PLATES (IN O.C.)	ALLOW (ASD) SHEAR (KLF) DF/SP	ALLOW (ASD) SHEAR (KLF) HF/SPF	NOTES
1	15/32" RS (1)	10d @ 6	5/8" @ 40	16d @ 5	16d @ 3T	0.364	0.335	1
2	15/32" RS (1)	10d @ 4	5/8" @ 32	16d @ 3	16d @ 2T	0.532	0.489	1

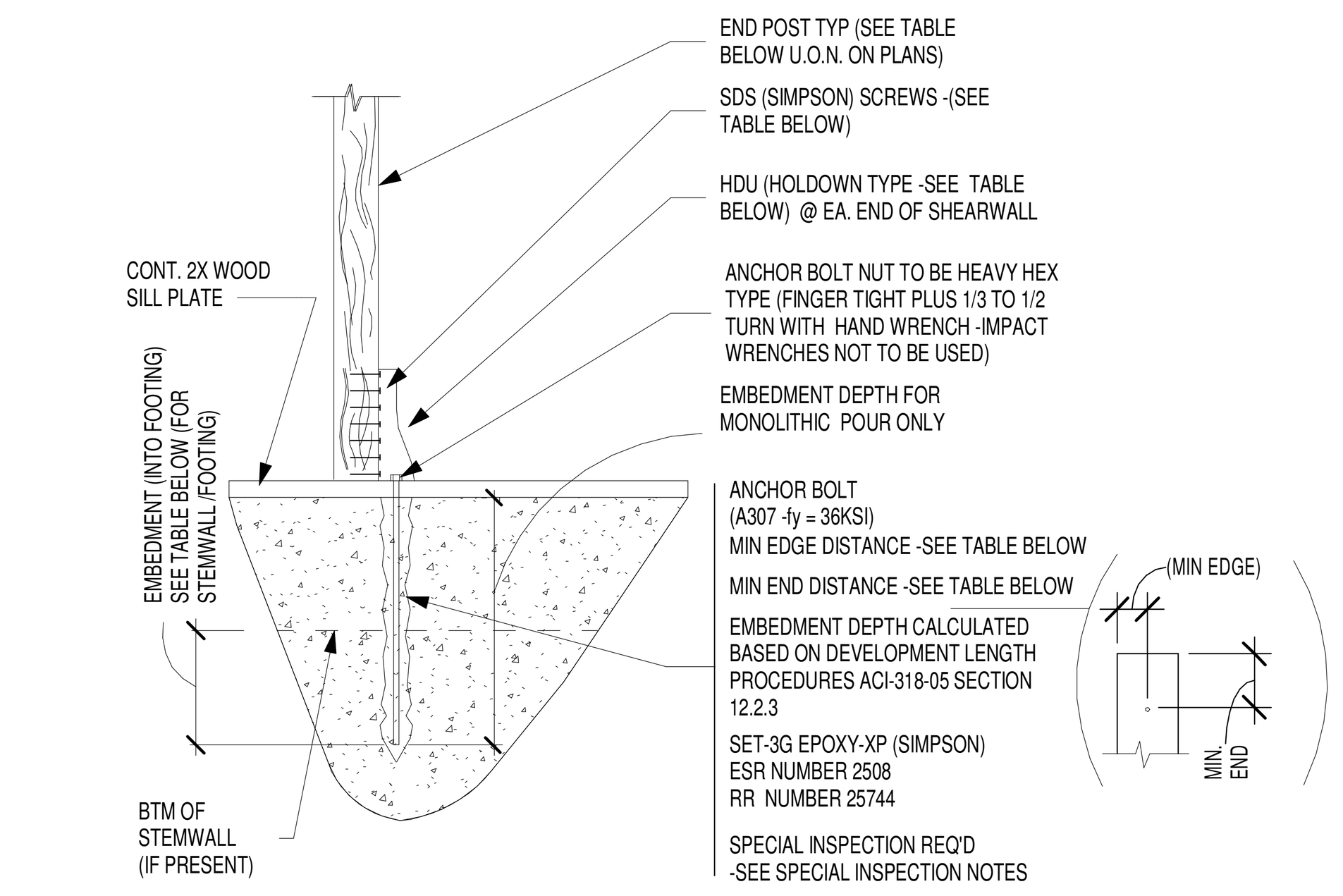
TABLE LEGEND:
T = TOENAIL (3T =3" O.C. TOE NAIL)
KLF = KIPS PER LINEAR FOOT
O.C. = ON -CENTER SPACING

GENERAL NOTES:

A) SPACE NAILS @12" O.C. ALONG INTERMEDIATE FRAMING MEMBERS (U.O.N.)
B) BLOCK ALL PANEL EDGES WITH MINIUM BLOCKING (UNLESS 3X BLOCKING IS REQ'D)
C) APPLY NAILING TO ALL STUDS, TOP AND BOTTOM PLATES AND BLOCKING
D) FRAMING TO BE A MAXIMUM OF 16" O.C.
E) FASTNERS SHALL BE DRIVEN FLUSH WITH SURFACE OF SHEATHING
F) PANELS MAY BE INSTALLED EITHER HORIZ. OR VERT.
G) ALL NAILS TO BE COMMON TYPE
H) ORIENTED STRAND STRUCTURAL PANELS (OSB) MAY BE SUBSTITUITED FOR PLYWOOD ONLY COMFORMING TO NER-180 PRODUCT STANDARD 2-92
I) 1-5/8" MIN. NAIL PENETRATION TO FRAMED MEMBERS

SPECIAL NOTES FOR SHEARWALLS :
1) APA RATED SHEATHING EXP1/EXP2/EXT OR C-C/C-D/STRUCT 1 PLYWOOD

WOOD STUD SHEARWALL SCHEDULE
(REFER TO SHEARWALL PLANS)



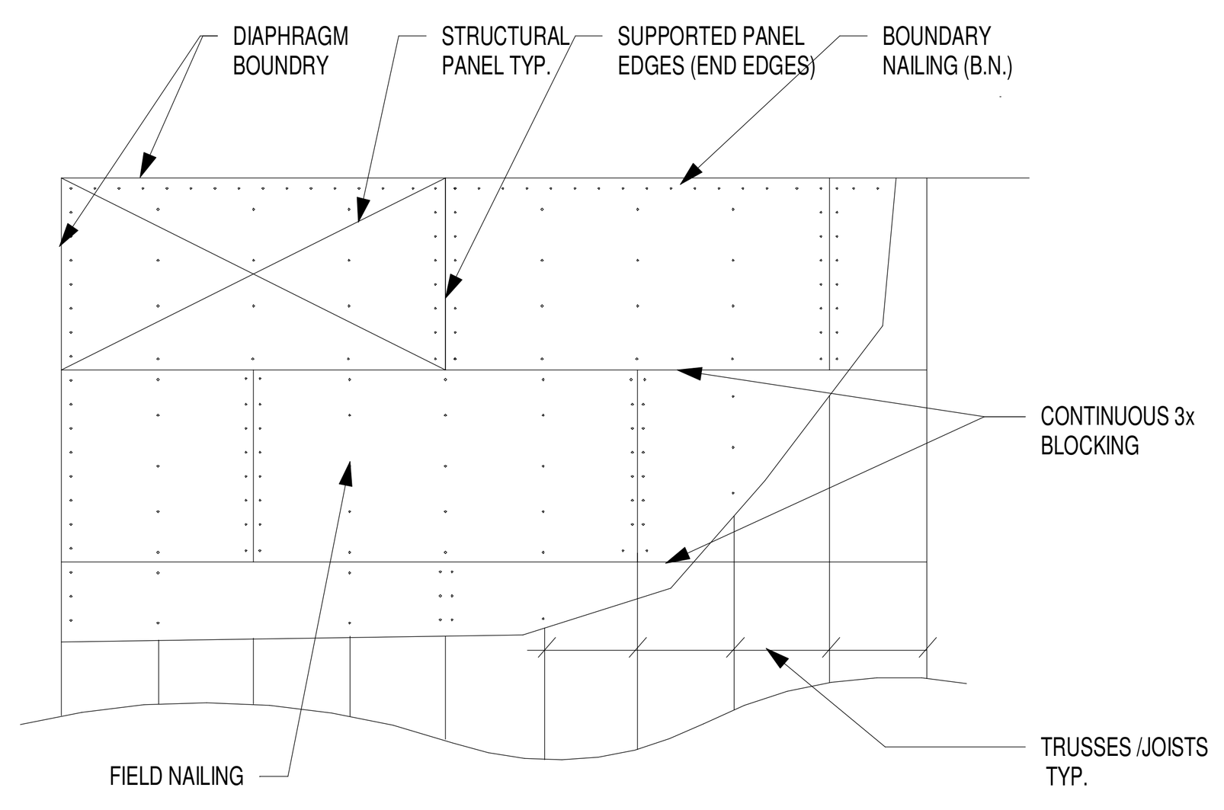
HOLDOWN SCHEDULE
(SIMPSON STRONG-TIE HOLDOWN TO SOLID CONCRETE FOUNDATION)

				FOUNDATION LEVEL						
HD △	TYPE	END POST TYPE	FASTNER TO END POST	SET-3G EPOXY ANCHOR EMBEDMENT (IN) (STEMWALL TYPE FND)	MINIMUM EDGE DISTANCE (IN) (STEMWALL TYPE FND)	MINIMUM END DISTANCE (IN) (STEMWALL TYPE FND)	SET-3G EPOXY ANCHOR EMBEDMENT (IN) (MONOLITHIC TYPE FND)	MINIMUM EDGE DISTANCE (IN) (MONOLITHIC TYPE FND)	MINIMUM END DISTANCE (IN) (MONOLITHIC TYPE FND)	**ASD CAP. (LBS)
1	HDU2	(2) 2x	6-SDS 1/4"x2-1/2"	4	12"	4 5/16"	7	2-3/4	4 5/16	3,075
2	HDU4	(2) 2x	10-SDS 1/4"x2-1/2"	8	12"	6 1/2"	10.5	2-3/4	15	4,565
3	HDU5	(2) 2x	14-SDS 1/4"x2-1/2"	8	12"	6 1/2"	12.5	3-3/4	9 1/2	5,645

**CAPACITY BASED ON LESSER ALLOWABLE VALUE OF HOLDOWN HARDWARE, A307 ANCHOR BOLT EMBEDMENT DEPTH (BASED ON DEVELOPMENT LENGTH PROCEDURES. ALL VALUES ARE BASED ON ASD (ALLOWABLE STRESS DESIGN) LOAD FACTORS FOR WIND/SEISMIC. TO CONVERT TO LRFD (LOAD RESISTANCE FACTOR DESIGN), MULTIPLY VALUES BY 1.4

GENERAL NOTES:
A) F'C = 4000 PSI (MIN)
B) SPECIAL INSPECTION REQUIRED FOR POST INSTALLED ANCHORS -SEE GENERAL STRUCTURAL NOTES.
C) SUBSTITUTION FOR SIMPSON STRONG-TIE PRODUCTS MUST BE EQUIVALENT AND APPROVED BY ENGINEER.

DRILLED /EPOXY HOLDOWN SCHEDULE (WOOD STUDS)
(4000 PSI -28 DAY CONCRETE COMPRESSIVE STRENGTH)



UNBLOCKED DIAPHRAGM SCHEDULE (APA RATED SHEATHING)		WORST CASE OF WIND/SEISMIC AND LOAD CASES (1,2,3,4,5,6) ALLOWABLES PER TABLE 4.2A (SDPWS-2015)			
ACTUAL SIZE (THK)	NOMINAL SIZE (THK)	DIAPHRAGM TYPE	COMMON NAIL SIZE	CAPACITY (ASD) DF OR SOUTHERN PINE FRAMING MEMBERS (PLF) 6" O.C. BOUNDRY 12" O.C. FIELDS	*CAPACITY (ASD) SPF OR HEM FIR FRAMING MEMBERS (PLF) 6" O.C. BOUNDRY 12" O.C. FIELDS
23/32"	3/4"	UNBLOCKED	10d	215	198

*CAPACITY ADJUSTMENT [1- (.5 x SPECIFIC GRAVITY OF FRAMING MEMBER)]

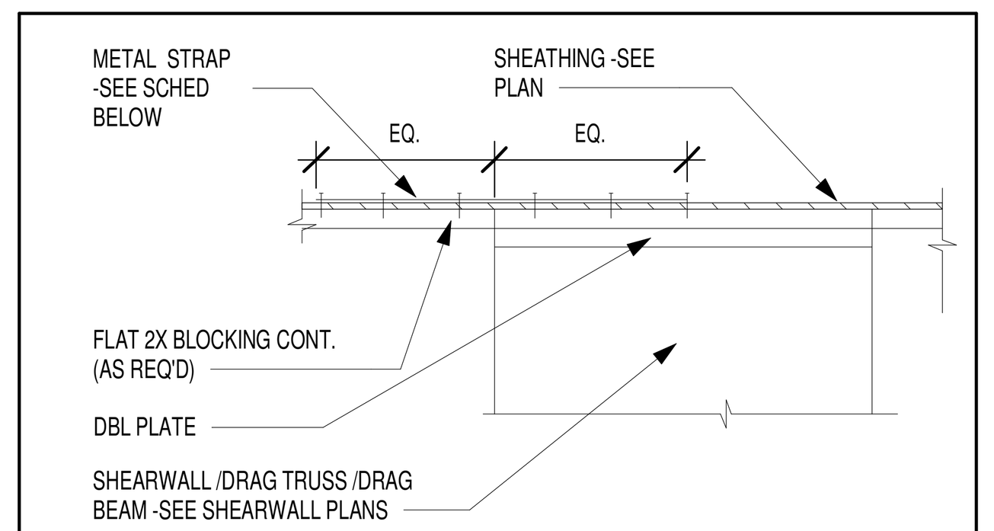
GENERAL NOTES:

A) PANEL SHALL NOT BE LESS THAN 4'x8' EXECPT AT BOUNDARIES AND CHANGES IN FRAMING WHERE MINIMUM PANEL DIMENSION SHALL BE 24" UNLESS ALL EDGES OT THE UNDERSIZED PANELS ARE SUPPORTED BY AND FASTENED TO FRAMING MEMBERS OR BLOCKING.

B) NAILS SHALL BE LOCATED AT LEAST 3/8" FROM THE EDGES OF PANELS. MAXIMUM NAIL SPACING AT PANEL EDGES SHALL BE 6" ON CENTER. NAILS ALONG INTERMEDIATE FRAMING MEMBERS AND BLOCKING FOR PANELS SHALL BE THE SAME SIZE AS INSTALLED AT THE PANEL EDGES. MAXIMUM NAIL SPACING SHALL BE 6" ON CENTER WHEN SUPPORTED SPACING OF 48" ON THE CENTER IS SPECIFIED AND 12" ON CENTER FOR CLOSER SUPPORT EDGES.

C) WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS FOR THEIR TYPE IN DOC PS1 OR PS2

UNBLOCKED DIAPHRAGM SCHEDULE (WOOD)

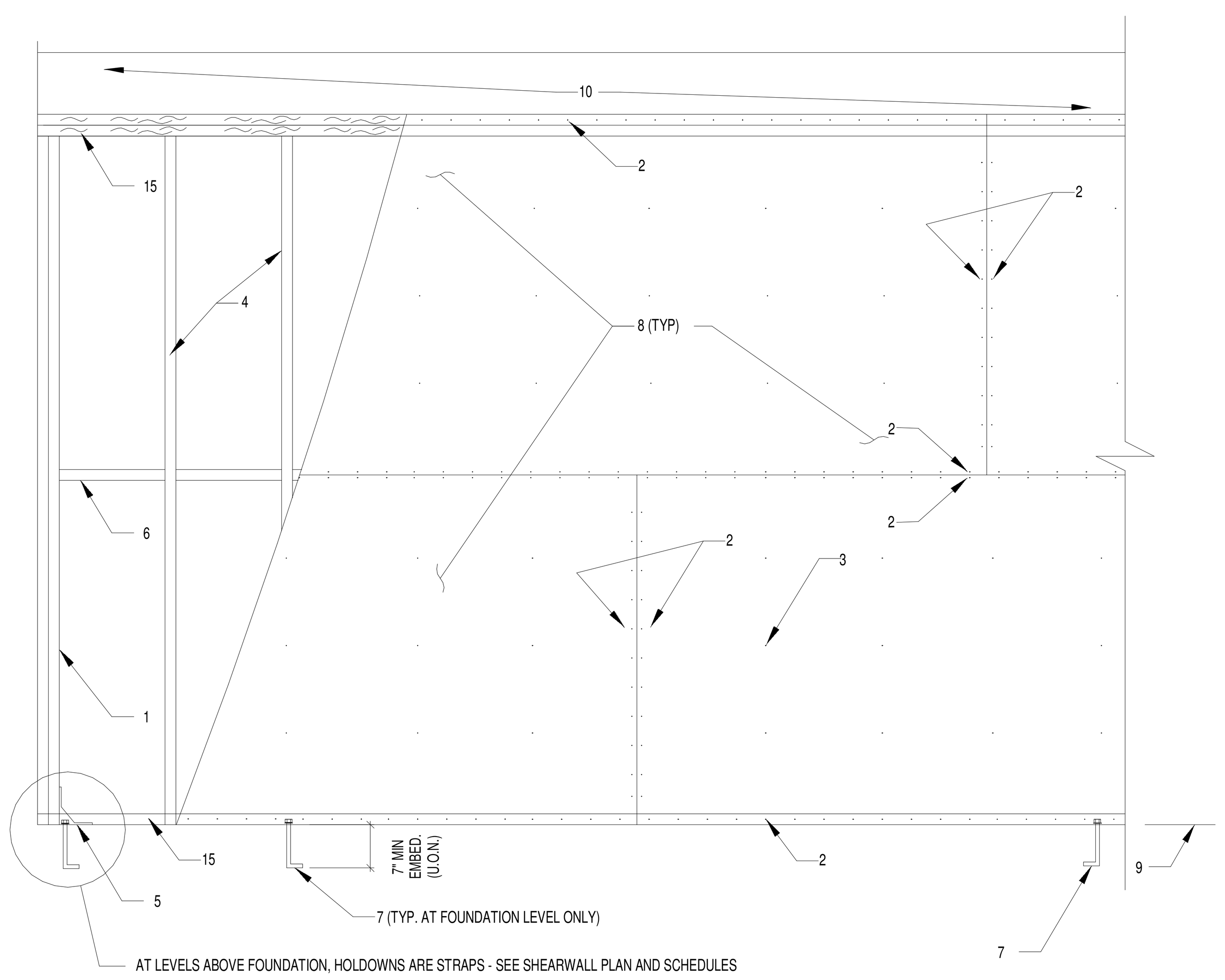


DRAG STRAP-SPLICE SCHEDULE
(Simpson Catalog - Latest ed.)

MARK (SEE PLANS) ◯	LATERAL FORCE CAPACITY (KIPS) (ASD)	METAL STRAP (INSTALL PER MANUF. REQUIREMENTS)	DRAG STRAP REQUIREMENT LENGTH @ EA. SIDE OF SPLICE
A	1.7	CS16	24"
B	3.4	(2) CS16	24"
C	5.10	(3) CS16	24"
D	6.49	CMST14	68"
E	9.23	CMST12	89"

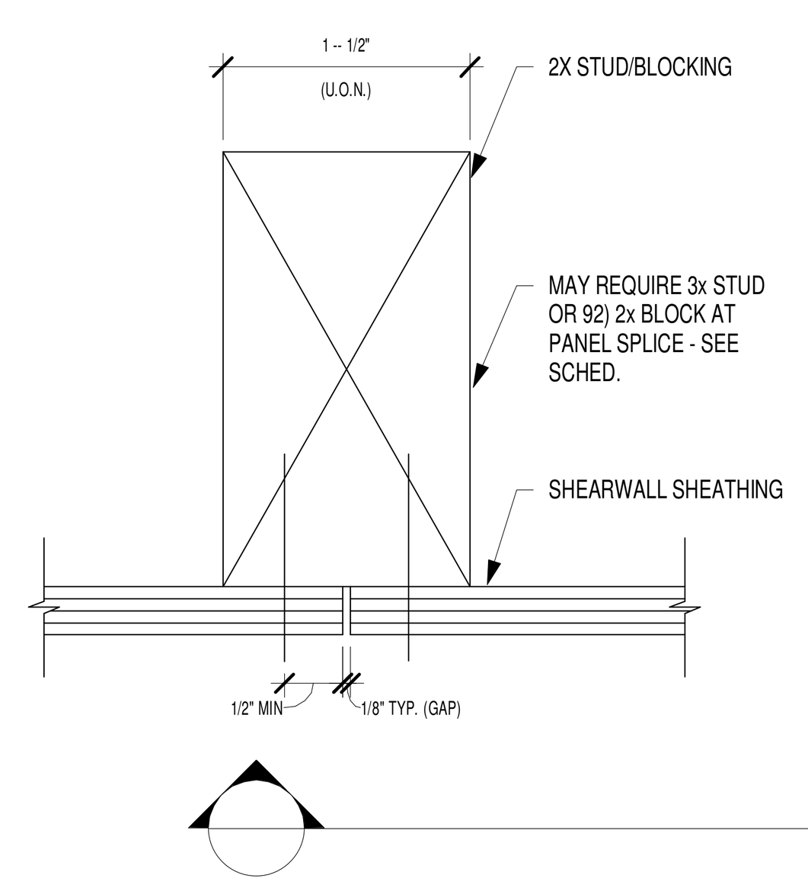
GENERAL NOTES:
A) REFER TO SHEARWALL PLANS FOR DRAG STRUT TYPES AND LOCATIONS.

METAL DRAG STRAP SCHEDULE
(REFER TO SHEARWALL PLANS)

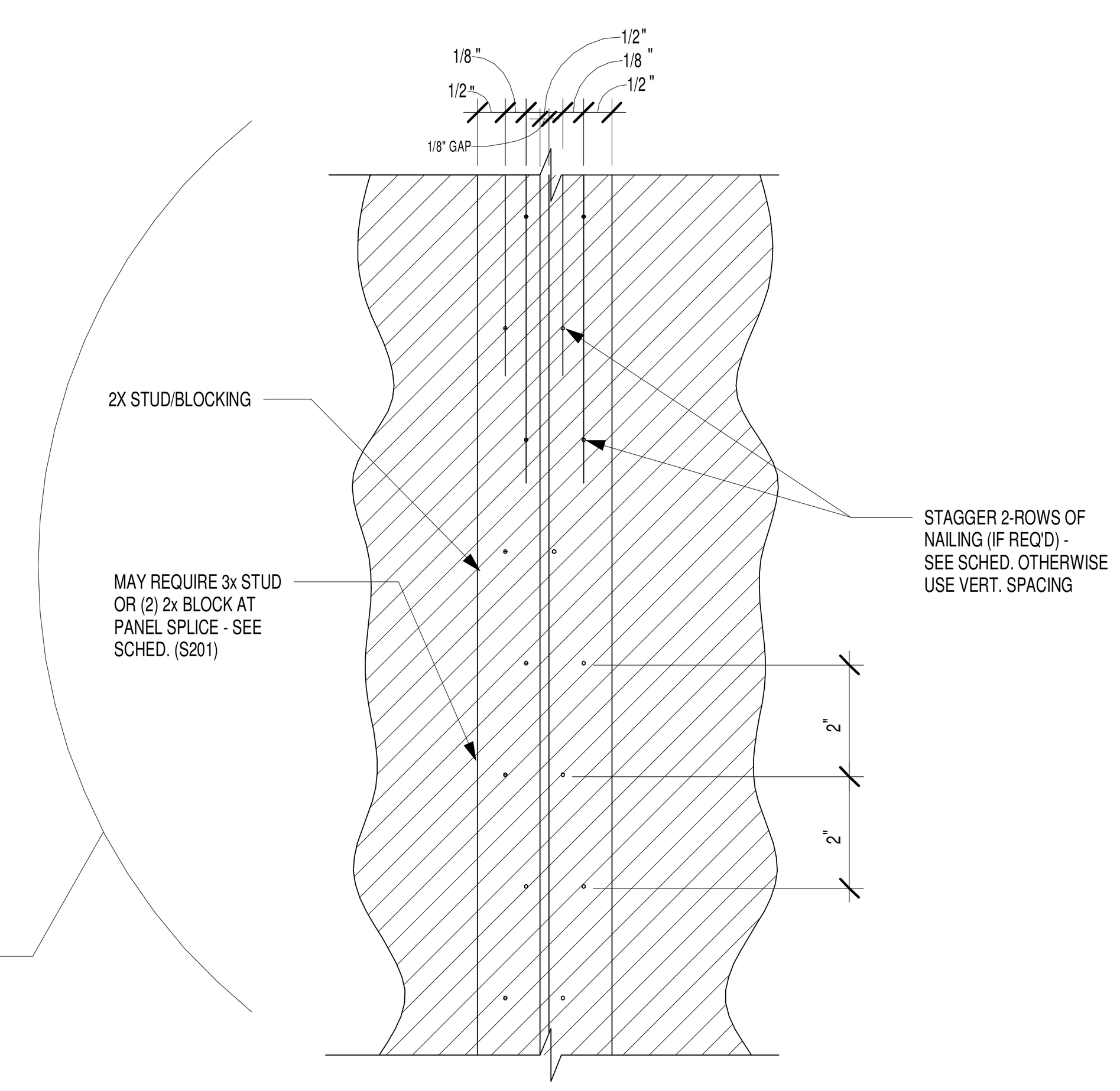


NOTES
1. DOUBLE STUDS AT EACH END OF PANEL - TYPICAL U.O.N. ON HOLDOWN SCHED.
2. E.N. (EDGE NAILING) - SEE SHEARWALL SCHED.
3. FIELD NAILING @ 12" O.C.
4. WOOD STUDS @ 16" O.C. MAX.
5. HOLDOWN AT EA. END OF SHEARWALL ONLY- SEE HOLDOWN SCHED.
6. 2X or 3X BLOCKING AT UNSUPPORTED SHEATHING PANEL JOINTS -SEE SHEARWALL SCHED.
7. ANCHOR BOLTS OR DRILLED AND EPOXIED - FOR SIZE AND SPACING - SEE SHEARWALL SCHED.
8. SHEATHING MATERIAL - SEE SHEARWALL SCHED.
9. FLOOR LINE.
10. BLOCKING, FLOOR/ROOF JOIST, BEAM OR DRAG TRUSS.
11. NOT USED.
12. 2 - 2X TOP PLATES
13. SIMPSON METAL STRAP TOP/BTM OF WINDOWS OPENING -SEE SHEARWALL PLAN/SCHED.
14. WINDOW SILL PLATE
15. 2X OR 3X BTM. PLATE - IF 3X BTM PLATE IS REQ'D AT LEVELS ABOVE FOUNDATION, PROVIDE FASTENERS W/ PENETRATION OF 2" INTO CONT. BLOCKING BELOW USING SPACING PER SHEARWALL SCHED.

2 / S06.E — TYP WOOD SHEARWALL ELEV. AND NOTINGS
1/8" = 1'-0"



EDGE SPACING



SHEARWALL NAILING ELEVATION DIAGRAM @TYPICAL EDGES

1 / S06.E — MISC WOOD SHEARWALL DETAIL
1/8" = 1'-0"

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

SHEARWALL SCHEDULES AND ELEVATIONS

	REV #	DATE	COMMENTS
REVISION	2	9/9/24	ADDENDUM
REVISION			
REVISION			
REVISION			

REVIEWS
INITIALS

RGAS
Project Number 2246
Drawn By JJR
Date 3/11/2024

S06.E

GENERAL NOTES

- THESE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, MEANS AND METHODS, BRACING, SHORING, FORMS, SCAFFOLDING, GUYING OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING DEMOLITION/CONSTRUCTION. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER OR STRUCTURAL OBSERVERS SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
- THE USE OF ELECTRONIC FILES OR REPRODUCTION OF THESE CONTRACT DOCUMENTS FOR ANY CONTRACTOR , SUBCONTRACTOR, ERECTOR, FABRICATOR OR MATEERIAL SUPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SHALL NOT BE PERMITTED.
- TYPICAL DETAILS AND NOTES ON STANDARD S00 SHEETS SHALL OTHERWISE APPLY UNLESS SPECIFICALLY SHOWN OR NOTED, CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILIAR CONDITIONS. ALL WORK, MATERIALS AND CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES, REGULATIONS AND SAFETY REQUIREMENTS.
- FOR CLARITY, ALL OPENINGS MAY NOT BE SHOWN ON DRAWINGS. SEE ALSO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING PLANS. ALL OPENINGS AND PENETRATIONS SHALL BE LOCATED AND VERIFIED BY ALL TRADES FROM DRAWINGS MADE BY THEM. CONTRACTOR SHALL NOT PROCEED WITH ANY WORK SHOWN ON DRAWINGS IF IN CONFLICT UNTIL RECEIVING CLARIFICATION FROM ARCHITECT. FOR FRAMING AT OPENINGS, SEE TYPICAL STRUCTURAL DETAILS, IF APPLICABLE.
- ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS. RESOLVE ALL DISCREPANCIES WITH ARCHITECT PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS AT THE JOB SITE DURING CONSTRUCTION AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT /ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED.

DO NOT SCALE DRAWINGS

- NO STRUCTURAL CHANGE FROM THE APPROVED PLANS AND SPECIFICATIONS SHALL BE MADE IN THE FIELD UNLESS WRITTEN APPROVAL IS OBTAINED PRIOR TO MAKING SUCH CHANGE. CHANGES WITHOUT THE WRITTEN APPROVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONDITION SHALL BE REPAIRED OR REPLACED AS DIRECTED.
- THE MECHANICAL, ELECTRICAL, PLUMBING AND CONCRETE CONTRACTORS SHALL COORDINATE INSTALLATION OF THE REQUIRED INSERTS WITH THE GENERAL CONTRACTOR. REFER TO APPLICABLE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR SUPPORT STRUCTURES AND INSERTS.
- THE MECHANICAL,ELECTRICAL AND PLUMBING CONTRACTORS SHALL FURNISH ALL NECESSARY STRUCTURES FOR MECHANICAL EQUIPMENT, HANGING DEVICES AND INSERTS FOR INSTALLATION OF EQUIPMENT, DUCTS, PIPING, SEISMIC RESTRAINTS, CONDUIT ETC..

SUPPLEMENTARY NOTES

- CERTIFICATIONS:

REINFORCING OR THREADED RODS DRILLED AND EPOXIED INTO CONCRETE AS DETAILED OR NOTED ON THE CONSTRUCTION DOCUMENTS SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUIVALENT:

REPORT#	PRODUCT
ESR #3187	HILTI HY--200
ER #2024	DEWALT POWER DRIVEN FASTENERS
ESR #4057	DEWALT POWER DRIVEN FASTENERS CEILING CLIP AND SILL PLATE ANCHORAGES

INSTALLATION OF EPOXIED DOWELS SHALL FOLLOW THE STRICT RECOMMENDATIONS OF THE MANUFACTURER AND THE APPLICABLE ESR REPORT. WHERE SPALLING IS ANTICIPATED DUE TO INSUFFICIENT EDGE DISTANCE, USE THREADED ANCHOR ROD EPOXIED INTO DRILLED HOLE. CONTRACTOR SHALL HAVE ER REPORT ON-SITE DURING ALL INSTALLATIONS. THE CONTRACTOR SHALL USE THE LATEST REPORT FOR THE TIME OF INSTALLATION (FIRST OCCURENCE) BUT SHALL UTILIZE THE SAME PARTICULAR REPORT FOR THE DURATION OF THE PROJECT.

EXPANSION BOLTS DRILLED AND INSTALLED INTO CONCRETE AS DETAILED OR NOTED ON THE CONSTRUCTION. DOCUMENTS SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUIVALENT:

REPORT#	PRODUCT
ESR #1917	HILTI KWIK--BOLT TZ
ESR #3772	ITW REDHEAD TRUBOLT
ESR #3260	DEWALT/POWERS POWER--BOLT
ESR #1396	SIMPSON STRONG TIE WEDGE--ALL
ESR #2024	DEWALT POWER DRIVEN FASTENERS CEILING CLIP AND SILL PLATE ANCHORAGES

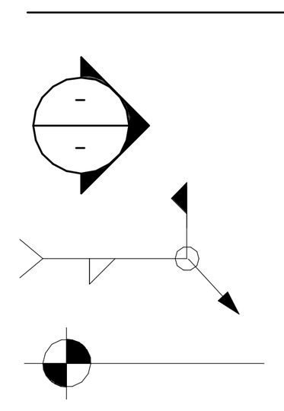
INSTALLATION OF EXPANSION BOLTS SHALL FOLLOW THE STRICT RECOMMENDATION OF THE MANUFACTURER AND THE APPLICABLE ICBO-ESR REPORT. CONTRACTOR SHALL HAVE ER REPORT ON-SITE DURING ALL INSTALLATIONS.
THE CONTRACTOR SHALL USE THE LATEST REPORT FOR THE TIME OF INSTALLATION (FIRST OCCURRENCE) BUT SHALL UTILIZE THE SAME PARTICULAR REPORT FOR THE DURATION OF THE PROJECT.

- MISCELLANEOUS:

THE USE OF ELECTRONIC FILES OR REPRODUCTION OF THESE CONTRACT DOCUMENTS FOR ANY CONTRACTOR , SUBCONTRACTOR, ERECTOR, FABRICATOR OR MATEERIAL SUPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SHALL NOT BE PERMITTED

@--------------- AT
A.B.------------ ANCHOR BOLT
APA ----------- AMERICAN PLYWOOD ASSOCIATION
A.S.T.M. ----- AMERICAN SOCIETY OF TESTING MATERIALS
ARCH. -------- ARCHITECTURAL
ASD ----------- ALLOWABLE STRESS DESIGN
BLDG --------- BUILDING
BLK. ----------- BLOCK
BM. ------------ BM
BN. ------------ BOUNDARY NAILING
B.O. ----------- BOTTOM OF
BTM ----------- BOTTOM
BRG. ---------- BEARING
BRK ----------- BRICK
C --------------- CHANNEL
CJ. ------------- CONTROL JOINT
CCJ. ---------- CONSTRUCTION CONTROL JOINT
CLR ----------- CLEAR
CMU ---------- CONCRETE MASONRY UNIT
COL ----------- COLUMN
CONC. -------- CONCRETE
CONN. -------- CONNECTION
CONT. -------- CONTINUOUS
CORR --------- CORRIDOR
DBL ------------ DOUBLE
DTL ------------ DETAIL
DIA. ------------ DIAMETER
DIM. ------------ DIMENSION
DL --------------- DEAD LOAD
D.T. ------------- DOUBLE TEE / DRAIN TILE
DWL ------------ DOWEL
EA --------------- EACH
EF --------------- EACH FACE
EJ ---------------- EXPANSION JOINT
EL ----------- ELEVATION
ELEV ------- ELEVATOR
E.N. --------- EDGE NAILING
E.S. --------- EDGE SCREW
EQ. --------- EQUAL
EW --------- EACH WAY
EXST.------ EXISTING
EXP. ------- EXPANSION
F.D. -------- FLOOR DRAIN
FDN -------- FOUNDATION
FTG -------- FOOTING
FT ---------- FEET
GALV. ----- GALVANIZE
GA. --------- GAUGE
HK. --------- HOOK
HORIZ. ---- HORIZONTAL
HSS -------- HOLLOW STRUCTURAL SECTION
INT --------- INTERIOR
JST -------- JOIST
KLF ------------ KIPS PER LINEAR FOOT
KSI ------------- KIPS PER SQUARE INCH
LL --------------- LIVE LOAD
LLH ------------- LONG LEG HORIZONTAL
LLV ------------- LONG LEG VERTICAL
LONG. --------- LONGITUDINAL
LWC ------------ LIGHT WEIGHT CONCRETE
MANUF -------- MANUFACTURER
MAS ------------ MASONRY
MAX. ----------- MAXIMUM
MIN. ------------ MINIMUM
MISC. ---------- MISCELLANEOUS
MTL ------------ METAL
M.O. ----------- MECHANICAL OPENING
N. -------------- NORTH
NTS ----------- NOT TO SCALE
O.C. ----------- ON CENTER
O.D. ------------ OUTSIDE DIAMETER
O.F. ------------- OUTSIDE FACE
O.H. ------------- OVERHEAD
OPNG. ---------- OPENING
ORIG. ----------- ORIGINAL
P.C. -------------- PRECAST
PLF --------------- POUND PER LINEAR FOOT
PLWD ----------- PLYWOOD
PSF -------------- POUNDS PER SQUARE FOOT
PSI --------------- POUNDS PER SQUARE INCH
R. OR RAD. --- RADIUS
REINF. --------- REINFORCING
REQ'D ----------- REQUIRED
S.A. --------------- STUD ANCHOR
SCHED. --------- SCHEDULE
SHT. ----------- SHEET
SIM ------------- SIMILAR
S.J. ------------- STEEL JOIST
SL --------------- SNOW LOAD
SPA. ------------ SPACING/ SPACES
SPECS. -------- SPECIFICATIONS
S.S. -------------- STAINLESS STEEL
STD -------------- STANDARD
STL -------------- STEEL
TEMP ----------- TEMPORARY
T & B ------------ TOP & BOTTOM
T & G ------------ GROOVE
THK. ------------- THICK/ THICKENED
T.O. -------------- TOP OF
TRANS. --------- TRANSVERSE
TS --------------- TUBE STEEL
TYP. ------------ TYPICAL
U.O.N. ----------- UNLESS OTHERWISE NOTED
VERT. ----------- VERTICAL
WD --------------- WOOD
WL --------------- WIND LOAD
W/ ---------------- WITH
W/O -------------- WITH OUT
WT. ---------------- WEIGHT
WWF ------------- WELDED WIRE FABRIC

SYMBOLS



SECTION / ELEVATION
REFER TO STRUCTURAL STEEL GENERAL NOTES FOR WRLD DETAILS
ELEVATION / TOP OF BRG.

$ STEPPED FOOTING
℄ CENTERLINE
℗ PLATE
L ANGLE
Ø DIAMETER

DESIGN CRITERIA

GOVERNING CODES AND MANUALS:

- INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION
- AMERICAN CONCRETE INSTITUTE (ACI)
  - ACI 318 LATEST EDITION, BUILDING CODE REQUIREMENTS
  - ACI 301 LATEST EDITION , SPECIFICATIONS FOR STRUCTURAL CONCRETE
- AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
  - ASCE 7-16 MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES
- TMS 402/602 BUILDING CODE RQMTS AND SPECIFICATIONS FOR MASONRY STRUCTURES
- NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS). LATEST EDITION
  SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC (SDPWS)

DESIGN LOADS

DEAD LOADS:

DEAD LOADS HAVE CALCULATED TO INCLUDE THE ACTUAL WEIGHT OF ALL WORK SHOWN ON THE STRUCTURAL, MECHANICAL, ELECTRICAL AND ARCHITECTURAL PLANS ALONG WITH A MISCELLANEOUS LOADING OF 5 PSF.

LIVE LOADS:

ROOF LIVE LOADS			
PITCHED, FLAT OR CURVED	=	20	PSF
FLOOR LIVE LOADS			
CORRIDORS ABOVE FIRST FLOOR	=	80	PSF
LIGHT STORAGE	=	125	PSF
TYPICAL MEZZANINE	=	60	PSF

SNOW LOADS:

GROUND SNOW LOAD	=	25	PSF
EXPOSURE CONDITION	=	FULLY EXPOSED	
SNOW EXPOSURE FACTOR (Ce)	=	.90	
THERMAL FACTOR (Ct)	=	1.1	
SNOW LOAD IMPORTANCE FACTOR (I)	=	1.0	
SLOPED -ROOF FACTOR (Cs)	=	1.0	
MIN. SNOW LOAD (Pf_min)	=	17.33	PSF
FLAT ROOF SNOW LOAD (Pf)	=	17.33	PSF
DESIGN SNOW LOAD (UNIFORM)	=	17.33	PSF MAX (pf_min, Pf)

DRIFT N/A

WIND:

ULTIMATE WIND SPEED	=	114	MPH
RISK CATEGORY	=	II	
EXPOSURE CATEGORY	=	C	
ENCLOSURE CLASSIFICATION	=	ENCLOSED BLDG	
INTERNAL PRESSURE COEF.	=	0.18	
DIRECTIONALITY (kd)	=	0.85	
MAIN (LFRS)			
ROOF DOWN PRESSURE	=	0	PSF (UNFACTORED)
ROOF UPLIFT PRESSURE	=	-16.85	PSF (UNFACTORED)
WALL INWARD PRESSURE	=	13.254	PSF (UNFACTORED)
WALL OUTWARD PRESSURE	=	-16.8	PSF (UNFACTORED)
	=	30.054	PSF (COMBINED WALL PRESSURES)

COMPONENTS AND CLADDING:
WORST CASE WIND ZONE PRESSURES (PSF) BASED ON THE FOLLOWING:
ZONE 5 (WALLS) @ CORNERS EFFECTIVE AREA OF 10 SQ.FT
ZONE 3 (ROOFS) @ CORNERS EFFECTIVE AREA OF 100 SQ.FT
ZONE WIDTH USED FOR WORST CASE CORNERS OF 6 FT (ROOFS)

ROOF UPLIFT PRESSURE	=	-44.8	PSF (UNFACTORED)
ROOF DOWN PRESSURE	=	16.7	PSF (UNFACTORED)
WALL INWARD PRESSURE	=	29.3	PSF (UNFACTORED)
WALL OUTWARD PRESSURE	=	-37	PSF (UNFACTORED)
OPEN STRUCTURES			
ROOF UPLIFT PRESSURE	=	-23.3	PSF (UNFACTORED)
ROOF DOWN PRESSURE	=	25.6	PSF (UNFACTORED)
FREE STANDING WALLS/ SIGNS			
HORIZONTAL PRESSURE	=	24.8	PSF (UNFACTORED)

SEISMIC:

SEISMIC DATA
RISK CATEGORY = II
SEISMIC IMPORTANCE FACTOR (Le) = 1.00
MAPPED SPECTRAL RESPONSE ACCELERATIONS
Ss = 0.29
S1 = 0.061
SPECTRAL RESPONSE COEFFICIENTS
Sds = 0.303
Sd1 = 0.098
SITE CLASS = D
SEISMIC DESIGN CATEGORY = B
SEISMIC RESPONSE COEFFICIENT (Cs) = 0.15
ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE

MAIN (LFRS)
NORTH -SOUTH DIRECTION

(R)	(OMEGA)	(Cd)	
6.5	2.5	4	LIGHT FRAMED WOOD WALLS WITH STRUCTURAL WOOD SHEAR PANELS
2	2	1.75	ORDINARY REINFORCED MASONRY SHEARWALLS

EAST -WEST DIRECTION

(R)	(OMEGA)	(Cd)	
2	2	1.75	ORDINARY REINFORCED MASONRY SHEARWALLS

IRREGULARITIES

HORIZONTAL	VERTICAL
NONE	NONE

NO SOILS REPORT

NO SOILS REPORT WAS PROVIDED TO JJK GROUP, INC THEREFORE, JJK GROUP, INC CANNOT BE RESPONSIBLE FOR THE PERFORMANCE OF THE FOUNDATRION DESIGN DUE TO HIDDEN SOIL CONDITIONS NOT DISCOVERABLE WITHOUT A SOILS INVESTIGATION.

REFER TO NOTE ON S1.0 AND S1.1

GENERAL SHOP DRAWING NOTES:

- THE STRUCTURAL SHOP DRAWING REVIEW IS INTENDED TO HELP THE ENGINEER VERIFY HIS DESIGN CONCEPT. THE REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE DESIGN DRAWINGS AND SPECIFICATIONS, WHICH HAVE PRIORITY OVER SHOP DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMED AND CORRELATED DIMENSIONS, FABRICATION PROCESSES, MEANS, METHODS, TECHNIQUES, SAFETY AND COORDINATION OF THE WORK WITH OTHER TRADES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK HIS OWN SHOP DRAWINGS AND THOSE OF HIS SUBCONTRACTORS.
- THE STRUCTURAL SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR PRIOR TO SUBMITTAL. THE SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF A CURSORY REVIEW SHOWS MAJOR ERRORS WHICH SHOULD HAVE BEEN FOUND BY THE CONTRACTOR'S REVIEW. ALL SHOP DRAWINGS SHALL INCLUDE PLAN LAYOUTS SHOWING LOCATIONS OF ITEMS DETAILED ON THE SHOP DRAWINGS. ANY CHANGES, SUBSTITUTIONS OR DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE CLOUDED ON SHOP DRAWINGS. ANY OF THE CHANGES WHICH ARE NOT CLOUDED OR FLAGGED BY SUBMITTING PARTIES, SHALL NOT BE CONSIDERED REVIEWED AFTER ENGINEER'S REVIEW UNLESS NOTED ACCORDINGLY. THE SUBMITTED SHOP DRAWINGS WILL BE REVIEWED BY THE ENGINEER OF RECORD IN A TIMELY MANNER, TYPICALLY TWO WEEKS IS STANDARD, ASSUMING ALL NECESSARY SHOP DRAWING SUBMITTAL CRITERIA HAVE BEEN MET AND ALL PERTINENT SHOP DRAWING DOCUMENTS REFLECT THE MOST CURRENT CONSTRUCTION DOCUMENTS IN SOME CASES THE SCALE WILL BE STIPULATED UPON RECEIPT OF A PARTICULAR SUBMITTAL PACKAGE. IN ALL CASES THIS REVIEW PERIOD IS EXCLUSIVE OF ARCHITECTURAL REVIEW AND SUBMITTAL PROCESSING.
- SHOP DRAWINGS SHALL BE CONSIDERED RECEIVED ON THE SAME DAY IF RECEIVED BY 2:00PM (ENGINEERES LOCAL TIME) ON THE DAY TRANSMITTED ELSE THAY SHALL BE CONSIDERED RECEIVED ON THE FIRST BUSINESS DAY FOLLOWING THE DAY TRANSMITTED (INCLUDING HOLIDAYS)

REQUIRED SHOP DRAWING SUBMITTALS

THE CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SUBMITTALS FOR EACH OF THE HIGHLIGHTED (CHECK BOX FILLED IN) TO BE INCORPORATED INTO WORK:

DIVISON 03 -CONCRETE:

- ■ CONCRETE MIX DESIGN
- ■ CONCRETE REINFORCING LAYOUT

DIVISON 04 -MASONRY:

- ■ MASONRY PRODUCT DATA
- ■ MASONRY MORTAR MIX DESIGN
- ■ MASONRY GROUT MIX DESIGN
- ■ MASONRY LAYOUT WITH REINFORCING

DIVISON 05 -METALS:

- ☐ STRUCTURAL STEEL LAYOUT
- ☐ ENGINEERED METAL TRUSS LAYOUT
- ☐ PRE-ENGINEERED OPEN WEB JOIST LAYOUT
- ☐ LIGHT GAGE METAL LAYOUT

DIVISON 06 -WOOD AND COMPOSITE:

- ■ LUMBER PRODUCT DATA
- ■ ENGINEERED LUMBER/TIMBER PRODUCT DATA
- ☐ ENGINEERED WOOD JOIST LAYOUT
- ■ PRE-ENGINEERED WOOD TRUSS DESIGN LAYOUT

GENERAL STRUCTURAL SHEET INDEX (S00 SERIES)

THE FOLLOWING SHEET INDEX INDICATES GENERAL STRUCTURAL SHEETS (S00 SERIES SHEETS). THESE SHEETS ARE STANDARDIZED TO CORRESPOND TO ASSOCIATED CSI MASTER SPECIFICATION DIVISIONS AND WILL BE HIGHLIGHTED (CHECK BOX FILLED IN) IF INCLUDED IN THIS PROJECT SET.

DIVISON 01 -GENERAL:

- ■ S01.A GENERAL PROJECT NOTES, DRAWING CONVENTIONS, DESIGN CRITERIA AND SHEET INDEX
- ■ S01.B SPECIAL INSPECTION NOTES AND TABLES
- ☐ S01.C SPECIAL INSPECTION NOTES AND TABLES

DIVISON 03 -CONCRETE:

- ■ S03.A CONCRETE GENERAL NOTES AND DETAILS
- ■ S03.B CONCRETE SLAB-ON-GRADE REQUIREMENTS
- ☐ S03.C MISCELLANEOUS CONCRETE DETAILS
- ☐ S03.D CONCRETE SHEARWALL DETAILS AND SECTIONS

DIVISON 04 -MASONRY:

- ■ S04.A MASONRY GENERAL NOTES, REINFORCING REQUIREMENTS AND LINTEL DIAGRAMS
- ■ S04.B MASONRY DETAILS AND MASONRY VENEER REQUIREMENTS
- ☐ S04.C MASONRY SHEARWALL DETAILS AND SECTIONS

DIVISON 05 -METALS:

- ☐ S05.A STRUCTURAL STEEL GENERAL NOTES AND DETAILS
- ☐ S05.B METAL DECK GENERAL NOTES AND DETAILS
- ☐ S05.C MOMENT RESISTING FRAMES /BRACED FRAMES
- ☐ S05.D STEEL BRACED FRAME DETAILS AND SECTIONS
- ☐ S05.E LIGHT GAGE METAL FRAMING GENERAL NOTES AND DETAILS
- ☐ S05.F METAL SHEARWALL SCHEDULES DETAILS AND SECTIONS

DIVISON 06 -WOOD AND COMPOSITES:

- ■ S06.A CARPENTRY GENERAL NOTES
- ■ S06.B CARPENTRY GENERAL DETAILS
- ■ S06.C CARPENTRY GENERAL DETAILS (2)
- ☐ S06.D WOOD STAIR AND SHAFT ENCLOSURE DETAILS
- ■ S06.E SHEARWALL SCHEDULES AND ELEVATIONS

DIVISON 13 -SPECIAL CONSTRUCTION:

- ☐ S13.A SPECIAL DETAILS

DIVISON 31 -EARTHWORK:

- ☐ S31.A EARTHWORK GENERAL NOTES AND DETAILS

DIVISON 32 -EXTERIOR IMPROVEMENTS:

- ☐ S32.A EXTERIOR DETAILS /RETAINING WALLS / FENCE WALLS

STRUCTURAL SHEET INDEX

THE FOLLOWING SHEET INDEX INDICATES THE PROJECT SPECIFIC STRUCTURAL SHEETS.

- ■ S1.0 FOUNDATION AND CONTROL JOINT PLAN WEST
- ■ S1.1 FOUNDATION AND CONTROL JOINT PLAN EAST
- ■ S2.0 FLOOR /ROOF FRAMING PLAN WEST
- ■ S2.1 FLOOR /ROOF FRAMING PLAN EAST
- ■ S3.0 SHEARWALL PLAN
- ■ S4.0 FOUNDATION SECTIONS
- ■ S5.0 FLOOR /ROOF FRAMING SECTIONS

JJK Group, Inc.
Consulting Structural Engineers
3240 Juan Tabo Bldg. C Albuquerque, New Mexico 87111 · tel. 505 296 5706 · fax 505 296 1672 · www.jjkgroup.com

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

GENERAL PROJECT NOTES, DRAWING CONVENTIONS, DESIGN CRITERIA AND SHEET INDEX

	REV #	DATE	COMMENTS
REVISION			
REVISION			
REVISION			
REVISION			

REVIEWS
INITIALS

RGAS
Project Number 2246
Drawn By JJR
Date 3/11/2024

S01.A

SPECIAL INSPECTIONS AND TESTS OF SOILS

TABLE 1705.6 ITEM	VERIFICATION AND INSPECTION TASK	FEQUENCY OF INSPECTION		REFERENCE FOR CRITERIA
		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	IBC SECTION
1	VERIFY MATERIAL BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	----	X	1705.6
2	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	----	X	1705.6
3	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	----	X	1705.6
4	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	----	1705.6
5	PRIOR TO PLACEMENT OF COMPACTED FILL, VERIFY SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	X	----	1705.6

SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TABLE 1908 ITEM	VERIFICATION AND INSPECTION TASK	CONTINUOUS SPECIAL INSPECTION	PERIODICAL SPECIAL INSPECTION	REFERENCE STANDARD	IBC REFERENCE
1	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	----	X	AISC 318 CH. 20, 25.2, 25.3, 26.5.1-26.5.3	1908.4
2	REINFORCING BAR WELDING:				
2 a	VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	----	X	PER AWS D1.4 ACI 318: 26.5.4	----
2 b	INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"	----	X		
2 c	INSPECT ALL OTHER WELDS	X	----		
3	INSPECT ANCHORS CAST IN CONCRETE	----	X	ACI 318: 17.8.2	----
4	INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:				
4 a	ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	----	ACI 318: 17.8.2.4	----
4 b	MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	----	X	ACI 318: 17.8.2.4	----
5	VERIFY USE OF REQUIRED DESIGN MIX.	----	X	AISC 318 CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	----	ASTM C 172, ASTM C 31, ACI 318: 26.4.5, 26.12	1908.10
7	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	----	AISC 318: 26.4.5	1908.6, 1908.7, 1908.8
8	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	----	X	AISC 318: 26.4.7-26.4.9	1908.9
9	INSPECT PRESTRESSED CONCRETE FOR:				
9 a	APPLICATION OF PRESTRESSING FORCES.	X	----	ACI 318: 26.9.2.1	----
9 b	GROUTING OF BONDED PRESTRESSING TENDONS.	X	----	ACI 318: 26.9.2.3	----
10	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	----	X	ACI 318: CH. 26.9.2.1	----
11	VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST- TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	----	X	AISC 318: 26.10.2	1908.9
12	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	----	X	ACI 318: CH 26.10.1 (b)	----

LEVEL B QUALITY ASSURANCE OF MASONRY (TMS 402-13 / ACI 530-13 / ASCE 5-13 TABLE 3.1.2)

MINIMUM TESTS

VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 B.1.b.3 FOR SELF-CONSOLIDATING GROUT.

ACCORDANCE WITH SPECIFICATION ARTICLE 1.4B PRIOR TO CONSTRUCTION, AND f'_m VERIFICATION OF f'_{AAC} EXCEPT WHERE SPECIFICALLY EXEMPTED BY TMS 402-13/ACI 1530-13/ASCE 5-13.

MINIMUM SPECIAL INSPECTION

TABLE ITEM	VERIFICATION AND INSPECTION TASK	FEQUENCY (a)		REFERENCE FOR CRITERIA	
		CONTINUOUS	PERIODICALLY	TMS 402 / ACI 530 / ASCE 5	TMS 602 / ACI 530.1 / ASCE 6
1	VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS.	----	X	----	ART. 1.5
2	AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
2 a	PROPORTIONS OF SITE-PREPARED MORTAR.	----	X	----	ART. 2.1, 2.6A
2 b	CONSTRUCTION OF MORTAR JOINTS.	----	X	----	ART. 3.3B
2 c	GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	----	X	----	ART. 2.4B, 2.4H
2 d	LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS, AND ANCHORAGES	----	X	----	ART. 3.4, 3.6A
2 e	PRESTRESSING TECHNIQUE.	----	X	----	ART. 3.6B
2 f	PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY.	X (b)	X (c)	----	ART. 2.1C
3	PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
3 a	GROUT SPACE.	----	X	----	ART. 3.2D, 3.2F
3 b	GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES.	----	X	SEC. 6.1	ART. 2.4, 3.4
3 c	PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES.	----	X	SEC. 6.1, 6.2.1, 6.2.6, 6.2.7	ART. 3.2E, 3.4, 3.6A
3 d	PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS.	----	X	----	ART. 2.6B, 2.4G.1.b
3 e	CONSTRUCTION OF MORTAR JOINTS.	----	X	----	ART. 3.3B
4	VERIFY DURING CONSTRUCTION:				
4 a	SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	----	X	----	ART. 3.3F
4 b	TYPE, SIZE, LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.	----	X	SEC.1.2.1(e), 6.1.4.3, 6.2.1	----
4 c	WELDING OF REINFORCEMENT.	X	----	SEC.8.1.6.7.2, 9.3.3.4(c), 11.3.3.4(b)	----
4 d	PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F)	----	X	----	ART. 1.8C, 1.8D
4 e	APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	X	----	----	ART. 3.6B
4 f	PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE.	X	----	----	ART. 3.5, 3.6C
4 g	PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS.	X (b)	X (c)	----	ART. 3.3B.9, 3.3F.1.b
4 h	INSTALLATION OF POST-INSTALLED ANCHORS ACCORDING TO MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. VERIFY ANCHOR DIMENSIONS, ADHESIVE IDENTIFICATION AND EXPIRATION DATE, HOLE DIMENSION, EDGE DISTANCES, EMBEDMENT DEPTH, TIGHTENING TORQUE, BASE- MATERIAL TEMPERATURE.	X (d)	X (e)	----	SEANM
5	OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS.	----	X	----	ART1.4B.2.a.3, 1.4B.2.b.3, 1.4B.2.c.3, 1.4B.3, 1.4B.4

FOOTNOTES:

(a) FREQUENCY REFERS TO THE FREQUENCY OF SPECIAL INSPECTIONS, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODIC DURING THE LISTED TASK, AS DEFINED IN THE TABLE.

(b) REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.

(c) REQUIRED AFTER THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.

(d) REQUIRED FOR THE FIRST 10% OF EACH DIFFERENT TYPE OF ANCHOR AND/OR INSTALLER

(e) REQUIRED FOR THE REMAINING 90% OF EACH DIFFERENT TYPE OF ANCHOR AND/OR INSTALLER

STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS PER IBC 2015

1. SPECIAL INSPECTIONS / TESTING -

   SPECIAL STRUCTURAL INSPECTIONS" ARE NOT TO BE CONFUSED WITH, NOR RELIEVE THE OWNER OF OWNER'S AGENT FROM THE JURISDICTION BUILDING DEPARTMENT INSPECTIONS REQUIRED BY IBC SECTION 110. SPECIAL INSPECTIONS DOR NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE CONTRACT DOCUMENTS. MEANS AND METHODS AND JOBSITE SAFETY ARE SOLELEY THE RESPONSIBILITY OF THE CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL TESTING REQUIREMENTS.

2. REPORTING FOR SPECIAL INSPECTION -

   SPECIAL INSPECTION AND TESTING REPORTS SHALL BE COMPLETED AND DISTRIBUTED ON A WEEKLY BASIS. REPORT DEFICIENCIES THAT HAVE NOT BEEN RESOLVED IMMEDIATELY. PROVIDE COPIES OF REPORTS TO: CONTRACTOR, OWNER, ARCHITECT AND STRUCTURAL ENGINEER OF RECORD. SPECIAL INSPECTOR TO KEEP A NON-COMPLIANT LIST DOCUMENTING ITEMS INSPECTED NOT MEETING APPROVED CONSTRUCTION DOCUMENTS AND WHEN /HOW RESOLVED

3. REFER TO IBC SECTION 1705 AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING CONSTRUCTION DOCUMENTS FOR ADDITIONAL NON-STRUCTURAL SPECIAL INSPECTION ITEMS.

4. ANY FABRICATOR NEEDS TO BE APPROVED BY THE JURISDICTION BUILDING DEPARTMENT OR BE CERTIFIED BY AN INDUSTRY RECOGNIZED AGENCY QUALIFIED FOR SUCH CERTIFICATION. CERTIFICATION OF FABRICATORS ARE TO BE PROVIDED TO THE STRUCTURAL ENGINEER . THE SPECIAL INSPECTION ITEMS CONTAINED HEREIN ARE REQUIRED FOR ALL NON-CERTIFIED FABRICATORS.

5. DEFINITION OF "PERIODIC" AND "CONTINUOUS" SPECIAL INSPECTIONS:
   - CONTINUOUS: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.
   - PERIODIC: THE PART-TIME OF INTERMITTEMT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.
   - WHERE "PERIODIC" SPECIAL INSPECTION IS REQUIRED, "PART-TIME" OR "INTERMITTENT" MEANS THAT INSPECTION OF THE TASK NEED TO BE PERFORMED FROM TIME TO TIME DURING THE PROGRESS OF THE TASK. THE PERIOD OF TIME BETWEEN INSPECTIONS VARIES GREATLY FOR DIFFERENT TYPES FO WORK DEPENDING ON THE TYPE OF INSPECTION DONE.
   - THE PERIOD OF TIME BETWEEN INSPECTION ALSO DEPENDS ON THE PACE OF CONSTRUCTION, THE NUMBER OF WORKERS, AND THE QUALITY OF WORKMANSHIP, AND OTHER FACTORS.
   - IT IS THE RESPONSIBILITY OF THE SPECIAL INSPECTOR TO PROVIDE INSPECTIONS AT AN APPROPRIATE FREQUENCY AND AT APPRORIATE TIMES DURING CONSTRUCTION. THE INSPECTOR MUST HAVE ADEQUQATE EXPERIENCE AND EXHIBIT GOOD JUDGEMENT IN DETERMINING THE FREQUENCY AND TIMING OF INSPECTIONS.

GRAPHIC CONVENTIONS

TABLE ITEM	VERIFICATION AND INSPECTION TASK
1	THIS CELL WITHOUT SHADE - ITEM IS NOT SCHEDULED FOR INCORPORATION INTO THE WORK
2	THIS CELL WITH SHADE - ITEM IS TO BE INCORPORATED INTO THE WORK

JJK Group, Inc.
Consulting Structural Engineers
3240 Juan Tabo Bldg. C Albuquerque, New Mexico 87111 · tel. 505 296 5706 · fax 505 296 1672 · www.jjkgroup.com

The following professional engineering submittal and its contents, including, without limitation, general notes, conditions, details, sections, calculations and code item explanations (collectively, the "Submittal"), is intended for and restricted to the exclusive use and reference of the client to whom this Submittal is addressed ("Client") solely with reference to and in connection with the project hereinafter described ("Project"), and is not to be reproduced, copied, disseminated, entered into a computer database or used as part of or in connetion with any other document or submittal, or otherwise used in any form or manner or by any person or entity other than Client without the express, prior written permission of JJK Group, Inc. JJK Group, Inc. hereby disclaims any and all responsibility, obligation, and liability of every kind and nature whatsoever, and howsoever arising, to any person or entity in any way relating to or arising out of any unauthorized use of the Submittal.

JIM J. KAPURANIS
082849

ROCKLAND GREEN CENTER FOR ANIMAL
RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

SPECIAL INSPECTIONS AND TABLES (2)

	REV #	DATE	COMMENTS
REVISION			
REVISION			
REVISION			
REVISION			

REVIEWS

INITIALS	

RGAS
Project Number 2246
Drawn By JJR
Date 3/11/2024

S01.B

X:\Projects\C23\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL SO SHEETS.rvt
9/9/2024 2:39:45 PM

CONCRETE:

PRODUCT REQUIREMENTS:

- ALL HARDROCK CONCRETE SHALL BE OF REGULAR WEIGHT OF 145 POUNDS PER CUBIC FOOT.
- AGGREGATE SIZE SHALL CONFORM TO ASTM C33.
- CONCRETE GROUT SHALL BE NON-SHRINKING WITH SUFFICIENT WATER TO ALLOW POURING. ULTIMATE COMPRESSIVE STRENGTH (F'c) AT (28) DAYS SHALL BE EQUAL TO 4000 PSI (MIN).
- ADMIXTURES TO BE INCORPORATED IN CASE-BY CASE-BASIS, REFER TO TABLE C-1

EXECUTION REQUIREMENTS:

- CONTRACTOR SHALL COORDINATE PLACEMENT OF ALL OPENINGS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS AND EMBEDS REQUIRED WITH MECH., ELC., AND EQUIPMENT MANUFACTURER'S PRIOR TO PLACEMENT.
- REFER TO SHEET S03B FOR CONTROL/CONSTRUCTION AND ISOLATION JOINT DETAILS.
- NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO THE CONCRETE SHALL BE EMBEDDED IN CONCRETE.
- ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, PIPES, SLEEVES ETC. SHALL BE SECURELY POSITIONED IN THE FORMS BEFORE PLACING THE CONCRETE.
- REMOVE ALL DEBRIS FROM FORMS BEFORE POURING.
- NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT UNLESS APPROVED BY TESTING AGENCY. CONCRETE SHALL BE PLACED WITHIN 15 MINUTES AFTER DISCHARGE.
- ALL CONCRETE TESTS INCLUDING AIR CONTENT, SLUMP, AND TEST CYLINDERS SHALL BE TAKEN AT THE POINT OF DISCHARGE AND FROM THE DISCHARGE END OF PUMP HOSE WHEN CONCRETE IS PUMPED.
- ONE GRADE OF CONCRETE SHALL BE POURED AT THE JOB SITE AT ANY ONE TIME.
- CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL SO AS TO CAUSE SEGREGATION OF AGGREGATES. USE HOPPERS, CHUTES OR TRUNKS OF VARIOUS LENGTHS SO THAT THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED (5) FEET, AND A SUFFICIENT NUMBER SHALL BE USED TO ENSURE THE CONCRETE IS KEPT LEVEL AT ALL TIMES.
- PROTECT FRESHLY POURED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD AND HOT TEMPERATURES. START CURING AS SOON AS FREE WATER HAS DISAPPEARED FROM THE CONCRETE SURFACE AFTER PLACING AND FINISHING. ALL CURING PROCEDURES TO FOLLOW ACI 308R-16.
- PROTECT CONCRETE FROM DAMAGE AND REDUCED STRENGTH CAUSED BY FROST, FREEZING ACTIONS AND LOW TEMPERATURES IN COMPLIANCE WITH ACI 306R-16.
- PROTECT CONCRETE FROM DAMAGE AND REDUCED STRENGTH CAUSED BY HIGH TEMPERATURES IN COMPLIANCE WITH ACI 305R-10. UNIFORMLY COOL WATER AND AGGREGATES BEFORE MIXING TO OBTAIN A CONCRETE MIXTURE TEMPERATURE OF NOT GREATER THAN 90 DEGREES FAHRENHEIT AT POINT OF PLACEMENT.
- CURING: PROVIDE 7-DAY MINIMUM CONTINUOUS CURE ON ALL CONCRETE SURFACES AS SPECIFIED.

CONCRETE REINFORCING:

PRODUCT REQUIREMENTS:

- ALL REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A615 AS FOLLOWS:
  #3 BARS......................... GRADE 40
  #4 & LARGER BARS...... GRADE 60
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.

EXECUTION REQUIREMENTS:

- FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1 "MANUAL OF STANDARD PRACTICE" AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE."
- ALL BENDS SHALL BE MADE COLD.
- ALL WALLS AND COLUMNS SHALL BE DOWELED INTO FOOTING WITH BARS OF THE SAME SIZE AND SPACING AS THE BARS ABOVE (U.O.N. ON PLANS).
- ALL REINFORCING STEEL SHALL BE SECURELY WIRED AND PROPERLY SUPPORTED ABOVE THE GROUND AND AWAY FROM FORMS.
- PROVIDE CORNER BARS THE SAME SIZE AND SPACING AS THE HORIZ. REINF. AT THE CORNERS AND INTERSECTION OF ALL WALLS, BEAMS AND FOOTINGS (U.O.N. ON PLANS).
- CONTINUOUS FOOTING REINFORCEMENT SHALL HAVE A MINIMUM LAP PER SCHEDULE AND THE SPLICES IN ADJACENT BARS SHALL NOT BE LESS THAN (3) FEET APART.
- ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS "CLEAR" ARE TO CENTER OF STEEL. MINIMUM REBAR COVER FOR CONCRETE SHALL BE AS OUTLINED IN TABLE CR-1
- TOLERANCES FOR LONGITUDINAL LOCATION OF BENDS AND ENDS OF REINFORCEMENT SHALL BE PLUS OR MINUS (2) INCHES EXCEPT AT DIS-CONTINUOUS ENDS OF MEMBERS WHERE TOLERANCES SHALL BE PLUS OR MINUS 1/2 INCH.
- REINFORCING FOR CONCRETE POURED ON GRADE SHALL BE SUPPORTED BY STEEL CHAIRS.

TABLE CR-1
REINFORCING STEEL CLEARANCES

CLEARANCE FROM FINISHED FACE	MINIMUM COVER	TOLERANCES + OR -
CAST AGAINST PERM. EXPOSED TO EARTH	3"	3/8"
EXPOSED TO EARTH OR WEATHER		
NO. 5 AND SMALLER BARS	1-1/2"	3/8"
NO. 6 AND LARGER BARS	2"	3/8"
NOT EXPOSED TO EARTH OR WEATHER SLABS, WALLS, JOISTS:		
NO. 11 AND SMALLER BARS	3/4"	3/8"
NO. 14 AND NO. 18 BARS	1-1/2"	3/8"

TABLE CQ-1
(CONCRETE QUALITY (ACI 318-08))
CEMENT TYPE (ASTM C150)

USE	TYPE OF PORTLAND CEMENT	DESCTRIPTION
■	TYPE I	GENERAL-PURPOSE FOR PAVEMENTS, FLOORS, REINF. CONC. BUILDINGS, BRIDGES, TANKS, RESERVOIRS, PIPE, MASONRY UNITS AND PRE-CAST CONC. PRODUCTS.
■	TYPE IA (EXTERIOR)	TYPE I CEMENT W/ AIR ENTRAINING.
☐	TYPE II	USED FOR MODERATE SULFATE ATTACK.
☐	TYPE IIA	TYPE II CEMENT W/ AIR ENTRAINING.
☐	TYPE III	HIGH EARLY STRENGTH (ONE WEEK OR LESS).
☐	TYPE IIIA	TYPE III W/ AIR ENTRAINING.
☐	TYPE IV	USED WHERE RATE/AMOUNT OF HEAT GENERATED FROM HYDRATION MUST BE BE MINIMIZED.
☐	TYPE V	USED FOR SEVERE SULFATE ATTACK.

TABLE CQ-2
COMPRESSIVE STRENGTH AND WATER-CEMENT RATIO (BY MASS)(ACI 211.1 & 211.3)

USE	COMPRESSIVE STRENGTH @ 28 DAYS (PSI)	EXPOSURE a, b CATEGORY	WATER-CEMENT RATIOS	
			NON-AIR ENTRAINED	AIR ENTRAINING
☐	7000	F0, S0, P0, C0	0.33	-
☐	6000		0.41	0.32
☐	5000		0.48	0.40
☐	4000		0.57	0.48
☐	3000		0.68	0.59
☐	2000		0.82	0.74
■	4000	P1, S1	0.50	-
☐	4500	F1, F2, F3, S2	0.45	-
☐	5000	C2, S3	0.40	-

FOOTNOTES:

(a) EXPOSURE CATEGORY

CATEGORY	DESCTRIPTION
F0, S0, P0, C0	CONCRETE PROTECTED FROM EXPOSURE TO FREEZING AND THAWING, APPLICATION OF DEICING CHEMICALS, OR AGGRESSIVE SUBSTANCES.
P1	CONCRETE INTENDED TO HAVE LOW PERMEABILITY WHEN EXPOSED TO WATER.
F1, F2, F3	CONCRETE EXPOSED TO FREEZING AND THAWING IN A MOIST CONDITION OR DEICERS.
C2	FOR CORROSION PROTECTION FOR REINFORCED CONCRETE EXPOSED TO CHLORIDES FROM DEICING SALTS, SALT WATER, BRACKISH WATER, SEAWATER, OR SPRAY FROM THESE SOURCES.

(b) * SULFATE EXPOSURE CLASS

EXPOSURE CLASS	SULFATE (S04) IN SOIL, % BY MASS	SULFATE (S04) IN WATER, PPM
S0 NEGLIBIBLE	LESS THAN 0.10	LESS THAN 150
S1 MODERATE	0.10 TO 0.20	150 TO 1500
S2 SEVERE	0.20 TO 2.00	1500 TO 10,000
S3 VERY SEVERE	OVER 2.00	OVER 10,000

TABLE CQ-3
AIR CONTENT (ACI 211.1) (%)

USE	EXPOSURE (a)	AGGREGATE SIZE (IN)							
		3/8	1/2	3/4	1	1½	2	3	6
■	MILD	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0
☐	MODERATE (F1)	6.0	5.5	5.0	4.5	4.5	3.5	3.5	3.0
☐	SEVERE (F2 & F3)	7.5	7.0	6.0	6.0	5.5	5.0	4.5	4.0

TABLE CQ-4
SLUMP (ACI 211.1)

USE	TYPE OF CONSTRUCTION	SLUMP (IN)	
		MAXIMUM	MINIMUM
■	REINFORCED FOUNDATION WALLS AND FOOTINGS	6	3
☐	UNREINFORCED FOOTINGS, CAISSONS, AND SUB-STRUCTURE WALLS	4	3
☐	REINFORCED SLABS, BEAMS, AND WALLS	6	4.5
☐	BUILDING COLUMNS	6	4
☐	PAVEMENTS	3	1
☐	HEAVY MASS CONSTRUCTION	3	1
☐	BRIDGE DECKS	4	3
■	SIDEWALK, DRIVEWAY, AND SLABS ON GROUND	5	3

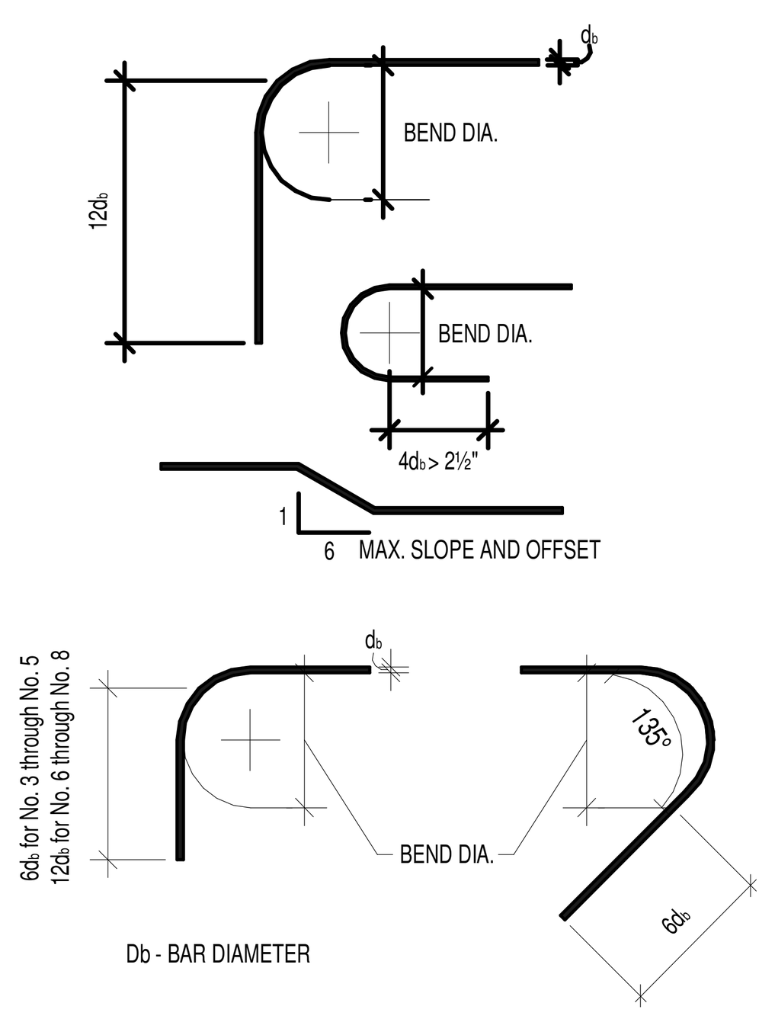


TABLE CR-2
STANDARD HOOKS FOR PRIMARY REINFORCEMENT

BAR SIZE NUMBER	MINIMUM FINISHED BEND DIAMETER (a)
3 THROUGH 8	$6 d_b$
9, 10, 11	$8 d_b$
14 AND 18	$10 d_b$

FOOTNOTES:

(a) MEASURED ON INSIDE OF BAR

TABLE CR-3
STANDARD HOOKS FOR STIRRUPS & TIE REINFORCEMENT

BAR SIZE NUMBER	MINIMUM FINISHED BEND DIAMETER (a)
3 THROUGH 5	$4 d_b$
6 THROUGH 8	$6 d_b$

FOOTNOTES:

(a) MEASURED ON INSIDE OF BAR

TABLE CR-4
STIRRUP SIZE/SPACING - TYPICAL (U.O.N.)

LATERAL TIES	STIRRUP SIZE	SPACING
MAIN REINFORCEMENT (d_b)		
< #10	# 3	LESSER OF: a. $16 d_b$ b. 48 x STIRRUP DIA. c. LEAST COL./BM. DIM
> #10	# 4	
SPIRAL TIES		
< #10	# 3	MAXIMUM SPACING = 3"
> #10	# 4	

STANDARD HOOK, STIRRUPS AND TIE REINFORCING DETAILS

1 / S03.A NTS

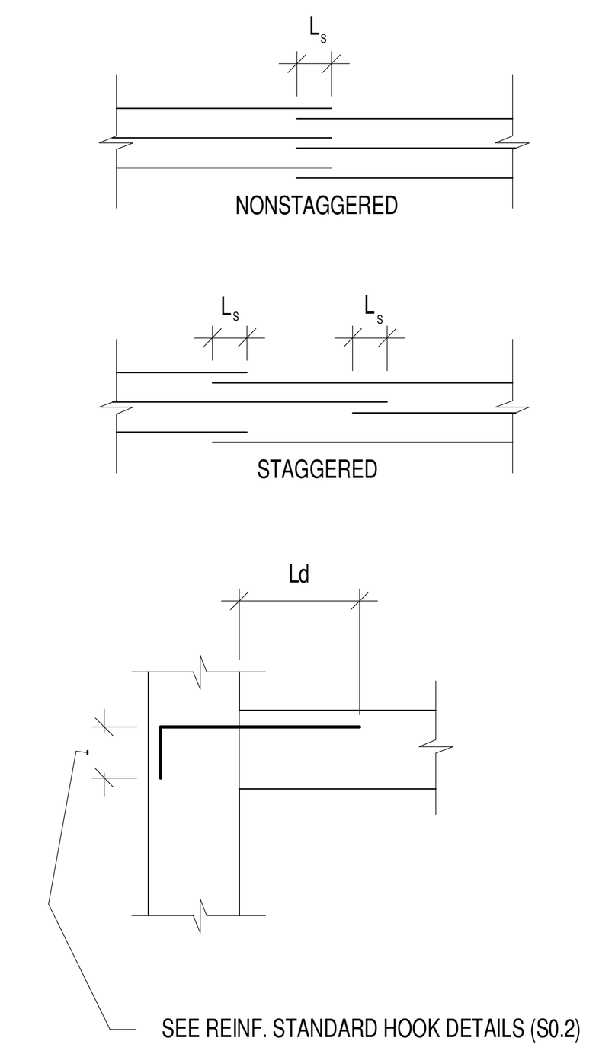


TABLE CR-6
LAP SPLICE SCHEDULE (Ls VALUES (IN))
-TENSION SPLICES (CLASS B NON STAGGERED)

BAR SIZE	f'c(psi)								
	2000	3000	4000	5000	6000	7000	8000	9000	10000
#3	35	29	27	27	27	27	27	27	27
#4	47	38	33	30	27	27	27	27	27
#5	59	48	42	37	34	31	29	28	27
#6	70	58	50	45	41	38	35	33	32
#7	82	67	58	52	47	44	41	39	37
#8	94	77	66	59	54	50	47	44	42
#9	106	86	75	67	61	57	53	50	47
#10	119	97	84	75	69	64	60	56	53

TABLE CR-7
DEVELOPMENT LENGTHS SCHEDULE
(L_d VALUES (IN)) -TENSION DEVELOPMENTS

BAR SIZE	f'c (psi)								
	2000	3000	4000	5000	6000	7000	8000	9000	10000
#3	27	22	21	21	21	21	21	21	21
#4	36	29	26	23	21	21	21	21	21
#5	45	37	32	29	26	24	23	21	21
#6	54	44	38	34	31	29	27	26	24
#7	63	52	45	40	36	34	32	30	28
#8	72	59	51	46	42	39	36	34	32
#9	81	67	58	52	47	44	41	38	36
#10	92	75	65	58	53	49	46	43	41

REINFORCING DEVELOPMENT LENGTHS AND SPLICES

2 / S03.A NTS

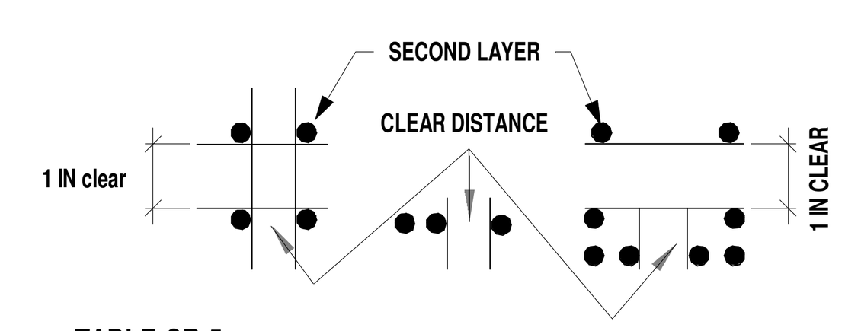
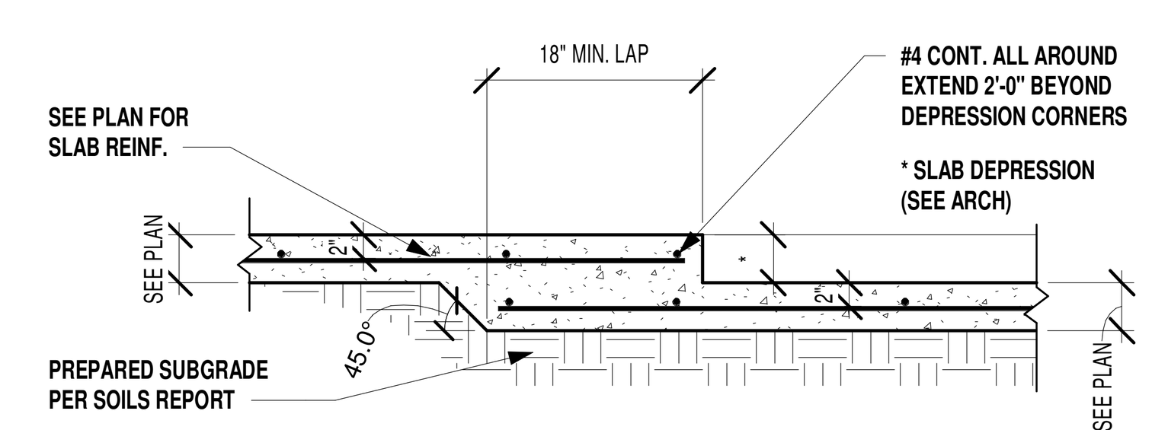


TABLE CR-5
CLEAR DISTANCES FOR REINF.

CONCRETE COVER TABLE (U.N.O.)		
CONDITION		COVER
SURFACE CAST AGAINST EARTH		3 INCHES
FORMED SURFACES EXPOSED TO EARTH OR WEATHER:	#6 BARS AND LARGER	2 INCHES
	#5 BARS AND SMALLER	1 1/2 INCHES
EXTERIOR POST-TENSION SLABS (INCLUDING PARKING)	TOP AND BOTTOM	1 INCHES
FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER. SLABS, WALLS, JOISTS:	#11 BARS AND SMALLER	3/4 INCHES
	#14-#18	1 1/2 INCHES
	BEAMS, COLUMNS	1 1/2 INCHES
SLABS ON GRADE (FROM TOP OF SLAB)		1 1/2 INCHES
SLABS ON METAL DECK	TOP	3/4 INCHES
	BOTTOM	3/4 INCHES

REINFORCING CLEARANCE DETAILS

3 / S03.A NTS



TYP. SLAB DEPRESSION

4 / S03.A NTS

(SEE FOUNDATION PLAN FOR LOCATIONS (WHERE APPLICABLE))

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

CONCRETE GENERAL NOTES AND DETAILS

REV #	DATE	COMMENTS
REVISION		
REVISION		
REVISION		
REVISION		

REVIEWS
INITIALS

RGAS
Project Number 2246
Drawn By JJR
Date 3/11/2024

S03.A

X:\Projects\C22\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL SO SHEETS.rvt
9/9/2024 2:39:46 PM

CONCRETE SLAB-ON-GRADE REQUIREMENTS

GENERAL

1. SAW-CUT JOINTS AS SOON AS THE SLAB WILL SUPPORT THE WEIGHT OF THE SAW AND OPERATOR WITHOUT DISTURBING THE FINAL FINISH.
2. THE DEPTH OF THE SAW-CUT WHEN USING A WET CUT SAW SHALL BE 1/4 THE SLAB THICKNESS.
3. PROVIDE CONSTRUCTION JOINT AT THE END OF CONCRETE PLACEMENT FOR THE DAY. SEE DETAIL A (THIS SHEET).
4. SEE FOUNDATION AND/OR CONTROL JOINT PLAN FOR ADDITIONAL INFORMATION.
5. SEE GENERAL NOTE SHEET S0.2 FOR ADDITIONAL CONCRETE REQUIREMENTS.
6. CONTRACTOR TO FAMILIARIZE HIMSELF WITH SOILS REPORT FOR SUBGRADE PREPARATION.

DESIGN

THE FOLLOWING MINIMUM ALLOWABLE REINFORCING RATIO USED IN THE DESIGN IS AS FOLLOWS:
.1 % FOR WELDED WIRE FABRIC
.2 % FOR REINFORCING BARS
THIS MINIMUM REINFORCING RATIO IS FOR SHRINKAGE AND KEEPING RANDOM CRACKING TIGHT. IT ALSO ALLOWS FOR LONGER JOINT SPANS.

ALSO ALLOWS FOR LONGER JOINT SPANS.

CONTROL/CONTRACTION JOINT SPACING WITH MINIMUM REINFORCING IS BASED OF THE FOLLOWING SUBGRADE DRAG FORMULA:

$A_s = FLW/2F_s$ WHERE:

As	CROSS-SECTION AREA OF STEEL, IN SQUARE INCHES PER LINEAL FOOT OF SLAB WIDTH
F	COEFFICIENT OF SUBGRADE FRICTION. (DESIGNERS USE 1.5 OR 2.0 FOR PAVEMENTS; 1.5 IS RECOMMENDED FOR CONCRETE FLOORS ON GROUND.)
L	SLAB LENGTH (OR WIDTH IF APPROPRIATE) BETWEEN FREE ENDS, IN FEET. (A FREE END IS ANY JOINT FREE TO MOVE IN A HORIZONTAL PLANE.)
W	WEIGHT OF SLAB, IN POUNDS PER SQUARE FOOT. (FOR NORMAL-WEIGHT CONCRETE, DESIGNERS USE 12.5 POUNDS PER INCH OF FLOOR THICKNESS)
Fs	ALLOWABLE WORKING STRESS OF REINFORCEMENT, IN POUNDS PER SQUARE INCH. (THE WORKING STRESS OF STEEL IS USUALLY 0.67 TO 0.75 THE YIELD STRENGTH OF THE STEEL IN POUNDS PER SQUARE INCH.)

DEFINITIONS

ISOLATION JOINTS
ISOLATION JOINTS ARE PLACED WHEREVER COMPLETE SEPARATION BETWEEN THE FLOOR AND ADJOINING CONCRETE IS NEEDED TO ALLOW THEM TO MOVE INDEPENDENTLY WITHOUT DAMAGE. ISOLATION JOINTS PERMIT HORIZONTAL AND VERTICAL MOVEMENT BETWEEN THE ABUTTING FACES OF THE FLOOR SLAB AND OTHER PARTS OF THE BUILDING BECAUSE THERE IS NO KEYWAY, BOND OR MECHANICAL CONSTRUCTION ACROSS THE JOINT.

CONTROL/CONTRACTION JOINTS

CONTROL JOINTS (ALSO CALLED CONTRACTION JOINTS) ACT TO RELIEVE STRESS AND WITH PROPER SPACING (SEE CONTROL JOINT PLAN) THEY ELIMINATE THE CAUSE OF UNCONTROLLED RANDOM CRACKING. THEY ALLOW HORIZONTAL MOVEMENT OF THE SLAB. THE OBJECTIVE IS TO FORM A PLANE OF WEAKNESS IN THE SLAB SO THAT THE CRACK WILL OCCUR ALONG THAT LINE AND NOWHERE ELSE. AS SHOWN ON SECTIONS ON THIS SHEET ALL SLAB REINFORCING MUST BE DISCONTINUOUS THROUGH JOINT. LOAD TRANSFER ACROSS THE CONSTRUCTION JOINT IS PROVIDED BY USE OF DOWELS (A BOND BREAKER IS USED ON ONE END TO ALLOW HORIZONTAL MOVEMENT).

CONSTRUCTION JOINT
CONSTRUCTION JOINTS ARE STOPPING PLACES AND FORM THE EDGE OF EACH DAY'S WORK. THEY FREQUENTLY ALIGN WITH CONTROL/CONTRACTION JOINTS OR ISOLATION JOINTS. WHENEVER CONTINUOUS CONCRETE PLACEMENT WILL BE INTERRUPTED FOR 30 MINUTES OR MORE, A BONDED OR TIED CONSTRUCTION JOINT SHOULD BE FORMED AND DEFORMED REINFORCING BARS ADDED. IF THE CONSTRUCTION JOINT OCCURS WITHIN THE PANEL (I.E. BETWEEN SPECIFIED CONTROL/CONTRACTION JOINTS) ALL REINFORCING MUST CONTINUE THROUGH THE CONSTRUCTION JOINT.

VISIBLE CONDITIONS THAT MAY OCCUR DURING CONSTRUCTION RANDOM CRACKING

WHEN RANDOM CRACKING OCCURS ON A NEWLY PLACED SLAB, IT IS USUALLY RELATED TO IMPROPER TIMING OF JOINT SAWING. THE PURPOSE OF CUTTING THE SLAB IS TO INDUCE A CRACK BENEATH THE CUT.

RANDOM CRACKING

CONCRETE NEEDS TO GAIN ADEQUATE STRENGTH BEFORE HAVING JOINTS CUT INTO IT. IDEALLY, THE TENSILE STRENGTH HOLDS THE SLAB TOGETHER, THE SAWCUT NOTCH CREATES A REDUCED SLAB SECTION, WHICH INCREASES THE TENSILE STRESSING IN THE CONCRETE BELOW THE NOTCH. IN THE REDUCED SECTION, THE TENSILE STRESS IS OF THE GREATER THAN THE CONCRETE TENSILE STRENGTH. THUS A CRACK OCCURS BELOW THE NOTCH. THE CRACK AND SAWCUT COMBINE TO RELIEVE THE STRESSES AND THUS PREVENT UNWANTED RANDOM CRACKING. BUT NEW CONCRETE IS ALWAYS TRYING TO SHRINK. AS THE SAWBLADE CUTS A JOINT IN THE CONCRETE, THE SAWCUT WEAKENS THE CONCRETE SLAB. IF SAWCUTTING IS STARTED WHEN CONTRACTION STRESS (AS A RESULT OF CONCRETE SHRINKAGE) IS GREAT AND TENSILE STRENGTH IS NOT YET ADEQUATE TO RESIST IT, CRACKS CAN JUMP AHEAD OF THE BLADE DURING JOINT CUTTING.

IF COOLING WATER (USED WITH WET SAWING) HITS THE WARM SLAB, IT CAN BE A THERMAL SHOCK THAT ADDS TO THE POTENTIAL FOR RANDOM CRACKING AHEAD OF THE SAW BLADE.

TO AVERT RANDOM CRACKING, SAWCUT JOINTING MUST BE DONE BEFORE CONCRETE COOLING AND DRYING STARTS, BUT AFTER SOME (TENSILE) STRENGTH HAS DEVELOPED (7 HOURS MAXIMUM AFTER CONCRETE IS POURED). THE NOTCH INSTALLED BY SAWCUTTING SHOULD BE DEEP ENOUGH THAT THE CRACK OCCURS BELOW THE SAWCUT (1/4 OF THE SLAB THICKNESS IS SUFFICIENT).

BLEEDING AND SET RETARDING

EXCESSIVE BLEEDING THAT OCCURS AFTER CONCRETE PLACING, STRIKEOFF, AND BULLFLOATING CAN DELAY SUBSEQUENT FINISHING STEPS. IN MOST INSTANCES, THE CAUSE OF EXCESSIVE BLEEDING IS DUE TO ONE OF THE FOLLOWING:

- A WATER-CEMENT RATIO THAT IS TOO HIGH
- POOR AGGREGATE GRADATION
- SLOW SET TIMES
- AMBIENT CONDITIONS THAT HINDER SURFACE WATER EVAPORATION: LOW TEMPERATURES, HIGH HUMIDITY, OR LACK OF AIR MOVEMENT

BLISTERING AND DELAMINATIONS

BLISTERING IS THE CONVEX RAISING OF THE SURFACE MORTAR LAYER WHILE THE CONCRETE IS STILL PLASTIC. THE BLISTERS ARE ATTRIBUTED TO SEALING THE FLOOR SURFACE BEFORE ALL THE BLEEDWATER AND AIR HAVE ESCAPED.

SIMILAR TO BLISTERING, DELAMINATION OF SURFACE MORTAR CAN OCCUR DUE TO ENTRAPMENT OF BLEEDWATER AND AIR BELOW THE PREMATURELY SEALED MORTAR SURFACE. DELAMINATIONS AFFECT LARGER SURFACE AREAS THAN BLISTERS, AND ARE VERY DIFFICULT TO DETECT DURING FINISHING. THEY BECOME APPARENT AFTER CONCRETE SURFACE DRYING WHEN THE DELAMINATED AREA IS CRUSHED UNDER TRAFFIC. THE THICKNESS OF DELAMINATED MORTAR RANGES FROM ABOUT 3 MM TO 9MM (1/8 IN TO 3/8 IN). THE AFFECTED AREA CAN BE ANYWHERE FROM A FEW SQUARE\ CENTIMETERS (INCHES) TO A FEW SQUARE METERS (YARDS).

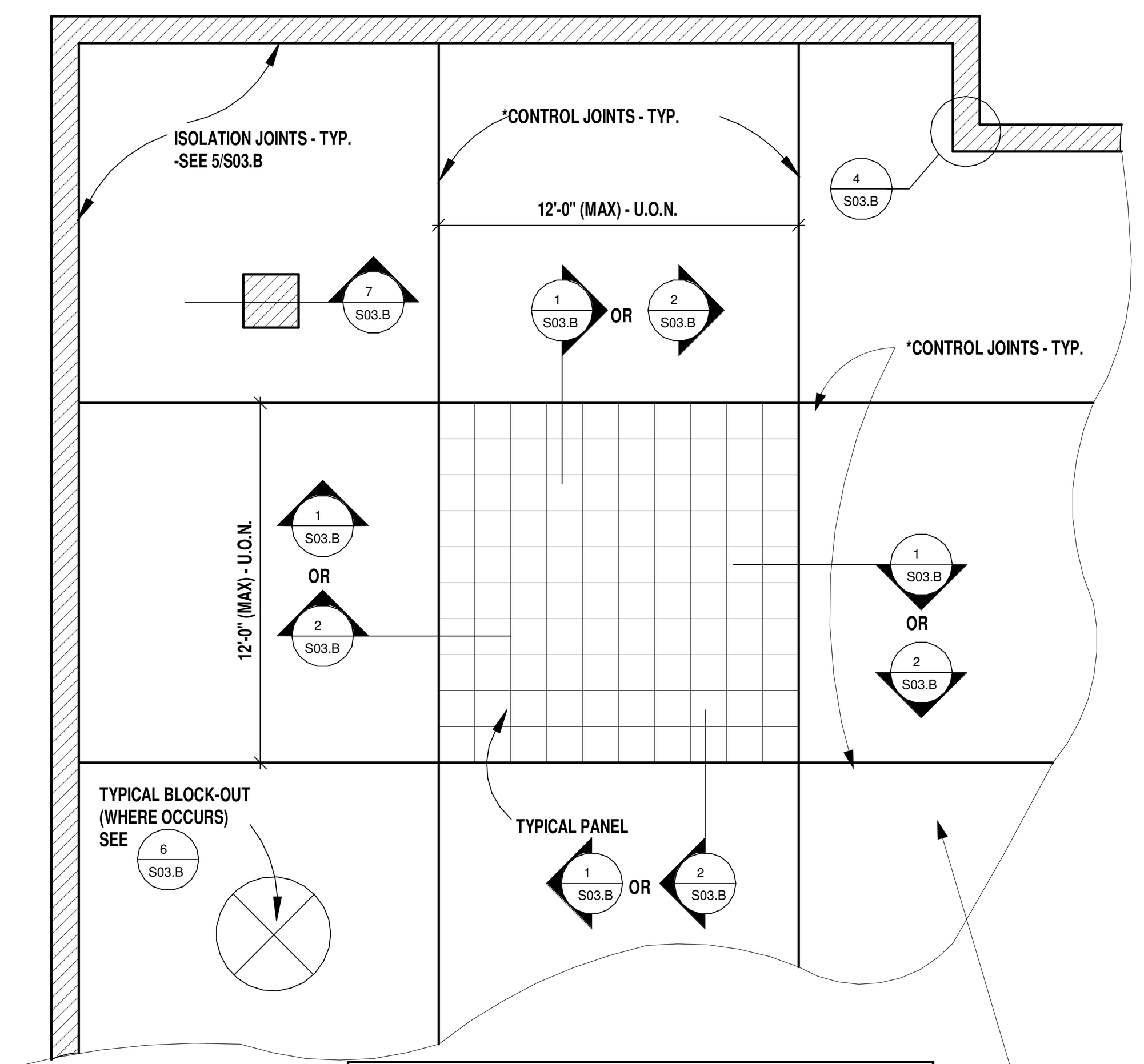
IF THE CONCRETE HAS STIFFENED FROM THE TOP DOWN, AS IT OFTEN DOES WHEN WIND SPEEDS ARE HIGHER, THERE IS A TENDENCY TO FINISH THE SLAB TOO SOON, BEFORE BLEEDING IS COMPLETE. FINISHING OPERATIONS PERFORMED WHILE THE UNDERLYING CONCRETE IS STILL SOFT (AND BLEEDING) WILL SEAL THE SLAB SURFACE, POTENTIALLY TRAPPING BLEEDWATER AND LEADING TO DELAMINATIONS.

PLASTIC SHRINKAGE CRACKING
PLASTIC SHRINKAGE CRACKING IS DUE TO CONCRETE AT THE SURFACE DRYING (AND SHRINKING) BEFORE INITIAL SET OF THE CONCRETE OCCURS. PLASTIC SHRINKAGE OCCURS DURING AND AFTER FINISHING, USUALLY WHEN THERE IS RAPID EVAPORATING OF BLEEDWATER. THE CONDITIONS THAT LEAD TO RAPID WATER EVAPORATION ARE LOW RELATIVE HUMIDITY, HIGH AIR TEMPERATURES, RAPID AIR MOVEMENT (WIND) ACROSS THE CONCRETE SURFACE, AND ELEVATED CONCRETE TEMPERATURES. UNDER THESE CONDITIONS THE CONCRETE SURFACE CAN CRUST OVER WHILE THE UNDERLYING CONCRETE IS STILL PLASTIC. AS PLASTIC SHRINKAGE CRACKS FORM, THEY START AT THE SURFACE AND EXTEND SOME DEPTH INTO THE UNHARDENED CONCRETE. FLOATING THE CONCRETE SLAB CAN REPAIR PLASTIC SHRINKAGE CRACKS, BUT ONLY IF DONE IMMEDIATELY AS THE CRACKS OCCUR.

CRAZING
CRAZE CRACKS ARE FINE RANDOM CRACKS OF FISSURES IN A CONCRETE SURFACE. ON CONCRETE FLATWORK, THEY USUALLY EXTEND LESS AN 3 MM (1/4 IN) BELOW THE SURFACE. THE CRACKS OCCUR WITHIN THE PASTE-RICH SURFACE MORTAR AND GENERALLY PASS THROUGH THE PASTE AND NOT THROUGH AGGREGATE PARTICLES. IT IS TYPICAL FOR THE CRACKS TO FORM A MAP PATTERN. THE NARROW CRACKS ARE SO FINE THAT THEY ARE DIFFICULT TO SEE. IN MANY INSTANCES, THEY ARE ONLY VISIBLE DURING THE DRYING PHASE OF A WETTED SURFACE OR WHEN A TRANSLUCENT COATING IS INSTALLED. CRAZE CRACKS ARE ATTRIBUTED TO INADEQUATE CURING THAT LEADS TO CONCRETE SURFACE DRYING AND COOLING BEFORE THE MORTAR HAS GAINED SUFFICIENT STRENGTH. THESE ARE COSMETIC BLEMISHES THAT GENERALLY HAVE NO EFFECT ON THE SERVICEABILITY OR DURABILITY OF THE FLOOR.

CURLING
WHEN THE EDGES AND CORNERS OF A FLOOR SLAB ON GROUND DISH UPWARD IN THE ABSENCE OF ANY LOADS OTHER THAN GRAVITY, THE SLAB IS SAID TO BE CURLING. IT IS USUALLY ATTRIBUTED TO DIFFERENCES IN MOISTURE CONTENT OR TEMPERATURE FROM TOP TO BOTTOM WITHIN THE SLAB. THESE TEMPERATURE AND MOISTURE GRADIENTS DEVELOP BETWEEN THE TOP AND BOTTOM SURFACE AS THE CONCRETE IN A FLOOR SLAB HARDENS. THE SLAB WILL CURL UP IF THE TOP IS TRYING AND COOLING (SHORTENING) WHILE THE BOTTOM REMAINS MOIST AND WARM. UNDER OPPOSITE CONDITIONS, THE SLAB SHOULD THEORETICALLY CURL DOWN. DOWNWARD CURL AS SUCH, HOWEVER, DOES NOT OCCUR DUE TO SUBBASE RESTRAINT.

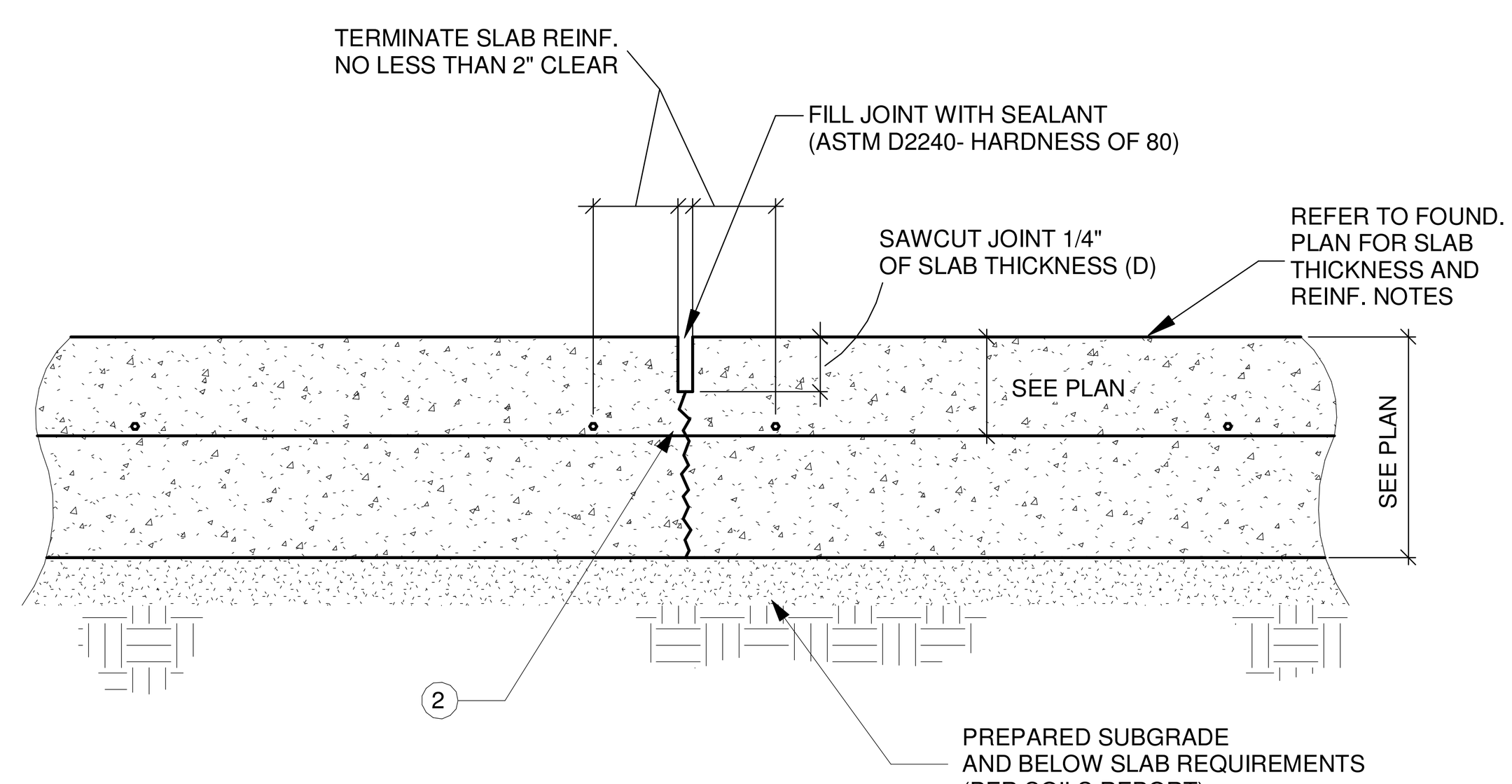
POPOUTS
A POPOUT IS A CONICAL GRADMENT THAT BREAKS OUT OF A CONCRETE SURFACE, LEAVING A HOLE, THE HOLE VARIES IN SIZE FROM 5MM (1/4 IN TO 2 IN), THOUGH LARGER POPOUTS ARE POSSIBLE. USUALLY, A FRACTURED AGGREGATE PARTICLE IS LOCATED AT THE BOTTOM OF THE HOLE. THE MATCHING PIECE OF THE FRACTURES PARTICLE ADHERES TO THE POINT OF THE POPOUT CONE. POPOUTS ARE CONSIDERED A COSMETIC DETRACTION AND GENERALLY DO NOT AFFECT THE SERVICE OF THE CONCRETE.



THE CONCRETE SLAB-ON-GRADE FOR THIS PROJECT IS A NON-LOAD BEARING ELEMENT AND THE ONLY DESIGN PARAMETERS IS FOR JOINT AND MINIMUM SHRINKAGE REINFORCEMENT. ALL CONCENTRATED OR UNIFORM LOADS IMPOSED ON THE SLAB-ON-GRADE HAVE DESIGNED FOOTINGS FOR THESE SITUATIONS.

*CONSTRUCTION JOINT LOCATION MAY ALSO OCCUR @ SAME LOCATION

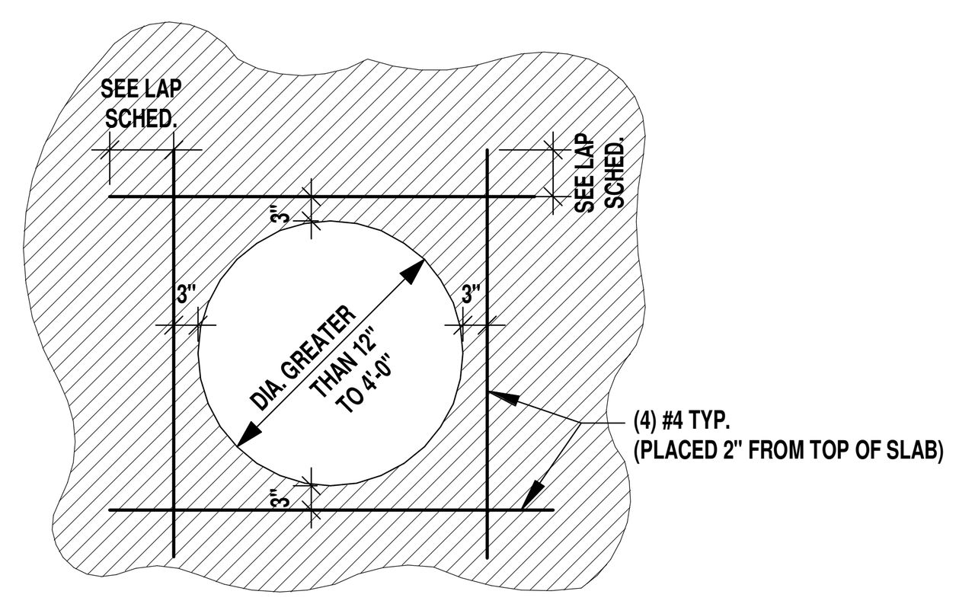
A S03.B TYPICAL JOINT LAYOUT PLAN
NTS



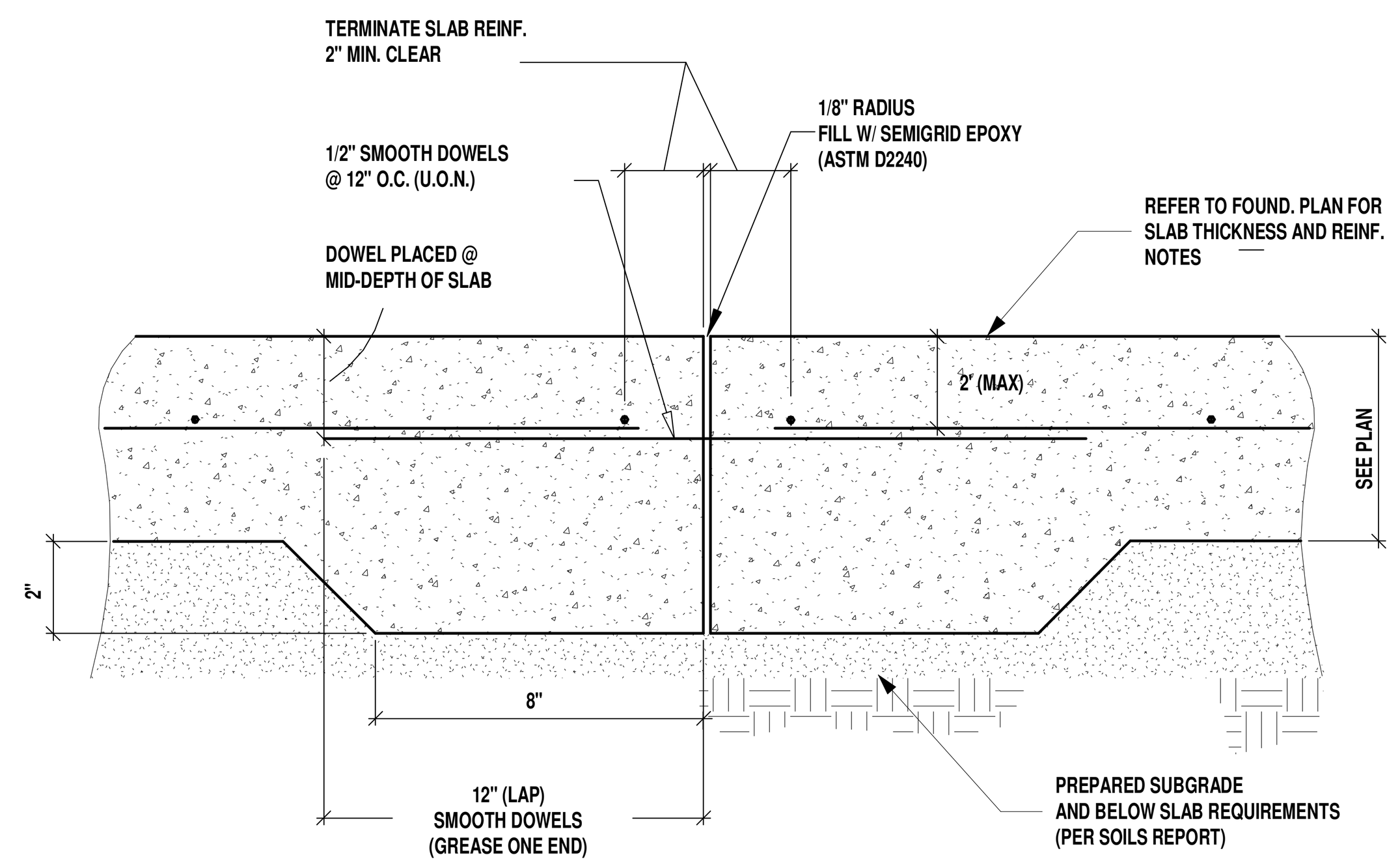
NOTES:

1. SAWCUT JOINT MUST OCCUR WITHIN 7 HOURS OF CONCRETE POUR.
2. CUT EVERY OTHER BAR @JOINT LOCATIONS TO PROVIDE A WEAK PLAN FOR INDUCED CRACKING.
3. SPACING OF JOINTS TO BE 12'-0" O.C. MAX EACH WAY (U.O.N.) ON PLAN
4. REFER TO CONTROL JOINT PLAN OR FOUNDATION PLAN FOR JOINT LOCATIONS.
5. REFER TO DEFINITIONS (THIS SHEET)

2 S03.B CONTROL/ CONTRACTION JOINT SECTION
NTS



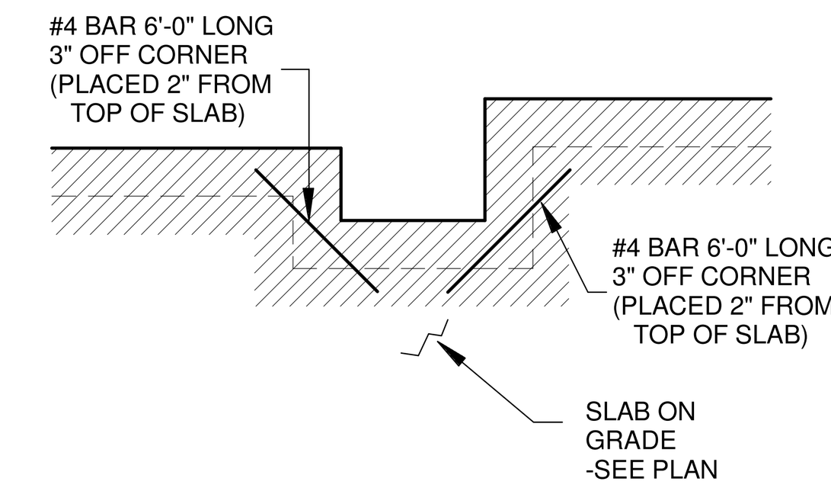
5 S03.B TYP REINFORCING AT ROUND OPENINGS AT CONC. SLAB-ON-GRADE
NTS



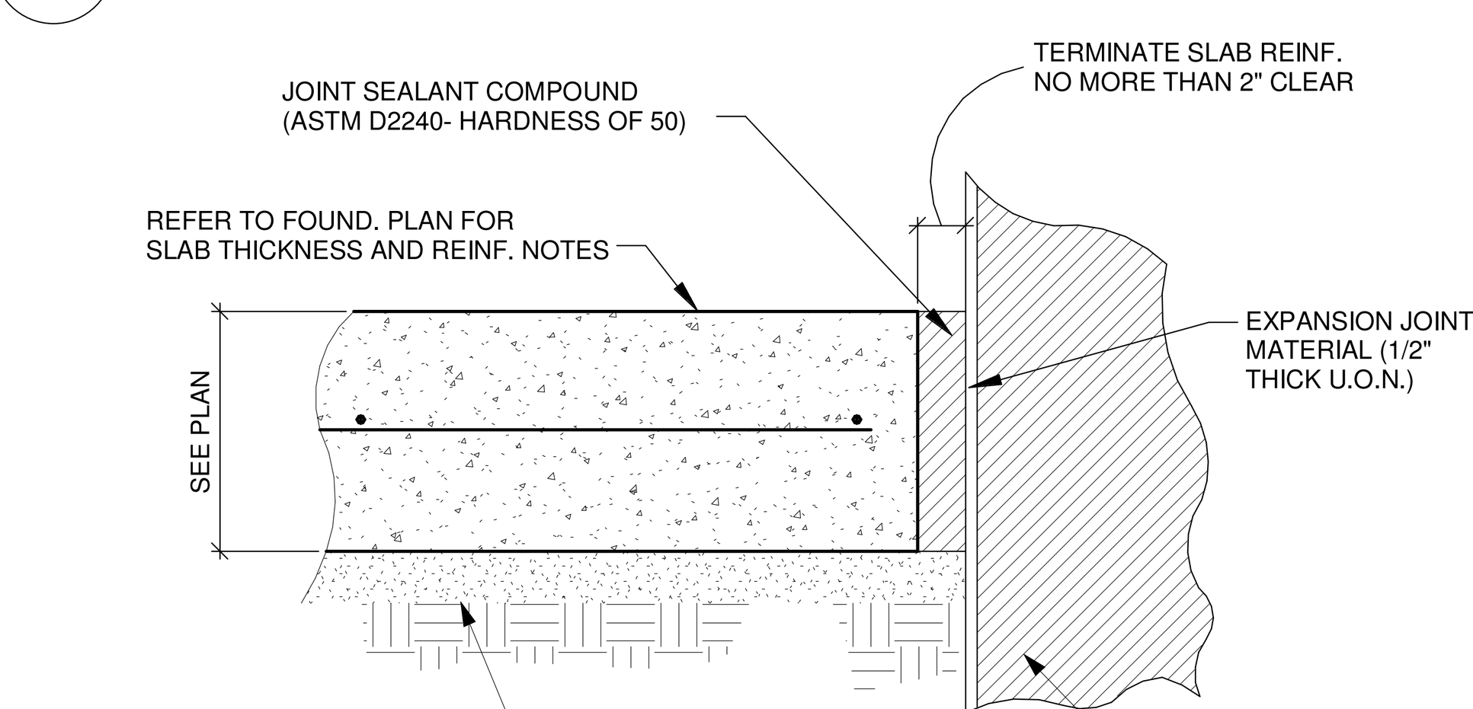
NOTES:

1. CONSTRUCTION JOINTS TO MATCH CONTROL JOINT LOCATIONS. IF NOT POSSIBLE AND LOCATED IN PANEL AREA, CONTINUE ALL REINFORCING THRU JOINT.
2. REFER TO DEFINITIONS (THIS SHEET)

1 S03.B CONSTRUCTION JOINT CONNECTION (TO OCCUR @CONTROL JOINT LOCATION)
NTS



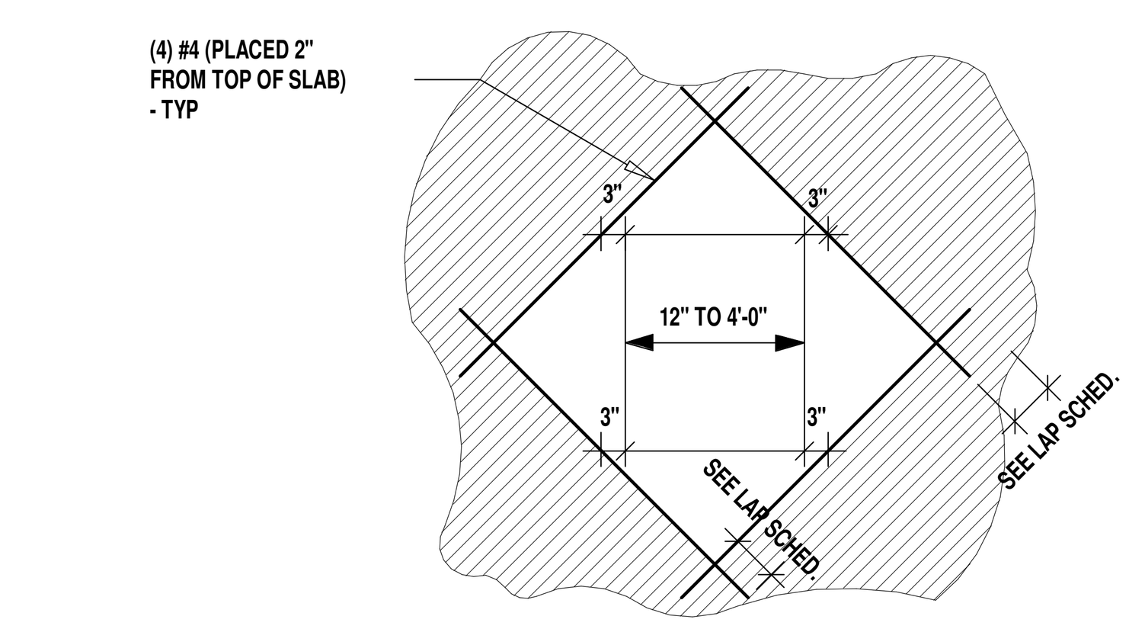
3 S03.B TYP. REINFORCING AT RE-ENTRANT CORNERS
NTS



NOTES:

1. EXPANSION JOINT MATERIAL TO BE MINIMUM 1/2" THICK (U.O.N.)
2. REFER TO DEFINITIONS (THIS SHEET)

4 S03.B ISOLATION/ EXPANSION JOINT SECTION
NTS



6 S03.B TYP, REINFORCING @SQUARE /RECTANGULAR OPENINGS AT CONC. SLAB-ON-GRADE
NTS

JJK Group, Inc.
Consulting Structural Engineers
3240 Juan Tabo Bldg. C Albuquerque, New Mexico 87111 · tel. 505 296 5706 · fax 505 296 1672 · www.jjkgroup.com

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

CONCRETE SLAB-ON-GRADE REQUIREMENTS

REV #	DATE	COMMENTS
REVISION		
REVISION		
REVISION		
REVISION		

REVIEWS	
INITIALS	

RGAS

Project Number	2246
Drawn By	Author
Date	3/11/2024

S03.B

MASONRY - GENERAL:

MIX MATERIALS:

- SPECIAL INSPECTION SHALL NOT BE REQUIRED UNLESS SPECIFICALLY NOTED ON SPECIAL INSPECTION NOTES AND TABLES ON THIS PLAN SET.
- FOR PROPER MIXING PLACE IN ORDER: SAND, CEMENT AND WATER INTO THE MIXER FOR EACH BATCH OF MORTAR OR GROUT AND MIX FOR A PERIOD OF AT LEAST (2) MINUTES. ADD THE LIME AND CONTINUE MIXING FOR AS LONG AS NEEDED TO SECURE A UNIFORM MASS BUT NOT IN NO CASE LESS THAN (10) MINUTES. USE MIXERS TO CREATE A UNIFORM CONSISTENCY. FRACTIONAL SACKS BATCHES WILL NOT BE PERMITTED UNLESS CEMENT IS WEIGHED FOR EACH SUCH BATCH. RETEMPER MORTAR ONLY BY ADDING WATER INTO A BATCH MADE WITH THE MORTAR AND THEN CAREFULLY WORKING THE WATER INTO THE MORTAR. RETEMPERING THE MORTAR BY DASHING WATER OVER THE MORTAR SHALL NOT BE PERMITTED. ANY MORTAR OR GROUT WHICH IS UNUSED WITHIN (1) HOUR OF THE INITIAL MIXING SHALL BE REMOVED FROM THE WORK. MORTAR SHALL BE MIXED AND MAINTAINED ON THE BOARDS TO A SLUMP OF (2-5/4") TO PLUS OR MINUS (1/4").
- CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150, TYPE I OR TYPE II AND SHALL BE SINGLE SOURCED (SAME MANUFACTURER) FOR THE ENTIRE PROJECT.
- AGGREGATES AND SANDS FOR MORTAR SHALL CONFORM TO ASTM C144 EXCEPT THAT NOT LESS THAN 3% OF THE SAND SHALL PASS THE NUMBER 100 SIEVE. SAND AND PEA GRAVEL FOR GROUT SHALL CONFORM TO ASTM C404, TABLE 1. COURSE AGGREGATE, EXCEPT WHEN OTHER GRADINGS ARE SPECIFICALLY APPROVED BY THE ENGINEER.
- QUICKLIME SHALL CONFORM TO ASTM C5.
- WATER USED FOR MORTAR AND GROUT SHALL BE CLEAN AND FREE FROM DELETERIOUS AMOUNTS OF ACID, SALTS, ALKALI AND ORGANIC MATERIALS.

