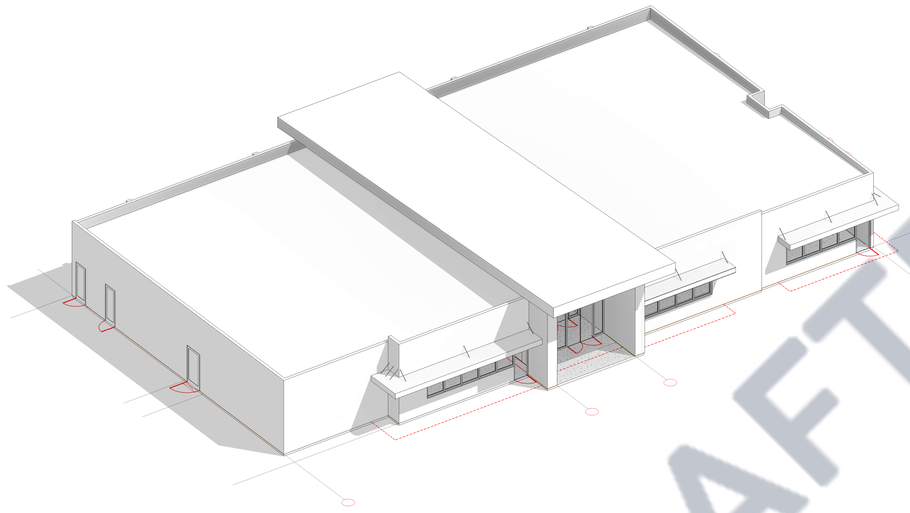
22 07 19 – 1.2-B
PLUMBING PIPING INSULATION SD



St. Jude's Healing Center
Education Building

115 Healing Circle, Boulder City, NV 89005.

Submitted by

RED MESA MECHANICAL

LICENSE NUMBER: NV #0086266 - & NV #0087531

No.	Description	Date

CLIENT:

CCSD
CLARK COUNTY SCHOOL DISTRICT
OFFICE: (+1) 702-799-8710
CLARK COUNTY SCHOOL DISTRICT

SUB CONTRACTOR:

RED MESA MECHANICAL

LICENSE NUMBER : NV #0086266 - & #0087531

SHOP DRAWINGS DATE: 11-23-2023

NOTES:

St. Jude's Healing Center Education Building

115 Healing Circle, Boulder City, NV 89005.

22 07 19 – 1.2-B - PLUMBING PIPING INSULATION COVER SHEET

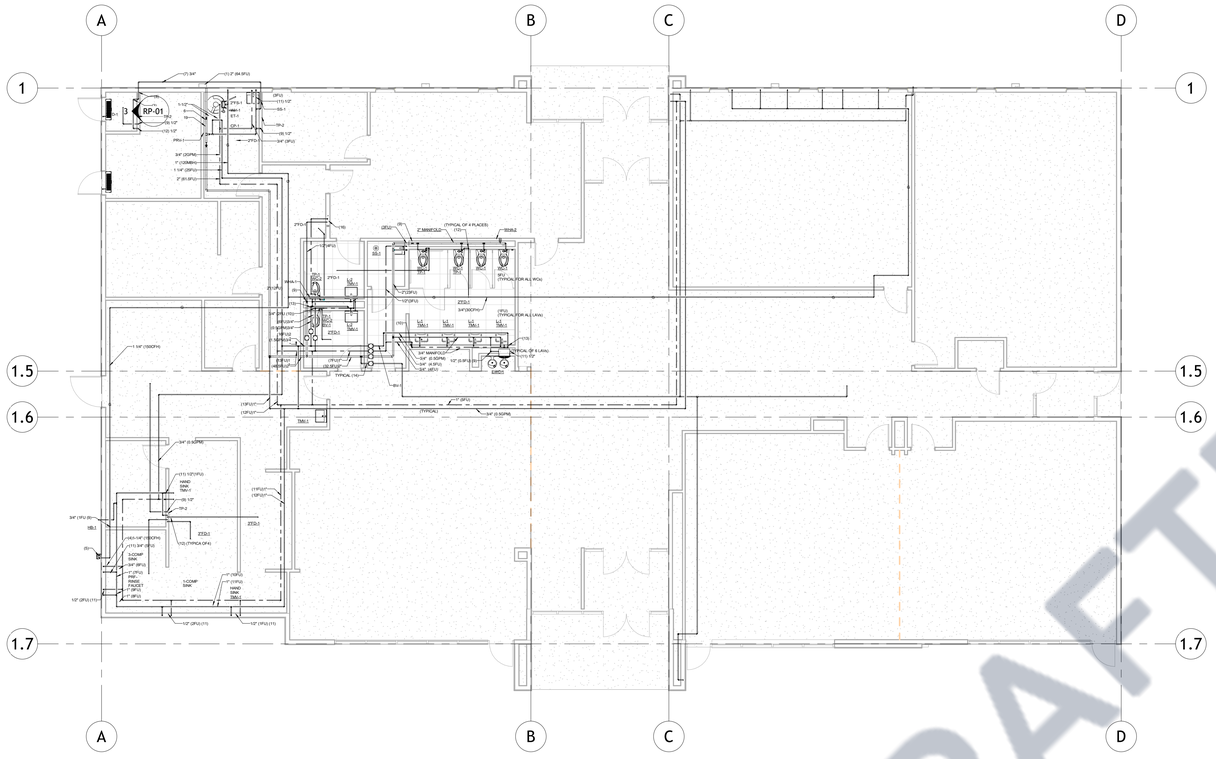
Project Number	2020157
Date	11-23-2023
Drawn By	Author
Checked By	Checker

PPI-00

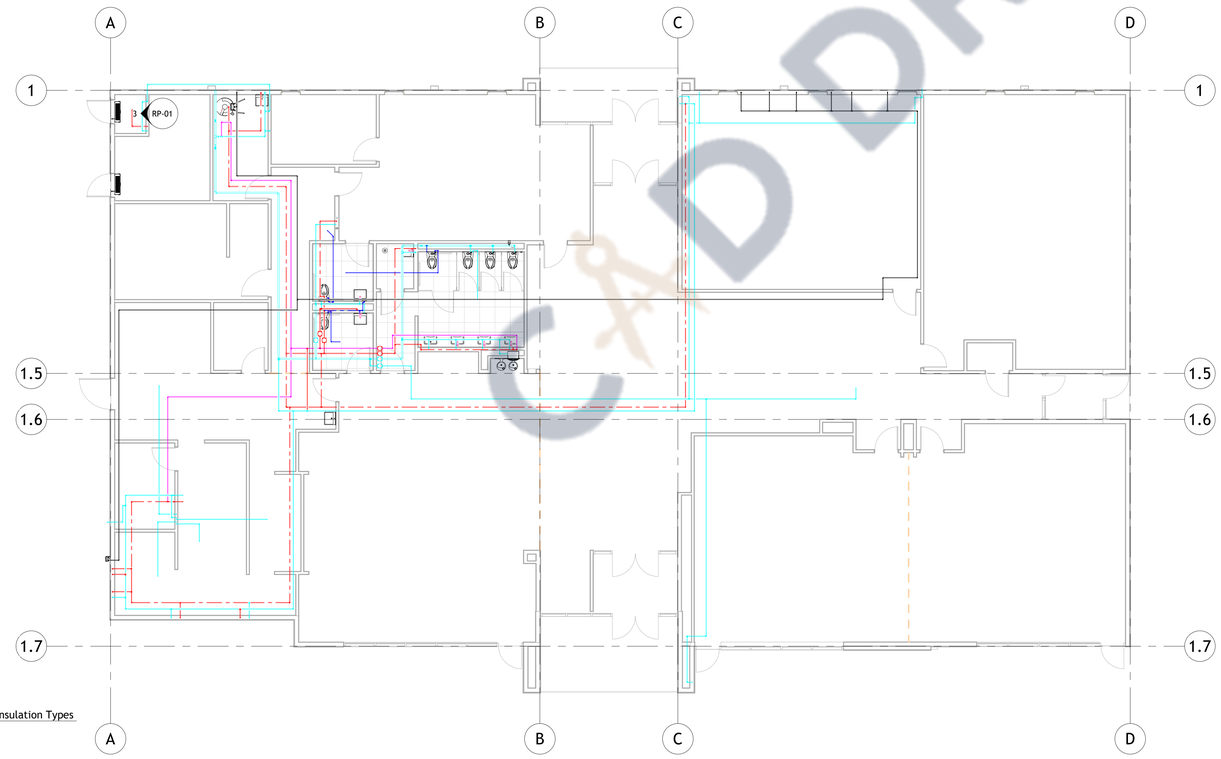
Scale 1/16" = 1'-0"

