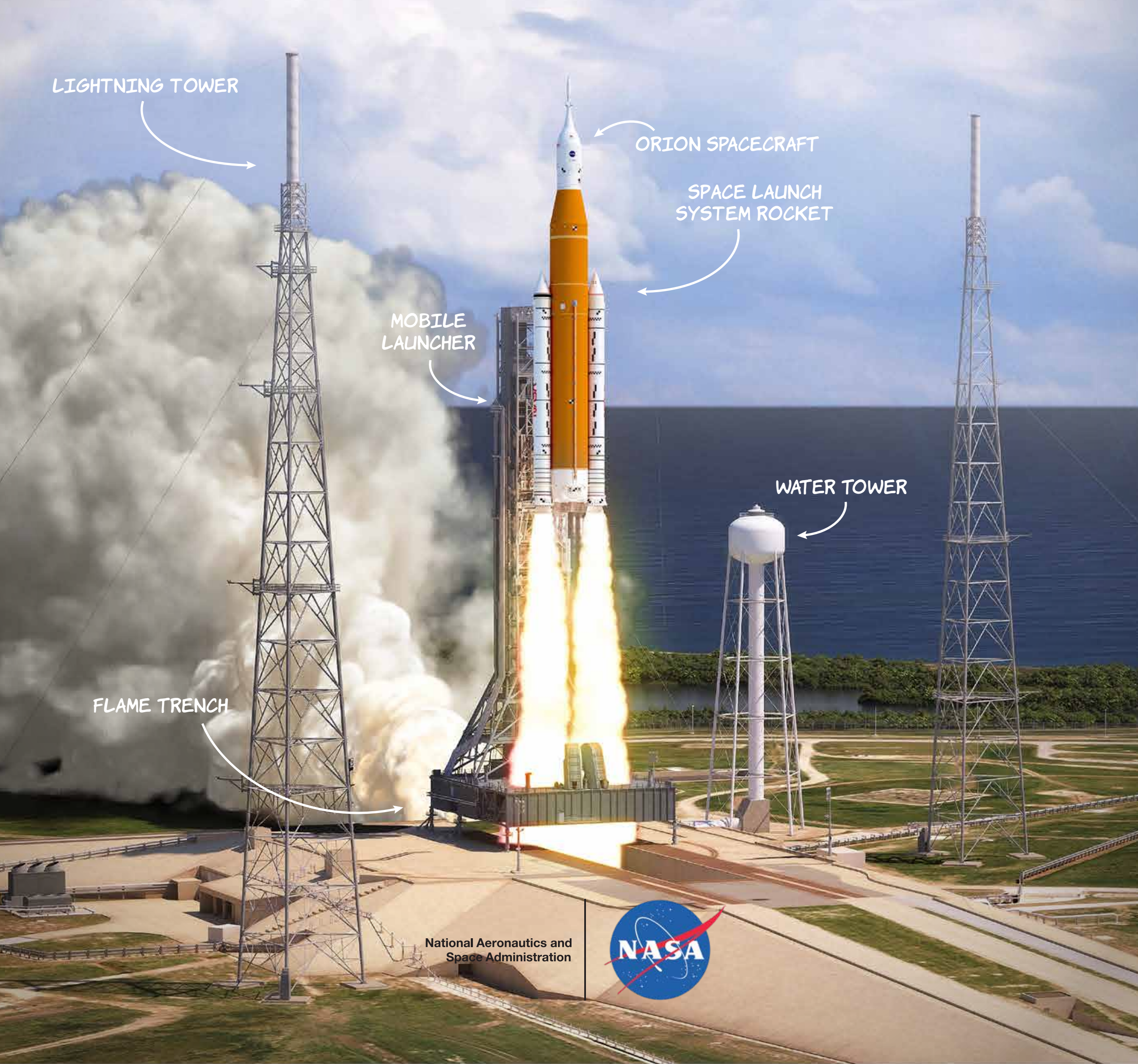


# HOW TO DRAW

# ARTS

## NASA'S LAUNCH PAD 39B



LIGHTNING TOWER

ORION SPACECRAFT

SPACE LAUNCH  
SYSTEM ROCKET

MOBILE  
LAUNCHER

WATER TOWER

FLAME TRENCH

National Aeronautics and  
Space Administration





# ***WE ARE GOING!***

FROM THIS LAUNCH PAD, NASA WILL LAUNCH THE FIRST WOMAN AND NEXT MAN TO THE MOON BY 2024, USING INNOVATIVE TECHNOLOGIES TO EXPLORE MORE OF THE LUNAR SURFACE THAN EVER BEFORE.