ADD MIXTURES:

- THE USE OF ADMIXTURES SHALL NOT BE PERMITTED IN MORTAR OR GROUT UNLESS SUBSTANTIATING DATA HAS BEEN SUBMITTED TO AND REVIEWED BY THE ENGINEER. THE USE OF ADMIXTURES IN MORTAR SHALL NOT BE PERMITTED WITHOUT REDUCING THE LIME CONTENT. THE USE OF UNCONTROLLED FINE CLAY, DIRT AND OTHER DELETERIOUS MATERIALS IS PROHIBITED.

MASONRY MATERIALS:

- CONCRETE MASONRY UNITS SHALL BE HOLLOW AND SUITABLE FOR BEARING WALL CONSTRUCTION. ALL BLOCKS SHALL CONFORM TO GRADE "N" UNITS AS LISTED IN ASTM C90 LATEST EDITION. IN ADDITION, UNITS SHALL HAVE A LINEAR SHRINKAGE OF .065% MAXIMUM FROM SATURATED TO THE OVEN DRY CONDITION. MASONRY UNITS SHALL HAVE CURED FOR NOT LESS THAN (28) DAYS PRIOR TO PLACEMENT IN THE STRUCTURE. PROVIDE ALL BOND BEAM UNITS, LINTELS, ETC., AS NOTED ON PLANS.
- ASSUMED COMPRESSIVE STRENGTH F'm SHALL BE 1500 PSI UNLESS OTHERWISE NOTED ON THESE PLANS. ULTIMATE COMPRESSIVE STRENGTH BASED ON THE AVERAGE OF (3) UNITS SHALL BE NOT LESS THAN 2000 PSI.

EXECUTION REQUIREMENTS:

- MASONRY REBAR LAP LENGTHS SHALL BE PER LAP SCHEDULE UNLESS NOTED OTHERWISE ON THESE PLANS.
- ALL VERTICAL WALL REINFOREMENT SHALL HAVE DOWELS EQUAL IN SIZE EMBEDDED INTO FOOTING UNLESS NOTED OTHERWISE IN THESE PLANS.
- REINFORCING COVER SHALL BE (2") MINIMUM THROUGHOUT. POSITIONING DEVICES SHALL BE USED TO INSURE THE CORRECT PLACEMENT OF THE REINFORCEMENT.
- ALL MASONRY SHALL BE BUILT TO PRESERVE THE UNOBSTRUCTED VERTICAL CONTINUITY OF THE CELLS TO BE FILLED. THE VERTICAL ALIGNMENT SHALL BE SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED VERTICAL FLUE MEASURING NOT LESS THAN (3) INCHES, EXCEPT WHERE OPEN END UNITS ARE USED.
- DO NOT USE CHIPPED OR CRACKED BLOCKS. IF ANY SUCH BLOCKS ARE DISCOVERED IN ANY FINISHING WALL, THEY SHALL BE PROMPTLY REMOVED AND REPLACED WITH NEW BLOCKS TO THE APPROVAL OF THE STRUCTURAL ENGINEER.

MASONRY - MORTAR:

PRODUCT REQUIREMENTS:

- MORTAR SHALL CONFORM TO ASTM C1329, TYPE S WITH A COMPRESSIVE STRENGTH OF 1800 (MIN SLUMP OF 9") PSI AT 28 DAYS UNLESS NOTED OTHERWISE. TYPE M WITH MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS SHALL BE USED WHERE MASONRY IS BELOW GRADE OR IN CONTACT WITH EARTH. THE MIX SHALL BE REVIEWED BY THE ENGINEER WHEN SPECIAL INSPECTION IS REQUIRED.

EXECUTION REQUIREMENTS:

- PLACE MORTAR IN HORIZONTAL JOINTS, COMPLETELY COVER THE FACE SHELLS OF THE UNITS WITH MORTAR. SOLID FILL ALL HEAD JOINTS. LAY ALL MASONRY WITH COMMON OR RUNNING BOND. HOLD RAKING TO A MINIMUM
- REMOVE CONCRETE SCUM AND GROUT STAINS ON THE WALL IMMEDIATELY. AFTER THE WALL IS CONSTRUCTED, DO NOT SATURATE WITH WATER FOR CURING OR ANY OTHER PURPOSE. CHECK ALL JOINTS FOR TIGHTNESS AND, WHERE CRACKS ARE VISIBLE, CHIP OUT THE MORTAR, TUCK POINT AND TOOL TO MATCH ADJACENT JOINTING.

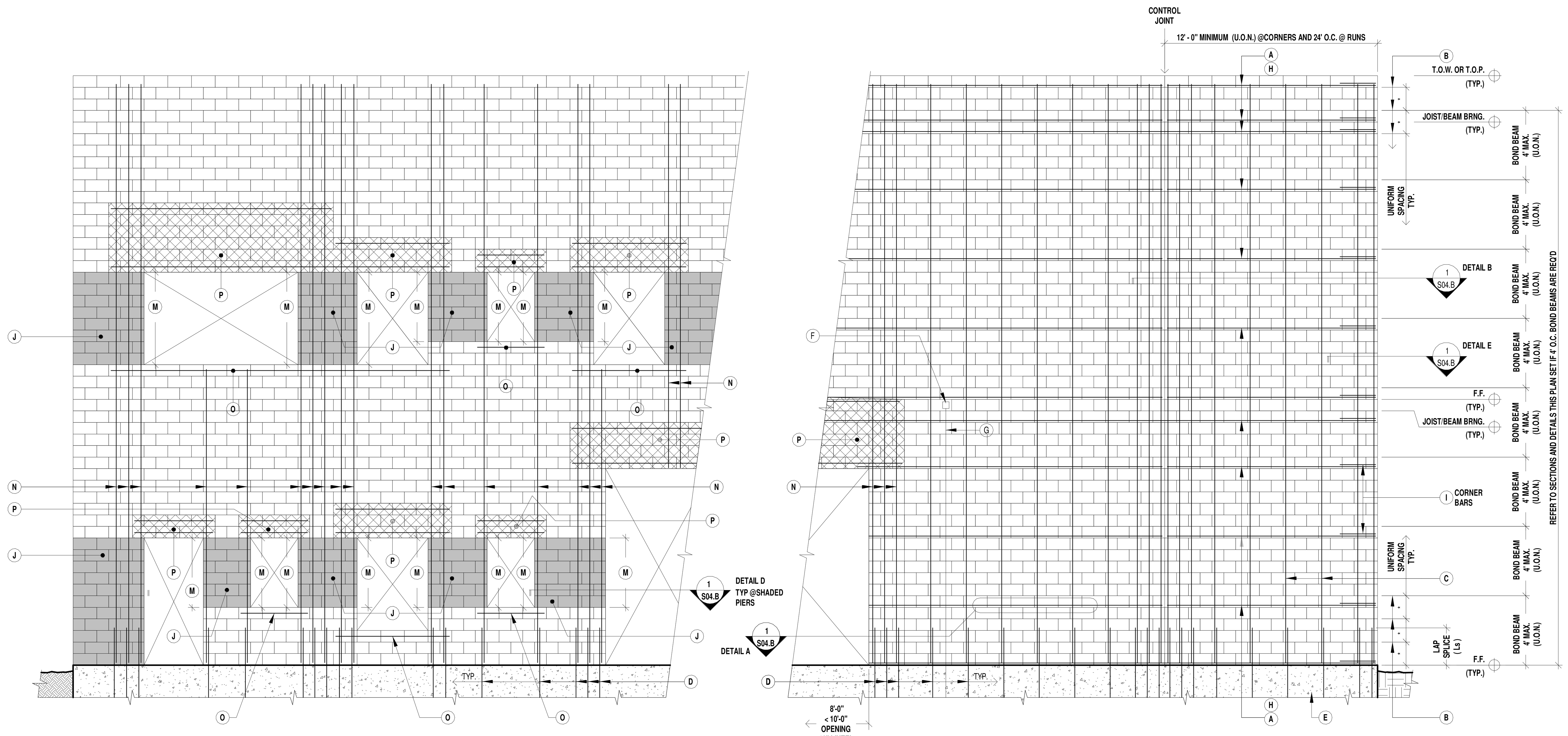
MASONRY - GROUT:

PRODUCT REQUIREMENTS:

- GROUT FILL FOR CELLS SHALL CONSIST OF ONE PART PORTLAND CEMENT TO NOT MORE THAN (3) PARTS SAND, TO (2) PARTS PEA GRAVEL. (3/8") MAX. SIZE COURSE AGGREGATE. GROUT FILL USING COURSER AGGREGATE MAY BE USED IF THE MIX IS PROPERLY DESIGNED AND APPROVED BY THE ENGINEER. THE MAXIMUM SIZE OF AGGREGATE USED SHALL NOT EXCEED (1/3) THE LEAST LATERAL DIMENSION OF THE CELL TO BE FILLED. GROUT SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT (28) DAYS..

EXECUTION REQUIREMENTS:

- GROUT ALL CELLS CONTAINING VERTICAL REINFORCEMENT, ANCHOR BOLTS OR EMBEDDED ITEMS. PROVIDE (2") MINIMUM COVER TO EMBEDDED ITEMS
- MAXIMUM HEIGHT OF ANY GROUT POUR SHALL NOT BE GREATER THAN (4') UNLESS PROPER HIGH-LIFT METHODS ARE USED
- MASONRY LINTELS SHALL BE SOLID GROUTED FOR THE REQUIRED DEPTH. HORIZONTAL REINFORCING SHALL EXTEND BEYOND THE OPENING ON EACH SIDE PER TABLE CMU-1 OF CMU-2.
- BOND BEAM HORIZONTAL REINFORCEMENT SHALL BE SOLIDLY ENCASED IN GROUT. WIRE MESH SHALL BE USED IN EACH CELL BELOW EACH BOND BEAM TO PREVENT THE FLOW OF GROUT INTO UNGROUTED CELLS.
- WHEN GROUTING IS STOPPED FOR A PERIOD OF (1) HOUR OR LONGER, FORM HORIZONTAL CONSTRUCTION JOINTS BY STOPPING THE GROUT POUR (1-1/2") MINIMUM BELOW THE UPPER MOST UNIT.



NOTES:

A. CONT. BOND BEAM @ TOP OF WALL, PARAPET AND BEARING LOCATIONS W/ (2) HORIZ. REINF. (U.O.N.) - SEE PLAN DETAILS FOR SIZE AND QUANTITY.
B. JOINT REINF. (LADDER) (U.O.N.) - SEE PLAN DETAILS, REFER TO DETAIL (C) 1/S04.B
C. VERT. REINF. - SEE PLAN DETAILS FOR SIZE AND SPACING.
D. PROVIDE DOWEL BARS IN FOUNDATION TO MATCH ALL VERTICAL WALL REINFORCING (U.O.N.); LAP VERTICAL REINFORCING WITH WALL DOWELS AND ALL OTHER VERTICAL BARS PER TABLE M-1. (U.O.N.)
E. FOUNDATION- SEE PLAN.
F. ELECTRICAL DEVICE (JUNCTION BOX, OUTLET, ETC.)
G. DO NOT PLACE VERT.CONDUIT IN SAME CELL AS VERTICAL REINFORCING; WHERE UNAVOIDABLE, NOTIFY ENGINEER.
H. STAGGER SPLICES IN ADJACENT HORIZONTAL BARS IN THE SAME COURSE BY 24"; REFER TO DETAIL (A) 1/S04.B
I. WALL INTERSECTIONS AND CORNERS, SEE DETAIL (E) 1/S04.B
J. MASONRY PIER, REFER TO DETAIL (D) 1/S04.B
K. NOT USED.
L. NOT USED.
M. AT ADJACENT OPENINGS, THE PIER HEIGHT SHALL BE THE LESSER HEIGHT OF THE ADJACENT OPENING.
N. "C" VERTICAL BARS, REFER TO 4/S04A (MAY REQUIRE 1, 2 OR 3 VERTICALS).
O. "B" HORIZONTAL BAR, REFER TO ON DETAIL 3/S04.A
P. MASONRY LINTEL, REFER TO 3/S04.A

1 S04.A REQUIRED MASONRY WALL REINFORCMENT AT OPENINGS, CONTROL JOINTS AND CORNERS
NTS

TABLE M-1

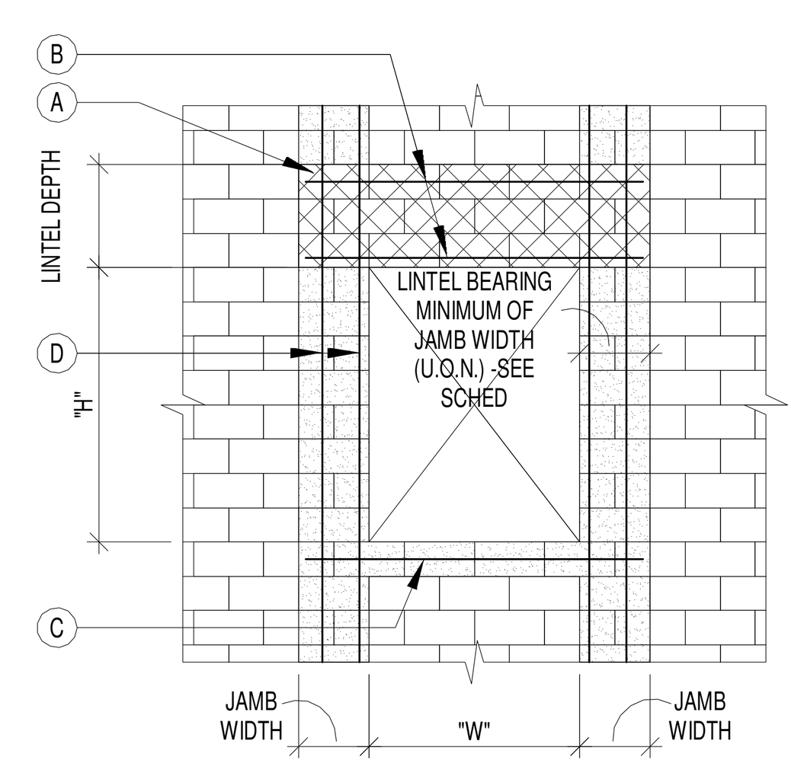
LAP SPLICE LENGTH			(U.O.N. ON PLAN SECTION /DETAILS)
BAR NO.	SIZE DIAMETER d_b (in)	Ls (in)	NOTES
#3	.375	18	F' m =1500 psi (CMU) GRADE 60 (REINF) F s= 24000 psi (REINF)
#4	.500	24	
#5	.625	30	
#6	.750	36	
#7	.895	42	
#8	1.000	48	

2 S04.A REINF LAP SPLICE LENGTHS
NTS (SAME FOR DEVELOPMENT LENGTH)

TABLE CMU-1 : 8" OR 10" WALL

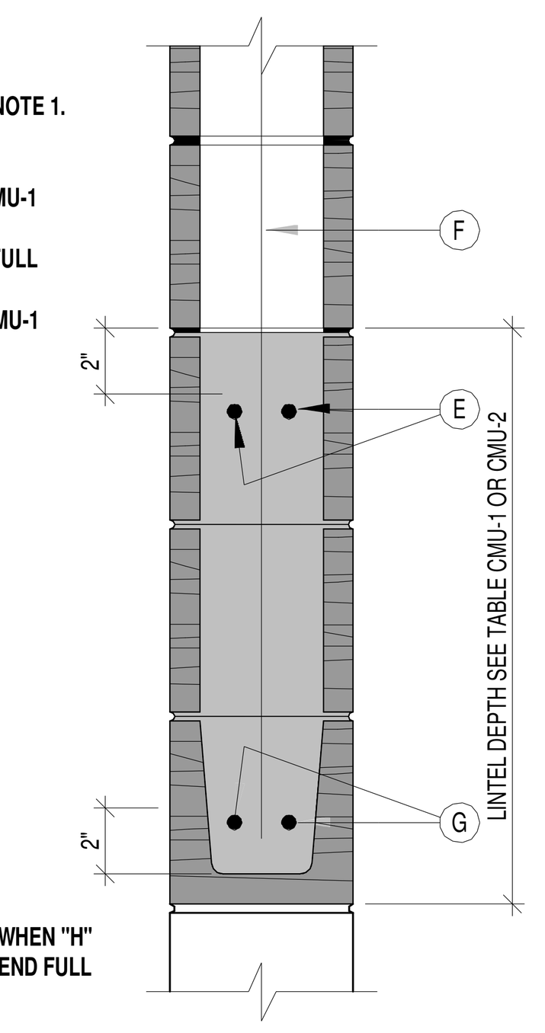
CMU OPENING REINFORCING SCHEDULE					
W	LINTEL DEPTH	"A" BARS	"B" BARS	"C" BARS	JAMB WIDTH
< 2'-8"	8"	(1) #5	(1)	(1)	8"
2'-8" < 4'-0"	16"	(2) #5	(1)	(1)	8"
4'-0" < 6'-0"	24"	(2) #6	(1)	(2)	16"
6'-0" < 8'-0"	32"	(2) #6	(2)	(3)	24"
8'-0" < 10'-0"	48"	(2) #6	(2)	(3)	24"
10'-0" < 13'-4"	48"	(2) #6	(2)	(3)	24"
*13'-4" < 24'-0"	48"	(2) #7	(2)	(3)	24"

*SPECIAL LINTEL -SEE PLAN



KEYED NOTES:

A. FULLY GROUTED CMU LINTEL.
B. "A" BARS IN CMU LINTEL BLOCK- SEE GENERAL NOTE 1.
C. "B" BARS IN BOND BEAM- SEE GENERAL NOTE 3.
D. "C" BARS EACH SIDE- SEE GENERAL NOTE 2.
E. CMU LINTEL TOP REINF. "A" BARS -SEE TABLE CMU-1 OR CMU-2
F. CONT. TYP. CMU WALL VERTICAL REINFORCING FULL LENGTH OF CMU LINTEL (SEE GENERAL NOTE 4).
G. CMU LINTEL BTM REINF. "A" BARS -SEE TABLE CMU-1 OR CMU-2

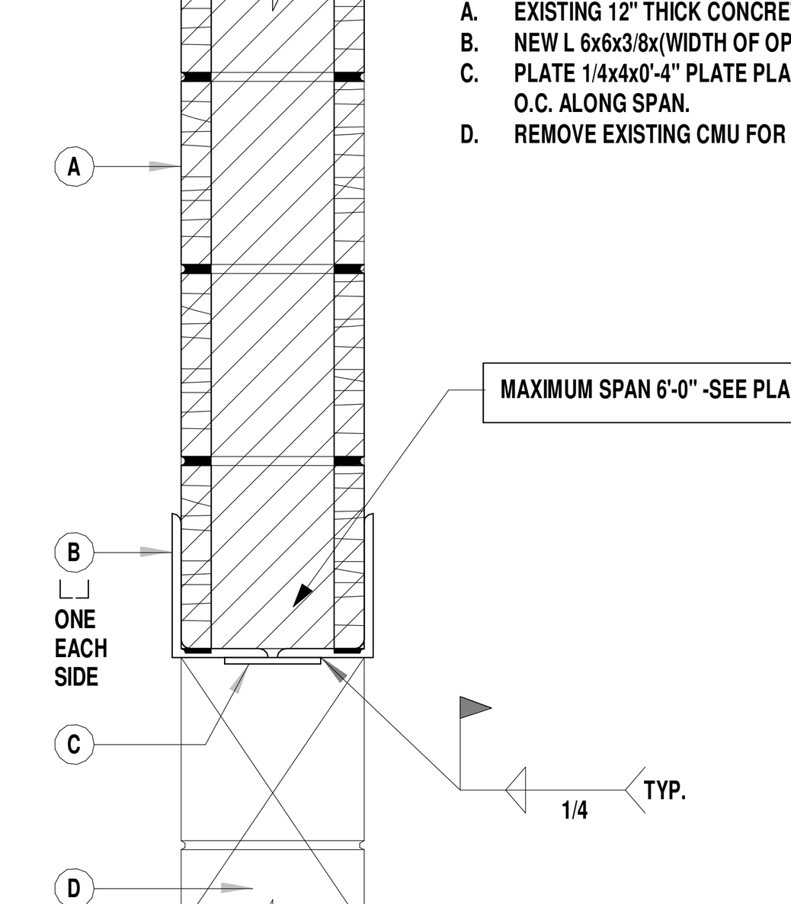


MASONRY LINTEL SECTION

GENERAL NOTES:

1. USE BAR QUANTITIES AND SIZES GIVEN IN TABLE CMU-1 OR CMU-2 UNLESS OTHERWISE NOTED ON PLANS.
2. EXTEND "C" BARS FROM TABLE -1 OR CMU-2 48 BAR DIAMETERS OR 24" MINIMUM BEYOND TOP AND BOTTOM OF OPENING EXCEPT WHEN "H" OR "W" EXCEEDS 24". "C" BARS SHALL EXTEND FULL HEIGHT. WHERE THERE IS LESS THAN 8" BETWEEN ADJACENT OPENINGS, EXTEND FULL HEIGHT REINFORCING 32" BEYOND FURTHEST OPENING.
3. "B" BARS IN TABLE CMU-1 OR CMU-2 SHALL EXTEND 48 BAR DIAMETERS OR 24" MINIMUM EACH SIDE OF THE OPENINGS.
4. FOR BAR SIZES, MATCH TYPICAL WALL REINFORCING AS SHOWN ON THE BUILDING WALL SECTIONS, U.O.N.

3 S04.A CMU OPENING REINFORCING
NTS



KEYED NOTES:

A. EXISTING 12" THICK CONCRETE MASONRY WALL.
B. NEW L 6x6x3/8x(WIDTH OF OPENING + 8" EA. END) LLV.
C. PLATE 1/4x4x0'-4" PLATE PLACED 2" FROM ENDS AND 16" O.C. ALONG SPAN.
D. REMOVE EXISTING CMU FOR NEW OPENING - SEE ARCH.

TYPICAL AT EXISTING MASONRY

4 S04.A DETAIL FOR NEW OPENING IN EXISTING MASONRY WALL
NTS

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

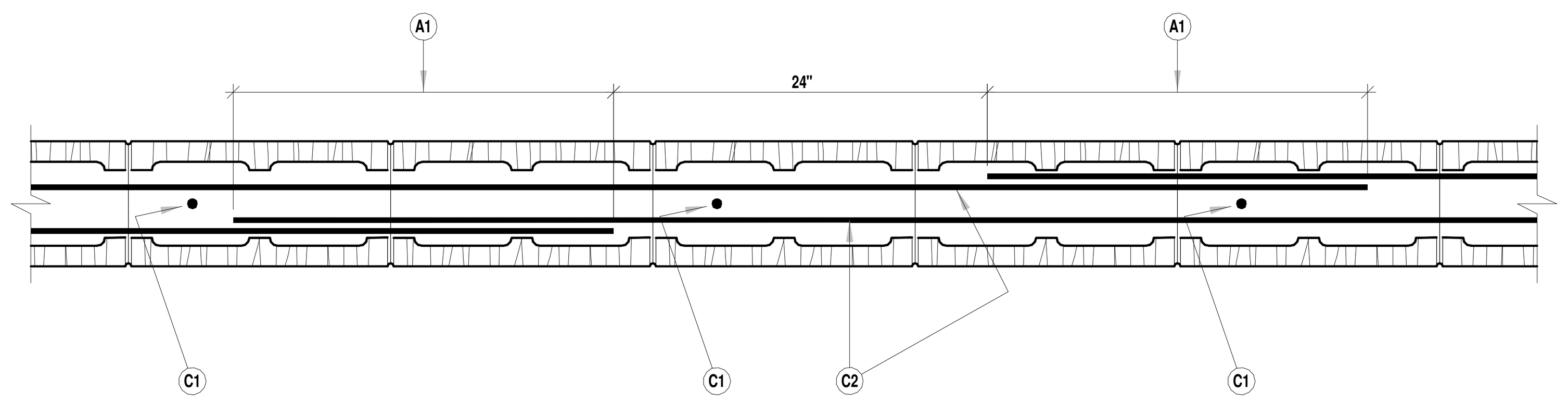
MASONRY GENERAL NOTES REINF. REQUIREMENTS AND LINTEL DIAGRAMS

REV #	DATE	COMMENTS
REVISION		
REVISION		
REVISION		
REVISION		

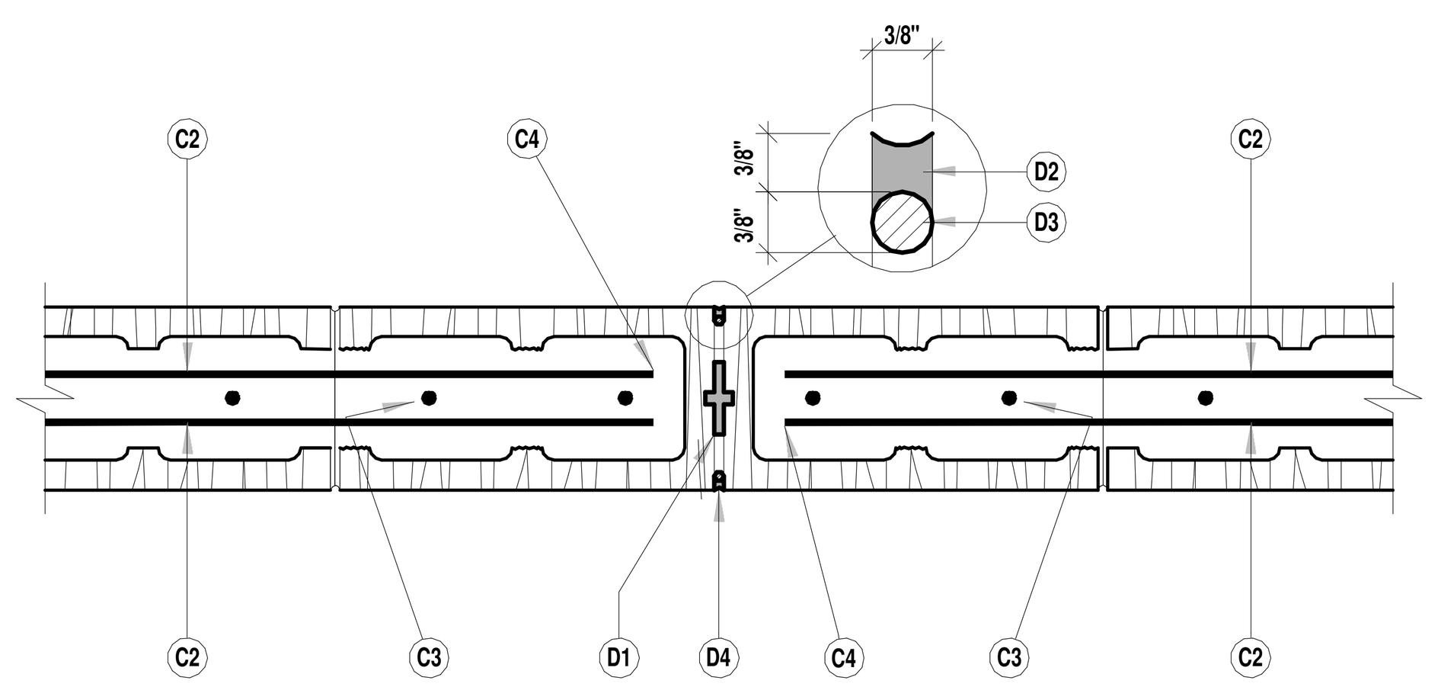
REVIEWS
INITIALS

RGAS
Project Number 2246
Drawn By JJR
Date 3/11/2024

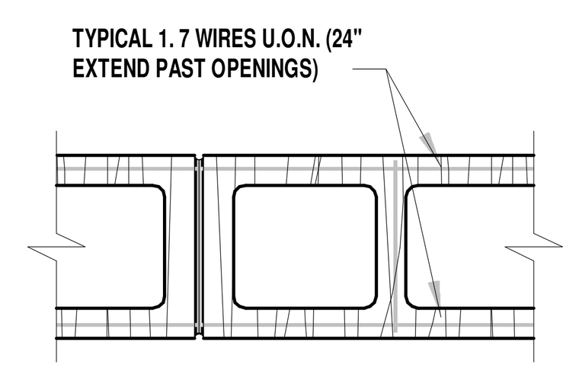
S04.A



A HORIZONTAL REINFORCING LAP STAGGER CUT ALONG BOND BEAM



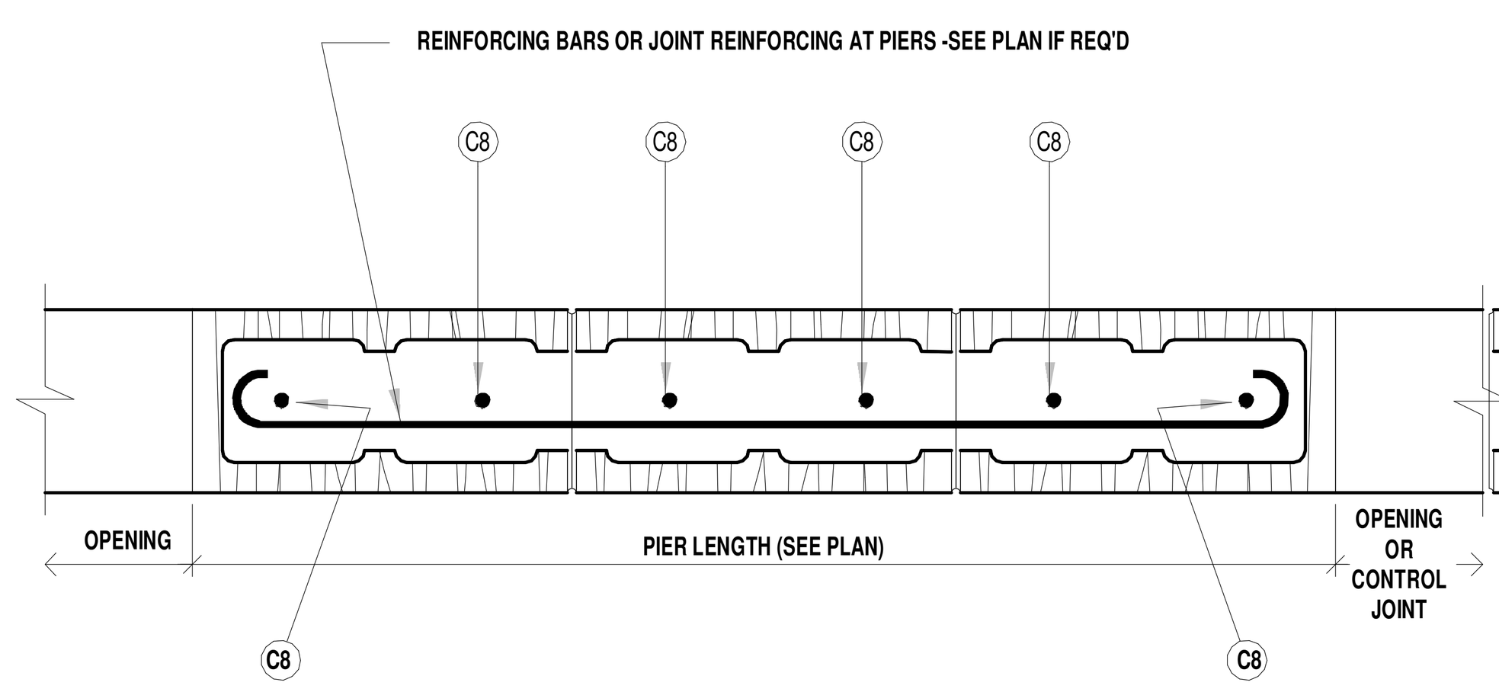
B TYPICAL CMU CONTROL JOINT CUT ALONG BOND BEAM



C HORIZONTAL JOINT REINFORCING

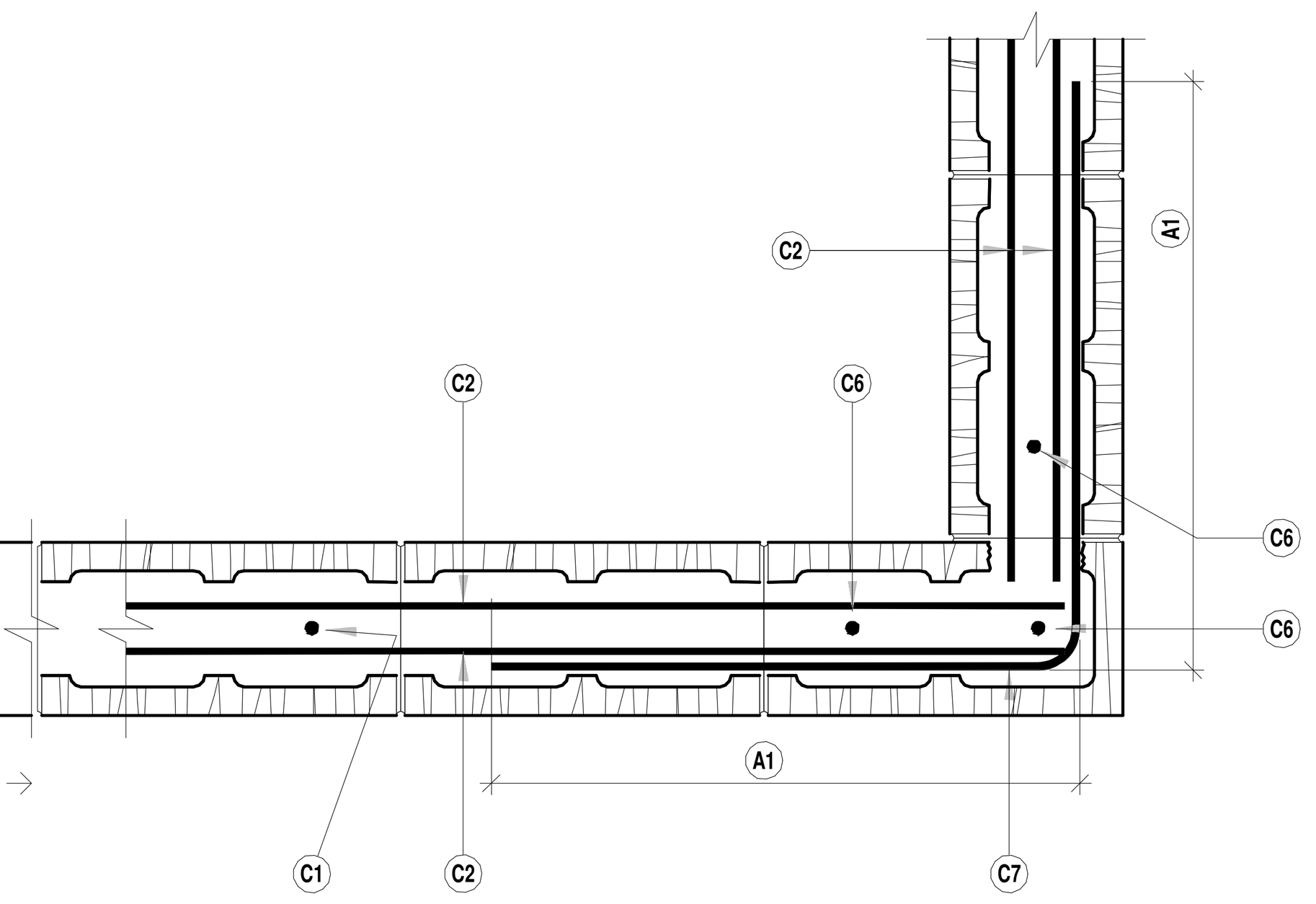
KEYED NOTES:

- A1. SPLICE LENGTH (Ls) REFER TO TABLE M-1. (2/S0.4A).
- B1. CONT CMU BOND BEAM.
- C1. VERTICAL REINFORCEMENT SEE PLAN AND DETAILS FOR SIZE AND SPACING.
- C2. (2) CONT. HORIZ. BOND BEAM REINFORCING -SEE PLAN.
- C3. PROVIDE VERTICAL REINFORCING IN THREE (3) CELLS AT EACH SIDE OF JOINT, TYPICAL; MATCH WALL REINF.
- C4. TERMINATE ALL NON-STRUCTURAL REINF. 2" FROM CONTROL JOINT. WHERE STRUCTURAL REINF. MUST CONTINUE THROUGH JOINT, MORTAR MAY BE RACKED BACK TO PROVIDE JOINT TO ACCOMMODATE SHRINKAGE CRACKING.
- C5. NOT USED.
- C6. INSTALL (3) VERTICAL BARS AS SHOWN, TYPICAL; MATCH WALL VERTICAL REINF.
- C7. CORNER BAR MATCH HORIZONTAL BAR REINF.
- C8. "C" PIER VERTICAL BARS AT OPENING, REFER TO 3/S04A (MAY REQUIRE 1, 2 OR 3 VERTICALS).
- D1. PREFABRICATED CONTROL JOINT.
- D2. SEALANT, INSTALL BOND BREAKER TAPE AT BACKER ROD AS NECESSARY.
- D3. BACKER ROD.
- D4. SEE ARCHITECTURAL ELEVATIONS FOR CONTROL JOINT LAYOUT (MAXIMUM 24'-0" O.C. AND 12'-0" FROM CORNERS).



D PARTICIPATING SHEARWALL PIER BETWEEN OPENINGS

TYPICAL VERTICAL REINF. NOT SHOWN



E EXTERIOR CORNER CUT ALONG BOND BEAM

TYP GENERAL MASONRY WALL DETAILS FOR VARYING CONDITIONS

1 S04.B NTS

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

MASONRY DETAILS AND VENEER REQUIREMENTS

REV #	DATE	COMMENTS
REVISION		
REVISION		
REVISION		
REVISION		

REVIEWS
INITIALS

RGAS
Project Number 2246
Drawn By Author
Date 3/11/2024

S04.B

X:\Projects\C23\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL SO SHEETS.rvt
9/9/2024 2:39:49 PM

ROUGH CARPENTRY:

PRODUCT REQUIREMENTS:

- EACH PIECE OF STRUCTURAL LUMBER, SHEATHING AND TIMBER SHALL BE MARKED WITH GRADE BY SUCH COMPETENT AND RELIABLE ORGANIZATION WHOSE REGULAR BUSINESS IS TO ESTABLISH LUMBER GRADES.
- ALL LUMBER, EXCEPT WHERE SPECIFICALLY NOTES OTHERWISE, SHALL BE MILL SIZED AND SURFACED ON (4) SIDES. ALL SHALL BE STRAIGHT STOCK, FREE FROM WARP OR CUP, AND SINGLE LENGTH PIECES. SPLICES WILL NOT BE PERMITTED EXCEPT WHERE SPECIFCALLY SO DETAILED OR AS DIRECTED BY THE ENGINEER.
- ROUGH HARDWARE, JOIST HANGERS, STRAPS, HOLDOWNS, ETC. SHALL BE MANUFACTURED BY "SIMPSON" COMPANY OR APPROVED EQUAL. THE MAXIMUM SIZE AND NUMBER OF FASTENERS SPECIFIED BY THE MANUFACTERER SHALL BE USED UNLESS NOTED OTHERWISE.
- BLOCKING AND FIRESTOPPING TO BE INSTALLED AS REQUIRED TO SUPPORT ALL ITEMS OF FINISH SUCH AS BULKHEADS AND BUCKS. PROVIDE FIREBLOCKING TO CUT OFF ALL CONCEALED DRAFT OPENINGS, BOTH VERTICAL AND HORIZONTAL, BETWEEN CEILING AND FLOOR AREAS (AS REQUIRED BY BUILDING OFFICIAL AND ARCHITECT).
- COMMON NAILS SHOULD BE USED WHEN NAILING IS SPECIFIED ON THESE PLANS (U.O.N.), SUCH AS AT SHEARWALLS AND DIAPHRAGMS. ALL OTHER NAILING MAY BE OF THE "BOX OR SINKER" TYPE.
- SHEATHING GRADE SHALL BE CD-X WITH EXTERIOR GLUE P.S. 1-83, U.O.N. ON PLANS: PRODUCTS SHALL BE THOSE LISTED IN TABLE WS-1 (THIS SHEET)
- UNLESS OTHERWISE NOTED ON PLANS, LUMBER SHALL BE AT LEAST OF THE GRADES SHOWN IN THE TABLE BELOW. ALL LUMBER SHALL BE SURFACED AND FREE OF HEART CENTER. LUMBER SHALL MEET SPECIES AND COMMERCIAL GRADE AS INDICATED ON THE PLANS AND THE DESIGN VALUES FOR VISUALLY GRADED LUMBER IN ACCORDANCE WITH THE PLANS AND THE DESIGN VALUES FOR VISUALLY GRADED LUMBER IN ACCORDANCE WITH THE NATIONAL DESIGN SPECIFICATION BY THE NATIONAL FOREST PRODUCTS ASSOCIATION, WHICHEVER IS GREATER. BASED VALUES SHOWN MAY BE ADJUSTED IN ACCORDANCE WITH THE NATIONAL DESIGN SPECIFICATION. "DF" INDICATES DOUGLAS-FIR-LARCH, "HF" INDICATES HEM-FIR, "SPF" INDICATES SPRUCE-PINE-FIR.

EXECUTION REQUIREMENTS:

- BOLTS (IF APPLICABLE) SHALL BE INSTALLED IN HOLES BORED WITH A BIT 1/16" LARGER THAN THE DIEMETER OF THE BOLT. BOLTS AND NUTS SEATING ON WOOD SHALL HAVE CUT STEEL WASHERS UNDER HEADS AND NUTS. NUTS SHALL BE PULLED TIGHT AND AGAIN CHECKED AND TIGHTENED JUST PRIOR TO ENCLOSING BOLTED MEMBERS. COUNTER BORE FOR BOLTED HEADS OR NUTS ONLY WHERE SO INDICATED ON THE DRAWINGS AND THEN SUFFICIENT DEPTH TO HOUSE THE BOLT HEAD OR NOT AND WASHER. CUT OFF EXCESSIVE BOLT PROJECTION WHERE NECESSARY. NICK THREADS TO PREVENT LOOSENING.
- LAG SCREWS (IF APPLICABLE) SHALL BE SCREWED AND NOT DRIVEN INTO PLACE. LAG SCREWS FASTENING ONE WOOD MEMBER TO ANOTHER SHALL HAVE PENETRATION INTO FAR MEMBER OF NOT LESS THAN (2/3) OF THE LENGTH OF THE LAG SCREW MEASURED UNDER THE HEAD U.O.N. IN PLACING LAG SCREWS IN WOOD, A HOLE SHALL FIRST BE BORED OF THE SAME DIAMETER AND DEPTH OF THE SHANK OF THE SCREW. AFTER WHICH THE HOLE SHALL BE CONTINUED TO A DEPTH EQUAL TO THE LENGTH OF THE LAG SCREW WITH THE DIAMETER EQUAL TO THE DIAMETER OF THE SCREW AT THE ROOT OF THE THREAD.
- ALL ROUGH CARPENTRY WILL PRODUCE JOINTS TRUE AND TIGHT AND WELL NAILED WITH MEMBERS ASSEMBLED IN ACCORDANCE WITH THE DRAWINGS AND ALL PERTINENT BUILDING CODES. THE SHIMMING OF SILLS, JOISTS SHORT STUDS, TRIMMERS, HEADERS OR OTHER FRAMING MEMBERS SHALL NOT BE PERMITTED. ALL WALLS AND PARTITIONS SHALL BE STRAIGHT, PLUMB AND ACCURATELY LOCATED. CAREFULLY SELECT ALL STRUCTURAL MEMBERS. INDIVIDUAL PIECES SHALL BE SELECTED SO THAT KNOTS AND OBVIOUS MINOR DEFECTS WILL NOT INTERFERE WITH THE PLACING OF BOLTS, OR PROPER NAILING OR THE MAKING OS SOUND CONNECTIONS. LUMBER MAY BE REJECTED BY THE ENGINEER FOR EXCESSIVE WARP, TWIST, BOW OR CROOK, MILDEW, FUNGUS OR MOLD AS WELL AS FOR IMPROPER GRADE MARKING, DEFECTS WHICH WILL RENDER A PIECE UNABLE TO SERVE ITS INTENDED FUNCTION SHALL BE DISCARDED.

PRE-ENGINEERED TRUSSES

PRODUCT REQUIREMENTS:

- "GANG-NAIL" PRE-ENGINEERED TRUSSES ARE TO BE CONSTRUCTED WITH METAL PLATE CONNECTORS AND DESIGNED AND MANUFACTURED BY OTHERS. DESIGN, CONSTRUCTION, AND INSTALLATION SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION AND OF THE TRUSS PLATE INSTITUTE. PROVIDE ALL REQUIRED BLOCKING AND BRACING REQUIRED BY THE MANUFACTURER FOR CONSTRUCTION AND ERECTION IN ADDITION TO BLOCKING SHOWN ON THE STRUCTURAL DETAILS. MEMBERS OF A COMPLETED TRUSS ARE NEVER TO BE NOTCHED OF CUT. THE TRUSS MANUFACTURER SHALL PROVIDE DESIGN CALCULATIONS AND SHOP DRAWINGS SIGNED AND SEALED BY A STRUCTURAL ENGINEER (CONTRACTED BY TRUSS SMANUFACTURER) FOR REVIEW PRIOR TO FABRICATION. THE DESIGN SHALL ACCOUNT FOR ALL UNIFORM LOADS AND EQUIPMENT LOADS. CONTACT THE STRUCTURAL ENGINEER FOR UNIFORM LOADING AN REQUIREMENTS IF REQUIRED.

EXECUTION REQUIREMENTS:

- TRUSS SHOP DRAWINGS SHALL SHOW THE TRUSS DESIGN LOADS, SIZES AND GRADES OF THE CHORDS AND WEBS, LOCATIONS OF THE JOINTS AND CONNECTIONS, SIZE AND TYPE OF METAL PLATES AND ALL BRACING AND BLOCKING REQUIREMENTS.
- ROOF AND FLOOR TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING CRITERIA:
  SEE DESIGN LOADS SHEET S01.A FOR VERTICAL LOADS
  STRESS INCREASE FOR DURATION OF LOAD -- ROOF (15%)
- LOCATION OF TRUSS BRACING REQUIRED BY THE PLANS OR TRUSS MANUFACTURER'S DESIGN SHALL BE INDICATED ON EACH TRUSS BY PAINT MARKING.

PARALLAM MEMBERS:

- WHERE PARALLAM "PSL" MEMBERS ARE INDICATED ON THE PLANS AND SCHEDULES THEY SHALL BE MANUFACTERED BY TRUSS-JOINST MACMILLAN (NEW-482 & ICBO ER-4979), OR BE AN APPROVED EQUAL PRODUCT. MEMBERS SHOWN ON THE PLANS AND SCHEDULES ARE DETERMINED FROM MANUFACTURER SUPPLIED INFORMATION AND SHOULD BE REVIEWED FOR COMPLAINCE BY THE MANUFACTERER'S CIVIL OR STRUCTURAL ENGINEER. LOADING INFORMATION MAY BE PROVIDED UPON REQUEST. NOTCHES, HOLES OR CUTS SHOWN IN THE TYPICAL DETAILS ARE ALLOWED WITHOUT ADDITION APPROVAL; ALL OTHER MEMBER MODICATIONS ARE TO BE APPROVED BY THE STRUCTURAL ENGINEER.

PLYWOOD WEB JOISTS:

- PLYWOOD WEB JOISTS NOTED "TJI" ARE TO BE MANUFACTURED BY TRUSS-JOIST MACMILLAN (NER-200 & ICBO ER-4354) OR APPROVED EQUAL. PROVIDE BLOCKING, WEB STIFFENERS, AND BRACING OVER THE SPAN BER THESE STRUCTURAL DRAWINGS AND ALL MANUFACTURER'S RECOMMENDATIONS. TOP AND BOTTOM FLANGES OF JOISTS ARE NEVER TO BE CUT AND ALL HOLES THROUGH THE JOIST WEB ARE TO BE SPECIFICALLY APPROVED BY STRUCTURAL ENGINEER.

TABLE WS-1 :
SHEATHING PRODUCTS:

DESCRIPTION	REQUIREMENTS
ROOF SHEATHING	5/8" APA RATED T&G ROOF PLYWOOD SHEATHING. NAIL W/ 10d @ 6" O.C. BOUNDARY/EDGES AND 12" O.C. FIELD. (U.O.N. ON SHEARWALL SCHEDULE) SPAN INDEX = 48/24
FLOOR SHEATHING	3/4" APA RATED FLOOR PLYWOOD SHEATHING. NAIL W/ 10d @ 6" O.C. BOUNDARY/EDGES AND 12" O.C. FIELD. (U.O.N. ON SHEARWALL SCHEDULE) SPAN INDEX = 48/24
WALL SHEATHING	1/2" APA RATED WALL PLYWOOD SHEATHING. NAIL W/ 10d @ 4" O.C. BOUNDARY/EDGES AND 12" O.C. FIELD. (U.O.N. ON SHEARWALL SCHEDULE)
	7/16" WAFERBOARD AND ORIENTED STRAND BOARD CONFORMING TO NER-108 AND PRODUCT STANDARD 2-92, AND WITH THE SAME EXPOSURE DURABILITY CLASSIFICATION, NOMINAL THICKNESS AND SPAN/INDEX RATIO MAY BE SUBSTITUTED FOR PLYWOOD ONLY IF APPROVED BY THE STRUCTURAL ENGINEER.

NOTES:
1. THE NAIL EDGE DISTANCE FOR 3" NOMINAL (2-1/2" ACTUAL) WIDE MEMBERS ON WHICH SHEETS ARE SPLICED SHALL BE 3/4" MIN.
2. THE NAIL EDGE DISTANCE FOR 2" NOMINAL (1-1/2" ACTUAL) WIDE MEMBERS ON WHICH SHEETS ARE SPLICED SHALL BE 3/8" MIN. CARE SHALL BE MADE NOT TO TO SPLIT THE MEMBERS.
3. NAILS MAY BE SLANT DRIVEN TO MAINTAIN MINIMUM EDGE DISTANCE.

TABLE WL-1 :
MINIMUM LUMBER GRADES (PER NDS 2001 ED.)

TYPE	PRIMARY USE	SIZES (IN)	MIN. GRADE	BASE VALUES (PSI)				
				Fb	Fv	E a	Fc ‖	Fc ⊥
SAWN LUMBER	STUDS	2x	DF #2	700	180	1.4	850	625
	JOISTS	2" & WIDER	DF #2	900	180	1.6	1350	625
	BEAMS	5" x 5" & LARGER	DF #2	875	170	1.3	600	625
	POSTS	5" x 5" & LARGER	DF #2	750	170	1.3	700	625
MICRO-LAMS	BEAMS	ANY	LAM	2400	275	1.8	2400	500
PSL	BEAMS	ANY	LAM	2900	285	2.0	2900	750

FOOTNOTES:
(a) *.0X10^6 (PSI)

TABLE WFS-1 :
FASTENING SCHEDULE

CONNECTION	FASTENING [a,m]	LOCATION
1. JOIST TO SILL GIRDER	(3) 8d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	TOENAIL
2. BRIDGING TO JOIST	(2) 8d COMMON (2) 3" x 0.131" NAILS (2) 3" 14 GAGE STAPLES	TOENAIL EACH END
3. 1"X6" SUBFLOOR OR LESS TO EACH JOIST	(2) 8d COMMON	FACE NAIL
4. WIDER THAN 1"X6" SUBFLOOR TO EACH JOIST	(3) 8d COMMON	FACE NAIL
5. 2" SUBFLOOR TO JOIST OR GIRDER	(2) 16d COMMON	BLIND & FACE NAIL
6A. SOLE PLATE TO JOIST OR BLOCKING	16d @ 16" O.C. 3" x 0.131" NAILS @ 8" O.C. 3" 14 GAGE STAPLES @ 12"O.C.	TYPICAL FACE NAIL
6B. SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANEL	(3) 16d @ 16" (4) 3" x 0.131" NAILS @ 16" (4) 3" 14 GAGE STAPLES PER 16"	BRACED WALL PANELS
7. TOP PLATE TO STUD	(2) 16d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	END NAIL
8. STUD TO SOLE PLATE	(4) 8d COMMON (4) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	TOENAIL
	(2) 16d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	END NAIL
9. DOUBLE STUDS	16d @ 24" O.C. 3" x 0.131" NAILS @ 8" O.C. 3" 14 GAGE STAPLES @ 8" O.C.	FACE NAIL
10. DOUBLE TOP PLATE	16d @ 16" O.C. 3" x 0.131" NAILS @ 12" O.C. 3" 14 GAGE STAPLES @ 12" O.C.	TYPICAL FACE NAIL
	(8) 16d COMMON (12) 3" x 0.131" NAILS (12) 3" 14 GAGE STAPLES	LAP SPLICE
11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	(3) 8d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	TOENAIL
12. RIM JOIST TO TOP PLATE	8d @ 6" O.C. 3" x 0.131" NAILS @ 6" O.C. 3" 14 GAGE STAPLES @6" O.C.	TOENAIL
13. TOP PLATES, LAPS AND INTERSECTIONS	(2) 16d COMMON (3) 3" x 0.131" NAILS @ 6" O.C. (3) 3" 14 GAGE STAPLES @6" O.C.	FACE NAIL
14. CONTINUOUS HEADER, TWO PIECES	16d COMMON	16" O.C. ALONG EDGE
15. CEILING JOISTS TO PLATE	(3) 8d COMMON (5) 3" x 0.131" NAILS (5) 3" 14 GAGE STAPLES	TOENAIL
16. CONTINUOUS HEADER TO STUD	(4) 8d COMMON	TOENAIL
17. CEILING JOISTS, LAPS OVER PARTITIONS (SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1)	(3) 16d COMMON, MINIMUM (4) 3" x 0.131" NAILS (4) 3" 14 GAGE STAPLES	FACE NAIL
18. CEILING JOISTS TO PARALLEL RAFTERS (SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1)	(3) 16d COMMON, MINIMUM (4) 3" x 0.131" NAILS (4) 3" 14 GAGE STAPLES	FACE NAIL
19. RAFTER TO PLATE (SEE SECTION 2308.10.1, TABLE 2308.10.1)	(3) 8d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	TOENAIL
20. 1" DIAGONAL BRACE TO EACH STUD AND PLATE	(2) 8d COMMON (2) 3" x 0.131" NAILS (2) 3" 14 GAGE STAPLES	FACE NAIL
21. 1"X8" SHEATHING TO EACH BEARING WALL	(2) 8d COMMON	FACE NAIL
22. WIDER THAN 1"X8" SHEATHING TO EACH BEARING	(3) 8d COMMON	FACE NAIL
23. BUILT-UP CORNER STUDS	16d COMMON 3" x 0.131" NAILS 3" 14 GAGE STAPLES	24" O.C. 16" O.C. 16" O.C.
24. BUILT-UP GIRDER AND BEAMS	20d COMMON @ 32" O.C. 3" x 0.131" NAILS @ 24" O.C. 3" 14 GAGE STAPLES @ 24" O.C.	FACE NAIL AT TOP & BOTTOM STAGGERED ON OPPOSITE SIDES
	(2) 20d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	FACE NAIL AT ENDS AT EACH SPLICE
25. 2" PLANKS	16d COMMON	AT EACH BEARING
26. COLLAR TIE TO RAFTER	(3) 10d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	FACE NAIL
27. JACK RAFTER TO HIP	(3) 10d COMMON (4) 3" x 0.131" NAILS (4) 3" 14 GAGE STAPLES	TOENAIL
	(2) 16d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	FACE NAIL
28. ROOF RAFTER TO 2-BY RIDGE BEAM	(2) 16d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	TOENAIL
	(2) 16d COMMON (3) 3" x 0.131" NAILS (3) 3" 14 GAGE STAPLES	FACE NAIL
29. JOIST TO BAND JOIST	(3) 16d COMMON (5) 3" x 0.131" NAILS (5) 3" 14 GAGE STAPLES	FACE NAIL
30. LEDGER STRIP	(3) 16d COMMON (4) 3" x 0.131" NAILS (4) 3" 14 GAGE STAPLES	FACE NAIL

FASTENING SCHEDULE (CONTINUED)

CONNECTION	FASTENING [a,m]		LOCATION
31. WOOD STRUCTURAL PANELS AND PARTICLEBOARD [b]; SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING):	1/2" AND LESS 19/32" TO 3/4" 7/8" TO 1"	6d [c,1] 2-3/8" x 0.131" NAIL [n] 1-3/4" 16 GAGE [o] 8d [d] OR 6d [e] 2-3/8" x 0.131" NAIL [p] 2" 16 GAGE [p] 8d [c]	
SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING	1-1/8" TO 1-1/4" 3/4" AND LESS 7/8" TO 1" 1-1/8" TO 1-1/4"	10d [d] OR 8d [e] 2-3/8" x 0.131" NAIL [n] 8d [e] 10d [d] OR 8d [e]	
32. PANEL SIDING (TO FRAMING)	1/2" AND LESS 5/8"	6d [f] 8d [f]	
33. FIBERBOARD SHEATHING: [g]	1/2" 25/32"	11 GAGE ROOFING NAIL [h] 6d COMMON NAIL 16 GAGE STAPLE [i] 11 GAGE ROOFING NAIL [h] 8d COMMON NAIL 16 GAGE STAPLE [i]	
34. INTERIOR PANELING	1/4" 3/8"	4d [j] 6d [k]	

FOOTNOTES:
- (a) COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.
- (b) NAILS SPACED AT 6 INCHES ON CENTER AT EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS EXCEPT 6 INCHES AT SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEARWALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
- (c) COMMON OR DEFORMED SHANK.
- (d) COMMON.
- (e) DEFORMED SHANK.
- (f) CORROSION-RESISTANT SIDING OR CASING NAIL.
- (g) FASTENERS SPACES 3 INCHES ON CENTER AT EXTERIOR EDGES AND 6 INCHES O.C. AT INTERMEDIATE SUPPORTS.
- (h) CORROSION-RESISTANT ROOFING NAILS WITH 7/16-INCH-DIAMETER HEAD AND 1 1/2-INCH LENGTH FOR 1/2-INCH SHEATHING AND 1 3/4-INCH LENGTH FOR 25/32-INCH SHEATHING..
- (i) CORROSION-RESITANT STAPLES WITH NOMINAL 7/16-INCH CROWN AND 1 1/8-INCH LENGTH FOR 1/2-INCH SHEATHING AND 1 1/2-INCH LENGTH FOR 25/32-INCH SHEATHING. PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED).
- (j) CASING OR FINISH NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
- (k) PANEL SUPPORTS AT 24 INCHES. CASING OR FINISH NAILS SPACED AT 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
- (l) FOR ROOF SHEATHING APPLICATIONS, 8d NAILS ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS.
- (m) STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16 INCH.
- (n) FOR ROOF SHEATHING APPLICATIONS, FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.
- (o) FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS FOR SUBFLOOR AND WALL SHEATHING AND 3 INCHES ON CENTER AT EDGES, 6 INCHES AT INTERMEDIATE SUPPORTS FOR ROOF SHEATHING.
- (p) FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

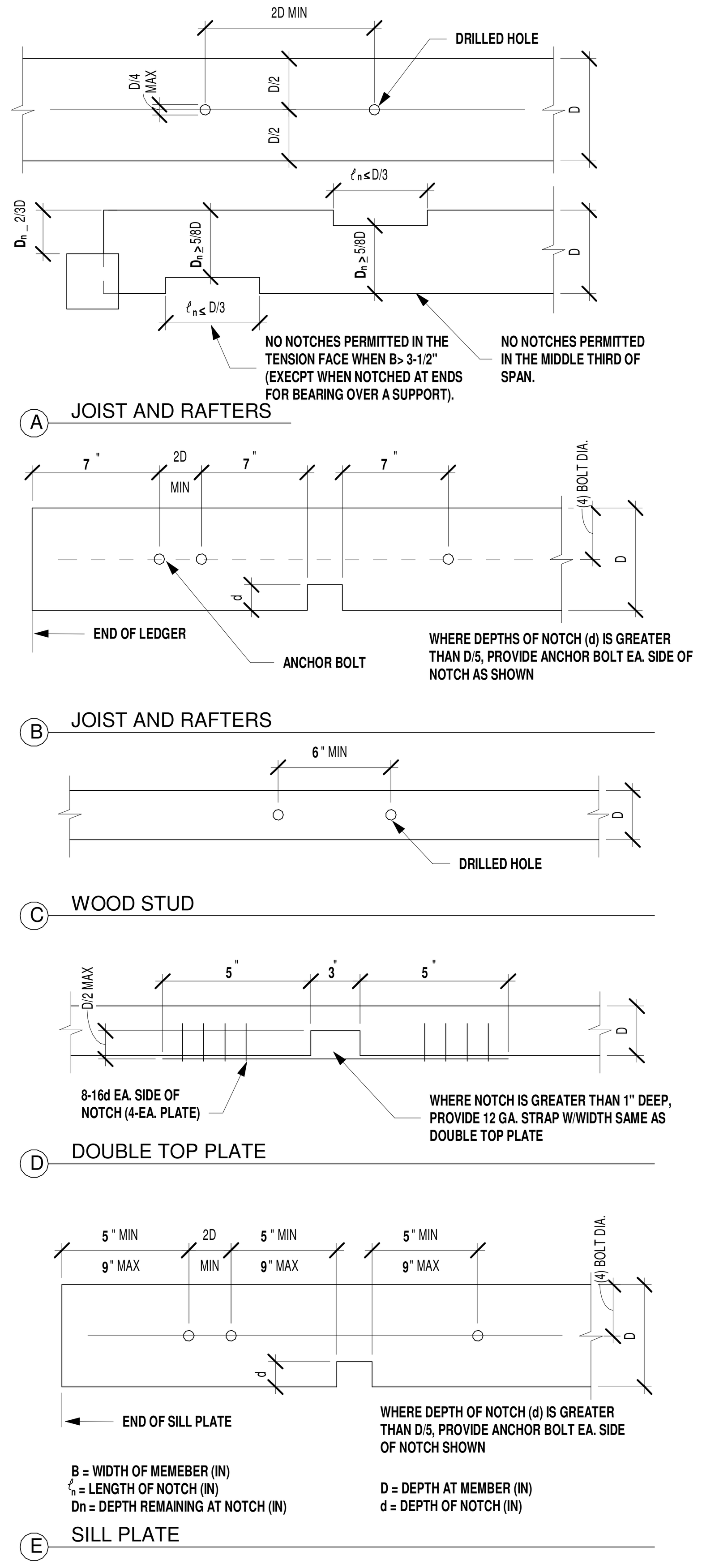
CARPENTRY GENERAL NOTES

REV #	DATE	COMMENTS
REVISION		
REVISION		
REVISION		
REVISION		

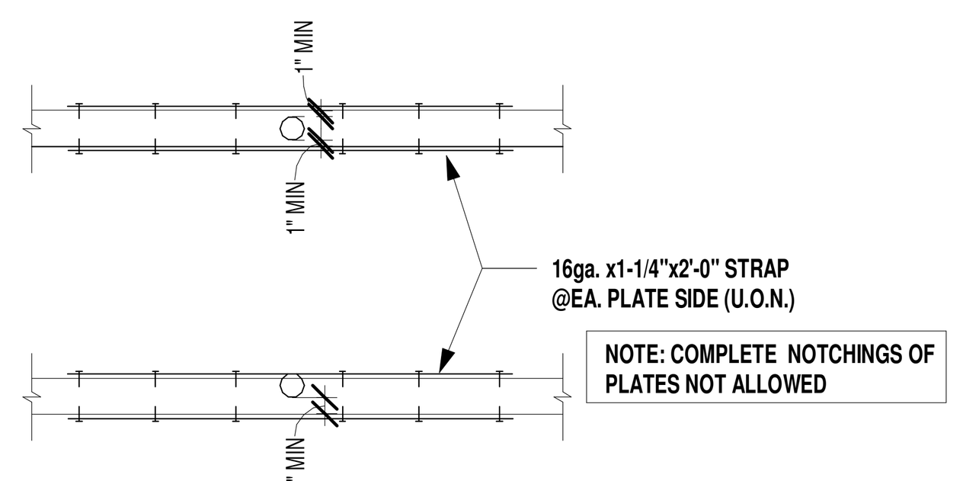
REVIEWS
INITIALS

RGAS
Project Number 2246
Drawn By JJR
Date 3/11/2024

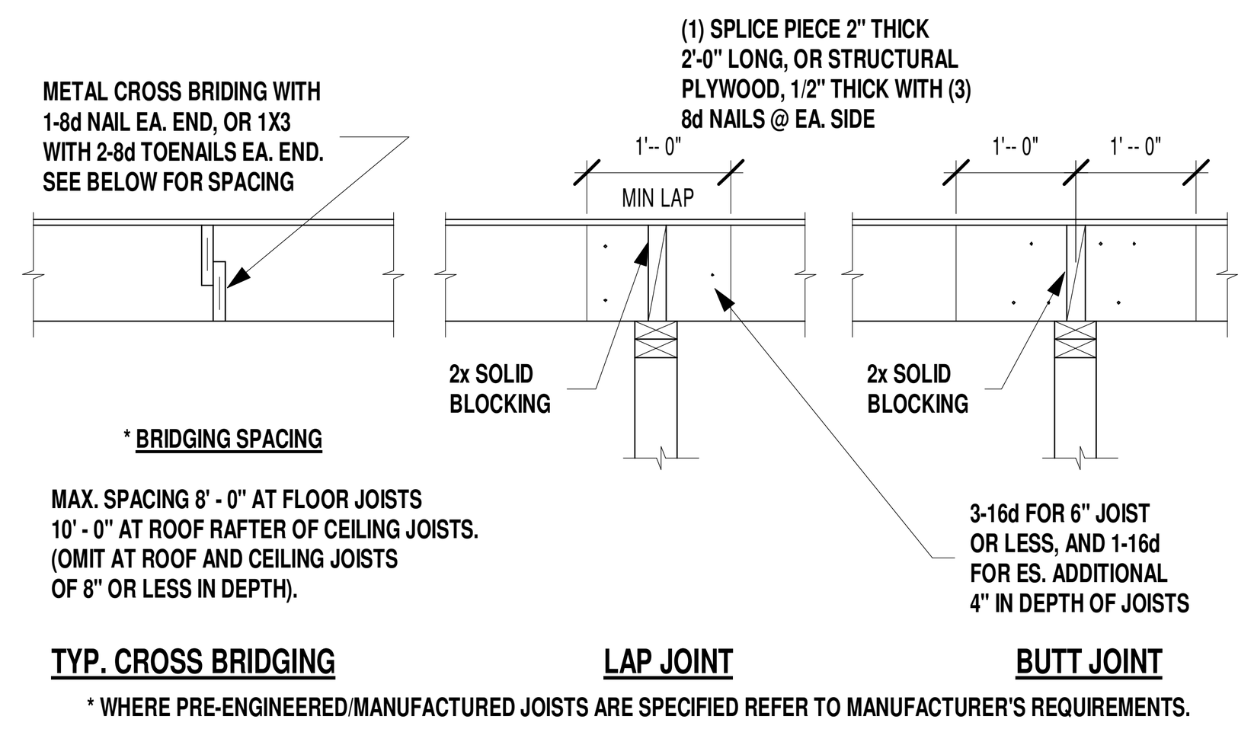
S06.A



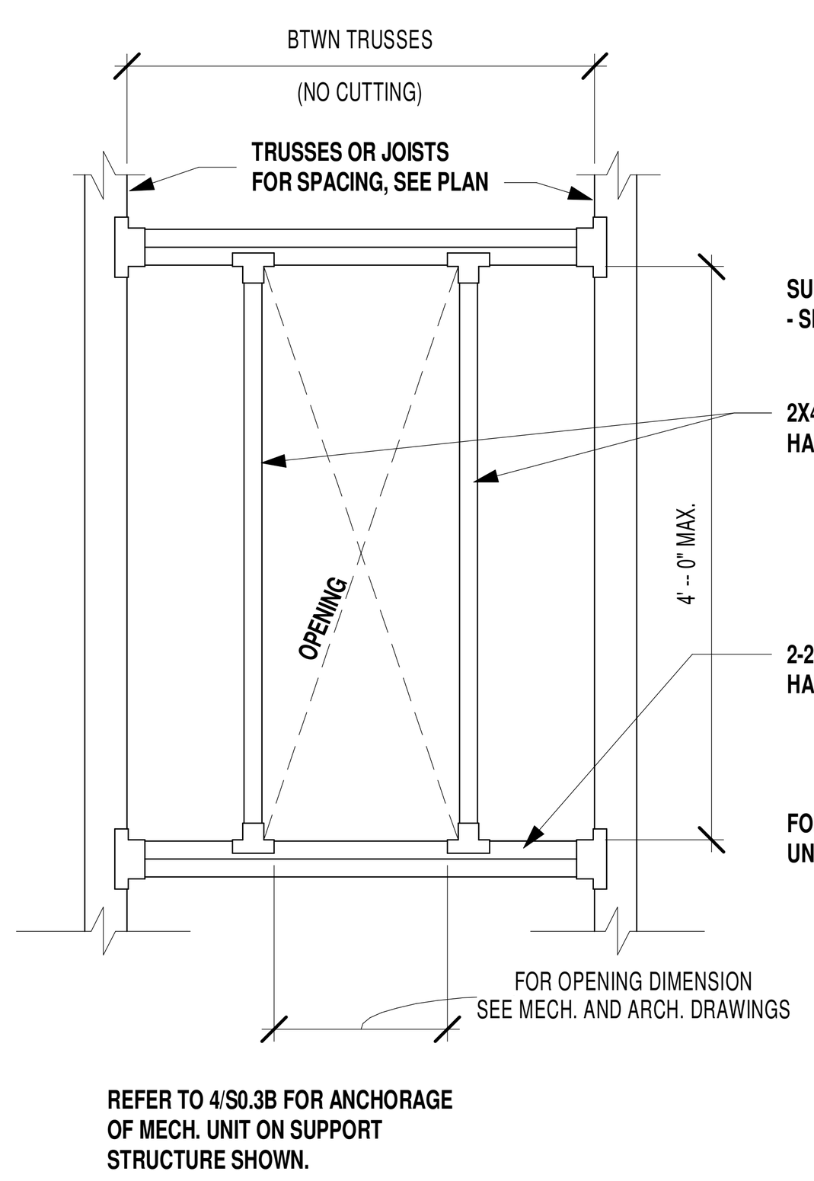
1/S06.B HOLES AND NOTCHES
NTS



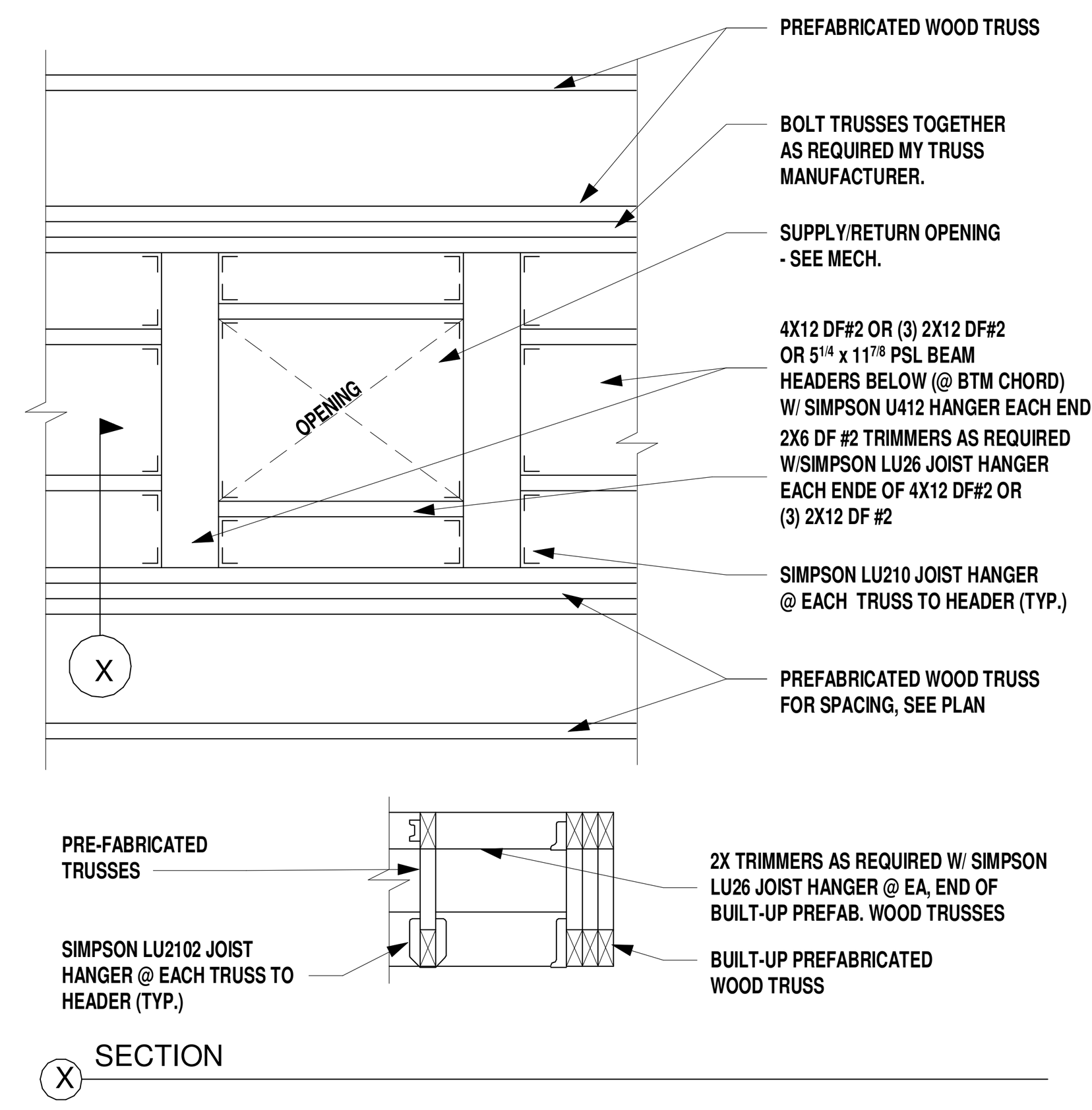
3/S06.B HOLE THROUGH PLATES @SHEAR /BEARING WALL
NTS



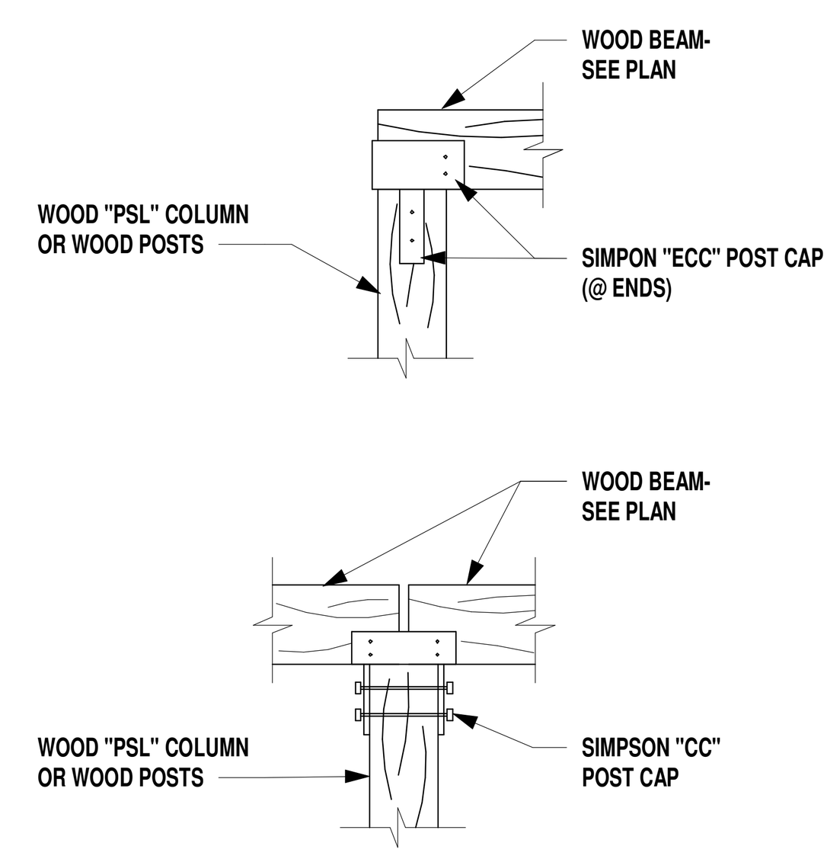
4/S06.B JOIST AND RAFTER LAP @SUPPORTS
NTS



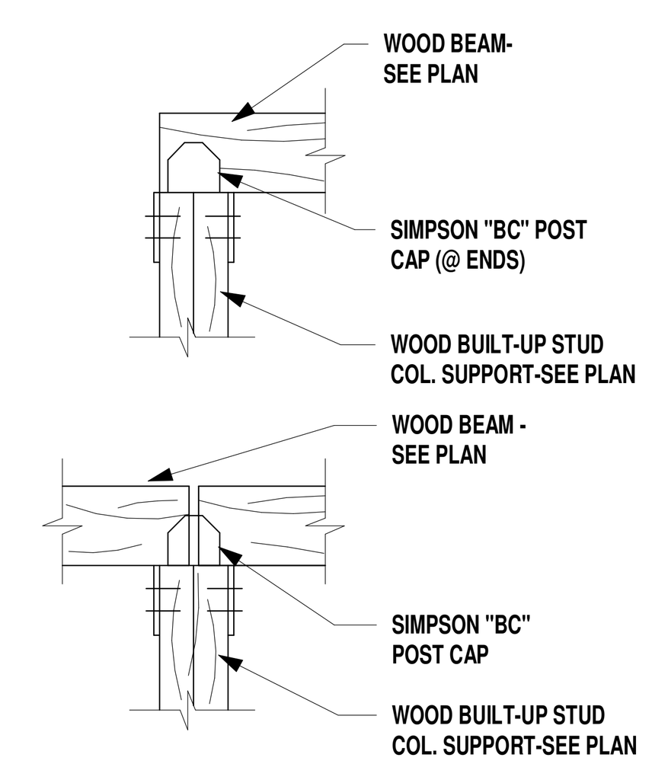
5/S06.B TYP. FRAMING OF SMALL OPENINGS BETWEEN TRUSSES / JOISTS
NTS



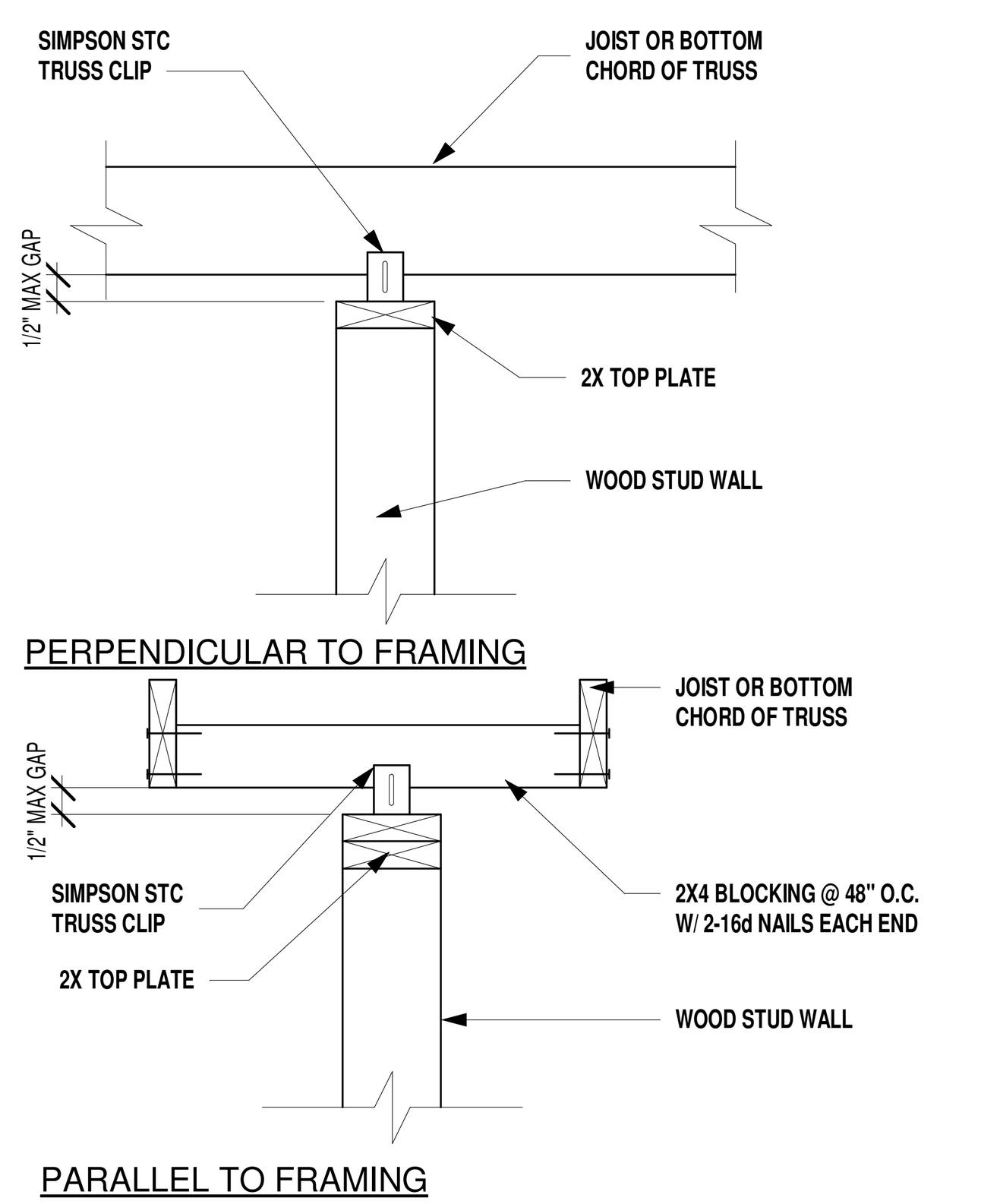
7/S06.B TYP. FRAMING OF LARGE OPENINGS CAUSING CUTTING OF PRE-ENGINEERED TRUSSES (SIM@JOISTS)
NTS



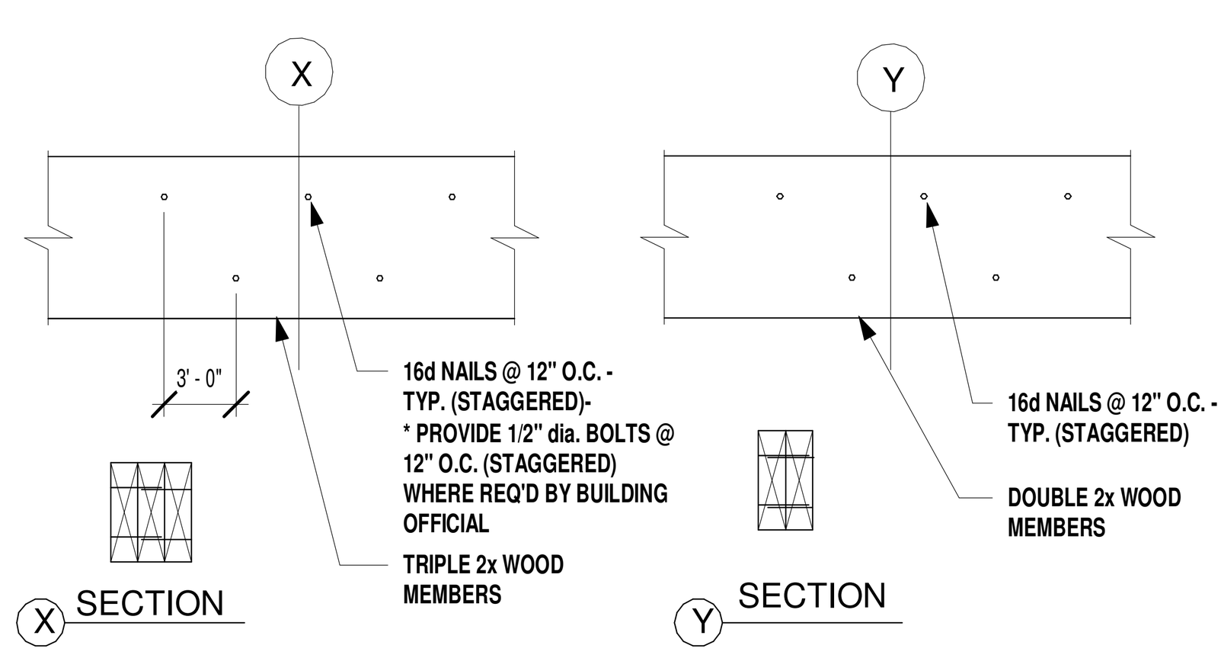
8/S06.B WOOD BEAM TO WOOD COL/POST
NTS



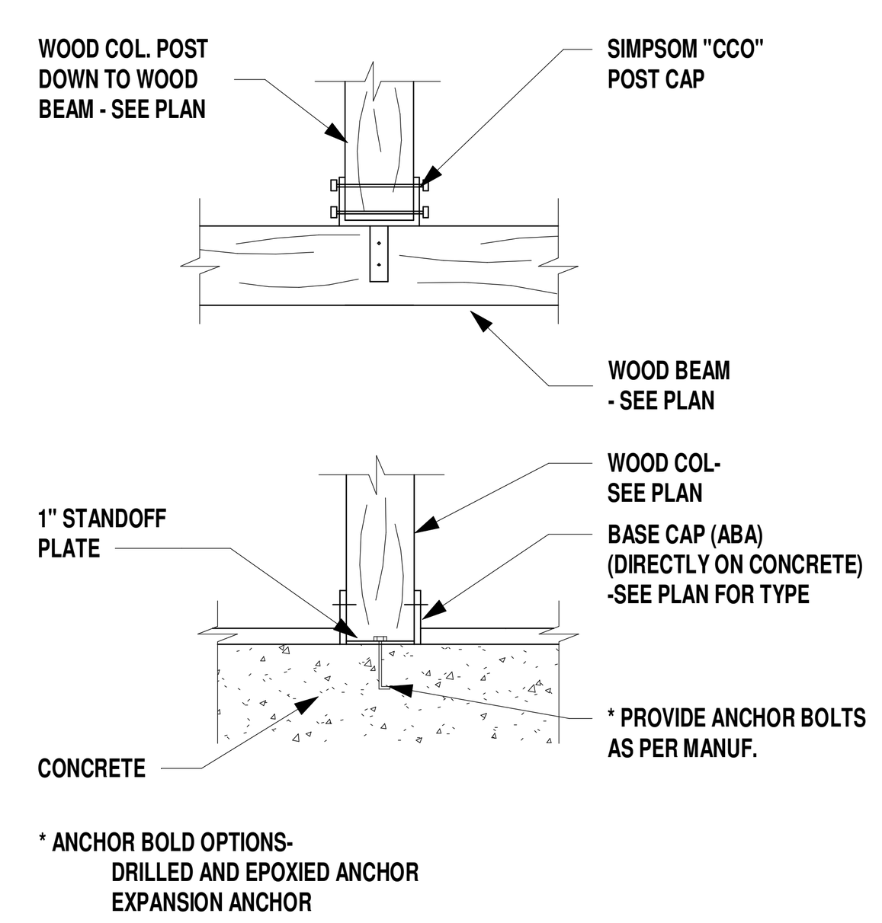
10/S06.B WOOD BEAM TO BUILT UP STUD COL
NTS



2/S06.B WOOD STUDS @NON-LOADING BEARING WALLS
NTS



6/S06.B TYP. BUILT-UP WOOD MEMBERS (BUILT-UP STUD COLUMNS OR HEADERS)
NTS



9/S06.B BASE AND POST DOWN CONN
NTS

JJK Group, Inc.
Consulting Structural Engineers

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

CARPENTRY GENERAL DETAILS

REV #	DATE	COMMENTS
REVISION		
REVISION		
REVISION		
REVISION		

REVIEWS

INITIALS

RGAS

Project Number	2246
Drawn By	Author
Date	3/11/2024

S06.B

X:\Projects\C23\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL SO SHEETS.rvt
9/9/2024 2:39:50 PM

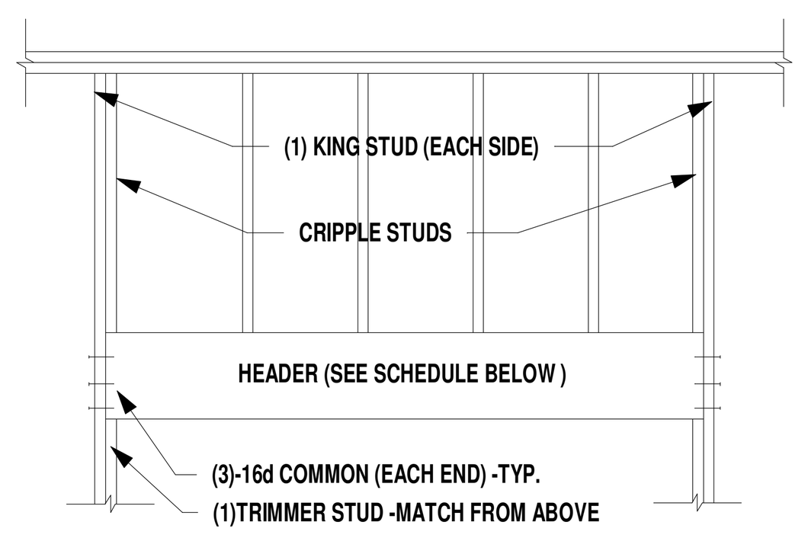


TABLE RC -1 :
LUMBER HEADER SCHEDULE

OPENING SIZE	HEADER SIZE
0'-4'	(2)-2X FLAT
4'-1" - 8'-0"	(2)-2X8
8'-1" - 12'-0"	(2)-2X12 HF#2
(DF#2, HF#2, OR SPF#2 MAY BE USED)	

1 / S06.C — TYP. NON-LOAD BEARING HEADER
NTS

TABLE RC - 2 :
TYPICAL CEILING JOIST SCHEDULE

JOIST SIZE	MAX. SPAN	BRIDGING SPACING	LEDGER AT MASONRY WALL	LEDGER AT STUD WALL
2 x 4	8'-0"	2'-9" O.C.	N/A	2x4 W/ (2) 16d NAILS EA. STUD
2 x 8	14'-0"	4'-8" O.C.	N/A	2x8 W/ (3) 16d NAILS EA. STUD
2 x 10	18'-0"	6'-0" O.C.	N/A	2x8 W/ (3) 16d NAILS EA. STUD

NOTES:
1. SPACE CEILING JOISTS @ 24" O.C. MAX.
2. 2. HANG CEILING JOISTS FROM LEDGERS W/ SIMPSON LU FACE MOUNTED JOIST HANGER.
3. 3. PROVIDE CONTINUOUS FLAT 2X4 BRIDGING W/ 1-16d NAIL EACH JOIST AT THE TOP OF THE JOISTS.
4. IF JOIST SPANS ARE GREATER THAT THOSE SHOWN ABOVE, NOTIFY THE STRUCTURAL ENGINEER.
5. JOISTS ARE DESIGNED FOR 5 PSF DEAD LOAD AND 10 PSF LIVE LOAD. IF ACTUAL LOADS ARE GREATER, NOTIFY THE STRUCTURAL ENGINEER.
6. ALL MATERIAL TO BE DF#2 OR SPF#2

2 / S06.C — CEILING JOISTS
NTS

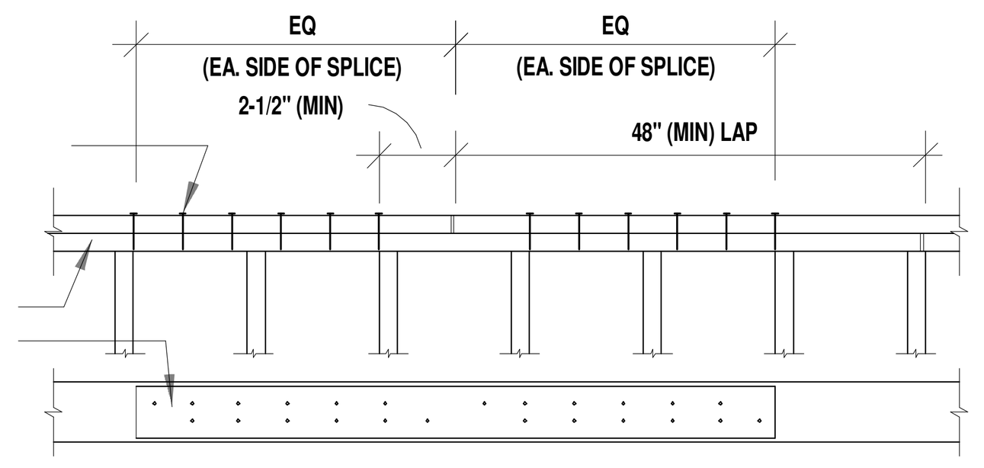


TABLE RC -3 :
LUMBER HEADER SCHEDULE

TYPE	NAILS BETWEEN BUTTS	STRAP TIE	CAPACITY (LBS)
A	(2) ROWS- 10 NAILS/ ROW 20 NAILS TOTAL / SIDE	N/A	0 <= 7,500 MARK "A" USED FOR ALL SPLICES U.O.N. SPECIFICALLY ON PLANS
B	(32) / SIDE	CMST-16	7,500 <= 12,000 (MAX)

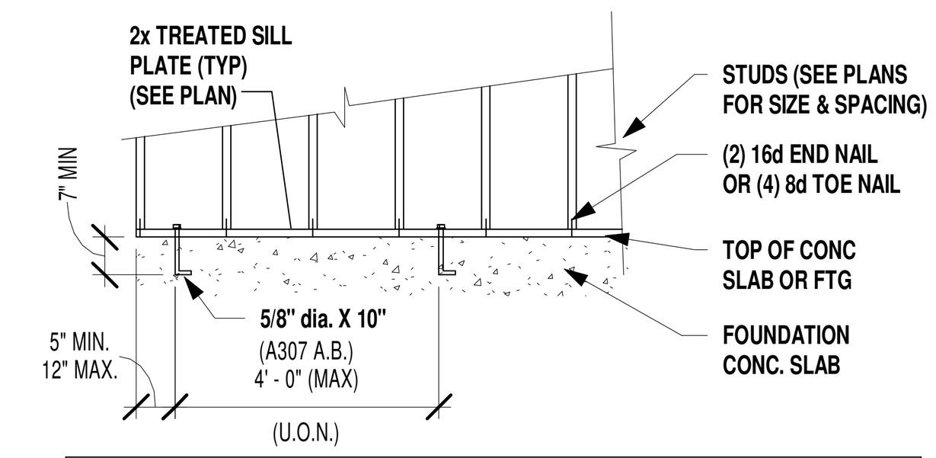
NOTES:
1. REFER TO FRAMING PLAN GENERAL NOTES FOR TYPE.
2. ALL NAILS TO BE 16d (COMMON)

3 / S06.C — TYP. DOUBLE TOP PLATE SPLICE
NTS

TABLE RC - 4 :
WASHER SCHEDULE

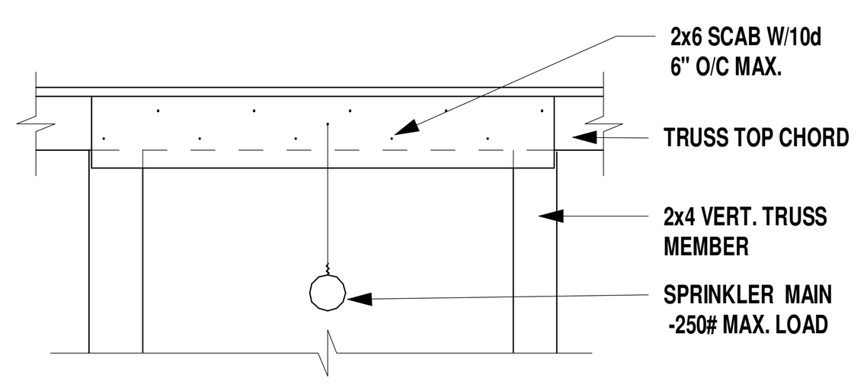
BOLT SIZE	WASHER TYPE		
	MALLEABLE IRON	HEAVY PLATE	STANDARD CUT
1/2" Ø	2-1/2" Ø x 1/4"	3" x 3" x 3/16"	1-3/8" Ø x 3/32"
USE 5/8" Ø	2-3/4" Ø x 5/16"	3" x 3" x 1/4"	1-3/4" Ø x 1/8"
3/4" Ø	3" Ø x 7/16"	3" x 3" x 5/16	2" Ø x 5/32
7/8" Ø	3-1/2" Ø x 7/16"	3" x 3" x 5/16	2-1/4" Ø x 11/64"
1" Ø	4" Ø x 1/2"	3-1/2" x 3-1/2" x 5/16"	2-1/4" Ø x 11/64"

NOTES:
1. USE STANDARD CUT WASHER FOR ALL BOLTS, U.O.N.
2. HEAVY PLATE WASHERS ARE REQUIRED @ SILL PLATE TO FOUNDATION AT ALL SHEARWALLS.
3. HEAVY PLATE WASHERS ARE REQUIRED @ HOLDOWNS.

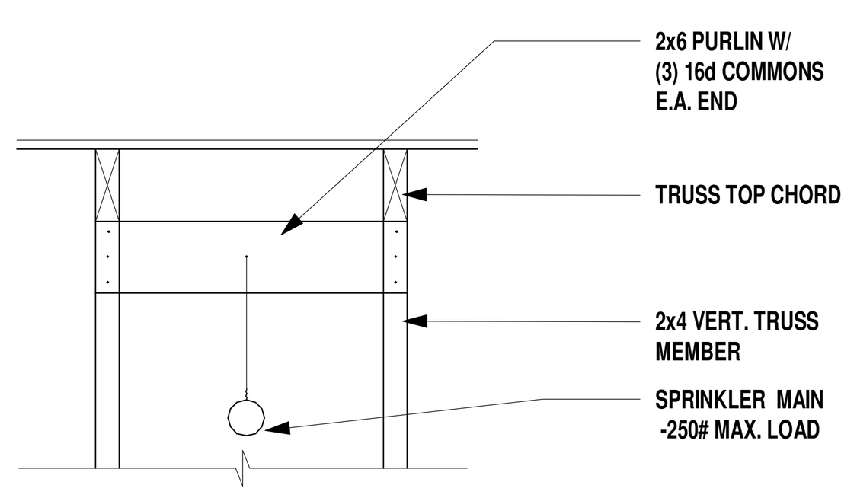


NOTE :
1. PROVIDE (2) BOLTS MIN PER SILL PIECE.
2. SEE PLANS FOR SIZE AND SPACING OF ANCHOR BOLTS AT SHEARWALLS.
3. PROVIDE ANCHOR BOLTS AT ALL PERIMETER WALLS AND SHEARWALLS.
4. PROVIDE WASHERS @EA. ANCHOR BOLT. - SEE SCHEDULE THIS SHEET.

4 / S06.C — SILL PLATE ANCHORAGE
NTS



SPRINKLER MAIN (PERPENDICULAR) TO TRUSS

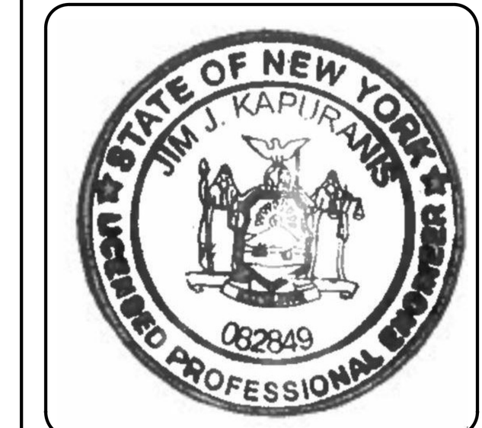


SPRINKLER MAIN (PARALLEL) TO TRUSS

5 / S06.C — SPRINKLER SUPPORT DETAILS
NTS

X:\Projects\C23\2024-2319\Drawings\JJK Drawings\JJK ROCKLAND FINAL SO SHEETS.rvt
9/9/2024 2:39:51 PM

JJK
JJK Group, Inc.
Consulting Structural Engineers
3240 Juan Tabo Bldg. C Albuquerque, New Mexico 87111 · tel. 505 296 5706 · fax 505 296 1672 · www.jjkgroup.com



ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH ROAD
W.HAVERSTRAW, NEW YORK 10993

ROUGH CARPENTER DETAILS

	REV #	DATE	COMMENTS
REVISION			
REVISION			
REVISION			
REVISION			

REVIEWS

INITIALS	

RGAS
Project Number 2246
Drawn By Author
Date 3/11/2024

S06.C

MECHANICAL NOTES

1. ALL MECHANICAL SYSTEMS AND COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE 2020 NEW YORK BUILDING CODES INCLUDING MECHANICAL, FIRE, FUEL GAS AND ENERGY CODES AS ARE APPLICABLE TO THE PROJECT IN ADDITION TO ALL NATIONAL FIRE CODES AND LOCAL AHJ AND/OR UTILITY REQUIREMENTS WHICH APPLY.
2. ALL MECHANICAL EQUIPMENT SHALL BE CLOSELY COORDINATED WITH STRUCTURAL SYSTEM, PLUMBING SYSTEM AND ELECTRICAL SYSTEM TO ENSURE PROPER COMPLIANCE WITH CODES AND ENSURE THAT ALL TRADES WILL NOT CONFLICT WITH EACH OTHER.
3. DO NOT SCALE DRAWINGS, DRAWINGS ARE DIAGRAMMATIC. SCALE WHERE INDICATED IS FOR REFERENCE ONLY.
4. PROVIDE TWO COPIES OF INSTALLATION, OPERATION, AND MAINTENANCE MANUALS TO THE OWNER WITHIN 15 CALENDAR DAYS OF ACCEPTANCE OF THE SYSTEM.
5. PROVIDE A ONE YEAR WARRANTY FOR ALL WORK PERFORMED BEGINNING ON THE DAY THE SYSTEM IS COMPLETELY OPERATIONAL AND ACCEPTABLE BY THE OWNER.
6. MECHANICAL MECHANICAL CONTRACTOR SHALL HAVE A FULL TEST AND BALANCE REPORT FOR REVIEW/APPROVAL. MECHANICAL CONTRACTOR SHALL PROVIDE A CERTIFIED TEST AND BALANCE REPORT FOR REVIEW PRIOR TO CERTIFICATE OF OCCUPANCY. SEE MECHANICAL SPECIFICATIONS FOR REQUIREMENTS.
7. THE GENERAL CONTRACTOR SHALL RETAIN THE SERVICES OF AN INDEPENDENT TEST AND BALANCE AGENCY THAT IS INDEPENDENT OF ANY CONTRACTOR, SUBCONTRACTOR, OR MANUFACTURER TO PERFORM THE TESTING AND BALANCING AND PREPARE REPORTS TO THE GENERAL CONTRACTOR. THE INDEPENDENT TEST AND BALANCE AGENCY SHALL BE A CERTIFIED MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU. RECORD DATA ON STANDARD AABC OR NEBB FORMS. MECHANICAL CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR TO ENSURE THAT ANY AND ALL REQUIRED AIR BALANCE TESTING PROCEDURE COSTS ARE INCORPORATED AND COVERED BY CONTRACTOR'S BASE BID.

INSTALLATION/MATERIALS NOTES

1. ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS, TO AVOID INTERFERENCE.
2. PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOORS OF NON– COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH NONCOMBUSTIBLE MATERIALS. PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOOR OF COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH MATERIALS EQUIVALENT TO TWO INCHES OF WOOD. FIRESTOPPING SHALL COMPLY WITH ASTM E–814.
3. MECHANICAL CONTRACTOR SHALL PROVIDE FIRE DAMPERS WHERE DUCTWORK PENETRATES ANY/ALL FIRE RATED WALLS/CEILINGS/PARTITIONS WHETHER FIRE DAMPERS INDICATED ON DRAWINGS OR NOT. COORDINATE WITH ARCH. DWGS FOR FIRE RATED LOCATIONS.
4. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND HVAC EQUIPMENT FOR MAINTENANCE AND FILTER REMOVAL

   MECHANICAL MECHANICAL CONTRACTOR SHALL VERIFY LOCATION OF ROOF PENETRATIONS FOR RELIEF HOODS AND OUTSIDE AIR HOODS WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.
5. MECHANICAL CONTRACTOR SHALL COORDINATE ANY AND ALL PAINTING OR FINISHING REQUIREMENTS WITH ARCHITECT PRIOR TO PURCHASING ANY MATERIALS.
6. MECHANICAL MECHANICAL CONTRACTOR SHALL LOCATE EXHAUST FANS, OUTLETS, AND GAS FLUES A MINIMUM OF 10'–0" FROM ANY OUTSIDE AIR INTAKE.
7. MECHANICAL MECHANICAL CONTRACTOR SHALL LOCATE ALL ROOF MOUNTED EQUIPMENT A MINIMUM OF 10'–0" FROM EDGE OF ROOF AND/OR PARAPET AS REQUIRED BY CODE REGARDLESS OF LOCATIONS INDICATED ON PLANS. COORDINATE INSTALLATION LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL PRIOR TO ROUGHING–IN.
8. ALL PIPING, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS AND ROOF SHALL BE FLASHED AND COUNTERFLASHED IN A WATERPROOF MANNER.
9. COORDINATE ROOFTOP EQUIPMENT WITH BUILDING STRUCTURE AND WORK BY OTHERS TO DETERMINE EXACT EQUIPMENT INSTALLATION LOCATION.
10. SPACE ABOVE CEILING IS LIMITED. MECHANICAL CONTRACTOR TO FIELD VERIFY EXACT DUCTWORK INSTALLATION LOCATION AND ROUTING PRIOR TO DUCTWORK FABRICATION.

SHEETMETAL/INSULATION NOTES

1. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS. ALL DUCT DIMENSIONS ON PLANS ARE SHEET METAL SIZE. DUCT DIMENSIONS HAVE BEEN INCREASED IN SIZE TO ALLOW FOR LINER WHERE REQUIRED, SIZES LISTED ARE O.D., DUCT FABRICATION DIMENSIONS. SPIRAL DUCTWORK SHALL BE DOUBLE WALL TYPE. ALL DUCT RUNOUTS TO GRD AIR TERMINAL DEVICES TO BE PROVIDED AS ROUND SPIRAL DUCT WITH EXTERNAL WRAP. ALL DUCT RUNOUTS TO BE SIZED PER GRD AIR TERMINAL NECK SIZE AS INDICATED ON GRD SCHEDULE. COORDINATE ALL DUCT SIZES PRIOR TO BIDDING, NO EXCEPTIONS. SEE MECHANICAL SPECIFICATIONS (DUCTWORK INSULATION SCHEDULE) FOR REQUIREMENTS.
2. ALL RECTANGULAR SUPPLY AND RETURN DUCTS SHALL BE LINED WITH 1" THICK DUCT LINER FOR THE FIRST 10FT FROM THE UNIT OR INDICATED ON PLANS. LINED DUCTWORK SHALL BE LABELED AS --"X--" (L). DUCT DIMENSIONS HAVE BEEN INCREASED IN SIZE TO ALLOW FOR LINER WHERE REQUIRED. ALL WRAPPED DUCTS SHALL BE WRAPPED WITH 2" THICK DUCT INSULATION. WRAPPED DUCTS SHALL BE LABELED AS --"X --" (WR).
3. OUTSIDE AIR DUCTWORK SHALL BE WRAPPED WITH 2" FIBERGLASS DUCT WRAP WITH VAPOR BARRIER IN LIEU OF DUCT LINER.
4. FLEXIBLE DUCT SHALL BE INSULATED FLEXMASTER TYPE 9M (OR EQUAL). MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE A MAXIMUM OF 4'–0".
5. PORTIONS OF DUCTWORK ABOVE CEILING VISIBLE THROUGH GRILLES, DIFFUSERS, AND REGISTERS SHALL HAVE INTERIOR AND EXTERIOR OF DUCTWORK PAINTED FLAT BLACK. IF EXTERIOR OF DUCTWORK IS INSULATED, WRAP VISIBLE INSULATION WITH FLAT BLACK VINYL WRAP.
6. ALL EXPOSED DUCTWORK TO BE PROVIDED WITH PAINT GRIP AND PAINTED TO MATCH WITH STRUCTURE OR COLOR SELECTED BY ARCHITECT, PAINTING BY GENERAL CONTRACTOR. ALL EXPOSED WRAPPED DUCTWORK TO BE PROVIDED WITH CONTINUOUS WHITE VINYL WRAP.
7. UNLESS OTHERWISE NOTED, BRANCH TAKE–OFF DUCTS SHALL BE EQUAL TO NECK SIZE OF THE GRILLE/DIFFUSER/REGISTER.

