

SECTION 11 6184
PRODUCTION LIGHTING FIXTURES AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Services as listed herein and related to the furnishing, preparation, installation, and commissioning of production lighting fixtures, cable, and accessories.
- B. Pricing / Bid Format:
 - 1. Line Item Pricing: Provide line-item pricing for each item, along with full package pricing.
 - a. Item 1H "Hang of Initial Plot" shall be considered a line-item.
 - 2. Contractor shall notify the owner of any specified items which require unusual or egregious lead time for delivery. This information shall be provided on the same form as the Line Item and Package Pricing, along with the earliest anticipated delivery date for the full order.

1.2 REFERENCES

- A. Comply with all national, state and local regulations. In the event of conflict between these specifications and the applicable regulations, the more stringent shall govern.
- B. Equipment shall be provided per the related trade and regulatory guidelines including but not limited to UL, CEC, IEEE, and all manufacturer's recommendations and requirements. Contractor shall be responsible in the event that work under their control voids or jeopardizes manufacturers' warranties.
- C. Labor shall be provided per applicable labor regulations and practices.

1.3 DEFINITIONS

- A. Refer to Div. 1 for definitions.
- B. Owner Representative: For the scope in this Section, authorized personnel representing the Owner and The Shalleck Collaborative, Inc., Theatre Consultants.

1.4 SYSTEM DESCRIPTION

- A. Provide Production Lighting fixtures, cable, and accessories for Terra Linda High School, and install in a light plot as described herein.
 - 1. Lighting fixtures, cable and accessories will be provided and delivered to the job site in a "ready to hang" state.
 - 2. New fixtures shall be prepped, tested, delivered to the project site, and organized by fixture type and lens type on stage floor in logical manner for ease of inventory check and installation.

1.5 CURRENT TECHNOLOGY

- A. Only the most current hardware and software shall be provided. In no case will discontinued or superseded products be acceptable. If the manufacturer has developed and successfully released products that meet or exceed the criteria within this specification, the Contractor shall notify the Owner Representative and submit the new product for review. If accepted, the products will be provided at no additional cost to the Owner. Software upgrades and authorized support services for its proper integration into the system shall be provided at no cost to the Owner throughout the warranty period.
- B. In the event of known product defaults or recall, the Contractor shall immediately notify the Owner and Owner Representative and make immediate arrangements for remedy.
- C. None of the stipulations herein shall be grounds for revision to the project schedule.
- D. See related procedures under Warranties in this Section.

1.6 SUBSTITUTIONS

- A. All requests for substitutions from the specified materials, assemblies or related services shall be submitted for review by the Owner Representative prior to bid. Substitution requests made after bid shall be neither reviewed nor accepted. Requests shall be made in accordance with Division 1 of the specifications, and in a timely fashion so as to not affect the project schedule in either case of the substitution being accepted or rejected.
 - 1. Owner Representative may reject any proposal for any substitution at their sole discretion and without reason or justification.
- B. Documentation for the substitution shall be submitted with supporting material and shall include the related information for the item as specified so that equivalence can be demonstrated. The burden of proof rests solely upon the Contractor. The Owner Representative shall be the sole evaluator of the fitness of the substitution.
- C. All expenses related to the substitution including, but not limited to, all fees and expenses incurred in the evaluation of the substitution, and any effect on the costs and schedule of other trades whether or not the substitution is accepted, shall be borne by the Contractor.

1.7 SUBMITTALS

- A. Submittals shall be made in accordance with Division 1.
- B. If permitted under Division 1, all submittals shall be made in electronic format.
 - 1. Files shall be in .pdf format and submitted via email or download link.
- C. Submittals shall be made in a timely fashion so as to not affect the project schedule and shall allow for adequate time for review and resubmittal. Partial submittals shall not be acceptable and shall be returned without review.
- D. Submittals shall be reviewed, and field dimensions verified prior to commencing acquisition for, and fabrication of the work in this section. All services and parts of the work in this section shall be verified through the submittal process.

