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New York, NY 10019

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www.dsai.ca  
info@dsai.ca

|            |  |               |               |
|------------|--|---------------|---------------|
| To:        | Rafat General Contractor Inc.<br>8850 George Bolton Parkway<br>Caledon, ON L7E 2Y4 | Submittal No: | 015R1         |
|            |  | Project No:   | 201014        |
|            |  | File No:      | 4-6-1-23      |
| Attention: | Pino Antelope, Bashar Mikha  | Date:         | January-10-25 |

Project: Chris Gibson Recreation Centre

The Architect's review is for the sole purpose of ascertaining conformance with the general design concept and for general arrangement. This review shall not mean approval of the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for all dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes, quantities or to techniques of construction and installation and for co-ordination with related work.

| Contractor<br>Package # | Spec<br>Section | Description | Reviewed by  | Status    |
|-------------------------|-----------------|-------------|--------------|-----------|
| 015R1                   | 23 05 00        | Fabric Duct | Introba, DSA | <b>RN</b> |

Status Legend: **R** – Reviewed **RN** – Reviewed As Noted **RR** – Revise and Resubmit **N** – Not Reviewed

Comments: See Introba comments within review. DSA: Colour of Fabric Duct to be WHITE.

Per: Patrick Johnson



8850 GEORGE BOLTON PARKWAY, CALEDON, ONTARIO L7E 2Y4

Shop Drawings  
Transmittal No:

15R1

|                      |  |  |             |
|----------------------|--|--|-------------|
| <b>Project Name:</b> | Renovation of Chris Gibson Recreation Centre Drive | <b>Project No.</b>                     | T2023-125   |
|                      |  | <b>DATE:</b>                           | 27-Nov-2024 |
|                      |  | <b>Submittal Required Return Date:</b> | 5 Dec 2024  |
| <b>Submittal No:</b> | 15R1   |  |             |

|               |                           |
|---------------|---------------------------|
| <b>Title:</b> | Fab Duct Rev 1 - 23-05-00 |
|---------------|---------------------------|

|            |   |
|------------|---|
| <b>To:</b> | Patrick Johnson Contract Administrator<br><br>384 Adelaide Street West, Suite 100 Toronto, Ontario, Canada M5V 1R7 PJohnson@dsai.ca |
|------------|---|


|                    |  |  |                    |
|--------------------|--|--|--------------------|
| <b>Checked by:</b> | Ashish Singla (Rafat General Contractor Inc/Corebuild) | <b>To Be Reviewed By the Following Consultants</b> | 1. .DSA 2. Introba |
|--------------------|--|--|--------------------|

|                       |        |
|-----------------------|--------|
| <b>Submitted for:</b> | REVIEW |
|-----------------------|--------|

|                             |  |
|-----------------------------|--|
| <b>Consultants Response</b> |  |
|-----------------------------|--|

Note: To be read in conjunction with R0

**SUBMITTAL REVIEW**  
INTROBA  
380 Wellington Street West  
Toronto, ON  
M5V 1E3



☐ REVIEWED  
☒ REVIEWED AS NOTED  
☐ REJECTED - REVISE AND RESUBMIT  
☐ NOT REVIEWED

**CHECKED BY:** ILITTLE  
**DISCIPLINE:** Mechanical  
**DATE:** 12/18/2024

REVIEWED FOR GENERAL DESIGN AND COMPLIANCE WITH CONTRACT DOCUMENTS. DIMENSIONS AND SUITABILITY FOR SITE CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. THIS REVIEW OF THE DRAWING SHALL NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE CONDITIONS OF THE CONTRACT DOCUMENTS.

IRB:

- Contractor to ensure all duct diameters match mechanical basis of design.
- All colours and finishes to be submitted to architect for approval.
- Install as per manufacturers recommendations.
- Air Distribution Vent sizes and quantities to be sized for air flow of system.



**SUBMITTAL REVIEW**

For general compliance with the design concept and contract documents. Subcontractor is solely responsible for jobsite correlation and correctness of all ratings, sizings, type, style, dimensions, finish, quantities and satisfactory fitting to other work and equipment. This review does not change the intent of the contract document.