CONTROLS NOTES

1. ANY DEVICE REQUIRING A THERMOSTAT FOR CONTROL SHALL BE FURNISHED WITH A THERMOSTAT WHETHER INDICATED ON THE PLANS OR NOT. LOCATE ALL THERMOSTATS AND SWITCHES ±4'–0" ABOVE FINISH FLOOR. VERIFY EXACT LOCATION OF THERMOSTATS WITH THE OWNER/ARCHITECT BEFORE ROUGHING–IN. PROVIDE THERMOSTAT WITH INSULATED SUB–BASE OPTION WHERE INSTALLED ON EXTERIOR WALL. PROVIDE THERMOSTAT WITH WATER RESISTANT OPTION WHERE USED IN WET ENVIRONMENT AREA.
2. PROVIDE MAGNETIC MOTOR STARTER WITH HAND–OFF–AUTO (H.O.A) SELECTOR SWITCH FOR EACH MOTOR SPECIFIED TO OPERATE AT 200 VOLTS OR HIGHER. PROVIDE MANUAL STARTER WITH HAND–OFF–AUTO (H.O.A) SELECTOR SWITCH FOR EACH MOTOR SPECIFIED TO OPERATE AT 120 VOLTS. ALL EQUIPMENT SUPPLIED WITH INTEGRAL STARTERS SHALL BE PROVIDED WITH ADDITIONAL SEPARATE DISCONNECT BY ELECTRICAL CONTRACTOR, NO EXCEPTIONS. COORDINATE EQUIPMENT DISCONNECTS WITH ELECTRICAL CONTRACTOR.
3. DUCT MOUNTED SMOKE DETECTORS SHALL BE WIRED TO SUPERVISORY INDICATOR DEVICES TO MEET NFPA 72 REQUIREMENTS. EACH DEVICE MUST BE PERMANENTLY LABELED TO ACCURATELY IDENTIFY THE UNIT SERVED TO MEET NFPA 72 REQUIREMENTS. SEE PLANS FOR INFORMATION.
4. ALL CONTROL VOLTAGE WIRING IN EXPOSED AREAS TO BE IN RIGID CONDUIT. ALL CONTROL VOLTAGE INSTALLED WITHIN A PLENUM RATED CEILING SHALL UTILIZE PLENUM RATED CABLE OR BE INSTALLED IN PLENUM RATED RIGID CONDUIT.
5. COORDINATE THE EXACT LOCATION OF ALL THERMOSTATS WITH FINAL FURNITURE LAYOUT, EQUIPMENT LAYOUT, ARCH AND OWNERS REPRESENTATIVES.

PIPING NOTES

1. PROVIDE UNIONS, FLANGES OR COUPLINGS AT CONNECTION TO ALL VALVES AND EQUIPMENT. DO NOT USE DIRECT WELDED OR THREADED CONNECTIONS TO VALVES, EQUIPMENT OR OTHER APPARATUS.
2. PROVIDE NON–CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
3. ALL VALVES AND SPECIALTIES SHALL BE LINE SIZE UNLESS NOTED OTHERWISE, USING ECCENTRIC REDUCERS ON PUMP SUCTION AND AUTOMATIC VALVES AND CONCENTRIC REDUCERS ON PUMP DISCHARGE.
4. ALL PIPING BELOW ROOF SHALL BE SUPPORTED WITH CARBON STEEL, ADJUSTABLE, CLEVIS HANGERS AT 10'–0" ON CENTER. ADDITIONAL HANGERS SHALL BE PROVIDE AS REQUIRED TO PREVENT WEIGHT OF EQUIPMENT BEING PLACED ON EQUIPMENT. PROVIDE RIGID INSULATION AND SHEET METAL PIPE SHIELDS AT HANGER LOCATIONS.
5. EXTEND ALL DRAIN LINES TO THE NEAREST FLOOR DRAIN OR AS INDICATED ON PLANS. COORDINATE DISCHARGE REQUIREMENTS WITH LOCAL AHJ PRIOR TO ROUGHING–IN.
6. CONDENSATE DRAIN PIPING, TRAPS, AND FITTINGS SHALL BE COPPER TYPE "L". SCHEDULE 40 PVC PIPE AND FITTINGS SHALL BE ACCEPTABLE FOR PIPE INSTALLED ON ROOF ONLY. DRAINS FROM HVAC EQUIPMENT SHALL BE TRAPPED. TERMINATE ROOFTOP UNIT DRAINS ON A CONCRETE SPLASHBLOCK.
7. ALL REFRIGERANT PIPE SHALL BE NITROGENIZED ACR COPPER TUBE AND INSULATED WITH 1" ARMAFLEX.

MECHANICAL LEGEND

SYMBOLS (NOT ALL SYMBOLS SHOWN ARE USED)

- SUPPLY AIR DUCT
- RETURN AIR DUCT
- EXHAUST AIR DUCT
- SUPPLY DUCT TURNING UP
- RETURN/EXHAUST DUCT TURNING UP
- SUPPLY DUCT TURNING DOWN
- RETURN/EXHAUST DUCT TURNING DOWN
- RISE IN DUCT
- DROP IN DUCT
- TRANSITION IN DUCT, SQUARE TO SQUARE
- DUCT ROUTED UP/DOWN
- TRANSITION IN DUCT, SQUARE TO ROUND
- DUCT CAPPED AND SEALED
- DUCTWORK WITH INTERNAL LINER (X"LINED)
- DUCTWORK TRANSITION FROM HARD ROUND TO FLEXIBLE
- SQUARE THROAT DUCT ELBOW WITH TURNING VANES
- SQUARE THROAT DUCT ELBOW WITHOUT TURNING VANES
- FULL RADIUS ELBOW
- FLEXIBLE DUCT CONNECTION
- 45 DEGREE TAP
- CONICAL TAP
- SPIN–IN FITTING W/ VOLUME DAMPER & FLEXIBLE DUCT
- ROUND FLEXIBLE DUCT
- VOLUME BALANCING DAMPER
- BOTTOM REGISTER
- SQUARE–TO–ROUND BRANCH DUCT TAKE–OFF
- TRANSITION
- TEE WITH TURNING VANES AND SPLITTER DAMPER
- SQUARE ELBOW WITH TURNING VANES
- S.A. CFM / R.A. CFM / E.A. CFM — SEE AIR DISTRIBUTION SCHEDULE — AIR QUANTITY REQUIRED
- PIPE UP
- PIPE DOWN
- VALVE IN VERTICAL
- G — GAS PIPING ON ROOF, SIZED PER PLANS
- G — GAS PIPING BELOW ROOF, SIZED PER PLANS
- CD — CONDENSATE DRAIN PIPING
- RS — REFRIGERANT SUCTION LINE
- RL — REFRIGERANT LIQUID LINE
- HG — REFRIGERANT HOT GAS LINE
- CONNECT NEW TO EXISTING
- THROUGH PLAN SECTION
- ACCESS DOOR/PANEL
- 3' MIN — EQUIPMENT ELECTRICAL ACCESS WITH SERVICE CLEARANCE OUTLINE

SYMBOLS (NOT ALL SYMBOLS SHOWN ARE USED)

- SUPPLY AIR DIFFUSER
- RETURN AIR DIFFUSER
- EXHAUST AIR DIFFUSER
- SUPPLY AIR SPIRAL DUCT DIFFUSER
- SUPPLY AIR SPIRAL DUCT DIFFUSER
- DOOR TRANSFER AIR GRILLE
- 1" DOOR UNDERCUT, COORD /W G.C. & ARCH
- WALL MOUNTED THERMOSTAT
- WALL MOUNTED PRESSURE CONTROLLER
- 120V — 120V/1Ø MOTOR OPERATED DAMPER
- 24V — 24–VOLT MOTOR OPERATED DAMPER
- DUCT MOUNTED SMOKE DETECTOR
- SPLITTER DAMPER
- ELECTRIC WALL HEATER /W INTEGRAL THERMOSTAT
- IN–LINE EXHAUST FAN
- CEILING EXHAUST FAN
- SPLIT AIR HANDLING UNIT (VERTICAL)
- SPLIT DOAS UNIT (HORIZONTAL)
- SPLIT SYSTEM OUTDOOR UNIT
- MINI–SPLIT SYSTEM OUTDOOR UNIT
- MINI–SPLIT SYSTEM INDOOR WALL–MOUNTED UNIT
- CEILING MOUNTED FAN FILTER UNIT
- EQUIPMENT CLEARANCES, TYPICAL

ABBREVIATIONS (NOT ALL ABBREVIATIONS SHOWN ARE USED)

AHU	AIR HANDLING UNIT
AC	AIR CURTAIN
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
APD	AIR PRESSURE DROP
ATC	AUTOMATIC TEMPERATURE CONTROLS
BC	BRANCH CONROL BOX
BE	BOTTOM ELEVATION
BHP	BRAKE HORSE POWER
BTUH	BRITISH THERMAL UNITS PER HOUR
CUH	CABINET UNIT HEATER
CC	COOLING COIL
CD	CONDENSATE DRAIN LINE
CL	CENTERLINE
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CHWS/R	CHILLED WATER SUPPLY/RETURN
CW	CITY WATER (DOMESTIC)
CP	CONDENSATE PUMP
D	DRAIN
DB	DRY BULB TEMPERATURE
DIA, Ø	DIAMETER
DN	DOWN
DWS	DOUBLE WALL SPIRAL DUCTWORK
DWG	DRAWING
EA	EXHAUST AIR
EAD	EXHAUST AIR DAMPER
EDP	EMERGENCY DRIP PAN
EG	EXISTING GAS PIPING
(E)	EXISTING
(ER)	EXISTING RELOCATED
(ERR)	EXISTING REMOVED AND RELOCATED
ESP	EXTERNAL STATIC PRESSURE
EF	EXHAUST FAN
FCU	FAN COIL UNIT
F	FAN
FC	FLEXIBLE CONNECTION
G	GRILLE
GF	GAS FURNACE
GL	GLYCOL PIPING (BY OTHERS)
HC	HEATING COIL
HG	HOT GAS PIPING
HP	HORSEPOWER
HWS/R	HEATING HOT WATER SUPPLY/RETURN
KEF	KITCHEN EXHAUST FAN
(L)	LINED DUCTWORK
LPS	LOW PRESSURE STEAM
MUW	MAKE UP WATER
MAX	MAXIMUM
MA	MIXED AIR
MBH	ONE THOUSAND BTUH
MD	MOTORIZED DAMPER
MTD	MOUNTED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAD	OUTSIDE AIR DAMPER
OC	ON CENTER
OSD	OPEN SITE DRAIN
PC	PUMPED CONDENSATE
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
PH	PHASE
PMU	PAD MOUNTED UNIT
RA	RETURN AIR
RAD	RETURN AIR DAMPER
RAG	RETURN AIR GRILLE
(R)	REMOVE
R	RETURN FAN
RS/RL	REFRIGERANT SUCTION/LIQUID LINES
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SENS	SENSIBLE
TD	TRANSFER DUCT
TYP	TYPICAL
TOS	TOP OF SLAB
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VF	VENTILATION FAN
VRV	VARIABLE REFRIG. VOLUME
V	VOLTS
VD	VOLUME DAMPER
VIF	VERIFY IN FIELD
W/	WITH
WMS	WIRE MESH SCREEN
WO	WALL OPENING
(WR)	WRAPPED DUCTWORK

MECHANICAL DRAWING SCHEDULE

DRAWING NUMBER	DESCRIPTION
M001	MECHANICAL LEGENDS & GENERAL NOTES
M002	MECHANICAL SPECIFICATIONS
M003	MECHANICAL SCHEDULES
M004	MECHANICAL SCHEDULES & NOTES
M005	MECHANICAL CALCULATIONS
M006	MECHANICAL CALCULATIONS
M007	MECHANICAL DETAILS
M101	MAIN FLOOR PLAN – MECHANICAL – WEST
M102	MAIN FLOOR PLAN – MECHANICAL – EAST
M103	UPPER FLOOR PLAN – MECHANICAL – WEST
M104	UPPER FLOOR PLAN – MECHANICAL – EAST
M105	ROOF PLAN – MECHANICAL – WEST
M106	ROOF PLAN – MECHANICAL – EAST
M201	VRF PIPING SCHEMATICS

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704-995-7020

BDA

STATE OF NEW YORK — MICHAEL SCHON — 071324 — LICENSED PROFESSIONAL ENGINEER

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MECHANICAL LEGENDS & GENERAL NOTES

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M001

MECHANICAL SPECIFICATIONS

HVAC GENERAL
REFER TO ALL OTHER DRAWINGS AND SPECIFICATIONS, AND BE RESPONSIBLE FOR ALL APPLICABLE PROVISIONS THEREIN. FURNISH AND INSTALL ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE SYSTEM. ANY APPLIANCES OR MATERIALS OBVIOUSLY A PART OF THE SYSTEM AND NECESSARY FOR ITS PROPER OPERATION, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES, NFPA 90A, AND THE BUILDING REGULATIONS. ATTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES. EQUIPMENT AND MATERIALS SHALL BE NEW UNLESS OTHERWISE SPECIFIED. MECHANICAL CONTRACTOR SHALL BE LICENSED TO HANDLE CFC REFRIGERANTS.

DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING, OFFSET, DROP AND RISE OF RUNS, AND DETAIL. INSTALL DUCTS, EQUIPMENT, AND CONTROLS IN A NEAT, WORKMANLIKE MANNER AND IN ACCORDANCE WITH GOOD PRACTICE FOR A COMPLETE, WORKABLE INSTALLATION. AVOID CONFLICT WITH OTHER WORK; MAKE ADEQUATE PROVISIONS FOR PREVENTING NOISE AND VIBRATION. DRAWINGS INDICATE LOCATIONS OF FIXTURES, APPARATUS, DUCTWORK, AND PIPING; WHILE THESE ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS NECESSARY TO CHANGE THE LOCATION OF SOME TO ACCOMMODATE BUILDING CONDITIONS, MAKE CHANGES WITHOUT ADDITIONAL COST TO THE OWNER AND AS APPROVED BY THE ARCHITECT. PROVIDE ADEQUATE ACCESS TO EQUIPMENT AND APPARATUS REQUIRING OPERATION, SERVICE, OR MAINTENANCE WITHIN THE LIFE OF THE SYSTEM. DO NOT RUN PIPING OR DUCTWORK, OR LOCATE EQUIPMENT (WITH RESPECT TO SWITCHBOARDS, PANEL BOARDS, POWER PANELS, MOTOR CONTROL CENTERS OR DRY TYPE TRANSFORMERS) WITHIN 42 INCHES IN FRONT OF EQUIPMENT, OVER EQUIPMENT, OR WITHIN 36 INCHES HORIZONTALLY OF SAME SPACE.

EXISTING CONDITIONS
CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE JOB CONDITIONS BEFORE SUBMITTING HIS PROPOSAL. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS AND SIZES OF ALL EXISTING UTILITY SERVICES PRIOR TO SUBMITTING HIS PROPOSAL. NO CONSIDERATION WILL BE GIVEN TO CLAIMS FOR EXTRA COST ARISING FROM CONTRACTOR'S FAILURE TO BE FULLY COGNIZANT OF JOB OR SITE CONDITIONS EXISTING AT TIME OF ACCEPTANCE OF BID

IF, DURING THIS INSPECTION, THE CONTRACTOR FINDS ANY OBSTRUCTION OR INTERFERENCE THAT MAY PROHIBIT THE PROPER INSTALLATION OF HIS WORK, HE IS TO MAKE IT KNOWN TO THE BUILDING MANAGEMENT AND/OR OWNER AND TENANT BEFORE AND AT THE TIME OF SUBMITTING HIS PROPOSAL.

BY SUBMISSION OF THE BID, IT IS UNDERSTOOD THAT SUCH INSPECTION HAS BEEN MADE AND INCLUDES ALL THE MATERIALS AND REQUIRED RELOCATION FOR ALL WORK.

ACTIVE SERVICES: WHEN ENCOUNTERED IN WORK, PROTECT, BRACE, OR SUPPORT EXISTING ACTIVE SEWERS, GAS, AND OTHER SERVICES REQUIRED FOR PROPER EXECUTION OF WORK. IF EXISTING ACTIVE SERVICES ARE ENCOUNTERED THAT REQUIRE RELOCATION, RELOCATE AS APPROVED. DO NOT PREVENT OR DISTURB OPERATION OF ACTIVE SERVICES THAT ARE TO REMAIN.

INACTIVE SERVICES: WHEN ENCOUNTERED IN WORK, REMOVE, CAP, OR PLUG INACTIVE SERVICES, AS INDICATED. OPENINGS IN THE DUCTWORK SHALL BE PATCHED WITH SHEET METAL, SEALED AIRTIGHT WITH DUCT SEALANT, AND RE-INSULATED.

INTERRUPTION OF SERVICES: WHERE WORK MAKES TEMPORARY SHUTDOWNS OF SERVICES UNAVOIDABLE, SHUT DOWN AT NIGHT, OR AT SUCH TIMES AS APPROVED BY OWNER AND THE BUILDING MANAGEMENT WHICH WILL CAUSE LEAST INTERFERENCE WITH ESTABLISHED OPERATING ROUTINE. ARRANGE WORK TO ASSURE THAT SERVICES WILL BE SHUT DOWN ONLY DURING TIME ACTUALLY REQUIRED TO MAKE NECESSARY CONNECTION TO EXISTING WORK.

WHERE EXISTING WALLS, CEILINGS, FLOORS, ETC., ARE CUT OR OTHERWISE DAMAGED DURING CONSTRUCTION, REPAIR ALL SURFACES TO THEIR ORIGINAL CONDITION.

COORDINATION
COORDINATE ALL WORK UNDER THIS DIVISION WITH THE WORK UNDER OTHER DIVISIONS. PROVIDE ADJUSTMENTS AS NECESSARY. EQUIPMENT, APPARATUS, DUCTWORK, PIPING, ETC., INSTALLED WITHOUT REGARD FOR THE SPEC REQUIREMENTS OR OTHER TRADES WILL BE REWORKED AT THE EXPENSE OF THE INSTALLING SUBCONTRACTOR IF IT CREATES AN UNNECESSARY HINDRANCE TO THE INSTALLATION OF ANOTHER TRADE'S WORK. ALL ITEMS MOUNTED OR BELOW THE CEILING, AND ANY ITEM PENETRATING THE CEILING, SHALL BE COORDINATED WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.

PROTECTION OF WORK DURING CONSTRUCTION
PROVIDE PROTECTIVE COVERS, SKIDS, PLUGS OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION. PROTECT EXPOSED COILS WITH PLYWOOD OR OTHER SUITABLE RIGID COVERS TO AVOID DAMAGE TO FINS.

CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST DAMAGING OR DISRUPTING BUILDING SYSTEMS, WIRING OR CONTROL TUBING FOR ADJACENT TENANTS. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S COST.

PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE. ANY DAMAGE SHALL BE REPAIRED USING THE SAME MATERIALS AT THE CONTRACTOR'S COST.

TEST AND BALANCE
TEST AND BALANCE HVAC AIR SYSTEMS TO WITHIN +10%, −5% OF DESIGN FLOW.

CHECK ALL FANS, INSTRUMENTATION DEVICES, CONTROL DEVICES, DAMPERS, ETC., FOR PROPER OPERATION AND CALIBRATION. REPORT DEFICIENCIES THAT CANNOT BE CORRECTED. MARK AND LOCK DAMPER AT THEIR PROPER POSITION. ADJUST FANS FOR THE CFM SHOWN ON THE FLOOR PLAN.

ADJUST, TEST AND CONFIRM DESIGN AIR FLOW RATES, PRESSURES, TEMPERATURES, AIR QUANTITIES, EQUIPMENT SPEED, AND MOTOR AMPERAGES FOR EACH SEGMENT BRANCH AND COMPONENT OF EACH SYSTEM.

VERIFY THAT DIFFUSER DISCHARGE PATTERNS HAVE BEEN PROPERLY SET. AIR FLOWS SHALL BE BALANCED WITH THE VOLUME DAMPERS INSTALLED IN BRANCH DUCTWORK. OPPOSED BLADE DAMPERS (OBD) IN THE DIFFUSERS SHALL BE SET IN THE FULLY OPEN POSITION DURING BALANCING. AFTER THE MAIN SYSTEM IS BALANCED WITHIN LIMITS SPECIFIED ABOVE, OBD CAN BE USED FOR MINOR ADJUSTMENT.

ADJUSTMENTS AND TESTS SHALL BE MADE UNDER SIMULATED MAXIMUM LOAD CONDITIONS.

THE GENERAL CONTRACTOR SHALL RETAIN THE SERVICES OF AN INDEPENDENT TEST AND BALANCE AGENCY THAT IS INDEPENDENT OF ANY CONTRACTOR, SUBCONTRACTOR, OR MANUFACTURER TO PERFORM THE TESTING AND BALANCING AND PREPARE REPORTS TO THE GENERAL CONTRACTOR. THE INDEPENDENT TEST AND BALANCE AGENCY SHALL BE A CERTIFIED MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU. RECORD DATA ON STANDARD AABC OR NEBB FORMS. MECHANICAL CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR TO ENSURE THAT ANY AND ALL REQUIRED AIR BALANCE TESTING PROCEDURE COSTS ARE INCORPORATED AND COVERED BY CONTRACTOR'S BASE BID.

THE TEST AND BALANCE AGENCY SHALL PROVIDE EQUIPMENT, PERSONNEL, AND A COPY OF THE TEST AND BALANCE REPORT AT THE ENGINEER'S FINAL INSPECTION FOR SPOT-CHECKING. ANY SYSTEM FOUND IMPROPERLY BALANCED OR NOT IN AGREEMENT WITH THE REPORT SHALL BE RE-BALANCED AND A REVISED REPORT SHALL BE SUBMITTED.

THE TEST AND BALANCE AGENCY SHALL PERFORM A "COMFORT" BALANCE 45 DAYS AFTER TENANT MOVES IN.

RECORD DRAWINGS
UPON COMPLETION OF PROJECT, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF REPRODUCIBLE DRAWINGS REFLECTING THE "AS BUILT" CONDITION OF THE MECHANICAL SYSTEMS.

OPERATING AND MAINTENANCE MANUALS
MECHANICAL CONTRACTOR SHALL SUBMIT OPERATING AND MAINTENANCE MANUALS UPON COMPLETION OF THE PROJECT. MANUALS TO BE IN ACCORDANCE WITH C408.2.5.2 OF 2020 NEW YORK STATE ENERGY CONSERVATION CODE.

GUARANTEE
MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AGAINST DEFECTS FOR ONE YEAR. PROVIDE ADDITIONAL FOUR YEARS WARRANTY ON ALL COMPRESSORS.

SLEEVES
SLEEVES SHALL BE PROVIDED WHERE PIPES PASS THROUGH WALLS, FLOORS, AND ROOFS; IRON PIPES PASSING THROUGH MASONRY WALL MAY BE BUILT INTO THE WALL. SLEEVES SHALL BE STANDARD WEIGHT STEEL PIPE, EXCEPT SLEEVES FOR CONCEALED PIPING THROUGH FLOORS NOT IN STRUCTURAL MEMBERS; THEY MAY BE 25 GAUGE GALVANIZED SHEET METAL. FLOOR SLEEVES FOR PIPING SHALL EXTEND FROM THE BOTTOM OF THE SLAB TO 2 INCHES ABOVE THE FINISHED FLOOR. WALL SLEEVES SHALL BE FULL THICKNESS OF WALLS. SEAL BETWEEN PIPING AND SLEEVE WITH FIRE-RATED CAULK AT ALL PENETRATIONS OF FIRE-RATED WALLS, PARTITIONS OR FLOORS. MAKE SLEEVES THROUGH OUTSIDE WALLS WATERTIGHT. CAULK BETWEEN UN-INSULATED PIPE AND SLEEVE. SIZE SLEEVES FOR INSULATED PIPES TO ALLOW FULL THICKNESS INSULATION.

ELECTRICAL WORK
ALL ELECTRICAL WORK AND INSTALLATION PROVIDED UNDER THIS DIVISION SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND THE REQUIREMENTS OF DIVISION 16. ALL POWER WIRING AND FINAL POWER CONNECTIONS TO THE SYSTEM SHALL BE PROVIDED UNDER DIVISION 16. CONTROL WIRING (120V AND LESS) SHALL BE PROVIDED UNDER DIVISION 15 AND EXTENDED FROM THE 120V POWER CIRCUITS INDICATED ON THE ELECTRICAL DRAWINGS. ALL WIRING FOR VOLTAGES HIGHER THAN 30 VOLTS SHALL BE DONE BY A LICENSED ELECTRICIAN. ALL ELECTRICAL CHARACTERISTICS SHALL BE TAKEN FROM THE ELECTRICAL DRAWINGS AND SPECIFICATIONS AND COORDINATED BEFORE EQUIPMENT IS ORDERED OR SUBMITTED. ALL WIRING IN THE CEILING PLENUM SHALL BE PLENUM-RATED CABLE OR IN CONDUIT.

EQUIPMENT IDENTIFICATION
PROVIDE LABELS FOR EACH EQUIPMENT, STARTER, AND CONTROL SWITCH. LABELS TO BE ENGRAVED, LAMINATED, BAKELITE NAMEPLATES WITH ¼ INCH HIGH WHITE CUT LETTERS; SECURE TO STARTER OR SWITCH.

EQUIPMENT, MATERIALS AND BID BASIS
SPECIFIED MANUFACTURER'S NAMES AND MODEL NUMBERS ARE FOR THE PURPOSE OF DESCRIBING TYPE, CAPACITY, FUNCTION, AND QUALITY OF EQUIPMENT AND MATERIALS TO BE USED. UNLESS "OR EQUAL" OR SPECIFICALLY STATED, BIDS SHALL BE BASED ON EQUIPMENT NAMES. CAPACITIES INDICATED TAKE PRECEDENCE OVER MODEL NUMBERS.

EQUIPMENT SUPPORT
SUPPORT ALL CEILING-MOUNTED EQUIPMENT, DUCTWORK, AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS AND EQUIPMENT, PROVIDE ADDITIONAL STEEL FRAMING.
THIS CONTRACTOR SHALL COORDINATE SUPPORTS WITH THE BUILDING MANAGEMENT AND SUBMIT THE METHOD OF SUPPORT FOR REVIEW TO THE BUILDING MANAGEMENT.

OPENINGS THROUGH ROOF
PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOF INTEGRITY OF THIS BUILDING AS REQUIRED BY THE REMOVAL AND/OR INSTALLATION OF PIPES, DUCTS, CONDUITS, AND EQUIPMENT. SUBMIT FOR REVIEW TO THE BUILDING MANAGEMENT.

VIBRATION ISOLATORS
VIBRATION ISOLATORS FOR FANS SHALL BE THE HANGER TYPE AND SHALL CONTAIN A STEEL SPRING AND 0.3" DEFLECTION NEOPRENE ELEMENT IN SERIES. THE NEOPRENE ELEMENT SHALL BE MOLDED WITH A ROD ISOLATION BUSHING THAT PASSES THROUGH THE HANGER BOX.

SPRING DIAMETERS AND HANGER BOX LOWER HOLE SIZES SHALL BE LARGE ENOUGH TO PERMIT THE HANGER ROD TO SWING THROUGH A 15 DEGREE ARC BEFORE CONTACTING THE HOLE AND SHORT CIRCUITING THE SPRING. SPRINGS SHALL HAVE A MINIMUM ADDITIONAL TRAVEL TO SOLID HEIGHT EQUAL TO 50% OF THE RATED DEFLECTION.

SUSPENDED EQUIPMENT SHALL BE PROVIDED WITH VIBRATION ISOLATION HANGERS WHICH SHALL BE FURNISHED WITH THE UNIT, AND ISOLATOR SHALL BE MATCHED TO EQUIPMENT WEIGHT AND SUPPORT LOCATIONS. ISOLATION HANGERS SHALL BE COMBINATION STEEL SPRING AND NEOPRENE-IN-SHEAR WITH STEEL HOUSING. ISOLATORS SHALL HAVE A MINIMUM OPERATING DEFLECTION OF 1 ½". SPRINGS SHALL HAVE A MINIMUM ADDITIONAL TRAVEL FOR 50% BETWEEN THE DESIGN HEIGHT AND THE SOLID HEIGHT.

HVAC INSULATION
QUALITY ASSURANCE: SPECIFIED COMPONENTS OF THIS INSULATION SYSTEM, INCLUDING FACINGS, MASTICS AND ADHESIVES, SHALL HAVE A FIRE HAZARD RATING NOT TO EXCEED 25 FOR FLAME SPREAD AND 50 FOR SMOKE DEVELOPED RATING, AS PER TESTS CONDUCTED IN ACCORDANCE WITH ASTM E84 (NFPA 255) METHODS.

PIPE INSULATION:
  TYPE P1 ASTM C547, CLASS 1 (−20 DEGREES F TO 500 DEGREES F):
    FIBERGLASS, MINIMUM 4 POUNDS PER CUBIC FOOT (P.C.F.) DENSITY, K FACTOR 0.23 MAXIMUM AT 75 DEGREES F MEAN, WITH FACTORY-APPLIED ALL-SERVICE-JACKET (ASJ) COMPOSED OF REINFORCED KRAFT AND ALUMINUM FOIL LAMINATE. JACKET SHALL HAVE SELF-SEALING LAP TO FACILITATE CLOSING LONGITUDINAL AND END JOINTS.

  APPROVED PRODUCTS:
    CERTAINED 500 DEGREE SNAP-ON ASJ/SSL
    MANVILLE MICRO-LOK AP-T
    OWENS/CORNING FIBERGLASS 25 ASJ/SSL
    KNAUF PIPE INSULATION ASJ/SSL

  TYPE P2 ASTM C534 (−40 DEGREES F TO 220 DEGREES F:)
    FLEXIBLE, CLOSED-CELL ELASTOMERIC, NOMINAL 6 PCF DENSITY, K FACTOR 0.27 MAXIMUM AT 75 DEGREES F MEAN.

  APPROVED PRODUCTS:
    ARMSTRONG AP ARMAFLEX
    MANVILLE AEROTUBE II
    NOMACO THERMA-CEL
    RUBATEX R-180-F5

DUCT INSULATION:
  TYPE D1 ASTM C553 TYPE 1, CLASS B3:
    FIBERGLASS, NOMINAL 1 P.C.F. DENSITY BLANKET, K FACTOR 0.31 MAXIMUM AT 75 DEGREES F MEAN, WITH FACTORY APPLIED FSK (FOIL-SCRIM-KRAFT) VAPOR BARRIER JACKET, FOR TEMPERATURES TO TEMPERATURES 250 DEGREES F.

  APPROVED PRODUCTS:
    CERTAINED "STANDARD DUCT WRAP"
    MANVILLE "MICROLITE"
    OWENS/CORNING FIBERGLASS RFK-75
    KNAUF "DUCTWRAP"

  TYPE D3:
    FIBERGLASS, NOMINAL 2.0 P.C.F. DENSITY LINER, K FACTOR 0.26 MAXIMUM AT 75 DEGREES F MEAN, BLACK COATING, FOR TEMPERATURES TO 250 DEGREES F.

  APPROVED PRODUCTS:
    CERTAINED ULTRALITE DUCT LINER 200
    MANVILLE LINACOUSTIC
    KNAUF DUCT LINER M

INSTALLATION OF PIPE INSULATION:
  INSTALL INSULATION ON PIPE SYSTEMS SUBSEQUENT TO TESTING AND ACCEPTANCE OF TEST.

  MAINTAIN INTEGRITY OF VAPOR-BARRIER JACKETS ON PIPE INSULATION, AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE. SEAL OPEN ENDS OF INSULATION WITH MASTIC. SECTIONALLY SEAL ALL BUTT ENDS OF ALL COLD WATER PIPING INSULATION AT FITTINGS WITH WHITE VAPOR BARRIER COATING.

  COVER VALVES, FLANGES, FITTINGS, AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN. INSTALL FACTORY MOLDED, PRECUT OR JOB FABRICATED UNITS (AT INSTALLER'S OPTION). FINISH COLD PIPE FITTINGS WITH WHITE VAPOR BARRIER COATING AND HOT PIPING WITH WHITE VINYL ACRYLIC MASTIC, BOTH REINFORCED WITH GLASS CLOTH.

  EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.

  INSTALL PROTECTIVE METAL SHIELDS AND FOAM GLASS INSERTS WHERE PIPE HANGERS BEAR ON OUTSIDE ON INSULATION.

INSTALLATION OF DUCTWORK INSULATION:
  MAINTAIN INTEGRITY OF VAPOR-BARRIER ON DUCTWORK INSULATION, AND PROTECT IT TO PREVENT PUNCTURE AND OTHER DAMAGE. TAPE ALL PUNCTURES. SECURE ALL DUCTWORK WITH GALVANIZED WIRE 12" O.C. SECURE DUCTWORK WITH OUTWARD CLINCHING STAPLES. SEAL ALL LONGITUDINAL AND CIRCUMFERENTIAL JOINTS WITH FSK TAPE.

  EXTEND DUCTWORK INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS, AND SIMILAR DUCTWORK PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.

  EXCEPT AS OTHERWISE INDICATED, OMIT INSULATION ON DUCTWORK WHERE INTERNAL INSULATION OR SOUND ABSORBING LININGS HAVE BEEN INSTALLED.

  ALL INTERNAL INSULATION SHALL BE ADHERED TO THE DUCT WITH 100% COVERAGE OF APPROVED FIRE RETARDANT MASTIC. ALL EDGES SHALL BE SEALED. ANY ABRASIONS OR TEARS REPAIRED WITH MASTIC.
  DUCT DIMENSIONS HAVE BEEN INCREASED IN SIZE TO ALLOW FOR LINER WHERE REQUIRED.

INSULATION REQUIREMENTS:

INSULATION SCHEDULE

LOCATION	WRAP	WRAP SIZE (IN.)	WRAP TYPE	WRAP R-VAL	LINER	LINER SIZE (IN.)	LINER LOCATION	LINER TYPE	LINER R-VAL
INDOOR CONCEALED SA/RA	☒	2"	D1	6.0	☒	1"	FIRST 10' FROM UNIT	D3	4.2
INDOOR EXPOSED SA/RA	☐	–	–	–	☒	1"	CONTINUOUS	D3	4.2
OUTDOOR CONCEALED SA/RA	☒	2"	D1	8.0	☒	2"	CONTINUOUS	D3	8.0
OUTDOOR EXPOSED SA/RA	☐	–	–	–	☐	–	–	–	–
INDOOR CONCEALED OA	☒	2"	D1	6.0	☐	–	–	–	–
INDOOR EXPOSED OA	☐	–	–	–	☐	–	–	–	–
INDOOR EA	☐	2"	D1	6.0	☐	–	–	–	–
INDOOR TRANSFER	☐	–	–	–	☐	1"	CONTINUOUS	D3	4.2
TYPE I KITCHEN EA	☐	–	–	–	☐	–	–	–	–
REFRIGERANT PIPING	☒	1/2"	P1	CODE MIN.	☐	–	–	–	–
CONDENSATE PIPING	☒	1/2"	P1	CODE MIN.	☐	–	–	–	–

MAINTENANCE AND SERVICE
THIS CONTRACTOR SHALL INCLUDE AND ASSUME COMPLETE RESPONSIBILITY FOR START-UP, 24 HOURS A DAY SERVICE WITH A RESPONSE TIME NOT TO EXCEED FOUR (4) HOURS.
MAINTENANCE ON A QUARTERLY BASIS (FOUR MAINTENANCE INSPECTIONS A YEAR) FOR A PERIOD OF ONE YEAR FOR ALL HVAC EQUIPMENT, INCLUDING PRE PURCHASED EQUIPMENT AS IS SAID PRE PURCHASED EQUIPMENT WERE PURCHASED BY THIS CONTRACTOR, AND INCLUDING EXISTING EQUIPMENT WITHIN TENANT SPACE.
PROVIDE COST TO PERFORM PREVENTATIVE MAINTENANCE FOR THE FIRST YEAR ONLY.

THIS ONE-YEAR MAINTENANCE CONTRACT SHALL INCLUDE, BUT IS NOT LIMITED TO THE FOLLOWING WORK:
  CHECK LINES FOR LEAKAGE OF REFRIGERANT/WATER
  REFILL LINES IF NECESSARY
  LUBRICATE MOTORS
  CHECK OPERATION OF THERMOSTATS
  REPLACE RETURN AIR FILTERS
  CLEAN CONDENSER COILS
  CHECK AND TIGHTEN ELECTRICAL CONNECTIONS
  CHECK CONTROLS
  CHECK FOR NOISE AND VIBRATION
  CHECK REFRIGERANT PRESSURE DURING OPERATION
  CHECK CURRENT (AMPERAGE) DRAW OF ALL MOTORS
  CHECK OPERATION OF CONDENSATE DRAIN SYSTEM
  CHECK AND ADJUST BLOWER FAN BELT TENSION

SHEET METAL WORK
EXCEPT AS OTHERWISE NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH LATEST EDITION OF THE SHEET METAL AND AIR CONDITIONING CONTRACTOR NATIONAL ASSOCIATION, INC. (SMACNA), HVAC CONSTRUCTION STANDARDS MANUAL. DUCTWORK SHALL BE GALVANIZED SHEET STEEL, UNLESS OTHERWISE NOTED. FIBERGLASS DUCTWORK IS NOT ACCEPTABLE.

MINIMUM DUCTWORK STATIC PRESSURE CONSTRUCTION SHALL BE 2" W.G. DUCTWORK STATIC PRESSURE CONSTRUCTION SHALL BE 4" W.G. FOR OPERATING PRESSURES ABOVE 2" W.G. AND UP TO 4" W.G. ALL DUCTS SHALL BE SEAL CLASS "A".

LOW PRESSURE FLEXIBLE DUCT SHALL BE SIMILAR TO FLEX MASTER TYPE 5, OR APPROVED EQUAL, WITH 1" THICK INSULATION AND SHALL CONFORM TO U.L. 181 AND NFPA BULLETIN 90A.

MEDIUM PRESSURE FLEXIBLE DUCT TAKE-OFFS TO VARIABLE VOLUME TERMINAL UNITS TO BE THERMAFLEX 11 TYPE ST-L OR APPROVED EQUAL.

FIRE DAMPERS: FIRE DAMPERS SHALL BE DYNAMIC TYPE SIMILAR TO RUSKIN CURTAINTYPE DIBD2, WITH BLADES OUTSIDE AIR STREAM, GALVANIZED STEEL CONSTRUCTION, EQUIPPED WITH FUSIBLE LINK, U.L. LISTED AND INSTALLED IN CONFORMANCE WITH U.L. AND NFPA STANDARD 90A, AND APPROVED FOR USE BY AUTHORITIES HAVING JURISDICTION. PROVIDE ACCESS DOOR IN DUCTWORK FOR EACH FIRE DAMPER.

VOLUME DAMPERS: SAME MATERIAL AS DUCT, PER SMACNA, EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT WITH LEVER AND LOCK SCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR SHALL CLEAR INSULATION; INSTALL WITH LEVERS ACCESSIBLE OUTSIDE INSULATION. BALANCING DAMPERS SHALL BE THE OPPOSED BLADE TYPE.

PROVIDE AND INSTALL INSULATED HINGED ACCESS PANELS FOR ALL FIRE AND COMBINATION FIRE/SMOKE DAMPERS.

FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC, 30 OZ. PER SQUARE YARD WITH SEWED AND CEMENTED SEAMS, SIMILAR TO VENT FABRICS. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL EQUIPMENT AND RIGID DUCTWORK. FABRIC CONNECTIONS SHALL BE AT LEAST FOUR (4) INCHES LONG AND HAVE METAL COLLAR AT EACH END; ALLOW AT LEAST 1" SLACK TO ELIMINATE VIBRATION TRANSMISSION.

TURNING VANES: GALVANIZED STEEL, SINGLE THICKNESS VANES WITH MINIMUM TWO (2) INCHES INSIDE RADIUS. ALL SQUARE ELBOWS SHALL HAVE TURNING VANES.

ACCESS TILE IDENTIFICATIONS: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF ALL CONCEALED VALVES, DAMPERS, AND EQUIPMENT. SUBMIT TO ARCHITECT FOR APPROVAL.

DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS. WHERE INTERNAL INSULATION IS CALLED FOR, DUCT DIMENSIONS HAVE BEEN INCREASED IN SIZE TO ALLOW FOR LINER WHERE REQUIRED.

PORTIONS OF DUCTWORK VISIBLE THROUGH SUPPLY AND RETURN AIR OPENINGS SHALL BE PAINTED FLAT BLACK.

TRANSITION RECTANGULAR DUCTWORK ON THE BOTTOM AND SIDES. MAINTAIN DUCTWORK LEVEL AND AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE.

FLEXIBLE DUCT RUNOUTS TO ALL GRILLES, DIFFUSERS SHALL BE INSTALLED FREE OF KINKS AND SAGS. ALL BRANCH DUCTWORK SHALL BE SIZED TO MATCH THE INLET OF THE GRILLES, DIFFUSERS SERVED. FLEXIBLE DUCT SHALL NOT BE ANY LONGER THAN 4 FEET.

ALL DUCT TRANSITIONS FROM SQUARE TO ROUND SHALL BE SMOOTH SQUARE TO ROUND TRANSITIONS. SPIN-IN FITTINGS AT THE END OF CAPPED DUCTS ARE NOT ACCEPTEPTABLE

ALL OPEN ENDED DUCTS SHALL BE REINFORCED WITH 1½" x 1½" x ⅛" GALVANIZED STEEL ANGLES BOLTED OR RIVETED 6" ON CENTER ALL AROUND THE EXTERIOR PERIMETER OF THE DUCT.

FOR ROUND DUCT TAKE-OFFS FROM METAL DUCTS, USE GENFLEX MODEL NUMBER SM-1DEL "SPIN-IN" FITTING.

PIPING
GENERAL: PIPING SHALL BE COMPLETE WITH PIPE FITTINGS, VALVES, COUPLING, STRAINERS, HANGER RODS, HANGERS, SUPPORTS, GUIDES, SLEEVES, AND ACCESSORIES IN CONFORMANCE WITH THE LATEST CODES AND ASME, ANSI, ASTM AND MSS STANDARDS.

  NO PIPING SHALL BE LESS THAN ¾", UNLESS OTHERWISE NOTED.

  FOR PIPE SIZES NOT INDICATED ON PLANS, SEE MANUFACTURER'S EQUIPMENT CONNECTION DETAILS.

  PROVIDE FITTINGS FOR CHANGE IN PIPE SIZE AND FOR FINAL CONNECTION AT EQUIPMENT, AS REQUIRED.

  AVOID ENTRY OF FOREIGN MATTER INTO PIPING DURING CONSTRUCTION.

  PROVIDE MINIMUM PITCH TO INSURE ADEQUATE VENTING AND DRAINAGE.

PIPING SUPPORTS:

  HORIZONTAL PIPING AND PIPING HANGERS SHALL BE ADJUSTABLE CLEVIS TYPE "CARPENTER AND PATTERSON" FIGURE NUMBER 100 OR 100SH, OR APPROVAL EQUAL. HANGER RODS SHALL BE ON THE FOLLOWING DIAMETER:

  PIPE SIZE: 1¼" & BELOW; ROD DIAMETER: ⅜"; MAX SPACING: 6'
  PIPE SIZE: 1½" & 2"; ROD DIAMETER: ⅜"; MAX SPACING: 8'

  PROVIDE ADDITIONAL SUPPORTS AT CHANGE OF DIRECTION, RUNOUTS, AND CONCENTRATED LOADS DUE TO VALVES, ETC.

PIPING MATERIAL:

  REFRIGERANT PIPING SHALL BE COPPER ASTM #B280, FACTORY CLEANED, NITROGEN CHARGED, AND CAPPED.

  CONDENSATE DISCHARGE PIPING AND FITTINGS SHALL BE COPPER TYPE "L" PIPE. SCHEDULE 40 PVC SHALL BE ACCEPTABLE FOR PIPE INSTALLED ON ROOF ONLY.

  PIPING AND FITTINGS SHALL BE SUITABLE FOR OPERATING PRESSURES OF 150 PSI.

FITTINGS:

  PROVIDE DIELECTRIC GASKETS FOR JOINTS OF DISSIMILAR METALS: ISOLATING GASKETS, SLEEVES AND WASHERS BETWEEN FLANGES, BOLTS AND NUTS.

  FOR MANUAL AIR VENTS, PROVIDE LINE SIZE AIR CHAMBER WITH ½" VALVE. PROVIDE VALVES AT ALL HIGH POINTS AND WHERE FLOW CHANGES FROM HORIZONTAL TO DOWNWARD.

  TRAP SEAL IN CONDENSATE DRAIN PIPING SHALL BE MINIMUM 1" GREATER THAN THE STATIC PRESSURE IN SYSTEM.

VALVES:

  VALVES FOR WATER PIPING SHALL BE SUITABLE FOR THE SERVICE PRESSURE AND TEMPERATURE AND SHALL BE:

    GLOBE VALVE: "JENKINS" FIGURE 556P, FIGURE 1200, FIGURE 613-C, OR FIGURE 923-C, OR APPROVED EQUAL.

REFRIGERANT PIPE SIZE:

  LIQUID AND SUCTION REFRIGERANT LINES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. HOWEVER, LIQUID LINE VELOCITY SHALL NOT EXCEED 360 FPM, AND THE PRESSURE DROP SHALL BE LIMITED TO A MAXIMUM EQUIVALENT OF 2 DEGREES F OF TEMPERATURE CHANGE. THE SUCTION LINE VELOCITY SHALL BE A MINIMUM OF 500 FPM IN HORIZONTAL LINES, AND A MINIMUM OF 1000 FPM IN VERTICAL RISERS (IF PART LOAD CONDITIONS EXIST, A DOUBLE RISER MAY BE REQUIRED); THE PRESSURE DROP SHALL BE LIMITED TO A MAXIMUM EQUIVALENT OF 2 DEGREES F OF TEMPERATURE CHANGE.

AIR DISTRIBUTION
DIFFUSERS, REGISTERS, AND GRILLES SHALL BE MATCHED AS SCHEDULE OR AS APPROVED EQUAL.

CEILING DIFFUSERS SHALL BE 4-WAY THROW, UNLESS SHOWN OTHERWISE ON DRAWINGS.

ALL REGISTERS SHALL BE FURNISHED WITH OPPOSED BLADE DAMPERS.

EXACT LOCATION OF ALL CEILING MOUNTED DIFFUSERS, GRILLES, AND REGISTERS TO BE COORDINATED WITH LIGHTING LAYOUT AND REFLECTED CEILING PLAN.

AUTOMATIC CONTROLS
MECHANICAL CONTRACTOR SHALL PROVIDE CONTROLS THAT MATCH THE MANUFACTURER'S RECOMMENDATION FOR ALL EQUIPMENT PROVIDED.

CONTROL WIRING SHALL BE #12 CU THHN INSTALLED IN EMT CONDUIT (MINIMUM ½" DIAMETER OR PLENUM RATED CABLE.

ALL AUTOMATIC CONTROL VALVES AND DAMPERS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

PROVIDE OCCUPANCY SENSORS AS REQUIRED BASED ON SEQUENCE OF OPERATIONS IF NOT PROVIDED FOR LIGHTING CONTROLS OTHERWISE BE ELECTRICAL CONTRACTOR.

EXHAUST FANS: EXHAUST FANS SHALL BE CONTROLLED AS SHOWN ON FAN SCHEDULE.

THERMOSTATS: ALL THERMOSTATS WITH ADJUSTABLE TEMPERATURE SET POINTS SHALL BE MOUNTED WHERE INDICATED ON PLANS 48" AFF, UNLESS NOTED OTHERWISE, AND BE FULLY COORDINATED WITH ARCHITECTURAL PLANS, OWNER GRAPHICS, WALL PATTERNS, LIGHTING CONTROLS/SWITCHES, POWER/DATA OUTLETS, AND ALL OTHER FIELD CONDITIONS. THERMOSTATS SHALL BE BY UNIT MANUFACTURER WITH PRIOR WRITTEN OWNER APPROVAL OF STYLE/TYPE AND COORDINATED PLACEMENT IN FIELD.

THE SEQUENCE OF OPERATIONS PROVIDED IN THE CONTRACT DOCUMENTS IS INTENDED TO COMMUNICATE THE GENERAL DESIGN INTENT TO THE CONTROLS SUBCONTRACTOR AND IS NOT INTENDED TO BE FULLY DEVELOPED OR COMPLETE. IN THE CONTROLS SUBMITTAL, THE SUBCONTRACTOR SHALL FULLY DEVELOP THE SEQUENCE OF OPERATIONS FOR ALL SYSTEMS IDENTIFIED AND SHALL PRESENT ALL SETPOINTS, CONTROL PARAMETERS, AND ALARM POINTS. THE CONTROLS SUBCONTRACTOR SHALL INCORPORATE STANDARD FEATURES SUCH AS MINIMUM RUN TIME DELAYS AND DEAD BANDS FROM SETPOINTS TO PREVENT EQUIPMENT FROM SHORT CYCLING AND WHEN HOVERING AROUND SETPOINTS. ALL MONITORED POINTS SHALL INCLUDE EARLY HIGH/LOW ALARM NOTIFICATIONS PRIOR TO HAVING TO TAKE CORRECTIVE ACTIONS OR EQUIPMENT SHUTDOWNS. TRANSMITTERS SHALL INCLUDE OUT-OF-RANGE, FAIL-SAFE POSITIONING FOR OPEN CIRCUITS OR LOSS OF COMMUNICATION. CONTROL CONTRACTOR SHALL SPECIFY TO FAIL DE-ENERGIZER, HOLD LAST STATE, OR DEFAULT TO A PREDETERMINED SETPOINT. THESE BASIC FEATURES THAT ARE NECESSARY AND ARE PART OF A ROBUST CONTROLS INSTALLATION SHALL BE ASSUMED INCLUDED IN THE SCOPE OF SERVICES FOR DELIVERABLES AT NO ADDITIONAL COSTS TO THE OWNER.

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

M MICHAEL SCHON
071324
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MECHANICAL SPECIFICATIONS

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M002

2 OF 14

VARIABLE REFRIGERANT VOLUME - AIR-COOLED CONDENSING UNIT SCHEDULE

TAG: ROOM	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	DESCRIPTION	COOLING CAPACITY BTU/h	COOLING CAPACITY AMBIENT DESIGN (°F DB)	HEATING CAPACITY BTU/h	HEATING CAPACITY AMBIENT DESIGN (°F DB / WB)	REFRIGERANT CHARGE Factory Charge (lbs)	REFRIGERANT CHARGE Add'l Refrigerant (lbs)	CONNECTION RATIO (%)
CU-1 (AHU-1-2-3)	REYQ312XATJB	26	Air cooled heat recovery (2)	312,666	92.2	246,834	13.0 / 10.0	51.6	NA	92.3
CU-2 (AHU-8-9-10)	REYQ192XATJB	16	Air cooled heat recovery (2)	192,407	92.2	177,510	13.0 / 10.0	51.6	NA	93.8
CU-3 (AHU-11-13)	REYQ264XATJB	22	Air cooled heat recovery (2)	264,555	92.2	211,340	13.0 / 10.0	51.6	NA	90.9
CU-4 (AHU-14-15)	REYQ144XATJB	12	Air cooled heat recovery (1)	144,297	92.2	115,105	13.0 / 10.0	25.8	NA	91.7

TAG: ROOM	ELECTRICAL VOLTAGE-PHASE	MIN CIRCUIT AMPS (MCA) mod #1	MCA mod #2	MCA mod #3	MCA total	MAX OVERCURRENT PROTECTION (MOP) mod #1	MOP mod #2	MOP mod #3	MOP total	RUNNING CURRENT(RLA) mod #1	RLA mod #2	RLA mod #3	RLA total
CU-1 (AHU-1-2-3)	208V - 230V 3ph	61.9	58.3		120.2	70.0	70.0		125.0	49.0	42.6		91.6
CU-2 (AHU-8-9-10)	208V - 230V 3ph	38.1	38.1		76.2	45.0	45.0		80.0	23.3	23.3		46.6
CU-3 (AHU-11-13)	208V - 230V 3ph	58.3	43.0		101.3	70.0	50.0		110.0	42.6	28.2		70.8
CU-4 (AHU-14-15)	208V - 230V 3ph	58.3			58.3	70.0			70.0	42.6			42.6

TAG: ROOM	DIMENSIONS (WxHxD) (inch)	WEIGHT (lbs)	EFFICIENCY (NonDucted/Ducted or Specific Combo) EER	IEER	COP47	COP17	SCHE	SEER	HSPF	NOTES	Options and Accessories
CU-1 (AHU-1-2-3)	48.9 x 66.7 x 30.2 / 48.9 x 66.7 x 30.2	793.0 / 727.0	10.1 / 9.9	20.4 / 18	3.56 / 3.2	2.09 / 2.05	24.3 / 20.7	NA	NA		BHFP26P100UA (1), EKEQDCBAV3-US (4)
CU-2 (AHU-8-9-10)	48.9 x 66.7 x 30.2 / 48.9 x 66.7 x 30.2	727.0 / 727.0	13 / 13	22.6 / 21.4	3.85 / 3.67	2.5 / 2.37	26.6 / 22.8	NA	NA		BHFP26P100UA (1), EKEQDCBAV3-US (3)
CU-3 (AHU-11-13)	48.9 x 66.7 x 30.2 / 48.9 x 66.7 x 30.2	727.0 / 727.0	11.2 / 10.4	21.6 / 18	3.62 / 3.2	2.22 / 2.07	26.1 / 18.2	NA	NA		BHFP26P100UA (1), EKEQDCBAV3-US (3)
CU-4 (AHU-14-15)	48.9 x 66.7 x 30.2	727.0	11.9 / 11.6	23.5 / 21.6	3.75 / 3.42	2.16 / 2.12	25.5 / 22	NA	NA		EKEQDCBAV3-US (2)

Schedule Notes:
1. ALL UNITS SHALL BE AGA CERTIFIED AND U.L. LABELED.
2. ALL UNITS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. REFRIGERANT SHALL BE R410A
4. PROVIDE ALL SUPPORTS, RAILS, CURBS, ETC. AS REQUIRED TO AND INSTALL UNITS ON ROOF.
5. VARIABLE REFRIGERANT SYSTEM SHALL BE INSTALLED, PIPED, AND CONTROLLED PER MANUFACTURERS RECOMMENDATIONS.
6. PROVIDE ANY ADDITIONAL PIPING, REFRIGERANT, ETC TO ACCOMMODATE ACTUAL PIPING LENGTHS, FIELD VERIFIED.
7. EQUIPMENT MANUFACTURER SHALL PROVIDE ALL REQUIRED TRAINING, ONSITE ASSISTANCE, PROJECT SPECIFIC SHOP DRAWINGS, ETC. AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. EQUIPMENT MANUFACTURERS SERVICE REPRESENTATIVE SHALL PROVIDE A FINAL REPORT AFTER START-UP CERTIFYING PROPER INSTALLATION AND CONFIRMING WARRANTIES.
8. COORDINATE WITH BRANCH CONTROLLER LAYOUT, SIZE, QUANTITY, ETC WITH MANUFACTURER.
9. PROVIDE PANEL HEATER KIT TO PREVENT ICE BUILDUP ON OUTDOOR DRAIN PAN.
10. PROVIDE WITH WIND BAFFLE KIT.
11. PROVIDE SNOW/HAIL KIT TO PREVENT DAMAGE OR SNOW BUILD-UP IN SEVERE WINTER CLIMATES.
12. PROVIDE WITH MASTER "CENTRAL BRANCH CIRCUIT CONTROLLER", 120V/1Ø, 0.3A.
13. PROVIDE WITH EXPANSION CONTROLLER, 120V/1Ø, 0.3A.
14. FIELD INSTALLED LOW-AMBIENT KIT.
15. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB), OUTDOOR OF 95°F (DB).
16. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 43°F (WB).
17. EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS.
18. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING.
19. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE, THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
20. EACH CONDENSING UNIT SHALL BE PROVIDED WITH A HOFFMAN & HOFFMAN SINGLE POINT POWER PANEL (SPPP).

VARIABLE REFRIGERANT VOLUME AIR HANDLING UNIT SCHEDULE

TAG	LEVEL SERVED	S.A. CFM	O.A. CFM	E.S.P. (IN.WC)	COOLING CAPACITY TC (MBH)	COOLING CAPACITY SC (MBH)	COOLING CAPACITY EFFICIENCY	COOLING COIL MANUFACTURER DAIKIN & MODEL	IFM FLA	ELECTRICAL DATA MCA	MOCP	VOLTAGE	CONFIGURATION	OPERATING WEIGHT	MANUFACTURER DAIKIN & MODEL	NOMINAL TONS	CONTROLLING VRF OUTDOOR UNIT	ADDITIONAL OPTIONS
AHU–1	MAIN	1840	1840	0.75	128.1	77.3	EER 10.1	DXM06C12	3.9	8.8	15	208V–1ø	FLOOR MOUNTED	634 LBS	T24IN	6	CU–1	A
AHU–2	MAIN	1805	1805	0.75	128.0	79.1	EER 10.1	DXM06C12	3.9	8.8	15	208V–1ø	FLOOR MOUNTED	634 LBS	T24IN	6	CU–1	A
AHU–3	MAIN	2900	2900	0.75	165.2	99.7	EER 10.1	DXM06C13	3.9	10.8	15	208V–1ø	FLOOR MOUNTED	634 LBS	T32IN	6	CU–1	A
AHU–8	MAIN	1045	1045	0.75	69.9	42.4	EER 13	DXM06C14	3.9	4.8	15	208V–1ø	FLOOR MOUNTED	465 LBS	T12IN	6	CU–2	A
AHU–9	MAIN	1255	1255	0.75	87.2	52.7	EER 13	DXM06C14	3.9	8.8	15	208V–1ø	FLOOR MOUNTED	465 LBS	T15IN	6	CU–2	A
AHU–10	MAIN	1425	1425	0.75	116.3	70.1	EER 13	DXM07C13	3.9	8.8	15	208V–1ø	FLOOR MOUNTED	562 LBS	T15IN	7	CU–2	A
AHU–11	UPPER	2065	2065	0.75	123.4	72.2	EER 11.2	DXM06C12	3.9	8.8	15	208V–1ø	FLOOR MOUNTED	634 LBS	T24IN	6	CU–3	A
AHU–13	UPPER	3150	3150	0.75	159.8	97.3	EER 11.2	DXM06C13	3.9	10.8	15	208V–1ø	FLOOR MOUNTED	634 LBS	T32IN	6	CU–3	A
AHU–14	UPPER	1650	1650	0.75	116.3	70.1	EER 11.9	DXM07C13	3.9	8.8	15	208V–1ø	FLOOR MOUNTED	562 LBS	T18IN	7	CU–4	A
AHU–15	UPPER	1245	1245	0.75	87.0	53.1	EER 11.9	DXM06C14	3.9	8.8	15	208V–1ø	FLOOR MOUNTED	465 LBS	T15IN	6	CU–4	A

OPTIONS (ALL UNITS)
- 7–DAY PROGRAMMABLE DIGITAL THERMOSTAT W/ HUMIDISTAT
- FILTER KIT /W 2" FILTERS
- CONDENSATE DRAIN PAN OVERFLOW SWITCH
- 2000+ CFM: DUCT SMOKE DETECTOR, SEE NOTE #3
- SINGLE POINT ELECTRICAL CONNECTION
- MANUAL O.A. DAMPER
- GALVANIZED CONDENSATE DRAIN PAN
- FACTORY INSTALLED ELECTRIC HEATER KIT

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: CONDENSATE PUMP, DIVERSITECH CP–22 120V/1ø
B: 24V MOTORIZED O.A. DAMPER
C: 120V/1ø MOTORIZED O.A. DAMPER
D: STAINLESS STEEL DRAIN PAN
E: CO2 SENSOR, WALL MOUNTED

NOTES:
1. ALL UNITS SHALL BE U.L. LABELED.
2. ALL UNITS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE EACH UNIT WITH 2000 CFM (OR GREATER) SUPPLY AIR FLOWRATE WITH A SMOKE DETECTOR. THE SMOKE DETECTOR SHALL BE IONIZATION TYPE WIRED TO SHUT–DOWN UNIT WHEN ACTIVATED. THE SMOKE DETECTOR SHALL BE INSTALLED IN THE RETURN DUCT BY THE MECHANICAL CONTRACTOR. THE SMOKE DETECTOR SHALL BE WIRED BY THE ELECTRICAL CONTRACTOR TO AN HVAC MONITORING PANEL. THE PANEL SHALL PROVIDE VISUAL AND AUDIBLE SIGNAL. THE SIGNAL SHALL INDICATE AND BE LABELED AS AIR DETECTOR TROUBLE. THE PANEL SHALL BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. PROVIDE SMOKE DETECTOR WITH REMOTE ALARM OR SUPERVISORY INDICATING DEVICES. EACH REMOTE DEVICE SHALL BE PERMANENTLY LABELED TO ACCURATELY IDENTIFY THE UNIT SERVED.
4. ELECTRIC HEATER SHALL BE BY UNIT MANUFACTURER.

VARIABLE REFRIGERANT VOLUME - BRANCH SELECTOR & ZONE HEAT RECOVERY DEVICE SCHEDULE

TAG: ROOM	BRANCH SELECTOR BASIS OF DESIGN (DAIKIN)	CONDENSING UNIT SERVED	VOLTAGE-PHASE	MIN CIRCUIT AMPS (MCA)	MAX OVERCURRENT PROTECTION (MOP)	MAX CAPACITY (per Port)	DIMENSIONS (WxHxD inch)	WEIGHT (lbs)	ZONE SERVED	REHEAT BOX BASIS OF DESIGN
BS-1	BSF4Q54TVJ	CU-1 for DOAS-1-2-3	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-2	BSF4Q54TVJ	CU-1 for DOAS-1-2-3	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-3	BSF6Q54TVJ	CU-1 for DOAS-1-2-3	208-230V 1ph	0.6	15.0	54,000	23.3 x 9.5 x 23.7	72.8	N/A	KHRP26A250TA (2)
BS-8	BSF4Q54TVJ	CU-2 for DOAS-8-9-10	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (2)
BS-9	BSF4Q54TVJ	CU-2 for DOAS-8-9-10	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-10	BSF4Q54TVJ	CU-2 for DOAS-8-9-10	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-11	BSF4Q54TVJ	CU-3 for DOAS-11-13	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-13	BSF6Q54TVJ	CU-3 for DOAS-11-13	208-230V 1ph	0.6	15.0	54,000	23.3 x 9.5 x 23.7	72.8	N/A	KHRP26A250TA (2)
BS-14	BSF4Q54TVJ	CU-4 for DOAS-14-15	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-15	BSF4Q54TVJ	CU-4 for DOAS-14-15	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)

Schedule Notes:
1. INCLUDE DIAMONDBACK BALL VALVES BV-SERIES, 700PSIG WORKING PRESSURE, FULL PORT, 410A RATED.
2. FOR SUB BC CONTROLLER, THE TOTAL CONNECTABLE INDOOR UNIT CAPACITY CAN BE 126,000 BTUS OR LESS. IF TWO SUB BC CONTROLLERS ARE USED, THE TOTAL INDOOR UNIT CAPACITY CONNECTED TO BOTH SUB BC CONTROLLERS ALSO CANNOT EXCEED 126,000 BTUS. FOR SUB BC CONTROLLER CMB-P1016NU-HB1 THE TOTAL CONNECTABLE INDOOR UNIT CAPACITY CAN BE 126,000 BTUS OR LESS. HOWEVER, IF TWO SUB CONTROLLERS ARE USED, AND ONE OF THEM IS CMB-1016NU-HB1, THE TOTAL INDOOR UNIT CAPACITY CONNECTED TO BOTH SUB CONTROLLERS MUST NOT EXCEED 168,000 BTUS.

STANDARD AIR HANDLING UNIT SCHEDULE

TAG	AREA SERVED	S.A. CFM	O.A. CFM	E.S.P. (IN.WC)	COOLING CAPACITY TC (MBH)	COOLING CAPACITY SC (MBH)	COOLING CAPACITY EFFICIENCY	ELECT. HEAT KW	ELECT. HEAT STEPS	ELECTRICAL DATA MCA	MOCP	VOLTAGE	CONFIGURATION	OPERATING WEIGHT	MANUFACTURER DAIKIN & MODEL	NOMINAL TONS	ADDITIONAL OPTIONS
AHU–4	INTAKE OFFICES	520	30	0.5	16.6	12.7	SEER2 17.5	5.0	1	27	30	208V–1ø	VERTICAL	115 LBS	DFVE24BP1400	2	B
AHU–5	SURRENDER/CONF	1460	140	0.75	45.0	33.4	SEER2 16.2	8.0	1	43	45	208V–1ø	VERTICAL	150 LBS	DFVE48DP1400	4	B
AHU–6	BULL PEN/COPY	1605	125	0.75	45.0	34.2	SEER2 16.2	10.0	1	50	50	208V–1ø	VERTICAL	150 LBS	DFVE48DP1400	4	B
AHU–7	ADOPTION LOBBY	1205	105	0.75	27.8	21.2	SEER2 17.1	15.0	1	71.5	80	208V–1ø	VERTICAL	140 LBS	DFVE36CP1400	3	B
AHU–12	ADOPTION LOBBY	2800	185	0.5	86.7	65.9	EER 11.0	30.0	1	95.4	110	208V–3	VERTICAL	406 LBS	DAX09043	6	B

OPTIONS (ALL UNITS)
- 7–DAY PROGRAMMABLE DIGITAL THERMOSTAT W/ HUNIDISTAT
- FILTER KIT /W 2" FILTERS
- CONDENSATE DRAIN PAN OVERFLOW SWITCH
- DUCT SMOKE DETECTOR, SEE NOTE #3
- SINGLE POINT ELECTRICAL CONNECTION
- MANUAL O.A. DAMPER
- GALVANIZED CONDENSATE DRAIN PAN
- FACTORY INSTALLED ELECTRIC HEATER KIT

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: CONDENSATE PUMP, DIVERSITECH CP–22 120V/1ø
B: 24V MOTORIZED O.A. DAMPER
C: 120V/1ø MOTORIZED O.A. DAMPER
D: STAINLESS STEEL DRAIN PAN
E: CO2 SENSOR, WALL MOUNTED

NOTES:
1. ALL UNITS SHALL BE U.L. LABELED.
2. ALL UNITS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE EACH UNIT WITH A SMOKE DETECTOR. THE SMOKE DETECTOR SHALL BE IONIZATION TYPE WIRED TO SHUT–DOWN UNIT WHEN ACTIVATED. THE SMOKE DETECTOR SHALL BE INSTALLED IN THE RETURN DUCT BY THE MECHANICAL CONTRACTOR. THE SMOKE DETECTOR SHALL BE WIRED BY THE ELECTRICAL CONTRACTOR TO AN AN HVAC MONITORING PANEL. THE PANEL SHALL PROVIDE VISUAL AND AUDIBLE SIGNAL. THE SIGNAL SHALL INDICATE AND BE LABELED AS AIR DETECTOR TROUBLE. THE PANEL SHALL BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. PROVIDE SMOKE DETECTOR WITH REMOTE ALARM OR SUPERVISORY INDICATING DEVICES. EACH REMOTE DEVICE SHALL BE PERMANENTLY LABELED TO ACCURATELY IDENTIFY THE UNIT SERVED.
4. ELECTRIC HEATER SHALL BE BY UNIT MANUFACTURER.

STANDARD HEAT PUMP SCHEDULE

TAG	COOLING CAPACITY TC (MBH)	SC (MBH)	EFFICIENCY	OA DB (°F)	HEATING CAPACITY TH (MBH)	OA DB (°F)	COMPRESSOR RLA	ELECTRICAL DATA MCA	MOCP	VOLTAGE	MANUFACTURER DAIKIN & MODEL	OPERATING WEIGHT	NOMINAL TONS	MATCHING INDOOR UNIT
HP–4	16.6	12.7	SEER2 17.5	94	17.4	13	10.0	14.6	15	208V–1ø	DZ6VSA1810	122 LBS	2	AHU–4
HP–5	45.0	33.4	SEER2 16.2	94	45.5	13	25.5	34.4	35	208V–1ø	DZ6VSA4810	168 LBS	4	AHU–5
HP–6	45.0	34.2	SEER2 16.2	94	45.5	13	25.5	34.4	35	208V–1ø	DZ6VSA4810	168 LBS	4	AHU–6
HP–7	27.8	21.2	SEER2 17.1	94	28.8	13	16.8	23.9	25	208V–1ø	DZ6VSA3010	132 LBS	3	AHU–7
HP–12	86.7	65.9	EER 11.0	95	86.7	95	26.9	40.6	60	208V–3ø	DZ14XA0903A	347 LBS	6	AHU–12

OPTIONS (ALL UNITS)
- 4" THICK PREFABRICATED PAD OR CONCRETE PAD
- PRE–CHARGED REFRIGERANT LINE SETS
- MANUFACTURER MINIMUM CLEARANCES

OPTIONS IF TOTAL EQUIVALENT REFRIGERANT LENGTH ≥ 50'–0" & ≤ 175'–0"
- COMPRESSOR CRANKCASE HEATER
- COMPRESSOR START ASSIST CAPACITOR AND RELAY (NOT REQUIRED FOR SCROLL COMPRESSORS OR 3 PHASE UNITS)
- OUTDOOR UNIT CYCLE PROTECTOR (5 MINUTE)
- WIND BAFFLES (UNITS MOUNTED ON ROOF)
- FOR HORIZONTAL CONFIGURATION: PROVIDE LIQUID LINE SOLENOID WITHIN 2'–0" OF OUTDOOR UNIT WITH FLOW ARROW POINTING TOWARD OUTDOOR UNIT. VAPOR LINE SHOULD SLOPE TOWARD INDOOR UNIT.
- FOR INDOOR UNIT LOCATED ABOVE HEAT PUMP (50'–0" MAX); A LIQUID LINE (BI–FLOW) SOLENOID MUST BE INSTALLED WITHIN 2'–0" OF OUTDOOR UNIT WITH FLOW ARROW POINTING TOWARD OUTDOOR UNIT. AN INVERTED VAPOR LINE TRAP MUST BE INSTALLED AT INDOOR UNIT. THE TOP OF THE TRAP MUST BE GREATER THAN THE HEIGHT OF THE INDOOR COIL.
- FOR INDOOR UNIT LOCATED BELOW HEAT PUMP (150'–0" MAX); A LIQUID LINE (BI–FLOW) SOLENOID MUST BE INSTALLED WITHIN 2'–0" OF OUTDOOR UNIT.

NOTES:
1. ALL UNITS SHALL BE U.L. LABELED.

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK
M. MICHAEL SCHON
071324
LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MECHANICAL SCHEDULES

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M003

GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE

TAG	SERVICE	CFM RANGE	FACE SIZE (IN)	NECK SIZE (IN)	TYPE	OBD	MANUFACTURER PRICE & MODEL	ADDITIONAL OPTIONS
Ⓐ	SUPPLY	0 – 100	24x24	6"ø	SQUARE PLAQUE	NO	SPD	
Ⓑ	SUPPLY	105 – 175	24x24	8"ø	SQUARE PLAQUE	NO	SPD	
Ⓒ	SUPPLY	180 – 270	24x24	10"ø	SQUARE PLAQUE	NO	SPD	
Ⓓ	SUPPLY	275 – 425	24x24	12"ø	SQUARE PLAQUE	NO	SPD	
Ⓔ	SUPPLY	430 – 700	24x24	14"ø	SQUARE PLAQUE	NO	SPD	
Ⓕ	SUPPLY	0 – 100	12x12	6"ø	SQUARE PLAQUE	NO	SPD	
Ⓖ	SUPPLY	105 – 250	12x12	8"ø	SQUARE PLAQUE	NO	SPD	
Ⓗ	SUPPLY	175 – 275	24x24	8"x8"	MODULAR 4–WAY	NO	SPD	
A	RETURN	0 – 175	24x24	8"ø	PERFORATED FACE	NO	PDDR	
B	RETURN	180 – 270	24x24	10"ø	PERFORATED FACE	NO	PDDR	
C	RETURN	275 – 400	24x24	12"ø	PERFORATED FACE	NO	PDDR	
D	RETURN	405 – 620	24x24	14"ø	PERFORATED FACE	NO	PDDR	
E	RETURN	625 – 1250	24x24	16"ø	PERFORATED FACE	NO	PDDR	
F	RETURN	0 – 100	16x16	6"ø	PERFORATED FACE	NO	PDDR	
G	RETURN	105 – 210	16x16	8"ø	PERFORATED FACE	NO	PDDR	
H	RETURN	215 – 330	16x16	10"ø	PERFORATED FACE	NO	PDDR	
I	RETURN	130 – 350	MFG	18"x4"	45° DEFL. LVRD FACE, 3/4" SPACING	NO	530 D	B,E
A	EXHAUST	0 – 175	24x24	8"ø	PERFORATED FACE	NO	PDDR	
B	EXHAUST	180 – 270	24x24	10"ø	PERFORATED FACE	NO	PDDR	
C	EXHAUST	275 – 390	24x24	12"ø	PERFORATED FACE	NO	PDDR	
D	EXHAUST	395 – 620	24x24	14"ø	PERFORATED FACE	NO	PDDR	
E	EXHAUST	625 – 1250	24x24	16"ø	PERFORATED FACE	NO	PDDR	
F	EXHAUST	0 – 100	16x16	6"ø	PERFORATED FACE	NO	PDDR	
G	EXHAUST	105 – 210	16x16	8"ø	PERFORATED FACE	NO	PDDR	
H	EXHAUST	215 – 330	16x16	8"ø	PERFORATED FACE	NO	PDDR	

ADDITIONAL OPTIONS (AS NOTED)

A: ADJUST FROM HORIZONTAL DISCHARGE TO VERTICAL DISCHARGE. PROVIDE DIFFUSER WITH SQUARE TO ROUND NECK ADAPTOR, MODEL #SR
B: PROVIDE REGISTER WITH ROUND NECK ADAPTOR WHERE REQUIRED.
C: PROVIDE LINEAR SLOT AND/OR LINEAR BAR GRILLE WITH END CAPS, BORDER SUITABLE FOR INSTALLING ON GYB CEILING/SIDEWALL.
D: PROVIDE SPIRAL DUCT GRILLE SIZED TO MATCH DUCT SIZE O.D., END FRAMES TO MATCH DUCT SIZE O.D., CLOSED CELL FOAM GASKET FACTORY COLOR TO MATCH DUCTWORK COLOR, AIR SCOOP ACCESSORY, AND OPPOSED BLADE DAMPER, NO EXCEPTIONS.
E: PROVIDE LOUVERED FACE GRILLE WITH STEEL OBD, FACTORY INSTALLED.

NOTES:

1. ALL DEVICES SHALL BE FINISHED WITH AN ENAMEL FINISH, COLOR BY ARCHITECT. COORDINATE DEVICE COLOR(S) WITH ARCHITECT PRIOR TO ORDERING. COLOR COORDINATION SHALL INCLUDE BUT NOT BE LIMITED TO DIFFUSER FACE, CENTER TEE, FRAME INTERIOR, PATTERN CONTROLLER, ETC.
2. ALL DEVICES SHALL BE FURNISHED WITH FRAMES SUITABLE FOR TYPE OF INSTALLATION REQUIRED, NO EXCEPTIONS.
3. PROVIDE EXTERNAL FOIL–BACK INSULATION, FACTORY INSTALLED FOR ALL DIFFUSER/GRILLE HOUSING.
4. ALL LINEAR SLOT DIFFUSERS AND BAR GRILLES SHALL BE FURNISHED WITH END CAPS.
5. ALL DEVICES INSTALLED IN HARD CEILINGS, WALLS, OR DIRECTLY ATTACHED TO DUCTS SHALL BE PROVIDED WITH OBD'S.
6. UNLESS OTHERWISE NOTED, ALL LINEAR SLOTS, BAR GRILLES, LOUVERED AND/OR EGGCRATE FACE GRILLES/REGISTERS SHALL BE PROVIDED WITH AN INSULATED PLENUM BOX FACTORY INSTALLED BY MANUFACTURER. PLENUM BOX SHALL BE FACTORY INSULATED WITH FIBER FREE FOAM, COLOR BLACK. PROVIDE PLENUM BOX WITH DUCT COLLAR AND WITH CABLE/FACE OPERATED FULL FLOW MANUAL CONTROL DAMPER ACCESSIBLE FROM FACE OF LINEAR SLOT OR BAR GRILLE.
7. COORDINATE GRILLES/DIFFUSERS WITH ARCHITECTURAL CEILING AND STRUCTURAL FRAMING LAYOUTS PRIOR TO ORDERING. COORDINATION SHALL INCLUDE TYPE OF INSTALLATION, MOUNTING REQUIREMENTS, T–BAR SPACING/SIZE, GYPBOARD FRAMING, INSTALLATION CLEARANCES, ETC.
8. ADJUST PATTERN CONTROLLERS ON ALL LINEAR SLOTS AND LINEAR BAR GRILLES PRIOR TO AIR BALANCE (T&B).
9. SEE AIR DEVICE TAG FOR DUCT INLET SIZE. ALL DUCT RUNOUTS TO BE SIZED PER GRD AIR TERMINAL NECK SIZE ON SCHEDULE AND/OR AS INDICATED ON PLANS IN CONJUNCTION WITH REQUIREMENTS BY GRD MANUFACTURER. COORDINATE ALL DUCT SIZES PRIOR TO BIDDING, NO EXCEPTIONS. DUCT SIZE SHALL MATCH GREILLE/LOUVER SIZE IF NO DUCTWORK SIZE INDICATED ON PLANS. CONTRACTOR SHALL REFERENCE DUCTWORK INSULATION SCHEDULE FOR ALL DUCTWORK INSULATION REQUIREMENTS.
10. CONTRACTOR SHALL PAINT ALL VISIBLE SURFACES THROUGH GRD'S FLAT BLACK. PLENUM BOX INSULATION SHALL BE COLOR BLACK FROM FACTORY.
11. PROVIDE TAPERED TRANSITIONS FOR ALL SUPPLY DIFFUSERS WITH NECK SIZES DIFFERENT THAN SUPPLY DUCT RUN–OUT SIZES.
12. PROVIDE SPIN–IN TAP WITH MANUAL VOLUME DAMPER AT EACH BRANCH TAKE–OFF. SEE DETAILS SHEET AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
13. WHERE TEE–BAR CEILING GRID IS USED, GENERAL CONTRACTOR SHALL ENSURE THAT ALL SELECTED GRILLES/DIFFUSERS/LIGHTING FIXTURES WILL FIT PROPERLY IN CEILING SYSTEM. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPE(S).

1

HVAC SEQUENCE OF OPERATIONS

MECHANICAL CONTRACTOR SHALL PROVIDE CONTROLS THAT MATCH THE MANUFACTURER'S RECOMMENDATION FOR ALL EQUIPMENT PROVIDED. SEE SPECIFICATIONS FOR ADDITIONAL CONTROLS INFORMATION.

THE SEQUENCE OF OPERATIONS PROVIDED IN THE CONTRACT DOCUMENTS IS INTENDED TO COMMUNICATE THE GENERAL DESIGN INTENT TO THE CONTROLS SUBCONTRACTOR AND IS NOT INTENDED TO BE FULLY DEVELOPED OR COMPLETE. IN THE CONTROLS SUBMITTAL, THE SUBCONTRACTOR SHALL FULLY DEVELOP THE SEQUENCE OF OPERATIONS FOR ALL SYSTEMS IDENTIFIED AND SHALL PRESENT ALL SETPOINTS, CONTROL PARAMETERS, AND ALARM POINTS. THE CONTROLS SUBCONTRACTOR SHALL INCORPORATE STANDARD FEATURES SUCH AS MINIMUM RUN TIME DELAYS AND DEAD BANDS FROM SETPOINTS TO PREVENT EQUIPMENT FROM SHORT CYCLING AND WHEN HOVERING AROUND SETPOINTS. ALL MONITORED POINTS SHALL INCLUDE EARLY HIGH/LOW ALARM NOTIFICATIONS PRIOR TO HAVING TO TAKE CORRECTIVE ACTIONS OR EQUIPMENT SHUTDOWNS. TRANSMITTERS SHALL INCLUDE OUT–OF–RANGE, FAIL–SAFE POSITIONING FOR OPEN CIRCUITS OR LOSS OF COMMUNICATION. CONTROL CONTRACTOR SHALL SPECIFY TO FAIL DE–ENERGIZER, HOLD LAST STATE, OR DEFAULT TO A PREDETERMINED SETPOINT. THESE BASIC FEATURES THAT ARE NECESSARY AND ARE PART OF A ROBUST CONTROLS INSTALLATION SHALL BE ASSUMED INCLUDED IN THE SCOPE OF SERVICES FOR DELIVERABLES AT NO ADDITIONAL COSTS TO THE OWNER.

GENERAL AREAS:

THE AHU's WILL BE FULLY CONTROLLED BY INTERNAL CONTROLS. THE UNITS WILL BE PROVIDED WITH STAND–ALONE CONTROLLERS.

AHU's SHALL BE CONTROLLED BY 7–DAY PROGRAMMABLE THERMOSTAT WITH HUMIDISTAT FEATURE OR ZONE SENSORS /W UNIT SENSORS/CONTROLS (SEE PLANS FOR INFORMATION). ROOFTOP UNITS SHALL SWITCH TO OCCUPIED MODE (74° – ADJUSTABLE, ± 4°F) ONE HOUR PRIOR TO BUILDING OCCUPANCY AND SHALL SWITCH TO UNOCCUPIED MODE (85°F COOLING, 68°F HEATING) ONE HOUR AFTER BUILDING OCCUPANCY. OCCUPANCY TIME TO BE DETERMINED BY OWNER. 3–HOUR OVERRIDES SHALL BE PROVIDED AS NEEDED FOR RETAIL PERSONNEL. DUCT MOUNTED HUMIDITY SENSORS SHALL BE INSTALLED IN R.A. DUCTWORK INTERLOCKED WITH 7–DAY PROGRAMMABLE THERMOSTAT WITH BUILT IN HUMIDISTAT FEATURE TO ENERGIZE ROOFTOP UNITS AND CORRESPONDING COMPRESSOR(S) TO MAINTAIN 50% RH WITH ±3°F OCCUPIED AND UNOCCUPIED DEADBAND AND MINIMUM UNIT RUNTIME OF 15 MINUTES DURING HUMIDITY OVERRIDE.

OPTIMAL START/STOP
THE AHU SYSTEM WILL BE STARTED AND STOPPED AS DEFINED BY OWNER BUILDING SCHEDULE. THE SYSTEM WILL START/STOP BY SCHEDULED OCCUPANCY TIME.

UNOCCUPIED COOLING
THE AHU's TO HAVE AN UNOCCUPIED COOLING SET POINT (85 DEG F, ADJUSTABLE AT EACH AHU). TO MAINTAIN DURING UNOCCUPIED PERIODS. ONCE ENERGIZED, THE RTU WILL PROVIDE COOLING AS SCHEDULED. THE SYSTEM WILL REMAIN ENERGIZED UNTIL SPACE SCHEDULED SET POINTS ARE MET.

UNOCCUPIED HEATING
THE AHU's TO HAVE AN UNOCCUPIED HEATING SET POINT (65 DEG F, ADJUSTABLE AT EACH AHU). TO MAINTAIN DURING UNOCCUPIED PERIODS. ONCE ENERGIZED, THE OUTSIDE AIR DAMPER WILL REMAIN CLOSED AND THE SUPPLY FAN WILL MAINTAIN THE DUCT STATIC PRESSURE SET POINT. THE SYSTEM WILL REMAIN ENERGIZED UNTIL NO ZONES REQUIRE UNOCCUPIED HEATING.

OCCUPANCY OVERRIDE
EACH SYSTEM WILL BE AVAILABLE FOR OCCUPANCY OVERRIDE. DURING UNOCCUPIED MODE, THE UNIT CONTROLLER WILL OVERRIDE THE ASSOCIATED SYSTEM INTO OCCUPIED MODE FOR 3 HOURS (ADJ.).

SUPPLY FAN CONTROL
WHEN THE AHU IS ENERGIZED, THE SUPPLY FAN VFD OR ECM MOTOR, WILL MODULATE TO MAINTAIN THE DUCT STATIC PRESSURE SET POINT (ADJ.). FAN SHALL MODULATE CAPACITY TO MAINTAIN 55° FLAT.

MECHANICAL COOLING
IF OUTSIDE AIR IS NOT SUFFICIENT TO PROVIDE COOLING, THE DX COMPRESSORS WILL BE TASKED WITH MAINTAINING THE DISCHARGE AIR TEMPERATURE SET POINT WHEN THE SYSTEM IS ENERGIZED AND NOT IN MORNING WARM–UP. STAGES OF DX COOLING WILL BE ENERGIZED AS NEEDED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SET POINT. COMPRESSOR STAGING CONTROL WILL BE DETERMINED BY THE AHU's INTERNAL CONTROLS. THE DISCHARGE AIR TEMPERATURE SET POINT SHALL MODULATE TO CONTROL SPACE TEMPERATURE AND/OR HUMIDITY AS SCHEDULED.

THE AIR ECONOMIZER WILL BE ENABLED BY A COMPARATIVE ENTHALPY. AHU–12 SHOULD BE PROVIDED WITH AN OUTSIDE AIR TEMP AND HUMIDITY SENSOR AS WELL AS A RETURN AIR TEMP AND HUMIDITY SENSOR. OUTSIDE AIR ENTHALPY AND RETURN AIR ENTHALPY WILL BE CALCULATED. IF THE OUTSIDE ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY, FREE COOLING IS AVAILABLE AND THE ECONOMIZER WILL BE ENABLED. AFTER BEING ENABLED, INTERNAL TRANE AHU CONTROLS WILL MODULATE THE OUTSIDE AIR AND RETURN AIR DAMPERS TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SET POINT.

HUMIDITY CONTROL
RETURN TEMPERATURE AND HUMIDITY WILL BE MONITORED AT EACH AHU, AND ZONE CONTROLLER LOCATION. IF THE RETURN AND /OR SPACE HUMIDITY RISES ABOVE SET POINT. THE DISCHARGE AIR TEMPERATURE SET POINT WILL RESET AND UNIT FAN SPEED AND CAPACITY SHALL MODULATE AS REQUIRED TO MAINTAIN SPACE HUMIDITY SET POINTS.

MINIMUM OA DAMPER POSITION
THE OUTSIDE AIR DAMPER WILL GO TO MINIMUM POSITION DURING SCHEDULED OCCUPIED TIMES IF NOT IN ECONOMIZER MODE. THE MINIMUM POSITION WILL BE DEFINED BY THE TEST AND BALANCE CONTRACTOR AND BE BASED ON OUTDOOR AIR INTAKE AS LISTED IN RTU SCHEDULE.

DISCHARGE AIR TEMPERATURE RESET
IF NOT IN MORNING WARM–UP, MORNING COOL–DOWN, OR HUMIDITY CONTROL, THE DISCHARGE AIR TEMPERATURE SET POINT WILL BE RESET ACCORDING TO THE OUTSIDE AIR TEMPERATURE. (ADJ.):

DUCT SMOKE DETECTORS:

CONTRACTOR SHALL PROVIDE SMOKE DETECTORS AS OUTLINED ON PLANS FOR ALL SPLIT SYSTEMS. SEE AHU UNIT SCHEDULE FOR INFORMATION.

RESTROOM EXHAUST FANS:

CEILING MOUNTED RESTROOM EXHAUST FANS ARE TO BE INTERLOCKED WITH LOCAL LIGHTING CIRCUIT TO ACTIVATE UPON RESTROOM OCCUPANCY. ROOF MOUNTED FANS SERVING MULTIPLE SPACES, INCLUDING RESTROOMS, SHALL BE INTERLOCKED WITH A TIME CLOCK AND OPERATE CONTINUOUSLY BUILDING IS IN OPERATION.

EXHAUST SYSTEMS SEQUENCES OF OPERATION

GENERAL REST ROOM EXHAUST:
- ALL EXHAUST FANS SERVING REST ROOMS, SHOWER ROOMS, LOCKER ROOMS, ETC. SHALL BE INTERLOCKED WITH ASSOCIATED ROOM LIGHTING OCCUPANCY SENSOR FOR CONTROL.

ISOLATION ROOM EXHAUST:
- ISOLATION ROOM(S) WILL REQUIRE 100 PERCENT OUTSIDE AIR WHEN IN USE; NO RETURN FROM THIS ROOM. FAN SHALL BE CONTROLLED VIA MANUAL SWITCH ON INTERIOR ROOM WALL. SWITCH SHALL BE PROVIDED WITH A PILOT LIGHT LOCATED ON ADJACENT EXTERIOR OF ROOM FOR VISUAL CONFIRMATION THE FAN IS OPERATING WHEN NEEDED.

ANIMAL AREAS ROOM EXHAUST:
- ALL ANIMAL AREAS (E.G. RUNS, WARDS, HOLDING KENNELS, ETC.) SHALL BE PROVIDED WITH AN ENERGY RECOVERY VENTILATOR THAT IS INTERCONNECTED WITH ASSOCIATED HVAC SYSTEM(S) SERVING EXHAUST SPACE. ERV EXHAUST FAN(S) SHALL ENERGIZE AND DE–ENERGIZE WITH THE ACTIVATION AND DE–ACTIVATION OF INTERLOCKED AHU FOR GENERAL SPACE CONDITIONING. MECHANICAL CONTRACTOR SHALL COORDINATE ALL REQUIRED CONTROL(S) SYSTEMS, WIRING, SWITCHES BETWEEN FAN MANUFACTURER AND RTU MANUFACTURER TO ENSURE INTERCONNECTION IS POSSIBLE.

AREAS OF FOCUS THIS PROJECT:
CANINE ADOPTION AREAS
FELINE/CANINE HOLDING AREAS
FELINE CONDO AREAS
REAL LIFE ROOMS
CONGREGATION ROOMS
INDOOR PLAY/EXERCISE AREAS
EXOTIC/AVIAN
TREATMENT/RECOVERY AREAS

FAN SCHEDULE

TAG	SYSTEM SERVED	FAN TYPE	CFM	E.S.P. (IN.WC)	DRIVE TYPE	RPM	ELECTRICAL DATA			SONES	OPERATING WEIGHT	MANUFACTURER GREENHECK & MODEL	OPTIONS
							H.P.	WATTS	VOLTAGE				
EF–1	141 MENS RR	CEILING EXHAUST	70	0.25	DIRECT	900	–	17.6	115V–1ø	1.1	12 LBS	SP–A90	A,B,F,S
EF–2	142 WOMENS RR	CEILING EXHAUST	70	0.25	DIRECT	900	–	17.6	115V–1ø	1.1	12 LBS	SP–A90	A,B,F,S
EF–3	162 PUBLIC RR	CEILING EXHAUST	70	0.25	DIRECT	900	–	17.6	115V–1ø	1.1	12 LBS	SP–A90	A,B,F,S
EF–4	243 MENS RR	CEILING EXHAUST	70	0.25	DIRECT	900	–	17.6	115V–1ø	1.1	12 LBS	SP–A90	A,B,F,S
EF–5	249 MENS SHOWER	CEILING EXHAUST	70	0.25	DIRECT	900	–	17.6	115V–1ø	1.1	12 LBS	SP–A90	A,B,F,S
EF–6	223 JANITOR	CEILING EXHAUST	30	0.25	DIRECT	900	–	16.4	115V–1ø	1.3	12 LBS	SP–A70	A,B,F,S
EF–7	226 WOMENS SHOWER	CEILING EXHAUST	70	0.25	DIRECT	900	–	17.6	115V–1ø	1.1	12 LBS	SP–A90	A,B,F,S
EF–8	242 WOMENS RR	CEILING EXHAUST	70	0.25	DIRECT	900	–	17.6	115V–1ø	1.1	12 LBS	SP–A90	A,B,F,S
EF–9	155 02 CLOSET	CEILING EXHAUST	25	0.5	DIRECT	900	–	17	115V–1ø	2.0	9 LBS	SP–B80	A,B,F,Q
EF–10	173 JANITOR CLOSET	CEILING EXHAUST	30	0.25	DIRECT	900	–	17.6	115V–1ø	1.1	12 LBS	SP–A90	A,B,F,S
EF–11	232 FELINE HOLD 2	INLINE EXHAUST	300	0.25	DIRECT	1050	1/30	–	115V–1ø	4.0	27 LBS	SQ–95–VG	A,B,F,L,Y
EF–12	116 FELINE CONDOS 1	INLINE EXHAUST	180	0.25	DIRECT	1050	1/30	–	115V–1ø	4.0	27 LBS	SQ–95–VG	A,B,F,L,Y
EF–13	112 FELINE CONDOS 2	INLINE EXHAUST	120	0.25	DIRECT	1050	1/30	–	115V–1ø	2.8	27 LBS	SQ–80–VG	A,B,F,L,Y
EF–14	143 JANITOR	CEILING EXHAUST	30	0.25	DIRECT	900	–	17.6	115V–1ø	1.3	12 LBS	SP–A70	A,B,F,S
EF–15	171 FELINE HOLD CONDOS	INLINE EXHAUST	150	0.25	DIRECT	1050	1/30	–	115V–1ø	4.0	27 LBS	SQ–95–VG	A,B,F,L,Y
EF–16	156/158 ISO AREAS	INLINE EXHAUST	210	0.25	DIRECT	1050	1/30	–	115V–1ø	4.0	27 LBS	SQ–95–VG	A,B,F,L,Y
RF–1	ECONOMIZER RELIEF FAN	IN–LINE EXHAUST	2800	1.0	VARI GREEN	1336	2	–	208V–1ø	9.7	122 LBS	SQ–160–VG	A,B,J,X

OPTIONS

A: DISCONNECT SWITCH
B: BACKDRAFT DAMPER
C: PREFAB. ROOF CURB
D: BIRDSCREEN
E: SHORT BASE OPTION
F: HANGING BRACKETS WITH VIBRATION ISOLATION
G: WALL MOUNTED HAND–OFF–AUTO (HOA) SWITCH WITH MOTOR STARTER/ (200 VOLTS OR HIGHER – 3 PHASES) WITH AUXILIARY CONTACT AND RELAY. STARTER PROVIDED BY M.C.
H: WALL MOUNTED HAND–OFF–AUTO (HOA) SWITCH WITH MAGNESTIC MOTOR STARTER (120 VOLTS – SINGLE PHASE) AND AUXILIARY CONTACT AND RELAY. STARTER PROVIDED BY M.C.
I: INTERLOCK WITH ASSOCIATED DOAS SYSTEM
J: PROVIDE FACTORY FAN SPEED CONTROLLER TO BALANCE FAN
K: INTERLOCKED WITH LIGHTING FIXTURE SWITCH
L: WL, WALL LOUVER DISCHARGE
M: RFC, ROOF CAP (FLAT ROOF)
RL, ROOF CAP (PITCHED ROOF) WITH MANUAL DAMPER
N: MOTORIZED DAMPER – 120V
O: PROVIDE FAN WITH FREE STANDING SPRING ISOLATORS AND VIBRATION ISOLATION RAILS, W/ WIND RESTRAINTS
P: WASHABLE ALUMINUM FILTERS
Q: CONTINUOUS RUN 24/7
R: EXHAUST METAL GRILLE
S: INTERLOCKED WITH LIGHTING OCCUPIED SENSOR (PROVIDED BY E.C. – SEE ELEC. DWGS FOR LOCATION)
T: RUN CONTINUOUSLY DURING OCCUPIED HOUR USE, CONNECTED VIA LIGHTING CONTROL. (CONTROL PROVIDED BY E.C. – SEE ELEC. DWGS FOR LOCATION)
U: INTERLOCK WITH CO/N20 MONITORS/DETECTORS
V: DISCHARGE SHUTTER (OUTLET DAMPER)
W: FOR OUTDOOR INSTALLATION
X: INTERLOCKED WITH ECONOMIZER/AHU TO ENERGIZE WHEN SYSTEM IN ECONOMIZER MODE; COORDINATE ALL CONTROLS INVOLVED
Y: RUN CONTINUOUSLY 24/7 FOR CAT CONDO EXHAUST SYSTEM

NOTES:

1. ALL FANS SHALL BE U.L. LABELED.
2. ALL FANS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. BACKDRAFT DAMPER ON ROOF SUPPLY FANS SHALL BE MOTORIZED.

ELECTRIC HEATER SCHEDULE

TAG	AREA SERVED	HEATER TYPE	ELECTRICAL DATA			OPERATING WEIGHT	MANUFACTURER MARKEL & MODEL	ADDITIONAL OPTIONS
			KW	AMPS	VOLTAGE			
EWH–1	FIRE RISER ROOM	WALL	5	24.1	208V–1ø	41 LBS	F3425T	A
EWH–2,3	STAIRWELL	WALL	3	14.4	208V–1ø	– LBS	F3423T	A

OPTIONS (ALL UNITS)
- BUILT–IN THERMOSTAT
- TAMPER PROOF CONTROLS
- MOUNTING BRACKETS/HARDWARE

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: FLUSH MOUNTING KIT, FULLY RECESSED
B: WALL MOUNTED THERMOSTAT /W INSULATED SUB BASE
C: WET LISTED FOR USE IN WET ENVIRONMENT
D: STAINLESS STEEL FINNED HEATING ELEMENTS
E: SUSPENDED HEATER SUPPORTS
F: ADJUSTABLE DISCHARGE LOUVERS

NOTES:

1. ALL HEATERS SHALL BE U.L. LABELED.
2. ALL HEATERS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. VERIFY MOUNTING HEIGHTS AND EXACT LOCATION WITH THE OWNER/ARCHITECT PRIOR TO INSTALLING UNIT.

MINI SPLIT SYSTEM/HEAT PUMP SCHEDULE

TAG	AREA SERVED	S.A. (CFM)	EVAPORATOR SECTION							CONDENSING SECTION				EFFICIENCY	MANUFACTURER MITSUBISHI & MODEL	ADDITIONAL OPTIONS
			RATED TC (MBH)	MIN/MAX TC (MBH)	SC (MBH)	MIN/MAX HEAT (MBH)	WEIGHT (LBS)	ELECTRICAL DATA		ELECTRICAL DATA			WEIGHT (LBS)			
								MCA	VOLTAGE	MCA	MOCP	VOLTAGE				
DAH–1/DHP–1	154 DOUBLE SURGERY	550	17.2	5.8/18.0	14.8	5.4/20.9	28	1	208V–1ø	10	15	208V–1ø	81	16 SEER/3.1 COP	MSZ–WR18NA/MUZ–WR18NA	F

OPTIONS (ALL UNITS)
- WALL MOUNTED 7–DAY PROGRAMMABLE DIGITAL THERMOSTAT
- CONDENSATE DRAIN PAN OVERFLOW SWITCH
- SINGLE POINT ELECTRICAL CONNECTION
- GALVANIZED CONDENSATE DRAIN PAN
- INTEGRAL CONDENSATE PUMP
- 4" THICK PREFABRICATED PAD OR CONCRETE PAD FOR OUTDOOR UNIT
- PRE–CHARGED REFRIGERANT LINE SETS
- MANUFACTURER MINIMUM CLEARANCES

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: CONDENSATE PUMP, DIVERSITECH CP–22 120V/1ø
B: 24V MOTORIZED O.A. DAMPER
C: 120V/1ø MOTORIZED O.A. DAMPER
D: STAINLESS STEEL DRAIN PAN
E: OUTDOOR UNIT WIND RESTRAINTS
F: UV LIGHT EQUAL TO ULTRAVATION MODEL 'UVPHOTOMAX' MOUNTED IN AIRSTREAM

NOTES:

1. ALL UNITS SHALL BE U.L. LABELED.
2. ALL UNITS SHALL HAVE R–410A REFRIGERANT.
3. ALL UNITS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
4. INDOOR UNIT POWERED BY OUTDOOR UNIT, SINGLE POINT ELECTRICAL CONNECT AT OUTDOOR UNIT ONLY. DISCONNECT SWITCH REQUIRED BY ELECTRICAL CONTRACTOR AT BOTH INDOOR AND OUTDOOR UNIT LOCATION.
5. CONTRACTOR SHALL VERIFY EQUIPMENT SUPPLIER EXACT ROUTING AND SIZE OF INSULATED REFRIGERANT PIPING. INSTALL PER MANUFACTURER RECOMMENDATIONS.

INTAKE LOUVER SCHEDULE

TAG	AREA SERVED	AIR FLOW (CFM)	LOUVER FUNCTION	THROAT VELOCITY (FT/MIN)	WIDTH (IN)	HEIGHT (IN)	DEPTH (IN)	FREE AREA (%)	MANUFACTURER RUSKIN & MODEL	OPERATING WEIGHT	ADDITIONAL OPTIONS
IL–1	212 MECH 1	5795	INTAKE	703	60	36	WALL	55	ELF6375DX	155 LBS	A,B,C
IL–2	215 MECH 2	5770	INTAKE	703	60	36	WALL	55	ELF6375DX	155 LBS	A,B,C
IL–3	230 MECH 3	9370	INTAKE	678	72	48	WALL	58	ELF6375DX	213 LBS	A,B,C

OPTIONS (ALL LOUVERS)
- STANDARD CONSTRUCTION
- BIRD/INSECT SCREEN
- PAINTED TO MATCH ADJ. SURFACES
- BACKDRAFT DAMPER
- DRAINABLE BLADES
- COMBINATION LOUVER/DAMPER
- INTERLOCKED WITH EXHAUST FAN
- ALL WELDED CONSTRUCTION
- ARCH. STYLE HIDDEN MULLIONS

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: PAINTED /W BAKED ENAMEL FINISH (COORD. COLOR W/ ARCHITECT)
B: EXTENDED SILL
C: HINGED FRAME
D: FILTER RACKS
E: SECURITY BARS

NOTES:

1. ALL LOUVERS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
2. LOUVER DAMPER TO CLOSE WHEN INTERLOCKED FAN NOT IN OPERATION.

FAN FILTER UNIT SCHEDULE

TAG	AREA SERVED	FAN FILTER INFORMATION				ELECTRICAL INFORMATION			MANUFACTURER ENVIRCO & MODEL	ADDITIONAL OPTIONS
		NOMINAL UNIT SIZE	ACTIVE FILT. FACE AREA (SQ.FT.)	MAXIMUM CFM	DESIGN CFM	WATTS AT MAXIMUM CFM	FLA	VOLTAGE		
FFU–1	154 DBL. SURG.	2x4 RSRE	5.3	610	300	300	1.5	208V–1PH	MAC–10–LAF	A,B,C,D

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: RSRE OPTION FOR ROOM SIDE MAINTENANCE ON FILTER AND MOTOR/BLOWER ASSEMBLY
B: AIRFLOW INDICATOR LIGHT
C: SOLID STATE SPEED CONTROL
D: FILTER REPLACEMENT INDICATOR LIGHT

CONTRACTOR NOTE:
FAN FILTER UNITS SHALL BE WIRED DIRECTLY TO PANEL FOR CONTINUOUS RUN 24/7. COORDINATE WITH ELECTRICAL CONTRACTOR TO HAVE TAG–OUT–LOCK–OUT PROVISIONS MADE AT PANEL FOR FUTURE MAINTENANCE.

EXHAUST LOUVER SCHEDULE

TAG	AREA SERVED	AIR FLOW (CFM)	LOUVER FUNCTION	THROAT VELOCITY (FT/MIN)	WIDTH (IN)	HEIGHT (IN)	DEPTH (IN)	FREE AREA (%)	MANUFACTURER RUSKIN & MODEL	OPERATING WEIGHT	ADDITIONAL OPTIONS
E–1	212 MECH 1	5795	EXHAUST	706	60	36	WALL	55	ELF6375DX	155 LBS	A,B,C
EL–2	215 MECH 2	5770	EXHAUST	706	60	36	WALL	55	ELF6375DX	155 LBS	A,B,C
EL–3	230 MECH 3	9370	EXHAUST	678	72	48	WALL	58	ELF6375DX	213 LBS	A,B,C

OPTIONS (ALL LOUVERS)
- STANDARD CONSTRUCTION
- BIRD/INSECT SCREEN
- PAINTED TO MATCH ADJ. SURFACES
- BACKDRAFT DAMPER
- DRAINABLE BLADES
- COMBINATION LOUVER/DAMPER
- INTERLOCKED WITH EXHAUST FAN
- ALL WELDED CONSTRUCTION
- ARCH. STYLE HIDDEN MULLIONS

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: PRIME COATED /W BAKED ENAMEL FINISH
B: EXTENDED SILL
C: HINGED FRAME
D: FILTER RACKS
E: SECURITY BARS

NOTES:

1. ALL LOUVERS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
2. LOUVER DAMPER TO CLOSE WHEN INTERLOCKED FAN NOT IN OPERATION.

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

M. MICHAEL SCHON
071324
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MECHANICAL SCHEDULES & NOTES

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M004

MAIN LEVEL EXHAUST AIR CALCULATION

2020 MECHANICAL CODE OF NEW YORK STATE (TABLE 403.3.1.1)

ROOM NAME	AREA (SQ.FT) NET	NUMBER OF UNIT	CFM/UNIT	NUMBER OF SHOWERS	CFM/UNIT	NET AREA O.A. RATE (CFM/SQ FT)	REQUIRED EXHAUST (CFM)	PROVIDED EXHAUST (MIN/MAX) (CFM)	SERVED BY	MAKE-UP AIR PROVIDED BY
124 CANINE ADOPT PUBLIC 1	482	–	–	–	–	0.9	434	435	AHU-1	AHU-1
125 CANINE ADOPT PUBLIC 2	384	–	–	–	–	0.9	346	350		
127 CANINE ADOPT PUBLIC 3	349	–	–	–	–	0.9	314	340		
128 CANINE ADOPT PUBLIC 4	329	–	–	–	–	0.9	296	315		
130 CANINE ADOPT PUBLIC 5	411	–	–	–	–	0.9	370	370		
126 JANITOR	20	–	–	–	–	1.0	20	30		
129 JANITOR	20	–	–	–	–	1.0	20	30		
131 CANINE ADOPT STAFF 5	408	–	–	–	–	0.9	367	370	AHU-2	AHU-2
132 CANINE ADOPT STAFF 4	302	–	–	–	–	0.9	272	300		
133 CANINE ADOPT STAFF 3	367	–	–	–	–	0.9	330	350		
135 CANINE ADOPT STAFF 2	356	–	–	–	–	0.9	320	350		
136 CANINE ADOPT STAFF 1	393	–	–	–	–	0.9	354	355		
134 JANITOR	20	–	–	–	–	1.0	20	30		
137 JANITOR	20	–	–	–	–	1.0	20	30		
153 TREATMENT/RECOVERY	406	–	–	–	–	0.9	365	425	AHU-3	AHU-3
158 CANINE ISO	72	–	–	–	–	0.9	65	70		
159 FELINE ISO	45	–	–	–	–	0.9	41	45		
170 FOOD PREP/LAUNDRY	242	–	–	–	–	1.0	242	250		
171 FELINE HOLD	241	–	–	–	–	0.9	217	350		
172 CANINE HOLD	514	–	–	–	–	0.9	463	500		
175 INTAKE HOLD	64	–	–	–	–	0.9	58	70		
152 OXYGEN RM	8	–	–	–	–	1.0	8	25		
162 PUBLIC RR	47	1	70	–	–	–	70	70	GF-5	GF-5
173 JANITOR	24	–	–	–	–	1.0	24	30		
141 MEN'S RR	47	1	70				70	70	GF-6	GF-6
142 WOMEN'S RR	47	1	70	–	–	–	70	70		
143 JANITOR	19	–	–	–	–	1.0	19	30		
106 CONG. FELINE RM 1	224	–	–	–	–	0.9	202	330	GF-8	GF-8
107 CONG. FELINE RM 2	213	–	–	–	–	0.9	193	330		
108 CONG. FELINE RM 3	214	–	–	–	–	0.9	193	385		
111 JAN/STORAGE	53	–	–	–	–	1.0	53	55	AHU-9	AHU-9
112 FELINE CONDOS 2	147	–	–	–	–	0.9	132	260		
116 FELINE CONDOS 1	334	–	–	–	–	0.9	301	340		
114 CONG. FELINE RM 4	139	–	–	–	–	0.9	125	400	AHU-10	AHU-10
115 CONG. FELINE RM 5	139	–	–	–	–	0.9	125	400		
119 REAL LIFE RM 1	85	–	–	–	–	0.9	76	105		
120 REAL LIFE RM 2	85	–	–	–	–	0.9	76	105		

NOTE: ONE (1) UNIT = ONE (1) FLUSHING FIXTURE AND/OR SHOWERHEAD.

UPPER LEVEL EXHAUST AIR CALCULATION

2020 MECHANICAL CODE OF NEW YORK STATE (TABLE 403.3.1.1)

ROOM NAME	AREA (SQ.FT) NET	NUMBER OF UNIT	CFM/UNIT	NUMBER OF SHOWERS	CFM/UNIT	NET AREA O.A. RATE (CFM/SQ FT)	REQUIRED EXHAUST (CFM)	PROVIDED EXHAUST (MIN/MAX) (CFM)	SERVED BY	MAKE-UP AIR PROVIDED BY
203 FELINE INDOOR PLAY	475	–	–	–	–	0.9	428	500	AHU-11	AHU-11
204 CONG. FELINE RM #7	127	–	–	–	–	0.9	114	175		
205 CONG. FELINE RM #8	130	–	–	–	–	0.9	117	175		
206 CONG. FELINE RM #9	131	–	–	–	–	0.9	117	175		
207 CONG. FELINE RM #10	174	–	–	–	–	0.9	150	275		
208 CONG. FELINE RM #11	151	–	–	–	–	0.9	135	200		
209 CONG. FELINE RM #12	224	–	–	–	–	0.9	186	250		
210 CONG. FELINE RM #13	152	–	–	–	–	0.9	121	175		
213 EXOTIC/AVIAN	534	–	–	–	–	0.9	466	750	AHU-13	AHU-13
213 LVL 2 CANINE ADOPT (EAST)	1028	–	–	–	–	0.9	888	1100		
218 JANITOR (WEST)	32	–	–	–	–	1.0	32	50		
219 JANITOR (EAST)	32	–	–	–	–	1.0	32	50		
248 LVL 2 CANINE ADOPT (WEST)	714	–	–	–	–	0.9	643	800		
233 INDOOR EXERCISE	1280	–	–	–	–	0.9	1152	1350	AHU-14	AHU-14
247 WHELPING PARTITION	284	–	–	–	–	0.9	256	300		
223 JANITOR	24	–	–	–	–	1.0	24	50	AHU-15	AHU-15
226 WOMEN'S SHOWER	29	1	70	–	–	–	70	70		
227 MEN'S LAVATORY	44	1	70	–	–	–	70	70		
229 MEN'S SHOWER	40	1	70	–	–	–	70	70		
232 FELINE HOLD #2	464	–	–	–	–	0.9	419	560		
241 WOMEN'S LAVATORY	44	1	70	–	–	–	70	70		
242 WOMEN'S RR	48	1	70	–	–	–	70	70		
243 MEN'S RR	48	1	70	–	–	–	70	70		

NOTE: ONE (1) UNIT = ONE (1) FLUSHING FIXTURE AND/OR SHOWERHEAD.

NEW YORK ENERGY CODE

(2020 New York Energy Conservation Code)

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
METHOD OF COMPLIANCE:

PRESCRIPTIVE ☒ ENERGY COST BUDGET ☐

THERMAL ZONE:	5A
EXTERIOR DESIGN CONDITIONS	
winter dry bulb	13° F.
summer dry bulb	93° F.
INTERIOR DESIGN CONDITIONS	
winter dry bulb	72° F.
summer dry bulb	75° F.
relative humidity	50% R.H.
BUILDING HEATING LOAD	756.1 MBH (PEAK)
BUILDING COOLING LOAD	1,083.6 MBH (PEAK)
MECHANICAL SPACING CONDITIONING SYSTEM	
UNITARY	
description of unit	SPLIT AHUs/HPs W/ INTEGRATED ERVs
heating efficiency	SEE SCHEDULES
cooling efficiency	SEE SCHEDULES
heat output of unit	SEE SCHEDULES
cooling output of unit	SEE SCHEDULES
BOILER	
total boiler output of unit	N/A
CHILLER	
total chiller capacity	N/A
LIST EQUIPMENT EFFICIENCIES	
Equipment schedules with motors (mechanical systems)	
motor horsepower	N/A
number of phases	N/A
minimum efficiency	N/A
motor type	N/A
# of poles	N/A

SECTION C406 COMPLIANCE
"ADDITIONAL EFFICIENCY PACKAGE OPTIONS"

- ☐ MORE EFFICIENT HVAC PERFORMANCE PER C406.2
- ☒ REDUCED LIGHTING POWER DENSITY SYSTEM PER C406.3
- ☐ ENHANCED LIGHTING CONTROLS PER C406.4
- ☐ ON-SITE SUPPLY OF RENEWABLE ENERGY PER C406.5
- ☐ PROVISION OF A DEDICATED OUTDOOR AIR SYSTEM PER C406.6
- ☐ HIGH-EFFICIENCY SERVICE WATER HEATING PER C406.7

DESIGNER STATEMENT:

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the 2020 New York Energy Conservation Code.

SIGNED: M Michael Schon

NAME: M. MICHAEL SCHON, P.E.

TITLE: MECHANICAL ENGINEER

Ventilation Sizing Summary for AHU-1

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
11:53AM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **1770** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
124 Can Adpt Pub 1	1	482.0	2.0	435.0	0.00	0.00	435.0	0.0	435.0
125 Can Adpt Pub 2	1	384.0	2.0	350.0	0.00	0.00	350.0	0.0	350.0
127 Can Adpt Pub 3	1	349.0	2.0	338.4	0.00	0.00	315.0	0.0	315.0
128 Can Adpt Pub 4	1	329.0	2.0	335.6	0.00	0.00	300.0	0.0	300.0
130 Can Adpt Pub 5	1	411.0	2.0	385.1	0.00	0.00	370.0	0.0	370.0
Totals (incl. Space Multipliers)				**1844.0**					**1770.0**

Ventilation Sizing Summary for AHU-2

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
11:59AM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **1654** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
121 Adoption Hallway	1	60.0	0.0	3.6	0.00	0.06	0.0	0.0	3.6
131 Can Adpt Staff 5	1	408.0	2.0	370.0	0.00	0.00	370.0	0.0	370.0
132 Can Adpt Staff 4	1	302.0	2.0	275.0	0.00	0.00	275.0	0.0	275.0
133 Can Adpt Staff 3	1	367.0	2.0	330.0	0.00	0.00	330.0	0.0	330.0
135 Can Adpt Staff 2	1	356.0	2.0	320.0	0.00	0.00	320.0	0.0	320.0
136 Can Adpt Staff 1	1	393.0	2.0	355.0	0.00	0.00	355.0	0.0	355.0
Totals (incl. Space Multipliers)				**1653.6**					**1653.6**

Ventilation Sizing Summary for AHU-3

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
12:00PM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **1468** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
144 Hallway 1	1	423.0	0.0	25.4	0.00	0.06	0.0	0.0	25.4
153 Treatment/Recovery	1	406.0	4.0	365.0	0.00	0.00	365.0	0.0	365.0
154 Double Surgery	1	190.0	4.0	185.2	7.50	0.18	0.0	0.0	64.2
156 Iso Hallway	1	97.0	0.0	59.9	0.00	0.06	0.0	0.0	5.8
158 Canine Iso	1	72.0	1.0	69.0	0.00	0.00	65.0	0.0	65.0
159 Feline Iso	1	45.0	1.0	45.0	0.00	0.00	45.0	0.0	45.0
170 Food Prep/Laun/Bathe	1	242.0	2.0	220.0	0.00	0.00	220.0	0.0	220.0
171 Feline Hold	1	241.0	1.0	465.0	0.00	0.00	465.0	0.0	465.0
172 Canine Hold	1	514.0	1.0	295.8	7.50	0.18	0.0	0.0	100.0
174 Hallway	1	110.0	0.0	6.6	0.00	0.06	0.0	0.0	6.6
175 Intake Hold	1	64.0	1.0	70.6	0.00	0.00	60.0	0.0	60.0
177 Receiving	1	156.0	1.0	139.8	5.00	0.12	0.0	0.0	23.7
178 Food Storage	1	119.0	1.0	77.7	5.00	0.06	0.0	0.0	12.1
179 Central Storage	1	87.0	0.0	12.1	5.00	0.12	0.0	0.0	10.4
Totals (incl. Space Multipliers)				**2037.2**					**1468.3**

Ventilation Sizing Summary for AHU-4

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
12:00PM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **30** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
163 Storage	1	77.0	0.0	10.7	0.00	0.00	0.0	0.0	0.0
164 Intake 1	1	106.0	1.0	67.6	0.00	0.00	5.0	0.0	5.0
165 Intake 2	1	106.0	1.0	67.6	0.00	0.00	5.0	0.0	5.0
166 Intake Exam	1	106.0	1.0	67.6	0.00	0.00	5.0	0.0	5.0
167 DVM Office	1	106.0	3.0	114.0	0.00	0.00	15.0	0.0	15.0
Totals (incl. Space Multipliers)				**327.5**					**30.0**

NOTE: THIS SYSTEM SHALL BE PROVIDED WITH A BI-POLAR IONIZATION FILTER DEVICE EQUAL TO PLASMA-AIR "7000" SERIES FOR REDUCED I.A.Q. DEMAND. SEE SHEET M006 FOR REDUCED I.A.Q. CALCULATIONS AND ADDITIONAL INFORMATION.

