



WATER FLOW TEST INFORMATION	
STATIC (PSI)	95
RESIDUAL (PSI)	32
FLOW (GPM)	839
DATE:	12/06/2013
TIME:	10:45 am
TEST LOCATION: VA MATHER - MEDICAL SPECIALTES	
BLDG 648, 10533 HOSPITAL WAY, MATHER, CA	
OBTAINED FROM: MARQUEE FIRE PROTECTION	



1. INFORMATION SHOWN IS FOR REFERENCE OF HYDRAULIC DESIGN INFORMATION ONLY.
DESIGN AND INSTALLATION IS BY OTHERS.
2. U.G. PIPING SHALL BE FLUSHED AND TESTED (BY OTHERS) BEFORE TIE-IN.

SHEET INDEX

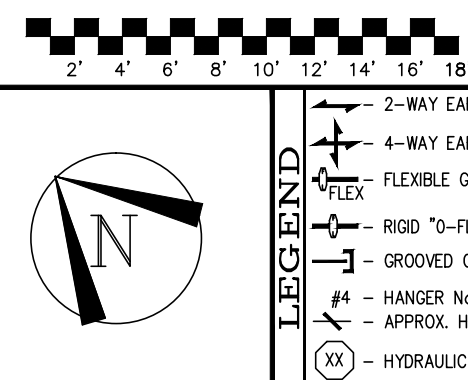
FP-1 - FIRE SPRINKLER SITE PLAN
FP-2 - FIRE SPRINKLER 1ST FLOOR PLAN
FP-3 - FIRE SPRINKLER 2ND FLOOR PLAN

GENERAL NOTES

1. THE AUTOMATIC SPRINKLER SYSTEM SHALL CONFORM TO THE REQUIREMENTS OF THE 2010 EDITION OF NFPA 13.
2. PENETRATIONS OF RATED ASSEMBLIES SHALL BE FIRE STOPPED. (SEE DETAIL)
3. MARQUEE FIRE PROTECTION TO PROVIDE FIRE SPRINKLER DESIGN SERVICES FOR THE NEW MEDICAL SPECIALTIES BUILDING.
4. ALL ELECTRICAL WIRING TO BE PERFORMED BY OTHERS.
5. ARMOVERS LONGER THAN 24" SHALL BE PROVIDED WITH A HANGER.
6. THE NEW SYSTEM IS HYDRAULICALLY CALIBRATED. (SEE PIPING PLAN)
7. NEW PIPING SHALL BE SUPPLIED FROM 4" UNDERGROUND.
8. UPON COMPLETION, THE OVERHEAD SYSTEM SHALL BE TESTED AT 200 PSI FOR TWO (2) HOURS. (BEFORE TIE-IN)
9. BUILDING CONSTRUCTION IS OF NON-COMBUSTIBLE CONSTRUCTION.
10. OWNER: DEPARTMENT OF VETERAN AFFAIRS
NETWORK CONTRACTING OFFICE 21
5342 DUDLEY BLVD., BLDG 209
MCLELLAN PARK, CA 95652
11. FOR INSPECTION CALL:
12. EXCLUSIONS (WORK BY OTHERS):
 1. Fire Alarm Design.
 2. Fire Extinguishing Cabinets Design.

DESIGN BUILD PROJECT:
DESIGN IS BASED UPON ISSUED CONTRACT DOCUMENTS
DATED: 1 / 17 / 2013. MARQUEE FIRE PROTECTION DESIGN
IS BASED ON ALL APPLICABLE CODES. MARQUEE FIRE
PROTECTION IS NOT RESPONSIBLE FOR ARCHITECTS AND
OWNER CHANGES.

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF MARQUEE FIRE PROTECTION AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF MARQUEE FIRE PROTECTION. AS A C-16 CONTRACTOR, OUR ERRORS AND OMISSIONS INSURANCE REQUIRES US TO INSTALL THE FIRE SPRINKLER SYSTEM WE DESIGN.