☒ Reviewed  
☐ Make Corrections  
☐ Resubmit  
☐ Rejected

**Per:**  
Ashish Singla  
  
**Date:**  
9 Dec 2024



54 Audia Court, Unit 2  
Concord, ON L4K 3N5  
(905)-738-1400

## Submittal 23-214-005

| PROJECT NAME                   | PROJECT ADDRESS                            | DATE SUBMITTED |
|--------------------------------|--|----------------|
| CHRIS GIBSON REC CENTRE 23-214 | 125 McLaughlin Rd N, Brampton, ON, L6X 1N9 | Dec 9, 2024    |

| TO   | FROM  |
|--|---|
| Ashish Singla                              | INZAMAN KHAN                                  |
| COMPANY                                    | COMPANY                                       |
| RAFAT GENERAL CONTRACTOR INC.              | Consult Mechanical Inc.                       |
| EMAIL                                      | EMAIL   |
| asingla@corebuildconstruction.com          | inzaman@consultmechanical.com                 |
| ADDRESS                                    | ADDRESS                                       |
| 8850 GEORGE BOLTON PKWY BOLTON, ON L7E 2Y4 | 54 Audia Court, Unit 2<br>Concord, ON L4K 3N5 |

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### Title

Fab Duct Rev 1

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### Description

Revised Fabric Ducts because of the change on the supply duct orientation.

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### Package Items

| SPEC | SUBSECTION | ITEM | TYPE |
|------|------------|------|------|
|------|------------|------|------|

**Submittal # 83808****APPROVAL REQUIRED**

**Project** 22006063-SMET-7- Chris Gibson Recreation Centre  
**Leader** Jaden Sebu  
**Job Site** Chris Gipson Recreation Centre  
**Submission Date** 2024-12-09  
**Sold To** CONSULT MECH  
**Submitted By** Chantal Koudou

**Contacts**

| Role            | Customer                  | Contact                 | Our Rep      |
|-----------------|---------------------------|-------------------------|--------------|
| Project Manager | Con-Sult Mechanical Inc.* | Mohammed Ali Khan Lodhi | Jaden Sebu   |
| Designer        | Integral Group            | Mark Marotta            | Graham Coote |

**Deliverables**

| Track #              | 241780       |  |  |
|----------------------|--------------|--|--|
| Tag                  | FAB DUCT     |  |  |
| Description          | Fabric Ducts |  |  |
| Quantity             | 6            |  |  |
| Production Lead Time | 8 - 10 weeks |  |  |
| Revision #           | 1            |  |  |

**Notes:**

\*\*\*Resubmission of the shop because the supply orientation has changed.

**Attention:**

- 1) HTS will provide equipment in accordance with the attached shop drawings.
- 2) Upon approved submittal and customer release, HTS will release equipment to fabrication per the published lead times. Any storage fees associated with project schedule changes will be the responsibility of the purchaser.
- 3) HTS can provide freight and logistics to the purchaser as an added benefit of doing business with HTS. When freight is received by the purchaser, any noticeable damage must be recorded. Otherwise, HTS is not responsible for subsequent damage claims.