Ventilation Sizing Summary for AHU-5

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
12:00PM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **140** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
147 Conf Room	1	306.0	8.0	437.7	0.00	0.00	60.0	0.0	60.0
149 Staff Lounge	1	204.0	8.0	347.5	0.00	0.00	50.0	0.0	50.0
160 Surrender Vest	1	69.0	0.0	207.7	0.00	0.00	5.0	0.0	5.0
161 Surrender Waiting	1	305.0	6.0	419.4	0.00	0.00	25.0	0.0	25.0
162 Public RR	1	49.0	0.0	20.5	0.00	0.00	0.0	0.0	0.0
Totals (incl. Space Multipliers)				**1432.8**					**140.0**

NOTE: THIS SYSTEM SHALL BE PROVIDED WITH A BI-POLAR IONIZATION FILTER DEVICE EQUAL TO PLASMA-AIR "7000" SERIES FOR REDUCED I.A.Q. DEMAND. SEE SHEET M006 FOR REDUCED I.A.Q. CALCULATIONS AND ADDITIONAL INFORMATION.

Ventilation Sizing Summary for AHU-6

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
12:01PM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **125** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
104 Closet	1	27.0	0.0	3.8	5.00	0.12	0.0	0.0	3.2
138 Hallway	1	63.0	0.0	3.8	0.00	0.06	0.0	0.0	3.8
139 Hallway	1	205.0	0.0	71.1	0.00	0.06	0.0	0.0	12.3
141 Mens RR	1	49.0	0.0	20.5	0.00	0.00	0.0	0.0	0.0
142 Womans RR	1	49.0	0.0	20.5	0.00	0.00	0.0	0.0	0.0
144 Hallway 2	1	397.0	0.0	23.8	0.00	0.06	0.0	0.0	23.8
145 Bullpen	1	290.0	6.0	390.4	5.00	0.06	0.0	0.0	47.4
146 Copy Station	1	113.0	1.0	73.1	5.00	0.06	0.0	0.0	11.8
150 Marketing Office	1	102.0	1.0	65.5	5.00	0.06	0.0	0.0	11.1
151 Directors Office	1	102.0	1.0	65.5	5.00	0.06	0.0	0.0	11.1
Totals (incl. Space Multipliers)				**738.1**					**124.6**

Ventilation Sizing Summary for AHU-7

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
12:01PM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **105** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
101 Adoption Vest	1	95.0	0.0	220.4	5.00	0.06	0.0	0.0	5.7
102 Adoption Lobby	1	589.0	8.0	366.4	5.00	0.06	0.0	0.0	75.3
103 Adoption Reception	1	152.0	3.0	117.8	5.00	0.06	0.0	0.0	24.1
Totals (incl. Space Multipliers)				**704.6**					**105.2**

Ventilation Sizing Summary for AHU-8

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
12:01PM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **590** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
106 Cong Feline 1	1	224.0	1.0	354.0	0.00	0.00	195.0	0.0	195.0
107 Cong Feline 2	1	213.0	1.0	352.4	0.00	0.00	195.0	0.0	195.0
108 Cong Feline 3	1	213.0	1.0	352.4	0.00	0.00	195.0	0.0	195.0
109 Closet	1	39.0	0.0	54.5	5.00	0.12	0.0	0.0	4.7
Totals (incl. Space Multipliers)				**1113.4**					**589.7**

Ventilation Sizing Summary for AHU-9

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
12:01PM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **532** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
105 Feline Hallway 1	1	235.0	0.0	14.1	0.00	0.06	0.0	0.0	14.1
105 Feline Hallway 2	1	253.0	0.0	15.2	0.00	0.06	0.0	0.0	15.2
111 Janitor/Storage	1	53.0	0.0	55.0	0.00	0.00	55.0	0.0	55.0
112 Feline Condos 2	1	147.0	1.0	272.8	0.00	0.00	135.0	0.0	135.0
116 Feline Condos 1	1	334.0	2.0	305.0	0.00	0.00	305.0	0.0	305.0
117 Feline Imaging 2	1	42.0	1.0	104.4	5.00	0.06	0.0	0.0	7.5
Totals (incl. Space Multipliers)				**766.5**					**531.8**

Ventilation Sizing Summary for AHU-10

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
11:58AM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **1425** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
113 Feline Food/Prep	1	130.0	1.0	140.0	0.00	0.00	140.0	0.0	140.0
114 Cong Feline 4	1	139.0	1.0	400.0	0.00	0.00	400.0	0.0	400.0
115 Cong Feline 5	1	139.0	1.0	400.0	0.00	0.00	400.0	0.0	400.0
119 Real Life Rm 1	1	85.0	1.0	105.0	0.00	0.00	105.0	0.0	105.0
120 Real Life Rm 2	1	85.0	1.0	105.0	0.00	0.00	105.0	0.0	105.0
122 Canine Imaging 2	1	49.0	1.0	125.0	0.00	0.00	125.0	0.0	125.0
123 Canine Imaging	1	49.0	1.0	150.0	0.00	0.00	150.0	0.0	150.0
Totals (incl. Space Multipliers)				**1425.0**					**1425.0**

Ventilation Sizing Summary for AHU-11

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
11:58AM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **2055** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
204 Cong Feline Rm #7	1	127.0	1.0	175.0	0.00	0.00	175.0	0.0	175.0
205 Cong Feline Rm #8	1	130.0	1.0	175.0	0.00	0.00	175.0	0.0	175.0
206 Cong Feline Rm #9	1	131.0	1.0	175.0	0.00	0.00	175.0	0.0	175.0
207 Cong Feline Rm #10	1	174.0	1.0	275.0	0.00	0.00	275.0	0.0	275.0
203 Feline Indoor Play	1	475.0	1.0	500.0	0.00	0.00	500.0	0.0	500.0
208 Cong Feline Rm #11	1	151.0	1.0	190.0	0.00	0.00	190.0	0.0	190.0
209 Cong Feline Rm #12	1	224.0	1.0	250.0	0.00	0.00	250.0	0.0	250.0
210 Cong Feline Rm #13	1	152.0	1.0	175.0	0.00	0.00	175.0	0.0	175.0
211 Upper Feline Food Pr	1	138.0	1.0	140.0	0.00	0.00	140.0	0.0	140.0
Totals (incl. Space Multipliers)				**2055.0**					**2055.0**

Ventilation Sizing Summary for AHU-12

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
11:58AM

1. Summary

Ventilation Sizing Method .... **ASHRAE Std 62.1-2016**
Design Condition .... **Heating operation**
Occupant Diversity (D) **1.000**
Uncorrected Outdoor Air Intake (Vou) .... **173** CFM
System Ventilation Efficiency (Ev) **0.941**
Outdoor Air Intake (Vot) .... **184** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Supply Air (CFM) (Vpz)	Space Floor Area (ft^2) (Az)	Area Outdoor Air Rate (CFM/ft^2) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Evz)
Zone 1										
201 Upper Lobby	1	353	552.0	0.06	4.0	5.00	0.8	**66**	*53*	0.985
202 Open Atrium	1	645	1664.0	0.06	4.0	5.00	0.8	**150**	*120*	0.941
Totals (incl. Space Multipliers)		**997**							**173**	**0.941**

Ventilation Sizing Summary for AHU-13

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
11:59AM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **3150** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
213 Exotics/Avian	1	534.0	2.0	750.0	0.00	0.00	750.0	0.0	750.0
213 Lvl 2 Canine Adopt E	1	1028.0	1.0	1100.0	0.00	0.00	1100.0	0.0	1100.0
214 Hallway (East)	1	553.0	0.0	400.0	0.00	0.00	400.0	0.0	400.0
218 Janitor W	1	32.0	0.0	50.0	0.00	0.00	50.0	0.0	50.0
219 Janitor E	1	32.0	0.0	50.0	0.00	0.00	50.0	0.0	50.0
248 Lvl 2 Canine Adopt W	1	748.0	1.0	800.0	0.00	0.00	800.0	0.0	800.0
Totals (incl. Space Multipliers)				**3150.0**					**3150.0**

Ventilation Sizing Summary for AHU-14

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
11:59AM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **1650** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
233 Indoor Exercise	1	1280.0	3.0	1350.0	0.00	0.00	1350.0	0.0	1350.0
247 Whelping/Part	1	284.0	1.0	300.0	0.00	0.00	300.0	0.0	300.0
Totals (incl. Space Multipliers)				**1650.0**					**1650.0**

Ventilation Sizing Summary for AHU-15

Project Name: Rockland Green Animal Shelter
Prepared by: TEG
05/02/2024
11:59AM

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **1245** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft^2)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft^2)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
221 Hallway (East)	1	266.0	0.0	200.0	0.00	0.00	200.0	0.0	200.0
222 Alcove	1	69.0	0.0	50.0	0.00	0.00	50.0	0.0	50.0
226 Women's Shower	1	29.0	0.0	30.0	0.00	0.00	30.0	0.0	30.0
227 Men's Lavatory	1	44.0	0.0	45.0	0.00	0.00	45.0	0.0	45.0
229 Men's Shower	1	40.0	0.0	40.0	0.00	0.00	40.0	0.0	40.0
231 Elevator Lobby	1	173.0	0.0	175.0	0.00	0.00	175.0	0.0	175.0
232 Feline Hold #2	1	464.0	1.0	560.0	0.00	0.00	560.0	0.0	560.0
241 Women's Lavatory	1	44.0	0.0	45.0	0.00	0.00	45.0	0.0	45.0
242 Women's RR	1	49.0	0.0	50.0	0.00	0.00	50.0	0.0	50.0
243 Men's RR	1	48.0	0.0	50.0	0.00	0.00	50.0	0.0	50.0
Totals (incl. Space Multipliers)				**1245.0**					**1245.0**

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

071324

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF
HARVERSTRAW, NY 10993

MECHANICAL CALCULATIONS

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M005

5 OF 14

SYSTEM GF-4 REDUCED I.A.Q. CALCULATIONS

Rockland Green Animal Care - 164 Intake 1

PlasmaSoft IAQ Procedure Software — Support: plasmasoft@plasma-air.com or call (203)662-0800 — Version PlasmaSoft 2.0 ASHRAE 62.1 2013-2019

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provider by Plasma Air.
Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation	Equation 5 – Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air		
Space Type	Office space		
Ez	0.8 - Ceiling supply of warm air 15ºF above space Temp and ceiling return		
Area (Sq.Ft.)	106	Number of People	1
Supply Air (CFM)	100	Emission Rate/ Person (µg/min)	260

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA

VRP Outside Air Rate per Person	14.20	CFM
Space Airflows	CFM	L/Min
Supply Air	100	2,832
Outside Air	14.20	402.14
Return Air	85.80	2,429.86

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	260	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	402.14	L/min
Ef	Filter Efficiency	0	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.86	
Vr	Return Air Flow Rate	2,429.86	L/min
Cbz	Contaminant Concentration, zone	1.164	ppm

Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA

IAQP Outside Air Rate per Person	5.00	CFM
Space Airflows	CFM	L/min
Supply Air	100	2,832
Outside Air	5.00	141.60
Return Air	95.00	2,690.40

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	260	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	141.60	L/min
Ef	Filter Efficiency	0.68	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.95	
Vr	Return Air Flow Rate	2,690.40	L/min
Cbz	Contaminant Concentration, zone	0.249	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

Rockland Green Animal Care - 165 Intake 2

PlasmaSoft IAQ Procedure Software — Support: plasmasoft@plasma-air.com or call (203)662-0800 — Version PlasmaSoft 2.0 ASHRAE 62.1 2013-2019

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provider by Plasma Air.
Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation	Equation 5 – Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air		
Space Type	Office space		
Ez	0.8 - Ceiling supply of warm air 15ºF above space Temp and ceiling return		
Area (Sq.Ft.)	106	Number of People	1
Supply Air (CFM)	100	Emission Rate/ Person (µg/min)	260

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA

VRP Outside Air Rate per Person	14.20	CFM
Space Airflows	CFM	L/Min
Supply Air	100	2,832
Outside Air	14.20	402.14
Return Air	85.80	2,429.86

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	260	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	402.14	L/min
Ef	Filter Efficiency	0	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.86	
Vr	Return Air Flow Rate	2,429.86	L/min
Cbz	Contaminant Concentration, zone	1.164	ppm

Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA

IAQP Outside Air Rate per Person	5.00	CFM
Space Airflows	CFM	L/min
Supply Air	100	2,832
Outside Air	5.00	141.60
Return Air	95.00	2,690.40

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	260	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	141.60	L/min
Ef	Filter Efficiency	0.68	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.95	
Vr	Return Air Flow Rate	2,690.40	L/min
Cbz	Contaminant Concentration, zone	0.249	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

Rockland Green Animal Care - 166 Intake Exam

PlasmaSoft IAQ Procedure Software — Support: plasmasoft@plasma-air.com or call (203)662-0800 — Version PlasmaSoft 2.0 ASHRAE 62.1 2013-2019

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provider by Plasma Air.
Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation	Equation 5 – Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air		
Space Type	Office space		
Ez	0.8 - Ceiling supply of warm air 15ºF above space Temp and ceiling return		
Area (Sq.Ft.)	106	Number of People	1
Supply Air (CFM)	100	Emission Rate/ Person (µg/min)	260

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA

VRP Outside Air Rate per Person	14.20	CFM
Space Airflows	CFM	L/Min
Supply Air	100	2,832
Outside Air	14.20	402.14
Return Air	85.80	2,429.86

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	260	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	402.14	L/min
Ef	Filter Efficiency	0	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.86	
Vr	Return Air Flow Rate	2,429.86	L/min
Cbz	Contaminant Concentration, zone	1.164	ppm

Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA

IAQP Outside Air Rate per Person	5.00	CFM
Space Airflows	CFM	L/min
Supply Air	100	2,832
Outside Air	5.00	141.60
Return Air	95.00	2,690.40

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	260	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	141.60	L/min
Ef	Filter Efficiency	0.68	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.95	
Vr	Return Air Flow Rate	2,690.40	L/min
Cbz	Contaminant Concentration, zone	0.249	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

Rockland Green Animal Care - 167 DVM Office

PlasmaSoft IAQ Procedure Software — Support: plasmasoft@plasma-air.com or call (203)662-0800 — Version PlasmaSoft 2.0 ASHRAE 62.1 2013-2019

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provider by Plasma Air.
Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation	Equation 5 – Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air		
Space Type	Office space		
Ez	0.8 - Ceiling supply of warm air 15ºF above space Temp and ceiling return		
Area (Sq.Ft.)	106	Number of People	3
Supply Air (CFM)	110	Emission Rate/ Person (µg/min)	260

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA

VRP Outside Air Rate per Person	8.90	CFM
Space Airflows	CFM	L/Min
Supply Air	110	3,115
Outside Air	26.70	756.14
Return Air	83.30	2,359.06

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	780	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	756.14	L/min
Ef	Filter Efficiency	0	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.76	
Vr	Return Air Flow Rate	2,359.06	L/min
Cbz	Contaminant Concentration, zone	1.856	ppm

Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA

IAQP Outside Air Rate per Person	4.45	CFM
Space Airflows	CFM	L/min
Supply Air	110	3,115
Outside Air	13.35	378.07
Return Air	96.65	2,737.13

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	780	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	378.07	L/min
Ef	Filter Efficiency	0.68	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.88	
Vr	Return Air Flow Rate	2,737.13	L/min
Cbz	Contaminant Concentration, zone	0.697	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

TOTAL REDUCED O.A. REQUIRED = 30 CFM

SYSTEM GF-5 REDUCED I.A.Q. CALCULATIONS

Rockland Green Animal Care - 147 Conference Room

PlasmaSoft IAQ Procedure Software — Support: plasmasoft@plasma-air.com or call (203)662-0800 — Version PlasmaSoft 2.0 ASHRAE 62.1 2013-2019

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provider by Plasma Air.
Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation	Equation 5 – Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air		
Space Type	Conference / meeting		
Ez	0.8 - Ceiling supply of warm air 15ºF above space Temp and ceiling return		
Area (Sq.Ft.)	306	Number of People	15
Supply Air (CFM)	420	Emission Rate/ Person (µg/min)	260

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA

VRP Outside Air Rate per Person	7.78	CFM
Space Airflows	CFM	L/Min
Supply Air	420	11,894
Outside Air	116.70	3,304.94
Return Air	303.30	8,589.46

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	3,900	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	3,304.94	L/min
Ef	Filter Efficiency	0	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.72	
Vr	Return Air Flow Rate	8,589.46	L/min
Cbz	Contaminant Concentration, zone	2.123	ppm

Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA

IAQP Outside Air Rate per Person	3.89	CFM
Space Airflows	CFM	L/min
Supply Air	420	11,894
Outside Air	58.35	1,652.47
Return Air	361.65	10,241.93

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	3,900	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	1,652.47	L/min
Ef	Filter Efficiency	0.68	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.86	
Vr	Return Air Flow Rate	10,241.93	L/min
Cbz	Contaminant Concentration, zone	0.917	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

Rockland Green Animal Care - 149 Staff Lounge

PlasmaSoft IAQ Procedure Software — Support: plasmasoft@plasma-air.com or call (203)662-0800 — Version PlasmaSoft 2.0 ASHRAE 62.1 2013-2019

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provider by Plasma Air.
Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation	Equation 5 – Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air		
Space Type	Breakrooms		
Ez	0.8 - Ceiling supply of warm air 15ºF above space Temp and ceiling return		
Area (Sq.Ft.)	204	Number of People	10
Supply Air (CFM)	350	Emission Rate/ Person (µg/min)	320

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA

VRP Outside Air Rate per Person	9.31	CFM
Space Airflows	CFM	L/Min
Supply Air	350	9,912
Outside Air	93.10	2,636.59
Return Air	256.90	7,275.41

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	3,200	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	2,636.59	L/min
Ef	Filter Efficiency	0	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.73	
Vr	Return Air Flow Rate	7,275.41	L/min
Cbz	Contaminant Concentration, zone	2.184	ppm

Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA

IAQP Outside Air Rate per Person	4.65	CFM
Space Airflows	CFM	L/min
Supply Air	350	9,912
Outside Air	46.55	1,318.30
Return Air	303.45	8,593.70

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	3,200	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	1,318.30	L/min
Ef	Filter Efficiency	0.68	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.87	
Vr	Return Air Flow Rate	8,593.70	L/min
Cbz	Contaminant Concentration, zone	0.901	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

Rockland Green Animal Care - 160 Surrender Vestibule

PlasmaSoft IAQ Procedure Software — Support: plasmasoft@plasma-air.com or call (203)662-0800 — Version PlasmaSoft 2.0 ASHRAE 62.1 2013-2019

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provider by Plasma Air.
Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation	Equation 5 – Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air		
Space Type	Main entry lobbies - Office		
Ez	0.8 - Ceiling supply of warm air 15ºF above space Temp and ceiling return		
Area (Sq.Ft.)	69	Number of People	1
Supply Air (CFM)	200	Emission Rate/ Person (µg/min)	260

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA

VRP Outside Air Rate per Person	11.42	CFM
Space Airflows	CFM	L/Min
Supply Air	200	5,664
Outside Air	11.42	323.56
Return Air	188.58	5,340.44

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	260	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	323.56	L/min
Ef	Filter Efficiency	0	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.94	
Vr	Return Air Flow Rate	5,340.44	L/min
Cbz	Contaminant Concentration, zone	1.446	ppm

Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA

IAQP Outside Air Rate per Person	5.00	CFM
Space Airflows	CFM	L/min
Supply Air	200	5,664
Outside Air	5.00	141.60
Return Air	195.00	5,522.40

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	260	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	141.60	L/min
Ef	Filter Efficiency	0.68	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.97	
Vr	Return Air Flow Rate	5,522.40	L/min
Cbz	Contaminant Concentration, zone	0.123	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

Rockland Green Animal Care - 161 Surrender Waiting

PlasmaSoft IAQ Procedure Software — Support: plasmasoft@plasma-air.com or call (203)662-0800 — Version PlasmaSoft 2.0 ASHRAE 62.1 2013-2019

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provider by Plasma Air.
Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation	Equation 5 – Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air		
Space Type	Main entry lobbies - Office		
Ez	0.8 - Ceiling supply of warm air 15ºF above space Temp and ceiling return		
Area (Sq.Ft.)	305	Number of People	5
Supply Air (CFM)	450	Emission Rate/ Person (µg/min)	260

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA

VRP Outside Air Rate per Person	10.82	CFM
Space Airflows	CFM	L/Min
Supply Air	450	12,744
Outside Air	54.12	1,532.82
Return Air	395.88	11,211.18

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	1,300	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	1,532.82	L/min
Ef	Filter Efficiency	0	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.88	
Vr	Return Air Flow Rate	11,211.18	L/min
Cbz	Contaminant Concentration, zone	1.526	ppm

Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA

IAQP Outside Air Rate per Person	5.00	CFM
Space Airflows	CFM	L/min
Supply Air	450	12,744
Outside Air	25.00	708.00
Return Air	425.00	12,036.00

$$C_{bz} = \frac{N + Ez\ Voz\ Co(1 - Ef)}{Ez\ (Voz + R\ Vr\ Ef)}$$

Variable	Description	Value	Units
N	Contaminant Generation Rate	1,300	µg/min
Ez	Zone Air Distribution Effectiveness	0.8	
Voz	Outdoor Air Flow Rate	708.00	L/min
Ef	Filter Efficiency	0.68	
Co	Contaminant Concentration, OA	1.2	µg/m³
R	Recirculation Flow Variable =Vr/(Vo+Vr)	0.94	
Vr	Return Air Flow Rate	12,036.00	L/min
Cbz	Contaminant Concentration, zone	0.277	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

TOTAL REDUCED O.A. REQUIRED = 140 CFM

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MECHANICAL CALCULATIONS

	REV.#	DATE	COMMENTS
REVISION	-	-	-
REVISION	-	-	-
REVISION	-	-	-
REVISION	-	-	-

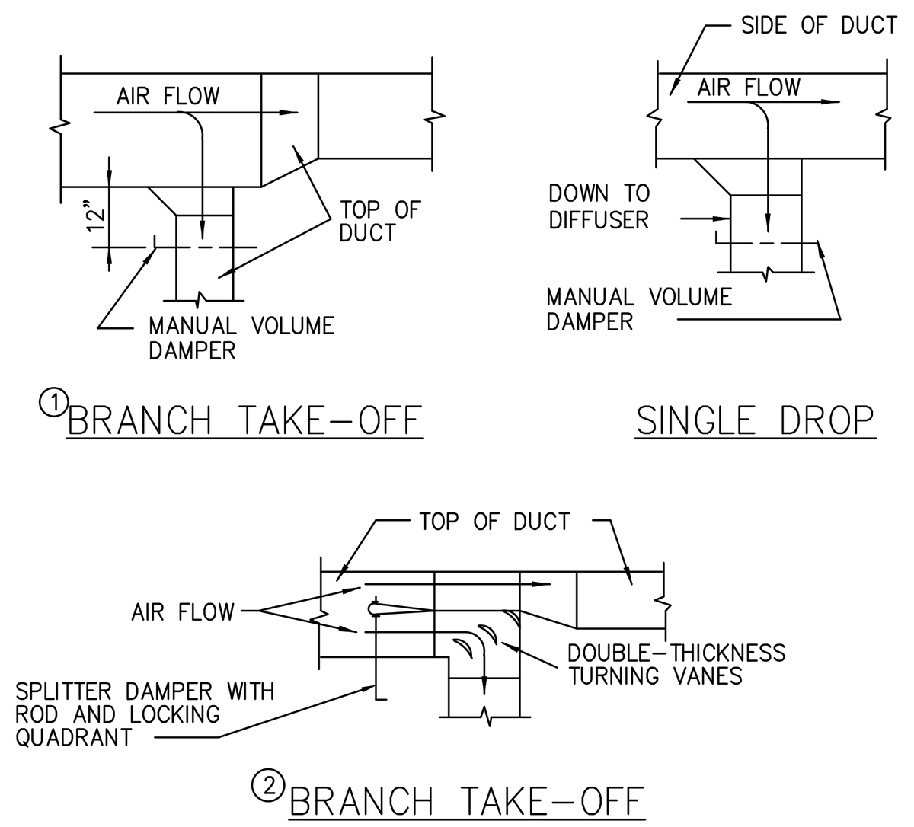
REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

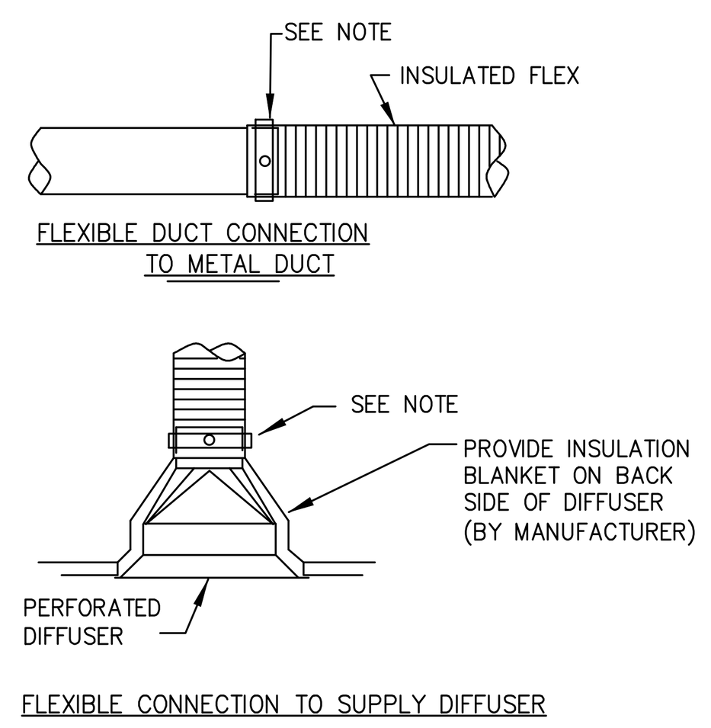
M006

6 OF 14



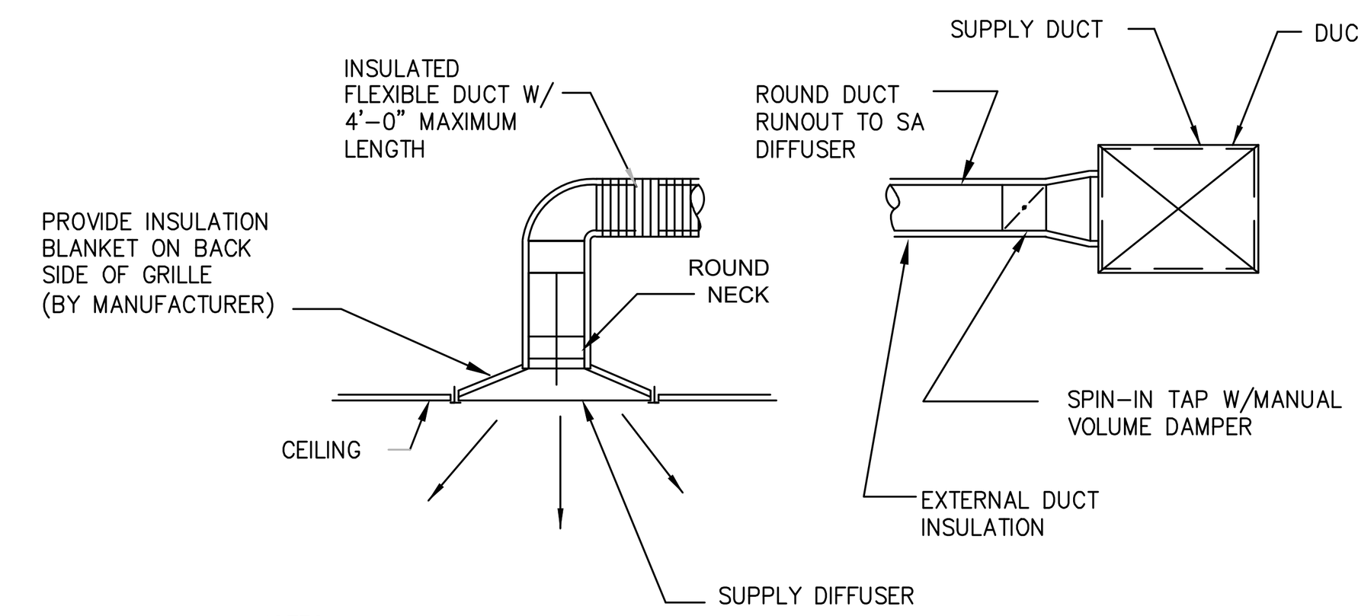
NOTE:
1. USE BRANCH TAKE-OFF ① WHEN MAIN AND BRANCH DUCTS ARE DIFFERENT DEPTHS
2. USE BRANCH TAKE-OFF ② WHEN MAIN AND BRANCH DUCTS ARE SAME DEPTHS

1 DUCTWORK DETAIL
SCALE: NONE



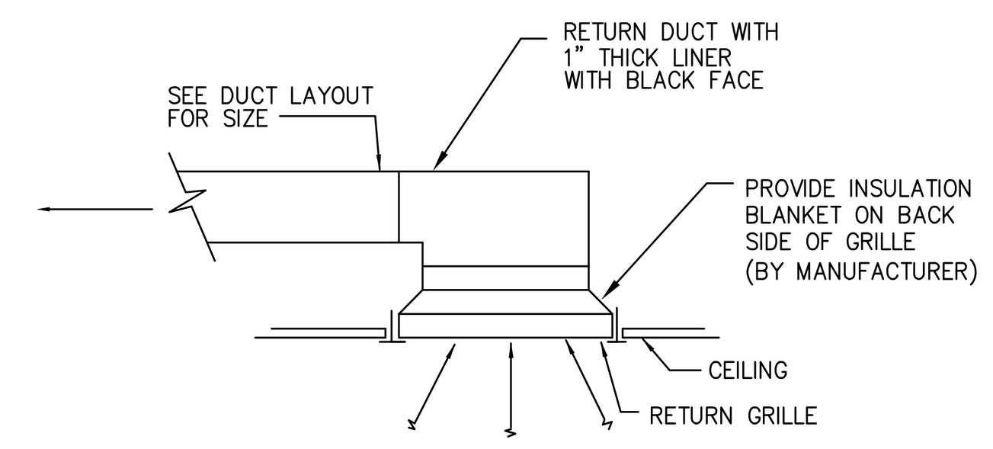
NOTE:
1. ALL FLEXIBLE DUCT CONNECTIONS TO SHEET METAL SHALL BE SECURED WITH NYLON STRAP AND 2 SHEET METAL SCREWS (MIN.).
2. PROVIDE INSULATION BLANKET ON BACK OF GRILLE FACE, TAPE EDGES DOWN TO GRILLE AND FLEX CONNECTION

2 FLEX. CONNECTION DETAIL
SCALE: NONE

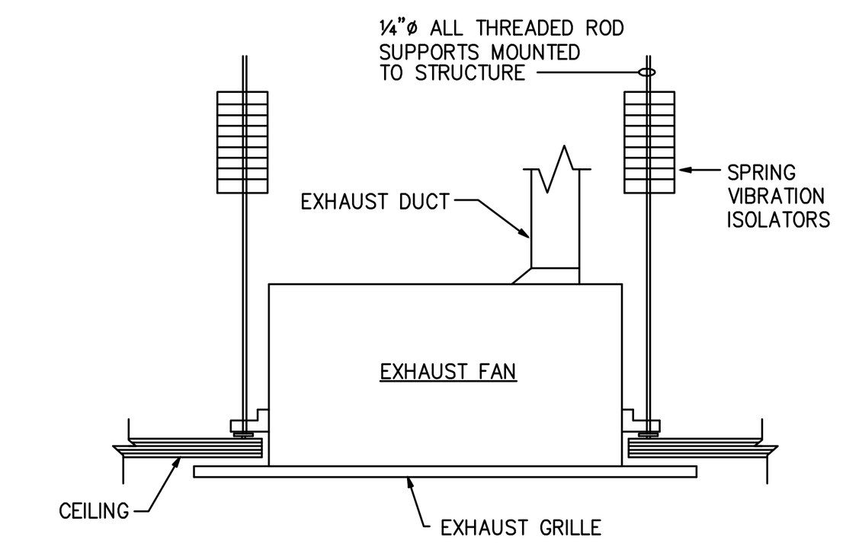


NOTES:
1. PROVIDE TRANSITION FROM ROUND DUCT TO DIFFUSER IF REQ'D.
2. PROVIDE EACH SUPPLY GRILLE A OPPOSED BLADE DAMPER (OBD)

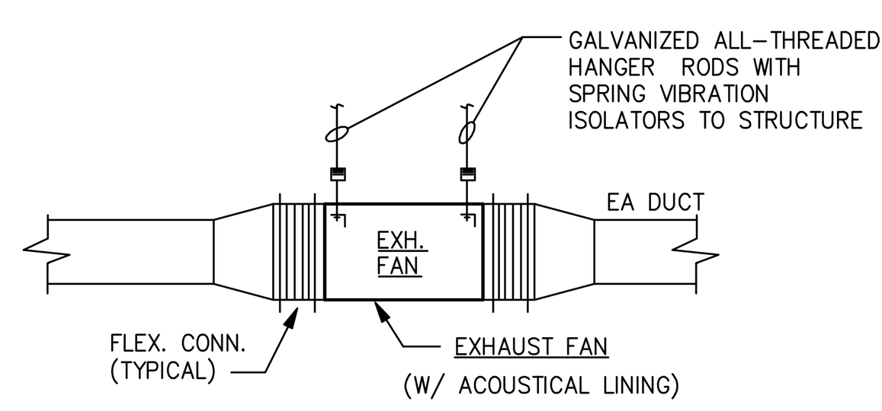
3 SPIN TAP TO ROUND NECK DIFFUSER
SCALE: NONE



4 RETURN GRILLE DETAIL
SCALE: NONE



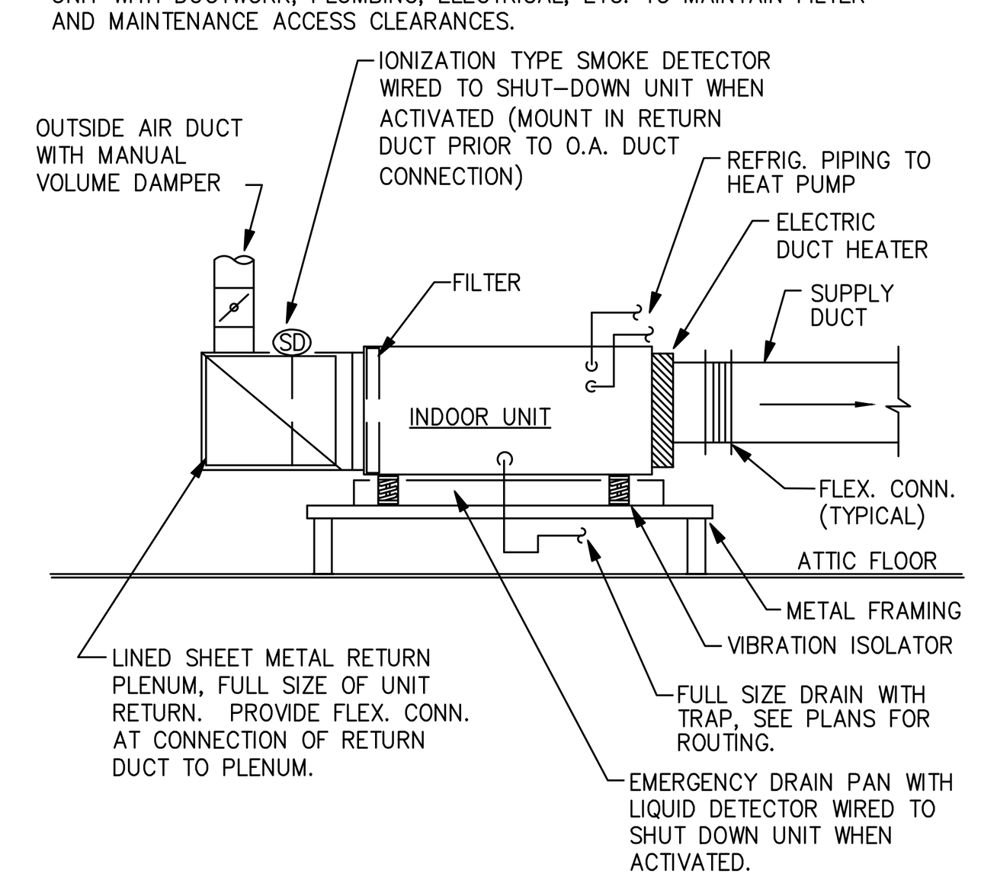
5 CEILING FAN DETAIL
SCALE: NONE



NOTES:
1. COORDINATE LOCATION OF FAN WITH OTHER TRADES TO INSURE SERVICE CLEARANCES.
2. MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS DOOR IN CEILING IF REQUIRED.

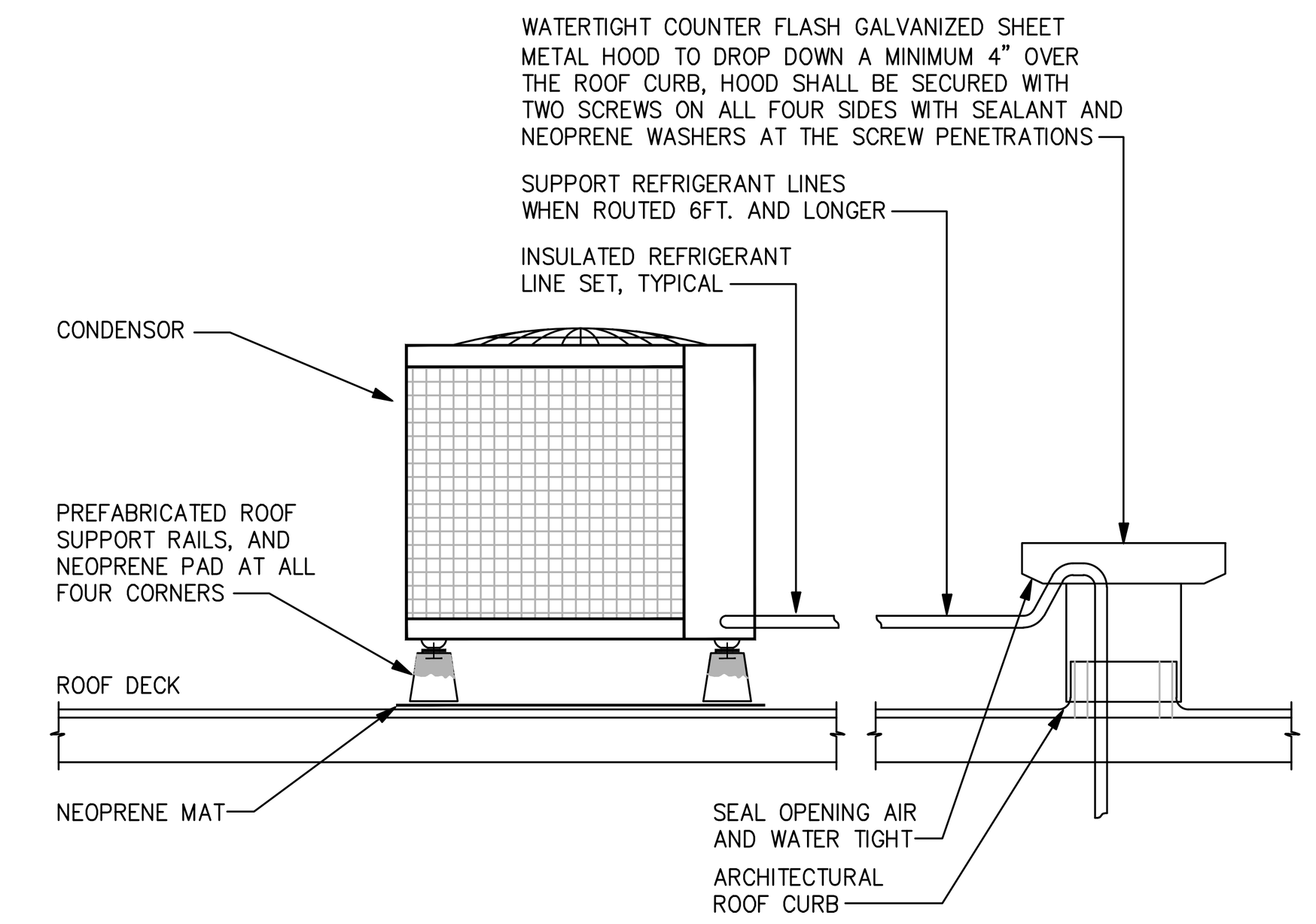
6 INLINE EXH. FAN DETAIL
SCALE: NONE

NOTE:
MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF INDOOR UNIT WITH DUCTWORK, PLUMBING, ELECTRICAL, ETC. TO MAINTAIN FILTER AND MAINTENANCE ACCESS CLEARANCES.

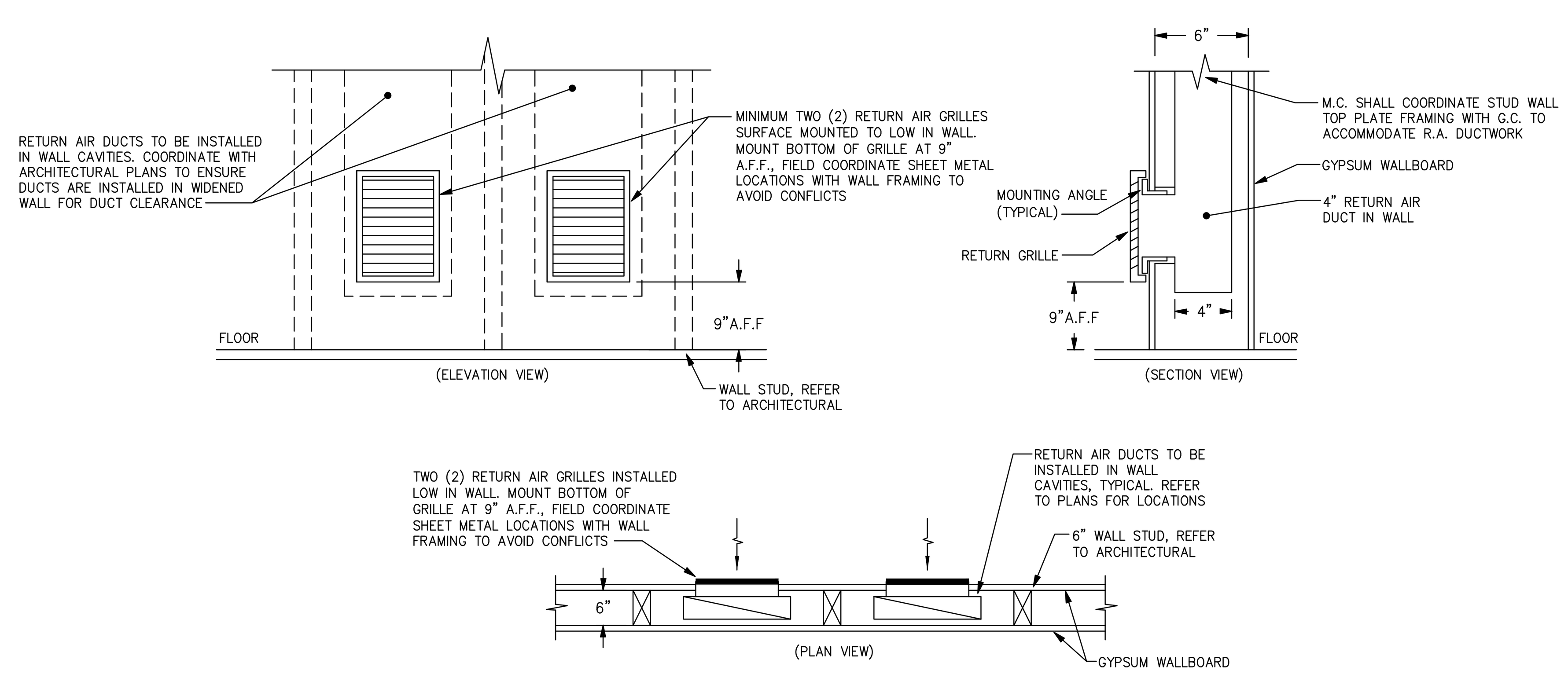


7 INDOOR UNIT DETAIL
SCALE: NONE

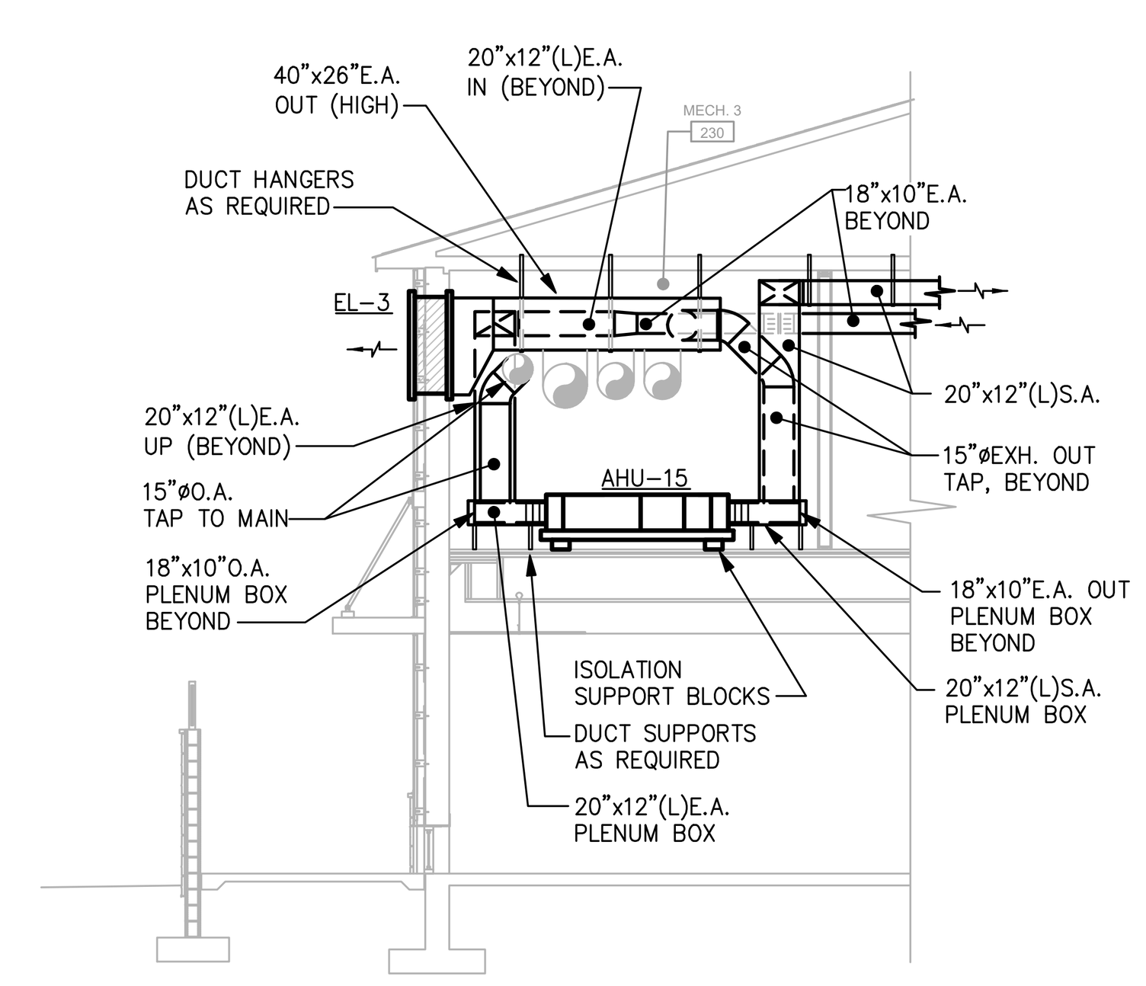
NOTE:
PROVIDE SMOKE DETECTORS WHERE INDICATED AND/OR ON ALL SYSTEMS 2000 CFM OR GREATER SUPPLY AIR. SMOKE DETECTORS SHALL BE WIRED TO SHUT DOWN THE UNIT UPON ACTIVATION. SMOKE DETECTORS SHALL BE FURNISHED, INSTALLED, AND WIRED BY THE MECHANICAL CONTRACTOR AND CONNECTED TO LOCAL FACP OR HVAC MONITORING PANEL AS REQUIRED.



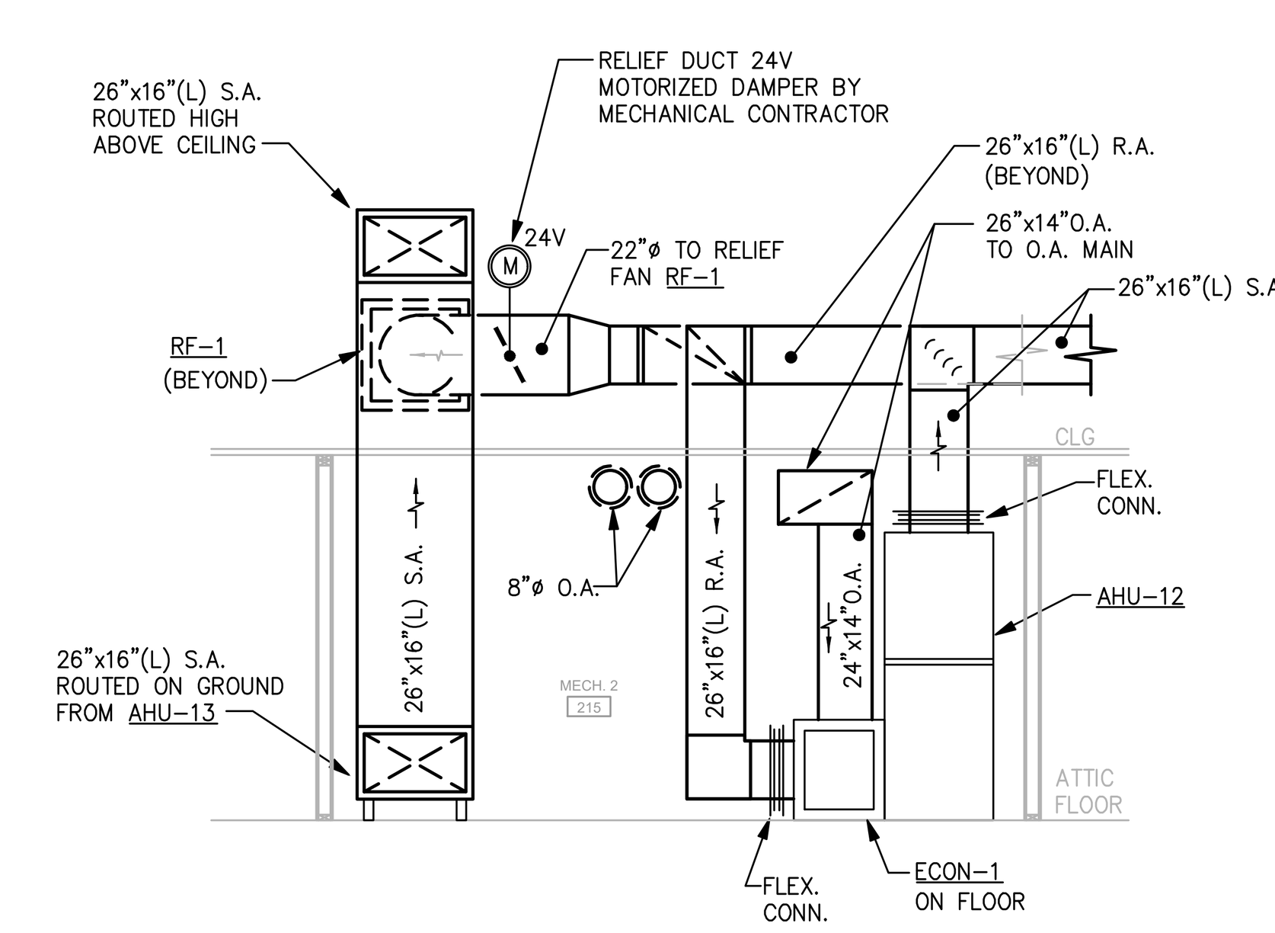
8 HEAT PUMP/ CONDENSING UNIT INSTALLATION
SCALE: NONE



9 SURGERY ROOM RETURN AIR GRILLE DETAIL
SCALE: NO SCALE



10 MECHANICAL ATTIC #3 – BUILDING SECTION
SCALE: NO SCALE



11 MECHANICAL ATTIC #2 – BUILDING SECTION
SCALE: NO SCALE

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK · M. MICHAEL SCHON · 071324 · LICENSED PROFESSIONAL ENGINEER
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MECHANICAL DETAILS

REV.#	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

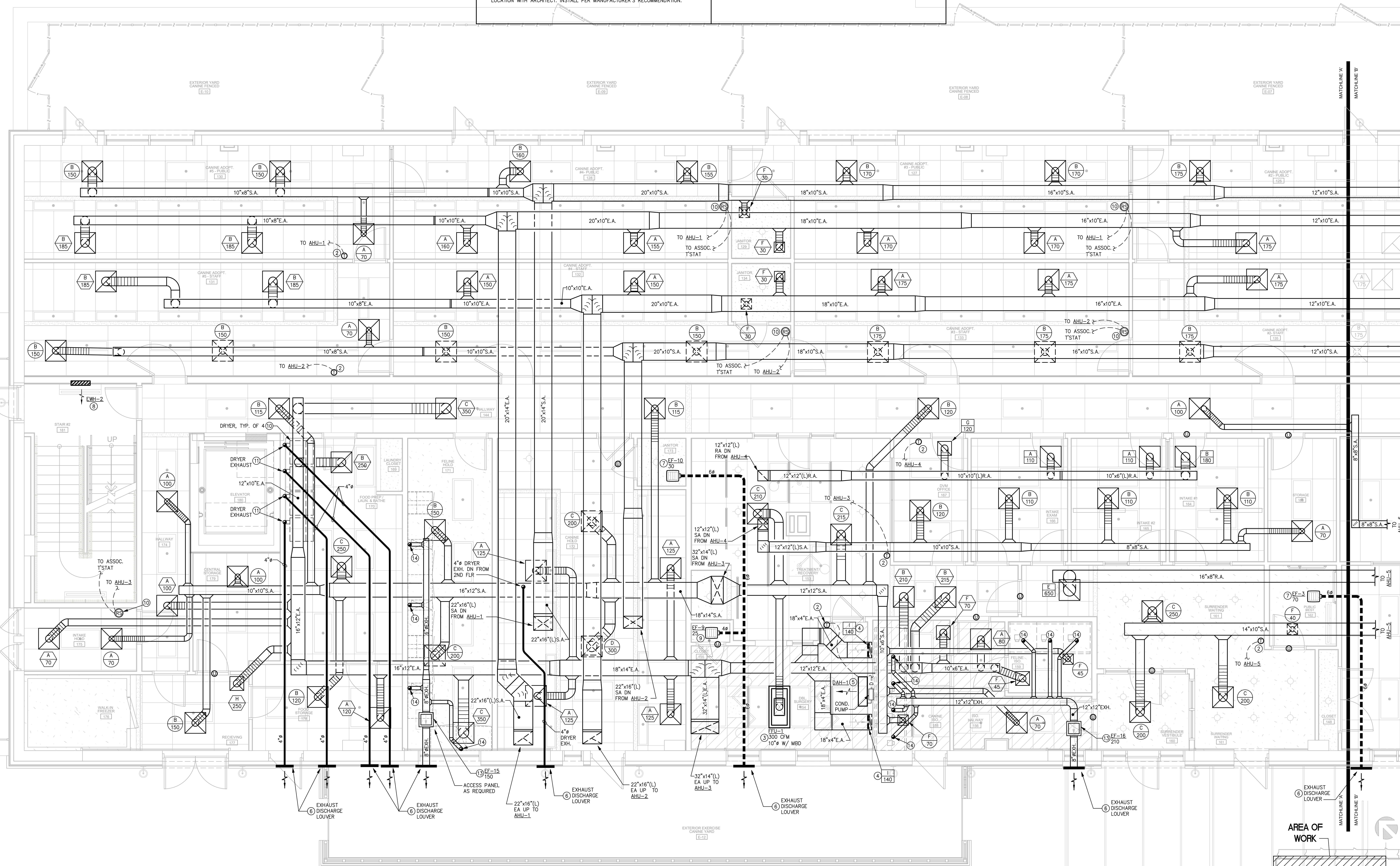
M007
7 OF 14

RATED WALL LEGEND

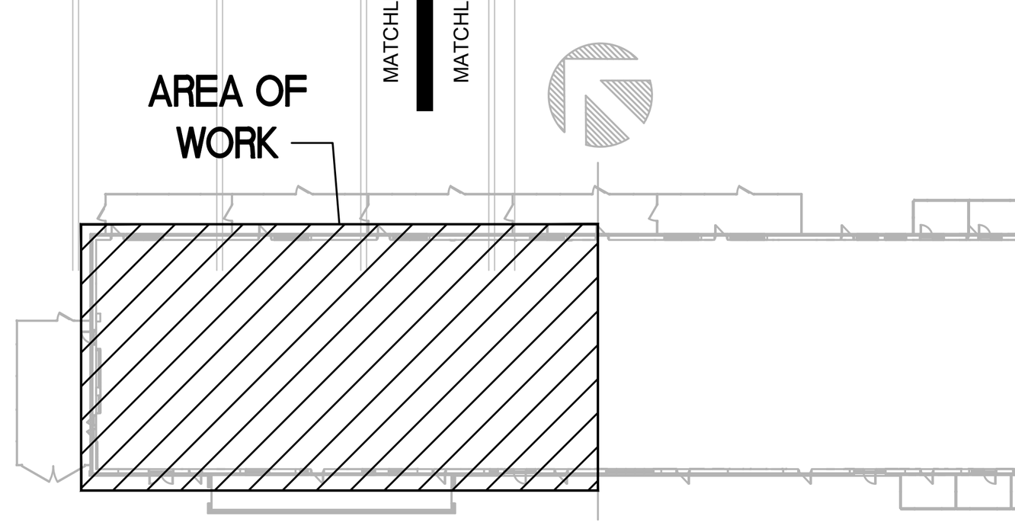
— · — · —	INDICATES A 1-HOUR RATED WALL

NOTES THIS SHEET

1. SEE SHEETS M001-007 FOR SPECIFICATIONS, LEGENDS, GENERAL NOTES, SCHEDULES AND DETAILS.
2. COORDINATE THERMOSTAT/SWITCH LOCATION WITH OWNER PRIOR TO ROUGHING-IN.
3. SURGERY ROOMS: MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL FAN FILTER UNIT (FFU-#) IN CEILING, SIZED AS INDICATED. COORDINATE WITH OWNER AND SURGERY ROOM EQUIPMENT SUPPLIER FOR EXACT LOCATION OF FFU PRIOR TO ROUGHING-IN. ENSURE THAT FFU MAINTAINS ALL REQUIRED MAINTENANCE AND OPERATIONAL CLEARANCES PER MANUFACTURER'S INSTRUCTION. FFU SHALL BE WIRED DIRECTLY TO ELECTRICAL PANEL FOR CONTINUOUS OPERATION AND SHALL RUN 24/7. COORDINATE WITH ELECTRICAL CONTRACTOR TO HAVE LOCK-OUT-TAG-OUT PROVISIONS MADE AT PANEL FOR FUTURE MAINTENANCE OF UNIT. ALL SUPPLY AIR DUCTWORK FEEDING FFU SHALL BE CONSTRUCTED OF RIGID DUCT, NO EXCEPTIONS.
4. SURGERY ROOMS: TWO (2) RETURN AIR GRILLES SHALL BE LOCATED LOW IN WALL (BOTTOM OF GRILLE TO BE 9" A.F.F.). GRILLE LOCATIONS SHALL BE COORDINATED WITH OWNER PRIOR TO ROUGHING-IN. PROVIDE AND INSTALL SHEET METAL R.A. DUCTS IN WALL SIZED AS INDICATED BELOW. FIELD COORDINATE DUCT LOCATIONS WITH STUD WALLS TO AVOID CONFLICT.
   154 DOUBLE SURGERY – 4"x18" R.A. SHEET METAL DUCT IN WALL
5. DAH-#: DUCTLESS AIR HANDLER MOUNTED CENTERED ON WALL, COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH OWNER AND MANUFACTURER PRIOR TO ROUGHING-IN. ROUTE CONDENSATE DRAIN LINE TO AUXILIARY DRAIN BOX BELOW CABINET NEAR SINK "S-4" IN 153 TREATMENT/RECOVERY AREA. SPILL WITH CODE APPROVED AIR GAP.
6. APPROXIMATE LOCATION OF SIDEWALL EXHAUST DISCHARGE. PROVIDE WITH CODE APPROVED DISCHARGE LOUVER WITH GRAVITY BACKDRAFT DAMPER. COORDINATE LOUVER FINISH AND FINAL LOCATION WITH ARCHITECT.
7. APPROXIMATE LOCATION OF CEILING MOUNTED EXHAUST FAN. FIELD VERIFY EXACT LOCATION OF FAN PRIOR TO ROUGHING-IN.
8. ELECTRIC WALL HEATER (EWH-#) TO BE FULLY RECESSED IN WALL. COORDINATE EXACT LOCATION WITH ARCHITECT. INSTALL PER MANUFACTURER'S RECOMMENDATION.
9. OXYGEN CLOSET EXHAUST FAN (EF-9) TO BE RUN 24/7. 6"ø EXHAUST DUCT ROUTED TO ROOF. EXHAUST DUCT SERVING N20/O2 ROOM SHALL BE CONSTRUCTED OF SCHEBLER "FYRE GUARD" PRE-FABRICATED DUCT, OR, SHALL BE WRAPPED IN A FIRE RETARDANT DUCT WRAP TO ACHIEVE A MINIMUM 1-HOUR FIRE BARRIER AND ZERO CLEARANCE TO COMBUSTIBLES DUCT SYSTEM. FIELD VERIFY BEST ROUTING OF DUCTWORK.
10. APPROXIMATE LOCATION OF REMOTE WALL MOUNTED TEMPERATURE SENSOR TO BE INTERLOCKED WITH ASSOCIATED SPLIT SYSTEM AND THERMOSTAT.
11. DRYER BY OTHERS. COORDINATE ALL MECHANICAL REQUIREMENTS VIA OWNER PROVIDED DRYER MANUFACTURER LITERATURE.
12. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL 4"/6"/8"ø RIGID DRYER DUCT (FIELD VERIFY WHICH EXACT SIZE EXHAUST DUCT TO INSTALL, VIA OWNER PROVIDED DRYER MANUFACTURER LITERATURE) PRIOR TO ROUGHING-IN. ROUTE RIGID CODE APPROVED DRYER DUCT TO EXTERIOR AS REQUIRED AND PROVIDE WITH CODE APPROVED DISCHARGE LOUVER, LINT TRAP, AND BACKDRAFT DAMPER.
   - WHERE THE EXHAUST DUCT EQUIVALENT LENGTH EXCEEDS 35' (10 688 mm), THE EQUIVALENT LENGTH OF THE EXHAUST DUCT SHALL BE IDENTIFIED ON A PERMANENT LABEL OR TAG. THE LABEL OR TAG SHALL BE LOCATED WITHIN 6 FEET (1829 mm) OF THE EXHAUST TERMINATION, AS PER SECTION 504.8.5 OF THE 2020 MECHANICAL CODE OF NEW YORK STATE.
13. APPROXIMATE LOCATION OF INLINE EXHAUST FAN (EF-15) TO BE INSTALLED ABOVE CEILING. MECHANICAL CONTRACTOR SHALL FULLY COORDINATE WITH GENERAL CONTRACTOR TO HAVE ACCESS PANEL(S) INSTALLED AS REQUIRED FOR MAINTENANCE AND CODE PURPOSES. FIELD VERIFY EXACT LOCATION OF FAN AND DISCHARGE POINT WITH ALL CONDITIONS PRIOR TO ROUGHING-IN. PROVIDE PERMANENT IDENTIFICATION LABEL AS CLOSE TO FAN AS POSSIBLE.
14. 4"ø EXHAUST CONNECTION FROM REAR OF CAT CONDO. MECHANICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF NEW CAT CONDO EXHAUST DUCTWORK TO 10"ø MAIN AND ASSOCIATED CONTINUOUS RUN EXHAUST FAN. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.



MAIN LEVEL
FLOOR PLAN – MECHANICAL – WEST
SCALE: 1/4" = 1'-0"



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK · M. MICHAEL SCHON · 071324 · LICENSED PROFESSIONAL ENGINEER
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL
FLOOR PLAN - MECHANICAL - WEST

	REV.#	DATE	COMMENTS
REVISION:	.	.	.
REVISION:	.	.	.
REVISION:	.	.	.
REVISION:	.	.	.

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

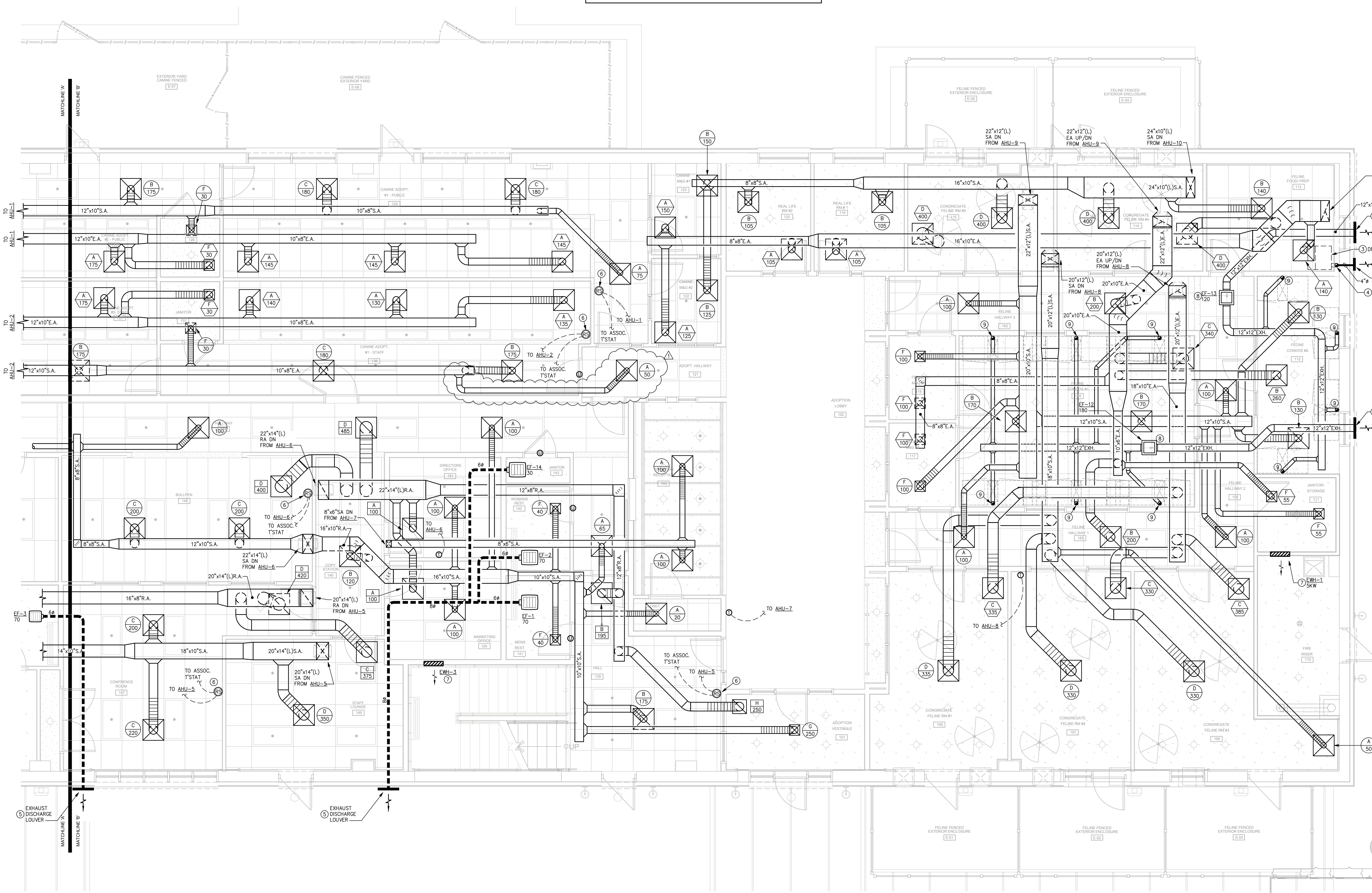
M101

RATED WALL LEGEND

— · — · —	INDICATES A 1-HOUR RATED WALL

NOTES THIS SHEET

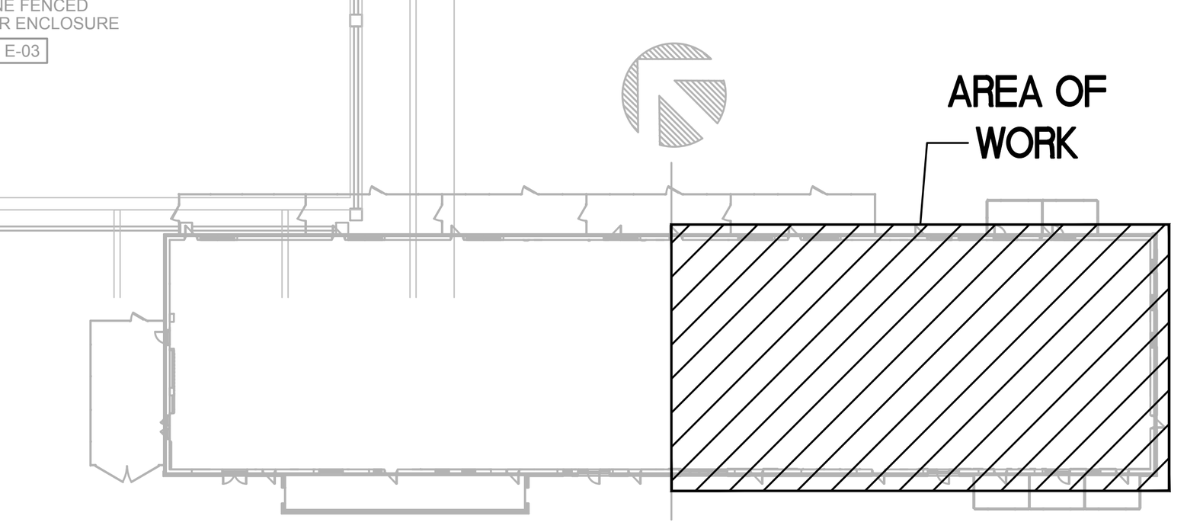
1. SEE SHEETS M001-00? FOR SPECIFICATIONS, LEGENDS, GENERAL NOTES, SCHEDULES AND DETAILS.
2. COORDINATE THERMOSTAT/SWITCH LOCATION WITH OWNER PRIOR TO ROUGHING-IN.
3. DRYER BY OTHERS. COORDINATE ALL MECHANICAL REQUIREMENTS VIA OWNER PROVIDED DRYER MANUFACTURER LITERATURE.
4. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL 4"/6"/8"ø RIGID DRYER DUCT (FIELD VERIFY WHICH EXACT SIZE EXHAUST DUCT TO INSTALL, VIA OWNER PROVIDED DRYER MANUFACTURER LITERATURE) PRIOR TO ROUGHING-IN. ROUTE RIGID CODE APPROVED DRYER DUCT TO ROOF AS REQUIRED AND PROVIDE WITH CODE APPROVED DRYER VENT CAP, LINT TRAP, AND BACKDRAFT DAMPER.
5. APPROXIMATE LOCATION OF SIDEWALL EXHAUST DISCHARGE. PROVIDE WITH CODE APPROVED DISCHARGE LOUVER WITH GRAVITY BACKDRAFT DAMPER. COORDINATE LOUVER FINISH AND FINAL LOCATION WITH ARCHITECT.
6. APPROXIMATE LOCATION OF REMOTE WALL MOUNTED TEMPERATURE SENSOR TO BE INTERLOCKED WITH ASSOCIATED SPLIT SYSTEM AND THERMOSTAT.
7. ELECTRIC WALL HEATER (EWH-#) TO BE FULLY RECESSED IN WALL. COORDINATE EXACT LOCATION WITH ARCHITECT. INSTALL PER MANUFACTURER'S RECOMMENDATION.
8. APPROXIMATE LOCATION OF INLINE EXHAUST FAN (EF-#) TO BE INSTALLED ABOVE CEILING. MECHANICAL CONTRACTOR SHALL FULLY COORDINATE WITH GENERAL CONTRACTOR TO HAVE ACCESS PANEL(S) INSTALLED AS REQUIRED FOR MAINTENANCE AND CODE PURPOSES. FIELD VERIFY EXACT LOCATION OF FAN AND DISCHARGE POINT WITH ALL CONDITIONS PRIOR TO ROUGHING-IN. PROVIDE PERMANENT IDENTIFICATION LABEL AS CLOSE TO FAN AS POSSIBLE.
9. 4"ø EXHAUST CONNECTION FROM REAR OF CAT CONDO. MECHANICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF NEW CAT CONDO EXHAUST DUCTWORK TO EXHAUST MAIN AND ASSOCIATED CONTINUOUS RUN EXHAUST FAN. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.



MAIN LEVEL
FLOOR PLAN - MECHANICAL - EAST

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

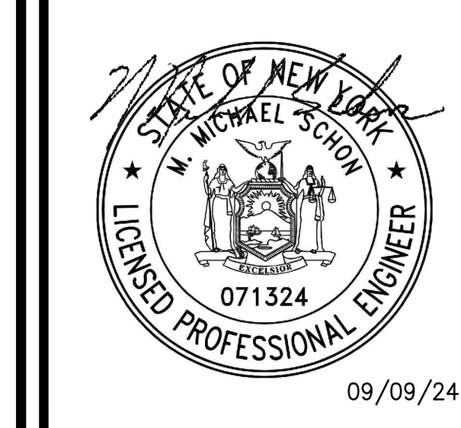
AREA OF WORK



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA



09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL
FLOOR PLAN - MECHANICAL - EAST

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

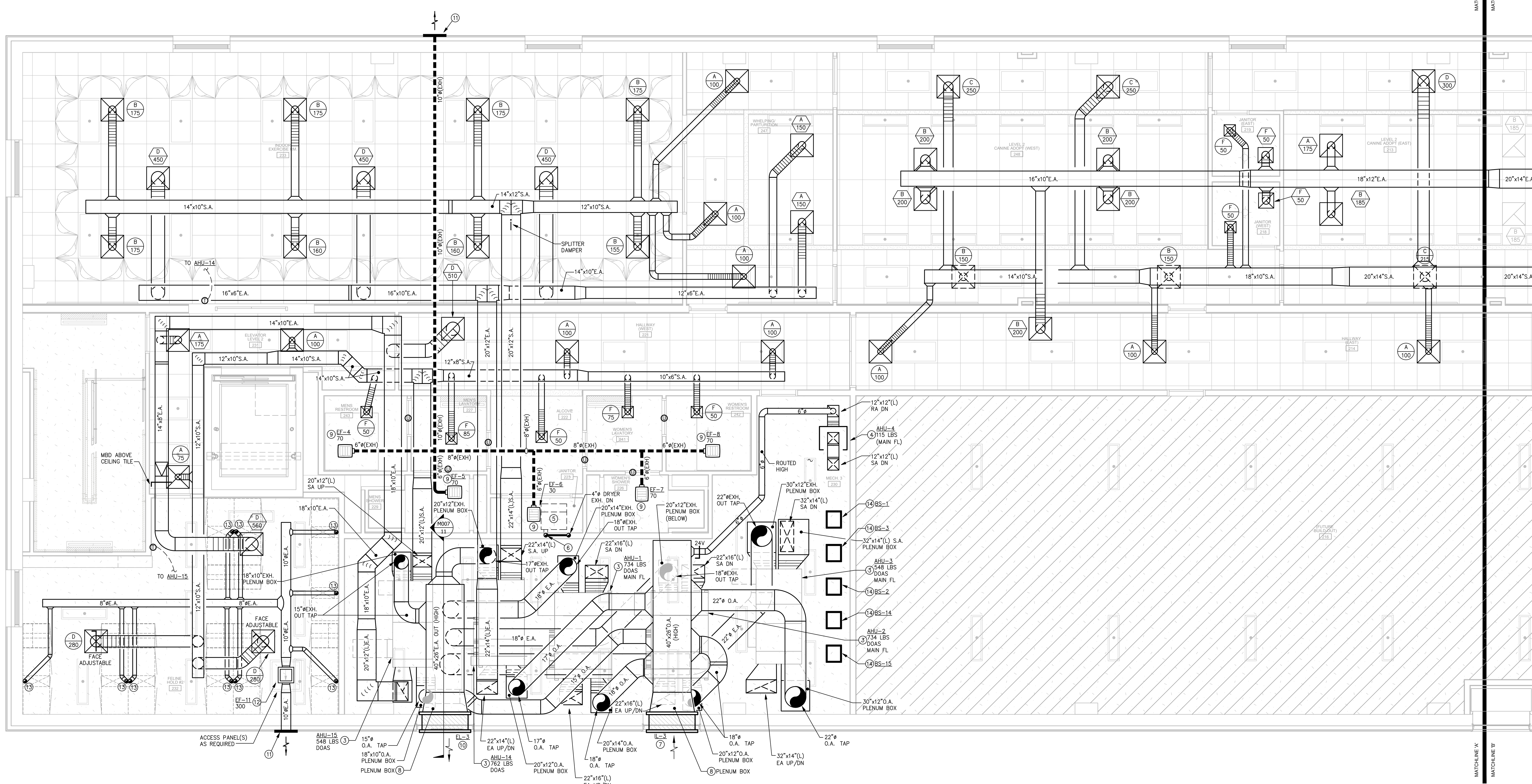
M102

RATED WALL LEGEND

— · — · —	INDICATES A 1-HOUR RATED WALL

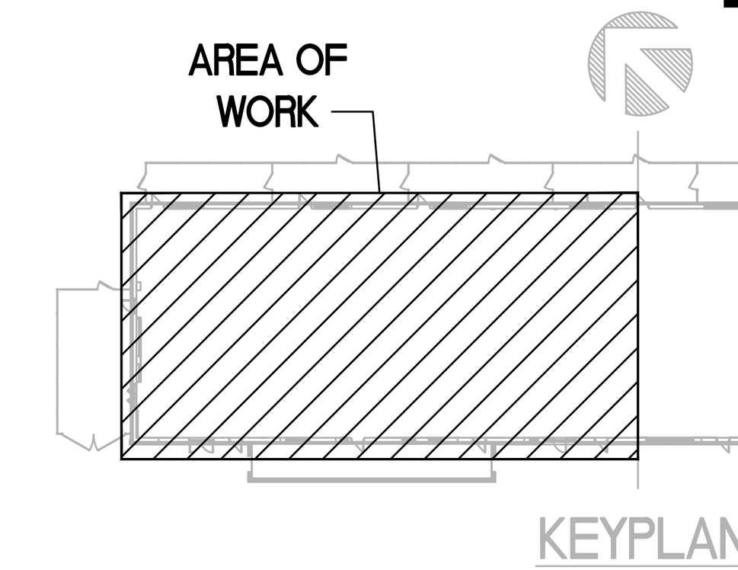
NOTES THIS SHEET

1. SEE SHEETS M001–007 FOR SPECIFICATIONS, LEGENDS, GENERAL NOTES, SCHEDULES AND DETAILS.
2. COORDINATE THERMOSTAT/SWITCH LOCATION WITH OWNER PRIOR TO ROUGHING–IN.
3. APPROXIMATE LOCATION OF HORIZONTAL, DOAS SPLIT SYSTEM AIR HANDLING UNIT (AHU–#) TO BE INSTALLED ON PREFABRICATED MANUFACTURER SUPPORT RAILS ON ATTIC FLOOR, MAKE DEAD LEVEL. PROVIDE UNIT WITH FULL SIZE DRAIN PAN AND HI–FLUID LEVEL SWITCH WIRED TO SHUT UNIT DOWN UPON ACTIVATION OF SWITCH. ROUTE CONDENSATE DRAIN LINE TO NEAREST FLOOR/HUB DRAIN (DRAIN BY OTHERS) AND SPILL WITH AIR GAP. FULLY COORDINATE EXACT LOCATION OF UNIT AND DUCT DROP LOCATIONS WITH STRUCTURAL PRIOR TO BEGINNING ANY WORK. INSTALL PER MANUFACTURER'S RECOMMENDATION AND CLEARANCES.
4. APPROXIMATE LOCATION OF VERTICAL, CONVENTIONAL SPLIT SYSTEM AIR HANDLING UNIT (AHU–#) TO BE INSTALLED ON PREFABRICATED MANUFACTURER SUPPORT RAILS ON ATTIC FLOOR, MAKE DEAD LEVEL. PROVIDE UNIT WITH FULL SIZE DRAIN PAN AND HI–FLUID LEVEL SWITCH WIRED TO SHUT UNIT DOWN UPON ACTIVATION OF SWITCH. ROUTE CONDENSATE DRAIN LINE TO NEAREST FLOOR/HUB DRAIN (DRAIN BY OTHERS) AND SPILL WITH AIR GAP. FULLY COORDINATE EXACT LOCATION OF UNIT AND DUCT DROP LOCATIONS WITH STRUCTURAL PRIOR TO BEGINNING ANY WORK. INSTALL PER MANUFACTURER'S RECOMMENDATION AND CLEARANCES.
5. DRYER BY OTHERS. COORDINATE ALL MECHANICAL REQUIREMENTS VIA OWNER PROVIDED DRYER MANUFACTURER LITERATURE.
6. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL 4"/6"/8"ø RIGID DRYER DUCT (FIELD VERIFY WHICH EXACT SIZE EXHAUST DUCT TO INSTALL, VIA OWNER PROVIDED DRYER MANUFACTURER LITERATURE) PRIOR TO ROUGHING–IN. ROUTE RIGID CODE APPROVED DRYER DUCT TO EXTERIOR AS REQUIRED AND PROVIDE WITH CODE APPROVED DISCHARGE LOUVER, LINT TRAP, AND BACKDRAFT DAMPER.
   - WHERE THE EXHAUST DUCT EQUIVALENT LENGTH EXCEEDS 35' (10 688 mm), THE EQUIVALENT LENGTH OF THE EXHAUST DUCT SHALL BE IDENTIFIED ON A PERMANENT LABEL OR TAG. THE LABEL OR TAG SHALL BE LOCATED WITHIN 6 FEET (1829 mm) OF THE EXHAUST TERMINATION, AS PER SECTION 504.8.5 OF THE 2020 MECHANICAL CODE OF NEW YORK STATE.
7. APPROXIMATE LOCATION OF OUTSIDE AIR INTAKE LOUVER (IL–#). COORDINATE WITH STRUCTURAL PRIOR TO ROUGHING–IN. COORDINATE EXACT LOCATION AND ELEVATION OF LOUVER WITH ARCHITECT PRIOR TO ROUGHING–IN. COORDINATE GRILLE FINISH AND COLOR WITH ARCHITECT PRIOR TO PURCHASE.
8. MECHANICAL CONTRACTOR SHALL FIELD FABRICATE O.A. PLENUM BOX TO CONNECT INTAKE LOUVER TO MAIN O.A. DUCT AS INDICATED. FIELD VERIFY ALL WORK INVOLVED.
9. CEILING MOUNTED EXHAUST FAN (EF–#), FILED VERIFY BEST LOCATION OF FAN PRIOR TO ROUGHING–IN. INSTALL PER MANUFACTURER'S RECOMMENDATION AND CLEARANCES.
10. APPROXIMATE LOCATION OF DOAS EXHAUST AIR DISCHARGE LOUVER (EL–#). COORDINATE WITH STRUCTURAL PRIOR TO ROUGHING–IN. COORDINATE EXACT LOCATION AND ELEVATION OF LOUVER WITH ARCHITECT PRIOR TO ROUGHING–IN. COORDINATE GRILLE FINISH AND COLOR WITH ARCHITECT PRIOR TO PURCHASE.
11. APPROXIMATE LOCATION OF SIDEWALL EXHAUST DISCHARGE. PROVIDE WITH CODE APPROVED DISCHARGE LOUVER WITH GRAVITY BACKDRAFT DAMPER. COORDINATE LOUVER FINISH AND FINAL LOCATION WITH ARCHITECT.
12. APPROXIMATE LOCATION OF INLINE EXHAUST FAN (EF–#) TO BE INSTALLED ABOVE CEILING. MECHANICAL CONTRACTOR SHALL FULLY COORDINATE WITH GENERAL CONTRACTOR TO HAVE ACCESS PANEL(S) INSTALLED AS REQUIRED FOR MAINTENANCE AND CODE PURPOSES. FIELD VERIFY EXACT LOCATION OF FAN AND DISCHARGE POINT WITH ALL CONDITIONS PRIOR TO ROUGHING–IN. PROVIDE PERMANENT IDENTIFICATION LABEL AS CLOSE TO FAN AS POSSIBLE.
13. 4"ø EXHAUST CONNECTION FROM REAR OF CAT CONDO. MECHANICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF NEW CAT CONDO EXHAUST DUCTWORK TO 10"ø MAIN AND ASSOCIATED CONTINUOUS RUN EXHAUST FAN. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
14. APPROXIMATE LOCATION OF VARIABLE REFRIGERANT VOLUME BRANCH SELECTOR (BS–#) TO BE SUSPENDED BELOW CEILING. INSTALL PER MANUFACTURER GUIDELINES AND RECOMMENDATIONS, ADHERE TO ALL REQUIRED CLEARANCES. COORDINATE WITH ALL TRADES PRIOR TO ROUGHING–IN.



UPPER LEVEL
FLOOR PLAN – MECHANICAL – WEST
SCALE: 1/4" = 1'–0"

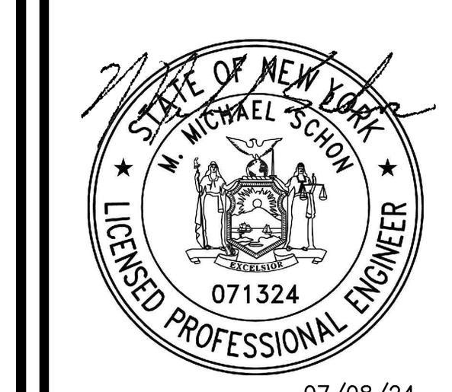
AREA OF WORK



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA



07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - MECHANICAL - WEST

REV.#	DATE	COMMENTS
REVISION:	.	.
REVISION:	.	.
REVISION:	.	.
REVISION:	.	.
REVISION:	.	.

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.:	23077
DRAWN:	DRH
DATE:	07/08/2024

M103

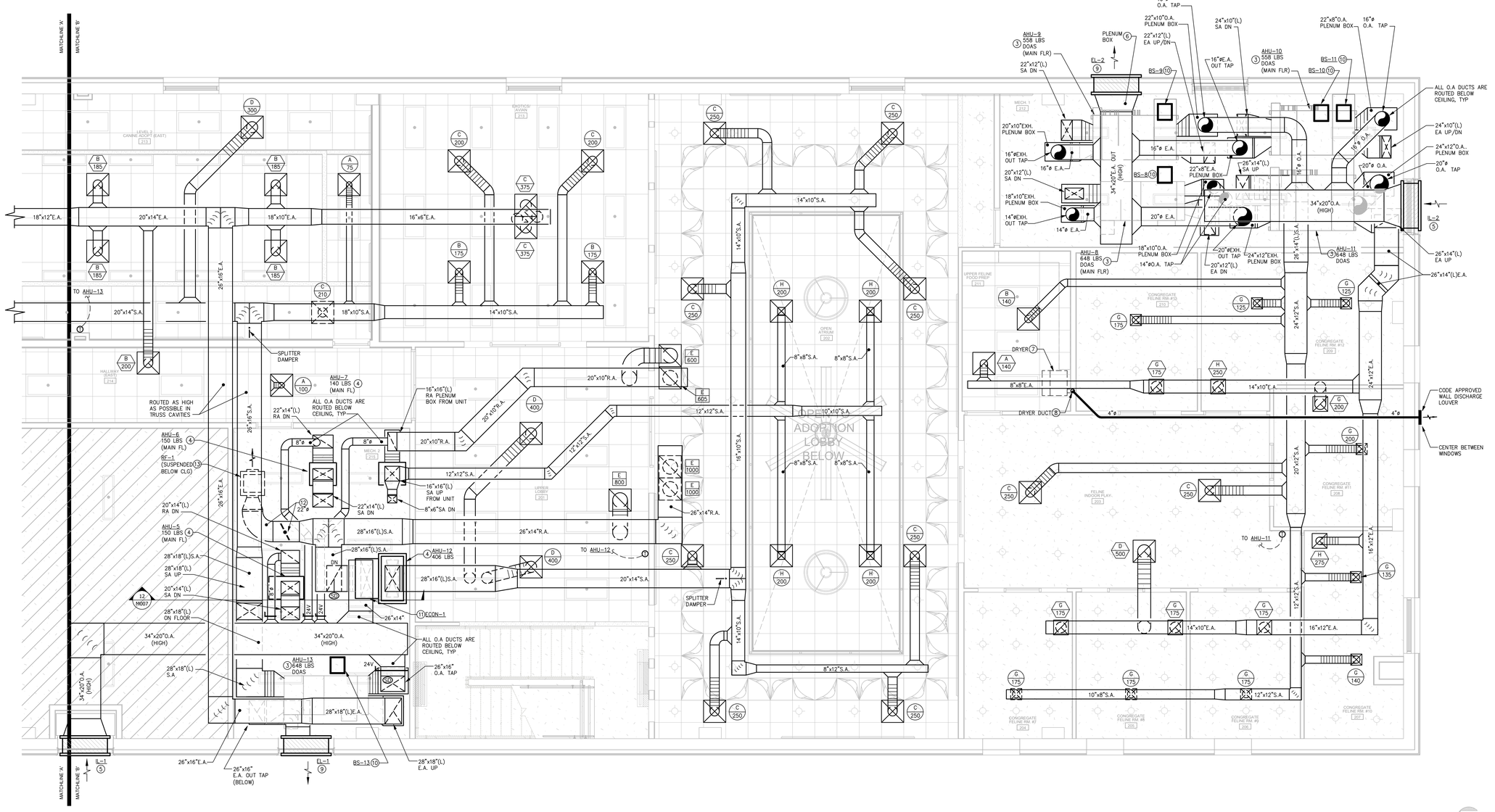
10 OF 14

RATED WALL LEGEND

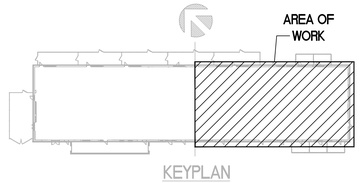
INDICATES A 1-HOUR RATED WALL

NOTES THIS SHEET

1. SEE SHEETS M001-007 FOR SPECIFICATIONS, LEGENDS, GENERAL NOTES, SCHEDULES AND DETAILS.
2. COORDINATE THERMOSTAT/SWITCH LOCATION WITH OWNER PRIOR TO ROUGHING-IN.
3. APPROXIMATE LOCATION OF HORIZONTAL, DOAS SPLIT SYSTEM AIR HANDLING UNIT (AHU-#) TO BE INSTALLED ON PREFABRICATED MANUFACTURER SUPPORT RAILS ON ATTIC FLOOR, MAKE DEAD LEVEL. PROVIDE UNIT WITH FULL SIZE DRAIN PAN AND HI-FLUID LEVEL SWITCH WIRED TO SHUT UNIT DOWN UPON ACTIVATION OF SWITCH. ROUTE CONDENSATE DRAIN LINE TO NEAREST FLOOR/HUB DRAIN (DRAIN BY OTHERS) AND SPILL WITH AIR GAP. FULLY COORDINATE EXACT LOCATION OF UNIT AND DUCT DROP LOCATIONS WITH STRUCTURAL PRIOR TO BEGINNING ANY WORK. INSTALL PER MANUFACTURER'S RECOMMENDATION AND CLEARANCES.
4. APPROXIMATE LOCATION OF VERTICAL, CONVENTIONAL SPLIT SYSTEM AIR HANDLING UNIT (AHU-#) TO BE INSTALLED ON PREFABRICATED MANUFACTURER SUPPORT RAILS ON ATTIC FLOOR, MAKE DEAD LEVEL. PROVIDE UNIT WITH FULL SIZE DRAIN PAN AND HI-FLUID LEVEL SWITCH WIRED TO SHUT UNIT DOWN UPON ACTIVATION OF SWITCH. ROUTE CONDENSATE DRAIN LINE TO NEAREST FLOOR/HUB DRAIN (DRAIN BY OTHERS) AND SPILL WITH AIR GAP. FULLY COORDINATE EXACT LOCATION OF UNIT AND DUCT DROP LOCATIONS WITH STRUCTURAL PRIOR TO BEGINNING ANY WORK. INSTALL PER MANUFACTURER'S RECOMMENDATION AND CLEARANCES.
5. APPROXIMATE LOCATION OF OUTSIDE AIR INTAKE LOUVER (IL-#). COORDINATE WITH STRUCTURAL PRIOR TO ROUGHING-IN. COORDINATE EXACT LOCATION AND ELEVATION OF LOUVER WITH ARCHITECT PRIOR TO ROUGHING-IN. COORDINATE GRILLE FINISH AND COLOR WITH ARCHITECT PRIOR TO PURCHASE.
6. MECHANICAL CONTRACTOR SHALL FIELD FABRICATE O.A. PLENUM BOX TO CONNECT INTAKE LOUVER TO MAIN O.A. DUCT AS INDICATED. FIELD VERIFY ALL WORK INVOLVED.
7. DRYER BY OTHERS. COORDINATE ALL MECHANICAL REQUIREMENTS VIA OWNER PROVIDED DRYER MANUFACTURER LITERATURE.
8. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL 4"/6"/8"ø RIGID DRYER DUCT (FIELD VERIFY WHICH EXACT SIZE EXHAUST DUCT TO INSTALL, VIA OWNER PROVIDED DRYER MANUFACTURER LITERATURE) PRIOR TO ROUGHING-IN. ROUTE RIGID CODE APPROVED DRYER DUCT TO EXTERIOR AS REQUIRED AND PROVIDE WITH CODE APPROVED DISCHARGE LOUVER, LINT TRAP, AND BACKDRAFT DAMPER.
   - WHERE THE EXHAUST DUCT EQUIVALENT LENGTH EXCEEDS 35' (10 688 mm), THE EQUIVALENT LENGTH OF THE EXHAUST DUCT SHALL BE IDENTIFIED ON A PERMANENT LABEL OR TAG. THE LABEL OR TAG SHALL BE LOCATED WITHIN 6 FEET (1829 mm) OF THE EXHAUST TERMINATION, AS PER SECTION 504.8.5 OF THE 2020 MECHANICAL CODE OF NEW YORK STATE.
9. APPROXIMATE LOCATION OF DOAS EXHAUST AIR DISCHARGE LOUVER (EL-#). COORDINATE WITH STRUCTURAL PRIOR TO ROUGHING-IN. COORDINATE EXACT LOCATION AND ELEVATION OF LOUVER WITH ARCHITECT PRIOR TO ROUGHING-IN. COORDINATE GRILLE FINISH AND COLOR WITH ARCHITECT PRIOR TO PURCHASE.
10. APPROXIMATE LOCATION OF VARIABLE REFRIGERANT VOLUME BRANCH SELECTOR (BS-#) TO BE SUSPENDED BELOW CEILING. INSTALL PER MANUFACTURER GUIDELINES AND RECOMMENDATIONS, ADHERE TO ALL REQUIRED CLEARANCES. COORDINATE WITH ALL TRADES PRIOR TO ROUGHING-IN.
11. ECON-1: MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL DIFFERENTIAL ENTHALPY ECONOMIZER (MIXING BOX) AT AIR HANDLER R.A. INLET. ECONOMIZER (MIXING BOX) SHALL BE EQUAL TO MICROMETL #MB-RU1CA-D2EH (1,800 – 5,000 CFM CAPACITY). ECONOMIZER O.A., R.A., AND REMOTE E.A. DAMPERS SHALL BE INTERLOCKED WITH ECONOMIZER AND AIR HANDLER CONTROLS. SEE AIR HANDLER SCHEDULE ON SHEET M003 AND VERTICAL AHU DETAIL ON SHEET M004 FOR ADDITIONAL INFORMATION.
12. RELIEF AIR DUCT (SIZED AS INDICATED) WITH 24V MOTORIZED RELIEF DUCT DAMPER INSTALLED ON R.A. DUCT ABOVE CEILING. INTERLOCK RELIEF DAMPER WITH IN-LINE RELIEF FAN AND AIR HANDLER ECONOMIZER CONTROLS TO OPEN WHEN UNIT IS IN ECONOMIZER MODE. DAMPER SHALL BE NORMALLY SHUT, SPRING CLOSED, 24V POWER OPENED. LOW VOLTAGE POWER TO BE PROVIDED BY MECHANICAL CONTRACTOR FROM CORRESPONDING GAS FURNACE. SEE GAS FURNACE DETAILS SHEET M007 FOR ADDITIONAL INFORMATION. RELIEF SHALL BE DISCHARGED TO ATTIC SPACE.
13. RELIEF AIR FAN (RF-1) INSTALLED ON OUTLET OF RELIEF AIR DUCT. INTERLOCK FAN WITH RELIEF DUCT DAMPER AND AIR HANDLER ECONOMIZER CONTROLS TO ENERGIZE FAN WHEN UNIT IS IN ECONOMIZER MODE. CONTRACTOR SHALL INSTALL CONSTANT PRESSURE ROOM CONTROL PROBE, BY FAN MANUFACTURER, IN CORRESPONDING SYSTEM BREATHING ZONE AND INTERLOCK WITH RELIEF AIR FAN TO MODULATE RELIEF AIR FAN FLOW RATE BASED ON ZONE PRESSURE TO MAINTAIN BUILDING NEUTRAL PRESSURIZATION DURING ECONOMIZER MODE. RELIEF AIR SHALL BE DISCHARGED TO ATTIC SPACE.



1 UPPER LEVEL
FLOOR PLAN – MECHANICAL – EAST
SCALE: 1/4" = 1'-0"



M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NY 10932
P: 704.995.7020

BDA

STATE OF NEW YORK
M. MICHAEL SCHON
071324
LICENSED PROFESSIONAL ENGINEER
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL
FLOOR PLAN - MECHANICAL - EAST

REV.#	DATE	COMMENTS
-	-	-
-	-	-
-	-	-
-	-	-

REVISION: REVISION: REVISION: REVISION:

REVIEWS

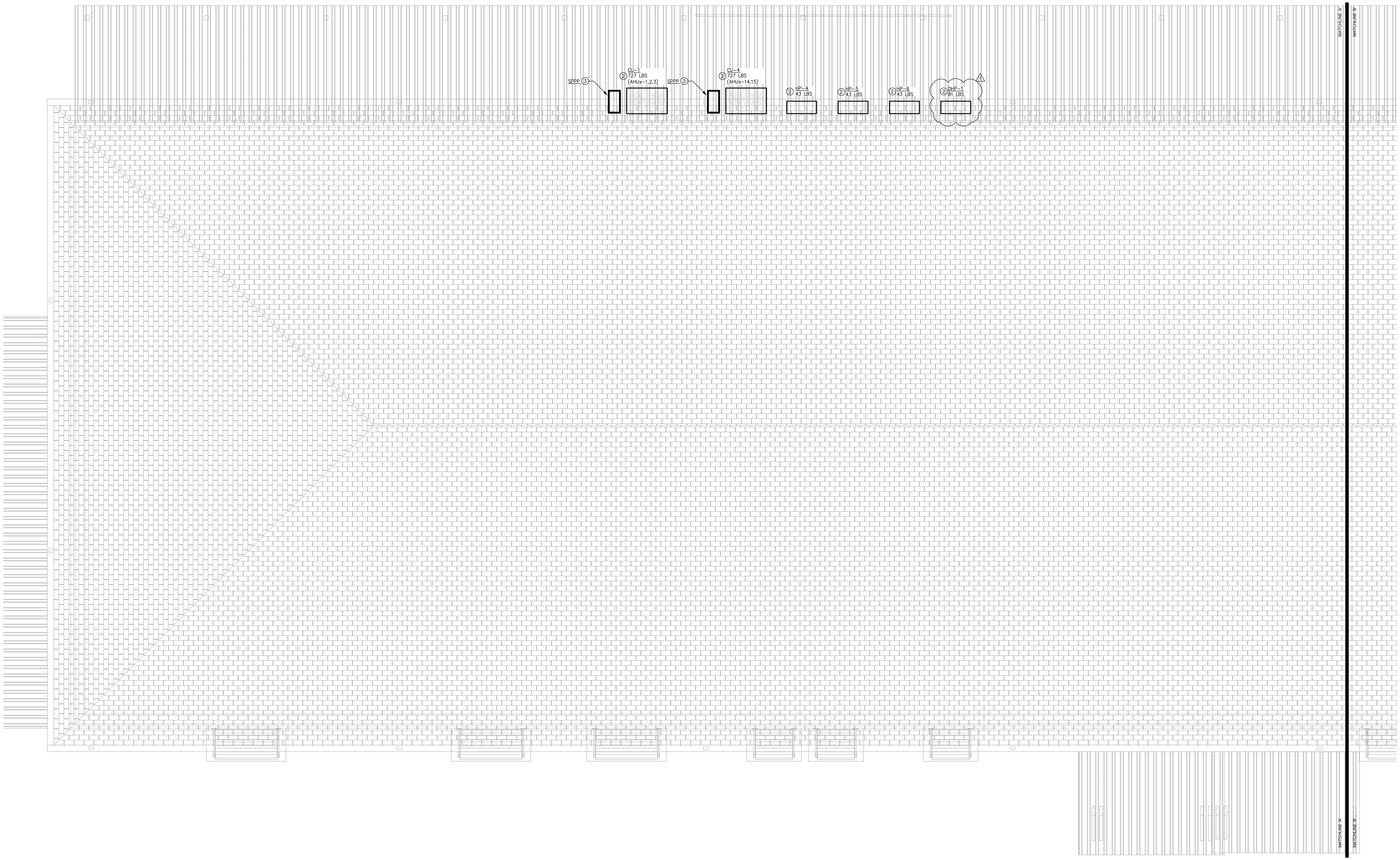
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M104
11 OF 14

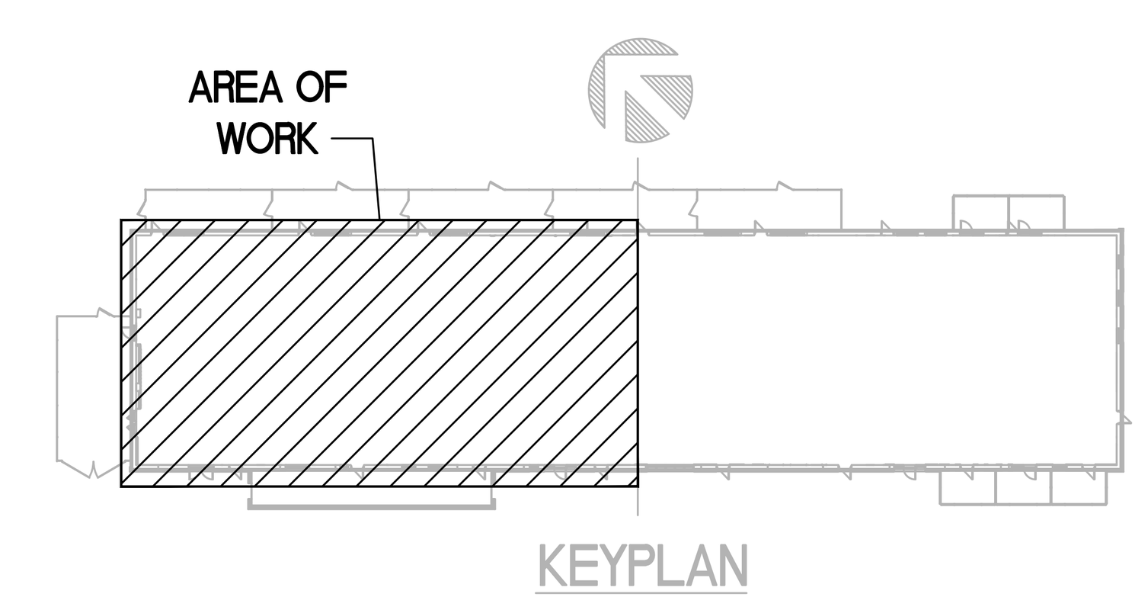
NOTES THIS SHEET

1. SEE SHEETS M001-007 FOR SPECIFICATIONS, LEGENDS, GENERAL NOTES, SCHEDULES AND DETAILS.
2. CONDENSING/HEAT-PUMP OUTDOOR UNIT TO BE INSTALLED ATOP OF THE ROOF OVER THE CANINE EXERCISE YARDS ON PRE-MANUFACTURED SUPPORT RAILS, MAKE DEAD LEVEL. COORDINATE FINAL INSTALLATION LOCATION, CONDENSATE LINE CONCEALMENT AND DRAINAGE CONCEALMENT WITH ARCHITECT. COORDINATE LEVEL PLATFORM/CURB WITH ARCHITECT AND STRUCTURAL ENGINEER. ROOF SYSTEM(S) BY OTHERS. TYPICAL.
3. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL A SINGLE POINT POWER PANEL EQUAL TO HOFFMAN & HOFFMAN "SPPP" AT EACH VRF CONDENSING UNIT. MECHANICAL CONTRACTOR SHALL FULLY COORDINATE WITH ELECTRICAL CONTRACTOR TO HAVE ALL ELECTRICAL CONNECTIONS LANDED AT PANEL AND THEN DISTRIBUTED TO ASSOCIATED INDOOR UNIT(S) AS REQUIRED. COORDINATE BEST LOCATION AND MOUNTING TECHNIQUE OF PANEL PRIOR TO ROUGHING-IN.



1 ROOF PLAN - MECHANICAL - WEST

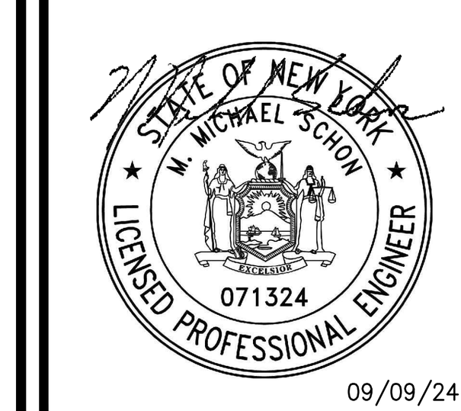
SCALE: 1/4" = 1'-0"



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA



09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ROOF PLAN - MECHANICAL - WEST

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

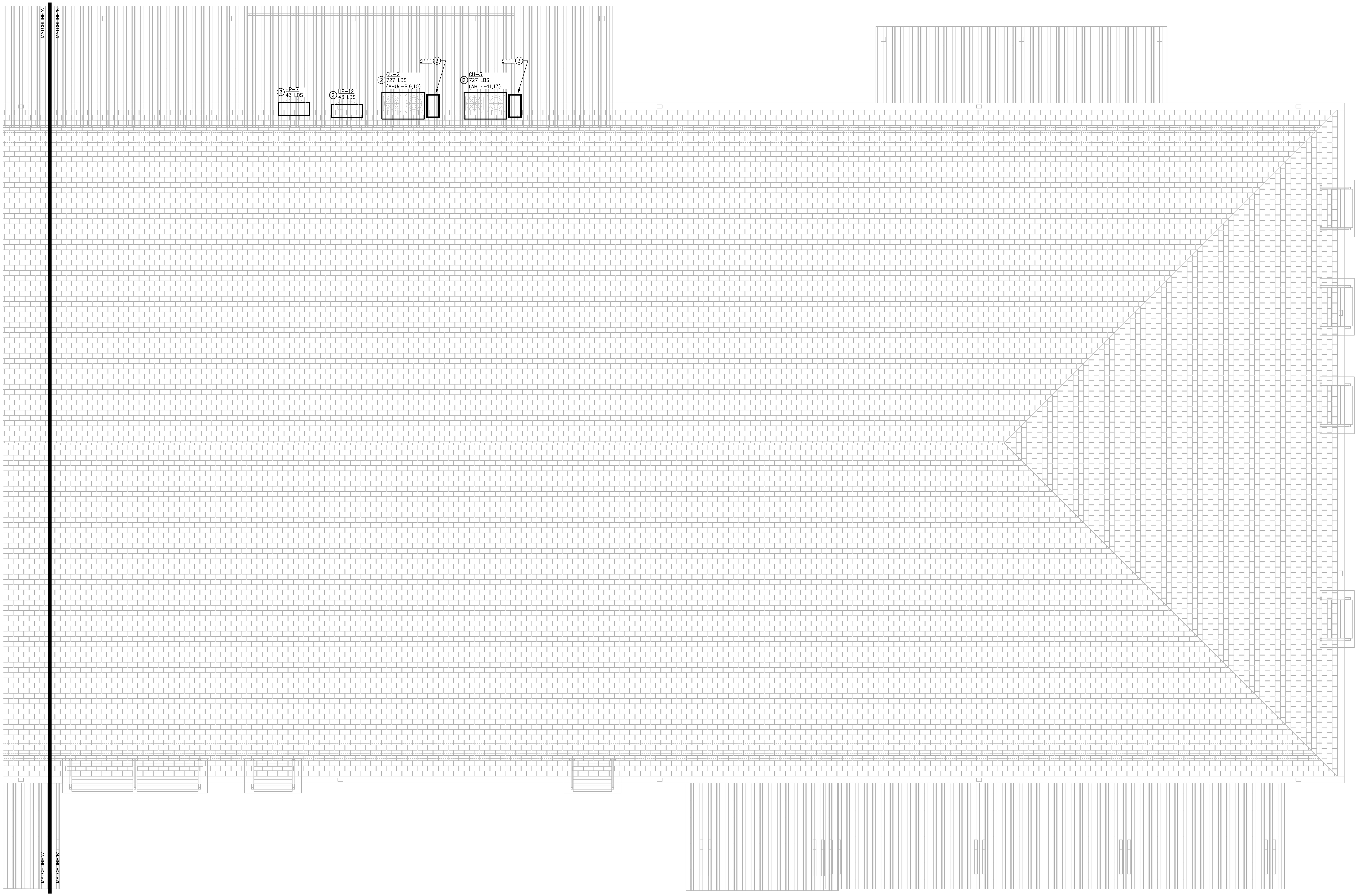
PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M105

12 OF 14

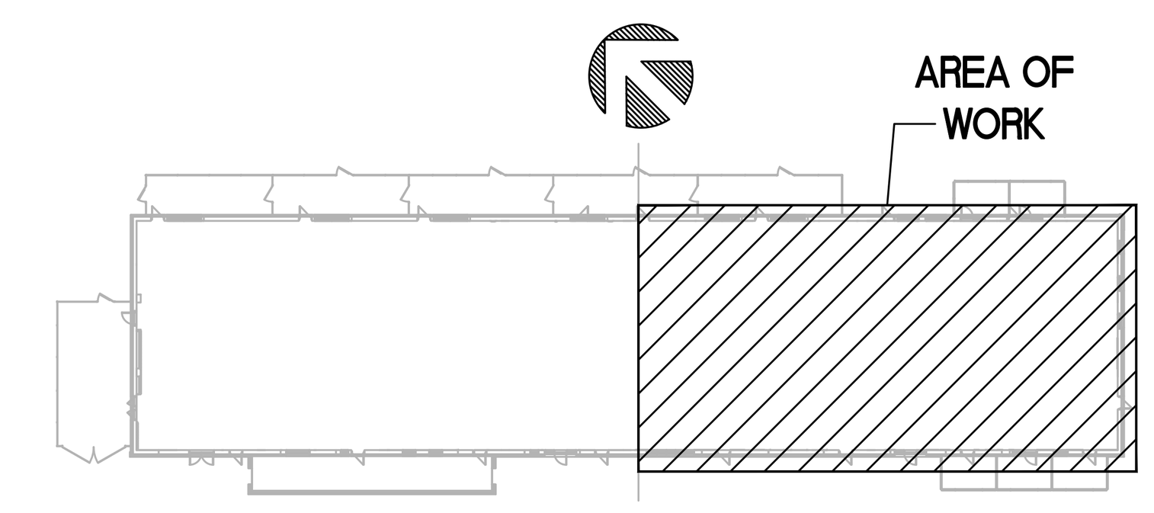
NOTES THIS SHEET

1. SEE SHEETS M001-007 FOR SPECIFICATIONS, LEGENDS, GENERAL NOTES, SCHEDULES AND DETAILS.
2. CONDENSING/HEAT-PUMP OUTDOOR UNIT TO BE INSTALLED ATOP OF THE ROOF OVER THE CANINE EXERCISE YARDS ON PRE-MANUFACTURED SUPPORT RAILS, MAKE DEAD LEVEL. COORDINATE FINAL INSTALLATION LOCATION, CONDENSATE LINE CONCEALMENT AND DRAINAGE CONCEALMENT WITH ARCHITECT. COORDINATE LEVEL PLATFORM/CURB WITH ARCHITECT AND STRUCTURAL ENGINEER. ROOF SYSTEM(S) BY OTHERS. TYPICAL.
3. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL A SINGLE POINT POWER PANEL EQUAL TO HOFFMAN & HOFFMAN "SPPP" AT EACH VRF CONDENSING UNIT. MECHANICAL CONTRACTOR SHALL FULLY COORDINATE WITH ELECTRICAL CONTRACTOR TO HAVE ALL ELECTRICAL CONNECTIONS LANDED AT PANEL AND THEN DISTRIBUTED TO ASSOCIATED INDOOR UNIT(S) AS REQUIRED. COORDINATE BEST LOCATION AND MOUNTING TECHNIQUE OF PANEL PRIOR TO ROUGHING-IN.



