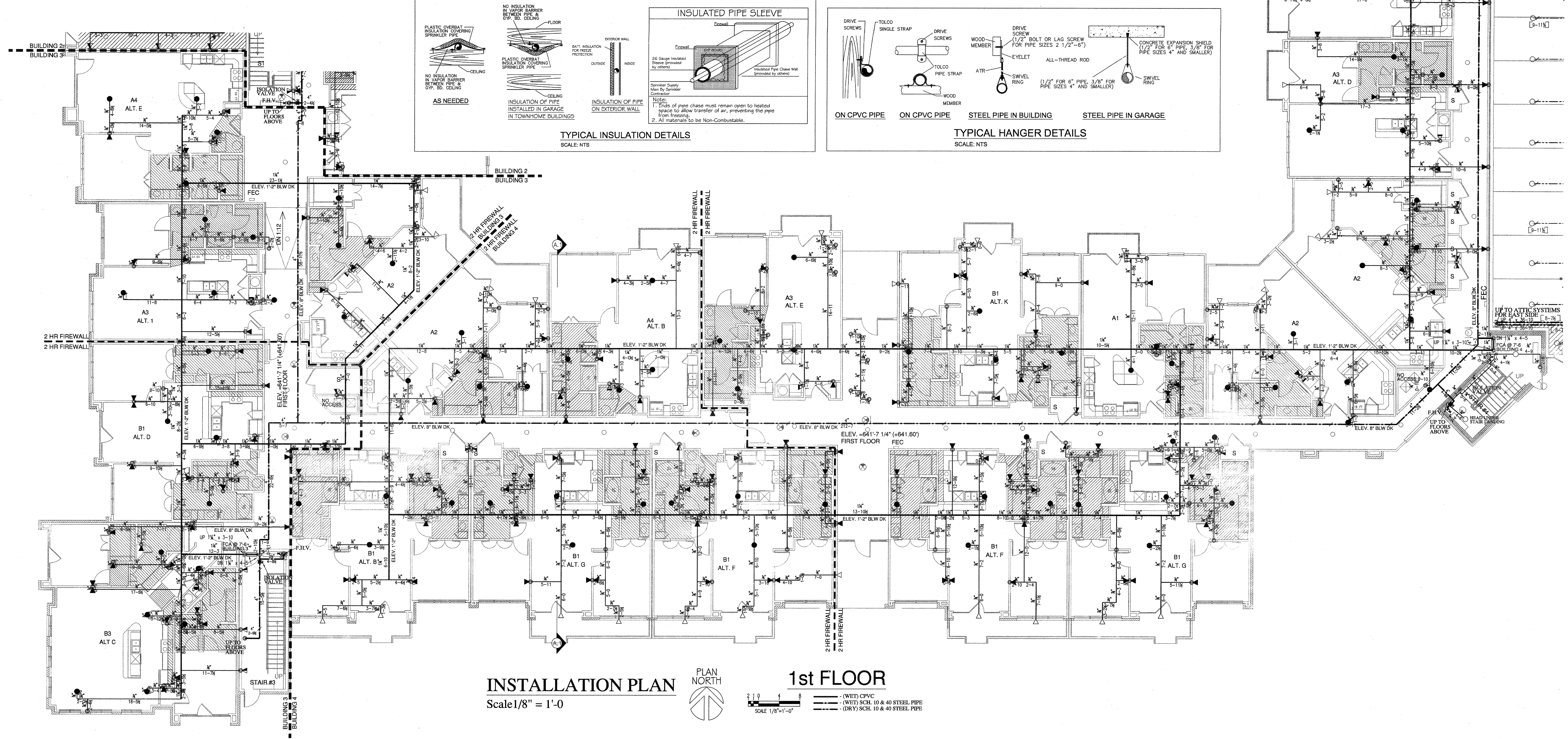
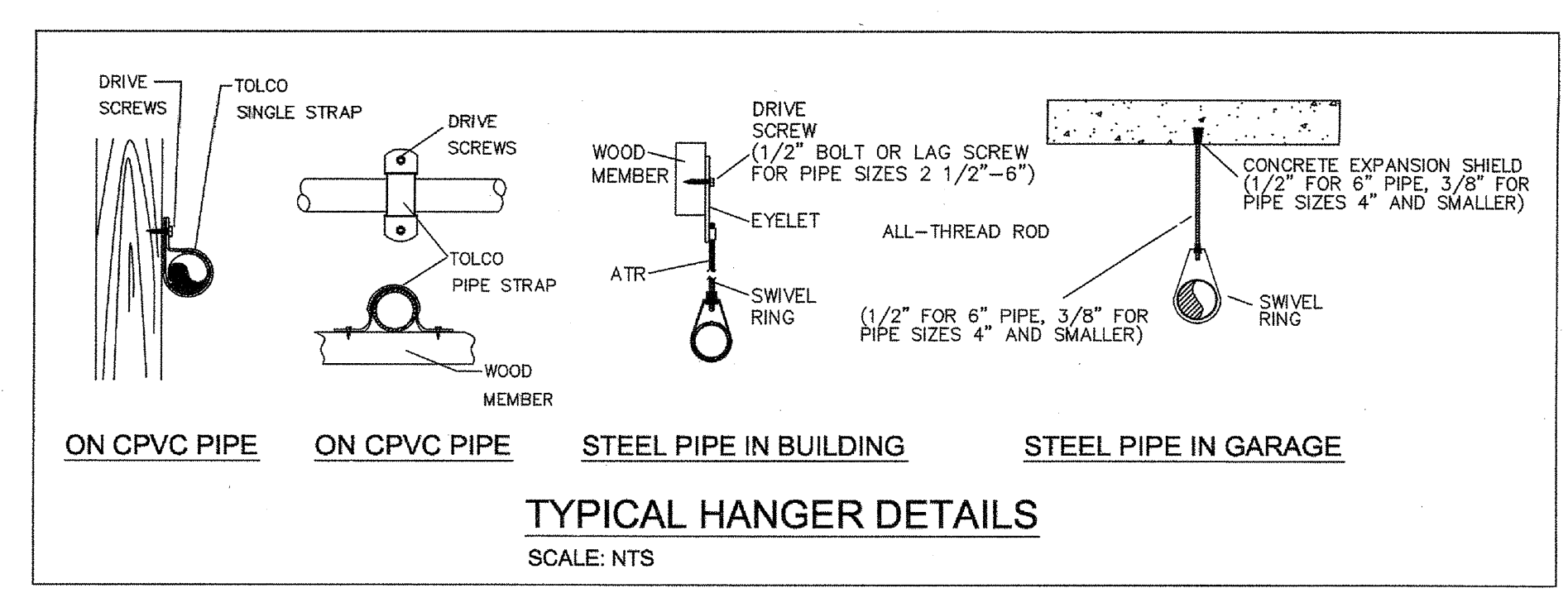
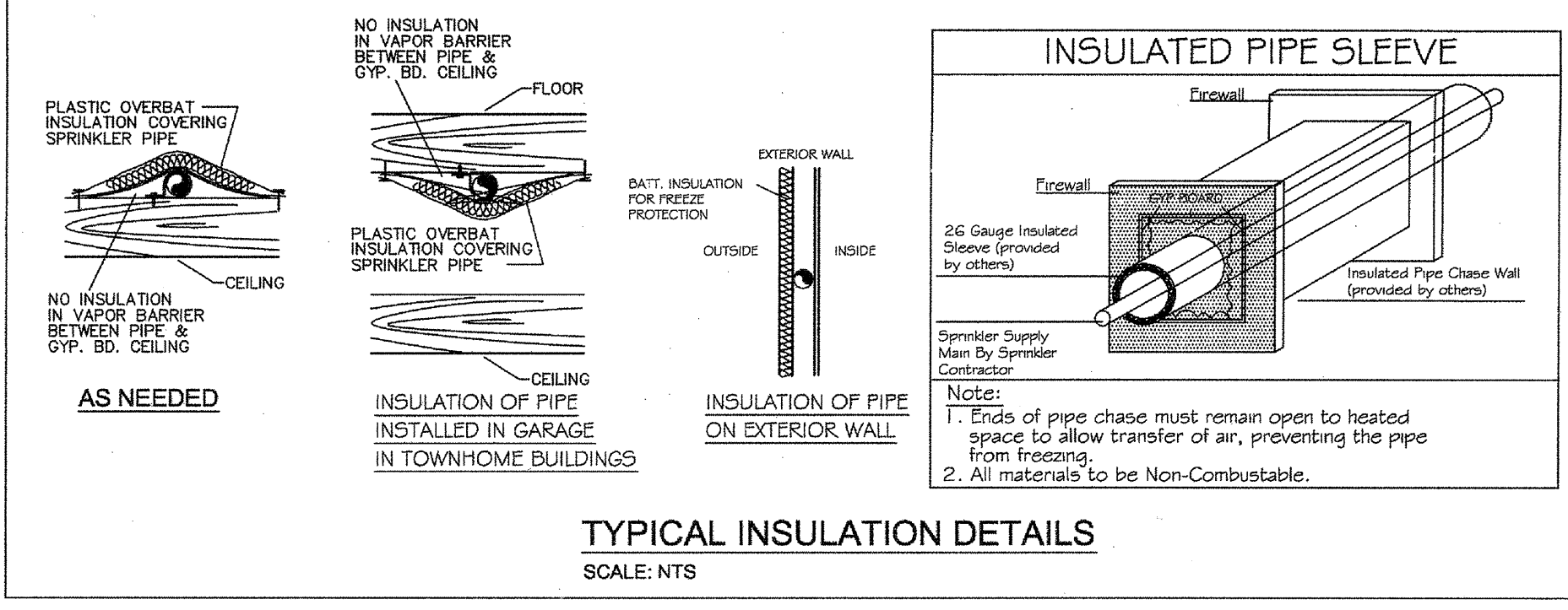
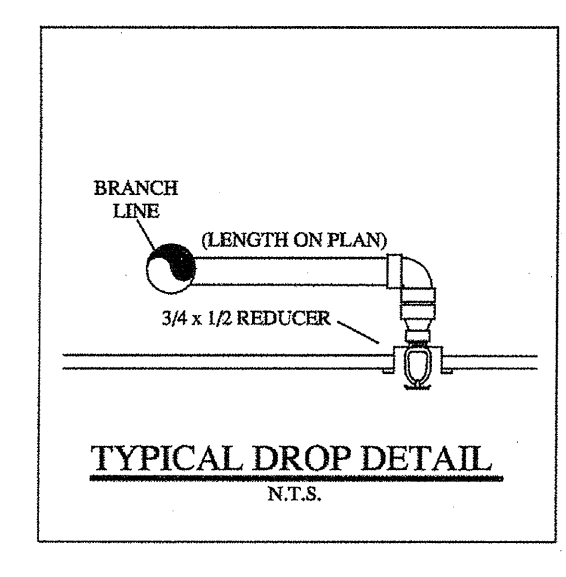
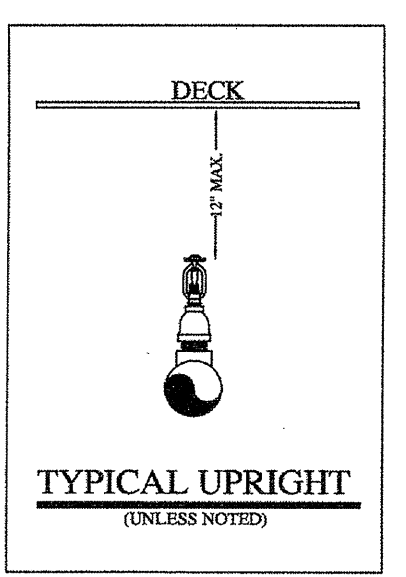
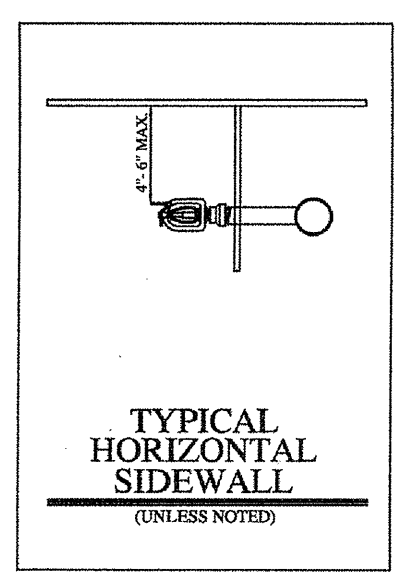
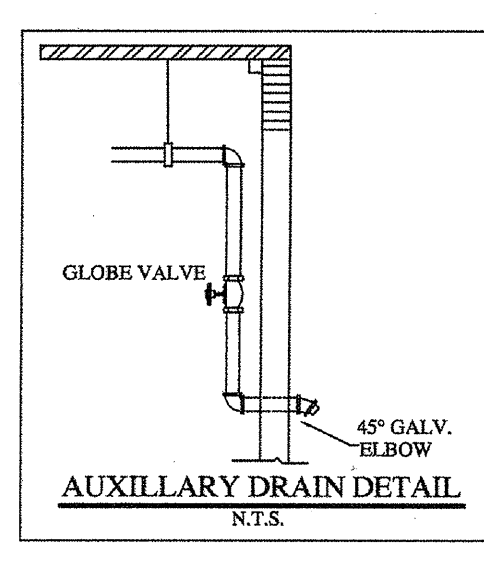


**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	6"
6"	8"
8"	10"



**HANGER SPACING CHART**

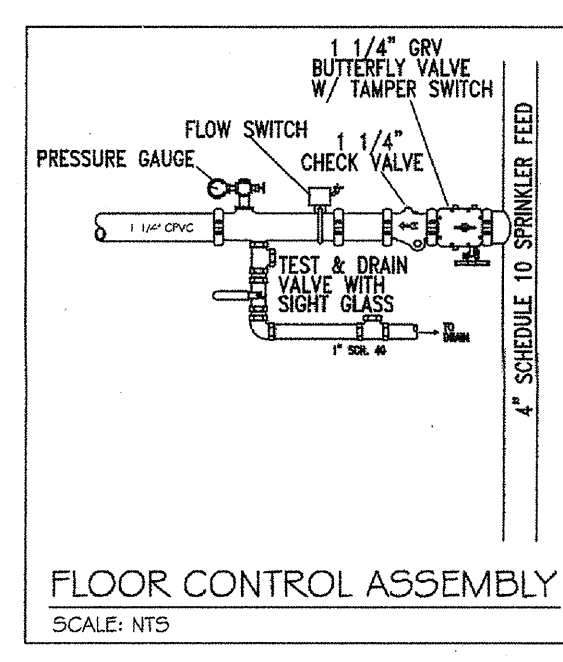
TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (DN)	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8"	1/2"



- LEGEND:**
- ⊗ SYSTEM RISER
  - ⊗ 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP OR DN)
  - REF HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - ⊗ 2 1/2" HOSE VALVE
  - ⊗ BUTTERFLY VALVE
  - ⊗ HANGERS (SIZE VARIES)
  - ⊗ CEILING ELEVATION
  - ⊗ PIPE ELEVATION

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
 GROSS BLDG AREA: 424,139 S.F.  
 TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

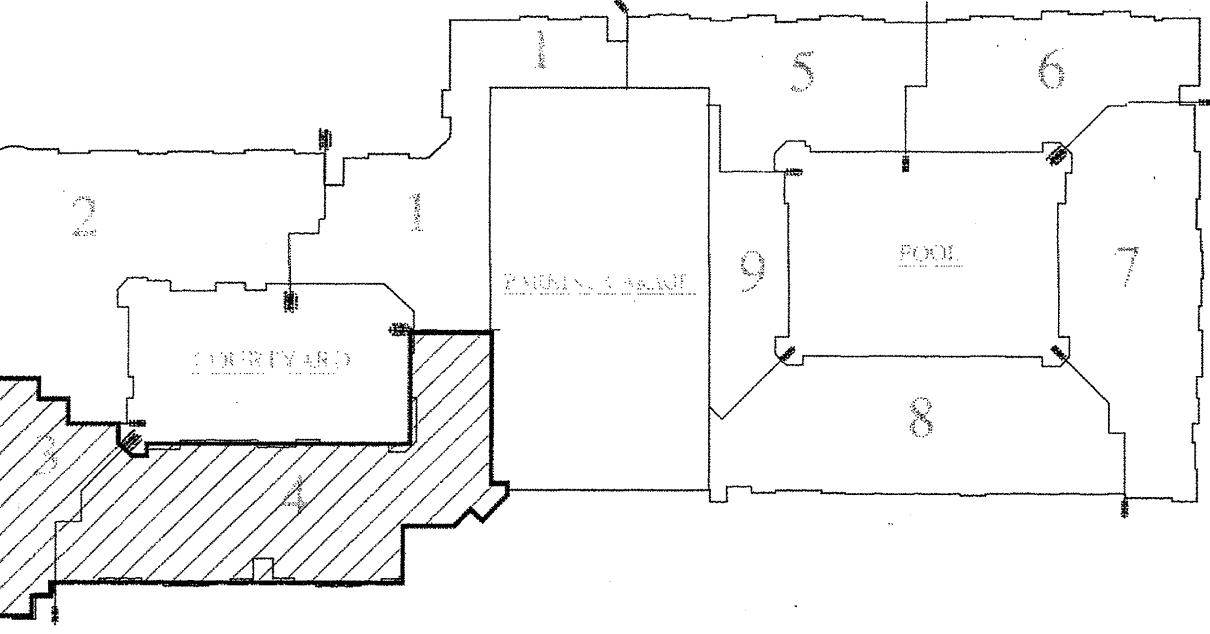
OCCUPANCY: S-2  
 GROSS BLDG AREA: 181,834 S.F.  
 TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

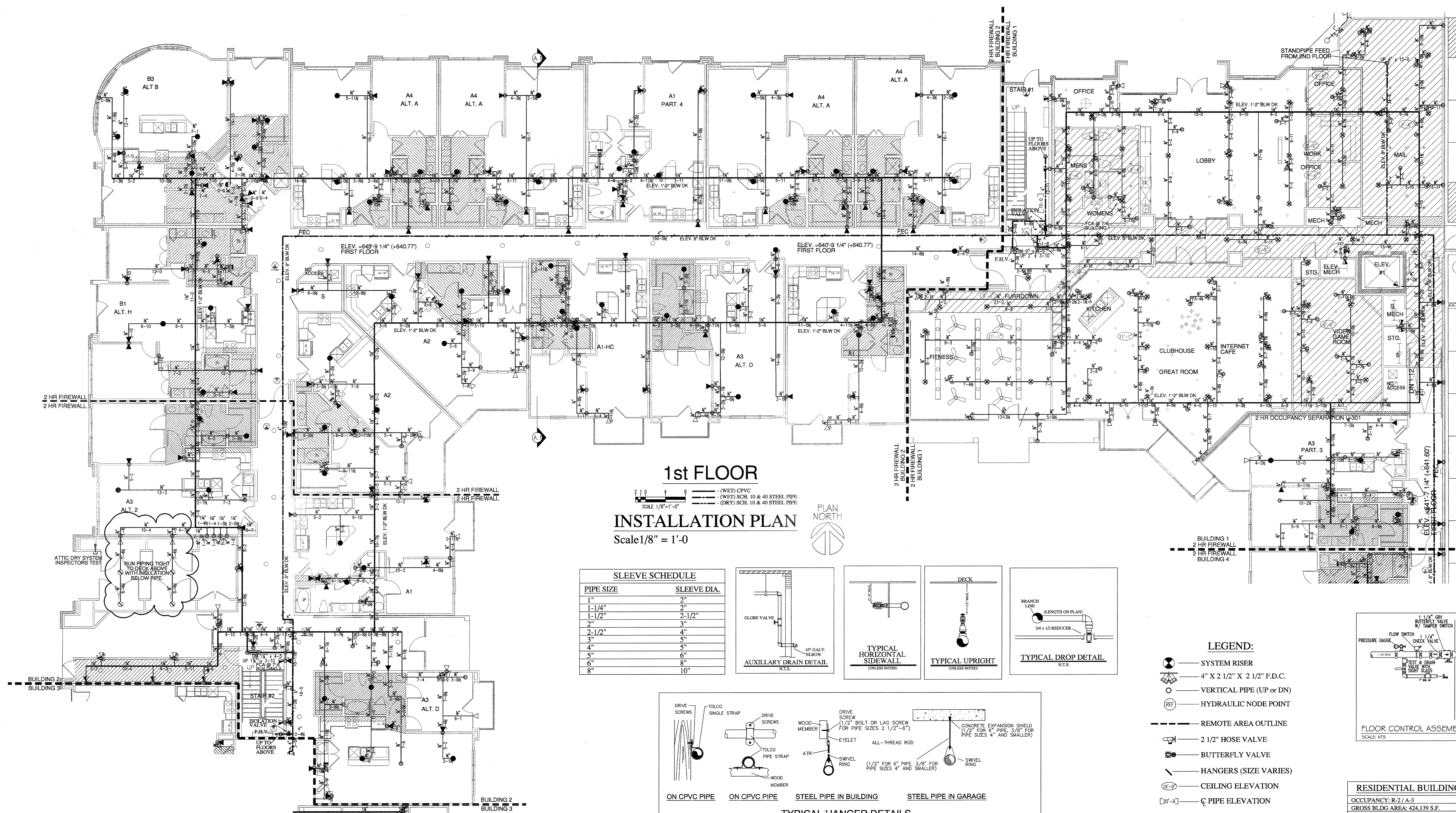
Ranger Fire, Inc.  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
 PRINTED RME NAME: Matthew B. Claxton  
 RME NUMBER: 0778 DATE: 7-3-13

AS-BUILT  SUBMITTAL  OTHER



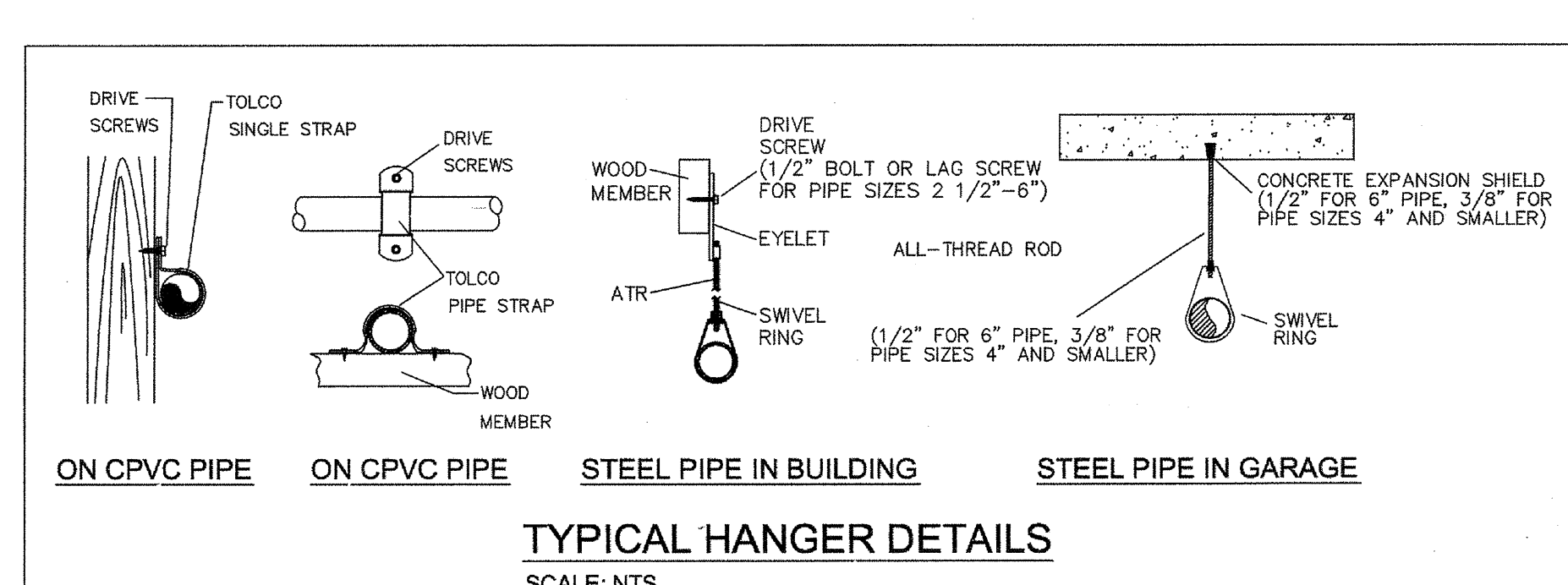
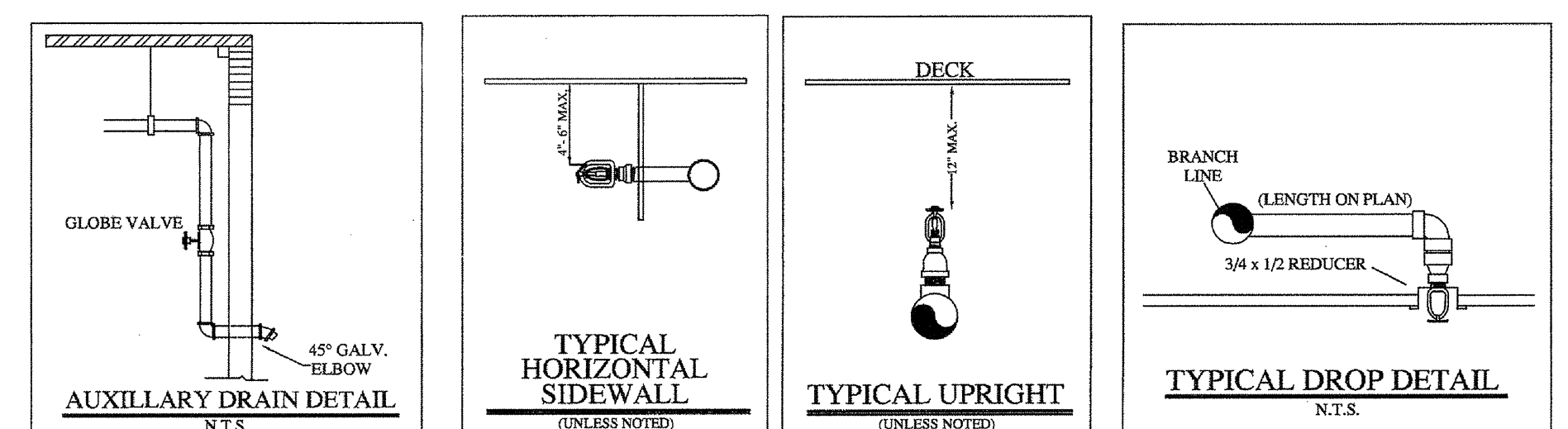
**AS-BUILT**



**1st FLOOR**  
**INSTALLATION PLAN**  
 Scale 1/8" = 1'-0"

**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	4"
4"	5"
5"	6"
6"	8"
8"	10"

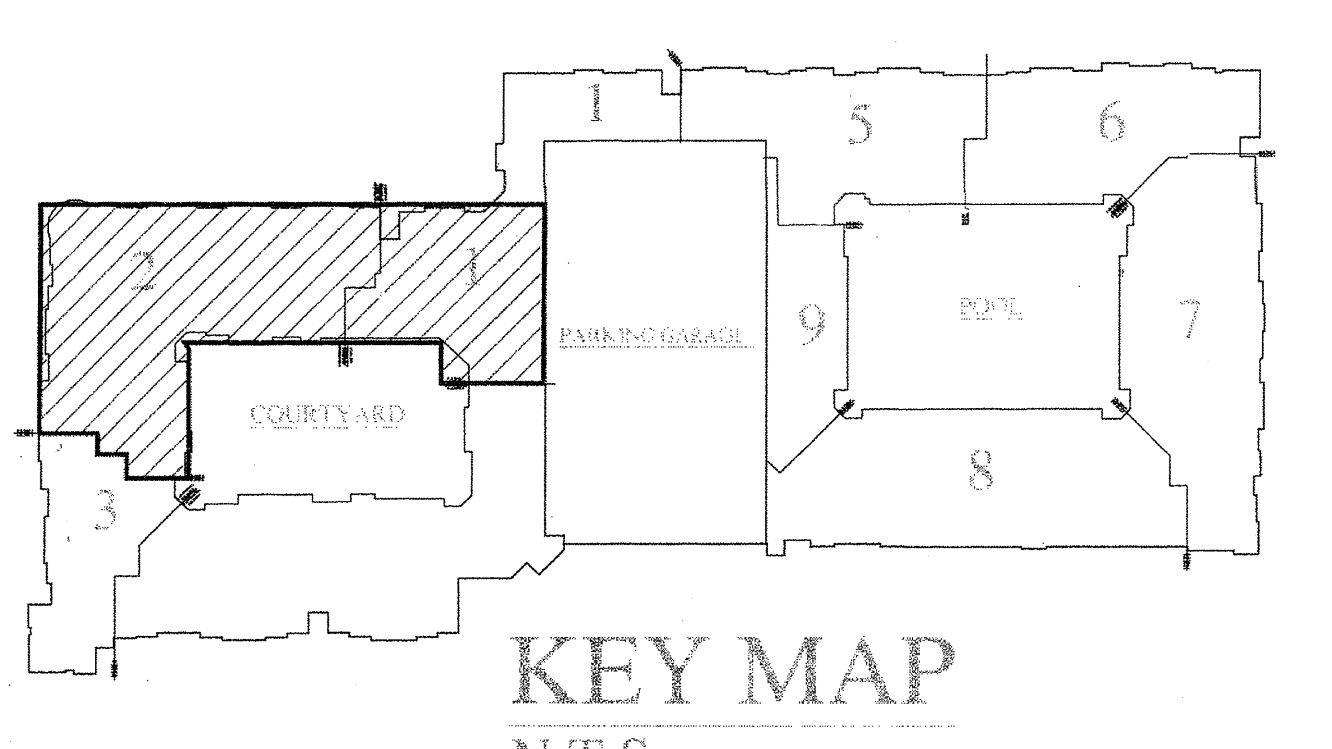
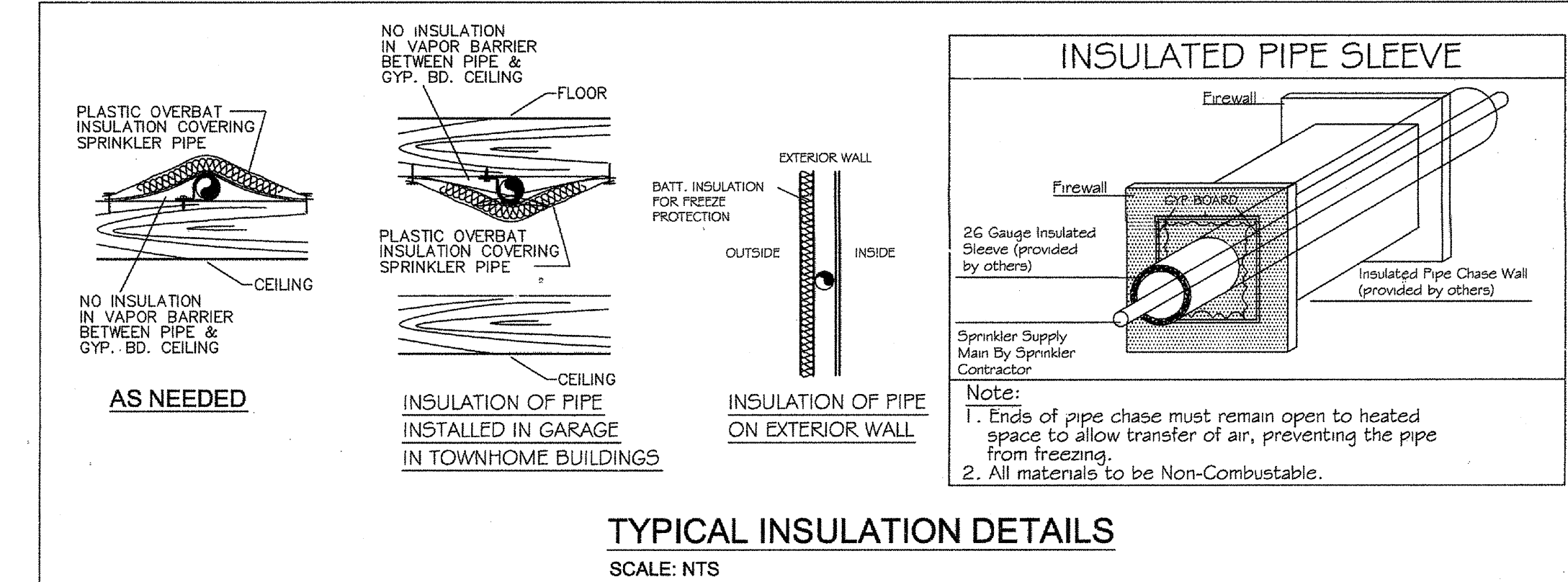


**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (IN)	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREAD	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER



- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
 GROSS BLDG AREA: 424,139 S.F.  
 TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
 GROSS BLDG AREA: 181,834 S.F.  
 TYPE OF CONSTRUCTION: 2-B

**AS-BUILT**

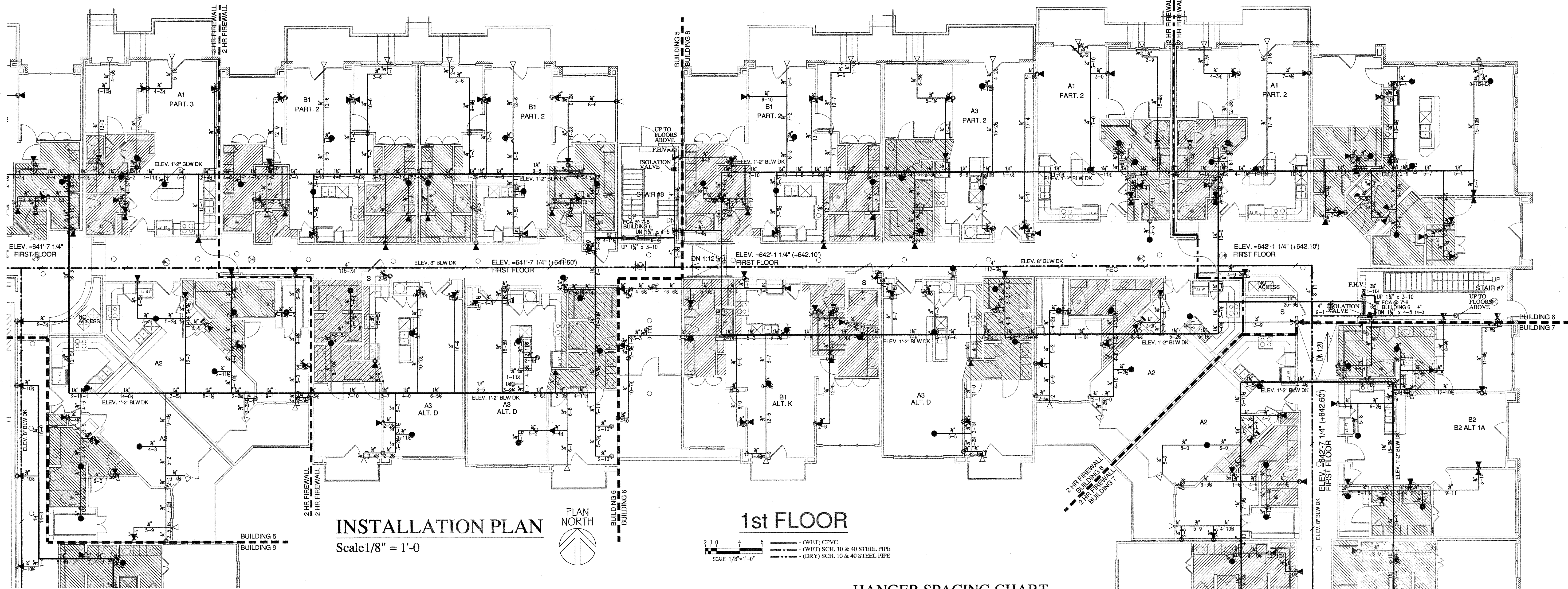
I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: [Signature]  
 PRINTED RME NAME: Matthew B. Claxton  
 RME NUMBER: 0778  
 DATE: 7-3-13

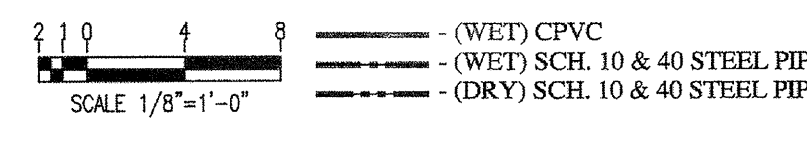
AS-BUILT  SUBMITTAL  OTHER

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, and the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
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  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.



**INSTALLATION PLAN**  
Scale 1/8" = 1'-0"

**1st FLOOR**



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN)

PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
UPRATED LIGHT WALL	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.1 DISTANCE FROM SPRINKLER TO HANGER

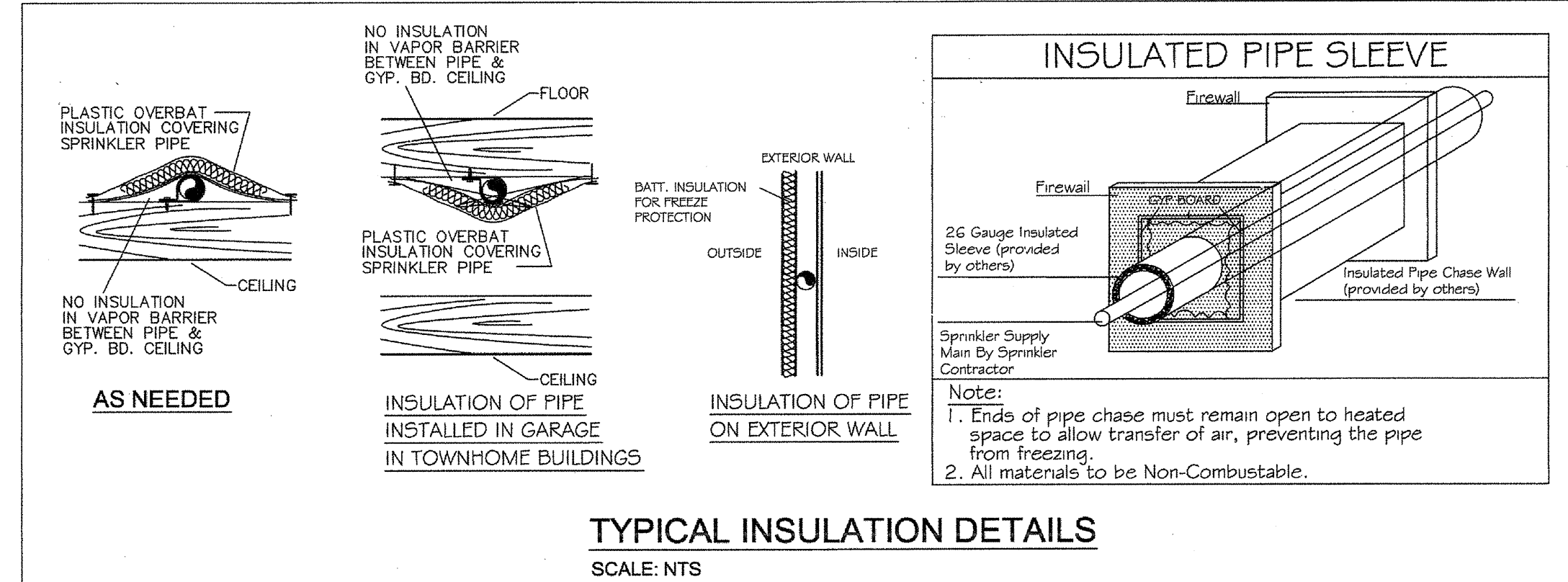
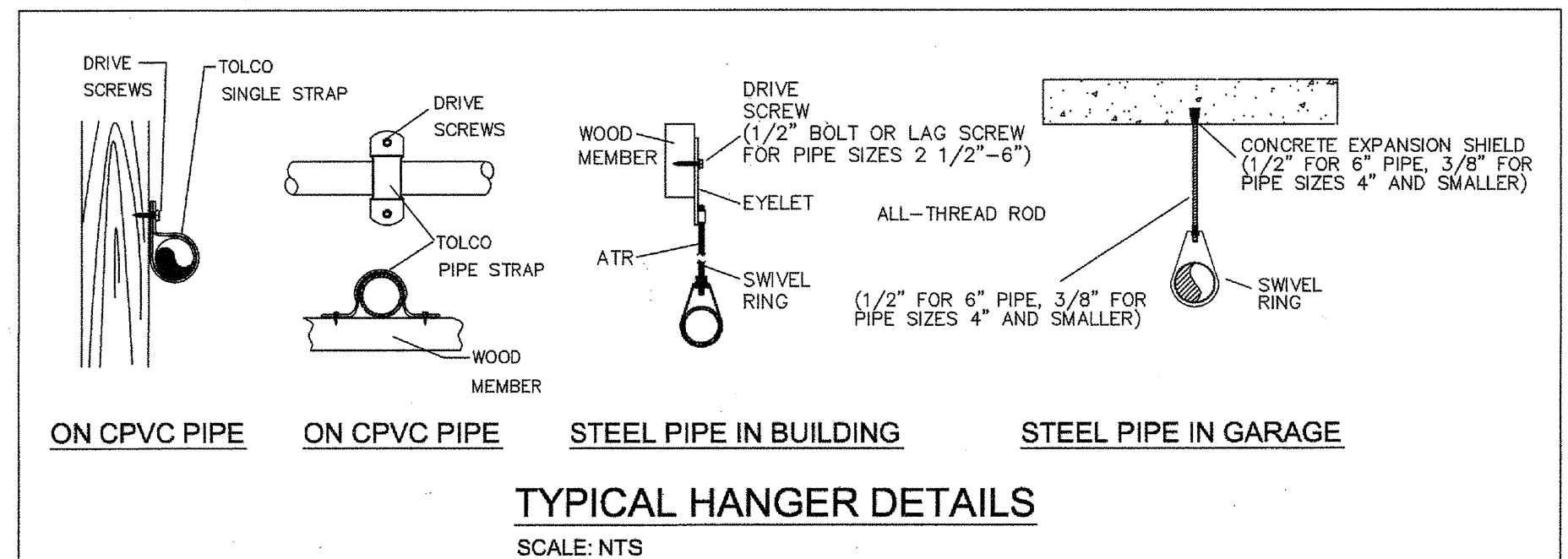
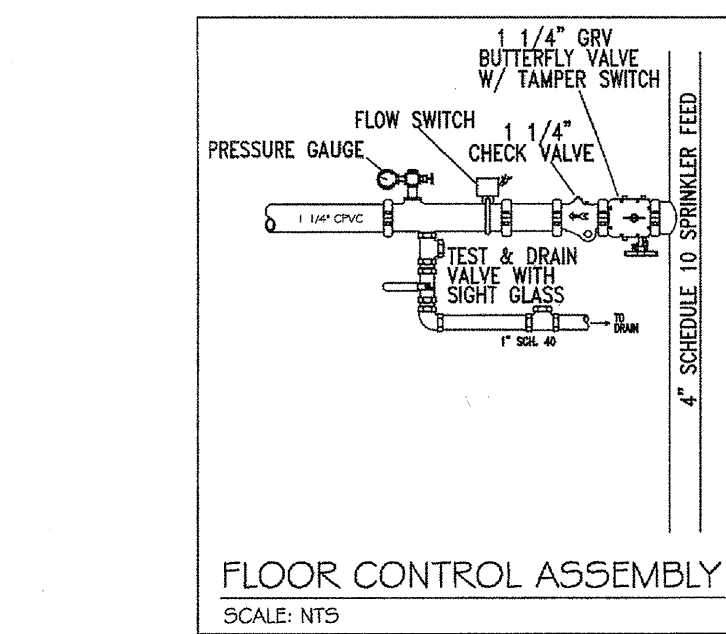
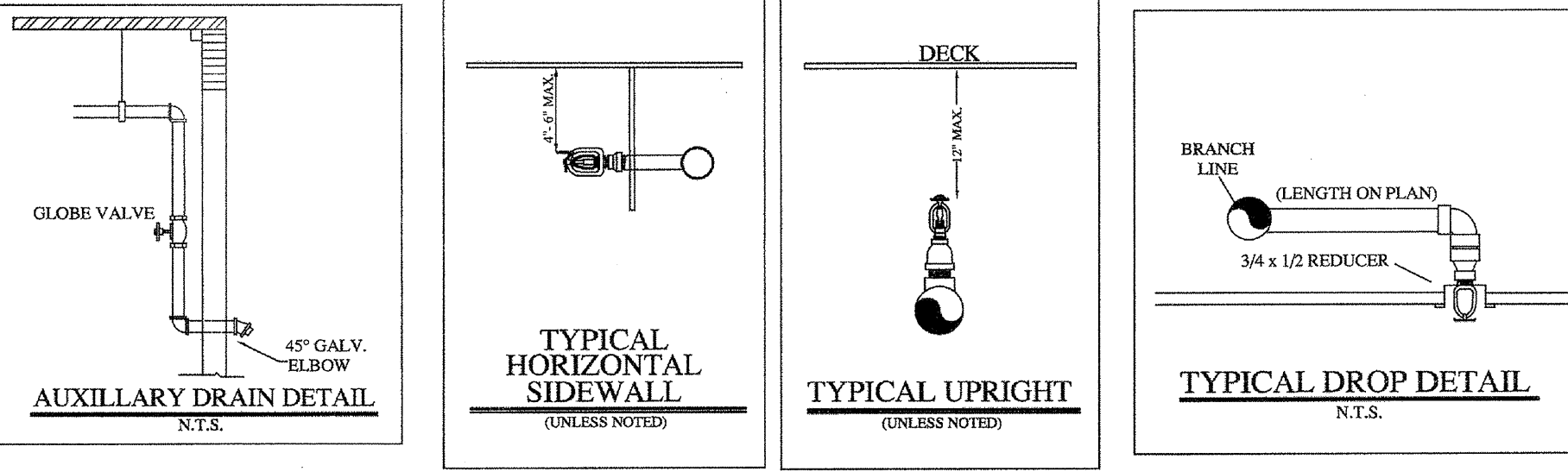
NOTE: WHEN PRESSURE EXCEEDS 150 PSI THE UNSPACED LENGTH BETWEEN THE END SPRINKLER IN A PENDENT POSITION OR DRIP WAPLE AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

