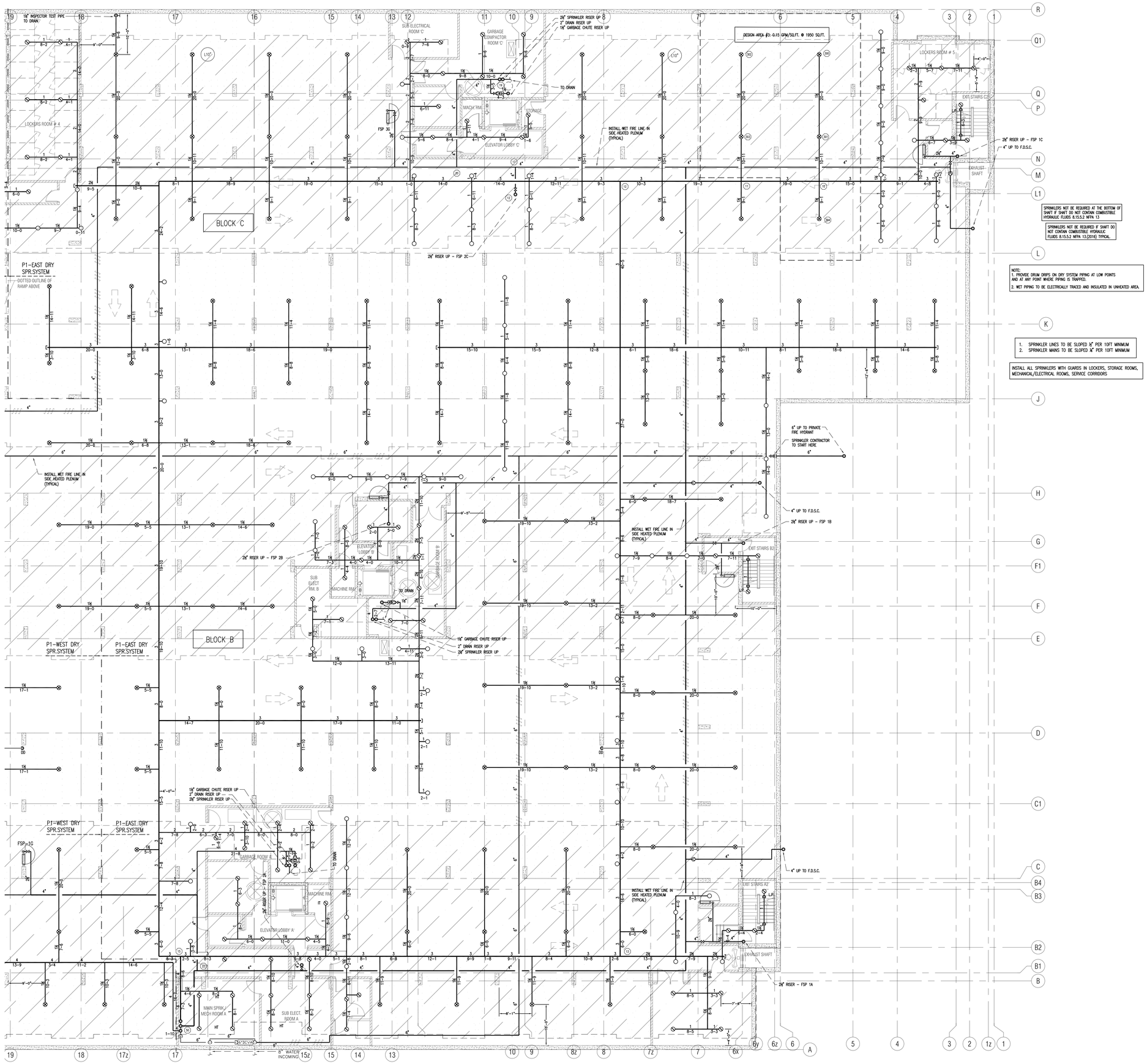


DESIGN AREA #3:
SPRINKLER SYSTEM DESIGNED FOR ORDINARY HAZARD GROUP 1.
0.15 GPM PER SQ.FT. OVER 1950 SQ.FT. (1300 + 30% DRY) PLUS 250 GPM FOR HOSES.
AS PER NFPA 13.

MATERIAL NOTES	
PIPING MATERIAL:	MAINS – SCHEDULE 7 OR 10 BLACK STEEL PIPE LINES – SCHEDULE 40, 7 OR 10 BLACK STEEL PIPE
FITTING MATERIAL:	MAINS – CUL LISTED GROOVED FITTINGS LINES – CUL LISTED GROOVED FITTINGS
HANGER MATERIAL:	MAINS – AS PER NFPA 13 REQUIREMENTS LINES – AS PER NFPA 13 REQUIREMENTS
DESIGN:	SPRINKLER SYSTEM – NFPA 13 (2016)

General Notes

1. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.
2. All Dimensions Shown are Center to Center.
3. High Temperature Heads are to be Field Located Where Required.
4. All Heads, Pipes and Hangers are to be Installed per NFPA #13.
5. Hangers are to be U.L.C. Listed and F.M. Approved.
6. SPRINKLERS c/w HEAD GUARDS TO BE INSTALLED UNDER ALL OBSTRUCTIONS OVER 48" WIDE.
7. OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

Symbols

Symbol	Description
⊖	Hydraulic Reference Points
[-x-]	Elev. Below Top of Steel
[+x+]	Elev. Above Finished Floor
+ (TOS 28-11)	Elev. of Top of Steel
⟲	Ceiling Height
—/—	Denotes Hanger Location
⊙	Rise up or down
IT/HT	INTERMEDIATE/HIGH TEMPERATURE
C	WIRE GUARD

Symbol	Description	Total
⊗	3/4" 155°F SR EC-14 BRASS UPRIGHT K=14.0	110
○	1/2" 155°F SR BRASS UPRIGHT K=5.6	148
◀●	3/4" 155°F SR SW-20 SIDEWALL K=11.2	5
◇	1/2" 155°F QR BRASS UPRIGHT K=5.6	151
◇	1" 155°F SR DS-3 DRY SIDEWALL K=11.2	1
▬▬	FIRE HOSE CABINET – 100 FT OF 1½" LINED HOSE C/W COMBINATION FOG NOZZLE	12

Contract No. 2019-251
Drawn By: E.N.
Scale: 1/8"=1'-0"
Date: July, 2019
Approval By: A. NOVOSSELOV P. Eng.

Revisions:	Date:
Issued for Tender	Aug.01/19
Issued for Permit & Tender	Sep.18/19
Re-issued for Permit & Tender	Sep.21/20
Issued for Permit	Mar.03/21
1. Revised as per Architectural Addendum #8	Apr.02/21
2. Revised as per SI AD1	Jun.07/21
Progressive Construction # 2	Jun.15/21

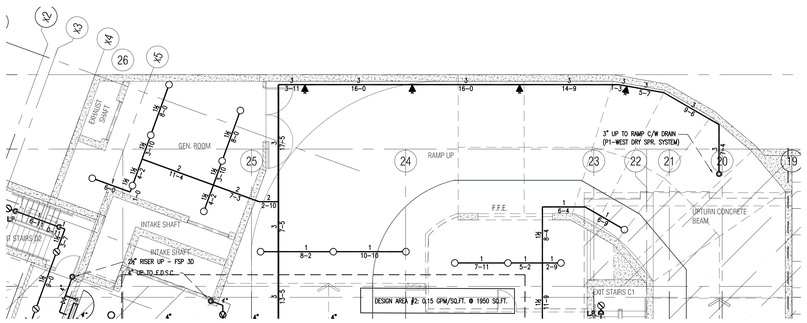
Elite Sprinkler Inc.
Automatic Fire Protection Sprinkler System Design
22 McDonnell Crescent, Bradford, Ontario, L3Z 0S7
T: 905-505-1370
www.elitesprinkler.ca

Contractor: STAR FIRE systems
601 Edgeley Boulevard, Unit # 9, 10, Vaughan, ON. L4K 4G2
T: 905.326.6400 • F: 905.326.6815

Job: ROYAL PINE
ATTMAR + PALLESCHI DRIVE
BRAMPTON, ON

Drawing Title: P1 LEVEL EAST

SHEET 1 of 7



MATERIAL NOTES	
PIPING MATERIAL:	MAINS – SCHEDULE 7 OR 10 BLACK STEEL PIPE LINES – SCHEDULE 40, 7 OR 10 BLACK STEEL PIPE
FITTING MATERIAL:	MAINS – CUL LISTED GROOVED FITTINGS LINES – CUL LISTED GROOVED FITTINGS
HANGER MATERIAL:	MAINS – AS PER NFPA 13 REQUIREMENTS LINES – AS PER NFPA 13 REQUIREMENTS
DESIGN:	SPRINKLER SYSTEM – NFPA 13 (2016)

General Notes

1. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.
2. All Dimensions Shown are Center to Center.
3. High Temperature Heads are to be Field Located Where Required.
4. All Heads, Pipes and Hangers are to be Installed per NFPA #13.
5. Hangers are to be U.L.C. Listed and F.M. Approved.
6. SPRINKLERS c/w HEAD GUARDS TO BE INSTALLED UNDER ALL OBSTRUCTIONS OVER 48" WIDE.
7. OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

Symbols

Symbol	Description
HP	Hydraulic Reference Points
[-•-]	Elev. Below Top of Steel
[•-•]	Elev. Above Finished Floor
+ (106 29-11)	Elev. of Top of Steel
CEILING	Ceiling Height
	Denotes Hanger Location
⊙	Rise up or down
IT/HT	INTERMEDIATE/HIGH TEMPERATURE
	WIRE GUARD

Symbol	Description	Total
	SEE SP1	

DESIGN AREA #1 & #2:
SPRINKLER SYSTEM DESIGNED FOR ORDINARY HAZARD GROUP 1
0.15 GPM PER SQ.FT. OVER 1950 SQ.FT. (1500 + 30E DRY) PLUS 250 GPM FOR HOSES.
AS PER NFPA 13.