1 ROOF PLAN - MECHANICAL - EAST

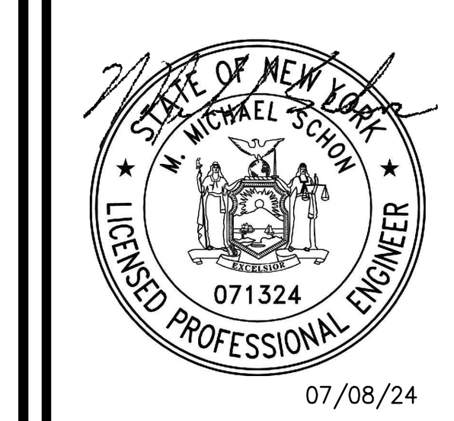
SCALE: 1/4" = 1'-0"



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA



07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ROOF PLAN - MECHANICAL - EAST

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

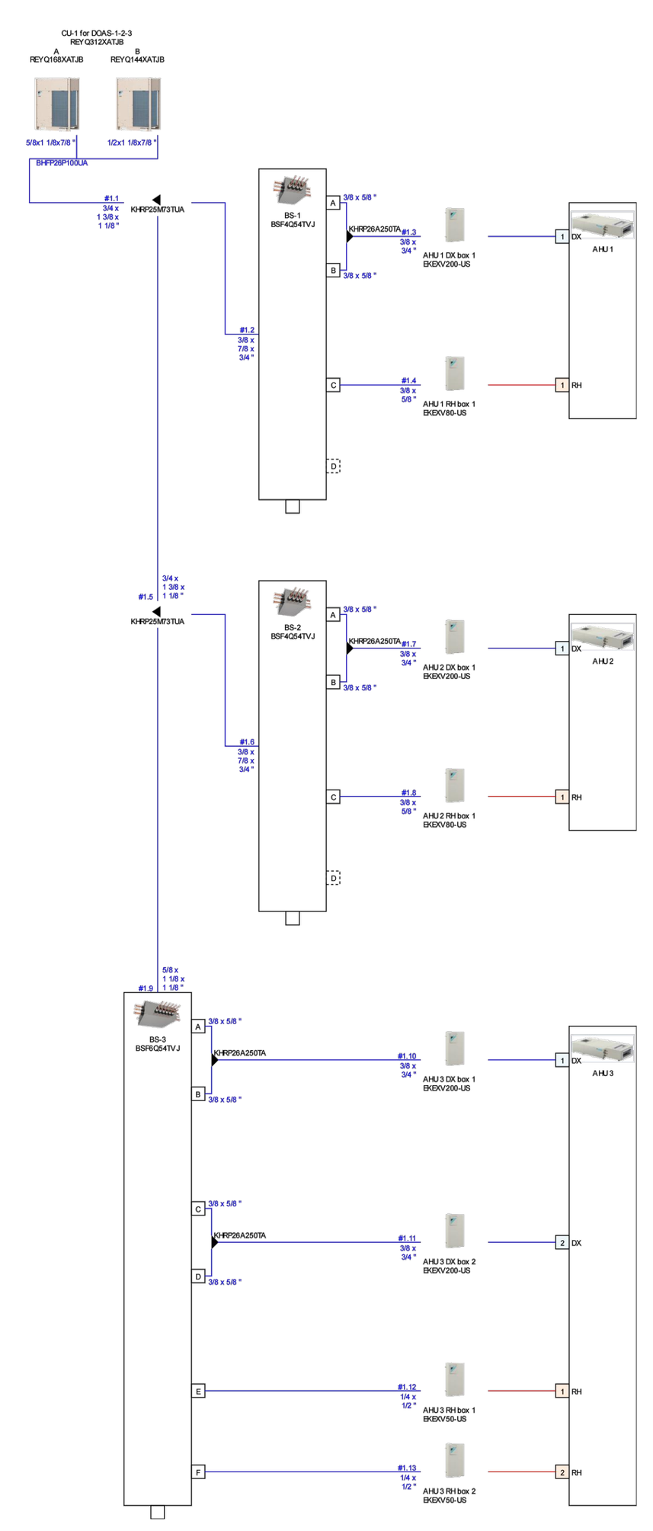
PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M106

DAIKIN

Piping diagrams

Piping CU-1 for DOAS-1-2-3

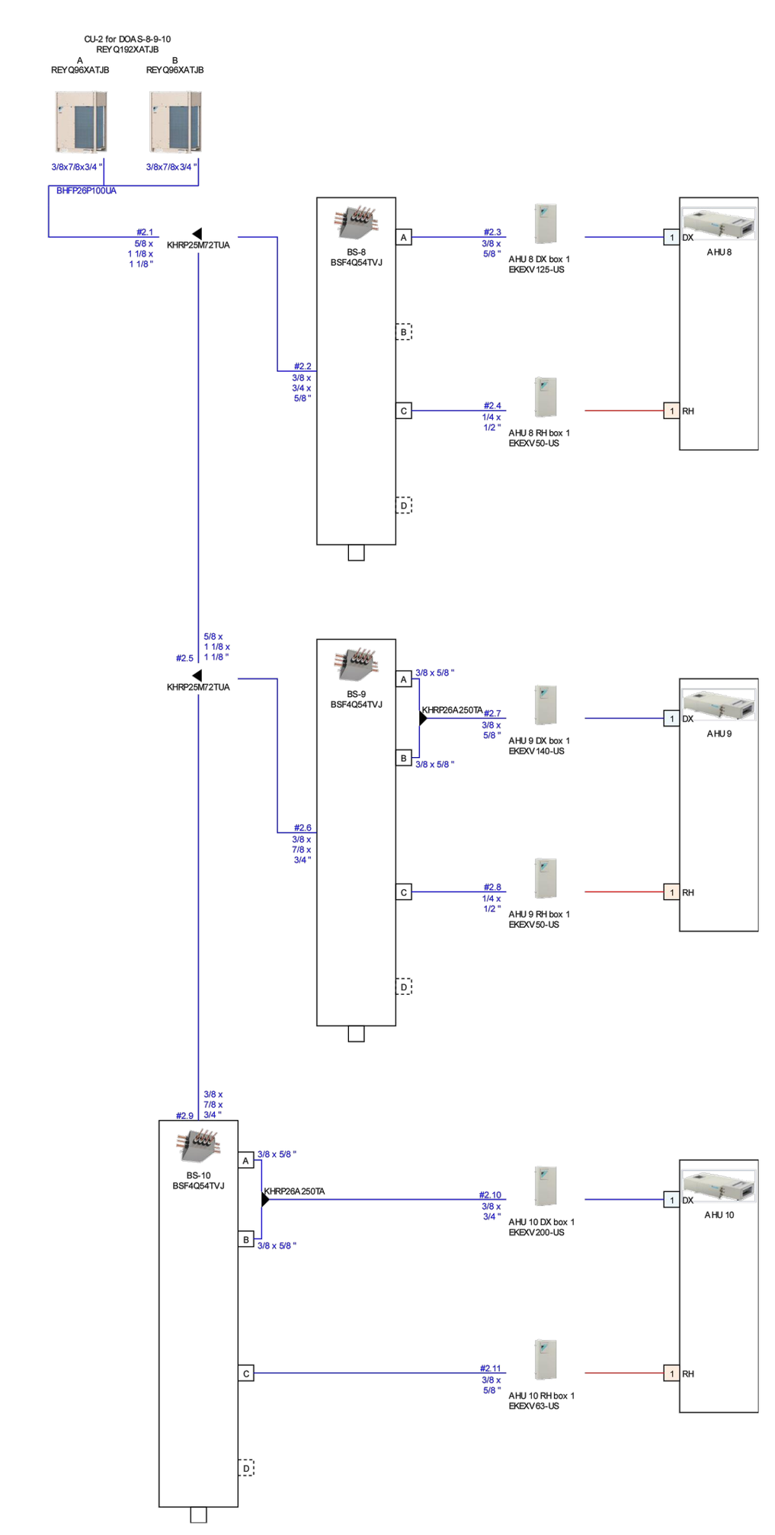


Piping

Warning: The pipe diameter values are purely indicative. Depending on the required pipe lengths, a different pipe diameter might be required.

DAIKIN

Piping CU-2 for DOAS-8-9-10

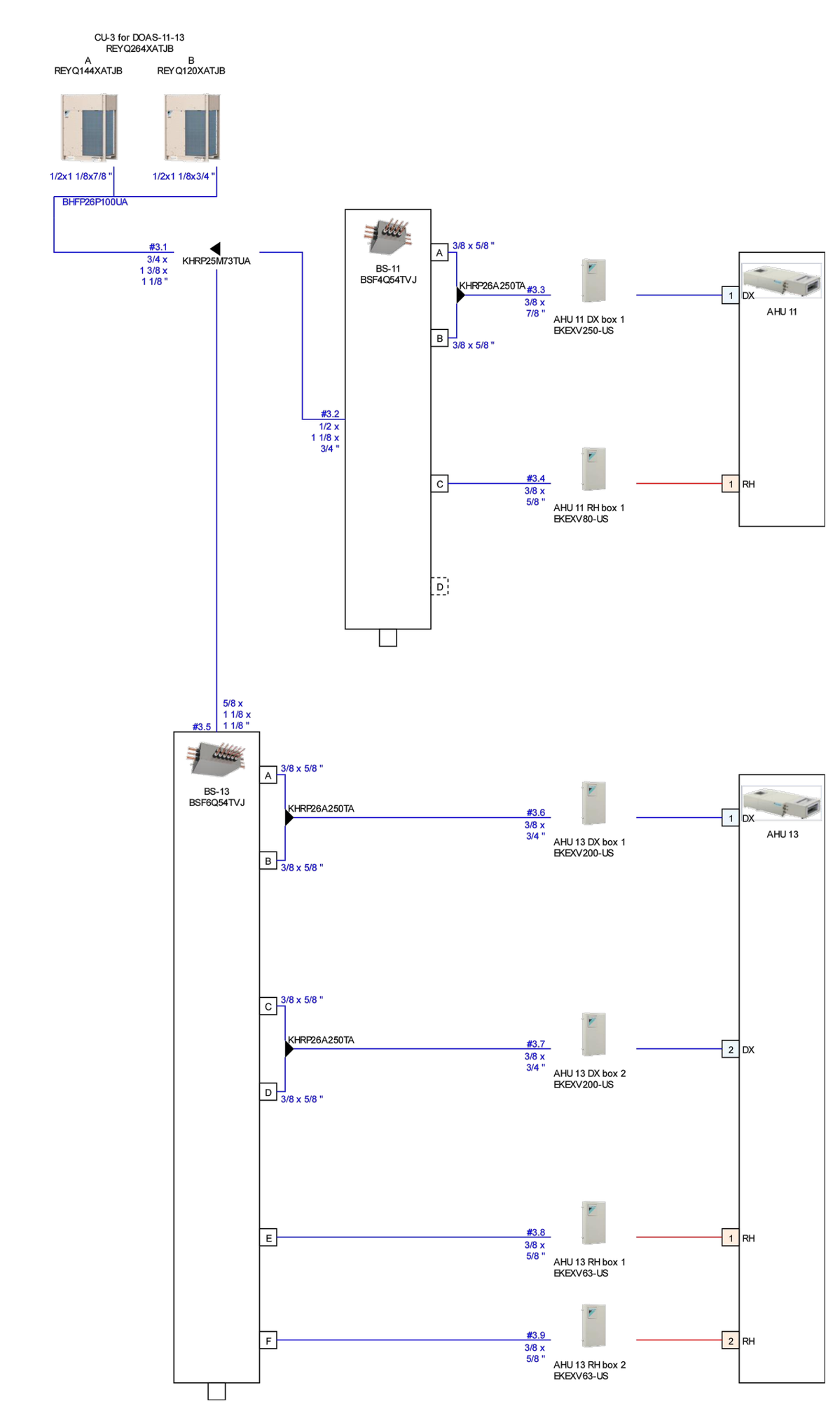


Piping

Warning: The pipe diameter values are purely indicative. Depending on the required pipe lengths, a different pipe diameter might be required.

DAIKIN

Piping CU-3 for DOAS-11-13

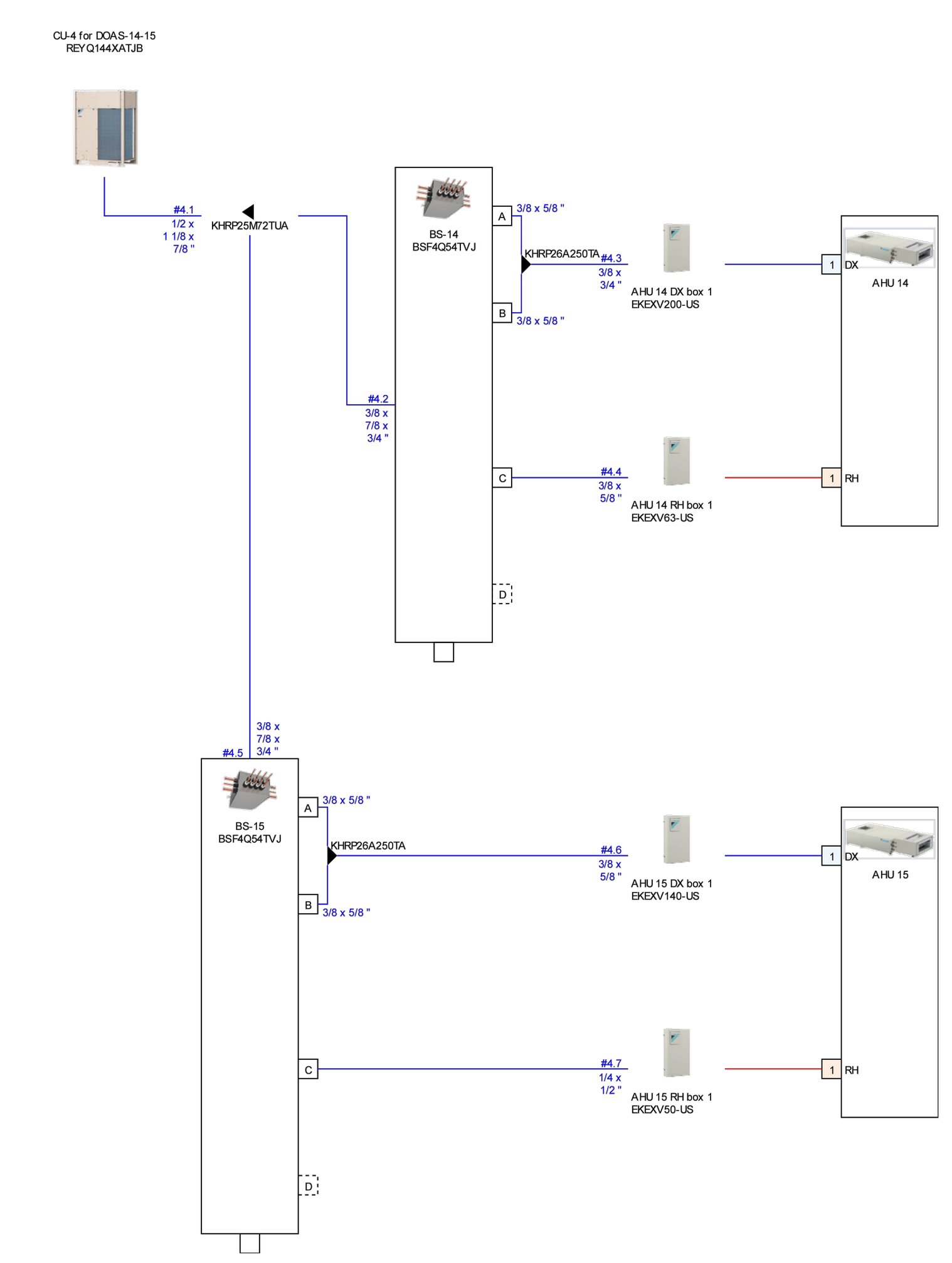


Piping

Warning: The pipe diameter values are purely indicative. Depending on the required pipe lengths, a different pipe diameter might be required.

DAIKIN

Piping CU-4 for DOAS-14-15



Piping

Warning: The pipe diameter values are purely indicative. Depending on the required pipe lengths, a different pipe diameter might be required.

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK · M. MICHAEL SCHON · 071324 · LICENSED PROFESSIONAL ENGINEER

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

VRF PIPING SCHEMATICS

REV.#	DATE	COMMENTS
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: DRH
DATE: 07/08/2024

M201

PLUMBING SPECIFICATIONS

01 GENERAL CONDITIONS

GENERAL AND SPECIAL CONDITIONS ARE HEREBY MADE AN INTEGRAL PART OF THIS DIVISION OF THE SPECIFICATIONS IN THAT THEY ARE APPLICABLE TO THE WORK UNDER THIS DIVISION UNLESS OTHERWISE NOTED.

PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH ALL APPLICABLE CODES.

PERMITS: APPLY FOR AND PAY FOR ALL NECESSARY PERMITS, FEES, AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION. ACREAGE CHARGES, BOND PROPERTY ASSESSMENTS AND FACILITIES CHARGE ARE NOT TO BE CONSTRUED TO BE A PART OF THIS CONTRACT.

WARRANTY: PROVIDE ALL MATERIALS AND EQUIPMENT UNDER THIS SECTION OF THE SPECIFICATIONS WITH A ONE YEAR WARRANTY FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER.

THE CONTRACTOR SHALL TIE INTO CIVIL PROVIDED TAP AS INDICATED ON PLANS. ALL COSTS FOR THIS SERVICE SHALL BE PART OF HIS BID CONTRACT PRICE.

PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER PLATED.

PROTECT COPPER PIPING AGAINST CONTACT WITH ALL MASONRY. WHERE COPPER IS SLEEVED THROUGH MASONRY, PROVIDE COPPER OR RED BRASS SLEEVES.

MAKE SURE PROVISIONS ARE INSTALLED IN ALL PIPING SO NO STRAIN OR BREAKAGE RESULTS FROM EXPANSION OR CONTRACTION.

INSTALL WATER PIPING IN EXTERIOR WALLS ON THE CONDITIONED SIDE OF THE WALL INSULATION.

PITCH ALL WATER PIPES SO THAT ALL PARTS MAY BE DRAINED. THE FORMATION OF SAGS AND TRAPS SHALL BE AVOIDED.

PROVIDE SHOCK ARRESTORS WHERE SHOWN ON PLANS FOR THE COMPLETE ELIMINATION OF WATER HAMMER.

STERILIZE DOMESTIC WATER PIPING IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.

SANITARY PIPING 2.5" OR LESS SHALL BE SLOPED AT 1/4" PER FOOT. SANITARY PIPING 3" OR LARGER SHALL BE SLOPED AT 1/8" PER FOOT, UNLESS OTHERWISE REQUIRED BY CODE OR NOTED.

WHERE WASTE PIPING IS EXPOSED IN REST ROOM AREAS, PROVIDE CHROME PLATED BRASS PIPING, WITH MATCHING STOPS AND ESCUTCHEONS.

PROVIDE REMOVABLE TRAPS WITH INTEGRAL CLEAN-OUT PLUG FOR ALL LAVATORIES. INSTALL CLEAN-OUTS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.

INSTALL CLEAN-OUTS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.

02 MATERIALS AND EQUIPMENT

ALL NEW WORK SHALL BE OF MATERIALS LISTED BELOW OR SHALL MATCH EXISTING. IF A CONFLICT EXISTS BETWEEN MATERIALS AND/OR EQUIPMENT, THE MORE STRINGENT SHALL APPLY AS ADJUDGED BY THE ARCHITECT/ENGINEER. THE CONTRACTOR SHALL FIELD VERIFY MATERIAL TYPE AND EQUIPMENT.

A. SANITARY SEWER PIPE AND FITTINGS – BELOW GRADE:
SCHEDULE 40 PVC DWV PIPE, (ASTM D1784 – D1785), PVC SOCKET FITTINGS AND SOLVENT CEMENTED FITTINGS. (ASTM D2665)

B. SANITARY SEWER/VENT PIPE AND FITTINGS – ABOVE GRADE:
SCHEDULE 40 PVC DWV PIPE, (ASTM D1784 – D1785), PVC SOCKET FITTINGS AND SOLVENT CEMENTED FITTINGS. (ASTM D2665)

C. DOMESTIC WATER PIPING BELOW GRADE:
SOFT ANNEALED SEAMLESS COPPER TUBING, TYPE 'K' (ASTM B 88) WITH NO JOINTS BELOW GRADE.

D. DOMESTIC WATER PIPING AND JOINTS ABOVE GRADE:
HARD DRAWN SEAMLESS COPPER TUBING, TYPE 'L' (ASTM B 88) WITH 95-5 SILVER SOLDERED JOINTS (ASME B16.18/22) OR PRESSURE SEALED JOINTS WITH EPDM-RUBBER, O-RING SEAL (PROPRESS OR EQUAL) OR
3" AND BELOW.
CROSSLINKED POLYETHYLENE (PEX A) BY WIRSBO AQUAPEX (ASTM F876 AND ASTM F877) WITH PEX-A COLD EXPANSION FITTINGS, PROPEX INSERT WITH CORRESPONDING PROPEX RING. (ASTM F1960)
MINIMUM BEND RADIUS (COLD BENDING): NO LESS THAN SIX TIMES THE OUTSIDE DIAMETER. USE A BEND SUPPORT AS SUPPLIED BY THE PEX TUBING MANUFACTURER FOR TUBING WITH A BEND RADIUS LESS THAN STATED.
MANIFOLDS: UPONOR PROPEX 1 OR UPONOR ENGINEERED PLASTIC (EP) MANIFOLDS. ALL MANIFOLDS MANUFACTURED WITH THE APPROPRIATE SIZED PROPEX FITTINGS.
PROVIDE RED PEX PIPE FOR HOT WATER, BLUE PEX PIPE FOR COLD WATER SYSTEMS.

E. OXYGEN PIPING AND JOINTS ABOVE GRADE:
COPPER MEDICAL GAS TUBING, TYPE 'L', STANDARD COLOR MARKING "OXY" (ASTM B 819) WITH WROUGHT-COPPER JOINTS (ASME B16.22), PRESSURE TYPE OR MSS-SP-73 WITH DIMENSIONS FOR BRAZED JOINTS; COPPER UNIONS, WROUGHT-COPPER OR CAST-COPPER ALLOY (ASME B16.22).

F. ANESTHIA EVACUATION PIPE AND FITTINGS – ABOVE GRADE:
SCHEDULE 40 PVC DWV PIPE, (ASTM D1784 – D1785), PVC SOCKET FITTINGS AND SOLVENT CEMENTED FITTINGS. (ASTM D2665)

03 INSULATION

INSULATE DOMESTIC WATER PIPING ABOVE GRADE (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES) WITH PREFORMED FIBERGLASS INSULATION (JOHNS-MANVILLE OR SIMILAR). FOLLOW THIS SCHEDULE:

SERVICE	PIPE SIZE	THICKNESS
DOMESTIC HOT WATER (105 –140 F)	ALL	1"
DOMESTIC HOT WATER RETURN	ALL	1"
DOMESTIC COLD WATER	ALL	1/2"

PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES ARE REQUIRED TO MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY (ASTM E84/NFPA 255) METHOD.
INSULATE HORIZONTAL STORM DRAIN PIPING ABOVE GRADE AND ROOF DRAIN BODIES WITH 1.5" PREFORMED FIBERGLASS INSULATION (JOHNS-MANVILLE OR SIMILAR).

04 VALVES

SHUT OFF VALVES: BRASS/BRONZE, BALL TYPE, FULL PORT, TWO-PIECE, 125 PSI WORKING PRESSURE, NSF 61 APPROVED.
CHECK VALVES: BRASS/BRONZE, SWING TYPE, 125 PSI WORKING PRESSURE, NSF 61 APPROVED.
INSTALL IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS. PROVIDE ACCESS DOORS IF REQUIRED.

05 TESTS

ALL SOIL, WASTE, VENT AND WATER PIPING SHALL BE TESTED BY THE CONTRACTOR IN THE PRESENCE OF THE PLUMBING INSPECTOR AND SHALL BE APPROVED BY THE ENGINEER BEFORE ACCEPTANCE. ALL PIPING LOCATED UNDERGROUND OR CONCEALED IN BUILDING CONSTRUCTION SHALL BE TESTED BEFORE BACKFILLING OR CONCEALING PIPE. ALL TESTS REQUIRED FOR EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGE TO THE OWNER.

06 SEISMIC REQUIREMENTS

PROPERLY SUPPORT AND BRACE VERTICALLY AND HORIZONTALLY ALL PIPING, APPARATUS, EQUIPMENT, ETC. IN ACCORDANCE WITH APPLICABLE CODES TO PREVENT EXCESSIVE MOVEMENT DURING SEISMIC CONDITIONS.

07 GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THE COMPLETE PLUMBING SYSTEM AGAINST DEFECTS DUE TO FAULTY MATERIALS, WORKMANSHIP OR FAILURE DUE TO NEGLIGENCE OF THE CONTRACTOR. THIS GUARANTEE SHALL EXTEND 12 MONTHS FROM DATE OF FINAL ACCEPTANCE. ALL SERVICE CALLS DURING THIS PERIOD SHALL BE PROVIDED BY THE CONTRACTOR.

PLUMBING LEGEND

NEW WORK

Symbol	Description
	DOMESTIC COLD WATER
E	DOMESTIC EXISTING COLD WATER
	DOMESTIC 120° WATER
E	DOMESTIC EXISTING 120° WATER
	DOMESTIC 120° WATER RETURN
E	DOMESTIC EXISTING 120° WATER RETURN
140	DOMESTIC 140° WATER
140HWR	DOMESTIC 140° WATER RETURN
TW	TEMPERED WATER
F	FILTERED WATER
	SANITARY
E	EXISTING SANITARY
	SANITARY VENT
E	EXISTING SANITARY VENT
RL	STORM DRAIN (ABOVE SLAB)
ORL	OVERFLOW STORM DRAIN (ABOVE SLAB)
SD	STORM DRAIN (BELOW SLAB OR GRADE)
ESD	EXISTING STORM DRAIN (BELOW SLAB OR GRADE)
CD	CONDENSATE
GW	GREASE WASTE
OW	OIL WASTE
D	DRAIN
P	PUMPED DISCHARGE
A	COMPRESSED AIR
EA	EXISTING COMPRESSED AIR
G	NATURAL GAS
	PIPE TURNING DOWN
	PIPE TURNING UP
	PIPE CAP
	FIXTURE SUPPLY WITH SHUT-OFF
	SHUT-OFF VALVE
	CHECK VALVE
	EXPANSION VALVE
	BALANCING VALVE
	GAS COCK AND GAS REGULATOR
	PRESSURE REDUCING/REGULATING VALVE
	STRAINER
	UNION
	SAFETY OR RELIEF VALVE
S	SOLENOID VALVE
	OS&Y VALVE
FD	FLOOR DRAIN
HD	HUB DRAIN
	FLOOR SINK
	TRENCH DRAIN
RD	ROOF DRAIN
OD	OVERFLOW ROOF DRAIN
Fco	FLOOR CLEANOUT
Pco	END-OF-LINE CLEANOUT
Wco	WALL CLEANOUT
	PRESSURE GAGE
	THERMOMETER
SA-"A"	SHOCK ARRESTER (SUFFIX INDICATES PDI SIZE)
	BACKFLOW PREVENTER (REDUCED PRESSURE)
	BACKFLOW PREVENTER (DOUBLE CHECK)
M	METER (GAS OR WATER)
	PUMP
FPH	FREEZE PROOF WALL HYDRANT
FPHB	FREEZE PROOF WALL HYDRANT BOX
HB	HOSE BIB
TP	TRAP PRIMER
FS	FLOW SWITCH – FS#1
	DIRECTION OF FLOW
EJ	EXPANSION JOINT
	PIPE ANCHOR
	PIPE SLEEVE
	FLEXIBLE CONNECTION
#	REVISION NOTES
	POINT OF CONNECTION NEW TO EXISTING
1 / W	DOMESTIC WATER RISER DESIGNATION
1 / S	WASTE RISER DESIGNATION
	SECTION OR DETAIL NO. SECTION OR DETAIL LOCATED ON THIS SHT.

ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE
AC	ABOVE CEILING
ADB	AUXILIARY DRAIN BOX
AFF	ABOVE FINISH FLOOR
BF-1	BACKFLOW PREVENTER
BFF	BELOW FINISH FLOOR
BG	BELOW GRADE
BTUH	BRITISH THERMAL UNIT/HOUR
BS	BELOW SLAB
BS-1	BREAK ROOM SINK
BV	BALANCING VALVE
℄	CENTER LINE
C-1	WATER COOLER/FOUNTAIN
CA	COMPRESSED AIR
CB-1	CATCH BASIN
CO	CLEANOUT
CV	CHECK VALVE
CW	COLD WATER
DC	DOWNSPOUT COVER
DN	DOWN
DW	DISHWASHER
EC	ELECTRICAL CONTRACTOR
ECO	EXISTING CLEANOUT
ES	EMERGENCY SHOWER/EYEWASH
ET-1	THERMAL EXPANSION TANK
EW	EMERGENCY EYEWASH
EX	EXISTING
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FPH	FREEZE PROOF HYDRANT
FS	FLOOR SINK
G	NATURAL GAS
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GI	GREASE INTERCEPTOR
GW	GREASE WASTE SANITARY
HB	HOSE BIBB
HCP	HANDICAP
HW	HOT WATER
HWR	HOT WATER RETURN
INV:	INVERT ELEVATION
IMB	ICE MAKER BOX
KW	KITCHEN WASTE
L-1	LAVATORY
MBH	MILLION BTU
MC	MECHANICAL CONTRACTOR
MS-1	MOP SINK
NIC	NOT IN CONTRACT
PC	PLUMBING CONTRACTOR
OD	OVERFLOW ROOF DRAIN
ORL	OVERFLOW ROOF LEADER
OW	OIL WASTE SANITARY
OWS	OIL WASTE SEPATATOR
RCP-1	RECIRCULATION PUMP
RD	ROOF DRAIN
RL	ROOF LEADER
S-1	SINK
SA	SHOCK ARRESTOR
SS	SANITARY
SH-1	SHOWER
SD	STORM DRAIN
TD-1	TRENCH DRAIN
TP	TRAP PRIMER
T&P	TEMPERATURE AND PRESSURE
TW	TEMPERED WATER
TYP	TYPICAL
U-1	URINAL
V	VENT
VB	VACUUM BREAKER
VLV	VALVE
VS	VENT STACK
VP	VENT PIPE
VTR	VENT THRU ROOF
W-1	WATER CLOSET
WCO	WALL CLEANOUT
WH-1	WATER HEATER
WP	WASTE PIPE
WS	WASTE STACK

PLUMBING NOTES

1. ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH THE 2020 NEW YORK PLUMBING CODE AND THE INTERNATIONAL FIRE CODES WHICH APPLY.
2. ALL PLUMBING PIPING SHALL BE CLOSELY COORDINATED WITH STRUCTURAL SYSTEM, MECHANICAL SYSTEM AND ELECTRICAL SYSTEM TO INSURE PROPER COMPLIANCE WITH CODES AND INSURE THAT ALL TRADES WILL NOT CONFLICT WITH EACH OTHER.
3. IF ANY SUBSTITUTED EQUIPMENT IS SUBMITTED AND APPROVED WITH PLUMBING CONNECTIONS OTHER THAN THAT SHOWN ON THE DRAWINGS AND SCHEDULES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE PROPER PLUMBING CONNECTIONS TO THIS EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
4. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DOORS, WINDOWS, WALLS, FIXTURES, ETC.
5. ALL CLEANOUTS SHALL HAVE TOPS ESPECIALLY DESIGNED FOR SPECIFIC FLOOR FINISHES SUCH AS CARPET, TILE, ETC. UNLESS OTHERWISE SPECIFIED.
6. ALL FLOOR CLEANOUT, FLOOR DRAIN AND CATCH BASIN TOPS SHALL BE COVERED DURING CONSTRUCTION TO PREVENT DAMAGE.
7. VENTS WILL BE COLLECTED ABOVE THE CEILING AND EXTENDED THROUGH THE ROOF AT AS FEW POINTS AS POSSIBLE. VENT PENETRATIONS SHALL AVOID MECHANICAL EQUIPMENT INTAKE AIR LOCATIONS PER CODE REQUIREMENTS.
8. EXCEPT WHERE PIPE SPACE IS PROVIDED OR UNLESS OTHERWISE NOTED, ALL SUPPLY, WASTE AND VENT RISERS SHALL BE RUN IN WALLS AND PARTITIONS.
9. PROVIDE ACCESS PANELS AS REQUIRED AT VALVE LOCATIONS TO PROVIDE ACCESS TO CONTROL VALVES. COORDINATE TYPE AND LOCATION WITH GENERAL CONTRACTOR.
10. PROVIDE FOR ACCESS TO ALL EQUIPMENT REQUIRING CLEANING OR ADJUSTMENT.
11. P.C. SHALL PROVIDE A PRESSURE REDUCING VALVE WHERE WATER MAIN ENTERS BUILDING IF PRESSURE EXCEEDS 80 PSI. SET PRV @ 75 PSI.

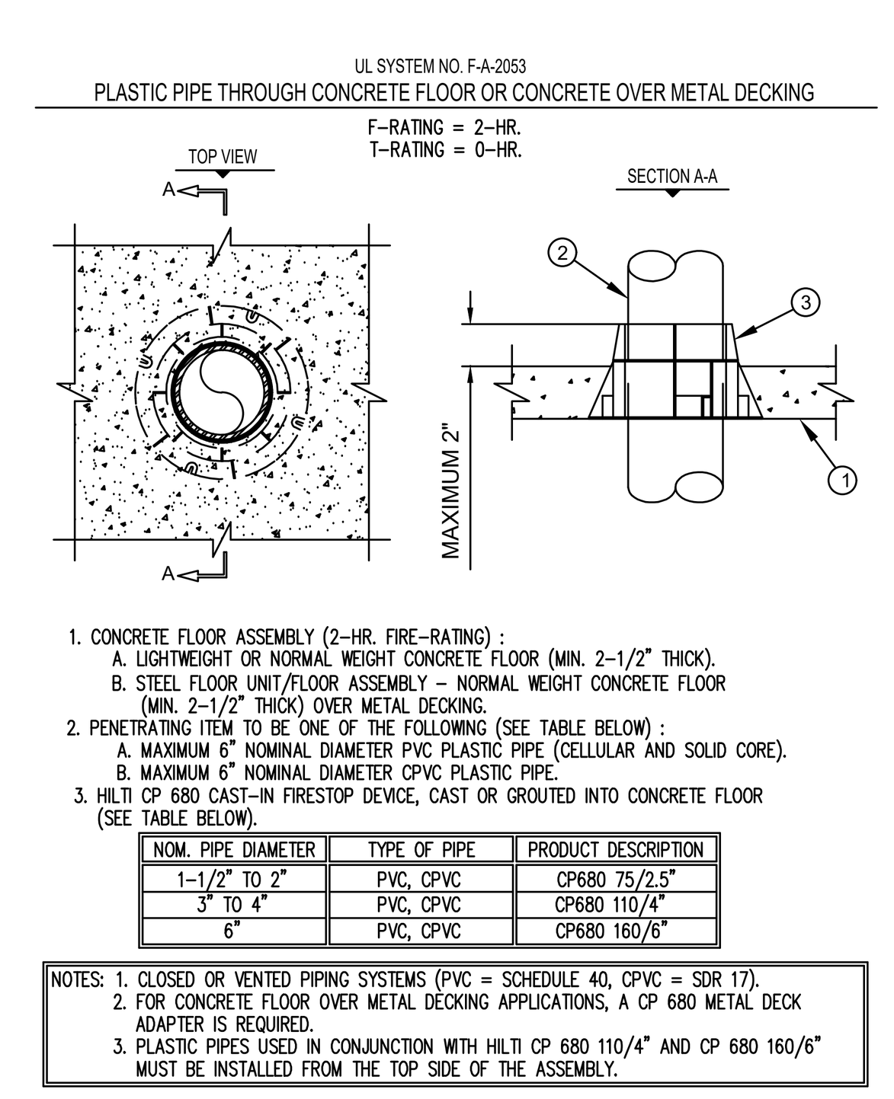
PIPE LABEL LEGEND

PLAN DESIGNATION	PIPE LABEL
CW	DOMESTIC WATER
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RETURN
SS	SANITARY SEWER
SV	SANITARY VENT
O	OXYGEN
AE	ANESTHESIA EVACUATION

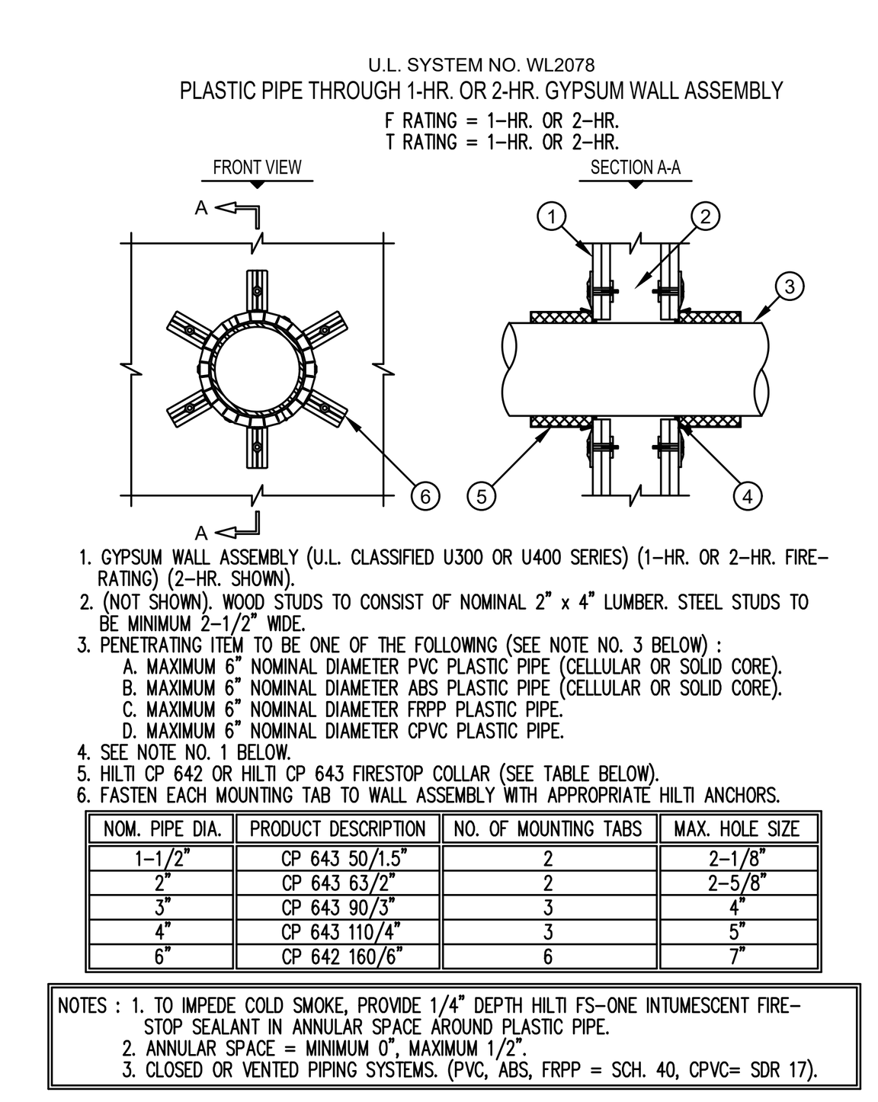
NOTES:
ALL PIPING WITH THE DESIGNATIONS ABOVE WILL BE LABELED PER ANSI/ASME A13.1
NON-POTABLE SYSTEMS WILL BE LABELED PER INTERNATIONAL PLUMBING CODE SECTION 608.8

PLUMBING DRAWING SCHEDULE

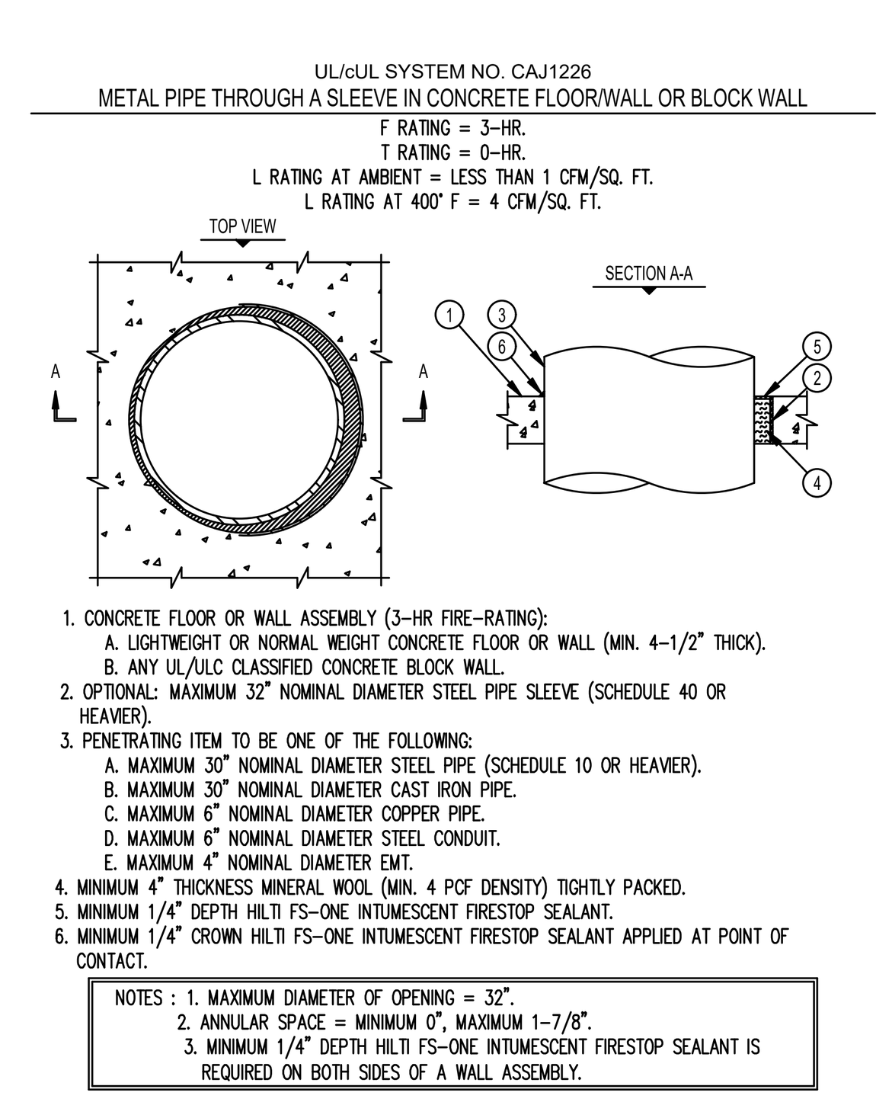
DRAWING NUMBER	DESCRIPTION
P001	PLUMBING SPECIFICATIONS, LEGEND, GENERAL NOTES
P002	PLUMBING SCHEDULES & DETAILS
P101	MAIN LEVEL FLOOR PLAN – WASTE – WEST
P102	MAIN LEVEL FLOOR PLAN – WASTE – EAST
P103	UPPER LEVEL FLOOR PLAN – WASTE – WEST
P104	UPPER LEVEL FLOOR PLAN – WASTE – EAST
P201	MAIN LEVEL FLOOR PLAN – WATER – WEST
P202	MAIN LEVEL FLOOR PLAN – WATER – EAST
P203	UPPER LEVEL FLOOR PLAN – WATER – WEST
P204	UPPER LEVEL FLOOR PLAN – WATER – EAST
P301	MAIN LEVEL FLOOR PLAN – MED GAS – WEST



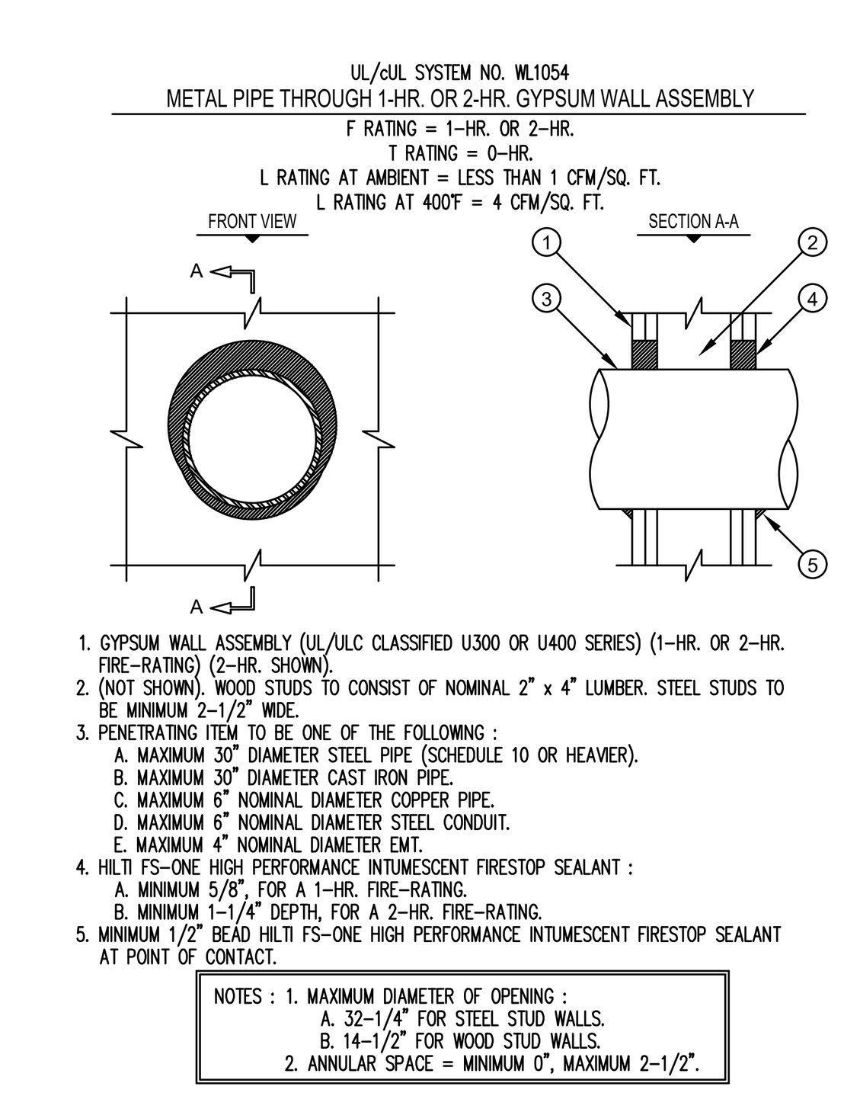
1 FIRE STOP DETAIL
SCALE: NONE



2 FIRE STOP DETAIL
SCALE: NONE



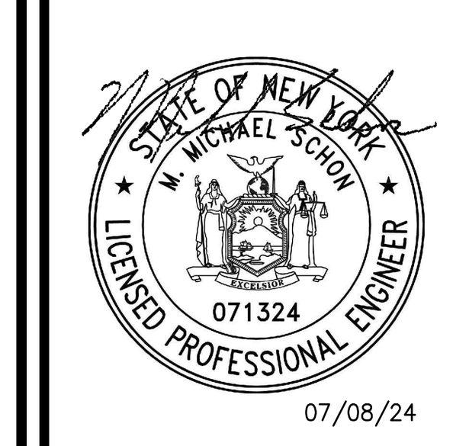
3 FIRE STOP DETAIL
SCALE: NONE



4 FIRE STOP DETAIL
SCALE: NONE

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA



07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

PLUMBING SPECIFICATIONS, LEGEND, GENERAL NOTES

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS

INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

P001

1 OF 14

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE TYPE	DESCRIPTION	SERVICE CONNECTIONS SAN	VENT	HW	CW	REMARKS
W-1	BARRIER-FREE WATER CLOSET TANK-TYPE	WATER CLOSET SHALL BE EQUAL TO AMERICAN STANDARD "CADET PRO" MODEL #215AA.104.020, WHITE, VITREOUS CHINA, ELONGATED BOWL, TANK TYPE, 1.28 GPF, FLOOR MOUNTED, BOTTOM OUTLET, 12" ROUGH-IN. SEAT SHALL BE EQUAL TO CHURCH MODEL #9500SSCT, ELONGATED WHITE OPEN FRONT SEAT LESS COVER. WATER CLOSET SHALL BE PROVIDED WITH CHROME PLATED SUPPLY WITH LOOSE KEY STOP EQUAL TO McGUIRE #172.	3"	2"	–	1/2"	FIXTURE RIM TO FINISHED FLOOR MOUNTING HEIGHT SHALL BE 17". LOCATE FLUSH LEVER ON WIDE SIDE OF STALL.
L-1	BARRIER-FREE LAVATORY WALL HUNG	LAVATORY SHALL BE EQUAL TO AMERICAN STANDARD "LUCERNE" MODEL #0355.012.020, VITREOUS CHINA, WALL HUNG. PROVIDE FAUCET EQUAL TO DELTA MODEL #21C134 CENTERSET FAUCET WITH LEVER HANDLES. PROVIDE LAVATORY COMPLETE WITH GRID DRAIN, PREWRAPPED INSULATED, CAST BRASS, OFFSET TAILPIECE AND P-TRAP WITH CLEANOUT (EQUAL TO McGUIRE #PW2150WC) AND CHROME PLATED SUPPLIES (EQUAL TO McGUIRE #175).	2"	1 1/2"	1/2"	1/2"	PROVIDE ASSE 1070 MIXING VALVE, MV-1 AT EACH FIXTURE. SET TEMP TO 110°F.
S-1	EXAM SINK	SINK SHALL BE EQUAL TO JUST MFG. MODEL SL-ADA-1815-A-GR, SINGLE BOWL, 18 GAUGE TYPE 304 STAINLESS STEEL. PROVIDE FAUCET EQUAL TO T&S BRASS MODEL #B-2866-05FC-CR, DUAL LEVER HANDLES, VANDAL RESISTANT AERATOR. PROVIDE SINK COMPLETE WITH ONE STAINLESS STEEL BASKET STRAINER AND TAILPIECE (EQUAL TO McGUIRE #151A), CHROME PLATED SEMI-CAST BRASS P-TRAP (EQUAL TO McGUIRE #8902), AND CHROME PLATED SUPPLIES WITH LOOSE KEY STOPS (EQUAL TO McGUIRE #175LK).	2"	1 1/2"	1/2"	1/2"	
S-2	TREATMENT SINK	SINK SHALL BE EQUAL TO JUST MFG. MODEL SL-2225-A-GR. PROVIDE FAUCET EQUAL TO T&S BRASS MODEL #B-1141-04, DUAL LEVER HANDLES, VANDAL RESISTANT AERATOR. PROVIDE SINK COMPLETE WITH ONE STAINLESS STEEL BASKET STRAINER AND TAILPIECE (EQUAL TO McGUIRE #151A), CHROME PLATED SEMI-CAST BRASS P-TRAP (EQUAL TO McGUIRE #8902), AND CHROME PLATED SUPPLIES WITH LOOSE KEY STOPS (EQUAL TO McGUIRE #175LK).	2"	1 1/2"	1/2"	1/2"	
S-3	SCRUB SINK	SINK SHALL BE TRISTAR MODEL #300-35, WALL MOUNTED, STAINLESS STEEL. FAUCET SHALL BE TRISTAR MODEL #5EF-1DWGB, WALL MOUNT, GOOSE NECK, INFRARED. CONTRACTOR SHALL COORDINATE WITH OWNER FOR CONNECTION SIZES, ROUGH-IN REQUIREMENTS AND NECESSARY ACCESORIES. PROVIDE SINK COMPLETE WITH GRID DRAIN, ANGLE STOPS, FLEXIBLE RISER AND P-TRAP UPON COORDINATION WITH OWNER.	2"	1 1/2"	1/2"	1/2"	
S-4	LAB FOOD PREP SINK	SINK SHALL BE EQUAL TO ELKAY MODEL #DL-ADA-2133, DOUBLE BOWL, THREE HOLE PUNCHING, 18 GAUGE TYPE 304 STAINLESS STEEL. PROVIDE FAUCET EQUAL TO T&S BRASS MODEL #B-2347-05, DUAL LEVER HANDLES, VANDAL RESISTANT AERATOR. PROVIDE SINK COMPLETE WITH ONE STAINLESS STEEL BASKET STRAINER AND TAILPIECE (EQUAL TO McGUIRE #151A), CHROME PLATED SEMI-CAST BRASS P-TRAP (EQUAL TO McGUIRE #8902), AND CHROME PLATED SUPPLIES WITH LOOSE KEY STOPS (EQUAL TO McGUIRE #175LK).	2"	1 1/2"	1/2"	1/2"	
S-5	UTILITY SINK	SINK SHALL BE EQUAL TO STEELTON MODEL #522CS118NFW, 24"X24"X12", SINGLE BOWL, 18 GAUGE TYPE 304 STAINLESS STEEL, STEEL LEGS, W/ GOOSENECK, DUAL LEVER HANDLE, 2.0 GPM FAUCET AND ONE STAINLESS STEEL BASKET STRAINER. PROVIDE TAILPIECE, CHROME PLATED SEMI-CAST BRASS P-TRAP, AND CHROME PLATED SUPPLIES WITH LOOSE KEY STOPS.	2"	1 1/2"	1/2"	1/2"	
S-6	CLINIC SERVICE SINK FLUSH VALVE FLOOR MOUNT	CLINIC SINK SHALL BE EQUAL TO AMERICAN STANDARD "CLINIC" MODEL #9504.999.020, WHITE, VITREOUS CHINA, SQUARE BOWL, SIPHON JET, 1.28 GPF, FLOOR MOUNTED, TOP SPUD. FLUSH VALVE SHALL BE AMERICAN STANDARD MODEL ULTIMA MODEL #6147121.002.	3"	2"	–	1"	FIXTURE RIM TO FINISHED FLOOR MOUNTING HEIGHT SHALL BE 15".
S-7	CORNER SINK WALL HUNG	SINK SHALL BE EQUAL TO FINE FIXTURES MODEL #WH1111W, VITREOUS CHINA, WALL HUNG, CORNER MOUNT. PROVIDE FAUCET EQUAL TO DELTA MODEL #21C134 CENTERSET FAUCET WITH LEVER HANDLES. PROVIDE LAVATORY COMPLETE WITH GRID DRAIN, PREWRAPPED INSULATED, CAST BRASS, OFFSET TAILPIECE AND P-TRAP WITH CLEANOUT (EQUAL TO McGUIRE #PW2150WC) AND CHROME PLATED SUPPLIES (EQUAL TO McGUIRE #175).	2"	1 1/2"	1/2"	1/2"	
BS-1	BARRIER-FREE BREAK ROOM SINK	SINK SHALL BE EQUAL TO ELKAY MODEL #LRAD-2521, SINGLE BOWL, FOUR PUNCHING, 18 GAUGE TYPE 304 STAINLESS STEEL. PROVIDE FAUCET EQUAL TO DELTA MODEL #400LF-HDF, 8" CENTERS, SINGLE LEVER HANDLE, VANDAL RESISTANT AERATOR W/SPRAY. PROVIDE SINK COMPLETE WITH ONE STAINLESS STEEL BASKET STRAINER, OFFSET TAILPIECE AND P-TRAP WITH CLEANOUT (EQUAL TO McGUIRE #PW1152WC) AND CHROME PLATED SUPPLIES WITH LOOSE KEY STOPS (EQUAL TO McGUIRE #175LK).	2"	1 1/2"	1/2"	1/2"	
T-1	4' TABLE TUB UNIT	TABLE AND FAUCET SHALL BE OWNER FURNISHED AND CONTRACTOR INSTALLED. PROVIDE VACUUM BREAKER AND HAIR INTERCEPTOR. PROVIDE TUB COMPLETE WITH STAINLESS STEEL FLEXIBLE RISERS, ANGLE STOPS AND P-TRAP.	2"	1 1/2"	1/2"	1/2"	
T-3	GROOMING TUB	TUB AND FAUCET SHALL BE OWNER FURNISHED AND CONTRACTOR INSTALLED. PROVIDE VACUUM BREAKER AND HAIR INTERCEPTOR. PROVIDE TUB COMPLETE WITH STAINLESS STEEL FLEXIBLE RISERS, ANGLE STOPS AND P-TRAP.	2"	1 1/2"	1/2"	1/2"	
HI	HAIR INTERCEPTOR	HAIR INTERCEPTOR SHALL BE MARBLE PRODUCTS CATCH-ALL HAIR TRAP IN LIEU OF FIXTURE TRAP, WITH REMOVABLE PERFORATED SCREEN, 1-1/2" THREADED INLET AND OUTLET.	1 1/2"	–	–	–	
MS-1	MOP SINK	SINK SHALL BE EQUAL TO FLORESTONE MODEL #90, 24"x24"x12", PRECAST TERRAZZO WITH 6" DROP FRONT. PROVIDE FAUCET EQUAL TO DELTA MODEL #28T9, INTEGRAL STOPS, VACUUM BREAKER, PAIL HOOK, THREADED SPOUT, AND LEVER HANDLES. PROVIDE SINK COMPLETE WITH MOP HANGER, HOSE WITH BRACKET, AND P-TRAP.	3"	1 1/2"	3/4"	3/4"	
SH-1	SHOWER	SHOWER SHALL BE FREEDOM MODEL #APF3838BF, 4-PIECE, ACRYLIC, 0.5" THRESHOLD. PROVIDE SHOWER COMPLETE WITH DRAIN, GRAB BARS, TRANSFER SEAT AND CURTAIN. BATH VALVE ASSEMBLY SHALL BE EQUAL TO DELTA MODEL #T13291 TEMP & PRESS BALANCING VALVE ASSEMBLY W/ #RPW324HDF HAND HELLP SHOWER HEAD AND SLIDE BAR.	2"	1 1/2"	1/2"	1/2"	
C-1	BARRIER-FREE BI-LEVEL ELECTRIC WATER COOLER	ELECTRIC WATER COOLER SHALL BE EQUAL TO ELKAY MODEL #LZSTL8C, BI-LEVEL, PUSHBAR CONTROLS, NON-FILTERED, LIGHT GRAY GRANITE, W/ BOTTLE FILLER. PROVIDE WATER COOLER COMPLETE WITH ANGLE SUPPLY LOOSE KEY STOP (EQUAL TO McGUIRE #175LK), P-TRAP (EQUAL TO McGUIRE #8902), AND CARRIER.	2"	1 1/2"	–	1/2"	8.0 GPH RECOVERY, 370 WATTS
C-2	ELECTRIC WATER WATER COOLER	ELECTRIC WATER COOLER SHALL BE ELKAY MODEL #EZS8L, SINGLE ADA, WALL HUNG, PUSHBAR CONTROLS, NON-FILTERED, LIGHT GRAY GRANITE, PROVIDE WATER COOLER COMPLETE WITH ANGLE SUPPLY LOOSE KEY STOP (EQUAL TO McGUIRE #175LK), P-TRAP (EQUAL TO McGUIRE #8902), AND CARRIER.	2"	1 1/2"	–	1/2"	8.0 GPH RECOVERY, 370 WATTS
C-3	ELECTRIC WATER WATER COOLER BOTTLE FILLER	ELECTRIC WATER COOLER SHALL BE ELKAY MODEL #EZS8WSLK, SINGLE ADA, WALL HUNG, PUSHBAR CONTROLS, NON-FILTERED, LIGHT GRAY GRANITE, W/ BOTTLE FILLER. PROVIDE WATER COOLER COMPLETE WITH ANGLE SUPPLY LOOSE KEY STOP (EQUAL TO McGUIRE #175LK), P-TRAP (EQUAL TO McGUIRE #8902), AND CARRIER.	2"	1 1/2"	–	1/2"	8.0 GPH RECOVERY, 370 WATTS
EW	EMERGENCY EYE/FASH WASH	EMERGENCY EYE/FACE WASH SHALL BE HAWS MODEL 7610 BARRIER-FREE SINK/COUNTERTOP EYE/FACE WASH. INCLUDE AN AXION MSR EYE/FACE WASH HEAD, POLISHED CHROME BRASS SINGLE ACTION PULL-DOWN VALVE BODY, WHEEL CHAIR ACCESSIBILITY, UNIVERSAL SIGN AND 1/2" O.D. SLIP JOINT INLET. PROVIDE WITH TEMPERED WATER BLENDING VALVE MODEL 9201EFE.	2"	1 1/2"	1/2"	1/2"	
TWDS-1	TRENCH DRAIN WASH-DOWN SYSTEM	TRENCH WASH-DOWN SYSTEM SHALL BE EQUAL TO VALOR SV-16 (½") SOLENOID VALVE. ALL SOLENOID VALVES SHALL BE CONNECTED TO AN INTERMATIC TIME CLOCK WITH REMOTE OVERRIDES AT EACH RUN ROOM. PROVIDE WITH FEBCO ATMOSPHERIC VACUUM BREAKER. VACUUM BREAKER SHALL BE INSTALLED ON THE DISCHARGE SIDE OF THE LAST SHUT-OFF VALVE AND SHALL HAVE ALL BRONZE BODIES AND BONNETS AND SHALL BE OF THE NON-SPILLING TYPE. SEE ARCHITECTURAL SHEET A502 FOR MORE INFORMATION.	–	–	–	1/2"	
IMB	ICE MACHINE BOX	ICE MACHINE BOX SHALL BE EQUAL TO GUY GRAY MODEL #FRIB-12 FIRE RATED.	–	–	–	1/2"	W/ VACCUM BREAKER
WMB	WASHING MACHINE BOX	WASHING MACHINE BOX SHALL BE OATEY MODEL #38470, QUATER TURN, SWEAT VALVES WITH MOUNTED WATER HAMMER ARRESTORS, MOLDED PLASTIC BOX.	3"	2"	1/2"	1/2"	W/ VACCUM BREAKER AND SA#1
WSB	WATER SUPPLY BOX	WATER SUPPLY BOX SHALL BE EQUAL TO OATEY MODEL #37897, QUATER TURN, SWEAT VALVE, PROVIDE COVER PLATE.	–	–	–	1/2"	W/ VACCUM BREAKER
HB	HOSE BIBB VALVE	HOSE BIBB SHALL BE EQUAL TO WOODFORD MODEL #24.	DWGS.	–	–	1/2"	PROVIDE WITH METAL HANDLE
FPH	WALL HYDRANT	FREEZE PROOF HYDRANT SHALL BE EQUAL TO WOODFORD MODEL #65.	–	–	–	1/2"	
HS	HOSE STATION	HOSE BIBB SHALL BE EQUAL TO WOODFORD MODEL #122.	–	–	1/2"	1/2"	PROVIDE WITH METAL HANDLE AND DRYWALL MOUNTING PLATE.
BV	BALANCING VALVE	BALANCING VALVE SHALL BE THERMOMEGA TECH "CIRCUIT SOLVER" MODEL CSU. PROVIDE SHUT-OFFS AT VALVE.	–	–	–	–	
ADB	AUX DRAIN BOX	AUX DRAIN BOX SHALL BE EQUAL TO GUY GRAY MODEL #FRAD12.	2"	1 1/2"	–	–	MOUNT 12"AFF W/ACCESSORY GRILLE
FD	FLOOR DRAIN	FLOOR DRAIN SHALL BE SIOUX CHIEF MODEL #832-36PNRV, PVC BODY, NICKEL BRONZE STRAINER, VANDAL RESISTANT SCREWS, DEEP SEAL P-TRAP, PLUG TRAP PRIMER CONNECTION, COMPLETE WITH TRAP GUARD MODEL SURE SEAL #SS3009V.	SEE DWGS.	–	–	–	PROVIDE TRAP GUARD CONNECTION AS REQUIRED.
FS	FLOOR SINK	FLOOR SINK SHALL BE EQUAL TO ZURN MODEL #Z-1900-2 . PROVIDE FLOOR SINK WITH P-TRAP.	SEE DWGS.	–	–	–	PROVIDE TRAP GUARD CONNECTION AS REQUIRED.
TD	TRENCH DRAIN	TRENCH DRAIN SHALL BE TRI-STAR 4"WIDE, INTEGRAL SLOPE, STAINLESS STEEL GRATE WITH 1/2"HOLES, 14 GA., DEEP SEAL P-TRAP, 4" NO-HUB CONNECTION, CUSTOM ORDER, DRAIN SYSTEM, COORDINATE WITH GENERAL CONTRACTOR FOR LENGTH.	SEE DWGS.	–	–	–	PROVIDE FACTORY INSTALLED REMOVABLE STRAINER AND HINGED ACCESS COVER AT DRAIN CONNECTION.
FCO	FLOOR CLEANOUT	FLOOR CLEANOUT SHALL BE EQUAL TO ZURN MODEL #ZS-1400. CLEANOUT.	SEE DWGS.	–	–	–	GAS/WATER TIGHT ABS PLUG
WCO	WALL CLEANOUT	WALL CLEANOUT SHALL BE EQUAL TO ZURN MODEL #ZS-1468, ACCESS COVER AND PLUG.	SEE DWGS.	–	–	–	GAS/WATER TIGHT ABS PLUG

ELECTRIC WATER HEATER SCHEDULE

TAG	DESCRIPTION	ELECTRICAL DATA GALLONS STORAGE	NO ELEMENTS	KW	TOTAL KW	VOLTAGE	PHASE	HERTZ	RECOVERY GPH/RISE	SELECTION BASED ON MANUFACTURER	MODEL NUMBER	REMARKS/OPTIONS
WH-1A	BUILDING	120	3	6.0	18.0	208	3	60	109/90°	A.O. SMITH	DRE-120-18	NOTE 1, B
WH-1B	BUILDING	120	3	6.0	18.0	208	3	60	109/90°	A.O. SMITH	DRE-120-18	NOTE 1, B

OPTIONS (ALL UNITS)
- CODE APPROVED VACUUM BREAKER, TEMPERATURE/PRESSURE RELIEF VALVE AND INTERGAL OR FIELD SUPPLIED HEAT TRAPS.
- THERMAL EXPANSION TANK ON CW MAKE-UP. SEE TANK SCHEDULE.
- SERVICE BALL VALVES ON HW/CW MAINS

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: WATER HEATER WIRED FOR NON-SIMULTANEOUS USE OR SINGLE ELEMENT.
B: WATER HEATER WIRED FOR SIMULTANEOUS DUAL ELEMENT USE.
C: WATER HEATERS OVER 120 GALLONS OR 200°F SHALL BE A.S.M.E. LISTED.
D: WATER HEATERS SUPPLING KITCHENS SHALL BE N.S.F. APPROVED.
E: WATER HEATER MOUNTED BELOW LAVATORY OR SINK.

NOTES:
1. INSTALL WATER HEATER PER MANUFACTURERS REQUIREMENTS. COORDINATE ALL CONNECTION POINTS IN THE FIELD.

EXPANSION TANK SCHEDULE

TAG	DESCRIPTION	VOLUME (GALLONS)	DIAMETER (INCHES)	HEIGHT (INCHES)	SELECTION BASED ON MANUFACTURER	MODEL NUMBER	REMARKS
ET-1	BLADDER TYPE	16.5	15"	25"	AMTROL	ST-30VC	NOTE 1

NOTES:
1. INSTALL EXPANSION TANK ON IN-COMING COLD WATER PER MANUFACTURERS REQUIREMENTS.

PUMP SCHEDULE

TAG	DESCRIPTION	TYPE	CAPACITY GPM	HEAD (ft.)	ELECTRICAL DATA HP	V	PH	HZ	SELECTION BASED ON MANUFACTURER	MODEL NUMBER	REMARKS/OPTIONS
RCP-1	HOT WATER RECIRC. PUMP	IN-LINE	2.5	20	1/6	120	1	60	BELL & GOSSETT	PL-30-B	NOTE 1,2
SP-1	SUMP PUMP	SUBMERSIBLE	50	20	0.5	120	1	60	STANCOR	SE50-O/M ELV	NOTE 3, A

OPTIONS (ALL RCP UNITS)
- AQUA-STAT & NIGHT TIMER
- FLANGED PUMP
- BALANCING VALVE & CHECK VALVE
- MAINTENANCE BALL VALVES ON BOTH SIDES OF PUMP

OPTIONS (ALL SUMP UNITS)
- 30"X30"X30" BASIN BY G.C.
- DISCHARGE CHECK VALVE
- DISCHARGE BALL VALVE
- ---

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: OIL-MINDER ALARM/CONTROL SYSTEM
B:
C:
D:

NOTES:
1. SET AQUA-STAT WITH SET POINT 10 DEGREES BELOW SYSTEM SUPPLY TEMP.
2. INSTALL RECIRCULATION PUMP PER MANUFACTURERS REQUIREMENTS.
3. INSTALL OIL-MINDER ALARM/CONTROL PANEL ON WALL AT ELEVATOR PER MANUFACTURERS REQUIREMENTS. FIELD VERIFY EXACT LOCATION.

MIXING VALVE SCHEDULE

TAG	DESCRIPTION	MAXIMUM GPM	MINIMUM GPM	PRESSURE LOSS	SELECTION BASED ON MANUFACTURER	MODEL NUMBER	REMARKS/OPTIONS
MV-1	THERMOSTATIC MIXING VALVE	3.5	.25	5	LEONARD	270-LF	NOTE 1, A

OPTIONS (ALL UNITS)
- LEAD FREE NSF APPROVED
- PROVIDE T'STAT ON TEMPERED LINE

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: ASSE 1070 APPROVED, SET @ 100° F. ½" INLETS/ ½" OUTLET, MOUNT BELOW FIXTURE

NOTES:
1. INSTALL MIXING VALVE PER MANUFACTURERS REQUIREMENTS. PROVIDE ALL PIPING AND VALVES PER O&M MANUAL.

INTERCEPTOR SCHEDULE

TAG	DESCRIPTION	INLET/ OUTLET SIZE (INCHES)	FLOW RATE (GPM)	CAPACITY WATER (GAL)	GREASE (LBS)	SOLIDS (GAL)	OIL (GAL)	SELECTION BASED ON MANUFACTURER	MODEL NUMBER	REMARKS/OPTIONS
LI-1	LINT INTERCEPTOR	3"	50	21	–	4	–	STRIEM	AA-3	NOTE 1
LI-2	LINT INTERCEPTOR	1.5"	25	–	–	–	–	FILTROL	IN-LINE FILTER	MEETS IPC 1003.6

OPTIONS (ALL UNITS)
- DISCHARGE BACKWATER VALVE IN SEPARATE VALVE BOX
- --

ADDITIONAL OPTIONS (UNITS AS NOTED)
A: NEMA 4X ALARM PANEL, SEE NOTE #2, SINGLE POINT ELECTRICAL CONNECTION
B: PROVIDE H-20 TRAFFIC RATED RELIEVING SLAB PER MANUFACTURERS REQUIREMENTS.
C: PROVIDE EXTERNAL, VENTED FLOW CONTROL @ SCHEDULED FLOW RATE.
D: MOUNT ON FLOOR, TERMINATE WASTE LINE TO FLOOR SINK W/ AIR GAP.

NOTES:
1. INSTALL INTERCEPTOR PER MANUFACTURERS REQUIREMENTS. COORDINATE ALL CONNECTION POINTS IN THE FIELD.
2. PROVIDE AUDIBLE AND VISUAL ALARM SYSTEM THAT INDICATES HIGH WATER LEVEL (VISUAL ONLY) AND HIGH-HIGH WATER LEVEL (AUDIBLE AND VISUAL) OF WATER LEVEL IN BASIN. A SILENCE CONTROL SHALL BE PROVIDED FOR THE AUDIBLE ALARMS. LEVEL SENSOR(S) TO BE INTRINSICALLY SAFE. LEVEL SENSOR FLOATS TO BE MADE OF STAINLESS STEEL. POWER TO THE CONTROL PANEL IS TO BE [208] VOLT, [1] PHASE BY E.C. CONTROL/POWER WIRING FROM PANEL TO PUMP PROVIDED BY P.C. AND INSTALLED BY E.C.

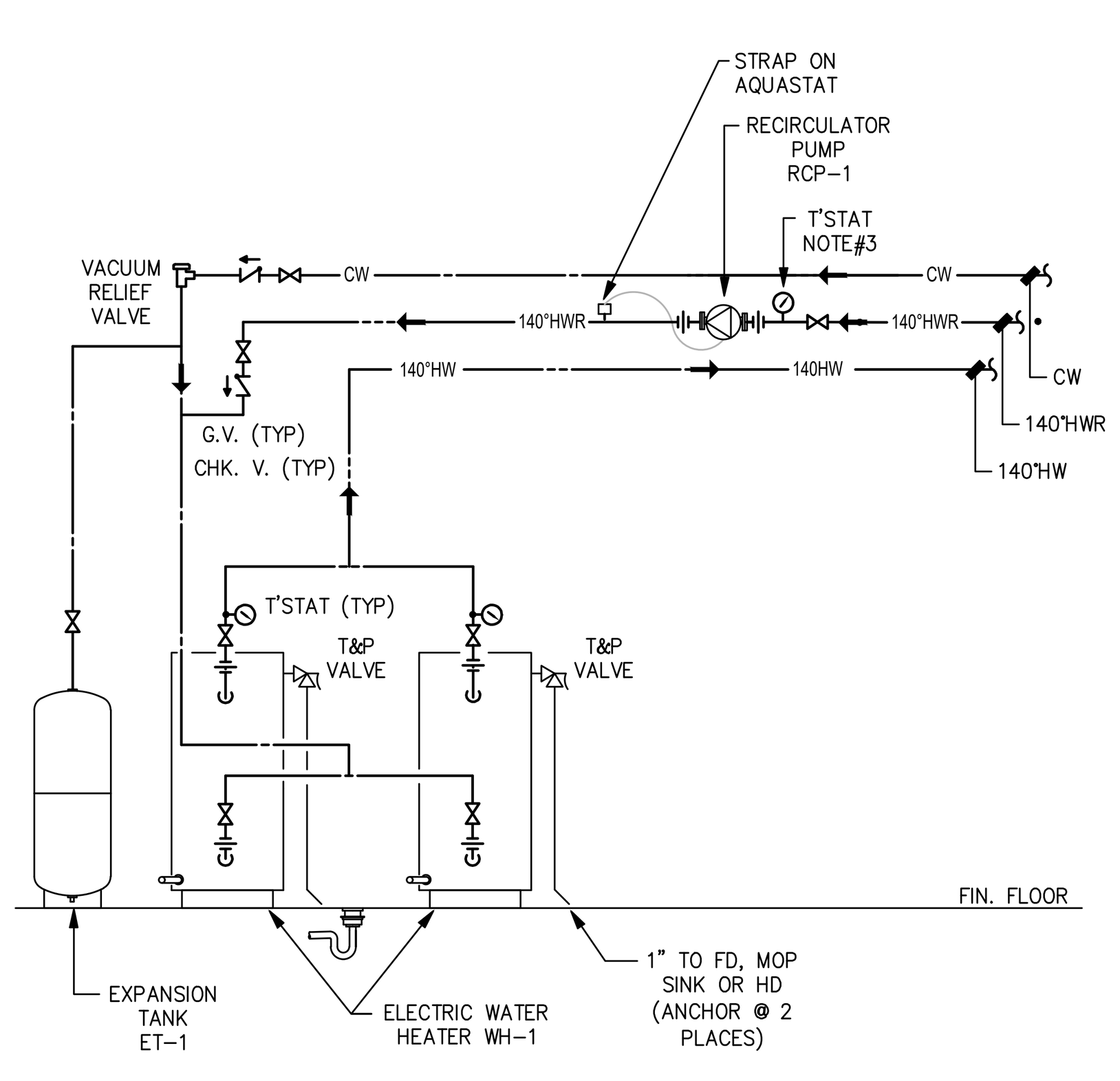
SHOCK ARRESTOR TABLE

TAG	PDI WH201 DESIGNATION	FIXTURE UNITS	SELECTION BASED ON MANUFACTURER	MODEL NUMBER	REMARKS
SA#1	AA	1-3	SIOUX CHIEF	660	NOTE 1
SA#2	A	4-11	SIOUX CHIEF	652-A	NOTE 1
SA#3	B	12-32	SIOUX CHIEF	653-B	NOTE 1
SA#4	C	33-60	SIOUX CHIEF	654-C	NOTE 1
SA#5	D	61-113	SIOUX CHIEF	655-D	NOTE 1

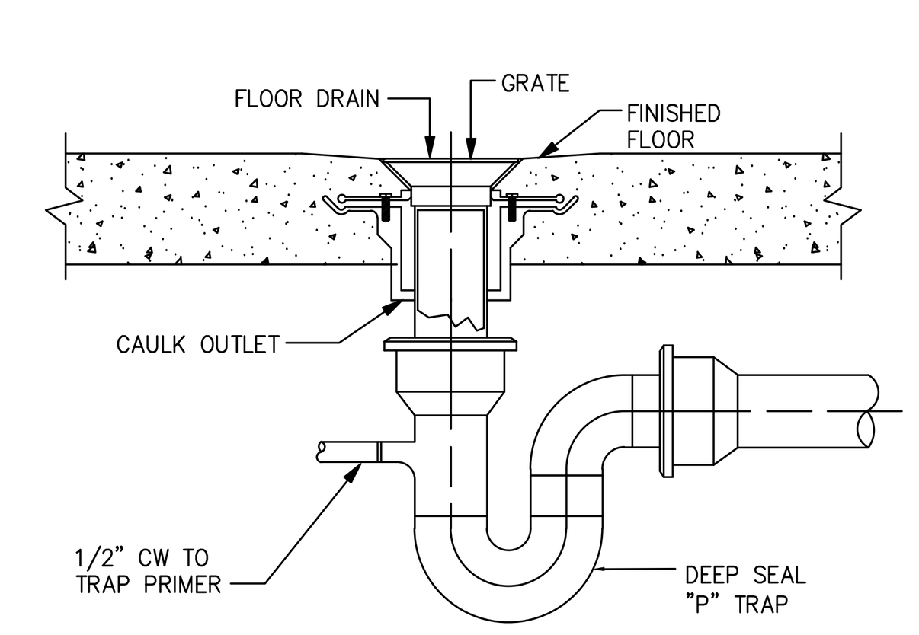
NOTES:
1. INSTALL ARRESTORS PER PDI WH201 AND MANUFACTURERS REQUIREMENTS.

MEDICAL GASES FIXTURE SCHEDULE

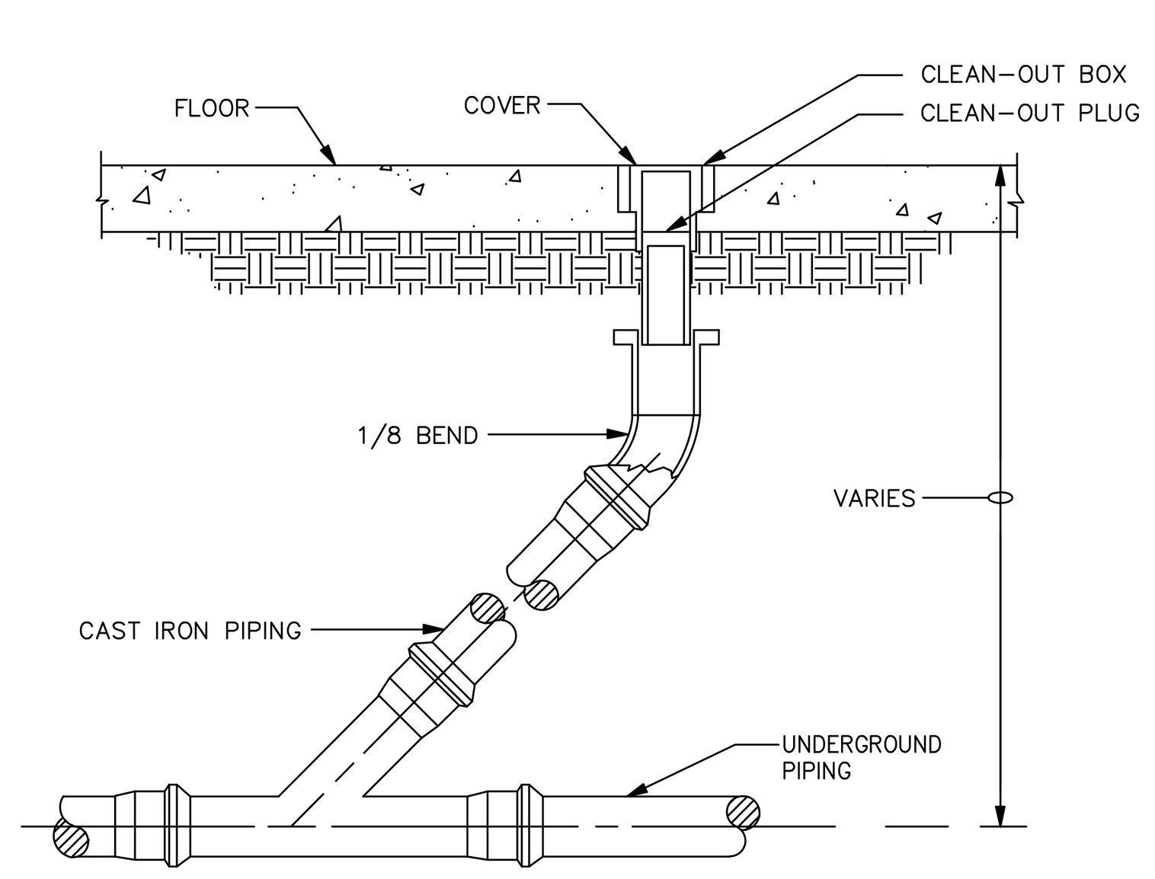
TAG	FIXTURE TYPE	DESCRIPTION
OM	OXYGEN MANIFOLD	OXYGEN MANIFOLD SHALL BE AMICO MODEL M3EC-S-HH-U-OXY. MANIFOLD SHALL SWITCH FROM "RIGHT BANK IN USE" TO "LEFT BANK IN USE" ONCE THE RIGHT BANK DEPLETES. MANUAL OPERATION SHALL BE REQUIRED AT THE TIME OF CHANGING CYLINDERS TO ENSURE SWITCH-OVER BY MOVING LEVER. PRESSURE SWITCH CONTROLS REMOTE ALARMS WHICH INDICATE "RIGHT BANK IN USE" TO "LEFT BANK IN USE" SUPPLY SWITCH-OVER AND THAT CYLINDER REPLACEMENT IS NECESSARY. PROVIDE WITH HEADER BAR ASSEMBLY M2-HBTC-04U-OXY AND WALL BRACKET FOR HEADER BAR ASSEMBLY, MODEL M-X-HB-WLBRKIT. PROVIDE ALL REQUIRED FITTINGS FOR OPERATION AS REQUIRED.
O2	OXYGEN GAS CEILING OUTLET	OXYGEN GAS CEILING OUTLET SHALL BE AMICO NO. O-DISCEI-E-OXY, LATCH VALVE AMICO NO. O-FASE-XX-U-OXY, DISS CEILING MOUNTED, UL LISTED, NFPA 99/CSA COMPLIANT, PRIMARY AND SECONDARY CHECKS, INDEXED FOR OXYGEN. PROVIDE ONE QUICK DETACH LATCH VALVE ASSEMBLY FOR EACH DISS OUTLET AND TURN OVER TO OWNER.
AE	ANETHESIA EVAC OUTLET	ANESTHESIA EVAC OUTLET SHALL BE SUPERA EVACUATION CEILING OUTLET, FOR ANESTHESIA EVAC. CEILING MOUNTED OUTLET WITH DISTRIBUTION TYPE CONNECTION. OWNER FURNISHED CONTRACTOR INSTALLED DROP HOSE, END FITTINGS AND LENGTH OF HOSE AS SELECTED BY OWNER.
SUAE	SCAVENGER UNIT	SCAVENGER UNIT, ANESTHESIA EVACUATION SHALL BE SUPERA ACTIVE EVACUATION SYSTEM MODEL EVC3000. PROVIDE SYSTEM COMPLETED, INCLUDING POWER UNIT, VENT PIPE, DISTRIBUTION PIPING, PIPING CONNECTIONS, HOSE AND HOSE DROPS (AT EACH LOCATION), SCAVENGING INTERFACE, GAUGE AND TUBING. 120V/1PH, FLA 0.30, 50/60 HZ. CONNECTION INLET AND OUTLET SIZE: 2".
MGAB	MEDICAL GAS ALARM BUZZER	MEDICAL GAS ALARM BUZZER SHALL BE AMICO NO. M2-REM-AL-NEMA, MEDICAL ALARM BUZZER, OXYGEN SENSORS 110V POWER, PROVIDE TRANSFORMER.
MGVB-1	MEDICAL GAS VALVE BOX	MEDICAL GAS VALVE BOX SHALL BE AMICO NO. VBU-M05 WITH W-ISO-G-05, MEDICAL VALVE BOX, SINGLE GAS, LABELED FOR OXYGEN SERVICE, SHUT-OFF VALVE AND GAUGE, SECTION ISOLATION VALVE WITH GAUGE PORT AND PRE-ATTACHED EXTENSIONS, 3-PIECE, FULL PORT BALL VALVE.



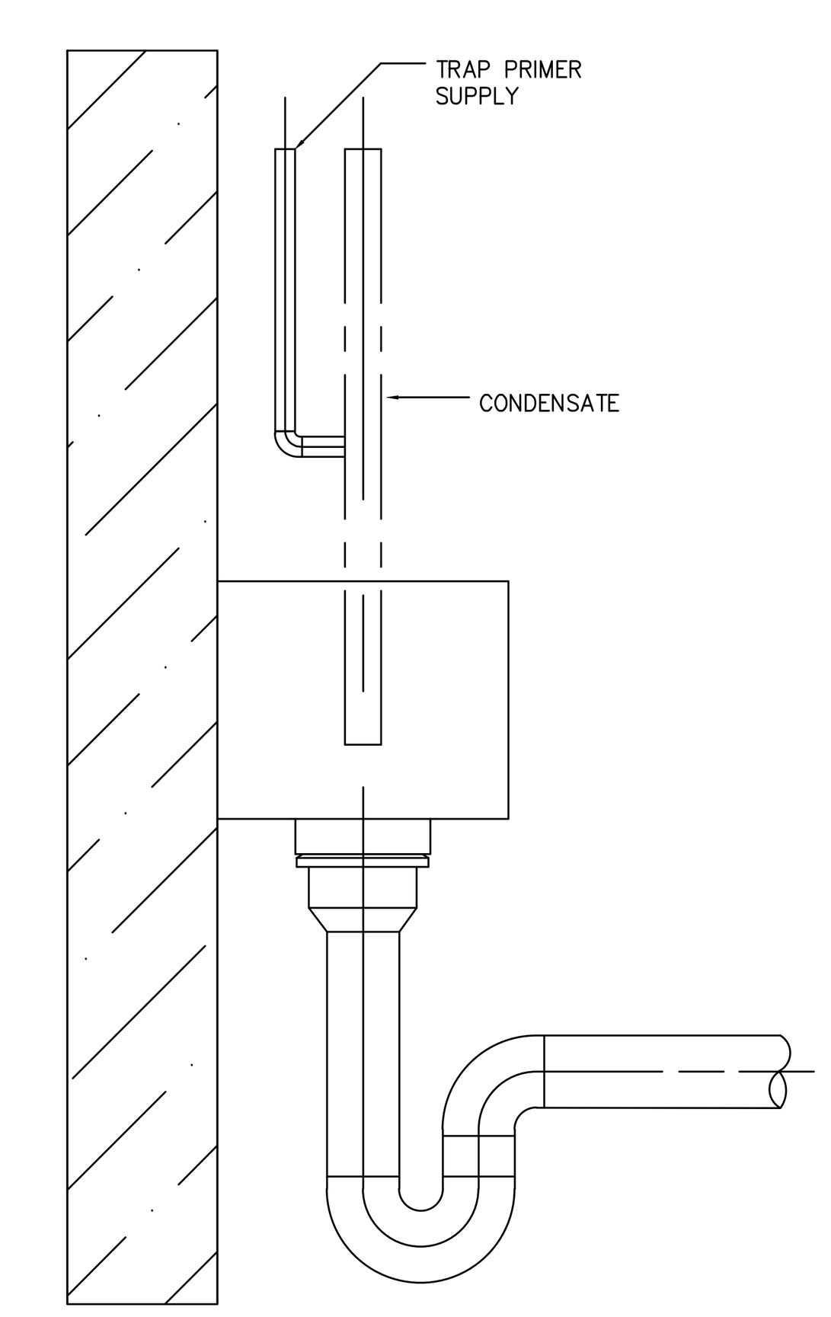
1 ELECTRIC WATER HEATER
SCALE: NONE
NOTES:
1. DRAWINGS FOR SCHEMATIC PURPOSES ONLY. ALL VALVES & EQUIPMENT MUST BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.



2 TYPICAL FLOOR DRAIN DETAIL
SCALE: NONE
NOTE:
P.C. SHALL PROVIDE TRAP GUARD AT DRAINS NOT WASHED BY A HOSE BIBB. TRAP GUARD = ZURN #Z1072. PROVIDE TRAP PRIMER IF REQUIRED BY AHJ. PRIMER = ZURN MODEL #Z1022 OR APPROVED EQUAL.



3 FLOOR CLEAN-OUT DETAIL
SCALE: NONE



4 TYPICAL AUXILIARY DRAIN OUTLET BOX
SCALE: NONE
NOTE:
XX

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

PLUMBING SCHEDULES & DETAILS

REV.#	DATE	COMMENTS
REVISION	-	-
REVISION	-	-
REVISION	-	-
REVISION	-	-

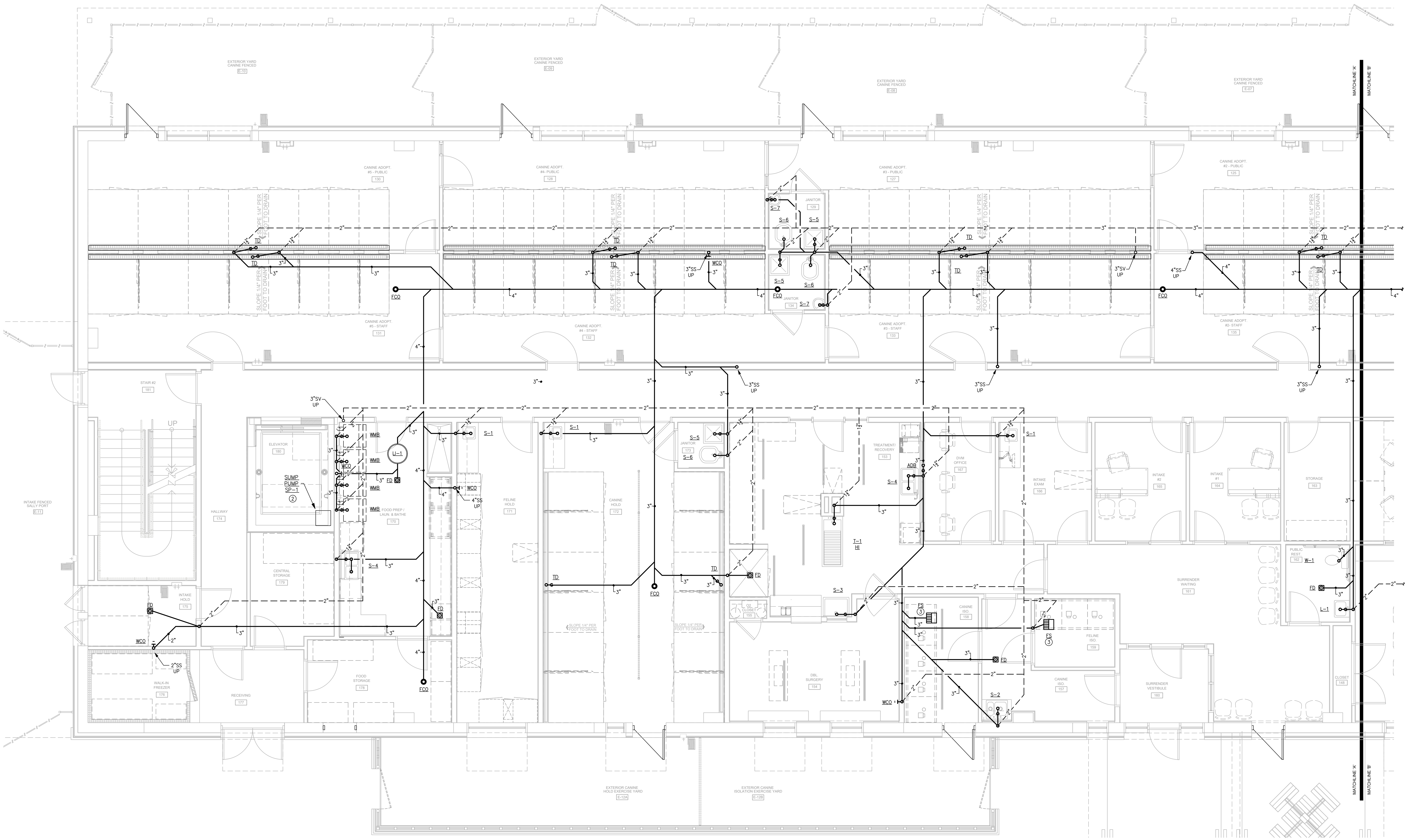
REVIEWS	
INITIALS	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

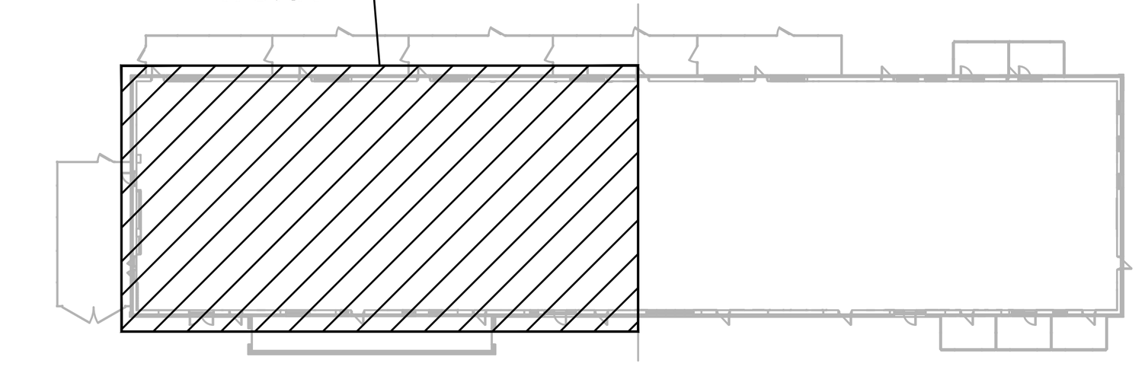
P002

NOTES THIS SHEET

1. SEE SHEETS P001–002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. ROUTE 1¼" ELEVATOR SUMP PUMP DISCHARGE BELOW FLOOR TO MOP SINK IN JANITORS CLOSET #116. TURN UP IN WALL AND DISCHARGE INTO MOP SINK WITH CODE APPROVED AIR GAP.
3. PLUMBING CONTRACTOR SHALL TIE THE DOG PEN DRAINS TOGETHER AND ROUTE ABOVE SLAB TO FLOOR SINKS. TERMINATE AT SINK WITH CODE APPROVED AIR GAP.



1 MAIN LEVEL FLOOR PLAN – WASTE – WEST
SCALE: 1/4" = 1'-0"



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK · M MICHAEL SCHON · 071324 · LICENSED PROFESSIONAL ENGINEER
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL FLOOR PLAN - WASTE - WEST

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

P101
3 OF 11

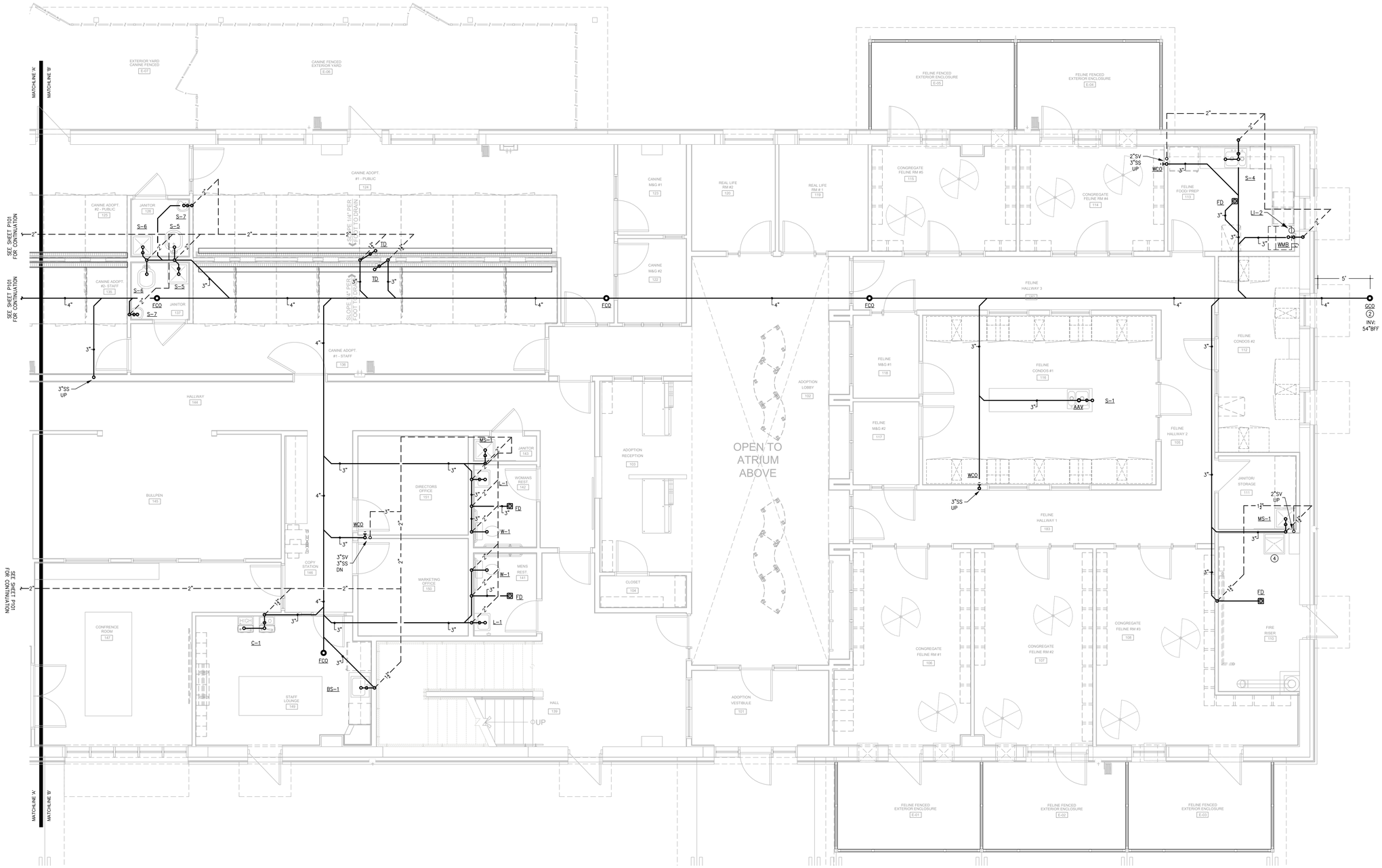
NOTES THIS SHEET

① SEE SHEETS P001–002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.

② PLUMBING CONTRACTOR SHALL TIE NEW SANITARY SEWER MAIN INTO CIVIL PROVIDED TAP. FIELD VERIFY EXACT LOCATION, INVERT ELEVATION AND FLOW DIRECTION. SEE CIVIL PLANS FOR CONTINUATION.

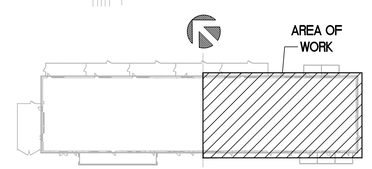
③ PLUMBING CONTRACTOR SHALL MOUNT REMOTE LINT TRAP ABOVE WASHER PER MANUFACTURERS REQUIREMENTS. PIPE DISCHARGE TO WASHER BOX. FIELD VERIFY EXACT LOCATION.

④ PLUMBING CONTRACTOR SHALL RECONNECT EXISTING UTILITY SINK TO NEW SANITARY SEWER LINE. FIELD VERIFY EXACT LOCATION AND INVERT ELEVATION.



1 MAIN LEVEL FLOOR PLAN – WASTE – EAST

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



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

M. MICHAEL SCHON
071324
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL FLOOR PLAN - WASTE - EAST

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS

INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

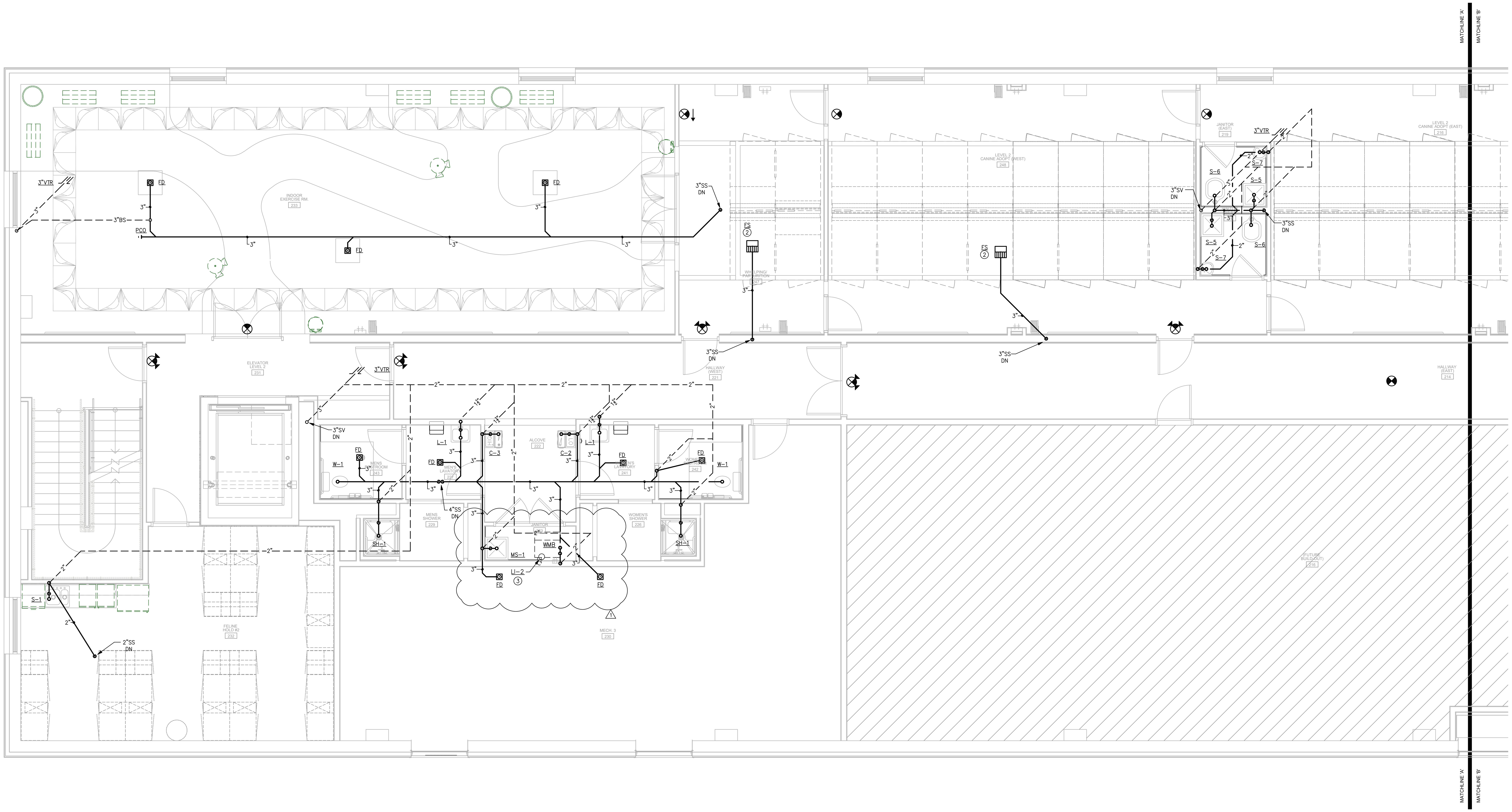
PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

P102

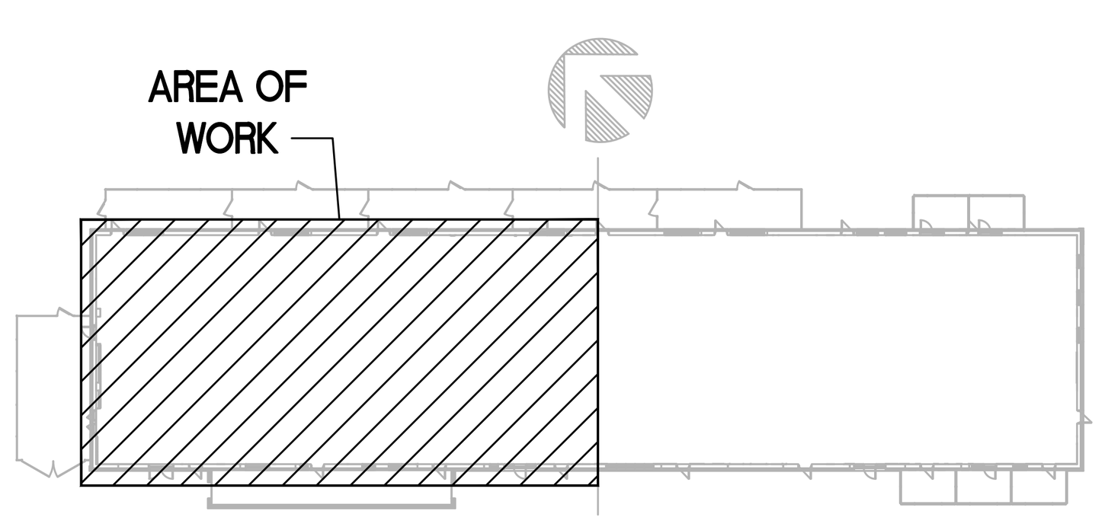
4 OF 11

NOTES THIS SHEET

1. SEE SHEETS P001–002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. PLUMBING CONTRACTOR SHALL TIE THE DOG PEN DRAINS TOGETHER AND ROUTE ABOVE SLAB TO FLOOR SINKS. TERMINATE AT SINK WITH CODE APPROVED AIR GAP.
3. PLUMBING CONTRACTOR SHALL MOUNT REMOTE LINT TRAP BESIDE WASHER PER MANUFACTURERS REQUIREMENTS. PIPE DISCHARGE TO WASHER BOX. FIELD VERIFY EXACT LOCATION.



1 UPPER LEVEL FLOOR PLAN – WASTE – WEST
SCALE: 1/4" = 1'-0"



M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK M. MICHAEL SCHON 071324 LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - WASTE - WEST

REV.#	DATE	COMMENTS
2	09/09/2024	ADDENDUM 2
REVISION:		
REVISION:		
REVISION:		
REVISION:		

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

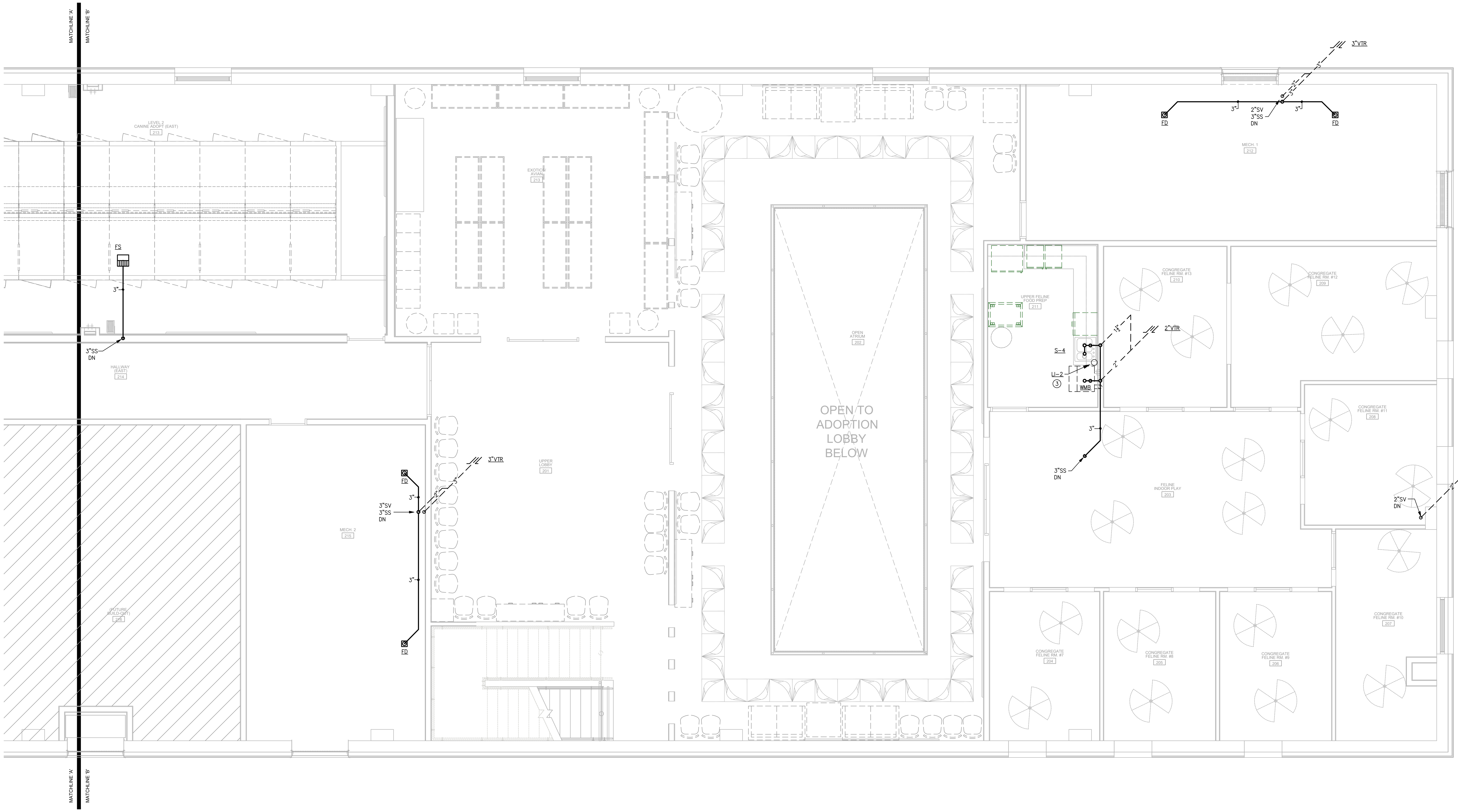
RGAS
PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

P103

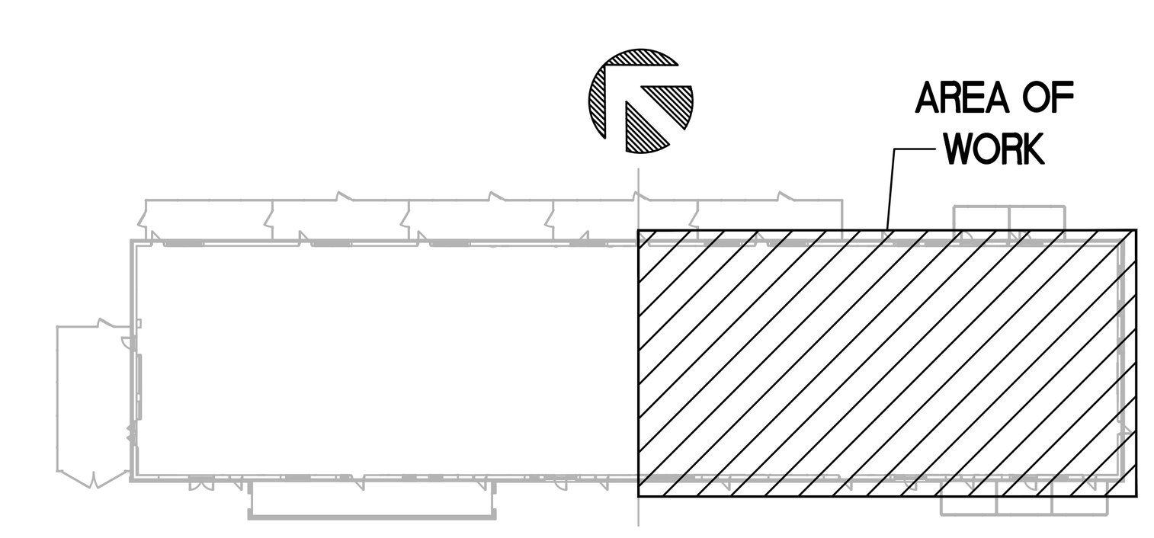
5 OF 11

NOTES THIS SHEET

1. SEE SHEETS P001–002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. PLUMBING CONTRACTOR SHALL TIE NEW SANITARY SEWER MAIN INTO CIVIL PROVIDED TAP. FIELD VERIFY EXACT LOCATION, INVERT ELEVATION AND FLOW DIRECTION. SEE CIVIL PLANS FOR CONTINUATION.
3. PLUMBING CONTRACTOR SHALL MOUNT REMOTE LINT TRAP BESIDE WASHER PER MANUFACTURERS REQUIREMENTS. PIPE DISCHARGE TO WASHER BOX. FIELD VERIFY EXACT LOCATION.



1 UPPER LEVEL
FLOOR PLAN – WASTE – EAST
SCALE: 1/4" = 1'-0"



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - WASTE - EAST

REV.#	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

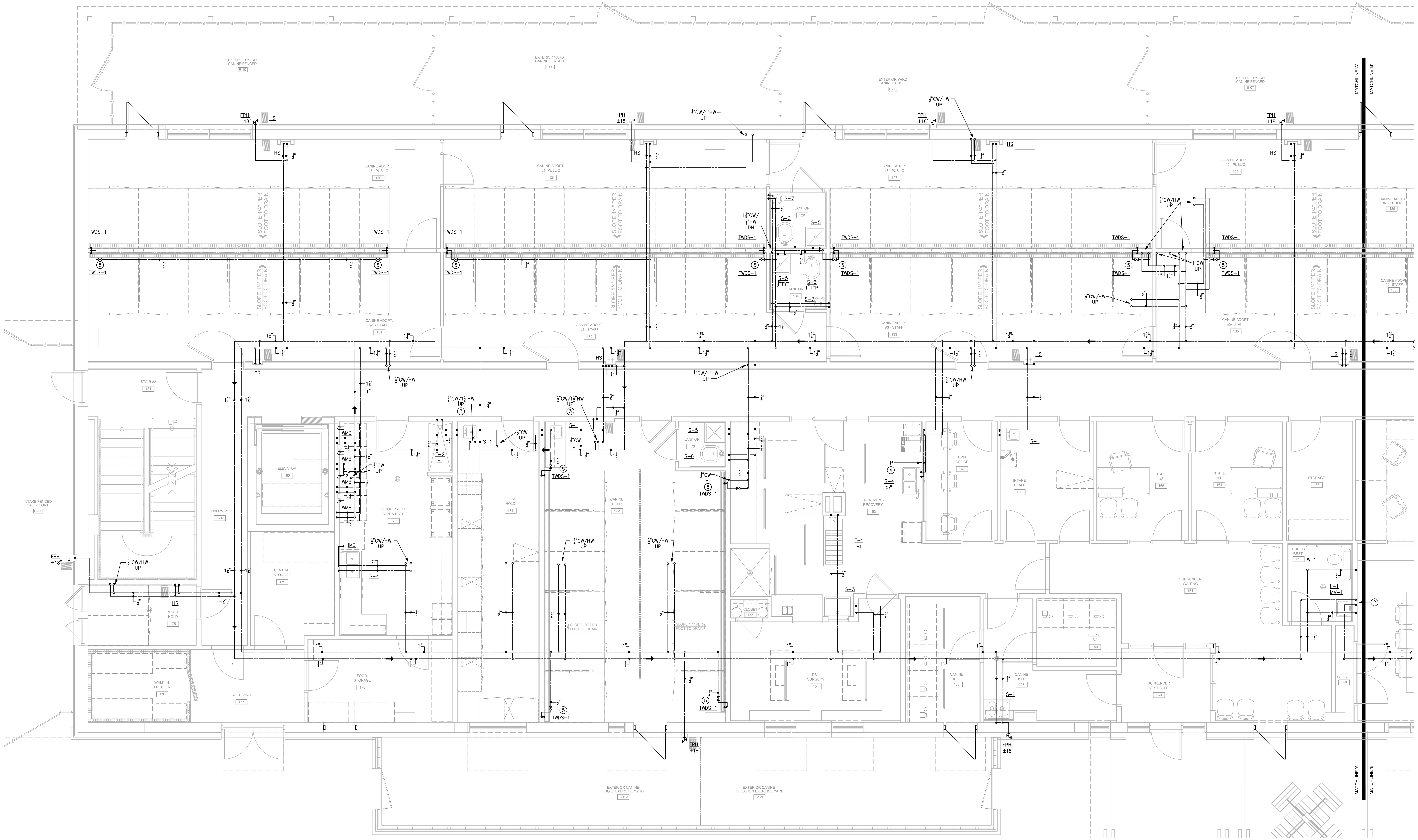
RGAS

PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

P104

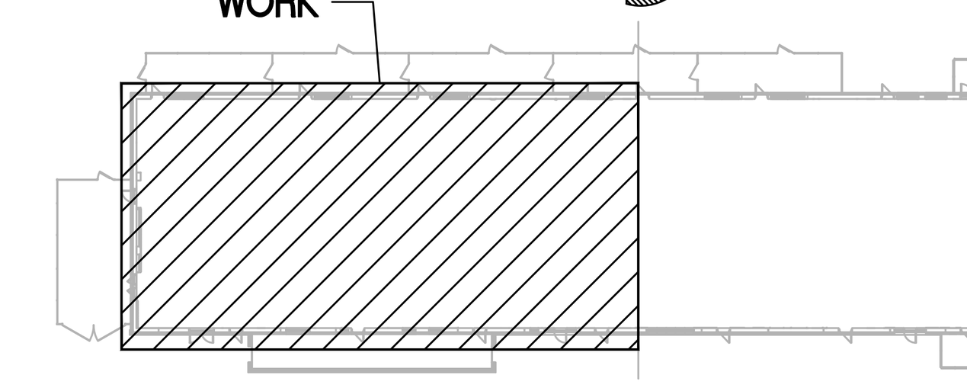
NOTES THIS SHEET

1. SEE SHEETS P001–002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. ROUTE HW DN IN WALL TO 12" AFF. ROUTE TO LAVATORY HW SUPPLIES, PROVIDE TAP AND TURN BACK UP TO ABOVE CEILING.
3. ROUTE HW UP TO SECOND FLOOR TO 12" AFF. ROUTE TO LAVATORY HW SUPPLIES, PROVIDE TAP AND TURN BACK DN TO FIRST FLOOR CEILING.
4. ROUTE ¼" CW FROM TRAP PRIMER TP TO ADB . FIELD VERIFY EXACT LOCATION.
5. TRENCH WASH–DOWN SYSTEM SHALL BE CONNECTED TO AN INTERMATIC TIME CLOCK WITH REMOTE OVERRIDES AT EACH RUN ROOM. SEE ARCHITECTURAL SHEET A502 FOR MORE INFORMATION.



