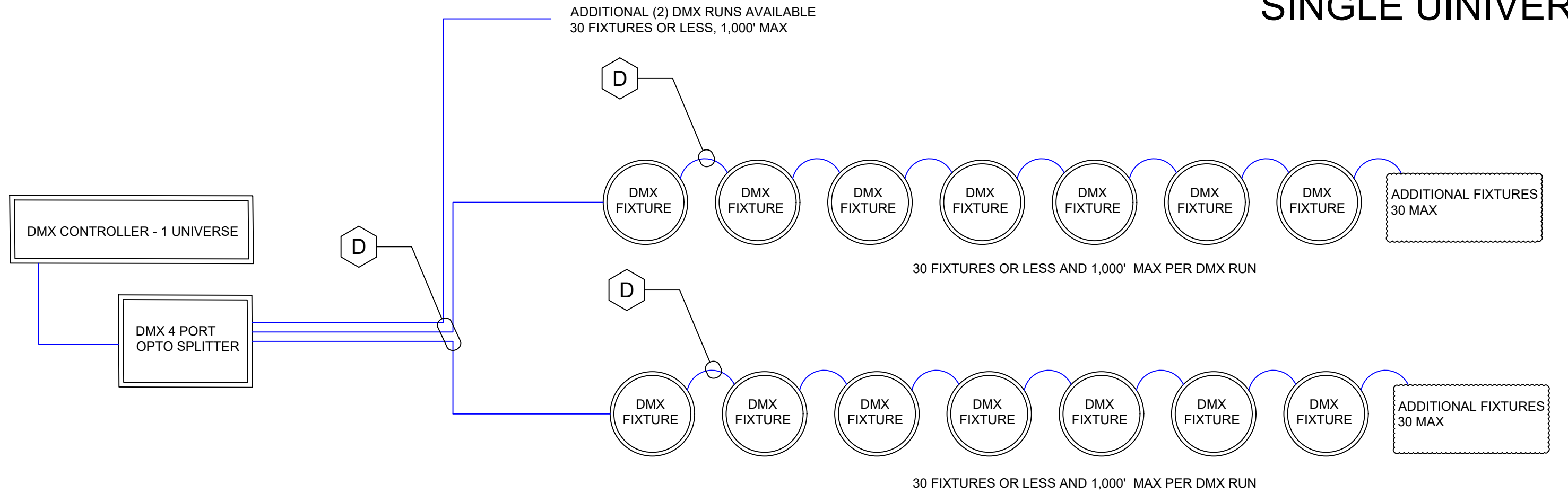
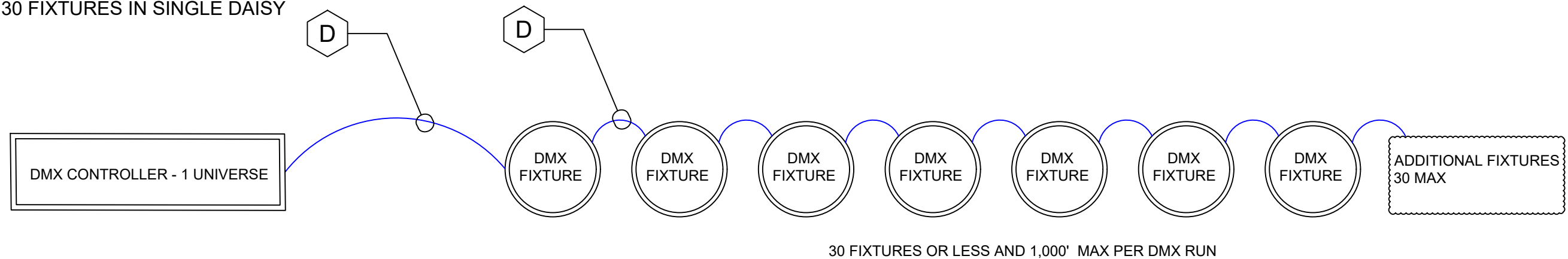


HARDLINE DMX - SINGLE UNIVERSE



SINGLE DMX CONTROLLER - 1 UNIVERSE - LESS THAN 30 FIXTURES IN SINGLE DAISY CHAIN



DMX FIXTURES:
THE NUMBER OF ADDRESSES REQUIRED PER FIXTURE CAN VARY
BASED ON THE FIXTURE TYPE AND MANUFACTURER - VERIFY WITH
CUTSHEET