LICENSED PROFESSIONAL ENGINEER A. NOVOSSELOV 100083841 PROVINCE OF ONTARIO

Contract No.	2019-251
Drawn By:	E.N.
Scale:	1/8"=1'-0"
Date:	July, 2019
Approval By:	A. NOVOSSELOV P. Eng.

Revisions:	Date:
Issued for Tender	Aug.01/19
Issued for Permit & Tender	Sep.18/19
Re-Issued for Permit & Tender	Sep.21/20
Issued for Permit	Mar.03/21
1. Revised as per Architectural Addendum #5	Apr.02/21
2. Revised as per SI A01	Jun.07/21
Progressive Construction # 2.	Jun.15/21

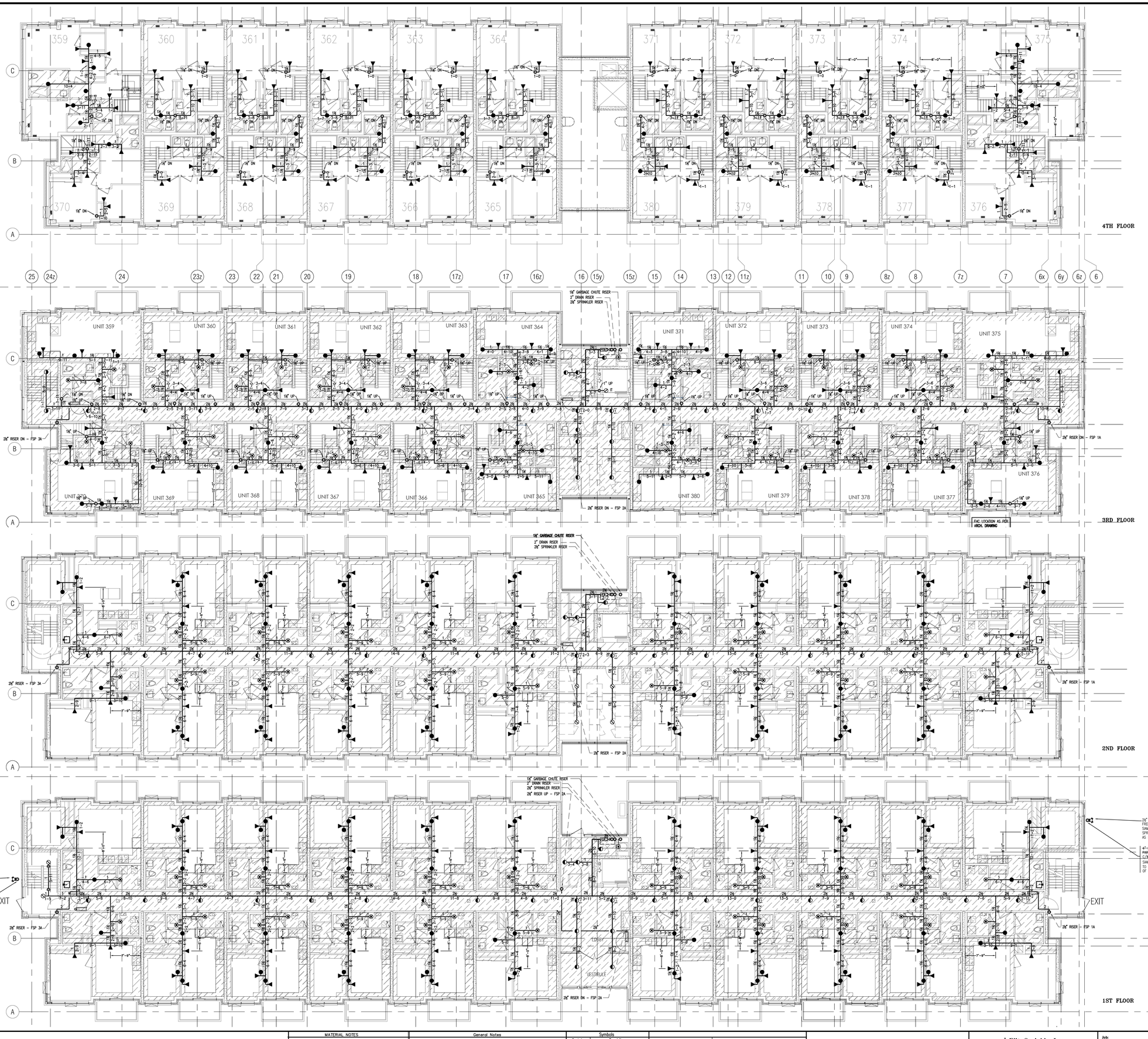
Elite Sprinkler Inc.
Automatic Fire Protection Sprinkler System Design
32 McDonnell Crescent, Bradford, Ontario, L3Z 0S7
T: 905.868.1170
www.elitesprinklers.ca

Contractor:
STAR FIRE systems
401 Edgeley Boulevard, Unit 9 & 10, Vaughan, ON L4K 4G2
T: 905.326.6405 • F: 905.326.6813

Job:
ROYAL PINE
ATTMAR + PALLESCHI DRIVE
BRAMPTON, ON

Drawing Title
P1 LEVEL WEST

SHEET 2 of 7



MATERIAL NOTES

PIPING MATERIAL: MAINS – SCHEDULE 7 OR 10 BLACK STEEL PIPE
LINES – SCHEDULE 40, 7 OR 10 BLACK STEEL PIPE

FITTING MATERIAL: MAINS – CUT, LISTED GROOVED FITTINGS
LINES – CUT, LISTED GROOVED FITTINGS

HANGER MATERIAL: MAINS – AS PER NFPA 13 REQUIREMENTS
LINES – AS PER NFPA 13 REQUIREMENTS

DESIGN: SPRINKLER SYSTEM – NFPA 13R (2016)

General Notes

1. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.
2. All Dimensions Shown are Center to Center.
3. High Temperature Heads are to be Field Located Where Required.
4. All Heads, Pipes and Hangers are to be Installed per NFPA #13.
5. Hangers are to be U.L.C. Listed and F.M. Approved.
6. SPRINKLERS c/w HEAD GUARDS TO BE INSTALLED UNDER ALL OBSTRUCTIONS OVER 48" WIDE.
7. OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

Symbols

Symbol	Description
HR	Hydraulic Reference Points
[⇔]	Elev. Below Top of Steel
[⇔2	Elev. Above Finished Floor
⇔ (TOS 39-11)	Elev. of Top of Steel
⇔CEIL	Ceiling Height
—//	Denotes Hanger Location
⊙	Rise up or down
IT/HT	INTERMEDIATE/HIGH TEMPERATURE
G	WIRE GUARD

Symbol	Description	Total
◀	1/2" 165°F QR VIKING VK480 RESID. WHITE CONCEALED SIDEWALL K=5.8	304
●	1/2" 155°F QR VIKING VK484 RESID. WHITE CONCEALED PENDENT K=4.9	243
⊗	1/2" 200°F QR VIKING VK484 RESID. WHITE CONCEALED PENDENT K=4.9	120
◑	1/2" 155°F QR WHITE CONCEALED PENDENT K=5.6	79
⊘	1/2" 155°F QR BRASS UPRIGHT K=5.6	7
▬▬	FIRE HOSE CABINET – 100 FT OF 1½" LINED HOSE C/W COMBINATION FOG NOZZLE	9

LICENSED PROFESSIONAL ENGINEER
A. NOVOSSELOV
100093841
PROVINCE OF ONTARIO

Contract No.	2019-251
Drawn By:	E.N.
Scale:	1/8"=1'-0"
Date:	July, 2019
Approval By:	A. NOVOSSELOV P. Eng.

