


	1	2	3	4	5
G					
F	<div>LAUDERDALE COUNTY AGRI-CENTER NEW SOUND REINFORCEMENT SYSTEM 1022 MS-19, Meridian, MS 39301</div> <div>Lauderdale County Board of Supervisors</div>				
E	<div>Sheet Index</div> <div>AV0.1 Sheet Index AV1.1 Overall Plan AV1.2 Enlarged Bleachers & Concourse Plan AV1.3 Enlarged Arena Plan AV1.4 Enlarged West Barn Plan AV1.5 Enlarged East Barn Plan AV1.6 Equipment Room Details AV2.1 Overall Loudspeaker Coverage Plan AV2.2 Enlarged Bleachers & Concourse Loudspeaker Coverage Plan AV2.3 Enlarged Arena Loudspeaker Coverage Plan AV2.4 Enlarged West Barn Loudspeaker Coverage Plan AV2.5 Enlarged East Barn Loudspeaker Coverage Plan AV3.0 Sound System Legend AV3.1 Single Line Diagram</div>				
D					
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	1	2	3	4	5



acoustics - technology

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NEW SOUND SYSTEM

Sheet Index

Project#21-046

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AV0.1

DrawnRWA

Date6-1-22

AV CABLING & TERMINATION NOTES

GENERAL

1. All plenum wire shall meet applicable local codes.
2. Cable types are specified based on terminated end points.
3. See single lines, provide as required to provide the system as shown.
4. Cable callouts shown on the single line drawings are for reference to the Basis of Design, UON.
5. All wire and cable shall be provided as recommended by the manufacturer for the connected equipment, UON.
6. All exposed wire and cable shall be plenum rated per NEC and NFPA.
7. Verify all cable types during submittal with the AV Consultant.
8. Verify cable lengths with manufacturer of connected equipment for all cable types.
9. Wire and cable for any device shall be supplied in accordance with the requirements of the device manufacturer
10. Wire and cable shall be installed in compliance with the National Electrical Code.
11. Wire, cable and signal conductors shall be new and unused.
12. All low level field cabling shall enter racks at punch points or directly soldered to equipment connectors.
13. Buss punch block ground points to single rack ground, see jack field detail.
14. Mechanically isolate all panel connectors from raceway system and finish plate.
15. Mechanically isolate connector chassis from rack panel. Pin 1 shall not be at the same potential as connector chassis or panel.
16. Mechanically isolate service entrance conduits from equipment rack.
17. Use #10AWG solid wire min. for all ground jumpers.
18. Isolate equipment rack from conduit, raceway and power distribution system.
19. Maintain proper twist ratio for all pairs (Category 6 patching and interconnect).
20. Terminate all pins and conductors (Category 6 patching and interconnect).
21. There shall be no ground loops, regardless of equipment configuration.
22. Use 3-wire grounded devices when possible.
23. Use only balanced audio terminations throughout system, U.O.N. Use only ratchet type crimp tools.
24. All wire and cable shall have a unique numbering designator at each end of the physical media.
25. Contractor shall supply the cable in accordance with the recommendations of the connected equipment manufacturer.
26. Install and terminate cabling per AES, ANSI, IEC or BICSI standards, UON.
27. Contractor shall supply the optimum cable for the application.
28. All cabling shall be subject to the circuit type.
29. All cabling shall be subject to environmental conditions.
30. All cabling shall be provided and installed for bandwidth requirements.
31. Wiring designators are shown to indicate the requirements and to denote circuiting.
32. Contractor is free to use their own numbering scheme.
33. Contractor shall document all wire numbers on their shop drawings and as-built drawings.
34. Provide cable schedules for all cables UON. See specifications for additional requirements.

Loudspeaker Trim & Tilt by Zone

Zone	Down Tilt	Acoustical Center Height
Arena	-90	30
Barn East	-90	37
Barn West	-90	37
Bleachers	-80	30
Concourse	---	30.71
Connector East	-60	30
Connector West	-60	30
Loading Area	-45	15

NOTE: Verify all mounting locations, trim and angles with consultant prior to integration.

GENERAL LOUDSPEAKER NOTES

1. All details are for reference, illustration of applicable device coordinates and mounting configurations and general device orientation.
2. Obtain final loudspeaker coordinates, aiming data and dimensional details from the consultant prior to integration.
3. Refer to the architectural drawings for details and dimensions, architectural details provided herein are for reference only.

SYSTEMS

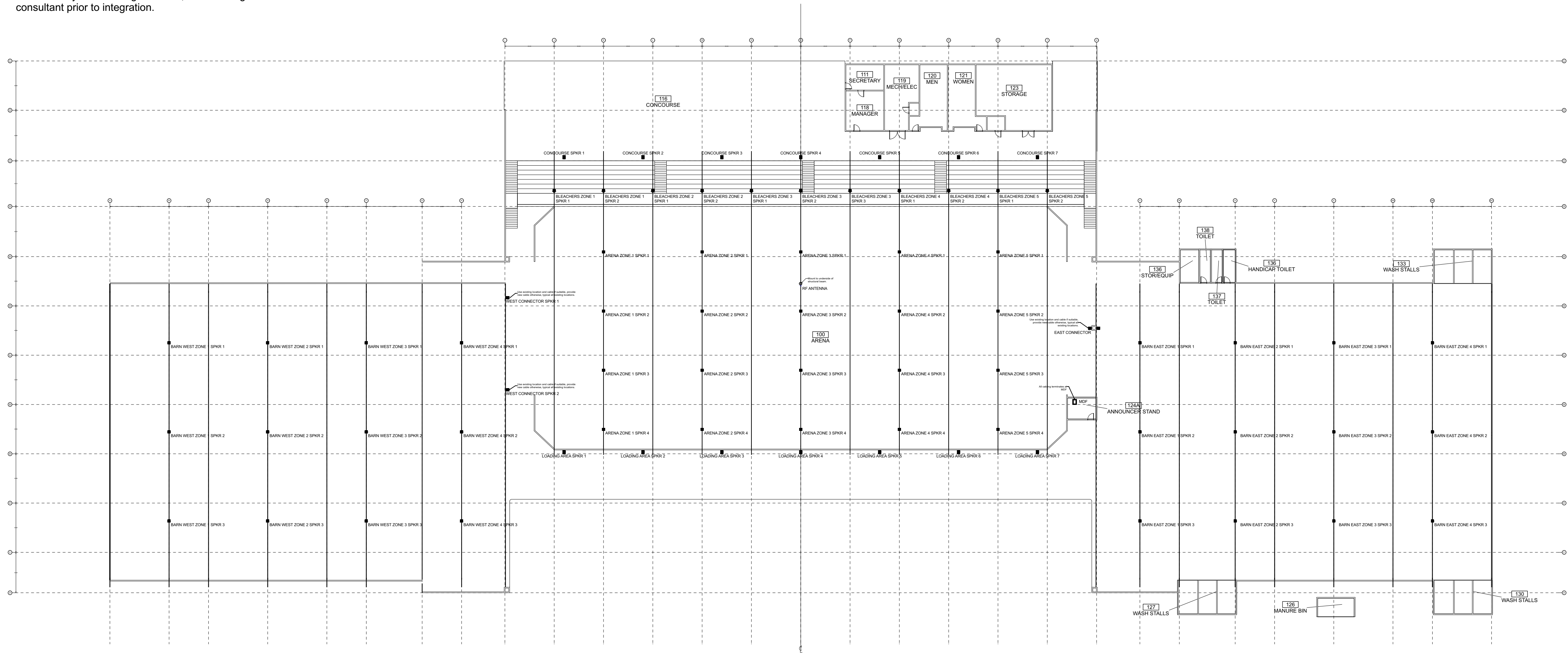
1. Provide cabling as reflected by single line drawings.
2. Pull cable through pull box, do not splice or use panel connectors.
3. Amplifier circuit shall terminate directly to transducer UON.
4. Final adjustment of loudspeaker aiming and mounting configuration will be determined on-site during commissioning.
5. Obtain aiming coordinates from consultant, UON.
6. Provide rigging hardware that supports adjustment of all loudspeakers for 360 degrees of adjustment.
7. Provide lift, scaffolding and rigging kits required for loudspeaker mounting and adjustment.
8. Ensure that all equipment is adjustable as to not impede loudspeaker dispersion during commissioning.
9. Refer to single line drawings for component callouts, circuiting and related signal processing requirements.
10. Attached to structure only, coordinate with owner, see specifications.
11. Equipment shall be held firmly in place with proper mounting hardware, suspension or rigging materials.
12. Equipment attached to any building structure, sub-structure or other load-bearing member shall be self-supporting.
13. All mounting or rigging hardware shall be installed with a safety factor of at least three times the required load.
14. Provide 1000% redundancy for all rigging attachment points, verify with owner.
15. Provide bumpers, array brackets, dead-hang hardware, fasteners, safety equipment as required by the loudspeaker manufacturer.
16. Use manufacturer's rigging hardware if available.
17. The AV Contractor shall verify, coordinate and obtain color preferences for all loudspeaker enclosures, related rigging, mounting hardware and accessories with the architect and/or owner.

CABLING

1. All low level field cabling shall enter rack at punch points or directly soldered to terminating connector at equipment or terminal panel.
2. Buss punch block ground points to single rack ground, see jack field detail.
3. If power supply includes ground to AC connector, do not terminate signal ground.
4. Mechanically isolate all panel connectors from raceway system and finish plate.
5. Mechanically isolate connector chassis from rack panel. Pin 1 shall not be at the same potential as connector chassis or panel.
6. Mechanically isolate service entrance conduits from equipment rack.
7. Use #10AWG solid wire min. for all ground jumpers.
8. There shall be no ground loops, regardless of equipment configuration.
9. Use 3-wire grounded devices when possible.
10. Use only balanced audio terminations throughout system, U.O.N.

WIRE NUMBERS

1. All wire and cable shall have a unique numbering designator at each end of the physical media.
2. Contractor shall supply the cable in accordance with the recommendations of the connected equipment manufacturer, per AV best practice or AES, ANSI, IEC or BICSI standards.
3. Contractor shall supply the optimum cable for the application, considering the circuit type, environmental conditions, bandwidth requirements, termination type, cable construction and performance requirements.
4. Wiring designators are shown to indicate the requirements and to denote circuiting. Contractor is free to use their own numbering scheme.
5. Contractor shall document all wire numbers on their shop drawings and as-built drawings. Provide cable schedules for all cables UON.
6. See specifications for additional requirements.