16/12/2023 12:47:27 AM

PLUMBING PIPING INSULATIONS FLOOR PLAN



1 Plumbing Plan
1/8" = 1'-0"



2 Plumbing Plan Highlighting Insulation Types
1/8" = 1'-0"

- DOMESTIC COLD WATER PIPING INSULATION
- DOMESTIC HOT WATER PIPING INSULATION
- DOMESTIC RECIRCULATING HOT WATER PIPING INSULATION
- DOMESTIC CHILLED WATER PIPING INSULATION FOR DRINKING FOUNTAINS
- SUPPLIES AND DRAINS HANDICAP ACCESSIBLE LAVATORIES AND SINKS

No.	Description	Date

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RED MESA MECHANICAL

LICENSE NUMBER : NV #0086266 - & #0087531

SHOP DRAWINGS DATE: 11-23-2023

NOTES:

St. Jude's Healing Center Education Building

115 Healing Circle, Boulder City, NV 89005.

22 07 19 – 1.2-B - PLUMBING PIPING INSULATION SD FLOOR PLAN

Project Number	2020157
Date	11-23-2023
Drawn By	Author
Checked By	Checker

PPI-01

Scale: As indicated

16/12/2023 12:47:29 AM

PLUMBING PIPING INSULATIONS SD

DOMESTIC COLD WATER PIPING

MANUFACTURER: AOWENS CORNING MODEL: SSL II WITH ASJ

DESCRIPTION:

Fiberglass pipe insulation is a molded one- or multiple-piece insulation made from fiberglass fibers bonded with thermosetting resins. It is produced in 36-inch (0.92 m) lengths with or without a factory-applied jacket.

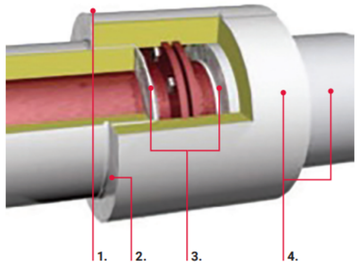
Pipe insulation for chilled-water and cold-water systems is specified and installed primarily for process control, condensation control, and energy conservation. Insulating chilled-water and cold-water systems requires special attention. When piping and equipment operate at temperatures lower than the ambient air, moisture in the air can condense on the cold surface, or when insulated incorrectly, on or within the insulation system. The pipe system must be protected by an insulation system with sufficient insulation thickness, an adequate vapor retarder, and be installed correctly for the system to perform. If not, the insulation system can become wet, which can lead to a number of issues

Thermal Conductivity

MEAN TEMPERATURE °F	k Btu•in/hr•ft²•°F	MEAN TEMPERATURE °C	λ W/M•°C
50	0.22	10	0.032
75	0.23	25	0.034
100	0.24	50	0.037
150	0.27	100	0.043
200	0.29	125	0.047
250	0.32	150	0.051
300	0.35	175	0.056
350	0.39	200	0.062
400	0.43	225	0.068
450	0.48	250	0.075
500	0.54	275	0.082