Revisions:	Date:
Issued for Tender	Aug.01/19
Issued for Permit & Tender	Sep.18/19
Re-Issued for Permit & Tender	Sep.21/20
Issued for Permit	Mar.03/21
2. Revised as per SI A01	Jun.07/21
Progressive Construction # 2	Jun.15/21

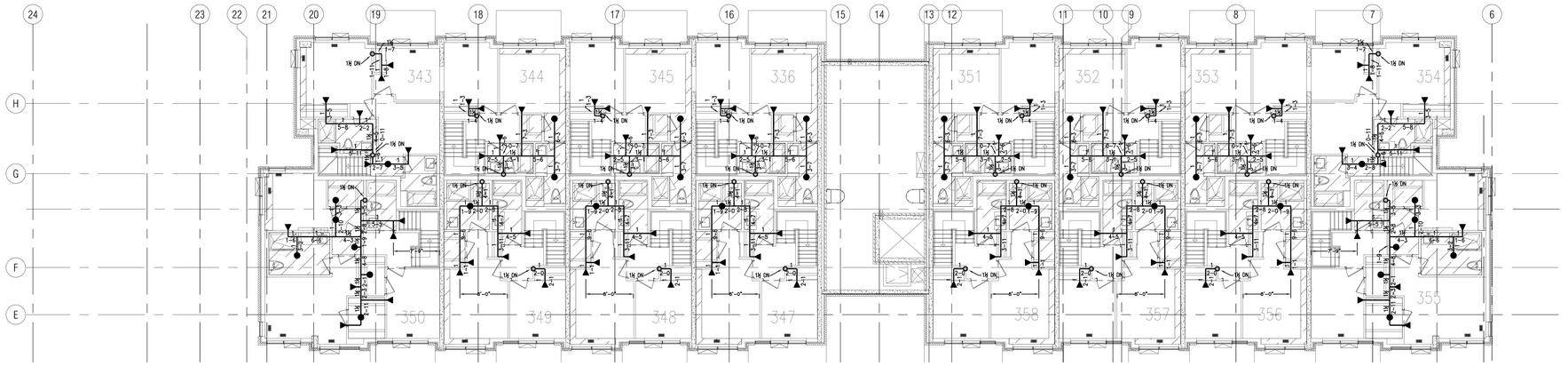
Elite Sprinkler Inc.
Authorized Fire Protection Sprinkler Design
22 McDonnell Crescent, Bradford, Ontario, L3Z 0E7
T: 905-868-1570
www.elitesprinkler.ca

Contractor:
STAR FIRE systems
601 Edgeley Boulevard, Unit 9 & 10, Vaughan, ON L4K 4G2
T: 905.326.6400 • F: 905.326.6413

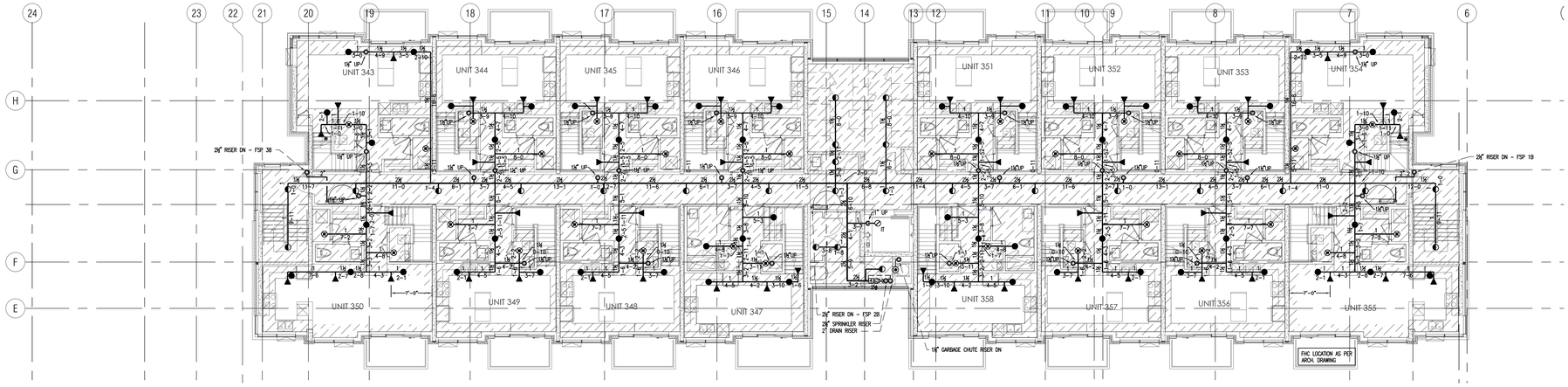
Job:
ROYAL PINE
ATTMAR + PALLESCHI DRIVE
BRAMPTON, ON

Drawing Title
BUILDING A

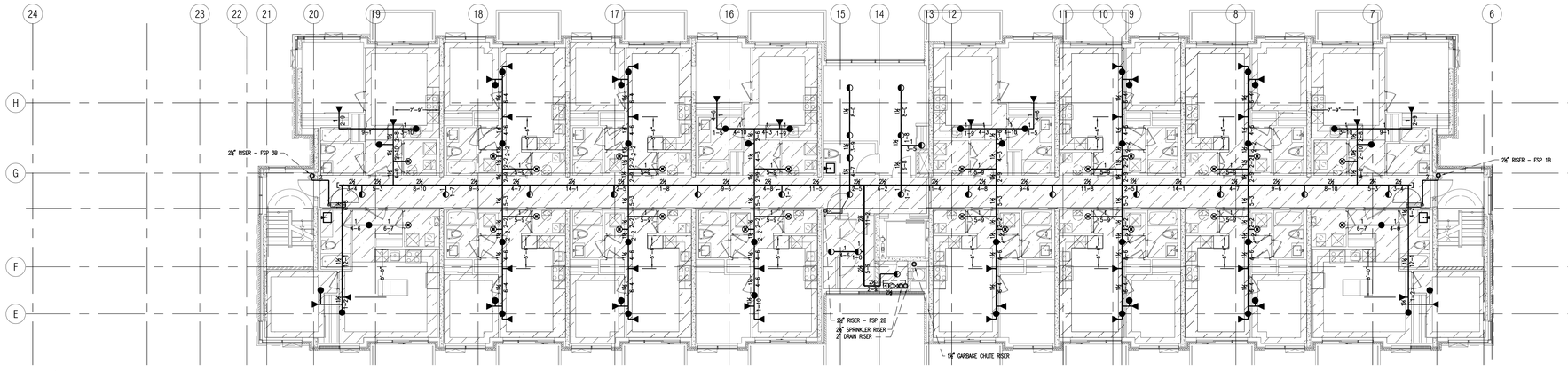
SHEET 3 of 7



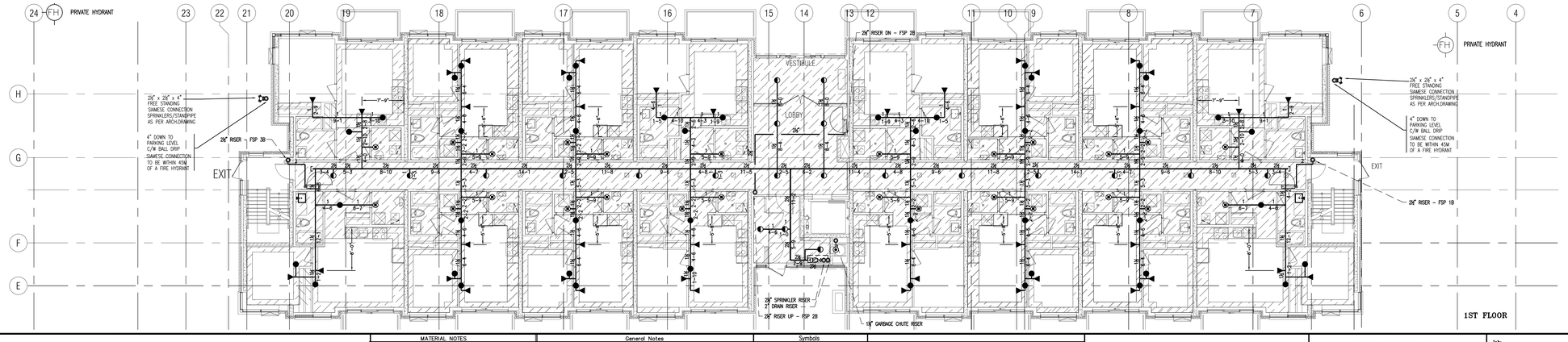
4TH FLOOR



3RD FLOOR



2ND FLOOR



1ST FLOOR

MATERIAL NOTES

PIPING MATERIAL: MAINS – SCHEDULE 7 OR 10 BLACK STEEL PIPE
LINES – SCHEDULE 40, 7 OR 10 BLACK STEEL PIPE

FITTING MATERIAL: MAINS – CUL LISTED GROOVED FITTINGS
LINES – CUL LISTED GROOVED FITTINGS

HANGER MATERIAL: MAINS – AS PER NFPA 13 REQUIREMENTS
LINES – AS PER NFPA 13 REQUIREMENTS

DESIGN: SPRINKLER SYSTEM – NFPA 13R (2016)

General Notes

1. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.
2. All Dimensions Shown are Center to Center.
3. High Temperature Heads are to be Field Located Where Required.
4. All Heads, Pipes and Hangers are to be installed per NFPA #13.
5. Hangers are to be U.L.C. Listed and F.M. Approved.
6. SPRINKLERS c/w HEAD GUARDS TO BE INSTALLED UNDER ALL OBSTRUCTIONS OVER 48" WIDE.
7. OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

Symbols

Symbol	Description
HR	Hydraulic Reference Points
[+∞]	Elev. Below Top of Steel
[∞+]	Elev. Above Finished Floor
+ (TOS 28-11)	Elev. of Top of Steel
	Ceiling Height
	Denotes Hanger Location
	Rise up or down
IT/HT	INTERMEDIATE/HIGH TEMPERATURE
	WIRE GUARD

Symbol	Description	Total
	1/2" 165°F QR VIKING VK490 RESID. WHITE CONCEALED SIDEWALL K=5.8	221
	1/2" 155°F QR VIKING VK484 RESID. WHITE CONCEALED PENDENT K=4.9	176
	1/2" 200°F QR VIKING VK484 RESID. WHITE CONCEALED PENDENT K=4.9	84
	1/2" 155°F QR WHITE CONCEALED PENDENT K=5.6	70
	1/2" 155°F QR BRASS UPRIGHT K=5.6	1
	FIRE HOSE CABINET – 100 FT OF 1½" LINED HOSE C/W COMBINATION FOG NOZZLE	9

LICENSED PROFESSIONAL ENGINEER
A. NOVOSSELOV
100038841
PROVINCE OF ONTARIO

Contract No. 2019-251
Drawn By: E.N.
Scale: 1/8"=1'-0"
Date: July, 2019
Approval By:
A. NOVOSSELOV P. Eng.