**SLEEVE SCHEDULE**

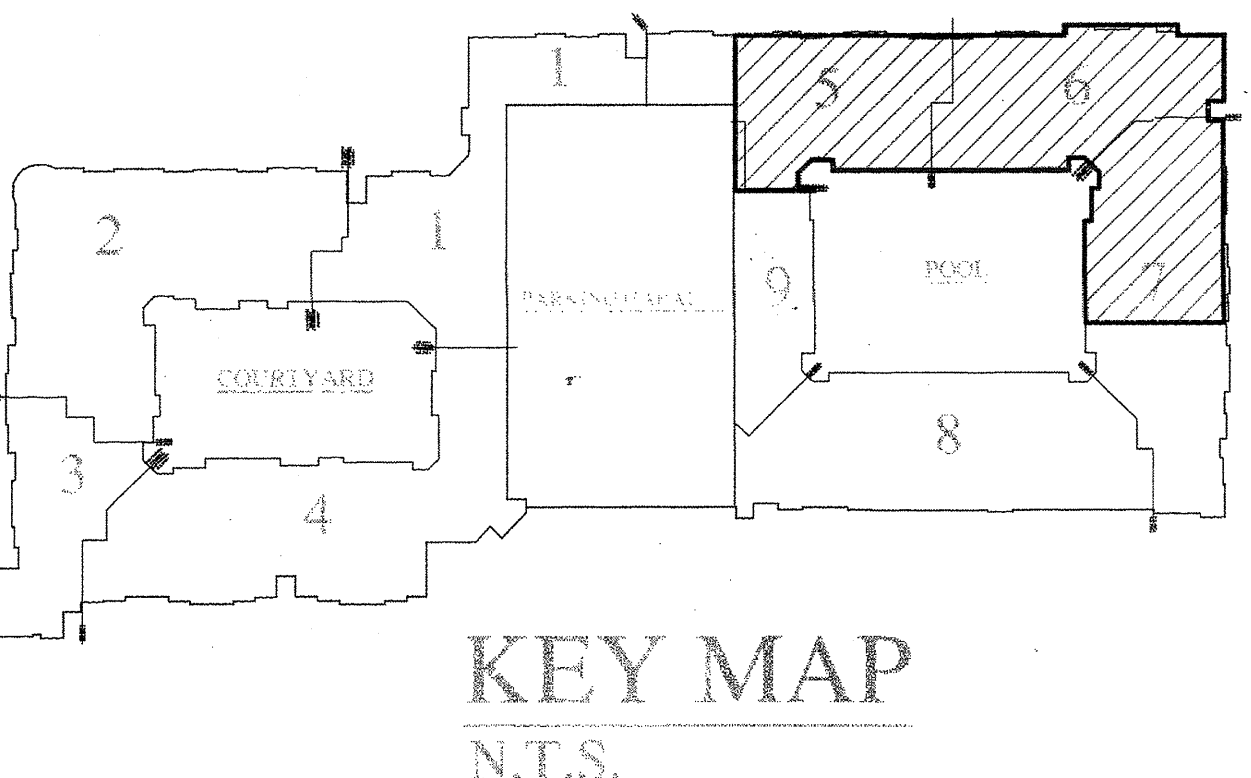
PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"



**TYPICAL INSULATION DETAILS**  
SCALE: NTS

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (8) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, and the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION



**KEY MAP**  
N.T.S.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2/A-3  
GROSS BLDG AREA: 424,139 S.F.  
TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
GROSS BLDG AREA: 181,834 S.F.  
TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778 DATE: 2-21-13  
 AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER

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**GENERAL CONTRACTOR:**  
RANGER FIRE, INC.  
1000 NE LOOP 410 STE 700  
SAN ANTONIO, TX  
210-824-6044

**DATE:** 04-01-12  
**PP 3 OF 30**

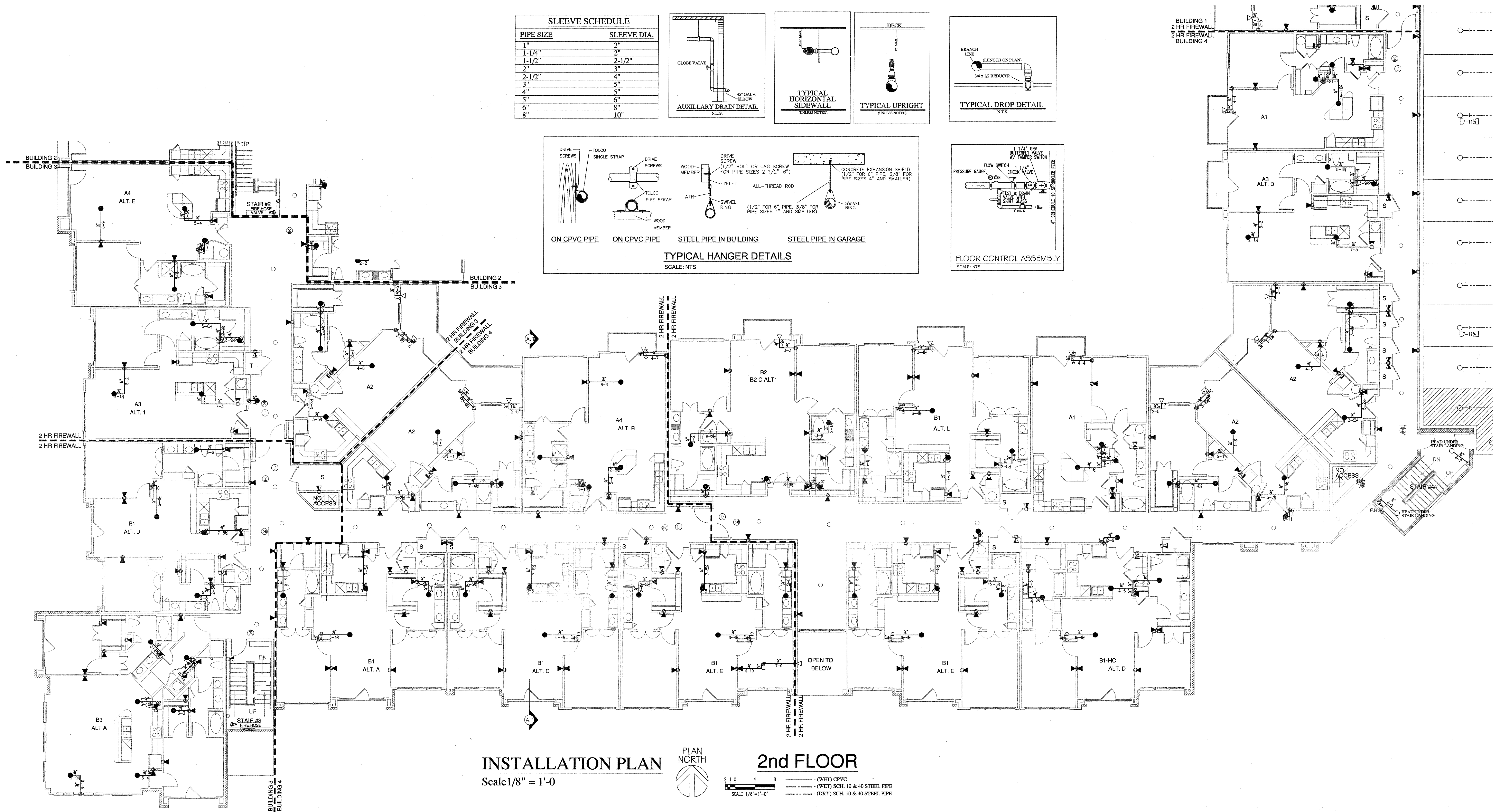
**DESCRIPTION:** 1st FLOOR

**CONTRACT #:** 11-05

**PROJECT:** KELLER SPRINGS LOFTS  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

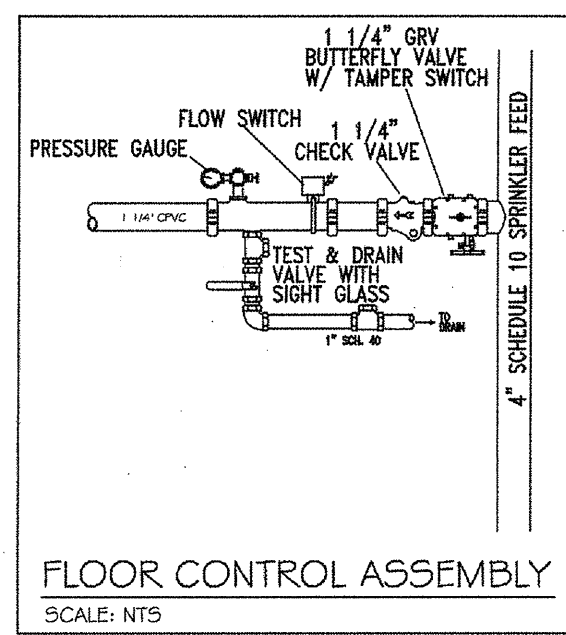
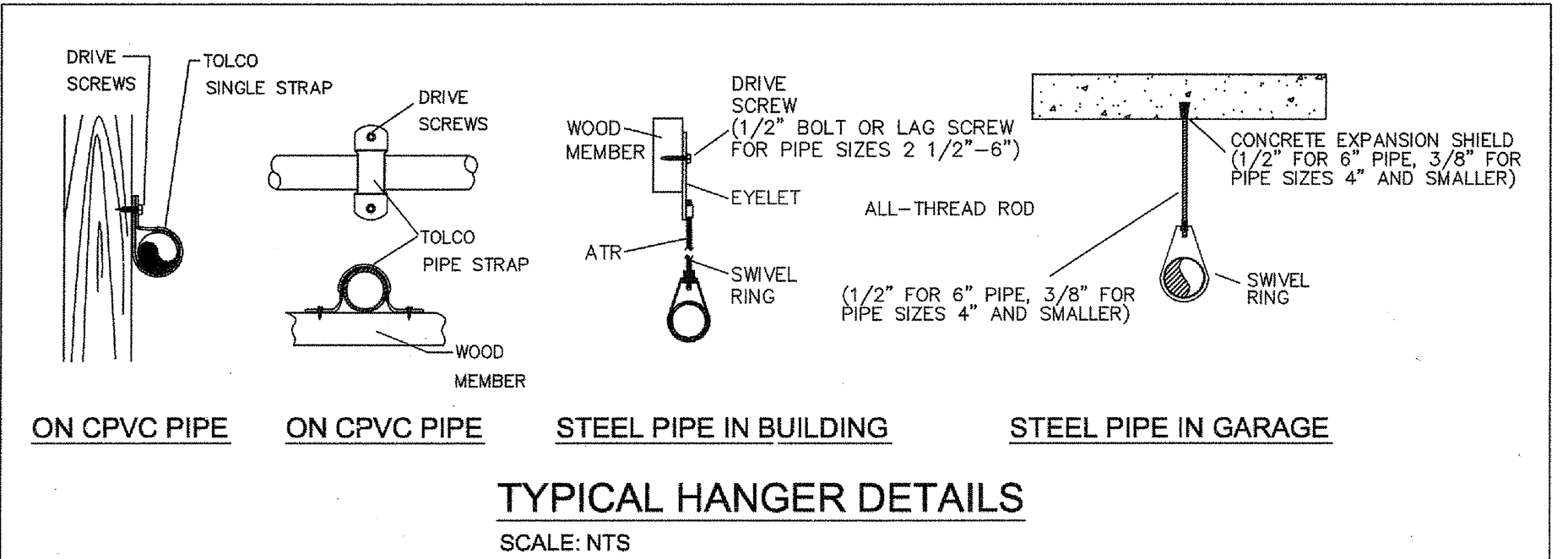
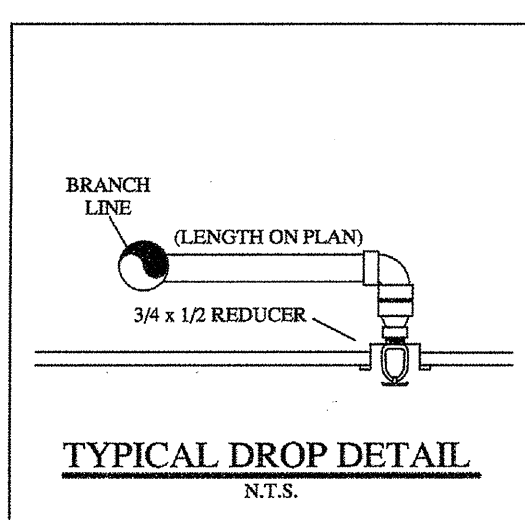
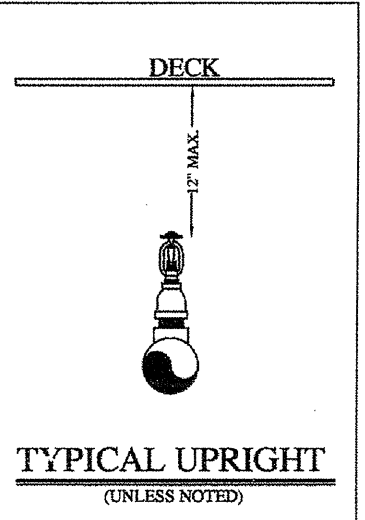
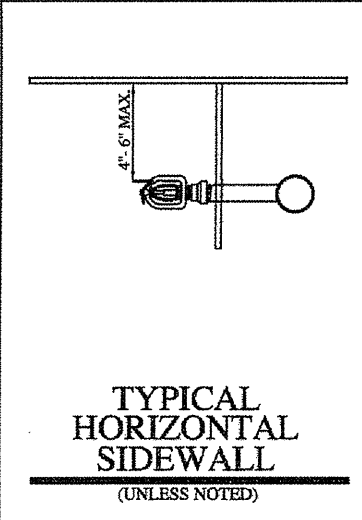
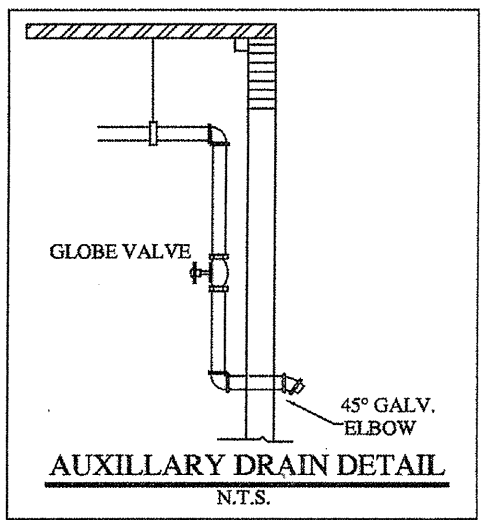




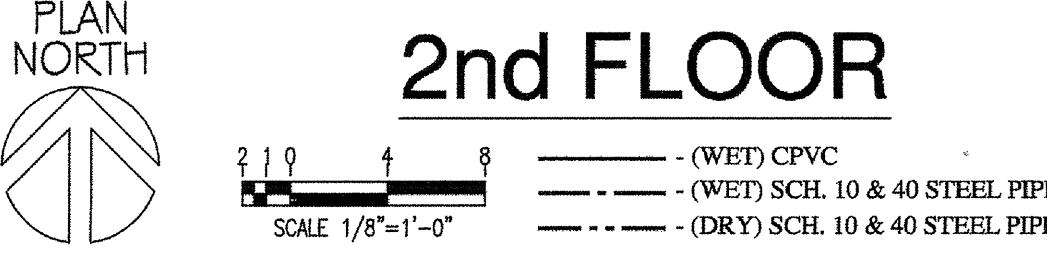


**SLEEVE SCHEDULE**

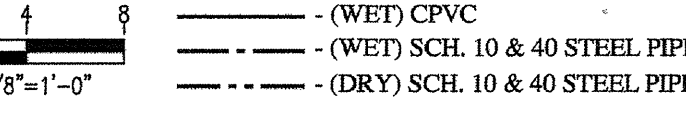
PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	6"
5"	8"
6"	8"
8"	10"



**INSTALLATION PLAN**  
Scale 1/8" = 1'-0"



**2nd FLOOR**



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN)

PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
UNGRADED LIGHT WALL	N/A	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

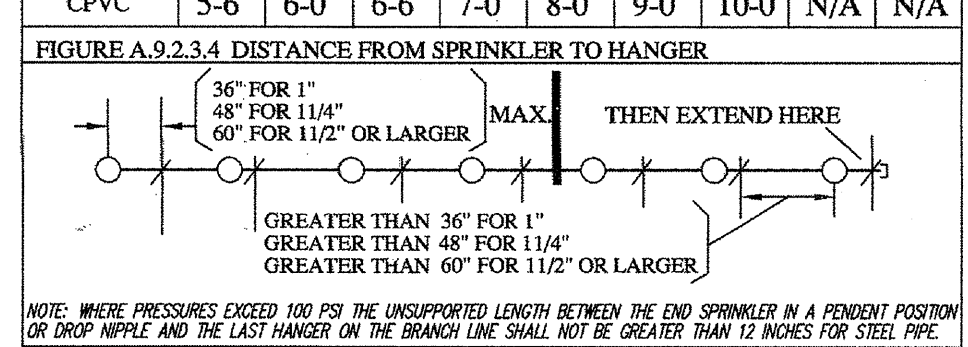


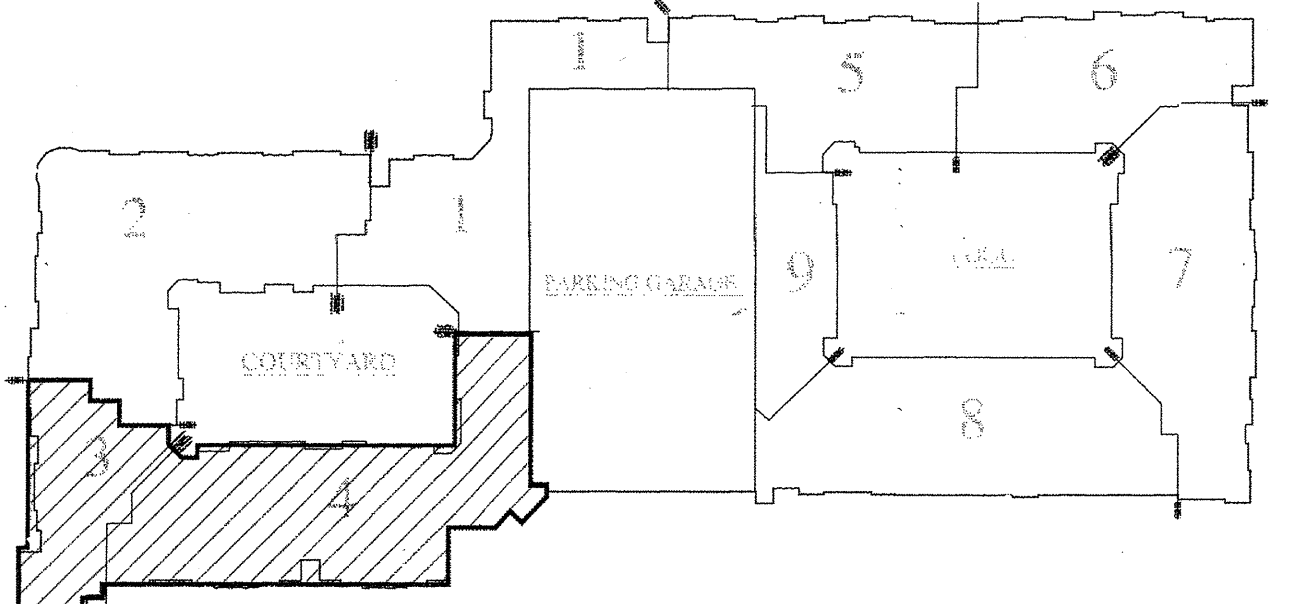
TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP OR DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - C PIPE ELEVATION

**GENERAL NOTES:**

- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
- Ranger Fire excludes all electrical and ceiling work.
- All design and installation shall conform to NFPA 13, 13R, 14, 20, and the City of Addison requirements.
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- The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
- Install Black steel piping in Parking Garage.



KEY MAP  
N.T.S.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
GROSS BLDG AREA: 424,139 S.F.  
TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
GROSS BLDG AREA: 181,834 S.F.  
TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778  
DATE: 7-31-13

**AS-BUILT**

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 0590

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**GENERAL CONTRACTORS:**  
CITY: FORT WORTH  
FIRM: LEMBEY PARTNERS LTD  
1000 BELLEWOOD, STE 100  
SAN ANTONIO, TX  
210-824-6044

**OWNER:**  
LEMBEY PARTNERS LTD  
1000 BELLEWOOD, STE 100  
SAN ANTONIO, TX  
210-824-6044

**CONTRACT NAME:** KELLER SPRINGS LOFTS  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

**CONTRACT #:** 11-055  
DESCRIPTION: 2ND FLOOR

**SCALE:** 1/8" = 1'-0"  
DRAWN BY: C. ALEXANDER  
CHECKED BY: [Signature]  
DATE: 04-01-12  
SHEET: FP 6 OF 30

AS-BUILT  SUBMITTAL  OTHER

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 DATE: BY: REV # REVISIONS:

**GENERAL CONTRACTOR:**  
 PROJECT: 1000 S. MAIN ST. STE 100  
 ADDRESS: SAN ANTONIO, TX  
 PHONE: 210-824-6044  
 OWNER: EMBREY PARTNERS LTD.  
 ADDRESS: SAN ANTONIO, TX  
 PHONE: 210-824-6044

**SPRINKLERS**

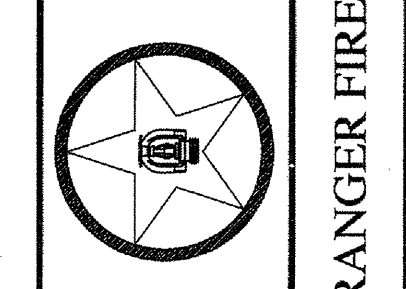
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RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE
RELIABLE	ETTES	R-2	45	WHITE	12' RISE

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
 GROSS BLDG AREA: 424,139 S.F.  
 TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

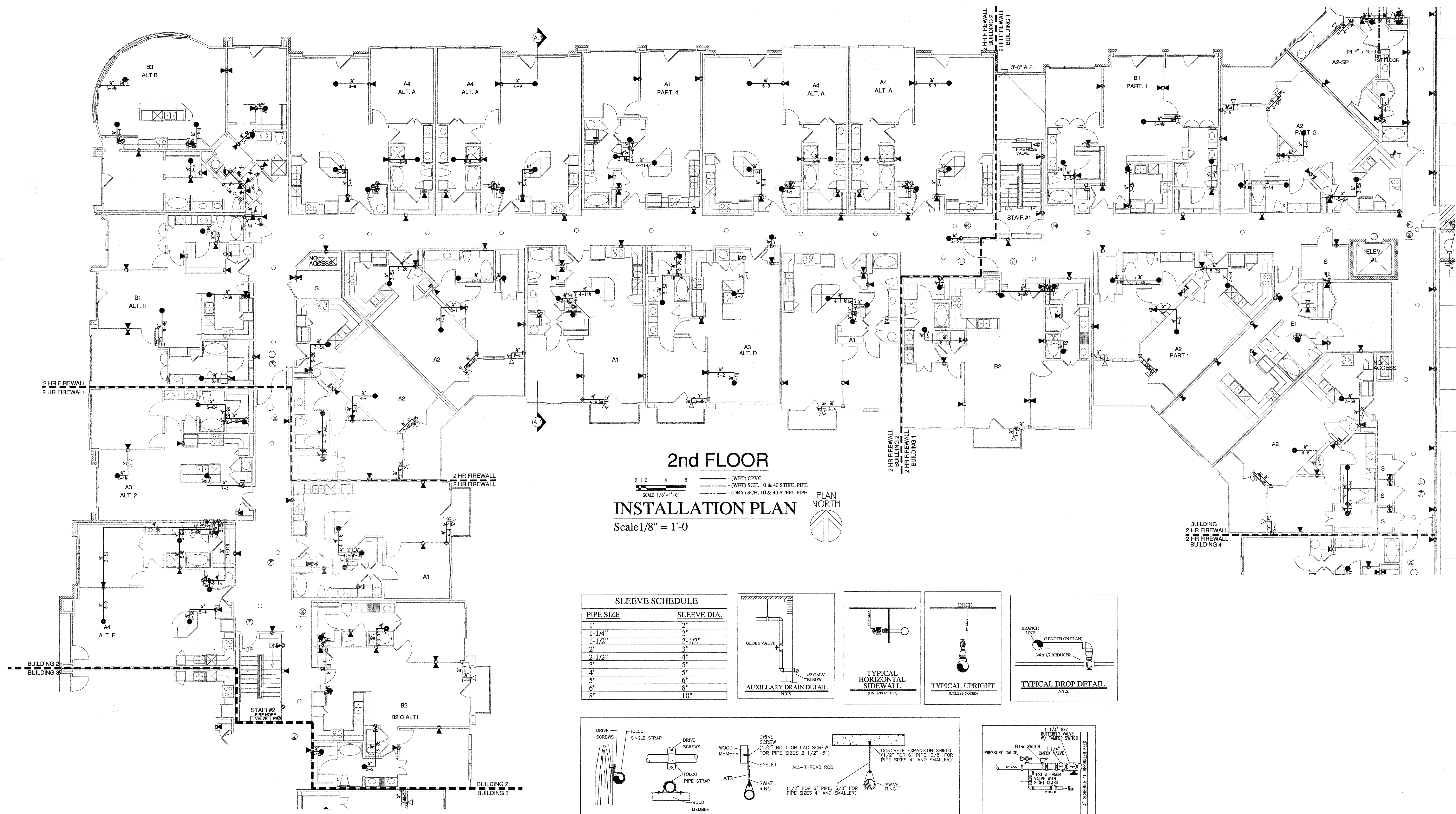
OCCUPANCY: S-2  
 GROSS BLDG AREA: 181,834 S.F.  
 TYPE OF CONSTRUCTION: 2-B



**KELLER SPRINGS LOFTS**  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

CONTRACT NAME:  
 CONTRACT # 11-055  
 DESCRIPTION: 2ND FLOOR

SCALE: 1/8" = 1'-0"  
 DRAWN BY: C. ALEXANDER  
 CHECKED BY:  
 DATE: 04-01-12  
 SHEET: FP 7 OF 30

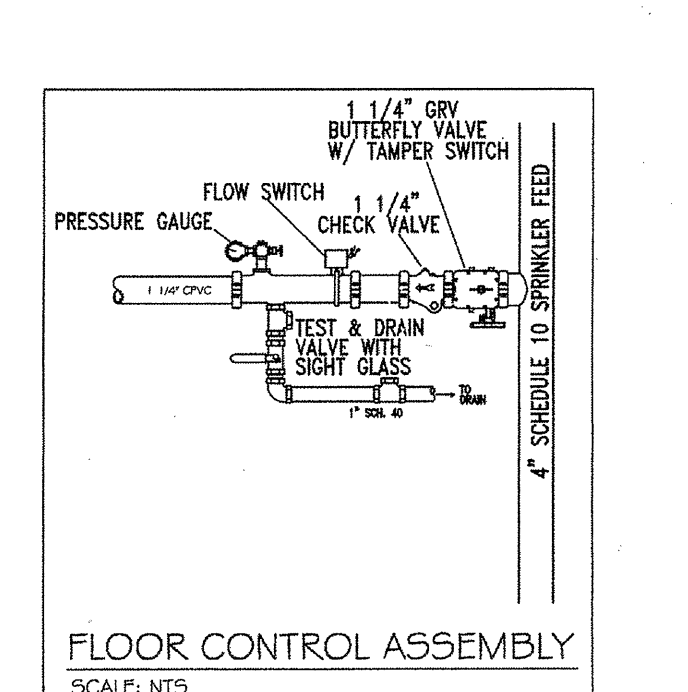
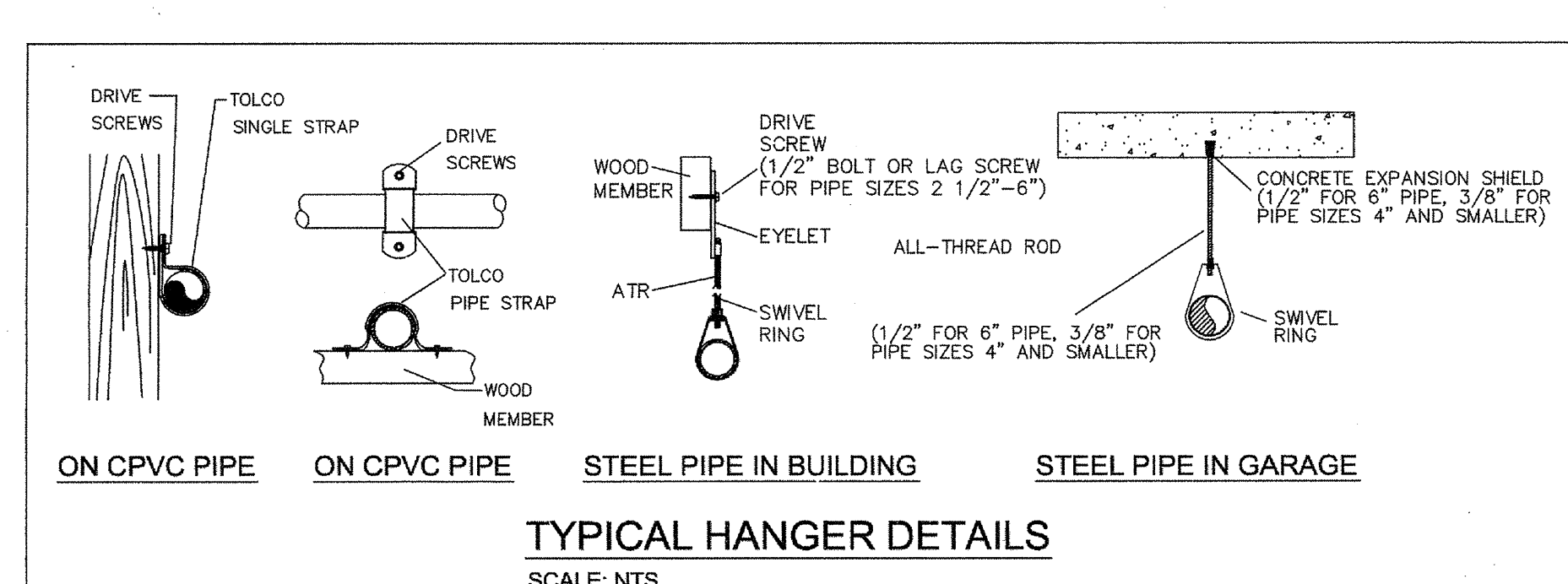
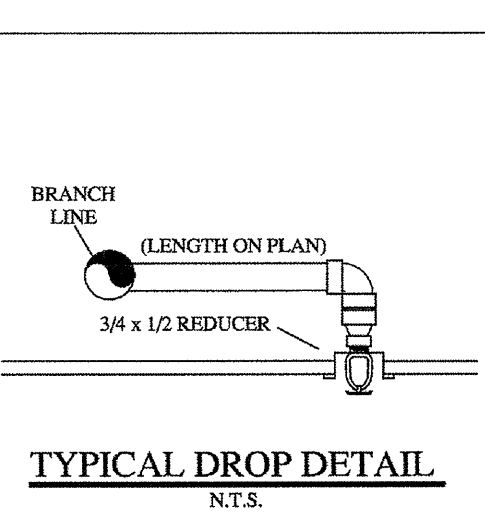
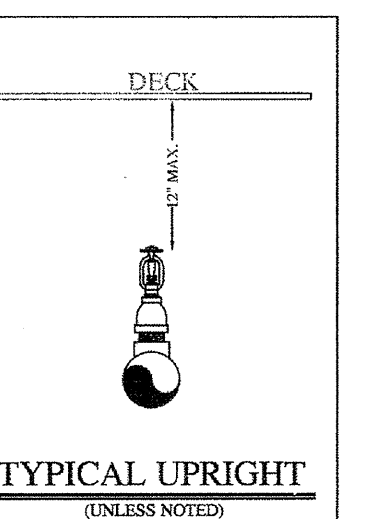
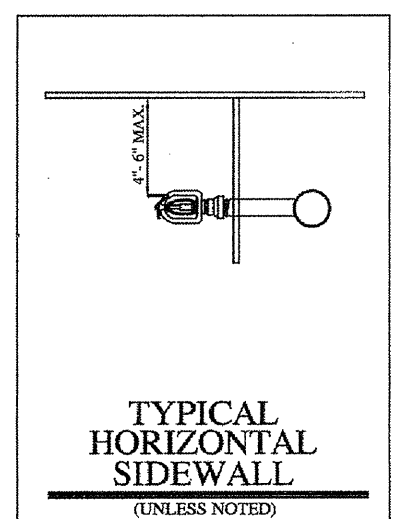
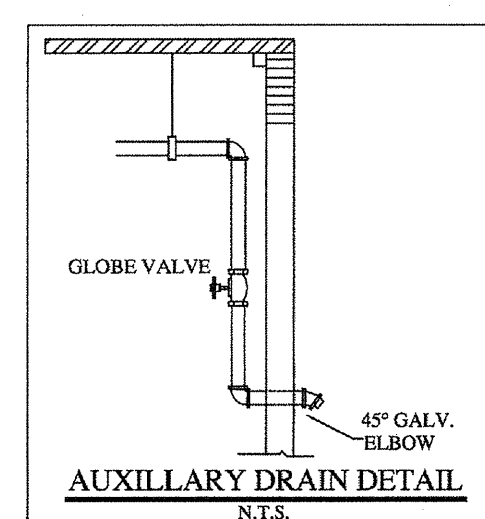


**2nd FLOOR**  
**INSTALLATION PLAN**  
 Scale 1/8" = 1'-0"

LEGEND:  
 (WET) CPVC  
 (WET) SCH. 10 & 40 STEEL PIPE  
 (DRY) SCH. 10 & 40 STEEL PIPE

**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (DN)	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: WHERE PRESSURES EXCEED 200 PSI THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER IN A PENDENT POSITION OR END WET PIPE AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 FEET FOR STEEL PIPE.

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP OR DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

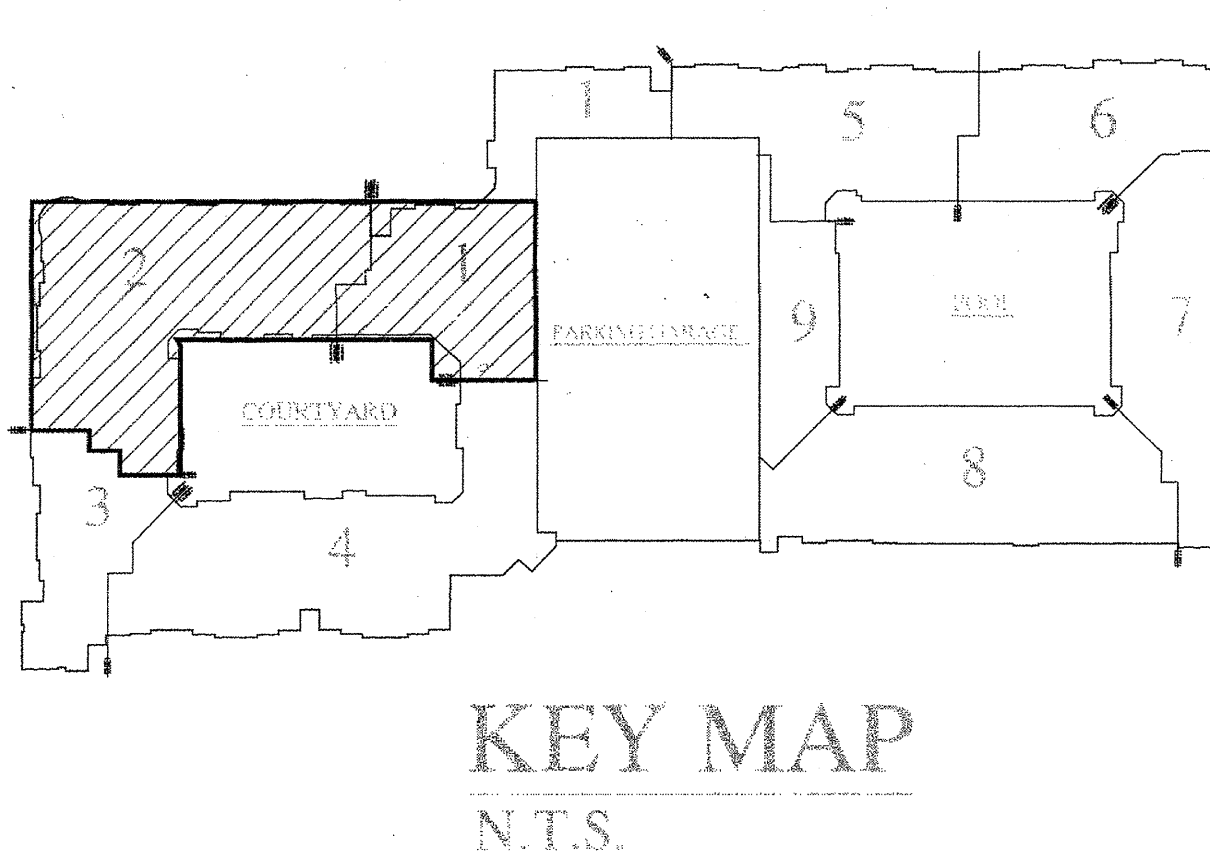
- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (B) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, and the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: [Signature]  
 PRINTED RME NAME: Matthew B. Claxton  
 RME NUMBER: 0778 DATE: 7-31-13

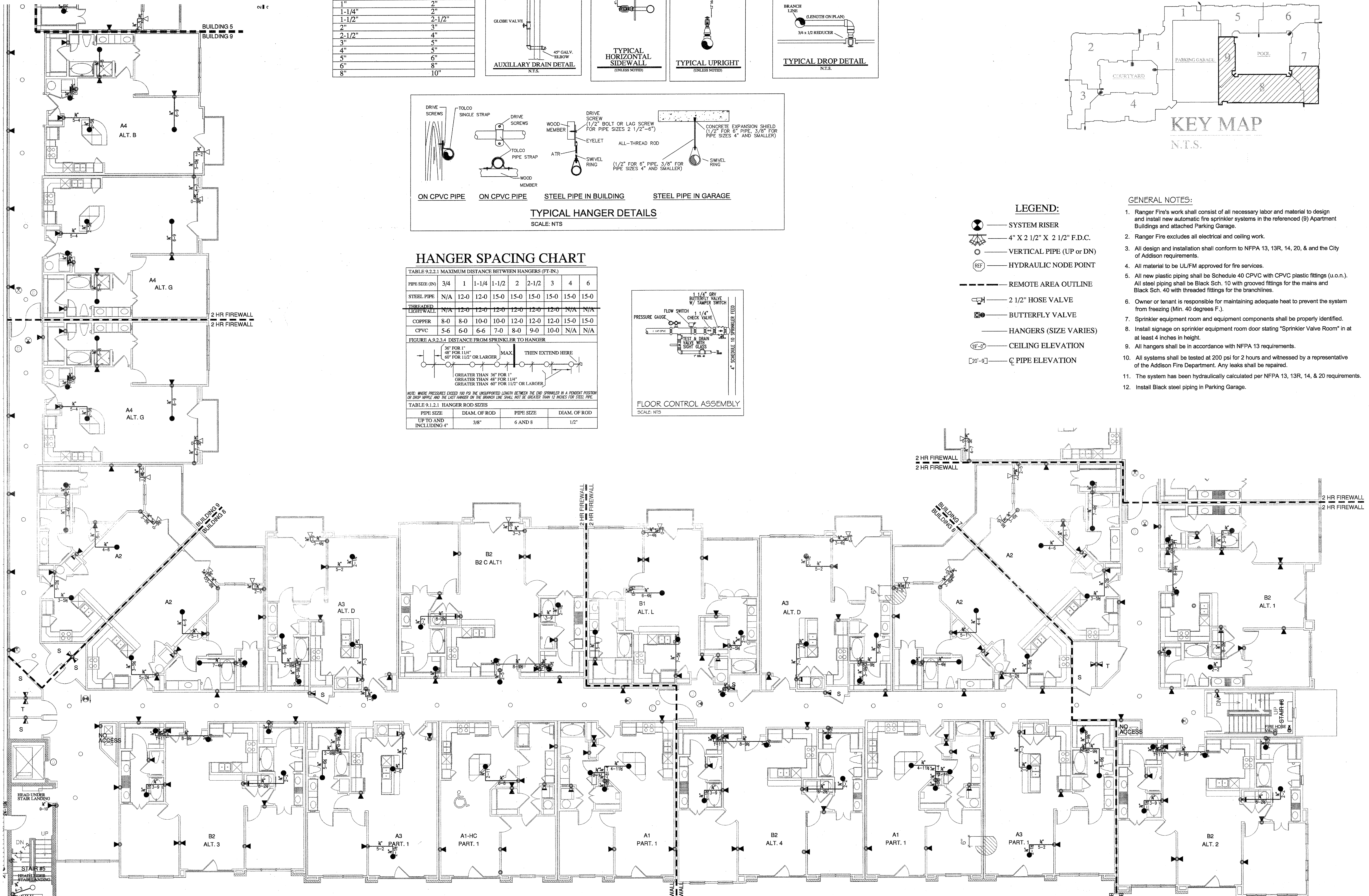
AS-BUILT  SUBMITTAL  OTHER



**AS-BUILT**

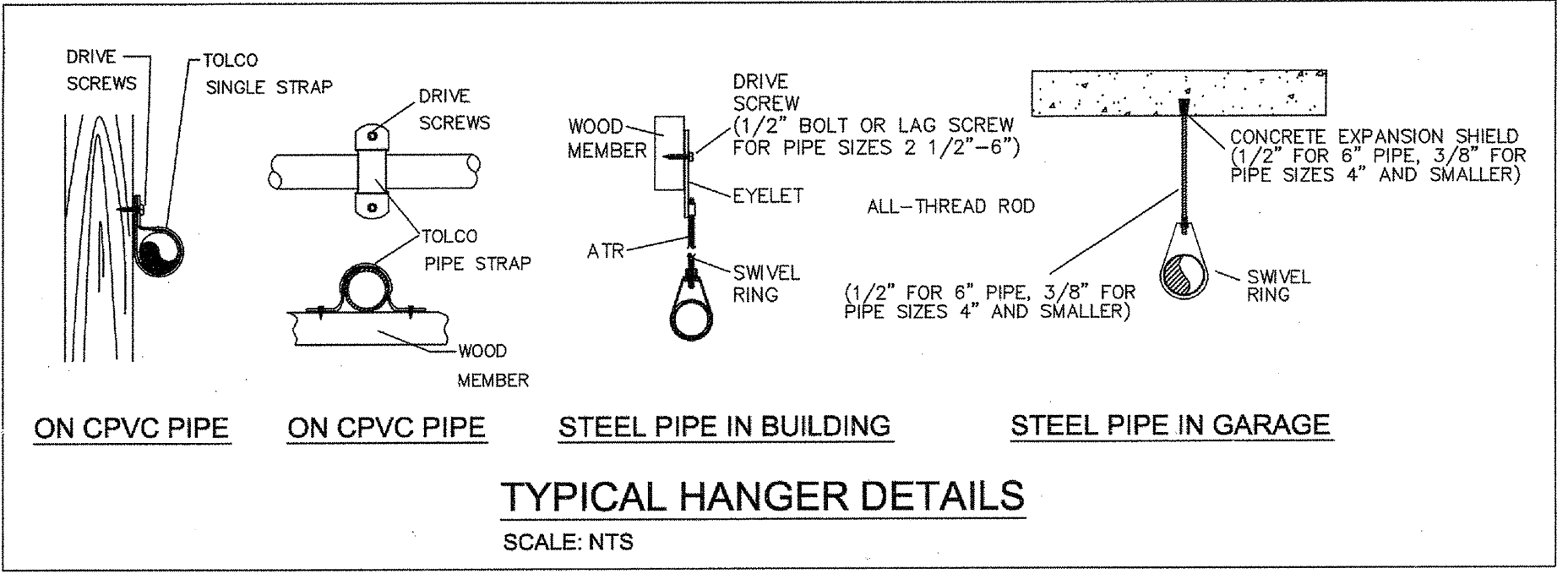
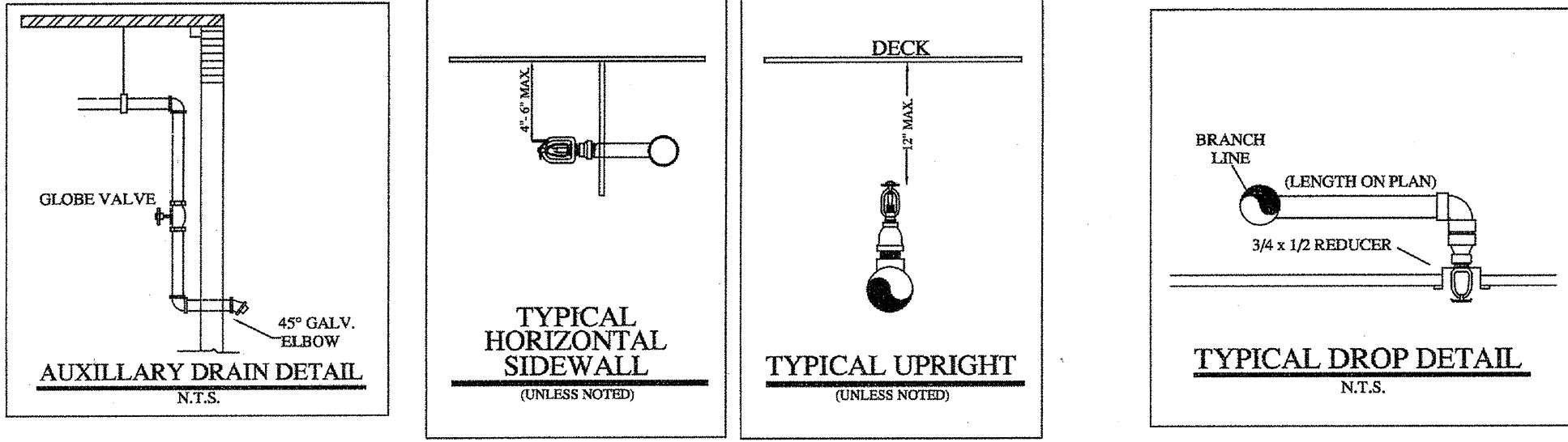






