

CITY OF LA VISTA
MAYOR AND CITY COUNCIL REPORT
SEPTEMBER 5, 2023 AGENDA

Subject:	Type:	Submitted By:
AUTHORIZE PURCHASE – AUDIO/VIDEO/LIGHTING/POWER EQUIPMENT	◆ RESOLUTION ORDINANCE RECEIVE/FILE	HEATHER BULLER RECREATION DIRECTOR

SYNOPSIS

A resolution has been prepared to authorize the purchase of technical equipment and supplies including audio, video, lighting and power systems from Technical Media Services (TMS), Omaha, NE in an amount not to exceed \$87,159.02.

FISCAL IMPACT

The FY23/FY24 Biennial Budget provides funding for the proposed purchase.

RECOMMENDATION

Approval.

BACKGROUND

The Recreation Department FY23 Capital Outlay budget included funding for a variety of technical equipment and supplies including a mobile stage as well as audio, lighting, video and power systems. The mobile stage purchase was approved by Council in July.

The equipment currently being proposed for purchase will be an amenity for the new stage and can also be used independently at a variety of City events in various locations. Currently this equipment is being rented as needed from outside vendors on multiple occasions throughout the year.

Examples of existing uses for the stage and equipment would be the City's live music events, outdoor movies, youth programming and entertainment, Recreation Department programs and activities, and for a variety of Salute to Summer activities such as judge's stage, award's stage, etc. Additionally, with the upcoming opening of The Astro, it is anticipated there will be an increase in events and activities in and around The Link, Central Park and in collaboration with the City Centre development.

This equipment will enhance the efficiency of our events logistics and can be easily operated by current staff. TMS is the local company that has provided all of the City's audio and video equipment for multiple facilities including conference room upgrades, Council Chambers and the annex upgrade. They are our service provider for technical assistance and repairs as well.

RESOLUTION NO. _____

A RESOLUTION OF THE MAYOR AND CITY COUNCIL OF THE CITY OF LA VISTA, NEBRASKA AUTHORIZING THE PURCHASE OF TECHNICAL EQUIPMENT AND SUPPLIES INCLUDING AUDIO, VIDEO, LIGHTING AND POWER SYSTEMS FROM TECHNICAL MEDIA SERVICES, OMAHA, NE IN AN AMOUNT NOT TO EXCEED \$87,159.02.

WHEREAS, the City Council of the City of La Vista has determined that the purchase of technical equipment and supplies is necessary; and

WHEREAS, the FY23/FY24 Biennial Budget provides funding for the proposed purchase, and

WHEREAS, Subsection (C) (9) of Section 31.23 of the La Vista Municipal Code requires that the city administrator secure Council approval prior to authorizing any purchase over \$5,000.00;

NOW, THEREFORE, BE IT RESOLVED, that the Mayor and City Council of La Vista, Nebraska, do hereby approve the purchase of a technical equipment and supplies including audio, video, lighting and power systems from Technical Media Services, Omaha, NE in an amount not to exceed \$87,159.02.

PASSED AND APPROVED THIS 5TH DAY OF SEPTEMBER 2023.

CITY OF LA VISTA

ATTEST:

Douglas Kindig, Mayor

Pamela A. Buethe, MMC
City Clerk



o 402.592.5522
 f 402.592.0094
 e tms@tmsomaha.com
 @ tmsomaha
 a 7510 Burlington St.
 Omaha, NE 68127

QUOTE:
 DATE:
 PREPARED BY:

7180-1

8/20/2023

Paul Jonas

TO:

City Of La Vista

Attn: Brian Allen
 8116 Park View Blvd
 La Vista, Nebraska 68128-2198 USA
 Phone: (402) 593-6402
 Email: ballen@cityoflavista.org

NOTES:

QUOTE VALID FOR 30 DAYS

PAYMENT TERMS

NET 30

SHIPPING TERMS

N/A

OUTDOOR AMPHITHEATER AV II BASE SYSTEM

QTY | ITEM / DESCRIPTION

2 dB Technologies INGENIA IG4T INGENIA IG4T
Speaker- Line Array Powered 2 Way DSP LF (4) 6.5" HF (1) 1.4" 900 Watt RMS Black

2 dB Technologies SUB 915 SUB 915
Speaker- Sub Powered LF (1) 15" 900 Watt RMS RDNet Black

4 dB Technologies FMX12 FMX12
Speaker- Floor Monitor Powered 2 Way Coax LF (1) 12" HF (1) 1" 800 Watt RMS Black

2 dB Technologies DS 2 DS 2
Rigging- Pole Mount Adjustable M20 Thread On One End

1 Soundcraft Si Impact 5056170
Console- Sound Digital 32 Channel 24 Faders 16 Outs

1 Soundcraft Mini Stagebox 32i US 5074418
Stagebox- Digital 32 Inputs 12 Outs 3 Space

1 Grundorf T8-MSOCSIIMPACT T8-MSOCSIIMPACT
Case- Console For SoundCraft Impact W / Dog House

1 Grundorf T4-AR0416 T4-AR0416
Rack- Amp 4 space 1/4" Wall 16" deep Black

1 ProCo DURASHIELD-100NBNC-R DURASHIELD-100NBNC-R
Cable- CAT6 EtherCon Male To EtherCon Male DURASHIELD Shielded cable 100' With Reel

2 Rapco 6293-HOGM-50-I-CS-XXR-BN 6293-HOGM-50-I-CS-XXR-BN
Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Brown Ring 50'

2 [Rapco 6293-HOGM-75-I-CS-XXR-RD](#) 6293-HOGM-75-I-CS-XXR-RD
Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Red Ring 75'