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00 = TOTAL SPRINKLERS THIS SHEET

VA MEDICAL SPECIALTIES BUILDING 648 - Mather Campus
10535 Hospital Way, Mather, CA. 95655

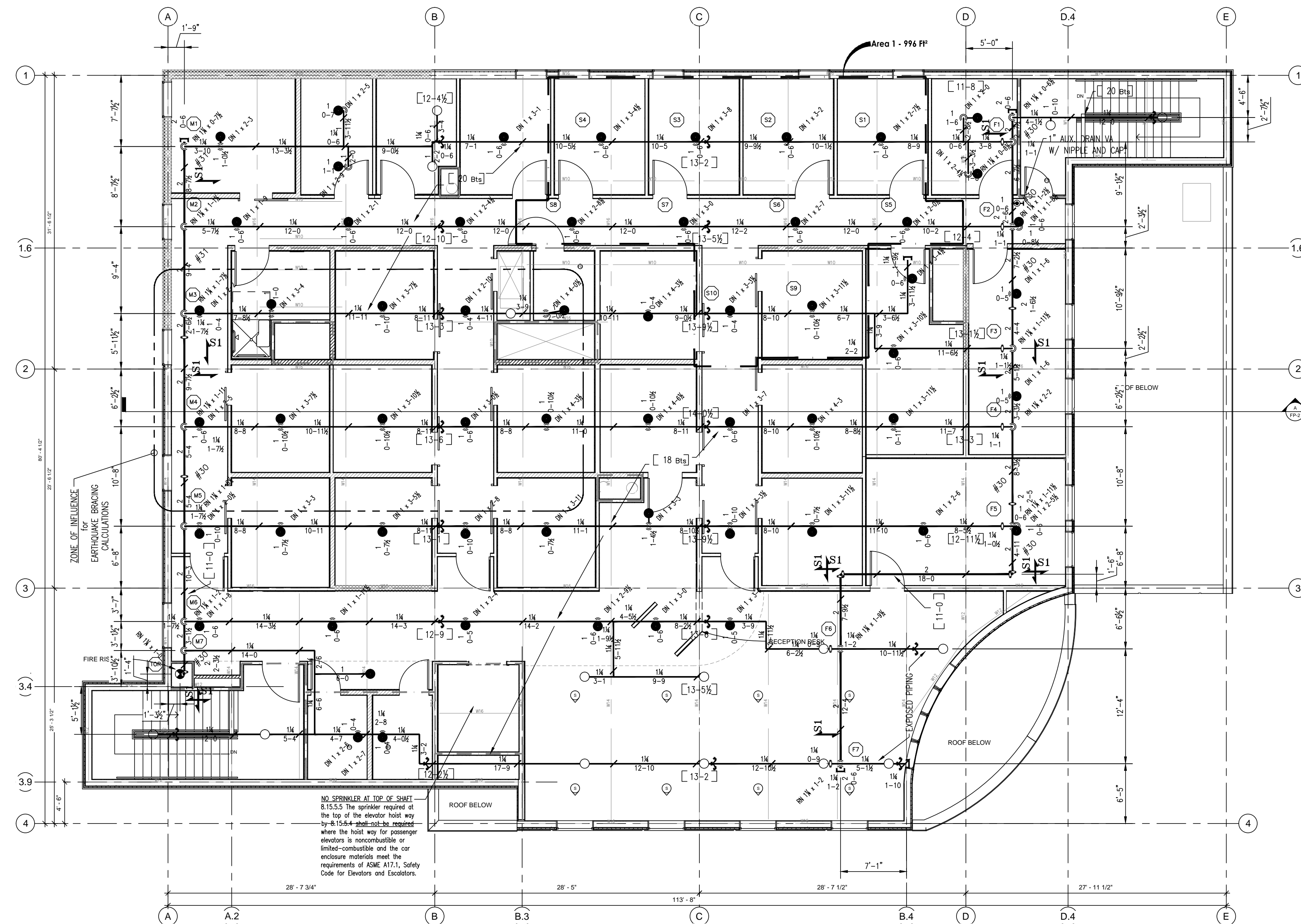
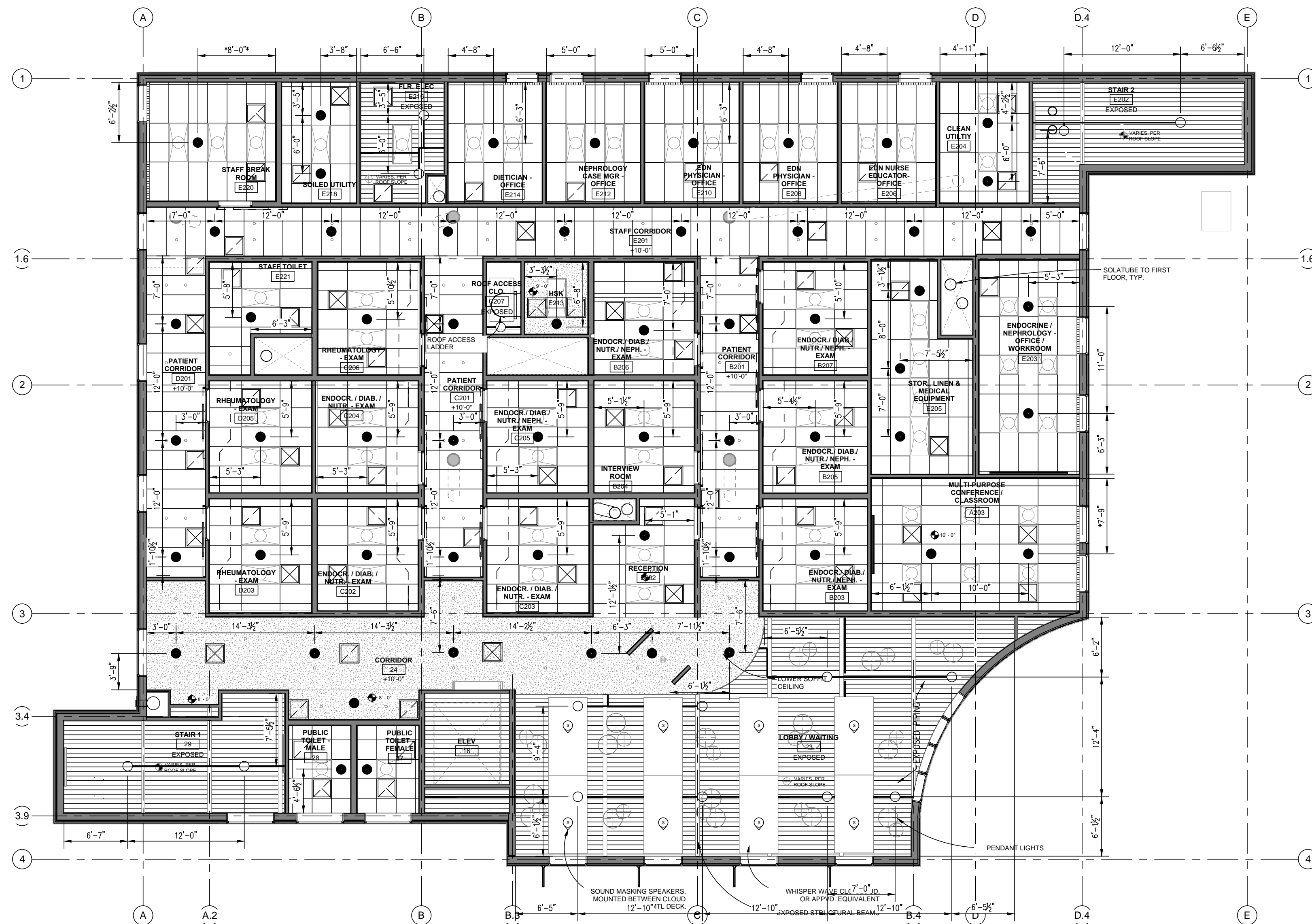
PROJECT NO: 612-122

