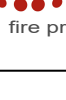


Hydraulic Information	
Remote Area 1	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft ²)	0.10 for 1500 ft ² (Actual 1535 ft ²)
TOTAL HOSE STREAMS	100.00
DRY CAPACITY	267.70 gal
TOTAL HEADS FLOWING	10
K-FACTOR	5.6
TOTAL WATER REQUIRED	278.03
TOTAL PRESSURE REQUIRED	35.538
SAFETY MARGIN (psi)	+4.712 (11.7%)



COSCO

Fire Protection

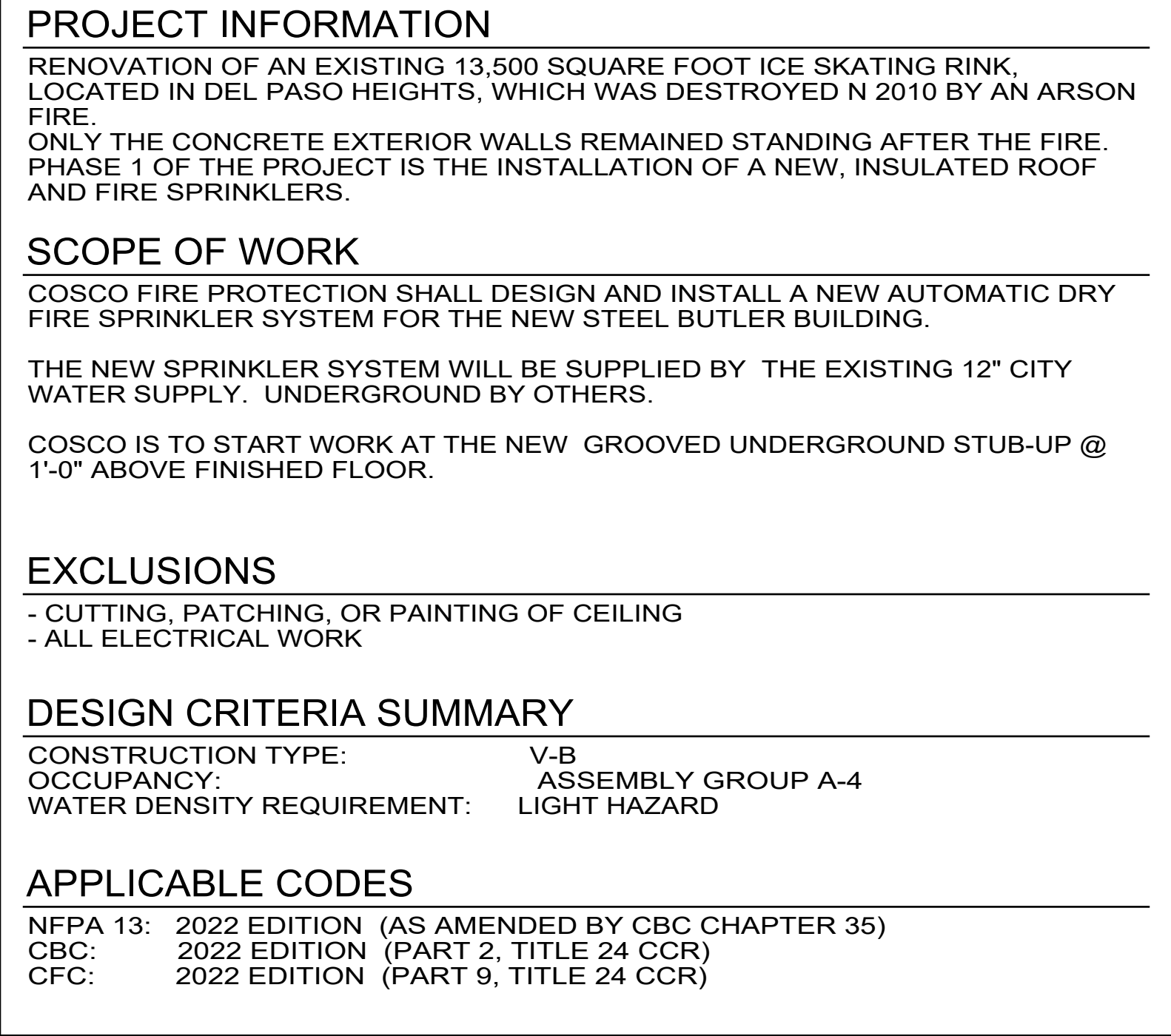
Fire protection products for all building types
 3800 Howard Road, Fremont, California 94538
 Tel: 925.461.8800 Fax: 925.461.8801
www.coscofire.com