MICS, STANDS & CABLES

QTY	ITEM / DESCRIPTION	
6	<u>Audio Technica ATM510</u> Mic- Vocal; Handheld; Dynamic; Cardioid	ATM510
1	<u>AKG D112 MKII</u> Mic- Instrument Dynamic Cardioid Kick Drum Mic	D112 MKII
3	<u>AKG C430</u> Mic- Instrument Condenser Cardioid	C430
6	<u>Shure SM57-LC</u> Mic- Instrument Dynamic Cardioid Less Cable	SM57-LC
2	<u>Whirlwind Director</u> Direct Box- Passive Two 1/4" In / Out XLR Mic Out Ground Lift	DIR
2	<u>Whirlwind L06</u> Cable- Instrument 1/4" Male TS to 1/4" Male TS 6'	L06
1	<u>Whirlwind podDI</u> Direct Box- Stereo In Female RCA Mono Out XLR w / Volume Control	podDI
1	<u>Hosa CMM-103</u> Cable- Patch Male 1/8" TRS to Male 1/8" TRS 3'	CMM-103
1	<u>Hosa CRA-201</u> Cable- Patch Male RCA To Male RCA 3'	CRA-201
6	<u>Rapco 6293-HOGM-5-I-CS-XXR-WT</u> Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink White Ring 5'	6293-HOGM-5-I-CS-XXR-WT
6	<u>Rapco 6293-HOGM-10-I-CS-XXR-BL</u> Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Ring 10'	6293-HOGM-10-I-CS-XXR-BL
6	<u>Rapco 6293-HOGM-15-I-CS-XXR-YL</u> Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Yellow Ring 15'	6293-HOGM-15-I-CS-XXR-YL
10	<u>Rapco 6293-HOGM-25-I-CS-XXR-BK</u> Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Black Ring 25'	6293-HOGM-25-I-CS-XXR-BK
2	<u>Rapco 6293-HOGM-50-I-CS-XXR-BN</u> Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Brown Ring 50'	6293-HOGM-50-I-CS-XXR-BN
4	<u>Rapco EC11-50</u> Cable- Hybrid Cable Assembly; (M-F XLR); Power IEC SO-12/3; 50'	EC11-50
2	<u>Rapco EC12-50</u> Cable- Hybrid Cable Assembly; (M-F XLR); PowerCon 12/3; 50'	EC12-50

2	<u>Rapco EC12-75</u> Cable- Hybrid Cable Assembly; (M-F XLR); PowerCon 12/3; 75'	
6	<u>K&M 26010.500.55</u> Stand- Mic Round Base 9.8" Tall 34.25" To 62" Black	260/1
8	<u>K&M 21140.500.55</u> Stand- Boom Arm 2 Piece Telescoping 425mm To 725mm Black	21140
4	<u>K&M 23323.500.55</u> Stand- Mic Round Base 9.8" Short 13.75" To 22.5" Black	23323
3	<u>K&M 21080.500.55</u> Stand- Mic Tripod With 2 Piece Boom Arm 35" - 63"; Black	210/8B
1	<u>TMS Installation</u> Labor- Project Installation	LBR-INST

PROJECT SUMMARY

Equipment & Labor Total	\$24,665.55
Tax	\$0.00
TOTAL	\$24,665.55
*	

ORDERS OVER \$500.00 WILL INCUR A 3% PROCESSING FEE IF PAYING BY CREDIT CARD

SALES TAX: The Buyer agrees to pay the Seller any taxes or additional costs arising from any federal, state, or local tax laws. The sales tax (if any) that is applied to this quote is an estimate and can be changed at invoicing according to the governing body(s) in which the job site resides OR where the Buyer takes possession of the equipment purchased. The sales tax on this quote may be removed if proper documentation is received by TMS, Inc.

Signature Approval:

Print Name

Authorized Signature

Date

PRODUCT DETAILS



dB Technologies INGENIA IG4T

Speaker- Line Array Powered 2 Way DSP LF (4) 6.5" HF (1) 1.4" 900 Watt RMS Black

The INGENIA IG4 T is equipped with 4 premium 6.5 low frequency transducers and 1 1.4" compression driver. All models of the series are designed to work individually, but they can also be coupled by simply turning one speaker upside down and placing it upon the other one. Thanks to infrared technology, INGENIA detects the presence of a second speaker, and an onboard-configuration wizard automatically sets up the system in order to ensure the best coverage and acoustic coherence. INGENIA's horn design is horizontally symmetric and vertically asymmetric: this way, horizontal dispersion is wide and constant while vertical dispersion is narrow in the upper part and wider in the lower part.

dB Technologies SUB 915

Speaker- Sub Powered LF (1) 15" 900 Watt RMS RDNet Black

Complete control of low-end power in order to convey a deep, full-bodied sound in every kind of applications. Equipped with high-performance components housed into a bass reflex design, dBTechnologies' SUB 900 are ready for full remote control via RDNet and software Aurora net (available for Windows and Mac). A 900 W RMS Class D Digipro G3 power amplifier ensures advanced efficiency as well as forcible sound pressure levels.

dB Technologies FMX12

Speaker- Floor Monitor Powered 2 Way Coax LF (1) 12" HF (1) 1" 800 Watt RMS Black

MX is an active 2-way coaxial stage monitor series encompassing 3 models (10,12 and 15") equipped with 400 RMS (for FMX 10) or 600 RMS (for FMX 12 and 15) Class D amplifiers. The wedge's coaxial acoustic design, together with its custom horn design and its advanced DSP featuring linear phase FIR filters, provides an even, highly-intelligible sound. In facts, FMX's horn design allows a very precise dispersion pattern (60° horizontal and 90° vertical) which can be easily reversed (90° horizontal and 60° vertical) by rotating the horn, adapting the wedge to the habits of the user.

dB Technologies DS 2

Rigging- Pole Mount Adjustable M20 Thread On One End

Pole Mount 35mm, adjustable, M20 thread. It can be used on all DVA subwoofers (S1521N, S2585N, S1518N, S30N, S10DP, S09DP, S08DP, KS10, KS20), DVA T8, DVA K5, SUBS D, SUBS H, ARENA SW15 and ARENA SW18. It allows the installation of any loudspeakers provided with a 35 mm hole above on any subwoofer with a M20 flange.



Soundcraft Si Impact

Console- Sound Digital 32 Channel 24 Faders 16 Outs

Drawing on over 40 years experience in live sound mixing, Si Impact brings the latest digital mix innovations together with the unrivalled sound quality of Soundcraft. Designed to be as simple as an analog mixer, but offer radical workflow enhancements such as the unique FaderGlow system, massive DSP power, and a pristine 32-in/32-out USB audio interface, Si Impact delivers digital live sound mixing and recording for those who refuse to compromise on audio quality.



