Steltronic
AUTOMATIC SCORING

MONITORS PRE-INSTALLATION

LCD Overhead Monitor Support Specifications
With Keypad Bowler Consoles

3205 Pomona Blvd.
Pomona, California 91768 USA

Service@SteltronicUSA.com

(909) 971-9656

SteltronicUSA.com

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LCD OVERHEAD MONITOR SUPPORT SPECIFICATIONS

WITH KEYPAD BOWLER CONSOLES

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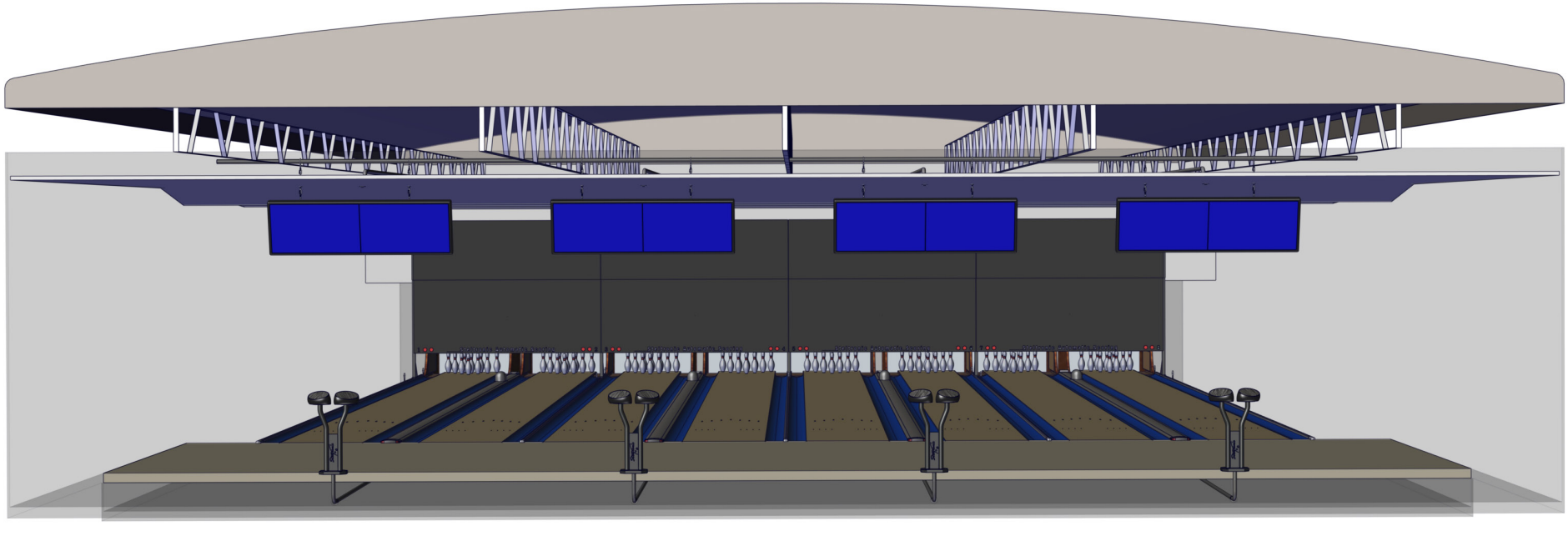
NOTE: ALL OF THESE DOCUMENTS ARE IN PDF FORMAT LOCATED AT WWW.STELTRONICUSA.COM



LCD MONITOR INSTALLATION

1. Overhead Monitors Structure & Support:

Before installing LCD monitors, it is the responsibility of the bowling center to ensure that a suitable structure above the drywall or ceiling tiles must be provided for installation of the overhead monitors onto the supplied monitor brackets. A certified stamped certificate from the structural engineer will be required before the installation team can perform any of the overhead monitors installation.

2. Keypads Installation:

For the installation of keypads, please follow these guidelines:

I. Set up a conduit for low voltage cables.

3. Structural support for overhead monitors.

The customer is required to:

I. Supply, install, and maintain the proper position of supporting beams or pipes (refer to the figures below for guidance).
II. Obtain certification from an architect or structural engineer, confirming that the chosen method of support can withstand 100 pounds of actual/static weight per video monitor (or 200 pounds for a pair of bowling lanes).

Please follow these instructions diligently to ensure a safe and secure installation of LCD monitors.