- E. Product Data
 - 1. Submit data sheets for all standard component parts, which shall include all information necessary to verify compliance with this Section.
- F. Record Documents:
 - 1. At time of final acceptance, submit regulatory listings and certifications as required by prevailing building codes.
 - 2. Within 30 days, submit "as built" submittals including shop drawings, product data, operations and instructions manuals for all products provided, care and maintenance instructions, service line and online contacts and warranty documents. Provide Digital versions on USB memory Drive

1.8 WARRANTY

- A. Warranty shall provide coverage of material and product defects and assembly workmanship or installation for a period of two years following the date of acceptance by the Owner.
- B. Items under warranty shall be serviced to the satisfaction of the Owner with 14 days of notification to the Contractor. If warranty claims are not serviced to the satisfaction of the Owner within the 14-day period, the Contractor shall bear all costs that arise as a result of the delay, including, but not limited to, the use of temporary replacement components, additional Owner's staffing or overtime, shipping, and cancelled uses or performances.

1.9 QUALITY ASSURANCE

- A. Equipment in this Section shall be provided by specialty subcontractors and manufacturers meeting the qualifications listed herein.
- B. Specialty subcontractors shall have been continuously engaged in the sales and integration of lighting equipment similar to that specified herein for a minimum of ten years.
 - 1. Manufacturer shall have been continuously engaged in the manufacturing of lighting equipment similar to that specified herein for a minimum of ten years.
- C. Specialty suppliers shall have at time of bid, and continuously maintain throughout the project and warranty period, a specialty Contractor's license appropriate for the work in this Section.
- D. Specialty subcontractors shall have within their employ manufacturer's factory authorized field services technicians, within a four-hour travel distance from the Project site.
- E. All equipment shall be UL listed and bear the appropriate labels.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Packing shall prevent damage to the equipment during transit. Costs to repair or replace all equipment damaged during the contract services shall be borne by the Contractor.
- B. Do not deliver materials in this Section until building is ready for installation. Contractor is responsible for properly sequencing the work and protecting equipment from damage

during delivery, handling, storage and installation.

- C. Contractor is responsible to coordinate and provide secure and protected storage as required for the execution of the Contract.
 - 1. Equipment shall not be delivered to the project site until the site is suitably clean and and the Owner is ready for the work to occur. The contractor shall provide and maintain complete protection of all equipment until the installation has been accepted by the Owner. The Contractor shall thoroughly clean and remove any dirt or dust that infiltrates system components and shall be responsible for timely replacement of any damaged components.

1.11 PROJECT CONDITIONS

- A. Defects in the field which may impact the work in this Section shall be reported to the Owner Representative and corrected in accordance with the requirements of the applicable Section of work prior to commencement of the work in this Section.

PART 2 - PRODUCTS

2.1 PRE-APPROVED SPECIALTY SUBCONTRACTORS

- A. The following production systems specialty subcontractors have been pre-approved for bidding for the work in this section:

Holzmueller Productions
1000 25th St
San Francisco, CA 94107
Tel. (415) 826-8383
Contact: Jim Schelstrate
Email: jim@holzmueller.com

Musson Theatrical
890 Walsh Ave
Santa Clara, CA 95050
Tel. (408) 986-0210
Contact: Dave Rimerman
Email: dave@musson.com

DTC Grip & Electric Inc
1280 65th St
Emeryville, CA 94608
Tel. (510) 595-0770
Contact: Corinne O'Sullivan
Email: info@dtcgrip.com

- B. All other specialty subcontractors must be approved prior to bid. Other contractors seeking acceptance must submit the following information at least 2 weeks prior to the

bid opening date. Approval of contractors will be by addenda. Failure to submit any of the required information will automatically disqualify the contractor from consideration of approval.