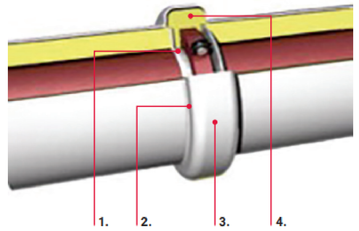
SSL II® WITH ASJ MAX FIBERGLAS™ PIPE INSULATION

FLANGES/UNIONS:



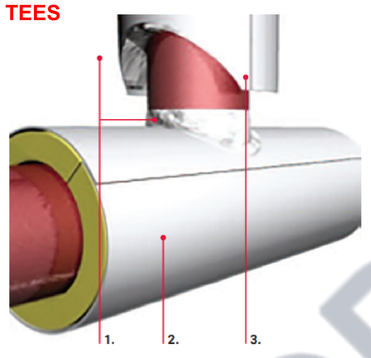
1. Nested insulation size
2. Vapor dam
3. Vapor dam at straight section of pipe on joints and terminations
4. Factory-applied jacket

PVC MOLDED FITTING COVER:



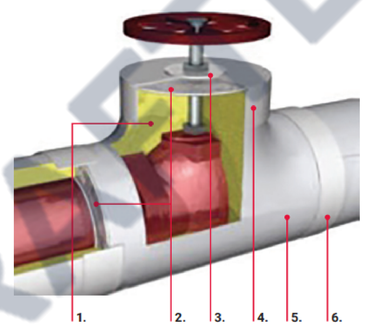
1. Vapor dam
2. Vapor retarder mastic or PVC tape on joints
3. PVC molded fitting cover
4. Fiberglass insulation

TEES



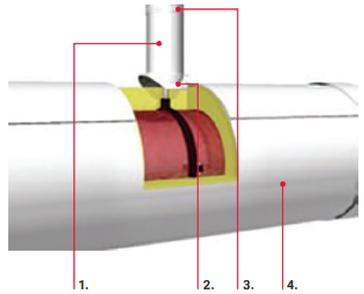
1. All terminations must be finished with vapor dams.
2. Preformed pipe insulation should be continued through the tee. The insulation and jacket in straight sections should be cut to fit around the vertical pipe.
3. Vertical section of pipe insulation should be cut to fit flush with the straight pipe insulation. The ASJ Max jacket should then be sealed and finished with vapor retarder mastic.

MOLDED VALVE COVERS:



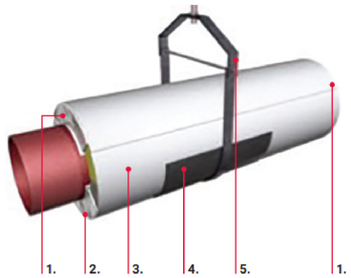
1. Fiberglass insulation wrapped around valve, filling void space
2. Vapor dam applied at ends of preformed fiberglass insulation.
3. Vapor retarder mastic
4. Molded PVC end cap. It is possible for the PVC valve cover to incorporate an end cap. If the end cap has a penetration to accommodate the valve stem, the hole must then be sealed with a vapor retarder mastic.
5. Molded PVC valve fitting cover
6. PVC vapor seal tape

SPLIT RING (CONTACT) HANGER:



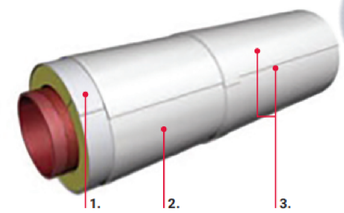
1. Insulate support rod with preformed fiberglass pipe insulation as required to prevent condensation. See Insulation Support Rod below.
2. Vapor retarder mastic
3. Add vapor dam at butt joints of pipe section and termination of insulation on support rod
4. Preformed fiberglass pipe insulation with factory-applied ASJ Max jacket

CLEVIS HANGER



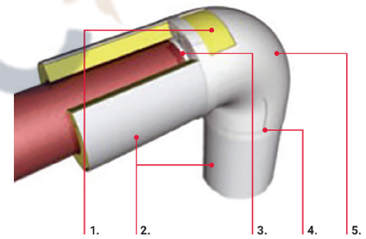
1. Add vapor dam at butt joints of pipe section.
2. High-density as required
3. Preformed fiberglass pipe insulation with factory-applied ASJ Max jacket
4. Metal pipe saddle
5. Clevis hanger

PVC JACKET



1. ASJ Max jacket
2. Field-applied PVC jacket
3. PVC jacket with overlap at all joints. Secure and seal joints with PVC tape or solvent weld adhesive.