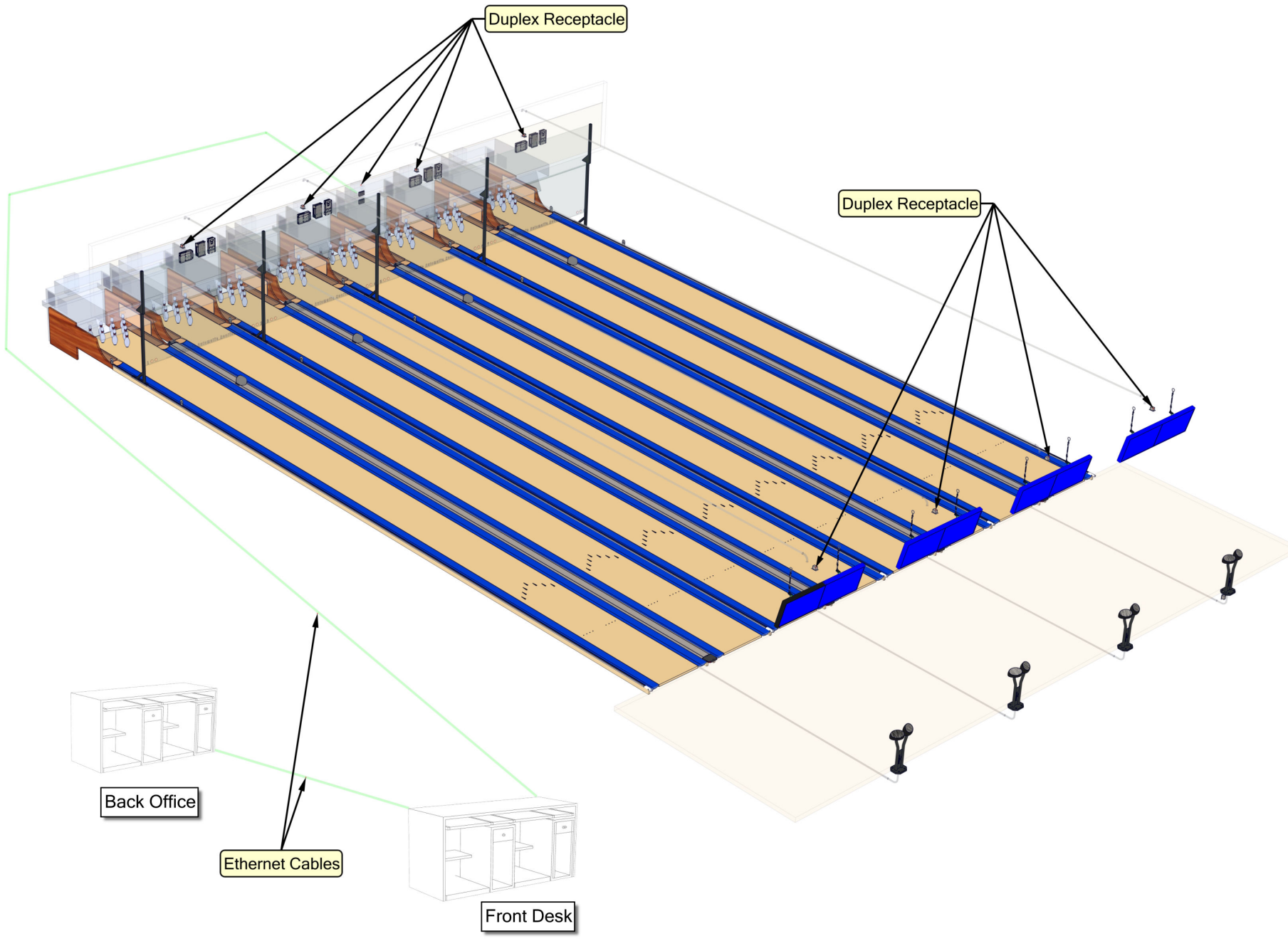
OVERHEAD MONITOR ELECTRICAL REQUIREMENTS

1. Steltronic requires a duplex receptacle (2 outlets) for each pair of overhead monitors.
2. Steltronic also requires a single receptacle for each lane computer that will be mounted on the rear curtain wall.
3. Each LCD monitor circuit needs to be rated at 2 AMPS per monitor.
4. Each lane computer circuit (on the back curtain wall) should be rated at 2 AMPS per lane computer.
5. The electrician should install a 20-amp circuit for each 6 lanes of overhead monitors.
6. The electrician should install a 20 AMP circuit per 6 lane computers. (Each lane computer runs one pair of lanes)
7. An additional circuit (always on) should be installed on the curtain wall at the middle of the center.
   I. For example, if you have a 24 lane center an additional circuit is required for the network hub/switch and should be placed on the curtain wall between lanes 11-12.
8. The electrician should install a 10 amp circuit for the network switches on the curtain wall. (Always on and separate from the circuits described above in bullet #4)
9. Every night when closing, the overhead monitors & lane computers (electrical circuits) should be turned off. Since it is not practical to use circuit breakers as an on/off switch, we recommend that the electrician put in some type of switching device to turn off these circuits. This can be done based on the electrician's suggestions:
   I. Install a lighting contactor with a remote key switch at the desk. (Preferred method)
   II. Install a standard light switch very close to the front desk shoe counter.
10. Place the monitor electrical outlets (FLUSH MOUNTED IN THE CEILING TILE or DRYWALL) as close as possible to the location of where the monitors will be placed. (See the enclosed drawings)
11. All electrical for this automatic scoring needs to be on a DEDICATED INSULATED ISOLATED GROUND CIRCUIT, and lightning arrestors should be installed on the new electrical panel.