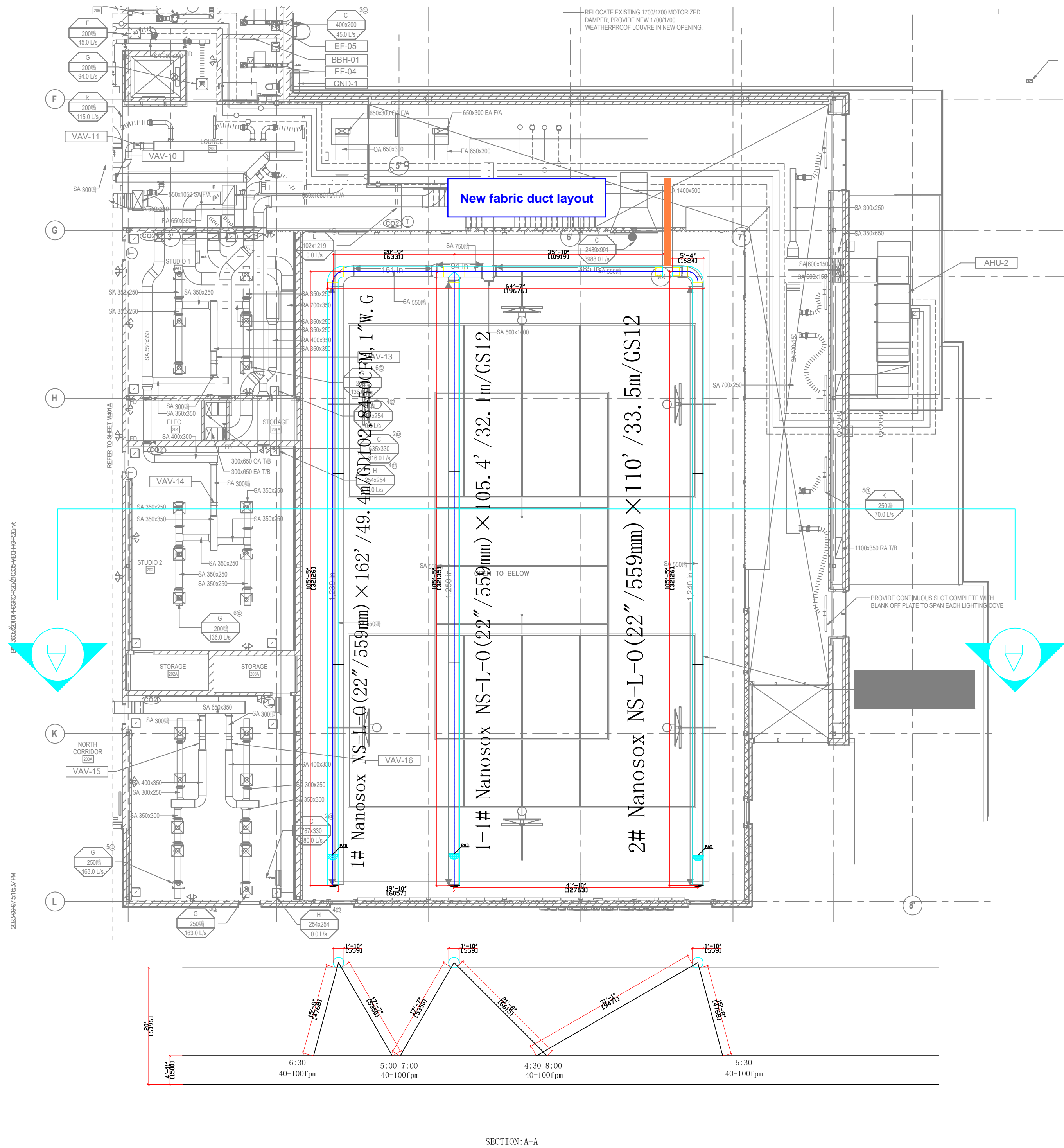
**Approval Stamps**







Fabric duct submittal



proprietor:

project name:

| Rev. | Description | Designed by |
|------|-------------|-------------|
|------|-------------|-------------|



Durkee America Inc.  
Add.: PO Box 1592 Issaquah WA 98027  
Tel: (206) 639-2889  
Email: info@durkeintl.com  
Website: http://www.nanosox.net

Project Name. 220518-33 ON HTS  
Chris Gibson  
Recreation Centre.

Project No. 22006063

Designed by KERRY

Checked by KERRY

Approved by

|       |  |      |  |
|-------|--|------|--|
| Scale |  | Date |  |
|-------|--|------|--|

Drawing Title:  
Design and construction instruction

|                |           |
|----------------|-----------|
| Drawing Number | Sheet No. |
|----------------|-----------|

|             |             |
|-------------|-------------|
| Doc Number: | 1NA2407259B |
|-------------|-------------|

# DurkeeSox system design and installation instruction

proprietor:

## 1. Project Profile

This project is the design for fabric air dispersion system for air-condition system of 220518-33 ON HTS Chris Gibson Recreation Centre, 22006063.

