MASON INDUSTRIES, Inc.
Manufacturers of Vibration Control Products
350 Rabro Drive
Hauppauge, NY 11788
631/348-0282
FAX 631/348-0279
Info@Mason-Ind.com
2101 W. Crescent Ave., Suite D
Anaheim, CA 92801
714/535-2727
FAX 714/535-5738
Info@MasonAnaheim.com
www.Mason-Ind.com

SVCS-100
SEISMIC
SPECIFICATION
APPLICATION
DRAWINGS

SVCSA

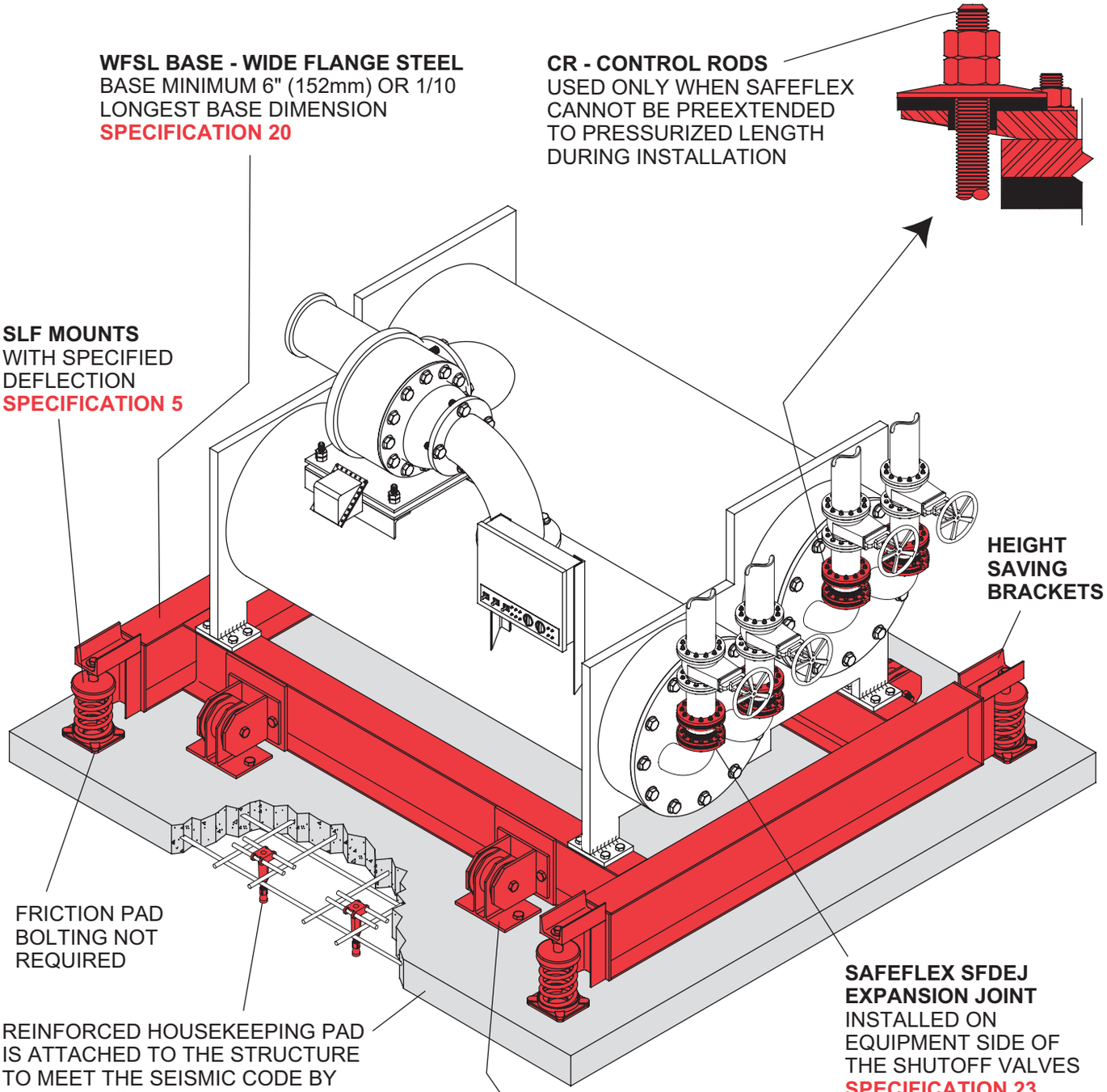
SVCSA-110-1 BULLETIN

Seismic Applications are basically the same as Non Seismic but complicated by the need to keep equipment in place. Whenever we show our Z-1011 heavily cushioned snubbers, the input to the equipment will not exceed 4 G. All mountings, hanger-cables or snubbers are designed to resist the seismic force in any zone or specification. Many of the mountings and hangers are the same as in static locations but designated by numbers in the Selection Guide rather than letters to distinguish the two applications. We hope these illustrations will help.

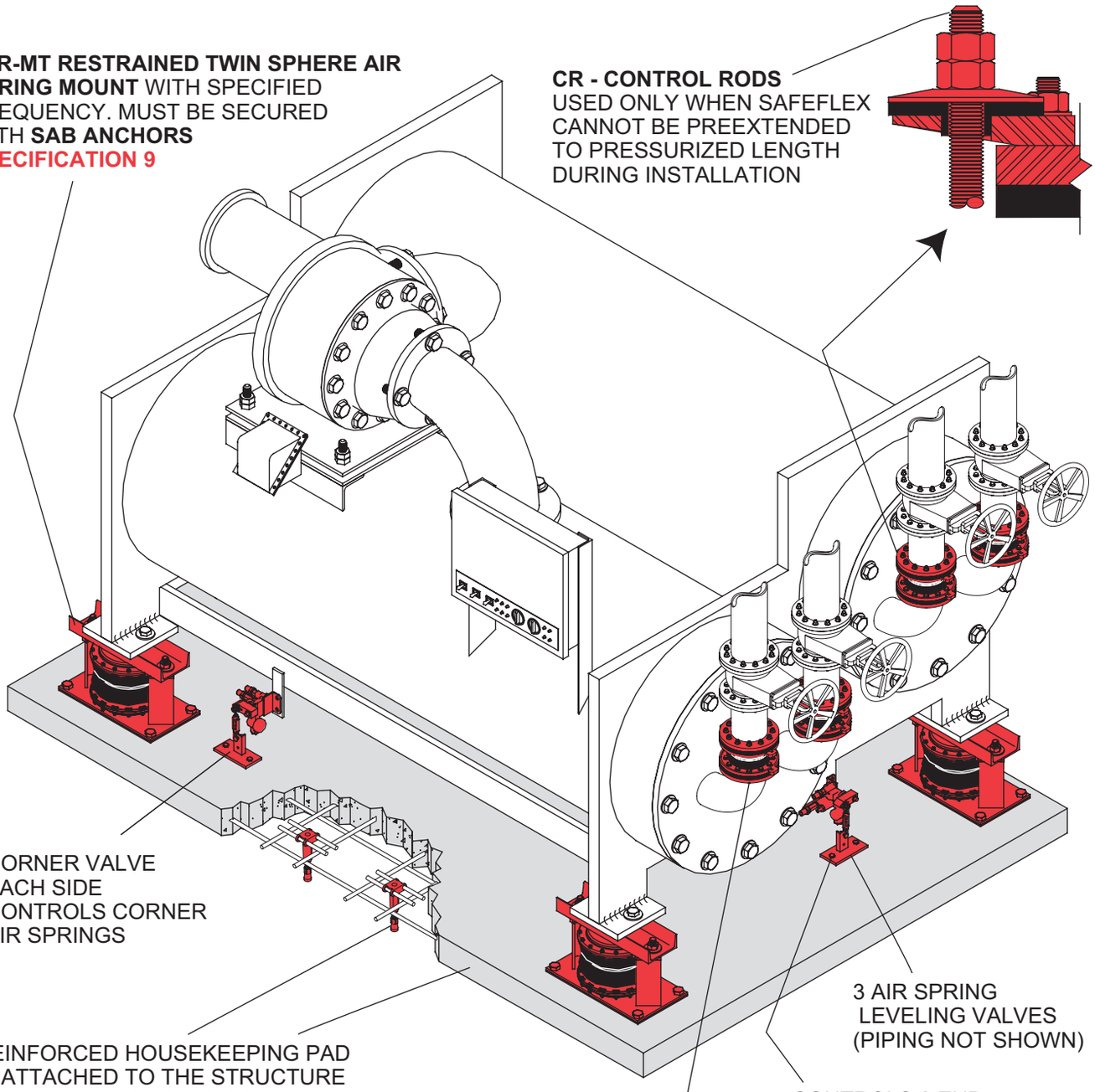
Page	Equipment	Isolation Description
2S	Centrifugal Chiller	Steel Base with Height Saving Brackets, High Deflection Springs and Seismic Restraints
3S	Centrifugal Chiller	Seismically Rated Twin Sphere Air Spring Mounts
4S	Reciprocating Direct Drive Compressor	Height Saving Brackets, High Deflection Springs and Seismic Restraints
5S	Steam Generator	Directly mounted on Restrained Spring Mounts
6S	Double Suction Pump	Concrete Filled Base with Height Saving Brackets, High Deflection Springs and Seismic Restraints
7S	End Suction Pump	Steel Base with Height Saving Brackets, High Deflection Springs and Seismic Restraints
8S	End Suction Pump	Steel Base with Height Saving Brackets, Air Springs and Seismic Restraints
9S	HVAC Unit	Suspended from Hangers and restrained by Cable Assemblies in four corners
10S	HVAC Unit	Steel Base with Height Saving Brackets, High Deflection Springs and Seismic Restraints
11S	HVAC Unit	Directly mounted on 1” Deflection Springs
12S	Vertical Tank Type Compressor	Concrete Filled Base, 1” Deflection Springs and Seismic Restraints
13S	Horizontal Tank Type Compressor	Directly mounted on Restrained Spring Mounts
14S	Direct Drive Blower	Bolted to Steel Base supported by Restrained Spring Mounts
15S	Utility Blower	Directly mounted on Seismically Restrained Mounts
16S	Centrifugal Blower	Concrete Filled Base with Height Saving Brackets, High Deflection Springs and Seismic Snubbers
17S	Centrifugal Blower	Concrete Filled Base with 1” Deflection Springs, Built In Corners and Seismic Snubbers
18S	Axial Blower	Steel Base with Height Saving Brackets, High Deflection Springs and Thrust Restraints.
19S	Axial Blower	Suspended by Hangers, restrained by Cable Assemblies and Thrust Restraints
20S	Large Multi-sectioned Cooling Tower	Steel Base and Beam Supports using Restrained Air Spring Mounts
21S	Large Multi-sectioned Cooling Tower	Steel Base and Beam Supports using High Deflection Steel Spring Restrained Mounts
22S	Packaged HVAC Cooling Tower	Steel Base with Restrained Twin Sphere Air Spring Mounts
23S	Rooftop Packaged HVAC Cooling Tower	Steel Base and Restrained Spring Mounts
24S	Large Transformer	Steel Base supported by Air Spring Mounts and Seismic Restraints

NOTE: All floor mounted systems are on seismically attached Housekeeping Pads.
All pipelines include Safeflex expansion joints to allow seismic movement.