Revisions:	Date:
Issued for Tender	Aug.01/19
Issued for Permit & Tender	Sep.18/19
Re-Issued for Permit & Tender	Sep.21/20
Issued for Permit	Mar.03/21
2. Revised as per SI A01	Jun.07/21
Progressive Construction # 2	Jun.15/21

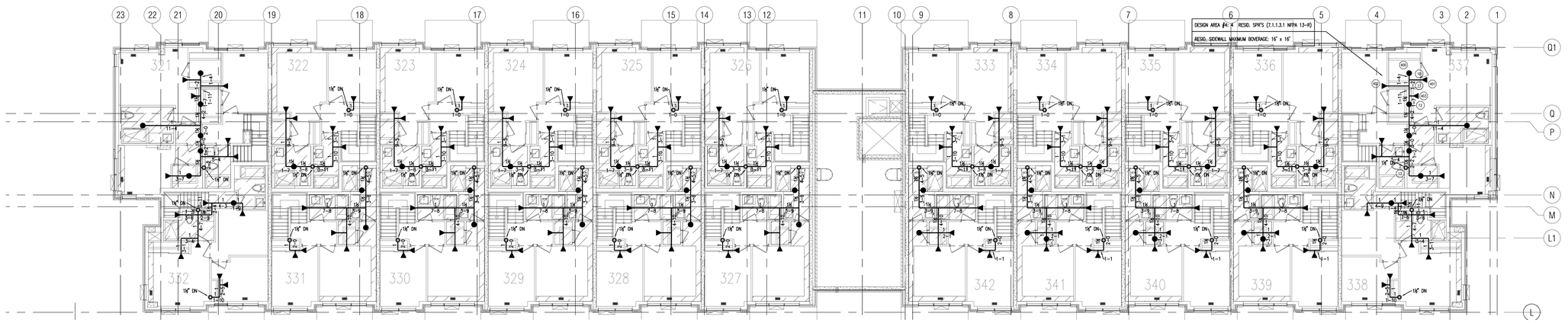
Elite Sprinkler Inc.
Automatic Fire Protection Sprinkler System Design
22 McDonnell Crescent, Stratford, Ontario, N5Z 4N7
T: 905-868-1178
www.elitesprinkler.ca

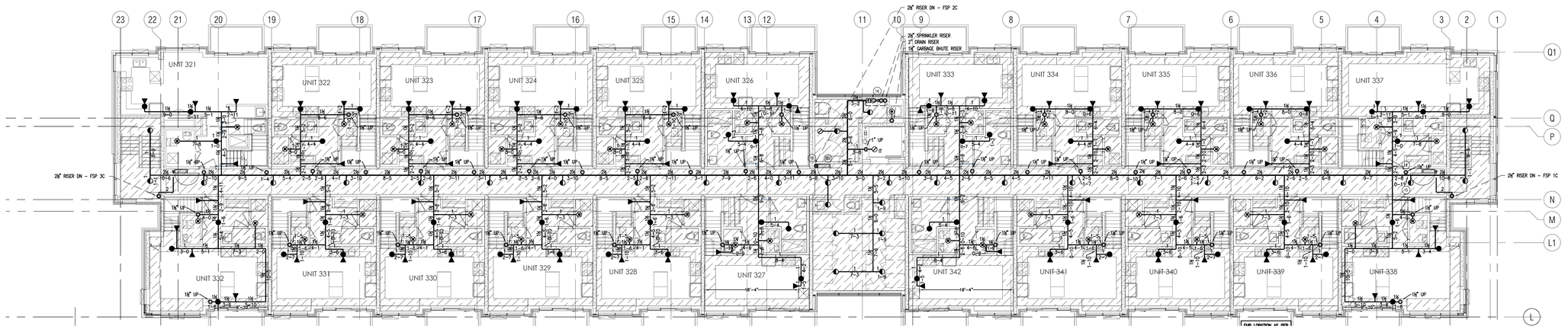
Contractor:
STARFIRE systems
401 Edgeley Boulevard, Unit # 10, Vaughan, ON L4K 4G2
T: 905.326.4433 • F: 905.326.4815

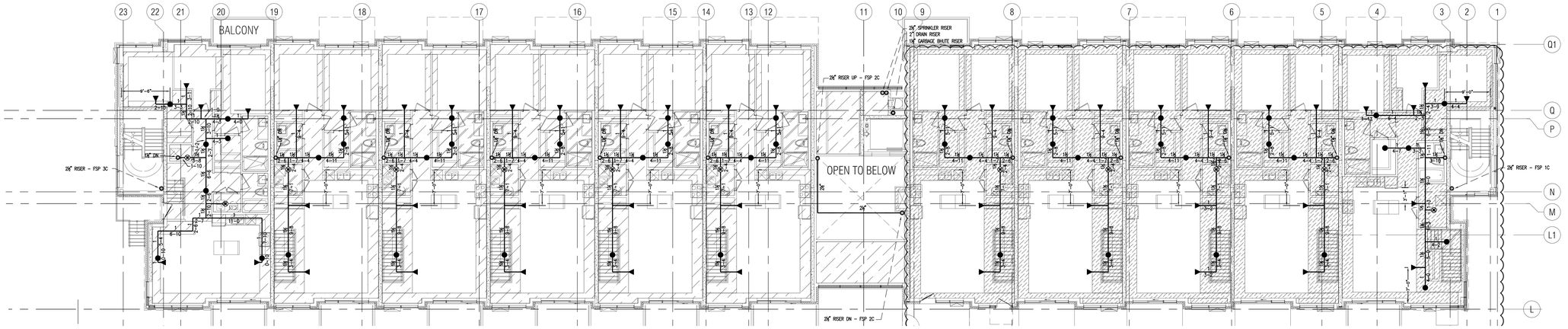
Job:
ROYAL PINE
ATTMAR + PALLESCHI DRIVE
BRAMPTON, ON

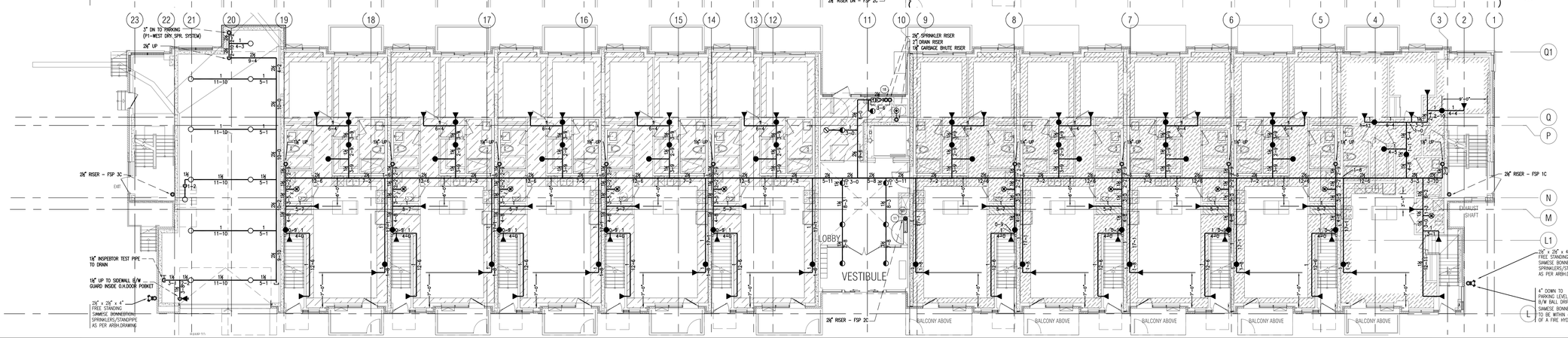
Drawing Title
BUILDING B

SHEET 4 of 7









DESIGN AREA #4:
DESIGNED FOR RESIDENTIAL SPRINKLERS AS PER NFPA 13R SECTION 7.1.1.3.1 (2016 ED.).
– DESIGN AREA TO INCLUDE THE FOUR ADJACENT SPRINKLERS THAT PRODUCE THE GREATEST HYDRAULIC DEMAND

LICENSED PROFESSIONAL ENGINEER A. NOVOSSELOV 100035841 PROVINCE OF ONTARIO

MATERIAL NOTES
PIPING MATERIAL: MAINS – SCHEDULE 7 OR 10 BLACK STEEL PIPE LINES – SCHEDULE 40, 7 OR 10 BLACK STEEL PIPE
FITTING MATERIAL: MAINS – CUL LISTED GROOVED FITTINGS LINES – CUL LISTED GROOVED FITTINGS
HANGER MATERIAL: MAINS – AS PER NFPA 13 REQUIREMENTS LINES – AS PER NFPA 13 REQUIREMENTS
DESIGN: SPRINKLER SYSTEM – NFPA 13R (2016)