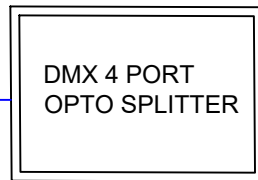
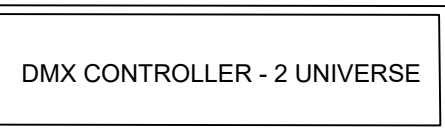
DMX UNIVERSE = 512 CHANNELS



HARDLINE DMX - TWO UNIVERSES

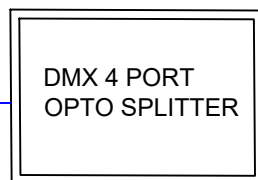
2 UNIVERSE DMX CONTROLLER - EACH UNIVERSE MUST BE CONNECTED TO ONLY ITEMS IN ITS UNIVERSE - IN HARDLINE DMX - YOU CANNOT MIX UNIVERSES

ADDITIONAL (2) DMX RUNS AVAILABLE
30 FIXTURES OR LESS, 1,000' MAX

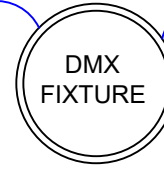
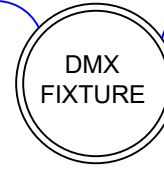
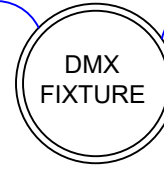
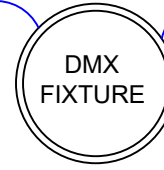
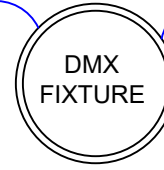
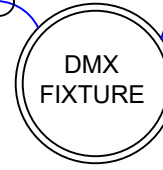
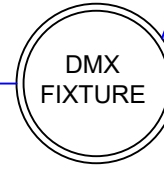


DMX UNIVERSE 1

DMX UNIVERSE 2

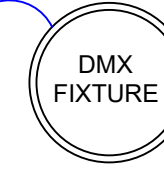
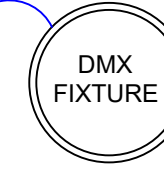
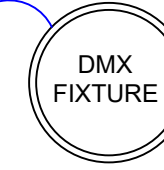
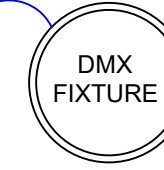
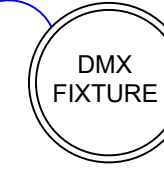
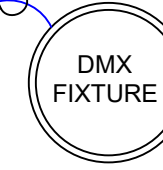
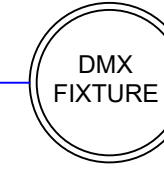


D DMX CABLE



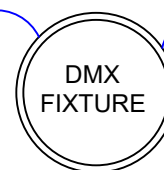
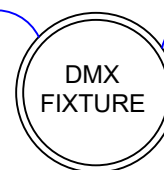
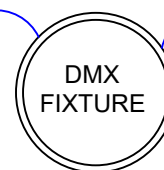
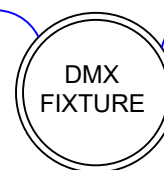
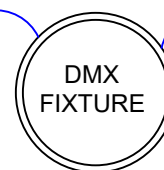
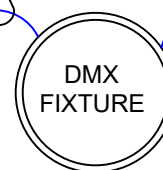
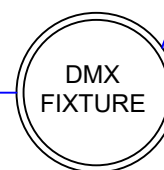
ADDITIONAL FIXTURES
30 MAX

30 FIXTURES OR LESS AND 1,000' MAX PER DMX RUN



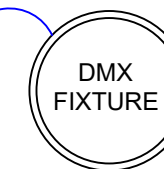
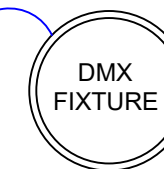
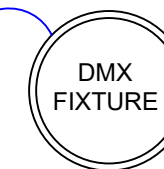
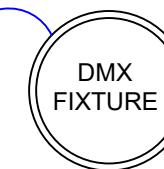
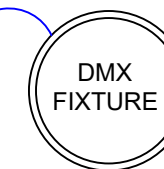
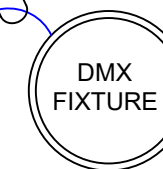
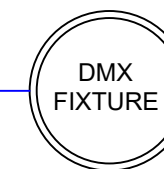
ADDITIONAL FIXTURES
30 MAX