Soundcraft Mini Stagebox 32i US

Stagebox- Digital 32 Inputs 12 Outs 3 Space

Soundcraft Mini Stagebox 32i and 16i combine high-quality components with a streamlined design, making it easy to add multiple channels of remote-controlled I/O to your Si-series mixing console. The Studer-designed mic preamps provide exceptional sound quality, while the compact form factor offers easy transport and fast

PRODUCT DETAILS

configuration. Ideal for live engineers, houses of worship, bands, club owners and corporate installations, Soundcraft Mini Stageboxes allow you to replace heavy, expensive analog snakes with a single RJ45 Cat5 style Ethernet cable.



Grundorf T8-MSOCSIIMPACT

Case- Console For SoundCraft Impact W / Dog House

This Grundorf Tour 8 Series 1/8" ATA Mixer case is constructed with 3/8" multi-layer plywood with a durable ABS laminate finish. The edges are finished with double edged aluminum extrusion. The lid-to-body seal is made with an interlocking aluminum tongue and groove valance system to provide a tight seal. We use 9 rivet point recessed handles and 10 rivet point recessed catches to provide the strength needed for years of wear-and-tear. The handles and catches all use a steel washer backed rivet system for greater durability.



Grundorf T4-AR0416

Rack- Amp 4 space 1/4" Wall 16" deep Black

Rack up your gear in Grundorf Tour 4™ Series Amp Racks. Super solid construction and unmatched Grundorf quality make these racks invaluable for any set up. Amp racks are sturdy cases designed to carry and protect your heavy amplifiers. They are rugged, strong, and built to take the rigors of the road! Tour 4™ Series Amp Racks are available in two depths: 16" body depth with 15.06" rackable depth, or 18" body depth with 16.94" rackable depth.



ProCo DURASHIELD-100NBNC-R

Cable- CAT6 EtherCon Male To EtherCon Male DURASHIELD Shielded cable 100' With Reel

ProCo DuraShield cable gives you true Cat6A specification within a double shielded cable. Designed for all data applications, not just audio transmission. Longer lengths are available on a super-convenient reel that truly expedites the installation and load out process. ProCo DuraShield Cat6A cable has superior flexibility for easy routing and repeated bending, yet it is constructed of heavy-duty industrial/tactical wire made right here in the USA, with Black Neutrik EtherCon connectors each end.



Rapco 6293-HOGM-75-I-CS-XXR-RD

Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Red Ring 75'

Roadhog microphone cables from RapcoHorizon are "Road Ready and Tour Tough". This unique design of microphone cable provides a lifetime of performance for the musician that uses their gear night after night. Utilizing the best pure copper conductors and shielding materials for a quality sound and encasing that sound in an extra thick rugged PVC skin for guaranteed durability without sacrificing flexibility. Common lengths (in feet): 1, 2, 3, 6, 10, 15, 20, 25, 30, 50, 75, 100. Other lengths available upon request.



Audio Technica ATM510

Mic- Vocal; Handheld; Dynamic; Cardioid

This cardioid dynamic step-up is built to survive the realities of day-to-day use and still produce clear, full-range vocal reproduction every time. Its superior internal shock mounting reduces handling noise. The microphone's cardioid polar pattern reduces pickup of sounds from the sides and rear, improving isolation of the desired sound source.



AKG D112 MKII

Mic- Instrument Dynamic Cardioid Kick Drum Mic

The D112 MkII can handle more than 160 dB SPL without distortion. Its large diaphragm has a very low resonance frequency that delivers a solid and powerful response below 100 Hz. Its authoritative low end is complemented by a narrow-band presence boost at 4 kHz that punches through even dense mixes and loud stage volumes with forceful impact. One of the many reasons artists and sound engineers love the D112 MkII is that it requires no additional EQ to sound just right as soon as you bring up the fader. Further refining its performance, the D112 MkII features an integrated hum-compensation coil that keeps noise to an absolute minimum.

PRODUCT DETAILS



AKG C430

Mic- Instrument Condenser Cardioid

The C430 professional condenser microphone is specifically designed for cymbal and overhead miking. The frequency response of the C430 ensures a uniquely crisp sound which often reduces the need for external EQs. With its extremely compact external dimensions, the C430 microphone will keep a low profile in any application without compromising audio quality.

Shure SM57-LC

Mic- Instrument Dynamic Cardioid Less Cable

An industry standard for performance and recording, the versatile and rugged SM57 is an exceptional instrument microphone and vocal microphone. Handheld or mountable microphone for guitars, vocals, and other instruments in live sound and recording applications. Dynamic cartridge with cardioid polar pattern. Includes SM57, microphone clip, storage bag, and user guide.



Whirlwind Director

Direct Box- Passive Two 1/4" In / Out XLR Mic Out Ground Lift

Features include: 1/4" parallel wired in/out jacks. Ground Lift switch to help eliminate hum and buzz. 30dB pad switch for selecting between line/instrument or speaker level input signals. Switchable high cut filter to eliminate amplifier noise. Uses Whirlwind's TRHL-M transformer with metal shield. Impedance Ratio (input to output): 133:1 Frequency Response: 20Hz-20kHz ±1dB. Level Change (input to output): -20dB (pad out), -50dB (pad in).



Whirlwind L06

Cable- Instrument 1/4" Male TS to 1/4" Male TS 6'

Premium, rugged, and practically indestructable, the Leader plug's patented cable grip absorbs any typical straining in the field. And its flexible boot extension has virtually eliminated breakage at the cable exit. Combined with Accusonic+1cable, the Leader is the highest quality instrument cable manufactured today..



Whirlwind podDI

Direct Box- Stereo In Female RCA Mono Out XLR w / Volume Control

A variable attenuator on each input allows level matching between left and right inputs. This makes the podDI a passive mixer in split track audio applications, balancing the voice track and the music track levels in the summed mono output. Signal is input via 3.5mm (1/8") stereo TRS jack or color coded RCA phono jacks. An unused input can be used as a "loop through". Output is via a balanced male XLR jack. Features a ground lift switch to help eliminate hum and buzz. The podDI can also be used as a high quality single input.