## 2. Design concept

- 1) Fire safety standard:  
Flame spread and smoke developed index less than 25/50 per ASTM E84 and UL S102 BS Part 6 and Part 7 Class 0 standard.
- 2) Using ACD (Airflow control device) & PAD(pressure adjustment device) to adjust and balance airflow in each DurkeeSox system.
- 3) Materials of DurkeeSox air dispersion system products meets the required fabric permeability.
- 4) Airflow Volume of each DurkeeSox system segment:  
Depending on the capacity of AHU (AHUs) supplied.
- 5) Velocity of inlet of DurkeeSox system shall be less than 1770fpm to avoid turbulence and negative pressure at inlet.
- 6) Quantity and length: Depending on total airflow volume of AHU and room size.
- 7) System layout: The DurkeeSox system layout is based on existing room geometry, equipments and the space limitation in the drawings, avoid any interference with other ductwork and structures. The installation height is about : ---'. The diameter of DurkeeSox system chosen are ---".
- 8) Airflow dispersion model: DurkeeSox-NS model.  
the designed airflow velocity at occupied area will be around 40-100fpm

## 3. Installation Instruction

- 1) Please refer to installation manual for more details.
- 2) Using double rows galvanized cable suspension system by the sites of 10:00 & 2:00 clock  
Using single rows galvanized cable suspension system by the sites of 12:00 clock
- 3) Connection with Metal duct (See drawing on the right for detail):  
The diameter of metal duct should be about 30mm (1-1/4") smaller than DurkeeSox inlet,  
The length of metal duct to be connected with DurkeeSox system should be at least 300mm in length. The metal duct is supplied by contractors before installation of DurkeeSox system.

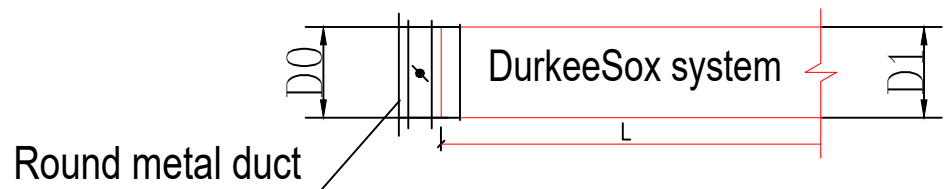
## 4. Specifications

### 1) Fabric materials (Physical Properties )

| Item                        | Parameters                | Compliance               |
|-----------------------------|---------------------------|--------------------------|
| Weight                      | 5-11 Oz/yd2               | UL 181/AC167/ASTM D3776  |
| Tension strength(N)         | >3.4 lbf                  | GB/T 3917.1-1997         |
| Tear strength(N)            | >112 lbf                  | GB/T 3923.1-1997         |
| Fire safety performance     | 25/50                     | UL 181 NAPA-90A/ASTM E84 |
|                             | ClassB-s1,d0,t0           | GB 8624-2006             |
|                             | Class 0                   | BS Part6 and Part 7      |
| 600s smoking volume         | (TSP600s) ≤25             | GB/T 20284-2006          |
| Motes dropped of Burning    | 600s nothing              | GB/T 20284-2006          |
| Smoking Toxicity            | ZA1                       | GB/T20285-2006           |
| Shrinkage after wash        | <0. 5%                    | UL 181/AC167             |
| Permeability toleranceCV(%) | <4%                       | UL 181/AC167             |
| Aging resistance (200h)     | No tear, no carbonization | UL 181/AC167             |
| Tempereture range           | -53℃--100℃ (-63℉ - 212℉)  | UL 181/AC167             |

### 2) DurkeeSox system performances

| Item                  | Parameters  | Compliance   |
|-----------------------|---|--------------|
| Pressure resistance   | Good appearance, no tear, no damage @ 8" W.G  | UL 181/AC167 |
| Passive Permeability  | ≤ 2.6cfm/ft <sup>2</sup> (50 m <sup>3</sup> /h • m <sup>2</sup> ) @ 2" W.G<br>≤ 5.4cfm/ft <sup>2</sup> (100 m <sup>3</sup> /h • m <sup>2</sup> ) @ 4" W.G | JGJ 141-2004 |
| Dimensional tolarence | ≤ 1 %   | JGJ 141-2004 |