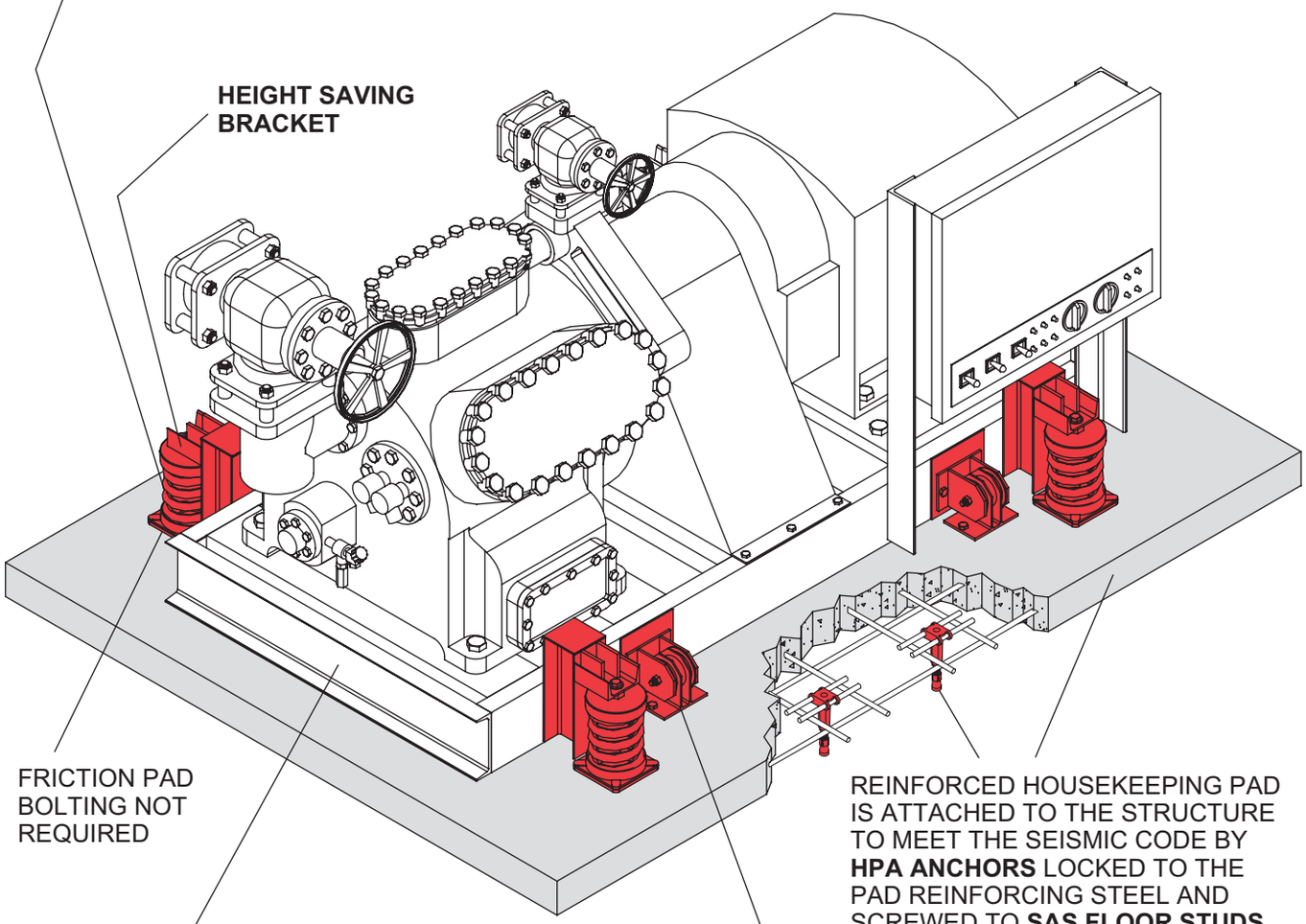
CENTRIFUGAL CHILLER on **WFSL** Base with height saving brackets and high deflection **SLF** Mounts and **Z-1011** Seismic Restraints. Reinforced housekeeping pad secured by **HPA** Anchors. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



CENTRIFUGAL CHILLER directly mounted on seismically rated **SLR-MT** Restrained Twin Sphere Air Spring Mounts. Reinforced housekeeping pad secured by **HPA** Anchors. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.

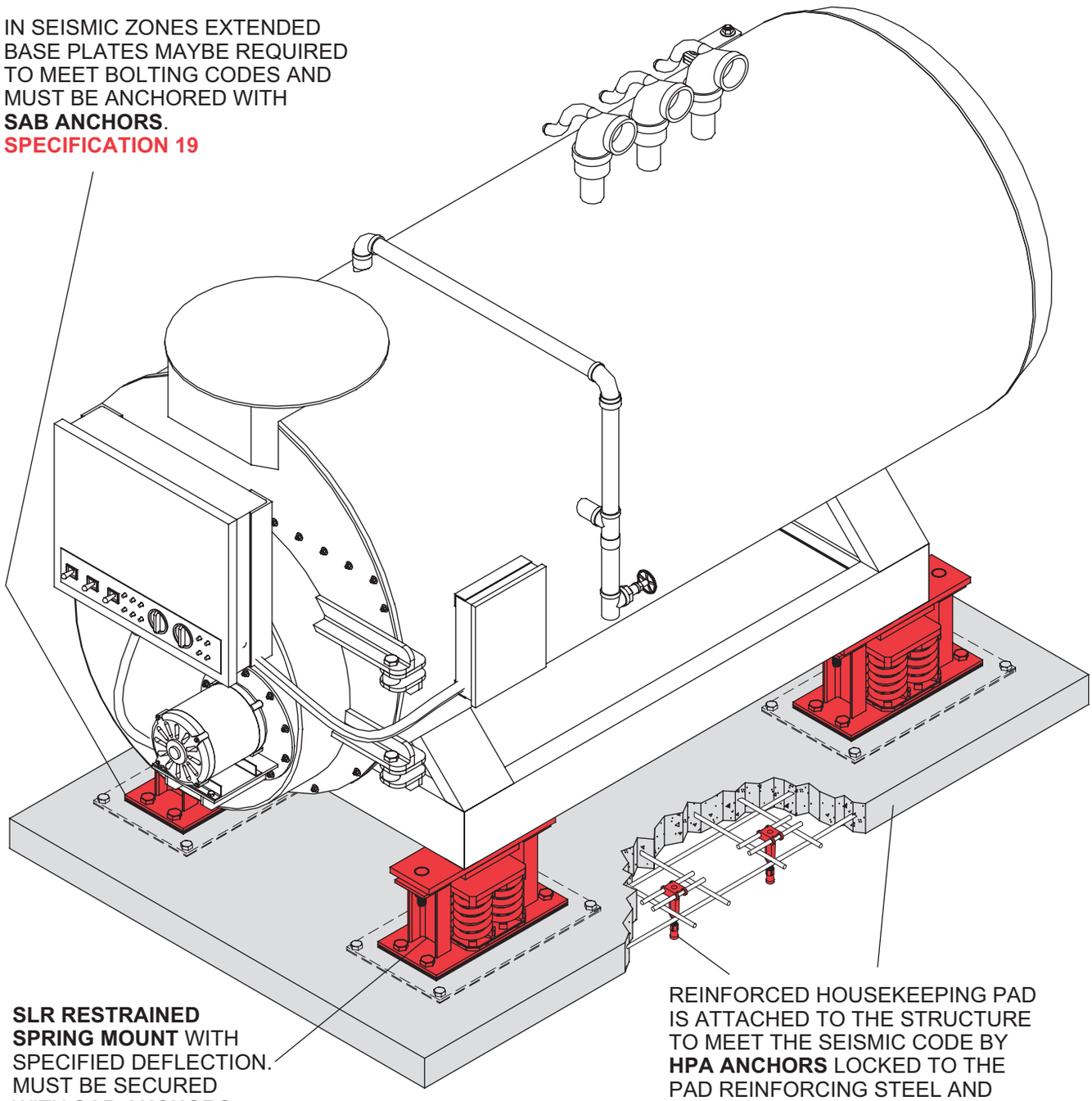


RECIPROCATING DIRECT DRIVE COMPRESSOR with height saving brackets on high deflection SLF Mounts and Z-1011 Seismic Restraints. Reinforced housekeeping pad secured by HPA Anchors.



STEAM GENERATOR directly mounted on **SLR** Restrained Spring Mounts. Reinforced housekeeping pad secured by **HPA** Anchors.

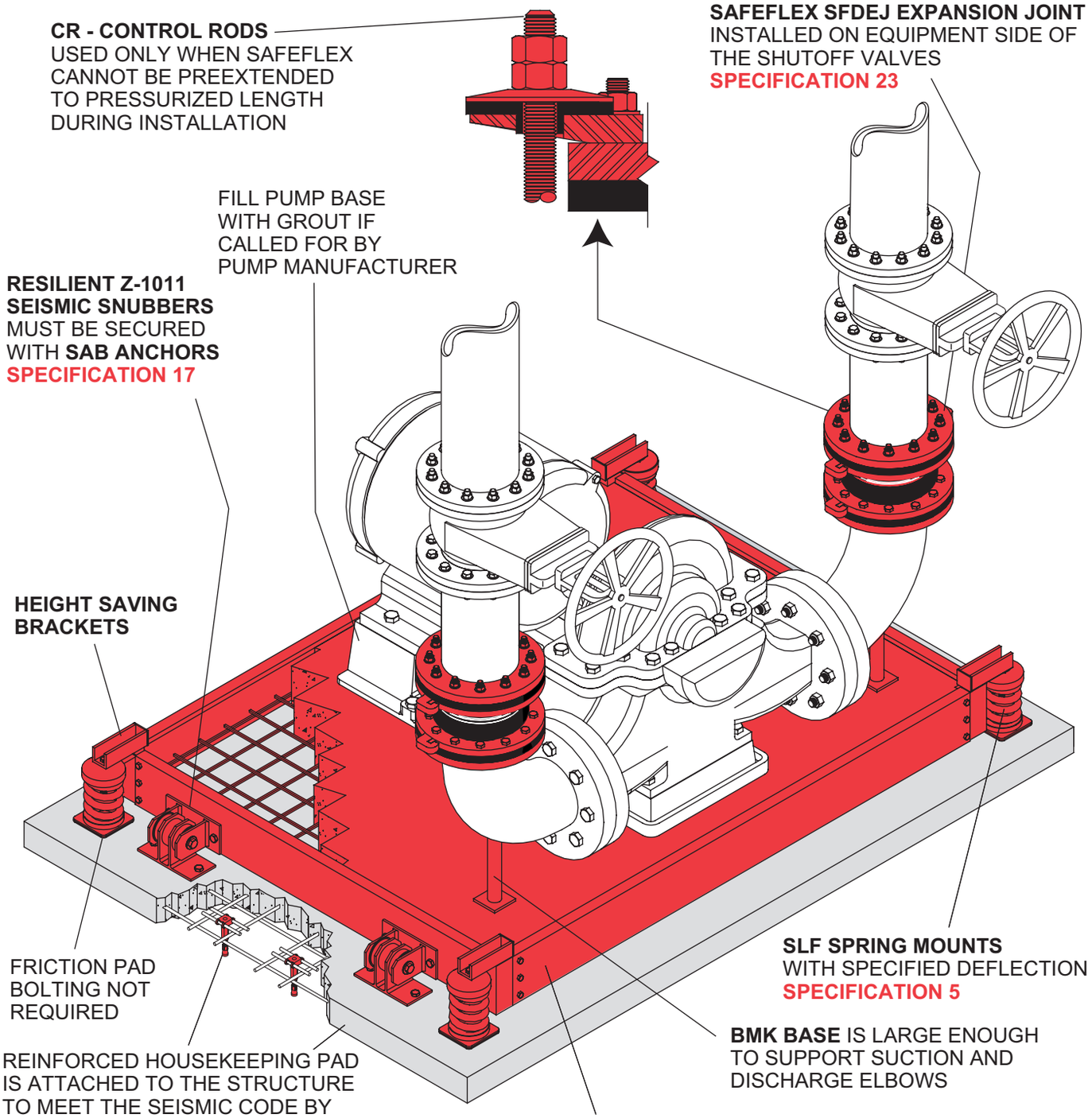
IN SEISMIC ZONES EXTENDED BASE PLATES MAYBE REQUIRED TO MEET BOLTING CODES AND MUST BE ANCHORED WITH **SAB ANCHORS**.
SPECIFICATION 19