Hosa CMM-103

Cable- Patch Male 1/8" TRS to Male 1/8" TRS 3'

This cable is designed to interconnect mobile devices with mini stereo phone jacks. It is ideal for use with portable media players, laptops, and similar devices. Features include:

- Nickel-plated plugs for rugged durability and efficient signal transfer
- Oxygen-Free Copper (OFC) conductors for enhanced signal clarity
- OFC spiral shield for effective EMI and RFI rejection and flexibility



Hosa CRA-201

Cable- Patch Male RCA To Male RCA 3'

This cable is designed to interconnect gear with stereo phono jacks. It is ideal for interconnecting consumer audio

PRODUCT DETAILS

components. Features include:

- Nickel-plated plugs for rugged durability and efficient signal transfer
- Oxygen-Free Copper (OFC) conductors for enhanced signal clarity
- OFC spiral shields for effective EMI and RFI rejection and flexibility



Rapco 6293-HOGM-5-I-CS-XXR-WT

Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink White Ring 5'

Roadhog microphone cables from RapcoHorizon are "Road Ready and Tour Tough". This unique design of microphone cable provides a lifetime of performance for the musician that uses their gear night after night. Utilizing the best pure copper conductors and shielding materials for a quality sound and encasing that sound in an extra thick rugged PVC skin for guaranteed durability without sacrificing flexibility. Common lengths (in feet): 1, 2, 3, 6, 10, 15, 20, 25, 30, 50, 75, 100. Other lengths available upon request.



Rapco 6293-HOGM-10-I-CS-XXR-BL

Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Ring 10'

Roadhog microphone cables from RapcoHorizon are "Road Ready and Tour Tough". This unique design of microphone cable provides a lifetime of performance for the musician that uses their gear night after night. Utilizing the best pure copper conductors and shielding materials for a quality sound and encasing that sound in an extra thick rugged PVC skin for guaranteed durability without sacrificing flexibility. Common lengths (in feet): 1, 2, 3, 6, 10, 15, 20, 25, 30, 50, 75, 100. Other lengths available upon request.



Rapco 6293-HOGM-15-I-CS-XXR-YL

Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Yellow Ring 15'

Roadhog microphone cables from RapcoHorizon are "Road Ready and Tour Tough". This unique design of microphone cable provides a lifetime of performance for the musician that uses their gear night after night. Utilizing the best pure copper conductors and shielding materials for a quality sound and encasing that sound in an extra thick rugged PVC skin for guaranteed durability without sacrificing flexibility. Common lengths (in feet): 1, 2, 3, 6, 10, 15, 20, 25, 30, 50, 75, 100. Other lengths available upon request.



Rapco 6293-HOGM-25-I-CS-XXR-BK

Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Black Ring 25'

Roadhog microphone cables from RapcoHorizon are "Road Ready and Tour Tough". This unique design of microphone cable provides a lifetime of performance for the musician that uses their gear night after night. Utilizing the best pure copper conductors and shielding materials for a quality sound and encasing that sound in an extra thick rugged PVC skin for guaranteed durability without sacrificing flexibility. Common lengths (in feet): 1, 2, 3, 6, 10, 15, 20, 25, 30, 50, 75, 100. Other lengths available upon request.



Rapco 6293-HOGM-50-I-CS-XXR-BN

Cable- Mic XLR Male To XLR Female Imprint Shrink Clear Shrink Brown Ring 50'

Roadhog microphone cables from RapcoHorizon are "Road Ready and Tour Tough". This unique design of microphone cable provides a lifetime of performance for the musician that uses their gear night after night. Utilizing the best pure copper conductors and shielding materials for a quality sound and encasing that sound in an extra thick rugged PVC skin for guaranteed durability without sacrificing flexibility. Common lengths (in feet): 1, 2, 3, 6, 10, 15, 20, 25, 30, 50, 75, 100. Other lengths available upon request.



Rapco EC11-50

Cable- Hybrid Cable Assembly: (M-F XLR): Power IEC SO-12/3: 50'

Combine balanced audio and AC power in a single easy-to-handle cable assembly. Rugged, yet flexible, composite cable for fast set-ups and tear-downs without adding "clutter" to an already busy stage. Shielded AC and double-shielded audio lines totally eliminate all hum and buzz problems under 100 kHz. PowerCon (Blue) to PowerCon (Grey) with (1) Channel of AES/EBU Audio XLR - XLRM.

PRODUCT DETAILS



Rapco EC12-50

Cable- Hybrid Cable Assembly: (M-F XLR); PowerCon 12/3; 50'

Combine balanced audio and AC power in a single easy-to-handle cable assembly. Rugged, yet flexible, composite cable for fast set-ups and tear-downs without adding "clutter" to an already busy stage. Shielded AC and double-shielded audio lines totally eliminate all hum and buzz problems under 100 kHz. PowerCon (Blue) to PowerCon (Grey) with (1) Channel of AES/EBU Audio XLRF - XLRM.



Rapco EC12-75

Cable- Hybrid Cable Assembly: (M-F XLR); PowerCon 12/3; 75'

Combine balanced audio and AC power in a single easy-to-handle cable assembly. Rugged, yet flexible, composite cable for fast set-ups and tear-downs without adding "clutter" to an already busy stage. Shielded AC and double-shielded audio lines totally eliminate all hum and buzz problems under 100 kHz. PowerCon (Blue) to PowerCon (Grey) with (1) Channel of AES/EBU Audio XLRF - XLRM.



K&M 26010.500.55

Stand- Mic Round Base 9.8" Tall 34. 25" To 62" Black

Cast-iron round base, with anti-vibration rubber insert for noise filtration. Rod combination: 2-piece folding design. Special features: anti-vibration rubber insert for noise filtration



K&M 21140.500.55

Stand- Boom Arm 2 Piece Telescoping 425mm To 725mm Black

Two-piece telescopic boom arm with 3/8" thread. Complete with locking washer and plastic grip. Smooth, silent and scratch-free adjustment thanks to large wing nut.



K&M 23323.500.55

Stand- Mic Round Base 9.8" Short 13.75" To 22.5" Black

Medium high stand with a heavy cast iron base for maximum stability. Well suited for microphoning amps, percussion, and string instruments etc. The circular rubber insert ring filters foot step sounds and reduces the transmission of unwanted sounds. Sleek adjustable clutch for easy height adjustment.