1 MAIN LEVEL FLOOR PLAN – WATER – WEST
SCALE: 1/4" = 1'-0"

AREA OF WORK



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK – M. MICHAEL SCHON – 071324 – LICENSED PROFESSIONAL ENGINEER
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL FLOOR PLAN - WATER - WEST

REV.#	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-

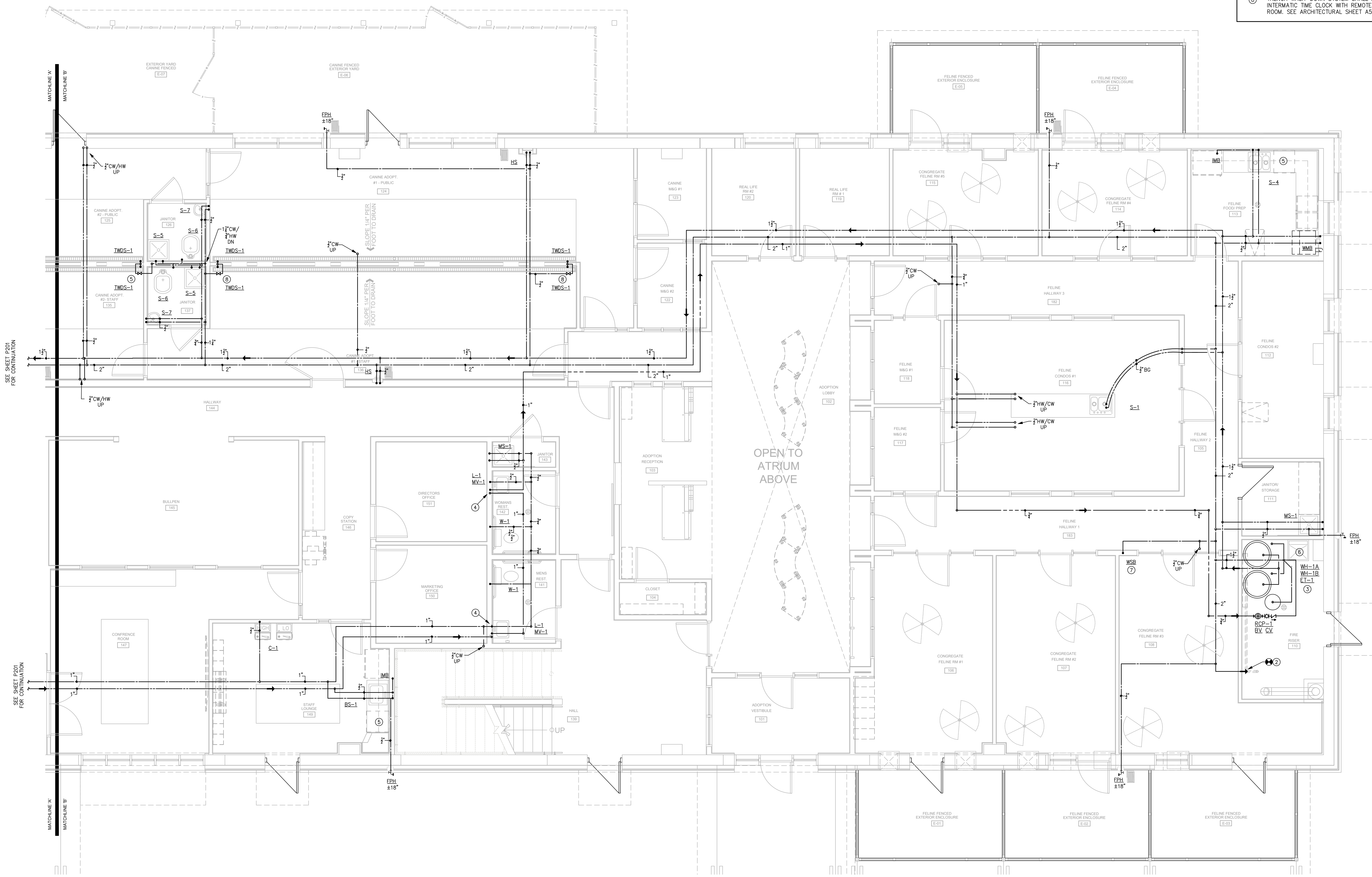
REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

P201
7 OF 11

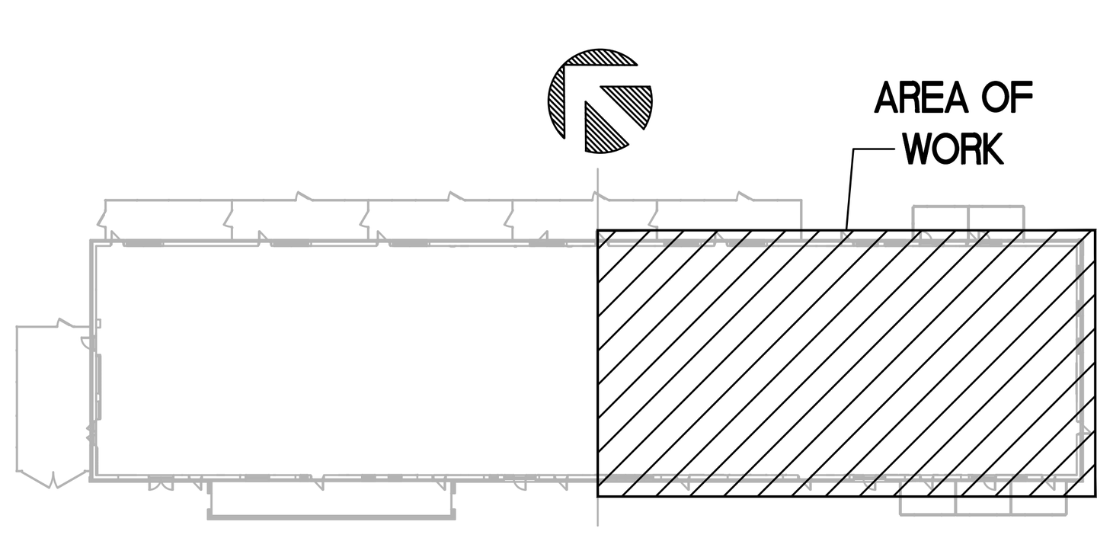
NOTES THIS SHEET

1. SEE SHEETS P001–002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. PLUMBING CONTRACTOR SHALL TIE NEW 2" CW LINE INTO EXISTING 2" CW RISER. PROVIDE SHUT–OFF VALVE AND PRV IF REQUIRED. FIELD VERIFY EXACT LOCATION.
3. PLUMBING CONTRACTOR SHALL MOUNT WATER HEATER ON 18" PLATFORM WITH DRAIN PAN. ROUTE DRAIN PAN DRAIN TO FLOOR DRAIN WITH CODE APPROVED AIR GAP.
4. ROUTE HW DN IN WALL TO 12" AFF. ROUTE TO LAVATORY HW SUPPLIES, PROVIDE TAP AND TURN BACK UP TO ABOVE CEILING.
5. TIE DISHWASHER SUPPLIES INTO BREAK SINK SUPPLIES.
6. PLUMBING CONTRACTOR SHALL TIE EXISTING SINK BACK INTO NEW WATER PIPING SYSTEM. FIELD VERIFY EXACT LOCATION.
7. PLUMBING CONTRACTOR SHALL PROVIDE WSB 12" AFF W/COVER PLATE.
8. TRENCH WASH–DOWN SYSTEM SHALL BE CONNECTED TO AN INTERMATIC TIME CLOCK WITH REMOTE OVERRIDES AT EACH RUN ROOM. SEE ARCHITECTURAL SHEET A502 FOR MORE INFORMATION.



1 MAIN LEVEL FLOOR PLAN – WATER – EAST

SCALE: 1/4" = 1'–0"



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK · M. MICHAEL SCHON · 071324 · LICENSED PROFESSIONAL ENGINEER

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER

427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL FLOOR PLAN - WATER - EAST

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077

DRAWN: WRB

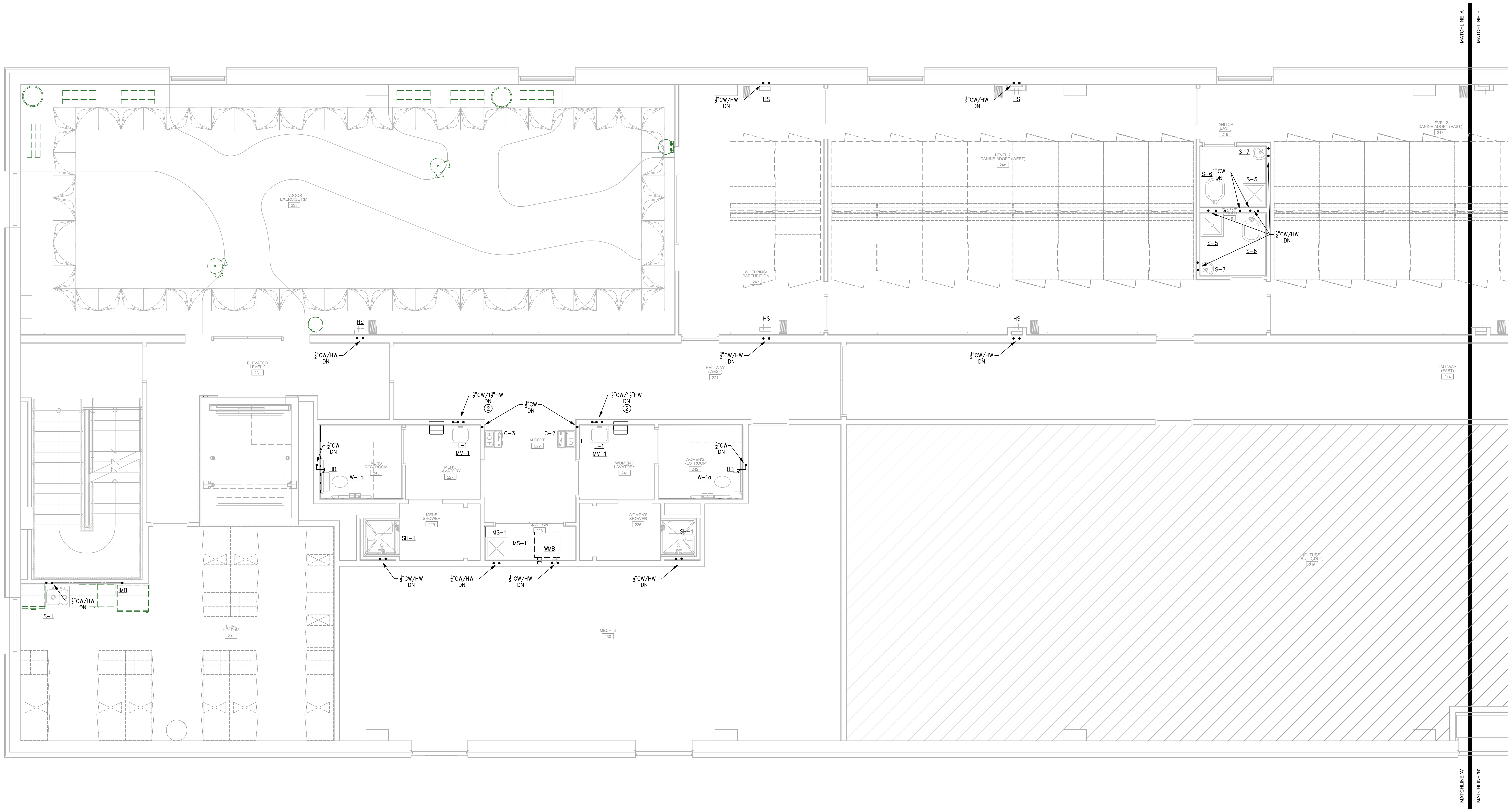
DATE: 07/08/2024

P202

8 OF 11

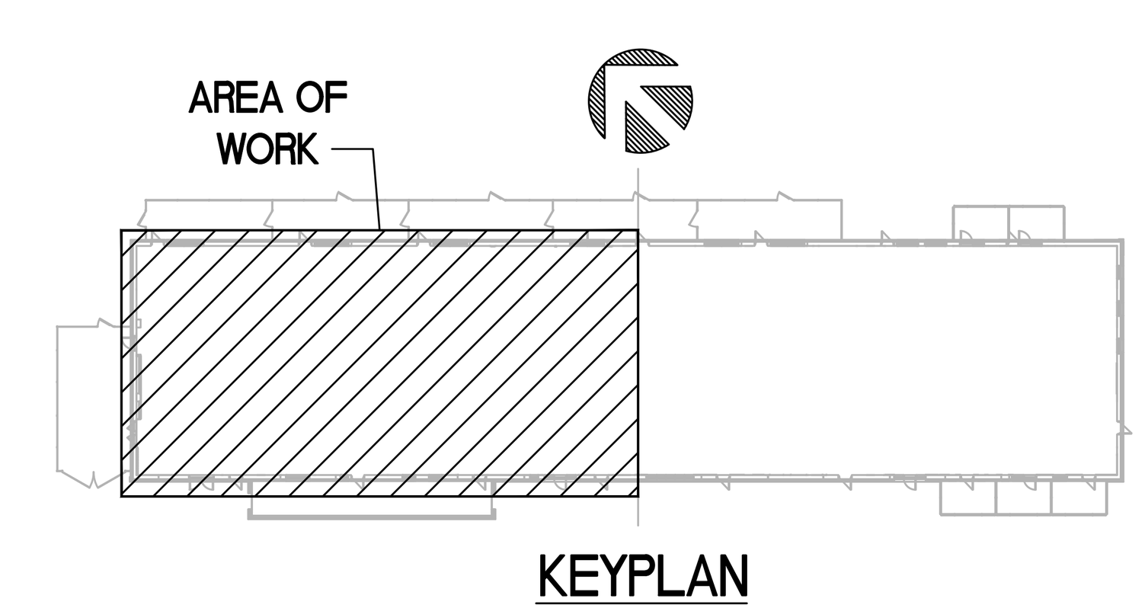
NOTES THIS SHEET

1. SEE SHEETS P001-002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. ROUTE HW UP TO SECOND FLOOR TO 12" AFF. ROUTE TO LAVATORY HW SUPPLIES, PROVIDE TAP AND TURN BACK DN TO FIRST FLOOR CEILING.



1 UPPER LEVEL FLOOR PLAN - WATER - WEST

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



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - WATER - WEST

REV.#	DATE	COMMENTS
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

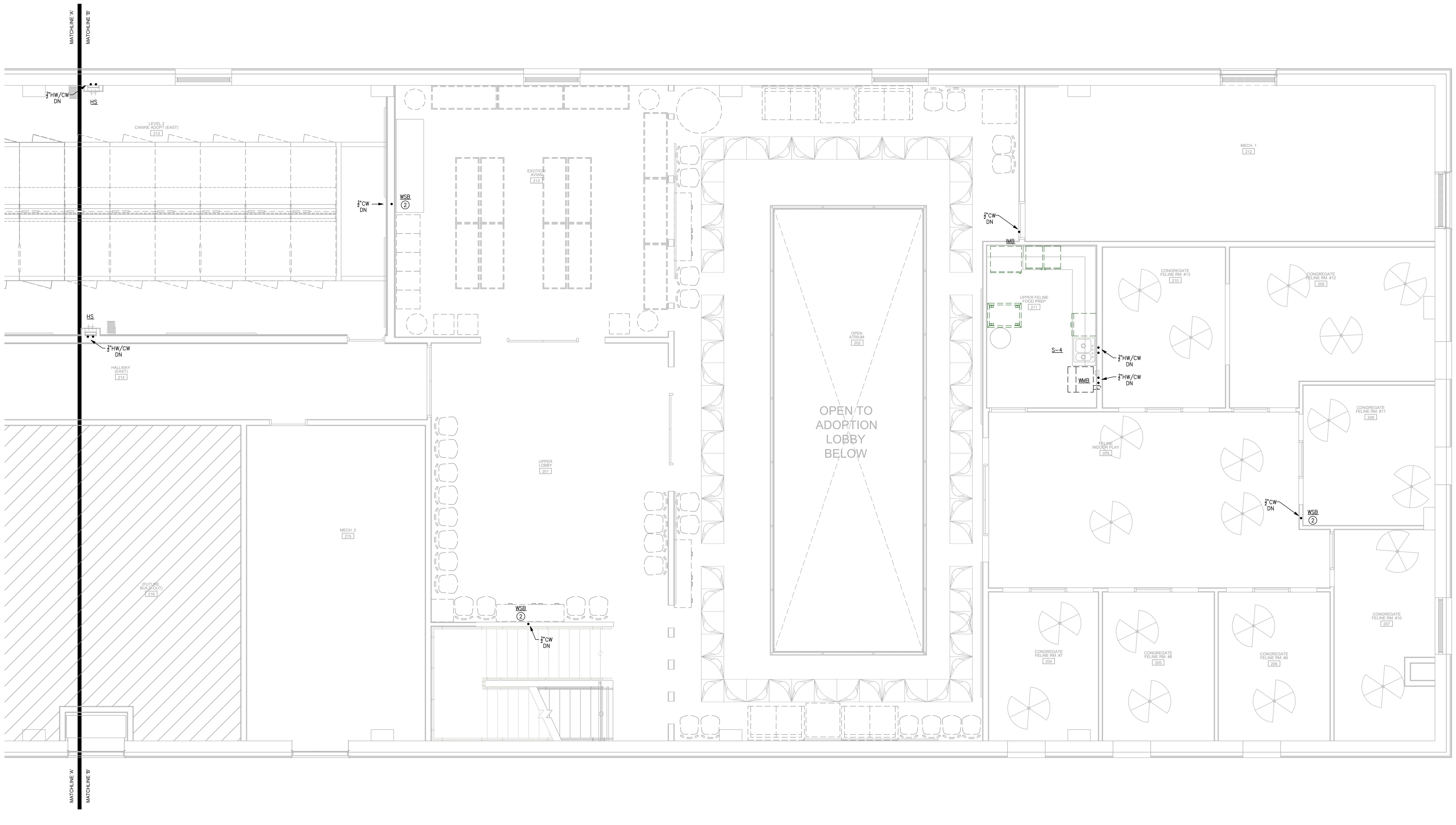
RGAS

PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

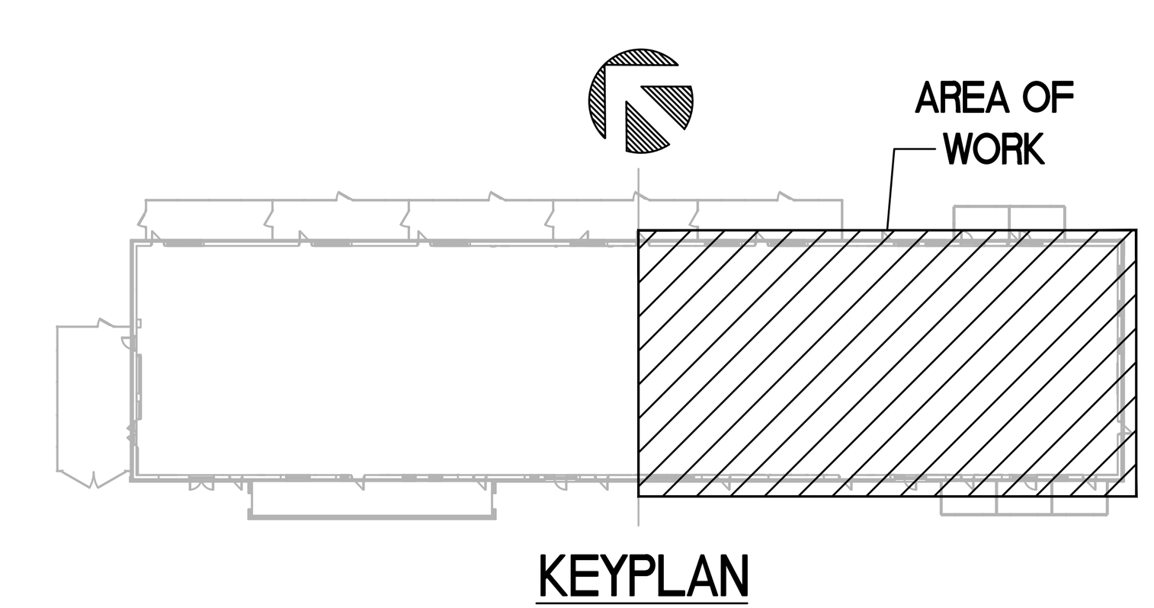
P203

NOTES THIS SHEET

1. SEE SHEETS P001-002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. PLUMBING CONTRACTOR SHALL PROVIDE WSB 12" AFF. PROVIDE COVER PLATE.



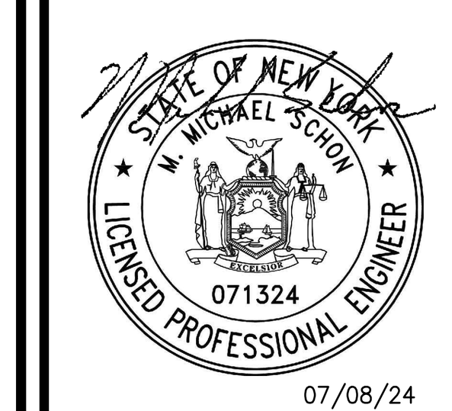
1 UPPER LEVEL FLOOR PLAN – WATER – EAST
SCALE: 1/4" = 1'-0"



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA



07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - WATER - EAST

REV.#	DATE	COMMENTS
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

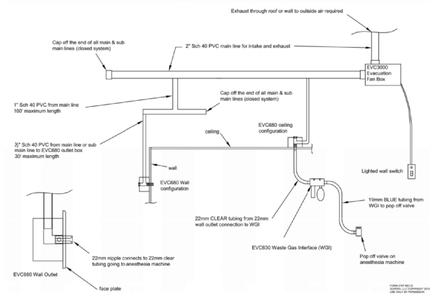
PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

P204

SAMPLE SYSTEM LAYOUT

Supera EVC3000 Waste Gas Evacuation Diagram

2" Sch 40 PVC main line and exhaust - 200' maximum length
1" Sch 40 PVC sub main - 100' maximum length
½" Sch 40 PVC line to outlet - 30' maximum length



MEDICAL GAS NOTES:

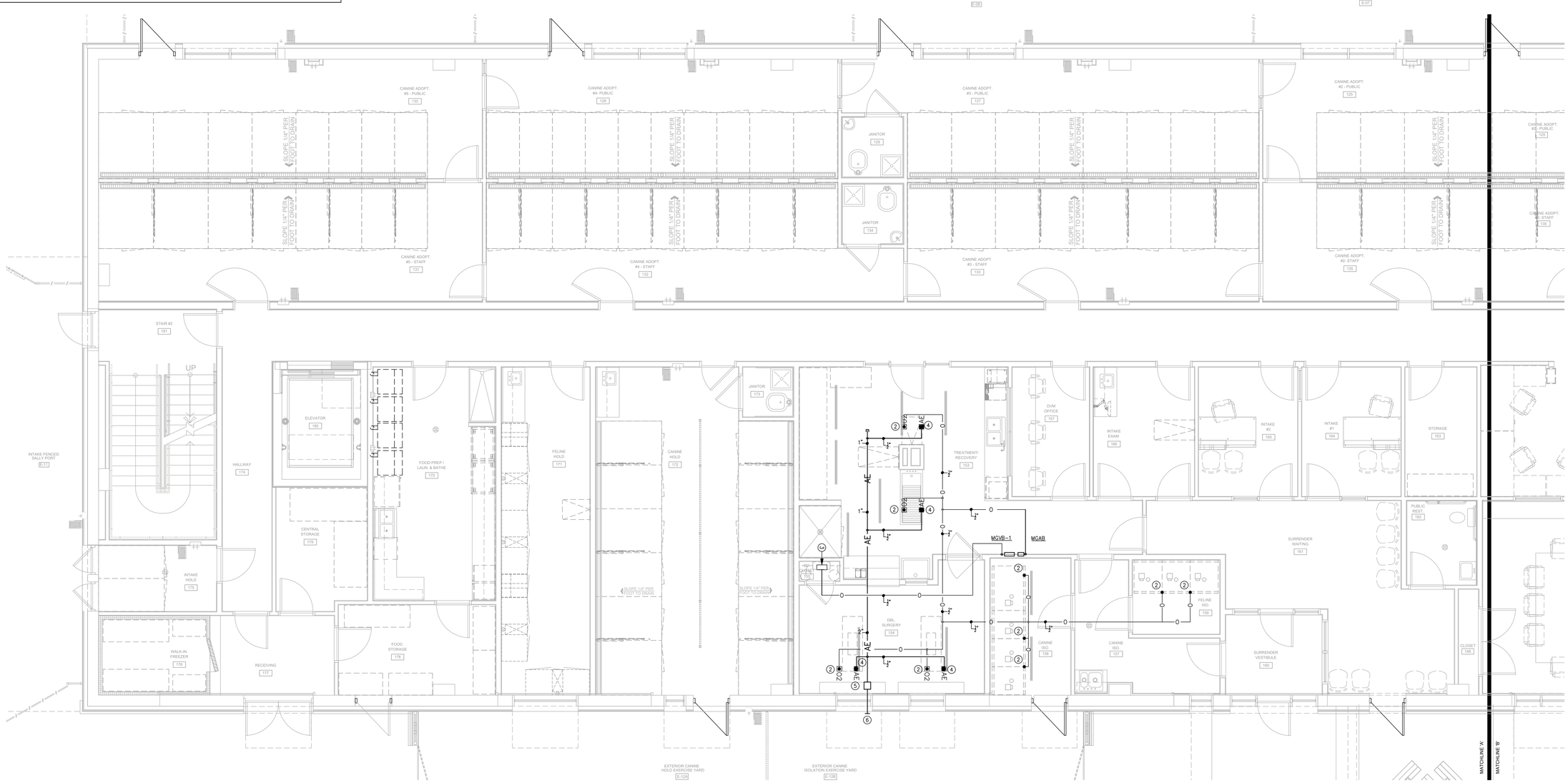
1. SEE SHEETS P001-002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. ALL EQUIPMENT, PIPING, INSTALLATION, AND TESTING OF THE MEDICAL GAS SHALL COMPLY WITH NFPA 99 (2004 EDITION), EXCEPT AS NOTED, AND ALL STATE AND LOCAL CODES AND/OR ORDINANCES.
3. ALL MEDICAL GAS STORAGE SYSTEMS SHOWN ON THESE PLANS SHALL BE INSTALLED PER NATIONAL FIRE PROTECTION ASSOCIATION NFPA 55 STANDARD 2004 EDITION.
4. MEDICAL GAS MAIN LINE VALVE, PRESSURE GAUGE AND PRESSURE SWITCH SHALL BE LOCATED IMMEDIATELY DOWN STREAM OF THE MAIN SOURCE VALVES PER NFPA 99.
5. ALL MEDICAL GAS MAIN LINES SHALL BE SIZED PER NATIONAL FIRE PROTECTION ASSOCIATION 99 STANDARD 2004 EDITION.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION AND COORDINATING ACTUAL LOCATION WITH ALL OTHER TRADES.
7. RECOMMENDED INSTALLATION HEIGHT OF WALL MOUNTED COMPONENTS IS 60" FROM THE CENTER LINE OF THE COMPONENT TO THE FINISHED FLOOR.
8. PIPE DROPS TO MEDICAL GAS SHALL BE ¾" NOMINAL FOR PRESSURE GASES.
9. ALL WALL PENETRATIONS SHALL BE FIRE STOPPED AS REQUIRED TO PRESERVE THE FIRE RESISTANCE RATING OF THE PENETRATED ASSEMBLY.

MEDICAL GAS DESIGN NOTE:

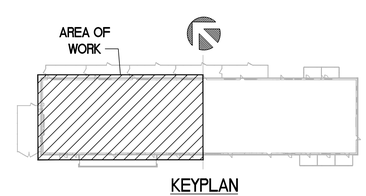
1. MEDICAL GAS PIPE SIZING AND LAYOUT IS DIAGRAMMATIC ONLY. LAYOUT AND EQUIPMENT SCHEDULE IS PROVIDED FOR BUDGET PURPOSES. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF MED GAS SYSTEM LAYOUT, PIPE SIZING AND VALVES/ALARMS WITH MEDICAL GAS EQUIPMENT SUPPLIER.

NOTES THIS SHEET

1. SEE SHEETS P001-002 FOR SCHEDULES, DETAILS AND SPECIFICATIONS.
2. OWNER PROVIDED 1/2" CEILING MOUNTED O2 OUTLET PER NFPA STANDARDS. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND OWNERS EQUIPMENT.
3. OXYGEN GAS MANIFOLD, QM. TIE 3/4" OXYGEN INTO MANIFOLD PER NFPA 99. PROVIDE ALL REQUIRED VALVES AND CONTROLS PER NFPA 99. ROUTE OXYGEN LINE ABOVE CEILING PER NFPA 99.
4. OWNER PROVIDED 1/2" ANESTHESIA EVACUATION DROP WITH SUPERA EVC680 CEILING/WALL CONFIGURATION. SEE SUPERA WASTE GAS EVACUATION DIAGRAM THIS SHEET. COORDINATE DROP & EVC680 LOCATIONS WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.
5. OWNER PROVIDED SCAVENGER UNIT, SUAE, MOUNTED ABOVE CEILING. COORDINATE LOCATION WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN. SCAVENGER UNIT SHALL BE CONTROLLED THROUGH A LIGHTED WALL SWITCH TO INDICATE THE DEVICE IS POWERED ON.
6. 2" SCHEDULE 40 PVC EXHAUST FROM SUAE SCAVENGER UNIT. PROVIDE 2" PVC BIRD MESH GRILLE WITH STAINLESS STEEL SCREEN EQUAL TO SIMTECH #1006 49S 020-SS. CONTRACTOR SHALL FIELD PAINT TO MATCH ADJACENT WALL SURFACES, COLOR BY ARCHITECT. COORDINATE EXACT LOCATION WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.



1 MAIN LEVEL
FLOOR PLAN – MED GAS – WEST
SCALE: 1/4" = 1'-0"



KEYPLAN

M MICHAEL SCHON, PE
1001 LANCASTER AVENUE
MONROE, NC 28112
P: 704.995.7020

BDA

STATE OF NEW YORK
M. MICHAEL SCHON
071324
LICENSED PROFESSIONAL ENGINEER
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL
FLOOR PLAN - MED GAS - WEST

REV.#	DATE	COMMENTS
-	-	-
-	-	-
-	-	-
-	-	-

REVISION:
REVISION:
REVISION:
REVISION:

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: WRB
DATE: 07/08/2024

P301

11 OF 11

DIVISION 26 ELECTRICAL SPECIFICATIONS

01 GENERAL
THE CONTRACTOR SHALL VISIT THE JOBSITE, PRIOR TO ANY SUBMISSION OF BID AND REVIEW ALL CONTRACT DOCUMENTS TO FAMILIARIZE HIMSELF WITH EXTENT OF WORK REQUIRED AND THE CONDITIONS (BOTH EXISTING AND NEW) UNDER WHICH THE WORK SHALL BE PERFORMED. THE CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCY BETWEEN THE ELECTRICAL PLANS AND EXISTING CONDITIONS PRIOR TO ISSUING A BID.

THE CONTRACTOR SHALL REVIEW ALL CONSTRUCTION DRAWINGS, SPECIFICATIONS, EQUIPMENT INSTALLATION INSTRUCTIONS AND SHOP DRAWINGS OF ALL TRADES TO FAMILIARIZE HIMSELF WITH THE EXTENT OF THE WORK REQUIRED.

THE CONTRACTOR SHALL NOT SCALE THESE DRAWINGS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, UNLESS NOTED OTHERWISE. IT SHALL NOT BE THE INTENT OF THESE DOCUMENTS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR SHALL BE EXPECTED TO FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. ALL CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY, EXACT ROUTING SHALL BE DETERMINED IN THE FIELD. UON.

ALL CUTTING AND PATCHING, FIRE SEALING, TRENCHING AND BACKFILL, ELECTRICAL COORDINATION, ETC. REQUIRED FOR THE INSTALLATION OF THIS WORK IS THE RESPONSIBILITY OF THIS CONTRACTOR.

IT SHALL BE UNDERSTOOD THAT ALL WORK SHALL COMPLY WITH THE LATEST EDITIONS OF NATIONAL ELECTRICAL CODE, APPLICABLE NATIONAL AND LOCAL CODES, LOCAL ORDINANCES, MANUFACTURERS' INSTALLATION INSTRUCTIONS, UL STANDARDS, NFPA, THAT SPECIFIED IN THESE DOCUMENTS, AND OTHER AUTHORITIES HAVING JURISDICTION OVER THE ELECTRICAL CONSTRUCTION WORK ON THIS PROJECT. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.

THE REQUIREMENTS OF THE ARCHITECT'S DIVISION 1, GENERAL AND SPECIAL CONDITIONS, AND THE CONTRACT SHALL APPLY TO THIS WORK.

ALL MATERIAL SHALL BE NEW AND LISTED FOR ITS INTENDED USE. WHERE UNDERWRITER'S LABORATORIES LABELING IS AVAILABLE FOR THE CLASS OF MATERIAL INVOLVED, MATERIALS SHALL BE FURNISHED WITH UL LABEL OR LISTING, OR THE CONTRACTOR SHALL PROVE IT IS NOT REQUIRED. ALL EQUIPMENT SHALL HAVE UL LABELS AND BE LISTED FOR ITS INTENDED USE.

ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS FOR PERMITS, LICENSES, FEES, INSPECTIONS, INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK UNDER THIS CONTRACT AT HIS EXPENSE.

CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF OSHA AS APPLIED TO CONSTRUCTION PROJECTS.

IN THE EVENT A CONFLICT OCCURS BETWEEN THE CONTRACT, SPECIFICATIONS, DRAWINGS, REFERRED TO MANUFACTURERS' LITERATURE, CODES HAVING JURISDICTION OR OTHER DOCUMENTS REFERRED TO HEREIN, THIS CONTRACTOR SHALL CONTACT THE ARCHITECT AND ENGINEER FOR A RULING AND CLARIFICATION PRIOR TO SUBMITTING ANY BID DOCUMENTS. WHERE CONFLICTS ARE QUESTIONED AFTER BID SUBMITTALS, THE DOCUMENT OR DOCUMENTS WITH THE MOST STRINGENT, EXPENSIVE AND DETAILED REQUIREMENTS WILL BE ENFORCED BY THE ARCHITECT AND ENGINEER. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH AND INSTALL THE MORE STRINGENT REQUIREMENTS AND AGREES THAT NO SEPARATE OR EXTRA PAYMENTS WILL BE MADE FOR ANY ITEM OF WORK OR MATERIALS REQUIRED TO FOLLOW THE MORE STRINGENT REQUIREMENTS.

ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED IN A FIRST CLASS WORKMAN-LIKE MANNER AND ALIGNED, LEVELED AND ADJUSTED FOR SATISFACTORY OPERATION. INSTALL EQUIPMENT SO THAT ALL PARTS ARE EASILY ACCESSIBLE FOR INSPECTION, OPERATION, MAINTENANCE AND REPAIR.

THE WORD "PROVIDE" MEANS THAT THIS CONTRACTOR SHALL FABRICATE, ERECT, CONNECT AND COMPLETELY INSTALL COMPLETE SYSTEMS PLACED IN PROPER OPERATING CONDITION. THIS SHALL INCLUDE ALL LABOR, PRODUCT OPTIONS, ACCESSORIES AND INCIDENTAL MATERIALS REQUIRED TO COMPLETE THE INSTALLATION.

THE WORD "CONNECT" MEANS THAT THIS CONTRACTOR SHALL PROVIDE (SEE DEFINITION ABOVE) ALL DISCONNECTING MEANS, OVERCURRENT PROTECTION AND WIRING REQUIRED TO PLACE THE EQUIPMENT AND SYSTEMS IN PROPER OPERATING CONDITION AND TO COMPLY WITH CODE REQUIREMENTS.

ALL ELECTRICAL APPARATUS SHALL BE INSTALLED AT THE SAME MOUNTING HEIGHTS (UNLESS ALTERED BY AMERICANS WITH DISABILITIES ACT – ADA), USING THE SAME MATERIALS AND METHODS USED IN THE EXISTING CONSTRUCTION. THE QUALITY, PERFORMANCE AND APPEARANCE OF THE NEW CONSTRUCTION SHALL MATCH THAT OF ANY EXISTING CONSTRUCTION.

02 SCOPE
ELECTRICAL CONTRACTOR SHALL FURNISH ALL, BUT NOT LIMITED TO, EQUIPMENT, TOOLS, SKILLED SUPERVISION NECESSARY FOR THE CONSTRUCTION, ERECTION, INSTALLATION, CONNECTION, TESTING AND ADJUSTMENT OF ALL CIRCUITS AND ELECTRICAL EQUIPMENT SHOWN OR NOTED ON PLANS.

IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL WORK IN ACCORDANCE WITH THE SPECIFICATIONS ASSOCIATED WITH THESE DRAWINGS. THE INSTALLATION OF ALL WORK PREFORMED AND ALL MATERIALS PROVIDED SHALL BE AS DIRECTED BY THE SPECIFICATIONS KEEPING IN MIND THAT THE NATIONAL ELECTRICAL CODE SHALL BE CONSIDERED AS A MINIMUM STANDARD AND THESE SPECIFICATIONS SHALL GOVERN ALL WORK. ALL EQUIPMENT SHALL BE AS SPECIFIED ON PLANS.

ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE AND FULLY OPERATIONAL ELECTRICAL SYSTEM, INSTALLED IN A GOOD WORKMANSHIP MANNER.

ELECTRICAL CONTRACTOR SHALL INCLUDE ALL LABOR, EQUIPMENT, TOOLS AND MATERIALS FOR ELECTRIC DISTRIBUTION, AS SHOWN ON DRAWINGS.

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH POWER AND TELEPHONE COMPANIES AND ADHERE TO REQUIRED CRITERIA.

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO ROUGHING.

ELECTRICAL CONTRACTOR SHALL FURNISH ALL NEW SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, DISCONNECT SWITCHES, ETC. THAT ARE MANUFACTURED BY THE SAME MANUFACTURER. NEW PANELBOARDS ADDED TO AN EXISTING FACILITY SHALL BE OF THE SAME MANUFACTURER AS THE EXISTING PANELBOARDS.

UNLESS NOTED AS EXISTING, ALL EQUIPMENT, WIRING, DEVICES, LUMINAIRES, LAMPS, ETC., SHALL BE NEW AND AS SPECIFIED.

IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR FOR THE ADVANCE ORDERING OF LONG LEAD ITEMS SO AS NOT TO INTERFERE WITH THE PRODUCTION OF OTHER TRADES RESULTING IN ANY DOWN OR LAG TIME.

03 QUALITY ASSURANCE
THIS CONTRACTOR SHALL VERIFY THE LOCATIONS AND MEASUREMENTS OF EQUIPMENT AND DEVICES BEFORE INSTALLATION TO AVOID CONFLICT WITH THE WORK OF OTHER TRADES. ANY UNCERTAINTIES AND CONFLICTS SHALL BE SUBMITTED TO THE ENGINEER FOR FINAL DECISION.

THE INTEGRITY OF ALL STRUCTURAL, FIRE AND SMOKE RATED PARTITIONS AND CEILINGS, ROOFING, AND WATER PROOFING SHALL BE MAINTAINED.

CHECK NAMEPLATE DATA AND INSTALLATION DOCUMENTS OF ALL OWNER FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED BY OTHER TRADES. VERIFY CIRCUIT SIZE, CONTROL REQUIREMENTS, AND MISCELLANEOUS REQUIREMENTS AGAINST THAT SHOWN IN THESE DOCUMENTS. ANY CONFLICT AND UNCERTAINTIES SHALL BE SUBMITTED TO THE ENGINEER FOR FINAL DECISION.

04 TESTS
UPON COMPLETION OF WORK, THE CONTRACTOR SHALL DEMONSTRATE THE INSTALLATION AND MAKE SUCH TESTS AS MAY BE REQUIRED TO SATISFY THE ENGINEER AND OWNER THAT THE WORK IS INSTALLED IN ACCORDANCE WITH DRAWINGS, SPECIFICATIONS AND EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

TEST ALL LIGHTS, EQUIPMENT, APPLIANCES, AND OTHER SYSTEMS. ALL DEFECTS SHALL BE PROMPTLY REMEDIED AT NO ADDITIONAL COST TO THE OWNER.

THE CONTRACTOR SHALL TEST ALL WIRING AND CONNECTIONS FOR CONTINUITY AND GROUNDS AND CORRECT ALL FAULTS AT NO ADDITIONAL COST TO THE OWNER.

CHECK SERVICE GROUND. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS.

CHECK ALL EMPTY RACEWAYS TO ASSURE AN UNOBSTRUCTED AND USEABLE PATH FOR USE BY OTHER TRADES OR THE OWNERS VENDOR.

05 WARRANTY
THE CONTRACTOR SHALL GUARANTEE THE SYSTEM INSTALLATION FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE AGAINST ANY DEFECT IN WORKMANSHIP OR MATERIAL. EXCEPTION: INCANDESCENT LAMPS SHALL BE GUARANTEED FOR 90 DAYS.

THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR TO ORIGINAL CONDITION ANY AND ALL DAMAGES TO BUILDING SURFACES,EQUIPMENT AND FURNISHINGS CAUSED DURING PERFORMANCE OF WORK.

CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.

ALL TEST EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR AT HIS EXPENSE.

06 RECORD DRAWINGS
DURING THE CONSTRUCTION OF THIS PROJECT, THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF ELECTRICAL CONTRACT DRAWINGS ON WHICH SHALL BE RECORDED ALL, BUT NOT LIMITED TO, SIGNIFICANT CHANGES IN EQUIPMENT LOCATIONS, CIRCUIT ASSIGNMENT DEVIATIONS, EQUIPMENT SIZE CHANGES, ADDITIONS AND DELETIONS TO THE PROJECT, LOCATIONS OF ALL CONDUITS AND WIRING BELOW GRADE, LOCATIONS OF ALL INSTALLED PULL AND JUNCTION BOXES, FEEDER CIRCUIT LOCATIONS, ETC. THIS SET OF DRAWINGS SHALL BE USED TO PREPARE RECORD DRAWINGS TO BE SUBMITTED TO THE OWNER UPON COMPLETION OF THE PROJECT.

UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PREPARE AN OPERATION AND MAINTENANCE MANUAL WHICH SHALL INCLUDE CATALOG DATA, EQUIPMENT INFORMATION, WIRING DIAGRAMS, WARRANTY INFORMATION, RECOMMENDED MAINTENANCE PROCEDURES, REPLACEMENT PARTS LISTS, ETC. FOR THE ELECTRICAL INSTALLATION. THE QUANTITIES OF MANUALS SHALL BE AS REQUIRED BY THE ARCHITECTURAL SECTIONS OF THESE SPECIFICATIONS. THESE MANUALS SHALL BE DELIVERED TO THE ARCHITECT FOR APPROVAL AND PRESENTATION TO THE OWNER.

07 SUBMITTALS
SHOP DRAWINGS OF MATERIALS, EQUIPMENT, LIGHTING FIXTURES AND WIRING DEVICES SHALL BE SUBMITTED FOR APPROVAL. ALL EQUIPMENT SHALL BE AS SPECIFIED HERE IN OR AS CALLED FOR ON THE DRAWINGS AND ANY ITEM NOT SUBMITTED SHALL BE PROVIDED AS SPECIFIED. THE RESPONSIBILITY TO ACCEPT OR REJECT ANY PROPOSED SUBSTITUTION REMAINS WITH THE PROJECT ENGINEER.

ALL OPERATING AND MAINTENANCE MANUALS SHALL BE DELIVERED TO THE OWNER.

SUBMIT CERTIFICATES OF INSPECTION AND ACCEPTANCE TO THE ENGINEER.

ANY ADDITIONAL COSTS INCURRED FOR SUBSTITUTE EQUIPMENT, MATERIALS AND METHODS SHALL BE PAID BY THE CONTRACTOR UNLESS APPROVED BY THE ENGINEER. CREDITS SHALL BE GIVEN TO THE OWNER WHERE SUCH SUBSTITUTE EQUIPMENT AND METHODS RESULT IN LESS EXPENSE TO THE CONTRACTOR.

ANY AND ALL DELAYS CAUSED BY THE REJECTION AND RE-SUBMITTAL OF SHOP DRAWINGS THAT ARE OR WERE IN CONFLICT WITH THE CONTRACT DRAWINGS SHALL BE THE DIRECT RESPONSIBILITY OF THIS CONTRACTOR.

CONTRACTOR AND EQUIPMENT SUPPLIERS SHALL PERFORM AND PROVIDE ALL COORDINATION STUDIES AND ARC FLASH STUDIES REQUIRED BY NATIONAL ELECTRICAL CODE FOR ALL REQUIRED SYSTEMS. REPORTS SHALL BE PROVIDED TO ENGINEER, INSPECTIONS DEPARTMENT AND OWNER.

08 CLEANING
THE ELECTRICAL CONTRACTOR SHALL KEEP ALL AREAS IN WHICH WORK IS BEING PERFORMED, FREE FROM DEBRIS AT ALL TIMES AND SAID AREAS SHALL BE LEFT BROOM CLEAN AT THE END OF EACH WORKING DAY.

ALL ELECTRICAL WORK SHALL BE CLEANED AND MADE READY FOR FINAL INSPECTION AND USE BY THE OWNER.

09 CONTRACT DOCUMENTS
THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INDICATE EVERY DETAIL OF CONSTRUCTION OR EVERY ITEM OF MATERIAL OR EQUIPMENT REQUIRED. THE CONTRACT DOCUMENTS ARE INTENDED TO ILLUSTRATE AND SPECIFY THE GENERAL EXTENT, TYPE OF SYSTEM AND PERFORMANCE WITH ANY SPECIAL CONDITION AND FUNCTIONS REQUIRED. THE ELECTRICAL CONTRACTOR SHALL BE EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE AND OPERATABLE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.

CONTRACTOR SHALL MAINTAIN ON THE JOB SITE ONE COMPLETE SET OF CONTRACT DOCUMENTS OF ALL TRADES AND SHALL COORDINATE WITH OTHER TRADES SO AS TO AVOID CONFLICTS AND PROVIDE EQUIPMENT CONNECTIONS AS REQUIRED BY EQUIPMENT SHOP DRAWINGS AND EQUIPMENT NAMEPLATES.

INDICATED LOCATIONS OF OUTLETS, EQUIPMENT CONNECTIONS, ETC. ARE APPROXIMATE AND SHALL BE VERIFIED BY REFERENCE TO RELATED DOCUMENTS (I.E. ARCHITECTURAL DRAWINGS, EQUIPMENT SHOP DRAWINGS, MANUFACTURER'S INSTRUCTIONS, MECHANICAL AND PLUMBING DRAWINGS, STRUCTURAL DRAWINGS, ETC.).

ANY SLASH MARKS SHOWN FOR CONDUCTOR QUANTITIES ARE INTENDED TO ILLUSTRATE THE WIRING INTENT ONLY. NOTE THAT IT IS NOT THE INTENT OF THE CONTRACT DRAWINGS TO INDICATE ALL CONDUCTORS REQUIRED TO PROVIDE COMPLETE AND FULLY OPERABLE WIRING SYSTEMS.

RISER DIAGRAMS ARE DIAGRAMMATIC AND NOT INTENDED TO SHOW ALL REQUIRED MATERIALS, DEVICES AND QUANTITIES OF STATIONS OR DEVICES. THE FLOOR PLANS, SPECIFICATIONS, CODES, REGULATIONS, LAWS, AND MANUFACTURER REQUIREMENTS ALSO SUPPLEMENT AND GOVERN THE REQUIREMENTS AND QUANTITIES OF DEVICES FOR THE SYSTEMS.

THE CONTRACT DOCUMENTS ARE INTENDED TO ILLUSTRATE TO COMPETENT AND EXPERIENCED CONTRACTORS AND WORKMEN THE SYSTEMS REQUIRED AND TO PERMIT SUCH PEOPLE TO TAKE-OFF THE REQUIRED MATERIALS AND EQUIPMENT, LAY OUT THE WORK SPECIFIED, AND EXECUTE ALL NECESSARY MEANS REQUIRED TO PROVIDE THE COMPLETE AND OPERABLE SYSTEMS SPECIFIED AND ILLUSTRATED.

10 GROUNDING AND BONDING
THE SERVICE CONDUITS, EQUIPMENT, AND NEUTRAL CONDUCTORS SHALL BE GROUNDED. THE GROUND CONNECTIONS FOR SYSTEM NEUTRAL AND CONDUIT SYSTEMS SHALL BE MADE AT THE SERVICE ENTRANCE. RUN A BARE COPPER GROUNDING CONDUCTOR IN CONDUIT FROM POINT OF ENTRANCE EQUIPMENT TO THE METAL COLD WATER LINE WHERE IT ENTERS THE BUILDING PLUS THE BUILDING STEEL IF AVAILABLE. PROVIDE A SUPPLEMENTAL MADE ELECTRODE UTILIZING GROUND ROD(S), OTHER METAL UNDERGROUND SYSTEMS OR STRUCTURES, OR PLATE ELECTRODE IN ACCORDANCE WITH NEC 250-66 IF BUILDING STEEL IS NOT AVAILABLE. THE GROUNDING CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE NEC 250-122. ALL GROUNDING CONDUCTORS SHALL BE INSTALLED AS TO PERMIT SHORTEST PATH FROM EQUIPMENT TO GROUND. ALL CONNECTIONS TO GROUND CONDUCTORS SHALL BE ACCESSIBLE FOR INSPECTION AND MADE WITH APPROVED SOLDERLESS CONNECTORS, EXOTHERMIC WELD, OR BOLTED TO THE EQUIPMENT OR STRUCTURE TO BE GROUNDED. ALL CONTACT SURFACES SHALL BE THOROUGHLY CLEANED BEFORE CONNECTIONS ARE MADE TO INSURE GOOD METAL TO METAL CONTACT. ALL CONNECTIONS TO GROUND RODS AND OR BUILDING FOOTER STEEL SHALL BE MADE BY EXOTHERMIC WELDS. IN NO CASE SHALL THE RESISTANCE OF THE "GROUND" EXCEEDED 25 OHMS.

ALL ELECTRICAL WORK SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250.

ALL "CSST" GAS PIPING SHALL HAVE A BONDING GROUND IN ACCORDANCE WITH NEC ARTICLE 250 AND SIZED PER NEC TABLE 250.66.

WIRING IN PVC CONDUIT SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR.

PROVIDE EQUIPMENT GROUNDING MEANS FOR TELEPHONE EQUIPMENT AND FIRE ALARM SYSTEM SPACES.

GROUND FAULT CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR.

PROVIDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN EACH RACEWAY UNLESS OTHERWISE NOTED.

EACH GROUNDED RECEPTACLE SHALL HAVE A GROUNDING JUMPER ATTACHED TO THE BOX WITH A SCREW. REMOVAL OF ANY DEVICE SHALL NOT DISRUPT THE GROUND CONTINUITY OF DOWNSTREAM DEVICES.

11 WIRING
BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM NO. 12 AWG, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. CONDUCTORS FOR SIGNAL AND PILOT CONTROL CIRCUITS MAY BE NO. 16 AWG.

ALL CONDUCTORS SHALL BE STRANDED OR SOLID COPPER CONDUCTORS FOR #12 AND #10 AWG AND STRANDED FOR #8 AND LARGER WITH 600 VOLT THHN/THWN INSULATION UNLESS OTHERWISE SHOWN ON THE DRAWINGS. INSULATION TO LIGHT FIXTURES OR SPECIAL EQUIPMENT SHALL BE AS REQUIRED BY NAMEPLATES OR TO SUITE THE CONDITION. CONDUCTORS FOR CIRCUITS & EQUIPMENT RATED 100 AMP OR LESS SHALL BE SIZED FOR 60°C. CONDUCTORS FOR CIRCUITS & EQUIPMENT RATED ABOVE 100 AMP SHALL BE SIZED FOR 75°C.

TO COMPENSATE FOR VOLTAGE DROP ACROSS A BRANCH CIRCUIT, WIRE SHALL BE UPSIZED IN RELATION TO LENGTH. SEE CONDUCTOR SIZING TABLE AND APPLY ACCORDINGLY.

COLOR CODE CONDUCTORS FOR VOLTAGE SYSTEMS SHALL BE AS FOLLOWS:

208 VOLTS		480 VOLTS	
A PHASE:	BLACK	A PHASE:	BROWN
B PHASE:	RED	B PHASE:	ORANGE
C PHASE:	BLUE	C PHASE:	YELLOW
NEUTRAL:	WHITE	NEUTRAL:	GRAY

GROUNDING CONDUCTORS: GREEN

CONDUCTORS SHALL BEAR READABLE MARKINGS ALONG THE ENTIRE LENGTH.

CONDUCTORS #6 AWG OR SMALLER SHALL BEAR FACTORY COLOR INSULATION COMPLYING WITH SYSTEM PHASING ALONG THE ENTIRE LENGTH.

TYPE "MC" CABLE SHALL HAVE FACTORY COLOR INSULATION ON CONDUCTORS COMPLYING WITH SYSTEM PHASING ALONG THE ENTIRE LENGTH OF THE CONDUCTORS. FIELD PHASE TAPING WILL NOT BE ALLOWED. THE USE OF TYPE "AC" OR "NM" CABLE SHALL BE PROHIBITED.

JOINTS FOR #10 AWG OR SMALLER SHALL BE MADE WITH APPROVED TWIST-ON TYPE CONNECTORS AND INSULATED WITH SCOTCH #33 ELECTRICAL TAPE. JOINTS FOR #8 OR LARGER SHALL BE WITH MECHANICAL PRESSURE TYPE CONNECTORS OR LUGS AND PROPERLY TAPED WITH SCOTCHFILL AND SCOTCH #33 ELECTRICAL TAPE TO 150% OF THE INSULATING VALUE OF THE CONDUCTOR.

WIRING WITHIN PANELBOARDS, JUNCTION BOXES AND OUTLET BOXES SHALL BE NEATLY SQUARED AND BUNCHED TOGETHER. DO NOT USE PLASTIC TIE WRAP SYSTEMS.

PROVIDE CIRCUIT NUMBER ON EACH CONDUCTOR WITHIN PANELBOARDS, JUNCTION BOXES AND OUTLET BOXES.

PROVIDE PANEL NAME AND CIRCUIT NUMBERS ON ALL JUNCTION BOX COVERS INDICATING CIRCUIT CONTAINED WITHIN BOX WITH PERMANENT MARKER.

ALL WIRING LUGS AND TERMINALS THROUGHOUT THE PROJECT, INCLUDING BUT NOT LIMITED TO LUGS FOR SWITCHBOARDS, PANELBOARDS, CIRCUIT BREAKERS, MOTOR STARTERS, TRANSFORMERS, WIRING DEVICES, AND/OR EQUIPMENT SHALL BE 75° TEMPERATURE RATING. LUG AND TERMINAL SIZES SHALL MATCH THE CONDUCTOR SIZE.

PARALLEL CONDUCTORS SHALL BE EXACTLY THE SAME LENGTH.

TRAVELERS FOR SWITCHING SHALL BE THE SAME COLOR AS THE PHASE CONDUCTORS.

NO MORE THAN THREE CIRCUITS SHALL BE ALLOWED IN ANY ONE CONDUIT. NO CONDUIT SHALL CONTAIN ANY SHARED NEUTRAL CONDUCTORS OR MORE THAN ONE CONDUCTOR OF THE SAME PHASE.

12 CONDUIT SYSTEMS
ALL WIRING SHALL BE IN CONDUIT OR TYPE "MC" CABLE WHICH IS ALLOWABLE IN CONCEALED LOCATIONS ONLY FOR SIZES #12 & #10 CONDUCTORS WITH INSULATED GROUND AND INSULATED THROAT CONNECTORS. MINIMUM SIZE CONDUIT IS 1/2". THE CONDUIT SHALL BE INTERMEDIATE (IMC), RIGID GALVANIZED (RGS) OR ELECTRICAL METALLIC TUBING (EMT) WITH STEEL COMPRESSION TYPE FITTINGS.

ALL WIRING FOR POWER, FIRE ALARM, SECURITY AND/OR COMMUNICATIONS IN EXPOSED AREAS SHALL BE IN CONDUIT.

ALL CONDUITS IN FINISHED AREAS SHALL BE CONCEALED UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

ALL CONDUITS IN UNFINISHED AREAS MAY BE RUN EXPOSED AND SHALL BE PARALLEL WITH AND PERPENDICULAR TO THE STRUCTURE.

PVC SCHEDULE 40 WILL BE ALLOWED UNDERGROUND, BELOW FLOOR SLABS, OUTSIDE OF THE BUILDING FOUNDATION BELOW GRADE, FOR SERVICES TO BUILDING NOT SUBJECT TO PHYSICAL DAMAGE, OR WHERE INDICATED ON THE DRAWINGS. HOWEVER, ALL RISERS AND ELBOWS SHALL BE GALVANIZED RIGID STEEL. RGS CONDUITS SHALL EXTEND A MINIMUM OF 18" BELOW GRADE. APPLY BITUMASTIC COATING TO ALL METALLIC CONDUITS IN SLABS OR UNDERGROUND. THE USE PVC SCHEDULE 80 WHERE CONDUIT IS SUSCEPTIBLE TO PHYSICAL DAMAGE SHALL BE ACCEPTABLE PROVIDING IT IS NOT EXPOSED TO VIEW.

ALL MOTORS, EQUIPMENT, AND OTHER ITEMS SUBJECT TO VIBRATION SHALL BE CONNECTED WITH FLEXIBLE METAL CONDUIT (FMC) OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) WITH LISTED FITTINGS.

FLEXIBLE METAL CONDUIT SHALL BE STEEL. FLEXIBLE CONDUIT OUTDOORS OR IN DAMP OR WET LOCATIONS SHALL BE LIQUID-TIGHT WITH BITE-TIGHT STEEL CONNECTORS. ALL CABLES SHALL BE SECURED WITHIN 12" OF TERMINATIONS AND EVERY SIX (6) FEET.

CONDUIT PENETRATIONS THROUGH RATED WALLS OR ASSEMBLIES SHALL BE SEALED WITH A UL LISTED FIRE SEALANT.

CONDUIT RUN THROUGH BUILDING EXPANSION JOINTS SHALL HAVE APPROPRIATE CONDUIT EXPANSION FITTINGS.

CONDUITS IN HAZARDOUS AREAS SHALL BE THREADED GALVANIZED RIGID STEEL (GRS), THREADED INTERMEDIATE METAL CONDUIT (IMC) OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) WITH LISTED FITTINGS.

CONDUITS PASSING THROUGH BUILDING FOUNDATION WALLS OR OTHER MOISTURE PRONE SURFACE SHALL BE PROPERLY WATER PROOFED.

WHERE CORE DRILLING OF FLOOR/WALLS ARE REQUIRED, CONTRACTOR SHALL SEAL OPENINGS WATERTIGHT AFTER UTILITIES HAVE BEEN INSTALLED. LOCATION OF CORED HOLES SHALL BE COORDINATED WITH LOCATION OF EQUIPMENT IN A MANNER TO BE CLEAN AND FUNCTIONAL. THE CONTRACTOR SHALL INSTALL ONLY ONE CONDUIT PER HOLE AND SEAL THE OPENING AROUND THE CONDUIT AS SPECIFIED.

CONDUITS RUN IN FLOOR SLABS SHALL BE SPACED APART AND REMAIN CLEAR OF STRUCTURAL COLUMNS AS REQUIRED BY THE STRUCTURAL ENGINEER.

CONDUITS PENETRATING THE ROOF STRUCTURE FOR THE PURPOSE OF SERVING EQUIPMENT SHALL UTILIZE THE OPENINGS THROUGH ROOF CURBS WHERE POSSIBLE. PENETRATIONS THROUGH THE ROOF SHALL BE HELD TO A MINIMUM.

SERVICE ENTRANCE CONDUITS SHALL BE SPACED APART AS REQUIRED BY NEC AND LOCAL CODES.

CONDUITS PENETRATING THE ROOF SHALL BE PROVIDED WITH A SUITABLE PREFABRICATED ROOF CURB OR PITCH POCKET.

FLEXIBLE CONDUIT WHIPS TO LIGHTING FIXTURES MAY BE 3/8" WITH A MAXIMUM LENGTH OF 6'-0" AND SUPPORTED WITHIN 12" OF TERMINATIONS.

ALL WIRING SHALL BE INSTALLED IN CONDUIT IN ACCORDANCE WITH THE N.E.C. AND SO THAT THE REQUIRED CONDUCTORS MAY BE PULLED WITHOUT INJURY OR STRAIN AND PROPERLY SUPPORTED.

PROVIDE ALL PULL BOXES AND FITTINGS WHEREVER NECESSARY OR SHOWN. ALL STRAIGHT CONDUIT RUNS SHALL NOT EXCEED 100 FEET WITHOUT PULL BOX, NOT OVER 75 FEET FOR RUN WITH ONE (1) RIGHT ANGLE BEND AND NOT OVER 50 FEET FOR RUN WITH TWO (2) RIGHT ANGLES.

ALL CONDUIT SHALL BE PROPERLY SUPPORTED IN ACCORDANCE WITH THE N.E.C. AND SECURED WITHIN THREE (3) FEET OF TERMINATION AND ALL CONDUITS SHALL BE INDEPENDENTLY SUPPORTED EVERY TEN (10) FEET FROM STRUCTURE AND NOT FROM DUCTWORK, CEILING HANGERS OR CEILING SUPPORT WIRES. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL WIRES AND NYLON BUSHINGS AT BOTH ENDS.

13 LIGHTING FIXTURES
FURNISH AND INSTALL LIGHTING FIXTURES AS SHOWN AND SCHEDULED ON THE DRAWINGS.

THE CATALOG NUMBERS GIVEN IDENTIFY THE SERIES OF LIGHT FIXTURE ONLY AND MAY NOT SPECIFY ALL MOUNTING HARDWARE AND ACCESSORIES REQUIRED. THE CATALOG NUMBERS ALSO MAY NOT IDENTIFY ALL ITEMS AND FINISHES REQUIRED BY THE LIGHT FIXTURE DESCRIPTION. INCLUDE ALL REQUIRED HARDWARE AND ACCESSORIES.

COORDINATE FIXTURE TYPE AND TRIM WITH CEILING CONSTRUCTION. RECESSED INCANDESCENT, FLUORESCENT, LED AND HID LIGHTING FIXTURES SHALL HAVE THERMAL PROTECTION. FIXTURES RECESSED IN INSULATED CEILINGS SHALL BE LISTED FOR DIRECT CONTACT WITH INSULATION MATERIAL OR MAINTAIN REQUIRED CLEARANCES FROM INSULATION.

RECESSED LIGHTING FIXTURES IN NON-ACCESSIBLE CEILINGS SHALL HAVE BOTTOM ACCESS.

ALL LINEAR FIXTURES IN LAY-IN CEILINGS SHALL BE SUPPORTED FROM THE STRUCTURE INDEPENDENT OF THE CEILING SYSTEM AT ALL FOUR (4) CORNERS AND ATTACHED WITH LISTED GRID CLIPS. ALL OTHER RECESSED FIXTURES (ie. RECESSED CANS) IN LAY-IN CEILINGS SHALL BE SUPPORTED FROM THE STRUCTURE INDEPENDENT OF THE CEILING SYSTEM AT TWO LOCATIONS (OPPOSITE SIDES) AND ATTACHED WITH LISTED GRID CLIPS.

RECESSED LIGHT FIXTURES IN FIRE RATED CEILINGS SHALL HAVE A FIRE RATED "TENT" BUILT OVER THE FIXTURE TO MAINTAIN THE STATED INTEGRITY OF THE CEILING. SUCH FIXTURES SHALL BE RATED FOR INSTALLATION IN AN INSULATED CEILING AND DESIGNED TO WITHSTAND THE INCREASED TEMPERATURE BUILD-UP AROUND THE FIXTURE.

LIGHTING FIXTURES INDICATED TO BE INSTALLED IN WET OR DAMP LOCATIONS SHALL HAVE THE APPROPRIATE UL "WET" OR "DAMP" LABELS.

THE MANUFACTURER OF EACH LIGHTING FIXTURE SHALL REVIEW THE APPLICATION OF HIS EQUIPMENT AND CERTIFY AT THE TIME OF SHOP DRAWING SUBMITTAL THAT HIS FIXTURE HAS BEEN PROPERLY APPLIED AND CAN BE INSTALLED, MAINTAINED AND SERVICED WHERE SHOWN ON THE DRAWINGS.

14 BALLASTS
BALLASTS SHALL BE ELECTRONIC TYPE <10% THD MINIMUM OR AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE.

LIGHTING FIXTURES IN COLD ATMOSPHERE SHALL HAVE BALLASTS SUITABLE FOR THE TEMPERATURE TO BE ENCOUNTERED.

BALLASTS SHALL BE MANUFACTURED BY OSRAM/SYLVANIA, UNIVERSAL, OR ADVANCE.

15 LED DRIVERS
LED ELECTRONIC DRIVERS SHALL BE UL CLASS 2 AND HAVE A SOUND RATING OF CLASS "A" WITH A LIFE EXPECTANCY OF 50,000 HOURS. DRIVERS SHALL BE CAPABLE OF REDUCING OUTPUT POWER IF CASE TEMPERATURE EXCEEDS 90 DEG. DRIVERS SHALL BE CAPABLE OF 0-10V DIMMING.

16 LAMPS
THE CONTRACTOR SHALL FURNISH LAMPS WITH ALL LIGHT FIXTURES. ALL LAMPS SHALL BE AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE.

17 OUTLET BOXES
OUTLET BOXES SHALL BE METAL TYPE (STEEL OR ALUMINUM) AS MANUFACTURED BY STEEL CITY, RACO, APPLETON, OR APPROVED EQUAL.

OUTLET BOXES SHALL BE 4" SQUARE MINIMUM AND SIZED PER NEC. THE USE OF GANGABLE BOXES SHALL BE PROHIBITED.

OUTLET BOXES TO BE INSTALLED IN PLASTER OR GYPSUM-BOARD WALLS SHALL BE EQUIPPED WITH PLASTER RING DEVICE COVER. BOXES FOR DUPLEX RECEPTACLES, SWITCHES, ETC. SHALL BE A MINIMUM OF 4" SQUARE AND 2 1/8" DEEP. BOXES FOR TELE/DATA OUTLETS SHALL BE A MINIMUM OF 4" SQUARE AND 2 1/8" DEEP. DEVICE COVERS SHALL BE SO SELECTED THAT THE DEPTH OF THE RAISED RING IS WITHIN 1/8" OF THE NOMINAL THICKNESS OF THE GYPSUM-BOARD, PLASTER OR CONCRETE. UON.

OUTLET BOXES IN MASONRY WALLS SHALL BE SUITABLE FOR INSTALLATION IN BLOCK AND CONCRETE WALLS.

ALL OUTLET BOXES SHALL BE FLUSH AND SECURELY MOUNTED. OUTLET BOXES IN METAL STUD WALLS SHALL BE SECURED TO THE STUDS WITH "CADDY" OR "STEEL CITY" BOX SUPPORTS OR OTHER APPROVED SUPPORT. ALL OUTLET BOXES SHALL RECEIVE COVER PLATES.

OUTLET BOXES IN WET AND/OR DAMP LOCATIONS SHALL BE MALLEABLE IRON TYPE WITH THREADED HUBS AND GASKETED LOCKABLE WEATHERPROOF "EXTRA-DUTY" COVER PLATES.

OUTLET BOXES WITHIN RATED WALLS AND MOUNTED ON OPPOSITE SIDES OF THE WALLS SHALL BE SPACED A MINIMUM OF 24" APART HORIZONTALLY AND HAVE ONE STUD SPACE BETWEEN THE BOXES. OUTLET BOXES EXCEEDING 16 SQUARE INCHES IN RATED WALLS SHALL HAVE A RATED GWB ENCLOSURE CONSTRUCTED AROUND THE BOX.

FLOOR OUTLET BOXES SHALL BE MOUNTED FLUSH WITH FINISHED FLOOR AND BE "UL" LISTED AND APPROVED FOR SCRUB/MOP USE.

18 WIRING DEVICES
DEVICES SHALL BE "HD" SPECIFICATION GRADE, DECORA TYPE, WHITE COLOR UNLESS OTHERWISE NOTED AND AS MANUFACTURED BY HUBBELL, P & S, LEVITON, OR APPROVED EQUAL.

TERMINATIONS TO DEVICES WITH THE USE OF STRANDED WIRE SHALL BE MADE WITH INSULATED STA-KON TERMINAL STUDS.

SWITCHES SHALL BE RATED 20 AMP, 120/277 VOLT.

DUPLEX RECEPTACLES SHALL BE RATED 20 AMP, 125 VOLT GROUNDING TYPE WHERE INDICATED TO BE CONNECTED TO A MULTI-OUTLET CIRCUIT. DUPLEX RECEPTACLES ON A DEDICATED CIRCUIT SHALL BE RATED 20 AMPS, 125V GROUNDING TYPE.

DEVICE COVER PLATES SHALL BE #302 STAINLESS STEEL.

FLOOR OUTLET DEVICES SHALL BE UL LISTED AND APPROVED FOR SCRUB/MOP USE COVER PLATES.

PROVIDE PLASTIC ENGRAVED LABELS INDICATING PANEL CIRCUIT NUMBERS ATTACHED TO EACH DEVICE COVER PLATE

EQUIPMENT RATED 100 AMP OR LESS SHALL HAVE LUGS RATED FOR 60°C. EQUIPMENT RATED ABOVE 100 AMP SHALL HAVE LUGS RATED FOR 75°C.

19 PANELBOARDS
PANELBOARD SHALL BE MANUFACTURED BY SIEMENS, CUTLER-HAMMER, OR SQUARE-D. MANUFACTURER SPECIFIC EQUIPMENT IS SHOWN ON THE DRAWINGS TO INDICATE THE MINIMUM STANDARDS REQUIRED.

CIRCUIT BREAKERS SHALL BE MOLDED CASE, FULL SIZE, BOLTED TO THE SUPPLY BUSS UNLESS OTHERWISE NOTED. MULTI-POLE BREAKERS SHALL HAVE COMMON TRIP.

PROVIDE PANEL DIRECTORY WITH EACH PANEL. DIRECTORY SHALL BE TYPE WRITTEN FOR ASSIGNED CIRCUITS AND NEATLY PENCILED-IN FOR SPARE BREAKERS AND SPACES.

ALL PANEL DOORS SHALL BE HINGED AND HAVE A LOCK AND KEY.

PANELBOARD BUSSING SHALL BE STANDARD ALUMINUM UNLESS OTHERWISE INDICATED ON PANEL SCHEDULES.

ALL PANELBOARDS SHALL HAVE AN EQUIPMENT GROUNDING BAR.

PROVIDE A PHENOLIC ENGRAVED NAMEPLATE ON THE COVER OF EACH PANELBOARD. NAMEPLATE SHALL INDICATE PANEL DESIGNATION, ORIGINATION, AND VOLTAGE. LABELS SHALL BE ENGRAVED PLASTIC WITH WHITE LETTERS ON BLACK BACKGROUND FOR 120/208V EQUIPMENT AND WHITE LETTERS ON A RED BACKGROUND FOR 277/480V EQUIPMENT. INDIVIDUAL ELECTRICAL METERS AND SWITCHGEAR SHALL BE CLEARLY LABELED TO INDICATE THE SPACE AND/OR AREA SERVED.

PROVIDE STRIPPING ON THE FLOOR AROUND ELECTRICAL PANELS TO CLEARLY IDENTIFY AND INDICATE THE "NOT LESS THAN 36" OF WORKING CLEARANCE AREA" AROUND ELECTRICAL EQUIPMENT AND THAT THIS AREA IS A "NO STORAGE AREA".

LIGHTING AND POWER PANELBOARDS IN FINISHED AREAS SHALL BE RECESSED AND PROVIDED WITH FOUR 3/4" EMPTY CONDUITS STUBBED UP 6" INTO ACCESSIBLE CEILING SPACE AND CAPPED.

PROVIDE MOUNTING BACKBOARDS FOR ALL SURFACE MOUNTED ELECTRICAL AND COMMUNICATION EQUIPMENT. BACKBOARDS SHALL BE 3/4" TYPE "AC" PLYWOOD, PAINTED ON BOTH SIDES AND EDGES WITH TWO COATS OF LIGHT GRAY PAINT.

NO SERIES RATING OF CIRCUIT BREAKERS IS ALLOWED.

ALL CIRCUIT BREAKERS WITH RATINGS OF 150A AND ABOVE SHALL HAVE ADJUSTABLE INSTANTANEOUS TRIP UNIT.

ALL CIRCUIT BREAKERS WITH RATINGS OF 600A AND ABOVE SHALL BE SOLID STATE.

ALL PANELBOARDS SHALL BE MARKED AND LABELED IN COMPLIANCE WITH NEC ARTICLE 110.

20 MECHANICAL EQUIPMENT
THIS CONTRACTOR SHALL FURNISH AND INSTALL A DISCONNECTING MEANS, WHERE REQUIRED BY CODE OR AS INDICATED ON THE CONTRACT DOCUMENTS, FOR ALL MOTORS, HVAC EQUIPMENT, HEATERS, APPLIANCES, WATER HEATERS, PUMPS, AND OTHER EQUIPMENT.

ALL POWER WIRING AND TERMINATIONS TO HVAC, PLUMBING, AND OTHER EQUIPMENT SHALL BE BY THIS CONTRACTOR. CONTROL WIRING SHALL BE BY OTHERS UNLESS OTHERWISE NOTED.

ALL ELECTRICAL EQUIPMENT SHALL BE RAINTIGHT WHERE EXPOSED TO THE WEATHER. ALL FLEX CONDUITS CONNECTED TO SUCH EQUIPMENT SHALL BE LIQUID-TIGHT (LFMC).

WEATHERPROOF DUPLEX "GFI" RECEPTACLES SHALL BE PROVIDED NEAR ALL HVAC EQUIPMENT.

21 SAFETY SWITCHES
ALL DISCONNECT SWITCHES SHALL BE HORSEPOWER RATED, FUSED, HEAVY-DUTY TYPE WITH AMPERE RATINGS AND POLES AS REQUIRED TO ACCOMMODATE THE EQUIPMENT SERVED. CONTRACTOR SHALL VERIFY PROTECTIVE DEVICE RATING FOR EQUIPMENT PRIOR TO CONSTRUCTION.

EQUIPMENT WITH NAMEPLATE DATA INDICATING "MAX FUSE SIZE" SHALL BE EQUIPPED WITH A FUSED SAFETY SWITCH WITH APPROPRIATE FUSES. USE DUAL-ELEMENT TIME DELAY FUSES FOR MOTOR AND COMPRESSOR LOADS.

SWITCHES USED FOR SERVICE ENTRANCE EQUIPMENT SHALL HAVE NEUTRAL AND GROUNDING BARS AND PROVISIONS FOR PADLOCKING.

PROVIDE A PHENOLIC ENGRAVED NAMEPLATE ON THE COVER OF EACH DISCONNECT. NAMEPLATE SHALL INDICATE EQUIPMENT BEING SERVED AND VOLTAGE. LABELS SHALL BE ENGRAVED PLASTIC WITH WHITE LETTERS ON BLACK BACKGROUND FOR 120/208V EQUIPMENT AND WHITE LETTERS ON A RED BACKGROUND FOR 277/480V EQUIPMENT.

22 DRY TYPE TRANSFORMERS
ACCEPTABLE MANUFACTURERS: SQUARE D COMPANY, CULTER-HAMMER OR SIEMENS.

PROVIDE FACTORY-ASSEMBLED TRANSFORMERS COMPLYING WITH APPLICABLE PORTIONS OF NEMA STANDARDS PUBLICATIONS ST 20 AND TR 27, RATED FOR CONTINUOUS OPERATION AT RATED KVA.

GENERAL PURPOSE: CONTINUOUS OPERATION OF RATED KVA, 65 DEGRESS C. MAXIMUM TRANSFORMER SURFACE TEMPERATURE RISE; TERMINAL ENCLOSURE WITH HINGED COVER, TO ACCOMMODATE PRIMARY AND SECONDARY COIL WIRING CONNECTIONS AND ELECTRICAL SUPPLY RACEWAY TERMINAL CONNECTOR; 75 DEGREES C MAXIMUM TERMINAL COMPARTMENT TEMPERATURE WITH TRANSFORMER OPERATING CONTINUOUSLY AT RATED LOAD AND 40 DEGREES C AMBIENT TEMPERATURE; WIRING CONNECTIONS SUITABLE FOR COPPER OR ALUMINUM WIRING; CORE AND COILS ELECTRICALLY GROUNDED TO TRANSFORMER ENCLOSURE WITH FLEXIBLE METAL GROUND STRAP; PRIMARY WINDING ISOLATED AND INSULATED FROM SECONDARY WINDING.

VOLTAGE REGULATION TAPS: 6 PROVIDED WITH PRIMARY WINDING, FOUR 2-1/2 % INCREMENTS BELOW FULL-RATED VOLTAGE AND TWO 2-1/2 % INCREMENTS ABOVE FULL-RATED VOLTAGE.

INSULATION: TRANSFORMER 45 KVA OR LESS – CLASS 150; TRANSFORMER ABOVE 45 KVA – CLASS 220.

VIBRATION ISOLATION: INTEGRALLY MOUNTED VIBRATION ISOLATION SUPPORTS BETWEEN CORE AND COIL ASSEMBLY AND TRANSFORMER ENCLOSURE.

MAXIMUM SOUND LEVEL RATING: TRANSFORMER 45 KVA OR LESS – 45 DECIBLES; TRANSFORMER ABOVE 45 KVA – 50 DECIBELS.

SHEET METAL FULLY ENCLOSING TRANSFORMER; FACTORY PHOSPHATIZED AND LIGHT GRAY FINISH PAINTED WITH EXTERIOR ENAMEL; METAL PLATE WITH COMPLETE TRANSFORMER DATA PERMANENTLY ATTACHED.

PROVIDE REQUIRED GROUNDING FOR A SEPARATELY DERIVED SYSTEM AS OUTLINED BY NEC 250-30 AND SIZED IN ACCORDANCE NEC 250-66.

23 SEISMIC REQUIREMENTS
THE ELECTRICAL CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING SEISMIC SUPPORT AND BRACING OF ELECTRICAL EQUIPMENT TO RESIST THE EFFECTS OF EARTHQUAKES AND ANY SPECIAL INSPECTIONS BASED ON GEOGRAPHIC LOCATION AS REQUIRED. THE SEISMIC RESTRAINTS AND SPECIAL INSPECTIONS AS REQUIRED SHALL MEET ALL APPLICABLE STATE AND LOCAL BUILDING CODE REQUIREMENTS.

THE ELECTRICAL CONTRACTOR SHALL VERIFY WITH THE ARCHITECT, STRUCTURAL ENGINEER AND SITE GEOTECH ENGINEER THE BUILDING USE, OCCUPANCY CATEGORY (I, II, III OR IV), SEISMIC USE GROUP (I, II OR III), SITE CLASS (A, B, C, D, E OR F) AND SEISMIC DESIGN CATEGORY. IF FINAL SEISMIC DESIGN CATEGORY IS A OR B, THEN SEISMIC RESTRAINTS ARE EXEMPT FROM ELECTRICAL SYSTEMS.

IF SEISMIC DESIGN CATEGORY IS OTHER THAN A OR B, THE ELECTRICAL CONTRACTOR SHALL INCLUDE SUBMITTALS OF THE SPECIFIC METHODS AND MATERIALS OF SEISMIC RESTRAINT TO BE USED FOR THIS PROJECT FOR REVIEW BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT AND SYSTEMS.

INTERNAL SEISMIC RESTRAINT ELEMENTS OF MANUFACTURED EQUIPMENT SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER RETAINED BY THE MANUFACTURER. SUCH CERTIFICATE APPLIES ONLY TO INTERNAL ELEMENTS OF THE EQUIPMENT. ALL EQUIPMENT ANCHORAGE REQUIREMENTS SHALL BE COORDINATED WITH THE BUILDING STRUCTURE AND SHALL BE COMPATIBLE THERETO. ALL SUCH ANCHORAGE SHALL BE REVIEWED BY THE PROJECT'S ELECTRICAL ENGINEER PRIOR TO INSTALLATION.

REVIEW OF THE SEISMIC DESIGN AND SHOP DRAWINGS BY THE PROJECT'S ELECTRICAL ENGINEER, STRUCTURAL ENGINEER OR ARCHITECT SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY WITH SEISMIC AND OTHER REQUIREMENTS OF THE STATE BUILDING CODE.

24 SERVICES TO BUILDING
COORDINATE THE EXACT LOCATION AND REQUIREMENTS OF THE ELECTRICAL SERVICE WITH LOCAL POWER COMPANY BEFORE ROUGHING-IN. COMPLETE ALL LOAD SERVICE APPLICATION FORMS AND DELIVER SAID FORM TO THE OWNER FOR THEIR COMPLETION.

THE SHORT CIRCUIT RATING OF ALL ELECTRICAL COMPONENTS SHALL BE NO LESS THAN THE VALUE SPECIFIED ON THE PANEL SCHEDULES AND/OR POWER RISER DIAGRAM. BEFORE PURCHASING EQUIPMENT THE ELECTRICAL CONTRACTOR IS TO CONTACT THE POWER COMPANY AND OBTAIN THE AVAILABLE INRUSH CURRENT RATING AND ALL COMPONENTS SHALL BE RATED AND OR COORDINATED TO NO LESS THAN THE FURNISHED RATING. PROVIDE MAXIMUM AVAILABLE FAULT CURRENT AFFIXED TO MAIN SERVICE SWITCH. CURRENT SHALL BE PROVIDE BY ENGINEER/UTILITY COMPANY AND BE IN COMPLIANCE WITH NEC 110.24 A&B.

COORDINATE THE EXACT LOCATION AND REQUIREMENTS OF THE TELEPHONE AND CABLE SERVICE ENTRANCES WITH THE LOCAL TELEPHONE AND CABLE COMPANIES PRIOR TO ROUGHING-IN. RUN SERVICE ENTRANCE CONDUITS FROM BUILDING ENTRANCE TO UTILITY TERMINATION CABINETS AND PROVIDE POWER AND GROUNDING AS REQUIRED BY THE TELEPHONE AND CABLE COMPANIES.

25 TEMPORARY
THIS CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING AND POWER AS REQUIRED FOR ALL TRADES.

ALL TEMPORARY WIRING INSTALLED SHALL BE REMOVED BY THIS CONTRACTOR.

26 ENGINEERS FIELD REVIEWS
THIS CONTRACTOR AND HIS APPROPRIATE SUBCONTRACTORS SHALL HAVE A REPRESENTATIVE AVAILABLE FOR ALL ARCHITECT, ENGINEER, OWNER AND INSPECTION AUTHORITY FIELD VISITS.

PANELBOARDS, SWITCHBOARDS, TRANSFORMERS, AND OTHER EQUIPMENT AND SYSTEMS SHALL BE OPEN (COVERS REMOVED) TO PERMIT INSPECTION. "WARNING" LABELS/SIGNS SHALL BE PLACED ON ALL OPEN EQUIPMENT WHICH IS HOT AND POSES A HAZARD TO PEOPLE.

THIS CONTRACTOR SHALL HAVE AT THE PROJECT SITE ALL TOOLS, LADDERS AND TEST EQUIPMENT REQUIRED FOR THE ENGINEER TO ADEQUATELY EVALUATE THE SYSTEMS AND EQUIPMENT.

FINAL FIELD REVIEWS SHALL BE CALLED FOR BY THE CONTRACTOR ONLY WHEN THE INSTALLATION IS COMPLETE, FULLY OPERATIONAL, CLEANED AND 100% READY FOR A FINAL INSPECTION. THE CONTRACTOR SHALL REVIEW AND TEST ALL SYSTEMS BEFORE THE ARCHITECT, ENGINEER AND OWNER ARE CALLED ON FOR THEIR FINAL INSPECTIONS. IF THE ARCHITECT, ENGINEER, AND OWNER WASTE TIME PERFORMING CALLED FOR FINAL REVIEWS THAT ARE NOT COMPLETE AND READY FOR A REVIEW, THE CONTRACTOR SHALL PAY FOR ALL WASTED MANHOUR COSTS INCURRED.

ALL INSTALLATION AND MAINTENANCE MANUALS SHALL BE AVAILABLE AT THE TIME OF FINAL FIELD REVIEWS. ALL REQUIRED SYSTEMS CERTIFICATIONS SHALL BE MADE AVAILABLE AT THE TIME OF FINAL FIELD REVIEWS.

ALL SYSTEMS AND EQUIPMENT SHALL BE COMPLETELY INSTALLED, OPERATIONAL AND TURNED "ON" PRIOR TO SCHEDULING FINAL FIELD REVIEWS.

27 TRAINING AND INSTRUCTION
THIS CONTRACTOR AND SYSTEMS INSTALLERS AND SUBCONTRACTORS OF ALL SPECIALTY SYSTEMS SHALL DEMONSTRATE THE SYSTEM OPERATION AND TRAIN AND INSTRUCT THE OWNER HOW THE SYSTEMS ARE TO BE OPERATED AND MAINTAINED.

THE TRAINING AND DEMONSTRATIONS SHALL INCLUDE ALL MANUFACTURER RECOMMENDED AND REQUIRED PREVENTIVE MAINTENANCE PROCEDURES.

TRAINING SESSIONS SHALL INCLUDE SIX (6) INSTRUCTION AND RECOMMENDED PREVENTIVE MAINTENANCE MANUALS BOUND IN BINDERS FOR EACH SYSTEM. THE INSTRUCTION MANUALS SHALL REMAIN THE PROPERTY OF THE OWNER.
THIS CONTRACTOR AND HIS MANUFACTURER REPRESENTATIVES SHALL ALLOW FOR TWENTY-FOUR (24) INSTRUCTION HOURS TIME FOR ALL SYSTEMS. INSTRUCTION TIME SHALL BE AT THE CONTRACTORS EXPENSE.

THIS CONTRACTOR SHALL SCHEDULE THE DEMONSTRATION AND INSTRUCTION TIME WITH THE ARCHITECT, ENGINEER AND OWNER. TEN DAYS NOTICE SHALL BE GIVEN PRIOR TO DEMONSTRATIONS AND INSTRUCTIONS. THE OWNER WILL BE ALLOWED TO INVITE AS MANY PEOPLE AS HE DEEMS NECESSARY FOR THE DEMONSTRATIONS AND INSTRUCTIONS.

TRAINING SHALL GIVE THE OWNER A TOUR OF THE ENTIRE ELECTRICAL SYSTEM. ALL ELECTRICAL SERVICE EQUIPMENT, PANELBOARDS, ETC. SHALL BE DESCRIBED AND THEIR PURPOSE EXPLAINED. THE ELECTRICAL ENGINEER WILL ASSIST THE CONTRACTOR WITH THIS TOUR UPON REQUEST. THE PURPOSE OF THIS TOUR IS TO FAMILIARIZE THE OWNER WITH THE TYPE OF SYSTEM INSTALLED AND LOCATIONS AND PURPOSE OF THE EQUIPMENT.

28 TESTING
NO EQUIPMENT SHALL BE TESTED OR OPERATED FOR ANY PURPOSE UNTIL IT HAS BEEN INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND OR THE REQUIREMENTS OF LOCAL AUTHORITIES. MEGGER TEST ALL PHASE AND NEUTRAL CABLES RATED 100 AMPS AND LARGER FOR ADEQUATE INSULATION RESISTANCE TO GROUND.

19_0506

ELECTRICAL DRAWING SCHEDULE

DRAWING SHEET	DESCRIPTION
E001	ELECTRICAL SPECIFICATIONS
E002	ELECTRICAL SYMBOLS AND LIGHTING FIXTURE SCHEDULE
E003	ELECTRICAL SCHEDULES – HVAC & PLUMBING EQUIPMENT
E100	SITE PLAN – ELECTRICAL
E101	MAIN LEVEL FLOOR PLAN – LIGHTING – WEST
E102	MAIN LEVEL FLOOR PLAN – LIGHTING – EAST
E103	UPPER LEVEL FLOOR PLAN – LIGHTING – WEST
E104	UPPER LEVEL FLOOR PLAN – LIGHTING – EAST
E201	MAIN LEVEL FLOOR PLAN – POWER – WEST
E202	MAIN LEVEL FLOOR PLAN – POWER – EAST
E203	UPPER LEVEL FLOOR PLAN – POWER – WEST
E204	UPPER LEVEL FLOOR PLAN – POWER – EAST
E205	ROOF PLAN – POWER – WEST
E206	ROOF PLAN – POWER – EAST
E301	POWER RISER DIAGRAM & PANEL SCHEDULES
E302	PANEL SCHEDULES
E401	ELECTRICAL DETAILS
E402	ELECTRICAL DETAILS
E403	ELECTRICAL DETAILS

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

WILLIAM LEE TEETER
071959
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ELECTRICAL SPECIFICATIONS

	REV.#	DATE	COMMENTS
REVISION:			
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E001

1 OF 19

SYMBOL SCHEDULE

GENERAL SYMBOLS

- HOMERUN TO PANELBOARD. SEE "CIRCUIT HOMERUN AND CONDUCTOR LOGIC".
- CONDUIT RUN CONCEALED OVERHEAD ABOVE CEILING AND IN WALLS OR MC CABLE WHERE PERMITTED. USE SURFACE RACEWAY SYSTEM EXPOSED ON INACCESSIBLE EXISTING CONSTRUCTION.
- CONDUIT RUN EXPOSED.
- CONDUIT RUN CONCEALED BELOW FLOOR.
- FLEXIBLE CONDUIT WITH CONNECTION TO EQUIPMENT SERVED.
- GROUND SIZED PER NEC 250.
- 120/208 VOLT PANELBOARD. SEE PANEL SCHEDULE.
- 277/480 VOLT PANELBOARD. SEE PANEL SCHEDULE.
- MONITORING PANEL, SEE PLANS FOR DESCRIPTION.

SWITCHES

- $ SWITCH RATED 120/277 VOLTS AND 20 AMPERES. SUBSCRIPTS FOR BASIC SYMBOL.
  - BLANK– SINGLE POLE
  - 2– DOUBLE POLE
  - 3– THREE WAY
  - 4– FOUR WAY
  - D– DIMMER WITH SILICON CONTROLED RECTIFIER (DEVICE SHALL BE COMPATIBLE WITH THE LOAD IT SERVES, VERIFY)
  - P– PILOT LIGHT
  - 3,D– THREE WAY SWITCH WITH DIMMING OPTION
- $$ TWO SWITCHES IN COMMON OUTLET BOX AT 48" AFF.
- ^{OC} $\$_{OC}$ SWITCH RATED 120/277 VOLTS AND 20 AMPERES WITH OCCUPANT SENSOR FOR MANUAL ON AND AUTO OFF AFTER PRESET TIME.
- ^{OC,D} $\$_{OC,D}$ COMBO SWITCH RATED 120/277 VOLTS AND 20 AMPERES WITH DIMMER AND OCCUPANT SENSOR FOR MANUAL ON AND AUTO OFF AFTER PRESET TIME.
- TC TIME CLOCK – ELECTRONIC 24 HOUR–7 DAY
- LC LIGHTING CONTROL LIGHTING CONTACTOR.
- OC LINE VOLTAGE TYPE DUAL TECHNOLOGY CEILING MOUNTED OCCUPANT SENSOR

WIRING DEVICES

- 120V, 20A DUPLEX RECEPTACLE WALL MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED
  - EWC– GFCI TYPE RECEPTACLE SERVING ELECTRIC WATER COOLER. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH PLUMBING CONTRACTOR AND INSTALL RECEPTACLE SO THAT IT IS CONCEALED FROM VIEW.
  - R– RECEPTACLE SERVING REFRIGERATOR. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH EQUIPMENT CONTRACTOR AND INSTALL RECEPTACLE SO THAT IT IS CONCEALED FROM VIEW AND DOES NOT IMPEDE THE INSTALLATION OF THE REFRIGERATOR.
  - GFCI– DUPLEX RECEPTACLE WITH BUILT–IN GROUND FAULT CIRCUIT INTERRUPTING MECHANISM.
  - WP– WEATHERPROOF COVER.
- 120V, 20A DUPLEX RECEPTACLE WITH BOTTOM OF BOX 2" ABOVE COUNTER BACKSLASH OR AT COUNTER HEIGHT
- TWO 120V, 20A DUPLEX RECEPTACLES UNDER COMMON COVER
- TWO 120V, 20A DUPLEX RECEPTACLE UNDER COMMON COVER MOUNTED AT COUNTER HEIGHT
- 120V, 20A DUPLEX RECEPTACLE WITH ISOLATED GROUND TERMINAL–COLORED ORANGE
- 120V, 20A DUPLEX RECEPTACLE FLUSH MOUNTED IN CEILING
- SPECIAL EQUIPMENT RECEPTACLE. (SEE NOTES)

LIGHTING (SEE LIGHTING FIXTURE SCHEDULE)

EQUIPMENT CONNECTIONS

- * CONNECTION TO 120 VOLT MOTOR.
- * CONNECTION TO 3–PHASE MOTOR.
- HEAVY DUTY SAFETY SWITCH. (NON–FUSED) SEE "EQUIPMENT DISCONNECT SCHEDULE".
- HEAVY DUTY SAFETY SWITCH. (FUSED) SEE "EQUIPMENT DISCONNECT SCHEDULE".
- * J J JUNCTION BOX WITH CONNECTION TO EQUIPMENT SERVED.
- * CONNECTION TO HVAC, PLUMBING OR OTHER EQUIPMENT AS NOTED.
- * WH CONNECTION TO WATER HEATER.
- CONNECTION TO OVERHEAD DOOR. PROVIDE SAFETY SWITCH AT CONNECTION POINT. RUN POWER WIRING THROUGH DOOR CONTROLLER. CONNECT ALL DOOR CONTROLS (UP/DOWN CONTROL STATION, LIMIT SWITCHES, OBSTRUCTION SAFETY SWITCHES, ETC.)
- MOTOR CONTROLLER

* NOTE: PROVIDE A DISCONNECT ON ALL FANS, UNIT HEATERS, FAN COILS, PUMPS, AIR HANDLERS, UNIT VENTILATORS, ETC.

COMMUNICATIONS SYMBOLS

- COMBINATION DATA/TELEPHONE CABLING OUTLET. COORDINATE MOUNTING HEIGHT WITH CLOSEST POWER RECEPTACLE.
- TV OUTLET BOX.
- 2–COMPARTMENT RECESSED FLOOR BOX, WITH ONE DUPLEX RECEPTACLE AND ONE SECTION FOR OWNERS COMMUNICATIONS REQUIREMENTS.
- 3–COMPARTMENT RECESSED FLOOR BOX, WITH ONE QUAD RECEPTACLE AND TWO SECTIONS FOR OWNERS COMMUNICATIONS REQUIREMENTS.
- FIRE RATED FLUSH STYLE POKE THRU DEVICE

FIRE ALARM SYMBOLS

- FACP CONTROL PANEL.
- ANN REMOTE ANNUNCIATOR 66" AFF TO MIDDLE OF DEVICE.
- F MANUAL PULL STATION 48" AFF.
- F AUDIBLE & VISUAL SIGNAL STROBE LIGHT MOUNTED @ 80" AFF. OR 6" BELOW CEILING WHICHEVER IS LOWER.
- S VISUAL SIGNAL STROBE LIGHT MOUNTED @ 80"AFF OR 6" BELOW CEILING WHICHEVER IS LOWER.
- F AUDIBLE & VISUAL SIGNAL STROBE LIGHT CEILING MOUNTED
- SD PHOTO–ELECTRIC TYPE SMOKE DETECTOR.
- TD THERMAL TYPE DETECTOR.
- SD DUCT MOUNT SMOKE DETECTOR WITH RELAY BASE IN AIR DUCT.
- R ADDRESSABLE CONTROL MODULE
- RT REMOTE TEST SWITCH WITH INDICATOR LAMP FOR DUCT MOUNTED SMOKE DETECTOR
- TS TAMPER SWITCH CONNECTED TO SPRINKLER VALVE.
- WF WATER FLOW SWITCH CONNECTED TO SPRINKLER PIPING.

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPERE	LC	LIGHTING CONTACTOR
A/C	AIR CONDITIONING	LED	LIGHT EMITTING DIODE
ADA	AMERICANS WITH DISABILITIES ACT	LT	LIGHT
AFF	ABOVE FINISHED FLOOR	LTG	LIGHTING
AFG	ABOVE FINISHED GRADE	MIN	MINIMUM
AHU	AIR HANDLING UNIT	MAX	MAXIMUM
AL	ALUMINUM	MCA	MINIMUM CIRCUIT AMPERES
AMP	AMPERE	MCB	MAIN CIRCUIT BREAKER
ATS	AUTOMATIC TRANSFER SWITCH	MFS	MAXIMUM FUSE SIZE
AWG	AMERICAN WIRE GAUGE	MLO	MAIN LUGS ONLY
BB	BACKBOARD	MOCP	MAXIMUM OVER–CURRENT PROTECTION
C	CONDUIT	MMS	MANUAL MOTOR STARTER
CB	CIRCUIT BREAKER	NEC	NATIONAL ELECTRICAL CODE
CU	CONDENSING UNIT	NEMA	NATIONAL ELECTRICAL MFRS ASSOC.
DPDT	DOUBLE POLE DOUBLE THROW	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
EC	EMPTY CONDUIT	NIC	NOT IN CONTRACT
EF	EXHAUST FAN	P	POLE
EGC	EQUIPMENT GROUNDING CONDUCTOR	PB	PULL BOX
EM	EMERGENCY	PE	PHOTO–ELECTRIC SWITCH
EMT	ELECTRICAL METALLIC TUBING	PVC	POLYVINYL CHLORIDE CONDUIT
E OR EX	EXISTING	PNL	PANEL
ER	EXISTING TO BE REMOVED	RMC	RIGID METAL CONDUIT
ETR	EXISTING TO REMAIN	RTU	ROOF TOP UNIT
F	FUSE	SF	SUPPLY FAN
FACP	FIRE ALARM CONTROL PANEL	SPD	SURGE PROTECTIVE DEVICE
FLA	FULL LOAD AMPERES	SPDT	SINGLE POLE DOUBLE THROW
FPN	FUSE PER NAMEPLATE	SPST	SINGLE POLE SINGLE THROW
FT	FEET	SQ	SQUARE
GC	GENERAL CONTRACTOR	SW	SWITCH
GND	GROUND	SWBD	SWITCHBOARD
GF	GAS FURNACE	TTB	TELEPHONE TERMINAL BACKBOARD
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UH	UNIT HEATER
GND	GROUND	UL	UNDERWRITER'S LABORATORIES
GRC	GALVANIZED RIGID STEEL CONDUIT	UNO	UNLESS NOTED OTHERWISE
GWB	GYPSUM WALLBOARD	UON	UNLESS OTHERWISE NOTED
HP	HORSEPOWER	UPS	UNINTERRUPTIBLE POWER SUPPLY
HVAC	HEATING–VENTILATING– –AIR CONDITIONING	V	VOLT
IG	ISOLATED GROUND	W	WATT
IMC	INTERMEDIATE METAL CONDUIT	VA	VOLT–AMPERE
KW	KILOWATT	WP	WEATHER PROOF
KVA	KILOVOLT–AMPERE	XFMR	TRANSFORMER
JB	JUNCTION BOX	XP	EXPLOSION PROOF

NOTES:

1. PROVIDE A BLANK COVERPLATE ON TELEPHONE OUTLETS.
2. SEE DETAILS FOR ELEVATION REPRESENTATION OF ALL DEVICE MOUNTING HEIGHTS. ALL QUESTIONS ABOUT MOUNTING HEIGHTS SHALL BE DIRECTED TO THE ARCHITECT AND ENGINEER PRIOR TO ROUGH–IN.
3. THESE ARE STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON PROJECT DRAWINGS. WHEREVER THE SYMBOL ON THE PROJECT OCCURS, THE ITEM SHALL BE PROVIDED AND INSTALLED.

LIGHTING FIXTURE SCHEDULE

SYMBOL & TYPE	MANUFACTURER & CATALOG NUMBER	DESCRIPTION	LAMP TYPE & QUANTITY	VOLTS/ DRIVER	MOUNTING	INPUT WATTS	TOTAL FIXTURES
A	EQUAL TO: LITHONIA #CPX–2X4–4000LM–80CRI–40K–SWL–MIN10–ZT–MVOLT	2'x4' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER. A/NL – NIGHT LIGHT FIXTURE, 24/7.	LED 4000 LUMENS 4000K	120–277V ELECTRONIC	RECESSED CEILING	40.0	167
AE	–	SAME AS "A" WITH INTEGRATED E10WLCP EMERGENCY BATTERY PACK.	–	–	–	40.0	2
A1	EQUAL TO: LITHONIA #CPX–2X4–6000LM–80CRI–40K–SWL–MIN10–ZT–MVOLT	2'x4' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER. A1/NL – NIGHT LIGHT FIXTURE, 24/7.	LED 6000 LUMENS 4000K	120–277V ELECTRONIC	RECESSED CEILING	44.0	4
A1E	–	SAME AS "A1" WITH INTEGRATED E10WLCP EMERGENCY BATTERY PACK.	–	–	–	44.0	4
A2	EQUAL TO: LITHONIA #CPX–2X2–3200LM–80CRI–40K–SWL–MIN10–ZT–MVOLT	2'x2' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER. A2/NL – NIGHT LIGHT FIXTURE, 24/7.	LED 3200 LUMENS 4000K	120–277V ELECTRONIC	RECESSED CEILING	31.0	10
A2F	EQUAL TO: LITHONIA #CPX–2X2–3200LM–80CRI–40K–SWL–MIN10–ZT–MVOLT MULTISURFACE KIT #2X2SMKSH	2'x2' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER. MULTISURFACE KIT INCLUDED.	LED 3200 LUMENS 4000K	120–277V ELECTRONIC	SURFACE CEILING	31.0	1
B	EQUAL TO: LITHONIA #SBL4–LP840 (CI–254RKU)	1'x4' LED WRAPAROUND FIXTURE.	LED 2994 LUMENS 4000K	120–277V ELECTRONIC	SURFACE CEILING	32.0	154
M	SELECTED BY OWNER, PURCHASED AND INSTALLED BY ELECTRICAL CONTRACTOR	LARGE PENDANT FIXTURE WITH LED BULBS. CONTRACTOR TO PROVIDE $1,000 ALLOWANCE.	LED	120V	PENDANT CEILING	100.0 MAX	2
C	EQUAL TO: GOTHAM EVO #EV06–35–10–WR–WD–LSS–MVOLT	6" ROUND LED DOWNLIGHT, WHITE REFLECTOR, WHITE FLANGE.	LED 1000 LUMENS 3500K	120V	RECESSED CEILING	10.0	316
CE	–	SAME AS "C" WITH INTEGRATED 10W EL EMERGENCY BATTERY PACK. C/NL – NIGHT LIGHT FIXTURE, 24/7.	–	–	–	10.0	2
D	EQUAL TO: TECH LIGHTING #700–TD–S–S–S VERIFY WITH ARCHITECT PRIOR ORDERING.	SMALL PENDANT LIGHTING FIXTURE, SMOKE COLOR, SATIN NICKEL FINISH. CONTRACTOR TO PROVIDE ONE (1) E11 BASE 60W T6 MINI–CANDELABRA BULB.	INCANDESCENT	120V	PENDANT CEILING	60.0	5
V	EQUAL TO: LITHONIA #FMVCSLS–48IN–MVOLT–35K–90CRI–BN–M4	1'x4' LED WALL MOUNTED CONTEMPORARY SWITCHABLE SQUARE VANITY FIXTURE.	LED 2960 LUMENS 3500K	120–277V ELECTRONIC	SURFACE WALL	36.0	5
F	EQUAL TO: LITHONIA #CPX–2X4–4000LM–80CRI–40K–SWL–MIN10–ZT–MVOLT MULTISURFACE KIT #2X4SMKSH	2'x4' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER. SHALLOW DEPTH MULTI–SURFACE MOUNTING KIT INCLUDED.	LED 4000 LUMENS 4000K	120–277V ELECTRONIC	SURFACE CEILING	40.0	4
G	PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	PROCEDURE (EXAM) LED LIGHT MEDICAL ILLUMINATION MI–550, PROVIDED BY OWNER, INSTALLED BY E.C.	LED	120V	SURFACE CEILING	16.0 (TASK)	2
G2	PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	SURGERY LED LIGHT MEDICAL ILLUMINATION MI–1000, PROVIDED BY OWNER, INSTALLED BY E.C.	LED	120V	SURFACE CEILING	54.0 (TASK)	2
N NE	EQUAL TO: LITHONIA #WL4–30L–SLD–LP840–DIM10 "NE" – WITH E10WLCP	5"x51" LED WRAPAROUND FIXTURE WITH INTEGRATED OCCUPANCY SENSOR. FIXTURE DIMS TO 10% WHEN UNOCCUPIED. "NE" WITH 90 MIN EMERGENCY BATTERY PACK.	LED 3000 LUMENS 4000K	120–277V ELECTRONIC	SURFACE WALL	28.0	7
P	EQUAL TO: PHOENIX LIGHTING #VA–W–17LED–WW–FGC	INDUSTRIAL TYPE ENCLOSED/GASKETED VAPORTIGHT SURFACE MOUNTED LIGHTING FIXTURE, FROSTED GLASS LENS.	LED 1336 LUMENS 3000K	120V–277V	SURFACE CEILING	17.0	1
S	EQUAL TO: LITHONIA #OLLWU–LED–P1–40K–MVOLT–WH	EXTERIOR LED DECORATIVE WALL SCONCE UP & DOWN FIXTURE, WHITE FINISH. SEE EXTERIOR ELEVATIONS SHEETS A201 & A202 FOR EXACT MOUNTING HEIGHTS AND LOCATIONS.	LED 947 LUMENS 4000K	120V–277V	SURFACE WALL @ 7' AGL	14 (EXTERIOR)	10
U	EQUAL TO: STONCO BY SIGNIFY #LPW16–50–NW–G3–3–120–BK. (VERIFY WITH CIVIL DRAWINGS C900 & C910 PRIOR ORDERING)	EXTERIOR LED WALL MOUNT MEDIUM SCONCE FIXTURE, BLACK FINISH. SEE EXTERIOR ELEVATIONS SHEETS A201 & A202 FOR EXACT MOUNTING HEIGHTS AND LOCATIONS.	LED 5334 LUMENS 4000K	120V	SURFACE WALL @ 15' AFG	50 (EXTERIOR)	14
OB	EQUAL TO: LITHONIA LIGHTING #DSX0–LED–P1–40K–70CRI–T3LG–MVOLT–SPA–PIR	LED POLE MOUNTED FIXTURE, DARK BRONZE FINISH. TYPE 3 LOW GLARE DISTRIBUTION. INTEGRATED PHOTOCELL AND HIGH/LOW MOTION/AMBIENT SENSOR DIM TO 30% WHEN UNOCCUPIED.	LED 4280 LUMENS 4000K	120V–277V	POLE	33.0 (EXTERIOR)	17
EO	EQUAL TO: LITHONIA #ERE–GY–T–WP–RD	WALL MOUNTED LED SQUARE TWIN REMOTE HEAD FIXTURE. GRAY COLOR.	LED	120V	WALL	<5	5
EX	EQUAL TO: LITHONIA #EXRG–EL–M6	SURFACE MOUNTED LED EXIT SIGN. 90 MINUTE MINIMUM BATTERY BACKUP. WHITE FINISH, RED/GREEN LETTERS.	LED	120V	UNIVERSAL	<5	20
EX1	EQUAL TO: LITHONIA #ECRG–HO–RD–M6	COMBINATION EMERGENCY LIGHTING UNIT/EXIT SIGN. WHITE THERMOPLASTIC HOUSING, RED/GREEN LETTERS. 90 MINUTE MINIMUM BATTERY BACKUP. REMOTE CAPABLE WHERE REQUIRED.	LED EXIT, TWO(2) LED LAMPHEADS	120V	UNIVERSAL	<5	37
EM	EQUAL TO: LITHONIA #ELM2L–M12	SURFACE MOUNTED EMERGENCY LIGHTING UNIT. WHITE THERMOPLASTIC HOUSING, 90 MINUTE MINIMUM BATTERY BACKUP. WHITE FINISH.	TWO(2) LED LAMPHEADS	120V	UNIVERSAL	<5	61

QUANTITY NOTE

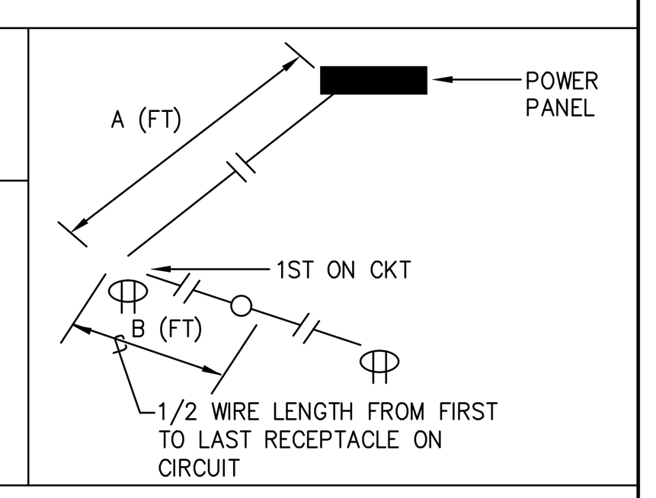
THE LIGHTING FIXTURE QUANTITIES LISTED IN THIS SCHEDULE ARE FOR ENERGY CODE COMPLIANCE ONLY. THE FLOOR PLANS GOVERN THE ACTUAL QUANTITIES. THE CONTRACTOR SHALL MAKE HIS OWN QUANTITY TAKEOFF.

TOTAL WATTS PER PROJECT (INTERIOR)	16,614
TOTAL SQUARE FEET (INTERIOR)	30,000
TOTAL WATTS / SQUARE FOOT	0.55
ALLOWED WATTS / SQUARE FOOT (–10%)	0.71

CONDUCTOR SIZING TABLE

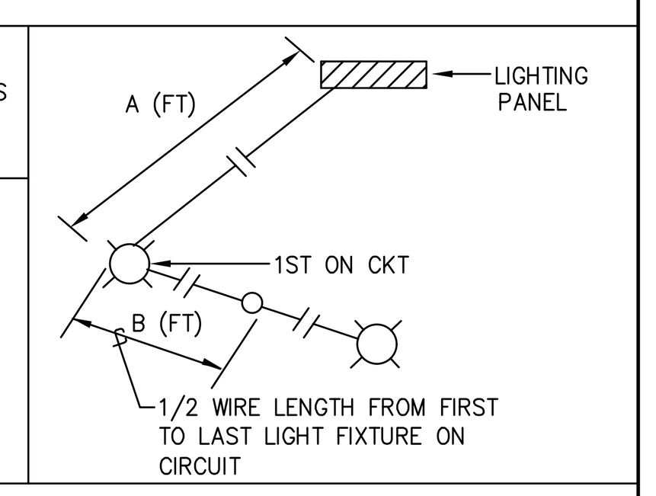
FOR 120V–20A BRANCH CIRCUITS ONLY, UNLESS OTHERWISE NOTED

IF DISTANCE A + B IN FEET IS: (SEE DIAGRAM AT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY:
0' TO 100'	#12 (MIN.)
100' TO 175'	#10
175' TO 300'	#8
300' TO 450'	#6 (MAX.)



FOR 277V–20A BRANCH CIRCUITS ONLY, UNLESS OTHERWISE NOTED

IF DISTANCE A + B IN FEET IS: (SEE DIAGRAM AT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY:
0' TO 250'	#12 (MIN.)
250' TO 400'	#10
400' TO 700'	#8
700' TO 1000'	#6 (MAX.)



THESE TABLES ARE BASED ON AN EVENLY DISTRIBUTED LOAD ALLOWING A 3% VOLTAGE DROP AT LAST OUTLET: APPLY ACCORDINGLY.

EQUIPMENT DISCONNECT SCHEDULE

- $M — MANUAL MOTOR STARTING SWITCH WITH OVERLOAD PROTECTION EQUAL TO SQUARE–D CLASS 2510 TYPE KG–1 SERIES.
- 3P/30A/208V — HEAVY DUTY SAFETY SWITCH; 3 POLE, 30 AMP, 208 VOLT. FIRST NUMERAL INDICATES QUANTITY OF POLES SECOND NUMERAL INDICATES AMPERE RATING. THIRD NUMERAL INDICATES VOLTAGE. IE: 3P/30A/208V INDICATES 3 POLE, 30 AMP, 208 VOLT, ETC.
- 3P/30A/208V — FUSED HEAVY DUTY SAFETY SWITCH SAME AS ABOVE EXCEPT WITH FUSES. ACTUAL SIZE AND TYPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. FUSES SHALL BE 'RK–5' FUSETRONS.
- 3P/30A/208V/3R, 3P/30A/208V/3R — NEMA 3R CONSTRUCTION HEAVY DUTY SAFETY SWITCHES. NO–FUSE AND FUSED SWITCHES RESPECTIVELY AS SPECIFIED ABOVE. /3R INDICATES NEMA 3R CONSTRUCTION. NOTE: PROVIDE NEUTRAL BARS, GROUNDING BARS, REJECTION CLIPS, SERVICE ENTRANCE LABELS, FUSES AND ALL OTHER ACCESSORIES REQUIRED FOR THE APPLICATION.