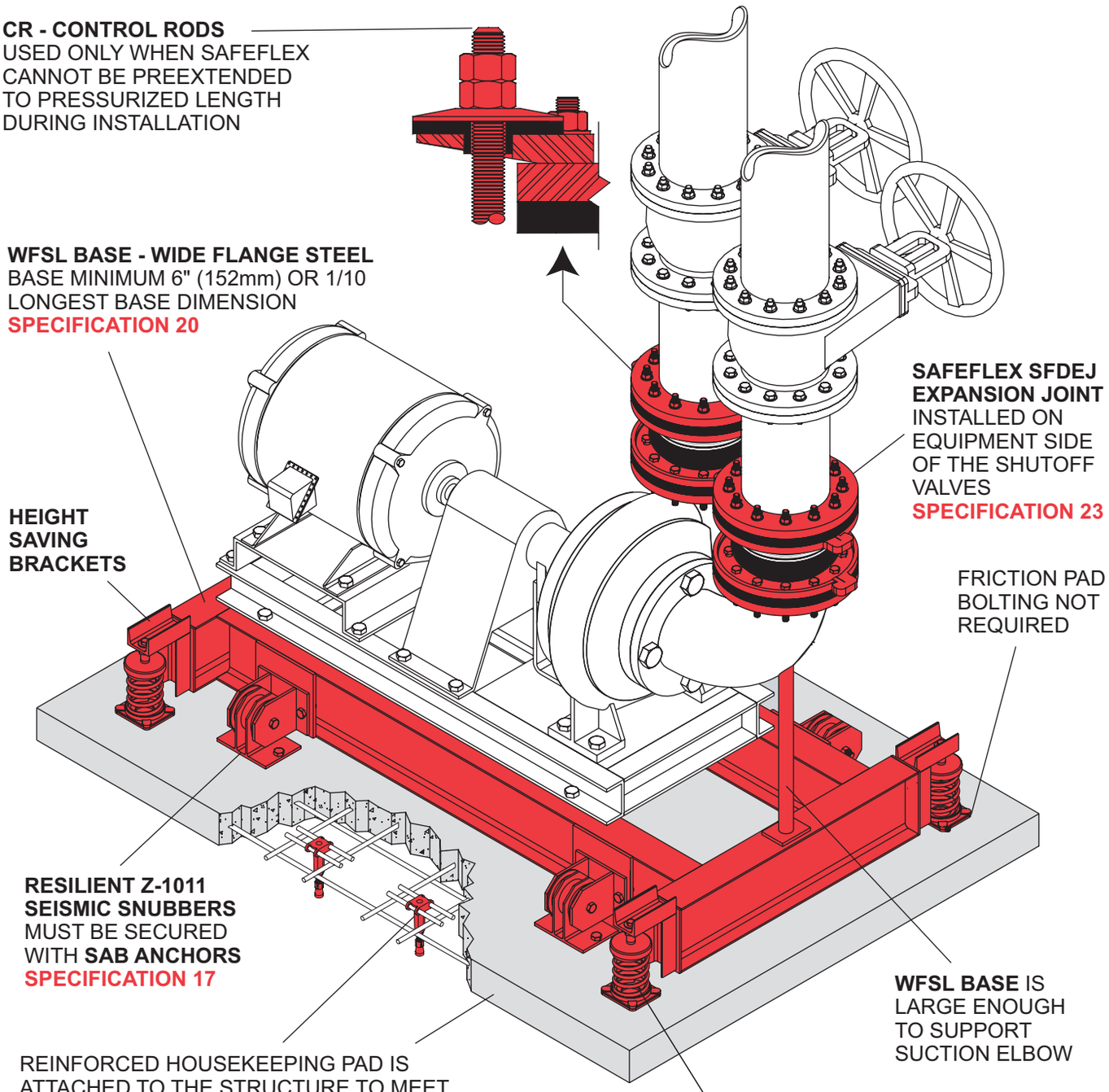
SLR RESTRAINED SPRING MOUNT WITH SPECIFIED DEFLECTION. MUST BE SECURED WITH **SAB ANCHORS**
SPECIFICATION 9

REINFORCED HOUSEKEEPING PAD IS ATTACHED TO THE STRUCTURE TO MEET THE SEISMIC CODE BY **HPA ANCHORS** LOCKED TO THE PAD REINFORCING STEEL AND SCREWED TO **SAS FLOOR STUDS**.
SPECIFICATION 29

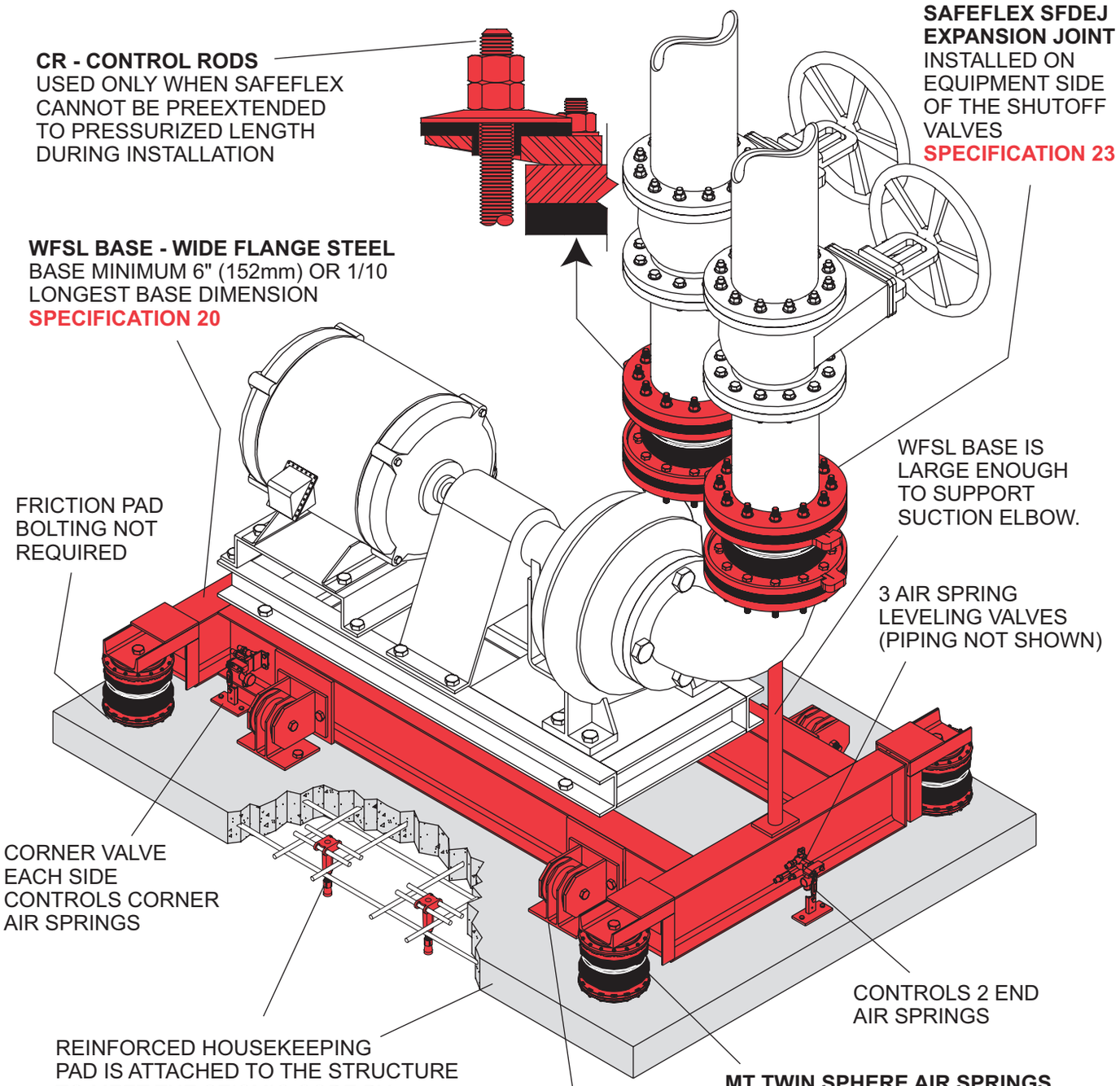
DOUBLE SUCTION PUMP on concrete filled **BMK** Base with height saving brackets, high deflection **SLF** Spring Mounts and **Z-1011** Seismic Restraints. Reinforced housekeeping pad secured by **HPA** Anchors. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



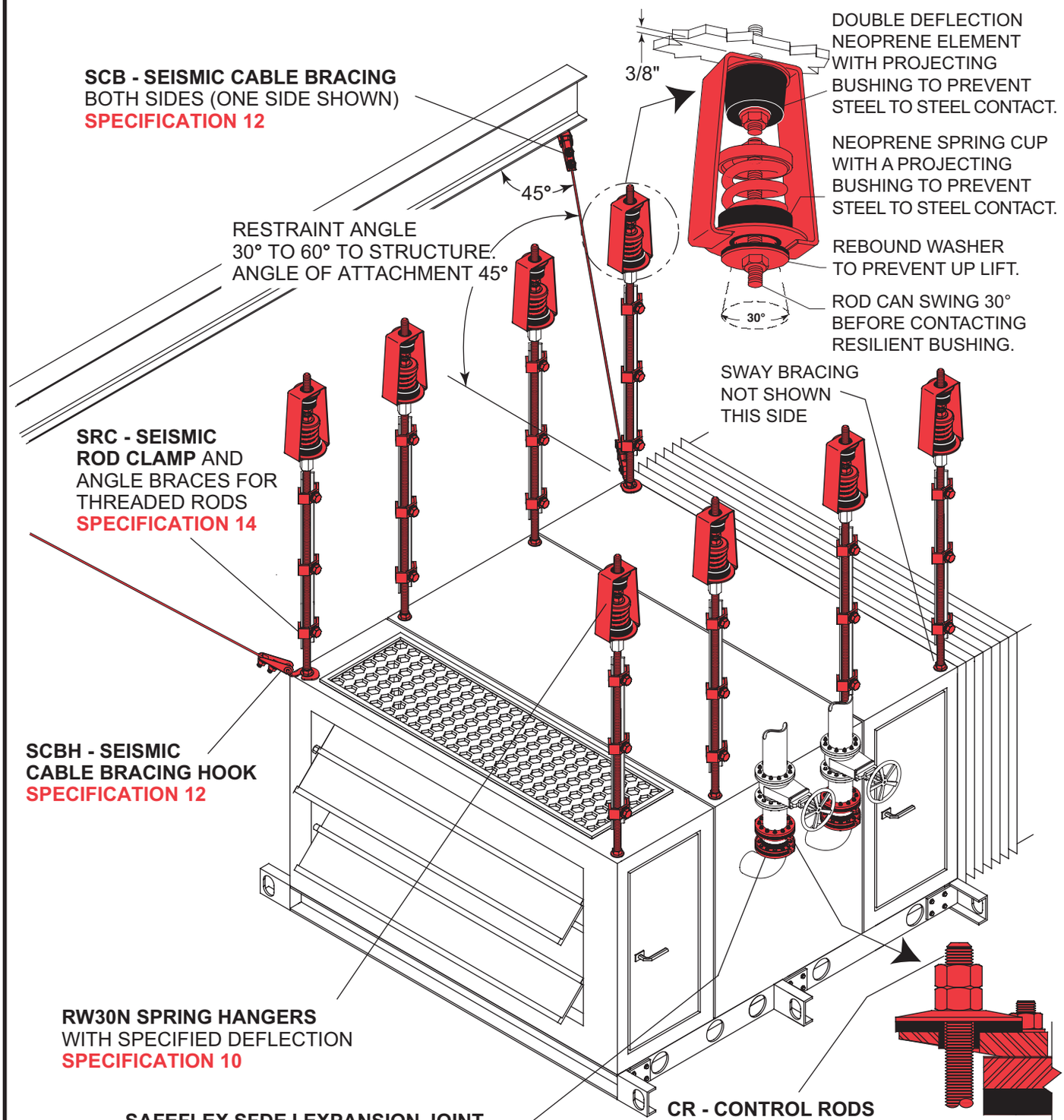
END SUCTION PUMP on **WFSL** Base with height saving brackets, high deflection **SLF** Mounts and **Z-1011** Seismic Restraints. Reinforced housekeeping pad secured by **HPA** Anchors. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