ELBOW COVERS



1. Fabricated, mitered, molded, or pre-cut fiberglass insert pipe insulation
2. Preformed fiberglass pipe insulation with vapor retarder jacket
3. Vapor dam
4. Apply PVC vapor seal tape, adhesive/solvent, or mastic to all joints
5. PVC fitting cover

PLUMBING PIPING INSULATION SCHEDULE

SYSTEM/LOCATION	TYPE	JACKET	TYPE <1-1/7 PIPE	TYPE 1-1/2"+PIPE	COVER
DOMESTIC COLD WATER					
Indoor/Concealed	MFP	ASJ	0.5	0.5	-
Indoor/Exposed	MFP	ASJ	0.5	0.5	PVC
Outdoor/Concealed	MFP	ASJ	0.5	0.5	-
Outdoor/Exposed	MFP	ASJ	0.5	0.5	CA
Buried	-	-	-	-	PVC,PE

ASJ: ALL SERVICE JACKET
MFP: MINERAL FIBER PIPE

Cold Water Pipe Sizing Chart (6 fps max.)				
FRICTION LOSS FER 100 FT: 3 PSI				
PIPE SIZE	GPM	FT FU	FV FU	VEL
1/2	2.4	3	-	2.8
3/4	5	6	-	3.1
1	9.5	13	-	3.6
1-1/4	20	30	-	4.3
1-1/2	28	49	11	4.7
2	57	160	66	5.5
2-1/2	88	315	186	6.0

No.	Description	Date

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CCSD
CLARK COUNTY SCHOOL DISTRICT
OFFICE: (+1) 702-799-8710
CLARK COUNTY SCHOOL DISTRICT

SUB CONTRACTOR:

RED MESA MECHANICAL

LICENSE NUMBER : NV #0086266 - & #0087531

SHOP DRAWINGS DATE: 11-23-2023

NOTES:

St. Jude's Healing Center Education Building

115 Healing Circle, Boulder City, NV 89005.

22 07 19 – 1.2-B - PLUMBING PIPING INSULATION SD

Project Number	2020157
Date	11-23-2023
Drawn By	Author
Checked By	Checker

PPI-02

Scale: As indicated

16/12/2023 12:47:29 AM

PLUMBING PIPING INSULATIONS SD

DOMESTIC HOT WATER PIPING

MANUFACTURER: AOWENS CORNING MODEL: SSL II WITH ASJ

DESCRIPTION:

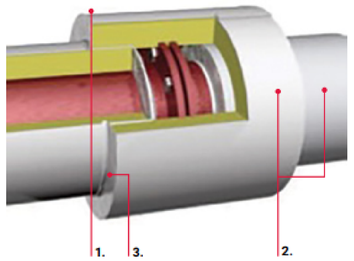
Pipe insulation for hot systems is specified and installed primarily for process control and energy conservation. Fiberglass pipe insulation is a molded one- or multiple piece insulation made from fiberglass fibers bonded with thermosetting resins. It is produced in 36-inch (0.92 m) lengths with or without a factory-applied jacket.