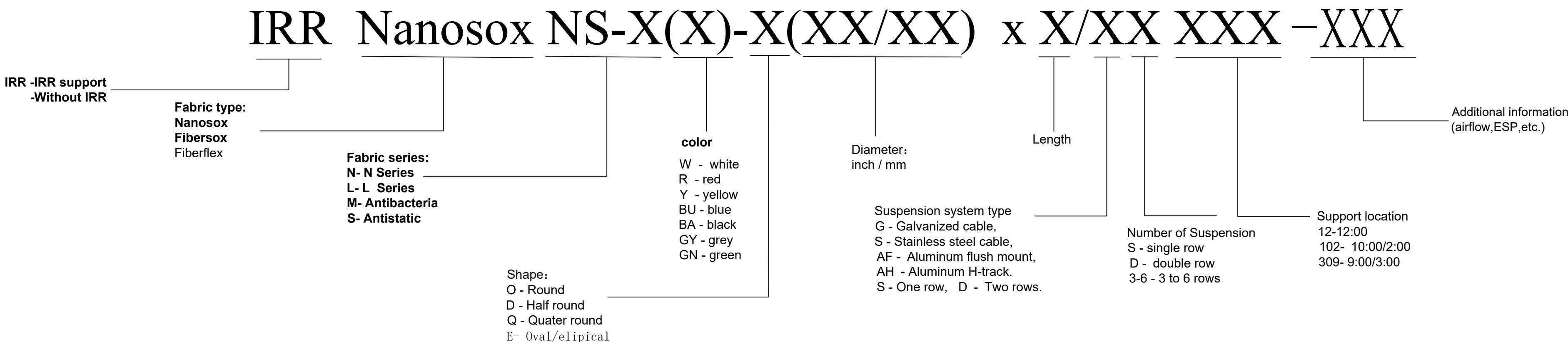
Connection between DurkeeSox and metal duct

#### Instructions:

D0=D1-30mm  
D0 = Outer diameter of the metal duct which connects to DurkeeSox system  
D1 = Inlet diameter of DurkeeSox system

The Length of metal duct should be no less then 300mm. A thickness of 10mm duct liner or duct wrap is recommended to prevent condensation.

### DurkeeSox system label Nomenclature



project name:

| Rev. | Description | Designed by |
|------|-------------|-------------|
|------|-------------|-------------|



Durkee America Inc.  
Add.: PO Box 1592 Issaquah WA 98027  
Tel: (206) 639-2889  
Email: info@durkeintl.com  
Website: http://www.nanosox.net

Project Name: 220518-33 ON HTS Chris Gibson Recreation Centre.  
Project No. 22006063

Designed by KERRY

Checked by KERRY

Approved by

Scale Date

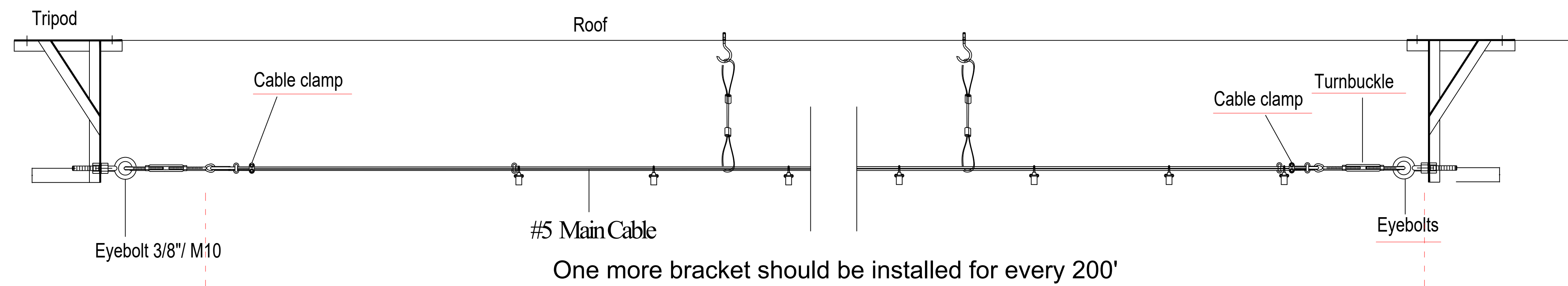
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Design and construction instruction