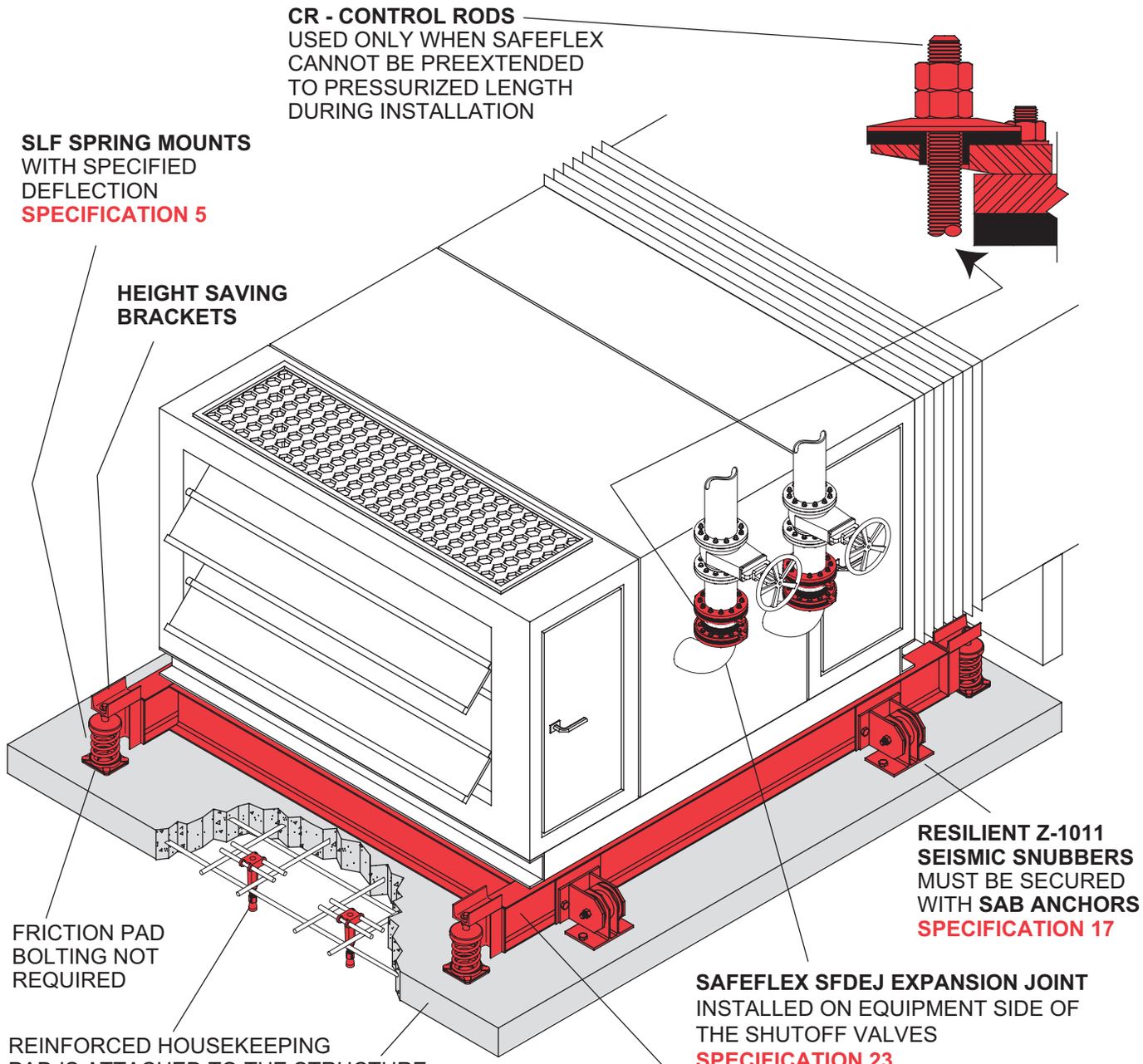
END SUCTION PUMP on **WFSL** Base with height saving brackets, **MT** Air Springs and **Z-1011** Seismic Restraints. Reinforced housekeeping pad secured by **HPA** Anchors. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



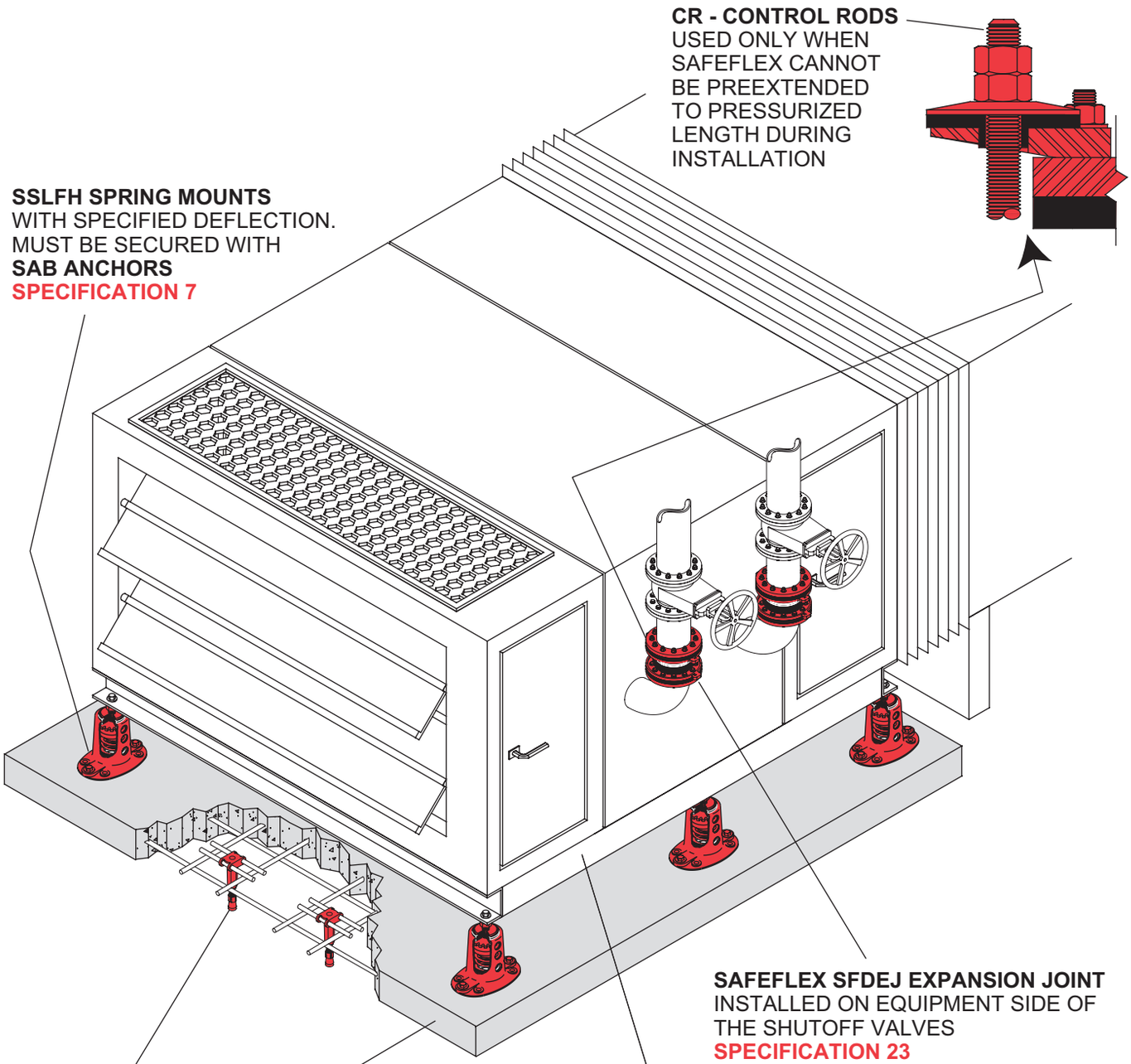
HVAC UNIT suspended from **RW30N** Hangers and restrained by **SCB** Cable Assemblies in four corners. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



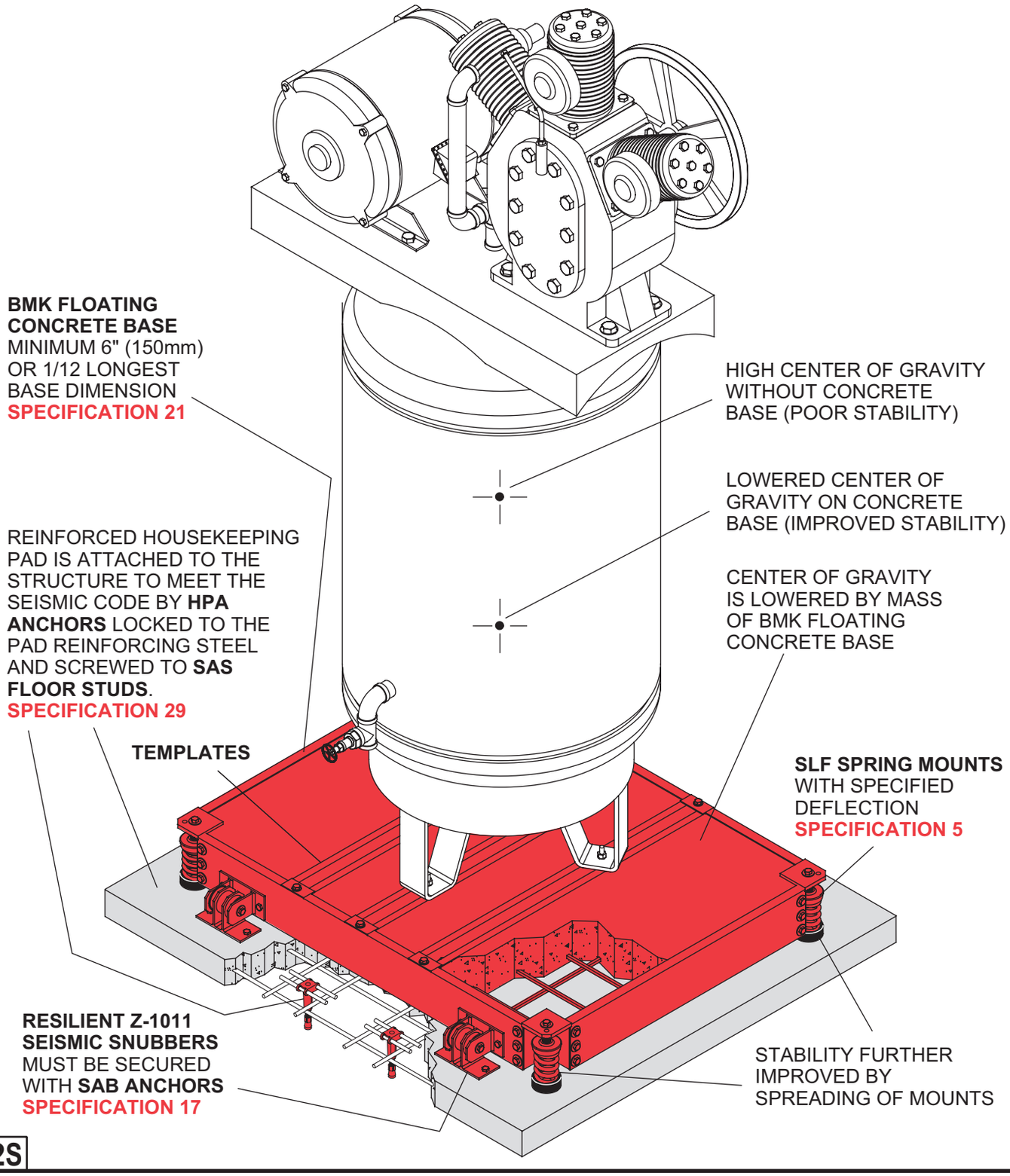
HVAC UNIT on steel base with height saving brackets, high deflection **SLF** Spring Mounts and **Z-1011** Seismic Restraints. Reinforced housekeeping pad secured by **HPA** Anchors. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



HVAC UNIT directly mounted on 1" deflection **SSLFH** Spring Mounts. Reinforced housekeeping pad secured by **HPA** Anchors. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.