1. A listing of five equivalent installations including:
 - a. Name, address and telephone number of Owner.
 - b. Name, address and telephone number of Owner Consultant.
 - c. Scope of work.
 - d. A brief written description of the contractor's operation including facilities, financial capabilities, and experience of key personnel.
 - e. A statement from a bonding company agreeing to provide the required bonds in the amount required for the project.
 - f. Documentation necessary to show compliance with Quality Assurance, above
- C. Permission to bid does not imply acceptance of the specialty subcontractors. It is the sole responsibility of the contractor for this Section to ensure that any price quotations received, and submittals made, are for control systems that meet or exceed the specifications.

2.2 MANUFACTURERS

- A. The equipment in this Section shall be the products of the following pre-approved manufacturers, and shall meet the specifications listed herein:
1. **Bescor**
 2. **Blizzard**
 3. **Calsone/Anvil**
 4. City Theatrical
 5. Electronic Theatre Controls
 6. **High End Systems**
 7. **Hubble**
 8. Lex Products
 9. Rosco
 10. TMB (cable only)
 11. Or equal.

2.3 MATERIALS

- A. All components supplied under this Section shall be new. Used or factory reconditioned components shall not be acceptable.

2.4 LIGHTING FIXTURES

- A. General
1. All fixtures shall be provided in a "ready to hang" state. Fixtures shall have the connector (where required) and C-clamp installed.
 2. Provide any pre-programming, calibration or addressing work required as part of the fixture setup.
 3. Each fixture shall be provided with the following:
 - a. Shutter barrel

- b. Black finish
 - c. Accessories as listed below, and in appendix A.
 - 4. Fixtures shall be labeled with a black, printed adhesive label on the fixture yoke.
 - a. "T.L.H.S."
- B. Fixtures shall be provided in types and quantities as shown in appendix A.
 - 1. Fixtures to be provided with all parts, lenses, add-ons, and accessories as shown in appendix A

2.5 CABLING

- A. General
 - 1. Provide stage extension cable in quantities as shown in appendix A.
 - a. Each cable shall be furnished with Velcro cable tie.
- B. 20A rated stage extension Cable
 - 1. All connectors of the same type shall be of the same manufacturer.
 - 2. Connectors shall provide clamping strain relief that tightly engages the cable jacket. Visible leads shall not be acceptable.
 - a. Strain relief mechanism shall be fully engaged.
 - 3. Cable shall be of neoprene covered, black, heavy duty SO, SOW or better three-wire 12/3 cable. Internal wiring shall be sized to circuit ampacity and shall be rated at 125°C.
 - a. SJTO is acceptable for PowerCON items.
 - 4. All stage extension cables shall have PowerCon True1 TOP, **PowerCon**, or L5-20 (Twistlock) connectors as indicated in appendix A
 - a. Items 10C and 11C "LSI Fixture Extension Cords" shall have 5-20 connectors to match existing fixtures and receptacles as indicated in appendix A.
- C. Control cabling
 - 1. Cable assemblies shall be heavy touring grade TMB ProPlex cable or similar.
 - a. Cable shall have a gold plated, 5 pin XLR type connector.
 - b. DMX cable shall consist of two pairs of 22 AWG tinned copper stranded 19x34 with Fluorinated ethylene propylene insulation.
 - c. Cable shall be reinforced with 600# breaking strength Kevlar.
 - d. Inner shield shall be aluminum/mylar with 100% coverage.
 - e. Outer shield shall be copper braid with 85% coverage.
 - f. Outer jacket shall be black polyurethane with 5000psi tensile strength.
 - g. Outside diameter shall not exceed 0.300".
 - h. Cable weight, excluding connectors, shall not exceed 50 pounds per 1000'.
 - i. Cable shall meet or exceed ETL specifications for DMX data transmission.
 - j. Cable shall be TMB Proplex PC224P or equal.
- D. Cable Labeling
 - 1. All cables shall be labeled with the name of the site:
 - a. "Terra Linda H.S."
 - b. Labels shall be black with white lettering on an adhesive label.
 - 2. In addition to the labels on the cabling, provide 1/2" colored bands (or electrical tape) indicating size:
 - a. Red = 5'
 - b. Yellow = 10'
 - c. Orange = 50'

- d. Blue = 100'
 - e. Colored bands compound and combine like roman numerals, such that a 25' cable would have two yellow bands and one red band.
3. Provide heat activated shrink wrap over both the written label and the colored bands. Shrink to cable.