30 FIXTURES OR LESS AND 1,000' MAX PER DMX RUN



ADDITIONAL FIXTURES
30 MAX

30 FIXTURES OR LESS AND 1,000' MAX PER DMX RUN



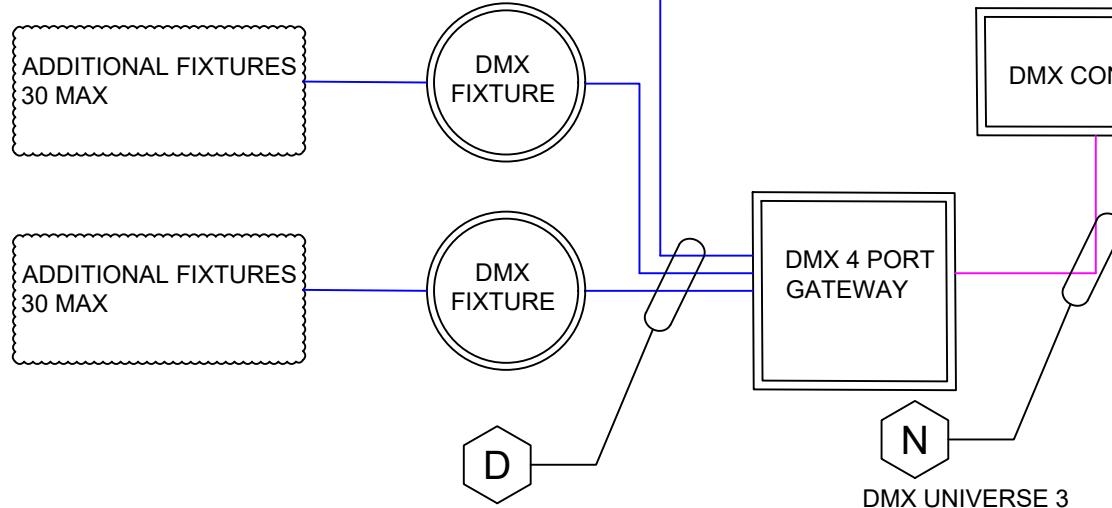
ADDITIONAL FIXTURES
30 MAX

30 FIXTURES OR LESS AND 1,000' MAX PER DMX RUN

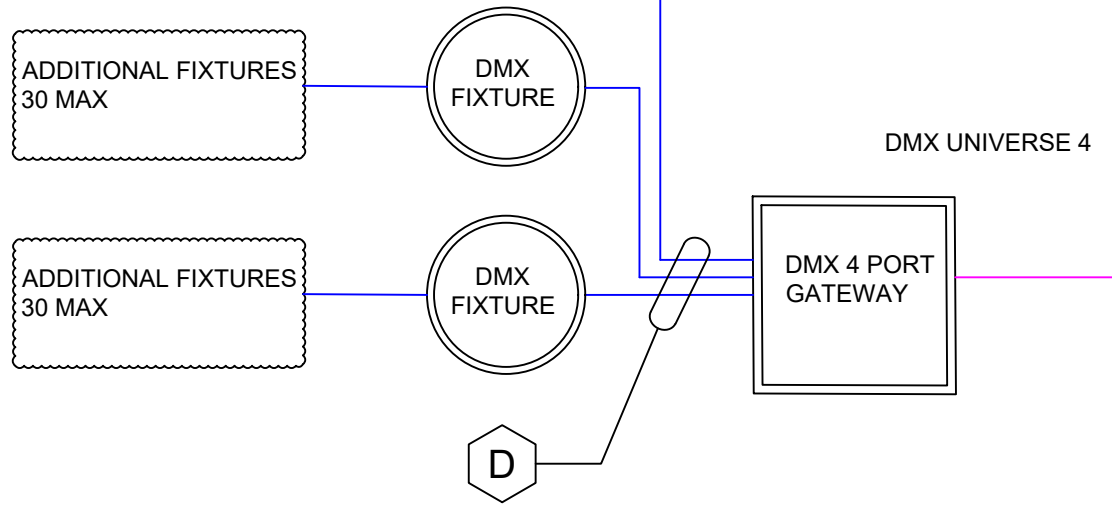
COMBO HARDLINE AND NETWORK DMX - FOUR UNIVERSES