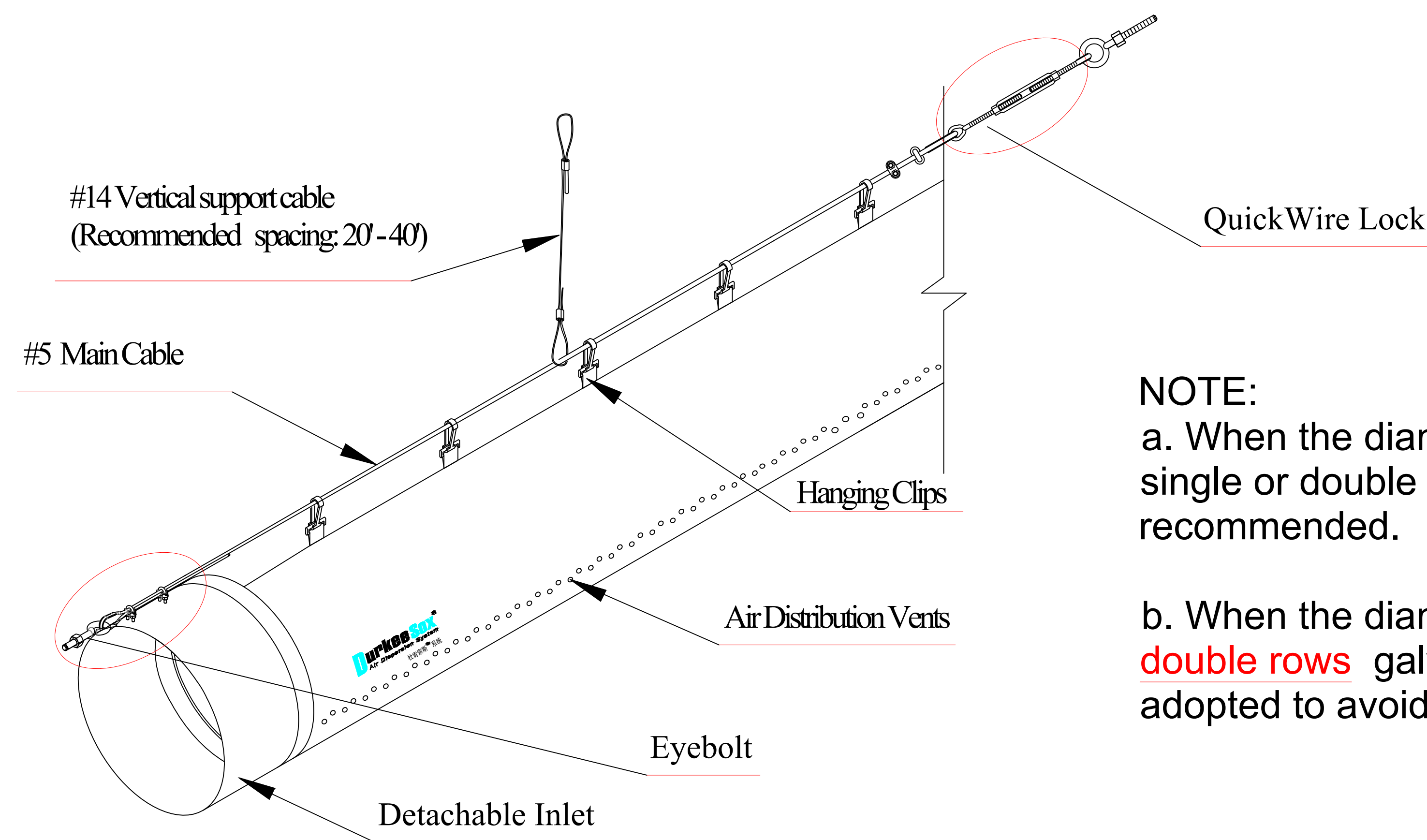
Drawing Number Sheet No.