General Notes

1. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.
2. All Dimensions Shown are Center to Center.
3. High Temperature Heads are to be Field Located Where Required.
4. All Heads, Pipes and Hangers are to be Installed per NFPA #13.
5. Hangers are to be U.L.C. Listed and F.M. Approved.
6. SPRINKLERS c/w HEAD GUARDS TO BE INSTALLED UNDER ALL OBSTRUCTIONS OVER 48" WIDE.
7. OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

Symbols

Symbol	Description
⊕	Hydraulic Reference Points
[⇒ ⇐]	Elev. Below Top of Steel
[⇐⇒]	Elev. Above Finished Floor
+ (TYP. 24-1)	Elev. of Top of Steel
⊕	Ceiling Height
	Denotes Hanger Location
⊙	Rise up or down
IT/HT	INTERMEDIATE/HIGH TEMPERATURE
C	WIRE GUARD

Symbol	Description	Total
◀	1/2" 165°F QR VIKING W480 RESD. WHITE CONCEALED SIDEWALL K=5.8	319
●	1/2" 155°F QR VIKING VK484 RESD. WHITE CONCEALED PENDENT K=4.9	220
⊗	1/2" 200°F QR VIKING VK484 RESD. WHITE CONCEALED PENDENT K=4.9	76
◑	1/2" 155°F QR WHITE CONCEALED PENDENT K=5.6	46
◇	1/2" 155°F QR BRASS UPRIGHT K=5.8	8
○	1/2" 155°F SR BRASS UPRIGHT K=5.6	12
◀	3/4" 155°F SR SW-20 SIDEWALL K=11.2	1
▬	FIRE HOSE CABINET – 100 FT OF 1½" LINED HOSE C/W COMBINATION FOG NOZZLE	5

Contract No. 2019-251
Drawn By: E.N.
Scale: 1/8"=1'-0"
Date: July, 2019
Approved By: A. NOVOSSELOV P. Eng.

Revisions:	Date:
Issued for Tender	Aug.01/19
Issued for Permit & Tender	Sep.18/19
Re-Issued for Permit & Tender	Sep.21/20
1. Revised as per Addendum #6	Jan.21/21
Issued for Permit	Mar.03/21
2. Revised as per SI A01	Jun.07/21
Progressive Construction # 2	Jun.15/21

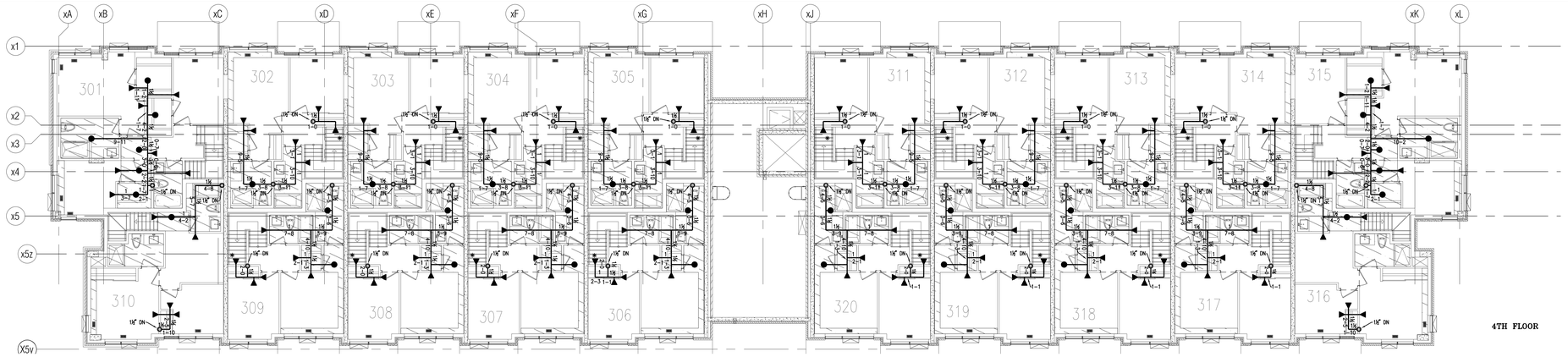
Elite Sprinkler Inc.
Industrial Fire Protection Sprinkler Systems
22 McDonnell Crescent, Bradford, Ontario, L3Z 0S7
T: 905-868-1178
www.elitesprinkler.ca

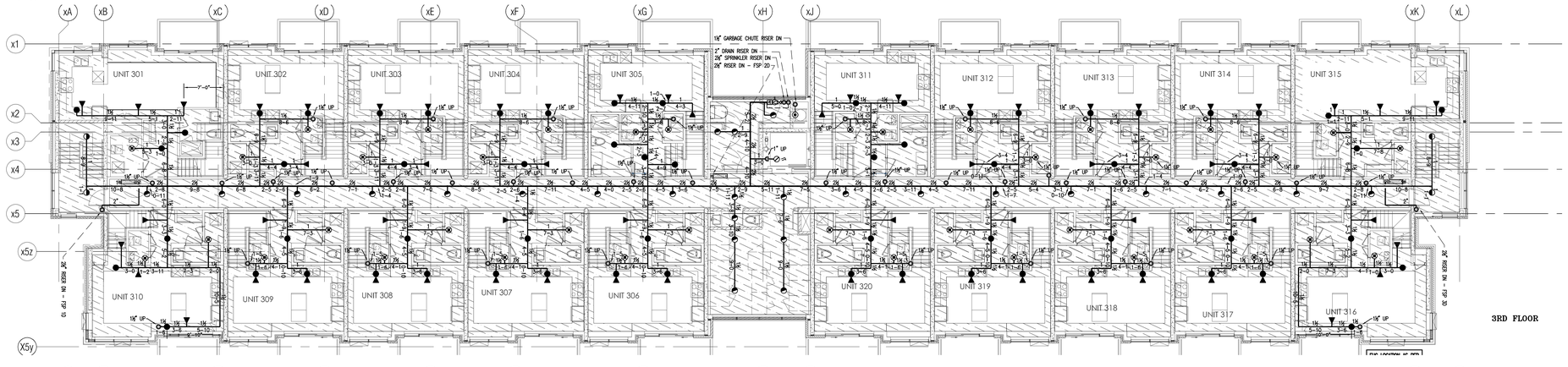
Contractor: STARFIRE systems
801 Edgeley Boulevard, Unit 9 & 10, Vaughan, ON L4K 4G2
T: 905.326.6400 • F: 905.326.6813

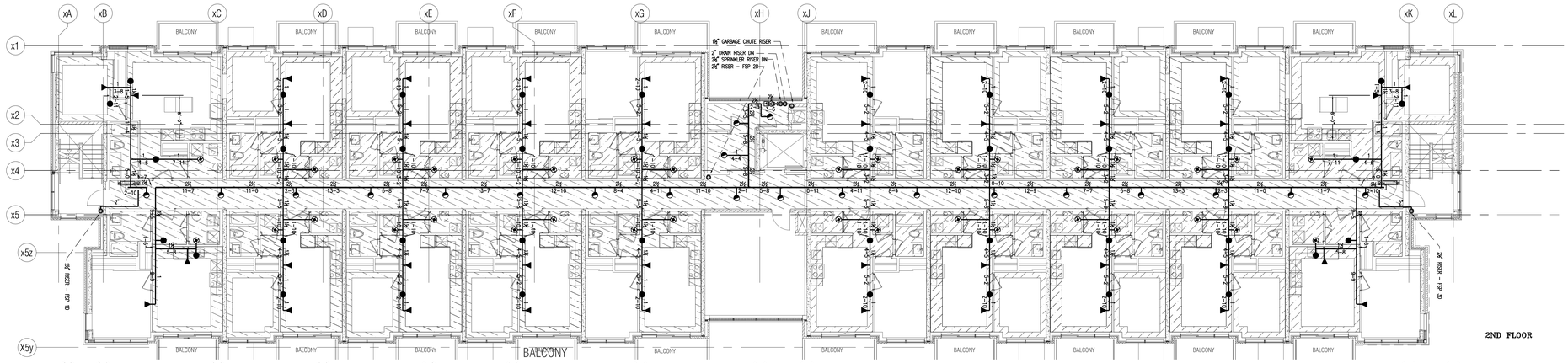
Job:
ROYAL PINE
ATTMAR + PALLESCHI DRIVE
BRAMPTON, ON