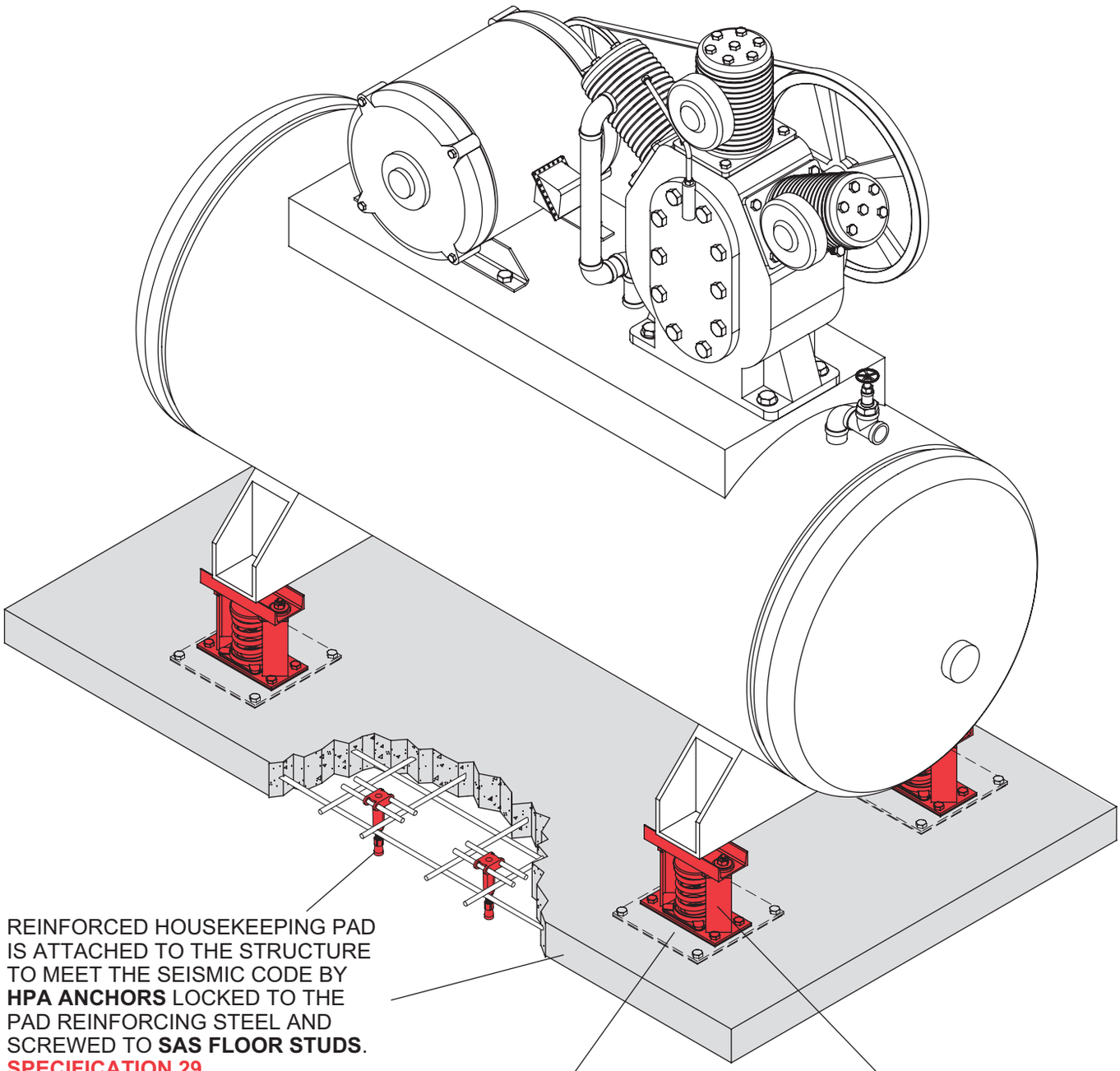


VERTICAL TANK TYPE COMPRESSOR directly mounted on BMK Concrete Filled Base, 1" deflection SLF Mounts and Z-1011 Seismic Restraints. Reinforced housekeeping pad secured by HPA Anchors.



HORIZONTAL TANK TYPE COMPRESSOR

directly mounted on SLR Restrained Spring Mounts.
Reinforced housekeeping pad secured by HPA Anchors.



REINFORCED HOUSEKEEPING PAD IS ATTACHED TO THE STRUCTURE TO MEET THE SEISMIC CODE BY **HPA ANCHORS** LOCKED TO THE PAD REINFORCING STEEL AND SCREWED TO **SAS FLOOR STUDS**.
SPECIFICATION 29

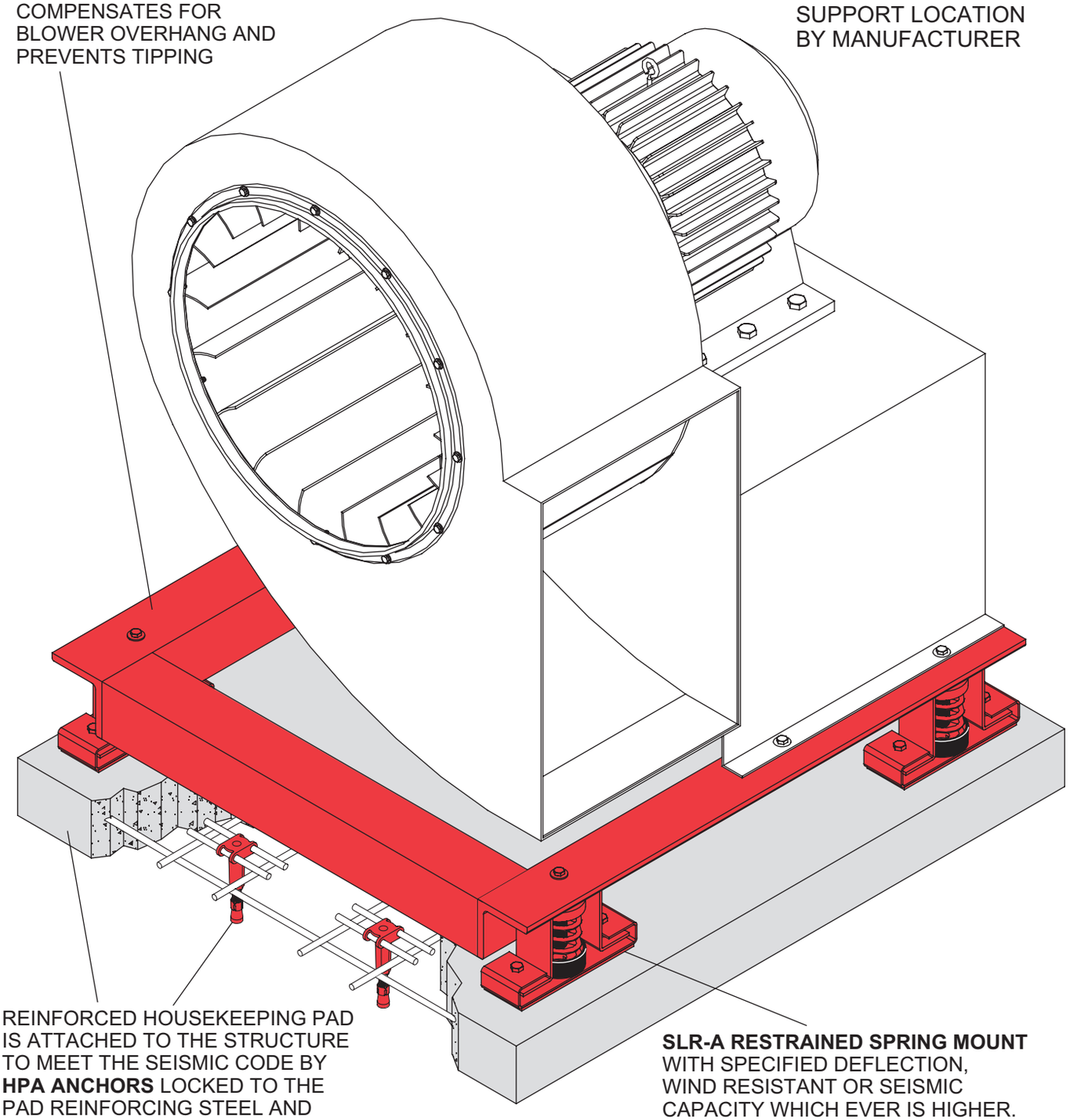
IN SEISMIC ZONES EXTENDED BASE PLATES MAYBE REQUIRED TO MEET BOLTING CODES AND MUST BE ANCHORED WITH **SAB ANCHORS**.
SPECIFICATION 19

SLR RESTRAINED SPRING MOUNT WITH SPECIFIED FREQUENCY. MUST BE SECURED WITH **SAB ANCHORS**
SPECIFICATION 9

DIRECT DRIVE BLOWER bolted to **MS-SLR** Steel Angle Base supported by **SLR-A** Restrained Spring Mounts. Reinforced housekeeping pad secured by **HPA** Anchors.

MS-SLR - STEEL ANGLE BASE
COMPENSATES FOR
BLOWER OVERHANG AND
PREVENTS TIPPING

NOTE: NO OUTBOARD
SUPPORT LOCATION
BY MANUFACTURER



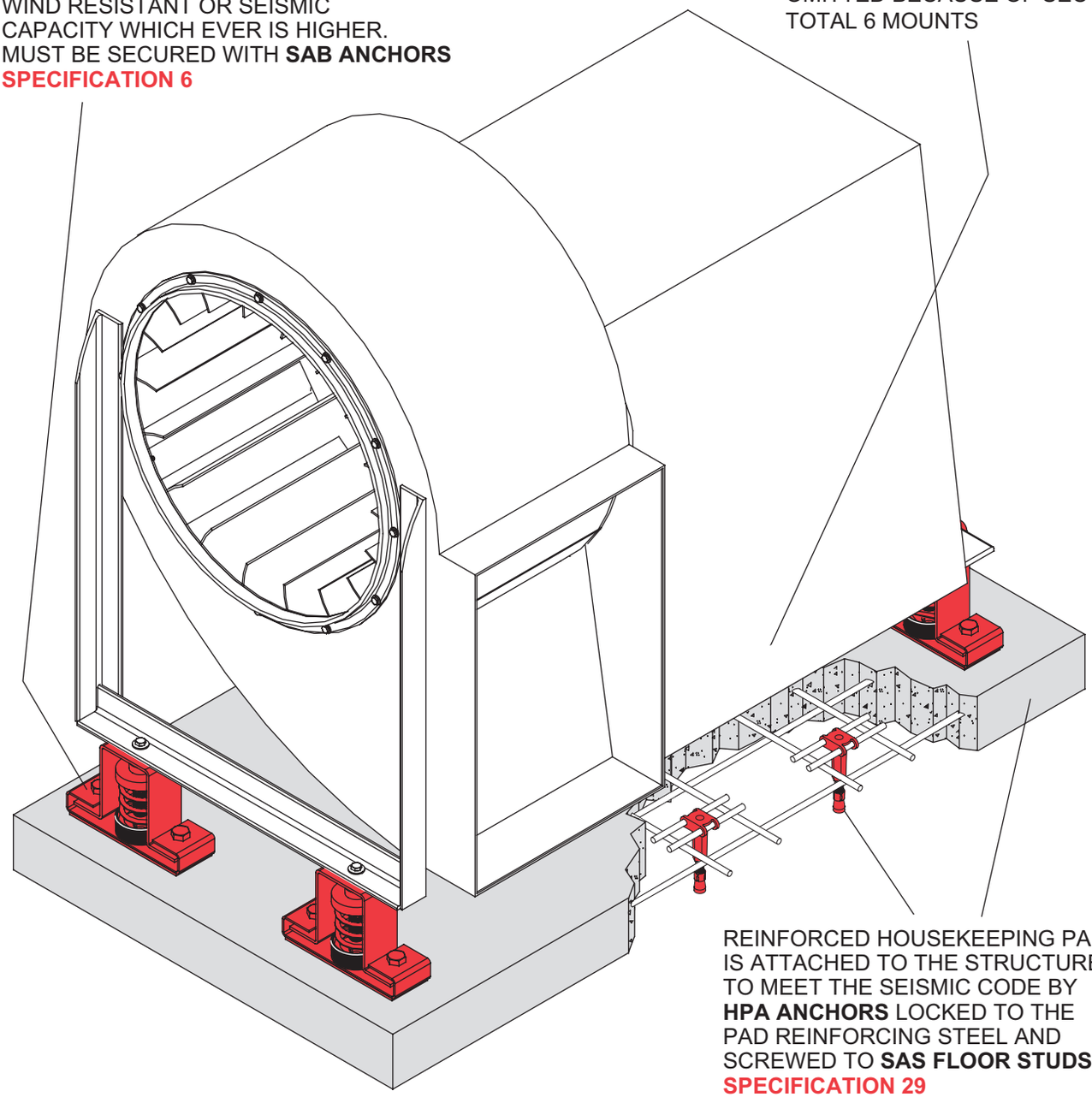
REINFORCED HOUSEKEEPING PAD
IS ATTACHED TO THE STRUCTURE
TO MEET THE SEISMIC CODE BY
HPA ANCHORS LOCKED TO THE
PAD REINFORCING STEEL AND
SCREWED TO **SAS FLOOR STUDS**.
SPECIFICATION 29

SLR-A RESTRAINED SPRING MOUNT
WITH SPECIFIED DEFLECTION,
WIND RESISTANT OR SEISMIC
CAPACITY WHICH EVER IS HIGHER.
MUST BE SECURED WITH **SAB ANCHORS**
SPECIFICATION 6

UTILITY BLOWER directly mounted on seismically restrained **SLR-A** Mounts. Reinforced housekeeping pad secured by **HPA** Anchors. Also useful for non seismic outdoor windy locations.