WITH PHAROS OR MOSAIC 4 UNIVERSE CONTROLLER:
 DMX UNIVERSE 1 & 2 CAN BE SENT DIRECTLY FROM THE CONTROLLER AS
 HARDLINE DMX OR CAN BE SENT VIA NETWORK TO A GATEWAY
 DMX UNIVERSE 3 & 4 CAN ONLY BE SENT VIA NETWORK TO A GATEWAY

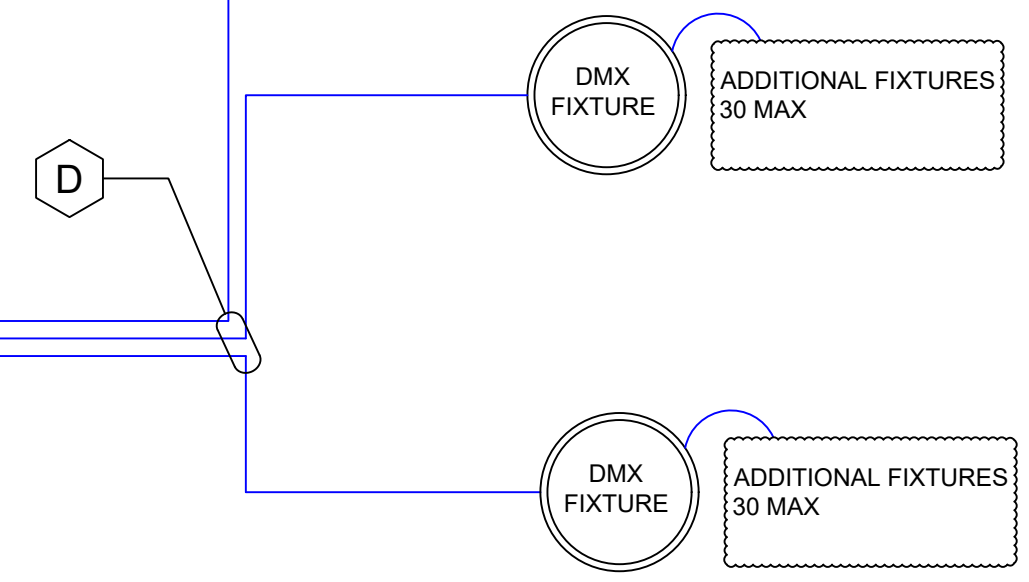
ADDITIONAL (2) DMX RUNS AVAILABLE
 30 FIXTURES OR LESS, 1,000' MAX



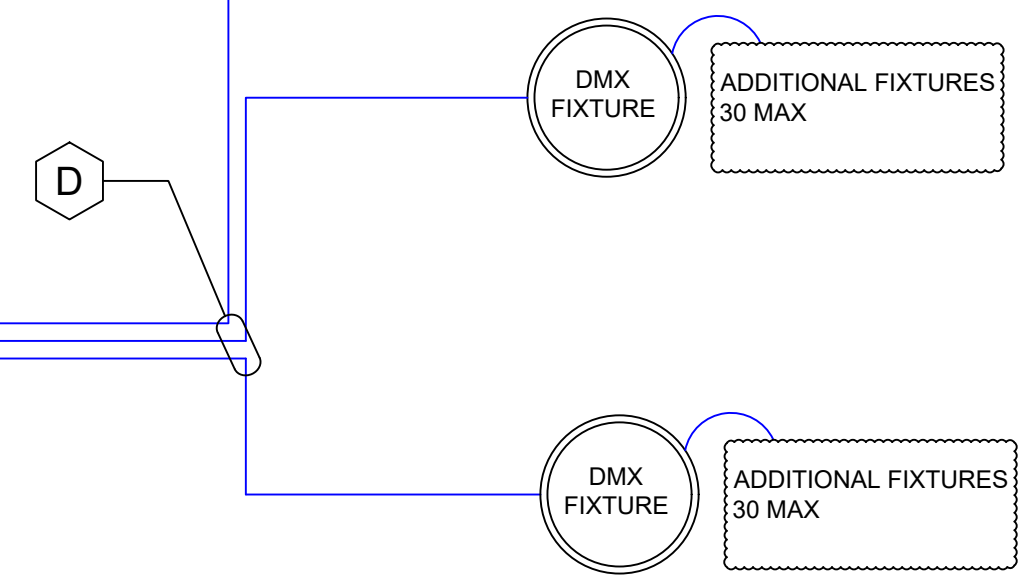
ADDITIONAL (2) DMX RUNS AVAILABLE
 30 FIXTURES OR LESS, 1,000' MAX