Doc Number: 1NA2310318A





One more bracket should be installed for every 200'  
Durkeesox Suspension Drawing(Length>50')



Single row Cable Suspension Details

NOTE:

a. When the diameter of fabric duct is less than **28"** , single or double rows galvanized cable suspension is recommended.

b. When the diameter of fabric duct is more than **28"** , **double rows** galvanized cable suspension shall be adopted to avoid breaking .

Additional intermediate bracket sets required

| THE STRAIGHT DUCT<br>DIAMETER (MM) | LENGTH(>40M/114') | LENGTH(>50M/164') | LENGTH(>90M/295') | LENGTH(>120M) | LENGTH(>150M/393') | LENGTH(>200M/656') | LENGTH(>200M/656') |
|------------------------------------|-------------------|-------------------|-------------------|---------------|--------------------|--------------------|--------------------|
| Dia<700MM/28"                      | 0                 | 1                 | 1                 | 2             | 3                  | 4                  | 4                  |
| Dia>700MM/28"                      | 1                 | 1                 | 2                 | 3             | 4                  | 5                  | 5                  |

proprietor:

project name:

| Rev. | Description | Designed by |
|------|-------------|-------------|
|      |             |             |

**DurkeeSox**  
Air Dispersion System

Durkee America Inc.  
Add.: PO Box 1592 Issaquah WA 98027  
Tel: (206) 639-2889  
Email: info@durkeintl.com  
Website: http://www.nanosox.net