CIRCUIT HOMERUN SYMBOL SCHEDULE

- A–1 — ONE CIRCUIT HOMERUN TO PANEL "A", CIRCUIT #1.
- A–1,3 — TWO CIRCUIT HOMERUN TO PANEL "A", CIRCUITS #1 & 3. (REQUIRES MULTI–POLE CIRCUIT BREAKER.)
- A–1,3,5 — THREE CIRCUIT HOMERUN TO PANEL "A", CIRCUITS #1, 3, & 5. (REQUIRES MULTI–POLE CIRCUIT BREAKER.)
- A–(1,3) — ONE CIRCUIT HOMERUN TO PANEL "A", 208 VOLT OR 480 VOLT–1 PHASE CIRCUIT TO POLES #1 & 3.
- A–(1,3,5) — ONE CIRCUIT HOMERUN TO PANEL "A", 208 VOLT OR 480 VOLT–3 PHASE CIRCUIT TO POLES #1, 3, & 5.
- SLASH MARKS INDICATE QUANTITY OF CONDUCTORS OTHER THAN TWO; INDICATES NEUTRAL, INDICATES HOT, NOTE: TWO WIRE CIRCUITS DO NOT SHOW SLASH MARKS.
- SLASH MARK INDICATES EQUIPMENT GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE 250–122.

LIGHTING NOTES

1. LED DRIVERS SHALL BE ELECTRONIC TYPE.
2. LED'S SHALL BE SOLID STATE WITH 3500 DEGREE COLOR TEMP.
3. LIGHTING FIXTURE CATALOG NUMBERS IDENTIFY THE SERIES OF LIGHTING FIXTURE ONLY. PROVIDE ALL FIELD FABRICATION, MOUNTING HARDWARE, ACCESSORIES AND OPTIONS REQUIRED TO ADAPT TO THE CONDITIONS AND MEET THE INTENT OF THE FIXTURE DESCRIPTION.
4. COORDINATE FIXTURE OPERATING VOLTAGES WITH THAT PROVIDED BY THE CIRCUITRY.
5. COORDINATE FIXTURE TRIMS WITH THE CEILING TYPE.
6. DRIVERS AND LED'S SHALL BE DESIGNED TO START AND MAINTAIN PROPER OPERATION IN THE ENVIRONMENTAL AND TEMPERATURE CONDITIONS IN WHICH THE FIXTURES ARE APPLIED.
7. RECESSED LIGHTING FIXTURES SHALL HAVE THERMAL PROTECTION.
8. DOWNLIGHTS IN NONACCESSIBLE CEILINGS SHALL HAVE BOTTOM ACCESS.
9. LAY–IN TYPE FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE INDEPENDENT FROM THE CEILING SYSTEM.
10. DOWNLIGHT FIXTURES AND EXIT SIGNS IN SUSPENDED CEILINGS SHALL NOT BE SUPPORTED BY THE GRID SYSTEM AND SHALL BE SUPPORTED FROM THE STRUCTURE AND NOT RELY ON THE CEILING SYSTEM ALONE FOR SUPPORT.
11. LIGHTING FIXTURES IN WET LOCATIONS SHALL BE "WET LOCATION" LISTED. LIGHTING FIXTURES IN DAMP LOCATIONS SHALL BE "DAMP LOCATION" LISTED.
12. SUBMIT SHOP DRAWINGS FOR APPROVAL.

NEW YORK ENERGY CODE

(2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE – SECTION 407)

METHOD OF COMPLIANCE:

- 2020 ENERGY CONSERVATION CODE OF NEW YORK STATE: [X] PRESCRIPTIVE [ ] PERFORMANCE
- 2007 ASHRAE 90.1: [ ] PRESCRIPTIVE [ ] PERFORMANCE

LIGHTING SCHEDULE:

LAMP TYPE REQUIRED IN FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
NUMBER OF LAMPS IN FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
BALLAST TYPE USED IN THE FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
NUMBER OF BALLASTS IN FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
TOTAL WATTAGE PER FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED (WHOLE BUILDING OR SPACE BY SPACE)	SEE "LIGHTING FIXTURE SCHEDULE"
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED	SEE "LIGHTING FIXTURE SCHEDULE"

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NEW YORK ENERGY CONSERVATION CODE.

SIGNED: William Lee Teeter

NAME: WILLIAM LEE TEETER

TITLE: PROFESSIONAL ENGINEER

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · LICENSED PROFESSIONAL ENGINEER · 071959

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ELECTRICAL SYMBOLS AND LIGHTING FIXTURE SCHEDULE

REV.#	DATE	COMMENTS
1	09/09/2024	ADDENDUM 2

REVIEWS

INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E002

2 OF 19

FAN SCHEDULE

TAG	SYSTEM SERVED	FAN TYPE	ELECTRICAL DATA			DISCONNECT	HOMERUN BRANCH CIRCUIT
			H.P.	WATTS	VOLTAGE		
EF-1	141 MENS RR	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-2	142 WOMENS RR	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-3	162 PUBLIC RR	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-4	243 MENS RR	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-5	249 MENS SHOWER	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-6	223 JANITOR	CEILING EXHAUST	–	16.4	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-7	226 WOMENS SHOWER	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-8	242 WOMENS RR	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-9	155 02 CLOSET	CEILING EXHAUST	–	17	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-10	173 JANITOR CLOSET	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-11	232 FELINE HOLD 2	INLINE EXHAUST	1/30	–	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-12	116 FELINE CONDOS 1	INLINE EXHAUST	1/50	–	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-13	112 FELINE CONDOS 2	INLINE EXHAUST	1/40	–	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-14	143 JANITOR	CEILING EXHAUST	–	17.6	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-15	171 FELINE HOLD CONDOS	INLINE EXHAUST	1/30	–	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
EF-16	156/158 ISO AREAS	INLINE EXHAUST	1/30	–	115V-1ø	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
RF-1	ECONOMIZER RELIEF FAN	IN-LINE EXHAUST	2	–	208V-1ø	2P/30A/208V/NF	¾"C, 2#12, 1#12 GND

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, STARTERS, CONTROL CIRCUITS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL EQUIPMENT.

VARIABLE AIR-COOLED CONDENSING UNIT SCHEDULE

TAG	ELECTRICAL DATA				DISCONNECT	HOMERUN BRANCH CIRCUIT
	MCA	MOCP	RLA	VOLTAGE		
CU-1 (DOAS 1-2-3)	120.2	125	91.6	208V-3ø	3P/200A/208V/3R-FPN	1½"C., 3#1 & 1#6 GND.
CU-2 (DOAS 8-9-10)	76.2	80	46.6	208V-3ø	3P/100A/208V/3R-FPN	1½"C., 3#1 & 1#8 GND.
CU-3 (DOAS 11-13)	101.3	110	70.8	208V-3ø	3P/200A/208V/3R-FPN	1½"C., 3#1 & 1#6 GND.
CU-4 (DOAS 14-15)	58.3	70	42.6	208V-3ø	3P/100A/208V/3R-FPN	1¼"C., 3#4 & 1#8 GND.

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS, DUCT TYPE SMOKE DETECTORS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL EQUIPMENT.

VARIABLE AIR HANDLING UNIT SCHEDULE

TAG	ELECTRICAL DATA				DISCONNECT	HOMERUN BRANCH CIRCUIT
	MCA	MOCP	FLA	VOLTAGE		
AHU-1	8.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-2	8.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-3	10.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-8	4.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-9	8.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-10	8.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-11	8.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-13	10.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-14	8.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
AHU-15	8.8	15	3.9	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS, DUCT TYPE SMOKE DETECTORS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL EQUIPMENT.

VARIABLE ZONE HEAT RECOVERY DEVICE SCHEDULE

TAG	ELECTRICAL DATA				DISCONNECT	HOMERUN BRANCH CIRCUIT
	MCA	MOCP	FLA	VOLTAGE		
BS-1	0.4	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-2	0.4	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-3	0.6	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-8	0.4	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-9	0.4	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-10	0.4	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-11	0.4	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-13	0.6	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-14	0.4	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
BS-15	8.8	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS, DUCT TYPE SMOKE DETECTORS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL EQUIPMENT.

MINI SPLIT / HEAT PUMP SCHEDULE

TAG	AREA SERVED	ELECTRICAL DATA			DISCONNECT	HOMERUN BRANCH CIRCUIT
		MCA	MOCP	VOLTAGE		
DAH-1	154 DOUBLE SURGERY	1.0	15	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
DHP-1		10.0	15	208V-1ø	2P/30A/208V/3R-FPN	¾"C., 2#12 & 1#12 GND.

NOTE:
1. INDOOR UNIT DAH FED FROM OUTDOOR UNIT DHP.

2. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS, DUCT TYPE SMOKE DETECTORS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL EQUIPMENT.

WATER HEATER SCHEDULE

TAG	GALLONS	ELECTRICAL DATA				DISCONNECT	HOMERUN BRANCH CIRCUIT
		NO ELEM	KW ELEM	KW TOTAL	VOLTAGE		
WH-1A	120	3	6.0	18.0	208V-3ø	3P/100A/208V/NF	1¼"C, 3#4, 1#8 GND
WH-1B	120	3	6.0	18.0	208V-3ø	3P/100A/208V/NF	1¼"C, 3#4, 1#8 GND

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE PLUMBING CONTRACTORS FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE PLUMBING EQUIPMENT.

ELECTRIC HEATER SCHEDULE

TAG	AREA SERVED	ELECTRICAL DATA			DISCONNECT	HOMERUN BRANCH CIRCUIT
		KW	AMPS	VOLTAGE		
EWH-1	RISER ROOM	5.0	24.1	208V-1ø	2P/60A/208V/NF	1¼"C., 2#4 & 1#10 GND.
EWH-2,3	STAIRWELL	3.0	14.4	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS, DUCT TYPE SMOKE DETECTORS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL EQUIPMENT.

PUMP SCHEDULE

TAG	TYPE	ELECTRICAL DATA				DISCONNECT	HOMERUN BRANCH CIRCUIT
		HP	V	PH	HZ		
RCP-1	IN-LINE	1/6	120	1	60	20A SPST SWITCH	¾"C, 2#12, 1#12 GND
SP-1	SUMP	1/2	120	1	60	20A SPST SWITCH	¾"C, 2#12, 1#12 GND

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE PLUMBING CONTRACTORS FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE PLUMBING EQUIPMENT.

STANDARD AIR HANDLING UNIT SCHEDULE

TAG	ELECTRICAL DATA				DISCONNECT	HOMERUN BRANCH CIRCUIT
	MCA	MOCP	KW	VOLTAGE		
AHU-4	27	30	5.0	208V-1ø	2P/30A/208V/NF	¾"C., 2#10 & 1#10 GND.
AHU-5	43	45	8.0	208V-1ø	2P/60A/208V/NF	1"C., 2#6 & 1#10 GND.
AHU-6	50	50	10.0	208V-1ø	2P/60A/208V/NF	1"C., 2#6 & 1#10 GND.
AHU-7	71.5	80	15.0	208V-1ø	2P/100A/208V/NF	1¼"C., 2#3 & 1#8 GND.
AHU-12	95.4	110	30.0	208V-3ø	3P/200A/208V/NF	1½"C., 3#1 & 1#6 GND.

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS, DUCT TYPE SMOKE DETECTORS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL EQUIPMENT.

STANDARD HEAT PUMP SCHEDULE

TAG	ELECTRICAL DATA				DISCONNECT	HOMERUN BRANCH CIRCUIT
	MCA	MOCP	FLA	VOLTAGE		
HP-4	14.6	15	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#12 & 1#12 GND.
HP-5	34.4	35	–	208V-1ø	2P/60A/208V/NF	¾"C., 2#8 & 1#10 GND.
HP-6	34.4	35	–	208V-1ø	2P/60A/208V/NF	¾"C., 2#8 & 1#10 GND.
HP-7	23.9	25	–	208V-1ø	2P/30A/208V/NF	¾"C., 2#10 & 1#10 GND.
HP-12	40.6	60	–	208V-3ø	3P/60A/208V/NF	1¼"C., 3#4 & 1#10 GND.

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS, DUCT TYPE SMOKE DETECTORS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL EQUIPMENT.

FAN FILTER UNIT SCHEDULE

TAG	AREA SERVED	ELECTRICAL DATA				DISCONNECT	HOMERUN BRANCH CIRCUIT
		FLA	V	PH	HZ		
FFU-1	SURGERY	1.5	208	1	60	20A DPST SWITCH	¾"C, 2#12, 1#12 GND

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR EXACT EQUIPMENT BEING FURNISHED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUCERS, CONTROL CIRCUITS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE PLUMBING EQUIPMENT.

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK
WILLIAM LEE TEETER
071959
LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ELECTRICAL SCHEDULES - HVAC & PLUMBING EQUIPMENT

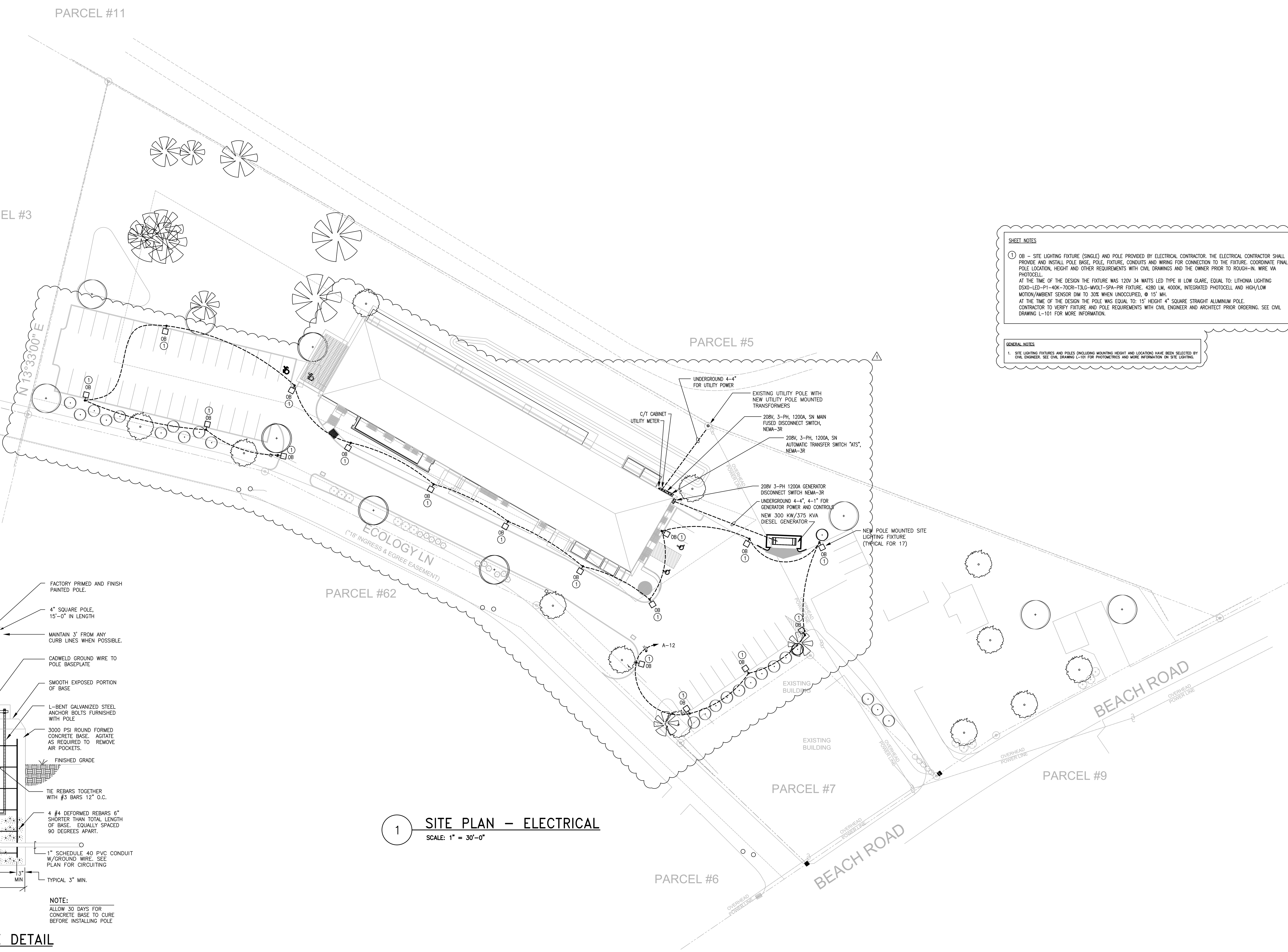
	REV.#	DATE	COMMENTS
REVISION:	2	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E003

3 OF 19



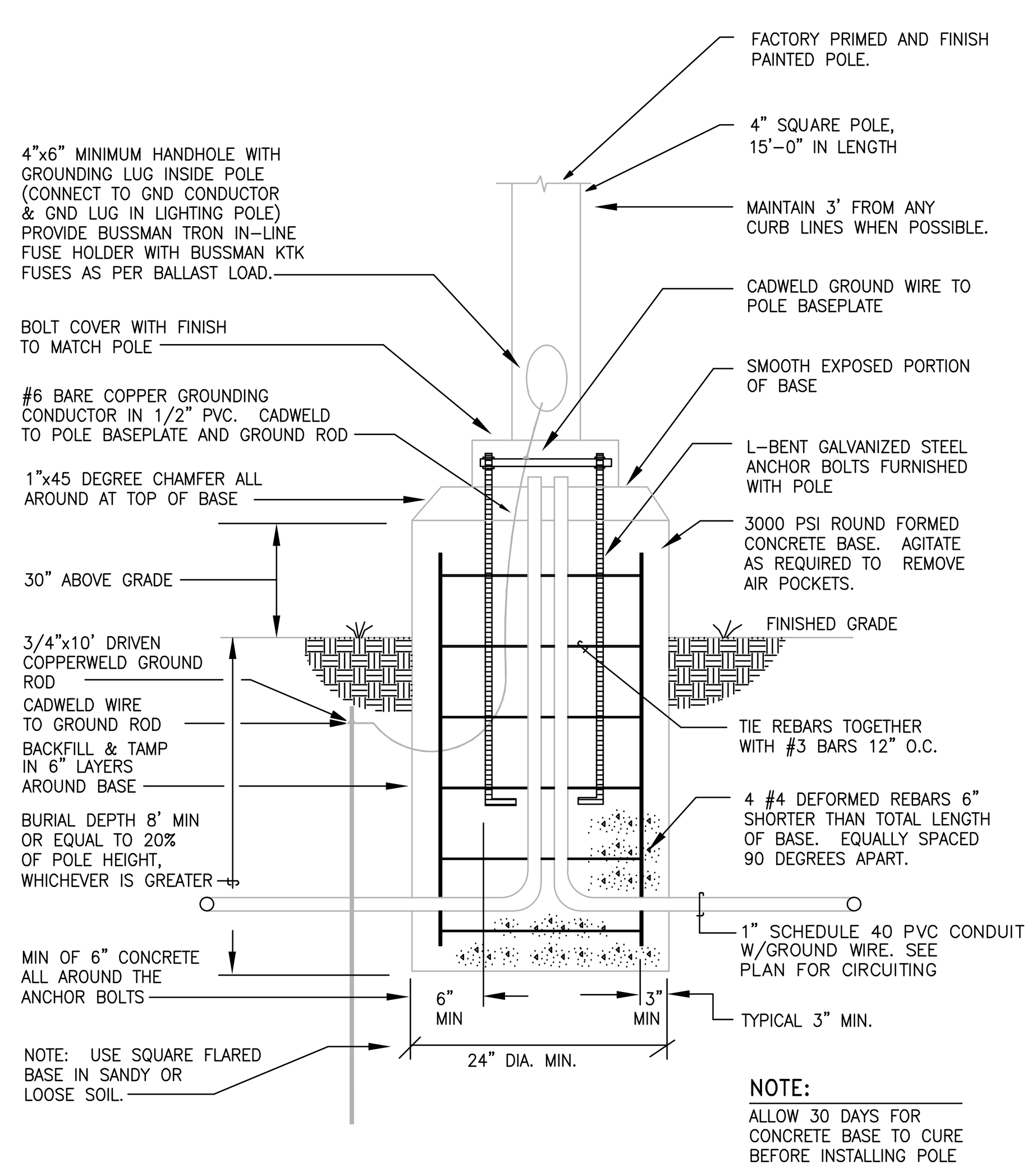
SHEET NOTES

(1) OB – SITE LIGHTING FIXTURE (SINGLE) AND POLE PROVIDED BY ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL POLE BASE, POLE, FIXTURE, CONDUITS AND WIRING FOR CONNECTION TO THE FIXTURE. COORDINATE FINAL POLE LOCATION, HEIGHT AND OTHER REQUIREMENTS WITH CIVIL DRAWINGS AND THE OWNER PRIOR TO ROUGH-IN. WIRE VIA PHOTOCELL.
AT THE TIME OF THE DESIGN THE FIXTURE WAS 120V 34 WATTS LED TYPE III LOW GLARE, EQUAL TO: LITHONIA LIGHTING DSX0-LED-P1-40K-70CRI-T3LG-MVOLT-SPA-PIR FIXTURE. 4280 LM, 4000K, INTEGRATED PHOTOCELL AND HIGH/LOW MOTION/AMBIENT SENSOR DIM TO 30% WHEN UNOCCUPIED, @ 15' MH.
AT THE TIME OF THE DESIGN THE POLE WAS EQUAL TO: 15' HEIGHT 4" SQUARE STRAIGHT ALUMINUM POLE.
CONTRACTOR TO VERIFY FIXTURE AND POLE REQUIREMENTS WITH CIVIL ENGINEER AND ARCHITECT PRIOR ORDERING. SEE CIVIL DRAWING L-101 FOR MORE INFORMATION.

GENERAL NOTES

1. SITE LIGHTING FIXTURES AND POLES (INCLUDING MOUNTING HEIGHT AND LOCATION) HAVE BEEN SELECTED BY CIVIL ENGINEER. SEE CIVIL DRAWING L-101 FOR PHOTOMETRICS AND MORE INFORMATION ON SITE LIGHTING.

1 SITE PLAN – ELECTRICAL
SCALE: 1" = 30'-0"



NOTE:
ALLOW 30 DAYS FOR CONCRETE BASE TO CURE BEFORE INSTALLING POLE

2 POLE BASE DETAIL
NOT TO SCALE

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK
WILLIAM LEE TEETER
071959
LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

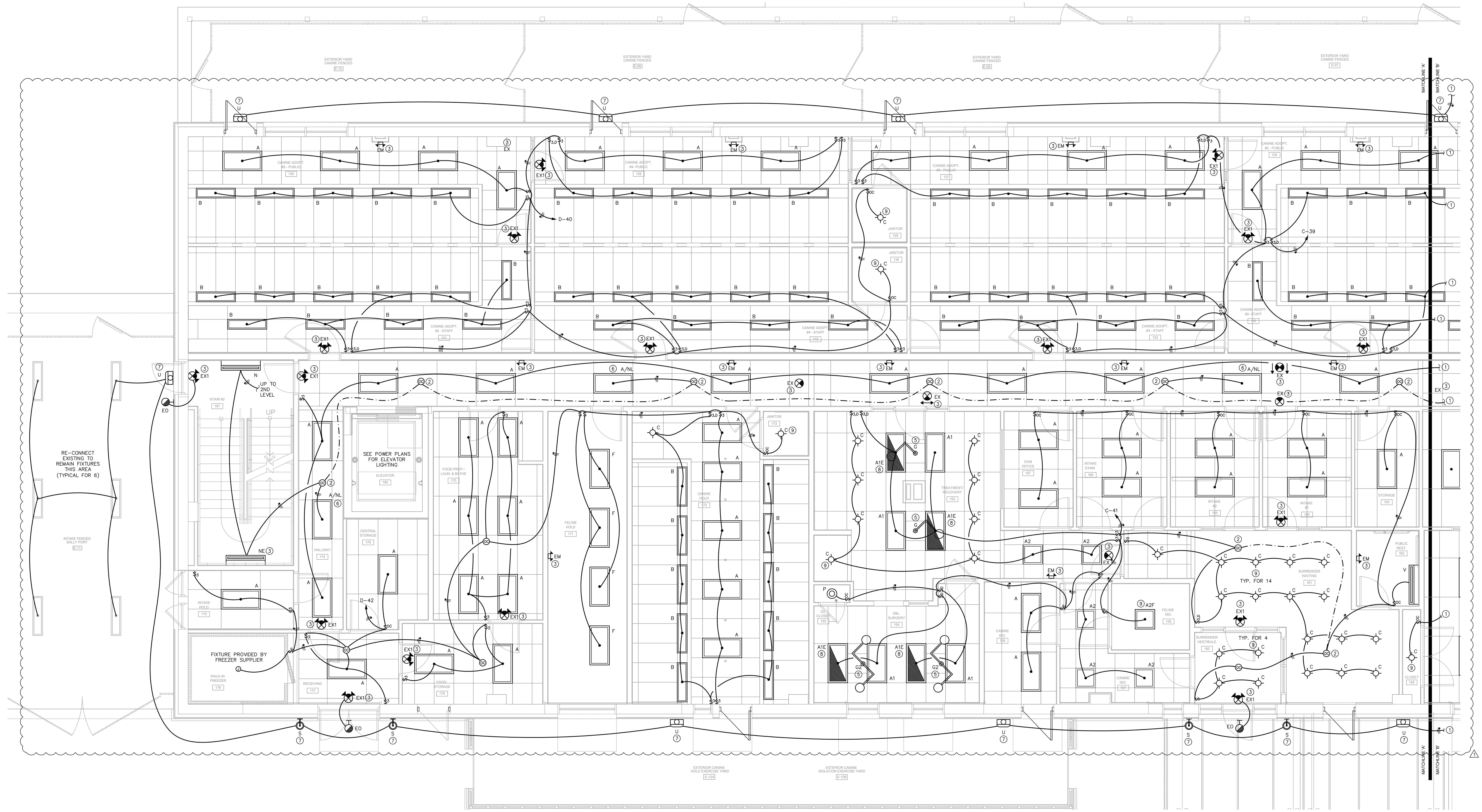
SITE PLAN - ELECTRICAL

REV.#	DATE	COMMENTS
REVISION: 1	09/09/2024	ADDENDUM 2
REVISION:		
REVISION:		
REVISION:		
REVISION:		

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E100



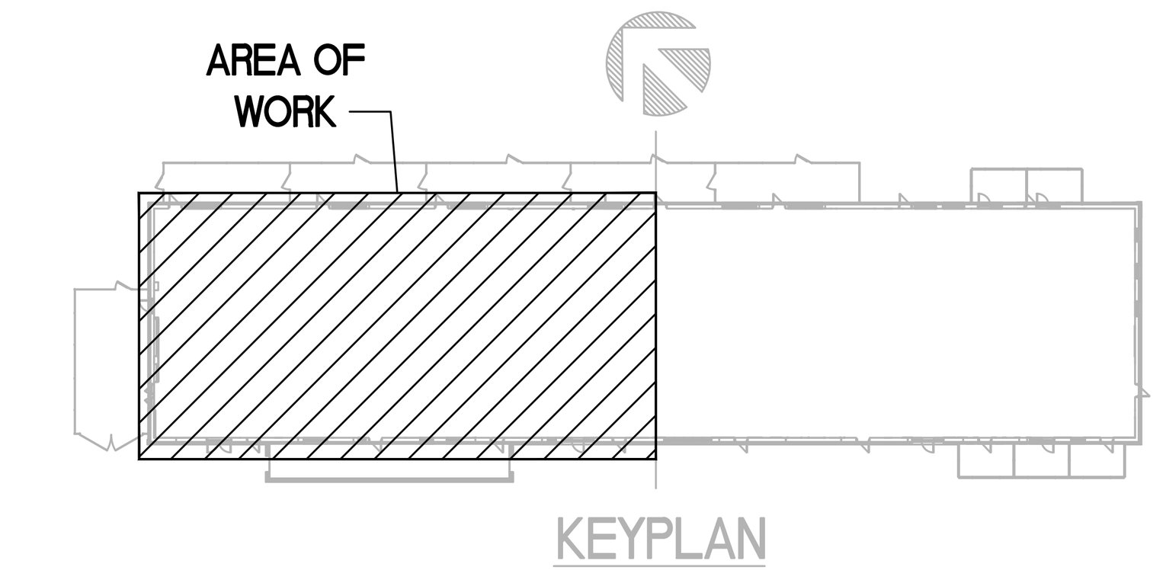
KEY NOTES

1. SEE DRAWING E102 FOR CONTINUATION.
2. CONNECT FIXTURES SUCH THAT ACTIVATION OF ANY OCCUPANCY SENSOR SHALL ENERGIZE ALL FIXTURES IN THIS SPACE. SEE DETAIL #1 SHEET E402.
3. NIGHT LIGHTS, EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES (DRIVERS) SHALL BE CONNECTED TO LOCAL AREA LIGHTING CIRCUIT UNSWITCHED, AHEAD OF AREA LIGHTING CONTROLS.
4. SEE UPPER LEVEL PLAN FOR LIGHTING IN THIS AREA.
5. OWNER SUPPLIED EXAM/SURGERY LIGHT. SEE SHEET E201 FOR POWER CONNECTION.
6. NIGHT LIGHT FIXTURE "ON" 24/7.
7. WIRE EXTERIOR LIGHTING FIXTURE VIA PHOTOCELL/LIGHTING CONTACTOR. VERIFY LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN. SEE LIGHTING CONTROL DETAIL #7 ON SHEET E402 FOR ADDITIONAL INFORMATION.
8. SEE SWITCHED EMERGENCY LIGHTING DETAIL #11 ON SHEET E402 FOR ADDITIONAL INFORMATION.
9. PROVIDE A FLANGE KIT FOR FIXTURES MOUNTED IN HARD CEILING (TYPICAL).

1 MAIN LEVEL FLOOR PLAN – LIGHTING – WEST

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

AREA OF WORK



KEYPLAN

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · 071959 · LICENSED PROFESSIONAL ENGINEER

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL FLOOR PLAN - LIGHTING - WEST

REV#	DATE	COMMENTS
1	09/09/2024	ADDENDUM 2
REVISION:		
REVISION:		
REVISION:		
REVISION:		

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

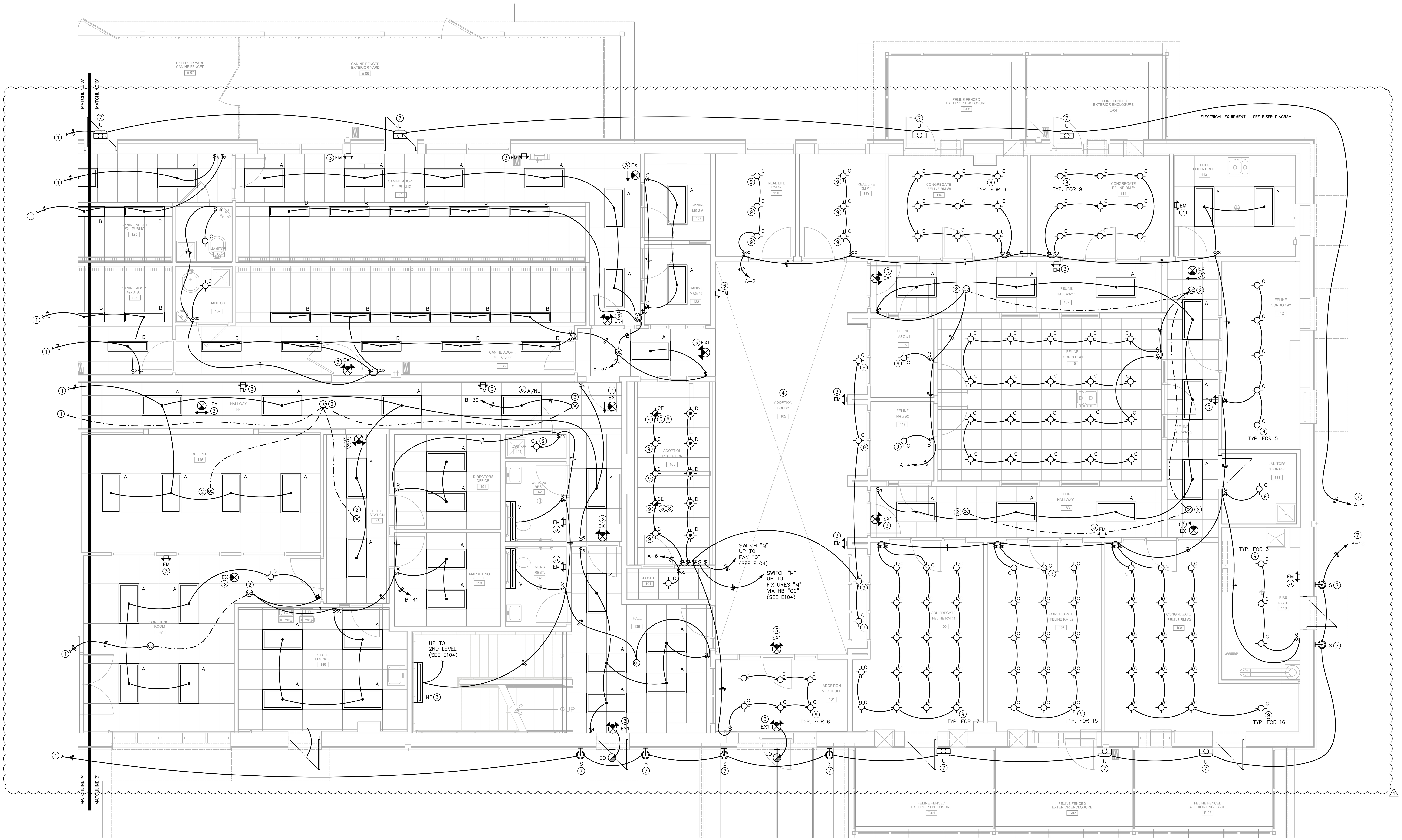
RGAS

PROJECT NO.:	23077
DRAWN:	ZLT
DATE:	07/08/2024

E101

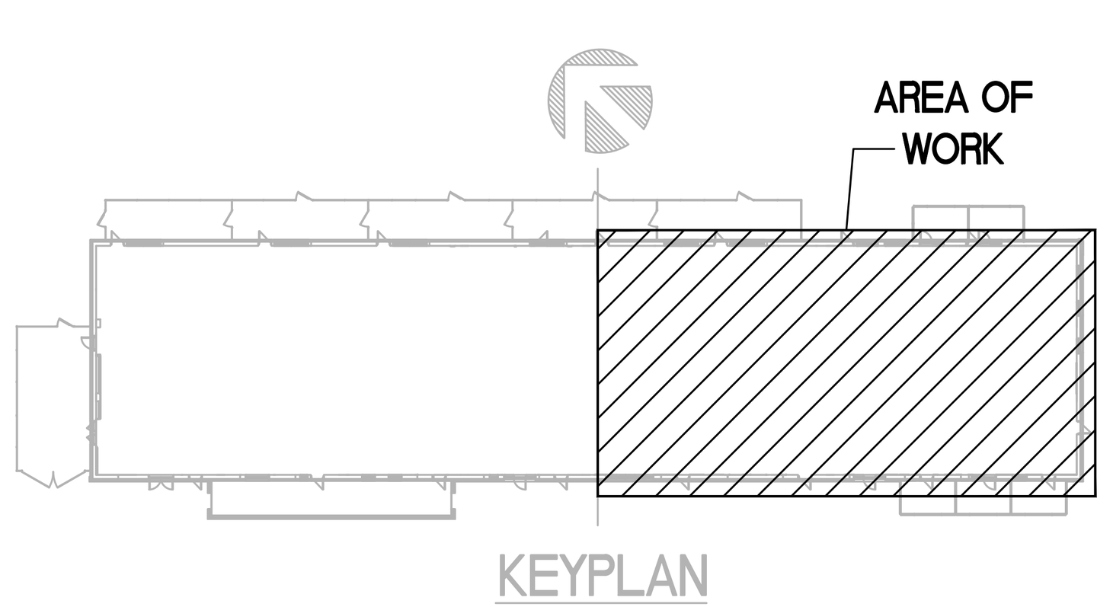
KEY NOTES

1. SEE DRAWING E101 FOR CONTINUATION.
2. CONNECT FIXTURES SUCH THAT ACTIVATION OF ANY OCCUPANCY SENSOR SHALL ENERGIZE ALL FIXTURES IN THIS SPACE. SEE DETAIL #1 SHEET E402.
3. NIGHT LIGHTS, EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES (DRIVERS) SHALL BE CONNECTED TO LOCAL AREA LIGHTING CIRCUIT UNSWITCHED, AHEAD OF AREA LIGHTING CONTROLS.
4. SEE UPPER LEVEL PLAN FOR LIGHTING IN THIS AREA.
5. OWNER SUPPLIED EXAM/SURGERY LIGHT. SEE SHEET E201 FOR POWER CONNECTION.
6. NIGHT LIGHT FIXTURE "ON" 24/7.
7. WIRE EXTERIOR LIGHTING FIXTURE VIA PHOTOCELL/LIGHTING CONTACTOR. VERIFY LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH–IN. SEE LIGHTING CONTROL DETAIL #7 ON SHEET E402 FOR ADDITIONAL INFORMATION.
8. SEE SWITCHED EMERGENCY LIGHTING DETAIL #11 ON SHEET E402 FOR ADDITIONAL INFORMATION.
9. PROVIDE A FLANGE KIT FOR FIXTURES MOUNTED IN HARD CEILING (TYPICAL).



1 MAIN LEVEL FLOOR PLAN – LIGHTING – EAST

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



WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · LICENSED PROFESSIONAL ENGINEER · 071959

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER

427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL FLOOR PLAN - LIGHTING - EAST

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077

DRAWN: ZLT

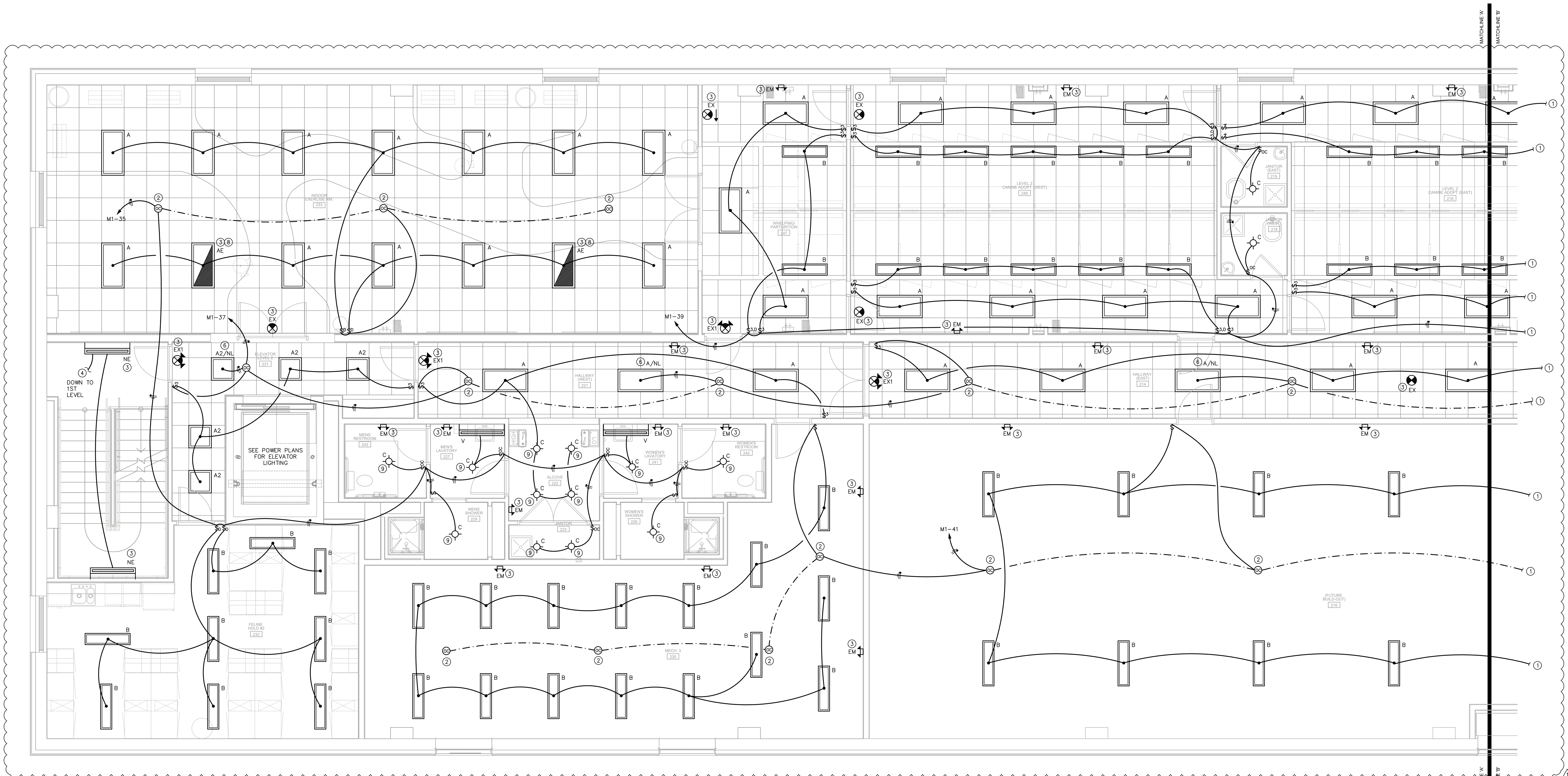
DATE: 07/08/2024

E102

6 OF 19

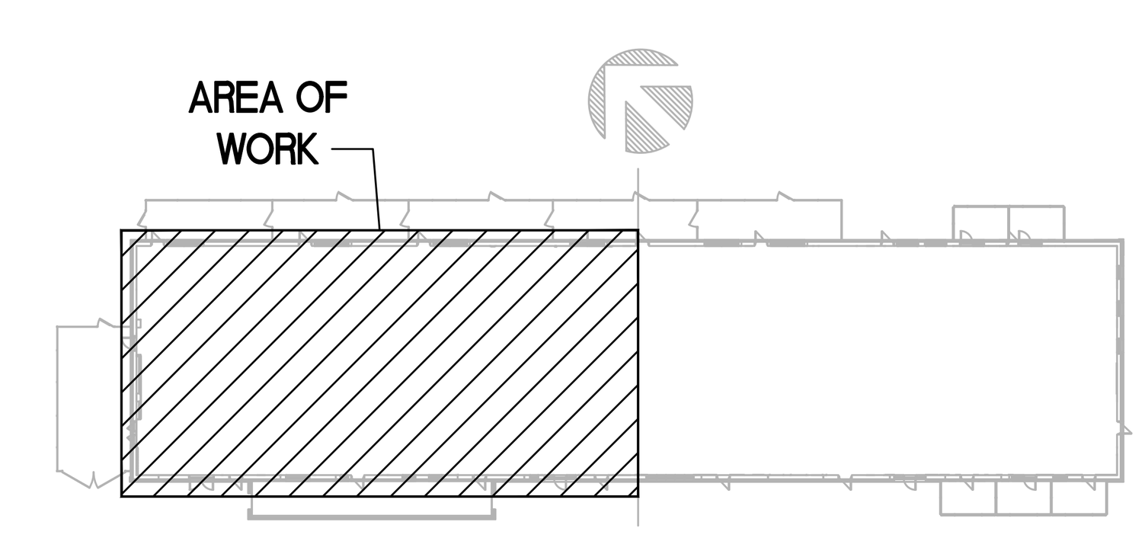
KEY NOTES

1. SEE DRAWING E104 FOR CONTINUATION.
2. CONNECT FIXTURES SUCH THAT ACTIVATION OF ANY OCCUPANCY SENSOR SHALL ENERGIZE ALL FIXTURES IN THIS SPACE. SEE DETAIL #1 SHEET E402.
3. NIGHT LIGHTS, EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES (DRIVERS) SHALL BE CONNECTED TO LOCAL AREA LIGHTING CIRCUIT UNSWITCHED, AHEAD OF AREA LIGHTING CONTROLS.
4. SEE LOWER LEVEL PLAN E101 FOR CONTINUATION.
5. NOT USED.
6. NIGHT LIGHT FIXTURE "ON" 24/7.
7. NOT USED.
8. SEE SWITCHED EMERGENCY LIGHTING DETAIL #11 ON SHEET E402 FOR ADDITIONAL INFORMATION.
9. PROVIDE A FLANGE KIT FOR FIXTURES MOUNTED IN HARD CEILING (TYPICAL).



1 UPPER LEVEL FLOOR PLAN – LIGHTING – WEST

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



KEYPLAN

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · 071959 · LICENSED PROFESSIONAL ENGINEER

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - LIGHTING - WEST

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

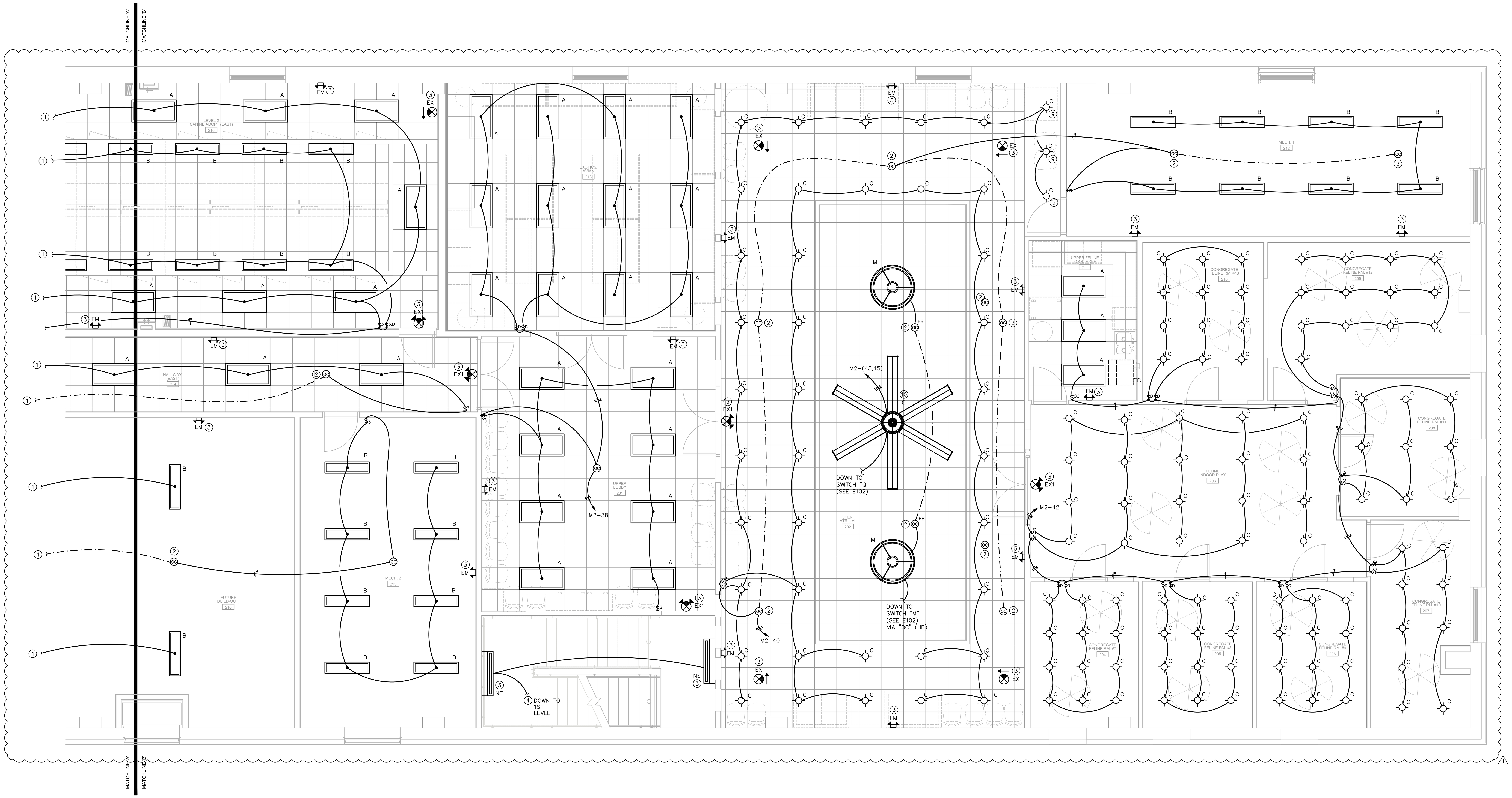
PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E103

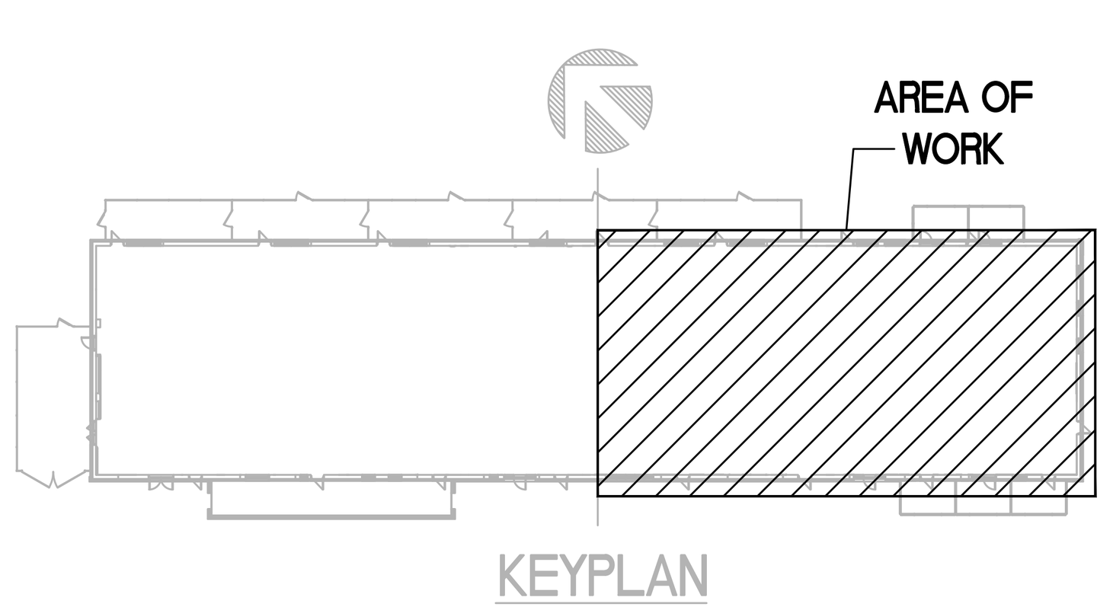
7 OF 19

KEY NOTES

1. SEE DRAWING E103 FOR CONTINUATION.
2. CONNECT FIXTURES SUCH THAT ACTIVATION OF ANY OCCUPANCY SENSOR SHALL ENERGIZE ALL FIXTURES IN THIS SPACE. SEE DETAIL #1 SHEET E402.
3. NIGHT LIGHTS, EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES (DRIVERS) SHALL BE CONNECTED TO LOCAL AREA LIGHTING CIRCUIT UNSWITCHED, AHEAD OF AREA LIGHTING CONTROLS.
4. SEE LOWER LEVEL PLAN E102 FOR CONTINUATION.
5. NOT USED.
6. NIGHT LIGHT FIXTURE "ON" 24/7.
7. NOT USED.
8. SEE SWITCHED EMERGENCY LIGHTING DETAIL #11 ON SHEET E402 FOR ADDITIONAL INFORMATION.
9. PROVIDE A FLANGE KIT FOR FIXTURES MOUNTED IN HARD CEILING (TYPICAL).
10. CEILING FAN (TYPE "Q") TO BE SELECTED BY ARCHITECT, PURCHASED AND INSTALLED BY CONTRACTOR. PROVIDE $1000 ALLOWANCE FOR THE FAN.



1 UPPER LEVEL FLOOR PLAN – LIGHTING – EAST
SCALE: 1/4" = 1'-0"



WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · 071959 · LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - LIGHTING - EAST

REV.#	DATE	COMMENTS
1	09/09/2024	ADDENDUM 2
REVISION:		
REVISION:		
REVISION:		
REVISION:		

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E104

ELEVATOR NOTES

1. LOCATE ELEVATOR LIGHT SWITCH ADJACENT TO LADDER 60" ABOVE LANDING. SWITCH SHALL BE EASILY ACCESIBLE FROM ENTRANCE TO ELEVATOR PIT.
2. ELEVATOR PIT LIGHT. 120V VAPOR PROOF LIGHT FIXTURE WALL MOUNTED 18" AFF. ELEVATOR LIGHTS SHALL SHARE CIRCUIT WITH ELEVATOR PIT RECEPTACLES. PER **NEC 620-23(A)**, LIGHTS SHALL BE UPSTREAM OF GFCI DEVICES SUCH THAT **GFCI RECEPTACLE DEVICES SHALL NOT INTERRUPT POWER TO LIGHT FIXTURES**.

   LIGHT FIXTURE MODEL #: CREE #C-VT-A-SMWL OR APPROVED EQUAL.
3. ELEVATOR SUMP PUMP. SEE DRAWING E003 FOR DETAILS.
4. SEE ELEVATOR DETAILS #1 AND #2 ON E401 FOR ADDITIONAL INFORMATION AND SPECIFICATIONS.
5. LOCATION OF ELEVATOR CONTROL BOX, ELEVATOR INDICATOR, AND FIREFIGHTER OVERRIDE.

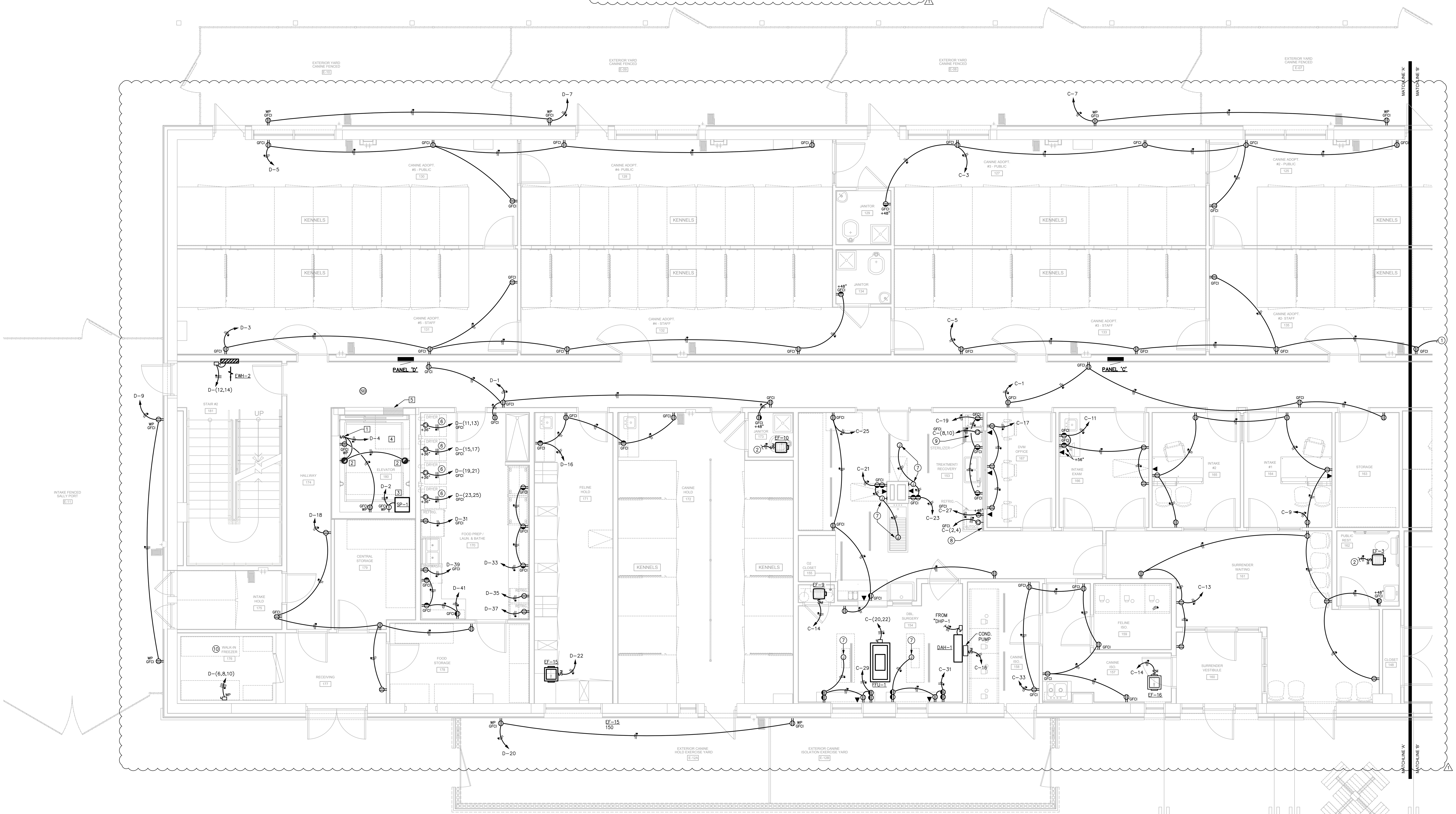
KEY NOTES

1. SEE DRAWING E202 FOR CONTINUATION.
2. POWER EXHAUST FAN VIA UN-SWITCHED LEG OF LOCAL 120V LIGHTING CIRCUIT. COORDINATE CONTROLS WITH MECHANICAL CONTRACTOR.
3. NOT USED.
4. NOT USED.
5. RECEPTACLE AND DATA PORT AT 72" HEIGHT FOR WALL MOUNTED MONITOR. VERIFY REQUIREMENTS AND MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.
6. CONNECTION FOR DRYER. 208V, 1-PH, 0.42 KW MOTOR WITH 5.4 KW HEATING ELEMENT, 26 AMPS. VERIFY ELECTRICAL CONNECTION TYPE REQUIRED WITH EQUIPMENT DELIVERED PRIOR TO ROUGH-IN.
7. POWER J-BOX IN CEILING FOR EXAM/SURGERY LIGHT, 115V, 1PH, 16W/54W. ELECTRICAL CONTRACTOR TO INSTALL OWNER SUPPLIED LIGHT.
8. CONNECTION FOR AUTOCLAVE 208V, 1-PH. VERIFY REQUIRED ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH-IN.
9. CONNECTION FOR STERILIZER 208V, 1-PH. VERIFY REQUIRED ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH-IN.
10. VERIFY WALK-IN COOLER AND FREEZER ELECTRICAL REQUIREMENT IN THE FIELD. AJUST ELECTRICAL CONNECTIONS PER MANUFACTURER'S DOCUMENTATION AS REQUIRED.

GENERAL NOTES

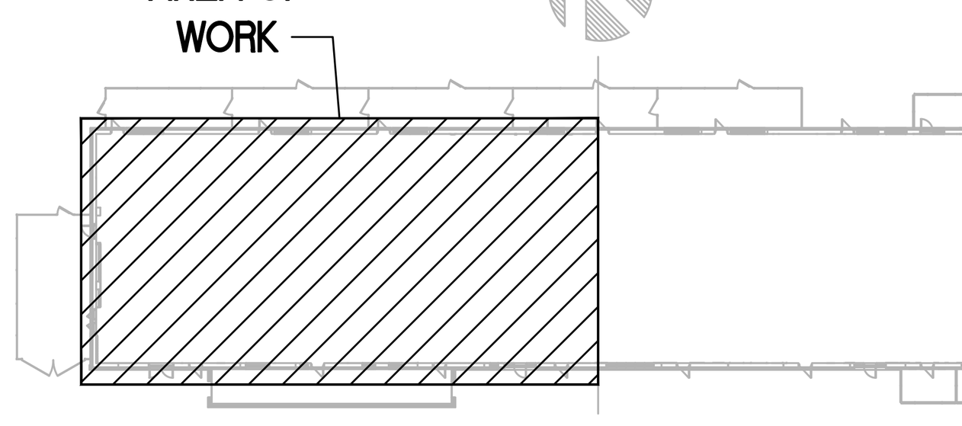
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 MAIN LEVEL FLOOR PLAN - POWER - WEST
SCALE: 1/4" = 1'-0"

AREA OF WORK



KEYPLAN

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK
WILLIAM LEE TEETER
071959
LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL
FLOOR PLAN - POWER - WEST

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.:	23077
DRAWN:	ZLT
DATE:	07/08/2024

E201

9 OF 19

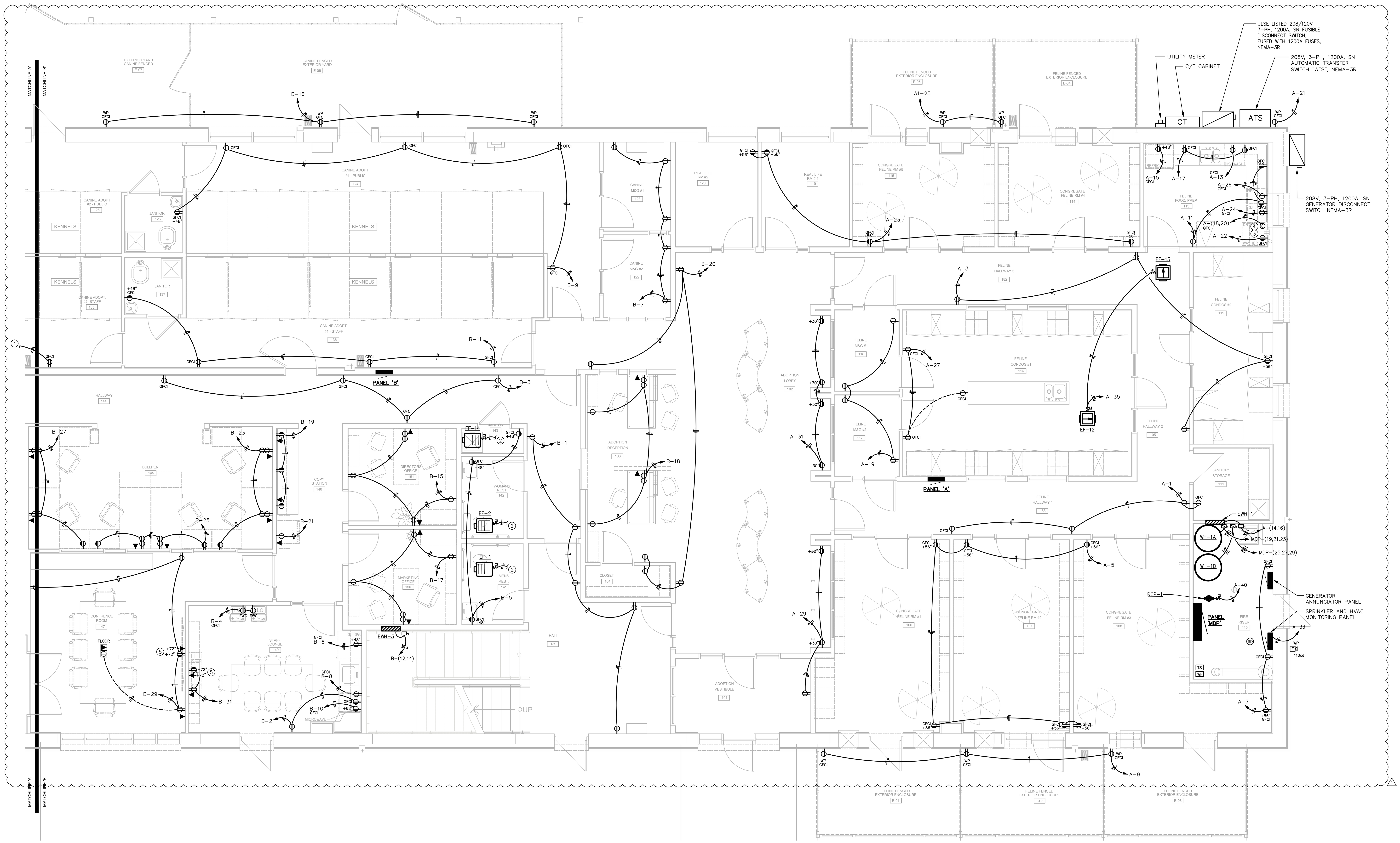
KEY NOTES

1. SEE DRAWING E201 FOR CONTINUATION.
2. POWER EXHAUST FAN VIA UN–SWITCHED LEG OF LOCAL 120V LIGHTING CIRCUIT. COORDINATE CONTROLS WITH MECHANICAL CONTRACTOR.
3. CONNECTION FOR STACKABLE WASHER 120V, 1–P, 15 AMPS. VERIFY ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH–IN. PROVIDE RESPECTIVE POWER CORD WITH PLUG AND CONNECT WASHER.
4. CONNECTION FOR STACKABLE ELECTRIC DRYER 208V, 1–P, 0.42 KW MOTOR WITH 5.4 KW HEATING ELEMENT, 26 AMPS. VERIFY ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH–IN. PROVIDE RESPECTIVE POWER CORD WITH PLUG AND CONNECT DRYER.
5. RECEPTACLE AND DATA PORT AT 72" HEIGHT FOR WALL MOUNTED MONITOR. VERIFY REQUIREMENTS AND MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH–IN.

GENERAL NOTES

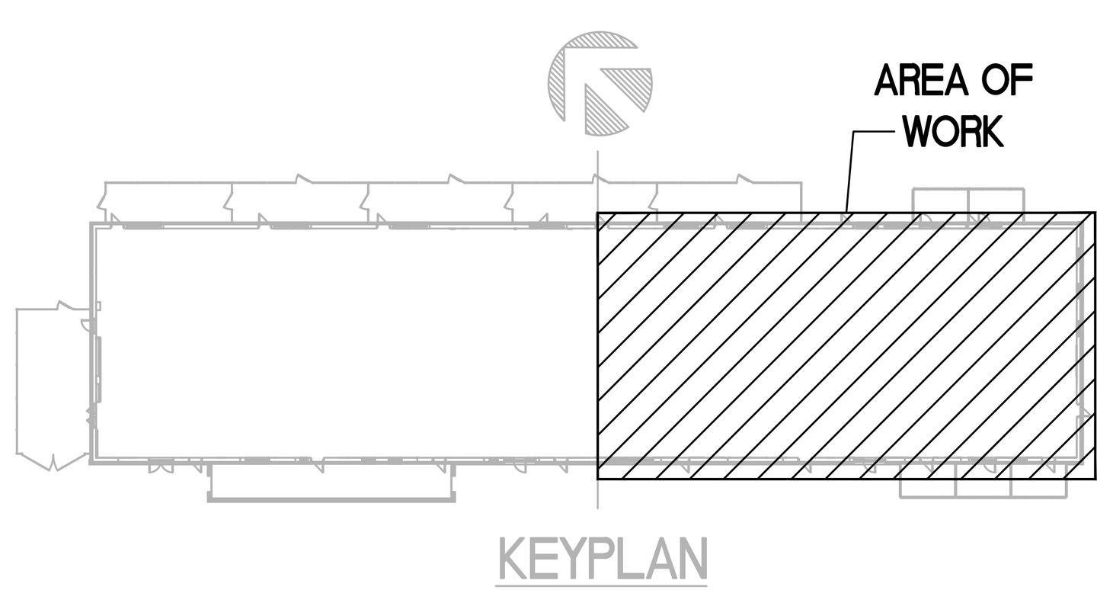
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 MAIN LEVEL FLOOR PLAN – POWER – EAST

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



WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL FLOOR PLAN - POWER - EAST

REV.#	DATE	COMMENTS
1	09/09/2024	ADDENDUM 2
REVISION:		
REVISION:		
REVISION:		
REVISION:		

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

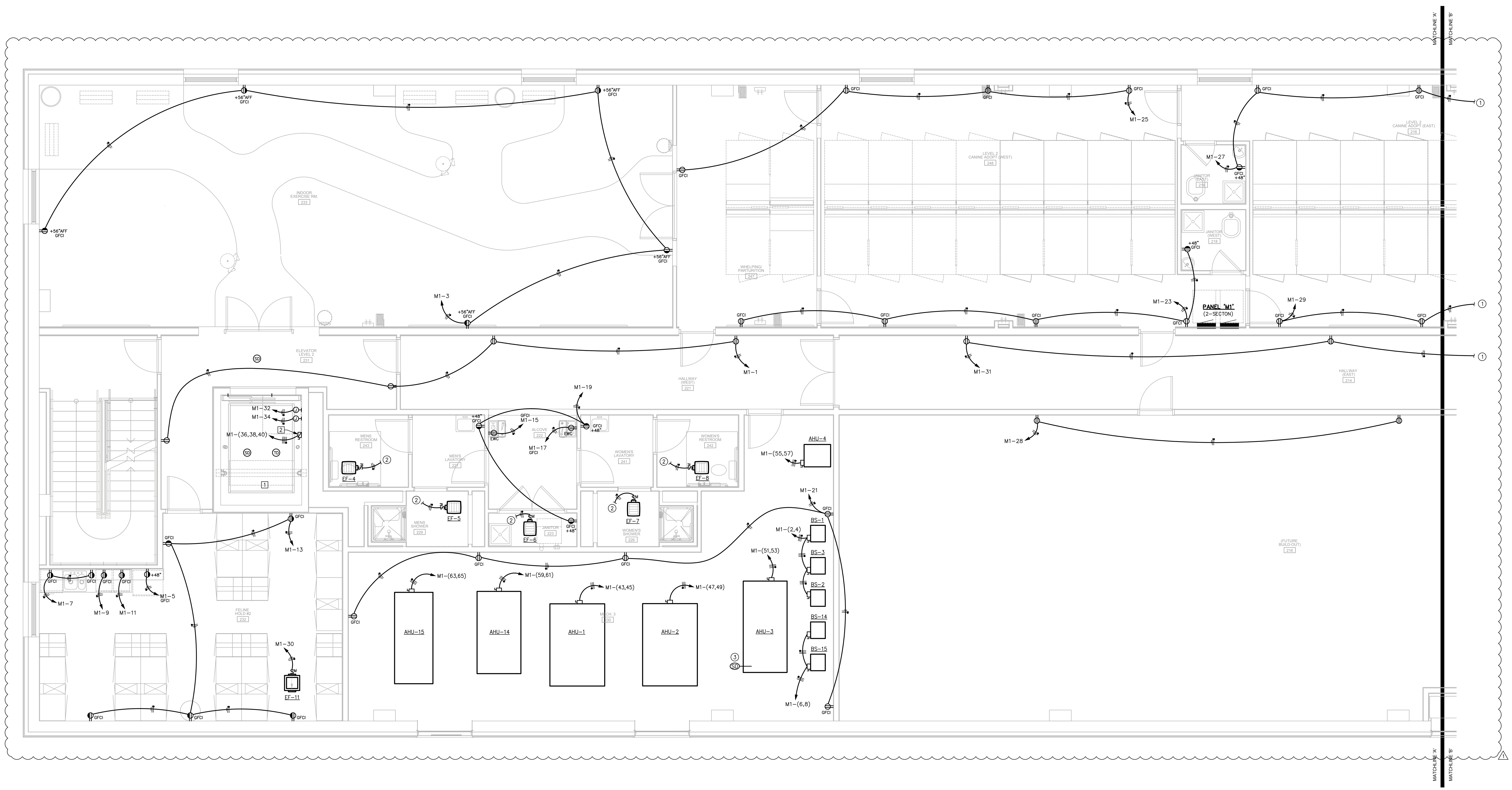
PROJECT NO.:	23077
DRAWN:	ZLT
DATE:	07/08/2024

E202

ELEVATOR NOTES
1 SEE ELEVATOR DETAILS #1 AND #2 ON E401 FOR ADDITIONAL INFORMATION AND SPECIFICATIONS.
2 ELEVATOR DISCONNECT BY ELEVATOR MANUFACTURER.

KEY NOTES
① SEE DRAWING E202 FOR CONTINUATION.
② POWER EXHAUST FAN VIA UN–SWITCHED LEG OF LOCAL 120V LIGHTING CIRCUIT. COORDINATE CONTROLS WITH MECHANICAL CONTRACTOR.
③ DUCT MOUNTED SMOKE DETECTOR(S) PROVIDED AND INSTALLED IN THE DUCT BY MECHANICAL CONTRACTOR. THE DUCT MOUNTED SMOKE DETECTOR(S) SHALL BE WIRED BY THE ELECTRICAL CONTRACTOR TO HVAC AND SPRINKLER MONITORING PANEL (PANEL PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR IN FIRE RISER ROOM 110). SEE E401 FOR RISER AMD NOTES. △1

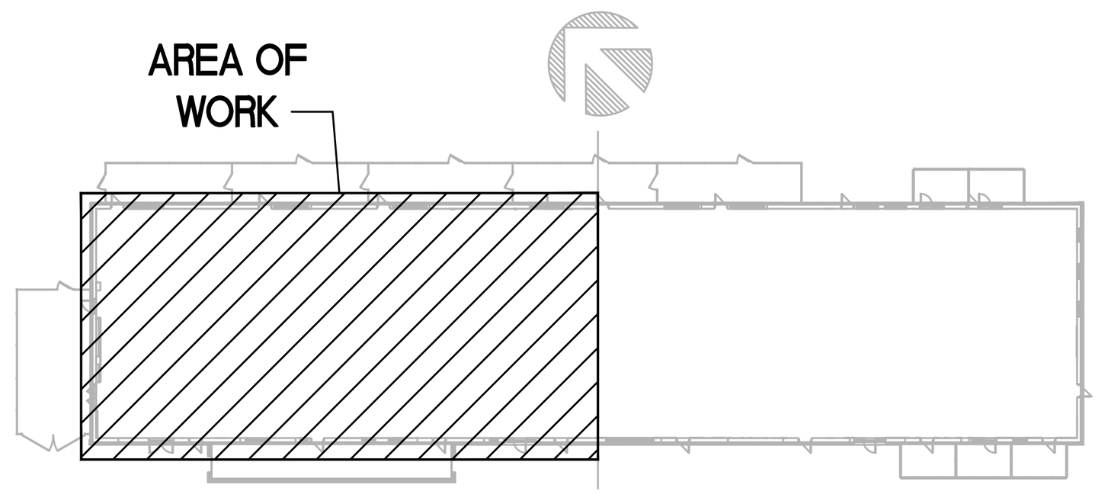
GENERAL NOTES
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.
B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 UPPER LEVEL FLOOR PLAN – POWER – WEST

SCALE: 1/4" = 1'–0"

AREA OF WORK



KEYPLAN

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · 071959 · LICENSED PROFESSIONAL ENGINEER

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - POWER - WEST

	REV.#	DATE	COMMENTS
REVISION:	△1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E203

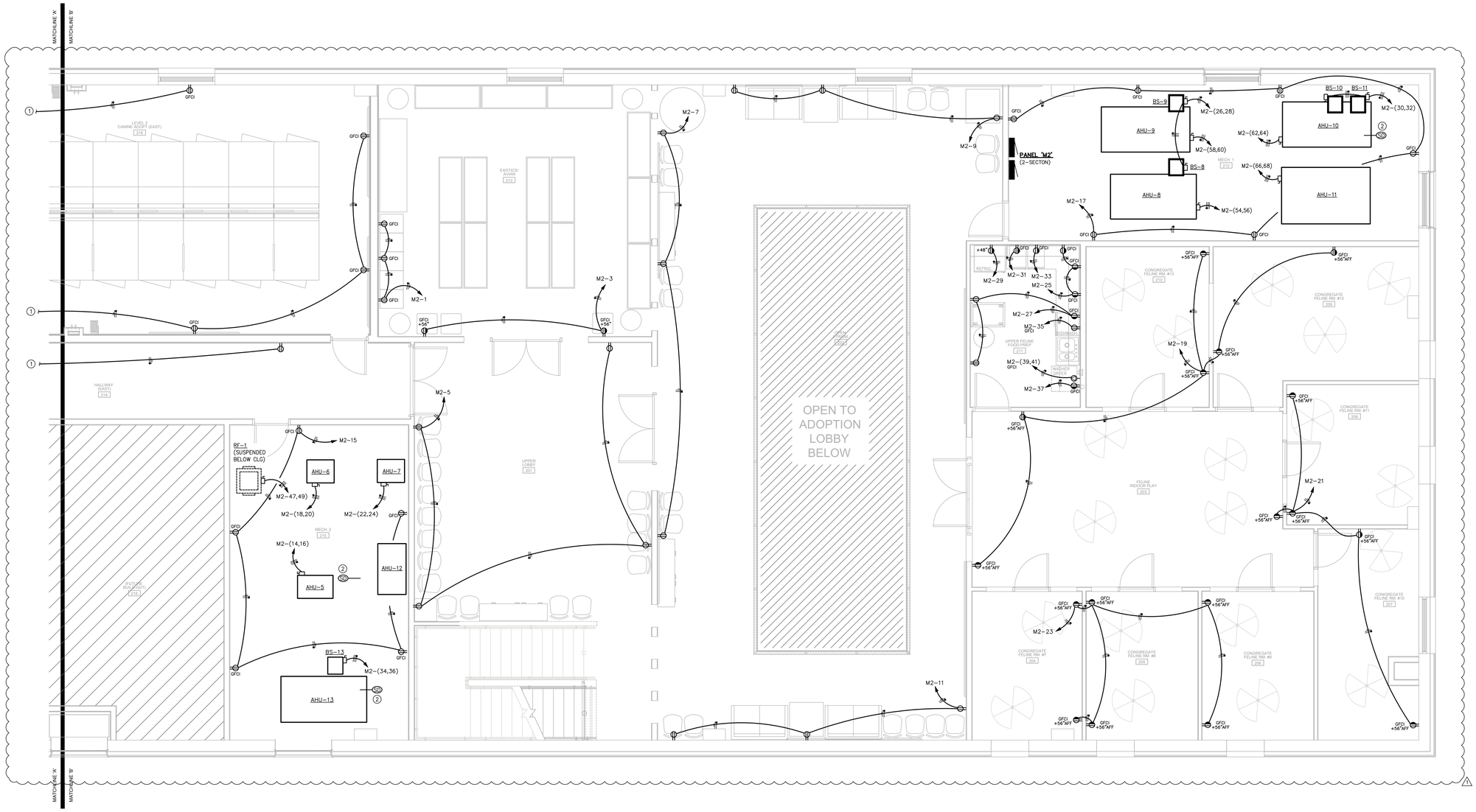
KEY NOTES

1. SEE DRAWING E203 FOR CONTINUATION.
2. DUCT MOUNTED SMOKE DETECTOR(S) PROVIDED AND INSTALLED IN THE DUCT BY MECHANICAL CONTRACTOR. THE DUCT MOUNTED SMOKE DETECTOR(S) SHALL BE WIRED BY THE ELECTRICAL CONTRACTOR TO HVAC AND SPRINKLER MONITORING PANEL (PANEL PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR IN FIRE RISER ROOM 110). SEE E401 FOR RISER AMD NOTES.

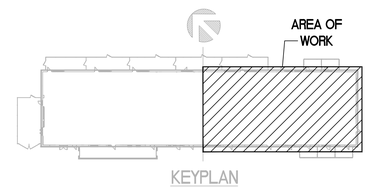
GENERAL NOTES

A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 UPPER LEVEL
FLOOR PLAN – POWER – EAST
SCALE: 1/4" = 1'-0"



WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK
WILLIAM LEE TEETER
071959
LICENSED PROFESSIONAL ENGINEER

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL
FLOOR PLAN - POWER - EAST

REV.#	DATE	COMMENTS
1	09/09/2024	ADDENDUM 2

REVISION: REVISION: REVISION: REVISION:

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E204

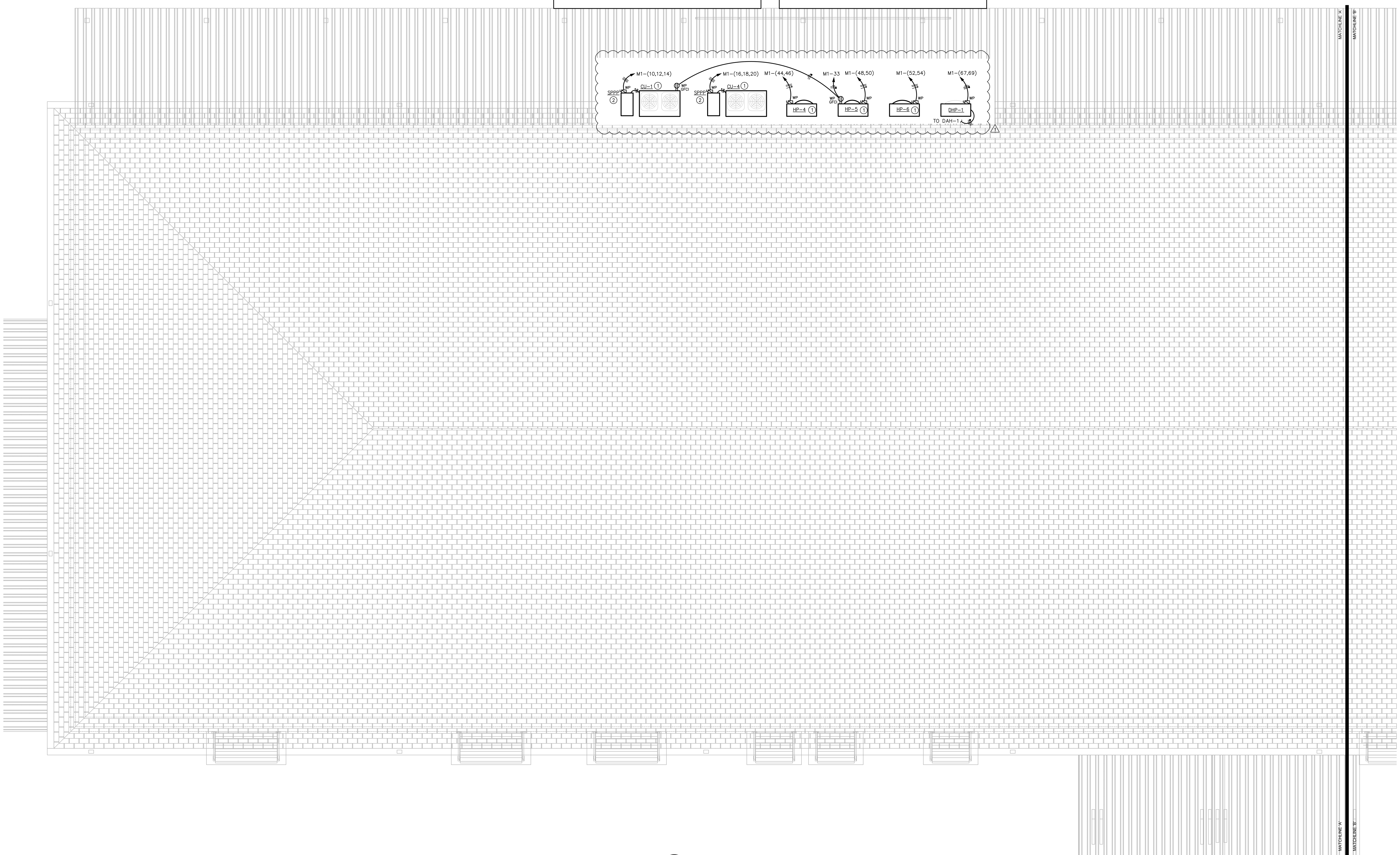
KEY NOTES

1. CONDENSING/HEAT-PUMP OUTDOOR UNIT INSTALLED ATOP OF THE ROOF OVER THE CANINE EXERCISE YARDS BY MECHANICAL.
2. SINGLE POINT POWER PANEL EQUAL "SPPP" PROVIDED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR TO HAVE ALL ELECTRICAL CONNECTIONS LANDED AT PANEL AND THEN DISTRIBUTED TO ASSOCIATED INDOOR UNIT(S) AS REQUIRED.

GENERAL NOTES

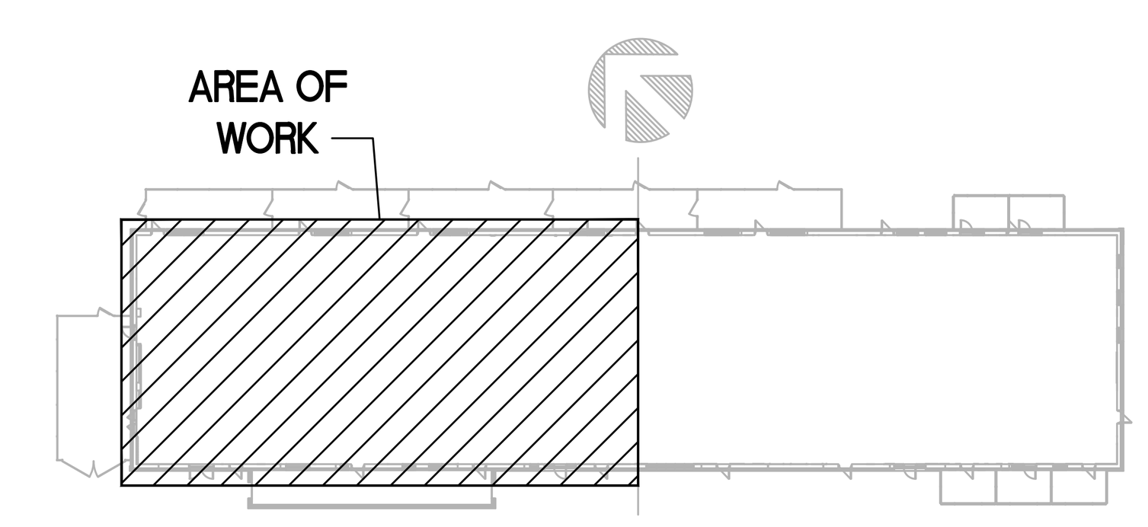
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 ROOF PLAN - POWER - WEST

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



KEYPLAN

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · 071959 · LICENSED PROFESSIONAL ENGINEER

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER

427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ROOF PLAN - POWER - WEST

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077

DRAWN: ZLT

DATE: 07/08/2024

E205

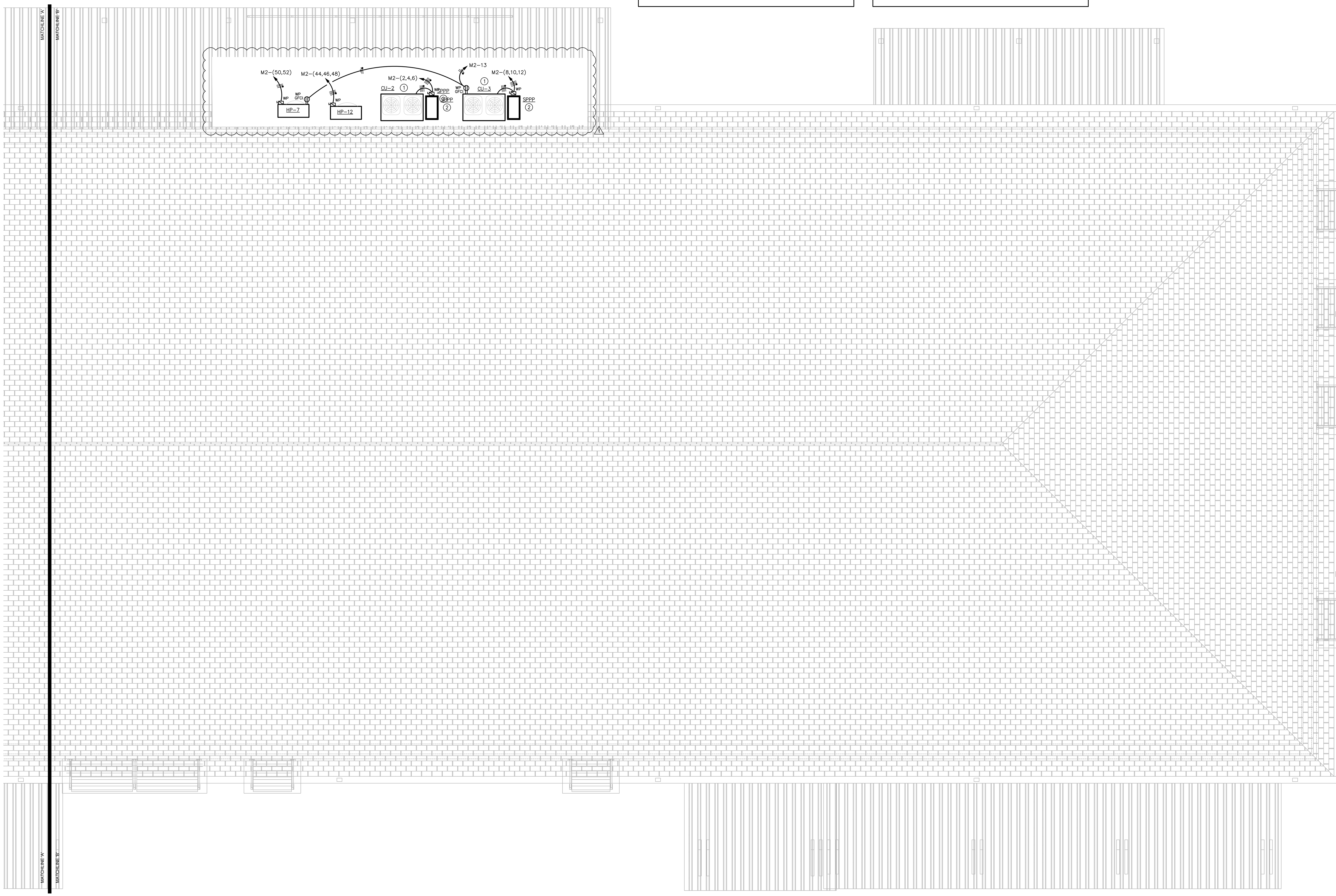
KEY NOTES

1. CONDENSING/HEAT-PUMP OUTDOOR UNIT INSTALLED ATOP OF THE ROOF OVER THE CANINE EXERCISE YARDS BY MECHANICAL.
2. SINGLE POINT POWER PANEL EQUAL "SPPP" PROVIDED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR TO HAVE ALL ELECTRICAL CONNECTIONS LANDED AT PANEL AND THEN DISTRIBUTED TO ASSOCIATED INDOOR UNIT(S) AS REQUIRED.

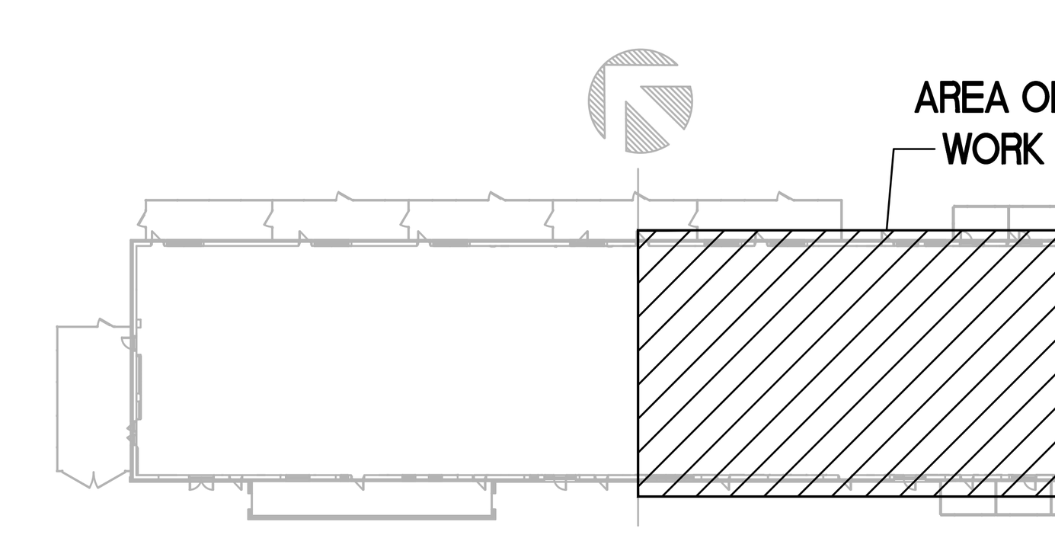
GENERAL NOTES

A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 ROOF PLAN – POWER – EAST
SCALE: 1/4" = 1'-0"



KEYPLAN

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK
WILLIAM LEE TEETER
071959
LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ROOF PLAN - POWER - EAST

	REV.#	DATE	COMMENTS
REVISION:	2	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E206

GROUNDING DETAILS MOVED TO SHEET E402

NEW PANEL MDP

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 1200A MLO
INTERRUPT RATING: 65K AIC
MOUNTING: SURFACE

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
						PHASE LOAD SUMMARY											
.	PANEL 'A'	225	3	SR	1	11.7	8.9					2	SR	3	225	PANEL 'B'	
					3			9.8	8.2			4					
					5					9.2	8.3	6					
.	PANEL 'C'	225	3	SR	7	8.2	19.2					8	SR	3	225	PANEL 'D'	
					9			9.4	17.2			10					
					11					8.5	19.9	12					
.	PANEL 'M1'	400	3	SR	13	37.7	40.5					14	SR	3	400	PANEL 'M2'	
					15			39.2	42.5			16					
					17					38.1	43.8	18					
	. WH-1A	70	3	4	19	0.0	0.0					20		3	225	SPARE	
					21			6.0	0.0			22					
				.	23					6.0	0.0	24					
	WH-1B	70	3	. 4 .	25	6.0	0.0					26	4	3	60	. SPD .	
					27			6.0	0.0			28					
					29					6.0	0.0	30					
TOTAL KVA PER PHASE						138.2		138.4		139.9							
DIVERSIFIED KVA PER PHASE						130.4		132.2		133.4							
DIVERSIFIED TOTAL KVA						396.0 KVA											
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)						1110.9 AMPS											

PANEL NOTES:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.
3. "SR" = SEE POWER RISER DIAGRAM

PANEL KEY NOTES:

NEC 220 LOAD JUSTIFICATION:

LIGHTING	125%	23.5
HEATING	100%	20.0
AIR HANDLERS	100%	21.9
AIR CONDITIONING	100%	48.6
RECEPTACLES	1st 10kVA = 100% +50% OF REMAINING	35.1
WATER HEATER	100%	36.0
SERVICE EQUIPMENT	MINUS NEC DEMAND 100%	0.0
PROCESS	100%	0.0
MISCELLANEOUS	100%	210.9

AVAILABLE SHORT CIRCUIT FAULT CURRENT & COORDINATION STUDY

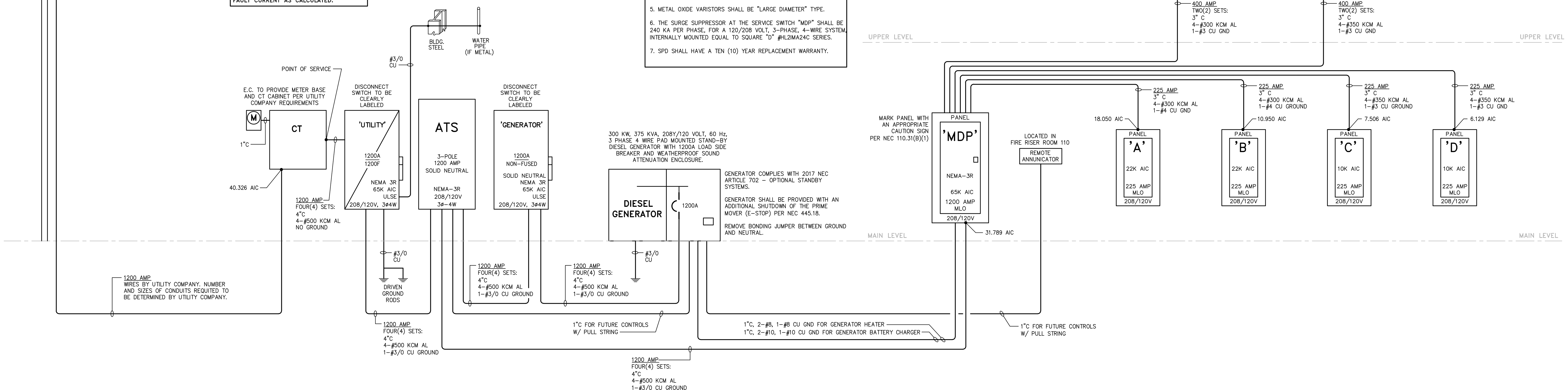
BASED ON A 300 KVA, 1.7%Z POLE BANK UTILITY TRANSFORMER (3x100 KVA), THE CALCULATED MAXIMUM FAULT CURRENT AVAILABLE AT THE TRANSFORMER IS 55.600 AMPS AND AT THE POINT OF SERVICE (70' AWAY) IS 40,326 AMPS OR LESS.
ALL EQUIPMENT SHALL BE COORDINATED AND RATED NO LESS THAN THE AVAILABLE FAULT CURRENT AS CALCULATED.

POWER RISER NOTES

1. ALL OVERCURRENT PROTECTION DEVICES SHALL HAVE THE SAME FAULT CURRENT RATING AS THAT OF THE PANEL OR SWITCHGEAR THEY ARE LOCATED WITHIN.
2. AVAILABLE FAULT CURRENT SHALL BE FIELD MARKED ON ALL SERVICE EQUIPMENT IN ACCORDANCE WITH NEC 110.24.
3. ALUMINUM FEEDER CONDUCTORS SHALL BE TERMINATED WITH BARREL TYPE COMPRESSION CONNECTORS WITH A MINIMUM OF TWO COMPRESSION INDENTS PER WIRE AND LISTED FOR USE WITH COPPER/ALUMINUM CONDUCTORS. EQUAL TO BURNDY COMPRESSION PIN ADAPTER AYPO.

SPD SPECIFICATION

1. PROVIDE TRANSIENT VOLTAGE SURGE SUPPRESSION (SPD) AT THE SERVICE PANEL "MDP".
2. SPD UNIT SHALL BE EQUAL TO THE SQUARE "D" "SURGELOGIC" (EMA) SERIES.
3. ACTIVE RESPONSE NETWORK SHALL PROVIDE EMI AND RFI NOISE FILTERING.
4. UNIT SHALL HAVE FORM-C DRY CONTACTS FOR REMOTE STATUS MONITORING.
5. METAL OXIDE VARISTORS SHALL BE "LARGE DIAMETER" TYPE.
6. THE SURGE SUPPRESSOR AT THE SERVICE SWITCH "MDP" SHALL BE 240 KA PER PHASE, FOR A 120/208 VOLT, 3-PHASE, 4-WIRE SYSTEM, INTERNALLY MOUNTED EQUAL TO SQUARE "D" #HL2IMA24C SERIES.
7. SPD SHALL HAVE A TEN (10) YEAR REPLACEMENT WARRANTY.



1 POWER RISER DIAGRAM
DIAGRAMMATIC

PANEL SCHEDULE KEY

'MDP'

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · 071959 · LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

POWER RISER DIAGRAM & PPANEL SCHEDULES

REV.#	DATE	COMMENTS
1	09/09/2024	ADDENDUM 2
REVISION:		
REVISION:		
REVISION:		

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E301

15 OF 19

NEW PANEL M1 (LEFT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 400A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS
TWO-SECTION PANELBOARD WITH 42 POLES PER SECTION. PROVIDE SUB-FEED LUGS AND CABLE CONNECTION TO SECOND SECTION.

						PHASE LOAD SUMMARY											
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – HALLWAY	20	1	12	1	0.7	0.2					2	12	2	15	BS-1,2,3	.
	REC – EXERCISE RM	20	1	12	3			0.9	0.2			4	.				.
A	REFRIGERATOR – FELINE	20	1	12	5					0.8	0.2	6	12	2	15	BS-14,15	.
	REC – FELINE	20	1	12	7	0.4	0.2					8	.				.
A	COUNTER REFRIG. FELINE	20	1	12	9			0.8	11.0			10	1	3	125	CU-1	.
A	COUNTER REFRIG. FELINE	20	1	12	11					0.8	11.0	12	.				.
	REC – FELINE	20	1	12	13	0.9	11.0					14	.				.
A	EWC – ALCOVE	20	1	12	15			1.0	5.2			16	4	3	70	CU-4	.
A	EWC – ALCOVE	20	1	12	17					1.0	5.2	18	.	.	.	.	.
	REC – JAN./RESTROOMS	20	1	12	19	0.5	5.2					20	.				.
	REC – MECH RM	20	1	12	21			0.9	0.0			22		1	20	SPARE	.
	REC – CANINE ADOPT WEST	20	1	12	23					0.9	0.0	24		1	20	SPARE	.
	REC – CANINE ADOPT WEST	20	1	12	25	0.7	0.0					26		1	20	SPARE	.
	REC – CANINE ADOPT EAST	20	1	12	27			0.7	0.4			28	12	1	20	REC FUT BUILD-OUT	.
	REC – CANINE ADOPT EAST	20	1	12	29					0.9	0.1	30	12	1	20	FAN EF-11	.
	REC – HALLWAY	20	1	12	31	0.5	1.0					32	12	1	20	ELEV CONTROLS	.
	REC – ROOF MECH	20	1	12	33			0.4	0.3			34	12	1	20	ELEV FAN & LIGHTS	.
	LTG – EXERCISE RESTROOMS	20	1	12	35					1.0	5.1	36	4	3	70	ELEVATOR	B
	LTG – CORRIDOR	20	1	12	37	0.6	5.1					38	.	.	.	.	.
	LTG KENNELS	20	1	12	39			1.5	5.1			40	.				
	LTG FUT BUILD-OUT	20	1	12	41					1.1	0.0	42	.	1	.	SHUNT TRIP SPACE	

	PHASE A	PHASE B	PHASE C
TOTAL KVA PER PHASE	27.1	28.4	28.1

NEC 220 LOAD JUSTIFICATION:
SEE RIGHT SECTION FOR LOAD JUSTIFICATION.

REQUIREMENTS:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE SHUNT TRIP BREAKER.

NEW PANEL M1 (RIGHT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 400A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS
TWO-SECTION PANELBOARD WITH 42 POLES PER SECTION. PROVIDE SUB-FEED LUGS AND CABLE CONNECTION TO SECOND SECTION.

						PHASE LOAD SUMMARY											
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	AHU-1	15	2	12	43	0.9	1.3					44	12	2	15	HP-4	
	.	.	.	.	45			0.9	1.3			46	.				
	AHU-2	15	2	12	47					0.9	3.1	48	8	2	35	HP-5	
	.	.	.	.	49	0.9	3.1					50	.				
	AHU-3	15	2	12	51			1.1	3.1			52	8	2	35	HP-6	
	.	.	.	.	53					1.1	3.1	54	.				
	AHU-4	30	2	10	55	2.4	0.0					56		1	20	SPARE	.
	.	.	.	.	57			2.4	0.0			58		1	20	SPARE	
	AHU-14	15	2	12	59					0.9	0.0	60		1	20	SPARE	.
	.	.	.	.	61	0.9	0.0					62		1	20	SPARE	
	AHU-15	15	2	12	63			0.9	0.0			64		1	20	SPARE	.
	.	.	.	.	65					0.9	0.0	66		1	20	SPARE	
	DHP-1/DAH-1	15	2	12	67	1.0	0.0					68		1	20	SPARE	
	.	.	.		69			1.0	0.0			70		1	20	SPARE	
	SPARE	20	1		71					0.0	0.0	72		1	20	SPARE	
	SPACE WITH BUSSING				73	0.0	0.0					74				SPACE WITH BUSSING	
	SPACE WITH BUSSING				75			0.0	0.0			76				SPACE WITH BUSSING	
	SPACE WITH BUSSING				77					0.0	0.0	78				SPACE WITH BUSSING	.
.	SPACE WITH BUSSING				79	0.0	0.0					80				SPACE WITH BUSSING	.
.	SPACE WITH BUSSING				81			0.0	0.0			82				SPACE WITH BUSSING	.
.	SPACE WITH BUSSING				83					0.0	0.0	84				SPACE WITH BUSSING	.

	PHASE A	PHASE B	PHASE C
TOTAL KVA PER PHASE	37.7	39.2	38.1
DIVERSIFIED KVA PER PHASE	37.8	39.6	38.6
DIVERSIFIED TOTAL KVA	116.0 KVA		
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)	329.6 AMPS		

NEC 220 LOAD JUSTIFICATION:

LIGHTING	125%	5.4
HEATING	100%	15.0
AIR HANDLERS	100%	17.5
AIR CONDITIONING	100%	48.6
RECEPTACLES	1st 10kVA = 100% +50% OF REMAINING	8.8
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND 100%	0.0
PROCESS	100%	0.0
MISCELLANEOUS	100%	20.7

REQUIREMENTS:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE SHUNT TRIP BREAKER.

NEW PANEL A

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

						PHASE LOAD SUMMARY											
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – FELINE HALLWAY	20	1	12	1	0.7	0.9					2	12	1	20	LTG CONGREGATE RM	
	REC – FELINE HALLWAY	20	1	12	3			0.7	0.6			4	12	1	20	LTG FEL CONDOS	
	REC – FELINE ROOMS	20	1	12	5					1.1	0.7	6	12	1	20	LTG ADOPT RECEPT	
	REC – FIRE RISER	20	1	12	7	0.5	0.4					8	10	1	20	LTG EXTERIOR	
	REC – FELINE EXTERIOR	20	1	12	9			0.5	0.7			10	10	1	20	LTG EXTERIOR	
	REC – FELINE FOOD PREP	20	1	12	11					0.5	0.4	12	10	1	20	LTG EXTER SITE	
A	DISHWASHER – FELINE	20	1	12	13	1.0	2.5					14	8	2	40	EWH-1	
A	REFRIGERATOR – FELINE	20	1	12	15			0.8	2.5			16	.				
	REC – FELINE FOOD PREP	20	1	12	17					0.4	2.7	18	10	2	30	DRYER	A
	REC – FELINE M&G	20	1	12	19	0.7	2.7					20	.				
	REC – EXTERIOR	20	1	12	21			0.2	1.6			22	12	1	20	WASHING MACHINE	.
	REC – FELINE CONGR.	20	1	12	23					0.7	0.8	24	12	1	20	REFRIG. – FELINE PREP	A
	REC – FELINE CONGR. EXTER.	20	1	12	25	0.4	0.8					26	12	1	20	REFRIG. – FELINE PREP	A
	REC – FELINE CONDOS	20	1	12	27			0.5	1.3			28	10	2	30	GENERATOR HEATER	
	REC – ADOPTION LOBBY	20	1	12	29					0.5	1.3	30	.				
	REC – ADOPTION LOBBY	20	1	12	31	0.7	0.4					32	10	1	20	GEN BATTERY CHARGER	
B	SPR & HVAC MONIT PNL	20	1	12	33			0.2	0.1			34	12	1	20	GEN CONTROLS	
	FANS EF-12 EF-13	20	1	12	35					0.1	0.0	36	.	1	20	SPARE	
	SPARE	20	1	.	37	0.0	0.0					38	.	1	20	SPARE	
	SPARE	20	1	.	39			0.0	0.1			40	12	1	20	RECIRC PUMP RCP-1	
	SPARE	20	1	.	41					0.0	0.0	42	.	1	20	SPARE	

	PHASE A	PHASE B	PHASE C
TOTAL KVA PER PHASE	11.7	9.8	9.2
DIVERSIFIED KVA PER PHASE	12.0	10.1	9.5
DIVERSIFIED TOTAL KVA	31.6 KVA		
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)	100.0 AMPS		

NEC 220 LOAD JUSTIFICATION:

LIGHTING	125%	4.5
HEATING	100%	5.0
AIR HANDLERS	100%	0.1
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100% +50% OF REMAINING	8.3
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND 100%	0.0
PROCESS	100%	0.0
MISCELLANEOUS	100%	13.7

PANEL NOTES + REQUIREMENTS:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON BREAKER. MARL BREAKER RED COLOR.

NEW PANEL M2 (LEFT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 400A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS
TWO-SECTION PANELBOARD WITH 42 POLES PER SECTION. PROVIDE SUB-FEED LUGS AND CABLE CONNECTION TO SECOND SECTION.

						PHASE LOAD SUMMARY											
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – EXOTICS	20	1	12	1	0.5	5.6					2	3	3	80	CU-2	
	REC – EXOTICS	20	1	12	3			0.4	5.6			4	.	.	.	.	
	REC – LOBBY	20	1	12	5					0.7	5.6	6	.				
	REC – ATRIUM	20	1	12	7	0.5	8.5					8	1	3	110	CU-3	
	REC – ATRIUM	20	1	12	9			0.5	8.5			10	.	.	.	.	
	REC – ATRIUM	20	1	12	11					0.5	8.5	12	.				
	REC – ROOF MECH	20	1	12	13	0.4	4.0					14	6	2	45	AHU-5	
	REC – MECH RM	20	1	12	15			0.9	4.0			16	.				
	REC – MECH RM	20	1	12	17					1.1	5.0	18	6	2	50	AHU-6	
	REC – FELINE	20	1	12	19	1.1	5.0					20	.				
	REC – FELINE	20	1	12	21			0.9	7.5			22	3	2	80	AHU-7	
	REC – FELINE	20	1	12	23					1.1	7.5	24	.				
	REC – FELINE FOOD SINK	20	1	12	25	0.5	0.2					26	12	2	15	BS-8,9	
	REC – FELINE FOOD	20	1	12	27			0.5	0.2			28	.				
.	REFRIGERATOR – FELINE	20	1	12	29					0.8	0.2	30	12	2	15	BS-10,11	
.	COUNTER REFRIG – FELINE	20	1	12	31	0.8	0.2					32	.				
.	COUNTER REFRIG – FELINE	20	1	12	33			0.8	0.2			34	12	2	15	BS-13	
A	DISHWASHER – FELINE	20	1	12	35					1.2	0.2	36	.				
.	WASHER – FELINE	20	1	12	37	1.5	0.8					38	12	1	20	LTG – LOBBY AVIAN	
A	DRYER – FELINE	30	2	10	39			2.6	0.7			40	12	1	20	LTG ATRIUM MECH	
				.	41					2.6	1.1	42	12	1	20	LTG CONGREGATE RMS	

	PHASE A	PHASE B	PHASE C
TOTAL KVA PER PHASE	29.7	33.3	36.1

NEC 220 LOAD JUSTIFICATION:
SEE RIGHT SECTION FOR LOAD JUSTIFICATION.

PANEL NOTES + REQUIREMENTS:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

NEW PANEL M2 (RIGHT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 400A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS
TWO-SECTION PANELBOARD WITH 42 POLES PER SECTION. PROVIDE SUB-FEED LUGS AND CABLE CONNECTION TO SECOND SECTION.

						PHASE LOAD SUMMARY											
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
.	FAN "Q"	20	2	12	43	1.0	4.2					44	4	3	60	HP-12	
.	.	.	.		45			1.0	4.2			46	.	.	.	.	
.	FAN RF-1	20	2	12	47					0.8	4.2	48	.				
.	.	.	.		49	0.8	2.2					50	10	2	25	HP-7	
.	SPARE	20	1		51			0.0	2.2			52	.				
.	SPARE	20	1		53					0.0	0.9	54	12	2	15	AHU-8	
.	SPARE	20	1		55	0.0	0.9					56	.	.	.	.	
.	SPARE	20	1		57			0.0	0.9			58	12	2	15	AHU-9	
.	SPARE	20	1		59					0.0	0.9	60	.	.	.	.	
.	SPARE	20	1		61	0.0	0.9					62	12	2	15	AHU-10	
.	SPARE	20	1		63			0.0	0.9			64	.	.	.	.	
.	SPARE	20	1		65					0.0	0.9	66	12	2	15	AHU-11	
.	SPARE	20	1		67	0.0	0.9					68	.	.	.	.	
.	SPARE	20	1		69			0.0	0.0			70		1	20	SPARE	
.	SPACE WITH BUSSING				71					0.0	0.0	72				SPACE WITH BUSSING	
.	SPACE WITH BUSSING				73	0.0	0.0					74				SPACE WITH BUSSING	
.	SPACE WITH BUSSING				75			0.0	0.0			76				SPACE WITH BUSSING	
.	SPACE WITH BUSSING				77					0.0	0.0	78				SPACE WITH BUSSING	
.	SPACE WITH BUSSING				79	0.0	0.0					80				SPACE WITH BUSSING	
.	SPACE WITH BUSSING				81			0.0	0.0			82				SPACE WITH BUSSING	
.	SPACE WITH BUSSING				83					0.0	0.0	84				SPACE WITH BUSSING	

	PHASE A	PHASE B	PHASE C
TOTAL KVA PER PHASE	40.5	42.5	43.8
DIVERSIFIED KVA PER PHASE	40.7	42.7	44.1
DIVERSIFIED TOTAL KVA	127.5 KVA		
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)	366.9 AMPS		

NEC 220 LOAD JUSTIFICATION:

LIGHTING	125%	3.3
HEATING	100%	0.0
AIR HANDLERS	100%	3.5
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100% +50% OF REMAINING	9.7
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND 100%	0.0
PROCESS	100%	0.0
MISCELLANEOUS	100%	111.0

PANEL NOTES + REQUIREMENTS:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

NEW PANEL B

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

						PHASE LOAD SUMMARY											
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – HALL HALLWAY	20	1	12	1	0.9	0.4					2	12	1	20	REC – STAFF LOUNGE	
	REC – HALLWAY	20	1	12	3			0.7	1.2			4	12	1	20	ELEC. WATER COOLER	A
	REC – RESTROOMS/JAN	20	1	12	5					0.5	0.8	6	12	1	20	REFRIGERATOR	A
	REC – CANINE M/G	20	1	12	7	0.9	1.2					8	12	1	20	DISHWASHER	A
	REC – KENNELS/ADOPT	20	1	12	9			0.9	1.2			10	12	1	20	MICROWAVE	A
	REC – KENNELS/ADOPT	20	1	12	11					0.7	1.5	12	12	2	20	EWH-3	
	SPARE	20	1		13	0.0	1.5					14	.				
	REC – OFFICE	20	1	12	15			0.9	0.5			16	12	1	20	REC – CANINE YARDS	
	REC – OFFICE	20	1	12	17					0.9	1.1	18	12	1	20	REC – ADOPT. RECEPTION	
	REC – COPY STATION	20	1	12	19	0.5	0.9					20	12	1	20	REC – ADOPTION LOBBY	
	COPY MACHINE	20	1	12	21			0.8	0.0			22		1	20	SPARE	
	REC – CUBICALS	20	1	12	23					0.9	0.0	24		1	20	SPARE	
	REC – CUBICALS	20	1	12	25	1.1	0.0					26		1	20	SPARE	
	REC – CUBICALS	20	1	12	27			0.9	0.0			28		1	20	SPARE	
	REC – CONF RM	20	1	12	29					1.0	0.0	30		1	20	SPARE	
	TV – LOUNGE	20	1	12	31	0.7	0.0					32		1	20	SPARE	
	SPARE	20	1	.	33			0.0	0.0			34		1	20	SPARE	
	SPARE	20	1		35					0.0	0.0	36		1	20	SPARE	
	LTG CANINE ADOPT	20	1	12	37	0.9	0.0					38		1	20	SPARE	
	LTG HALLWAY	20	1	12	39			1.0	0.0			40		1	20	SPARE	
	LTG CONF LOUNGE OFFICES	20	1	12	41					0.9	0.0	42		1	20	SPARE	

	PHASE A	PHASE B	PHASE C
TOTAL KVA PER PHASE	8.9	8.2	8.3
DIVERSIFIED KVA PER PHASE	8.5	7.9	7.9
DIVERSIFIED TOTAL KVA	24.3 KVA		
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)	70.9 AMPS		

NEC 220 LOAD JUSTIFICATION:

LIGHTING	125%	3.5
HEATING	100%	0.0
AIR HANDLERS	100%	0.0
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100% +50% OF REMAINING	11.9
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND 100%	0.0
PROCESS	100%	0.0
MISCELLANEOUS	100%	8.9

REQUIREMENTS:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

NEW PANEL D

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 10K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

						PHASE LOAD SUMMARY											
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
.	REC – HALL/JANITOR	20	1	12	1	0.9	0.4					2	12	1	20	ELEV – SP-1 (SUMP PUMP)	.
.	REC – KENNELS/ADOPT	20	1	12	3			1.1	0.5			4	12	1	20	ELEV – PIT LIGHTING	.
.	REC – KENNELS/ADOPT	20	1	12	5					0.9	6.0	6	4	3	60	WALK-IN FREEZER	.
.	REC – CANINE EXTERIOR	20	1	12	7	0.4	6.0					8					.
.	REC – SALLY PORT EXTERIOR	20	1	12	9			0.4	6.0			10					.
A	DRYER	30	2	10	11					2.7	1.5	12	12	2	20	EWH-2	
				.	13	2.7	1.5					14	.				
A	DRYER	30	2	10	15			2.7	0.7			16	12	1	20	REC – FELINE/CANINE HOLD	
				.	17					2.7	0.9	18	12	1	20	REC – RECEIVING	.
A	DRYER	30	2	10	19	2.7	0.4					20	12	1	20	REC – EXTERIOR	
				.	21			2.7	0.2			22	12	1	20	FAN EF-15	
A	DRYER	30	2	10	23					2.7	0.0	24	.	1	20	SPARE	
				.	25	2.7	0.0					26	.	1	20	SPARE	
	SPARE	20	1		27			0.0	0.0			28	.	1	20	SPARE	
	SPARE	20	1		29					0.0	0.0	30	.	1	20	SPARE	
A	REFRIG. – FOOD PREP	20	1	12	31	0.8	0.0					32	.	1	20	SPARE	
	REC – FOOD PREP	20	1	12	33			0.5	0.0			34	.	1	20	SPARE	
.	REFRIG. – FOOD PREP	20	1	12	35					0.8	0.0	36	.	1	20	SPARE	
.	REFRIG. – FOOD PREP	20	1	12	37	0.8	0.0					38	.	1	20	SPARE	
A	DISHWASHER – FOOD PREP	20	1	12	39			1.2	1.3			40	12	1	20	LTG – KENNELS	.
	REC – FOOD PREP	20	1	12	41					0.5	1.2	42	12	1	20	LTG – RECEIVING	.