SITE PLAN



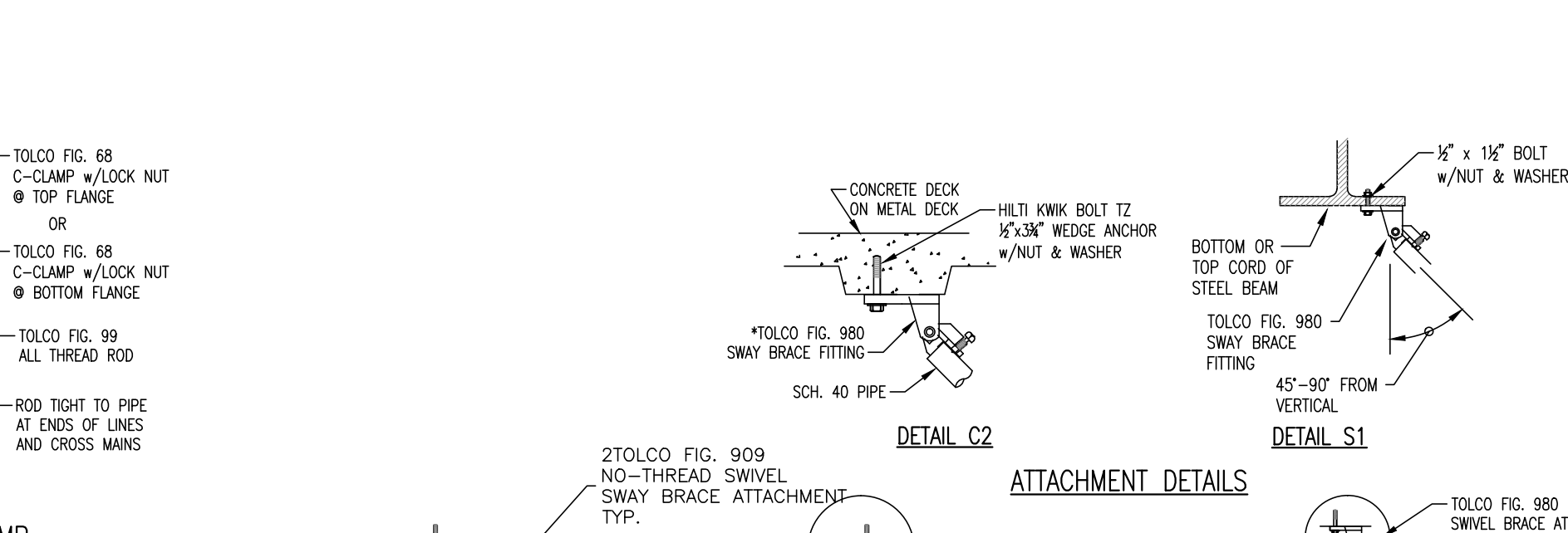
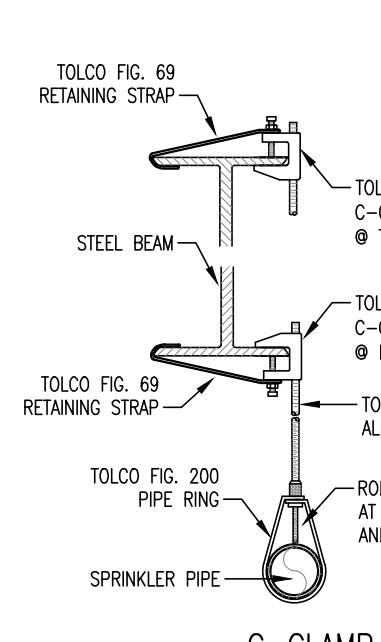
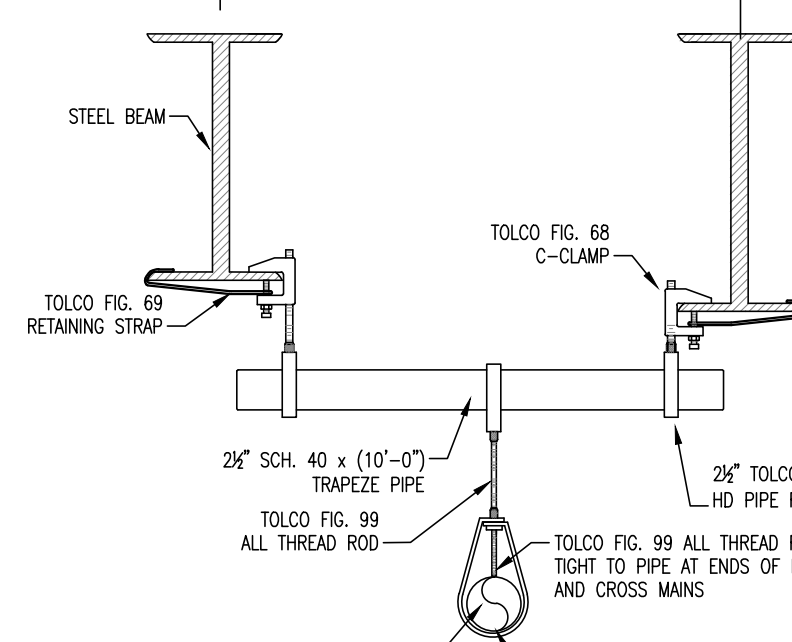
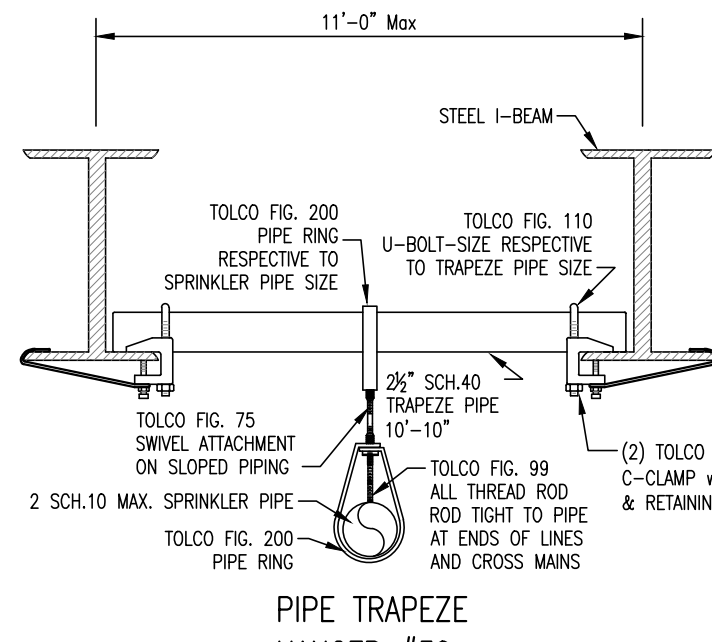
Date:	05/12/14
Contract With:	Syska Hennessy Group
Scale:	$1/16" = 1'-0"$
Drawn:	Tom Hintz
Job No:	1812-951
Sheet:	FP-1
	Of 3 Sheets