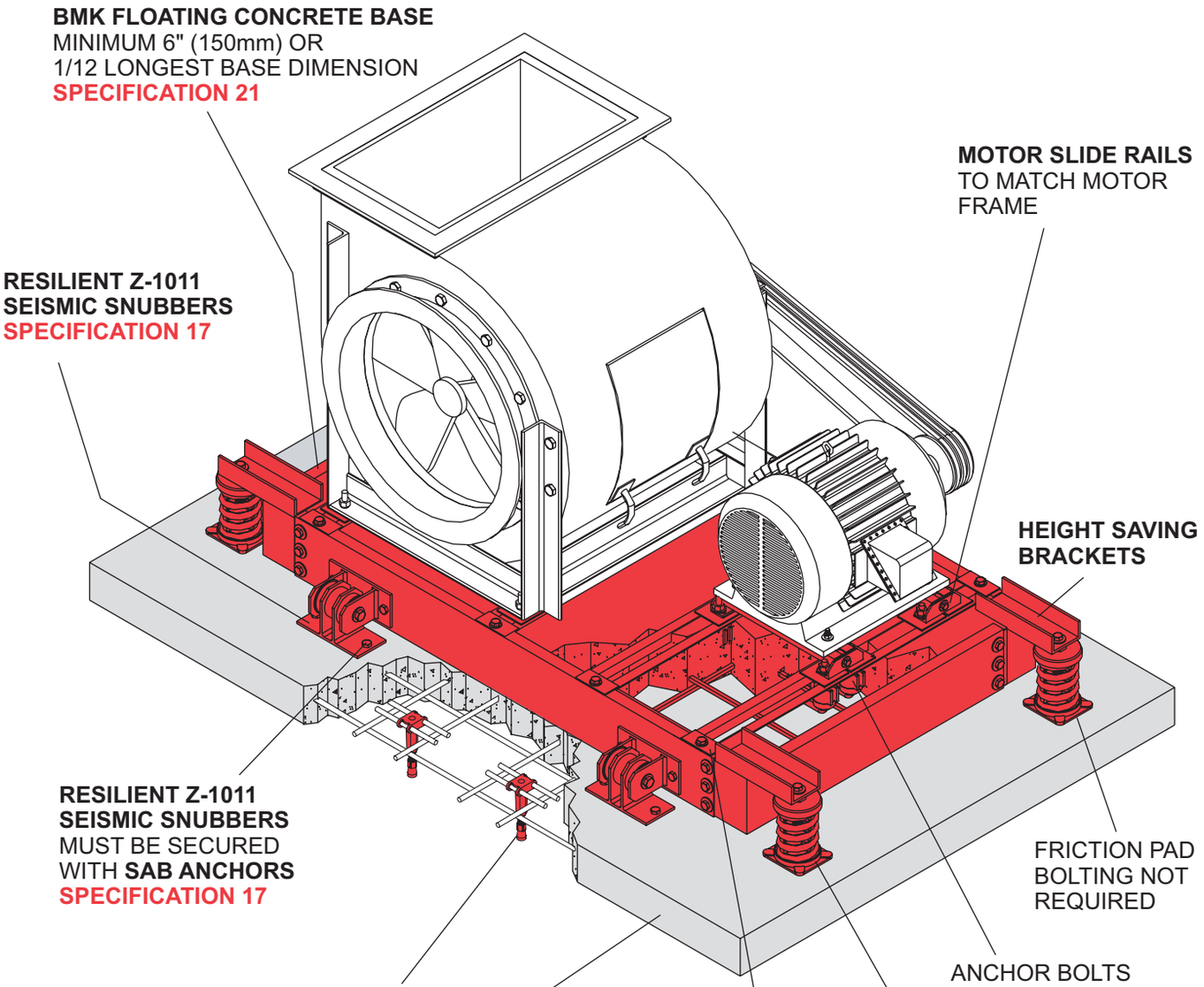
SLR-A SPRING MOUNT
WITH SPECIFIED DEFLECTION,
WIND RESISTANT OR SEISMIC
CAPACITY WHICH EVER IS HIGHER.
MUST BE SECURED WITH **SAB ANCHORS**
SPECIFICATION 6

NOTE: MOUNT LOCATION
OMITTED BECAUSE OF SECTION
TOTAL 6 MOUNTS

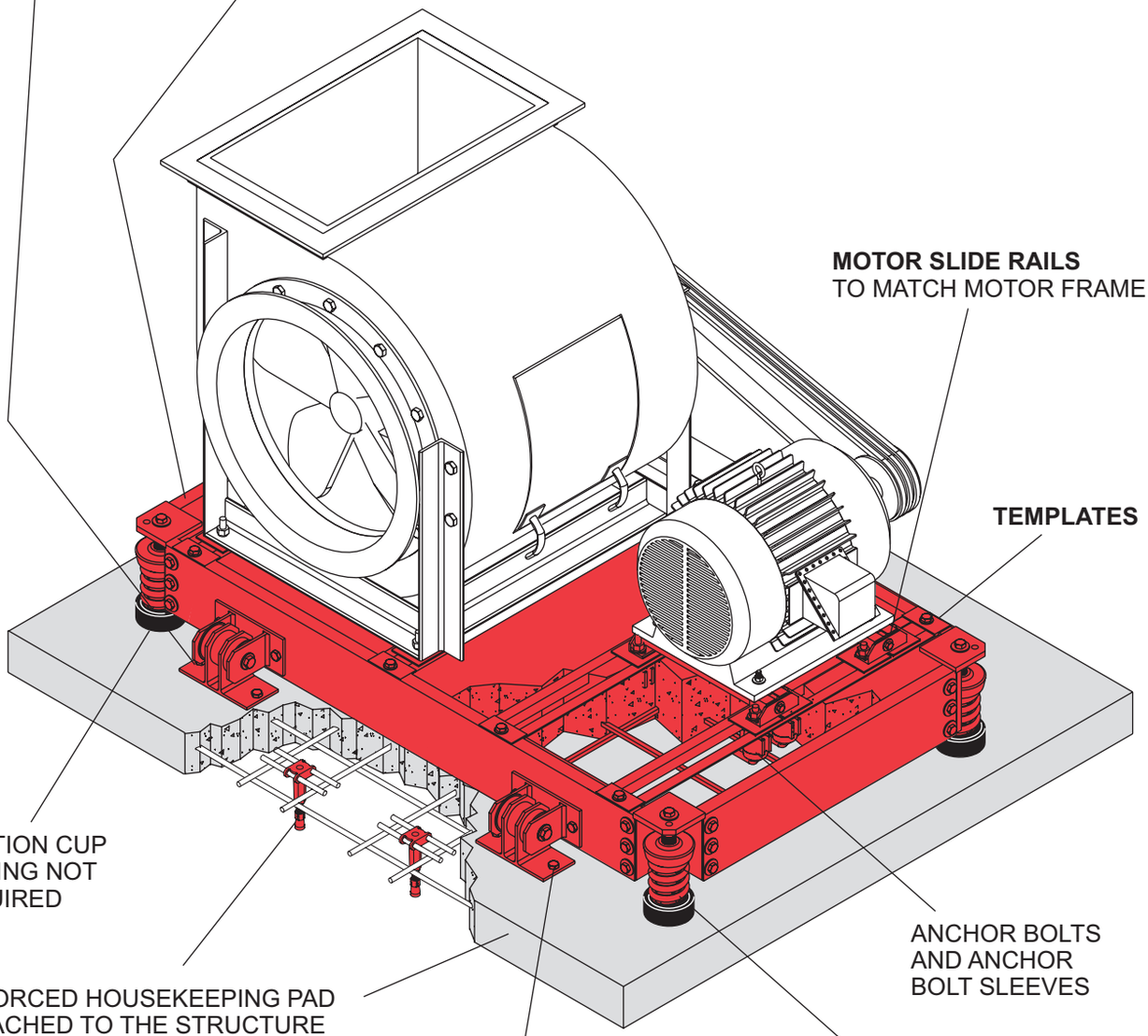


REINFORCED HOUSEKEEPING PAD
IS ATTACHED TO THE STRUCTURE
TO MEET THE SEISMIC CODE BY
HPA ANCHORS LOCKED TO THE
PAD REINFORCING STEEL AND
SCREWED TO **SAS FLOOR STUDS**.
SPECIFICATION 29

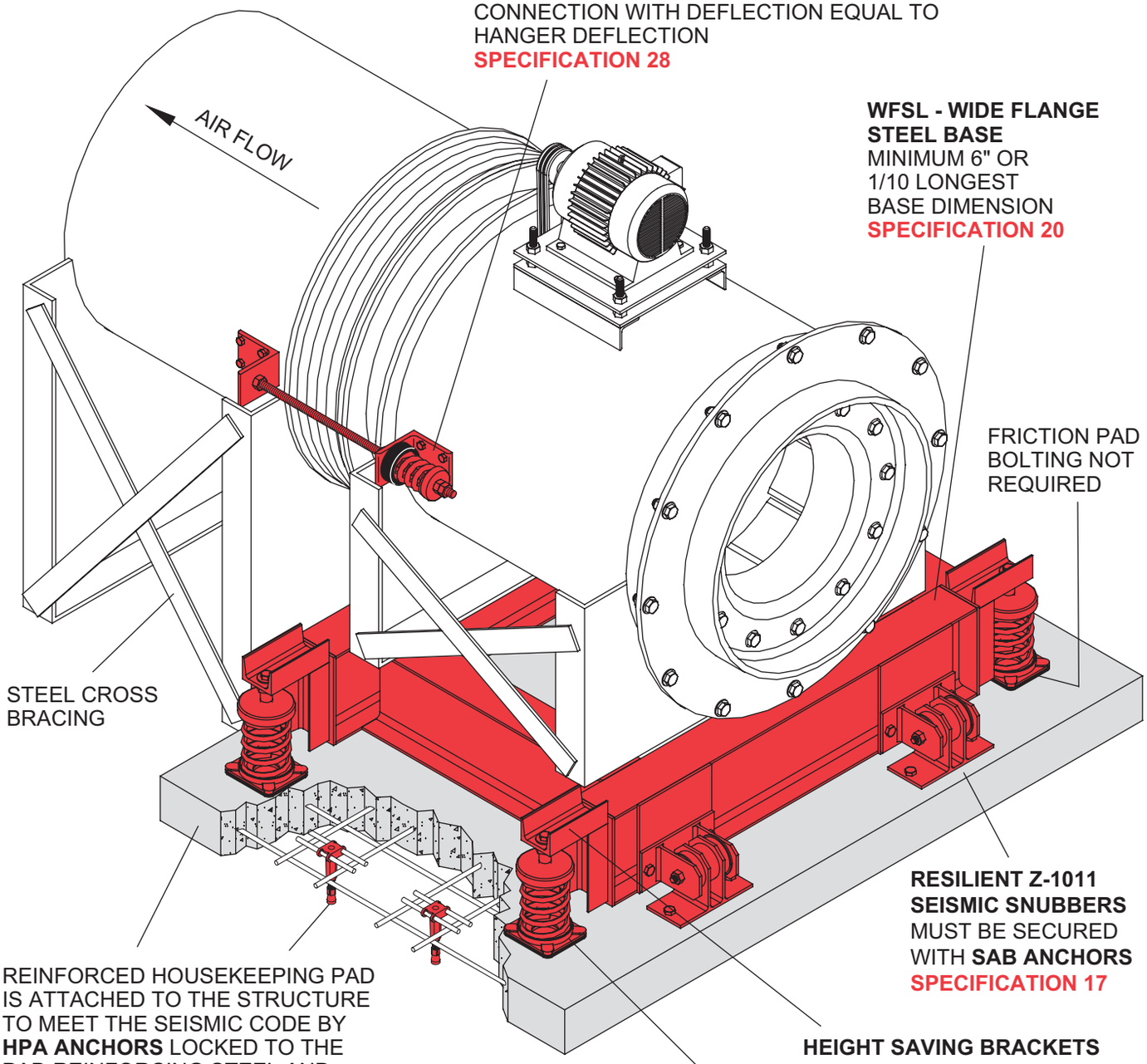
CENTRIFUGAL BLOWER on concrete filled **BMK** Base with height saving brackets, high deflection **SLF** Spring Mounts and **Z-1011** Seismic Snubbers. Reinforced housekeeping pad secured by **HPA** Anchors.



CENTRIFUGAL BLOWER on concrete filled BMK Base with built in corners, 1" deflection SLF Spring Mounts and Z-1011 Seismic Restraints. Reinforced housekeeping pad secured by HPA Anchors.



AXIAL BLOWER with WBI/WBD Thrust Restraints mounted on WFSL Base with height saving brackets, high deflection SLF Mounts and Z-1011 Seismic Restraints. Reinforced housekeeping pad secured by HPA Anchors.