LEARN MORE:  
[NASA.GOV/ARTEMIS](https://www.nasa.gov/artemis)

***THE SPACE LAUNCH SYSTEM  
WORLD'S MOST POWERFUL ROCKET***

***THE GATEWAY  
OUTPOST ORBITING THE MOON***

***ORION SPACECRAFT  
DESIGNED FOR DEEP SPACE***

***ARTEMIS GENERATION  
SPACE SUITS***



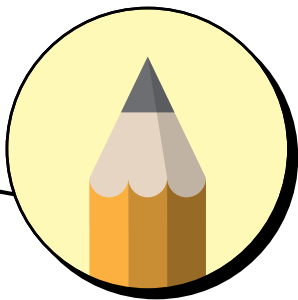
# 1. GETTING SOME PERSPECTIVE...



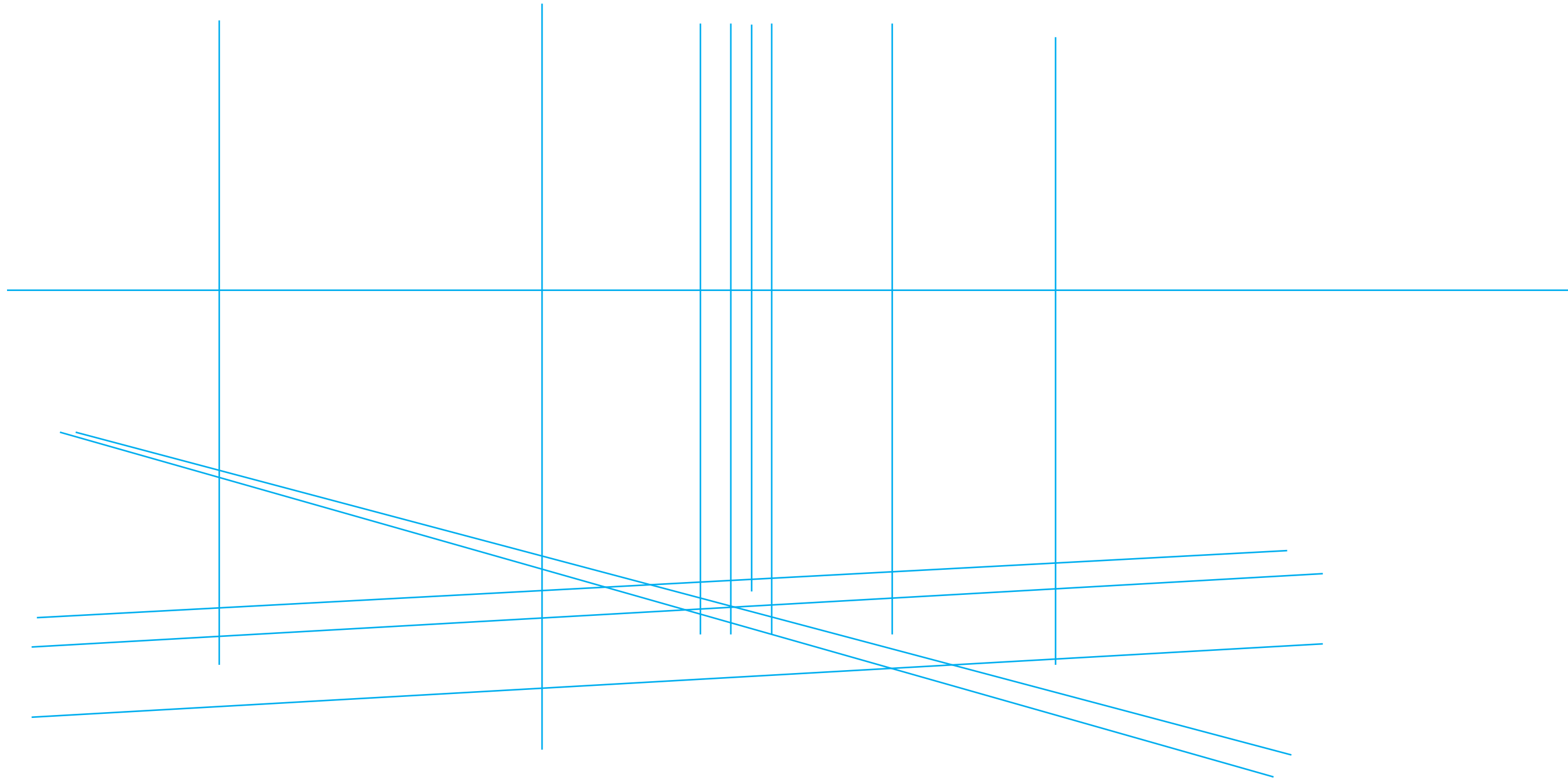
## SUPPLY LIST

- 1. PENCIL WITH ERASER
- 2. BLACK PEN OR MARKER
- 3. RULER
- 4. SHEET OF PAPER

LET'S SET THE SCENE. LIGHTLY DRAW OR TRACE THE BLUE LINES HERE WITH A RULER IN **PENCIL**. THIS WILL PROVIDE A GOOD PERSPECTIVE FRAME FOR YOUR DRAWING.



DRAW THESE LINES USING A **PENCIL**



### FUN FACT

EXPLORATION GROUND SYSTEMS (EGS) HAS MADE SIGNIFICANT UPGRADES AND ENHANCEMENTS TO LAUNCH PAD 39B TO SUPPORT NASA'S ARTEMIS MISSIONS TO THE MOON AND DEEP SPACE DESTINATIONS INCLUDING MARS.

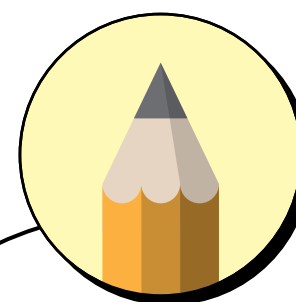
### FUN FACT

DURING REFURBISHMENT PROJECTS, 13 MILLION FEET OF COPPER CABLES WERE REMOVED AND REPLACED WITH 300,000 FEET OF FIBER CABLE.