ADDITIONAL (2) DMX RUNS AVAILABLE
 30 FIXTURES OR LESS, 1,000' MAX



ADDITIONAL (2) DMX RUNS AVAILABLE
 30 FIXTURES OR LESS, 1,000' MAX

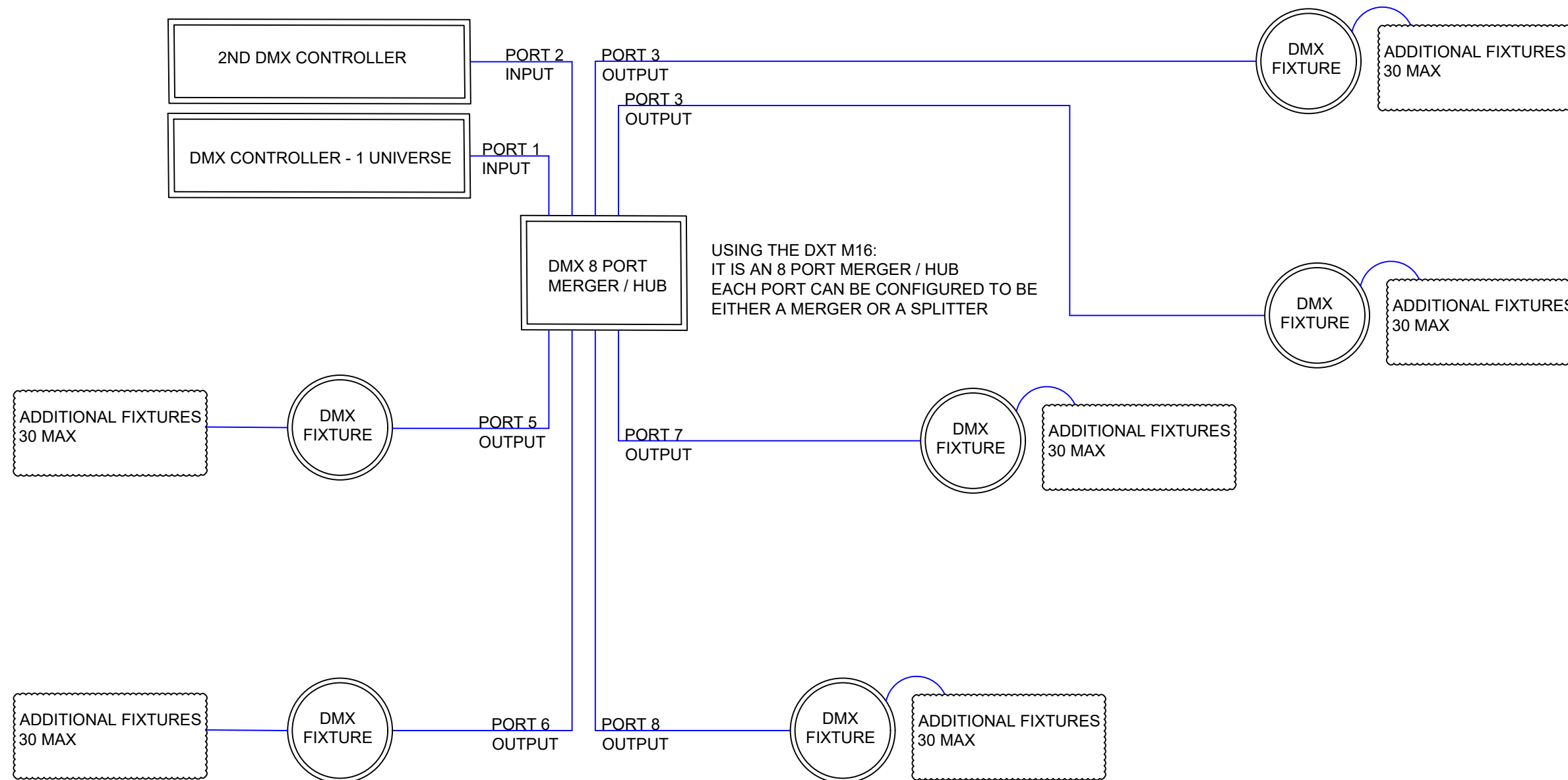


GATEWAYS CONNECT TO THE DMX CONTROLLER THROUGH STANDARD NETWORK COMMUNICATION. THEY CONVERT SACN OR SIMILAR NETWORK SIGNAL TO HARDLINE DMX TO GO TO THE FIXTURE. THE NUMBER OF PORTS IS THE NUMBER OF HARDLINE DMX OUTPUTS.
 WHEN THE GATEWAYS USE RJ45 CONNECTORS FOR THE DMX OUTPUTS, NOTE THAT THEY ARE USING CAT5 TO TRANSMIT HARDLINE DMX, IT IS NOT A NETWORK SWITCH.