Project Name: **220518-33 ON HTS  
Chris Gibson  
Recreation Centre.**

Project No. **22006063**

Designed by **KERRY**

Checked by **KERRY**

Approved by

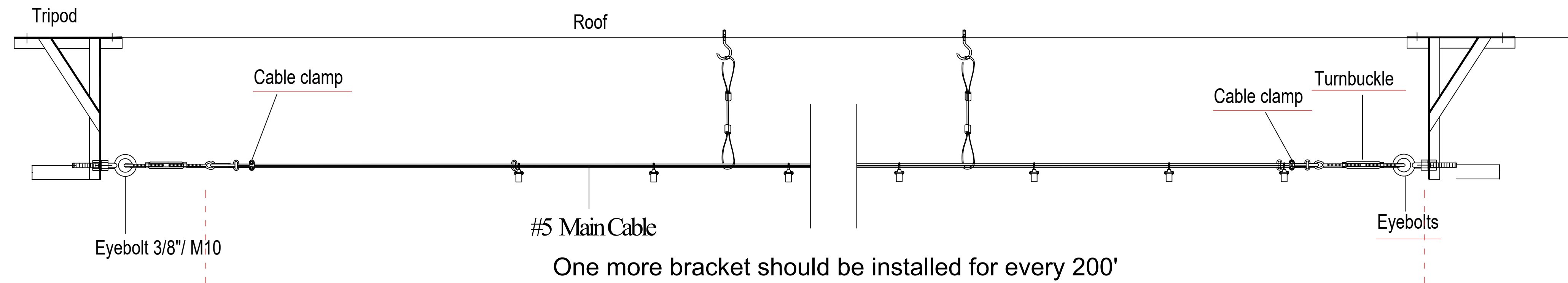
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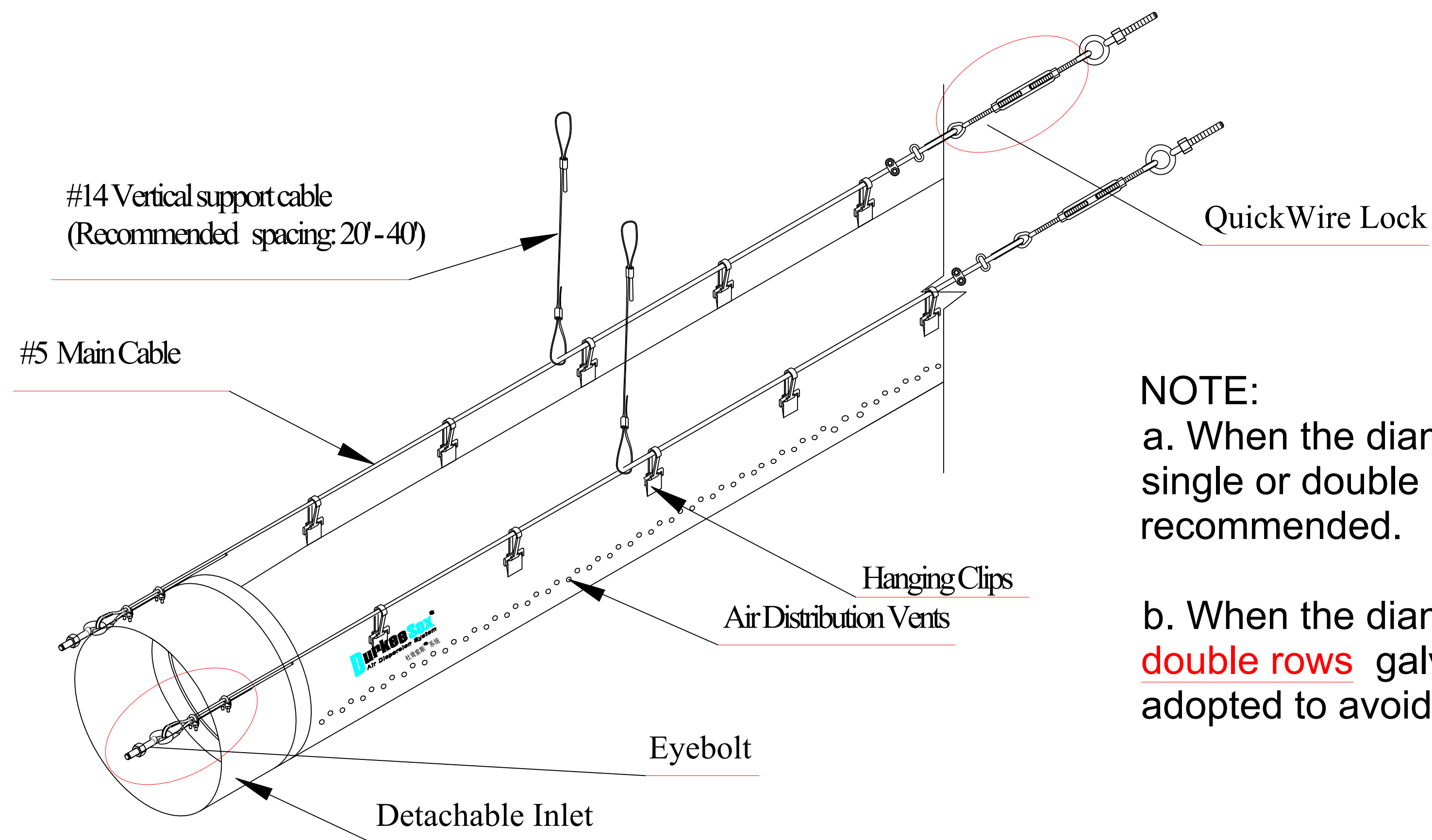
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One more bracket should be installed for every 200'  
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NOTE:

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| THE STRAIGHT DUCT<br>DIAMETER (MM) | LENGTH(>40M/114') | LENGTH(>50M/164') | LENGTH(>90M/295') | LENGTH(>120M) | LENGTH(>150M/393') | LENGTH(>200M/656') | LENGTH(>200M/656') |
|------------------------------------|-------------------|-------------------|-------------------|---------------|--------------------|--------------------|--------------------|
| Dia<700MM/28"                      | 0                 | 1                 | 1                 | 2             | 3                  | 4                  | 4                  |
| Dia>700MM/28"                      | 1                 | 1                 | 2                 | 3             | 4                  | 5                  | 5                  |

proprietor:

project name:

| Rev. | Description | Designed by |
|------|-------------|-------------|
|------|-------------|-------------|

**DurkeeSox®**  
Air Dispersion System

Durkee America Inc.  
Add.: PO Box 1592 Issaquah WA 98027  
Tel: (206) 639-2889  
Email: info@durkeintl.com  
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Project Name: **220518-33 ON HTS  
Chris Gibson  
Recreation Centre.**

Project No. **22006063**

Designed by **KERRY**

Checked by **KERRY**

Approved by

|       |  |      |  |
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| Scale |  | Date |  |
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Drawing Title:

**Design and construction instruction**

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