**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

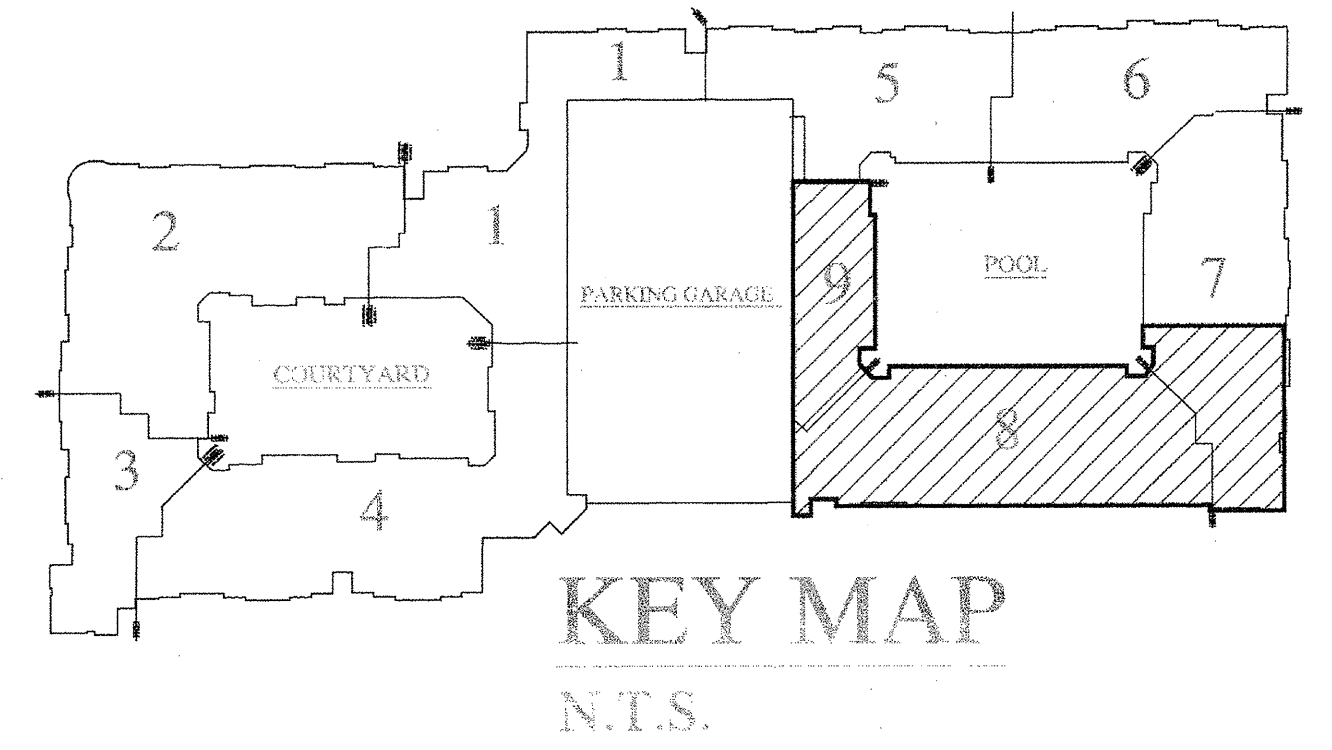
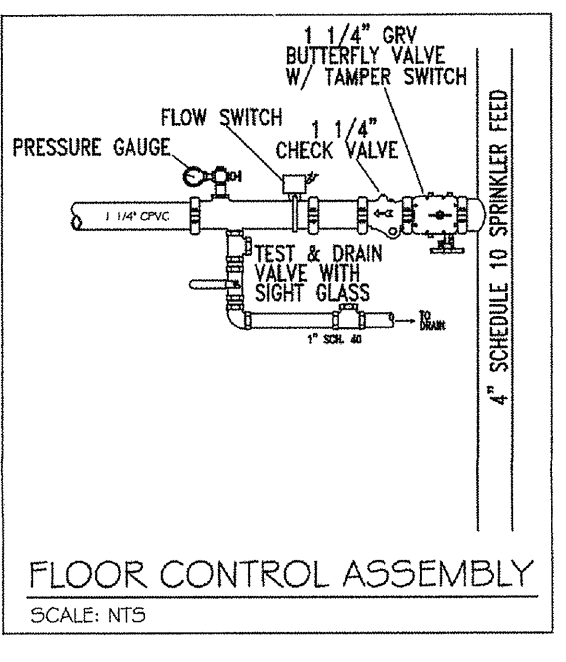
PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHTWALL	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: WHERE PRESSURES EXCEED 100 PSI THE UNBARRICADED LENGTH BETWEEN THE END SPRINKLER IN A PERMITTED POSITION OR END PIPE AND THE LAST HANGER OF THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"



- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP OR DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (S) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

**2nd FLOOR**

SCALE 1/8" = 1'-0"

PLAN NORTH

--- (WET) CPVC  
--- (WET) SCH. 10 & 40 STEEL PIPE  
--- (DRY) SCH. 10 & 40 STEEL PIPE

**INSTALLATION PLAN**

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
GROSS BLDG AREA: 424,139 S.F.  
TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
GROSS BLDG AREA: 181,834 S.F.  
TYPE OF CONSTRUCTION: 2-B

**AS-BUILT**

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778 DATE: 7/31/20

AS-BUILT  SUBMITTAL  OTHER

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 6590

AS-BUILT  SUBMITTAL  OTHER

**KELLER SPRINGS LOFTS**  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

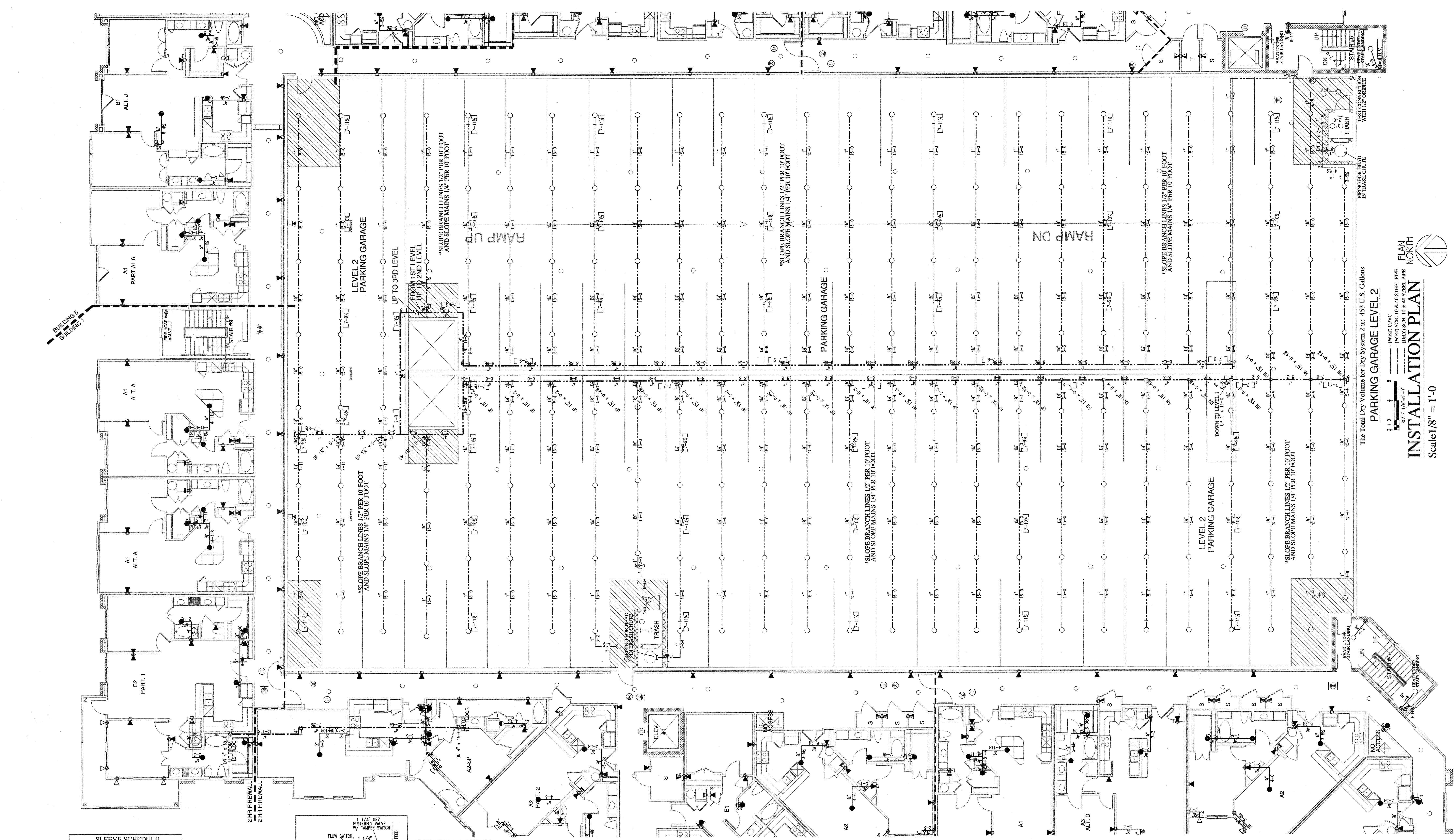
CONTRACT NAME: RANGER FIRE  
CONTRACT # 11-055  
DESCRIPTION: 2ND FLOOR

SCALE: 1/8" = 1'-0"  
DRAWN BY: C. ALEXANDER  
CHECKED BY:  
DATE: 04-01-12  
DWG #: PP 9 OF 30

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REV	DATE	BY	REVISIONS
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

TOTAL FOR THIS SHEET: 25



The Total Dry Volume for Dry System 2 is: 453 U.S. Gallons

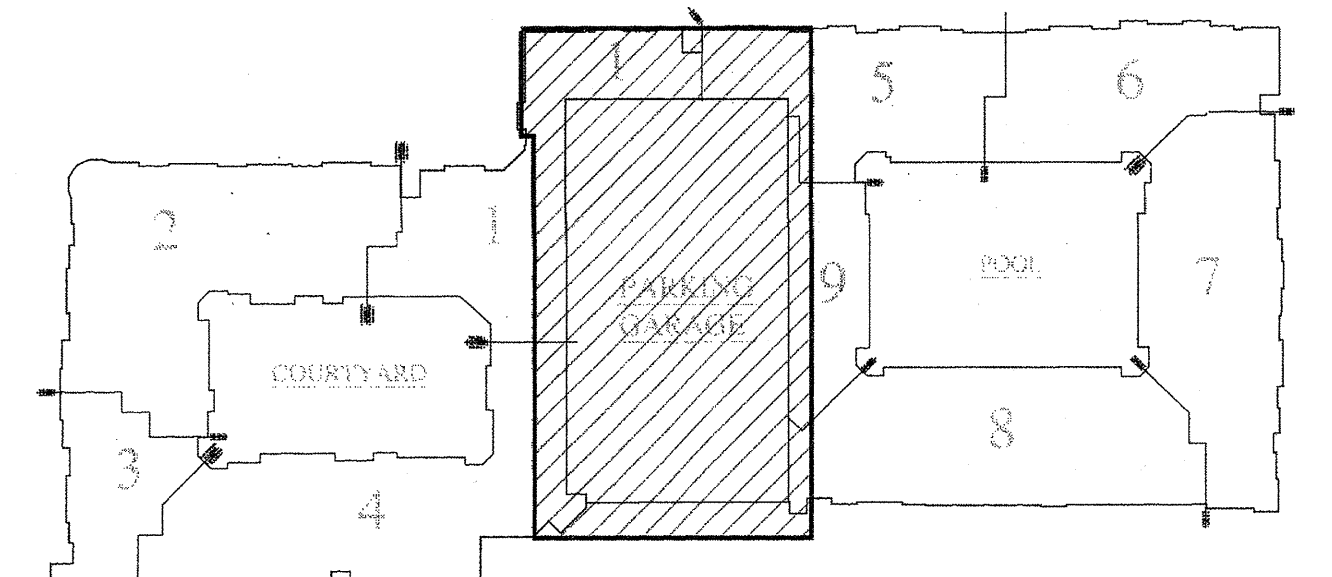
**PARKING GARAGE LEVEL 2**

SCALE: 1/8" = 1'-0"

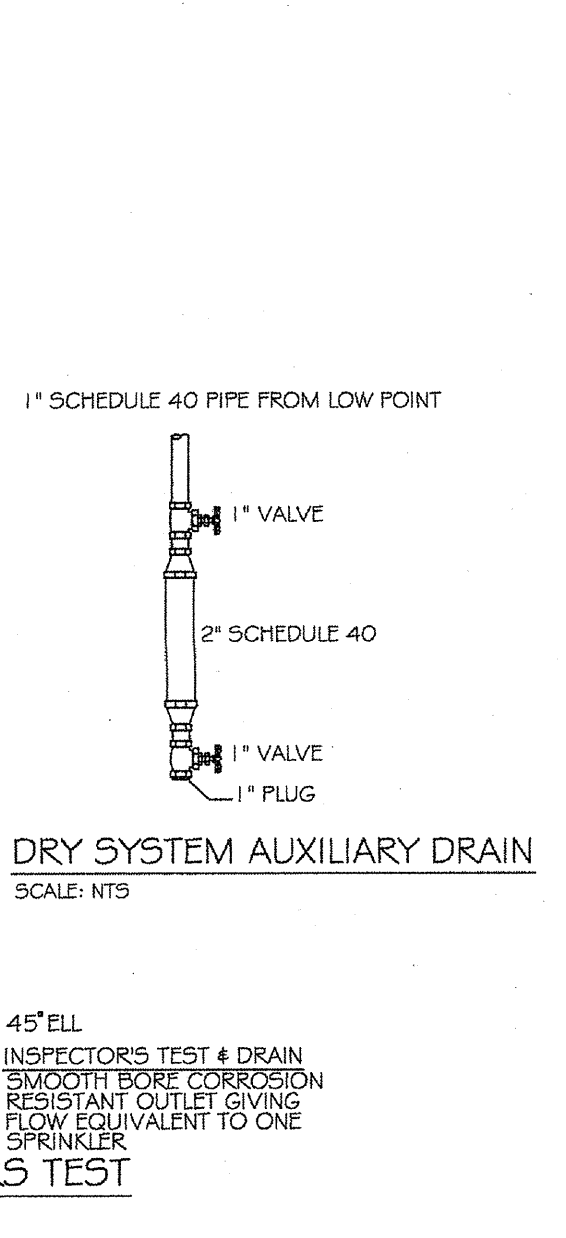
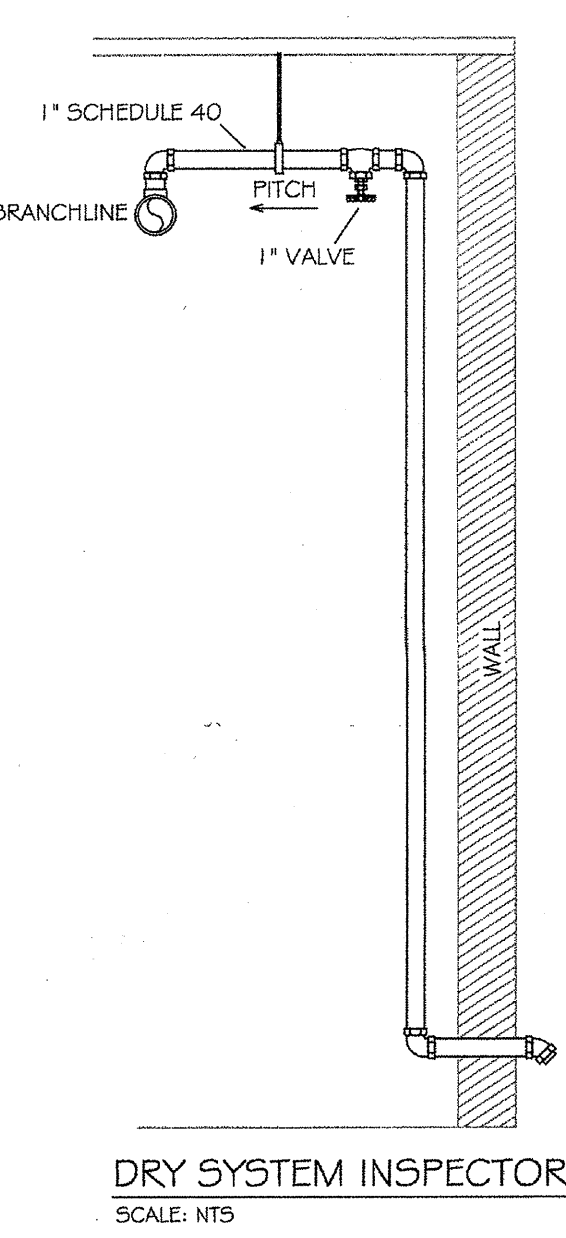
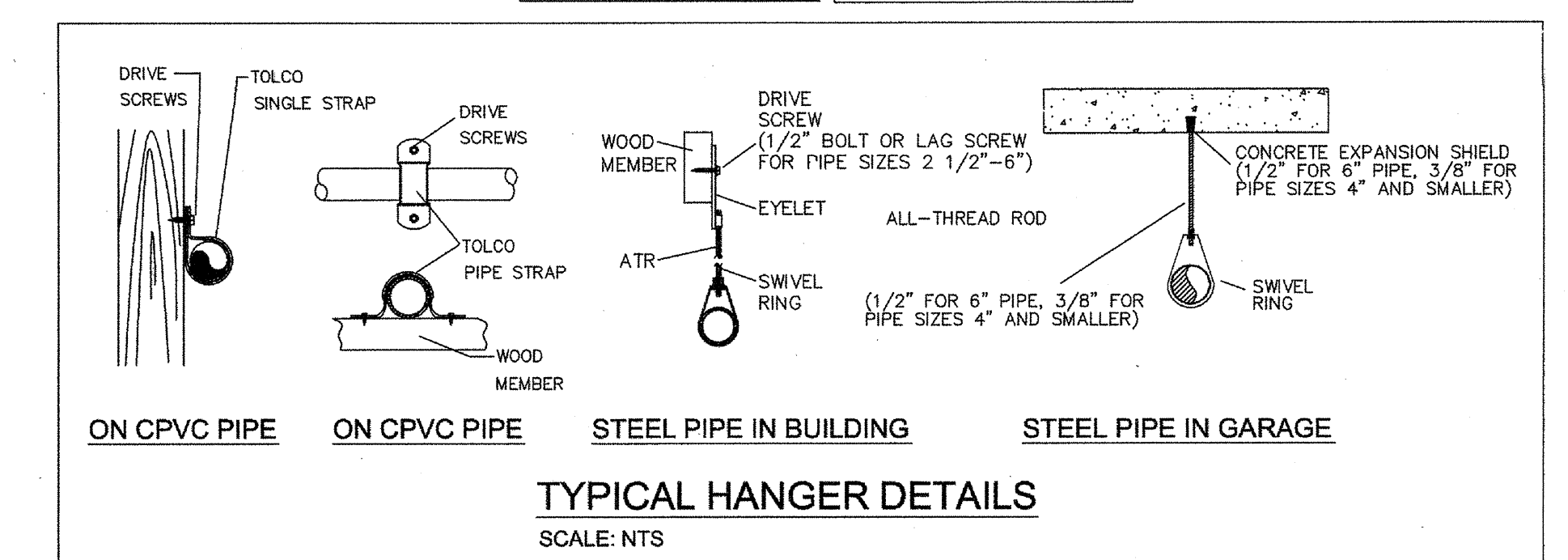
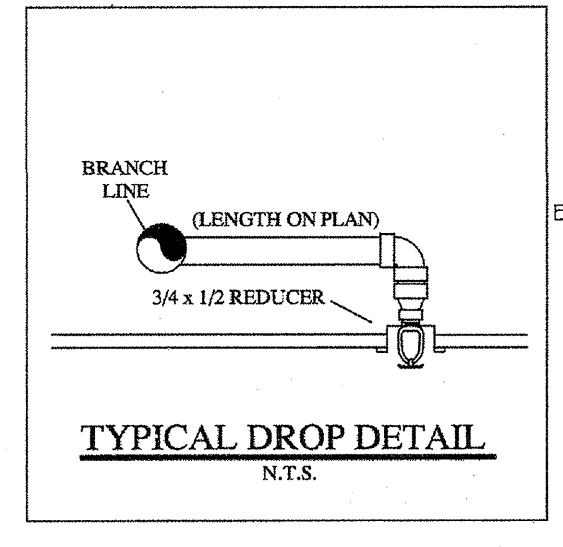
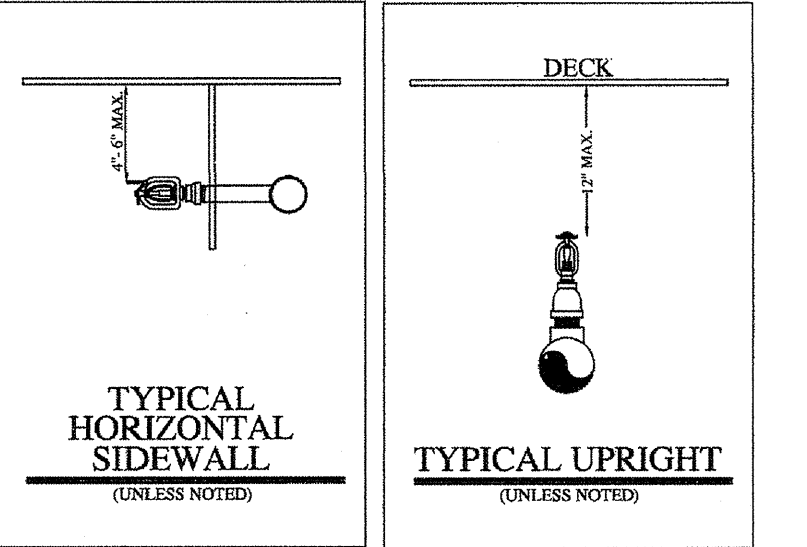
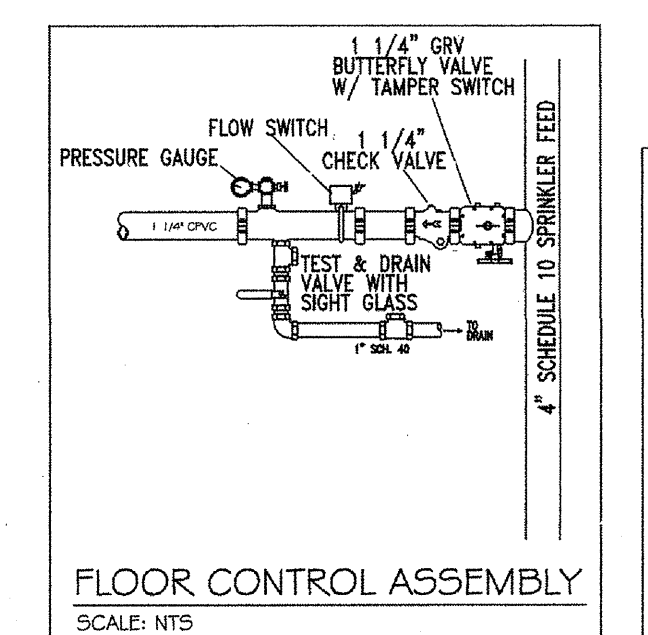
PLAN NORTH

**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2 1/2"
1-1/4"	2 3/4"
1-1/2"	3"
2"	3 1/2"
2-1/2"	4"
3"	4 1/2"
4"	5"
6"	7"
8"	9"
10"	12"



**KEY MAP**  
N.T.S.



- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP OR DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
  - All material to be ULFM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 40 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2/A-3  
GROSS BLDG AREA: 424,139 S.F.  
TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
GROSS BLDG AREA: 181,834 S.F.  
TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

**Ranger Fire, Inc.**  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE:   
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778    DATE: 7-31-13

AS-BUILT     SUBMITTAL     OTHER

REV	DATE	BY	REVISIONS

CONTRACT NAME:	CONTRACT #:
KELLER SPRINGS LOFTS	11-055
4800 KELLER SPRINGS PKWY	PP 10 OF 30
ADDISON, TEXAS 75001	DESCRIPTION: 2ND FLOOR

SCALE:	DATE:
1/8" = 1'-0"	04-01-12
DRAWN BY:	DATE:
C. ALEXANDER	
CHECKED BY:	

GENERAL CONTRACTOR:	OWNER:
EMERGENCY PARTNERS LTD.	EMERGENCY PARTNERS LTD.
1000 NE LOOP 410, STE 700	1000 NE LOOP 410, STE 700
SAN ANTONIO, TX	SAN ANTONIO, TX
215	215
210-524-6044	210-524-6044
21	21
210-524-6044	210-524-6044

CONTRACTOR'S STATEMENT:
The design of this project was prepared by Ranger Fire, Inc. and is the property of Ranger Fire, Inc. It is to be used only for the project and location specified on the contract. Any other use without the written consent of Ranger Fire, Inc. is prohibited. This document is the property of Ranger Fire, Inc. and is not to be distributed, copied, or reproduced in any form without the written consent of Ranger Fire, Inc.

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 6590

AS-BUILT     SUBMITTAL     OTHER

**AS-BUILT**

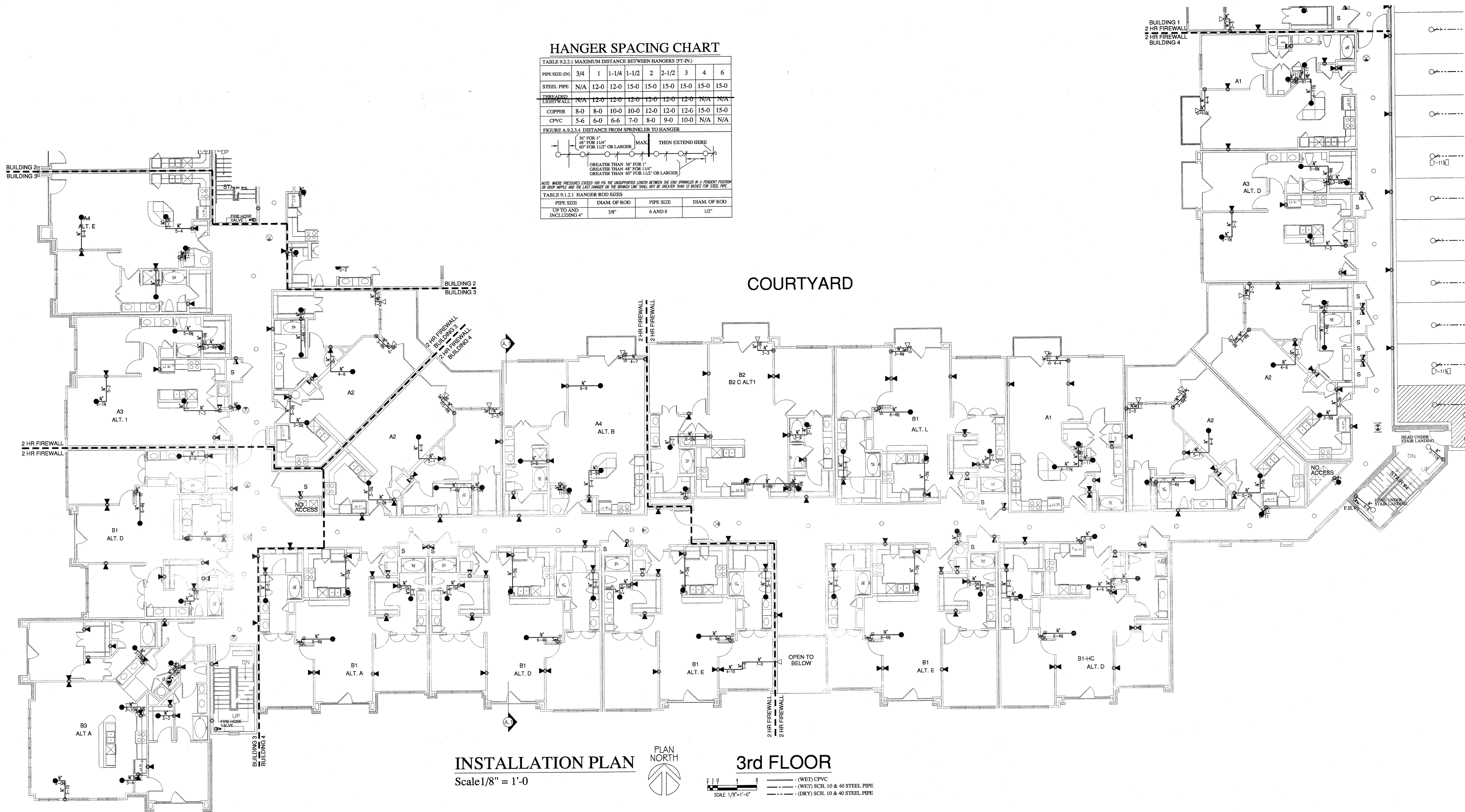
### HANGER SPACING CHART

PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHT WALL	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-6	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: WHERE PRESSURES EXCEED 100 PSI THE UNBARRICADED LENGTH BETWEEN THE END SPRINKLER IN A FEMORY ROOM OR STAIR WELLS AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 FEET FOR STEEL PIPE.

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

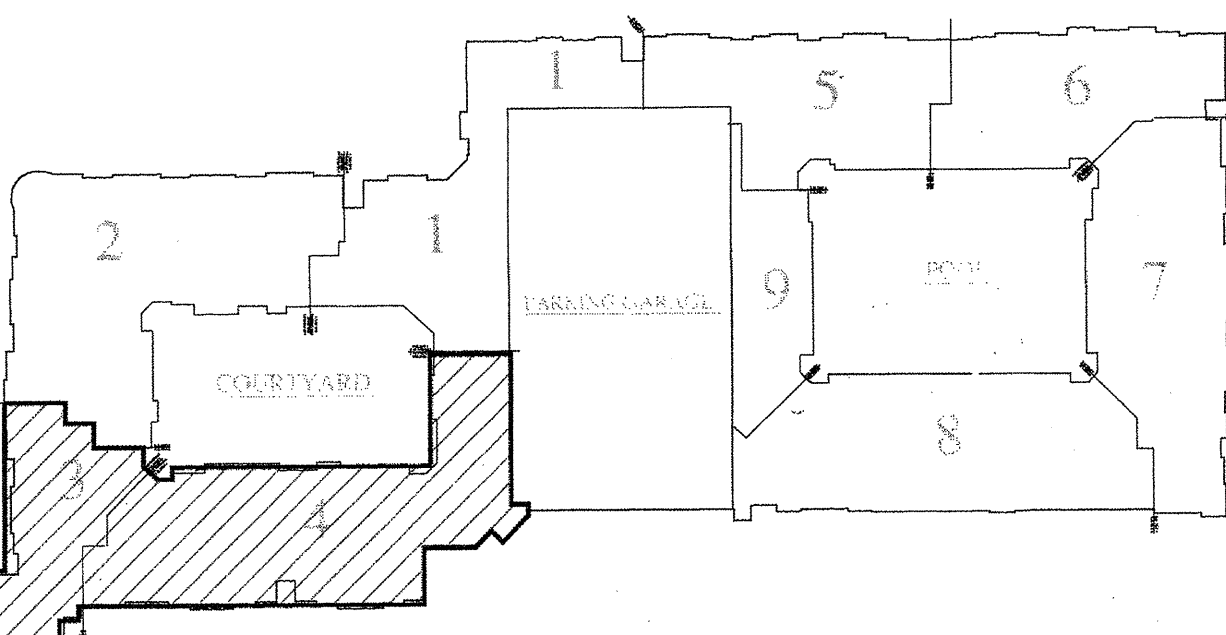


## INSTALLATION PLAN

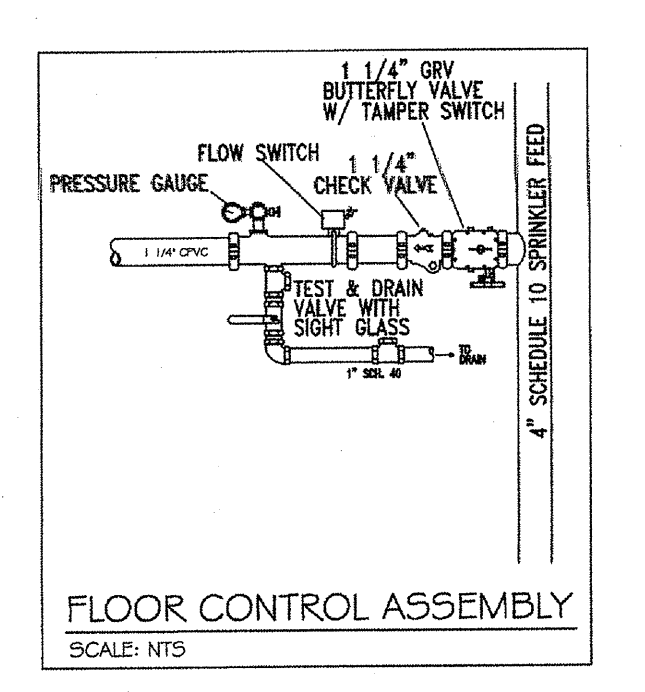
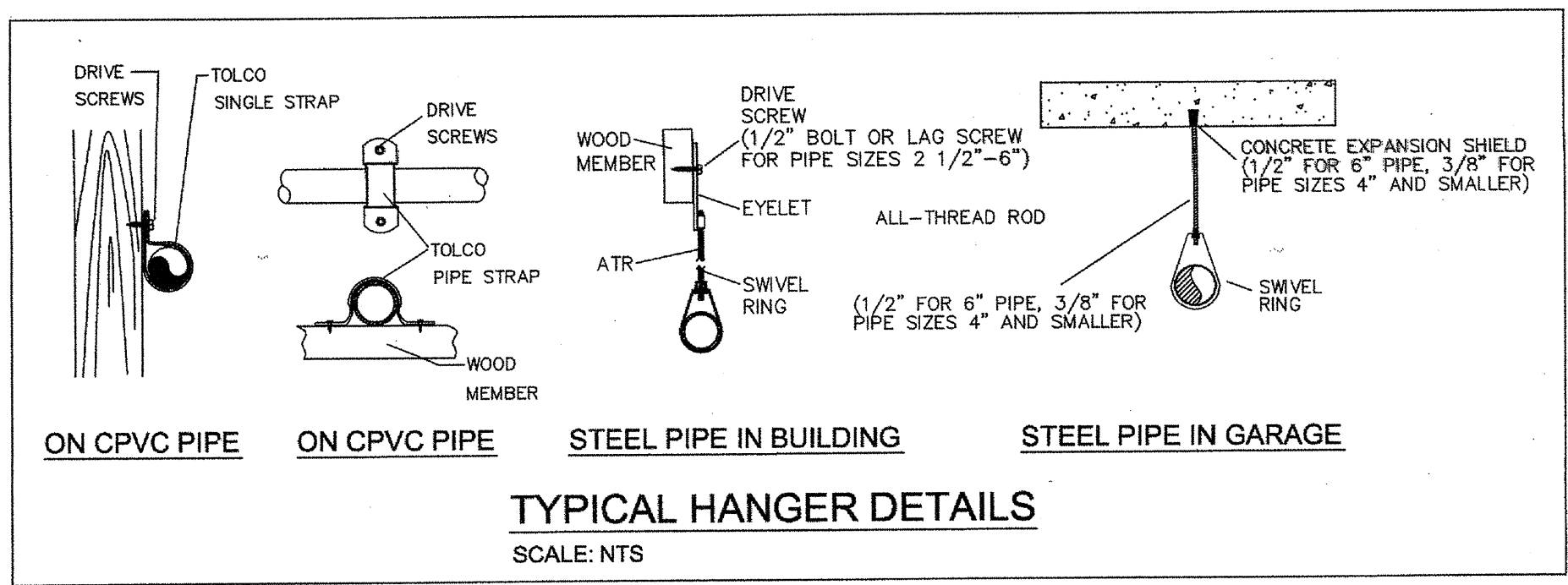
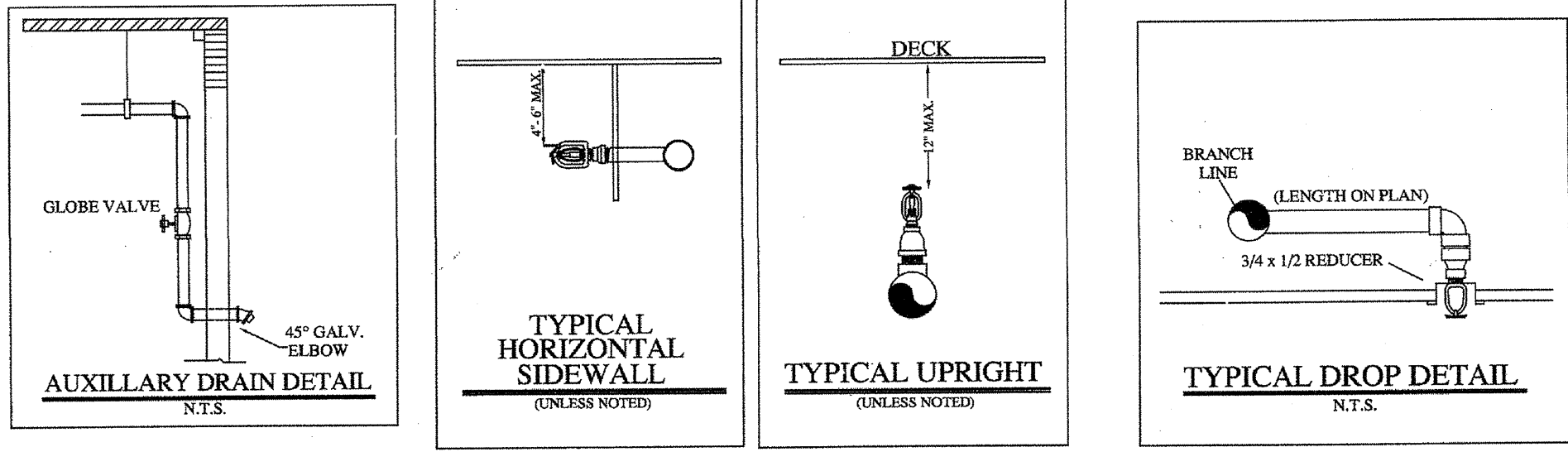
Scale 1/8" = 1'-0"

### 3rd FLOOR

Scale 1/8" = 1'-0"



PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	6"
5"	8"
6"	10"



- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (B) Apartment Buildings and attached Parking Garage.
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  - All design and installation shall conform to NFPA 13, 13R, 14, 20, and the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

RESIDENTIAL BUILDING INFO	
OCCUPANCY:	R-2 / A-3
GROSS BLDG AREA:	424,139 S.F.
TYPE OF CONSTRUCTION:	V-A

GARAGE BUILDING INFO	
OCCUPANCY:	S-2
GROSS BLDG AREA:	181,834 S.F.
TYPE OF CONSTRUCTION:	2-B

**I have reviewed these plans and certify that they comply with the adopted NFPA standards.**

**Ranger Fire, Inc.**  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: *[Signature]*  
 PRINTED RME NAME: Matthew B. Claxton  
 RME NUMBER: 0778 DATE: 7-31-13

AS-BUILT  SUBMITTAL  OTHER

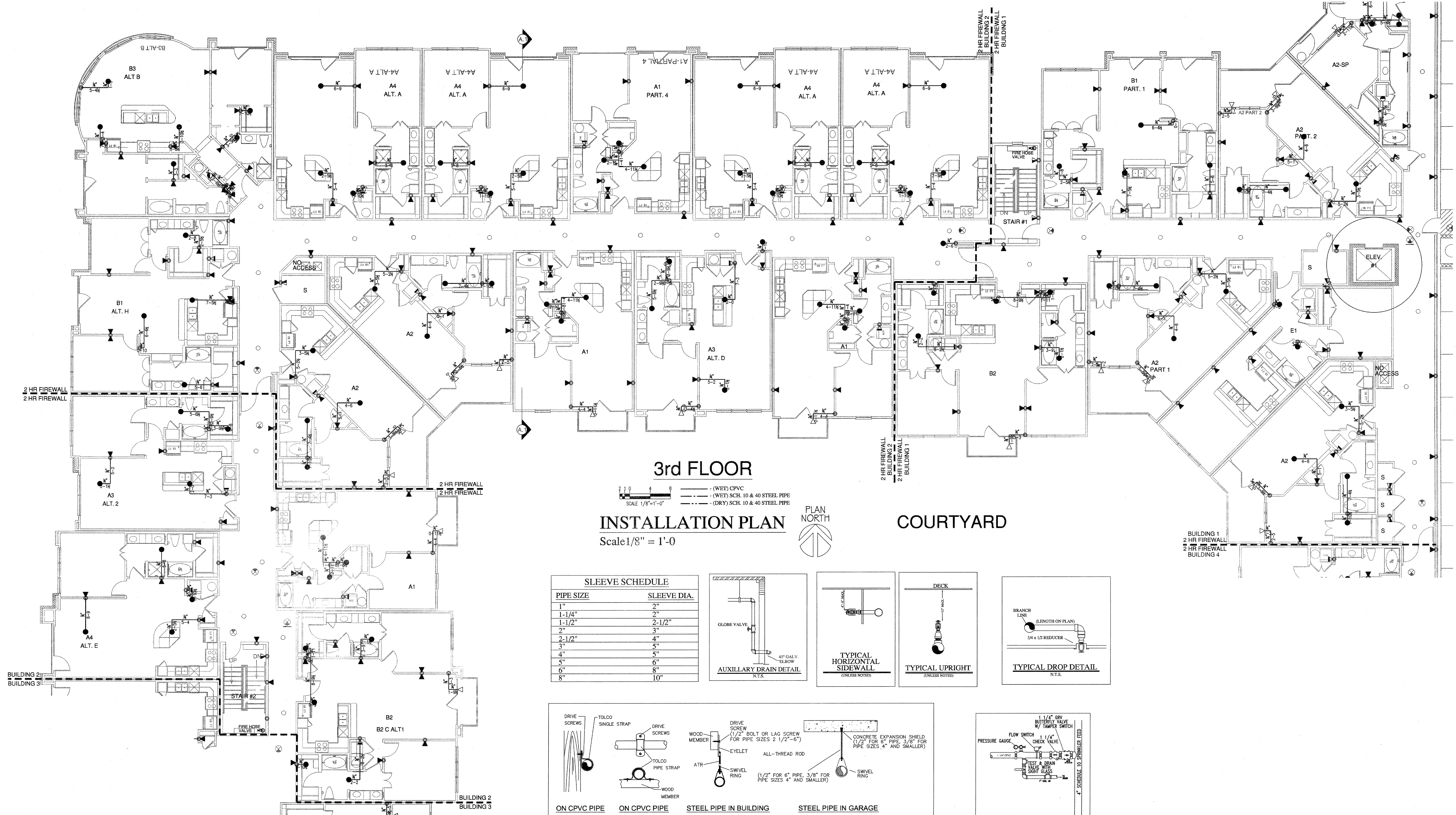
**RANGER FIRE, INC.**  
 920 SOUTH MAIN STREET  
 SUITE 200  
 GRAPEVINE, TEXAS 76051  
 PHONE: 817-410-9070  
 TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER

**KELLER SPRINGS LOFTS**  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

CONTRACT NAME: \_\_\_\_\_  
 CONTRACT # 11-055  
 DESCRIPTION: 3RD FLOOR

SCALE: 1/8" = 1'-0"  
 DRAWN BY: C. ALEXANDER  
 CHECKED BY: \_\_\_\_\_  
 DATE: 04-01-12  
 DWG # EP 11 OF 30



**3rd FLOOR**

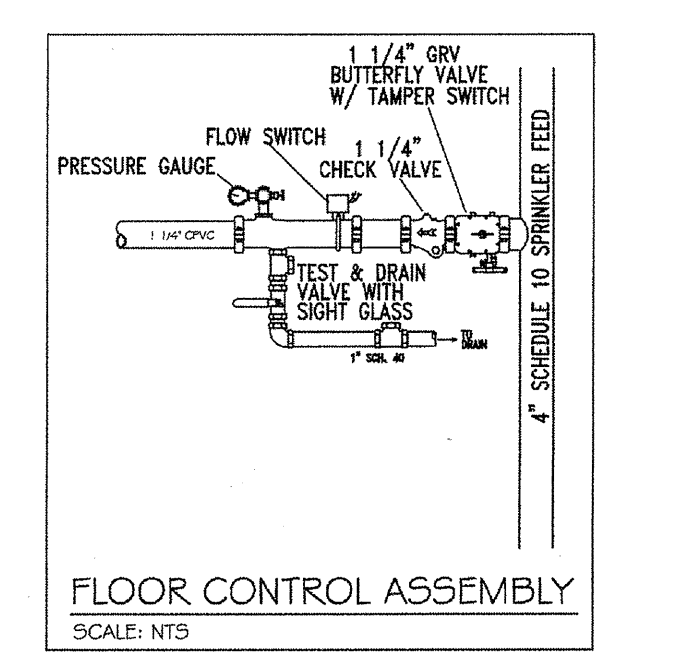
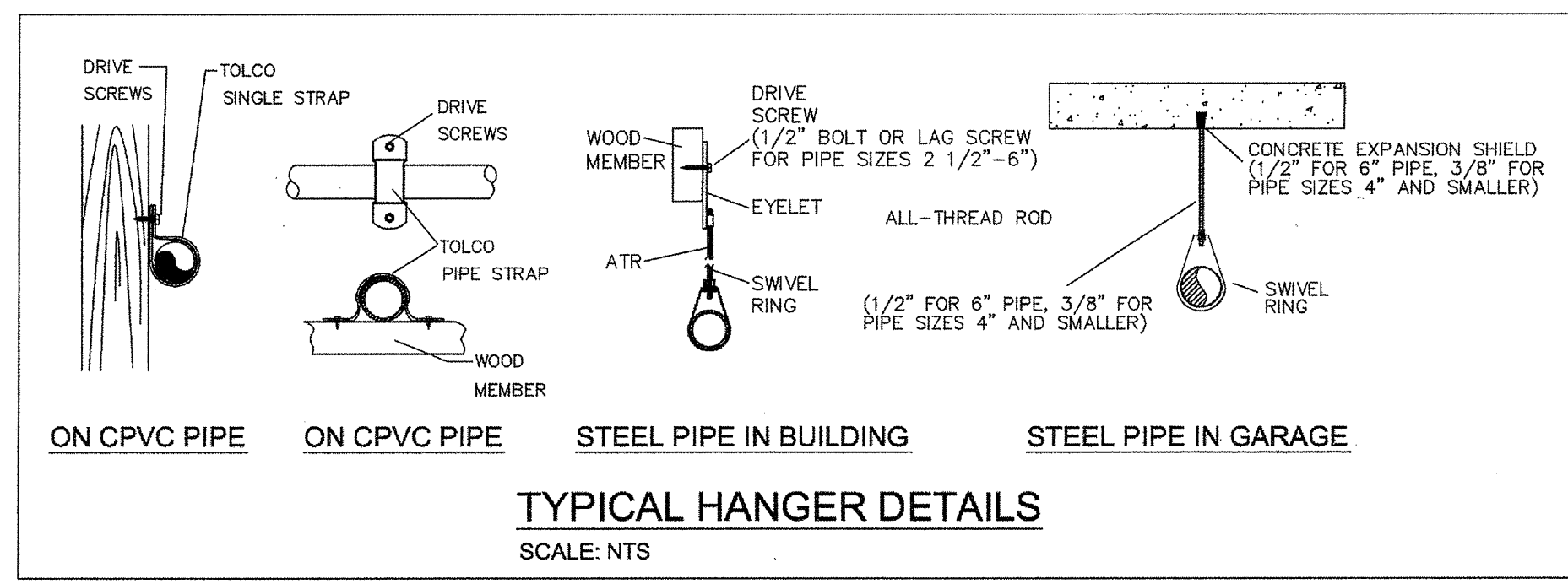
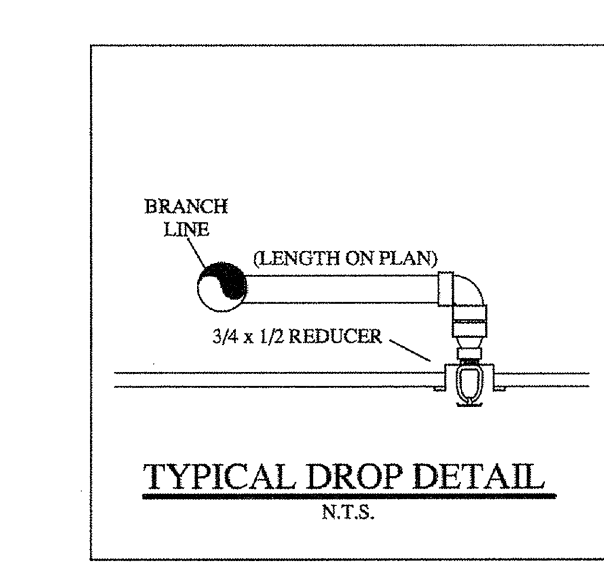
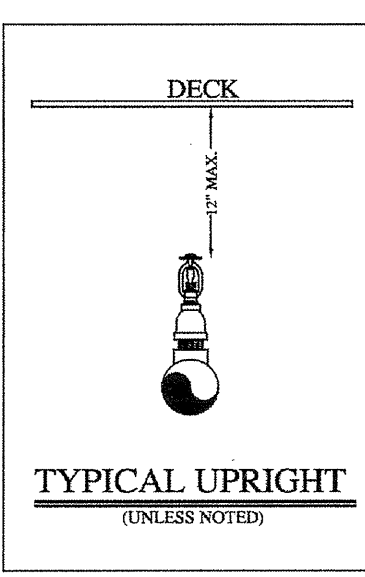
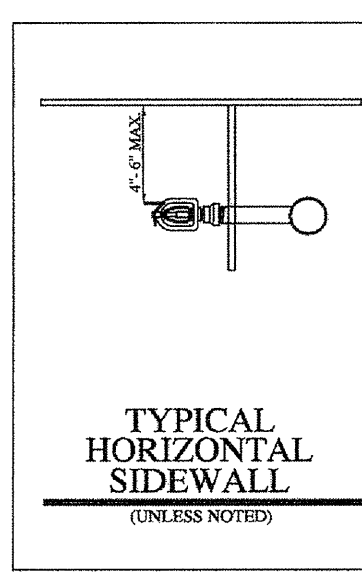
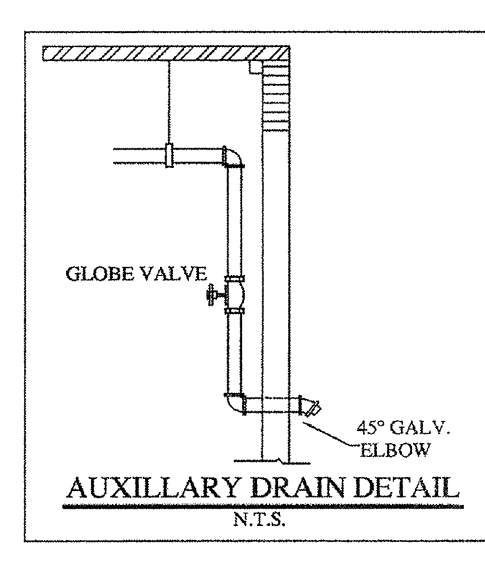
**INSTALLATION PLAN**  
Scale 1/8" = 1'-0"



**COURTYARD**

**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2 3/4"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5 1/2"
5"	6"
6"	8"
8"	10"



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (NO.)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADER	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: MAKE PRESSURES EXCEED 100 PSI FOR THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER IN A PENDENT POSITION OR SHIP WIRE AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

- LEGEND:**
- SYSTEM RISER
  - 4" x 2 1/2" x 2 1/2" F.D.C.
  - VERTICAL PIPE (UP OR DN)
  - HYDRAULIC NODE POINT
  - REMOVE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

**GENERAL NOTES:**

1. Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (B) Apartment Buildings and attached Parking Garages.
2. Ranger Fire excludes all electrical and ceiling work.
3. All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
4. All material to be UL/FM approved for fire services.
5. All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
6. Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degree F.).
7. Sprinkler equipment room and equipment components shall be properly identified.
8. Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
9. All hangers shall be in accordance with NFPA 13 requirements.
10. All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
11. The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
12. Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
GROSS BLDG AREA: 424,139 S.F.  
TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
GROSS BLDG AREA: 181,834 S.F.  
TYPE OF CONSTRUCTION: 2-B

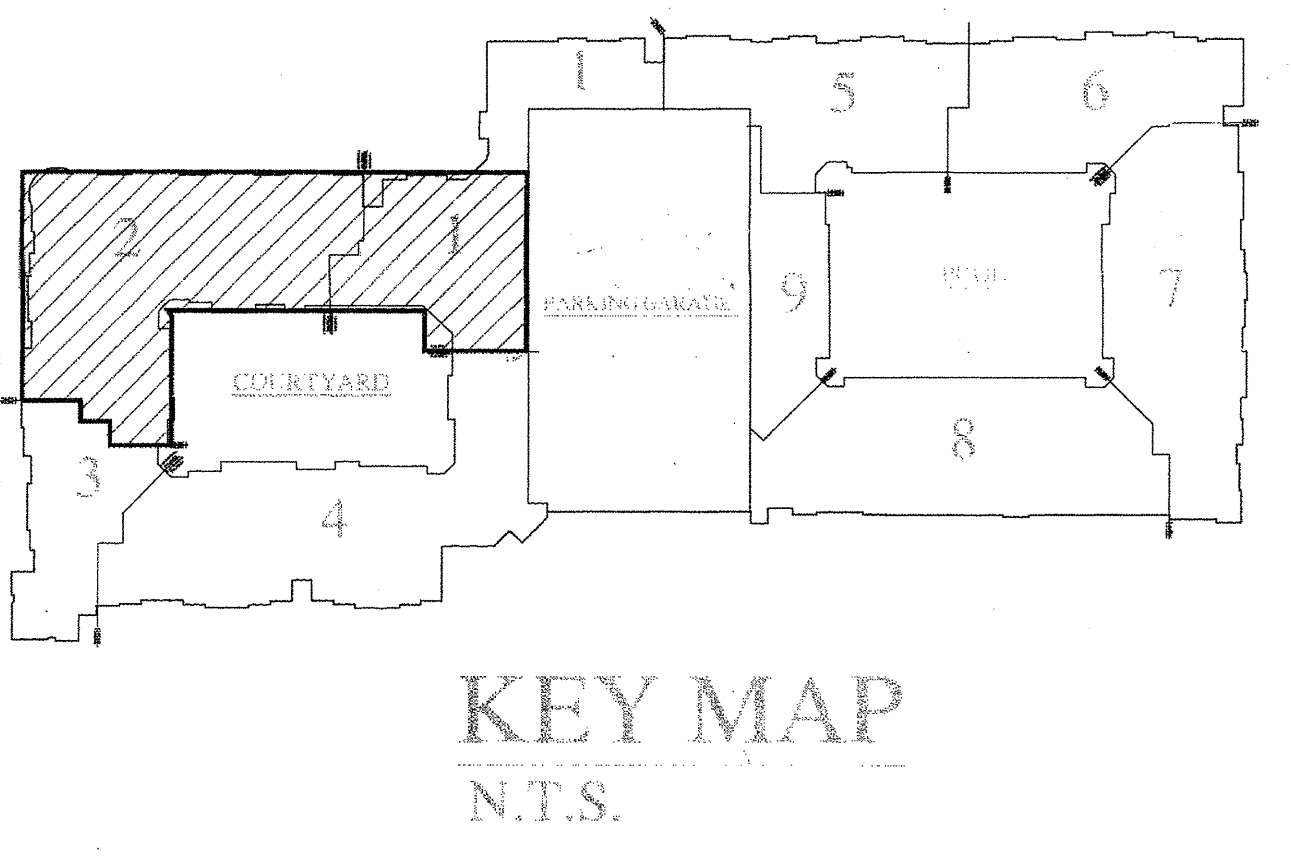
I have reviewed these plans and certify that they comply with the adopted NFPA standards.

**Ranger Fire, Inc.**  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE: *[Signature]*  
PRINTED RME NAME: **Matthew B. Claxton**  
RME NUMBER: **0778** DATE: **7-23-13**

AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**



**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
TEXAS LICENSE: 6590

AS-BUILT  SUBMITTAL  OTHER

**CONFIDENTIALITY STATEMENT**  
This drawing, its contents and design constitute the confidential information of Ranger Fire, Inc. and are not to be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written consent of Ranger Fire, Inc.

**GENERAL CONTRACTOR:**  
EMERY PARTNERS LTD  
1000 NE LOOP 110 STE 700  
SAN ANTONIO, TX  
710-524-0944

**OWNER:**  
EMERY PARTNERS LTD  
1000 NE LOOP 110 STE 700  
SAN ANTONIO, TX  
710-524-0944

**CONTRACT NAME:**  
KELLER SPRINGS LOFTS  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

**CONTRACT # 11-05** DESCRIPTION: 3RD FLOOR

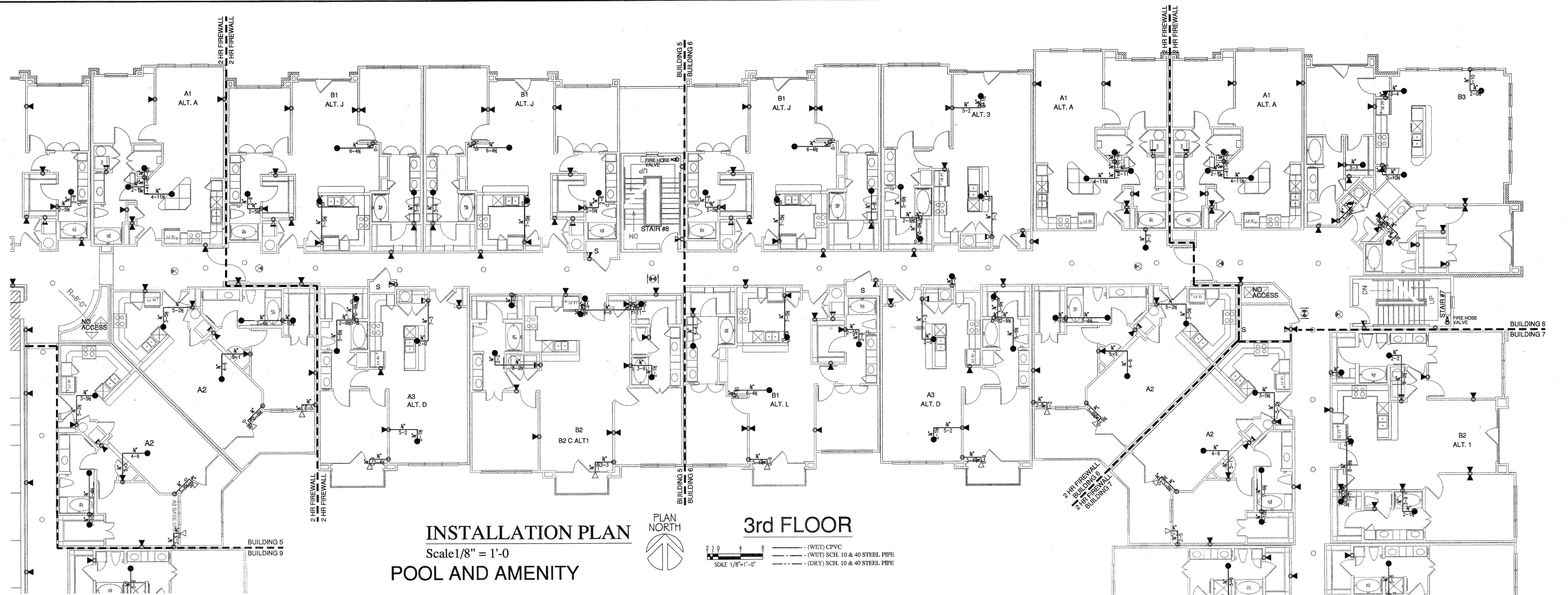
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**DRAWN BY:** C. ALEXANDER

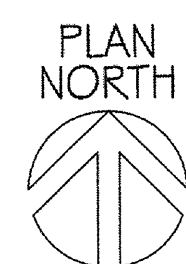
**CHECKED BY:**

**DATE:** 04-01-12

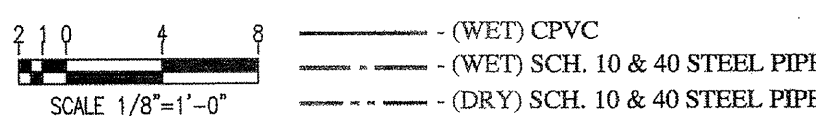
**PP 12 OF 30**



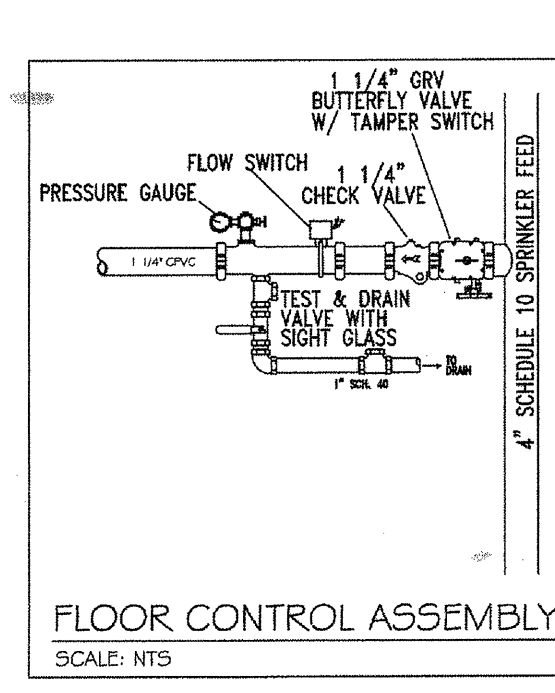
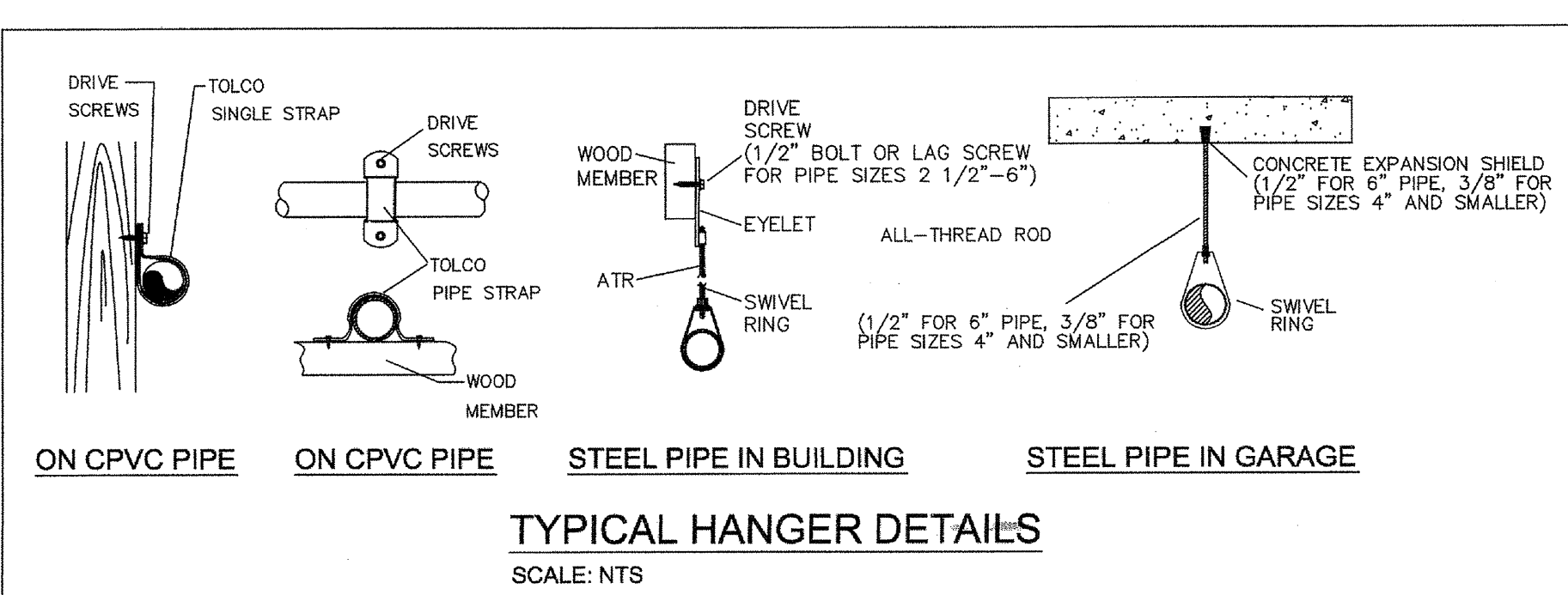
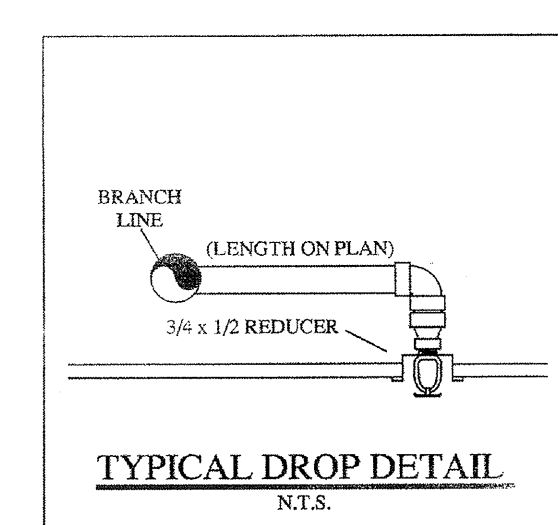
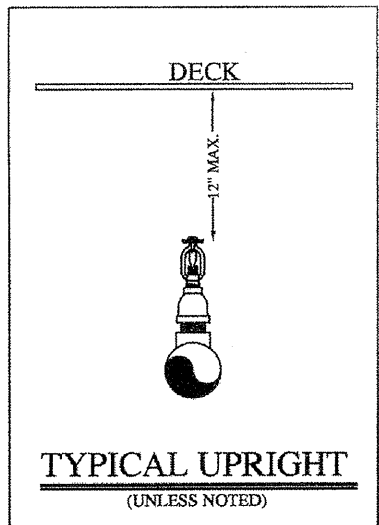
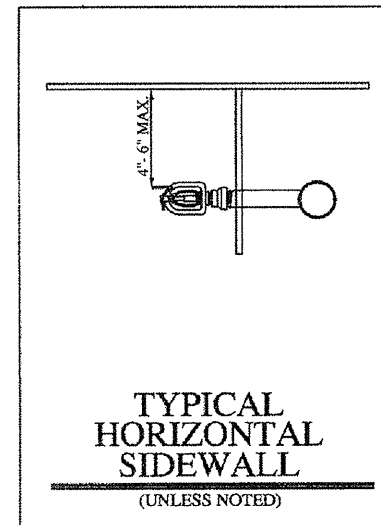
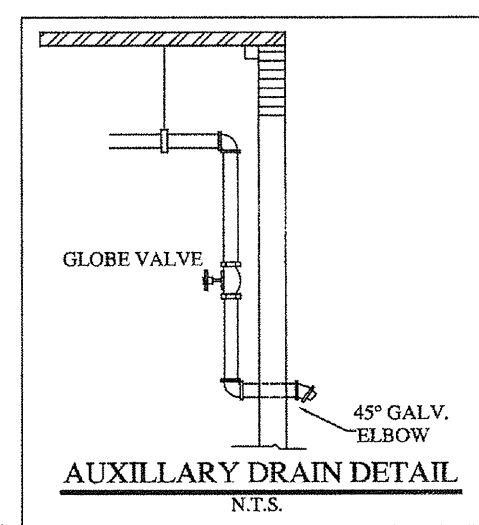
**INSTALLATION PLAN**  
Scale 1/8" = 1'-0"  
**POOL AND AMENITY**



**3rd FLOOR**

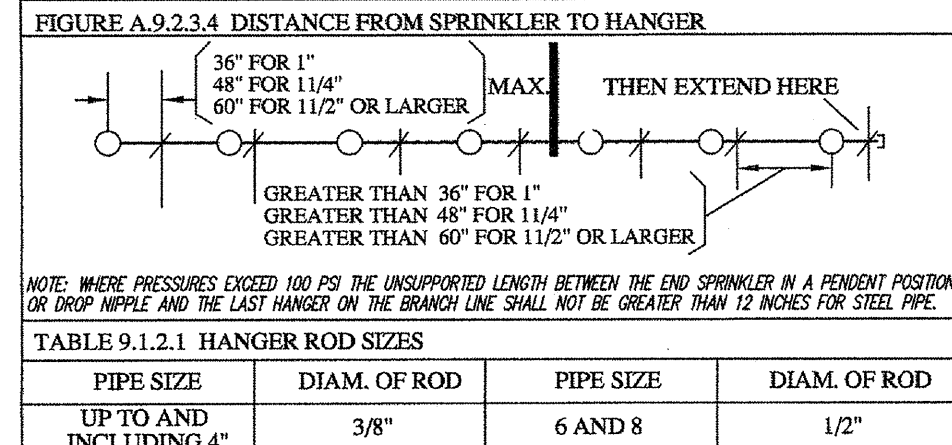


PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	3"
3"	4"
4"	5"
5"	6"
6"	8"
8"	10"



**HANGER SPACING CHART**

PIPE SIZE (OD)	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADER	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A



**GENERAL NOTES:**

- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
- Ranger Fire excludes all electrical and ceiling work.
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- All material to be UL/FM approved for fire services.
- All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
- Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
- Sprinkler equipment room and equipment components shall be properly identified.
- Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
- All hangers shall be in accordance with NFPA 13 requirements.
- All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
- The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
- Install Black steel piping in Parking Garage.

**LEGEND:**

- SYSTEM RISER
- 4" X 2 1/2" X 2 1/2" F.D.C.
- VERTICAL PIPE (UP or DN)
- HYDRAULIC NODE POINT
- REMOTE AREA OUTLINE
- 2 1/2" HOSE VALVE
- BUTTERFLY VALVE
- HANGERS (SIZE VARIES)
- CEILING ELEVATION
- PIPE ELEVATION

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2/A-3  
GROSS BLDG AREA: 424,139 S.F.  
TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

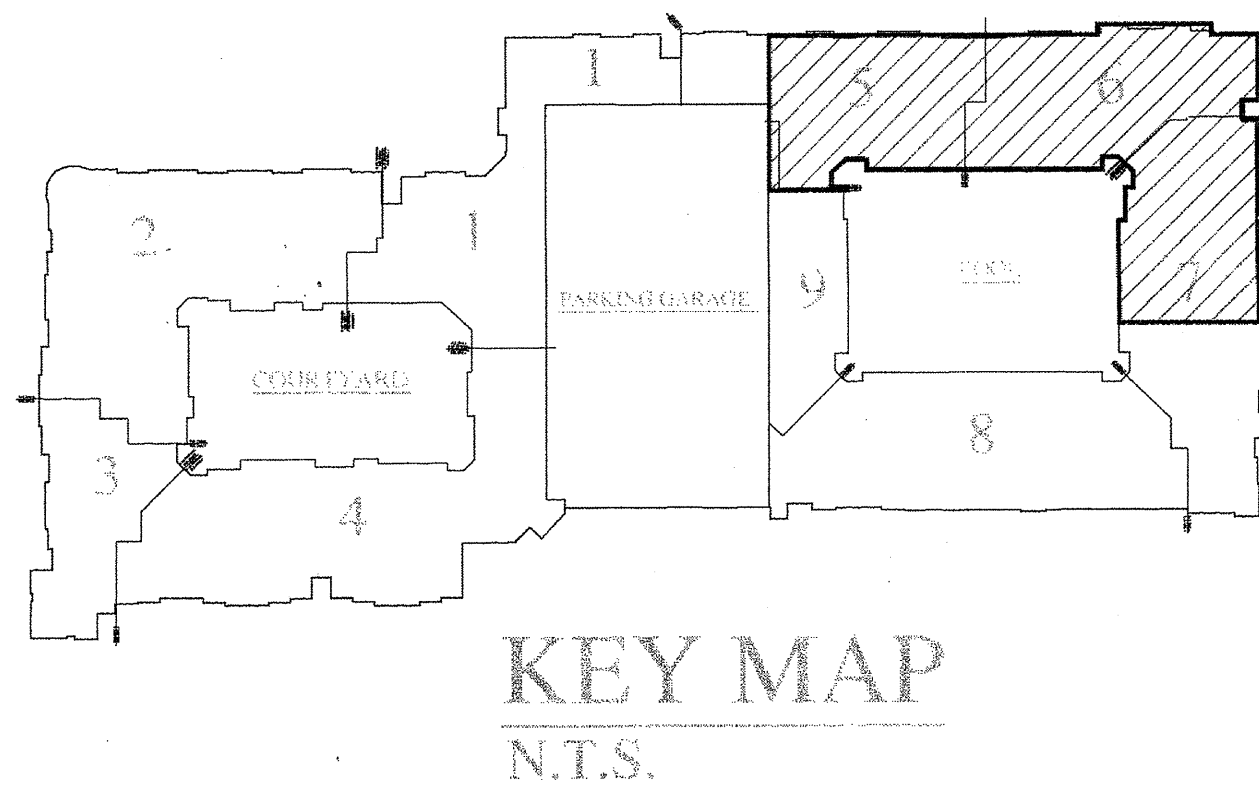
OCCUPANCY: S-2  
GROSS BLDG AREA: 181,834 S.F.  
TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE: [Signature]  
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778 DATE: 7-31-13  
 AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**



NO.	DATE	REVISIONS
1	04-01-12	ISSUE FOR PERMITS
2	04-01-12	ISSUE FOR PERMITS
3	04-01-12	ISSUE FOR PERMITS
4	04-01-12	ISSUE FOR PERMITS
5	04-01-12	ISSUE FOR PERMITS
6	04-01-12	ISSUE FOR PERMITS
7	04-01-12	ISSUE FOR PERMITS
8	04-01-12	ISSUE FOR PERMITS
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14	04-01-12	ISSUE FOR PERMITS
15	04-01-12	ISSUE FOR PERMITS
16	04-01-12	ISSUE FOR PERMITS
17	04-01-12	ISSUE FOR PERMITS
18	04-01-12	ISSUE FOR PERMITS
19	04-01-12	ISSUE FOR PERMITS
20	04-01-12	ISSUE FOR PERMITS

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
TEL: 817-410-9070  
TEXAS LICENSE: 0590

CONTRACT NAME: KELLER SPRINGS LOFTS  
CONTRACT # 11-055  
DESCRIPTION: 3RD FLOOR

GENERAL CONTRACTOR: EMERBY PARTNERS LTD.  
1020 N. LOOP 410, STE 700  
SAN ANTONIO, TX  
210-824-6044

OWNER: EMERBY PARTNERS LTD.  
1020 N. LOOP 410, STE 700  
SAN ANTONIO, TX  
210-824-6044

DATE: 04-01-12  
SCALE: 1/8" = 1'-0"

DATE: 04-01-12  
SCALE: 1/8" = 1'-0"

DATE: 04-01-12  
SCALE: 1/8" = 1'-0"

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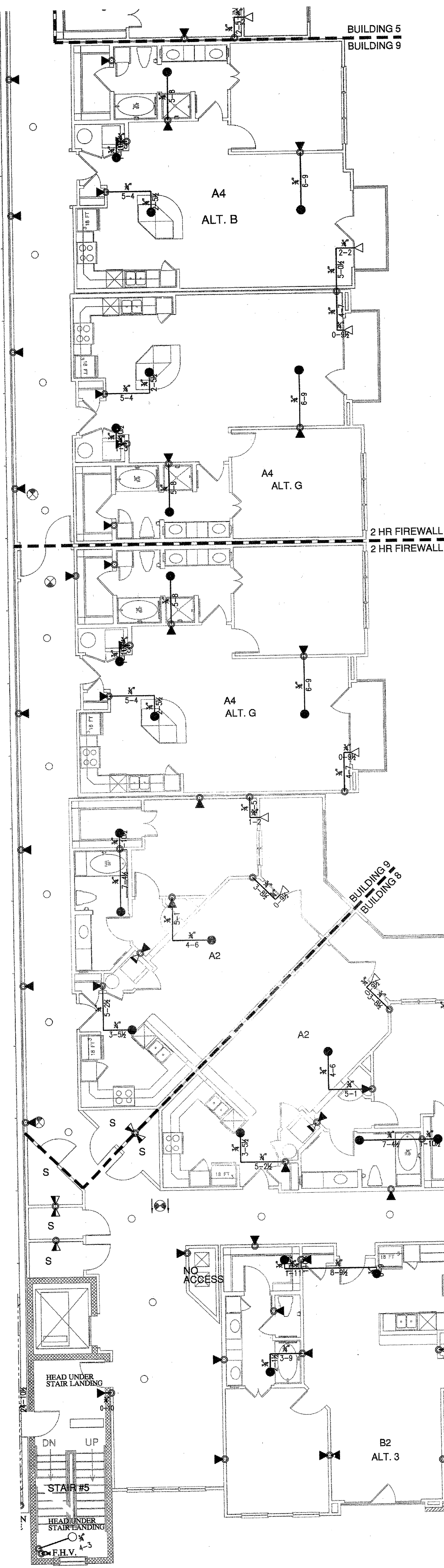
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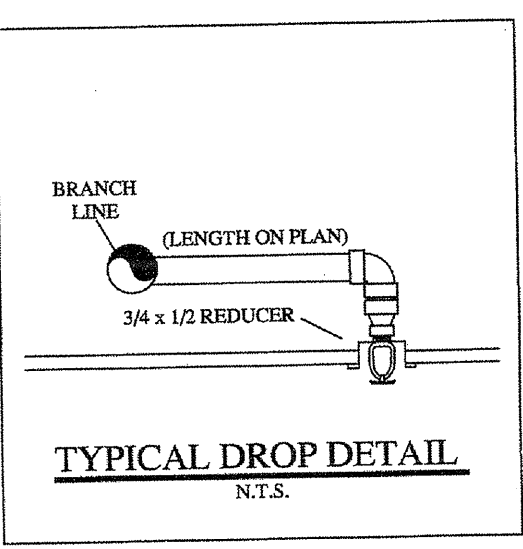
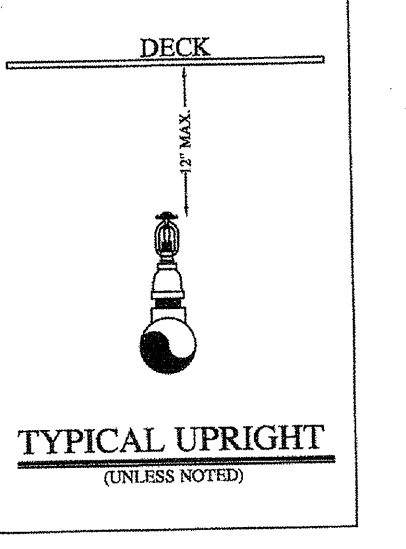
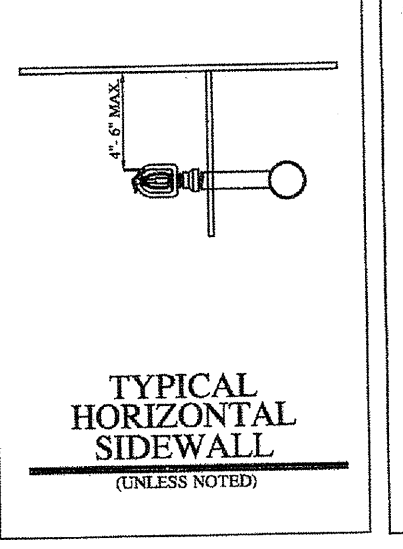
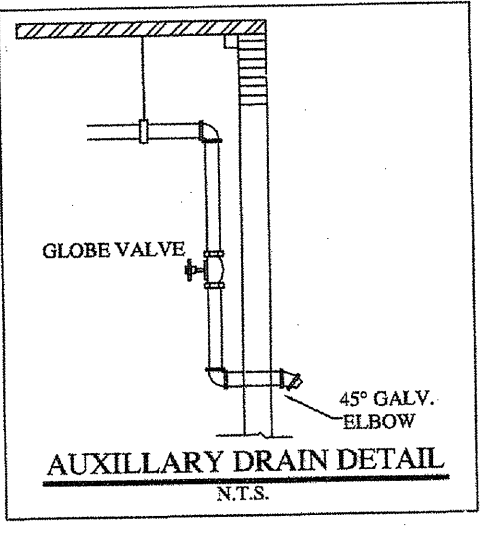
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DATE: 04-01-12  
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SCALE: 1/8" = 1'-0"

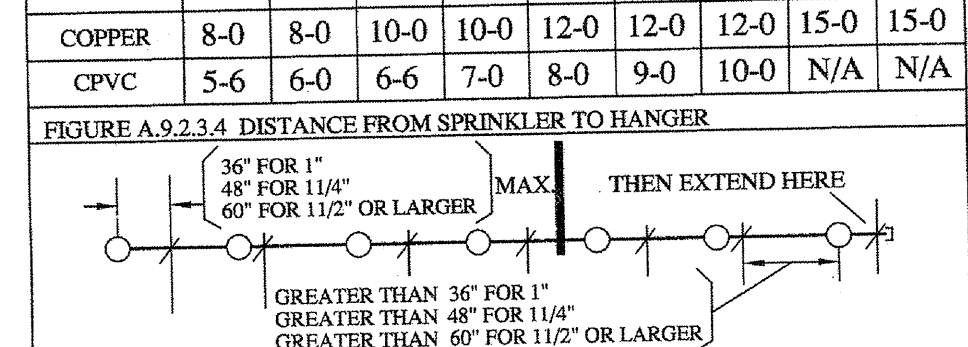


PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"



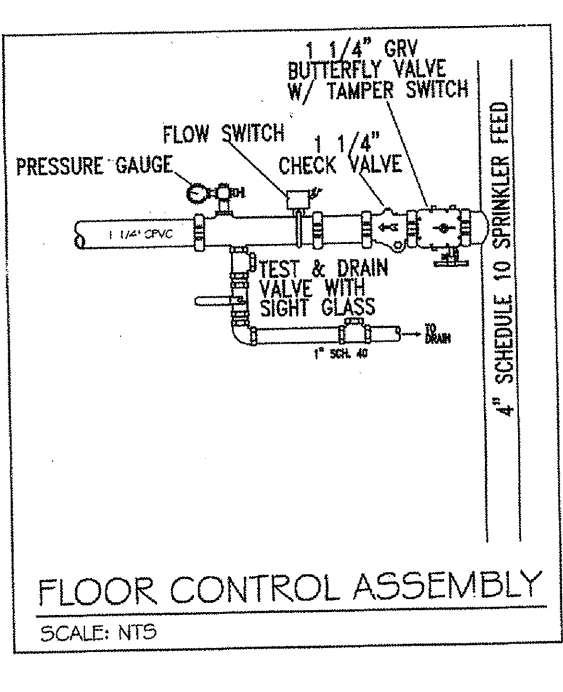
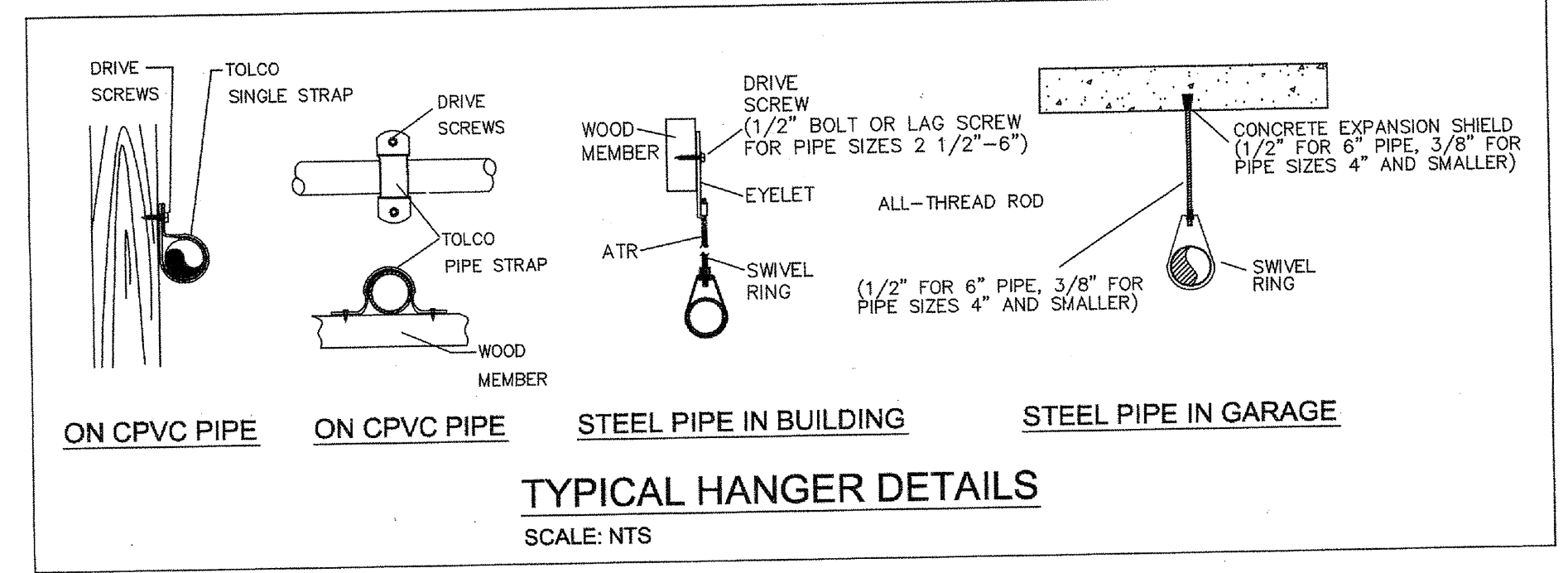
### HANGER SPACING CHART

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0
TUBED	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A
LIGHTWALL	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A

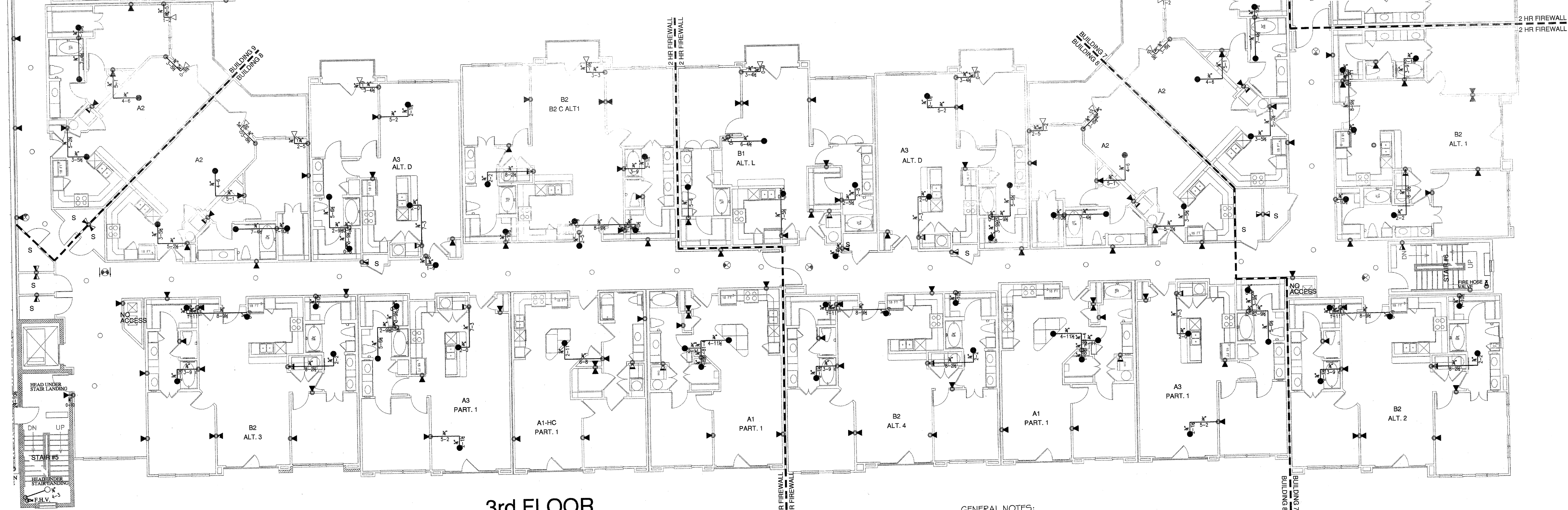


NOTE: THESE PRESSURES ARE FOR THE UNINSULATED LENGTH BETWEEN THE END SPRINKLER IN A RAMP POSITION OR SHARP BEND AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

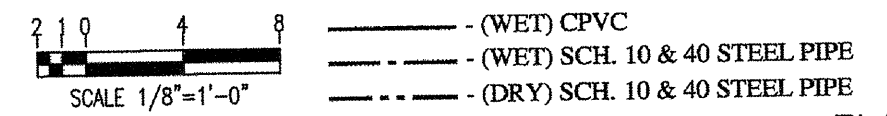
TABLE 9.1.2.1 HANGER ROD SIZES	PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"		3/8"	6 AND 8	1/2"



## POOL AND AMENITY



### 3rd FLOOR



### INSTALLATION PLAN

Scale: 1/8" = 1'-0"



- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

**GENERAL NOTES:**

1. Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
2. Ranger Fire excludes all electrical and ceiling work.
3. All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
4. All material to be UL/FM approved for fire services.
5. All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
6. Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
7. Sprinkler equipment room and equipment components shall be properly identified.
8. Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
9. All hangers shall be in accordance with NFPA 13 requirements.
10. All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
11. The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
12. Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
 GROSS BLDG AREA: 424,139 S.F.  
 TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

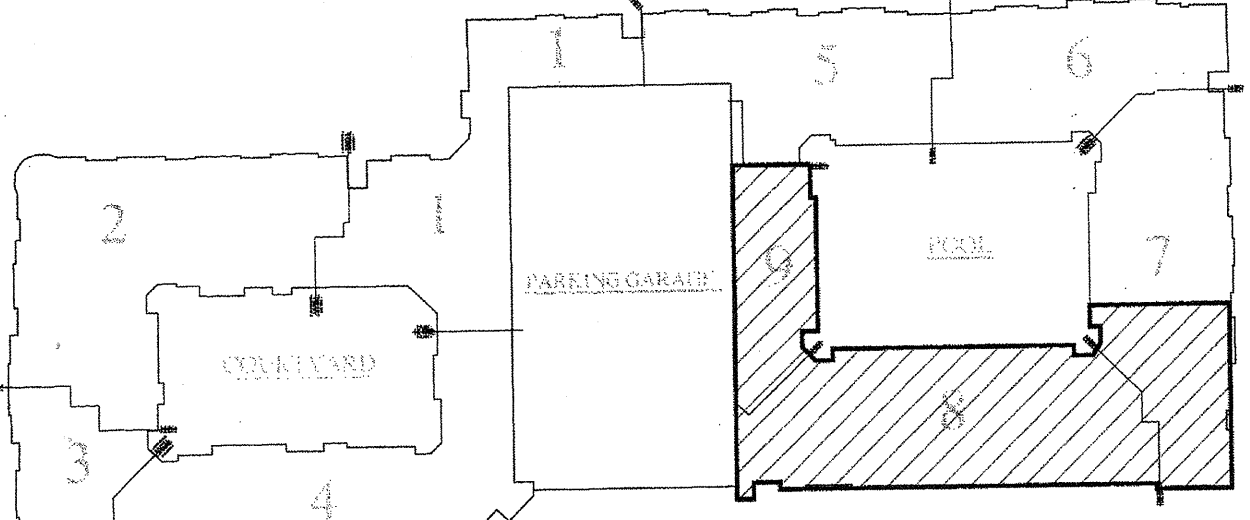
OCCUPANCY: S-2  
 GROSS BLDG AREA: 181,834 S.F.  
 TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

**Ranger Fire, Inc.**  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: *[Signature]*  
 PRINTED RME NAME: Matthew B. Claxton  
 RME NUMBER: 0778 DATE: 7-31-13  
 AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**



**KEY MAP**

**RANGER FIRE, INC.**  
 920 SOUTH MAIN STREET  
 GRAPEVINE, TEXAS 76051  
 PHONE: 817-410-9070  
 TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER

**GENERAL CONTRACTOR:**  
 EMBREY PARTNERS LTD.  
 1020 NE LOOP 410 STE 700  
 DALLAS, TEXAS 75242  
 OWNER:  
 EMBREY PARTNERS LTD.  
 1020 NE LOOP 410 STE 700  
 SAN ANTONIO, TX 78242