K&M 21080.500.55

Stand- Mic Tripod With 2 Piece Boom Arm 35" - 63"; Black

Consists of a tubing assembly and an adjustable boom arm. Zinc die cast base with folding legs. Square swivel joint with large wing nut.



o 402.592.5522
 f 402.592.0094
 e tms@tmsomaha.com
 @ tmsomaha
 a 7510 Burlington St.
 Omaha, NE 68127

QUOTE:
 DATE:
 PREPARED BY:

7187-3

8/25/2023

Paul Jonas

TO:

City Of La Va Vista

Attn: **Brian Allen**
 8116 Park View Blvd
 La Vista, Nebraska 68128-2198 USA
 Phone: (402) 593-6402
 Email: ballen@cityoflavista.org

NOTES:

QUOTE VALID FOR 30 DAYS

PAYMENT TERMS

SHIPPING TERMS

NET 30

N/A

OUTDOOR AMPHITHEATER -VIDEO II

QTY	ITEM / DESCRIPTION	
1	<u>Digital Projection E-Vision Laser 15000 WU</u> Projector- Video 15,000 Aspect Ratio 16:10	120-995
1	<u>Digital Projection 112-501</u> Lens- Projector 1.73 - 2.27 : 1 Zoom	112-501
1	<u>TechLogix Networkx, LLC MOFO-HD20-30</u> Cable- HDMI Over Fiber Male HDMI To Male HDMI Plenum 30m (100')	MOFO-HD20-30
1	<u>Tascam BD-MP1</u> Blue Ray Player- DVD HDMI Out; 7.1Ch. Audio Out 1Space	BD-MP1
1	<u>TMS General Hardware</u> Parts/Components- Additional and/ Replacement Components	TMS-HW-GEN
1	<u>TMS Installation</u> Labor- Project Installation	LBR-INST

QUOTE

Equipment & Labor

\$25,842.00

PROJECT SUMMARY

Equipment & Labor Total	\$25,842.00
-------------------------	-------------

Tax	\$0.00
TOTAL	\$25,842.00
*	

*****ORDERS OVER \$500.00 WILL INCUR A 3% PROCESSING FEE IF PAYING BY CREDIT CARD*****

SALES TAX: The Buyer agrees to pay the Seller any taxes or additional costs arising from any federal, state, or local tax laws. The sales tax (if any) that is applied to this quote is an estimate and can be changed at invoicing according to the governing body(s) in which the job site resides OR where the Buyer takes possession of the equipment purchased. The sales tax on this quote may be removed if proper documentation is received by TMS, Inc.

Signature Approval:

Print Name

Authorized Signature

Date

PRODUCT DETAILS



Digital Projection E-Vision Laser 15000 WU

Projector- Video 15,000 Aspect Ratio 16:10

The E-Vision range of single-chip DLP projectors has taken another huge leap forward in brightness with the introduction of the 15,000 Lumen E-Vision 15000. Like other recent additions to the E-Vision range, the E-Vision 15000 employs Colorboost + Red Laser Technology. Already renowned for being a robust, reliable workhorse, the latest generation of this compact, lamp-free projector utilises Colorboost+Red technology to create the most realistic and beautifully saturated colours ever seen from any high-brightness 1-Chip DLP Projector. With new intelligent processing, colour performance of the E-Vision Laser 15000 is ever closer to that of a 3-Chip DLP projector.



Digital Projection 112-501

Lens- Projector 1.73 - 2.27 : 1 Zoom



TechLogix Networkx, LLC MOFO-HD20-30

Cable- HDMI Over Fiber Male HDMI To Male HDMI Plenum 30m (100')

Forget clunky extenders and bandwidth-limited copper cable. The MOFO PT Series combines fiber-based cabling with traditional table inserts and wallplates, delivering cleaner installations, fewer failure points and better bandwidth. Simply pull, plug and play. No power required

- Options for HDMI & USB
- True fiber cable core using TechLogix's MOFO technology
- Fiber supports re-termination, repair & re-purposing in the field using standard fiber tools & connectors
- Female source connector mounts to stock or custom plates
- Male destination connector connects directly to displays



Tascam BD-MP1

Blue Ray Player- DVD HDMI Out; 7.1Ch. Audio Out 1Space

The TASCAM BD-MP1 is a professional-grade Blu-ray player that expands the legacy of TASCAM's popular BD-01U Blu-ray player. The BD-MP1 is the perfect choice for a wide range of commercial installations, including public, educational and commercial facilities, theaters, amusement and entertainment businesses, to name a few.



o 402.592.5522
 f 402.592.0094
 e tms@tmsomaha.com
 @ tmsomaha
 a 7510 Burlington St.
 Omaha, NE 68127

QUOTE:
 DATE:
 PREPARED BY:

7183-2

8/20/2023

Paul Jonas

TO:

City Of La Vista

Attn: Brian Allen
 8116 Park View Blvd
 La Vista, Nebraska 68128-2198 USA
 Phone: (402) 593-6402
 Email: ballen@cityoflavista.org

NOTES:

QUOTE VALID FOR 30 DAYS

PAYMENT TERMS

SHIPPING TERMS

NET 30

N/A

OUTDOOR AMPHITHEATER LIGHTING II

QTY	ITEM / DESCRIPTION	
1	<u>ETC CS20</u> Console- ColorSource 20; 20 Fader ColorSource console (80 Channels or Devices)	7225A1000-US
1	<u>ETC CS20DC</u> Dust Cover- CS20/CS20 AV Console	7225A4020
24	<u>ADJ 18P HEX IP</u> Fixture- LED Wash RGBAW+UV 18 x 12W LEDs IP 65 Rated 25 Degree Beam Angle	HEX817
6	<u>TechniLux SC-30B</u> Safety Cable- 30" w/ Spring Lock; Black	SC-30B
2	<u>Elation RDM 6XL</u> Splitter- DMX 1 Input x 6 Outputs; Rack Mount; 5-pin; RDM	NRD123
1	<u>Accu Cable AC5PDMX100</u> Cable- DMX Assembly; (M-F) 5-pin XLR; 100'	AC5PDMX100
2	<u>Accu Cable AC5PDMX5</u> Cable- DMX Assembly; (M-F) 5-pin XLR; 5'	AC5PDMX5
1	<u>Accu Cable AC5PDMX50</u> Cable- DMX Assembly; (M-F) 5-pin XLR; 50'	AC5PDMX50
220 ft	<u>Accu Cable AC5CDMX300-1</u> Wire- DMX; 22 AWG/2 Pair Shielded; Black	AC5CDMX300-1
1	<u>Accu Cable EC123-3FER50</u> Cable- Edison Molded Threefer (1M-3F); 12/3; 50'	EC123-3FER50