2.6 ACCESSORIES

- A. Provide Barn Doors, gel frames, and smooth wash diffusers for fixtures as listed in the equipment per appendix A.
- B. Provide any other accessories as listed in the equipment list. Provide in wheeled storage case as described below.
 - 1. Provide all spare cable and accessories in rolling, lockable "Cadillac" style road case(s).
 - a. Provide in quantities as required for spare equipment noted herein.
 - b. Case shall be 45"x30"x36" – "full" size
 - c. Case shall be ¾" birch plywood with rabbet joints, glued and fastened.
 - d. Heavy Duty, polyurethane/cast iron ½ ton caster with lock.
 - e. Inner supports and dividers for user definable separation within the case.
 - f. Stackable with wheel stops/ receptacles to prevent roll off when stacking.
 - g. Steel recessed hardware, latches, handles, and steel reinforced corners.
 - h. Black finish.
 - i. Provide Calzone/anvil, or equal.
 - j. Provide label on face and lid of each case: 2" tall characters, minimum.
 - 1) "Terra Linda High School"

2.7 LIGHT PLOT

- A. The contractor is responsible to document, hang, focus, and program a complete lighting plot.
 - 1. Plot shall be as shown in appendix B and C, and shall meet the following minimum requirements:
 - a. Even wash throughout the performance area with no dark spots for a person that is 6' tall.
 - 2. Documentation shall include ½" scaled plot and magic sheet in paper form, updated with any changes at time of commissioning and turned over to the Owner in final form at the completion of the project.
- B. Fixtures and systems.
 - 1. The light plot shall include fixtures, accessories, and cabling as listed in appendix A.
 - 2. The light plot shall also include removing, rehangng, reconnecting, and reprogramming the existing LSI / Lumenpulse fixtures in the space, as shown in Appendix B.
 - a. Contractor to provide channel assignments and DMX addressing information in the submittal documents for review by the Owner's Representative.
 - 1) All fixtures in appendix C shall be programmed to Universe 1 as theatrical lighting systems.

- 2) LSI / Lumenpulse fixtures to be assigned to Universe 2, and programmed as audience downlight systems.
3. Any fixtures or accessories listed in appendix A but not used in the light plot shall be turned over to the Owner as spares.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Deliver fixtures to the stage in ready to hang/install state.
 1. Remove and recycle all packaging from the delivery site
- B. For the commissioning services as listed herein only, coordinate scheduling and access with the Contractor and Owner, and provide personnel lifts of ladders as required for access to the lighting equipment.

3.2 COMMISSIONING AND DEMONSTRATION

- A. Coordinate with Division 26.
- B. Factory trained and authorized personnel shall review, test, program and otherwise prepare and verify the fixtures and equipment.
- C. Upon completion of the installation, the Contractor shall notify the Owner's Representative that the system is available for formal checkout. Notification shall be provided in writing. Checkouts shall be scheduled in accordance with the Owner's Representative's schedule.
 1. The Contractor shall be liable for any return visits by the Owner Representative as a result of incomplete installation or incorrect delivery or fixture malfunction upon initial inspection by owner.
- D. Make available for review by the Owner's Representative:
 1. All components for physical observation and inventory.
 2. Demonstration of programmed systems as described above.
- E. Provide training as follows:
 1. 2 hours with Owner's Representative during commissioning for verification of system programming and channel / address assignment preferences from submittal documentation.