1 Overall Device Plan
Scale: 1/32" = 1'-0"



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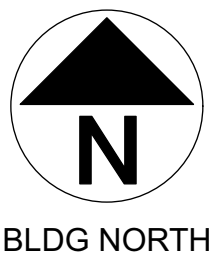
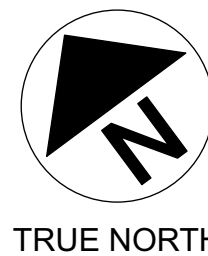
Overall Plan

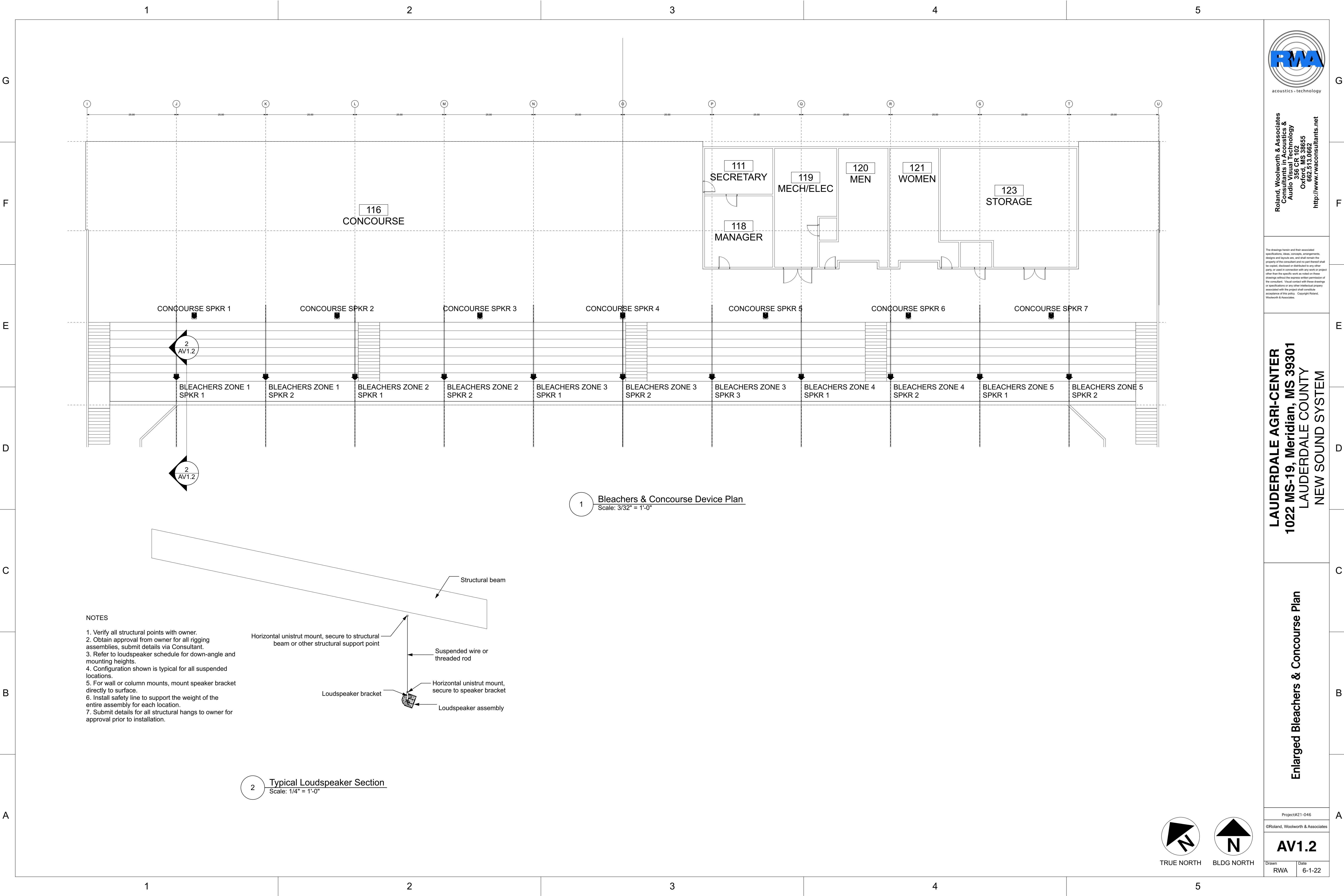
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AV1.1

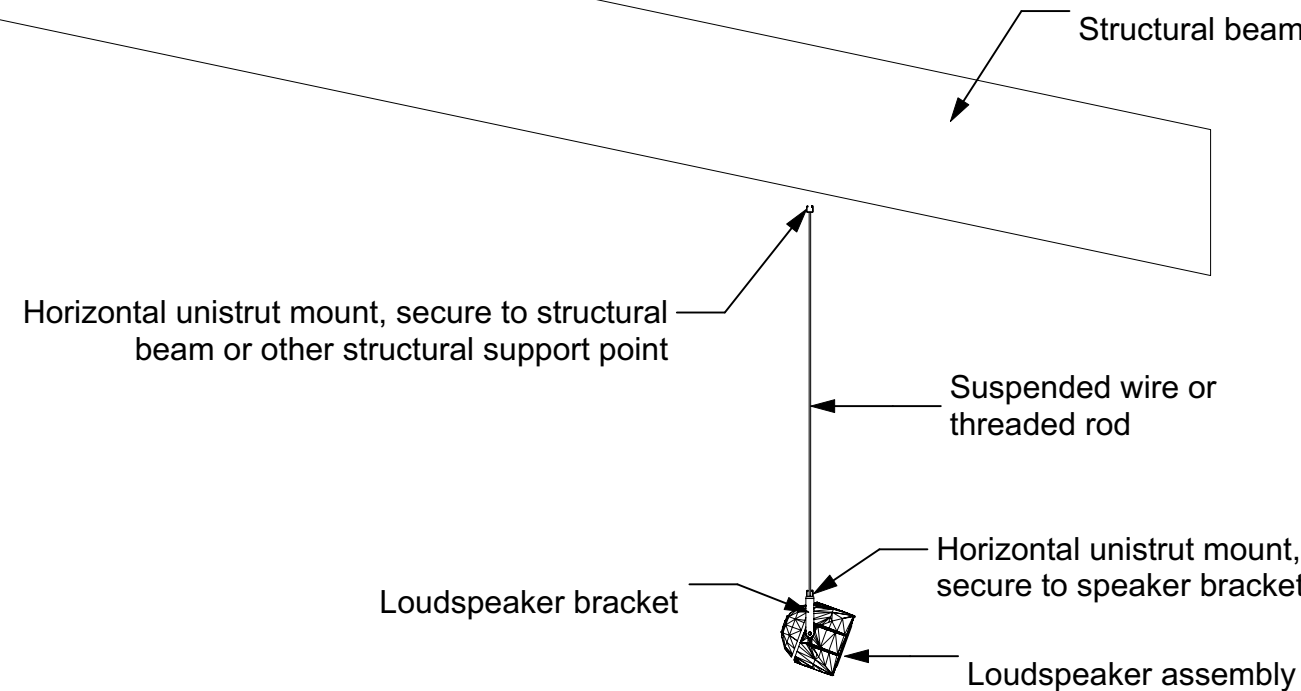
Drawn RWA Date 6-1-22





1 Bleachers & Concourse Device Plan
Scale: 3/32" = 1'-0"

- NOTES
1. Verify all structural points with owner.
 2. Obtain approval from owner for all rigging assemblies, submit details via Consultant.
 3. Refer to loudspeaker schedule for down-angle and mounting heights.
 4. Configuration shown is typical for all suspended locations.
 5. For wall or column mounts, mount speaker bracket directly to surface.
 6. Install safety line to support the weight of the entire assembly for each location.
 7. Submit details for all structural hangs to owner for approval prior to installation.



2 Typical Loudspeaker Section
Scale: 1/4" = 1'-0"



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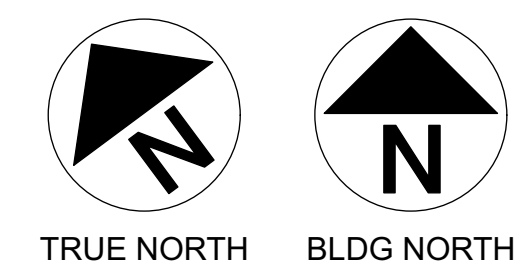
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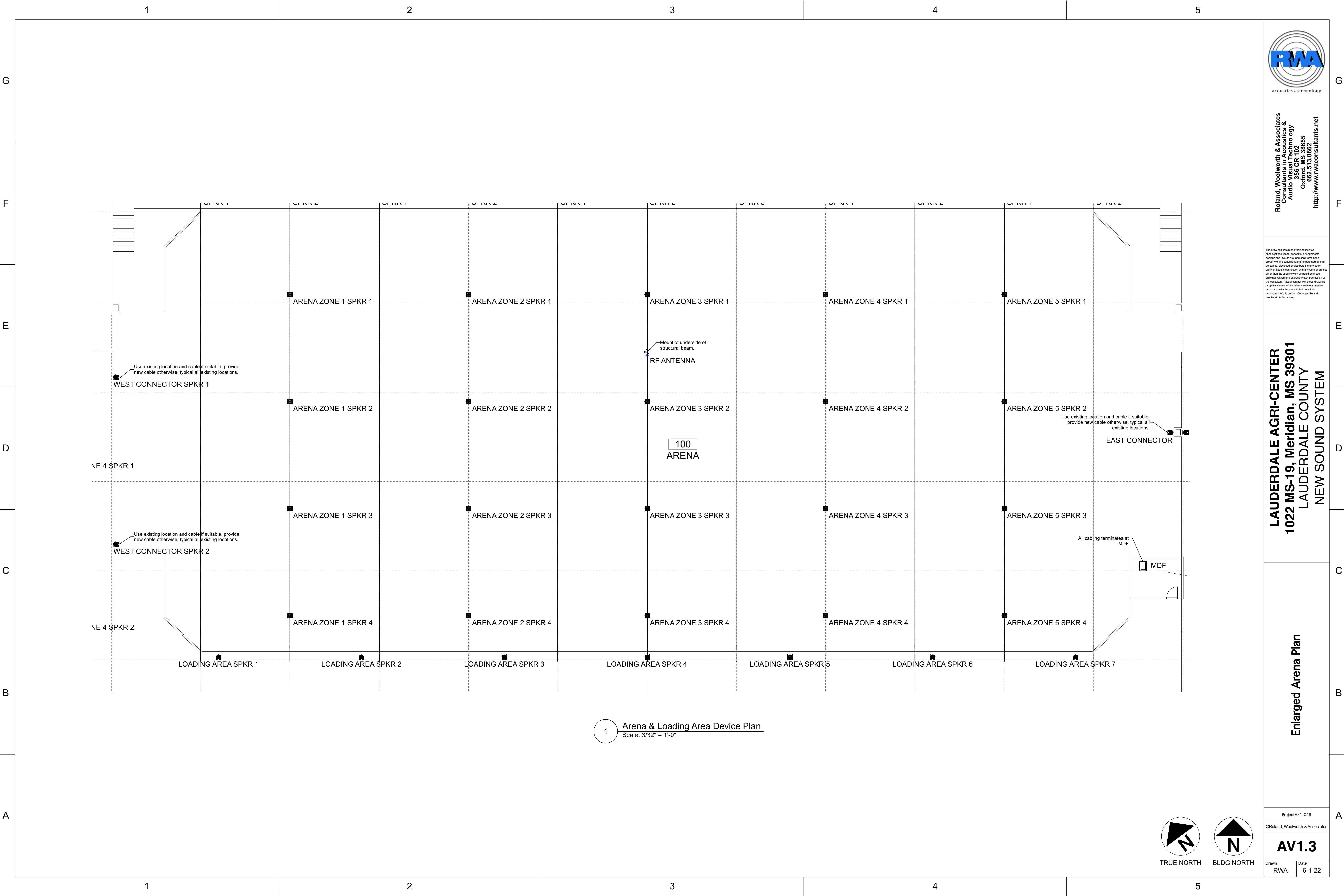
Enlarged Bleachers & Concourse Plan