	PHASE A	PHASE B	PHASE C
TOTAL KVA PER PHASE	19.2	17.2	19.9
DIVERSIFIED KVA PER PHASE	19.2	17.6	20.2
DIVERSIFIED TOTAL KVA	57.0 KVA		
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)	168.4 AMPS		

NEC 220 LOAD JUSTIFICATION:

LIGHTING	125%	3.2
HEATING	100%	0.0
AIR HANDLERS	100%	0.2
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100% +50% OF REMAINING	7.0
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND 100%	0.0
PROCESS	100%	0.0
MISCELLANEOUS	100%	46.6

REQUIREMENTS:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

NEW PANEL C

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 10K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

						PHASE LOAD SUMMARY											
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A		PHASE B		PHASE C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – HALLWAY	20	1	12	1	0.7	1.5					2	12	2	20	AUTOCLAVE	A
	REC – KENNELS/ADOPT	20	1	12	3			1.1	1.5			4	.				
	REC – KENNELS/ADOPT	20	1	12	5					1.1	1.5	6	.	1	.	SPACE ONLY	.
	REC – CANINE YARD	20	1	12	7	0.4	1.5					8	12	2	20	STERILIZER	A
	REC – INTAKE RMS	20	1	12	9			1.1	1.5			10	.				
	REC – EXAM	20	1	12	11					0.7	0.0	12	.	1		SPACE ONLY	
	REC – WAITING RM	20	1	12	13	1.3	0.2					14	12	1	20	FANS EF-9 EF-16	
	SPARE	20	1		15			0.0	0.2			16	12	1	20	DAH-1 CONDENS PUMP	
	COMPUTERS – DVM OFFICE	20	1	12	17					1.2	1.3	18	12	1	20	REC – DOUBLE SURGERY	
	REC – TREATMENT	20	1	12	19	0.5	0.2					20	12	2	15	FFU-1	
	REC LTS – TREATMENT	20	1	12	21			0.5	0.2			22	.				
	REC LTS – TREATMENT	20	1	12	23					0.5	0.0	24		1	20	SPARE	
	REC – TREATMENT	20	1	12	25	0.9	0.0					26		1	20	SPARE	
A	REFRIGERATOR – TREATM	20	1	12	27			1.2	0.0			28		1	20	SPARE	
	REC LTS – DBL SURGERY	20	1	12	29					1.0	0.0	30		1	20	SPARE	
	REC LTS – DBL SURGERY	20	1	12	31	1.0	0.0					32		1	20	SPARE	
	REC – ISOLATION	20	1	12	33			1.1	0.0			34		1	20	SPARE	
	SPARE	20	1		35					0.0	0.0	36		1	20	SPARE	
	SPARE	20	1		37	0.0	0.0					38		1	20	SPARE	
	LTG – KENNELS	20	1	12	39			1.2	0.0			40		1	20	SPARE	
	LTG – TREATM EXAMS	20	1	12	41					1.3	0.0	42		1	20	SPARE	

	PHASE A	PHASE B	PHASE C
TOTAL KVA PER PHASE	8.2	9.4	8.5
DIVERSIFIED KVA PER PHASE	7.7	9.4	8.5
DIVERSIFIED TOTAL KVA	25.6 KVA		
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)	78.0 AMPS		

NEC 220 LOAD JUSTIFICATION:

LIGHTING	125%	3.7
HEATING	100%	0.0
AIR HANDLERS	100%	0.6
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100% +50% OF REMAINING	11.3
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND 100%	0.0
PROCESS	100%	0.0
MISCELLANEOUS	100%	10.0

PANEL NOTES + REQUIREMENTS:
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

PANEL SCHEDULE KEY

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

WILLIAM LEE TEETER
071959
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

PANEL SCHEDULES

	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

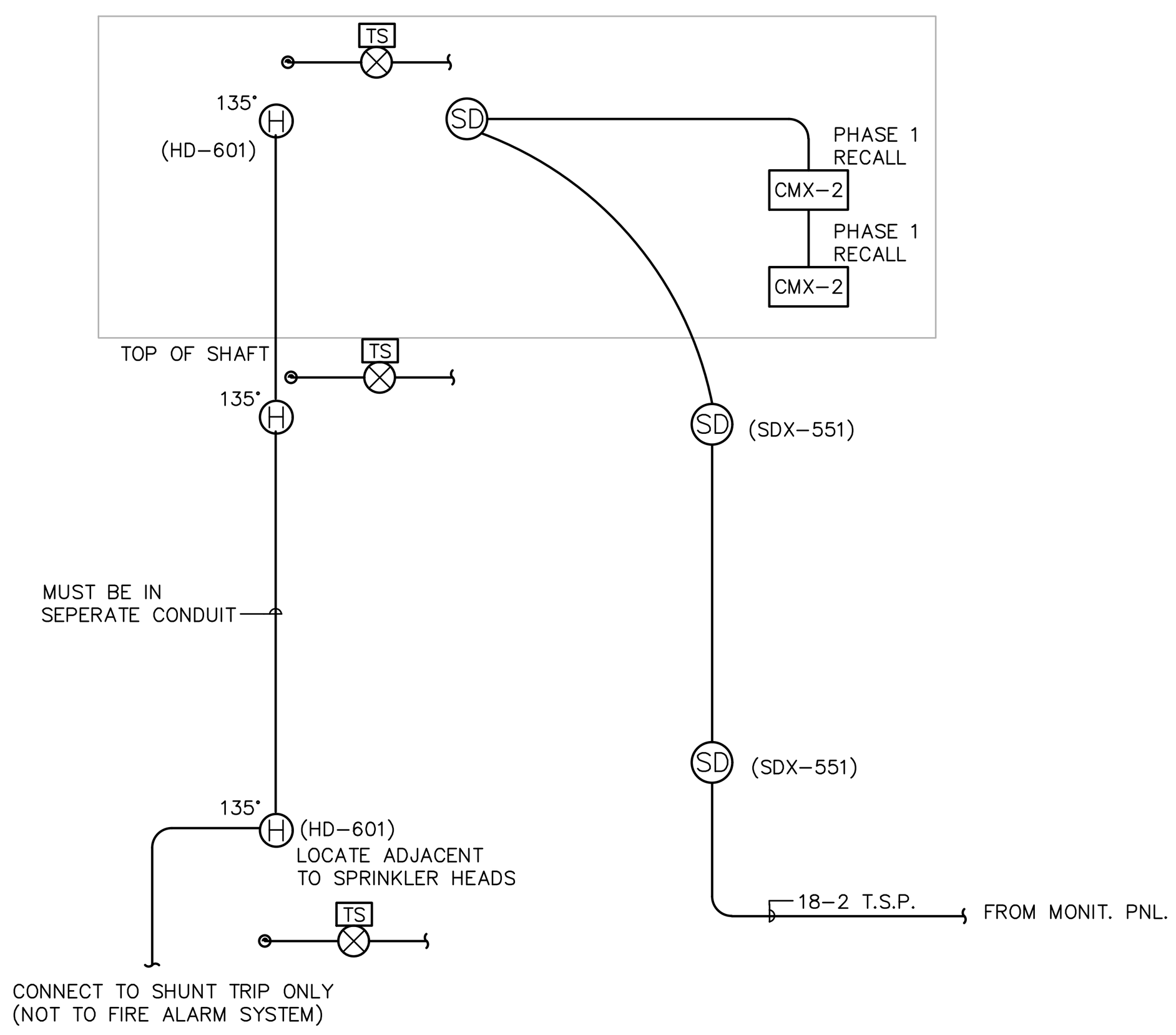
REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E302

16 OF 19



NOTES:

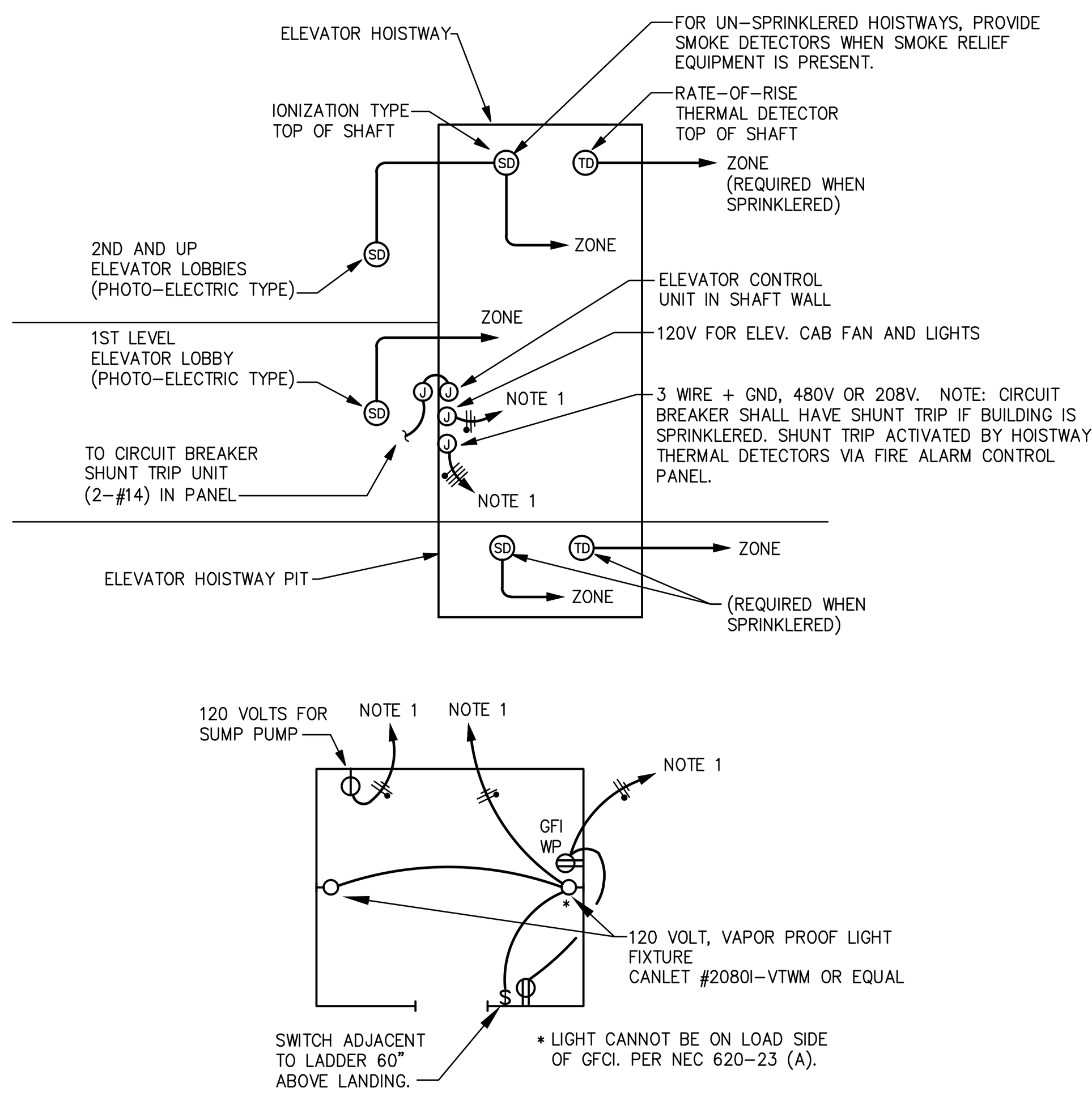
1. WIRE COMPONENTS PER NORTH CAROLINA STATE FIRE MARSHALL "UNIFORM FIRE SAFETY STANDARDS FOR ELEVATORS".
2. CONNECT WARNING LIGHTS THRU FIRE ALARM PANEL.
3. SHUT-OFF VALVE: RUN TAMPER SWITCH TO F.A.P.(TYP.)
4. SIGN: ENGRAVED BAKELIGHT, RED WITH 1/8" HIGH WHITE LETTERS STATING. "DO NOT USE ELEVATOR WHEN FLASHING".
5. WARNING LIGHT: PROVIDED POWERED AND WIRED TO FIRE ALARM PANEL BY ELECTRICAL CONTRACTOR.
6. SEE POWER PLANS FOR EXACT DEVICE LOCATIONS.
7. SMOKE DETECTOR WITH AUXILLARY CONTACT (TYP.).
8. HEAT DETECTOR (135ø F) LOCATE HEAT DETECTOR NEXT TO THE SPRINKLER HEAD. CONNECT DETECTORS IN PARALLEL TO SHUNT-TRIP MECHANISM THRU AUXILLARY CONTACTS.
9. MONITORING PANEL. (SEE SPRINKLER AND HVAC MONIT. RISER DIAGRAM).

2 ELEVATOR RECALL DIAGRAM

DIAGRAMMATIC

ELEVATOR RECALL CONTROL SYSTEM SPECIFICATIONS

1. FURNISH AND INSTALL A SUPERVISED, LOW VOLTAGE, ADDRESSABLE CONTROL UNIT. THE SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROL PANEL WITH ALL REQUIRED COMPONENTS, POWER SUPPLIES, STANDBY BATTERY SYSTEM, INTEGRAL ALARM, CONDUIT, OUTLETS AND WIRE, END-OF-LINE DEVICES, POWER CIRCUIT, 120 VOLT POWER CIRCUIT, ETC.
2. ALL COMPONENTS SHALL BE U.L. LISTED AND COMPLY WITH NFPA 72. WIRING SHALL COMPLY WITH NEC ARTICLE 760.
3. CATALOG NUMBERS GIVEN ARE THOSE OF EDWARDS AND DENOTE THE MINIMUM QUALITY AND PERFORMANCE REQUIRED. EQUAL EQUIPMENT BY FCI, SIMPLEX, ADT, AUTOCALL, GAMEWELL, PYROTRONICS OR OTHER APPROVED MANUFACTURER WILL BE ACCEPTABLE.
4. WIRING SHALL BE CLASS-B, COPPER SINGLE STRANDED CONDUCTORS, #16AWG, COLOR CODED AS REQUIRED BY EQUIPMENT SUPPLIER. COORDINATE WIRE AND CONDUIT SHOWN IN RISER DIAGRAM WITH EQUIPMENT SUPPLIER PRIOR TO CONDUIT INSTALLATION. ALL WIRE SHALL BE RUN IN EMT CONDUIT, ½" MINIMUM SIZE. AT THE CONTRACTORS OPTION, FIRE RETARDANT AND LOW SMOKE PRODUCING FIRE ALARM CABLE UL LISTED FOR THE PURPOSE MAY BE USED WITHOUT CONDUIT.
5. THE CONTROL PANEL SHALL BE EQUAL TO THE EDWARDS FIRE SHIELD SERIES SEMI-FLUSH MOUNTED. THE PANEL SHALL BE COMPLETE WITH, BUT NOT LIMITED TO, POWER MODULES, MASTER PANEL CONTROLS, SIGNAL CIRCUIT MODULES FOR AUDIBLE/VISUAL DEVICES, SMOKE DETECTOR ALARM RECEIVING/POWER MODULES, REMOTE STATION MONITOR MODULE CAPABLE, 24 HOUR STANDBY BATTERY WITH INTERFACE MODULE AND CHARGER MODULE, AUXILIARY MODULES, TROUBLE MODULES, ALL REQUIRED TERMINAL STRIPS AND BLOCKS AND ACCESSORY RELAYS, AND ALL OTHER NECESSARY FEATURES FOR A COMPLETE SYSTEM. PROVIDE TRANSIENT SUPPRESSION ON THE POWER SUPPLY.
6. THE SYSTEM SHALL BE TESTED AND CERTIFIED.
7. PROVIDE 12 MONTH GUARANTEE ON ALL WORKMANSHIP AND MATERIALS EFFECTIVE THE DATE OF BENEFICIAL USE.
8. THE SYSTEM SHALL OPERATE ON 120 VOLT POWER. FAILURE TO THE NORMAL POWER SOURCE SHALL AUTOMATICALLY TRANSFER TO THE STANDBY BATTERY.
9. SYSTEM OPERATION:
ACTUATION OF EACH ELEVATOR LOBBY, ELEVATOR HOISTWAY, AND ELEVATOR MACHINE ROOM SMOKE DETECTOR SHALL INITIATE ALARM CONDITION AND ELEVATOR RECALL. VISBLE AND AUDIBLE SUPERVISORY SIGNAL SHALL BE ACTIVATED AT CONTROL UNIT THE ALARM INITIATION CIRCUIT FROM WHICH THE ALARM ORIGINATED.
10. THE SYSTEM SHALL BE FULLY SUPERVISED SUCH THAT ANY CIRCUIT OPENS OR GROUNDS, POWER FAILURES, OR DISARRANGEMENT OF SYSTEM COMPONENTS OR WIRING SHALL BE INDICATED AT THE CONTROL PANEL.



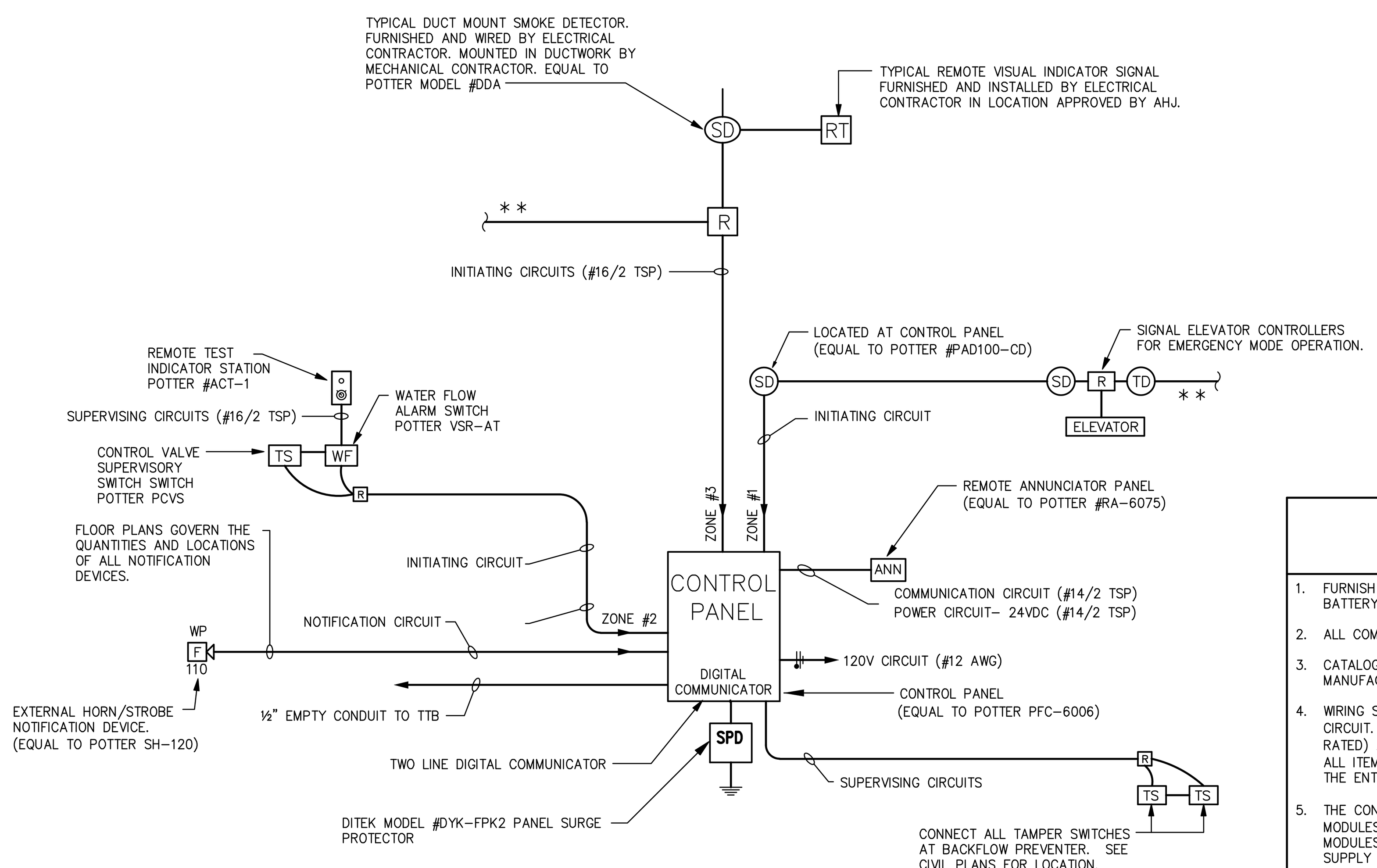
NOTE:
1. SEE PANEL SCHEDULES FOR RESPECTIVE CIRCUIT DESIGNATION(S).

1 TYPICAL ELEVATOR HOIST AND PIT

DIAGRAMMATIC

MACHINE ROOMLESS DESIGN ELEVATOR PROVISIONS

1. THE ELECTRICAL WORK ASSOCIATED WITH THE ELEVATOR SHALL BE IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND STANDARDS.
2. THIS CONTRACTOR SHALL COORDINATE THE ELEVATOR REQUIREMENTS WITH THE ELEVATOR INSTALLER. LOCATE EQUIPMENT ROOM AND HOISTWAY SWITCHES, LIGHTS, DETECTORS, RECEPTACLES, TELEPHONE, ETC AS DIRECTED BY THE ELEVATOR INSTALLER.
3. THE HOISTWAY SHALL INCLUDE THE FOLLOWING: TWO (2) VAPOR-TIGHT WALL MOUNTED LIGHT FIXTURES AT 18" ABOVE THE PIT FLOOR AND TWO (2) VAPOR-TIGHT WALL MOUNTED LIGHT FIXTURE NEAR TOP OF HOISTWAY, COORDINATE BEST LOCATION IN THE FIELD TO ILLUMINATE ELEVATOR EQUIPMENT AT TOP OF HOISTWAY. TWO LIGHT CONTROL SWITCHES ADJACENT TO THE HOISTWAY LADDER AT 60" ABOVE THE LOWEST AND UPPER LANDING ENTRANCE SILL. A 20 AMPERE, GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE AT 18" ABOVE THE PIT FLOOR. A SECOND 20 AMPERE, RECEPTACLE AT 18" ABOVE THE PIT FLOOR FOR SUMP PUMP IF A PUMP IS SPECIFIED. AN IONIZATION TYPE SMOKE DETECTOR AT THE TOP OF THE HOISTWAY. A THERMAL DETECTOR AT THE TOP OF THE HOISTWAY (WHEN HOISTWAY IS SPRINKLERED).
4. THIS ELEVATOR IS MACHINE ROOMLESS TYPE. PROVIDE A DIRECT CONNECTION FOR THE ELEVATOR UNIT AS REQUIRED BY THE ELEVATOR SUPPLIER. COORDINATE EXACT REQUIREMENTS WITH ELEVATOR INSTALLER PRIOR TO ROUGHING. PROVIDE CONDUIT AND TELEPHONE STATION CABLE FOR TELEPHONE SERVICE TO THE CONTROL UNIT AS REQUIRED. CABLE SHALL BE 4-PAIR, #24GA IN ¾" EMT CONDUIT. PROVIDE A CONDUIT TO CONTROL UNIT FOR THE FIRE ALARM CONTROL AND CAB EMERGENCY MODE OPERATION.
5. ACTIVATION OF ANY THERMAL DETECTOR IN THE HOISTWAY SHALL AUTOMATICALLY SIGNAL THE ELEVATOR CONTROLLER AND ACTIVATE A SHUNT TRIP UNIT ON THE ELEVATOR SERVICE CIRCUIT BREAKER. PRIOR TO THE APPLICATION OF WATER.
6. ACTIVATION OF ANY SMOKE DETECTOR IN THE HOISTWAY OR ELEVATOR LOBBIES SHALL AUTOMATICALLY SIGNAL THE ELEVATOR CONTROLLER. THESE SIGNALS WILL BE USED TO PLACE THE ELEVATOR IN AN EMERGENCY MODE OF OPERATION.
7. ALL WIRING IN THE HOISTWAY SHALL BE RUN IN EMT CONDUIT (NO FLEX OR CABLE). ONLY WIRING ASSOCIATED WITH THE ELEVATOR EQUIPMENT IS ALLOWED TO RUN THROUGH THE HOISTWAY AND EQUIPMENT ROOMS. ALL POWER WIRING CIRCUITS SHALL HAVE A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR.
8. ALL WIRING BETWEEN THE ELEVATOR POWER AND CONTROLS/LIGHT FUSED SWITCHES AND THE ELEVATOR EQUIPMENT SHALL BE BY THIS CONTRACTOR.
9. ONLY ITEMS THAT PERTAIN TO THE OPERATION OF THE ELEVATOR ARE ALLOWED IN THE ELEVATOR HOISTWAY.



3 FIRE SPRINKLER & HVAC MONITORING SYSTEM RISER

DIAGRAMMATIC

** FLOOR PLAN GOVERNS THE QUANTITY AND LOCATIONS OF ALL INITIATION AND NOTIFICATION DEVICES.

SYMBOL SCHEDULE

(solid bar)	SPRINKLER AND HVAC MONITORING PANEL.
ANN	REMOTE ANNUNCIATOR 66" AFF TO MIDDLE OF DEVICE.
SD	PHOTO-ELECTRIC TYPE SMOKE DETECTOR.
SD	DUCT MOUNT SMOKE DETECTOR WITH RELAY BASE IN AIR DUCT.
F	AUDIBLE & VISUAL SIGNAL STROBE LIGHT MOUNTED @ 80" AFF. OR 6" BELOW CEILING WHICHEVER IS LOWER.
R	ADDRESSABLE CONTROL MODULE.
RT	REMOTE INDICATOR MODULE
WF	WATER FLOW SWITCH CONNECTED TO SPRINKLER PIPING.
TS	TAMPER SWITCH CONNECTED TO SPRINKLER VALVE.

SPRINKLER & HVAC MONITORING SYSTEM SPECIFICATIONS

1. FURNISH AND INSTALL A SUPERVISED, LOW VOLTAGE, HVAC MONITORING SYSTEM. THE SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROL PANEL WITH ALL REQUIRED COMPONENTS, POWER SUPPLIES, STANDBY BATTERY SYSTEM, INTEGRAL ALARM, CONDUIT, OUTLETS AND WIRE, END-OF-LINE DEVICES, POWER CIRCUIT, 120 VOLT POWER CIRCUIT, ACCESS TO TELEPHONE EQUIPMENT, AUTOMATIC DIALER, ETC.
2. ALL COMPONENTS SHALL BE U.L. LISTED AND COMPLY WITH NFPA 72. WIRING SHALL COMPLY WITH NEC ARTICLE 760.
3. CATALOG NUMBERS GIVEN ARE THOSE OF POTTER AND DENOTE THE MINIMUM QUALITY AND PERFORMANCE REQUIRED. EQUAL EQUIPMENT BY FCI, SIMPLEX, ADT, AUTOCALL, GAMEWELL, PYROTRONICS OR OTHER APPROVED MANUFACTURER WILL BE ACCEPTABLE.
4. WIRING SHALL BE CLASS-B, COPPER SINGLE STRANDED CONDUCTORS, #16AWG, COLOR CODED AS REQUIRED BY EQUIPMENT SUPPLIER. SYSTEM SHALL HAVE NO MORE THAN 50 ADDRESSABLE DEVICES ON EACH INITIATING CIRCUIT. CONDUCTORS SHALL BE RUN IN EMT CONDUIT, ½" MINIMUM SIZE. RUN INITIATING AND NOTIFICATION DEVICES WITH #16-2TSP AND POWER WITH #12 AWG. AT THE CONTRACTORS OPTION, FIRE RETARDANT (2-HR CI RATED) AND LOW SMOKE PRODUCING FIRE ALARM CABLE UL LISTED FOR THE PURPOSE MAY BE USED WITHOUT CONDUIT, PROVIDING ALL CABLES ARE RUN CONCEALED FROM VIEW IN WALLS OR ABOVE CEILINGS. EACH AND ALL ITEMS OF THE MONITORING SYSTEM SHALL BE LISTED AS A PRODUCT OF A SINGLE MANUFACTURER UNDER THE APPROPRIATE CATEGORY BY "UL". ALL DEVICES BY ANOTHER MANUFACTURER SHALL NOT BE ACCEPTABLE. THE ENTIRE SYSTEM SHALL BE INSTALLED BY A CURRENTLY LICENSED CONTRACTOR TRAINED & CERTIFIED BY THE MANUFACTURER. INSTALLER SHALL BE A NICET-CERTIFIED TECHNICIAN LEVEL IV MINIMUM.
5. THE CONTROL PANEL SHALL BE SEMI-FLUSH MOUNTED. THE PANEL SHALL BE COMPLETE WITH POWER SUPPLY MODULES, MASTER PANEL CONTROLS, SIGNAL CIRCUIT MODULES FOR AUDIBLE/VISUAL DEVICES, ALARM RECEIVING MODULES, SMOKE DETECTOR ALARM RECEIVING/POWER MODULES, REMOTE STATION MONITOR MODULE CAPABLE, 24 HOUR STANDBY BATTERY WITH INTERFACE MODULE AND CHARGER MODULE, AUXILIARY MODULES, TROUBLE MODULES, ALL REQUIRED TERMINAL STRIPS AND BLOCKS AND ACCESSORY RELAYS, AND ALL OTHER NECESSARY FEATURES FOR A COMPLETE SYSTEM. PROVIDE TRANSIENT SUPPRESSION WIRED IN SERIES TO THE POWER SUPPLY AND MUNICIPAL CONNECTION CIRCUITS. THE SPD SHALL HAVE A MINIMUM PEAK SURGE CURRENT OF 54,000 AMPS AND A RESPONSE TIME OF 5 NANOSECONDS.
6. THE REMOTE ANNUNCIATOR SHALL DUPLICATE FUNCTIONS OF THE CONTROL PANEL FOR ALARM, SUPERVISORY, AND TROUBLE INDICATIONS. ALSO DUPLICATE MANUAL SWITCHING FUNCTIONS OF THE CONTROL PANEL, INCLUDING ACKNOWLEDGING, SILENCING, RESETTING AND TESTING. ALPHANUMERIC DISPLAY SHALL BE THE SAME AS THE CONTROL PANEL. CABINET SHALL BE FLUSH MOUNTED IN WALL AND LOCATED AT A CONSTANTLY ATTENDED LOCATION APPROVED BY THE FIRE MARSHAL.
7. THE SYSTEM SHALL BE FULLY SUPERVISED SUCH THAT CIRCUIT OPENS OR GROUNDS, POWER FAILURES, OR DISARRANGEMENT OF SYSTEM COMPONENTS AND WIRING SHALL BE INDICATED AT THE CONTROL PANEL.
8. THE SYSTEM SHALL HAVE PROVISIONS FOR CENTRAL STATION MONITORING VIA A DIGITAL COMMUNICATOR. CENTRAL STATION MONITORING SHALL BE DONE BY A U.L. LISTED STATION.
9. THE SYSTEM SHALL BE PROVIDED WITH SUFFICIENT BATTERY TO OPERATE THE ENTIRE SYSTEM UPON LOSS OF NORMAL 120 VAC POWER IN A NORMAL SUPERVISORY MODE FOR A PERIOD OF TWENTY-FOUR (24) HOURS WITH FIVE (5) MINUTES OF ALARM INDICATION AT THE END OF THIS PERIOD OR AS REQUIRED.
10. AREA SMOKE DETECTOR SHALL BE REQUIRED BY THE APPLICATION FOR DETECTION. DETECTOR SHALL INCLUDE DRY CONTACTS WHERE REQUIRED FOR CONTROL FUNCTIONS. DETECTORS SHALL BE PHOTOELECTRIC TYPE.
11. DUCT MOUNT SMOKE DETECTORS SHALL BE PHOTOELECTRIC TYPE WITH APPROPRIATE SAMPLING TUBE, REMOTE MONITOR STATION, AND DRY CONTACTS FOR AHU SHUT-DOWN, (ADDITIONAL CONTACTS FOR AHU SHUT-DOWN WHERE MULTIPLE UNITS ARE SERVICING A COMMON AREA), SELF-RESTORING, WHITE COLOR. AIR DUCT HOUSING WITH SAMPLING TUBE RUN ENTIRE WIDTH OF DUCT. DETECTORS TO BE SUPPLIED BY THE ELECTRICAL CONTRACTOR, INSTALLED IN THE DUCT WORK BY THE MECHANICAL CONTRACTOR, AND WIRED BY THE ELECTRICAL CONTRACTOR.
12. FLOW AND TAMPER SWITCHES TO BE SUPPLIED AND INSTALLED IN THE PIPING BY THE PLUMBING CONTRACTOR, AND WIRED BY THE ELECTRICAL CONTRACTOR.
13. THE COMPLETED SYSTEM SHALL BE FULLY TESTED BY THE CONTRACTOR AND THE MANUFACTURER'S CERTIFIED TECHNICAL REPRESENTATIVE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.
14. PROVIDE 12 MONTH GUARANTEE ON ALL WORKMANSHIP AND MATERIALS EFFECTIVE THE DATE OF BENEFICIAL USE.
15. THE SYSTEM SHALL OPERATE ON 120 VOLT POWER. FAILURE TO THE NORMAL POWER SOURCE SHALL AUTOMATICALLY TRANSFER TO THE STANDBY BATTERY.
16. SYSTEM OPERATION:
A) ACTIVATION OF A WATER FLOW DEVICE SHALL OPERATE AUDIBLE HORN AND VISUAL SIGNAL IN CONTROL PANEL AND INDICATE WHERE THE SIGNAL ORIGINATED. IT SHALL TRANSMIT AN ALARM SIGNAL TO AN OFF PREMISE SECURITY MONITORING COMPANY (APPROVED SUPERVISING STATION).
B) ACTIVATION OF A DUCT MOUNTED SMOKE DETECTOR SHALL OPERATE AUDIBLE HORN AND VISUAL SIGNAL IN CONTROL PANEL AND INDICATE WHERE THE SIGNAL ORIGINATED. CONTROL PANEL SHALL TRANSMIT A SUPERVISORY SIGNAL TO THE OFF PREMISE SECURITY MONITORING COMPANY.
C)ALL AUDIBLE SIGNAL DEVICES SHALL SOUND CONTINUOUSLY UNTIL ACKNOWLEDGED AND VISUAL SIGNALS SHALL ILLUMINATE UNTIL RESET.
D)ACTIVATION OF ANY THERMAL DETECTOR IN THE HOISTWAY SHALL AUTOMATICALLY SIGNAL THE ELEVATOR CONTROLLER AND ACTIVATE A SHUNT TRIP UNIT ON THE ELEVATOR SERVICE CIRCUIT BREAKER. PRIOR TO THE APPLICATION OF WATER.
E)ACTIVATION OF ANY SMOKE DETECTOR IN THE HOISTWAY OR ELEVATOR LOBBIES SHALL AUTOMATICALLY SIGNAL THE ELEVATOR CONTROLLER. THESE SIGNALS WILL BE USED TO PLACE THE ELEVATOR IN AN EMERGENCY MODE OF OPERATION.
5. THE SYSTEM SHALL BE FULLY SUPERVISED SUCH THAT ANY CIRCUIT OPENS OR GROUNDS, POWER FAILURES, OR DISARRANGEMENT OF SYSTEM COMPONENTS OR WIRING SHALL BE INDICATED AT THE CONTROL PANEL.
6. THE SYSTEM SHALL HAVE MONITORING VIA A DIGITAL COMMUNICATOR.

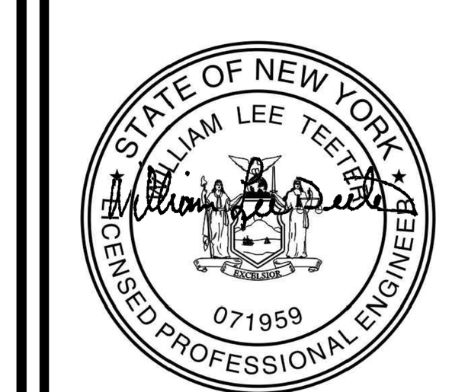
FIRE ALARM SYSTEM MATRIX

EVACUATION TONE SHALL BE THREE PULSE TEMPORAL PATTERN.

	BUILDING SYSTEM OUTPUTS																				CENTRAL COMM		
	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE GENERAL EVACUATION SIGNAL	DISPLAY CHANGE OF STATUS	ACTIVATE EXTERNAL HORN STROBE	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL COMM	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL COMM	TRANSMIT TROUBLE SIGNAL TO CENTRAL COMM	RELEASE MAGNETIC DOOR HOLD OPEN DEVICES	RECALL ELEVATORS TO PRIMARY RECALL FLOOR	RECALL ELEVATORS TO ALTERNATE RECALL FLOOR	SHUNT TRIP ELEVATOR PWR UPON ARRIVING RECALL FLOOR	ILLUMINATE THE FIREMAN'S HAT	UNLOCK EXIT DOORS	SHUT DOWN RESPECTIVE HVAC	SHOW CHANGE OF STATUES ON AUNNUNICATOR	SHOW CHANGE OF STATUS ON CENTRAL PANEL	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION
MANUAL FIRE ALARM PULL BOXES	X	X					X	X	X	X			X					X		X	X	X		
BUILDING SMOKE DETECTOR	X	X					X	X	X	X			X					X		X	X	X		
SPRINKLER WATER FLOW	X	X					X	X	X	X			X					X		X	X	X		
SPRINKLER TAMPER SWITCH			X	X				X			X									X	X		X	
FIRE ALARM AC POWER FAILURE					X	X		X				X								X	X			X
FIRE ALARM SYSTEM LOW BATTERY					X	X		X				X								X	X			X
OPEN CIRCUIT					X	X		X				X								X	X			X
GROUND FAULT					X	X		X				X								X	X			X
NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X		X				X								X	X			X
DUCT DETECTORS			X	X				X			X								X	X	X		X	
ELEVATOR SHAFT – SMOKE DETECTOR	X	X						X			X						X			X	X		X	
MAIN ELEVATOR LOBBY – SMOKE DETECTOR	X	X					X	X	X	X					X					X	X	X		
OTHER ELEVATOR LOBBY – SMOKE DETECTOR	X	X					X	X	X	X				X						X	X	X		
ELEVATOR SHAFT – HEAT DETECTOR	X	X					X	X	X	X			X			X		X		X	X	X		

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA



09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ELECTRICAL DETAILS

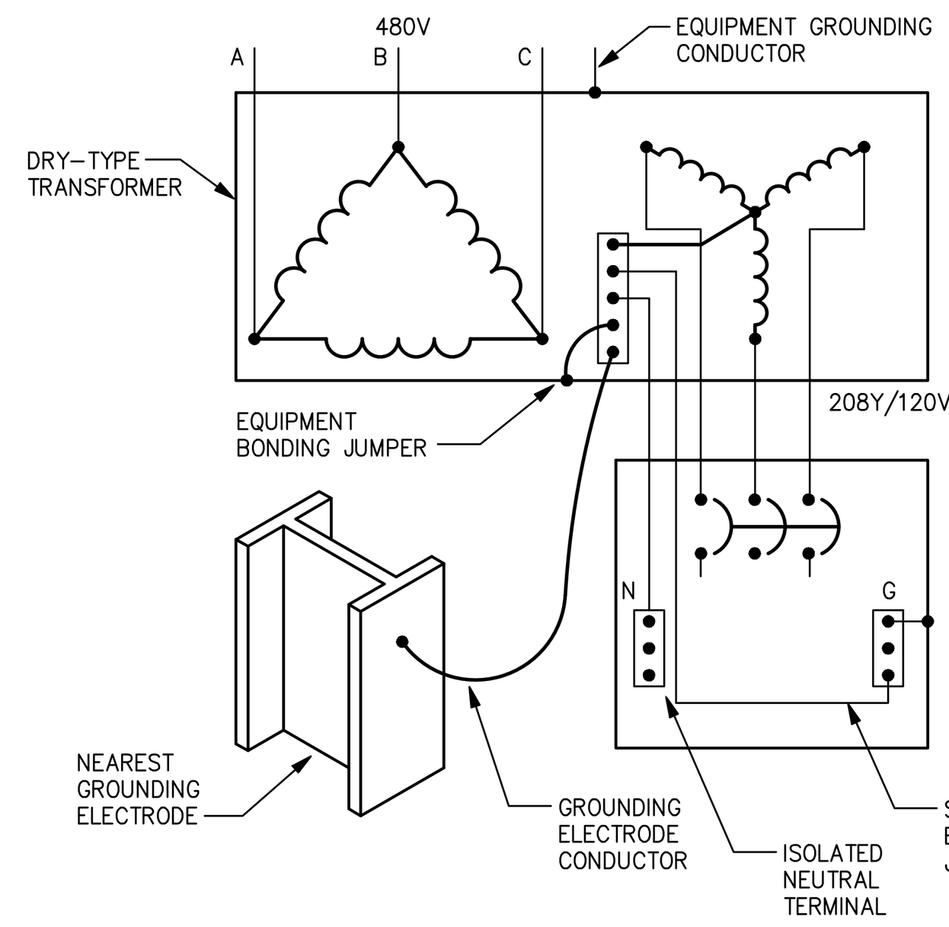
	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

INITIALS	REVIEWS
	BDA DSGN. REV.
	BDA TECH REV.

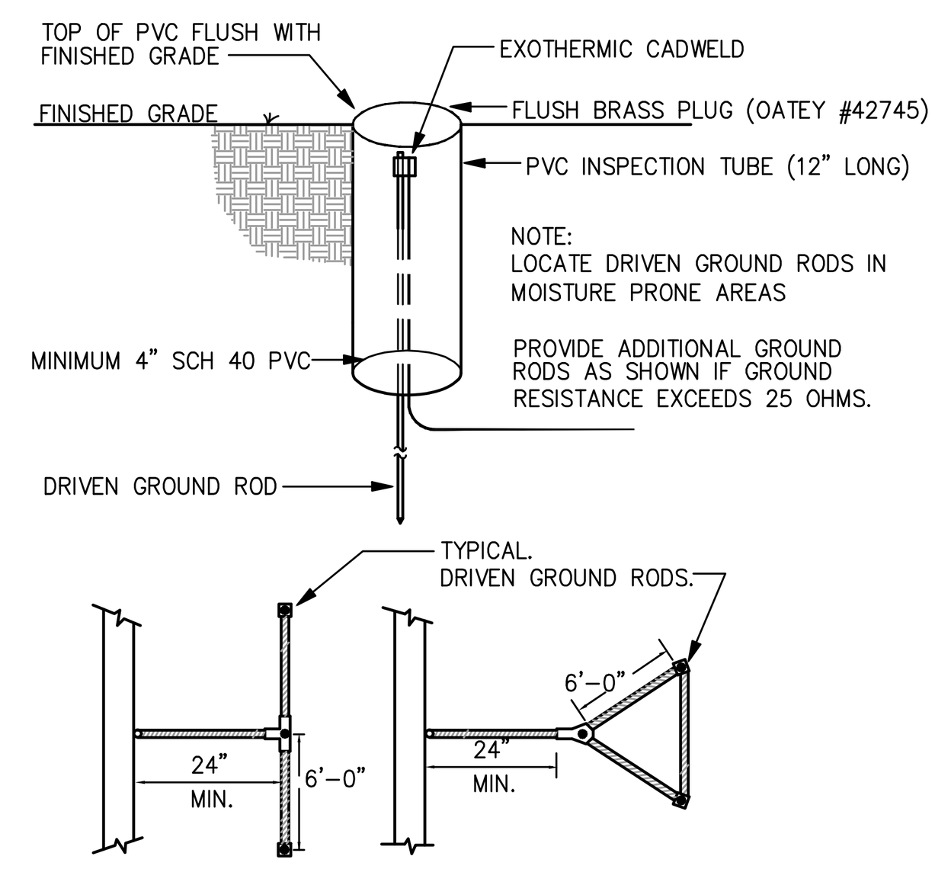
RGAS

PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

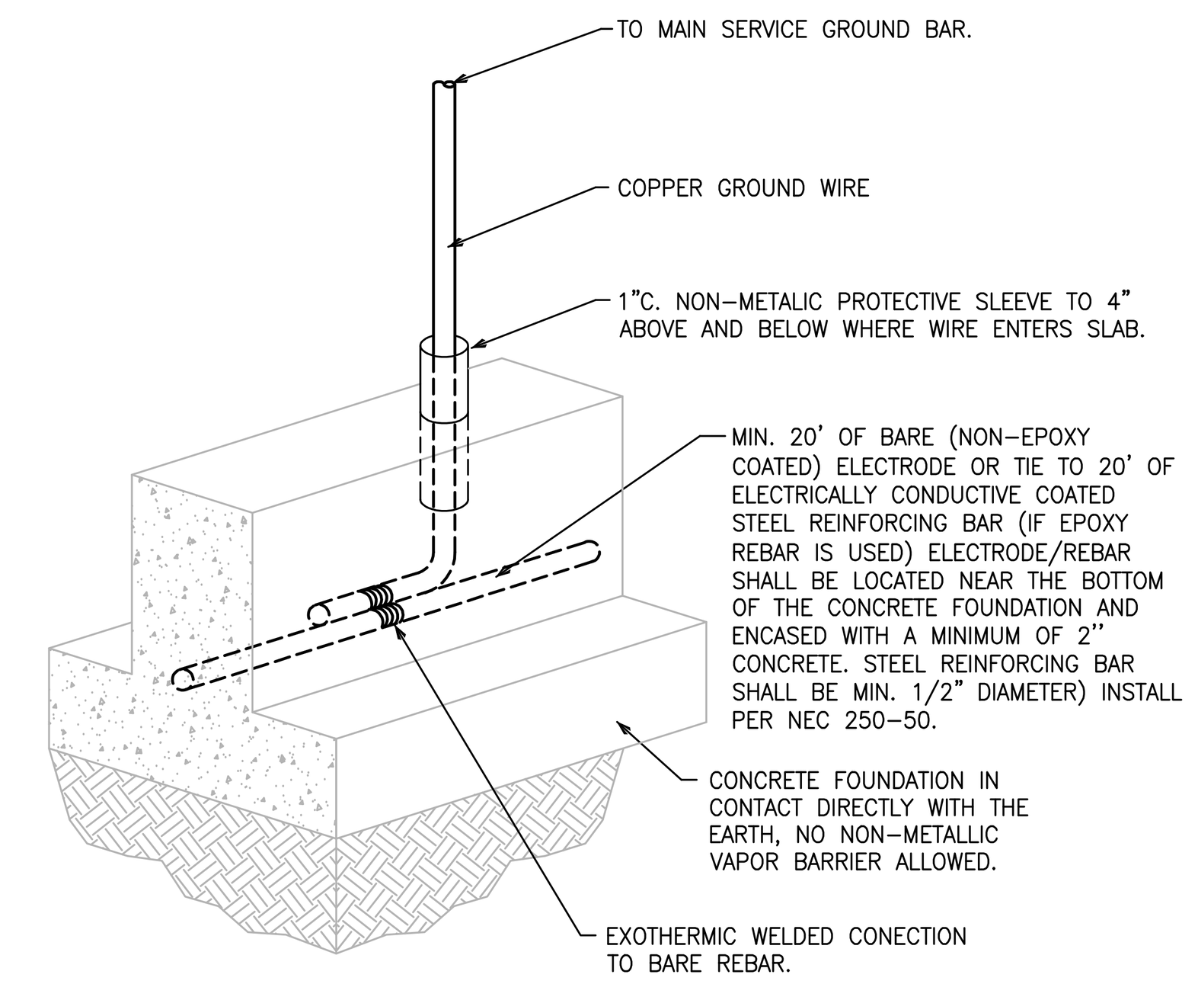
E401



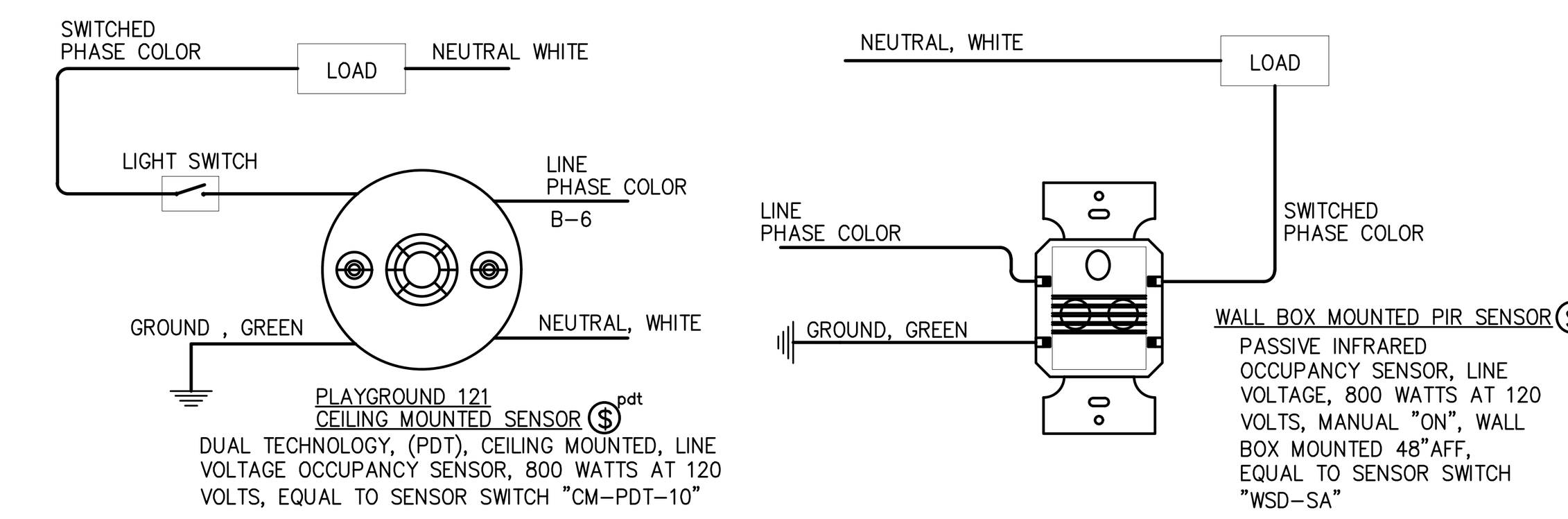
4 TRANSFORMER GROUND SYSTEM
NOT TO SCALE



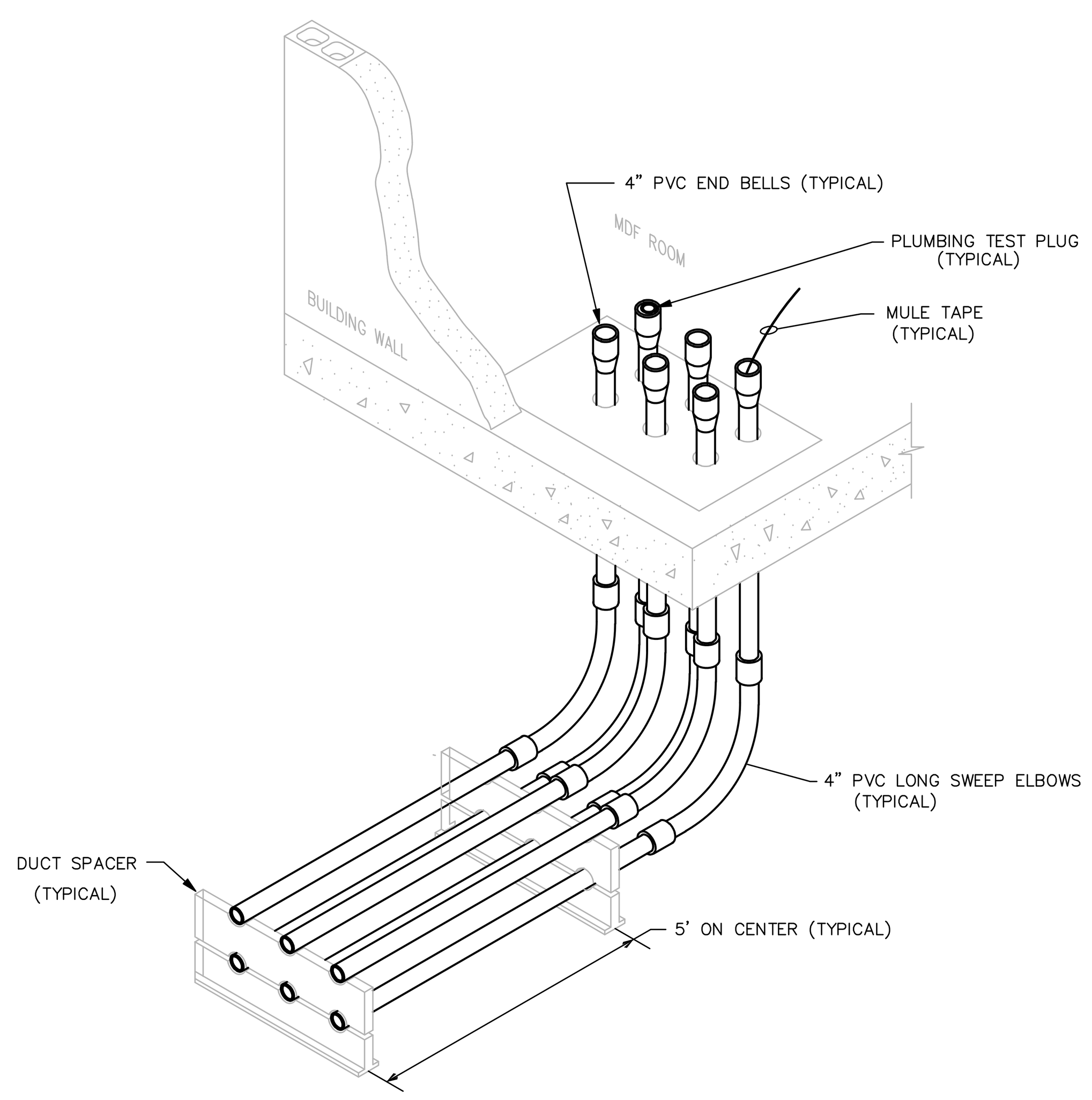
3 DRIVEN GROUND DETAIL
NOT TO SCALE



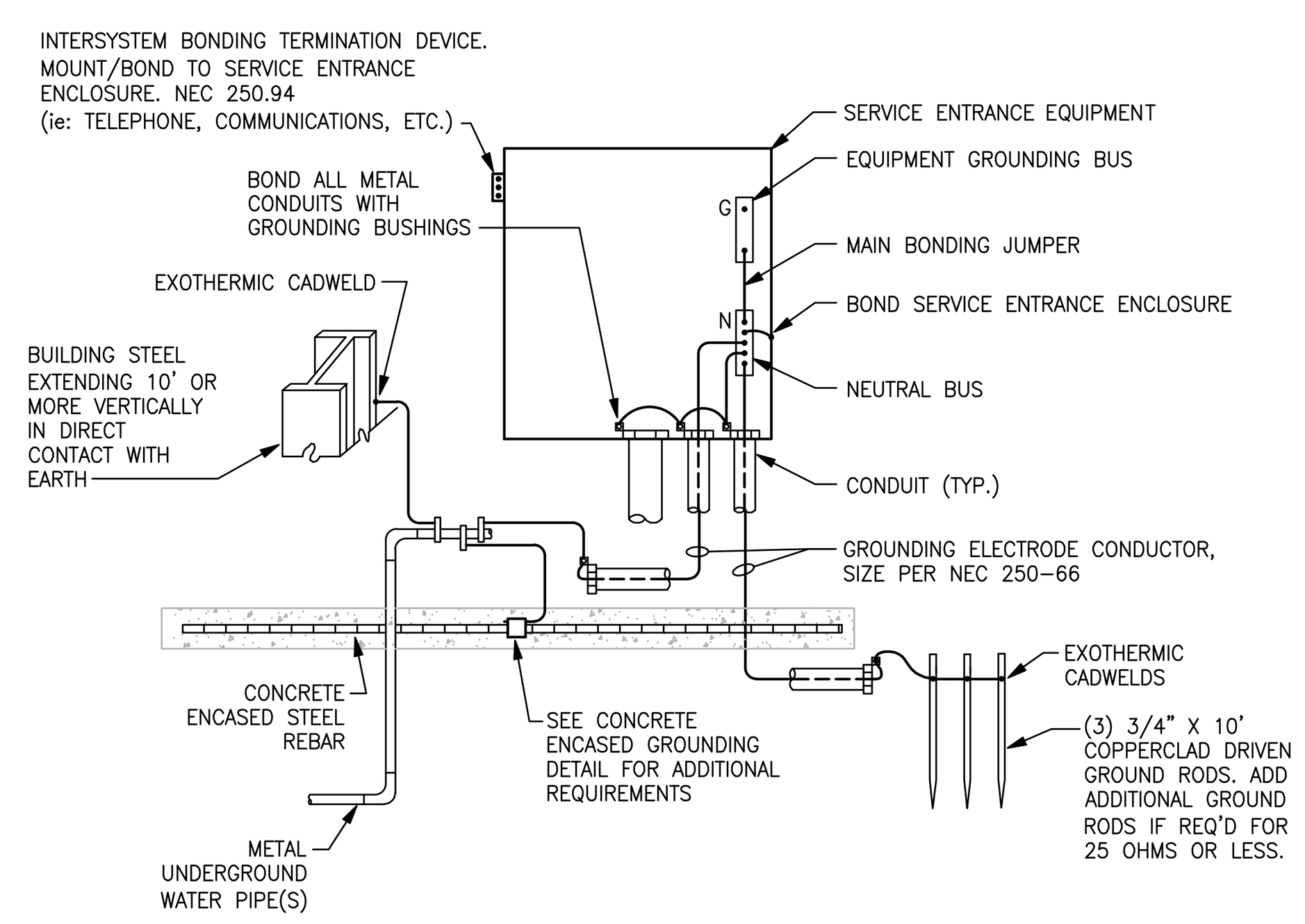
2 CONCRETE ENCASED GROUNDING DETAIL
NOT TO SCALE



1 OCCUPANCY SENSOR LIGHTING CONTROLS
DIAGRAMMATIC



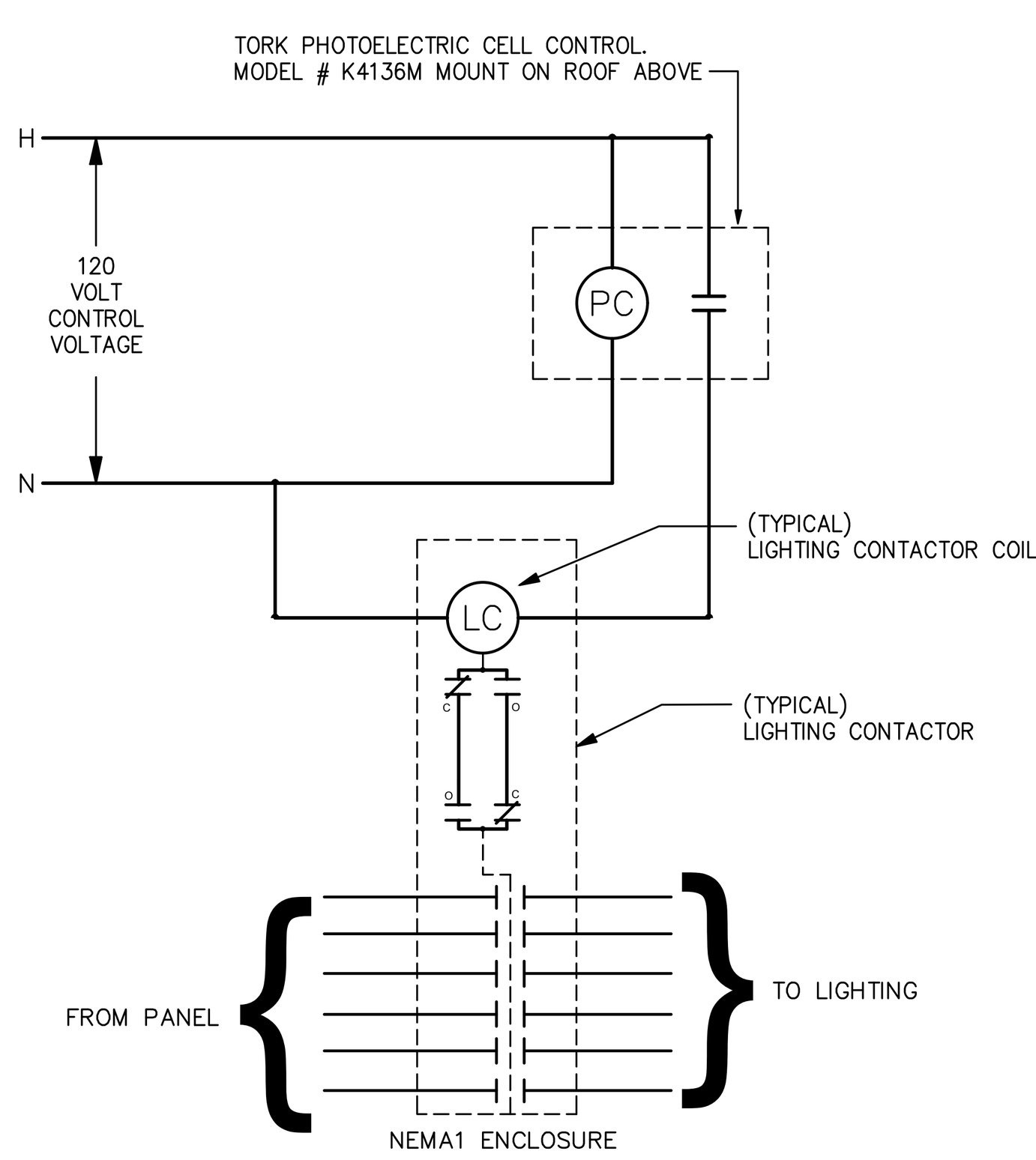
5 CONDUIT ENTRANCE DETAIL
NTS



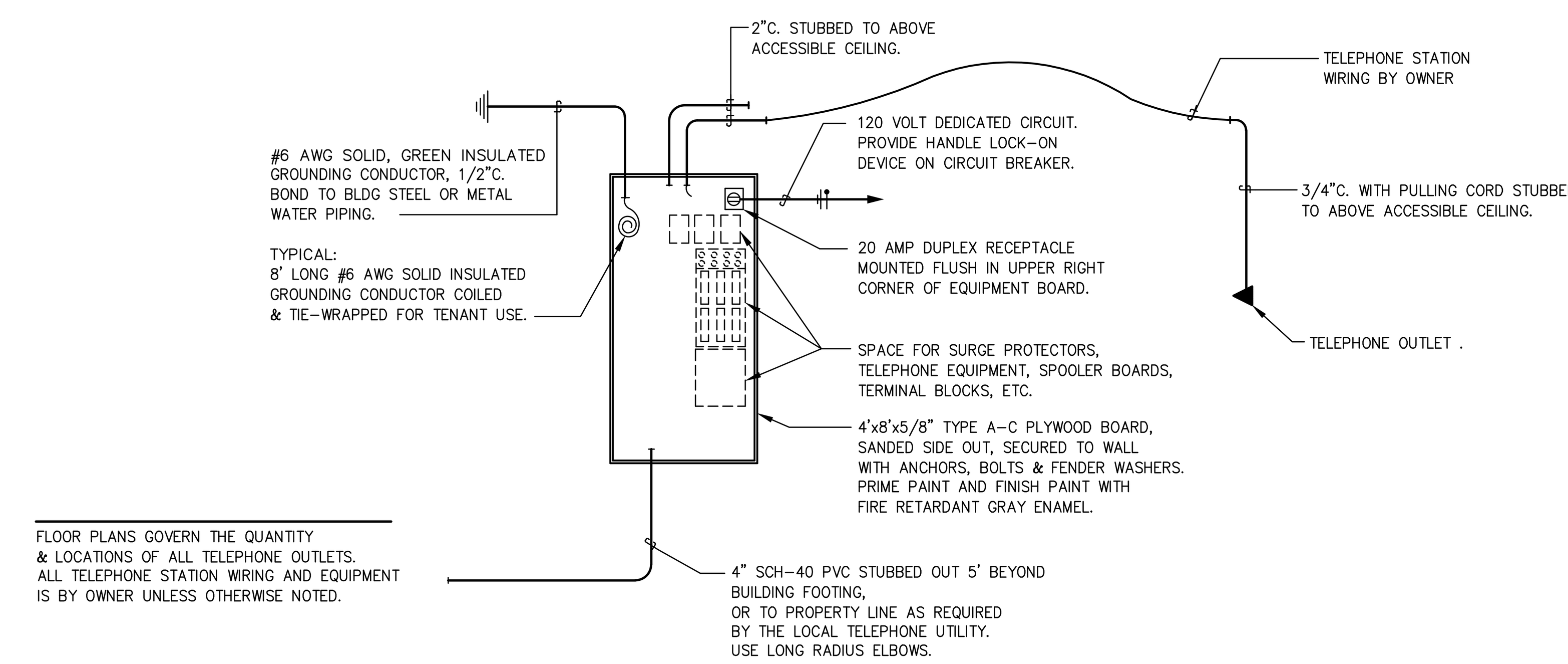
NOTES:

1. GROUNDING ELECTRODE CONDUCTOR SHALL BE ENCLOSED FULL LENGTH BY CONDUIT (RMC OR EMT).
2. GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS (UNBROKEN) FROM THE NEUTRAL BUS TO THE GROUNDING ELECTRODE. SPLICES AND/OR JOINTS ARE PROHIBITED. EXCEPTIONS AS ALLOWED PER NEC 250.64(C) IRREVERSIBLE COMPRESSION TYPE CONNECTORS OR BY EXOTHERMIC WELDING WILL BE ACCEPTABLE FOR REMODEL WORK ONLY.
3. GROUNDING ELECTRODE CONDUCTORS SHALL BE COPPER.
4. CONNECTION TO THE METAL COLD WATER PIPE SHALL BE MADE WITHIN 5' OF THE POINT OF ENTRANCE INTO THE BUILDING.
5. GROUNDING ELECTRODE CONDUCTORS AND BONDING JUMPER CONNECTIONS TO BUILDING STEEL, CONCRETE ENCASED STEEL REBAR, AND DRIVEN GROUND RODS SHALL BE CONNECTED BY EXOTHERMIC CADWELDS.
6. ALL GROUNDING BUSHINGS, CLAMPS, JUMPERS, FASTENERS, ETC. SHALL BE APPROVED AND LISTED FOR THE PURPOSE.

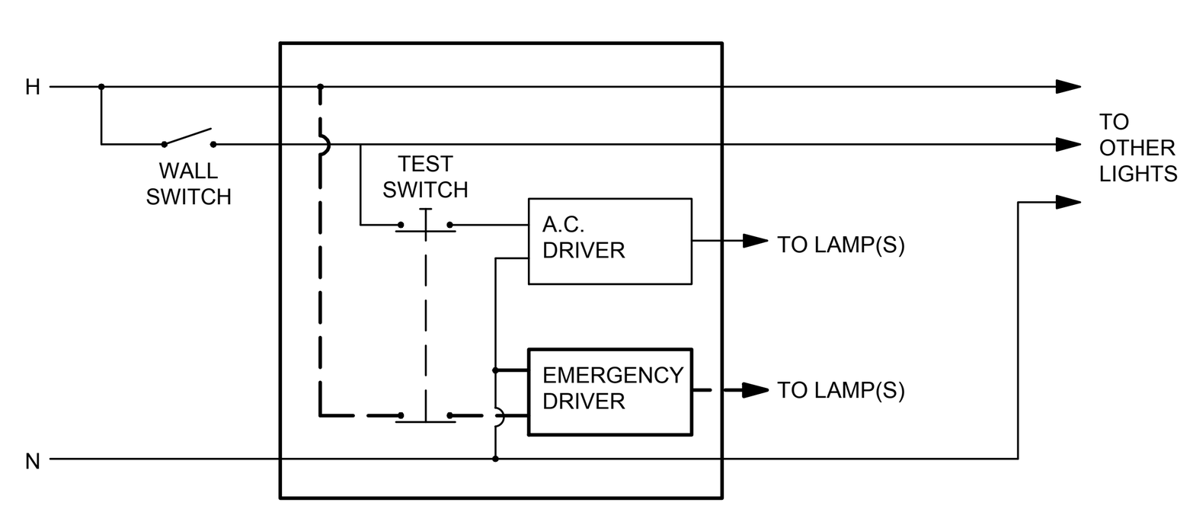
6 SERVICE GROUND DETAIL
NOT TO SCALE



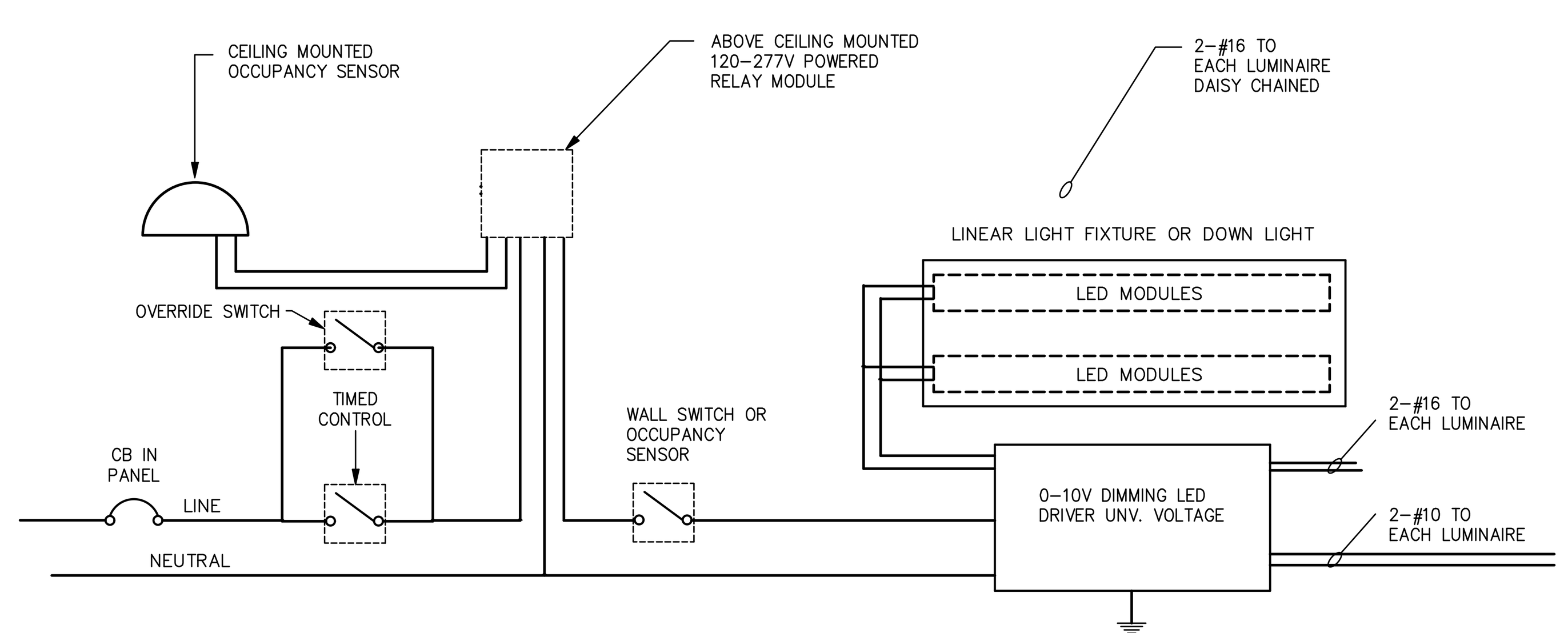
7 EXTERIOR PHOTOCELL LIGHTING CONTROLS
DIAGRAMMATIC



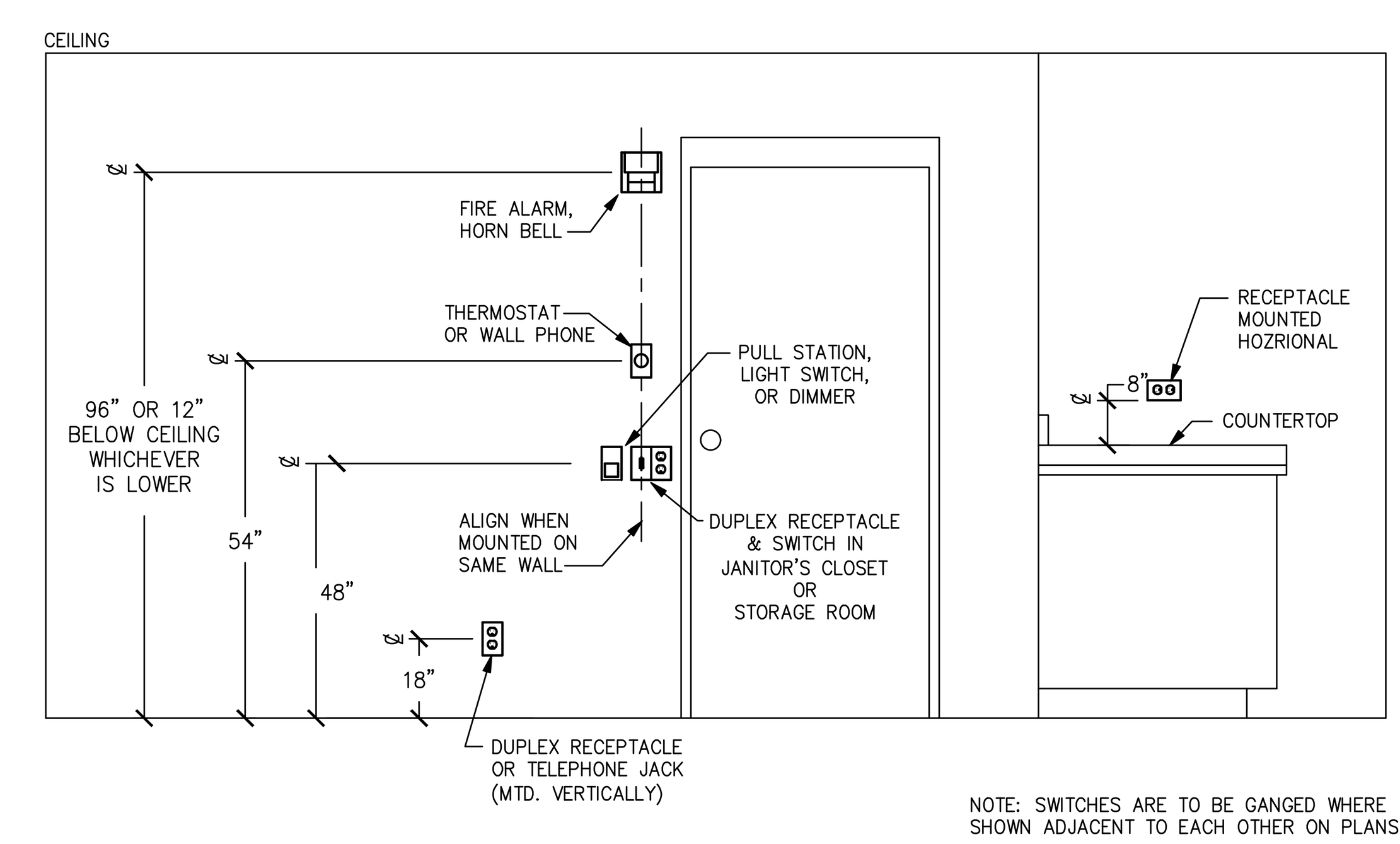
8 TELEPHONE RISER DIAGRAM
DIAGRAMMATIC



11 SWITCHED EMERGENCY LIGHTING DETAIL
NO SCALE



10 LED DRIVER WIRING DETAIL
NOT TO SCALE



9 TYPICAL MOUNTING HEIGHTS
NOT TO SCALE

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST. • SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK · WILLIAM LEE TEETER · 071959 · LICENSED PROFESSIONAL ENGINEER
09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

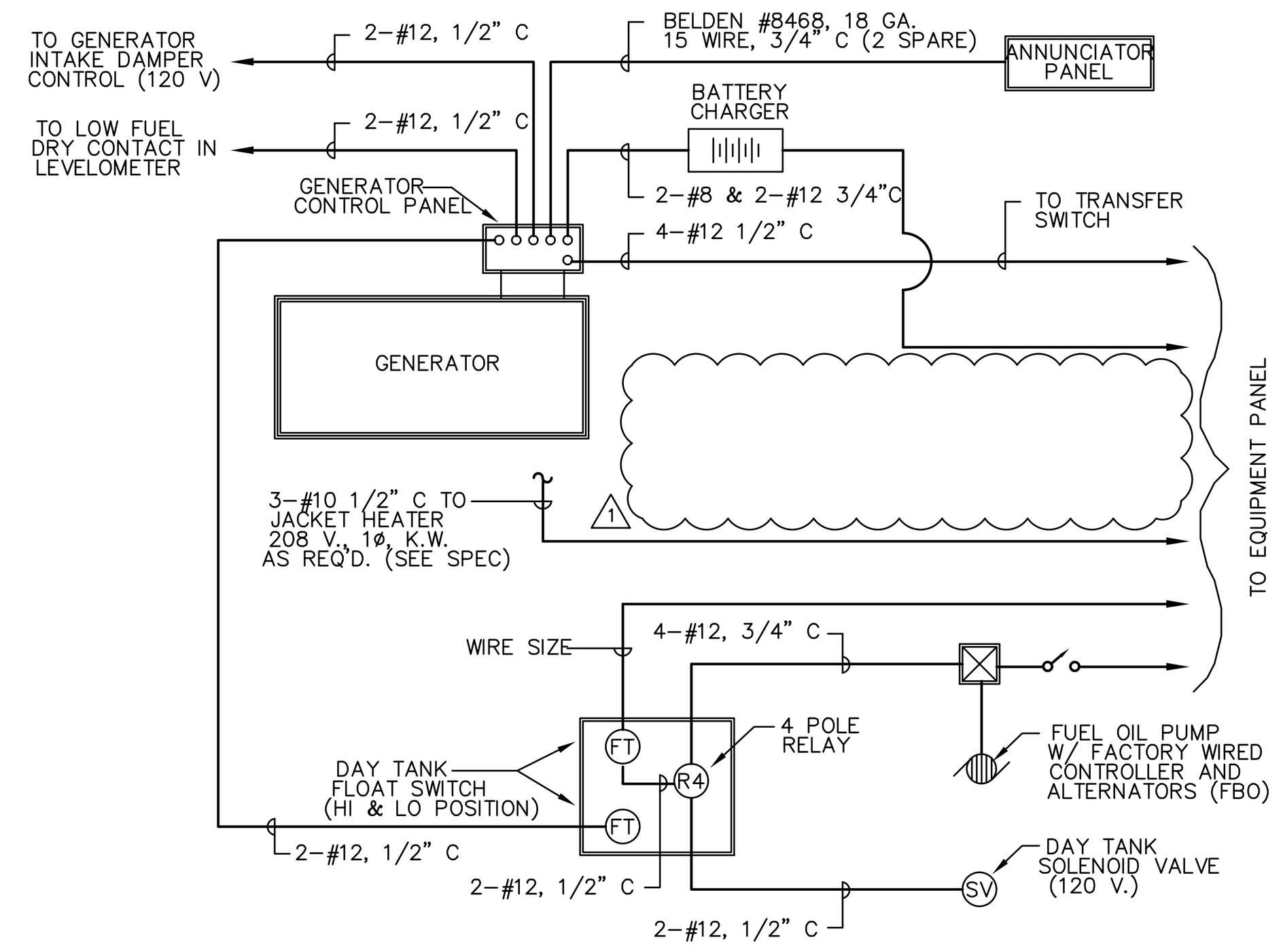
ELECTRICAL DETAILS

REVISION:	REV.#	DATE	COMMENTS
REVISION:	1	09/09/2024	ADDENDUM 2
REVISION:			
REVISION:			
REVISION:			

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

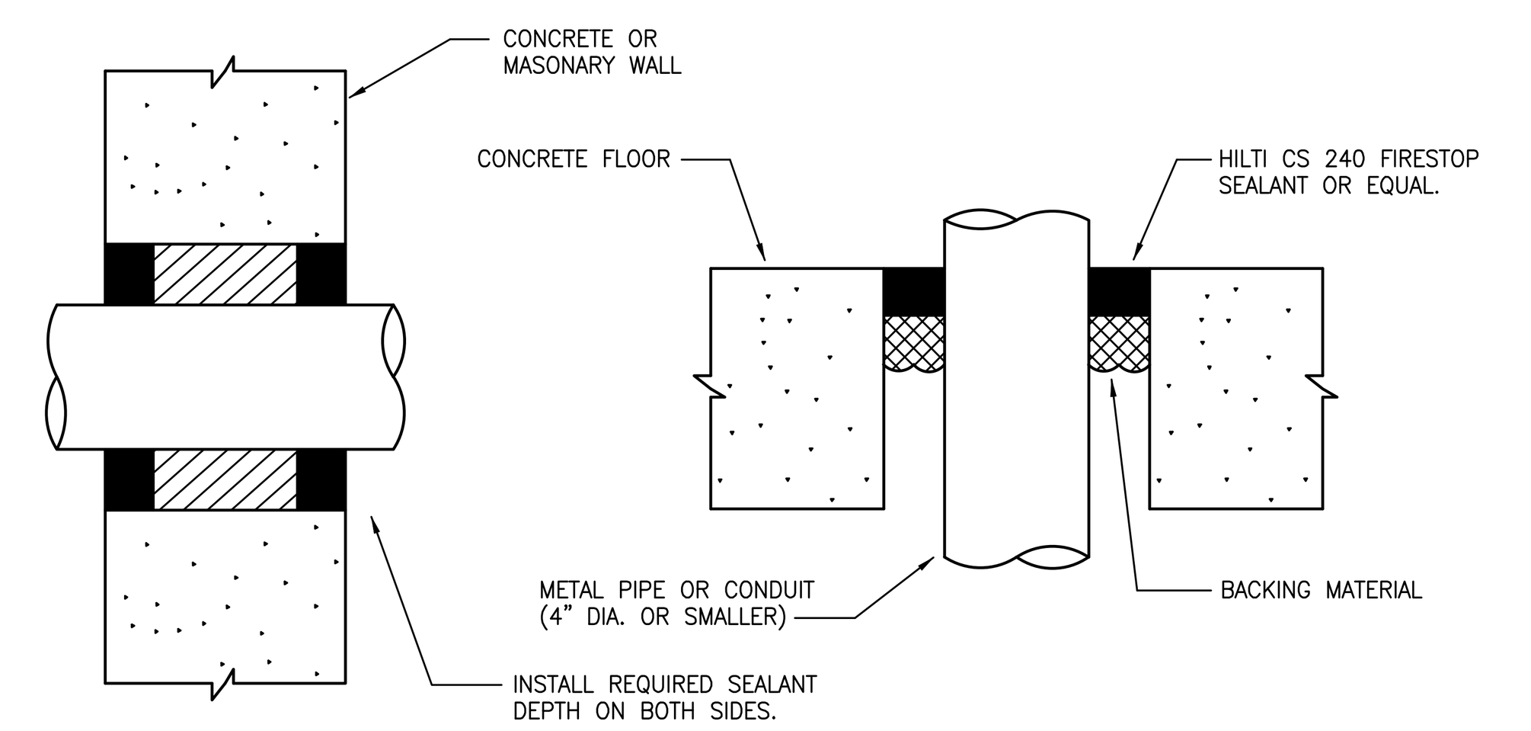
RGAS
PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E402



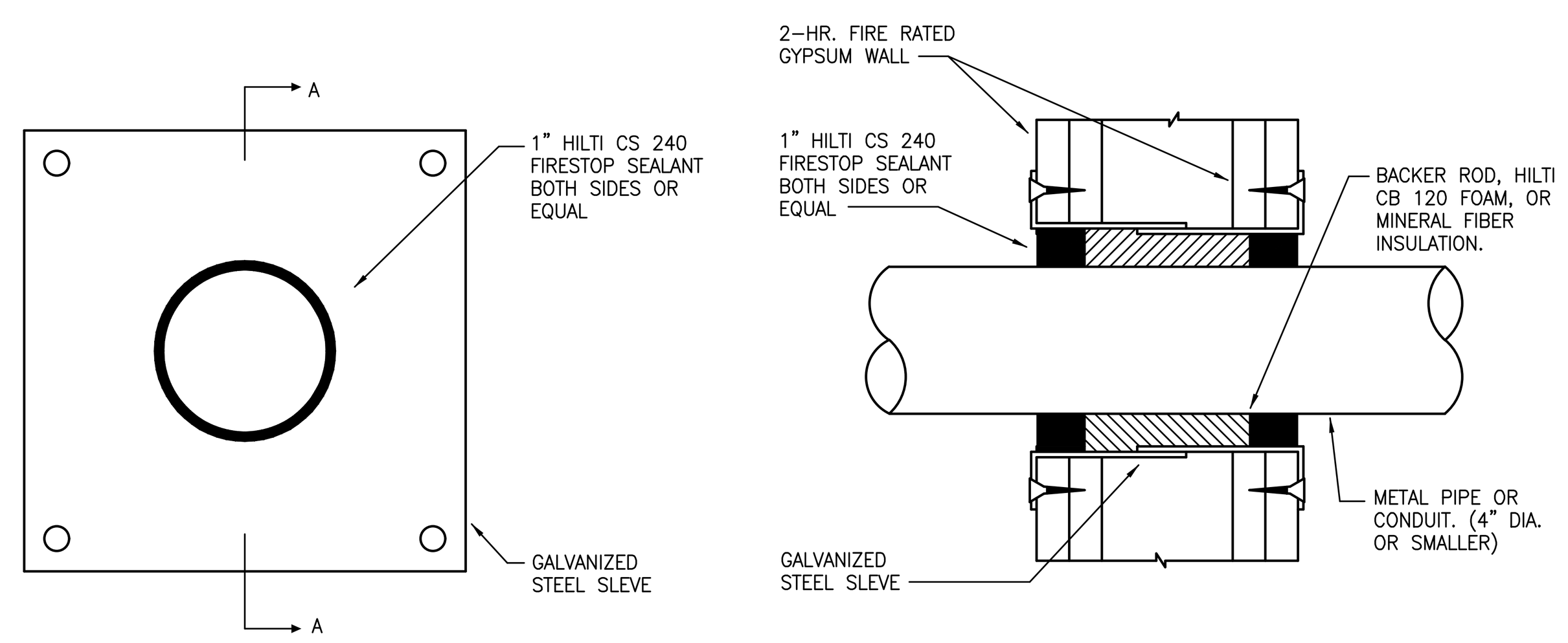
2 EMERGENCY DIESEL GENERATOR SYSTEM INTERLOCKING DIAGRAM

NOT TO SCALE



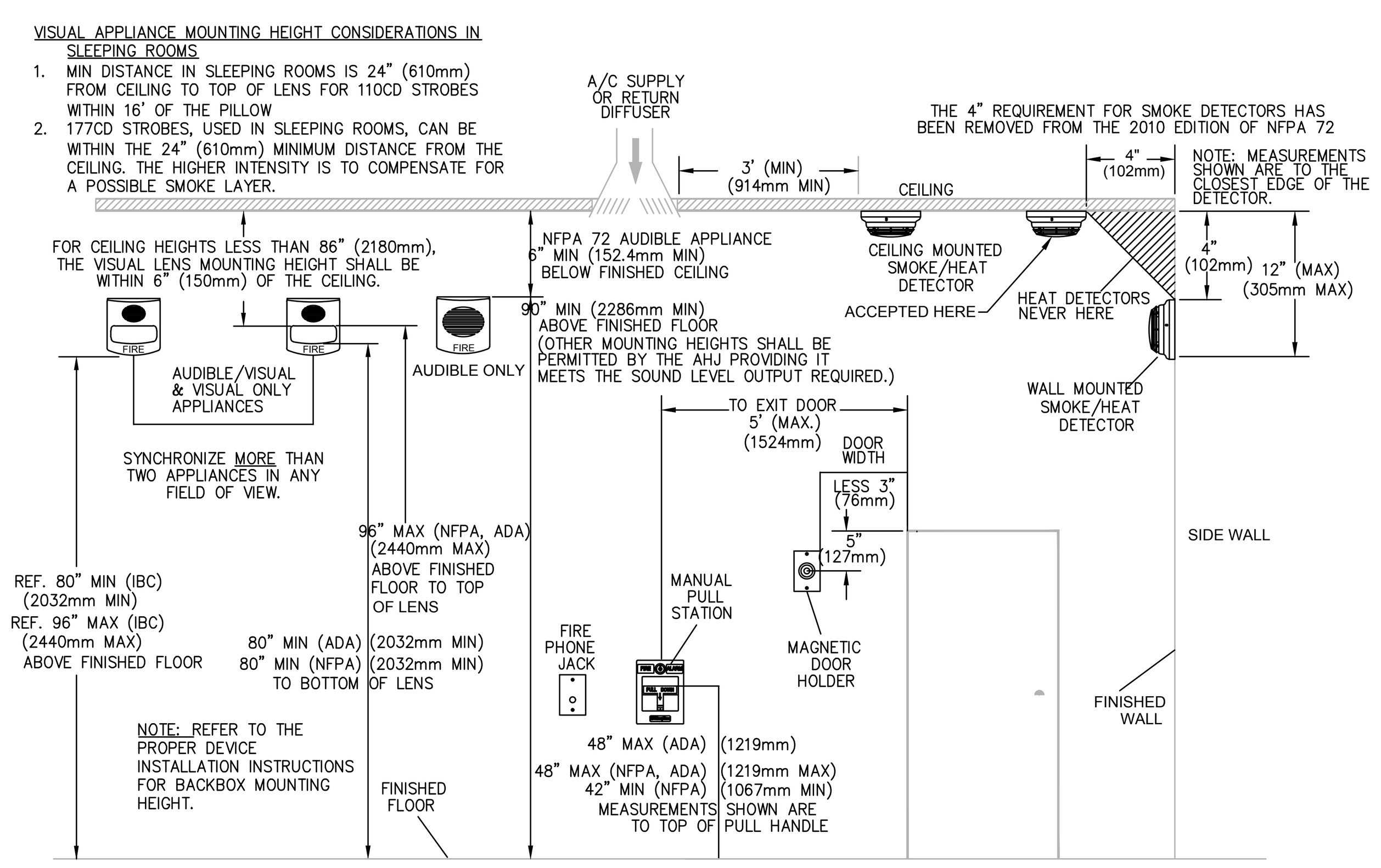
3 FIRESTOP DETAIL THRU CONCRETE/MASONRY

NOT TO SCALE



4 FIRESTOP DETAIL THRU GYPSUM WALL

NOT TO SCALE



5 DEVICE MOUNTING HEIGHT DETAIL (NFPA 72)

DIAGRAMMATIC

EMERGENCY POWER SYSTEM

CONTRACTOR SHALL FURNISH AND INSTALL, AS INDICATED ON THE PLANS AND AS HEREIN SPECIFIED, A COMPLETE SYSTEM FOR THE GENERATION, CONTROL AND DISTRIBUTION OF ELECTRICAL POWER UPON FAILURE OF NORMAL SOURCE.

SYSTEM SHALL INCLUDE ENGINE-GENERATOR UNIT(S), AUTOMATIC TRANSFER SWITCH(ES), DIESEL FUEL SUPPLY SYSTEM, AND ALL OTHER WIRING, RACEWAYS, EQUIPMENT, HARDWARE, ETC., NECESSARY FOR A COMPLETE AND PROPERLY FUNCTIONING SYSTEM, WHETHER OR NOT EVERY SUCH ITEM IS SPECIFICALLY SHOWN OR MENTIONED.

SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 110 AND 37, NEC ARTICLE 700, UL 2200, STATE BUILDING CODE, AND ALL LOCAL CODES AND REQUIREMENTS.

UPON FAILURE TO NORMAL POWER SOURCE TO THE AUTOMATIC TRANSFER SWITCH, SYSTEM SHALL FUNCTION AUTOMATICALLY TO RESTORE POWER TO DESIGNATED LOADS FROM THE ENGINE-GENERATOR SET WITHIN 10 SECONDS.

POWER RATING OF THE DIESEL ENGINE-GENERATOR SET SHALL BE BASED ON OPERATION AT 1800 RPM WHEN EQUIPPED WITH ALL NECESSARY OPERATION ACCESSORIES SUCH AS AIR CLEANERS, LUBRICATING OIL PUMP, JACKET WATER PUMP, GOVERNOR, ALTERNATING CURRENT GENERATOR, AND EXCITER REGULATOR. RADIATOR FAN SHALL BE INCLUDED AS NECESSARY OPERATING ACCESSORY. RATING SHALL APPLY AT SITE CONDITIONS.

THE ENGINE SHALL BE WATER-COOLED, IN-LINE TYPE, WITH FOUR STROKE ENGINE.

THE ENGINE SHALL BE COMPRESSION IGNITION DIESEL WHICH MEETS SPECIFICATIONS FOR OPERATING ON NO. 2 FUEL OIL.

THE ENGINE SHALL BE EQUIPPED WITH FUEL, LUBE OIL, INTAKE AIR FILTERS, LUBE OIL COOLER, FUEL TRANSFER PUMP, FUEL PRIMING PUMP, RUNNING TIME METER, CHARGING ALTERNATOR, GEAR-DRIVEN WATER PUMP, AND INSTRUMENTS, INCLUDING A FUEL PRESSURE GAUGE, WATER TEMPERATURE GAUGE, LUBRICATING OIL PRESSURE GAUGE AS HEREIN SPECIFIED.

AN AUTOMATIC VOLTS PER HERTZ TYPE, SOLID STATE EXCITER/REGULATOR, MANUFACTURED BY THE GENERATOR MANUFACTURER, SHALL BE INCLUDED AND SHOCK MOUNTED INSIDE THE GENERATOR. VOLTAGE REGULATION SHALL BE +1% FROM NO LOAD TO FULL RATED LOAD. READILY ACCESSIBLE VOLTAGE DROOP, VOLTAGE LEVEL, AND VOLTAGE GAIN CONTROLS SHALL BE INCLUDED IN THE MODULE. VOLTAGE LEVEL ADJUSTMENTS SHALL BE MINIMUM OF +10%. THE MODULE SHALL INCLUDE THE FOLLOWING PROTECTIVE FEATURES:

VOLTAGE REGULATOR SHALL BE THREE PHASE SENSING. SINGLE SENSING SHALL NOT BE ACCEPTABLE.

AN ENGINE MOUNTED RADIATOR WITH BLOWER-TYPE FAN SHALL BE PROVIDED TO MAINTAIN SAFE OPERATION AT 100 DEGREE F* (43 DEGREES C) AMBIENT TEMPERATURE. TOTAL AIR FLOW RESTRICTION TO AND FROM THE RADIATOR SHALL NOT EXCEED 0.5 IN. H20 (0, 12 KPA).

THE ENGINE COOLING SYSTEM SHALL BE PRETREATED BY THE ENGINE SUPPLIER FOR THE INHIBITION OF INTERNAL CORROSION. IN ADDITION, A SOLUTION OF 50% ETHYLENE GLYCOL SHALL BE ADDED, TO PREVENT FREEZING OF SYSTEM DUE TO EXTREME TEMPERATURES.

A CRITICAL EXHAUST SILENCER, AND ALL REQUIRED ACCESSORIES AND FITTINGS, SHALL BE PROVIDED. MOUNTING SHALL BE ON THE WEATHERPROOF ENCLOSURE. THE SILENCER SHALL BE MOUNTED SO THAT ITS WEIGHT IS NOT SUPPORTED BY THE ENGINE NOR WILL EXHAUST SYSTEM GROWTH, DUE TO THERMAL EXPANSION, BE IMPOSED ON THE ENGINE. EXHAUST PIPE SIZE SHALL BE SUFFICIENT TO ENSURE THAT EXHAUST BACKPRESSURE DOES NOT EXCEED THE MAXIMUM LIMITATIONS SPECIFIED BY THE ENGINE MANUFACTURER.

THE EXHAUST SILENCER SHALL BE MOUNTED DIRECTLY ON THE EXHAUST ELBOW OF THE ENGINE AND SHALL PROTRUDE THROUGH THE ENCLOSURE. A RAINCAP SHALL ALSO BE PROVIDED.

FULLY AUTOMATIC GENERATOR SET START-STOP CONTROLS IN THE GENERATOR CONTROL PANEL SHALL BE PROVIDED. CONTROLS SHALL PROVIDE SHUTDOWN FOR LOW OIL PRESSURE, HIGH WATER TEMPERATURE, OVERSPEED, OVERCRANK, AND ONE AUXILIARY CONTACT FOR ACTIVATING ACCESSORY ITEMS. CONTROLS SHALL INCLUDE ONE 30-SECOND CRANKING CYCLE WITH LOCKOUT AND MANUAL RESET FEATURE.

AN ENGINE-MOUNTED THERMAL CIRCULATION TANK-TYPE IMMERSION WATER HEATER INCORPORATING AN ADJUSTABLE THERMOSTATIC SWITCH SHALL BE FURNISHED TO MAINTAIN ENGINE JACKET WATER TO 90 DEGREES F (32.2 DEGREES C) IN A STILL AIR, AMBIENT TEMPERATURE OF 30 DEGREES F (-1.1 DEGREES C). THE HEATER SHALL BE 120 VOLT, SINGLE PHASE, 1.5KW, 60HZ.

THE ENGINE SHALL BE EQUIPPED WITH A 24 VOLT ELECTRIC STARTING SYSTEM WITH POSITIVE ENGAGEMENT DRIVE AND OF SUFFICIENT CAPACITY TO CRANK THE ENGINE AT A SPEED WHICH WILL START THE ENGINE UNDER OPERATING CONDITIONS. THE STARTING PINION WILL DISENGAGE AUTOMATICALLY WHEN THE ENGINE STARTS. THE STARTING SYSTEM SHALL INCORPORATE AN AUTOMATICALLY RESET CIRCUIT BREAKER FOR ANTIBUTT ENGAGEMENT.

A LEAD-ACID STORAGE BATTERY SET OF THE HEAVY-DUTY DIESEL STARTING TYPE SHALL BE PROVIDED. BATTERY VOLTAGE SHALL BE COMPATIBLE WITH THE STARTING SYSTEM. THE BATTERY SET SHALL BE RATED NO LESS THAN 220 AMPERE HOURS. A BATTERY RACK CONSTRUCTED IN CONFORMANCE WITH NEC REQUIREMENTS AND NECESSARY CABLES AND CLAMPS SHALL BE PROVIDED. BATTERIES SHALL BE CAPABLE OF CRANKING ENGINE AT RATED AMBIENT FOR MINIMUM OF FIVE MINUTES.

BATTERIES SHALL FIT INSIDE ENCLOSURE AND ALONG SIDE THE ENGINE. (BATTERIES UNDER THE GENERATOR ARE NOT ACCEPTABLE).

A CURRENT LIMITING, FLOAT-EQUALIZE CHARGER SHALL BE FURNISHED TO AUTOMATICALLY RECHARGE BATTERIES. THE CHARGER SHALL FLOAT AT 2.17 VOLTS PER CELL AND EQUALIZE AT 2.33 VOLTS PER CELL. IT SHOULD INCLUDE OVERLOAD PROTECTION, SILICON DIODE FULL WAVE RECTIFIERS, VOLTAGE SURGE SUPPRESSERS, DC AMMETER, AND FUSED C OUTPUT. AC INPUT VOLTAGE SHALL BE 120 VOLTS, SINGLE PHASE. AMPERAGE OUTPUT SHALL BE NO LESS THAN 5 AMPERES. CHARGER SHALL BE WALL MOUNTING TYPE IN NEMA 3R ENCLOSURE OR IN GENERATOR ENCLOSURE.

MAIN LINE MOLDED CASE, THREE-POLE, SINGLE THROW CIRCUIT BREAKER(S) RATED AS INDICATED ON THE DRAWINGS, AT 104 DEGREES F (40 DEGREES C) AMBIENT TEMPERATURE SHALL BE INSTALLED FOR THREE PHASE OVERLOADS AND/OR SHORT CIRCUIT PROTECTION. THESE RATINGS SHALL INCLUDE AT LEAST 10% ADDITIONAL CAPACITY FOR OVERLOAD AND OPERATING TEMPERATURE RISE OVER 104 DEGREES F(40 DEGREES C). IT SHALL OPERATE BOTH MANUALLY FOR NORMAL SWITCHING FUNCTIONS AND AUTOMATICALLY DURING OVERLOAD AND SHORT CIRCUIT CONDITIONS.

WEATHERPROOF, SOUND ATTENUATED (LEVEL II) ENCLOSURE FOR GENERATOR AND ALL OTHER ITEMS TO BE DESIGNED AND BUILT BY ENGINE MANUFACTURER AS AN INTEGRAL PART OF THE GENERATOR SET AN BE DESIGNED TO PERFORM WITHOUT OVERHEATING IN THE AMBIENT TEMPERATURE SPECIFIED.

CONSTRUCTED OF 16 GAUGE CORROSION RESISTANT SHEET METAL, SUITABLY REINFORCED TO BE VIBRATION FREE IN THE OPERATING MODE. ROOF TO BE PEAKED TO ALLOW DRAINAGE OF RAIN WATER.

BAKED ENAMEL FINISH WITH PRIMER AND FINISH COAT TO BE PAINTED BEFORE ASSEMBLY. ALL FASTENERS SHALL BE RUST RESISTANT.

UNIT SHALL HAVE SUFFICIENT GUARDS TO PREVENT ENTRANCE BY SMALL ANIMALS.

UNIT SHALL HAVE COOLANT AND OIL DRAINS OUTSIDE THE UNIT TO ACCUMULATE MAINTENANCE. EACH DRAIN LINE IS TO HAVE A HIGH QUALITY VALVE LOCATED NEAR THE FLUID SOURCE.

FUEL TANK CAPACITY SHALL BE AS NOTED ON THE POWER RISER DIAGRAM.

PROVIDE U.L. LISTED BASE MOUNTED TANK WITH RUPTURE BASIN AND LEAK ALARM CONNECTED TO REMOTE STATUS MONITOR AND CONTROL PANEL. VERIFY STATUS AND CONTROL PANEL LOCATION.

PROVIDE LOW-FUEL ALARM INDICATOR, ANALOG TYPE, VERIFY LOCATION.

TANK SHALL BE CONSTRUCTED IN ACCORDANCE WITH NEMA, UL AND ASTM STANDARDS.

THE GENERATOR ASSEMBLY SHALL BE MOUNTED SECURELY TO THE CONCRETE HOUSEKEEPING PAD. THE CONCRETE PAD SHALL BE 6" THICK, 3000 PSI WITH #4 REBAR TIED TOGETHER ON 6" CENTERS (BOTH WAYS). PROVIDE 1½" THICK VIBRATION ISOLATION RUBBER MAT BETWEEN THE CONCRETE PAD AND CONCRETE DECK. THE GENERATOR SET FRAME SHALL HAVE SPRING VIBRATION ISOLATORS. ALL ELECTRICAL CONNECTIONS TO THE GENERATOR SET SHALL CONSIST OF WEATHER-PROOF FLEXIBLE CONDUIT.

PROVIDE AND INSTALL AUTOMATIC TRANSFER SWITCH TO OPERATE ON A 3 PHASE, 4 WIRE, 60 HZ SYSTEM. VOLTAGE AND AMPERAGE AS NOTED ON DRAWINGS. TRANSFER SWITCH SHALL BE 3 POLE WITH SOLID NEUTRAL UNLESS INDICATED AS 4-POLE ON THE POWER RISER DIAGRAM. THE ENTIRE ASSEMBLY SHALL BE UL LISTED UNDER UL-1008 AND COMPLY WITH NATIONAL ELECTRICAL CODE REQUIREMENTS. THE TRANSFER SWITCH SHALL BE DOUBLE THROW, ACTUATED BY A SINGLE ELECTRICAL OPERATOR, MOMENTARILY ENERGIZED; AND CONNECTED TO THE TRANSFER MECHANISM BY A SINGLE OVER-CENTER TYPE LINKAGE WITH A TOTAL TRANSFER TIME NOT TO EXCEED ONE-HALF SECOND.

THE TRANSFER SWITCH SHALL BE CAPABLE OF TRANSFERRING SUCCESSFULLY IN EITHER DIRECTION WITH 70% OF RATED VOLTAGE APPLIED TO THE SWITCH TERMINALS.

PROVIDE WITH EXERCISER CLOCK WHICH SHALL VIRTUALLY EXERCISE THE GENERATOR SET WITHOUT TRANSFERRING THE LOAD.

THE NORMAL AND EMERGENCY CONTACTS SHALL BE POSITIVELY INTERLOCKED MECHANICALLY AND ELECTRICALLY TO PREVENT SIMULTANEOUS CLOSING. MAIN CONTACTS SHALL BE MECHANICALLY LOCKED IN POSITION IN BOTH THE NORMAL AND EMERGENCY POSITIONS WITHOUT THE USE OF HOOKS, LATCHES, MAGNETS OR SPRINGS AND SHALL BE SILVER ALLOY. SEPARATE ARCING CONTACTS, WITH MAGNETIC BLOWOUTS, SHALL BE PROVIDED ON ALL TRANSFER SWITCHES. INTERLOCKED MOLDED CASE CIRCUIT BREAKERS OR CONTACTORS ARE NOT ACCEPTABLE. THE TRANSFER SHALL BE EQUIPPED WITH A PERMANENTLY ATTACHED SAFE MANUAL OPERATOR DESIGNED TO PREVENT INJURY TO OPERATING PERSONNEL.

THE MANUAL OPERATOR SHALL PROVIDE A SAME CONTACT-TO CONTACT TRANSFER SPEED AS THE ELECTRICAL OPERATOR TO PREVENT A FLASHOVER FROM SWITCHING THE MAIN CONTACTS SLOWLY.

CAREFULLY "OHM" OUT CONTROL WIRING BETWEEN ATS AND GENERATOR SET PRIOR TO CONNECTING. CHECK FOR OPENS, SHORTS, OR GROUNDS.

TEST ATS FUNCTIONS PRIOR TO CONNECTING LOAD CHECK NORMAL AND EMERGENCY INPUT FEEDERS, PRIOR TO CONNECTION, FOR INSULATION BREAKAGE, OPENS, SHORTS, OR GROUNDS.

THE GENERATOR SET SHALL BE TESTED AT THE EQUIPMENT MANUFACTURER'S FACILITY PRIOR TO SHIPMENT. ALL TESTS SHALL BE RECORDED AND SUBMITTED TO THE ARCHITECT/ENGINEER. MINIMUM TESTING TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

1. TRANSIENT RESPONSE.
2. VOLTAGE DIP AT 50, 75, AND 100% LOAD.
3. FREQUENCY DIP.
4. RECOVERY TIME.

ON COMPLETION OF THE INSTALLATION, START-UP SHALL BE PERFORMED BY THE GENERATOR SET MANUFACTURER, A TRAINED DEALER SERVICE REPRESENTATIVE. PARTS BOOKS COVERING THE ENGINE, GENERATOR, AND MAJOR AUXILIARY EQUIPMENT SHALL BE PROVIDED TO THE OWNER AT THIS TIME. PROCEDURES ON OPERATING AND MAINTENANCE OF THE STANDBY POWER SYSTEM SHALL BE EXPLAINED TO OPERATING PERSONNEL.

EQUIPMENT FURNISHED UNDER THESE SPECIFICATIONS SHALL BE GUARANTEED AGAINST DEFECTIVE PARTS AND WORKMANSHIP UNDER TERMS OF THE MANUFACTURER'S AND DEALER'S STANDARD WARRANTY. BUT, IN NO EVENT, SHALL IT BE FOR A PERIOD OF LESS THAN TWO YEARS FROM DATE OF INITIAL START-UP OF THE SYSTEM AND SHALL INCLUDE LABOR AND TRAVEL TIME FOR NECESSARY REPAIRS AT THE JOB SITE. RUNNING HOURS SHALL NOT BE A LIMITING FACTOR FOR THE SYSTEM WARRANTY.

BASE-TANK STORAGE REQUIREMENTS

CONTROL OF SPILLAGE FROM ABOVEGROUND TANKS.

FACILITIES SHALL BE PROVIDED SO THAT ANY ACCIDENTAL DISCHARGE OF ANY CLASS I, II, OR IIIA LIQUIDS WILL BE PREVENTED FROM ENDANGERING IMPORTANT FACILITIES, AND ADJOINING PROPERTY, OR REACHING WATERWAYS.

EXCEPTION NO. 1: TANKS STORING CLASS IIIB LIQUIDS DO NOT REQUIRE SPECIAL DRAINAGE OR DIKING PROVISIONS FOR FIRE PROTECTION PURPOSES.

EXCEPTION NO. 2: ABOVEGROUND SECONDARY CONTAINMENT-TYPE TANKS NEED NOT MEET THE REQUIREMENTS OF 2-3.4 IF ALL OF THE FOLLOWING CONDITIONS ARE MET:
(A) THE CAPACITY OF THE TANK SHALL NOT EXCEED 12,000 GAL (45,420 L).

(B) ALL PIPING CONNECTIONS TO THE TANK SHALL BE MADE ABOVE THE NORMAL MAXIMUM LIQUID LEVEL.

(C) MEANS SHALL BE PROVIDED TO PREVENT THE RELEASE OF LIQUID FROM THE TANK BY SIPHON FLOW.

(D) MEANS SHALL BE PROVIDED FOR DETERMINING THE LEVEL OF LIQUID IN THE TANK. THIS MEANS SHALL BE ACCESSIBLE TO THE DELIVERY OPERATOR.

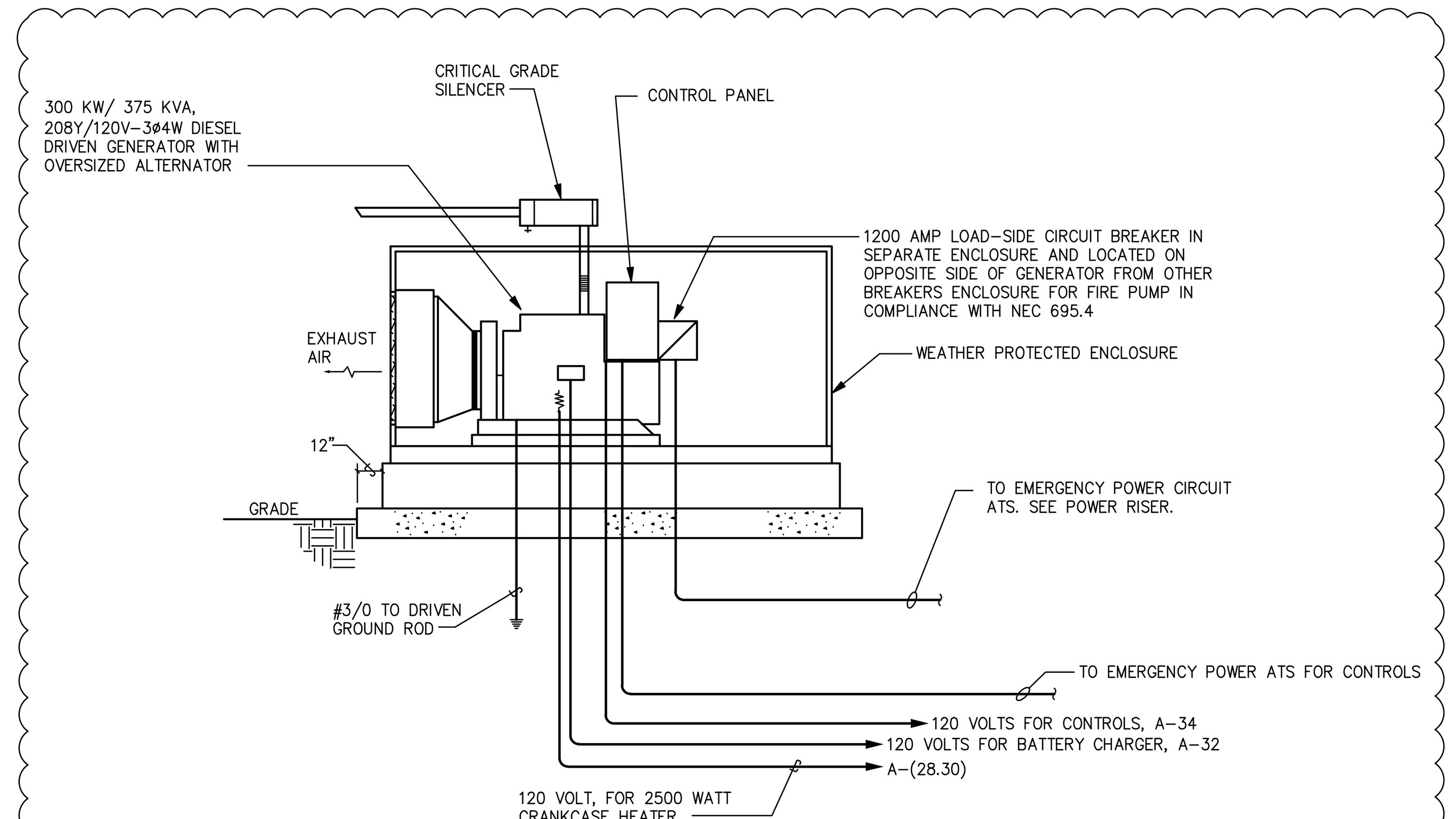
(E) MEANS SHALL BE PROVIDED TO PREVENT OVERFILLING BY SOUNDING AN ALARM WHEN THE LIQUID LEVEL IN THE TANK REACHES 90 PERCENT OF CAPACITY AND BY AUTOMATICALLY STOPPING DELIVERY OF LIQUID TO THE TANK WHEN THE LIQUID LEVEL IN THE TANK REACHES 95 PERCENT OF CAPACITY. IN NO CASE SHALL THESE PROVISIONS RESTRICT OR INTERFERE WITH THE PROPER FUNCTIONING OF THE NORMAL VENT OR THE EMERGENCY VENT.

(F) SPACING BETWEEN ADJACENT TANKS SHALL BE NOT LESS THAN 3FT (0.9 M).

(G) THE TANK SHALL BE CAPABLE OF RESISTING THE DAMAGE FROM THE IMPACT OF A MOTOR VEHICLE OR SUITABLE COLLISION BARRIERS SHALL BE PROVIDED.

(H) WHERE THE INTERSTITIAL SPACE IS ENCLOSED, IT SHALL BE PROVIDED WITH EMERGENCY VENTING IN ACCORDANCE WITH 2-3.6.

(I) MEANS SHALL BE PROVIDED TO ESTABLISH THE INTEGRITY OF THE SECONDARY CONTAINMENT. FOR TESTING OF SECONDARY CONTAINMENT-TYPE TANKS.



1 GENERATOR DEATIL

NOT TO SCALE

WILLIAM LEE TEETER, PE
3400 SOUTH TRYON ST., SUITE D
CHARLOTTE, NC 28217
P: 704.376.2999 • F: 704.376.2999

BDA

STATE OF NEW YORK — WILLIAM LEE TEETER — LICENSED PROFESSIONAL ENGINEER — 071959

09/09/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ELECTRICAL DETAILS

REV.#	DATE	COMMENTS
REVISION: 2	09/09/2024	ADDENDUM 2
REVISION:		
REVISION:		
REVISION:		
REVISION:		

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: ZLT
DATE: 07/08/2024

E403