3.3 APPENDIX

- A. This section is incomplete without the following appendices:
 1. Appendix 11 6184A: Lighting Fixtures and Equipment list
 2. Appendix 11 6184B: Lighting Plot
 3. Appendix 11 6184C: Instrument Schedule

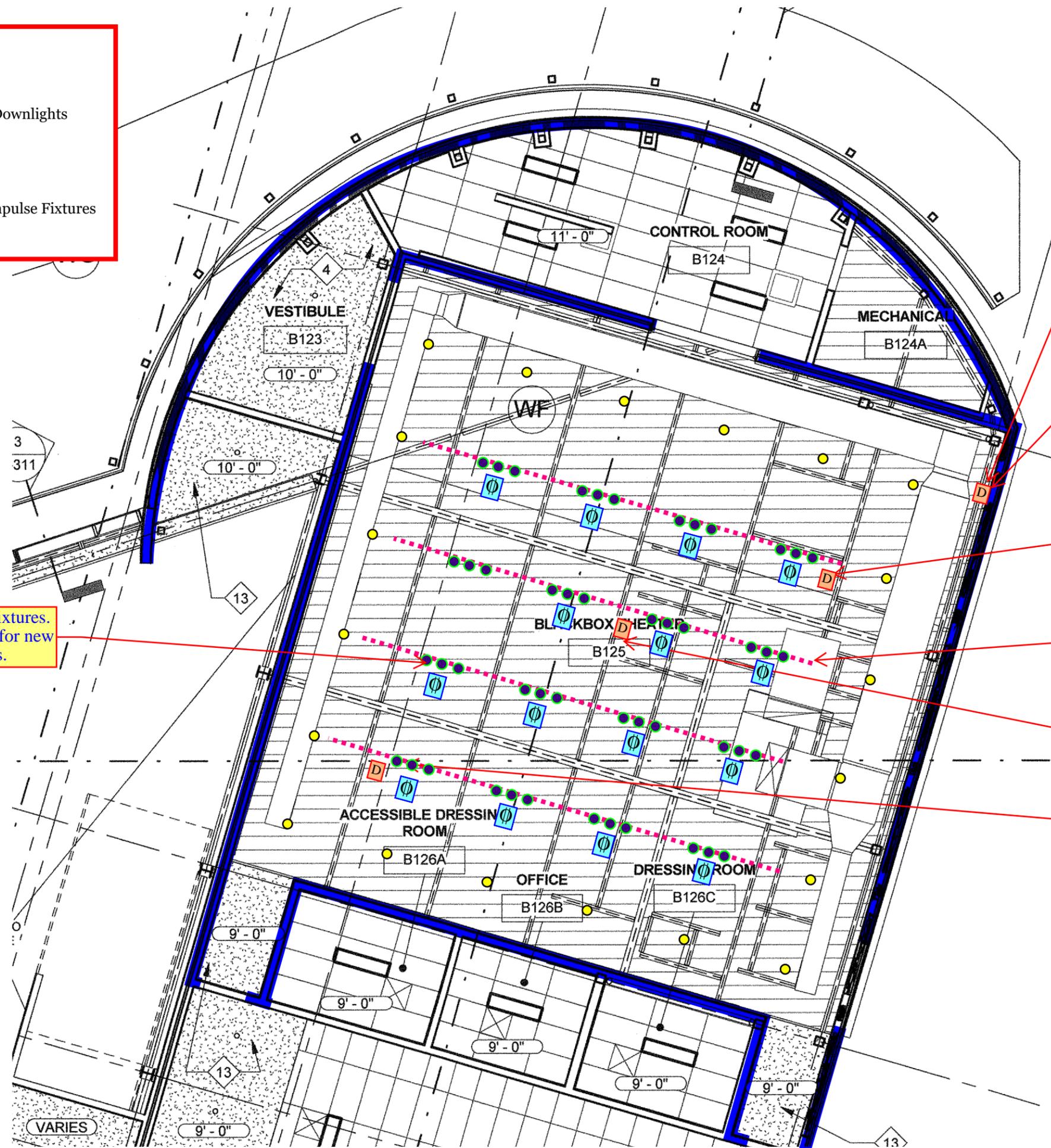
END OF SECTION

Terra Linda High School Student Commons
Production Lighting Fixtures
116184-A Appendix
Notes: "A/R" = As Required

