CLIMBING STRUCTURE BID ADDENDUM 1

The attached schematics and drawings supplement the bid package documents for The Lane Climbing Wall Structure.

ELDORADO CLIMBING

Section 131200 – CLIMBING STRUCTURES

Part 1 - GENERAL

1.1. Summary

A. This section includes the following:

1. Kinetix Action Towers climbing structures.
2. Panelized, wood based climbing walls.
3. Wall mounted, wood based climbing panels.

1.2. REFERENCES

A. CWA – Standards for Artificial Climbing Walls.

B. ANSI/ACCT 03-2019 Challenge Course and Canopy/Zip Line Tour Standard

C. ASTM F2959-19 Standard for Aerial Adventure Courses

D. ASTM F2291 Standard Practice for Design of Amusement Rides and Devices

E. International Building Code (IBC) 2018 or code of local conformance.

F. ASCE 7-16 Minimum Design Loads for Buildings and Other Structures

G. AISC Steel Manual, 15th Edition

1.3. SYSTEM DESCRIPTION

A. Climbing structure to be constructed of steel superstructures (e.g. Towers), with modular, climbable Challenges, Climbponents, holds, and volumes. Texture on any climbable panels to be coated with a non-aggressive pigmented epoxy friction coating. Challenges, Climbponents, and any other climbable items shall be compatible with modular steel superstructures (Towers) and shall allow for replacement of the each item or subassembly thereof (panels, plates, hardware, etc,). The climbing structure system must be capable of achieving various configurations – easy to difficult, rigid and tensile, and re-arrangements and re-orientations of existing items to alter the climbing experience.

B. Panelized (i.e. faceted, substantially planar) climbing terrain must accept not only holds and volumes, but also multi-bolt static and kinetic climbing elements (e.g. Climbponents) that may be placed (i.e. “set”) and subsequently moved (translationally and rotationally) or removed by the operator without loss of functionality (operationally or aesthetically) of the custom panelized climbing surface.

C. Climbing wall to be constructed of modular, impact resistant, engineered plywood panels. Texture on panels to be coated with a non-aggressive pigmented epoxy friction coating. Cementitious coatings over plywood will not be accepted unless approved by Owner/Architect. Panel system shall be compatible with modular structural support system and shall allow for replacement of the climbing surface. Panel system must be capable of achieving various configurations including overhangs, vertical faces, below vertical slabs, arêtes, and dihedrals.

D. The steel support structure may rely on a component of the facility as its primary structure, or may be self-supporting, as indicated. The climbing structure shall be designed and installed to CWA, ACCT, and ASTM standards. Climbing structure shall include all supporting structure necessary to create the steel

superstructure, climbable challenges, belay and handhold fastening systems, and specific equipment as defined below.

E. Wall mounted panels may optionally attach directly to facility walls if/as appropriate per engineering, or may affix to ledgers (i.e. horizontal wooden members) which are themselves directly attached to one or more walls in the facility. These panels may create an entirely two-dimensional climbing surface, or additional three-dimensional frames and/or panels may be interspersed throughout the layout to create articulated climbing terrain.

1.4. QUALITY ASSURANCE

A. Climbing wall manufacturer shall be as specified and shall have a minimum of 30 years of experience in the manufacturing of artificial climbing structures. No substitutions will be permitted.

B. Fabricator/Installer shall be acceptable to the climbing wall manufacturer.

C. Installer shall have a minimum of 10 years of experience with manufacturer's materials or be supervised by manufacturer's representative.

1.5. SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and General Conditions.

B. Product data including climbing structure manufacturer's specifications, standard details, and installation drawings.

C. Submit two (2) samples of climbing panel material (for Panelized climbing walls, wall mounted climbing panels, and/or applicable Challenges and Climbponents), minimum three (3) inches by three (3) inches, showing color and finish.

D. Shop drawings: indicating layout of any Kinetix Action Towers, panelized climbing wall(s), an wall-mounted climbing panels, dimensions of materials and parts, fastening and anchoring methods, and detail and location of joints.

1.6. DESIGN

A. Climbing structure shall be designed to suit the facility, and must be specifically crafted to meet the client's needs and requirements as follows:

1. Structure shall be capable of being freestanding (i.e. bolting down only to the slab, without relying upon the existing building for structural support.
2. Structure shall be capable of being disassembled and reassembled elsewhere, if need be.
3. Structure shall be bolt-together (i.e. without any on-site welding) unless recommended or required by the climbing wall engineer or building's engineer of record.
4. Structure shall be capable of operating indoors or outdoors.
5. Holds, volumes, Challenges, and Climbponents (i.e. activities) shall be modular and swappable.
6. Handhold fastener density: Supply at least two (2) handhold fasteners per every square foot of climbing wall surface area (for custom panelized climbing surfaces, and wall-mounted climbing panels).
7. Lead routes (if rope climbing wall): Equivalent for every top anchor supplied.

a. First anchor installed 11-12ft above ground level

b. Subsequent anchors spaced approximately every 4ft vertically.

c. Belay bars with double point attachments at top of every lead line.