100% CONSTRUCTION DOCUMENTS



REFLECTED CEILING PLAN

- PENDENT SPRINKLERS ARE NOT NECESSARILY INTENDED TO BE CENTER OF CEILING TIERS.
- SPACING OF PENDENT SPRINKLERS IS FOR LIGHT HAZARD PER NFPA 13.
- PENDENT SPRINKLERS SHALL BE CHROME WITH CHROME SEMI-RECESSED ESCUTCHEONS.
- PENDENT SPRINKLERS SHALL BE CHROME WITH WHITE 2-PIECE CANOPY ESCUTCHEONS WHERE SURFACE MOUNTED FIXTURES ARE PRESENT AND MINIMUM DISTANCES AWAY FROM THE OBSTRUCTION CAN NOT BE MET.
- * - INDICATES APPLICATION OF "SMALL ROOMS" RULE PER NFPA 13.
- ===== INDICATES 1 HR RATED WALLS.
- ALL CEILINGS TO BE AT +9'-0" ABOVE FINISH FLOOR UNLESS NOTED OTHERWISE.



EARTHQUAKE BRACING NOTES

- EARTHQUAKE BRACING SHALL BE PROVIDED PER NFPA 13, 2010 ed., SECTION 9.3.5.
- LOADS ARE DETERMINED BY ANALYSIS PER 9.3.5.3 (SEE ANNEX E & CALCULATIONS).
- 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 9.3.5.3 & 9.3.5.4.2.
- EACH RUN OF PIPE BETWEEN A CHANGE IN DIRECTION SHALL BE PROVIDED WITH BOTH LATERAL AND LONGITUDINAL BRACING. EXCEPTION: PIPE RUNS LESS THAN 12 FT. PER 9.3.5.1.1.3.

BRANCH LINE RESTRAINT NOTES

- BRANCH LINE RESTRAINT SHALL BE PROVIDED BY THE US OF ONE OF THE FOLLOWING (PER NFPA 13, 2010 ed., SECTION 9.3.6):
 - A LISTED SWAY BRACE ASSEMBLY (SEE SEISMIC BRACING DETAILS).
 - No. 12, 440 LB WIRE INSTALLED AT LEAST 45" FROM THE VERTICAL PLANE AND ANCHORED ON BOTH SIDES OF THE PIPE. WIRE RESTRAINT SHALL BE LOCATED WITHIN 24" OF A HANGER PER 9.3.6.2.
 - A HANGER NOT LESS THAN 45" FROM VERTICAL INSTALLED WITHIN 6" OF THE VERTICAL HANGER ARRANGED FOR RESTRAINT AGAINST UPWARD MOVEMENT. PROVIDED IT IS UTILIZED SUCH THAT 1/4" DOES NOT EXCEED 400, WHERE THE ROD SHALL EXTEND TO THE PIPE OR HAVE A SURGE CLIP INSTALLED. MAX LENGTH OF 3/8" ROD = 30"
- THE END SPRINKLER ON A LINE SHALL BE RESTRAINED AGAINST EXCESSIVE VERTICAL AND LATERAL MOVEMENT PER 9.3.6.3.
- BRANCH LINES SHALL BE LATERALLY RESTRAINED AT INTERVALS NOT EXCEEDING THOSE SPECIFIED IN TABLE 9.3.6.4(a) BASED ON BRANCH LINE DIAMETER AND THE VALUE OF Cp (PER 9.3.6.4 AND TABLE 9.3.6.4(a)). Cp = 40
- WHERE BRANCH LINES ARE SUPPORTED BY ROIDS LESS THAN 6" LONG MEASURED BETWEEN THE TOP OF THE PIPE AND THE POINT OF ATTACHMENT TO THE STRUCTURE, BRANCH LINE RESTRAINT SHALL NOT BE REQUIRED PER 9.3.6.5.
- SPRINGS 4 FT OR LONGER SHALL BE RESTRAINED AGAINST LATERAL MOVEMENT.
- DROPS AND ARMORS SHALL NOT REQUIRE RESTRAINT.