Thermal Conductivity

MEAN TEMPERATURE °F	k Btu•in/hr•ft²•°F	MEAN TEMPERATURE °C	λ W/M•°C
50	0.22	10	0.032
75	0.23	25	0.034
100	0.24	50	0.037
150	0.27	100	0.043
200	0.29	125	0.047
250	0.32	150	0.051
300	0.35	175	0.056
350	0.39	200	0.062
400	0.43	225	0.068
450	0.48	250	0.075
500	0.54	275	0.082

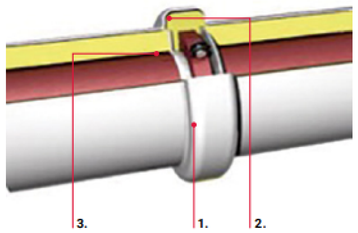
SSL II® WITH ASJ MAX FIBERGLAS™ PIPE INSULATION

FLANGES/UNIONS:



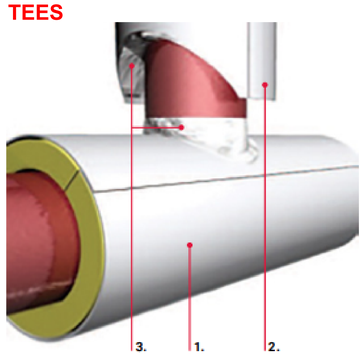
1. Nested insulation size
2. Factory-applied jacket
3. Mastic ends of insulation

PVC MOLDED FITTING COVER:



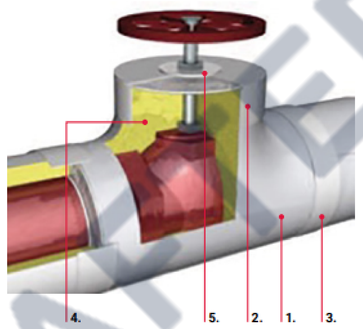
1. PVC molded fitting cover
2. Fiberglass insulation
3. Mastic or PVC tape on joints

TEES



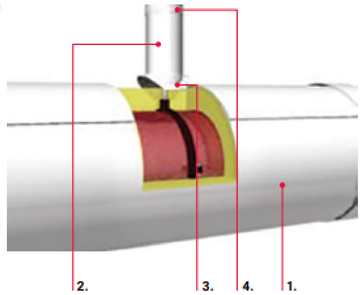
1. Preformed pipe insulation should be continued through the tee. The insulation and jacket in straight sections should be cut to fit around the vertical pipe.
2. Vertical section of pipe insulation should be cut to fit flush with the straight pipe insulation. The ASJ Max jacket should then be sealed with mastic.
3. All terminations must be finished with mastic.

MOLDED VALVE COVERS:



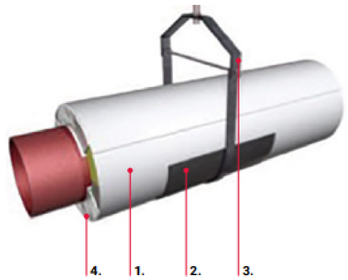
1. Molded PVC valve fitting cover.
2. Molded PVC end cap. It is possible for the PVC valve cover to incorporate an end cap. If the end cap has a penetration to accommodate the valve stem, the hole must then be sealed with a vapor retarder mastic.
3. PVC tape
4. Fiberglass insulation wrapped around valve, filling void space
5. The void around the valve stem must be filled with insulation.

PIPE SUPPORTS: SPLIT RING (CONTACT) HANGER:



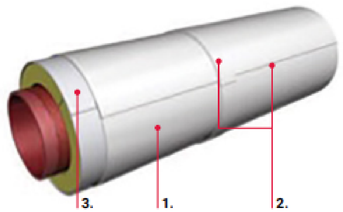
1. Preformed fiberglass pipe insulation with factory-applied ASJ Max jacket
2. Insulate support rod with preformed fiberglass pipe insulation as required to prevent condensation. See Insulation Support Rod following.
3. Mastic joint
4. Add mastic at butt joints of pipe section and termination of insulation on support rod.