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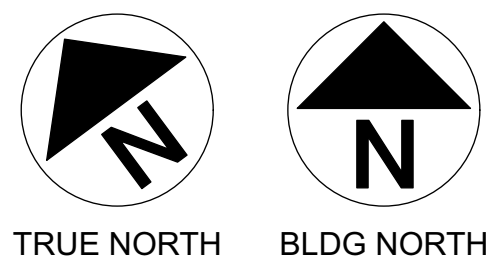
AV1.2

Drawn RWA Date 6-1-22





1 Arena & Loading Area Device Plan
Scale: 3/32" = 1'-0"



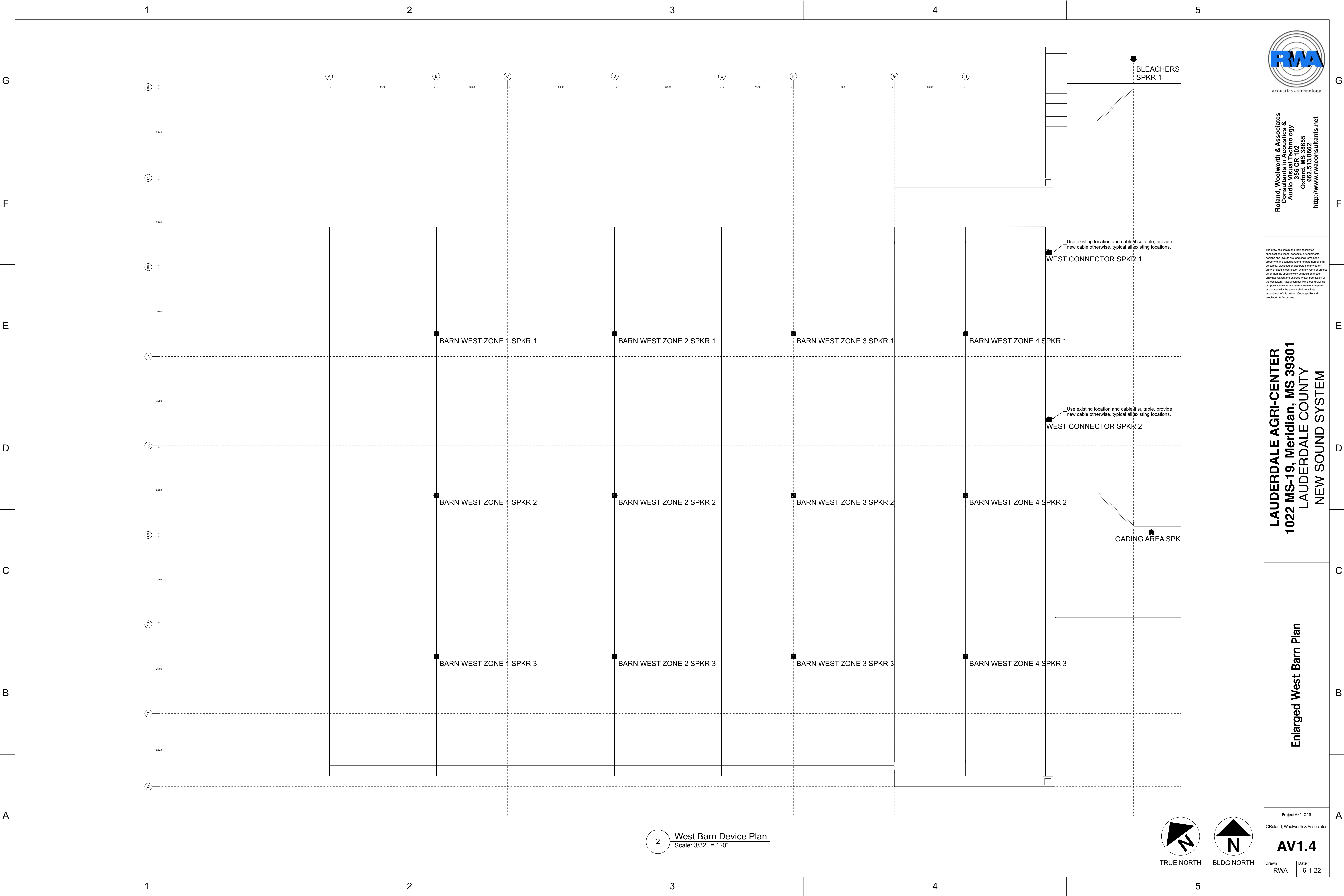
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Enlarged Arena Plan

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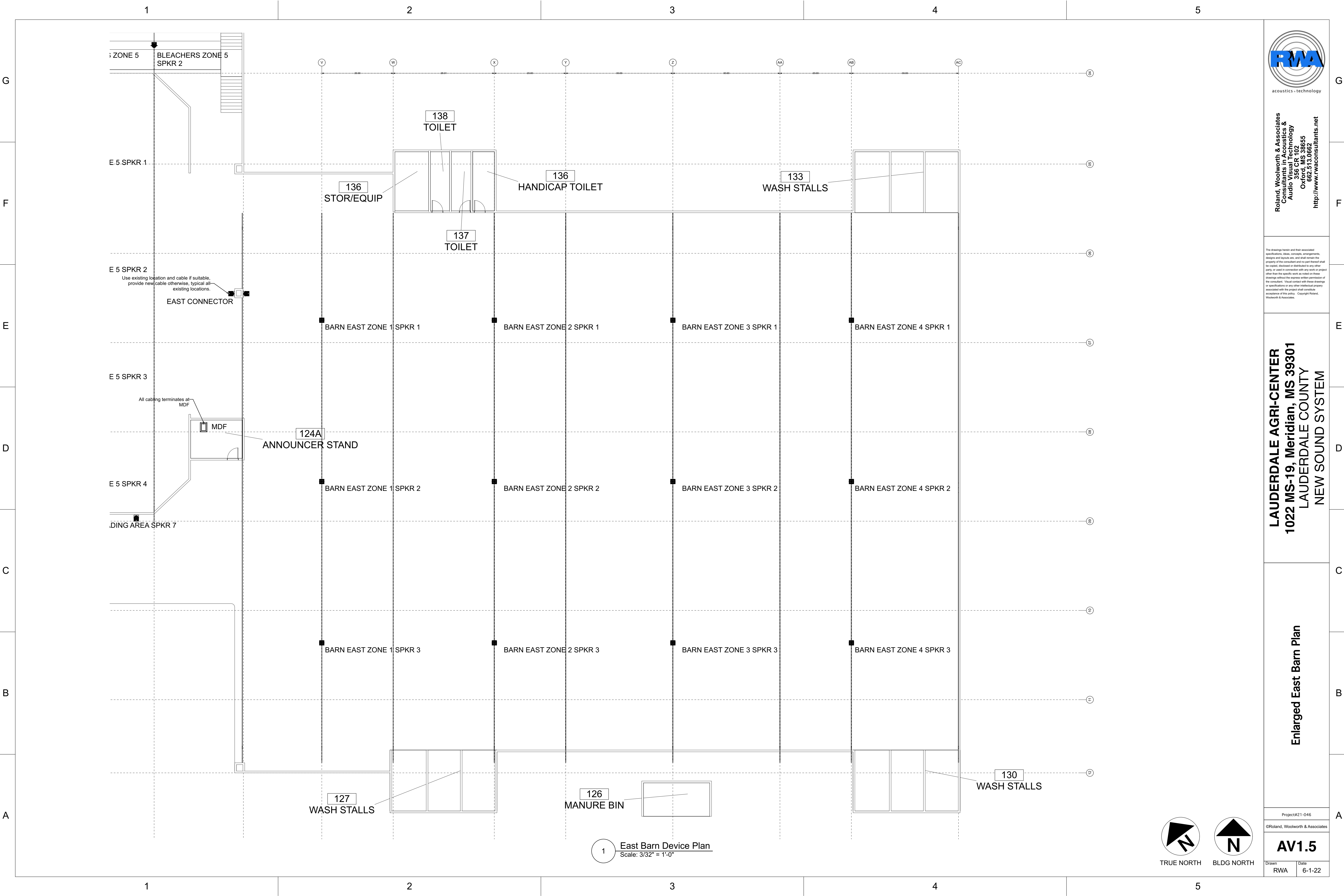
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Enlarged West Barn Plan

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AV1.4

Drawn	Date
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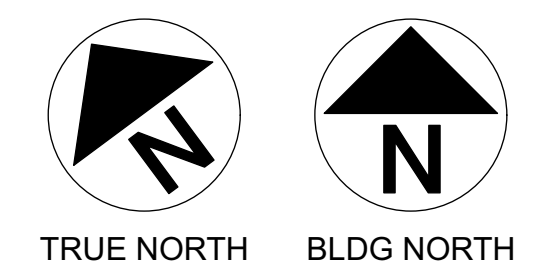
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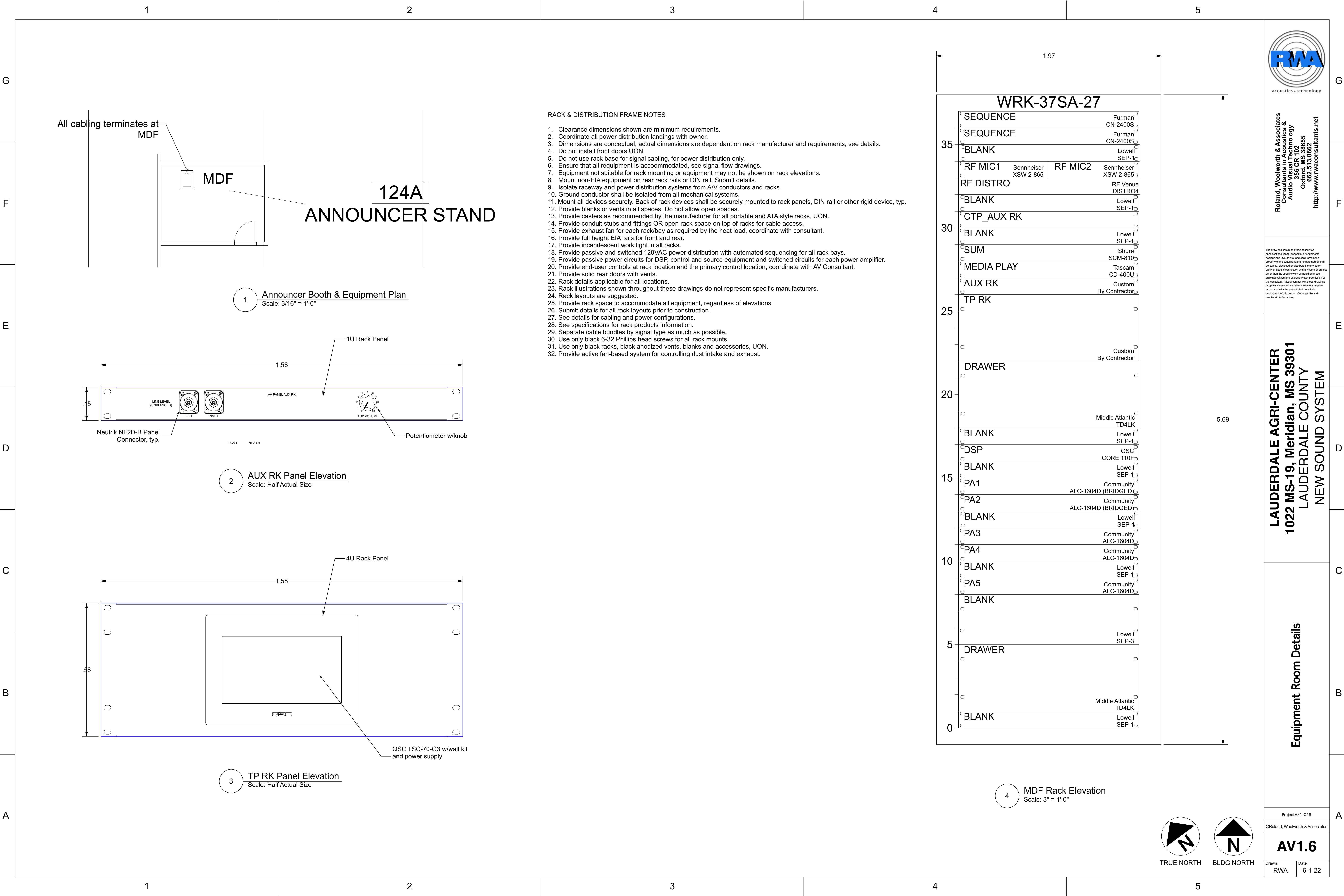
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Enlarged East Barn Plan