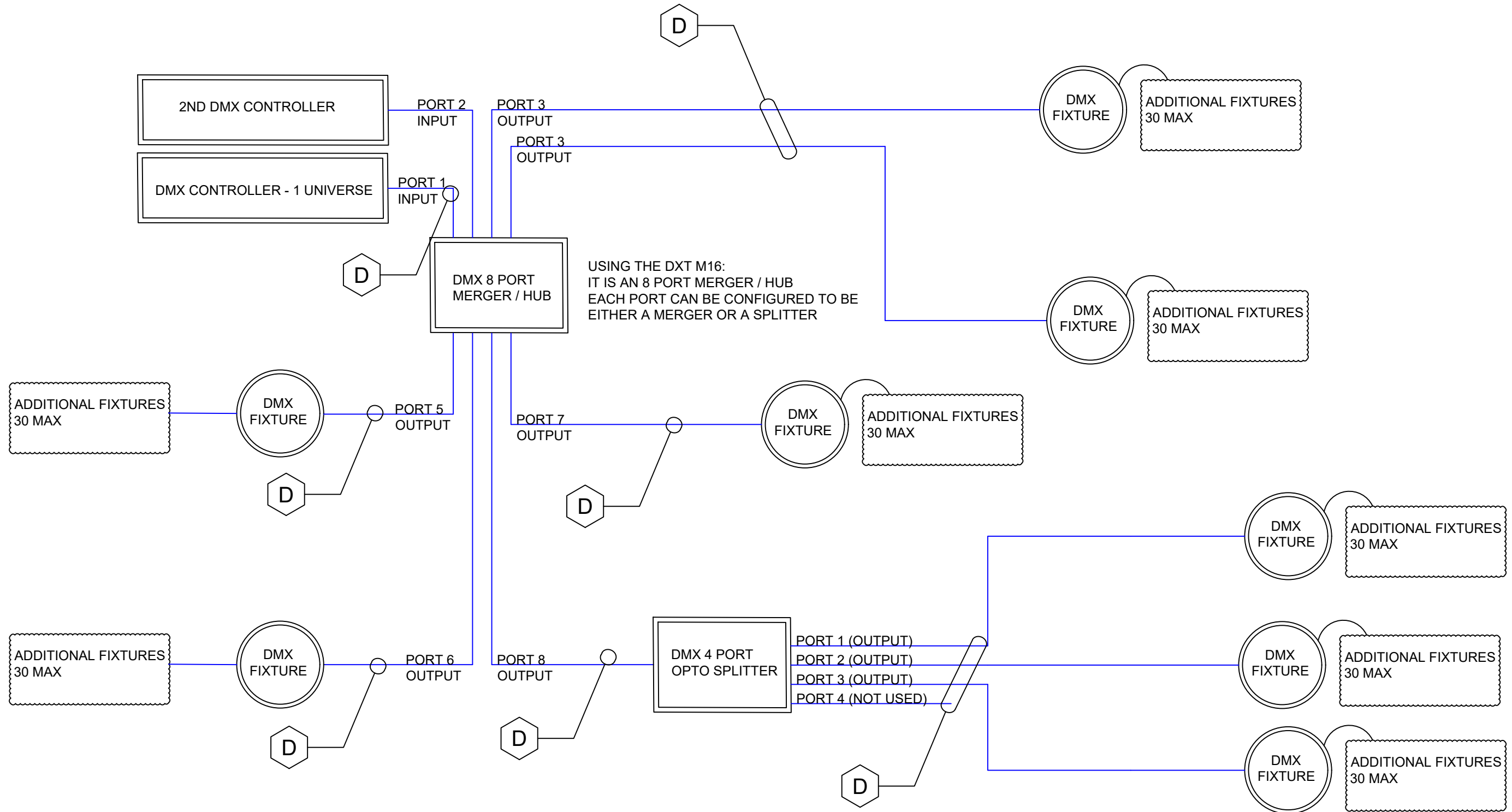
D DMX CABLE

N NETWORK CABLE

EXAMPLE USING 2 DMX CONTROLLERS AND DXT M16



EXAMPLE USING 2 DMX CONTROLLERS AND DXT M16, M09