PIPE SUPPORTS: CLEVIS HANGER



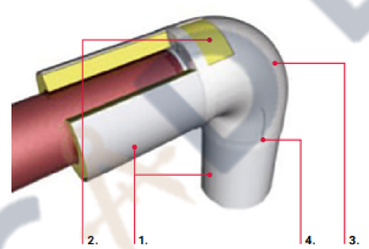
1. Preformed fiberglass pipe insulation with factory-applied ASJ Max jacket
2. Metal pipe saddle
3. Clevis hanger
4. High-density insulation insert as required

JACKETING: PVC JACKET



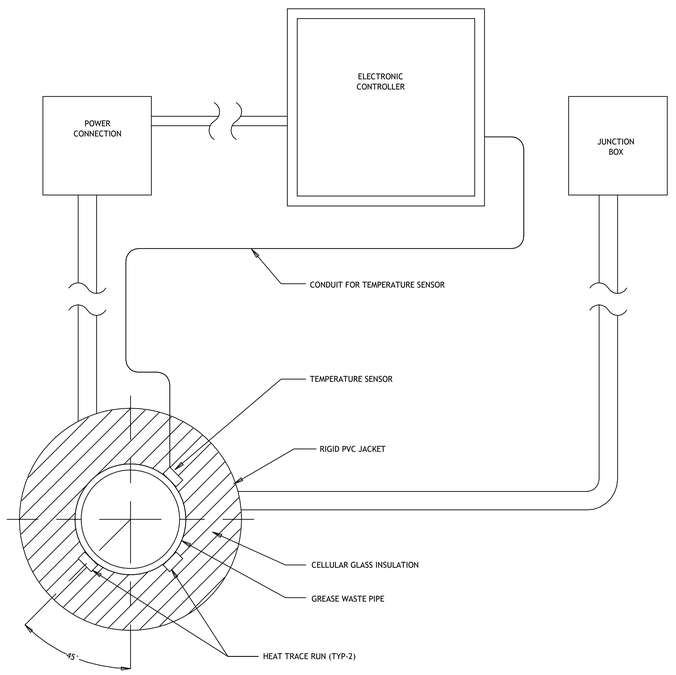
1. Field-applied PVC jacket
2. PVC jacket with overlap at all joints. Secure and seal joints with PVC tape or solvent weld adhesive.
3. ASJ Max jacket

ELBOW COVERS



1. Preformed fiberglass pipe insulation with ASJ Max jacket
2. Fabricated, mitered, molded, or pre-cut fiberglass insert pipe insulation
3. PVC fitting cover.
4. Apply PVC tape, adhesive/solvent, or mastic to all joints

HEAT TRACE DIAGRAM (BURIED PIPING)



PLUMBING PIPING INSULATION SCHEDULE

SYSTEM/LOCATION	TYPE	JACKET	TYPE <1-1/7 PIPE	TYPE 1-1/2"+PIPE	COVER
DOMESTIC HOT, RECIRC, TEMPERED AND TEPID WATER					
Indoor/Concealed	MFP	ASJ	1	1.5	-
Indoor/Exposed	MFP	ASJ	1	1.5	PVC
Outdoor/Concealed	MFP	ASJ	1	1.5	-
Outdoor/Exposed	MFP	ASJ	1	1.5	CA
Buried	FE	-	1	1.5	PVC,PE

ASJ: ALL SERVICE JACKET
MFP: MINERAL FIBER PIPE

HOT Water Pipe Sizing Chart (4 fps max.)				
FRICTION LOSS FER 100 FT: 3 PSI				
PIPE SIZE	GPM	FT FU	FV FU	VEL
1/2	2.4	3	-	2.8
3/4	5	6	-	3.1
1	9.5	13	-	3.6
1-1/4	20	30	-	4.3
1-1/2	28	49	11	4.7

No.	Description	Date

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SUB CONTRACTOR:

RED MESA MECHANICAL

LICENSE NUMBER : NV #0086266 - & #0087531

SHOP DRAWINGS DATE: 11-23-2023

NOTES:

St. Jude's Healing Center Education Building

115 Healing Circle, Boulder City, NV 89005.

22 07 19 – 1.2-B - PLUMBING PIPING INSULATION SD

Project Number	2020157
Date	11-23-2023
Drawn By	Author
Checked By	Checker
Scale	As indicated

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