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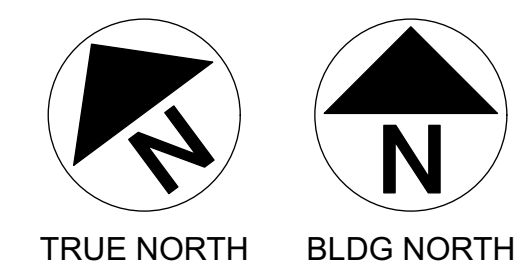


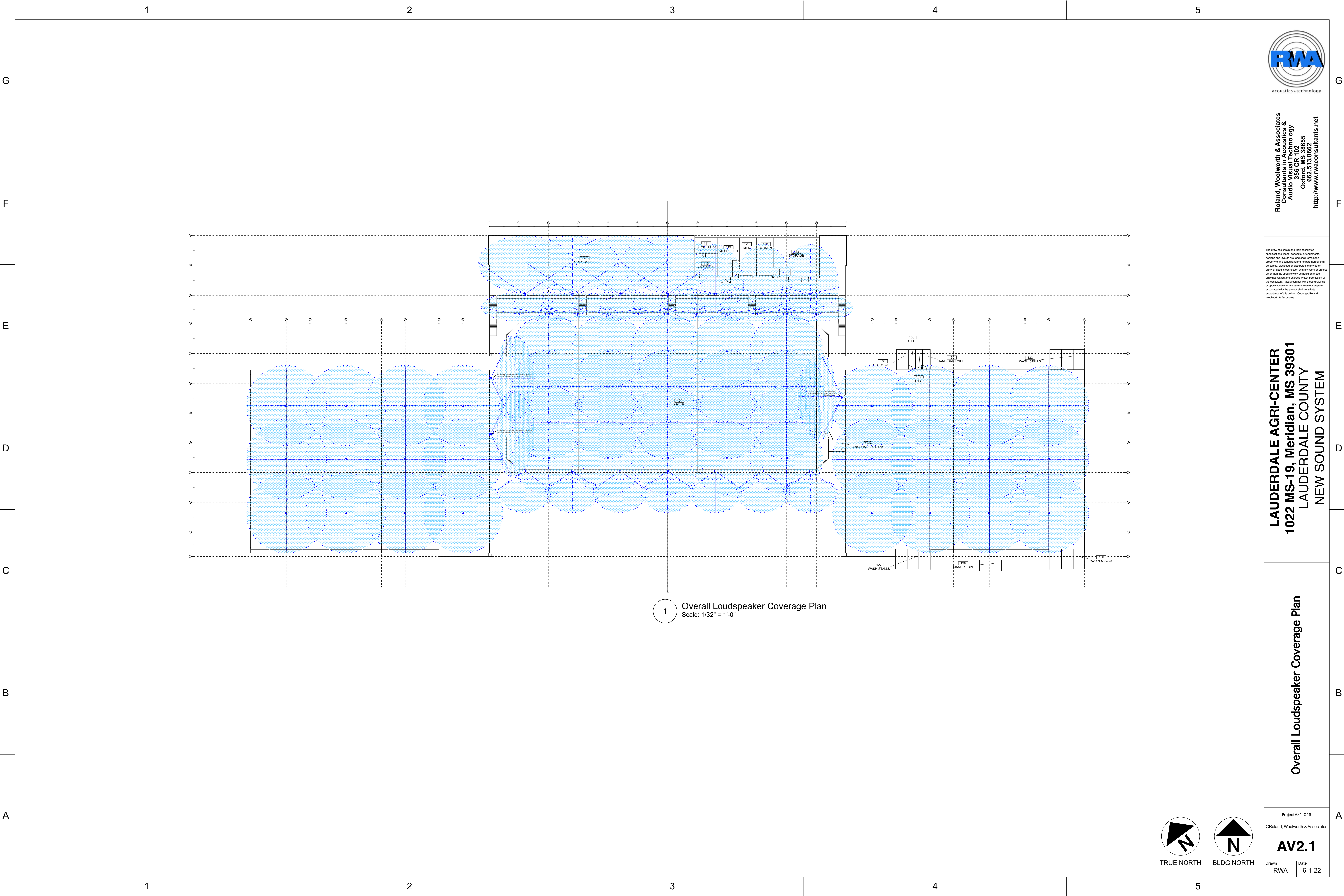
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Equipment Room Details





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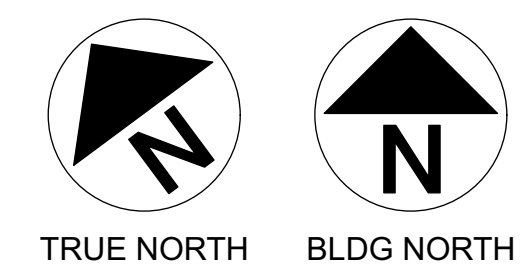
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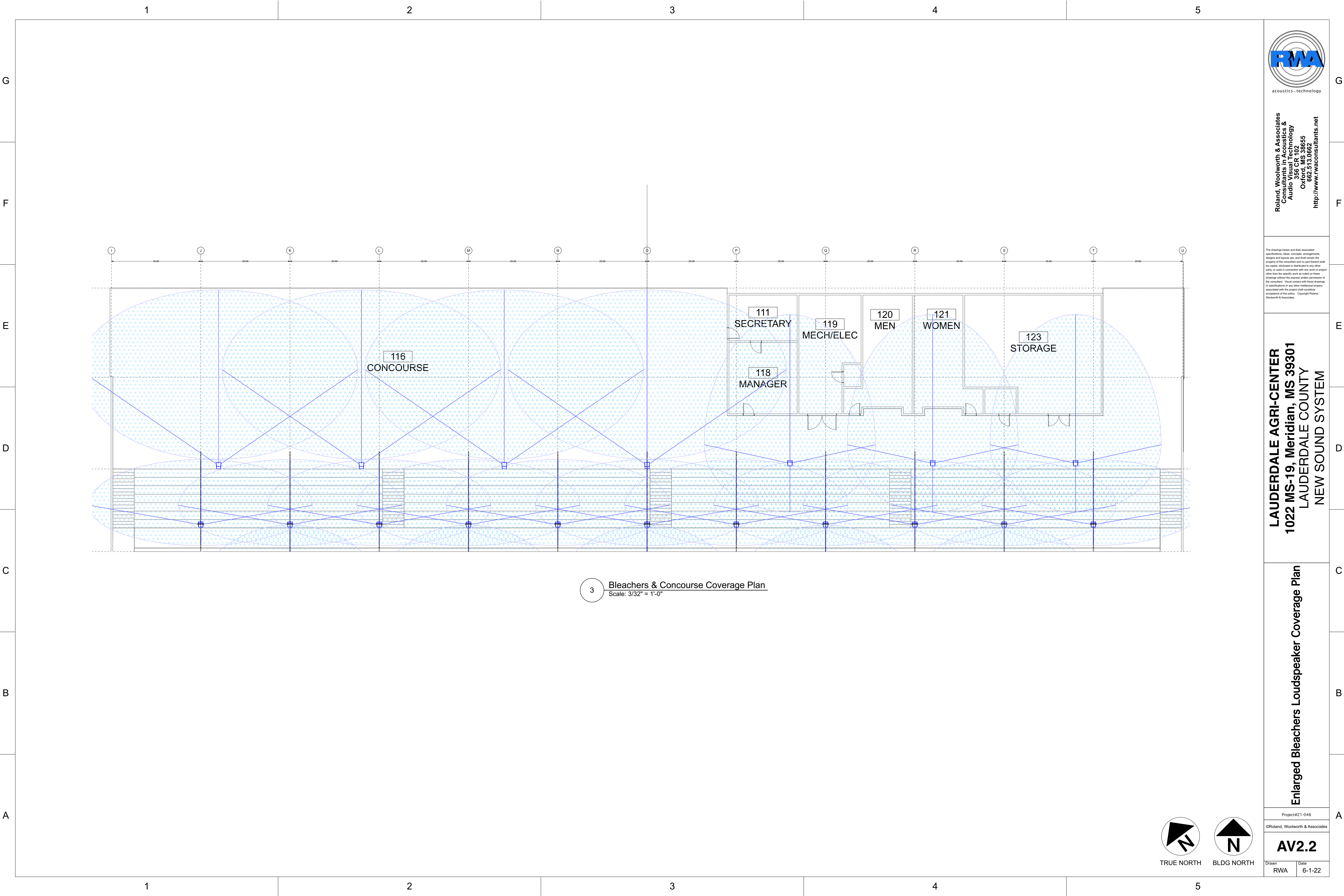
Overall Loudspeaker Coverage Plan