PIPING PLAN

- AT UNOBSTRUCTED CONSTRUCTION SPRINKLER DEFLECTOR SHALL BE BETWEEN 1" AND 12" BELOW THE BOTTOM OF THE CEILING. AT OBSTRUCTED CONSTRUCTION SPRINKLER DEFLECTOR SHALL NOT EXCEED 22" BELOW THE BOTTOM OF THE FRAMING. (DEFLECTOR SHALL NOT EXCEED 22" BELOW THE DECK.)
- MAIN PIPING SHALL HANG AT 11'-0" CENTERLINE ABOVE FINISH FLOOR LINE PIPING SHALL HANG AT 4" CENTERLINE BELOW THE BOTTOM OF THE FRAMING. (SEE PLAN FOR CALL OUT)
- HANGERS SHALL BE #7 (3/8") BEAM CLAMP WITH RETAINER STRAP, ROD AND PIPE RING. HANGERS WHERE NO BEAM IS PRESENT SHALL BE TRAPEZE TYPE. (SEE HANGER DETAILS)
- DROPS TO SPRINKLERS SHALL BE 1" x 1'-0" WITH 1" x 3/4" R.C. (UNO)
- MAIN PIPING SHALL BE SCHEDULE 10 STEEL (THINWALL) AND SHALL BE ROLL GROOVED PER NFPA 13. LINE PIPING SHALL BE SCHEDULE 40 STEEL (STANDARD) AND SHALL BE GROOVED OR THREADED PER NFPA 13.

CALCULATION DESIGN INFORMATION

SYSTEM: 1 - AREA NO. 1	
QUICK RESPONSE SPRINKLER: YES	
SYSTEM TYPE:	WET
K-FACTOR:	5.6
HAZARD:	LIGHT
AREA FOR SPRINKLER (F1):	225
AREA FOR SPRINKLER (F1):	225
AREA OF OPERATION (F1):	1500
AREA OF OPERATION ADJUSTED AS FOLLOWS:	
PIPE INCREASE (20%):	N/A
CEILING HEIGHT:	+14'-0"
CEILING HEIGHT:	55 = 34.0%
CEILING HEIGHT:	1500 x 34.0 = 510 Sq. Ft.
ALL AREA OF OPERATION (F1):	979

AREA ADJUSTMENT

DESIGN AREA REDUCTION FOR SPRINKLERS	
CEILING HEIGHT:	+14'-0"
CEILING HEIGHT:	55 = 34.0%
CEILING HEIGHT:	1500 x 34.0 = 510 Sq. Ft.
ALL AREA OF OPERATION (F1):	979

WATER SUPPLY

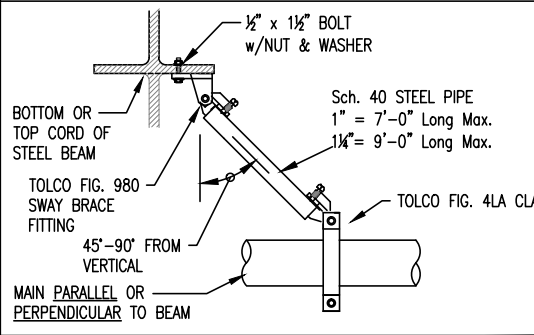
STATIC (PSI):	35.0
RESIDUAL (PSI):	32.0
FLOW (GPM):	430
PUMP (GPM @ PSI):	N/A
PS REQUIRED:	44.252
PS AVAILABLE:	33.632
GPM AVAILABLE:	332.632
SAFETY MARGIN:	23.1%
HOSE STREAM DEMAND (GPM):	100
NOSE:	N/A
OUTSIDE:	100
LOCATION:	Second Floor

DESIGN BUILD PROJECT:

DESIGN IS BASED UPON ISSUED CONTRACT DOCUMENTS DATED: 1/17/2013. MARQUEE FIRE PROTECTION DESIGN IS BASED ON ALL APPLICABLE CODES. MARQUEE FIRE PROTECTION IS NOT RESPONSIBLE FOR ARCHITECTS AND OWNER CHANGES.