QUOTE

1	<u>Accu Cable EC123-100</u>	EC123-100
	Cable- Edison Molded Extension (M-F); 12/3; 100'	
2	<u>Accu Cable EC123-50</u>	EC123-50
	Cable- Edison Molded Extension (M-F); 12/3; 50'	
6	<u>Neutrik NC5FDX-TOP</u>	NC5FDX-TOP
	Connector- 5-pin XLR Female Panel; Black w/ Gold Contacts; IP65	
27	<u>Neutrik NC5MX-TOP</u>	NC5MX-TOP
	Connector- 5-pin XLR Male Cable; Stainless w/ Gold Contacts; IP65	
33	<u>Neutrik NC5FX-TOP</u>	NC5FX-TOP
	Connector- 5-pin XLR Female Cable; Black w/ Gold Contacts, IP65	
2	<u>Neutrik NAC3MX-W-TOP</u>	NAC3MX-W-TOP
	Connector- powerCON TRUE1 Locking Cable End; Male; IP65	
30	<u>Neutrik NAC3FX-W-TOP</u>	NAC3FX-W-TOP
	Connector- powerCON TRUE1 Locking Cable End; Female; IP65	
6	<u>Neutrik NAC3MPX-TOP</u>	NAC3MPX-TOP
	Connector- PowerCON TRUE1 Panel Mount IP 64 Rated Male	
12	<u>Neutrik SCNAC-MPX</u>	SCNAC-MPX
	Connector- PowerCON TRUE1 Panel Mount IP 64 Rated Rubber Sealing Cover For NAC3MPX-TOP	
6	<u>K&M 24625-000-35</u>	24625
	Stand- Lighting Tri Pod From 5.5' To 10' High	
6	<u>K&M 24281.000.55</u>	24281
	Stand- AdapterTee For 35mm Diameter Tuding	
1	<u>IMS General Hardware</u>	TMS-HW-GEN
	Parts/Components- Additional and/ Replacement Components	
1	<u>TMS Installation</u>	LBR-INST
	Labor- Project Installation	

QUOTE

Equipment & Labor

\$23,677.45

PROJECT SUMMARY

Equipment & Labor Total \$23,677.45

Tax \$0.00
TOTAL \$23,677.45
*

*****ORDERS OVER \$500.00 WILL INCUR A 3% PROCESSING FEE IF PAYING BY CREDIT CARD*****

SALES TAX: The Buyer agrees to pay the Seller any taxes or additional costs arising from any federal, state, or local tax laws. The sales tax (if any) that is applied to this quote is an estimate and can be changed at invoicing according to the governing body(s) in which the job site resides OR where the Buyer takes possession of the equipment purchased. The sales tax on this quote may be removed if proper documentation is received by TMS, Inc.

Signature Approval:

Print Name

Authorized Signature

Date

PRODUCT DETAILS



ETC CS20

Console- ColorSource 20; 20 Fader ColorSource console (80 Channels or Devices)

Available in two sizes with optional audiovisual and ethernet capabilities, ColorSource consoles provide hands-on control designed for the latest technology. These affordable, portable desks specialize in streamlined, plug-and-play setup; the console recognizes intelligent lights in the rig via RDM and auto-populates them in patch, and the on-board touchscreen allows fixtures to be dragged into place on a customizable stage map for quick selection and programming. The faders and touchscreen can be used to control moving lights, mix LED colors, play stored looks and effects and - with the AV consoles - play sound and visual media.



ADJ 18P HEX IP

Fixture- LED Wash RGBAW+UV 18 x 12W LEDs IP 65 Rated 25 Degree Beam Angle

The ADJ 18P Hex IP is a versatile IP65 outdoor rated Par with 18 x 12-Watt (6-IN-1 HEX) LEDs. With a 25-degree beam angle, users may produce wide washes with smooth color mixing from 63 built-in color macros utilizing red, green, blue, amber, white and UV LEDs. Not only is this LED Par great for lighting indoor stages and venues, but with IP 65 rating, it is a great solution for temporary outdoor lighting of stages or events. The IP 65 rating helps protect the fixture from rain, snow and dust.



TechniLux SC-30B

Safety Cable- 30" w/ Spring Lock: Black

Steel Aircraft cable • 30 inches long • Carabiner C-hook clip and loop



Elation RDM 6XL

Splitter- DMX 1 Input x 6 Outputs; Rack Mount; 5-pin; RDM

The Netron RDM 6XL is a rugged and compact DMX/RDM Splitter. Designed for live production and installations, it features six opto-isolated 5pin XLR outputs and flexible mounting options to cover any situation.



Accu Cable AC5PDMX100

Cable- DMX Assembly: (M-F) 5-pin XLR; 100'

5pin DMX cable with 22 AWG stranded (0.15 x 19) tinned copper conductors • Polyethylene insulation • Twisted pair • Polyethylene inner jacket • Duofoil® (100% coverage) and cotton plus a tinned copper braid shield (85% coverage) • PVC jacket



Accu Cable AC5PDMX5

Cable- DMX Assembly: (M-F) 5-pin XLR; 5'

5pin DMX cable with 22 AWG stranded (0.15 x 19) tinned copper conductors • Polyethylene insulation • Twisted pair • Polyethylene inner jacket • Duofoil (100% coverage) and cotton plus a tinned copper braid shield (85% coverage) • PVC jacket

PRODUCT DETAILS



Accu Cable AC5PDMX50

Cable- DMX Assembly: (M-F) 5-pin XLR; 50'

5pin DMX cable with 22 AWG stranded (0.15 x 19) tinned copper conductors • Polyethylene insulation • Twisted pair • Polyethylene inner jacket • Duofoil (100% coverage) and cotton plus a tinned copper braid shield (85% coverage) • PVC jacket



Accu Cable AC5CDMX300-1

Wire- DMX; 22 AWG/2 Pair Shielded; Black

22 AWG stranded (0.15 x 19) tinned copper conductors • Polyethylene insulation • Twisted pair • Polyethylene inner jacket • Duofoil (100% coverage) and cotton plus a tinned copper braid shield (85% coverage) • PVC jacket



Accu Cable EC123-3FER50

Cable- Edison Molded Threefer (1M-3F); 12/3; 50'

Black • 3 Prong • 120V • UL Listed



Accu Cable EC123-100

Cable- Edison Molded Extension (M-F); 12/3; 100'

Black • 3 Prong • 120V • UL Listed



Accu Cable EC123-50

Cable- Edison Molded Extension (M-F); 12/3; 50'

Black • 3 Prong • 120V • UL Listed



Neutrik NC5FDX-TOP

Connector- 5-pin XLR Female Panel; Black w/ Gold Contacts; IP65

5 pole female chassis connector, TRUE OUTDOOR PROTECTED (TOP) • The X-TOP series is a "heavy-duty" XLR chassis connector for outdoor use. Outdoor protected by mating with related cable connector of the XLR TOP range (IP65 and UL50E). Gold contacts are standard.