WBI\WBD THRUST RESTRAINTS ACROSS FLEXIBLE CONNECTION WITH DEFLECTION EQUAL TO HANGER DEFLECTION
SPECIFICATION 28

WFSL - WIDE FLANGE STEEL BASE
MINIMUM 6" OR 1/10 LONGEST BASE DIMENSION
SPECIFICATION 20

FRICTION PAD BOLTING NOT REQUIRED

STEEL CROSS BRACING

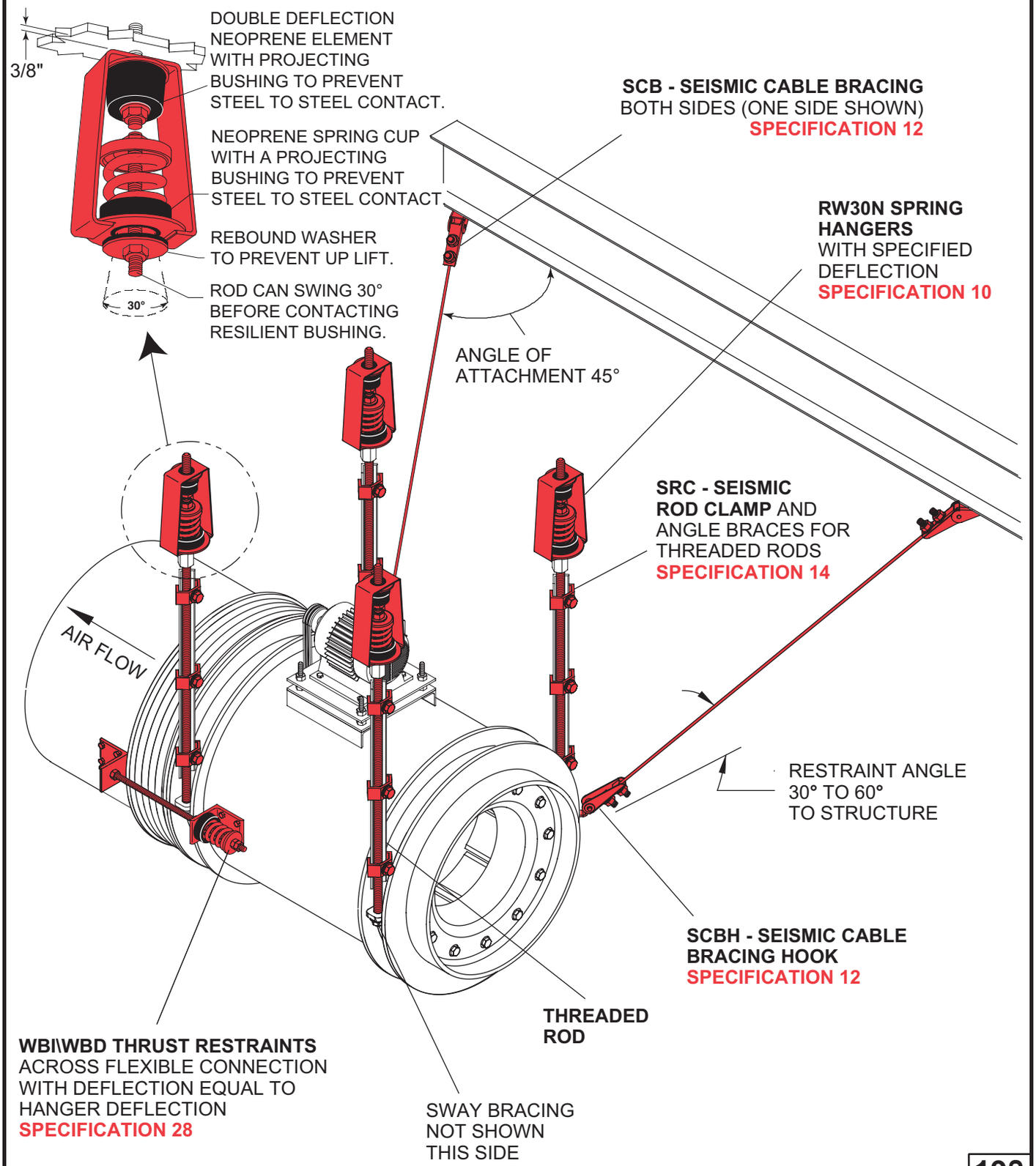
REINFORCED HOUSEKEEPING PAD IS ATTACHED TO THE STRUCTURE TO MEET THE SEISMIC CODE BY **HPA ANCHORS** LOCKED TO THE PAD REINFORCING STEEL AND SCREWED TO **SAS FLOOR STUDS**.
SPECIFICATION 29

RESILIENT Z-1011 SEISMIC SNUBBERS
MUST BE SECURED WITH **SAB ANCHORS**
SPECIFICATION 17

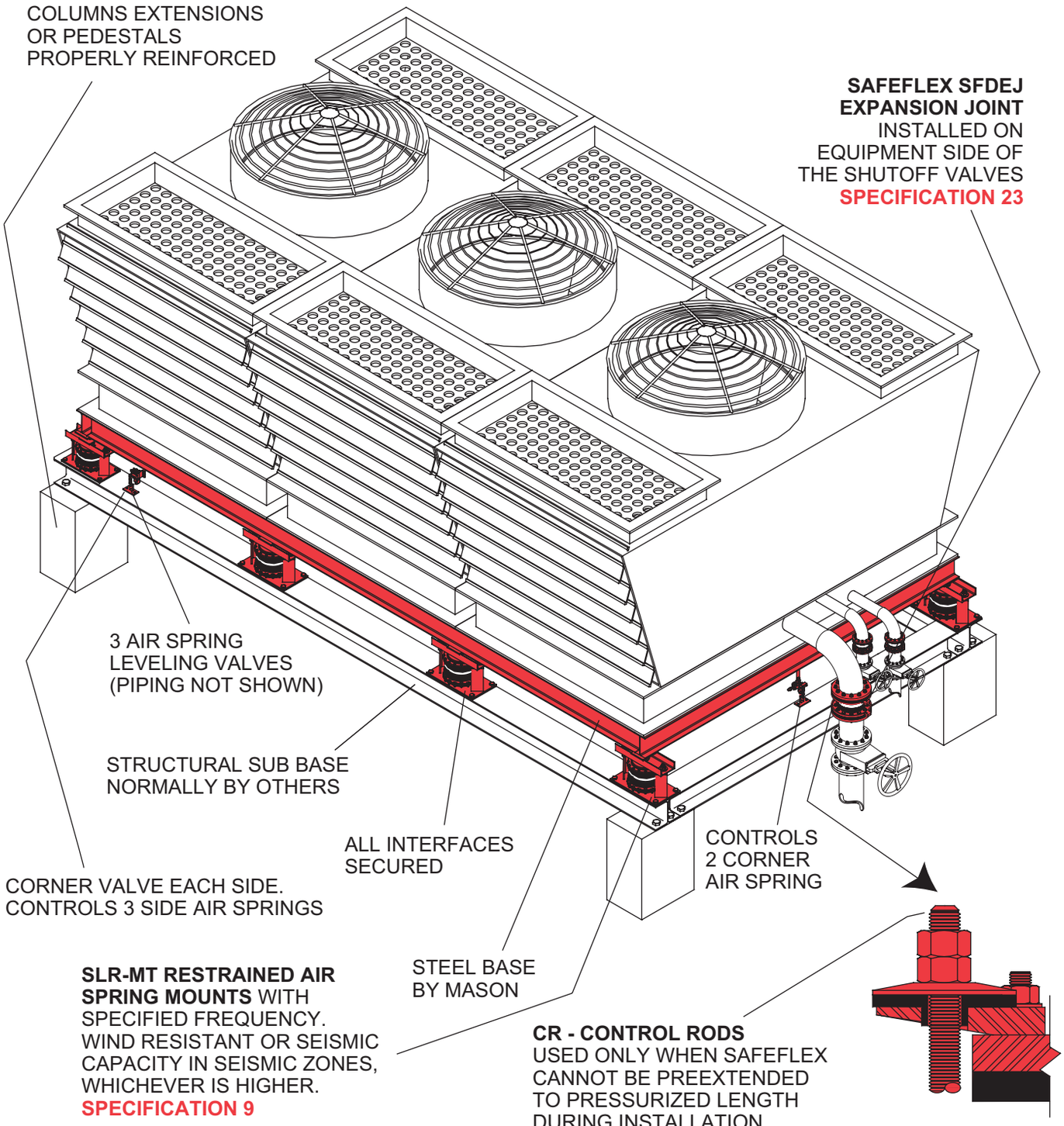
HEIGHT SAVING BRACKETS

SLF SPRING MOUNTS
WITH SPECIFIED DEFLECTION
SPECIFICATION 5

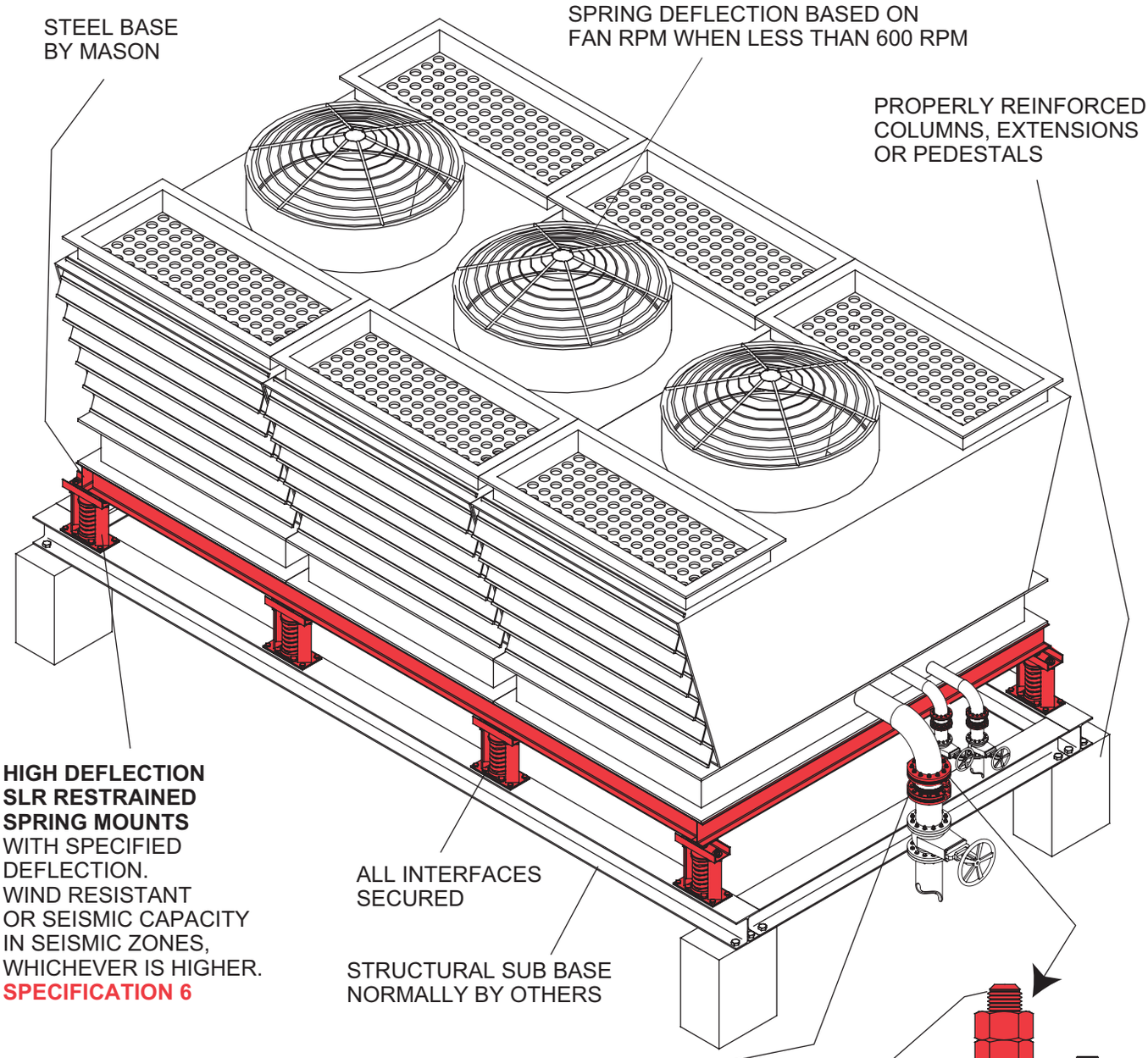
AXIAL BLOWER with WBI/WBD Thrust Restraints suspended by RW30N Hangers and restrained by SCB Cable Assemblies