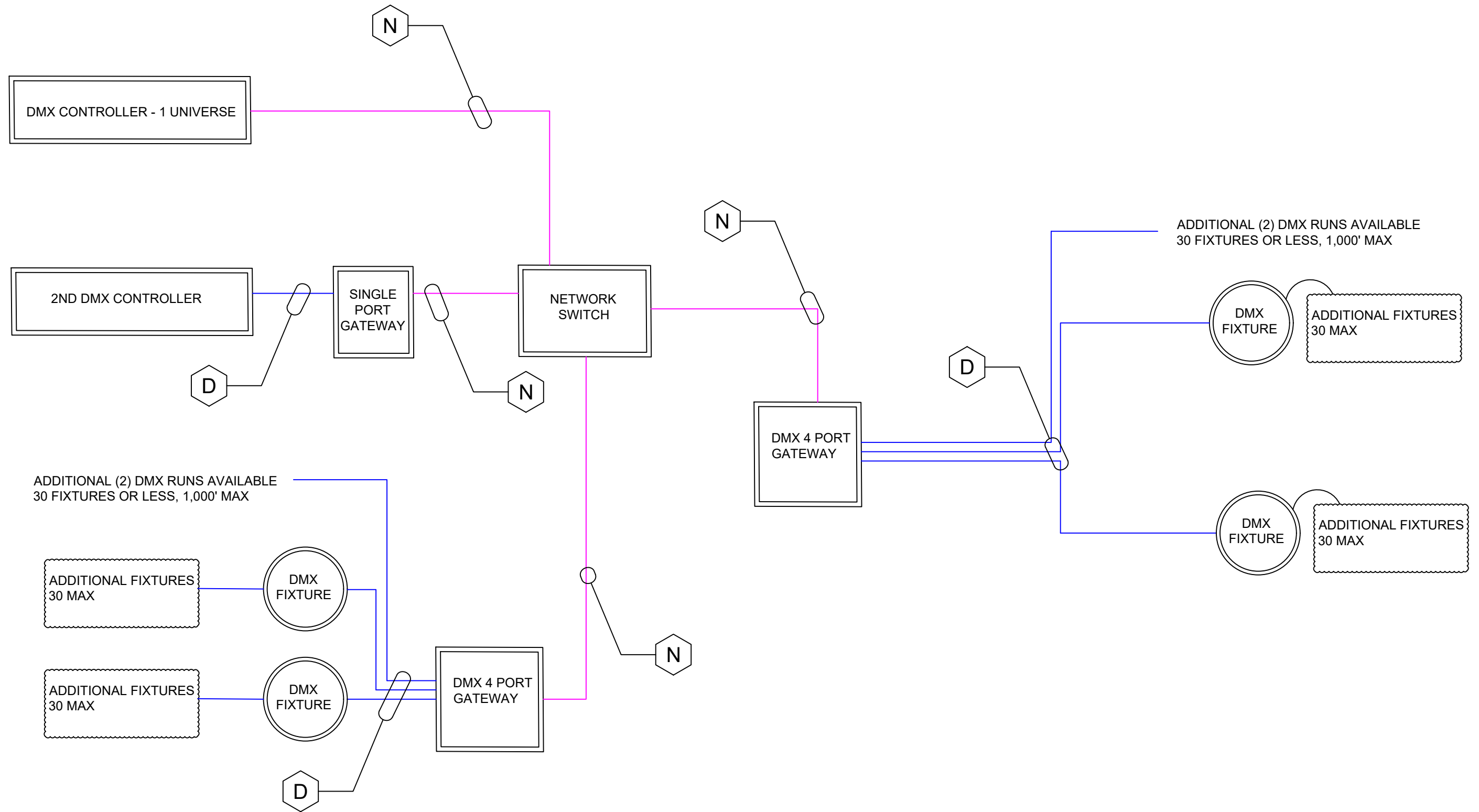


TAKE NOTE THAT TO BE ABLE TO USE THE MERGING CAPABILITIES AND IF YOU NEED A SECOND SPLITTER, YOU WILL USE ONE PORT OF THE MERGER / HUB