BOWLER CONSOLE (KEYPAD) REQUIREMENTS

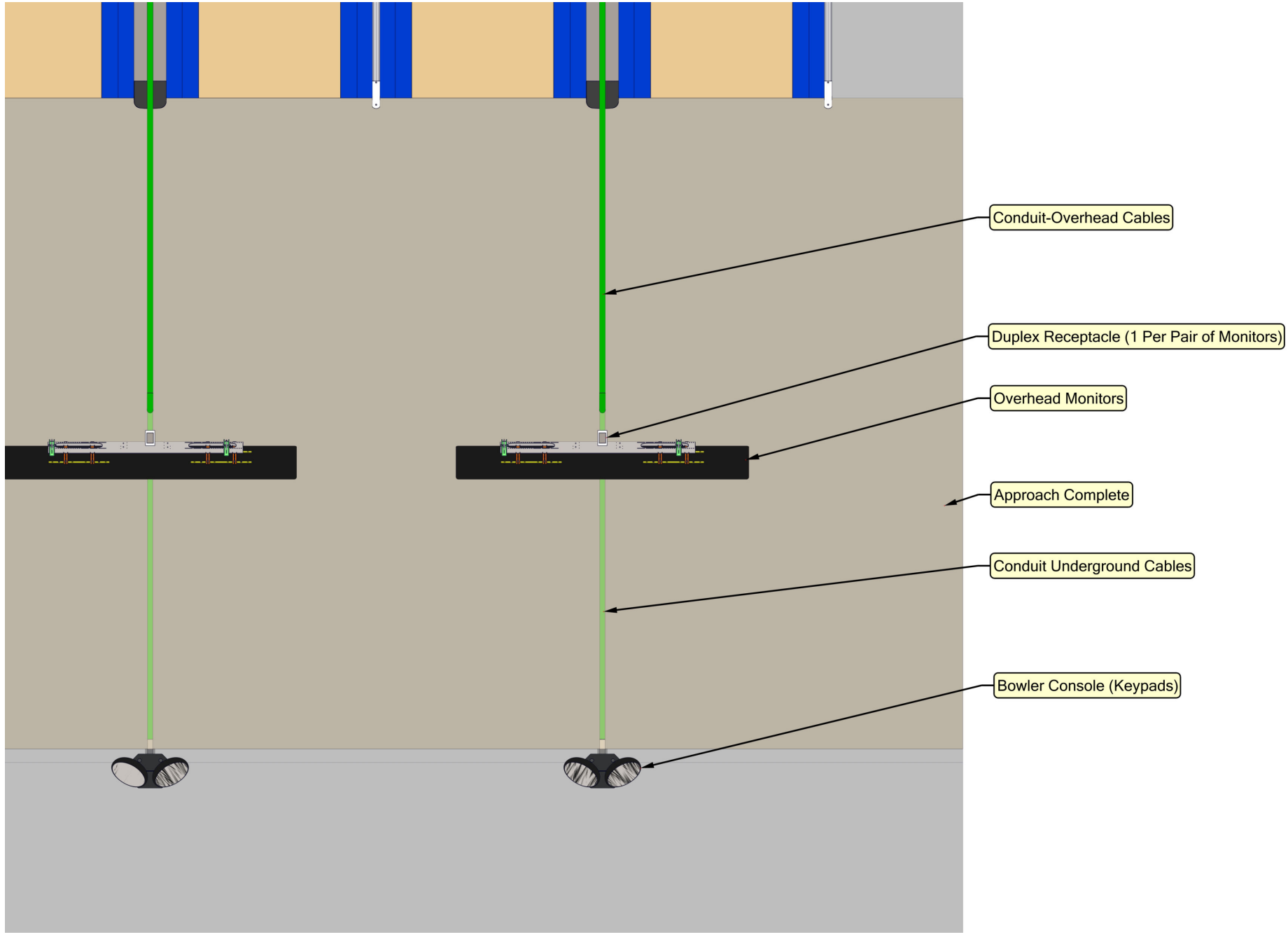
1. The bowler console keypad assembly does NOT require high voltage, but it does need a conduit for a low voltage (12 VDC) cable. Please make sure there is accessibility for this low voltage cable to be installed from the pedestal assembly to the pinsetter area.