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AV2.1

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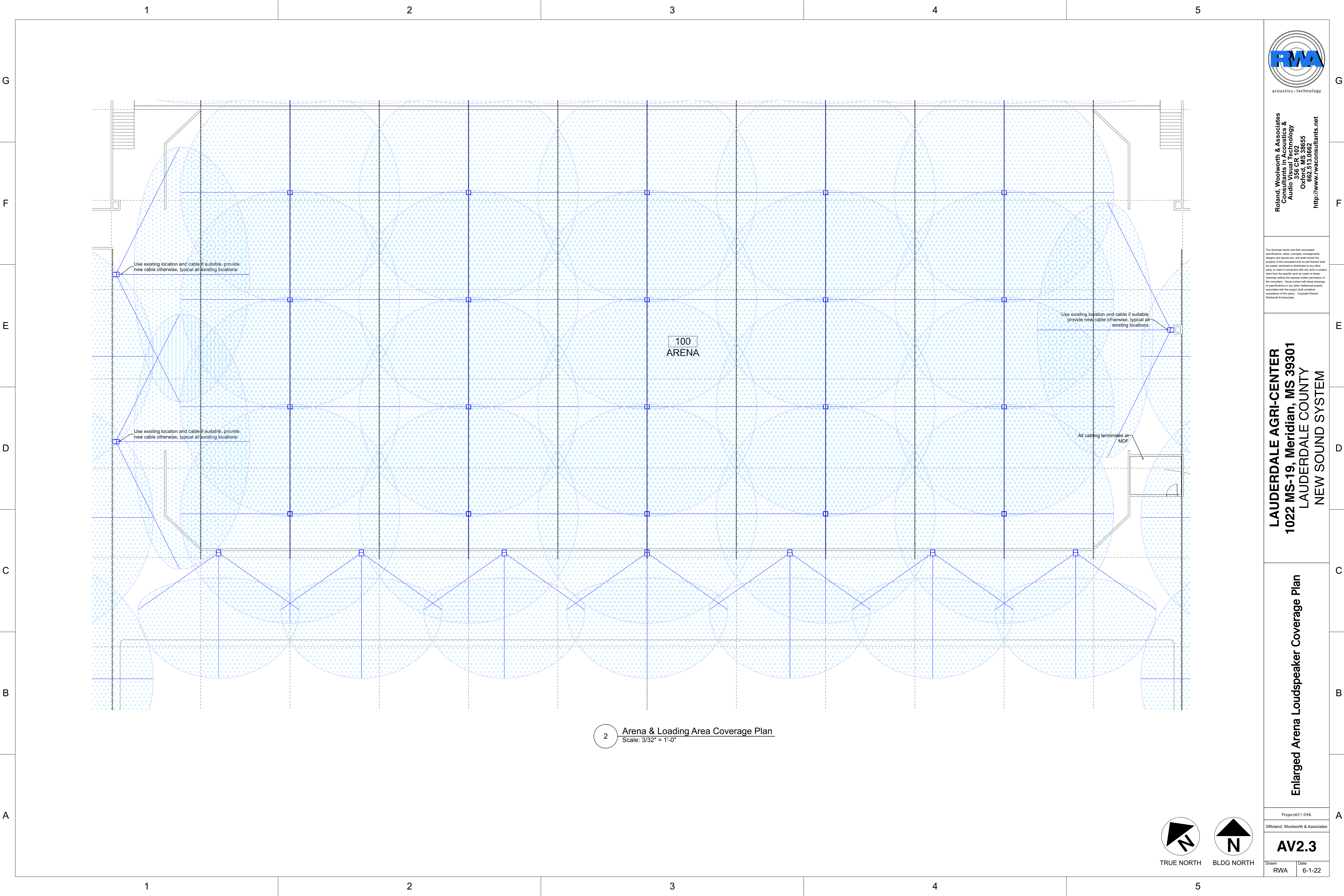
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Enlarged Bleachers Loudspeaker Coverage Plan

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AV2.2

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2 Arena & Loading Area Coverage Plan
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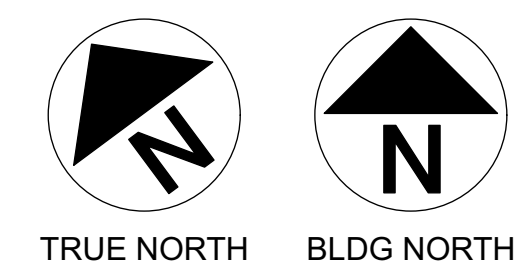
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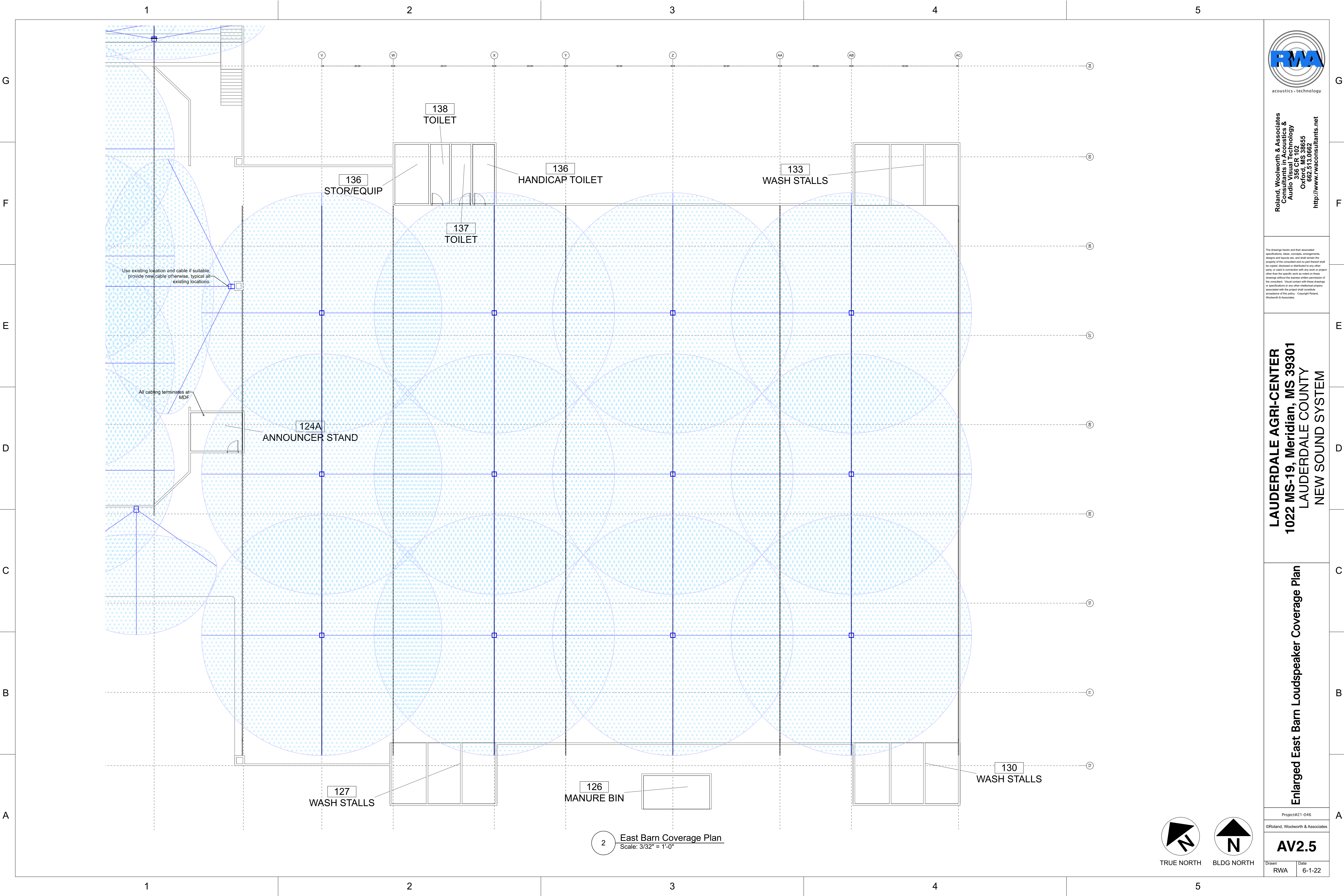
Enlarged Arena Loudspeaker Coverage Plan

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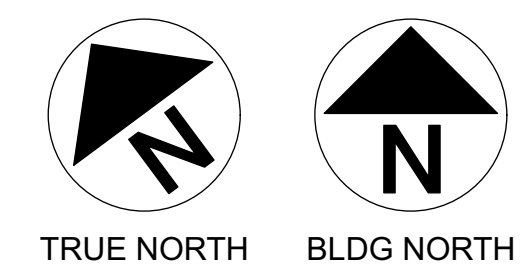
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Enlarged East Barn Loudspeaker Coverage Plan

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AV2.5

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2 East Barn Coverage Plan
Scale: 3/32" = 1'-0"

CABLE & WIRE REFERENCE			
TYPE DESIGNATOR	FUNCTION	BASIS OF DESIGN	NOTES
ML	Audio, Low Level	West Penn 452	OK for racks, conduit only. Do not expose.
S	Audio, High Level	West Penn 225	
S	Audio, High Level	West Penn 226	
S	Audio, High Level	West Penn 227	
S	Audio, High Level	THHN, #10-#12 AWG	>1000W Audio Power RMS or as recommended by equipment manufacturer.
COM, 232, SERIAL	Control	West Penn 452	OK for racks, conduit only. Do not expose.
GPIO	Control	As Required	As Recommended by the equipment manufacturer.
LAN, D	Data	West Penn 4246F	Ethernet and similar networks, <50 meters.
LAN, D	Data	West Penn 4246AF	Ethernet and similar networks, >50, <100 meters.
OTP	UTP, Proprietary	As Required	AV Transport, as recommended by Extron
DM	UTP, Proprietary	As Required	AV Transport, as recommended by Crestron
FX, OPT	Optical Fiber	As Required	As recommended by the manufacturer of connected endpoints.
AES	AES3 (EBU)	Belden 1696A	All uses within the limits of the AES specification.
AESS0	Audio	West Penn 4246AF	All uses within the limits of the AES specification.
SDI	HD-SDI	Belden 1855A	In racks, risers, conduit installation, 250' max.
SDI	HD-SDI	Belden 1505A	In racks, risers, conduit installation, 300' max.
SDI	HD-SDI	Belden 1894A	Conduit installation, 400' max.
SDI	HD-SDI	Belden 1895A	Plenum or exposed installation, 300' max.
RGB	RGB/VGA	West Penn 3CRGB	OK for racks, conduit only, do not expose
NTSC	NTSC Video	West Penn 819	OK for racks, conduit only, do not expose
PCOM	Production Com	West Penn 452	OK for racks, conduit only, do not expose, use similar for 2-channel systems.
DMX	DMX Control, XLR Type	Belden 9842	OK for racks, conduit only, do not expose.
RF	RF	RG6 or As Required	As recommended by the manufacturer of connected endpoints.

RACK & DISTRIBUTION FRAME NOTES

- Clearance dimensions shown are minimum requirements.
- Coordinate all power distribution landings with site conditions.
- Dimensions are conceptual, actual dimensions are dependent on rack manufacturer and requirements, see details.
- Do not install front doors UON.
- Do not use rack base for signal cabling, for power distribution only.
- Equipment not suitable for rack mounting or equipment may not be shown on rack elevations.
- Mount non-EIA equipment on rear rack rails or DIN rail. Submit details.
- Isolate raceway and power distribution systems from AV conductors and racks.
- Ground conductor shall be isolated from all mechanical systems.
- Mount all devices securely. Back of rack devices shall be securely mounted to rack panels, DIN rail or other rigid device, type.
- Provide blanks or vents in all spaces. Do not allow open spaces.
- Provide casters as recommended by the manufacturer for all portable and ATA style racks, UON.
- Provide conduit stubs and fittings OR open rack space on top of racks for cable access.
- Provide exhaust fan for each rack/bay as required by the heat load, coordinate with consultant.
- Provide full height EIA rails for front and rear.
- Provide incandescent work light in all racks.
- Provide passive and switched 120VAC power distribution for all rack bays.
- Provide passive power circuits for DSP, control and source equipment and switched circuits for each power amplifier.
- Provide end-user controls at rack location and the primary control location, coordinate with AV Consultant.
- Provide solid rear doors with vents.
- Rack details applicable for all locations.
- Rack illustrations shown throughout these drawings do not represent specific manufacturers.
- Rack layouts are suggested.
- Provide rack space to accommodate all equipment, regardless of elevations.
- Submit details for all rack layouts prior to construction.
- See details for cabling and power configurations.
- See specifications for rack products information.
- Separate cable bundles by signal type as much as possible.
- Use only black 6-32 Phillips head screws for all rack mounts.
- Use only black racks, black anodized vents, blanks and accessories, UON.