D DMX CABLE

N NETWORK CABLE

EXAMPLE USING 2 DMX CONTROLLERS AND NETWORK AND GATEWAYS



QUESTIONS THAT WE NEED TO KNOW TO QUOTE / RELEASE A DMX JOB

How many fixtures are going to be controlled by DMX?

Are all the fixtures in one area, or will there be multiple areas? If multiple areas, how many?

Does the client want a static look? As in you push a button and get a single look. Or do they want a dynamic show? As in the lights Automatically change / chase etc.

How is the DMX going to connect to the fixture? It can connect with XLR Pre-terminated (typically portable theatrical type fixtures) RJ45 / Cat5 (many permanent fixtures as well as many portable ones use this) or Terminal Block (only used in permanent fixtures)

Are there any wire run restrictions or preferences? Does the contractor need to run DMX in a certain way?

BASIC DMX RULES

All wiring must be in a continuous run and daisy chained. No "Tees" are permitted.

Star wiring is only allowed in conjunction with an opto-splitter.

Maximum cable length for systems incorporating RDM is 1000 ft due to timing constraints (assume RDM is required)

No more than 32 fixtures are allowed on a single daisy-chained run. If more than 32 fixtures are required, an opto-splitter will be required for multiple daisy-chained runs. (Design around 30 for room for changes in the field)

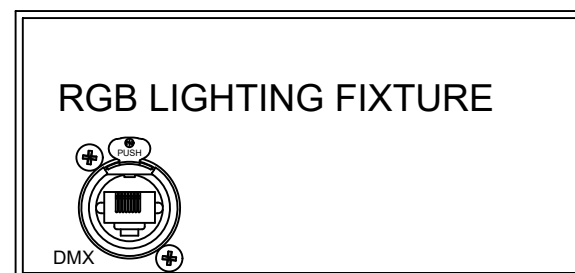
TYPES OF DMX CONNECTORS



DMX FIXTURE WITH TERMINAL BLOCK CONNECTORS
TYPICAL APPLICATION - PERMANENT INSTALLED FIXTURES.

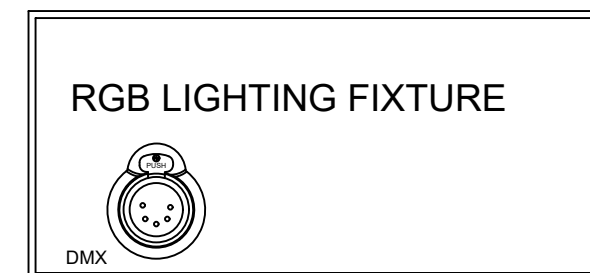
RECOMMEND EITHER HCG PLENUM DMX CABLE OR BELDEN 9829 (NON-PLENUM) / 89829 (PLENUM)
WE (HCG) DOES NOT ALLOW FOR CAT5 CABLE TO BE USED FOR TERMINAL BLOCK WIRING, EITHER SOLID CORE OR STRANDED.

DMX CABLE IS 5 CONDUCTOR - 2 TWISTED PAIR 24AWG AND 24AWG DRAIN WIRE. SECOND PAIR IS NOT INITIALLY USED. CAN BE USED TO CORRECT BAD WIRING.



DMX FIXTURE WITH RJ45 CONNECTORS
TYPICAL APPLICATION - PERMANENT & TEMPORARY INSTALLED FIXTURES.

STANDARD CAT5 CABLE.
CAT5 IS USED TO PROVIDE HARDLINE DMX SIGNAL, NOT A NETWORK DEVICE.



DMX FIXTURE WITH XLR CONNECTORS
TYPICAL APPLICATION - TEMPORARY INSTALLED FIXTURES.

PRETERMINATED 5 PIN OR 3 PIN. 5 PIN IS WHAT ETC USES, VERIFY 5 OR 3 PIN PRIOR TO ORDERING CABLE.
MICROPHONE CABLE IS NOT ACCEPTABLE. EVEN WITH 3 PIN CONNECTORS.