GENERAL OVERVIEW



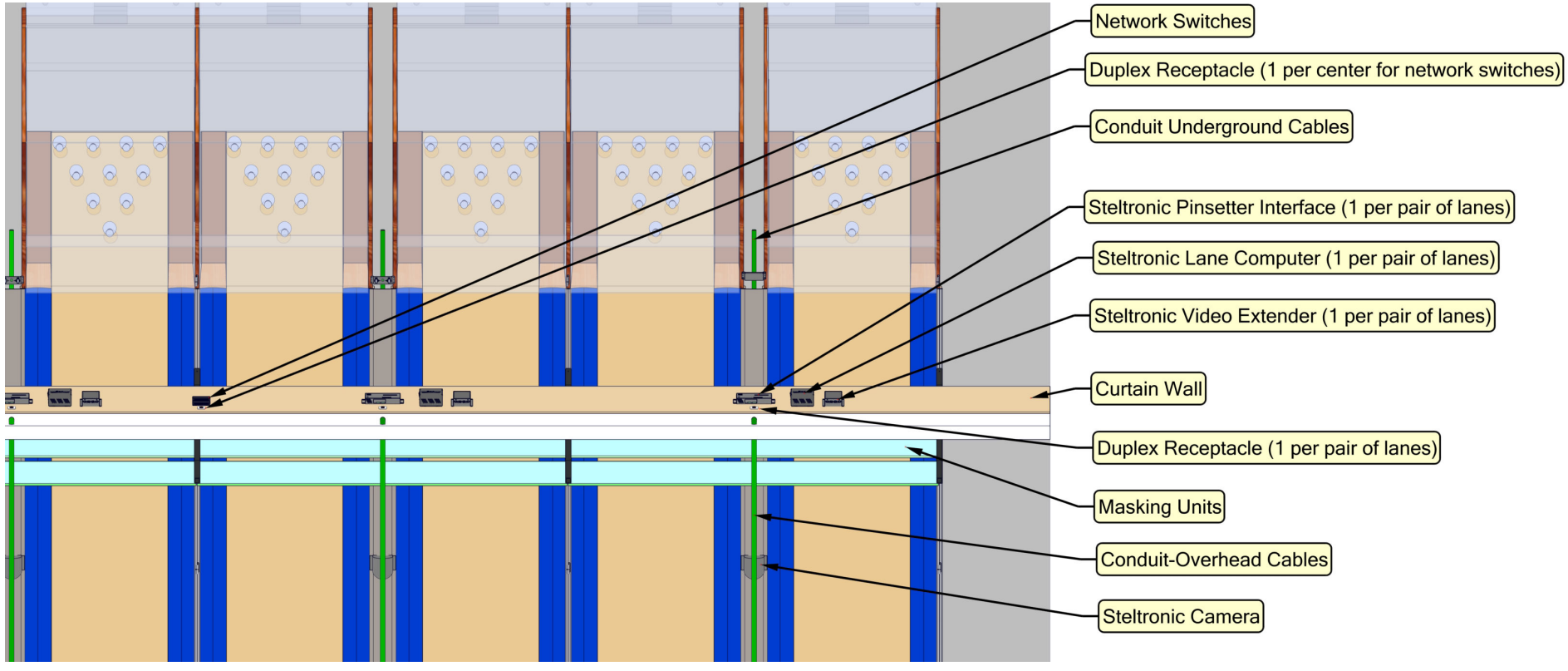
TOP VIEW-MONITORS

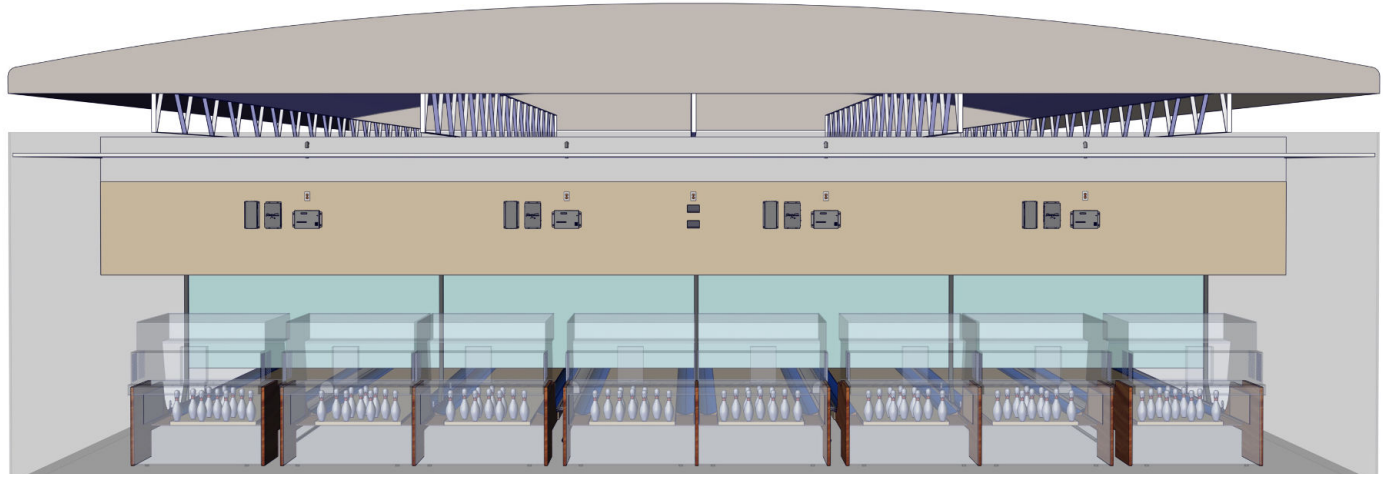
The picture below represents a “TOP VIEW” of a typical bowling center while viewing the monitors.



TOP VIEW-CURTAIN WALL

The picture below represents a “TOP VIEW” of a typical bowling center, while viewing the hardware near the curtain wall.