HYDRAULIC SYSTEM

THIS BUILDING IS PROTECTED
 BY A HYDRAULICALLY RATED
 AUTOMATIC FIRE SPRINKLER SYSTEM

LOCATION	ICELAND SKATING RINK
NO. OF SPRINKLERS	10
BASIS OF DESIGN	
1. ENERGY	0.10 <small>MPH/500°F</small>
2. DESIGNED WET AND DRY OVERHEAD	15.35 <small>MPH</small>
SYSTEM DESIGN	
1. WATERFLOW RATE	278.03 <small>GPM</small>
2. PRESSURE REQUIRED AT THE HEAD OF THE RISER	35.538 <small>PSI</small>

INSTALLED BY
 COSCO FIRE PROTECTION



GENERAL NOTES

DESIGN AND INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF NFPA 13, 2022 EDITION.

ALL MATERIALS AND EQUIPMENT TO BE USED SHALL BE APPROVED FOR USE IN FIRE SPRINKLER SYSTEMS.

ALL MAINS ARE TO BE SCHEDULE 10 BLACK-STEEL PIPE WITH WELDED OUTLETS OR GROOVED FITTINGS AND COUPLINGS.

BRANCHLINES ARE TO BE SCHEDULE 10 BLACK-STEEL PIPE WITH WELDED OUTLETS OR GROOVED FITTINGS AND COUPLINGS.

ALL HANGERS SHALL BE INSTALLED PER NFPA 13 AS REQUIRED.

ALL ROOMS ARE LIGHT HAZARD UNLESS OTHERWISE NOTED.

ANY DEVIATION FROM THE DRAWINGS MUST BE APPROVED.

FIRE SPRINKLER SHEET INDEX	
FP-1.0	FIRE SPRINKLER PLAN
FP-2.0	HANGERS AND BRACING DETAILS / CALCULATIONS



1 VICINITY MAP
SCALE: NONE

[illegible][illegible]

COSCO

Fire Protection

FIRE PROTECTION AND LIFE SAFETY SPECIALISTS


SACRAMENTO DISTRICT

3850 Arlington Road
Bakersfield, CA 93306
CSL #19 (A) 562-1556 • FAX #19 (A) 625-1307

CALIFORNIA • C-14C-10
LICENSE # 57821

SAN DIEGO • LOS ANGELES • PRESNO • SACRAMENTO • PORTLAND • SEATTLE • DENVER

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PROJECT: ICELAND ICE SKATING RINK 1430 DEL PASO BLVD. SACRAMENTO, CA 95815	CONTRACT WITH: ROEBELEN CONTRACTING, INC. 1241 HAWKS FLIGHT COURT EL DORADO HILLS, CA 95762	DRAWING TITLE: COVER PAGE
DATE : 05/29/24	SCALE : AS NOTED	
DRAWN BY : B. GONZALES		
JOB NO: 23RD2372		
SHEET NO: FP-1.0		
		



(PER NFPA 13, 2022 ed., SECTION 18.6)

FRANCH LINE RESTRAINT SHALL BE PROVIDED BY THE USE OF ONE OF THE FOLLOWING:

- a. LISTED WYRE BRACE ASSEMBLY (SEE SEISMIC BRACING DETAILS)
- b. WRAPAROUND U-HOOK SATISFYING THE REQUIREMENTS OF SECTION 18.5.11
- c. NO. 12, 440 LB WIRE INSTALLED AT LEAST 45° FROM VERTICAL PLANE AND ANCHORED ON BOTH SIDES OF THE PIPE. WIRE RESTRAINT SHALL BE LOCATED WITHIN 24" OF A HANGER PER SECTION 18.6.2
- d. A HANGER NOT LESS THAN 45° FROM VERTICAL INSTALLED WITHIN 6" OF THE VERTICAL PLANE AND ANCHORED TO THE STRUCTURE RESTRAINT ANCHORED UPWARD MOVEMENT, PROVIDED IT IS UTILIZED SUCH THAT IT/ DO NOT EXCEED 400 LB. WHERE THE ROD SHALL EXTEND TO THE PIPE OR HAVE A SURGE CLIP INSTALLED

2. THE END SPRINKLER ON A LINE SHALL BE RESTRAINED AGAINST EXCESSIVE VERTICAL AND LATERAL MOVEMENT PER SECTION 18.6.3.
3. BRANCH LINES SHALL BE LATERALLY RESTRAINED AT INTERVALS NOT EXCEEDING THOSE SPECIFIED IN TABLE 18.6.4(a) BASED ON BRANCH LINE DIAMETER AND THE VALUE OF C_p (PER SECTION 18.6.4 AND TABLE 18.6.4(a)).

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1. EARTHQUAKE BRACING SHALL BE PROVIDED PER NFPA 13, 2022 EDITION, SECTION 18.5.
2. LOADS ARE DETERMINED BY ANALYSIS PER SECTION 18.5.1.3
3. LONGITUDINAL BRACES SHALL BE ALLOWED TO ACT AS LATERAL BRACES WHERE THEY ARE INSTALLED WITHIN 24" OF PIPING WHICH IS BRACED Laterally AND VICE VERSA PER SECTION 18.5.5.8 & SECTION 18.5.6.3.
4. EACH RUN OF PIPE REQUIRES A MINIMUM OF TWO LATERAL BRACES, ONE AT EACH END OF THE RUN.
5. THE MAXIMUM OFFSET ALLOWED IN A RUN OF PIPE IS 24".
6. A VERTICAL SEISMIC BRACE (VSB) SHALL BE PLACED WITHIN 6" OF ALL LATERAL AND LONGITUDINAL BRACES.



1. ALL HANGER ASSEMBLIES ARE PER NFPA 13 & MANUFACTURER DETAILS.
2. PER CBC AND NFPA 13 THE BUILDING STRUCTURE MUST BE CAPABLE OF SUPPORTING THE ADD LOAD OF THE WATER FILLED PIPE PLUS A MINIMUM OF 250 lbs.
3. HANGER SPACING SHALL BE PER NFPA 13 TABLE 17.4.2.1(a).

- 17.4.4.1 Unless the requirements of 17.4.4.2 through 17.4.4.7 are met, hangers for mains shall be in accordance with 17.4.2, between each branch line or on each section of pipe, whichever is the lesser dimension.

17.4.4.2: For welded or mechanical outlets on a continuous section of pipe, hanger spacing shall be according to Table 17.4.2.1(a).

17.4.4.3: For cross mains in steel pipe systems in bays having two branch lines, the intermediate hanger shall be permitted to be omitted provided that a hanger attached to a purlin is installed on each branch line located as near to the cross main as the location of the purlin permits. Remaining branch line hangers shall be installed in accordance with 17.4.3.

17.4.4.4: For cross mains in steel pipe systems only in bays having three branch lines, either side or center feed, one (only) intermediate hanger shall be permitted to be omitted provided that a hanger attached to a purlin is installed on each branch line located as near to the cross main as the location of the purlin permits. Remaining branch line hangers shall be installed in accordance with 17.4.3.

17.4.4.5: For cross mains in steel pipe systems only in bays having four or more branch lines, either side or center feed, two intermediate hangers shall be permitted to be omitted provided the maximum distance between hangers does not exceed the distance specified in 17.4.2 and a hanger attached to a purlin on each branch line is located as near to the cross main as the purlin permits.

17.4.4.7: A single section of pipe shall not require a hanger when the cumulative distance between hangers on the main does not exceed the spacing required by Table 17.4.2.1(a).