REF	DESCRIPTION	MFR	MODEL	QTY	NOTES
<i>Production Lighting Fixtures</i>					
1CF	LED Ellipsoidal Spotlight	ETC	ColorSource SPOT V	16	shutter barrel; black finish
2CF	LED Par Fixture	ETC	ColorSource PAR	19	Original array; black finish
3CF	LED Moving Fixture (Profile)	High End Systems	Lonestar	1	
4CF	Moving Mirror	Rosco	iCue	2	With one compatible power supply
<i>Production Lighting Fixture Lenses</i>					
1L	LED Ellipsoidal spotlight lens - 50 deg	ETC	450EDLT	16	Enhanced Definition LED Lens Tube
2L	PAR Lenses- Medium- Round		SELRM-7.5	19	
<i>Spares & Fixture Add-ons</i>					
1SP	Twist Lock Connector, Plug (for field replacement)	Contractor	Contractor	3	
2SP	C-Clamp	Contractor	Contractor	A/R	1.1 x number of fixtures (10% spares)
3SP	Safety Cable, Black	Contractor	Contractor	A/R	1.1 x number of fixtures (10% spares)
<i>Accessories</i>					
1ACC	Barn Door, PAR	City Theatrical	Barn Door	10	4-leaf Barn Door
2ACC	Gel Frame Ellipsoidal	City Theatrical	Gel Frame	16	6.25" x 6.25"
3ACC	Smooth Wash Diffuser	ETC	S4:ED-SWD6	16	Install in all Spotlight fixtures
4ACC	"Cadillac" Style Road Case	Calzone/Anvil	Strongbox	1	Full Size
<i>Cables</i>					
1C	L5-20P Twistlock to Powercon True1 TOP Receptacle, 5'	Contractor	Contractor	A/R	1 per fixture, Powercon type to match fixture

Symbol Key

- E Lumenpulse Fixture
- 9" Diameter Architectural Downlights
- ⊕ Existing Power for E Lumenpulse Fixtures (assumed locations)
- D Existing DMX Outputs



(e) 4 port gateway mounted overhead near existing DMX controllers, with network input from console

Universe 2 output to DMX controller for LSI fixtures

Universe 1 output, adjacent to existing power receptacles at fixtures

Existing Lighting Pipe, typical.

Universe 2 output, adjacent to existing power receptacles at fixtures

Universe 1 output, adjacent to existing power receptacles at fixtures

Existing LSI fixtures. See next sheet for new locations.

Existing Reflected Ceiling Plan in Blackbox Theater

Title: Terra Linda Lighting Plot
 Date: 2023-01-12 Drawing Number:
 Scale: 1/8"=1'-0"
 Drawn By: ml, MWB, mc **11 61 84B-1**

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Symbol Key

- (e) Lumenpulse Fixture, rehung on perimeter pipe
 - 9" Diameter Architectural Downlights
 - ColorSource PAR with Medium Round Lens
 - ColorSource Spot V with 50deg lens tube
 - Existing Power for (e) Lumenpulse Fixtures
 - Existing DMX Outputs
 - New 20A Outlet, Twist Lock
- (e) = Existing



New 20A dedicated outlet for Production Lighting fixtures. L5-20R connector. Typical of 7. (under Electrical work)

(e) LSI fixtures, relocated to perimeter for audience downlight; new extension cords connecting back to existing receptacle locations. Fixtures spaced on approximately 2' centers.