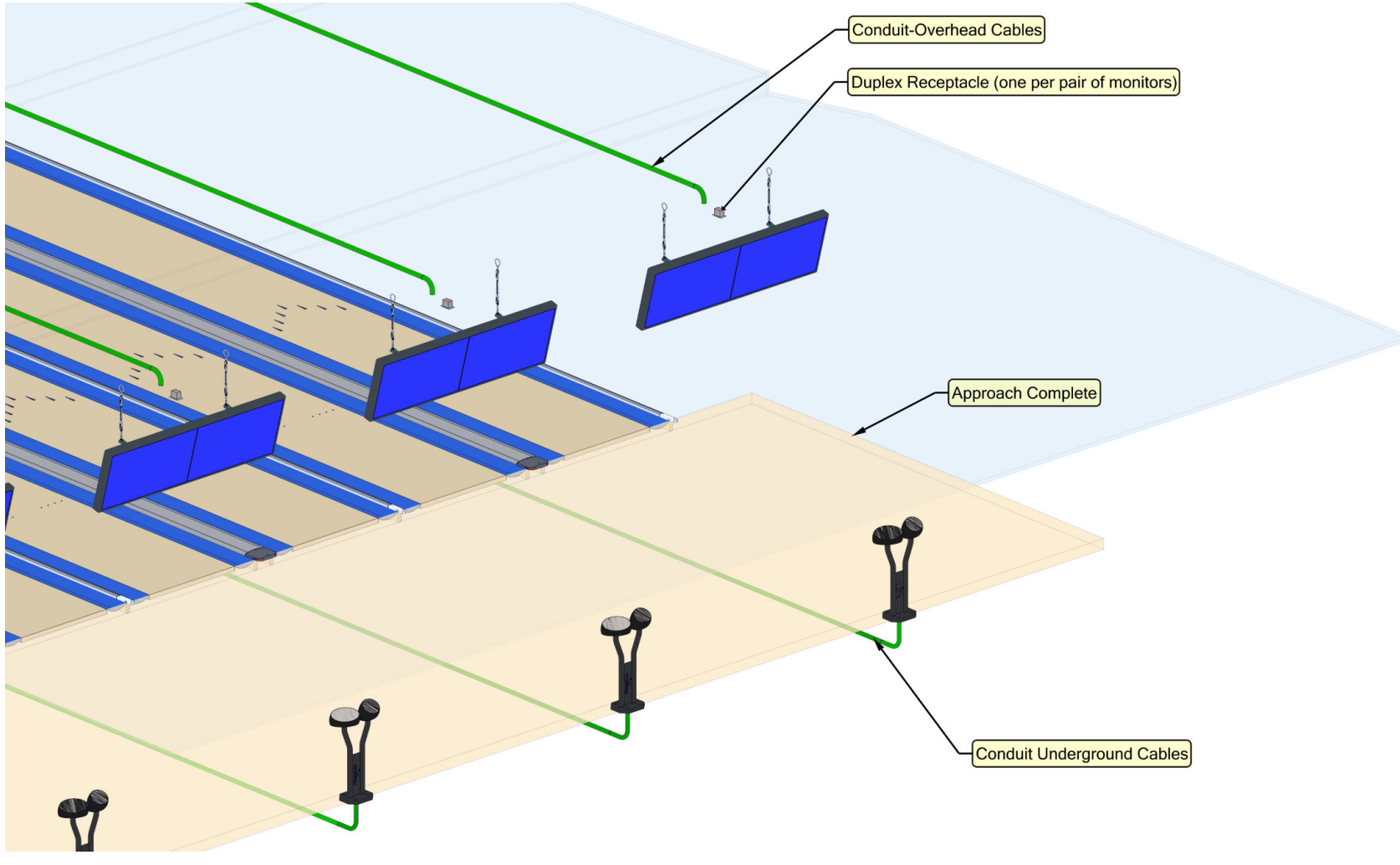




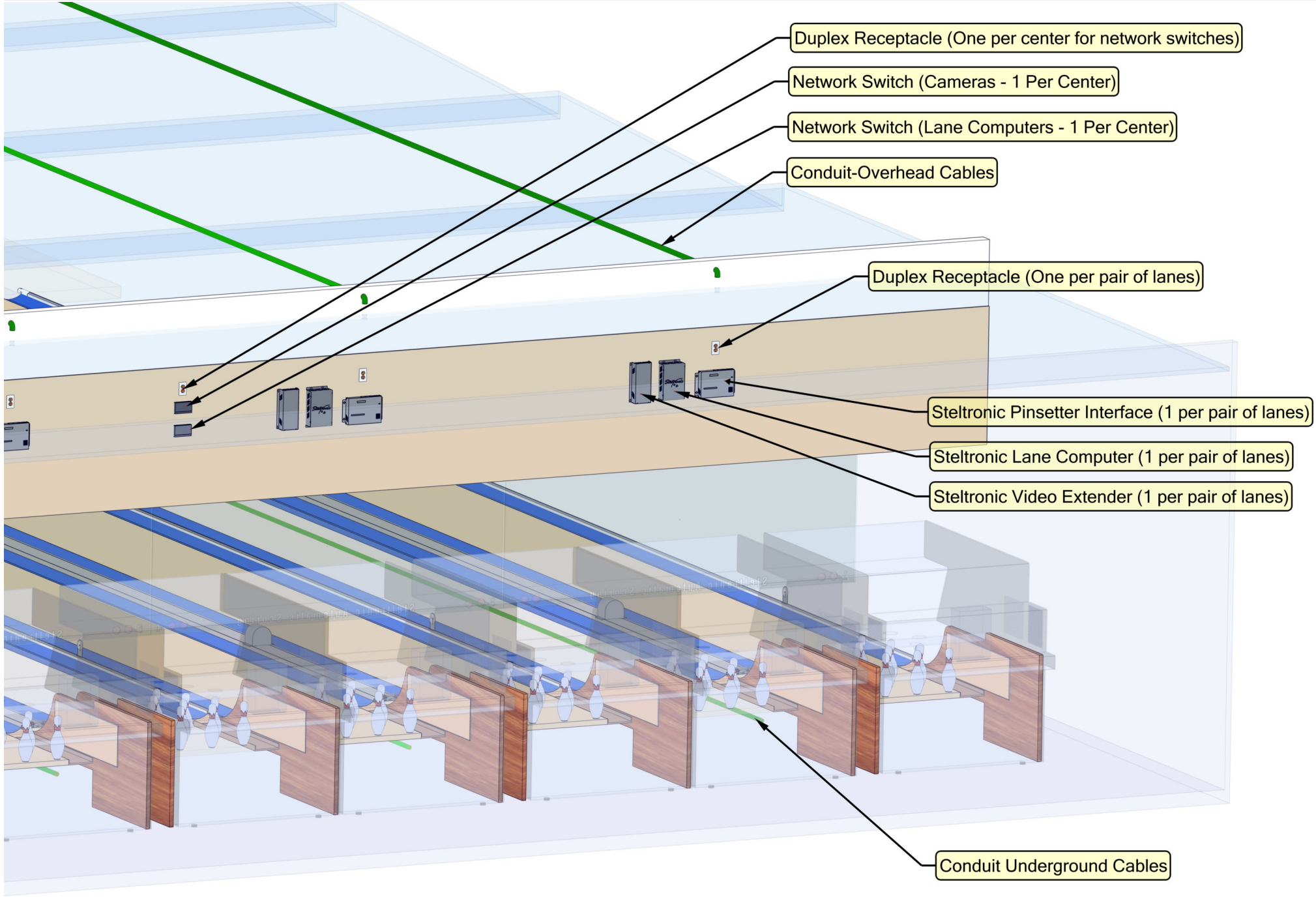
TOP VIEW-FRONT SIDE

Looking at the image below, take notice of the following:

1. One each duplex receptacle is required for each “pair” of overhead monitors.
2. The preferred method is to install a 1-½ inch conduit for the bowler console keypad low voltage cable to be installed all the way to the pinsetters. Access from the keypads baseplate to the foul line must be available for the installers.