Neutrik NC5MX-TOP

Connector- 5-pin XLR Male Cable; Stainless w/ Gold Contacts; IP65

5 pole male cable connector, TRUE OUTDOOR PROTECTED (TOP), gold contacts • The X-TOP series is a "heavy-duty" XLR cable connector for outdoor use. Outdoor protected by mating with related cable or chassis connector of the XLR TOP range (IP65 and UL50E). Gold contacts are standard.

PRODUCT DETAILS



Neutrik NC5FX-TOP

Connector- 5-pin XLR Female Cable: Black w/ Gold Contacts, IP65

5 pole female cable connector, TRUE OUTDOOR PROTECTED (TOP), gold contacts • The X-TOP series is a "heavy-duty" XLR cable connector for outdoor use. Outdoor protected by mating with related cable or chassis connector of the XLR TOP range (IP65 and UL50E). Gold contacts are standard.



Neutrik NAC3MX-W-TOP

Connector- powerCON TRUE1 Locking Cable End; Male; IP65

Locking male cable connector, screw terminals • The powerCON TRUE1 TOP is a locking 16 A true mains connector for outdoor applications. It replaces appliance couplers wherever a very rugged solution in combination with a locking device is needed in order to guarantee a safe power connection. The powerCON TRUE1 TOP is a connector with breaking capacity (CBC), i.e. it can be connected or disconnected under load or live.



Neutrik NAC3FX-W-TOP

Connector- powerCON TRUE1 Locking Cable End; Female; IP65

Locking male cable connector, screw terminals • The powerCON TRUE1 TOP is a locking 16 A true mains connector for outdoor applications. It replaces appliance couplers wherever a very rugged solution in combination with a locking device is needed in order to guarantee a safe power connection. The powerCON TRUE1 TOP is a connector with breaking capacity (CBC), i.e. it can be connected or disconnected under load or live.



Neutrik NAC3MPX-TOP

Connector- PowerCON TRUE1 Panel Mount IP 64 Rated Male

The powerCON TRUE1 range is well established in many AV applications and, with the IP 65 rating, is used in various weather resistant applications. To ensure true outdoor protection, Neutrik has enhanced this range with appropriate materials to fulfil NEMA 250 and UL50E requirements. With this improvement the new powerCON TRUE1 TOP series features maximal outdoor protection according to IP65 IEC standard and UL50E enclosure type 4. With the introduction of powerCON TRUE1 TOP, the existing TRUE1 cable connectors and chassis connectors will be discontinued.



Neutrik SCNAC-MPX

Connector- PowerCON TRUE1 Panel Mount IP 64 Rated Rubber Sealing Cover For NAC3MPX-TOP

Suitable for NEUTRIK POWERCON True1 top panel plug NAC3MPX-TOPSB. Dustproof and splashproof according to IP65. Plastic version, cover with snap lock.



K&M 24625-000-35

Stand- Lighting Tri Pod From 5.5' To 10' High

Easy to transport, lightweight aluminum lighting stand, extension rod with adapter to take a TV pin (inner extension tube diameter 28 mm). Stable tripod construction. Height adjustable with handy clamping levers and additional safety pin.



K&M 24281.000.55

Stand- AdapterTee For 35mm Diameter Tuding

Attachable to speakers. Slip-on adapter for speaker stands with tube-diameter 35 mm. With 2 drill holes diam. 11 mm at intervals of 115 mm and locking device. Mounting bolts M10 x 40 mm, washers and nuts (2 of each) included. Technical details

PRODUCT DETAILS



o 402.592.5522
 f 402.592.0094
 e tms@tmsomaha.com
 @ tmsomaha
 a 7510 Burlington St.
 Omaha, NE 68127

QUOTE:
 DATE:
 PREPARED BY:

7185-1
 8/20/2023

TO:

City Of La Va Vista

Attn: **Brian Allen**
 8116 Park View Blvd
 La Vista, Nebraska 68128-2198 USA
 Phone: (402) 593-6402
 Email: ballen@cityoflavista.org

NOTES:

QUOTE VALID FOR 30 DAYS

PAYMENT TERMS
NET 30

SHIPPING TERMS
N/A

OUTDOOR AMPITHEATER -POWER DISTRIBUTION II

QTY	ITEM / DESCRIPTION	
2	<u>Lex Products T2-A2-6A1E</u>	T2-A2-6A1E Power- Distro 50 Amp 125/250 VAC W/Feed Thru W/ (6) 20 Amp Breackered Edisons GFCI Receptacles.
2	<u>Lex Products PE6/4L-50-CS63</u>	PE6/4L-50-CS63 Cable- Power Feeder CS63 Male To CS63 Female 50A 125/250 VAC 6/4 SOOW 50'
2	<u>Lex Products PE6/4L-100-CS63</u>	PE6/4L-100-CS63 Cable- Power Feeder CS63 Male To CS63 Female 50A 125/250 VAC 6/4 SOOW 100'
4	<u>Lex Products PE7000-25-515</u>	PE7000-25-515 Cable- Power Edison Male To Edison Female 15A 12/3 SOOW 25'
4	<u>Lex Products PE7000-50-515</u>	PE7000-50-515 Cable- Power Edison Male To Edison Female 15A 12/3 SOOW 50'
2	<u>Lex Products PE7000-75-515</u>	PE7000-75-515 Cable- Power Edison Male To Edison Female 15A 12/3 SOOW 75'
2	<u>Lex Products PE7000-100-515</u>	PE7000-100-515 Cable- Power Edison Male To Edison Female 15A 12/3 SOOW 100'
6	<u>Lex Products DB15-QD25-1D</u>	DB15-QD25-1D Cable- Power Edison Quad Box Male Edison To Edison Quad Box Female 15A 12/3 SOOW 25'
6	<u>Lex Products DB15-QD50-1D</u>	DB15-QD50-1D Cable- Power Edison Quad Box Male Edison To Edison Quad Box Female 15A 12/3 SOOW 50'
1	<u>TMS General Hardware</u>	TMS-HW-GEN Parts/Components- Additional and/ Replacement Components