Program in to console as "AudieNce Downlight" with assignable color and intensity control via fader. Assign to Universe 2.

(e) 4 port gateway mounted overhead near existing DMX controllers, with network input from console

(e) Universe 2 output to DMX controller for Lumenpulse fixtures (via data-over-power protocol at existing ceiling outlets)

New Perimeter Theatrical Lighting Pipe; (under Rigging work)

(e) Universe 1 output

Existing Lighting Pipe, typical.

(e) Output reassigned to Universe 1 at (e) gateway device

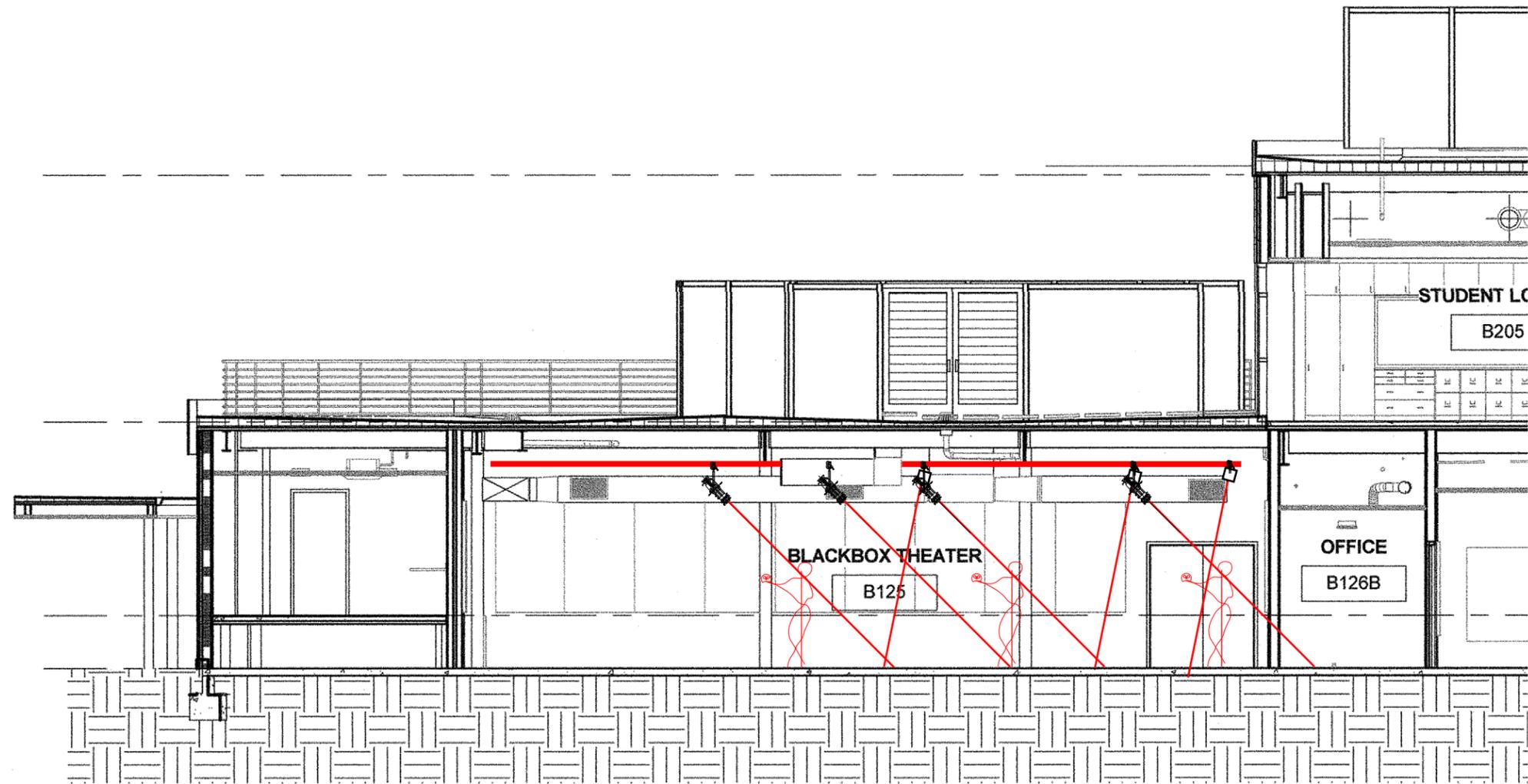
(e) Universe 1 output

Optional Additional Theatrical Lighting Pipe; (under Rigging work). If pipe option is not taken, provide these 5 fixtures to Owner loose as future specials.

Title: Terra Linda Lighting Plot
 Date: 2023-01-12 Drawing Number:
 Scale: 1/8"=1'-0"
 Drawn By: ml, MWB, mc 11 61 84B-2

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1 Reflected Ceiling Plan in Blackbox Theater
 1/8" = 1'-0"



1 Centerline Section in Blackbox Theater

Title: Terra Linda Lighting Plot
 Date: 2023-01-12 Drawing Number:
 Scale: 1/8"=1'-0"
 Drawn By: ml, MWB, mc 11 61 84B-3

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Terra Linda High School Student Commons

Production Lighting Fixtures

116184C - Instrument Schedule

Notes: "A/R" = As Required

UNIT #	PURPOSE	INSTRUMENT TYPE	CHANNEL	NOTES
			Universe 1	
1st Electric				
1	Front Side Light	ETC ColorSource Spot V - 50deg		
2	Front Light SR	ETC ColorSource Spot V - 50deg		
3	Front Light Center	ETC ColorSource Spot V - 50deg		
4	Unassigned Special	ETC ColorSource Spot V - 50deg		
5	Front Light SL	ETC ColorSource Spot V - 50deg		
6	Front Side Light	ETC ColorSource Spot V - 50deg		
2nd Electric				
1	Front Side Light	ETC ColorSource Spot V - 50deg		
2	Front Fill	ETC ColorSource PAR - Medium Round Lens		