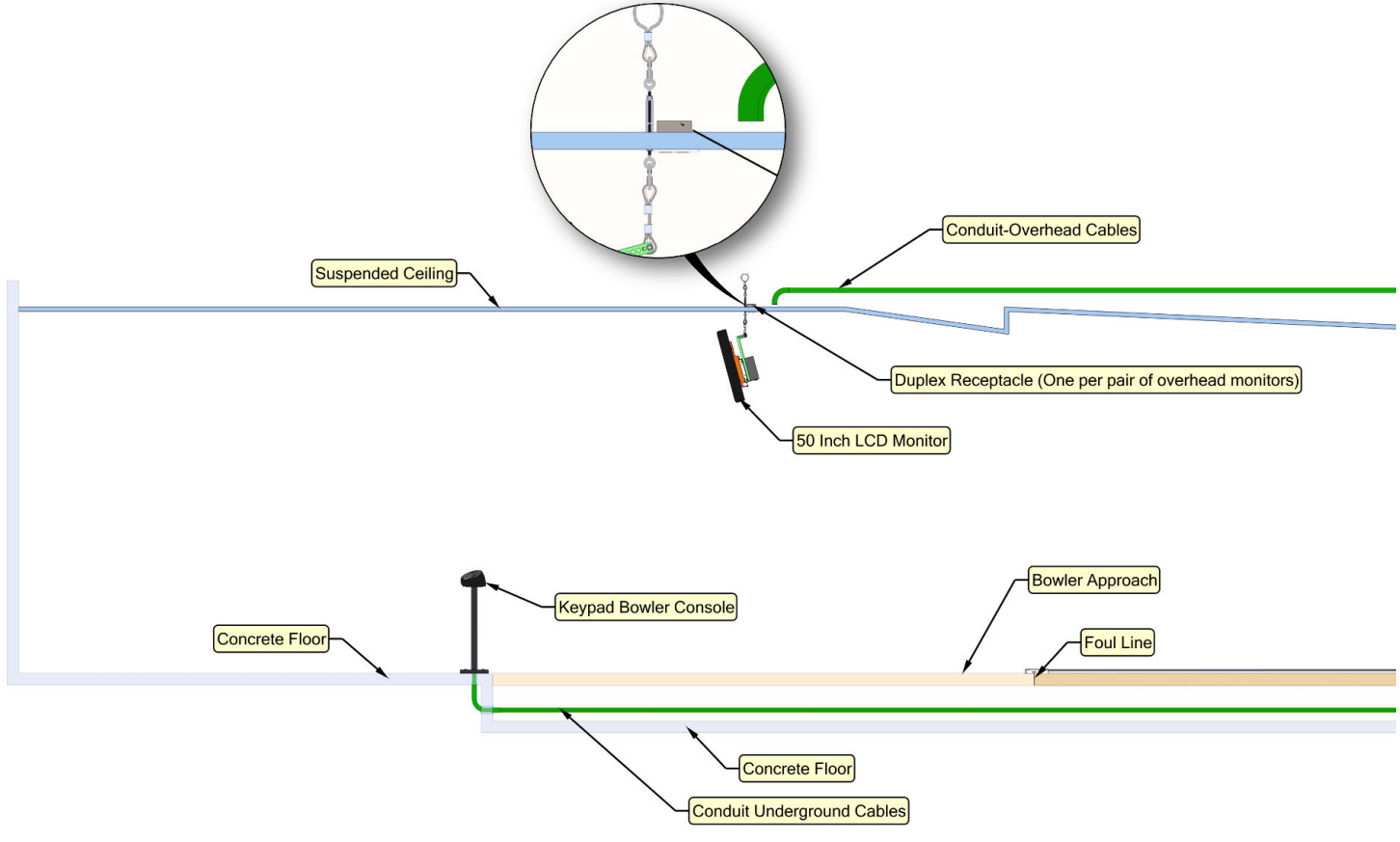
TOP VIEW-BACKSIDE



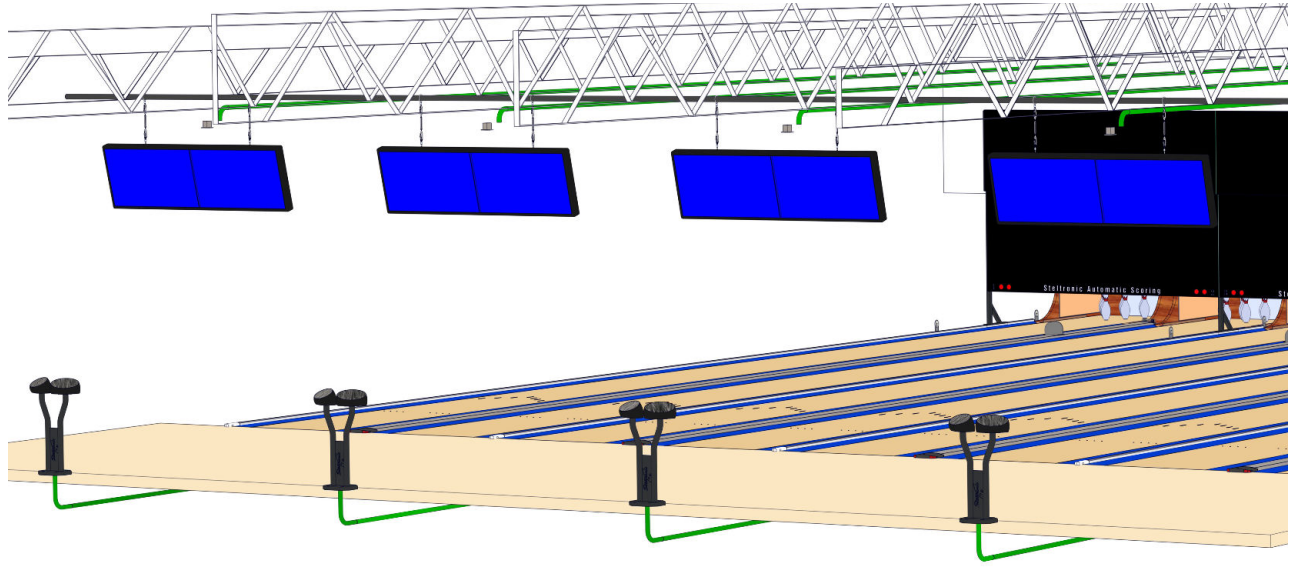
SIDE VIEW

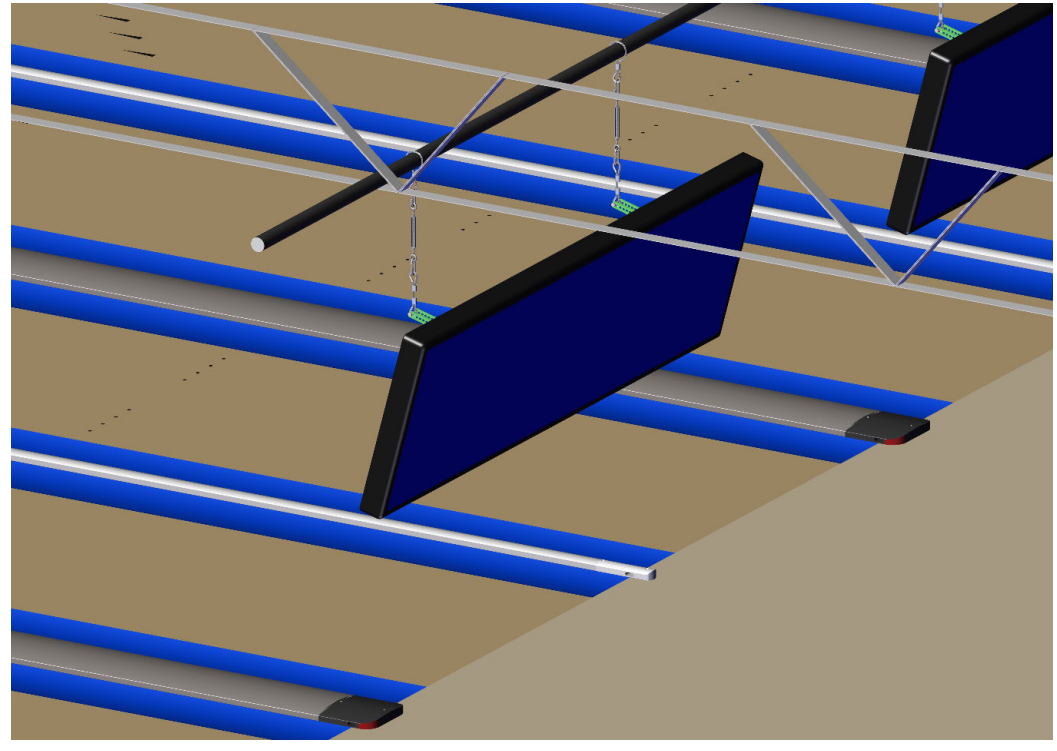
Looking at the image below, take notice of the following:

1. One each duplex receptacle is required for each “pair” of overhead monitors. This receptacle can be flush mounted into the ceiling tiles or drywall in a way that the overhead monitors can be plugged in.
2. A 1-½ inch conduit is preferred for the overhead low voltage cables. This conduit starts at the overhead pair of monitors and runs to the curtain wall near the pinsetters.
3. A 1-½ inch conduit is preferred for the keypad bowler console low voltage cable. This conduit is run all the way to the pinsetters.