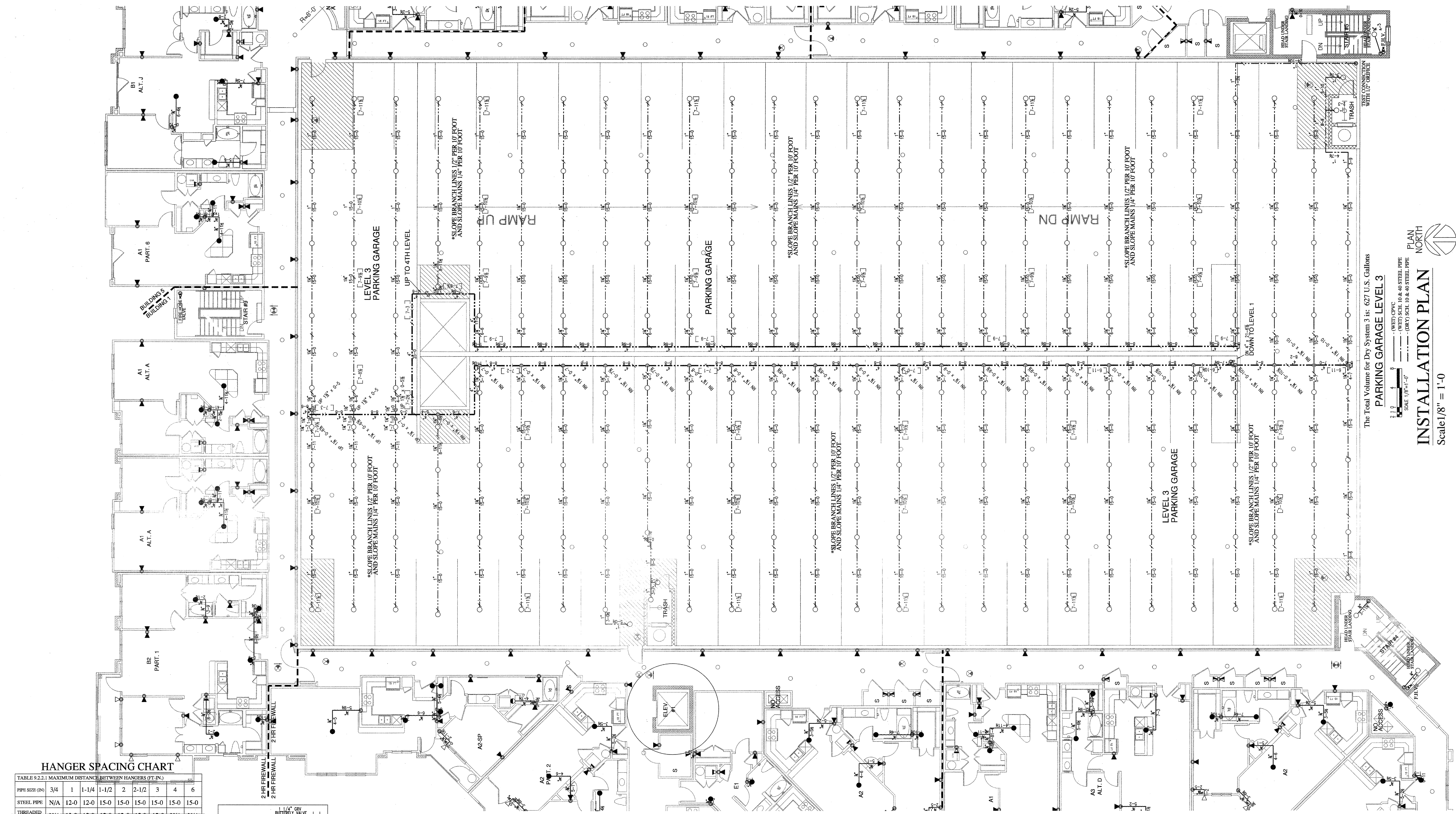
**CONTRACTOR:**  
 RANGER FIRE  
 1000 SOUTH MAIN STREET  
 SUITE 150  
 GRAPEVINE, TEXAS 76051  
 PHONE: 817-410-9070  
 TEXAS LICENSE: 0590

**DATE:** 04-01-12  
**SCALE:** 1/8" = 1'-0"

**CONTRACT #:** 11-065  
**DESCRIPTION:** 3RD FLOOR

**DATE:** 04-01-12  
**SCALE:** 1/8" = 1'-0"

**CONTRACTOR:**  
 RANGER FIRE  
 1000 SOUTH MAIN STREET  
 SUITE 150  
 GRAPEVINE, TEXAS 76051  
 PHONE: 817-410-9070  
 TEXAS LICENSE: 0590



**HANGER SPACING CHART**  
TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
BRANDS	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	15-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

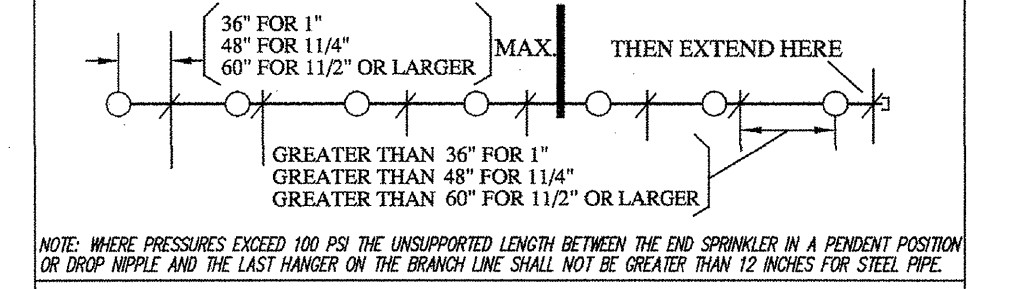
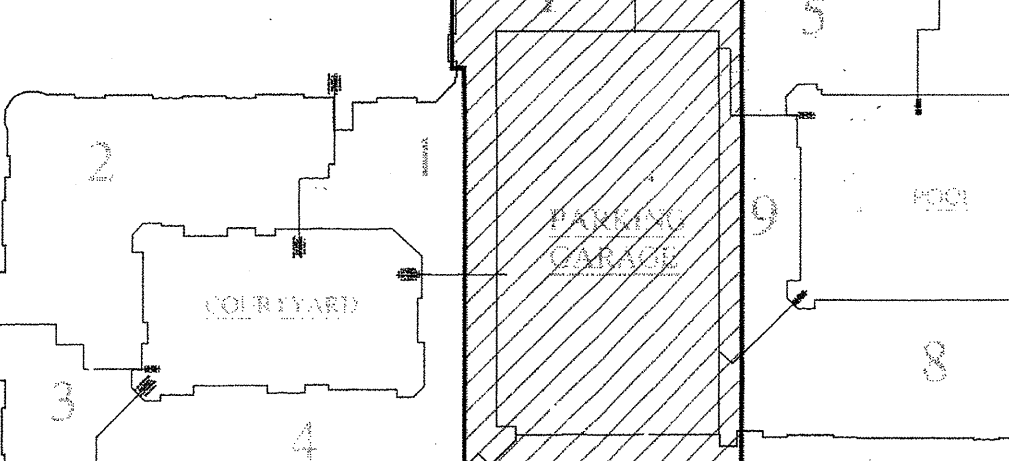


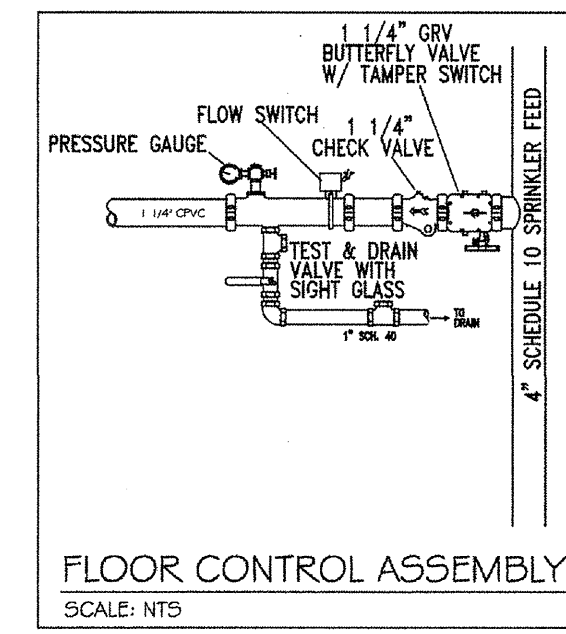
FIGURE A.9.3.4.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: WHERE PRESSURES EXCEED 200 PSI THE UNDRIPPED LENGTH BETWEEN THE END SPRINKLER IN A PENDENT POSITION OR DROP PIPE AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

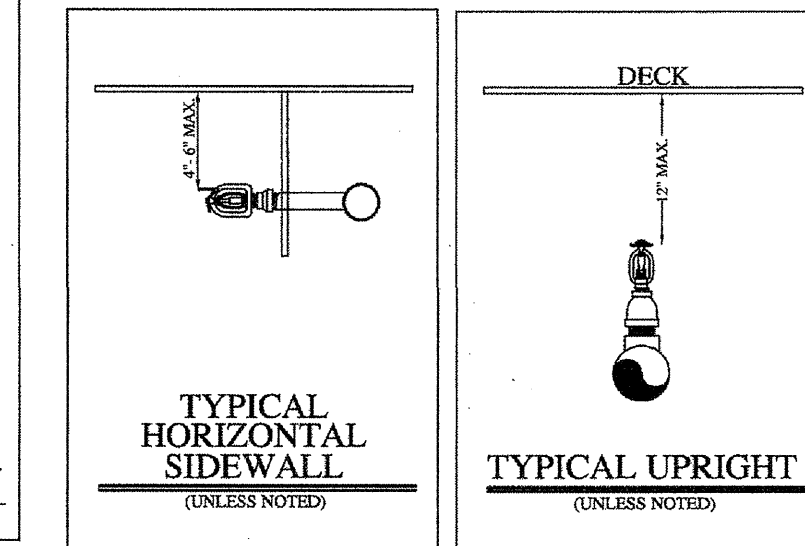
PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"



**KEY MAP**  
N.T.S.



FLOOR CONTROL ASSEMBLY  
SCALE: N.T.S.



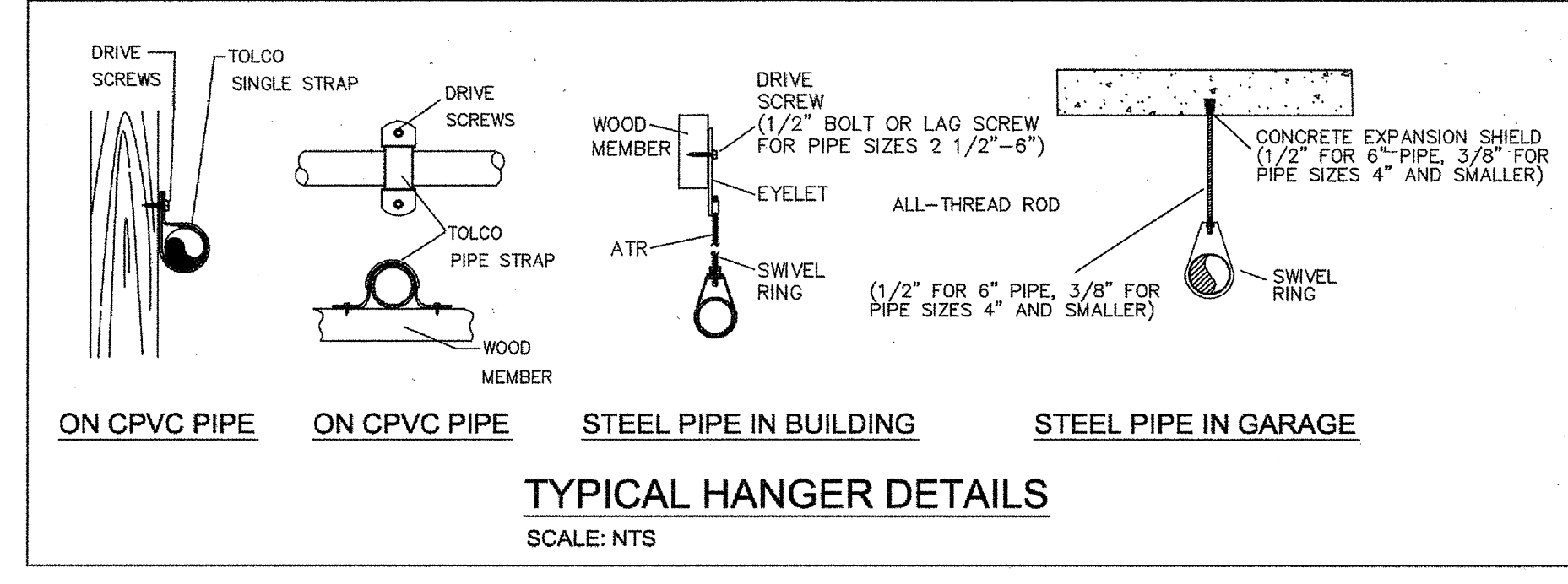
TYPICAL HORIZONTAL SIDEWALL (UNLESS NOTED)  
TYPICAL UPRIGHT (UNLESS NOTED)

**SLEEVE SCHEDULE**

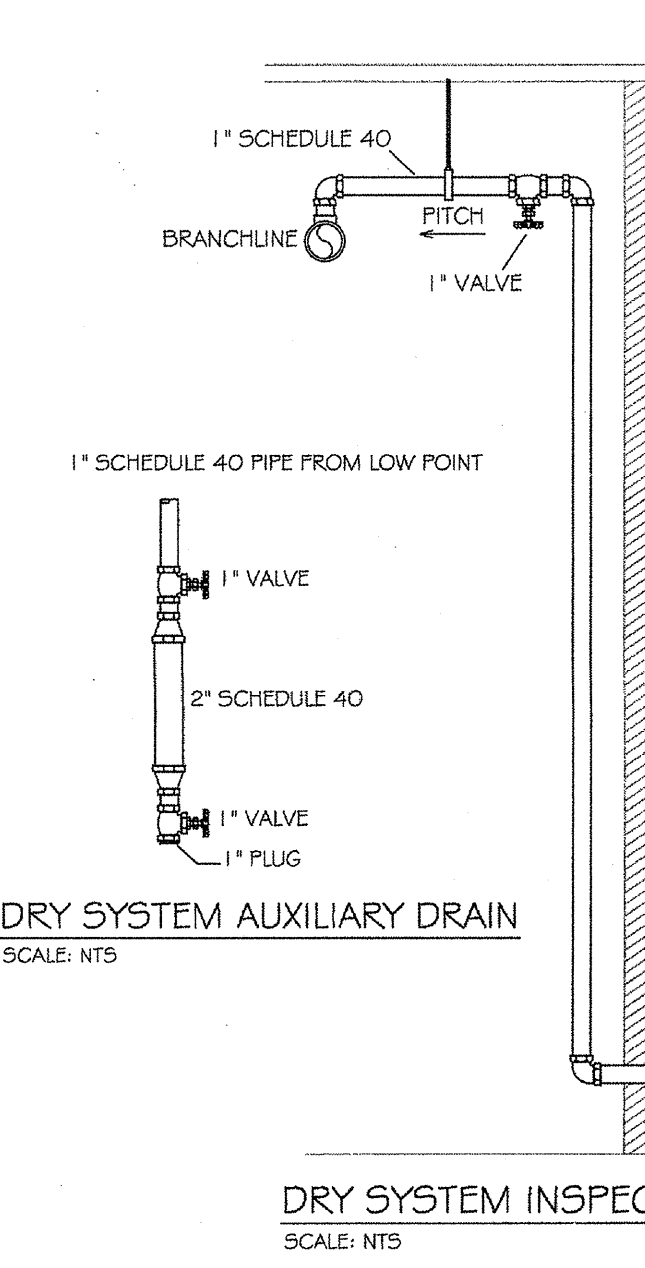
PIPE SIZE	SLEEVE DIA.
1"	2 1/2"
1-1/4"	3"
1-1/2"	3 1/2"
2"	4"
2-1/2"	4 1/2"
3"	5"
4"	6"
5"	7"
6"	8"
8"	10"



TYPICAL DROP DETAIL  
N.T.S.



TYPICAL HANGER DETAILS  
SCALE: N.T.S.



DRY SYSTEM INSPECTOR'S TEST  
SCALE: N.T.S.

- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, and the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
GROSS BLDG AREA: 424,139 S.F.  
TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
GROSS BLDG AREA: 181,834 S.F.  
TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE: [Signature]  
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778 DATE: 7-31-13  
 AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**

INSTALLATION PLAN  
Scale 1/8" = 1'-0"

NO.	DATE	BY	REVISIONS

CONTRACT NAME: KELLER SPRINGS LOFTS  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

CONTRACT # 11-05 DESCRIPTION: 3RD FLOOR

SCALE: 1/8" = 1'-0"  
DRAWN BY: C. ALEXANDER  
CHECKED BY: [Signature]  
DATE: 04-01-12  
DWG # FP 15 OF 30

CONFIDENTIALITY STATEMENT  
The drawings of Ranger Fire are a confidential work product. The drawings are prepared for the use of the client and are not to be reproduced or distributed to any other party without the written consent of Ranger Fire, Inc.

GENERAL CONTRACTOR: TEMBER PARTNERS LTD.  
1000 NE LOOP 410, STE 700  
SAN ANTONIO, TX 78242-6044  
OWNER: TEMBER PARTNERS LTD.  
1000 NE LOOP 410, STE 700  
SAN ANTONIO, TX 78242-6044

CITY: SAN ANTONIO, TX  
ESTABLISHED: 1978  
FINISH: WHITE  
RELIEF: 1/2" / 1/4" / 1/8" / 3/16" / 1/32"  
RANGE: 1/2" / 1/4" / 1/8" / 3/16" / 1/32"  
MATERIAL: NONE

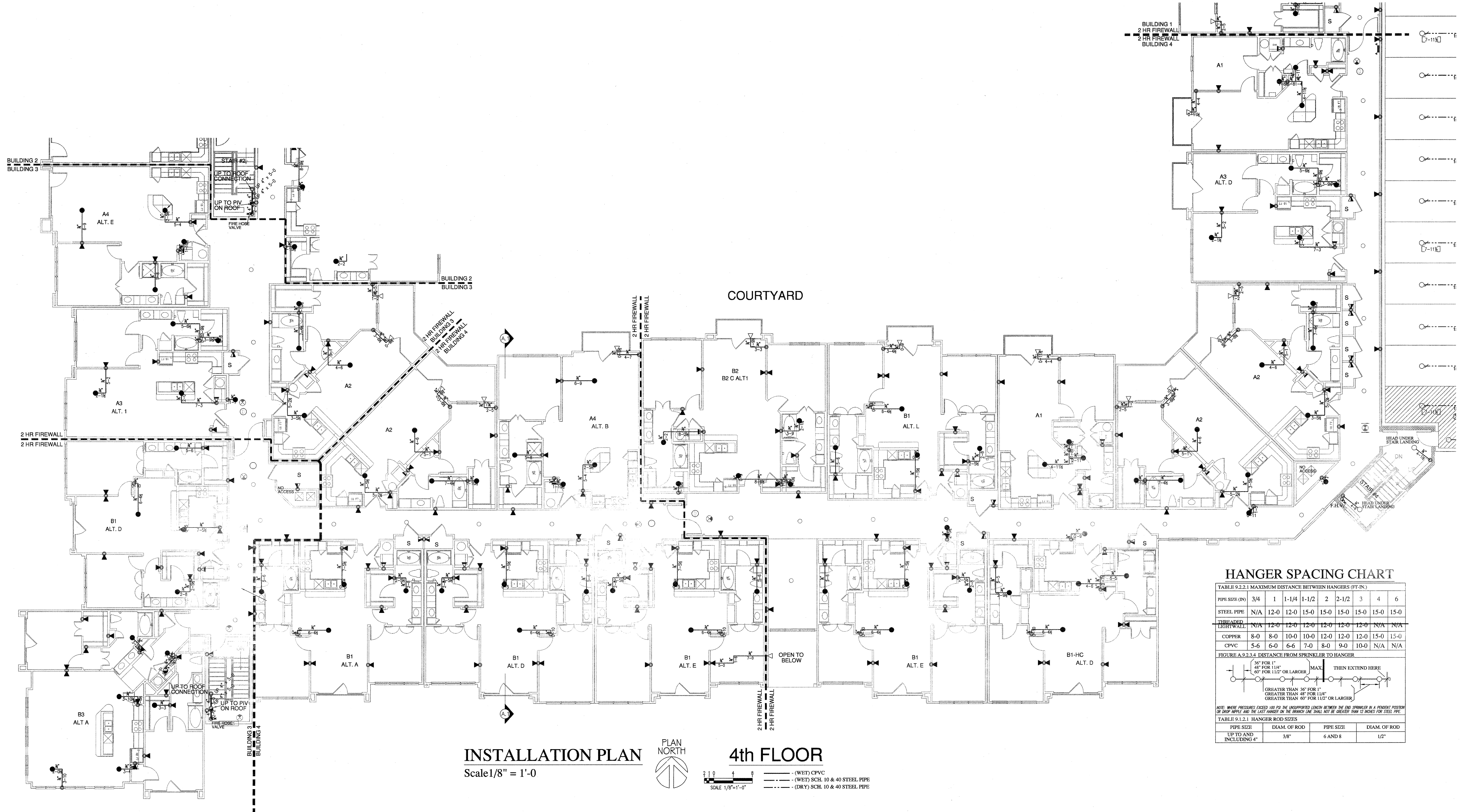
CITY: SAN ANTONIO, TX  
ESTABLISHED: 1978  
FINISH: WHITE  
RELIEF: 1/2" / 1/4" / 1/8" / 3/16" / 1/32"  
RANGE: 1/2" / 1/4" / 1/8" / 3/16" / 1/32"  
MATERIAL: NONE

TOTAL FOR THIS SHEET: 271  
TOTAL FOR THIS SHEET: 271

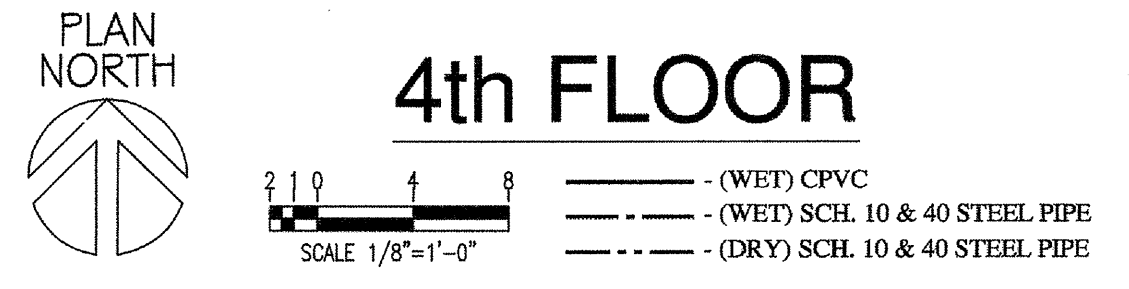
CONTRACT # 11-05 DESCRIPTION: 3RD FLOOR

RANGER FIRE, INC.  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER



**INSTALLATION PLAN**  
Scale 1/8" = 1'-0"



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED	N/A	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE 9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

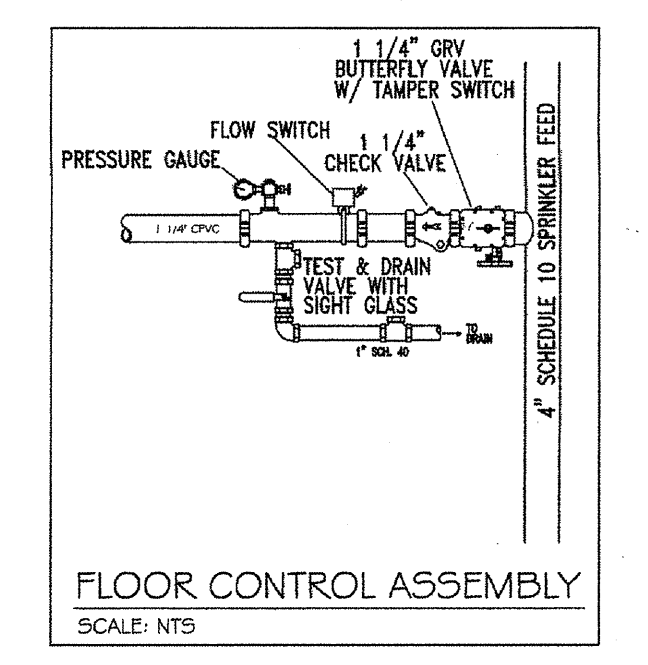
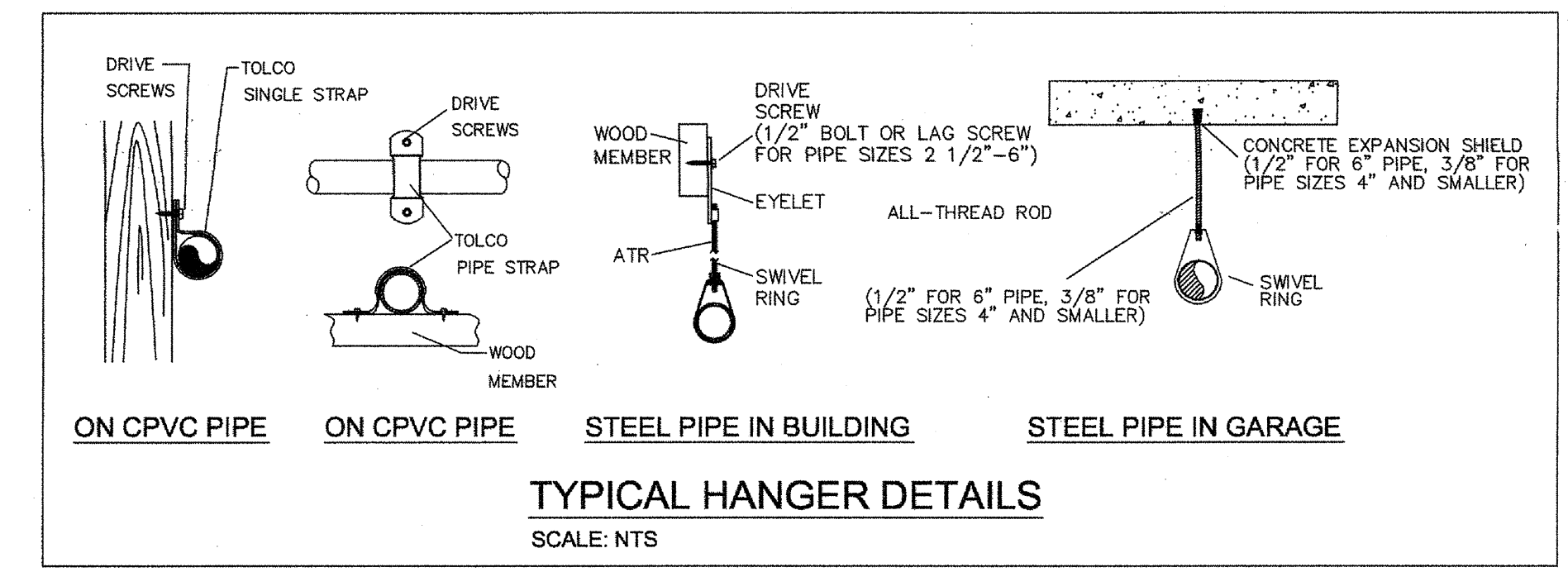
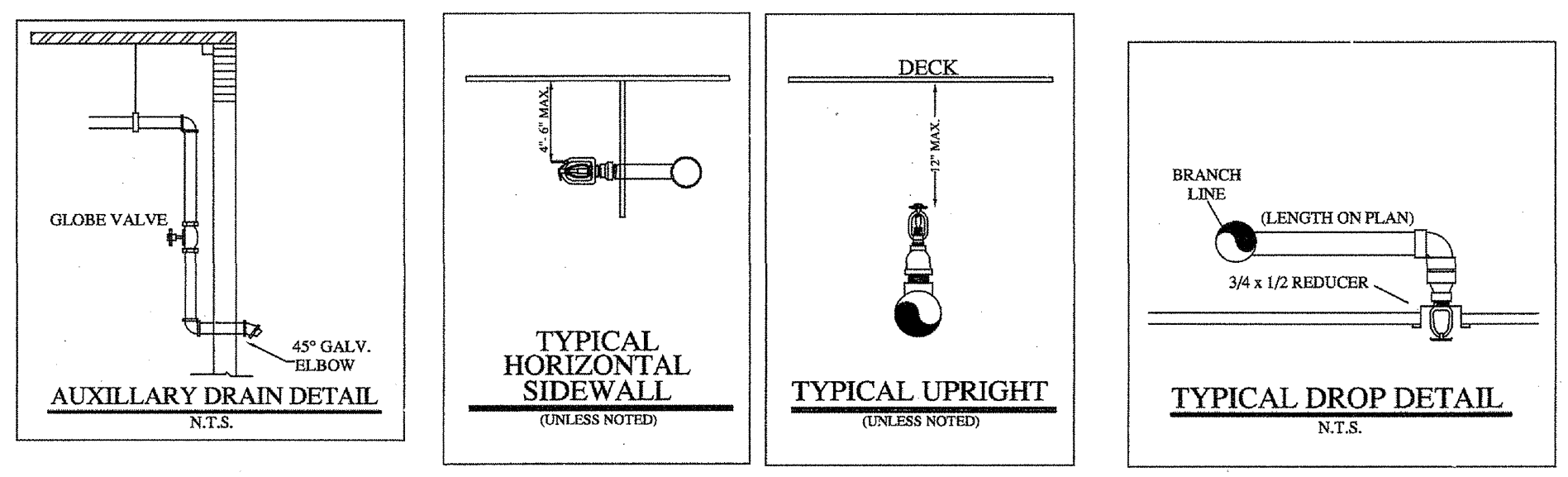
NOTE: WORK PRESSURES CHECKED AND FOR THE UNREPORTED LENGTH BETWEEN THE END SPRINKLER IN A RAINWATER PROTECT OR DROP WHEEL AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"



- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - C PIPE ELEVATION

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, and the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (i.e.o.n.). All steel piping shall be Black Sch. 40 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2/A-3
GROSS BLDG AREA: 424,139 S.F.
TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

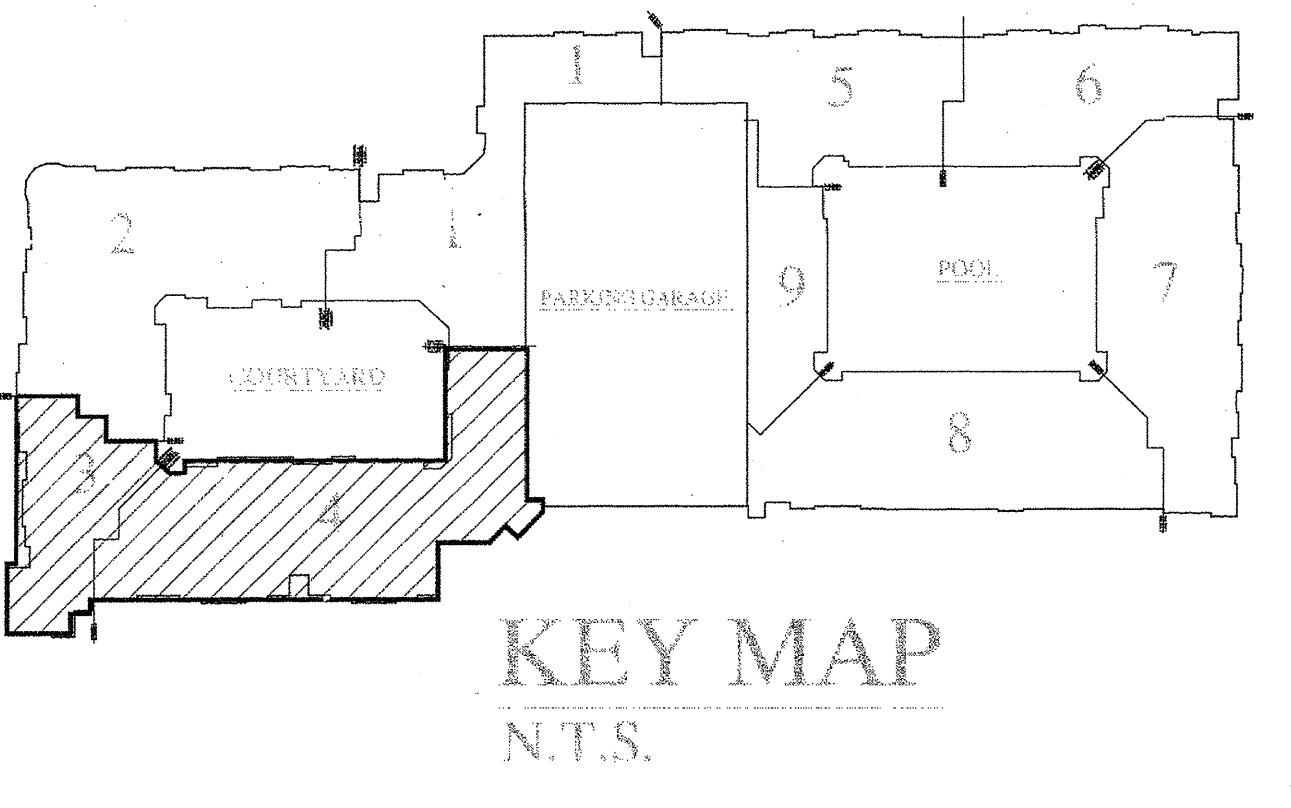
OCCUPANCY: S-2
GROSS BLDG AREA: 181,834 S.F.
TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

**Ranger Fire, Inc.**  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778 DATE: 7-2-13

AS-BUILT  SUBMITTAL  OTHER



**AS-BUILT**

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER

GENERAL CONTRACTOR	EMERY PARTNERS LTD	1000 NE LOOP 410 STE 100	SAN ANTONIO, TX	210-824-6044
OWNER	EMERY PARTNERS LTD	1000 NE LOOP 410 STE 100	SAN ANTONIO, TX	210-824-6044
DATE	04-01-12			
REVISIONS				

TOTAL FOR THIS SHEET: 254

CONTRACT NAME: **KELLER SPRINGS LOFTS**  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

CONTRACT # 11-055  
DESCRIPTION: 4TH FLOOR

SCALE: 1/8" = 1'-0"

DRAWN BY: C. ALEXANDER  
CHECKED BY: [Signature]



CONTRACT NAME: **KELLER SPRINGS LOFTS**  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

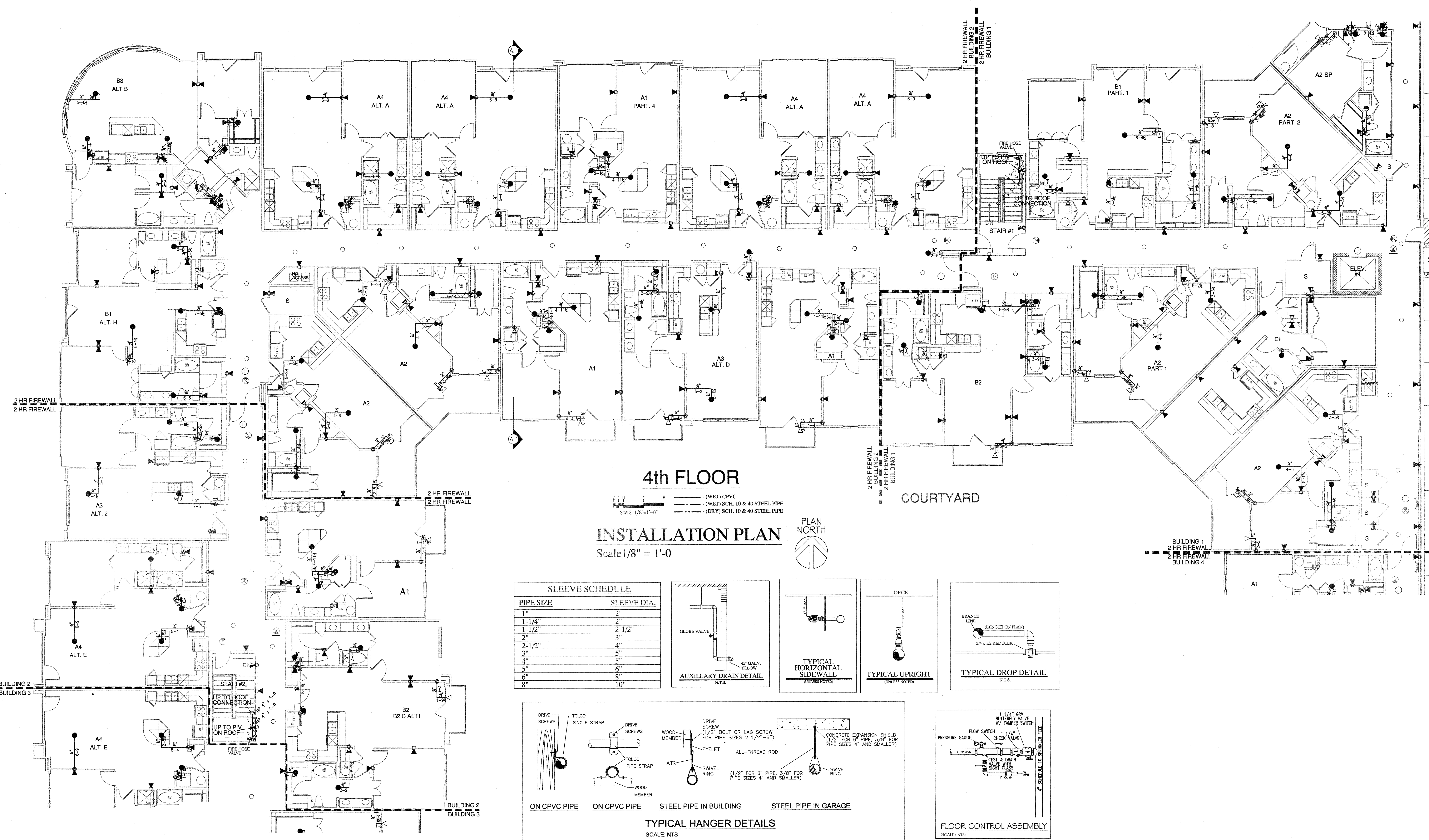
CONTRACT # 11-053  
 DESCRIPTION: 4TH FLOOR

GENERAL CONTRACTOR: **EMBEY PARTNERS LTD**  
 1000 W. LOOP 410 STE 700  
 SAN ANTONIO, TX  
 210-824-6844

DATE: 04-01-12  
 DRAWN BY: **C. ALEXANDER**  
 CHECKED BY: **W. J. [Signature]**

DATE: 04-01-12  
 DRAWN BY: **C. ALEXANDER**  
 CHECKED BY: **W. J. [Signature]**

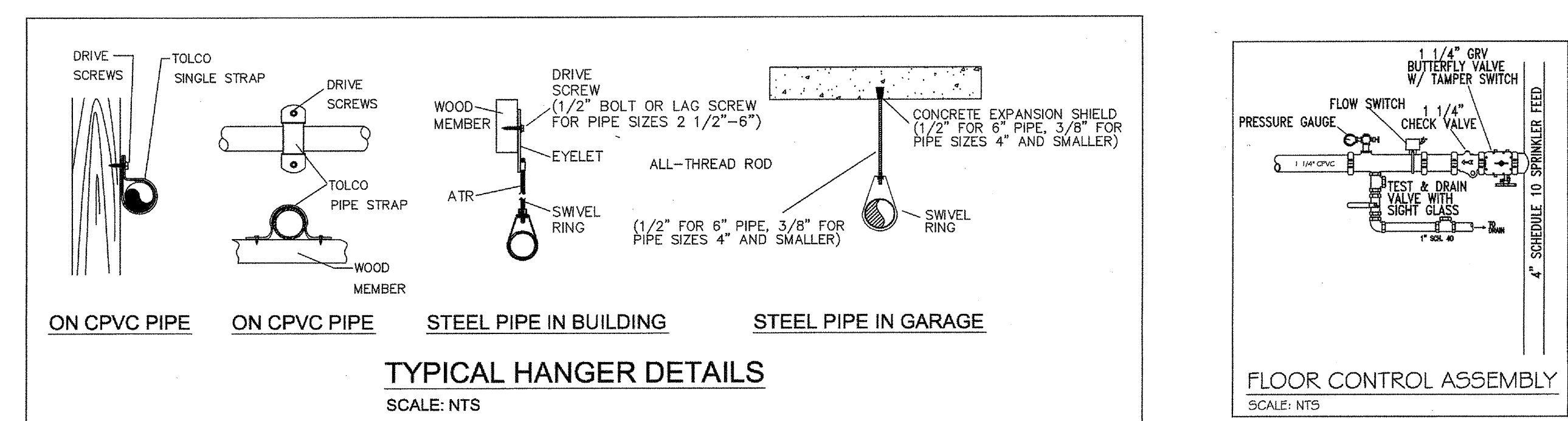
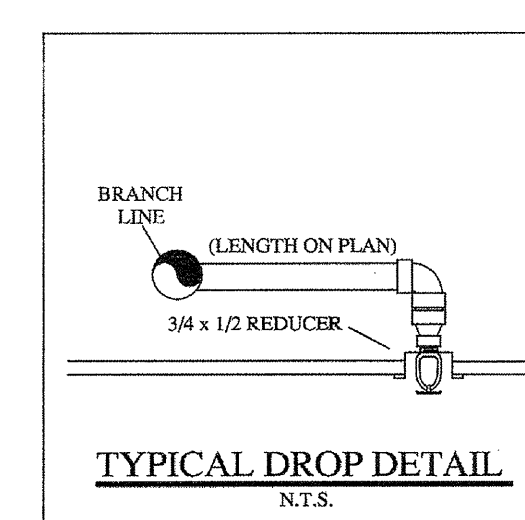
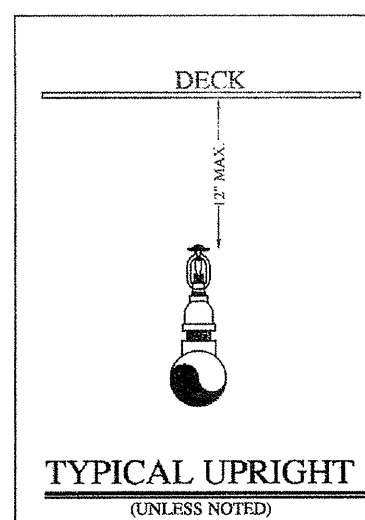
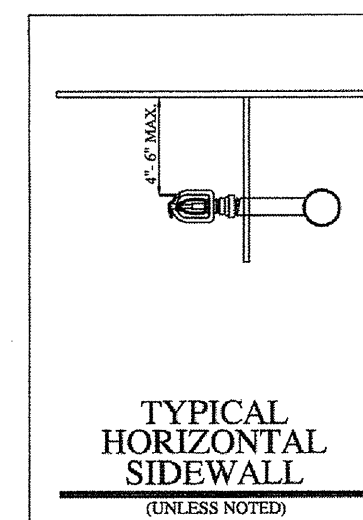
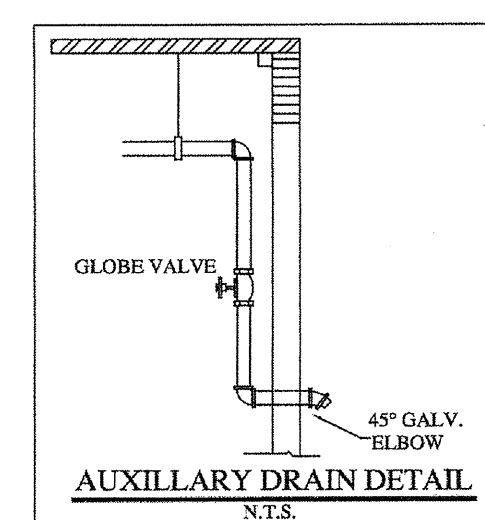
DATE: 04-01-12  
 DRAWN BY: **C. ALEXANDER**  
 CHECKED BY: **W. J. [Signature]**



**4th FLOOR**  
**INSTALLATION PLAN**  
 Scale 1/8" = 1'-0"

**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHTWALL	N/A	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: WHERE PRESSURES EXCEED 200 PSI THE UNBARRIRED LENGTH BETWEEN THE END SPRINKLER IN A PENDENT POSITION OR STOP PIPE AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 FEET FOR STEEL PIPE.