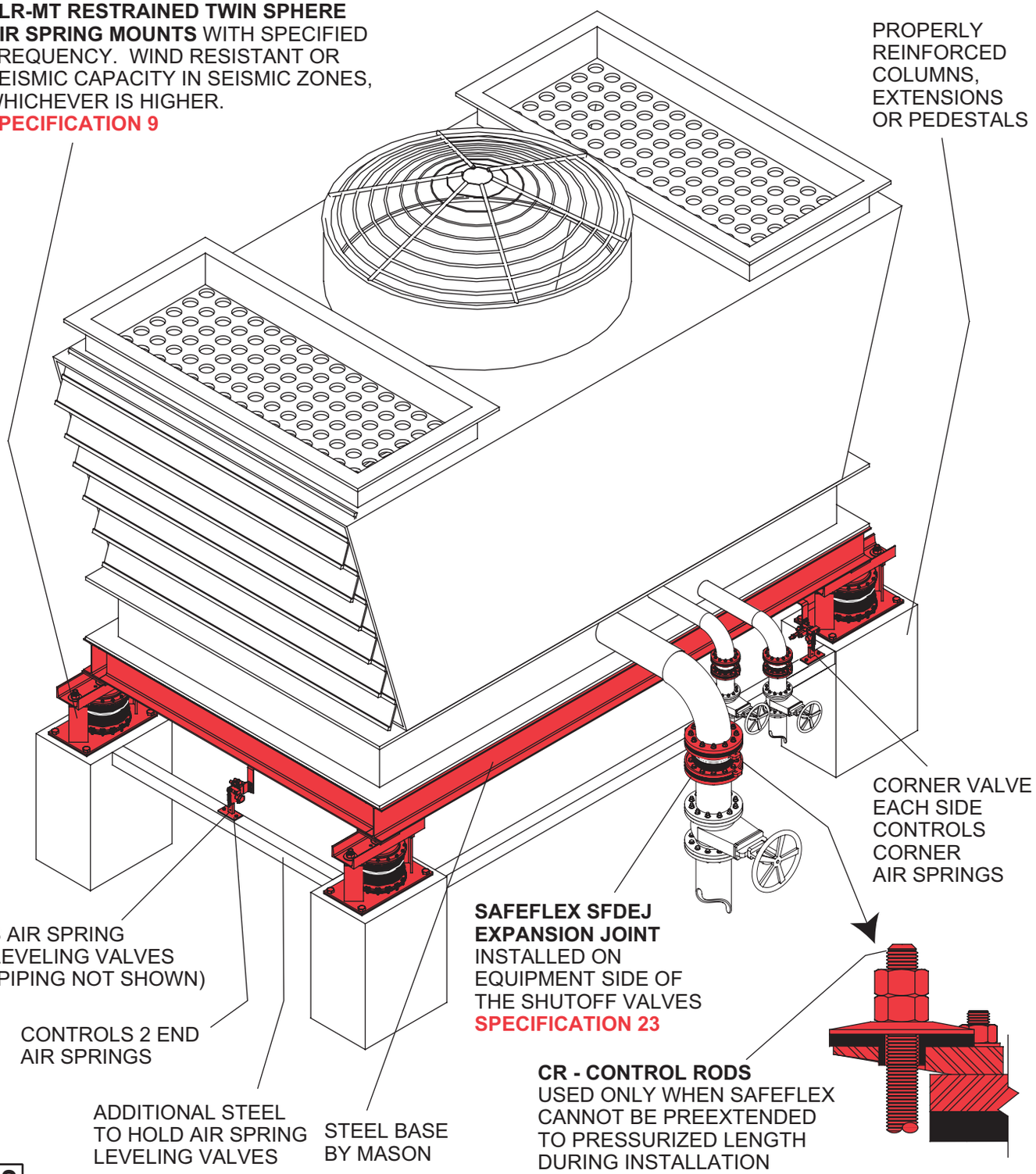
LARGE MULTI-SECTIONED COOLING TOWER secured to steel base and beam supports using **SLR-MT** Restrained Air Spring Mounts. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



LARGE MULTI-SECTIONED COOLING TOWER secured to steel base and beam supports using high deflection **SLR** Restrained Spring Mounts. **SAFEFLEX** Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



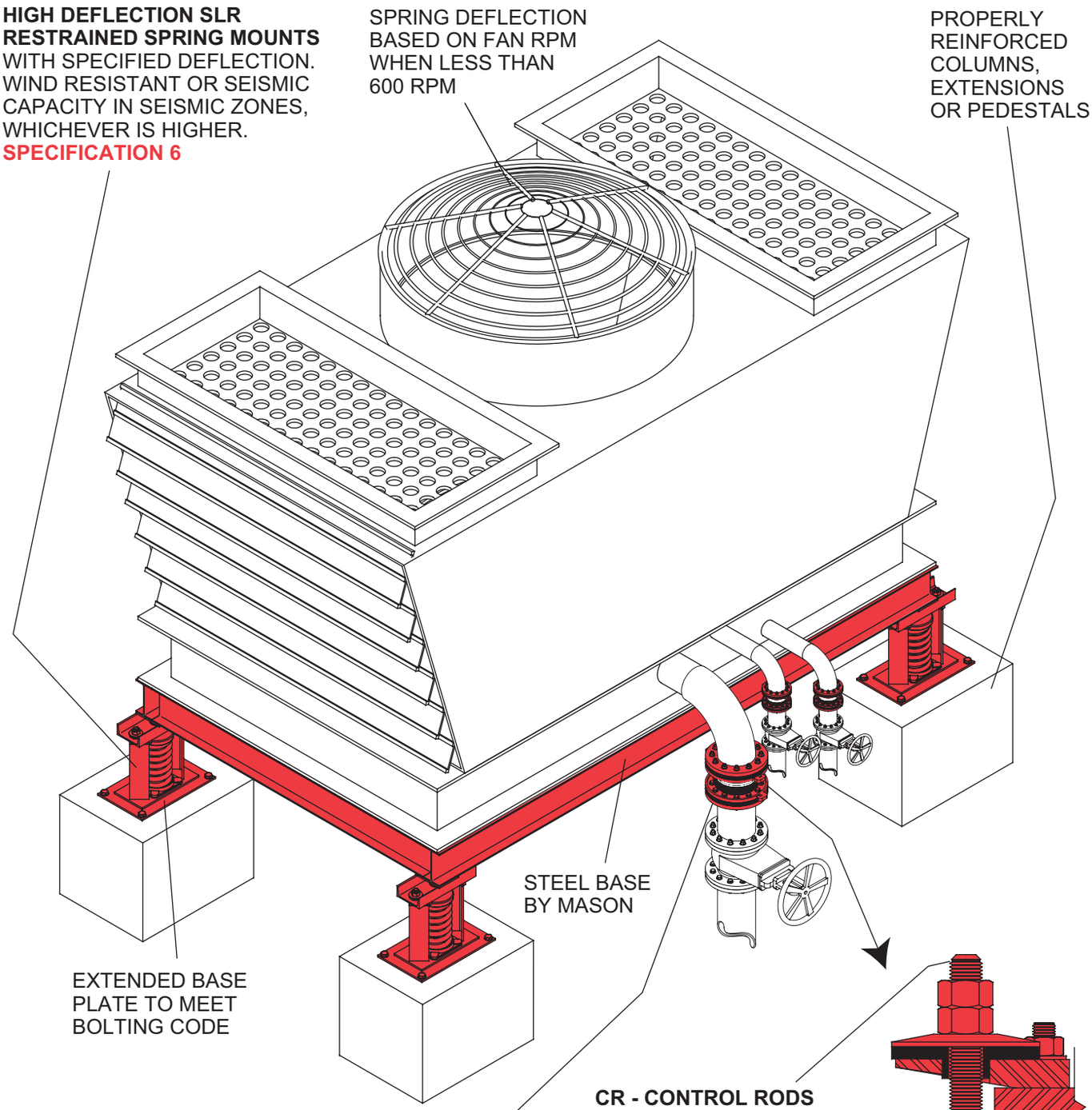
PACKAGED HVAC COOLING TOWER on steel base with SLR-MT Restrained Twin Sphere Air Spring Mounts. SAFEFLEX Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



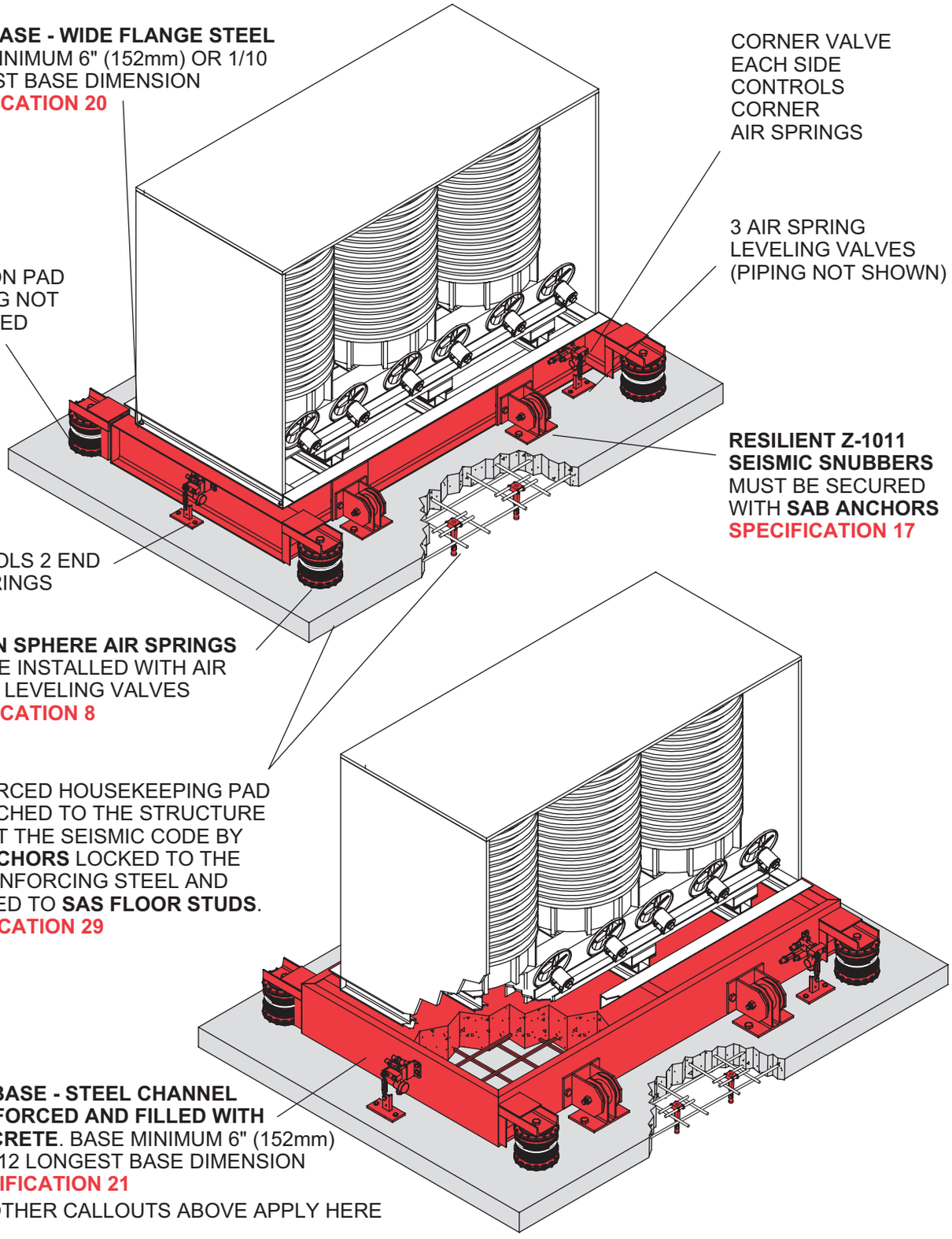
ROOFTOP PACKAGED HVAC COOLING TOWER

on steel base and **SLR** Restrained Spring Mounts.

SAFEFLEX Expansion Joints are installed in pipelines to reduce blade frequency vibration and noise and to allow for seismic displacement.



LARGE TRANSFORMER mounted on a WFSL or KSL Base supported by MT Air Spring Mounts and Z-1011 Seismic Restraints. Reinforced housekeeping pad secured by HPA Anchors. Schematic Only– Final installation to meet all safety regulations as well as electrical and other codes.



2/04
Wu1006