8. Unless otherwise conveyed by Owner or Architect through pre-design discussions, the general climbing wall configuration should be:

a. 30% less-than-vertical to vertical in nature

b. 40% minimally overhung in nature

c. 30% moderately to substantially overhung in nature

9. Climbing wall returns (sides of the climbing wall) shall return to the facility walls and conceal the interior structure of the climbing wall and restrict access behind the climbing wall.

10. For any custom panelized climbing terrain, access shall be provided to the back of wall.

1.7. ENGINEERING

A. Climbing structure shall be engineered to meet CWA, ACCT, and ASTM standards for climbing wall and aerial adventure course construction.

B. Installation drawings to be delivered to General Contractor/Owner for review prior to start of on-site installation.

C. If required by Owner, engineering calculations shall be signed and sealed by an engineer licensed in the state where project is located.

1.8. DELIVERY, HANDLING, & STORAGE

A. Protect products during transit, delivery, storage and handling to prevent damage, soiling, and deterioration.

B. Protect climbing structure finish and edges in accordance with manufacturer's recommendations.

C. Store climbing structure components in accordance with manufacturer's recommendations.

1.9. WARRANTY

A. Climbing structure manufacturer shall warrant to the original purchaser for one (1) year from the date of completion that its products are free from defects in materials and workmanship.

1.10. COORDINATION

A. Coordinate installation of climbing structure after primary support structure is installed and before final finishes to climbing wall area have been performed.

B. The Owner shall have direct contact with the climbing structure manufacturer in the design phase of the climbing structure to achieve specific programmatic requirements set forth by the Owner.

1.11. SITE CONDITIONS

A. For indoor projects, building shall be enclosed and capable of maintaining a minimum temperature of 55 degrees Fahrenheit. Climbing wall area shall be supplied with an artificial light source by the General Contractor or Owner for the duration of climbing structure installation. Lighting shall be of sufficient quantity and brightness to perform detailed work.

B. General Contractor shall provide multiple temporary outlets (110V) at various locations around the climbing structure area for operation of power tools.

2. CLIMBING STRUCTURE

2.1. Manufacturer: Eldorado Climbing Walls or approved equal

A. Eldorado Climbing Walls Kinetix Action Towers

B. Eldorado Climbing Walls Panelized Wall System

C. Eldorado Climbing Walls DIY Panels

2.2. Climbing wall surface

A. Kinetix Action Towers, Panelized Wall System, and DIY Panels from Eldorado Climbing Walls are the basis of design. Other system(s) to be approved by Owner/Architect.

B. Climbing panels (if/where applicable) to be constructed of impact resistant, engineered plywood panels. Texture on panels to be coated with a non-aggressive, pigmented epoxy friction coating. Cementitious coatings over engineered plywood will not be accepted unless approved by Owner/Architect.

C. Surface coloration chosen by Owner and Architect from manufacturer's color palette.

D. Integrated modular support structure for custom panelized climbing surfaces:

1. The support structure shall be modular in nature and capable of transferring all applied design loads back to the primary vertical support structure that lies parallel to the projected plane of the climbing surface.

2. Integrated modular support structure shall be made of a combination of non-adjustable angle struts and adjustable pipe members capable of transferring all design loads from the climbing wall to the primary support structure.

2.3. PRIMARY SUPPORT STRUCTURE

A. General: All structural steel and structural steel work shall conform to the specifications of design, fabrication, and erection of structural steel for buildings of the American Institute of Steel Construction (AISC) Code of Standard Practice, and to the requirements of local building codes.

B. Dimensions: Dimensions given in drawings prepared by the climbing wall manufacturer are final fabricated dimensions.

C. Primary support structure members will be sized and detailed by climbing structure manufacturer. The engineering calculations will outline the reactions generated by the climbing structure.

D. Anchorage details for the primary support structure will be provided by a structural engineering consultant.

2.4. CLIMBING STRUCTURE FASTENERS

A. Modular handholds and Climbponents: Shall be 3/8in – 16 thread socket head cap screws or flat head cap screws of appropriate length as suggested by the manufacturer.