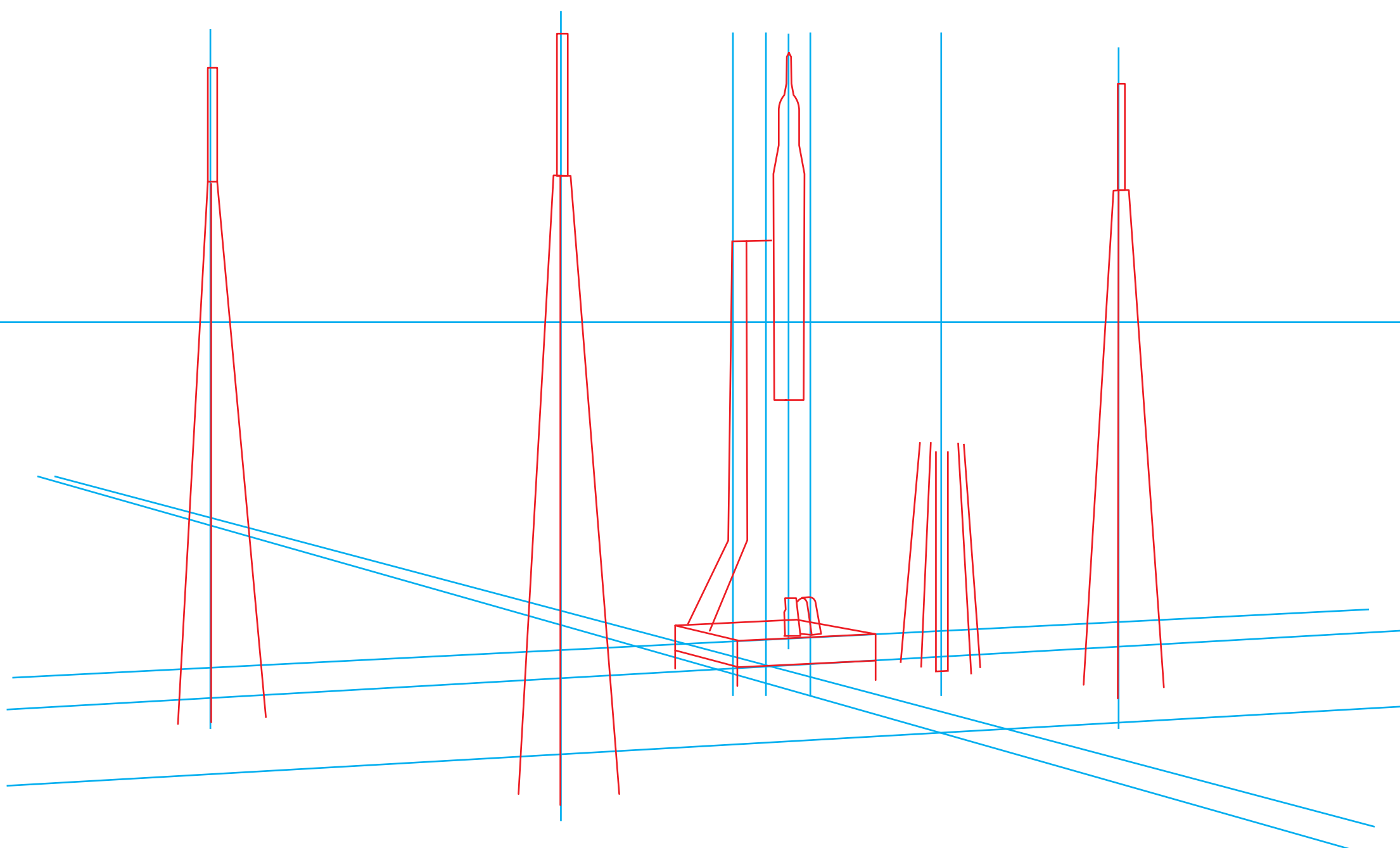
## 2. DRAW YOUR FIRST STRUCTURE LINES

DRAW THE FIRST LINES FOR THE LIGHTNING TOWERS, WATER TOWER, MOBILE LAUNCHER AND SPACE LAUNCH SYSTEM (SLS).

THE CURRENT SHAPES TO BE DRAWN ARE ALWAYS SHOWN IN **RED**.



DRAW NEW RED SHAPES  
USING A PENCIL



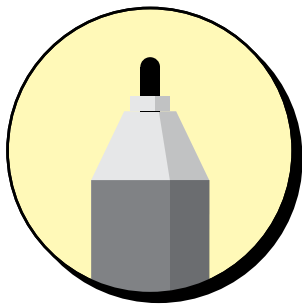
### FUN FACT

THE THREE LIGHTNING TOWERS ARE ABOUT 600 FEET TALL - TALLER THAN THE VEHICLE ASSEMBLY BUILDING, WHICH IS 525 FEET TALL.

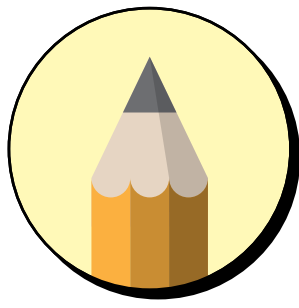
### FUN FACT

APOLLO 10 WAS THE FIRST MISSION TO BEGIN AT LAUNCH PAD 39B WHEN IT LIFTED OFF MAY 18, 1969, TO REHEARSE THE FIRST MOON LANDING.