PANEL & PLATE NOTES

- All exterior panel mounts shall be rivets or tamper proof screws UON, submit detail.
- All panels shall be brushed, black anodized 1/8" aluminum UON.
- All text shall be at least 1/8" high bold characters. Engrave and fill in white ink.
- Bevel all panel edges by 1/16".
- Connector borders shall be engraved 1/8" thick, filled in white ink.
- Connector compliment is typical, see single line drawings and specifications for details, submit for approval.
- Each character shall have a unique number corresponding to the conductor number, see single lines.
- Panel elevations are conceptual, refer to single line drawings for connection requirements.
- Submit shop drawings for all panels.
- Coordinate field panel installation with electrical contractor.
- Isolate panel metal from backboxes where necessary.
- Verify backboxes with electrical drawings and/or AV Raceway drawings for all panel locations.
- Verify field conditions for all panel locations, adjust panel sizes or finish configuration as required.
- Verify that all conduit is isolated from backbox metal.
- Do not couple signal ground to raceway system UON.
- Where panels include 120VAC, coordinate with electrical contractor.
- All connectors shall be as shown UON.
- All high-level audio connectors shall be Neutrik NL Type UON.
- All RCA type connectors shall be Neutrik NF type.
- All UTP data connectors shall be equal to CAT5 compliant, Neutrik etherCON Series UON.
- All XLR type connectors shall be Neutrik DLX Series, solder cup type.
- Match connector finish with panel color, verify all colors UON.
- Provide optical connectors as shown, equal to Neutrik opticaCON Series.
- Unless otherwise specified, provide the following:
- Configure terminations and grounding detail. Configure terminations and grounding accordingly or as recommended by the manufacturer.

ABBREVIATIONS

- A Antenna or Antenna Connection Point
AC Alternating Current (Power Distribution)
AFF Above Finished Floor
AIC Audio Input Card
AL Assisted Listening
AM Amplitude Modulation (AM Radio)
AOC Audio Output Card
AOC Constant Voltage Attenuator
ATK Constant Voltage Attenuator Rack Panel
AVT Audio Video Interface
BOB Breakout Box
CL Center Line
CMT Cathode Ray Tube Display
CU Control Unit, Control Panels
D Data
DA Distribution Amplifier
DC Direct Current (Circuit Designator)
DSP DSP Signal Processor
DT Data Terminal
DV Digital Video
DVD Digital Video or Versatile Disc Player
EQ Equalizer
FA Fire Alarm
FB Feedback Floor Box
FC Format Converter
FD Floor Pocket
FP Flat Panel Display
FS Filter Set
GPS General Purpose Input/Output
GPIO Input/Output Interface
IO Intermediate Distribution Frame
IR Infrared
INT Interface
J Junction or Junction Box
K Relay
LINE Line Level (>4dBm)
LAN Local Area Network
LCD Liquid Crystal Display
LIM Limiter
M Microphone Level (<20dBm)
MCS Master Control Server/Controller
MDF Master Distribution Frame
ML Mic or Line Level
MLK Mic, Line on Rack Panel
MLS Mic, Line, Speaker
MOD Modulator
MON Monitor
NC Normally Closed or No Connection
NO Normally Open
OFE Owner Furnished Equipment
PA Power Amplifier
PTZ Pan/Tilt/Zoom
PC Computer (Mac, Windows, Linux)
PJ Projector
PS Power Supply
REC Record or recorder
RF Radio Frequency
RK Rack Mounted device
RX Receiver
SLS Loudspeaker, Speaker
SUM Audio Mixer
TB Thunderbolt
TP Touch Panel
TX Transmitter
UN Unless otherwise specified, provide the following:
VC Volume Control
VD Visual or Video Display
X Switch
XO Crossover
Z Impedance

TERMINAL PANELS & FIELD PANELS

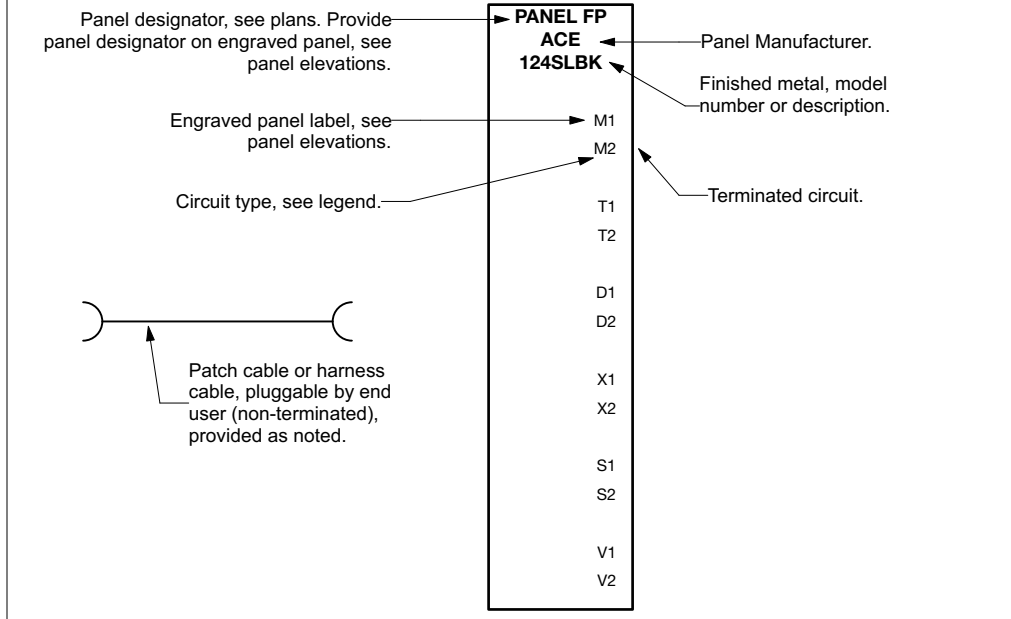
Field and/or Terminal panels shall be configured to provide circuit access to the end-user at the finish side of the panel metal. The interior shall be terminated per the standards noted in the specification, or as recommended by the equipment manufacturer of the terminated equipment.

Panel Legend applies to field panels, rack panels and custom millwork panels.

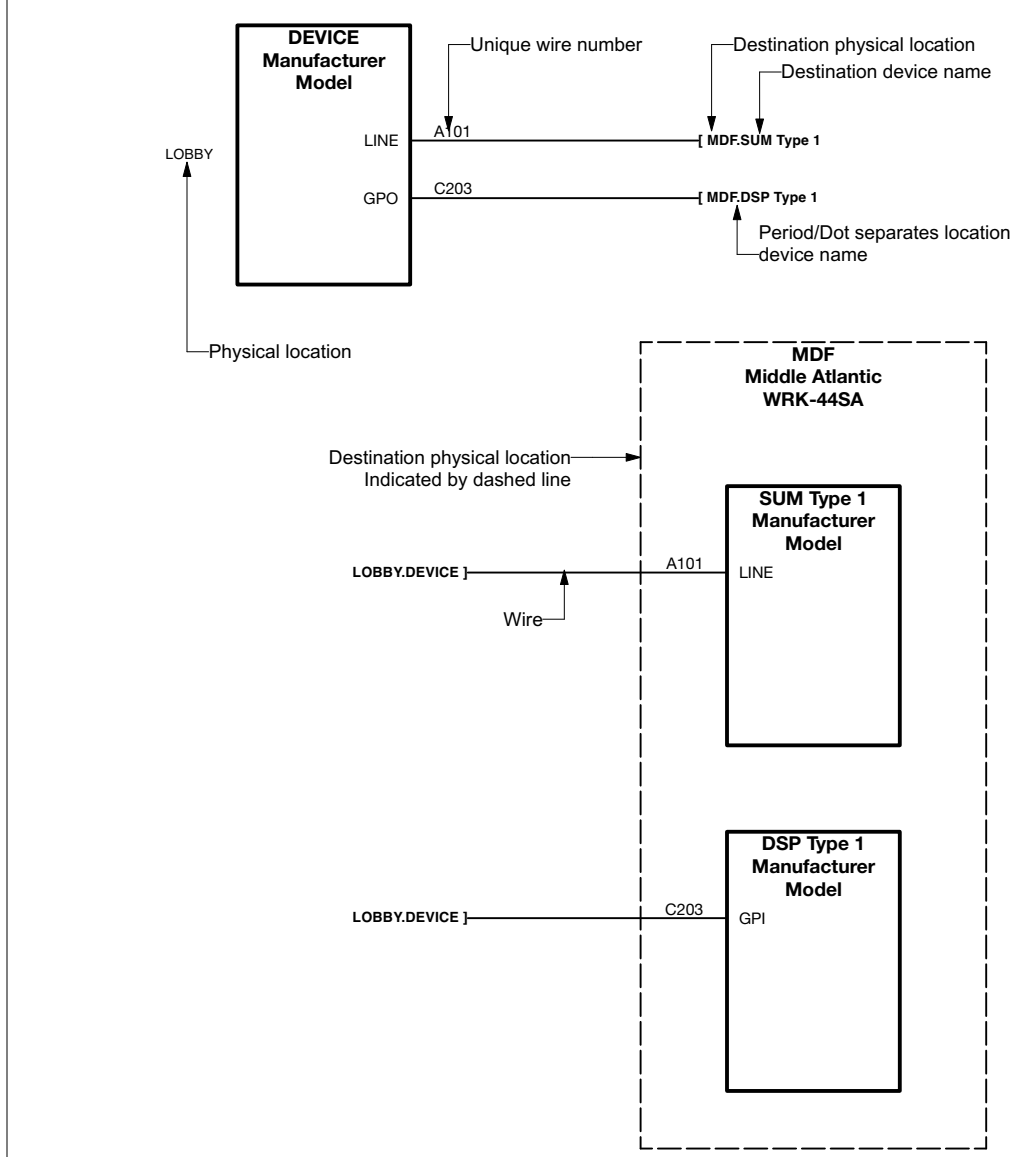
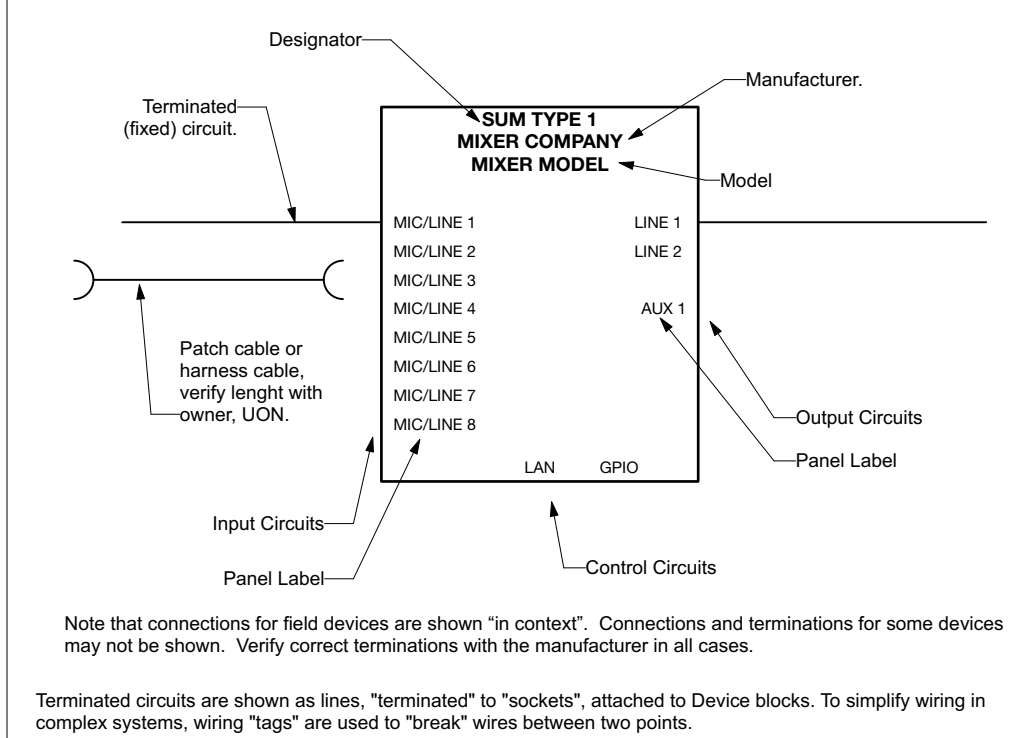
Provide connector types typical for circuit (see wire & cable schedule) and/or the terminated end point.