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
 GROSS BLDG AREA: 424,139 S.F.  
 TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
 GROSS BLDG AREA: 181,834 S.F.  
 TYPE OF CONSTRUCTION: 2-B

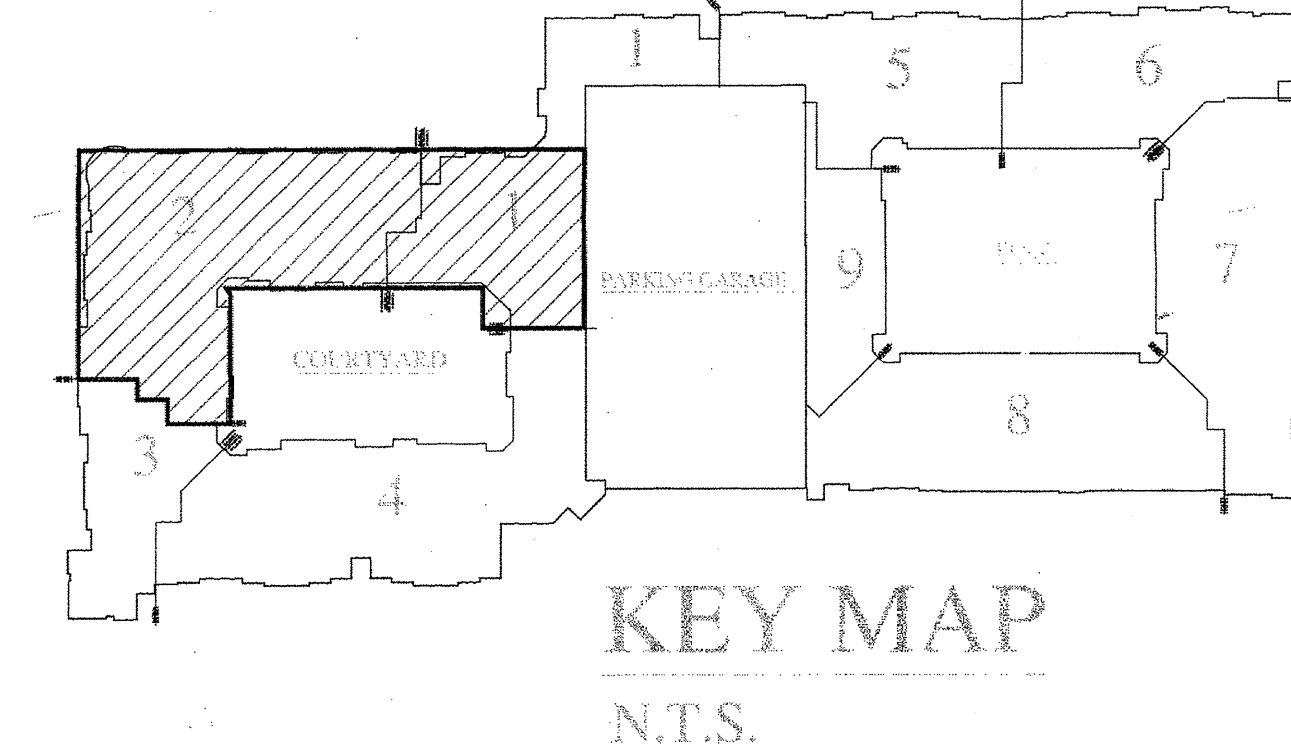
I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

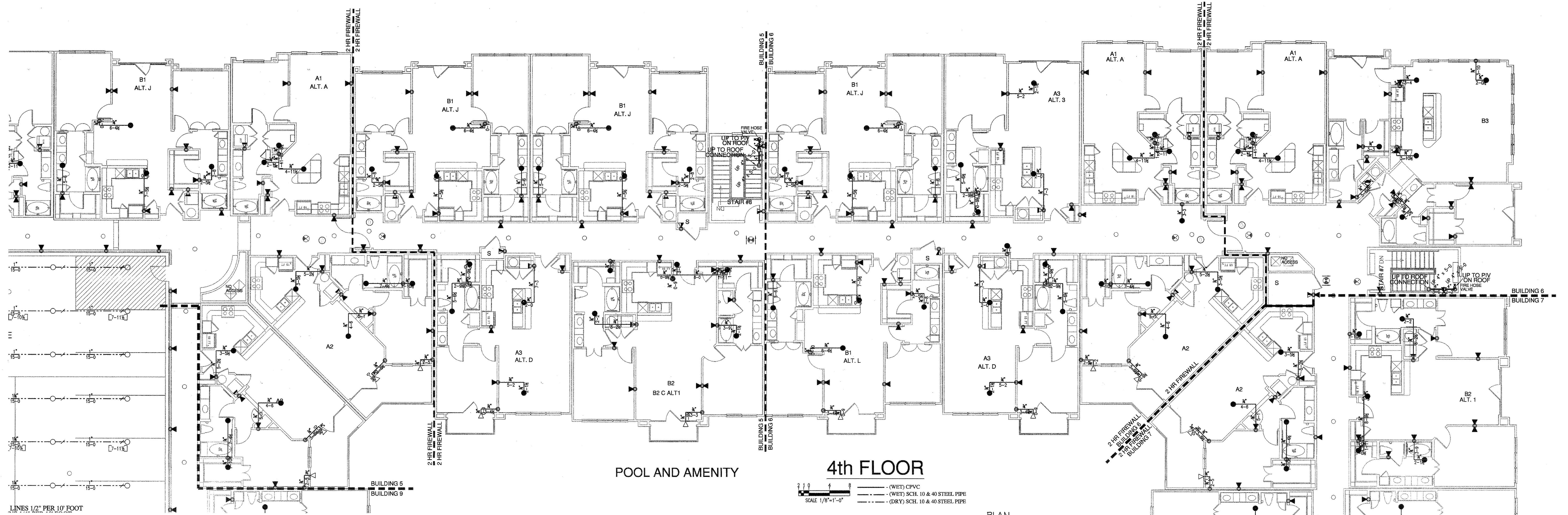
RME SIGNATURE: **[Signature]**  
 PRINTED RME NAME: **Matthew B. Claxton**  
 RME NUMBER: **0778** DATE: **2-3-12**

AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**



**KEY MAP**  
 N.T.S.



**4th FLOOR**  
**INSTALLATION PLAN**  
 Scale 1/8" = 1'-0"

LINES 1/2" PER 10' FOOT

**HANGER SPACING CHART**

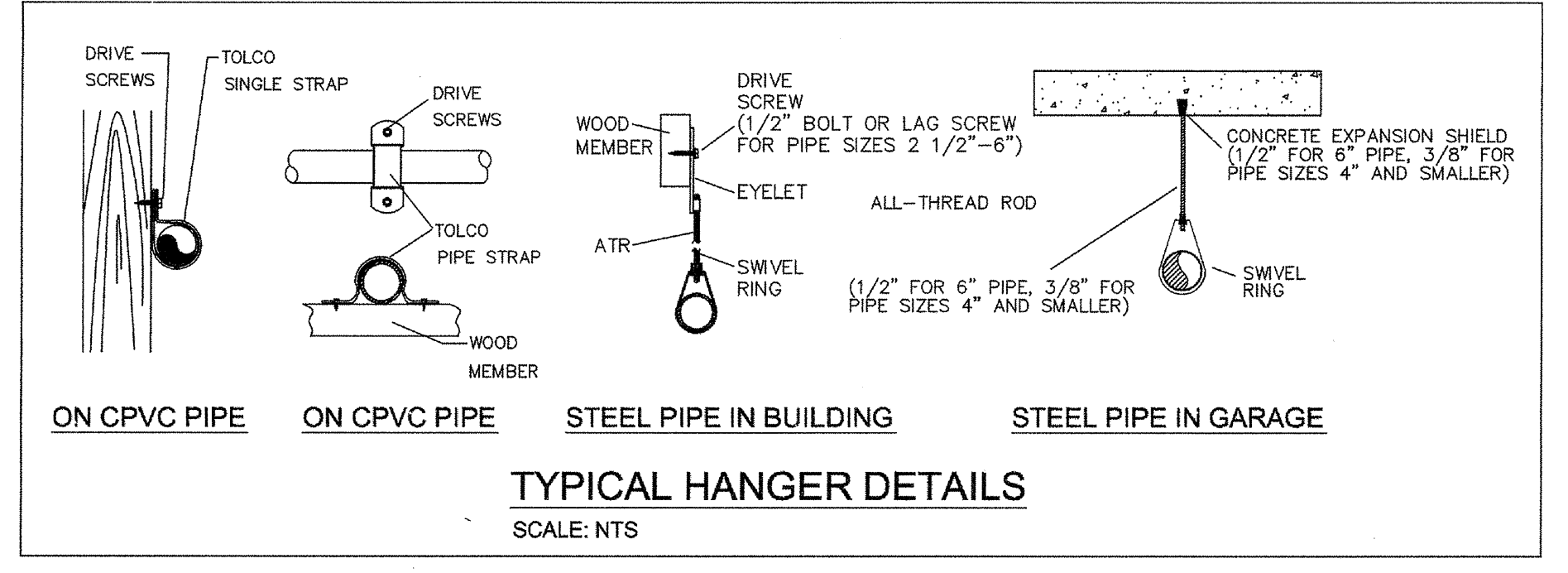
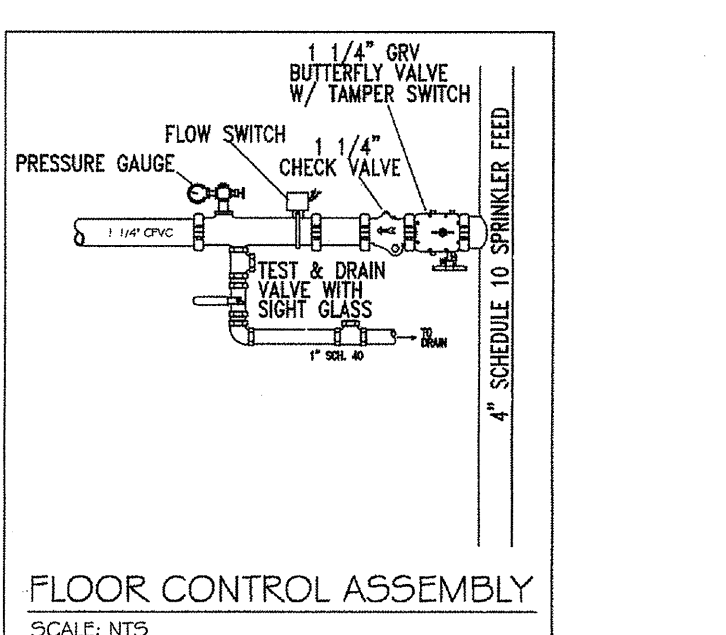
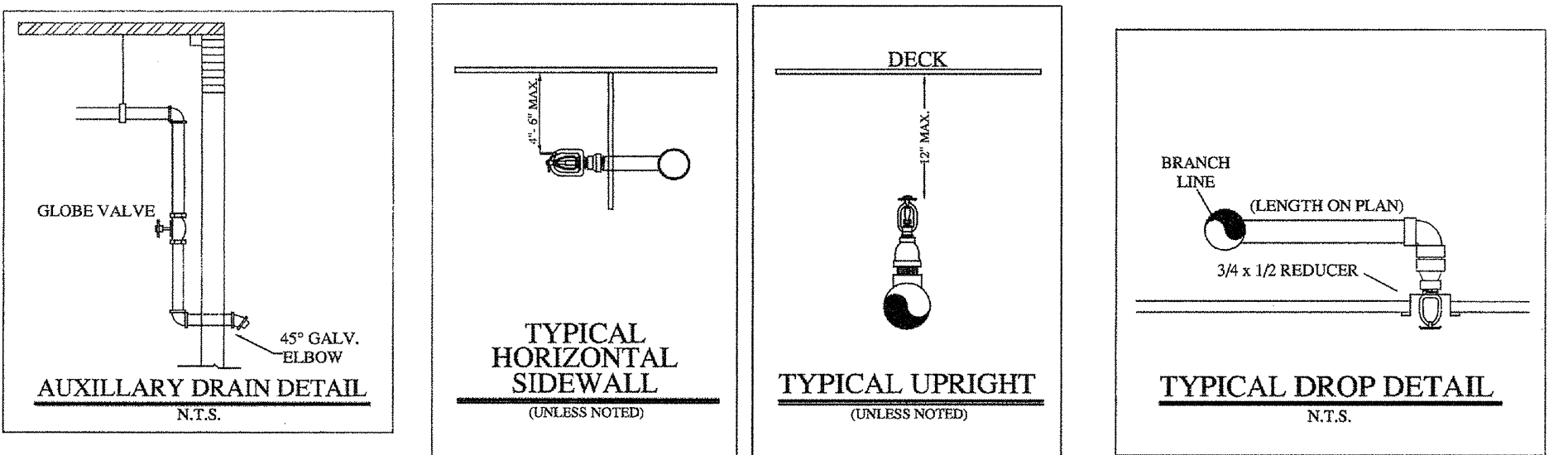
PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: WHEN PRESSURES EXCEED 100 PSI THE SPACINGS BETWEEN THE END SPRINKLER IN A PENDANT POSITION OR DROP HANGER AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 FEET FOR STEEL PIPE.

**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"

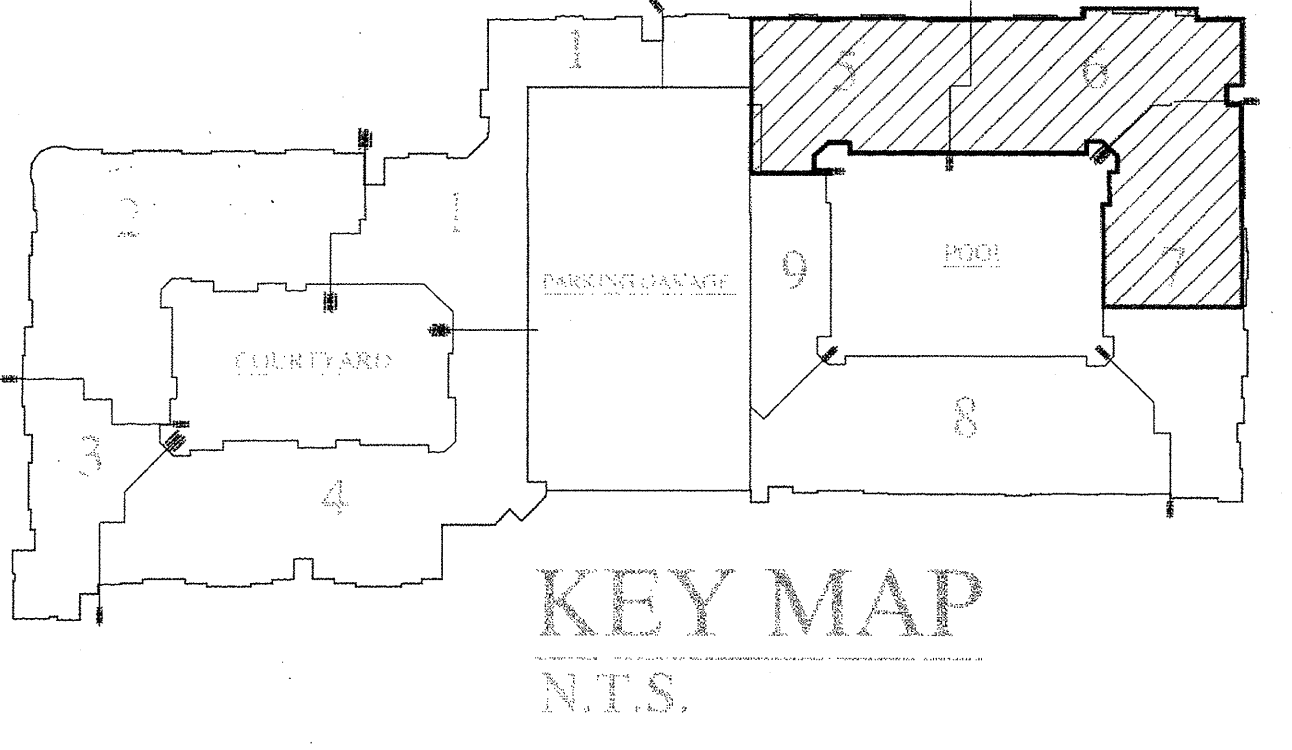


**TYPICAL HANGER DETAILS**  
SCALE: NTS

**GENERAL NOTES:**

- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
- Ranger Fire excludes all electrical and ceiling work.
- All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
- All material to be UUFM approved for fire services.
- All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
- Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
- Sprinkler equipment room and equipment components shall be properly identified.
- Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
- All hangers shall be in accordance with NFPA 13 requirements.
- All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
- The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
- Install Black steel piping in Parking Garage.

- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION



**KEY MAP**  
N.T.S.

RESIDENTIAL BUILDING INFO	
OCCUPANCY:	R-2 / A-3
GROSS BLDG AREA:	424,139 S.F.
TYPE OF CONSTRUCTION:	V-A
GARAGE BUILDING INFO	
OCCUPANCY:	S-2
GROSS BLDG AREA:	181,834 S.F.
TYPE OF CONSTRUCTION:	2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

**Ranger Fire, Inc.**  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
 PRINTED RME NAME: **Matthew B. Claxton**  
 RME NUMBER: **0778** DATE: **7-31-13**

AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**

**RANGER FIRE, INC.**  
 920 SOUTH MAIN STREET  
 SUITE 200  
 GRAPEVINE, TEXAS 76051  
 PHONE: 817-410-9070  
 TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER

**KELLER SPRINGS LOFTS**  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

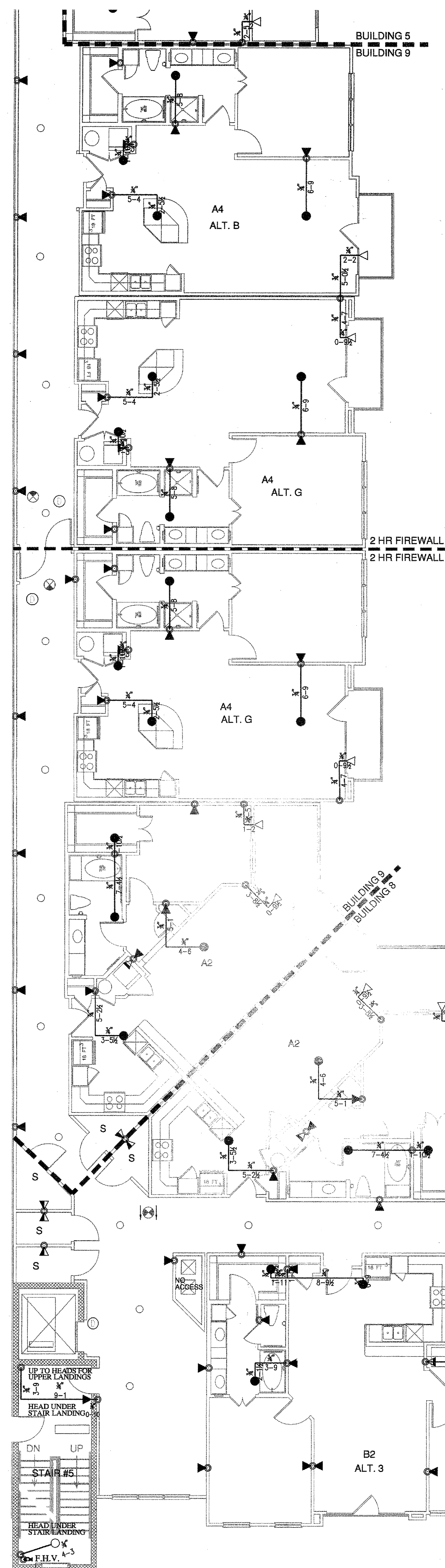
**RANGER FIRE**

CONTRACT NAME: **KELLER SPRINGS LOFTS**  
 CONTRACT # 11-055  
 DESCRIPTION: 4TH FLOOR

SCALE: 1/8" = 1'-0"  
 DRAWN BY: **C. ALEXANDER**  
 CHECKED BY:  
 DATE: 04-01-12  
 DWG #: **FP 18 OF 30**

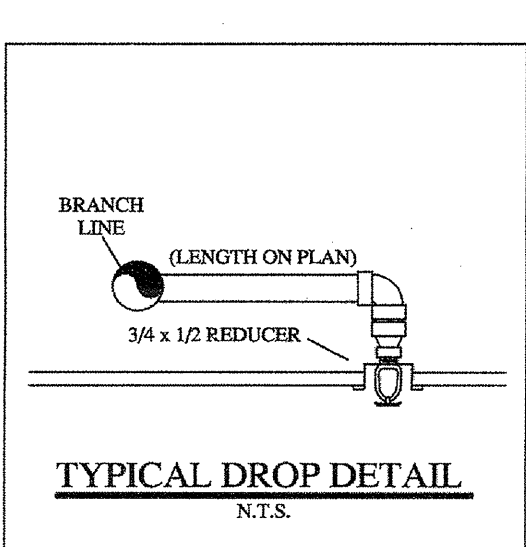
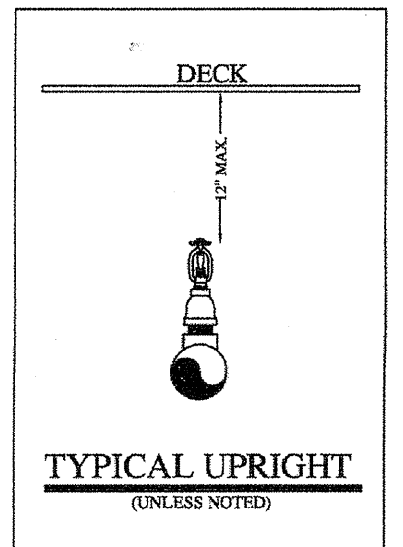
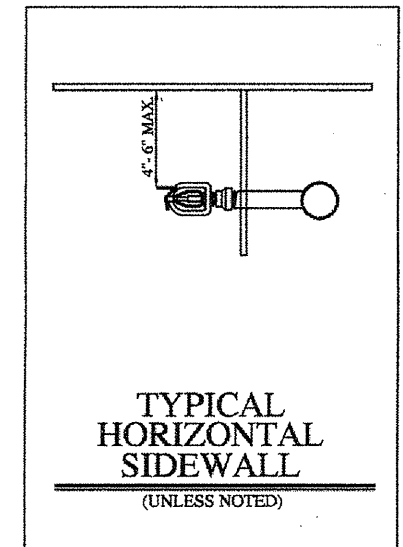
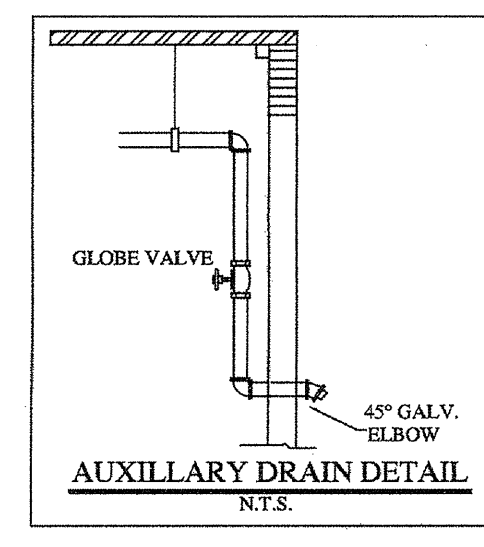
CONFIDENTIALITY STATEMENT  
 This document contains confidential information. It is intended for the use of the person to whom it is addressed. If you have received this document in error, please notify the sender immediately. All information herein shall be held confidential. No part of this document may be reproduced without the written consent of Ranger Fire, Inc.

REV #	DATE	DESCRIPTION
1	04-01-12	ISSUE FOR PERMIT
2	04-01-12	ISSUE FOR PERMIT
3	04-01-12	ISSUE FOR PERMIT
4	04-01-12	ISSUE FOR PERMIT
5	04-01-12	ISSUE FOR PERMIT
6	04-01-12	ISSUE FOR PERMIT
7	04-01-12	ISSUE FOR PERMIT
8	04-01-12	ISSUE FOR PERMIT
9	04-01-12	ISSUE FOR PERMIT
10	04-01-12	ISSUE FOR PERMIT
11	04-01-12	ISSUE FOR PERMIT
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13	04-01-12	ISSUE FOR PERMIT
14	04-01-12	ISSUE FOR PERMIT
15	04-01-12	ISSUE FOR PERMIT
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21	04-01-12	ISSUE FOR PERMIT
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24	04-01-12	ISSUE FOR PERMIT
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30	04-01-12	ISSUE FOR PERMIT



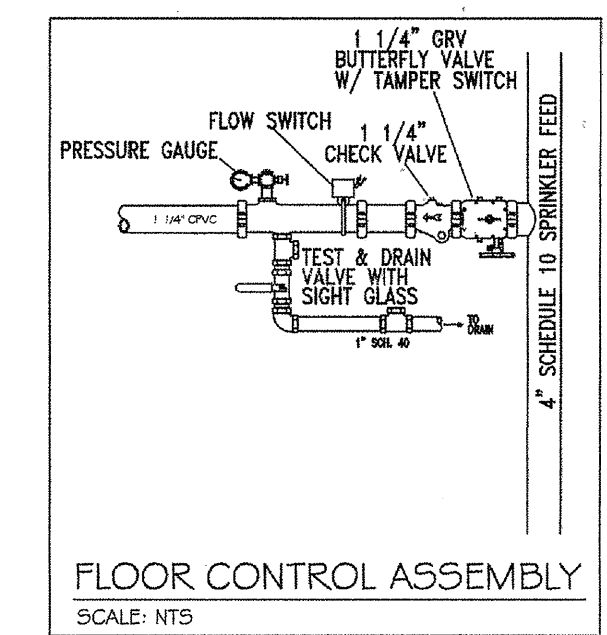
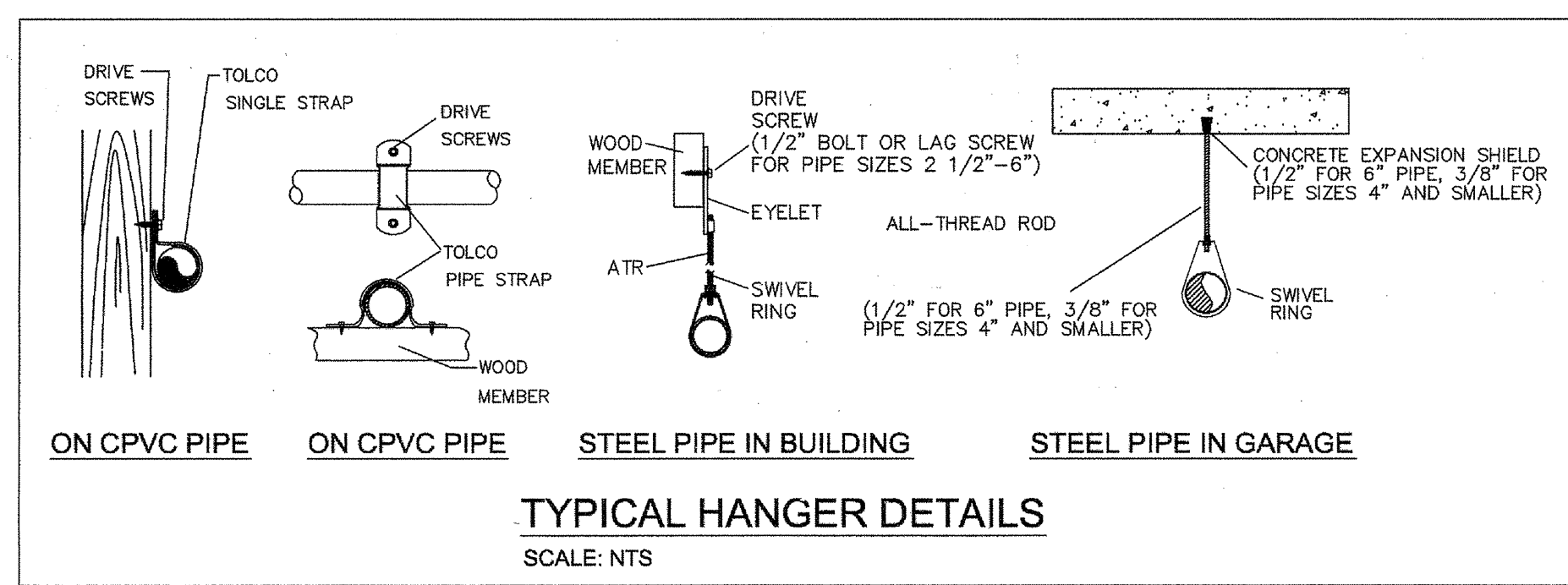
**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	6"
5"	8"
6"	8"
8"	10"

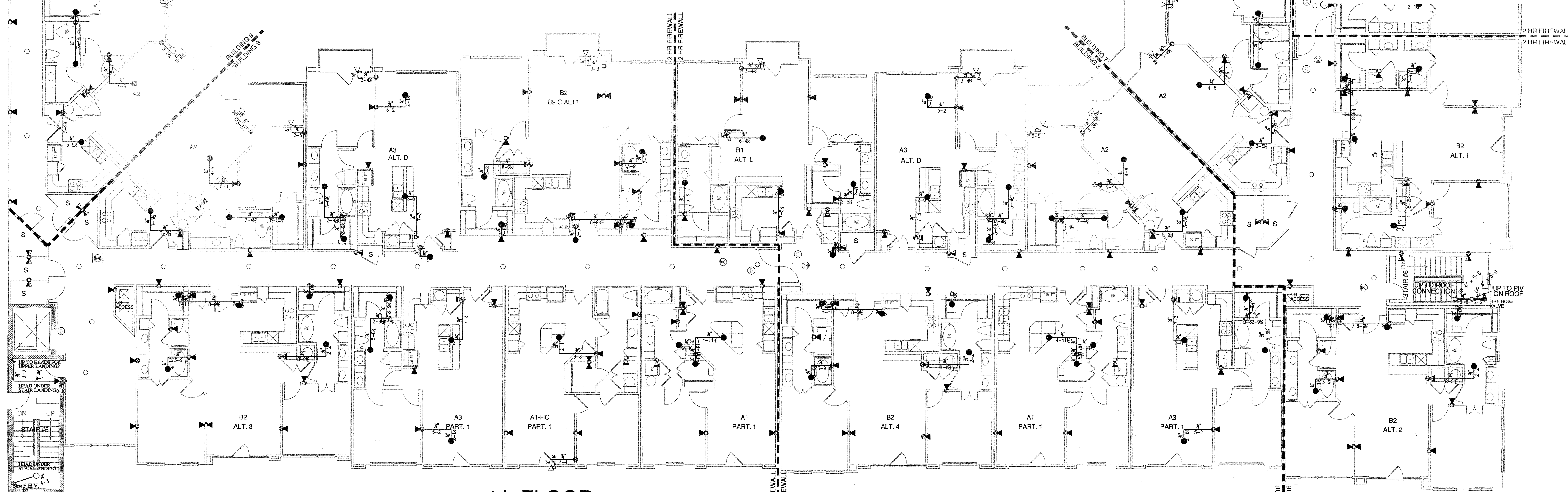


- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.



**POOL AND AMENITY**



**4th FLOOR**

Scale 1/8" = 1'-0"

(WET) CPVC  
 (WET) SCH. 10 & 40 STEEL PIPE  
 (DRY) SCH. 10 & 40 STEEL PIPE

**INSTALLATION PLAN**

PLAN NORTH

**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (DN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED	N/A	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

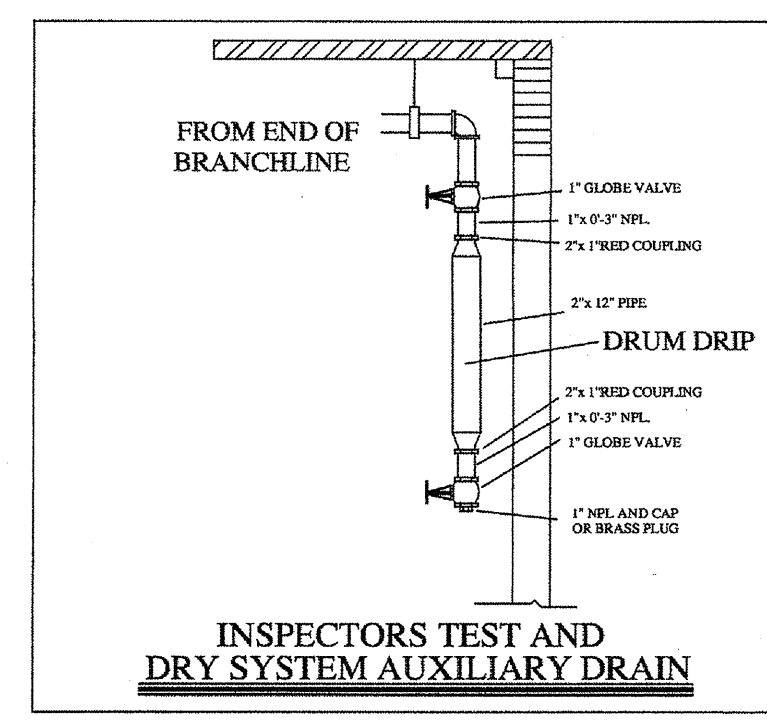
FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

6" FOR 1"  
 4" FOR 1 1/4"  
 4" FOR 1 1/2" OR LARGER  
 MAX. THEN EXTEND HERE  
 GREATER THAN 36" FOR 1"  
 GREATER THAN 48" FOR 1 1/4"  
 GREATER THAN 60" FOR 1 1/2" OR LARGER

NOTE: MAJOR PRESSURES EXCEED 100 PSI THE UNBARRICADED LENGTH BETWEEN THE END SPRINKLER IN A REMOTE POSITION OR DRIP WIPPLE AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

TABLE 9.1.2.1.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"



**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
 GROSS BLDG AREA: 424,139 S.F.  
 TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

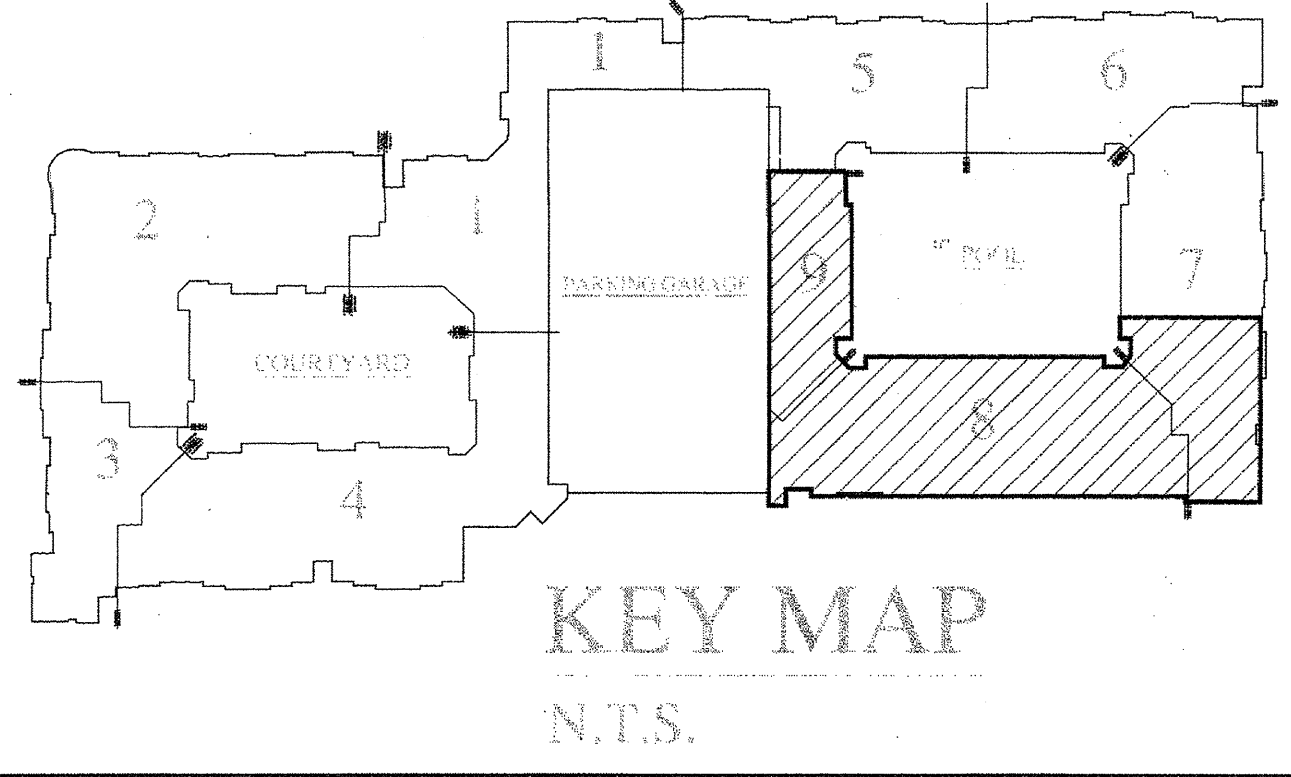
OCCUPANCY: S-2  
 GROSS BLDG AREA: 181,834 S.F.  
 TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
 PRINTED RME NAME: Matthew B. Claxton  
 RME NUMBER: 0778 DATE: 7-31-12

AS-BUILT  
 SUBMITTAL  
 OTHER



**AS-BUILT**

**RANGER FIRE, INC.**  
 920 SOUTH MAIN STREET  
 SUITE 200  
 GRAPEVINE, TEXAS 76051  
 PHONE: 817-410-9070  
 TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER

**GENERAL CONTRACTOR:**  
 KELLER SPRINGS LOFTS  
 HEMERY PARTNERS LTD  
 1000 NE LOOP 410, STE 700  
 SAN ANTONIO, TX  
 210.824.6944

**OWNER:**  
 HEMERY PARTNERS LTD  
 1000 NE LOOP 410, STE 700  
 SAN ANTONIO, TX  
 210.824.6944

**CONTRACT NAME:** KELLER SPRINGS LOFTS  
**CONTRACT #:** 11-465  
**DESCRIPTION:** 4TH FLOOR

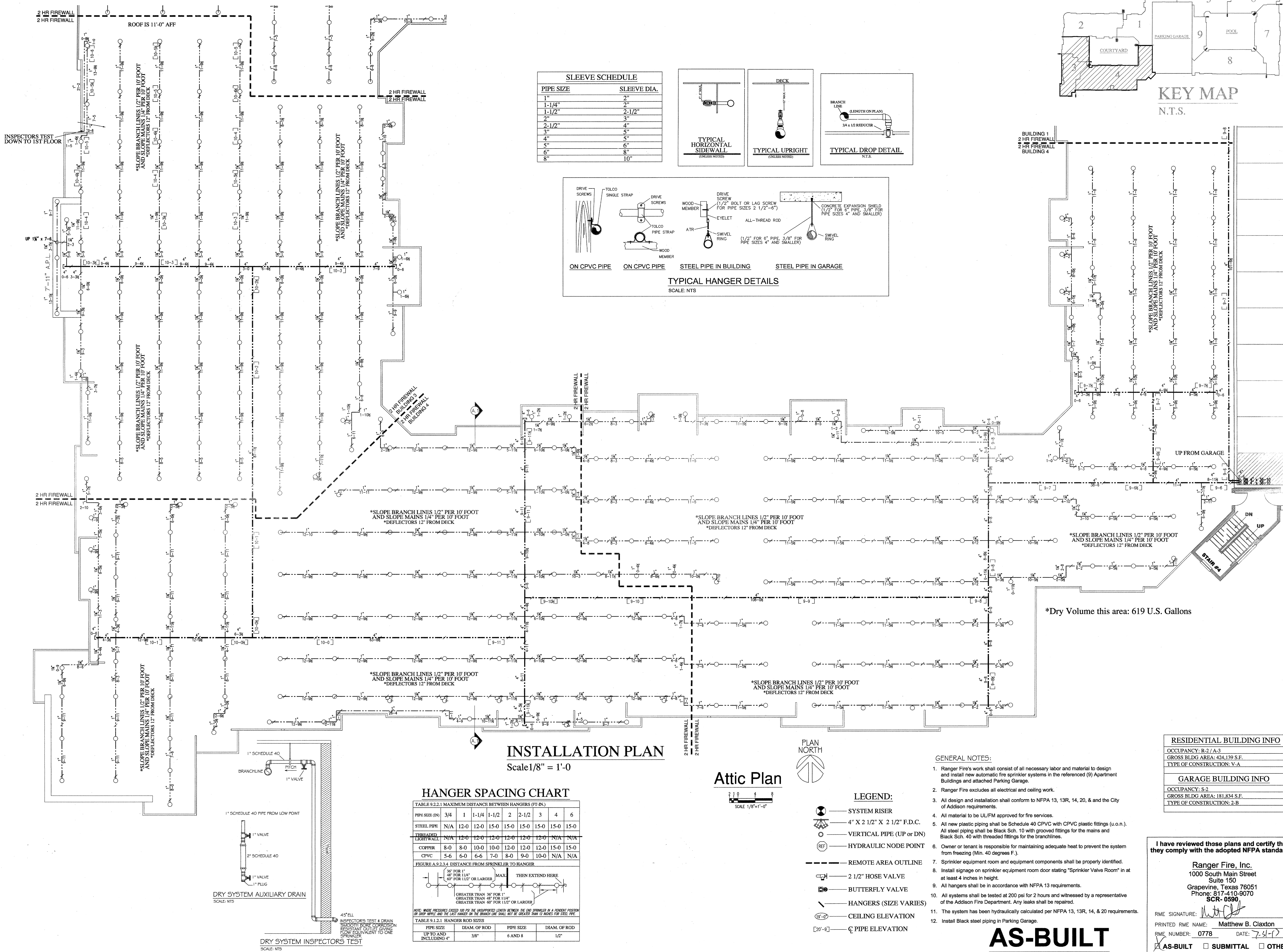
**SCALE:** 1/8" = 1'-0"

**DRAWN BY:** C. ALEXANDER  
**CHECKED BY:** [Signature]  
**DATE:** 04-01-12  
**DATE:** 04-01-12

**CONTRACTOR'S STATEMENT:**  
 This is a true and correct copy of the plans as submitted for the project of Hemery Partners Ltd. I, the undersigned, certify that the information herein was obtained from reliable sources and that the information herein was prepared in accordance with the original intent of the design team. I am a duly licensed Professional Engineer in the State of Texas.  
**DATE:** 04-01-12  
**BY:** [Signature]

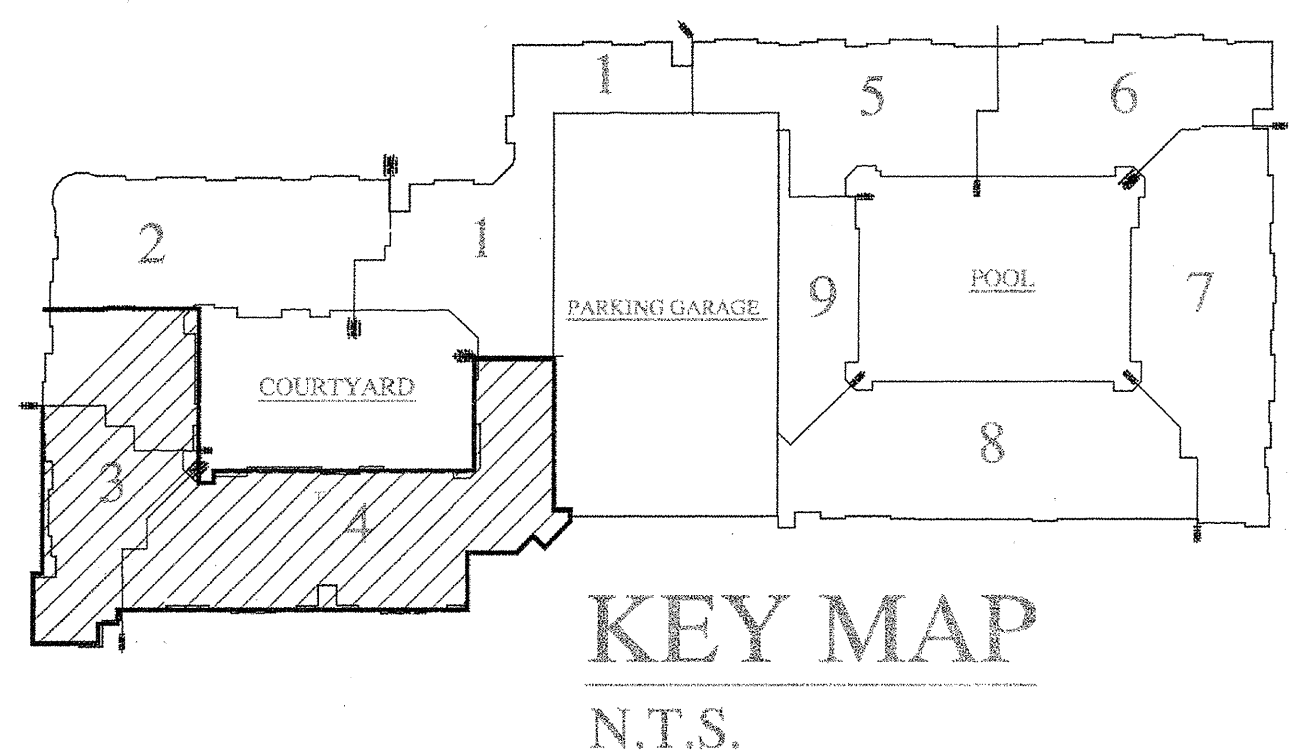
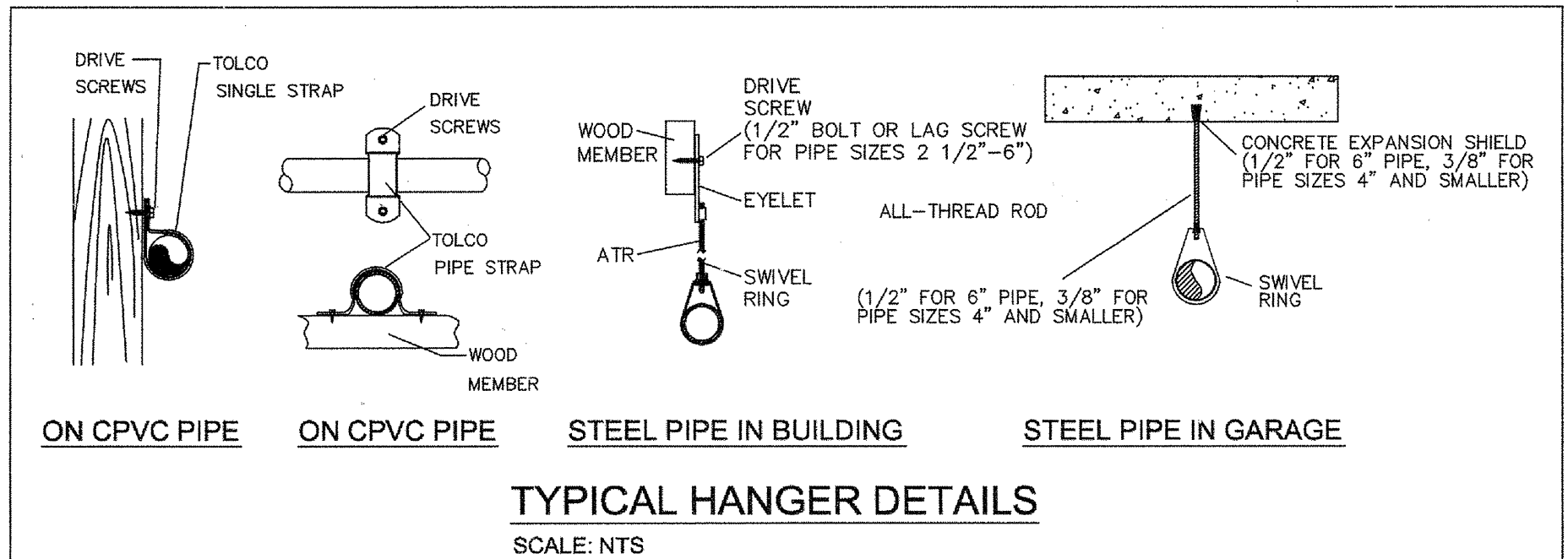
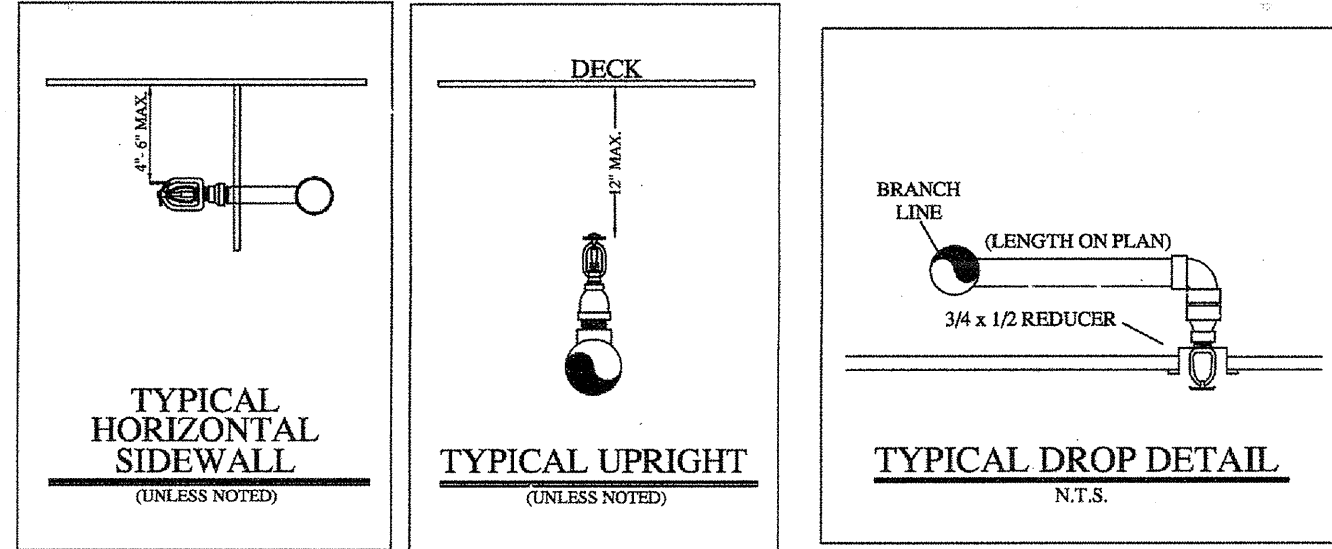
**CONTRACT #:** 11-465  
**DATE:** 04-01-12  
**DATE:** 04-01-12