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF MARQUEE FIRE PROTECTION AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF MARQUEE FIRE PROTECTION. AS A C-16 CONTRACTOR, OUR ERRORS AND OMISSIONS INSURANCE REQUIRES US TO INSTALL THE FIRE SPRINKLER SYSTEM WE DESIGN.

SEISMIC BRACING CALCULATIONS (PER NFPA 13)						
MARQUEE FIRE PROTECTION 710 WEST STADIUM LANE SACRAMENTO, CA 95834 PHONE: (916) 641-7997 FAX: (916) 641-0775 DESIGNER: Mel Davis			DATE: 12/19/13 SHEET 1 OF 1 PROJECT: VA Medical Specialties Bldg 648 ADDRESS: 10535 Hospital way Mather, Ca. 95655			
SEISMIC BRACE IDENTIFICATION No. S1						
REFERENCE PLANS:						
LATERAL BRACE: X						
LONGITUDINAL BRACE: X						
BRACE INFORMATION						
LENGTH OF SWAY BRACE: 7'-0"						
DIAMETER OF SWAY BRACE: 1"						
TYPE OF BRACE: SCH. 40						
ANGLE OF BRACE: 45°-30'						
LEAST RADIUS OF GYRATION: .421						
L/R VALUE: .200						
MAXIMUM HORIZONTAL LOAD: 1310 lbs.						
FASTENER INFORMATION						
ORIENTATION OF CONNECTING SURFACE: B						
FASTENER TYPE: CONNECTION TO STEEL						
DIAMETER: 1/2"						
LENGTH: 2.00						
MAXIMUM LOAD: 2050 lbs.						
SPRINKLER SYSTEM LOAD CALCULATION (Fp=W+Cp/Wp)						
PIPE DIAMETER	PIPE TYPE	PIPE LENGTHS	WEIGHT PER FT	TOTAL LENGTH (Wp)	COEFFICIENT (Cp)	TOTAL WEIGHT (Fp+W)
1"	SCH. 40	0	2.05	0.00	.4	0.00
1 1/2"	SCH. 40	0	2.93	0.00	.4	0.00
1 1/2"	SCH. 40	0	3.61	0.00	.4	0.00
2"	SCH. 40	80	5.13	410.40	.4	164.16
2 1/2"	SCH. 10	0	5.89	0.00	.4	0.00
3"	SCH. 10	0	7.94	0.00	.4	0.00
4"	SCH. 10	0	11.78	0.00	.4	0.00
6"	SCH. 10	0	23.03	0.00	.4	0.00
TOTAL LOAD - WEIGHT OF WATER FILLED PIPE =						164.16 lbs
TOTAL LOAD x 15% =						188.78 lbs

STRUCTURAL ATTACHMENT FITTING:	
MAKE: TOLOCO	MODEL: 980
LISTED LOAD RATING:	not available
ADJUSTED LOAD RATING PER 9.3.5.10.3:	1970 lbs.
PIPE ATTACHMENT FITTING:	
MAKE: TOLOCO	MODEL: 41A
LISTED LOAD RATING:	1000 lbs.
ADJUSTED LOAD RATING PER 9.3.5.10.3:	702 lbs.
SEISMIC BRACE ASSEMBLY DETAIL	
	
SPRINKLER SYSTEM LOAD CALCULATION (Fp=W+Cp/Wp)	