Note that panel elevations may not always be provided. The single line takes precedence over any panel elevation for connector types, quantities, terminations and circuiting. Contractor shall submit shop drawings for all custom panel assemblies.

Signal flow/direction is not literal, the symbol indicates a panel at source location or destination location, regardless of signal types. Symbol configuration is based on physical orientation.

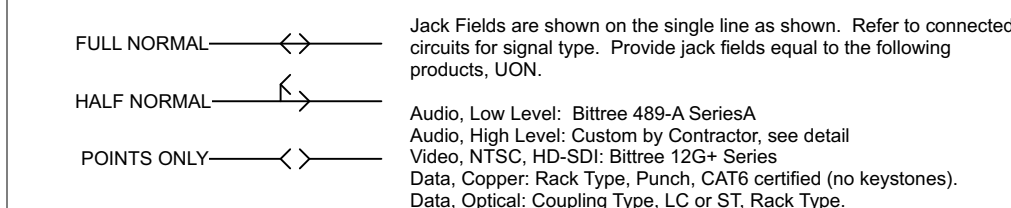


SINGLE FLOW & COMPONENT TERMINATION CONVENTIONS



Note that in some cases, physical locations are shown on the plans and NOT on the single lines. This is usually the case where the device location is often repeated, such as a flat panel display or a connection plate that is used in multiple location. In this case, the location as shown on the plan is referred to a detail which includes applicable direction for that location. The corresponding connection is also included as shown above.

AUDIO JACK FIELD CONVENTION



Refer to termination and grounding detail. Configure terminations and grounding accordingly or as recommended by the manufacturer.

Configure isolated or bussed grounds as required by the frame configuration, circuit type, circuit mix, etc. IE: Isolate grounds from frames when frames share circuit types (ML, Production Intermox, etc.).

Include details on all shop drawings and as-built drawings, see specifications.

IP NETWORKS CONVENTIONS

All network switches indicated by the AV single line drawings shall be provided by the AV Contractor as stand-alone networks, fully independent of all site LAN, UON.

Network switches chassis/frame units may not be shown on the single line drawings. Indication of a terminated LAN port indicates a switch is required at each physical location (MDF, FOH, IDF, etc.).

Provide and configure switches as recommended by the manufacturer of the connected systems. Include switch configuration in submittals. All switches shall be gigabit type (10/100/1000) and shall support AES67, and shall be compliant with the requirements of the connected equipment's manufacturer's recommendations.

Provide port quantity as shown on the single lines for terminated ports.

Interface AV switches to site LAN via "the line" port shown on the single line drawings. In this case, coordinate with the owner's IT staff for filtering, DHCP configuration, administrative access and internet access. In cases where AV switches are connected to the site LAN, the AV Contractor shall enable security features required by the owner. Access to the primary site network shall be limited to internet access, administration, control UI access and service access. Do not stream content to primary site network unless specifically noted on the drawings and/or specification.

Network switch requirements are indicated by the port type and/or logical network, dictated by the connected client equipment. Networks may not be represented on the single line drawings unless specific configurations are required. Indication of a terminated LAN port to a client device indicates that a switch is required at each physical location.

Provide and configure switches as recommended by the manufacturer of the connected systems. Include switch configuration in submittals. All switches shall be gigabit type (10/100/1000), and shall provide the following minimum features:

Managed, Layer 3 functionality.

Configurable multicast.

AES67 Support/hall support AES67, and shall be compliant with the requirements of the connected equipment's manufacturer's recommendations.

The ability to disable IEEE 802.3ah.

Full IGMP support.

IGMP query support, enable on one switch per network, UON (recommended query interval is 30 seconds).

Enable filtering for unregistered multicast traffic.

Provide port quantity as shown on the single lines for terminated ports or as recommended by the manufacturer of the connected equipment.

Configure a single physical switch with vLAN segments as shown on the single line drawings and prepare Port Schedules for as-built drawings (see specification). Each network segment shall be configured as a separate (virtual or physical) network with a separate physical switch OR vLAN segments. Standard network types are shown below:

Network ID (Typical, Subject to Change):

A: (Network Segment) AV Controls, administration and configuration

D: (Network Segment) IP Audio (AES67, G-Lan, AVB, Dante)

N: (Network Segment) IP Video Streaming

U: (Network Segment) Other Proprietary/Non-IP Distribution Systems

L: (Port "line") Interface to site LAN

Network ID (Typical, Subject to Change):

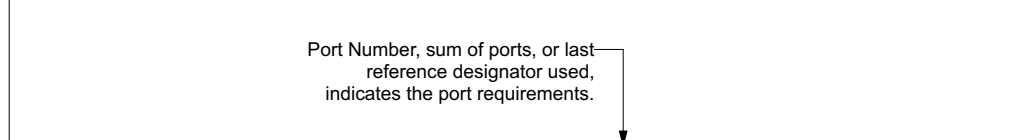
A: (Network Segment) AV Controls, administration and configuration

D: (Network Segment) IP Audio (AES67, G-Lan, AVB, Dante)

N: (Network Segment) IP Video Streaming

U: (Network Segment) Other Proprietary/Non-IP Distribution Systems

L: (Port "line") Interface to site LAN



Port Schedule example. AV Contractor shall provide schedules for each physical system, see single line drawings.

Physical network, refers to a rack location.

Basis of Design switch, indicated for reference only. AV Contractor is responsible for providing switches per the notes in this section (see above).

PORT	QSC	FUNCTION	CLIENT DEVICE	NOTES
1	DSP Transport	QSC 100F		Configure for redundant operation.
2	Field Panel	AttoTech vndX20+		
3	Audio Amplifier	CX-Q 2K4		
4				
5				

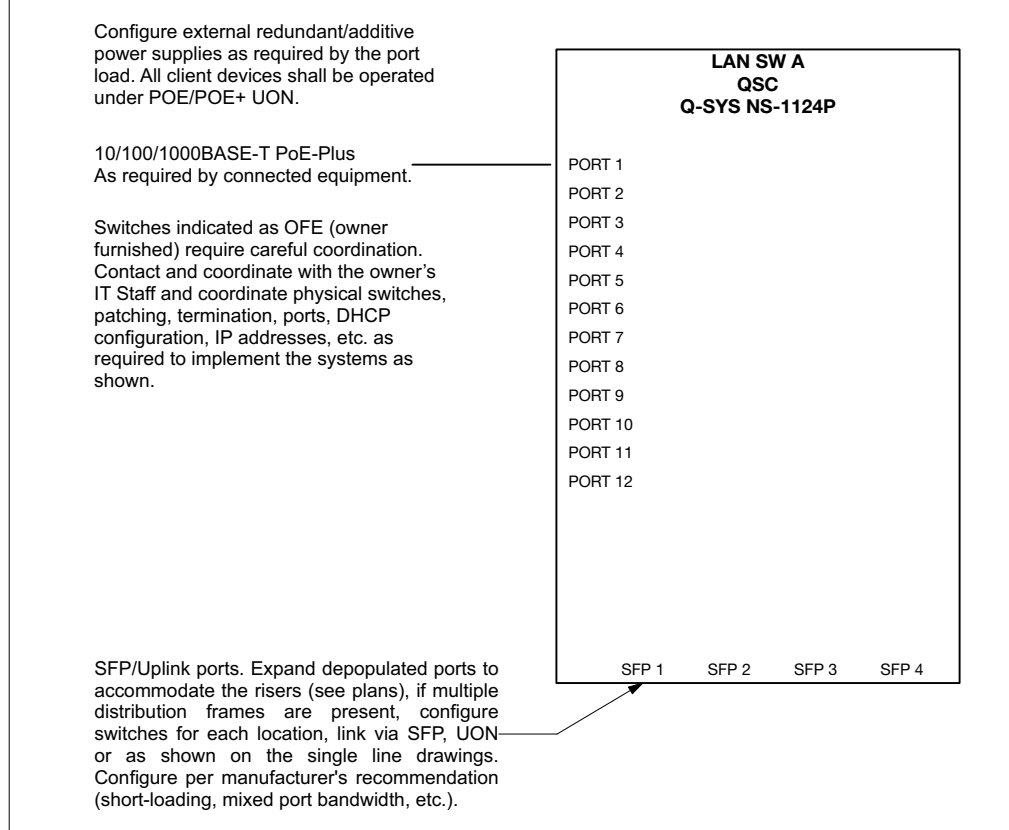
Provide switches and/or routers as required by the manufacturers of the connected equipment. Manufacturer's recommendations shall take precedence in all cases.

All switches shall be compliant with the requirements of the connected equipment's manufacturer's recommendation.

Basis of Design switch configurations, if shown on the single line drawings, are for reference, provide switches as recommended by the manufacturer of the connected equipment, and that reflect the latest technology.

Provide and install updated and/or specific versions of firmware to accommodate the documented systems.

Provide RTU Licenses as required to complete the functional requirements of the documented systems. This includes stacking options, media options, configuration software licensing, protocol options and applicable bandwidth expansion options.



EQUIPMENT ROOM & CONTROL ROOM NOTES

- Coordinate with consultant and end-user for configuration of all control areas. Assist the end-user with OFE equipment and integrate with system components as required to complete the systems.
- Contact consultant for coordination drawings related to room layouts.
- Provide cable harnessing, hook systems or cable trays as required to secure cabling from conduit and raceway exits to equipment.
- Coordinate final configuration of equipment space requirements with millwork and/or furniture contractor.

AV CABLEING RACEWAYS & BOXES

- The plans, may indicate physical pull boxes, junctions and plug boxes.
- Refer to the AV Raceway plans or related electrical drawings.
- Conduit and boxes provided and installed by others, UON.
- Coordinate with owner in all cases, verify box type and mounting conditions.
- Do not use pull boxes as splice points, pull all cabling through box, UON.
- Boxes may not be shown on single lines, refer to plans for locations, plans have precedence over single lines.

WIRELESS MICROPHONE & IEM SYSTEMS

- Provide all rack kits, remote antennas, cabling, terminators, etc. required to support the systems as shown.
- Provide rechargeable battery systems to accommodate each body pack or handheld device.
- Include charging stations to support the total number of battery-operated devices.
- Provide remote antenna and related distribution to support the systems as shown, regardless if such systems are shown on the single line drawings.
- Provide LAN access for supported receivers and transmitters in all cases, configure software per manufacturer's recommendation for end-user use. Configure software UI as needed, coordinate with the end-user.