**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	6"
5"	8"
6"	8"
8"	10"



**INSTALLATION PLAN**  
Scale 1/8" = 1'-0"

**Attic Plan**  
Scale 1/8" = 1'-0"

**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN)

PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
UNBURNED LIGHTWALL	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A-9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: WHERE PRESSURES EXCEED 100 PSI THE UNBURNED LENGTH BETWEEN THE END SPRINKLER IN A REMOTE POSITION OR DROP HANGER AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

- GENERAL NOTES:**
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, and the City of Addison requirements.
  - All material to be UL/FM approved for fire services.
  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
  - Owner or tenant is responsible for maintaining adequate heat to prevent the system from freezing (Min. 40 degrees F.).
  - Sprinkler equipment room and equipment components shall be properly identified.
  - Install signage on sprinkler equipment room door stating "Sprinkler Valve Room" in at least 4 inches in height.
  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY:	R-2 / A-3
GROSS BLDG AREA:	424,139 S.F.
TYPE OF CONSTRUCTION:	V-A

**GARAGE BUILDING INFO**

OCCUPANCY:	S-2
GROSS BLDG AREA:	181,834 S.F.
TYPE OF CONSTRUCTION:	2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

**Ranger Fire, Inc.**  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

PRINTED NAME: **Matthew B. Claxton**  
RME NUMBER: **0778** DATE: **7-31-17**

AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER

**KELLER SPRINGS LOFTS**  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

**RANGER FIRE**

CONTRACT NAME: **ATTIC SYSTEM**  
CONTRACT # **11-055**  
SCALE: **1/8" = 1'-0"**  
DRAWN BY: **C. ALEXANDER**  
CHECKED BY: **[Signature]**  
DATE: **04-01-12**  
DWG # **FP 21 OF 30**

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REVISIONS:

NO.	DATE	BY	DESCRIPTION

TOTAL FOR THIS SHEET: 291

### HANGER SPACING CHART

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

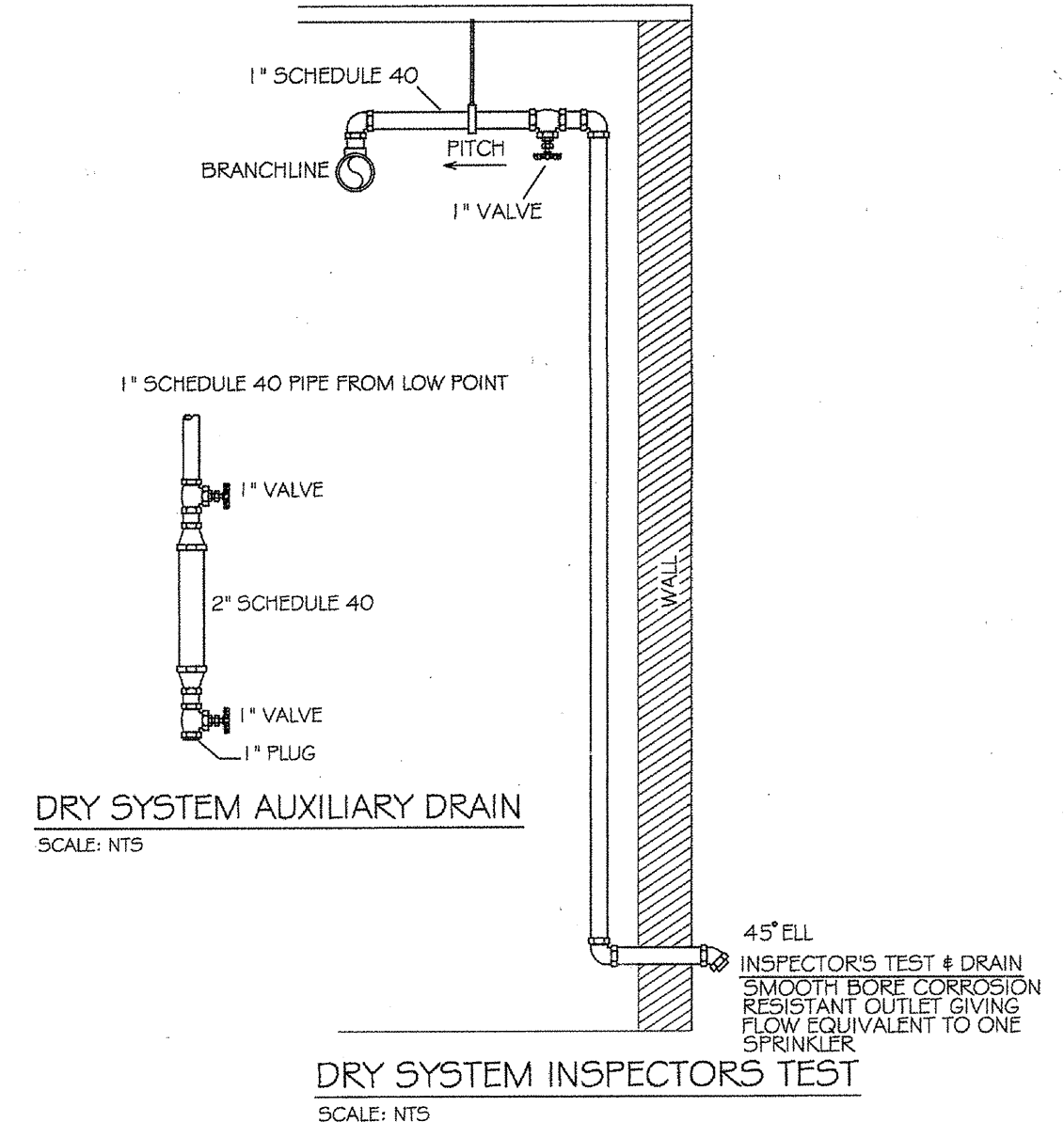
PIPE SIZE (DN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHTWALL	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: WHEN PRESSURES EXCEED 100 PSI THE UNHANGED LENGTH BETWEEN THE SPRINKLER IN A TENDRY ROOM OR SHOP WARE AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 15 INCHES FOR STEEL PIPE.

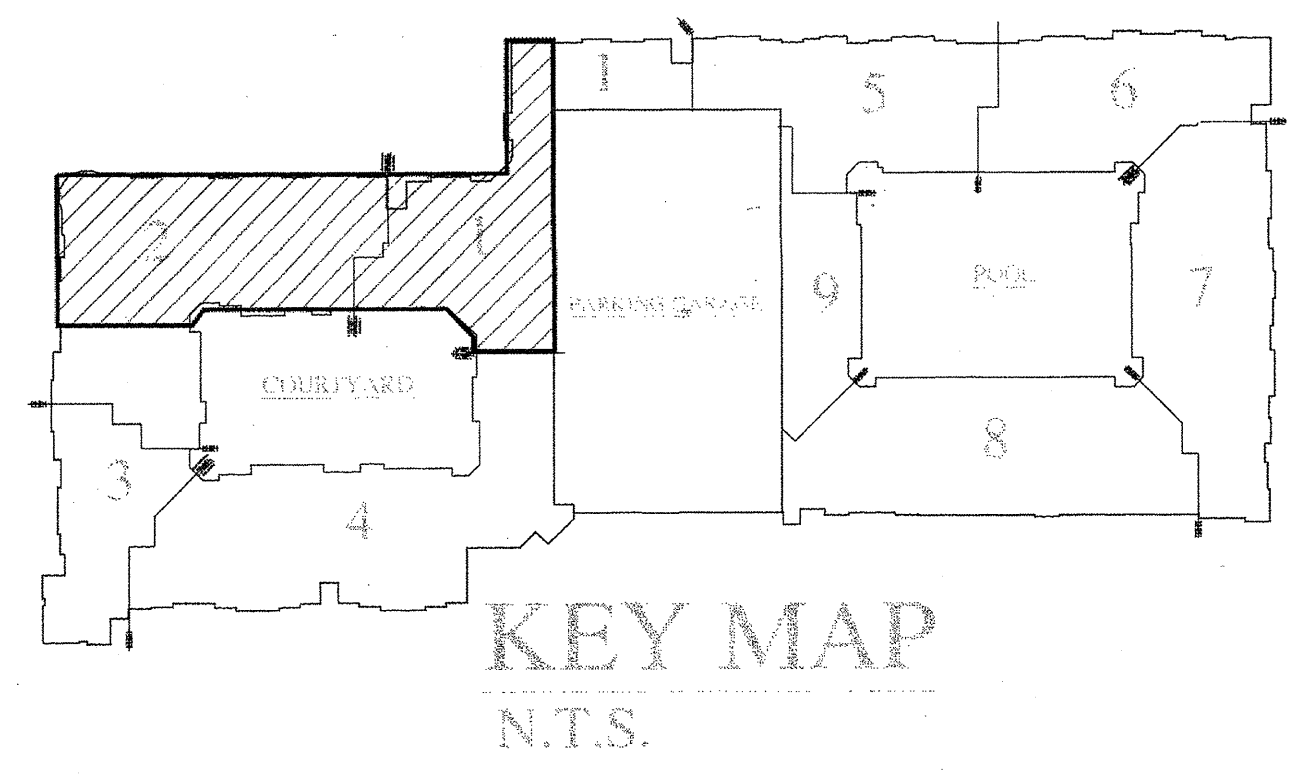
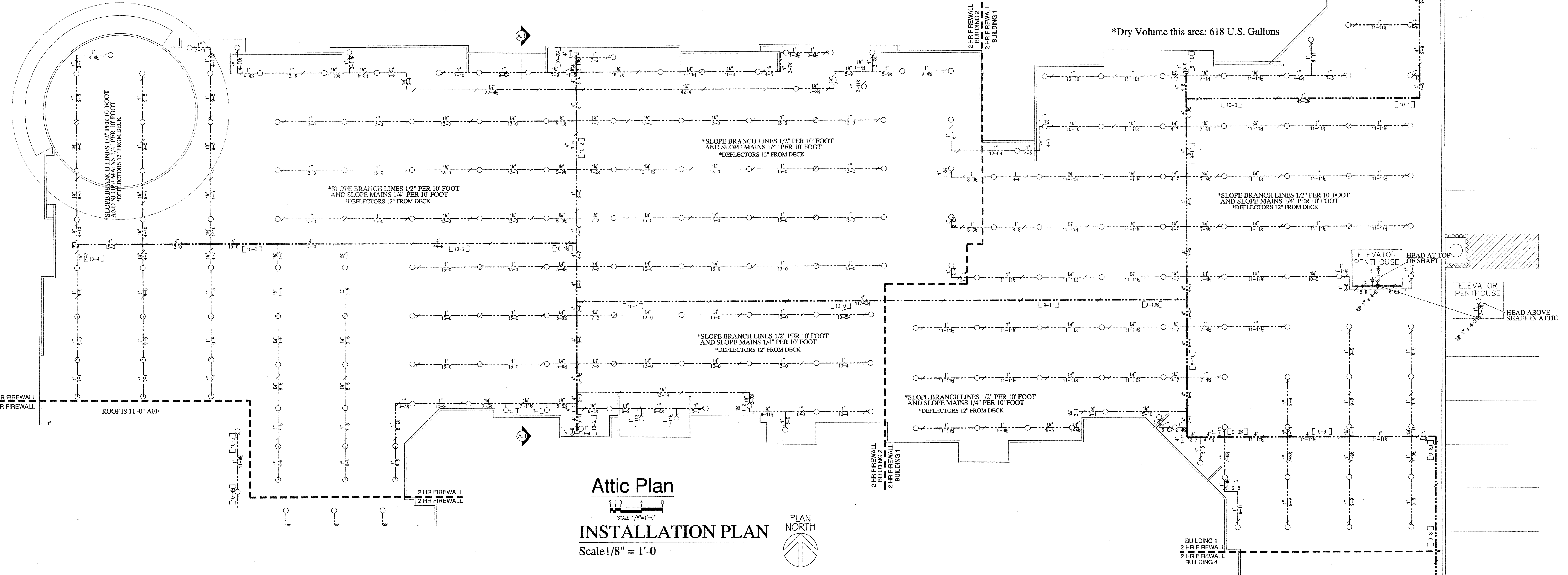
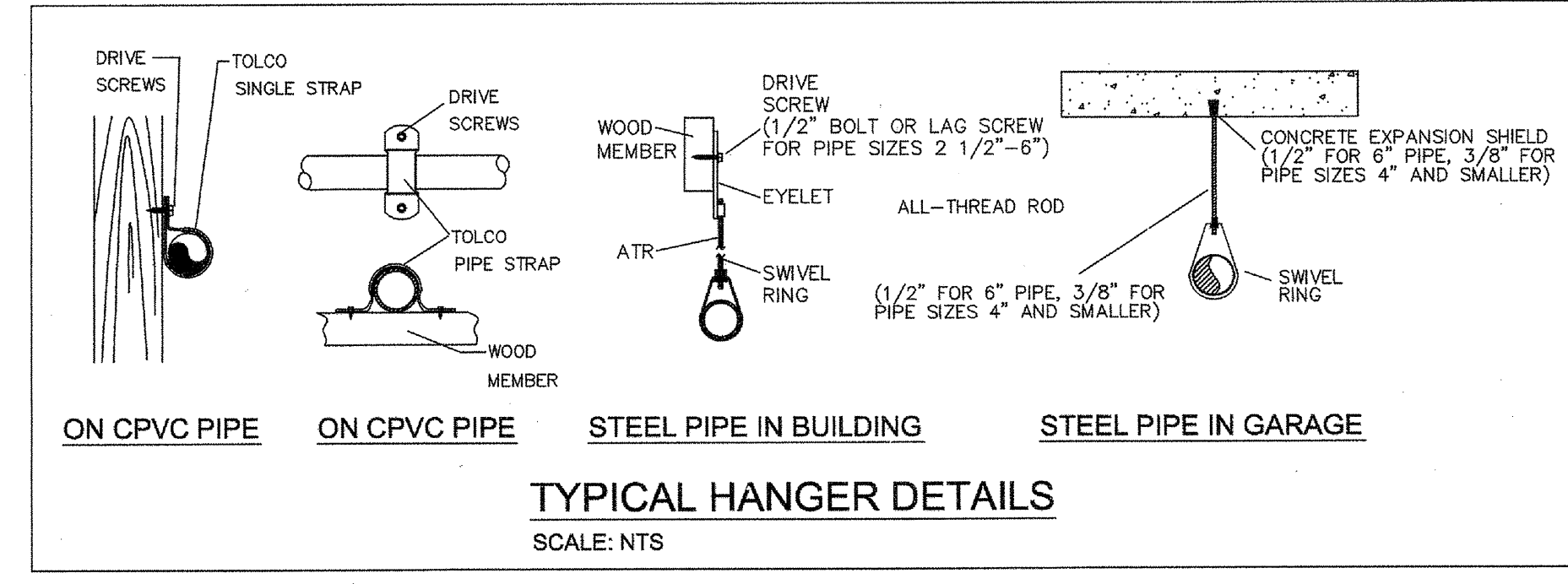
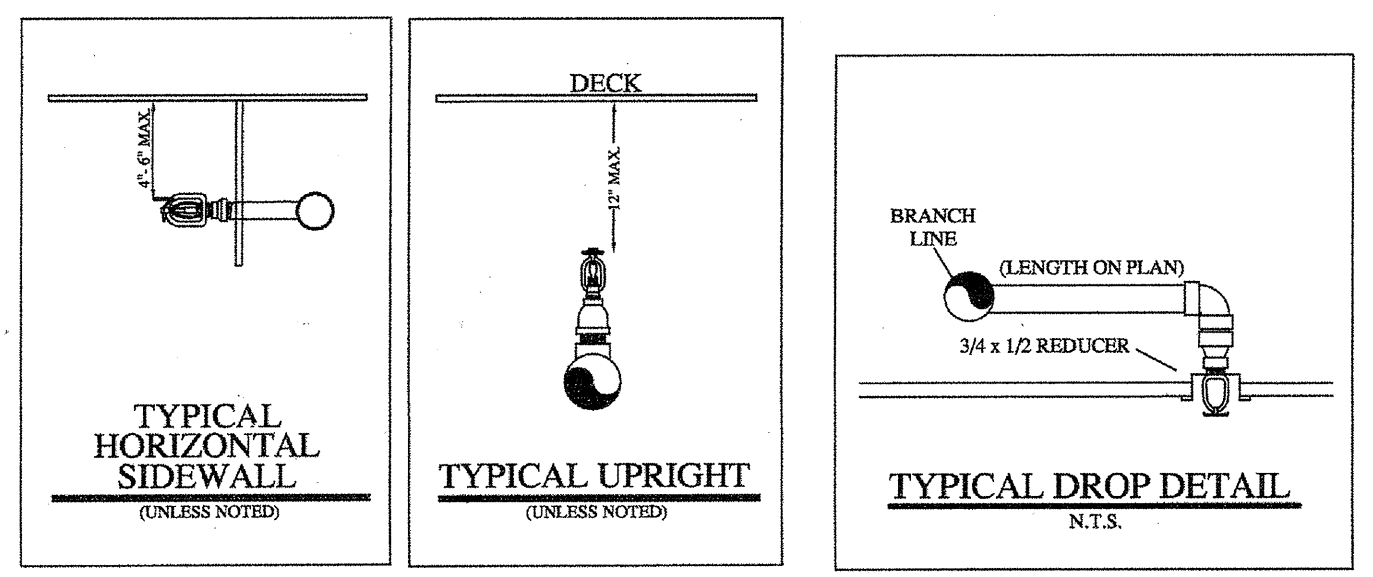
TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"



### SLEEVE SCHEDULE

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	6"
5"	8"
6"	8"
8"	10"



- ### LEGEND:
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

- ### GENERAL NOTES:
- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
  - Ranger Fire excludes all electrical and ceiling work.
  - All design and installation shall conform to NFPA 13, 13R, 14, 20, & the City of Addison requirements.
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  - All new plastic piping shall be Schedule 40 CPVC with CPVC plastic fittings (u.o.n.). All steel piping shall be Black Sch. 10 with grooved fittings for the mains and Black Sch. 40 with threaded fittings for the branchlines.
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  - All hangers shall be in accordance with NFPA 13 requirements.
  - All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
  - The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
  - Install Black steel piping in Parking Garage.

RESIDENTIAL BUILDING INFO	
OCCUPANCY:	R-2 / A-3
GROSS BLDG AREA:	424,139 S.F.
TYPE OF CONSTRUCTION:	V-A

GARAGE BUILDING INFO	
OCCUPANCY:	S-2
GROSS BLDG AREA:	181,834 S.F.
TYPE OF CONSTRUCTION:	2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778 DATE: 7-31-12

AS-BUILT  SUBMITTAL  OTHER

# AS-BUILT

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 0590

AS-BUILT  SUBMITTAL  OTHER

**KELLER SPRINGS LOFTS**  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

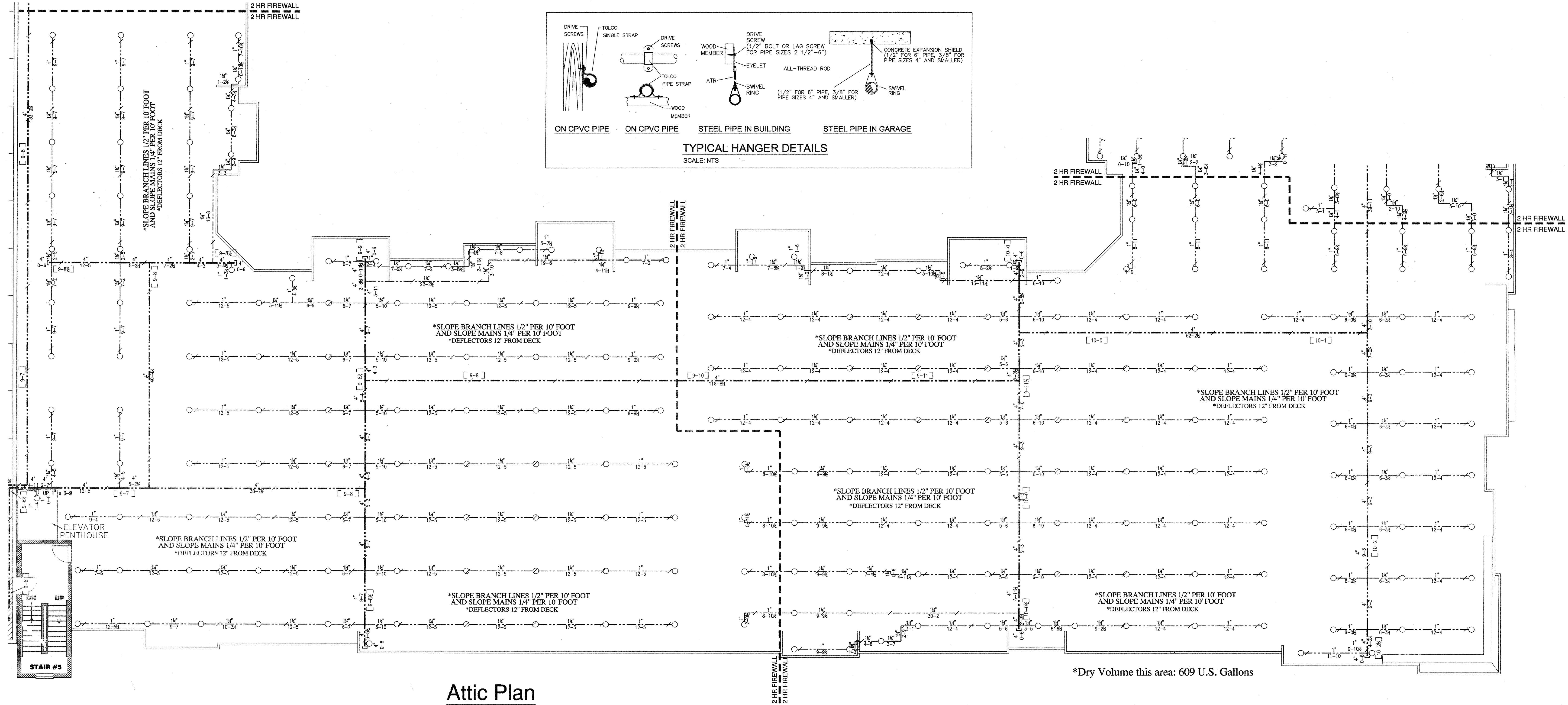
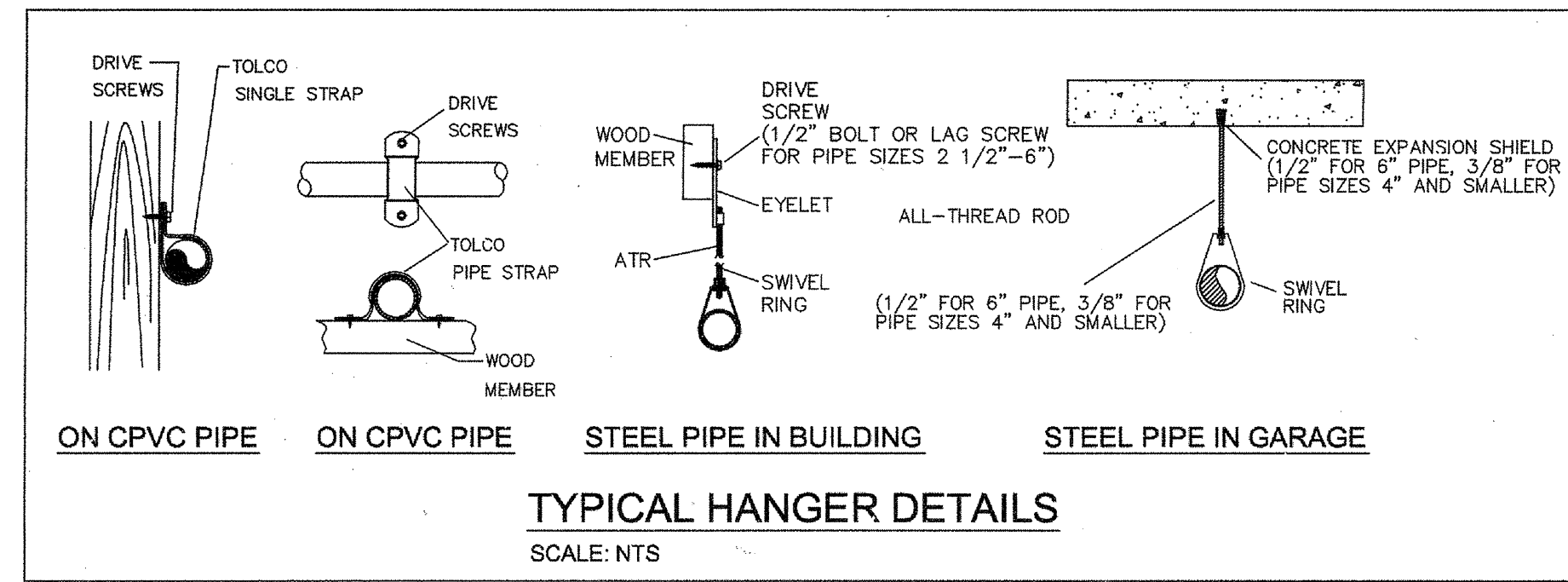
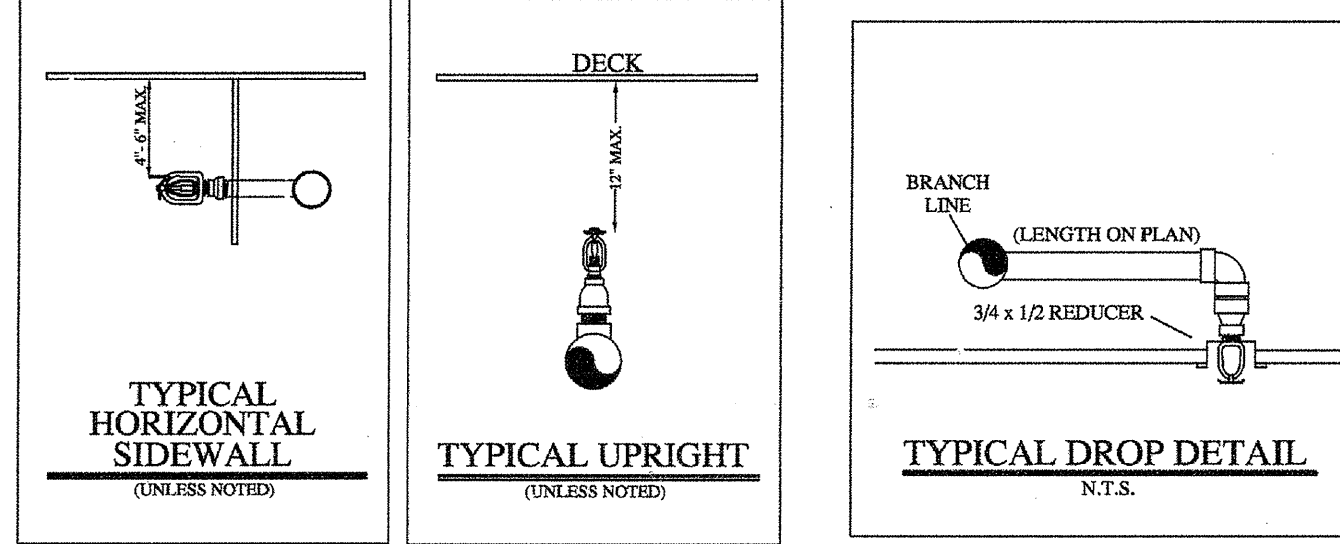
CONTRACT # 11-05 DESCRIPTION: ATTIC SYSTEM

DATE: 04-01-12 DWG#: FP 22 OF 30

NO.	REVISION	DATE	BY

OWNER: KELLER SPRINGS LOFTS  
GENERAL CONTRACTOR: RANGER FIRE, INC.  
DESIGNER: RANGER FIRE, INC.  
DATE: 04-01-12

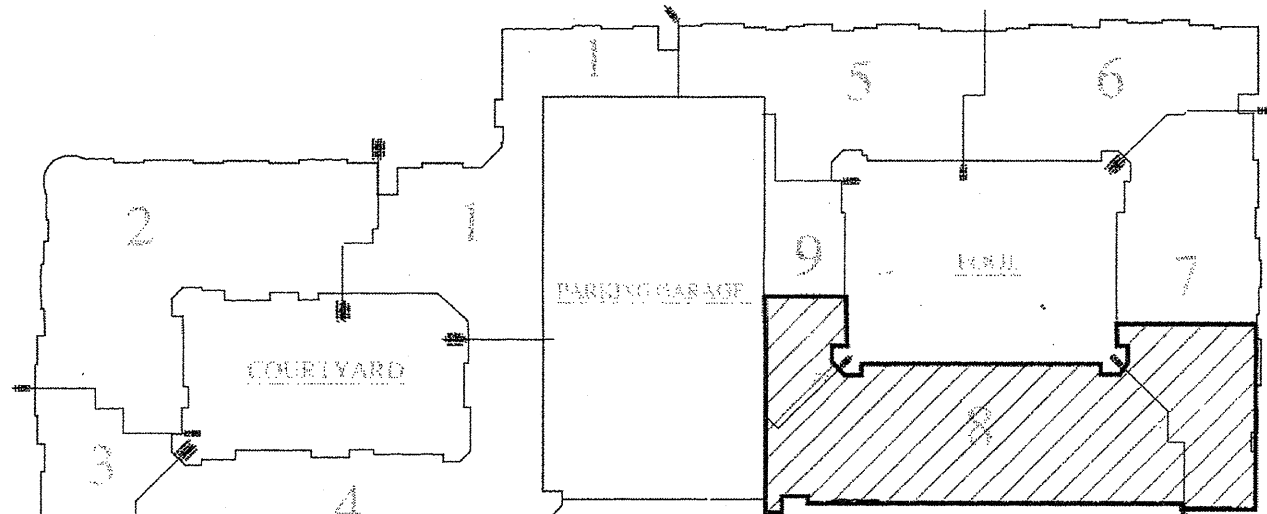
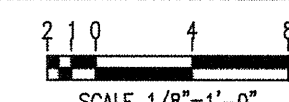
PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"



**Attic Plan**

**INSTALLATION PLAN**

Scale 1/8" = 1'-0"



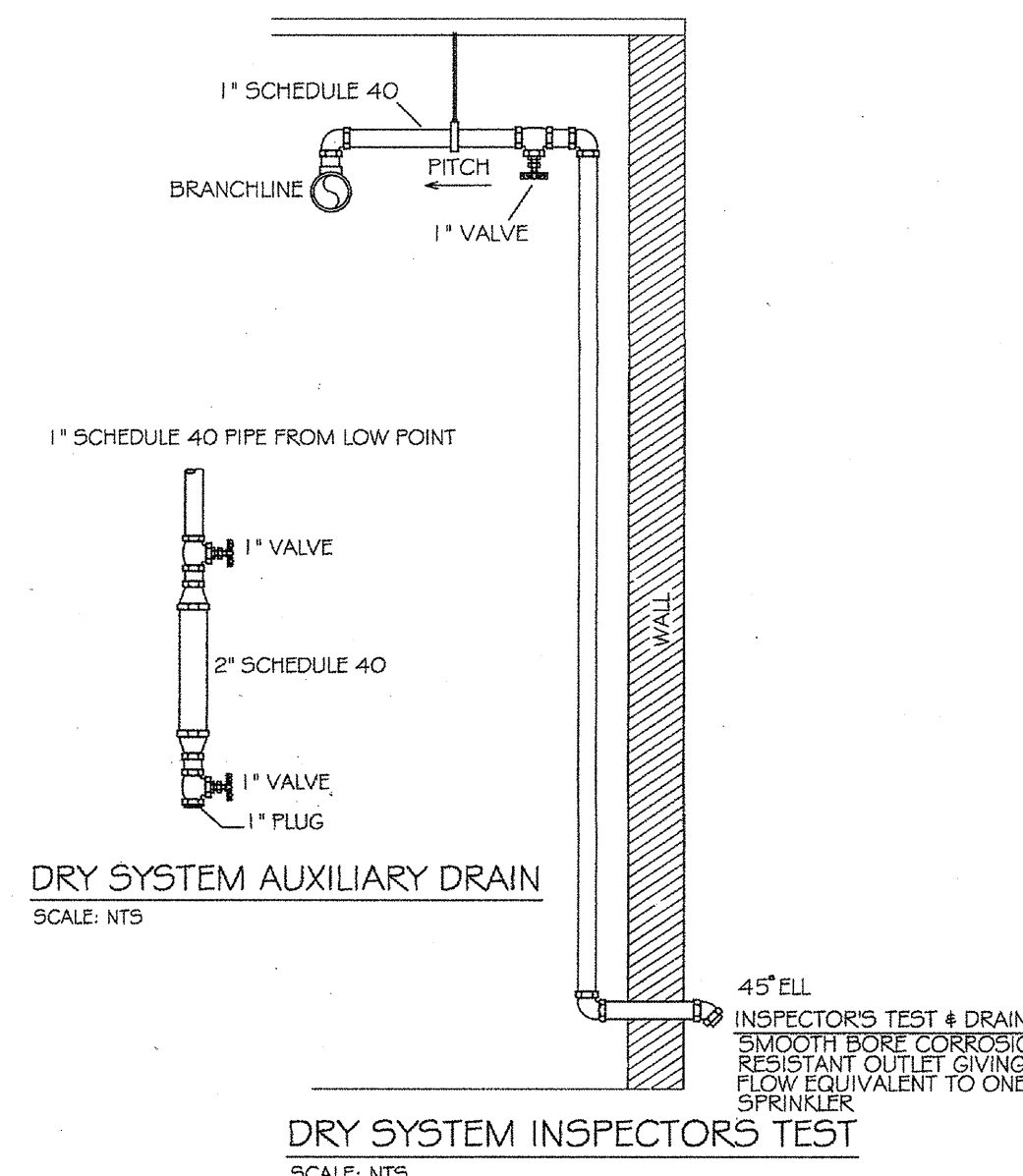
KEY MAP  
N.T.S.

**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN)									
PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
TURBAGED	N/A	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER			
PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"



**GENERAL NOTES:**

- Ranger Fire's work shall consist of all necessary labor and material to design and install new automatic fire sprinkler systems in the referenced (9) Apartment Buildings and attached Parking Garage.
- Ranger Fire excludes all electrical and ceiling work.
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- All systems shall be tested at 200 psi for 2 hours and witnessed by a representative of the Addison Fire Department. Any leaks shall be repaired.
- The system has been hydraulically calculated per NFPA 13, 13R, 14, & 20 requirements.
- Install Black steel piping in Parking Garage.

**LEGEND:**

- SYSTEM RISER
- 
- VERTICAL PIPE (UP or DN)
- HYDRAULIC NODE POINT
- REMOTE AREA OUTLINE
- 
- BUTTERFLY VALVE
- HANGERS (SIZE VARIES)
- CEILING ELEVATION
- C PIPE ELEVATION

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3
GROSS BLDG AREA: 424,139 S.F.
TYPE OF CONSTRUCTION: V-A
<b>GARAGE BUILDING INFO</b>
OCCUPANCY: S-2
GROSS BLDG AREA: 181,834 S.F.
TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

Ranger Fire, Inc.  
1000 South Main Street  
Suite 150  
Grapevine, Texas 76051  
Phone: 817-410-9070  
SCR-0590

RME SIGNATURE:   
PRINTED RME NAME: Matthew B. Claxton  
RME NUMBER: 0778 DATE: 7-31-17  
 AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**

**RANGER FIRE, INC.**  
920 SOUTH MAIN STREET  
SUITE 200  
GRAPEVINE, TEXAS 76051  
PHONE: 817-410-9070  
TEXAS LICENSE: 6596

AS-BUILT  SUBMITTAL  OTHER

**KELLER SPRINGS LOFTS**  
4800 KELLER SPRINGS PKWY  
ADDISON, TEXAS 75001

CONTRACT NAME: KELLER SPRINGS LOFTS  
CONTRACT # 11-055  
DESCRIPTION: 1st FLOOR

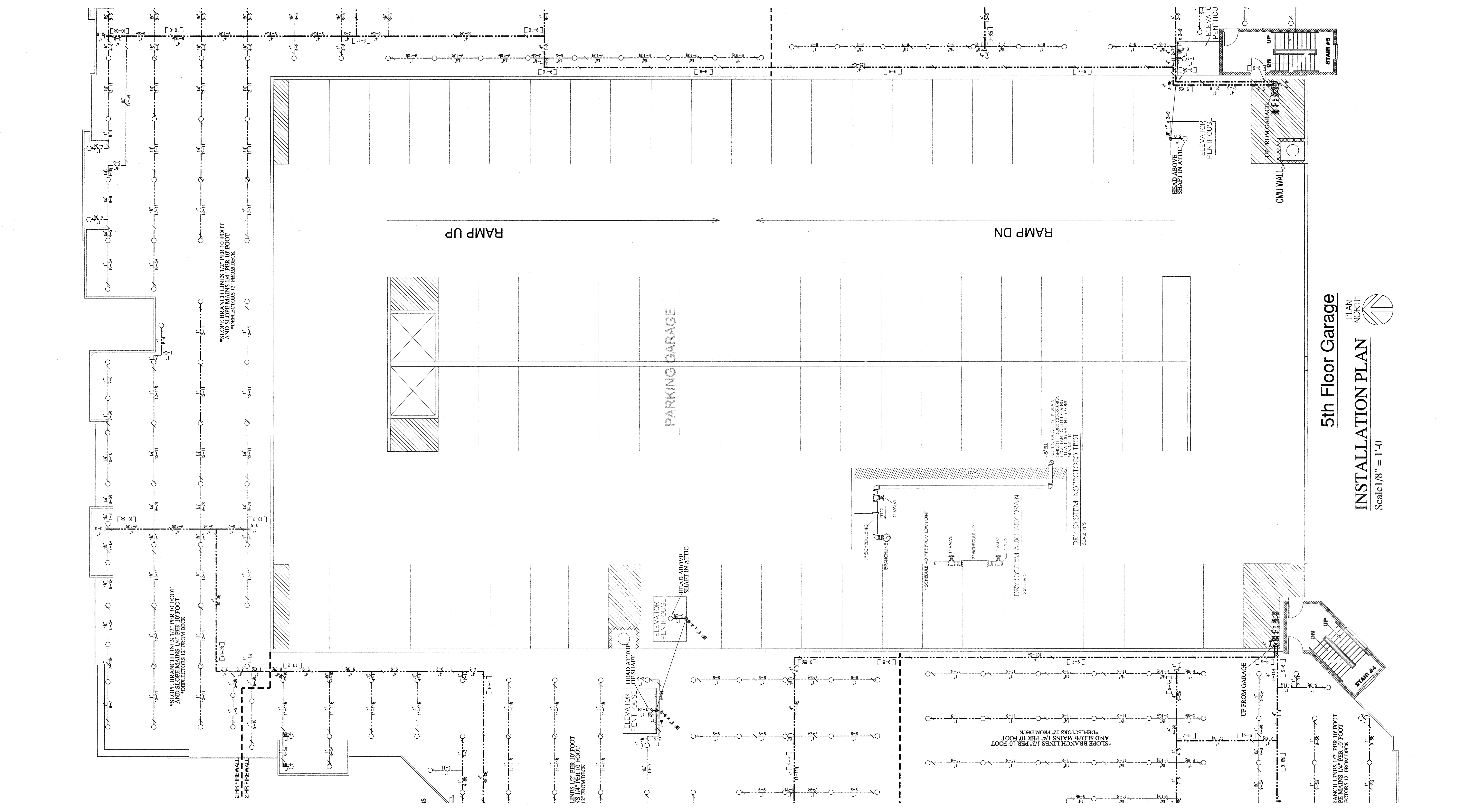
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DRAWN BY: C. ALEXANDER  
CHECKED BY: [Signature]  
DATE: 04-01-12  
DATE: 04-01-12

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DATE BY

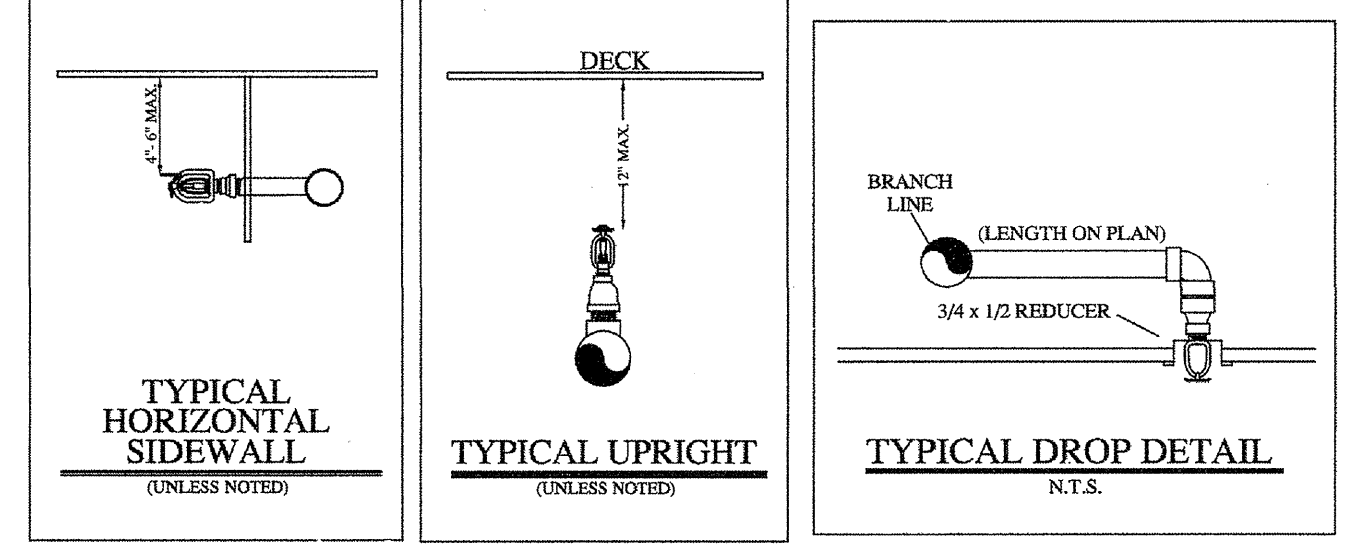
REVISIONS:  
DATE BY

TOTAL FOR THIS SHEET: 2/5



**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	4"
2-1/2"	4"
3"	5"
4"	6"
5"	8"
6"	10"



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

PIPE SIZE (IN.)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHTWALL	N/A	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - C PIPE ELEVATION

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  - Install Black steel piping in Parking Garage.