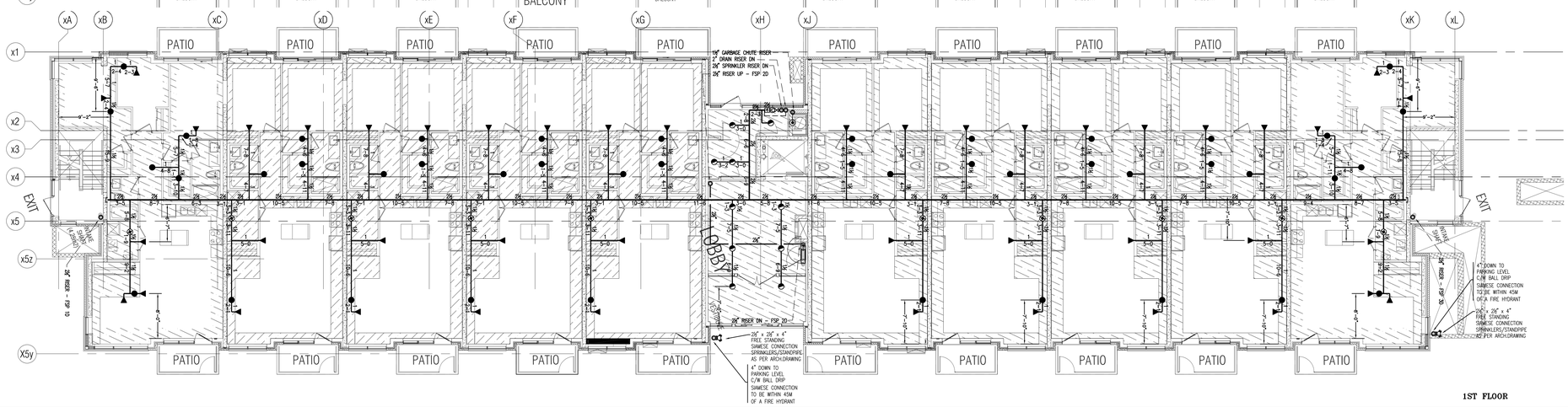
Drawing Title
BUILDING C

SHEET 5 of 7









MATERIAL NOTES	
PIPING MATERIAL:	MAINS – SCHEDULE 7 OR 10 BLACK STEEL PIPE LINES – SCHEDULE 40, 7 OR 10 BLACK STEEL PIPE
FITTING MATERIAL:	MAINS – CUL LISTED GROOVED FITTINGS LINES – CUL LISTED GROOVED FITTINGS
HANGER MATERIAL:	MAINS – AS PER NFPA 13 REQUIREMENTS LINES – AS PER NFPA 13 REQUIREMENTS
DESIGN:	SPRINKLER SYSTEM – NFPA 13R (2016)

General Notes

1. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.
2. All Dimensions Shown are Center to Center.
3. High Temperature Heads are to be Field Located Where Required.
4. All Heads, Pipes and Hangers are to be Installed per NFPA #13.
5. Hangers are to be U.L.C. Listed and F.M. Approved.
6. SPRINKLERS c/w HEAD GUARDS TO BE INSTALLED UNDER ALL OBSTRUCTIONS OVER 48" WIDE.
7. OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

Symbols

Symbol	Description
6@	Hydraulic Reference Points
[-0.=0]	Elev. Below Top of Steel
[+=0]	Elev. Above Finished Floor
+ (TOS 23-13)	Elev. of Top of Steel
<6'-0>	Ceiling Height
—/—	Denotes Hanger Location
o	Rise up or down
IT/HT	INTERMEDIATE/HIGH TEMPERATURE
C	WIRE GUARD

Symbol	Description	Total
◀	1/2" 165°F QR VIKING VK480 RESID. WHITE CONCEALED SIDEWALL K=5.8	264
●	1/2" 155°F QR VIKING VK494 RESID. WHITE CONCEALED PENDENT K=4.9	195
⊗	1/2" 200°F QR VIKING VK494 RESID. WHITE CONCEALED PENDENT K=4.9	85
◑	1/2" 155°F QR WHITE CONCEALED PENDENT K=5.8	61
⊘	1/2" 155°F QR BRASS UPRIGHT K=5.8	1
▬▶	FIRE HOSE CABINET – 100 FT OF 1½" LINED HOSE C/W COMBINATION FOG NOZZLE	6

Contract No. 2019-251
Drawn By: E.N.
Scale: 1/8"=1'-0"
Date: July, 2019
Approval By:
A. NOVOSSELOV P. Eng.

Revisions:	Date:
Issued for Tender	Aug.01/19
Issued for Permit & Tender	Sep.18/19
Re-Issued for Permit & Tender	Sep.21/20
Issued for Permit	Mar.03/21
2. Revised as per SI A01	Jun.07/21
Progressive Construction # 2	Jun.15/21

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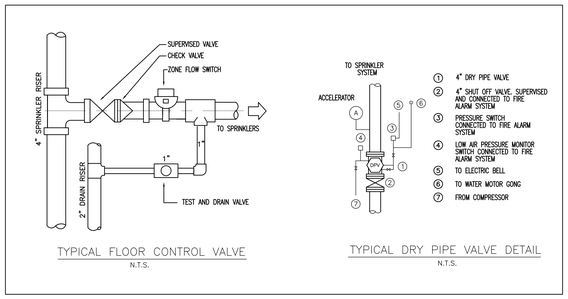
Contractor:
STAR FIRE systems
601 Edgeley Boulevard, Unit 9 & 10, Vaughan, ON. L4K 4G2
T: 905.326.6455 • F: 905.326.6815

Job:
ROYAL PINE
ATTMAR + PALLESCHI DRIVE
BRAMPTON, ON

Drawing Title
BUILDING D

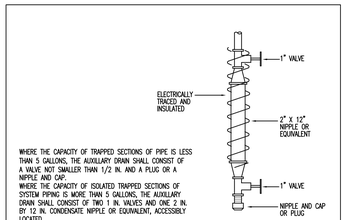
SHEET 6 of 7

LICENSED PROFESSIONAL ENGINEER
A. NOVOSSELOV
100093841
PROVINCE OF ONTARIO



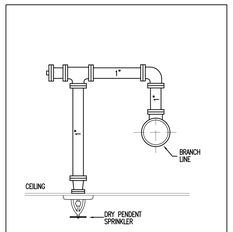
TYPICAL FLOOR CONTROL VALVE
N.T.S.

TYPICAL DRY PIPE VALVE DETAIL
N.T.S.

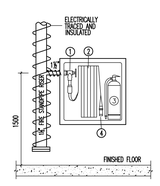


WHERE THE CAPACITY OF TRAPPED SECTIONS OF PIPE IS LESS THAN 5 GALLONS, THE AUXILLARY DRAIN SHALL CONSIST OF A VALVE NOT SMALLER THAN 1/2 IN. AND A PLUG OR A NIPPLE AND CAP.
WHERE THE CAPACITY OF ISOLATED TRAPPED SECTIONS OF SYSTEM PIPING IS MORE THAN 5 GALLONS, THE AUXILLARY DRAIN SHALL CONSIST OF TWO 1 IN. VALVES AND ONE 2 IN. BY 12 IN. CONDENSATE NIPPLE OR EQUIVALENT, ACCESSIBLY LOCATED.

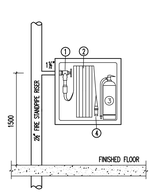
DRUM DRIP DETAIL
N.T.S.



DRY PENDENT SPRINKLER
N.T.S.

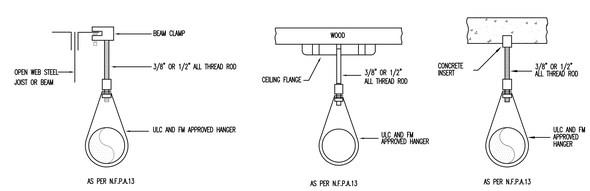


FIRE HOSE CABINET
1½" BRONZE ANGLE VALVE C/W
1 STANDARD VALVE AND HYDROLATOR
2 100 FT. OF 1½" LINED HOSE
3 FIRE EXTINGUISHER
4 COMBINATION FOG NOZZLE



FIRE HOSE CABINET DETAIL/ N.T.S.
(FOR UNHEATED AREA)

FIRE HOSE CABINET DETAIL/ N.T.S.
(FOR HEATED AREA)



HANGER DETAILS/ N.T.S.

Table 6.4.6.3.7.2(a) Positioning of Sprinklers to Avoid Obstructions (Residential Sidewall Sprinklers)

Distance from Sidewall Sprinkler to Side of Obstruction (A)	Maximum Allowable Distance of Deflector above Bottom of Obstruction (in.) (B)
Less than 8 ft	Not Allowed
8 ft to less than 10 ft	1
10 ft to less than 11 ft	2
11 ft to less than 12 ft	3
12 ft to less than 13 ft	4
13 ft to less than 14 ft	6
14 ft to less than 15 ft	7
15 ft to less than 16 ft	9
16 ft to less than 17 ft	11
17 ft or greater	14

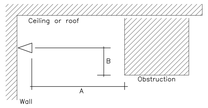


FIGURE 6.4.6.3.7.2(a) Positioning of Sprinklers to Avoid Obstructions (Residential Sidewall Sprinklers)

Table 6.4.6.3.7.2(b) Positioning of Sprinklers to Avoid Obstructions Along the Wall (Residential Sidewall Sprinklers)

Distance from Sidewall Sprinkler to Side of Obstruction (A)	Maximum Allowable Distance of Deflector above Bottom of Obstruction (in.) (B)
Less than 1 ft 6 in.	0
1 ft 6 in to less than 3 ft	1
3 ft to less than 4 ft	3
4 ft to less than 4 ft 6 in	5
4ft 6 in to less than 6 ft	7
6 ft to less than 6 ft 6 in	9
6 ft 6 in to less than 7 ft	11
7 ft to less than 7 ft 6 in	14

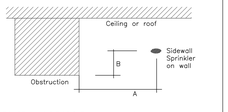
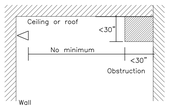


FIGURE 6.4.6.3.7.2(b) Positioning of Sprinklers to Avoid Obstructions Along Wall (Residential Sidewall Sprinklers)



NFPA-13R (2016) 6.4.6.3.7.2(c)