AV CABLEING & TERMINATION NOTES

GENERAL

- All plenum wire shall meet applicable local codes.
- Cable callouts shown on the single line drawings are for reference to the Basis of Design, UON.
- All wire and cable shall be provided in accordance with the recommendations of the manufacturer for the connected equipment, UON.
- All exposed wire and cable shall be plenum rated per NEC and NFPA.
- Verify all cable types during submittal with the AV Consultant.
- Verify cable lengths with manufacturer of connected equipment for all cable types.
- Wire and cable for any device shall be supplied in accordance with the requirements of the device manufacturer.
- Wire and cable shall be installed in compliance with the National Electrical Code.
- Wire, cable and signal conductors shall be new and unused.
- All low level field cabling shall enter racks at punch points or directly soldered to equipment connectors.
- Bus punch block ground points to single rack ground, see jack field detail.
- Mechanically isolate all panel connectors from raceway system and finish plate.
- Mechanically isolate audio connector chassis from rack panel.
- Mechanically isolate service entrance conduits from equipment rack.
- Use #10AWG solid wire min. for all ground jumpers.
- Isolate equipment rack from conduit, raceway and power distribution system.
- Maintain proper bend ratio for all pairs (Category 6 patching and interconnect).
- Terminate all pins and conductors (Category 6 patching and interconnect).
- There shall be no ground loops, regardless of equipment configuration.
- Use 3-wire grounded devices when possible.
- Use only balanced audio terminations throughout system, UON. Use only ratchet type crimp tools.
- Provide cables as recommended by the manufacturer of the terminated equipment, UON.
- Contractor shall supply the cable in accordance with the recommendations of the connected equipment manufacturer, the cable types shown are for reference only.
- Install and terminate cabling per AES, ANSI, IEC or BICSI standards, UON.
- Contractor shall supply the optimum cable for the application.
- All cabling shall be subject to the circuit type.
- All cabling shall be subject to environmental conditions.
- All cabling shall be provided and installed for bandwidth requirements.
- Wiring designators are shown to indicate the requirements and to denote circuiting.
- Contractor is free to use their own numbering scheme.
- Contractor shall document all wire numbers on their shop drawings and as-built drawings.
- Provide cable schedules for all cables UON. See specifications for additional requirements.
- Cable types are specified based on terminated and points. See single lines, provide as required to provide the system as shown.
- Provide cables as recommended by the manufacturer of the terminated equipment, UON.
- Provide cable as mandated by site conditions, including, but not limited to, conditions that require cable type to support return air plenums, fire ratings, adjacent cable paths that could impact performance, physical obstructions and federal, state and local building codes.

AUDIO CABLEING

- All low level field cabling shall enter rack at punch points or directly soldered to terminating connector at equipment or terminal panel.
- Bus punch block ground points to single rack ground, see jack field detail.
- Power supply including ground to AC connector, do not terminate signal ground.
- Mechanically isolate all panel connectors from raceway system and finish plate.
- Mechanically isolate connector chassis from rack panel. Pin 1 shall not be at the same potential as connector chassis or panel.
- Mechanically isolate service entrance conduits from equipment rack.
- Use #10AWG solid wire min. for all ground jumpers.
- There shall be no ground loops, regardless of equipment configuration.
- Use 3-wire grounded devices when possible.
- Use only balanced audio terminations throughout system, UON.

DATA CABLEING

- Use only ratchet type crimp tools.
- The presence of a non-ratchet crimp tool on the job site shall render all connections suspect.
- Use only standard wiring and active devices, do not use crossover cables unless specifically noted on the drawings.
- Use pre-made (manufactured) cables wherever possible.
- Certify all Ethernet cable runs for Gigabit operation, min. per specifications.
- Certify all proprietary cable runs per the manufacturer's recommendation.
- All cabling transporting data shall be provided and installed in compliance with the connected endpoints.
- For this section, "connected endpoints" indicates manufacturer requirements of devices connected to data cabling plans.

WIRE NUMBERS

- All wire and cable shall have a unique numbering designator at each end of the physical media.
- Contractor shall supply the cable in accordance with the recommendations of the connected equipment manufacturer, per AV best practice or AES, ANSI, IEC or BICSI standards.
- Contractor shall supply the optimum cable for the application, considering the circuit type, environmental conditions, bandwidth requirements, termination type, cable construction and performance requirements.
- Wiring designators are shown to indicate the requirements and to denote circuiting. Contractor is free to use their own numbering scheme.
- Contractor shall document all wire numbers on their shop drawings and as-built drawings. Provide cable schedules for all cables UON.
- See specifications for additional requirements.

LOUDSPEAKERS

- Provide cabling as reflected by single line drawings.
- Pull cable through pull box, do not splice or use panel connectors.
- Amplifier circuit shall terminate directly to transducer UON.
- Final adjustment of loudspeaker aiming and mounting configuration will be determined on-site during commissioning.
- Obtain aiming coordinates from consultant, UON.
- Provide rigging hardware that supports adjustment of all loudspeakers for 360 degrees of adjustment.
- Provide lift, scaffolding and rigging kits required for loudspeaker mounting and adjustment.
- Ensure that all equipment is adjustable so as to not impede loudspeaker dispersion during commissioning.
- Refer to single line drawings for component callouts, circuiting and related signal processing requirements.
- Attached to structure only, coordinate and/or obtain approval from owner, see specifications.
- Equipment shall be held firmly in place with proper mounting hardware, suspension or rigging materials.
- Equipment attached to any building structure, sub-structure or other load-bearing member shall be self-supporting.
- All mounting or rigging hardware shall be installed with a safety factor of at least three times the required load.
- Provide 100% redundancy for all rigging attachment points.
- Provide bumpers, array brackets, dead-hand hardware, fasteners, safety equipment as required by the loudspeaker manufacturer.
- Use manufacturer's rigging hardware if available.

SIGNAL FLOW

- Single line drawings, reconciled with the plans, constitute the design.
- Wire numbers are shown for reference only.
- All cables shall be numbered. Contractor is free to use their own cable numbering scheme.
- Single line drawings may not include minor supplemental items, accessories and cabling.
- Provide all required items to support the systems as shown as recommended by the manufacturer or per AV best practice.
- Configure LAN switches to support the ports shown on the single lines and applicable port schedules.
- Refer to legends, abbreviations and callouts for specific direction.
- See specifications for more information.

CONTROLS

- Configure control server to accommodate all control ports shown, see control port schedule.
- Provide applicable wireless gateway or other interfaces as required for wireless controls.
- Refer to the AV Raceway plans or related electrical drawings.
- Where possible, power control panels and devices interface and transport units with Power Over Ethernet (POE).
- Provide additional power supply to support POE or power to end-points where required.
- All control cabling shall be provided as recommended by the specified or approved control system manufacturer.
- Provide UI clients for all systems, duplicate primary control interface for each client.
- UI clients shall be provided for Mac OS, Windows, Linux, iOS and Android devices. Verify and coordinate with owner.



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1022 MS-19, Meridian, MS 39301
LAUDERDALE COUNTY
NEW SOUND SYSTEM

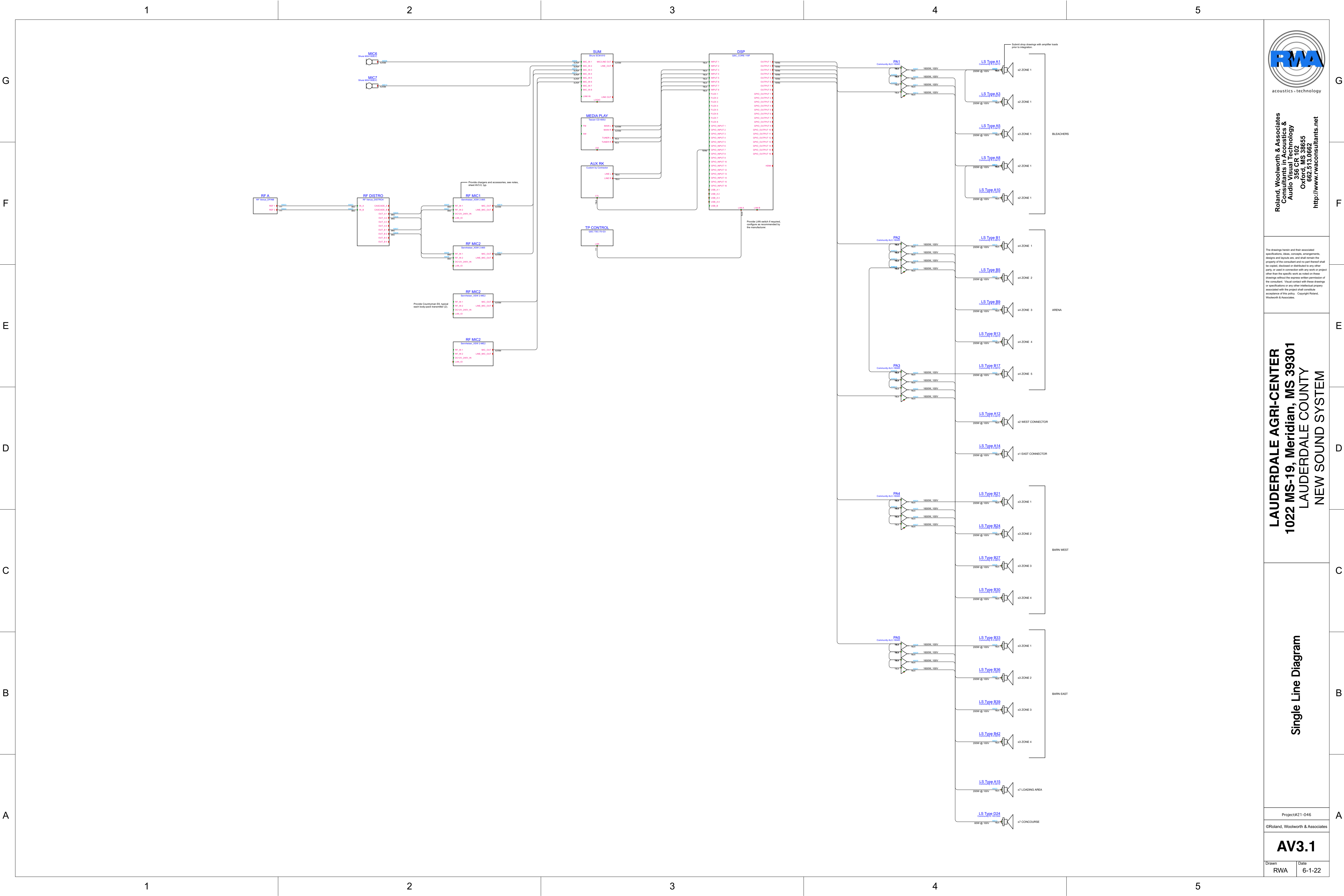
Sound System Legend

Project#21-046

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AV3.0

Drawn RWA Date 6-1-22



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LAUDERDALE AGRI-CENTER
1022 MS-19, Meridian, MS 39301
LAUDERDALE COUNTY
NEW SOUND SYSTEM

Single Line Diagram
AV3.1

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