3	Front Light SR	ETC ColorSource Spot V - 50deg		
4	Front Fill	ETC ColorSource PAR - Medium Round Lens		
5	Front Light Center	ETC ColorSource Spot V - 50deg		
6	Unassigned Special	ETC ColorSource Spot V - 50deg		
7	Front Fill	ETC ColorSource PAR - Medium Round Lens		
8	Front Light SL	ETC ColorSource Spot V - 50deg		
9	Front Fill	ETC ColorSource PAR - Medium Round Lens		
10	Front Side Light	ETC ColorSource Spot V - 50deg		
3rd Electric				
1	Side Light	ETC ColorSource Spot V - 50deg		
2	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
3	Unassigned Special	ETC ColorSource Spot V - 50deg		with iCue moving mirror
4	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
5	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
6	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
7	Unassigned Special	ETC ColorSource Spot V - 50deg		with iCue moving mirror
8	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
9	Side Light	ETC ColorSource Spot V - 50deg		

Terra Linda High School Student Commons
Production Lighting Fixtures
116184C - Instrument Schedule
Notes: "A/R" = As Required

UNIT #	PURPOSE	INSTRUMENT TYPE	CHANNEL	NOTES
4th Electric				
1	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
2	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
3	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
4	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
5	Top / Down Light	ETC ColorSource PAR - Medium Round Lens		
5th Electric (if Optional Additional Theatrical Lighting Pipe is provided under Rigging work)				
1	Backlight	ETC ColorSource PAR - Medium Round Lens		
2	Backlight	ETC ColorSource PAR - Medium Round Lens		
3	Backlight	ETC ColorSource PAR - Medium Round Lens		
4	Backlight	ETC ColorSource PAR - Medium Round Lens		
5	Backlight	ETC ColorSource PAR - Medium Round Lens		