1. All surfaces shall utilize heavy-duty steel t-nuts that accept 3/8in – 16 thread fasteners.

B. Steel superstructure:

1. Kinetix Action Towers: Shall be 5/8in – 11 thread – grade 8 for indoor, or 5/8in – 11 thread – 316 stainless steel for outdoor installations.

2. Panelized Wall System: Shall be 1/2in – 13 thread – grade 5 for indoor, or 1/2in – 13 thread – A307 for outdoor installations

C. Challenges: Shall attach to the steel superstructure with 1/2in – 13 thread – Grade 5 (or better) fasteners.

D. Climbing protection anchors

1. Lead bolts (if rope climbing wall):

a. UIAA approved bolt hangers shall be attached through the panel flange into the hinge plate hardware using a 1/2in Grade 5 socket head cap screw or 1/2in Grade 5 hex bolt.

b. 1/2in Grade 5 flat socket head cap screw and 1/2in Grade 5 hex bolt shall be sufficient length to extend through the panel flange, hinge plate hardware and through a backup locknut (or lock washer + hex nut) behind the hardware.

E. Belay anchors (if rope climbing wall):

1. Each belay anchor shall consist of a through-bolted belay bar assembly with two 3/4in holes for double point anchor attachment. Each belay bar requires four 1/2in Grade 5 hex bolts through panel flange, hinge plate hardware, and nylock nut (or lock washer + hex nut).

2. A minimum horizontal distance between bolt hangers shall be 6 inches.

2.5. EQUIPMENT (if required)

A. Climbing harnesses: two (2) per climbing station.

B. Auto-locking steel carabiners: two (2) per climbing station.

C. Modular handholds: Eldo Holds

1. Composed of polyurethane to minimize breakage.

2. Handhold selection shall be made based on the potential user base and shall include the following:

a. 30% Large holds

b. 50% Medium holds

c. 20% Small holds

3. To include handhold bolt of appropriate length.

D. Rental shoes (if required)

1. All-purpose climbing approach shoes of size range to include most popular size for users

a. Evolv or approved equal

E. Climbing rope: Dynamic ropes. One (1) per belay bar.

F. Belay devices: GriGri style manufactured by Petzl: One (1) per belay bar.

G. Quick draws (where lead routes and top rope anchors are specified). Gym Safe Express draws by CAMP or equivalent. For each lead anchor.

H. Auto Belay system

1. TRUBLUE™ Auto Belays with Belay Gate and mounting kit

3. EXECUTION

3.1. PRE-INSTALLATION INSPECTION (if required by Manufacturer or the Owner)

A. Verify that all surfaces are ready to receive work and are within specified tolerances.

B. Beginning of installation means installer accepts conditions of existing surfaces.

C. Verify that layout of the materials or equipment will not interfere with installed climbing wall.

3.2. INSTALLATION

A. Erection of the climbing structure system shall be in accordance with manufacturer's recommendations.

B. Erection shall be accomplished by a fully-trained, factory-authorized erector in accordance with section 1.4.

C. Completed climbing structure shall comply with specified tolerances and shop drawing requirements.

3.3. CLEANUP

A. Clean area of debris from installation of climbing structure.

B. Separate waste materials in accordance with the construction waste management plan and place in designated areas.

3.4. INSPECTION (if required by Manufacturer or the Owner)

A. The completed climbing structure shall undergo a full, complete, final inspection by a duly trained supervisor of the manufacturer and shall be certified by the manufacturer that the finished product has been built in accordance with the manufacturer's approved installation drawings and these contract documents.

B. The completed climbing structure shall undergo full and complete inspection by the Owner or Owner's representative at the completion of the climbing wall installation prior to demobilization.

3.5. TRAINING

A. Climbing structure Contractor shall provide a half-day training session for the facility operations staff, following the climbing structure installation. Training should cover the following topics:

1. Climbing structure maintenance, periodic inspections, and Basic Operations.
2. Sample handhold, volume, and Climbponent installation and removal.

3.6. PROTECTION

A. General Contractor to provide final protection in a manner acceptable to the Owner or Owner's representative that insures the climbing structure will be without damage or deterioration at time of substantial completion.