QUOTE

1 TMS Installation
Labor- Project Installation

LBR-INST

Equipment & Labor \$12,974.02

PROJECT SUMMARY

Equipment & Labor Total	\$12,974.02
Tax	\$0.00
TOTAL	\$12,974.02
*	

*****ORDERS OVER \$500.00 WILL INCUR A 3% PROCESSING FEE IF PAYING BY CREDIT CARD*****

SALES TAX: The Buyer agrees to pay the Seller any taxes or additional costs arising from any federal, state, or local tax laws. The sales tax (if any) that is applied to this quote is an estimate and can be changed at invoicing according to the governing body(s) in which the job site resides OR where the Buyer takes possession of the equipment purchased. The sales tax on this quote may be removed if proper documentation is received by TMS, Inc.

Signature Approval:

Print Name

Authorized Signature

Date

PRODUCT DETAILS



Lex Products T2-A2-6A1E

Power- Distro 50 Amp 125/250 VAC W/Feed Thru W/ (6) 20 Amp Breackered Edisons GFCI Receptacles.

50A 125/250 VAC, (1) California Style CS63 Male (Inlet) to (6) NEMA 5-20 (Edison) GFCI Straight Blade Receptacles (Outlets) and (1) NEMA L6-30 Locking Receptacle (Outlet), Feed Thru, Terrapin II™. Meets UL, NEC and OSHA requirements for events and generator rental. -Meets OSHA Regulation 20 Part 1926, Subpart K standards for open-neutral GFCI protection for enhanced safety. -Heavy duty molded rubber enclosure is fully insulated and resistant to shock, impact and corrosion for years of trouble-free service versus painted metal
-Thermal magnetic circuit breakers are located under a heavy duty rubber, waterproof, self-closing lid for enhanced breaker protection.



Lex Products PE6/4L-50-CS63

Cable- Power Feeder CS63 Male To CS63 Female 50A 125/250 VAC 6/4 SOOW 50'

50A 250 VAC, (1) Leviton California Style Locking Male (Plug) to (1) Leviton California Style Locking Female (Connector), #6/4 Type SOOW, Weather Resistant Extension. Industrial grade locking plug and connector.
- Extra hard usage type SOOW cord. - 4" clear heat shrink included for user label.



Lex Products PE6/4L-100-CS63

Cable- Power Feeder CS63 Male To CS63 Female 50A 125/250 VAC 6/4 SOOW 100'

50A 250 VAC, (1) Leviton California Style Locking Male (Plug) to (1) Leviton California Style Locking Female (Connector), #6/4 Type SOOW, Weather Resistant Extension. Industrial grade locking plug and connector.
- Extra hard usage type SOOW cord. - 4" clear heat shrink included for user label.



Lex Products PE7000-25-515

Cable- Power Edison Male To Edison Female 15A 12/3 SOOW 25'

15A 125 VAC, (1) NEMA 5-15 Male (Plug) to (1) NEMA 5-15 Female (Connector), #12/3 Type SOOW, Extension. Extension for utilization equipment such as stage fixtures. - Locking type industrial grade wiring devices. - Extra hard usage type SOOW-A cord. - 4" clear heat shrink provided for user label.



Lex Products PE7000-50-515

Cable- Power Edison Male To Edison Female 15A 12/3 SOOW 50'

15A 125 VAC, (1) NEMA 5-15 Male (Plug) to (1) NEMA 5-15 Female (Connector), #12/3 Type SOOW, Extension. Extension for utilization equipment such as stage fixtures. - Locking type industrial grade wiring devices. - Extra hard usage type SOOW-A cord. - 4" clear heat shrink provided for user label.



Lex Products PE7000-75-515

Cable- Power Edison Male To Edison Female 15A 12/3 SOOW 75'

15A 125 VAC, (1) NEMA 5-15 Male (Plug) to (1) NEMA 5-15 Female (Connector), #12/3 Type SOOW, Extension. Extension for utilization equipment such as stage fixtures. - Locking type industrial grade wiring devices. - Extra hard usage type SOOW-A cord. - 4" clear heat shrink provided for user label.



Lex Products PE7000-100-515

Cable- Power Edison Male To Edison Female 15A 12/3 SOOW 100'

15A 125 VAC, (1) NEMA 5-15 Male (Plug) to (1) NEMA 5-15 Female (Connector), #12/3 Type SOOW, Extension. Extension for utilization equipment such as stage fixtures. - Locking type industrial grade wiring devices. - Extra hard usage type SOOW-A cord. - 4" clear heat shrink provided for user label.

PRODUCT DETAILS



Lex Products DB15-QD25-1D

Cable- Power Edison Quad Box Male Edison To Edison Quad Box Female 15A 12/3 SOOW 25'

15A 125 VAC, (1) NEMA 5-15 (Edison) Straight Blade Male (Plug) on a 25.0' Pigtail to (2) NEMA 5-20 (Edison) Straight Blade Receptacles (Outlets), Quad Box. This exceptionally versatile box is used for placing convenient duplex receptacles exactly where they are needed. - Heavy-duty molded rubber enclosure is fully insulated and resistant to shock, impact, corrosion.



Lex Products DB15-QD50-1D

Cable- Power Edison Quad Box Male Edison To Edison Quad Box Female 15A 12/3 SOOW 50'

15A 125 VAC, (1) NEMA 5-15 (Edison) Straight Blade Male (Plug) on a 25.0' Pigtail to (2) NEMA 5-20 (Edison) Straight Blade Receptacles (Outlets), Quad Box. This exceptionally versatile box is used for placing convenient duplex receptacles exactly where they are needed. - Heavy-duty molded rubber enclosure is fully insulated and resistant to shock, impact, corrosion.