SEISMIC BRACING CALCULATIONS (PER NFPA 13)				
MARQUEE FIRE PROTECTION 710 WEST STADIUM LANE SACRAMENTO, CA 95834 PHONE: (916) 641-7997 FAX: (916) 641-0775 DESIGNER: Mel Davis		DATE: 12/19/13 SHEET 1 OF 1 PROJECT: VA Medical Specialties Bldg 648 ADDRESS: 10535 Hospital Way Mather, Ca. 95655		
SEISMIC BRACE IDENTIFICATION				
BRACE IDENTIFICATION No.	S1			
REFERENCE PLANS:				
LATERAL BRACE	X			
LONGITUDINAL BRACE	X			
BRACE INFORMATION				
LENGTH OF SWAY BRACE	7'-0"			
DIAMETER OF SWAY BRACE	1"			
TYPE OF BRACE	SCH. 40			
ANGLE OF BRACE	45°-30'			
LEAST RADIUS OF GYRATION:	.421			
L/R VALUE:	.200			
MAXIMUM HORIZONTAL LOAD:	1310 lbs.			
FASTENER INFORMATION				
ORIENTATION OF CONNECTING SURFACE:	B			
FASTENER TYPE: CONNECTION TO STEEL				
DIAMETER:	1/2"			
LENGTH:	2.00			
MAXIMUM LOAD:	2050 lbs.			
SPRINKLER SYSTEM LOAD CALCULATION (Fp=W+Cp/Wp)				
PIPE DIAMETER	PIPE TYPE	PIPE LENGTHS	WEIGHT PER FT	TOTAL WEIGHT (Fp+W)
1"	SCH. 40	37.54	2.05	76.96
1 1/2"	SCH. 40	91.04	2.93	266.75
1 1/2"	SCH. 40	0	3.61	0.00
2"	SCH. 40	32.0	5.13	164.16
2 1/2"	SCH. 10	0	5.89	0.00
3"	SCH. 10	0	7.94	0.00
4"	SCH. 10	0	11.78	0.00
6"	SCH. 10	0	23.03	0.00
TOTAL LOAD - WEIGHT OF WATER FILLED PIPE =				203.15 lbs.
TOTAL LOAD x 15% =				233.62 lbs.

SEISMIC BRACE ATTACHMENTS	
STRUCTURAL ATTACHMENT FITTING:	
MAKE: TOLOCO	MODEL: 980
LISTED LOAD RATING:	not available
ADJUSTED LOAD RATING PER 9.3.5.10.3:	1970 lbs.
PIPE ATTACHMENT FITTING:	
MAKE: TOLOCO	MODEL: 41A
LISTED LOAD RATING:	1000 lbs.
ADJUSTED LOAD RATING PER 9.3.5.10.3:	702 lbs.
SEISMIC BRACE ASSEMBLY DETAIL	
<p>Diagram showing a seismic brace assembly detail. A steel beam is connected to a steel pipe via a hanger. The hanger is labeled '1/2" X 16" HOT DIP STEEL PIPE W/ 4" NUT & WASHER'. The steel pipe is labeled '1" SCH. 40 STEEL PIPE'. The hanger is also labeled '1/2" X 16" HOT DIP STEEL PIPE W/ 4" NUT & WASHER'. The steel pipe is also labeled '1" SCH. 40 STEEL PIPE'. The hanger is also labeled '1/2" X 16" HOT DIP STEEL PIPE W/ 4" NUT & WASHER'. The steel pipe is also labeled '1" SCH. 40 STEEL PIPE'. The hanger is also labeled '1/2" X 16" HOT DIP STEEL PIPE W/ 4" NUT & WASHER'. The steel pipe is also labeled '1" SCH. 40 STEEL PIPE'. The hanger is also labeled '1/2" X 16" HOT DIP STEEL PIPE W/ 4" NUT & WASHER'. The steel pipe is also labeled '1" SCH. 40 STEEL PIPE'. The hanger is also labeled '1/2" X 16" HOT DIP STEEL PIPE W/ 4" NUT & WASHER'. The steel pipe is also labeled '1" SCH. 40 STEEL PIPE'. The hanger is also labeled '1/2" X 16" HOT DIP STEEL PIPE W/ 4" NUT & WASHER'. 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VA MEDICAL SPECIALTIES BUILDING 648 - Mather Campus

10535 Hospital Way,

Mather, CA. 95655

PROJECT NO: 612-122

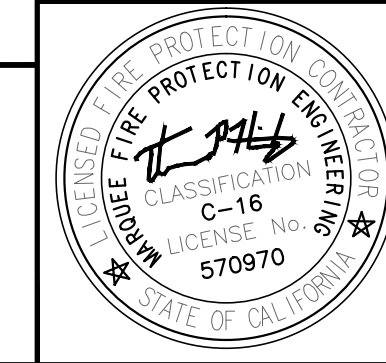
100% CONSTRUCTION DOCUMENTS

SECOND FLOOR

REV	DATE	BY	DATE

REVISION	DATE	BY	DATE

DATE:	05/12/14
Contract With:	Syska Hennessy Group
Scale:	1/8" = 1'-0"
Drawn:	Mel Davis
Job No:	1812-951
Sheet:	FP-3
Of	3 Sheets



MARQUEE
FIRE PROTECTION
710 W. Stadium Lane
Sacramento, CA 95834-1130
TEL 916 641-7997 / 707 642-7905
FAX 916 641-0775
CA. LIC. 570970 C-16