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A0510

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14
A0614

4.8

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8

ROOF ASSEMBLY
TPO ROOF
TAPERED RIGID INSULATION (MIN. R-25)
METAL DECKING

EXTERIOR WALL ASSEMBLY
VERTICAL CORRUGATED METAL WALL PANEL (MP
1" R-5 RIGID INSULATION B/T 'Z' CHANNELS
WEATHER BARRIER
5/8" GYPSUM SHEATHING
6" METAL STUD FRAMING FILLED W/ BATT INSULA
5/8" GYPSUM WALL BOARD

RANSLUCENT WALL SYSTEM

STOREFRONT SYSTEM

43' - 8"

13' - 4"

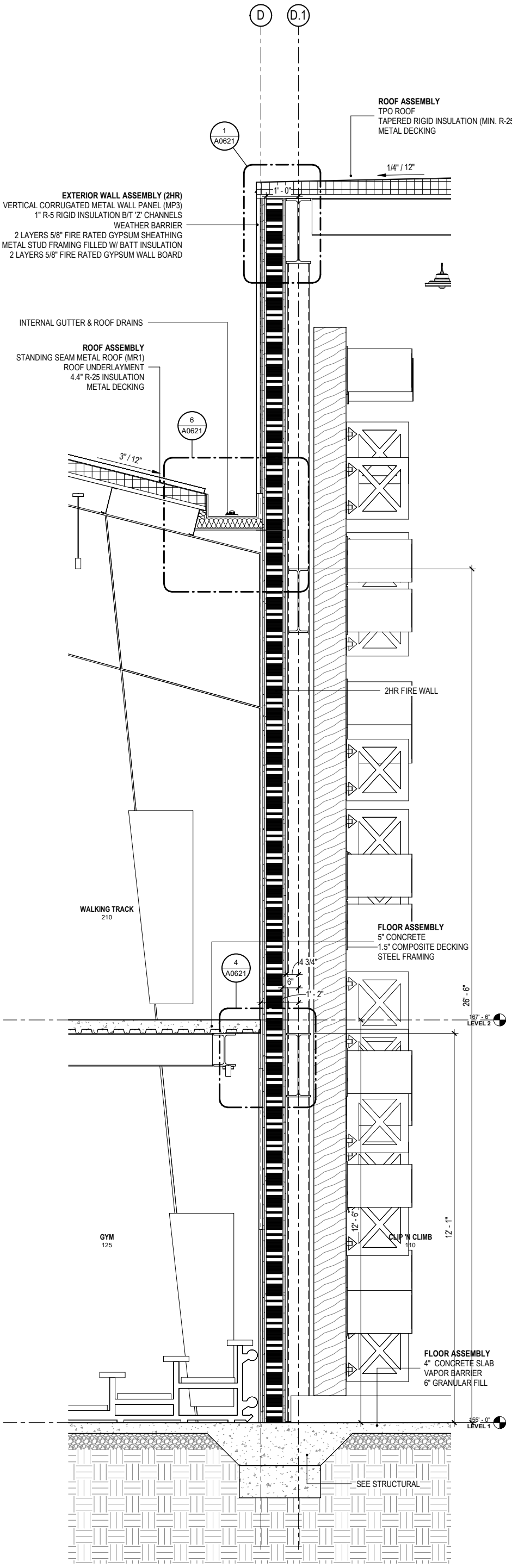
34' - 3 1/4"

18' - 8"

11' - 6"

CLIP 'N CLIMB
110

CORRIDOR
202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D.1
1
A0621
ROOF ASSEMBLY
TPO ROOF
TAPERED RIGID INSULATION (MIN. R-25)
METAL DECKING
1/4" / 12"
1' - 0"
EXTERIOR WALL ASSEMBLY (2HR)
VERTICAL CORRUGATED METAL WALL PANEL (MP3)
1" R-5 RIGID INSULATION B/T 'Z' CHANNELS
WEATHER BARRIER
2 LAYERS 5/8" FIRE RATED GYPSUM SHEATHING
6" METAL STUD FRAMING FILLED W/ BATT INSULATION
2 LAYERS 5/8" FIRE RATED GYPSUM WALL BOARD
INTERNAL GUTTER & ROOF DRAINS
ROOF ASSEMBLY
STANDING SEAM METAL ROOF (MR1)
ROOF UNDERLAYMENT
4.4" R-25 INSULATION
METAL DECKING
6
A0621
3" / 12"
2HR FIRE WALL
WALKING TRACK
210
FLOOR ASSEMBLY
5" CONCRETE
1.5" COMPOSITE DECKING
STEEL FRAMING
4
A0621
4 3/4"
6"
1' - 2"
26' - 6"
167' - 6"
LEVEL 2
GYM
125
CLIP 'N CLIMB
110
12' - 6"
12' - 1"
FLOOR ASSEMBLY
4" CONCRETE SLAB
VAPOR BARRIER
6" GRANULAR FILL
155' - 0"
LEVEL 1
SEE STRUCTURAL