**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R 2 / A-3  
 GROSS BLDG AREA: 424,139 S.F.  
 TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
 GROSS BLDG AREA: 181,834 S.F.  
 TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

**Ranger Fire, Inc.**  
 1000 South Main Street  
 Suite 150  
 Grapevine, Texas 76051  
 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: *Matthew B. Claxton*  
 PRINTED RME NAME: **Matthew B. Claxton**  
 RME NUMBER: 0778 DATE: 7-31-13  
 AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**

**RANGER FIRE, INC.**  
 920 SOUTH MAIN STREET  
 SUITE 200  
 GRAPEVINE, TEXAS 76051  
 PHONE: 817-410-9070  
 TEXAS LICENSE: 6990

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**GENERAL CONTRACTOR:**  
 RANGER FIRE, INC.  
 1000 S. LOOP W. STE. 100  
 SAN ANTONIO, TX  
 210.824.6044

**OWNER:**  
 KELLER SPRINGS LOFTS  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001  
 210.824.6044

**DATE:** 04-01-12  
**SCALE:** 1/8" = 1'-0"  
**FIGURE:** FT 25 OF 30  
**CONTRACT #:** 11-055  
**DESCRIPTION:** 1st FLOOR

**CONTRACT NAME:** KELLER SPRINGS LOFTS  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

**CONTRACT #:** 11-055  
**DESCRIPTION:** 1st FLOOR

**SCALE:** 1/8" = 1'-0"  
**FIGURE:** FT 25 OF 30  
**CONTRACT #:** 11-055  
**DESCRIPTION:** 1st FLOOR

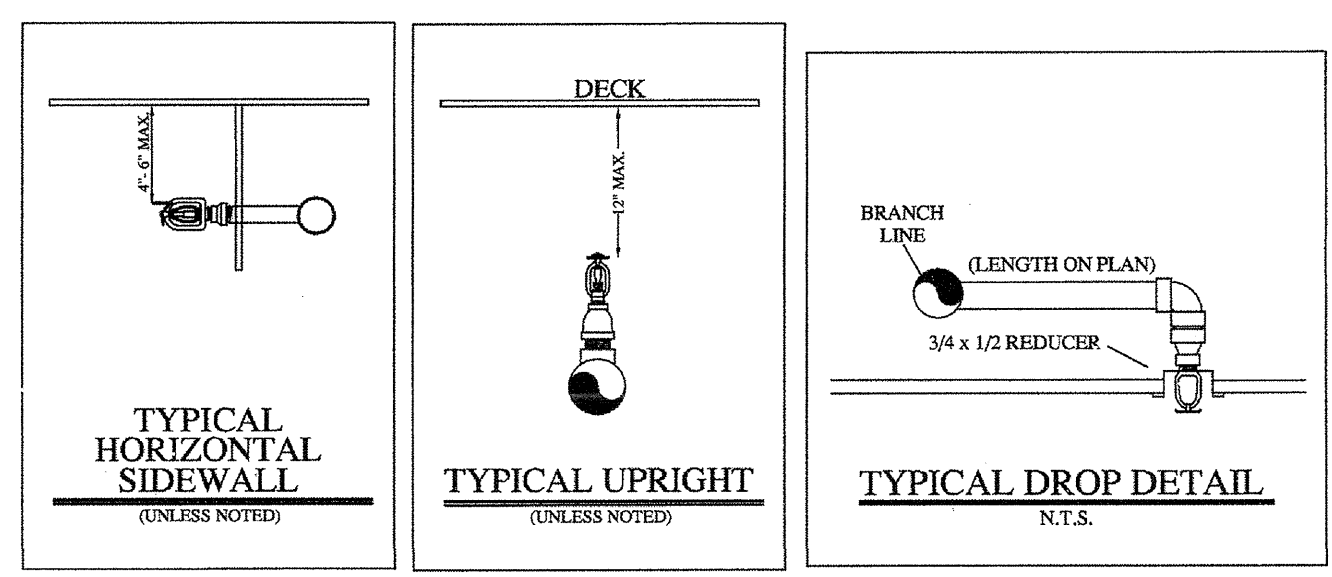
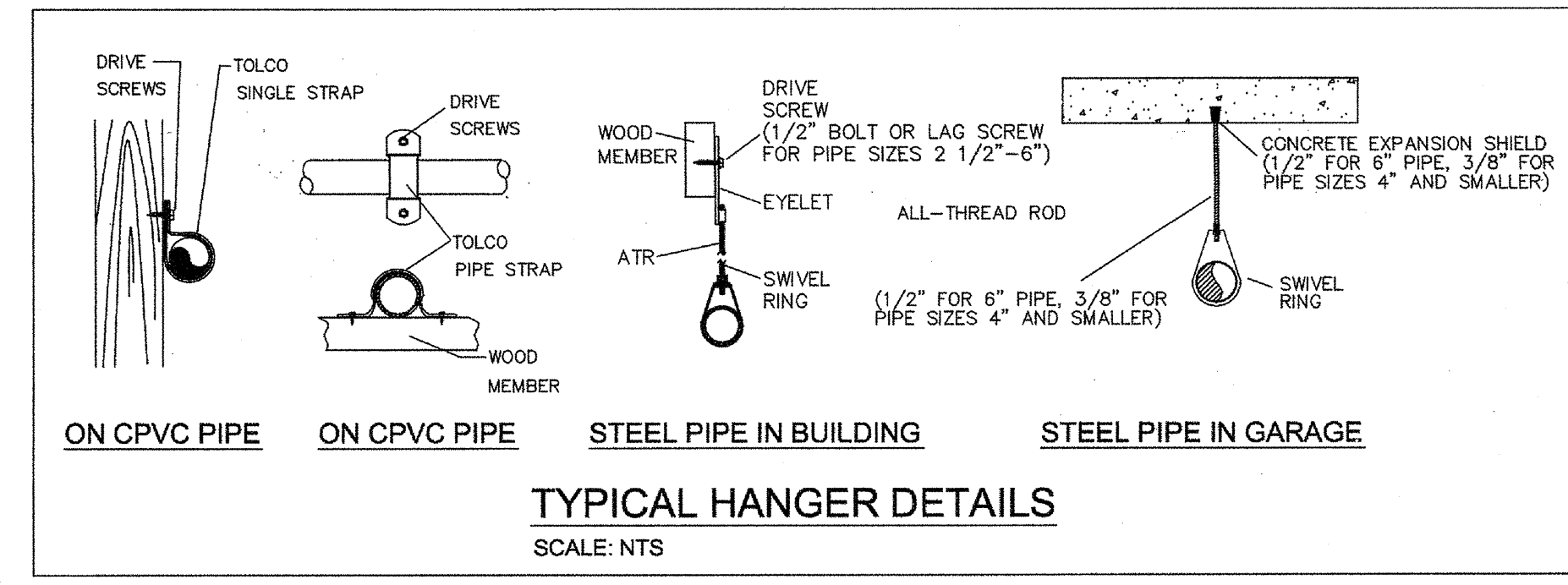
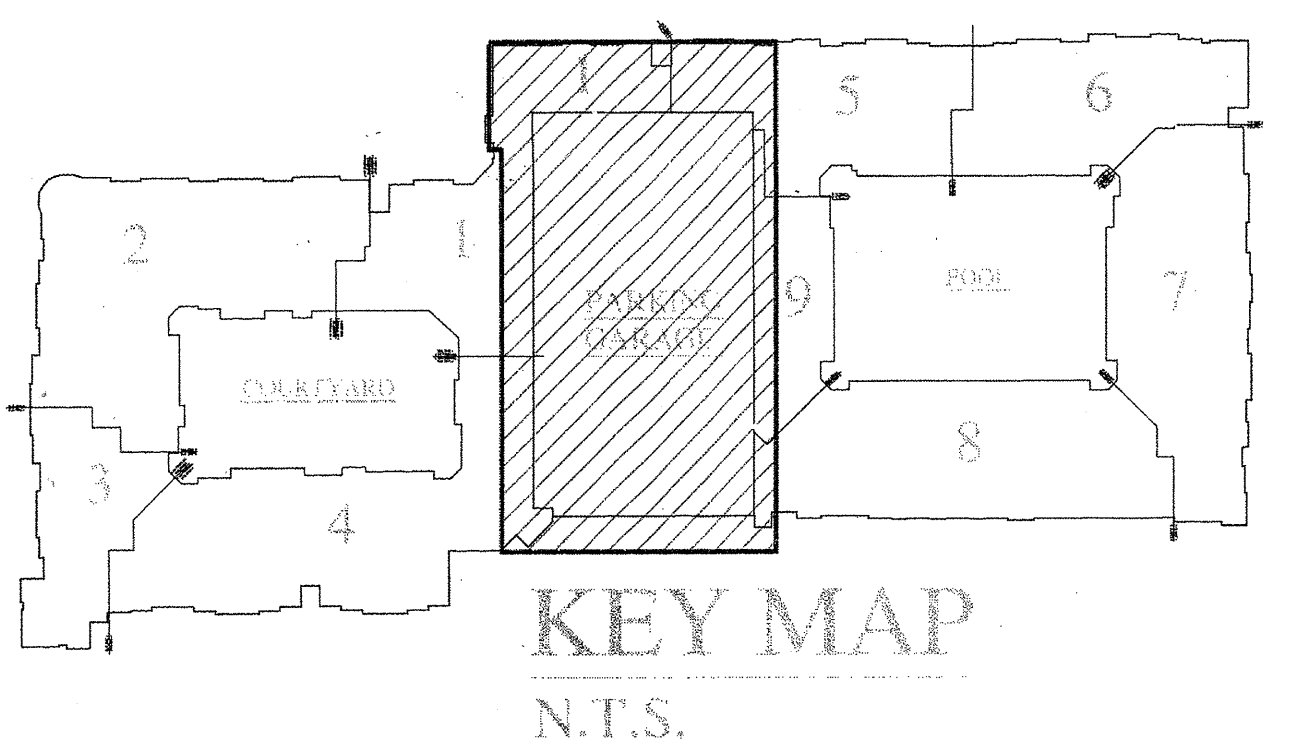
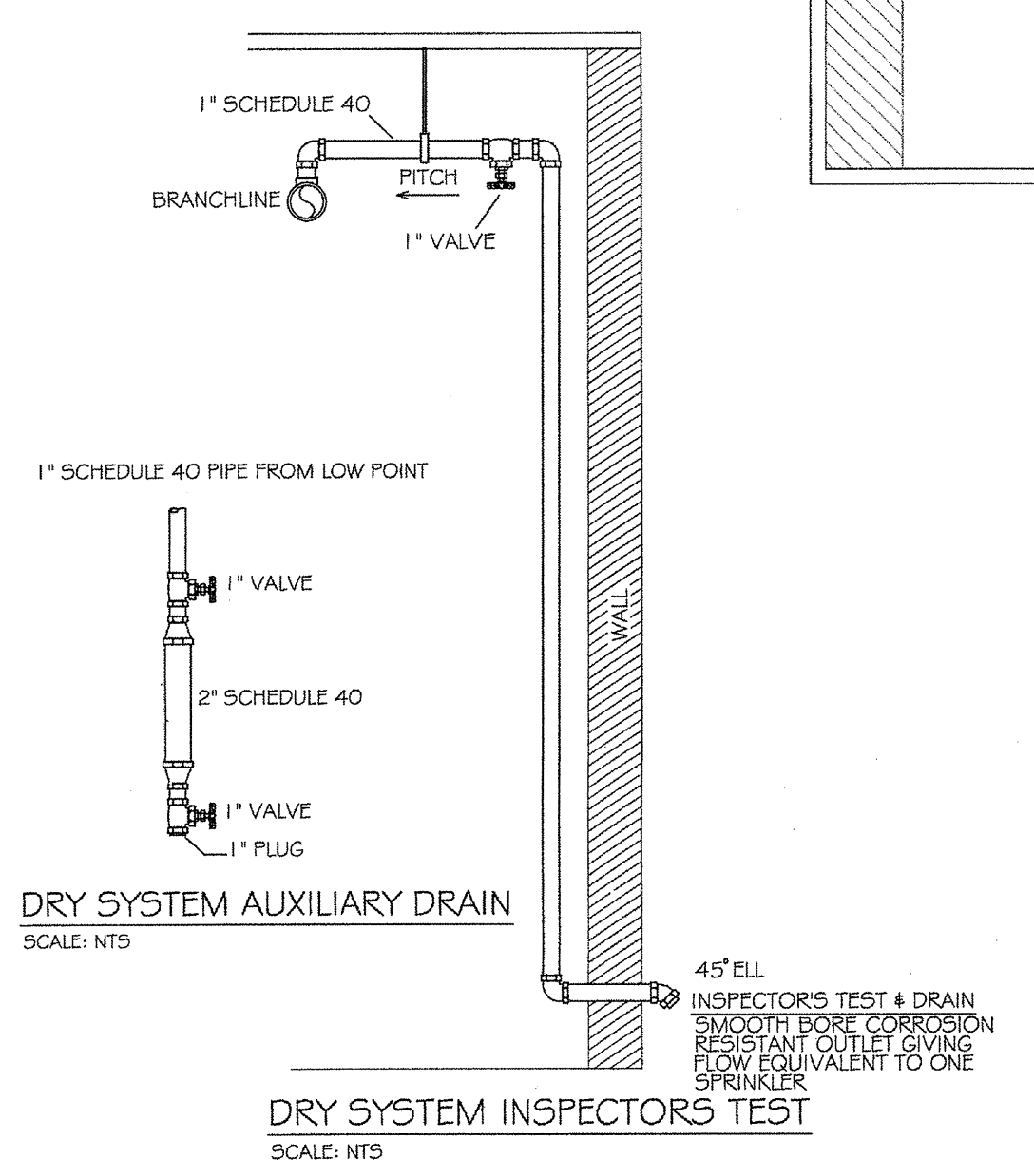








PARKING GARAGE LEVEL 7  
 PLAN NORTH  
**INSTALLATION PLAN**  
 Scale 1/8" = 1'-0"



**HANGER SPACING CHART**

TABLE 9.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN)

PIPE SIZE (IN)	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	6
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHTWALL	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
COPPER	8-0	8-0	10-0	10-0	12-0	12-0	12-0	15-0	15-0
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

FIGURE A.9.2.3.4 DISTANCE FROM SPRINKLER TO HANGER

NOTE: MAKE PRESSURES EXCEED 100 PSI FOR THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER IN A PENDENT POSITION OR DROP SPRINKLER AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE.

TABLE 9.1.2.1 HANGER ROD SIZES

PIPE SIZE	DIAM. OF ROD	PIPE SIZE	DIAM. OF ROD
UP TO AND INCLUDING 4"	3/8"	6 AND 8	1/2"

**SLEEVE SCHEDULE**

PIPE SIZE	SLEEVE DIA.
1"	2"
1-1/4"	2"
1-1/2"	2-1/2"
2"	3"
2-1/2"	4"
3"	5"
4"	5"
5"	6"
6"	8"
8"	10"

- LEGEND:**
- SYSTEM RISER
  - 4" X 2 1/2" X 2 1/2" F.D.C.
  - VERTICAL PIPE (UP or DN)
  - HYDRAULIC NODE POINT
  - REMOTE AREA OUTLINE
  - 2 1/2" HOSE VALVE
  - BUTTERFLY VALVE
  - HANGERS (SIZE VARIES)
  - CEILING ELEVATION
  - PIPE ELEVATION

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**RESIDENTIAL BUILDING INFO**

OCCUPANCY: R-2 / A-3  
 GROSS BLDG AREA: 424,139 S.F.  
 TYPE OF CONSTRUCTION: V-A

**GARAGE BUILDING INFO**

OCCUPANCY: S-2  
 GROSS BLDG AREA: 181,834 S.F.  
 TYPE OF CONSTRUCTION: 2-B

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**Ranger Fire, Inc.**  
 1000 South Main Street  
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 Phone: 817-410-9070  
 SCR-0590

RME SIGNATURE: *[Signature]*  
 PRINTED RME NAME: Matthew B. Claxton  
 RME NUMBER: 0778 DATE: 7-31-13

AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**

**RANGER FIRE, INC.**  
 920 SOUTH MAIN STREET  
 SUITE 200  
 GRAPEVINE, TEXAS 76051  
 PHONE: 817-410-9070  
 TEXAS LICENSE: 0590

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 KELLER SPRINGS LOFTS  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

**OWNER:**  
 TEMBREY PARTNERS LTD.  
 SAN ANTONIO, TX  
 210-824-6044

**DATE:** 04-01-12

**REVISIONS:**

REV #	DESCRIPTION	DATE

**CONTRACT NAME:** KELLER SPRINGS LOFTS  
**CONTRACT #:** 11-055  
**DESCRIPTION:** LEVEL 7 PARKING GARAGE  
**SCALE:** 1/8" = 1'-0"  
**DATE:** 04-01-12  
**DATE:** 04-01-12  
**DATE:** 04-01-12



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**GENERAL CONTRACTOR:**  
 KELLER SPRINGS LOFTS  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

**OWNER:**  
 KELLER SPRINGS LOFTS  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

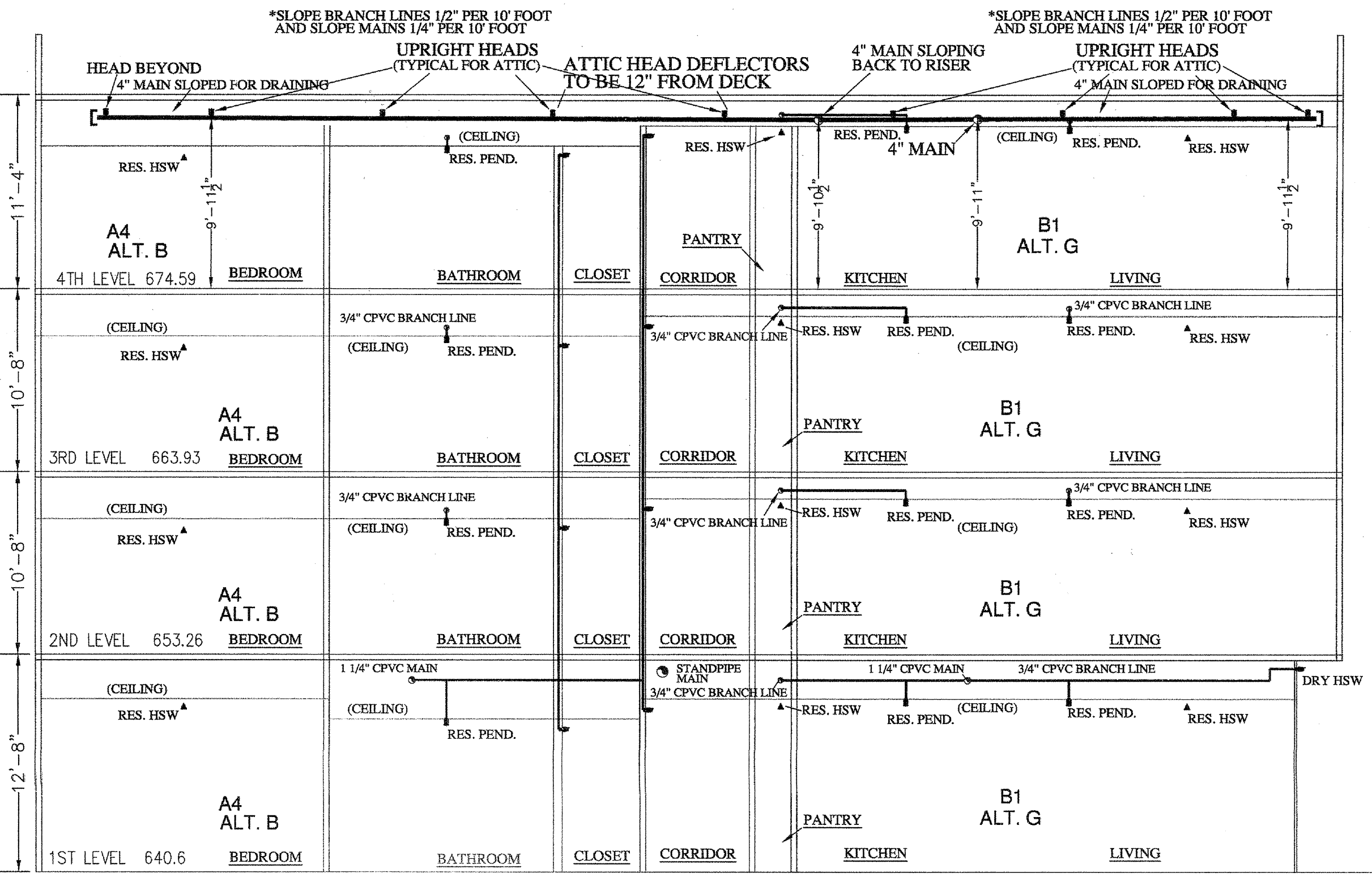
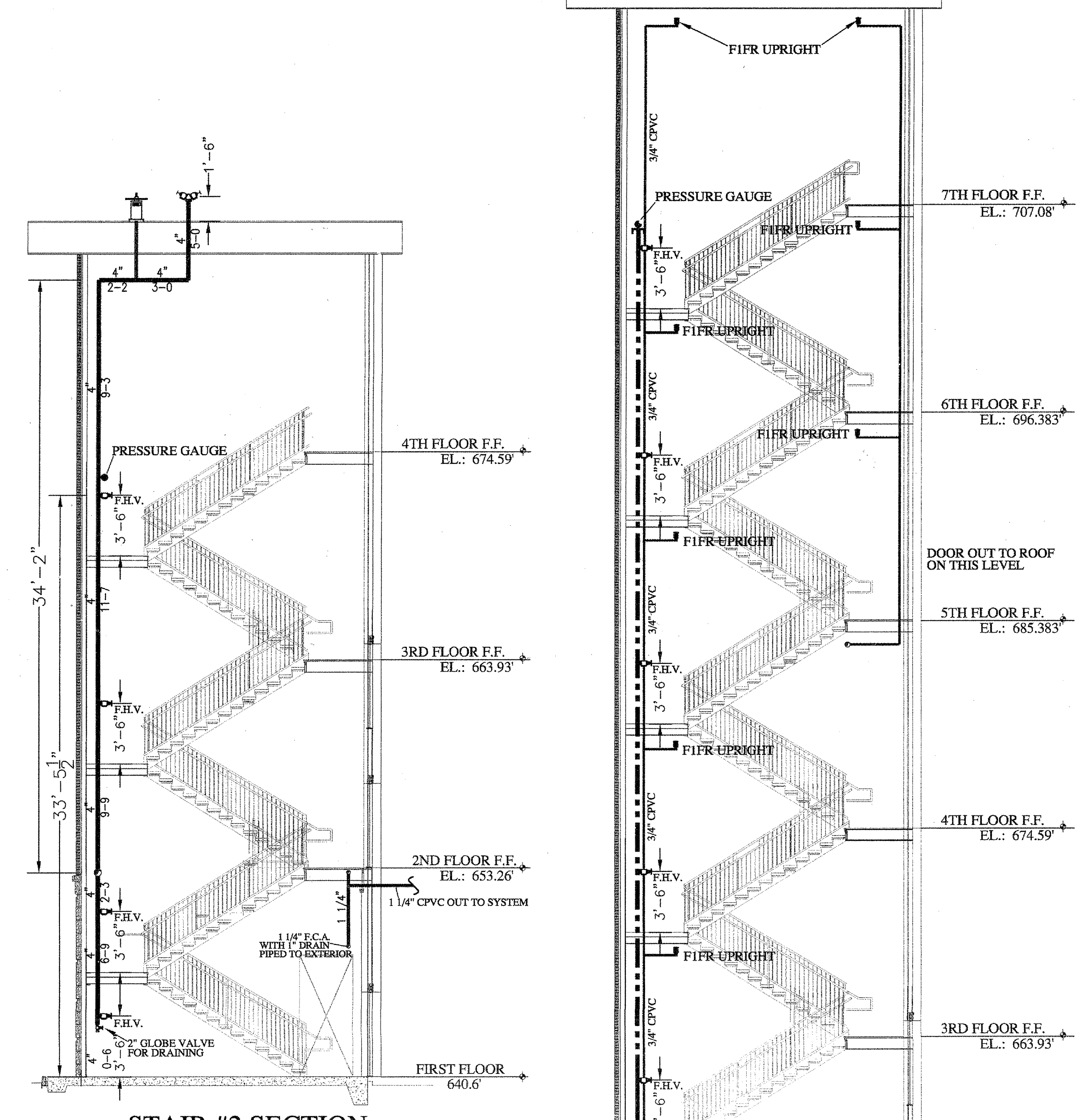
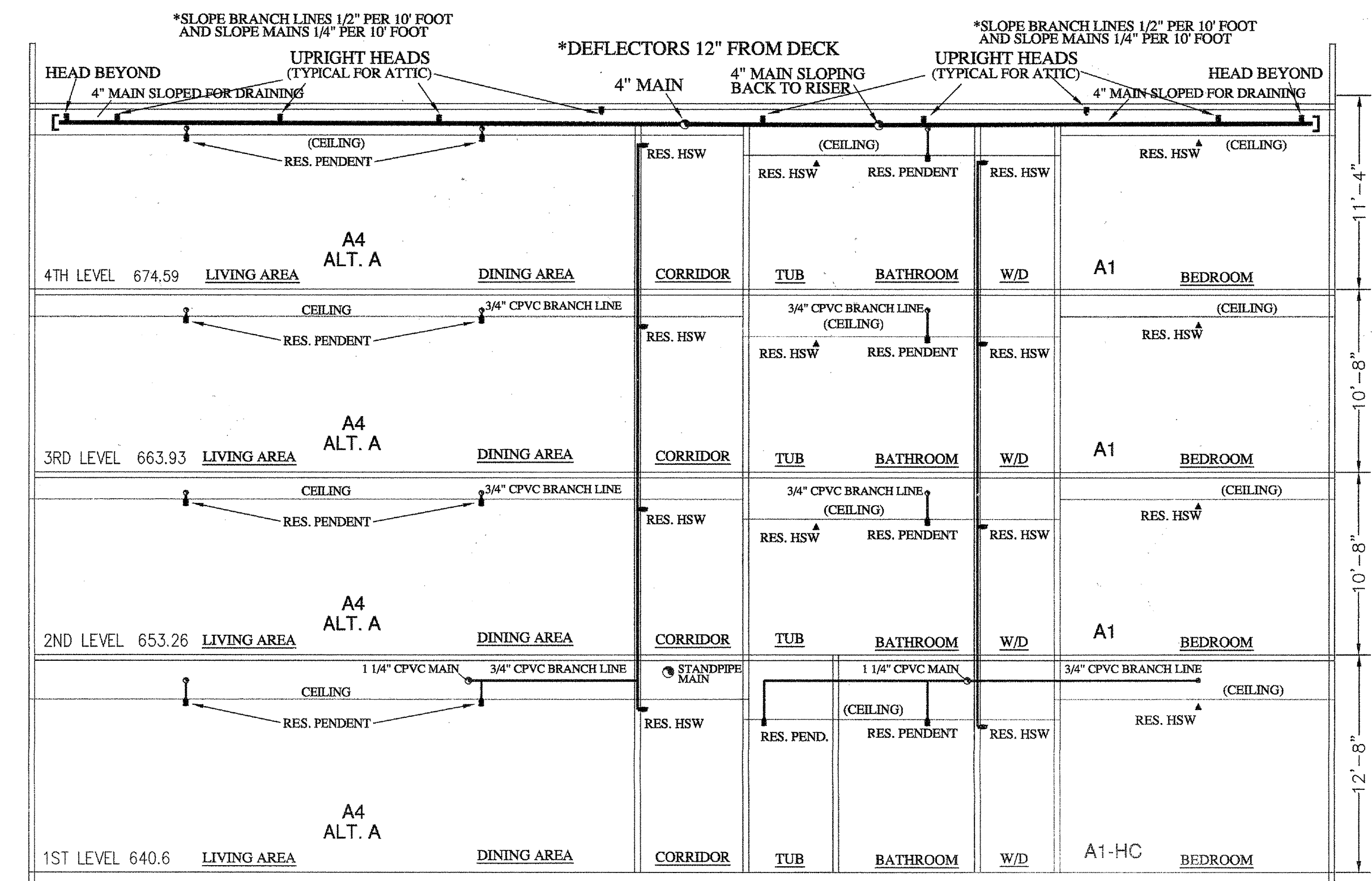
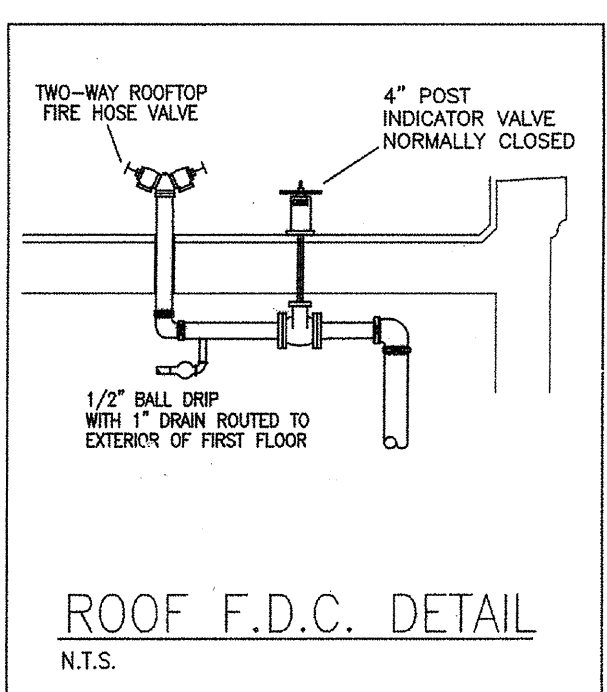
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**SCALE:** 1/8" = 1'-0"

**CONTRACT NAME:**  
 KELLER SPRINGS LOFTS  
 4800 KELLER SPRINGS PKWY  
 ADDISON, TEXAS 75001

**CONTRACT # 11-05**  
**DESCRIPTION: SECTIONS & DETAILS**

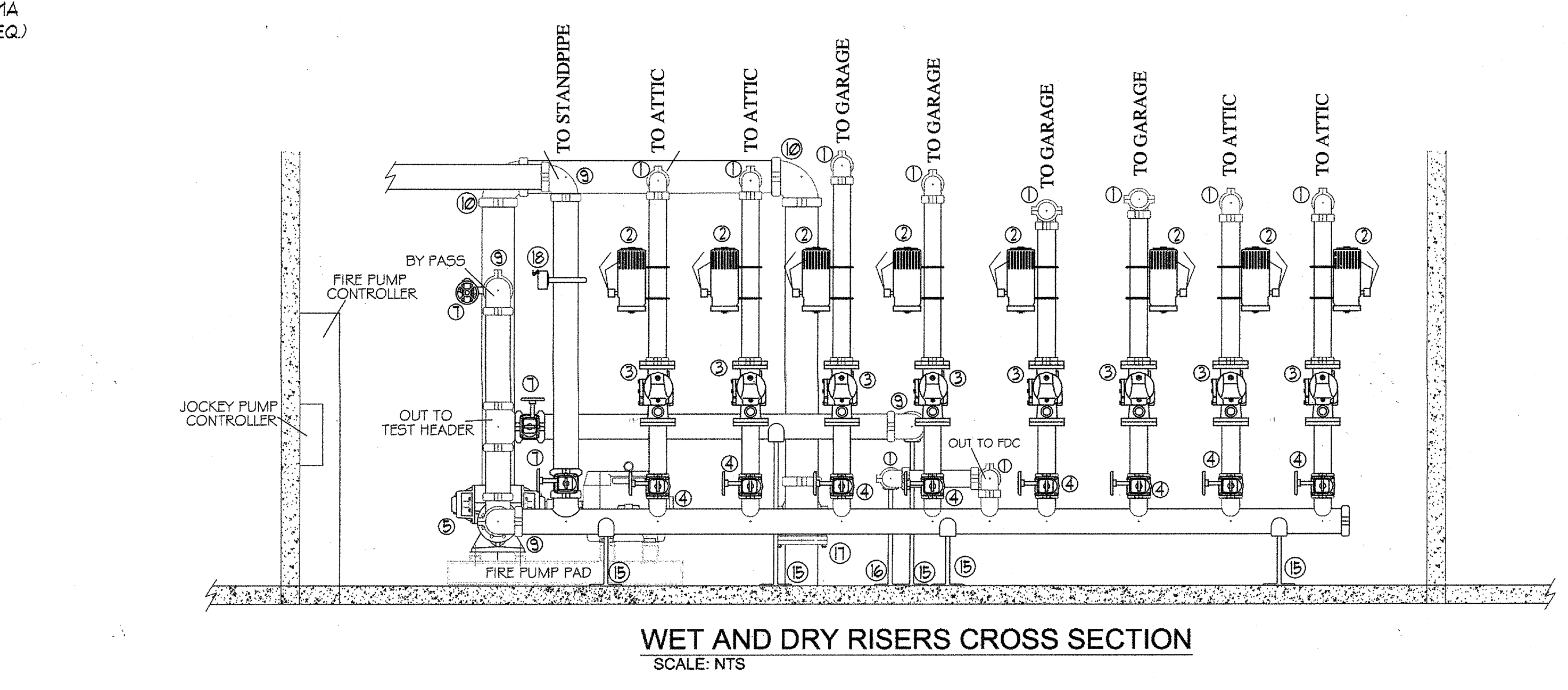
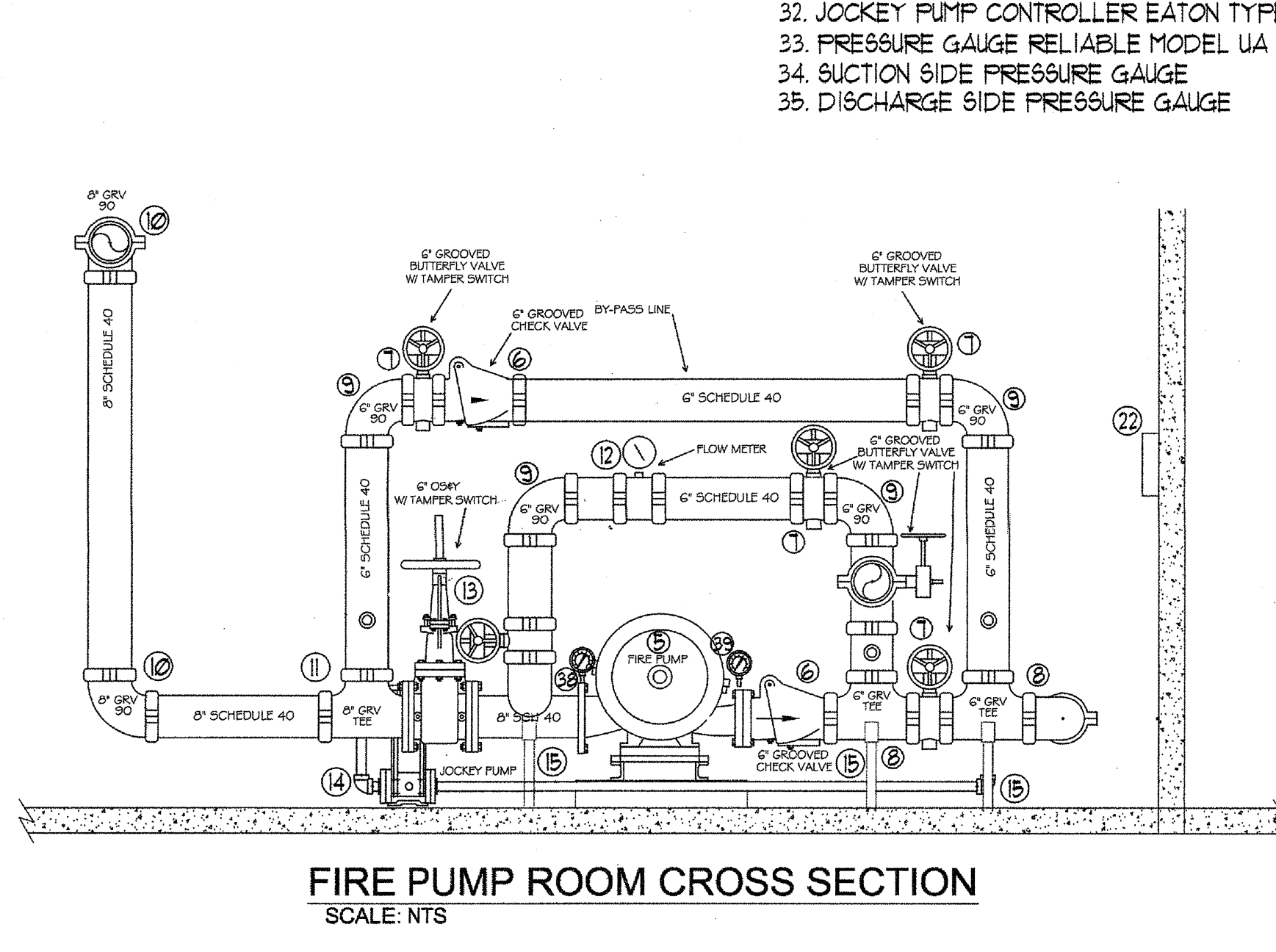
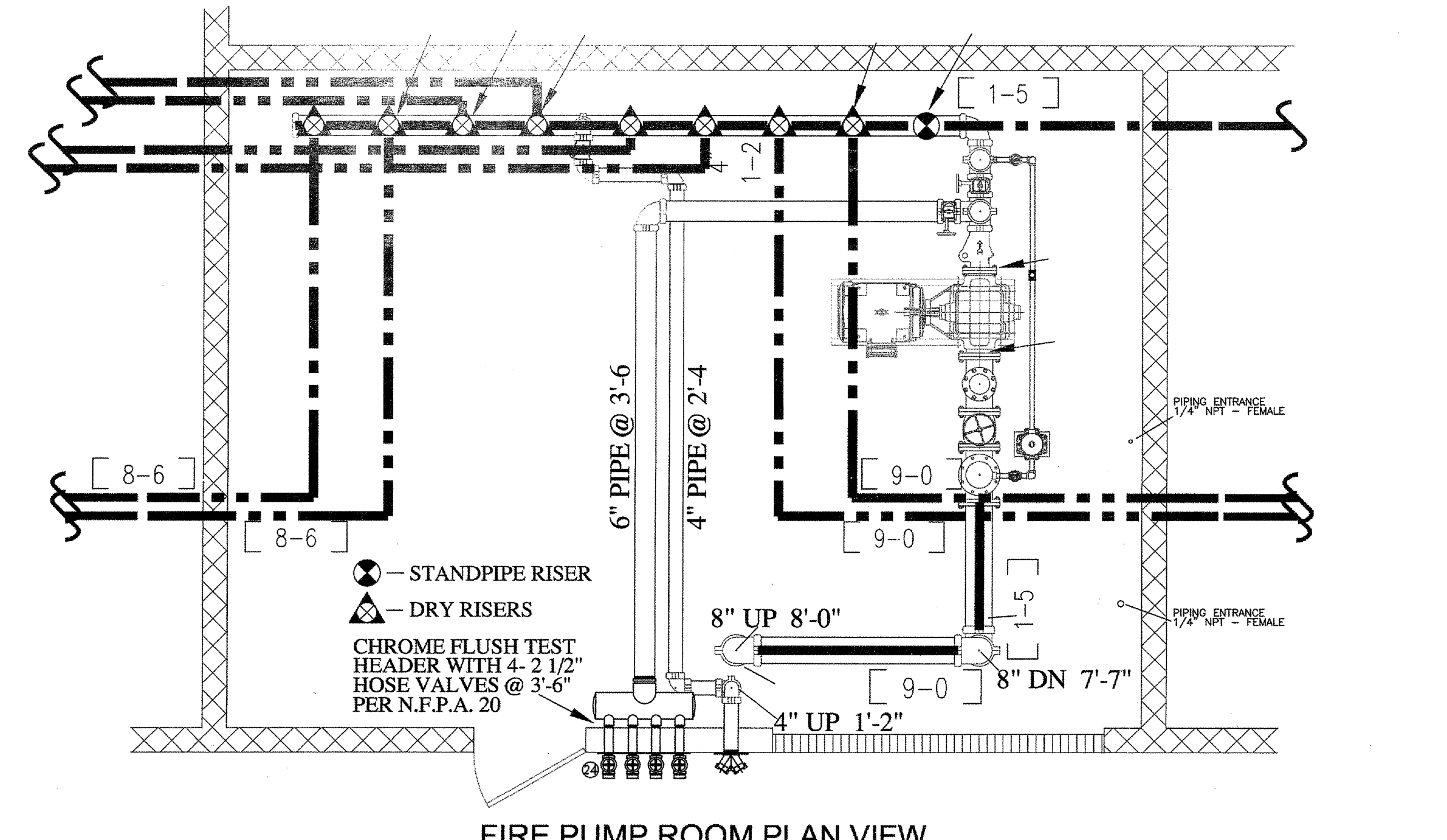
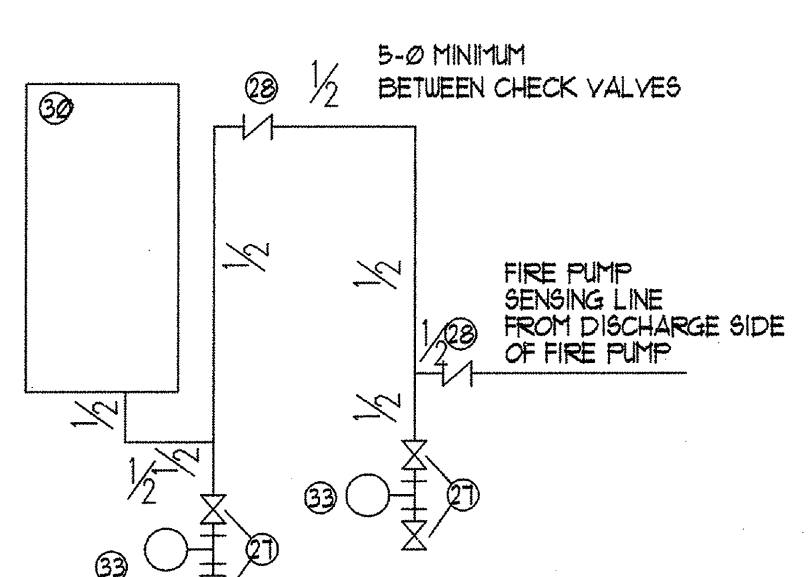
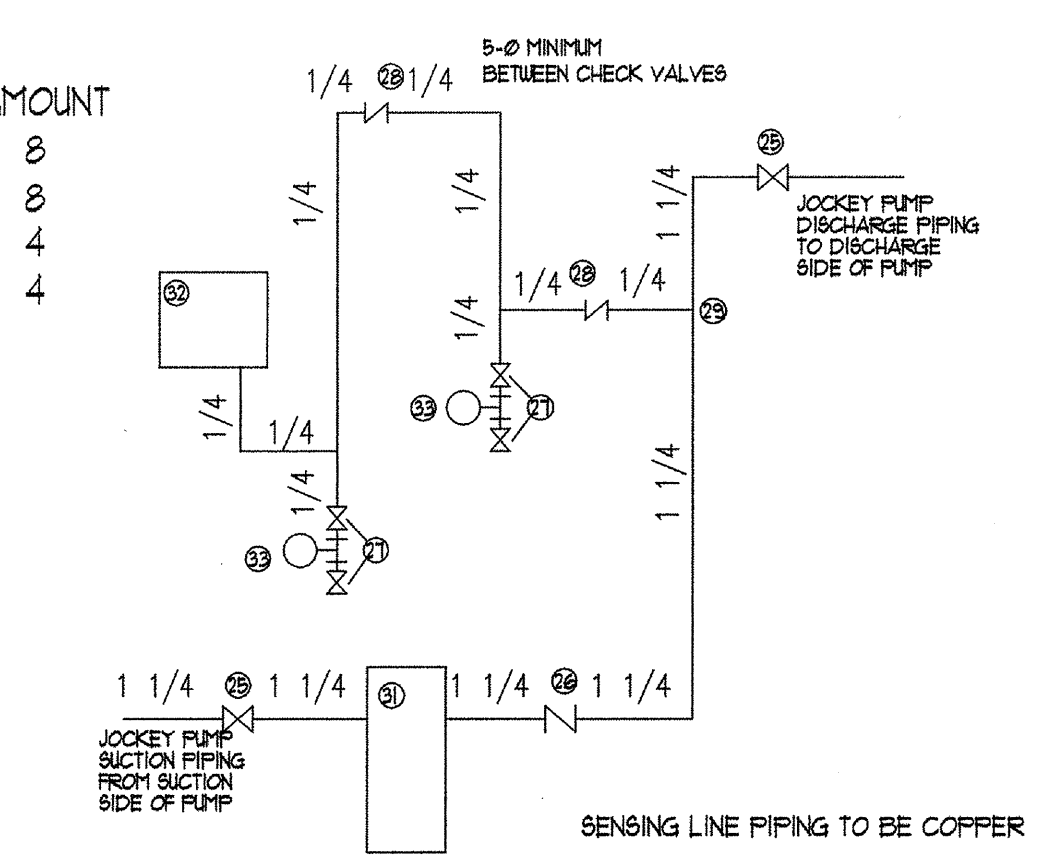
**DATE:** 04-01-12  
**SCALE:** 1/8" = 1'-0"

**DATE:** 04-01-12  
**SCALE:** 1/8" = 1'-0"



**FIRE PUMP / RISER LEGEND**

NO.	DESCRIPTION	ORIF.	TEMP.	K-FACT.	FINISH	AMOUNT
1.	4" FIRELOCK ELLS					8
2.	AIR COMPRESSORS					0
3.	4" DRY PIPE VALVES					0
4.	4" NIBCO BUTTERFLY VALVE STYLE GD-4165-4/8 (8 REQ.)					8
5.	FIRE PUMP A-C MODEL F-5 1000 GPM @ 50 PSI 50 HP 3 PHASE 60 HZ 460 VOLTS 1770 RPM					1
6.	6" CHECK VALVE RELIABLE MODEL G (2 REQ.)					2
7.	6" BUTTERFLY VALVE NIBCO GD-4165-4/8 (6 REQ.)					6
8.	6" TEE FIRELOCK (3 REQ.)					3
9.	6" 90° ELL FIRELOCK (5 REQ.)					5
10.	8" FIRELOCK ELLS (5 REQ.)					5
11.	8" FIRELOCK TEE					1
12.	6" FLOW METER					1
13.	8" OS&Y GATE VALVE					1
14.	JOCKEY PUMP					1
15.	6" PIPE STANDS (3 REQ.)					3
16.	4" PIPE STANDS (2 REQ.)					2
17.	8" FLANGED SPIGOT					1
18.	6" FLOW SWITCH					1
19.	NOT USED					0
20.	NOT USED					0
21.	NOT USED					0
22.	SPARE HEAD BOX RELIABLE MODEL A4-12 (2 REQ.)					2
23.	NOT USED					0
24.	4 WAY FIRE PUMP TEST HEADER 4 - 2 1/2" BRASS NRS HOSE GATE VALVE (NPT INLET x MALE HOSE THREAD OUT) 4 - 2 1/2" GALVANIZED THREADED NIPPLE 4 - 2 1/2" BRASS CAP & CHAIN 1 SIGN TO READ "PUMP TEST CONNECTION" 1 4" WALL PLATE W/ ESCUTCHEON					1
25.	1 1/4" GATE VALVE NIBCO T-104-O (2 REQ.)					2
26.	1 1/4" CHECK VALVE NIBCO KT-403-U					2
27.	1 1/4" GATE VALVE NIBCO T-104-O (8 REQ.)					8
28.	1 1/4" CHECK VALVE NIBCO KT-403-U					8
29.	3/32" ORIFICE IN CLAPER (3 REQ.)					3
30.	FIRE PUMP CONTROLLER EATON TYPE FD30					1
31.	JOCKEY PUMP A-C 15V (e-5V) 1 HP 3550 RPM					1
32.	JOCKEY PUMP CONTROLLER EATON TYPE NEMA					1
33.	PRESSURE GAUGE RELIABLE MODEL UA (4 REQ.)					4
34.	SUCTION SIDE PRESSURE GAUGE					1
35.	DISCHARGE SIDE PRESSURE GAUGE					1



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**RESIDENTIAL BUILDING INFO**

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GROSS BLDG AREA: 424,139 S.F.
TYPE OF CONSTRUCTION: V-A

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OCCUPANCY: S-2
GROSS BLDG AREA: 181,834 S.F.
TYPE OF CONSTRUCTION: 2-B

I have reviewed these plans and certify that they comply with the adopted NFPA standards.

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 1000 South Main Street  
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 Grapevine, Texas 76051  
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 SCR-0590

RME SIGNATURE: *[Signature]*  
 PRINTED RME NAME: Matthew B. Claxton  
 RME NUMBER: 0778 DATE: 7-31-13  
 AS-BUILT  SUBMITTAL  OTHER

**AS-BUILT**