SPRINKLERS SHALL NOT BE REQUIRED IN ATTICS, PENTHOUSE EQUIPMENT ROOMS, ELEVATOR MACHINE ROOMS, CONCEALED SPACES DEDICATED EXCLUSIVELY TO AND CONTAINING ONLY DWELLING UNIT VENTILATION EQUIPMENT, CRAWL SPACES, FLOOR/CEILING SPACES, ELEVATOR SHAFTS WHERE THE ELEVATOR INSTALLATION COMPLIES WITH ANSI A17.1, SAFETY CODE FOR ELEVATORS AND ESCALATORS, AND OTHER CONCEALED SPACES THAT ARE NOT INTENDED FOR LIVING PURPOSES OR STORAGE AND DO NOT CONTAIN FUEL-FIRED EQUIPMENT (6.6.6 NFPA13R-2016)

SHADOW AREAS. SHADOW AREAS SHALL BE PERMITTED IN THE PROTECTION AREA OF A SPRINKLER AS LONG AS THE CUMULATIVE DRY AREAS DO NOT EXCEED 15 SQ.FT PER SPRINKLER (6.4.6.3.3.1 NFPA13R-2016)

EXCEPT WHERE SPECIFIED IN 6.6.6, SPRINKLERS SHALL NOT BE REQUIRED IN CLOSETS CLOSETS, LINEN CLOSETS, AND PANTRIES WITHIN DWELLING UNITS THAT MEET ALL OF THE FOLLOWING CONDITIONS:
(1) THE AREA OF THE SPACE DOES NOT EXCEED 24 SQ.FT.
(2) THE WALLS AND CEILINGS ARE SURFACED WITH NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIALS (6.6.3 NFPA13R-2016)

SPRINKLERS SHALL NOT BE REQUIRED IN BATHROOMS WHERE THE BATHROOM AREA DOES NOT EXCEED 55 SQ.FT (6.6.2 NFPA13R-2016)

SPRINKLERS SHALL NOT BE REQUIRED IN CLOSETS (REGARDLESS OF SIZE) ON EXTERIOR BALCONIES AND EXTERIOR BREEZEWAYS/CORRIDORS, REGARDLESS OF SIZE, AS LONG AS THE CLOSET DOES NOT HAVE DOORS OR UNPROTECTED PENETRATIONS DIRECTLY INTO THE DWELLING UNIT (6.6.7 NFPA13R-2016)

PENDENT SPRINKLERS SHALL BE LOCATED AT LEAST 3 FT FROM OBSTRUCTIONS SUCH AS CEILING FANS AND LIGHT FIXTURES (6.4.6.3.4.1); SIDEWALL SPRINKLERS SHALL BE LOCATED AT LEAST 5 FT FROM OBSTRUCTIONS SUCH AS CEILING FANS AND LIGHT FIXTURES UNLESS THE REQUIREMENTS (6.4.6.3.5.1) OR UNLESS THE OBSTRUCTION RULES ARE APPLY.

ALL SIDEWALL HEADS TO BE POSITIONED 4" TO 6" FROM CEILING

MINIMUM DISTANCE FROM EDGE OF HEAT SOURCE TO RESIDENTIAL SPRINKLERS. (ORDINARY TEMPERATURE):
1. 24 INCHES FROM HOT AIR DIFFUSER EDGE.
2. 18 INCHES FROM KITCHEN RANGE.

THE SPRINKLER IS REQUIRED WHERE THE FOLLOWING POCKET RULES ARE NOT ACHIEVED (NFPA-13R (2016) 6.2.3.5.2.2):
1. THE TOTAL VOLUME OF THE UNPROTECTED CEILING POCKET DOES NOT EXCEED 100 CU.FT.
2. THE DEPTH OF THE UNPROTECTED CEILING POCKET DOES NOT EXCEED 12 IN.
3. THE ENTIRE FLOOR OF THE UNPROTECTED CEILING POCKET IS PROTECTED BY THE SPRINKLERS AT THE LOWER CEILING ELEVATION.
4. THE INTERIOR FINISH OF THE UNPROTECTED CEILING POCKET IS NONCOMBUSTIBLE OR LIMITED COMBUSTIBLE CONSTRUCTION.

COORDINATE SPRINKLER LOCATIONS WITH RESPECT TO SURFACE MOUNTED LIGHT FIXTURES AND MANTAIN MINIMUM CLEARANCE AS REQUIRED BY NFPA#13/13R (OBSTRUCTION RULES)

SPRINKLER CONTRACTOR TO INCLUDE FOR AN ADDITIONAL:
- 10 DRUM DRIPS.
- 40 SPRINKLERS

SPRINKLER PROTECTION NOT REQUIRED IN EVERY ROOM ON TOP FLOOR, IF ROOF ASSEMBLY IS THE FIRE-RESISTANCE RATING AS PER OBC 3.2.5.13(6), 3.2.2.17

NOTE: LISTED ELECTRICAL TRACING TO BE USED AND CONNECTED TO FIRE ALARM SYSTEM (TYP.)

ALL WET PIPING IN UNHEATED AREAS TO BE ELECTRICALLY TRACED AND INSULATED

OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

ALL PIPING IN THE CORRIDOR (INCLUDING FEEDS INTO RESIDENTIAL UNITS) SHALL BE STEEL TYPE.

INSTALL ALL SPRINKLERS WITH GUARDS IN LOCKERS, STORAGE ROOMS, MECHANICAL/ELECTRICAL ROOMS, SERVICE CORRIDORS

EXACT LOCATION AND ELEVATION OF SPRINKLER/STANDPIPE LINES OR MAINS TO BE DETERMINED BY SPRINKLER CONTRACTOR TO SUIT SITE CONDITIONS.
PROVIDE CANDLE STICKS IF REQUIRED FOR THE INSTALLATION OF SPRINKLERS.

EXTRA SPRINKLERS ARE REQUIRED DUE TO ADDITIONAL OBSTRUCTIONS (BEAMS, DUCTS, MECH.PIPING, ETC.)

FIRE EXTINGUISHER IN PARKING (TYPICAL):
MODEL ABC-20GWMD,
FIRE EXTINGUISHER 20 lbs.,

FIRE EXTINGUISHER ON THE FLOOR (TYPICAL):
MODEL ABC-05GWMD,
FIRE EXTINGUISHER 5 lbs.,

OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

ALL GLASS BULB TYPE SPRINKLERS TO BE OF RECENT ISSUE. MANUFACTURE DATE OF AT LEAST YEAR 2016.

IF SPRINKLER CONTRACTOR USES PLASTIC PIPING THEN THE FOLLOWING IS APPLICABLE.

O.B.C. SECTION 3.2.5.14 COMBUSTIBLE SPRINKLER PIPING

(1) COMBUSTIBLE SPRINKLER PIPING SHALL BE USED ONLY FOR WET SYSTEMS IN RESIDENTIAL OCCUPANCIES AND OTHER LIGHT HAZARD OCCUPANCIES. (SEE APPENDIX A)

(2) COMBUSTIBLE SPRINKLER PIPING SHALL MEET THE REQUIREMENTS OF ULC/ORD-C199P-M, "COMBUSTIBLE PIPING FOR SPRINKLER SYSTEMS".

(3) COMBUSTIBLE SPRINKLER PIPING SHALL BE SEPARATED FROM THE AREA SERVED BY THE SPRINKLER SYSTEM AND FROM ANY OTHER FIRE COMPARTMENT BY CEILINGS, WALLS, OR SOFFITS CONSISTING AS A MINIMUM,
(A) LATH AND PLASTER,
(B) GYPSUM BOARD NOT LESS THAN 9.5 MM (3/8 IN) THICK
(C) PLYWOOD NOT LESS THAT 13 MM (1/2 IN) THICK OR
(D) A SUSPENDED MEMBRANE CEILING WITH
(i) STEEL SUSPENSION GRID, AND
(ii) LAY-IN PANELS OR TILES HAVING A MASS NOT LESS THAN 1.7 KG/SQUARE METRE (0.35 LB/SQUARE FOOT)

(4) IF COMBUSTIBLE SPRINKLER PIPING IS LOCATED ABOVE A CEILING, AN OPENING THROUGH THE CEILING THAT IS NOT PROTECTED IN CONFORMANCE WITH SENTENCE (3) SHALL BE LOCATED SO THAT THE DISTANCE BETWEEN THE EDGE OF THE OPENING AND THE NEAREST SPRINKLER IS NOT MORE THAN 300 MM (11 3/4").

(5) THE PROTECTION REQUIRED BY SENTENCES (3) AND (4) IS PERMITTED TO BE WAIVED WHERE COMBUSTIBLE SPRINKLER PIPING HAS BEEN TESTED IN CONFORMANCE WITH ULC/ORD-C199P-M, "COMBUSTIBLE PIPING FOR SPRINKLER SYSTEMS", AND HAS BEEN SHOWN TO MEET THE REQUIREMENTS IN THAT DOCUMENT WITHOUT ADDITIONAL PROTECTION.

IF CPVC PIPE IS USED, CONTRACTOR TO PROVIDE "EXPANSION OFFSET" ON STRAIGHT RUNS EXCEEDING 100 FT IN LENGTH.