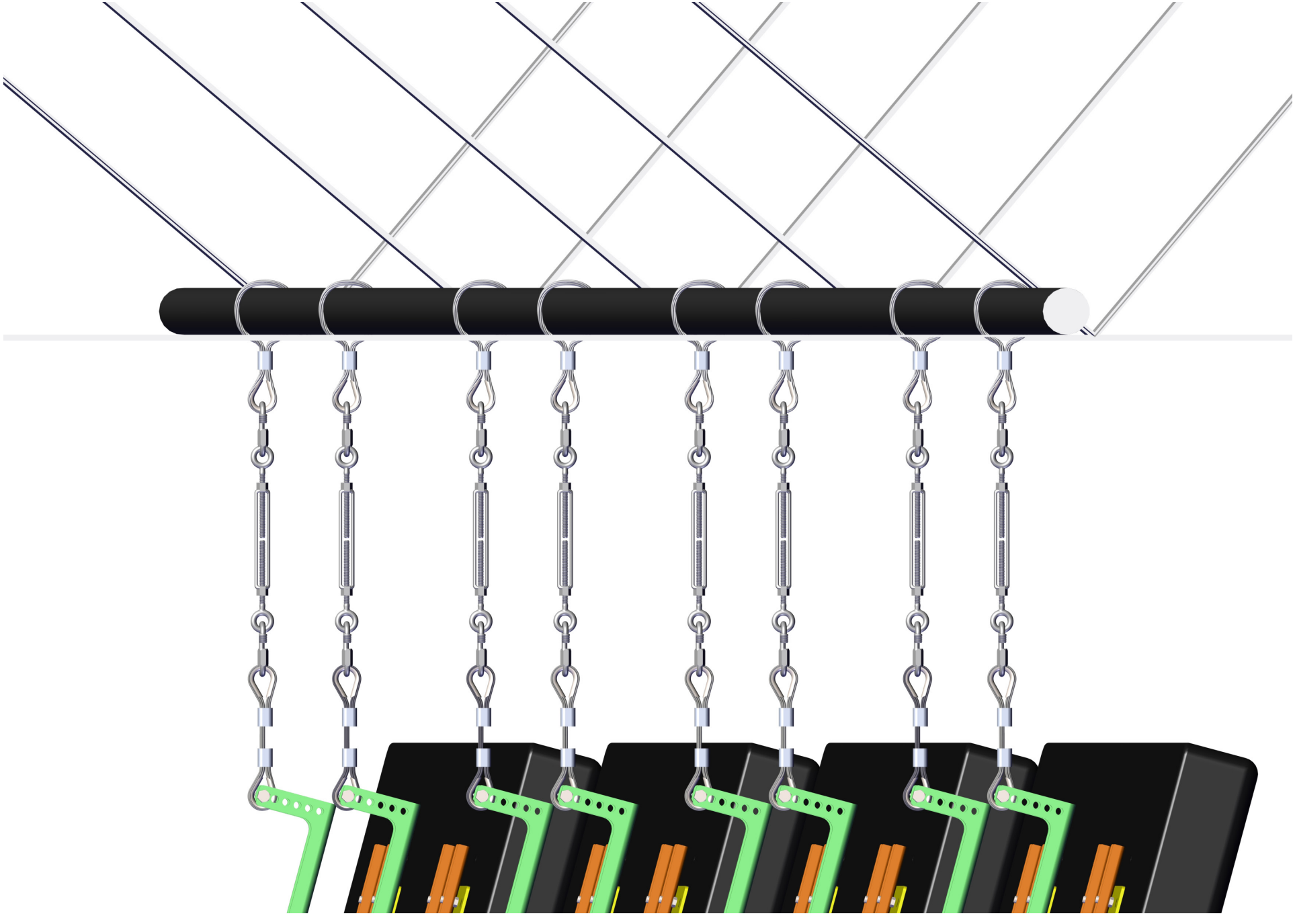


FRONT VIEW WITH NO ROOF





MONITOR HANGING SUPPORT HARDWARE



STATIC LOAD REQUIREMENTS

It is the responsibility of the building contractor or current bowling center owner to obtain the services of a registered structural engineer or architect to determine that the requirements stated in this document can be obtained. Certification must be based on an investigation of the actual structure or drawings specifying the overhead construction supporting the curtain wall and Steltronic overhead monitors.

Shipment of Automatic Scoring Equipment will not be authorized prior to Steltronic receipt of this completed document.

STRUCTURAL ENGINEER CERTIFICATE

PRIOR TO INSTALLATION OF ANY MONITOR, STELTRONIC REQUIRES YOUR STRUCTURAL ENGINEER TO SIGN THE CERTIFICATE BELOW.

STELTRONIC AND ITS CERTIFIED INSTALLERS MAY NOT START INSTALLATION OF ANY MONITOR UNTIL THIS CERTIFICATE BELOW IS PROPERLY FILLED OUT AND STAMPED BY YOUR STRUCTURAL ENGINEER.

"I have investigated the structures or the drawings for the structures at: _____

located at:_____

City:_____State_____Zip_____

and certify:

"There is a device in place that will support the weight of a 200 pound static load per pair of lanes for _____ (qty.) of Overhead Monitor Assemblies.

"Also, there is a device in place that will support an additional load of 100 pounds for each additional single monitor assembly, if ordered (qty): _____.

These units are located over the approach in the ball return area."

Signed:_____ P.E. # _____

Address:_____

City:_____State_____

P.E. SEAL

CERTIFICATION AND RELEASE (BY PROPRIETOR)

I, _____, as the proprietor or as duly-authorized representative of the proprietor, certify to Steltronic that:

1. The proprietor has obtained the above structure certification for the proprietor's own benefit
2. The proprietor is not relying upon Steltronic that the roof structure described in the structure certification will support the overhead video display units selected by the proprietor and installed by Steltronic.

In consideration for Steltronic's agreement to install the overhead video display units, and by signing below, proprietor for proprietor's own self and for proprietor's heirs, successors, assigns, employees, agents, representatives, insurers, contractors, subcontractors, and their spouses and relatives ("Proprietor Group"), releases and agrees to indemnify Steltronic Inc. its officers, directors, employees, parent companies, subsidiaries, and affiliated companies, insurers, agents, contractors, subcontractors, from all claims, demands, actions, causes of action, or their functional equivalent, that any member of the Proprietor Group may have subsequently accrue to a member of the Proprietor Group arising out of or connected with, directly or indirectly, the inability of the roof structure described in the above structure certification to support the overhead video display units installed by Steltronic Inc. in accordance with the support specifications on the reverse of this sheet.

_____

Printed or typed name of proprietor

_____

Signature

_____

Title

_____

Date