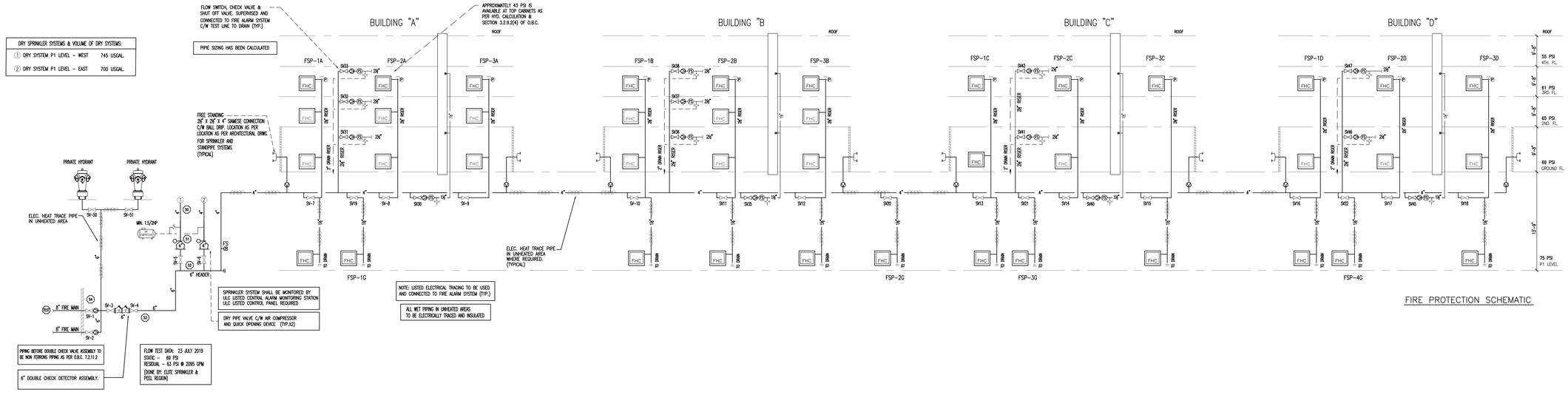
WHEN MAXIMUM PRESSURES EXCEED 100 PSI FOR BRANCH LINES ABOVE A CEILING SUPPLYING PENDENT SPRINKLERS BELOW A CEILING

1.) THE HANGER ASSEMBLY SUPPORTING THE PIPE SUPPLYING AN END SPRINKLER IN THE PENDANT POSITION SHALL BE OF A TYPE THAT PREVENTS UPWARD MOVEMENT OF THE PIPE. THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER IN A PENDENT POSITION (OR A DROP NIPPLE) AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12" FOR STEEL PIPE OR 6" FOR COPPER PIPE.

2.) THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOVER TO A SPRINKLER OR SPRINKLER DROP SHALL NOT EXCEED 12" FOR STEEL PIPE OR 6" FOR COPPER PIPE. THE HANGER CLOSEST TO THE SPRINKLER SHALL BE OF A TYPE THAT PREVENTS UPWARD MOVEMENT OF THE PIPING.

FIRE PROTECTION SYSTEM SUPERVISED VALVES SCHEDULE		
ZONE	DESCRIPTION	LOCATION
SV- 1	INCOMING WATER ISOLATION	METER ROOM
SV- 2	INCOMING WATER ISOLATION	METER ROOM
SV- 3	INLET DOUBLE CHECK VALVE ASSEMBLY ISOLATION	METER ROOM
SV- 4	OUTLET DOUBLE CHECK VALVE ASSEMBLY ISOLATION	METER ROOM
SV- 5	P-1 LEVEL WEST U/G GARAGE DRY SPRINKLERS	METER ROOM
SV- 6	P-1 LEVEL EAST U/G GARAGE DRY SPRINKLERS	METER ROOM
SV- 7	ISOLATION FSP-1A BUILDING A	PARKING GARAGE
SV- 8	ISOLATION FSP-2A BUILDING A	PARKING GARAGE
SV- 9	ISOLATION FSP-3A BUILDING A	PARKING GARAGE
SV-10	ISOLATION FSP-1B BUILDING B	PARKING GARAGE
SV-11	ISOLATION FSP-2B BUILDING B	PARKING GARAGE
SV-12	ISOLATION FSP-3B BUILDING B	PARKING GARAGE
SV-13	ISOLATION FSP-1C BUILDING C	PARKING GARAGE
SV-14	ISOLATION FSP-2C BUILDING C	PARKING GARAGE
SV-15	ISOLATION FSP-3C BUILDING C	PARKING GARAGE
SV-16	ISOLATION FSP-1D BUILDING D	PARKING GARAGE
SV-17	ISOLATION FSP-2D BUILDING D	PARKING GARAGE
SV-18	ISOLATION FSP-3D BUILDING D	PARKING GARAGE
SV-19	ISOLATION FSP-1G PARKING GARAGE	PARKING GARAGE
SV-20	ISOLATION FSP-2G PARKING GARAGE	PARKING GARAGE
SV-21	ISOLATION FSP-3G PARKING GARAGE	PARKING GARAGE
SV-22	ISOLATION FSP-4G PARKING GARAGE	PARKING GARAGE
SV-23-29	SPARE	--
SV-30	BUILDING "D" GARBAGE CHUTE SYSTEM ISOLATION	PARKING GARAGE
SV-31	BUILDING "D" GROUND FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "D" 1ST FLOOR
SV-32	BUILDING "D" 2ND FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "D" 2ND FLOOR
SV-33	BUILDING "D" 3RD FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "D" 3RD FLOOR
SV-34	SPARE	--
SV-35	BUILDING "C" GARBAGE CHUTE SYSTEM ISOLATION	PARKING GARAGE
SV-36	BUILDING "C" GROUND FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "C" 1ST FLOOR
SV-37	BUILDING "C" 2ND FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "C" 2ND FLOOR
SV-38	BUILDING "C" 3RD FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "C" 3RD FLOOR
SV-39	SPARE	--
SV-40	BUILDING "B" GARBAGE CHUTE SYSTEM ISOLATION	PARKING GARAGE
SV-41	BUILDING "B GROUND FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "B" 1ST FLOOR
SV-42	BUILDING "B" 3RD FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "B" 3RD FLOOR
SV-43-44	SPARE	--
SV-45	BUILDING "A" GARBAGE CHUTE SYSTEM ISOLATION	PARKING GARAGE
SV-46	BUILDING "A GROUND FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "A" 1ST FLOOR
SV-47	BUILDING "A" 3RD FLOOR SPRINKLER SYSTEM ISOLATION	BUILDING "A 3RD FLOOR
SV-48-49	SPARE	--
SV-50	PRIVATE HYDRANT ISOLATION	METER ROOM
SV-51	PRIVATE HYDRANT ISOLATION	METER ROOM

DRY SPRINKLER SYSTEMS & VOLUME OF DRY SYSTEMS:	
① DRY SYSTEM P1 LEVEL – WEST	745 USGAL.
② DRY SYSTEM P1 LEVEL – EAST	700 USGAL.



FIRE PROTECTION SCHEMATIC

MATERIAL NOTES

PIPING MATERIAL: MAINS – SCHEDULE 7 OR 10 BLACK STEEL PIPE.
LINES – SCHEDULE 40, 7 OR 10 BLACK STEEL PIPE

FITTING MATERIAL: MAINS – CUL LISTED GROOVED FITTINGS
LINES – CUL LISTED GROOVED FITTINGS

HANGER MATERIAL: MAINS – AS PER NFPA 13 REQUIREMENTS
LINES – AS PER NFPA 13 REQUIREMENTS

DESIGN: SPRINKLER SYSTEM – NFPA 13 (2016)

General Notes

1. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.
2. All Dimensions Shown are Center to Center.
3. High Temperature Heads are to be Field Located Where Required.
4. All Heads, Pipes and Hangers are to be Installed per NFPA #13.
5. Hangers are to be U.L.C. Listed and F.M. Approved.
6. SPRINKLERS c/w HEAD GUARDS TO BE INSTALLED UNDER ALL OBSTRUCTIONS OVER 48" WIDE.
7. OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

Symbols	
Symbol	Description
(H)	Hydraulic Reference Points
[=e =e]	Elev. Below Top of Steel
[e+2	Elev. Above Finished Floor
+ (TOS 24-11)	Elev. of Top of Steel
<DEP	Ceiling Height
—•—	Denotes Hanger Location
o	Rise up or down
IT/HT	INTERMEDIATE/HIGH TEMPERATURE
CP	WIRE GUARD

Symbol	Description	Total

Contract No.	2019-251
Drawn By:	E.N.
Scale:	1/8"=1'-0"
Date:	July, 2019
Approval By:	A. NOVOSSELOV P. Eng.

Revisions:	Date:
Issued for Tender	Aug.01/19
Issued for Permit & Tender	Sep.18/19
Re-Issued for Permit & Tender	Dec.21/20
Issued for Permit	Mar.03/21
2. Revised as per SI A01	Jun.07/21
Progressive Construction # 2	Jun.15/21

LICENSED PROFESSIONAL ENGINEER A. NOVOSSELOV 100083641 PROVINCE OF ONTARIO

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www.elitesprinkler.ca

Contractor: STAR FIRE systems
601 Edgeley Boulevard, Unit 9 & 10, Vaughan, ON L4K 4G2
T: 905.326.6455 • F: 905.326.6815

Job: ROYAL PINE
ATTMAR + PALLESCHI DRIVE
BRAMPTON, ON

Drawing Title: FIRE PROTECTION SCHEMATIC & DETAILS

SHEET 7 of 7