### 3. ADD SLS BOOSTERS AND MORE DETAILS TO TOWERS



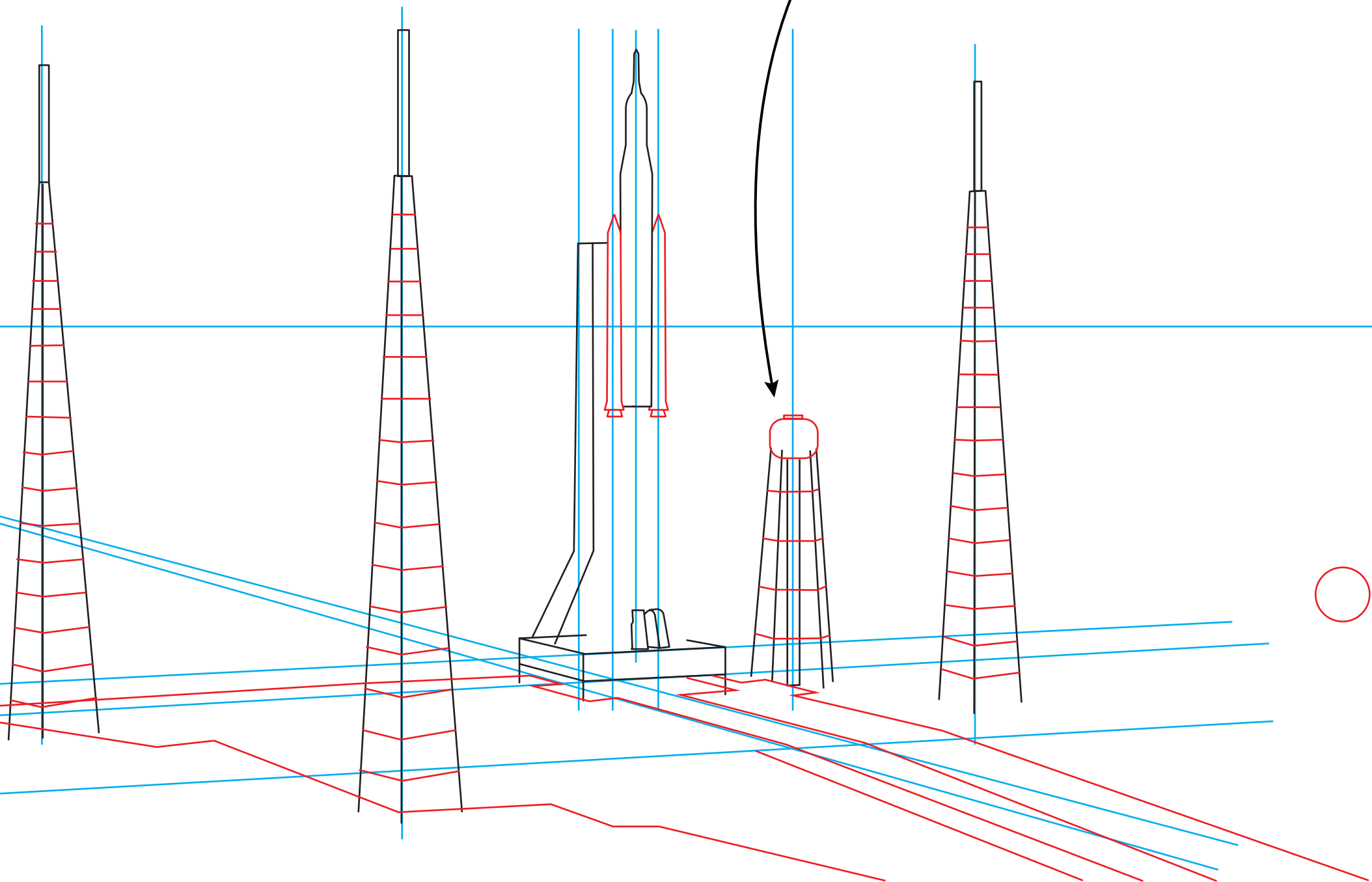
FILL IN BLACK LINES  
USING A **BLACK PEN**



DRAW NEW RED SHAPES  
USING A **PENCIL**

#### **FUN FACT**

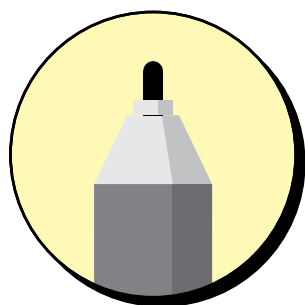
THE WATER TOWER FOR THE IGNITION OVERPRESSURE AND SOUND SUPPRESSION SYSTEM (IOP/SS) HOLDS ROUGHLY 400,000 GALLONS OF WATER, OR ENOUGH TO FILL 27 AVERAGE POOLS. THE WATER IS DUMPED ON THE MOBILE LAUNCHER AND INSIDE THE FLAME TRENCH IN LESS THAN 30 SECONDS.



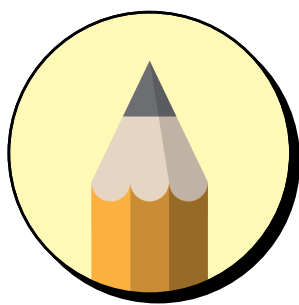
#### **FUN FACT**

THE IOP/SS PEAK FLOW RATE IS 11 MILLION GALLONS PER MINUTE, HIGH ENOUGH TO EMPTY ROUGHLY TWO OLYMPIC-SIZE SWIMMING POOLS IN ONE MINUTE!

# 4. FINISH THE PAD AND LAUNCH YOUR SLS!



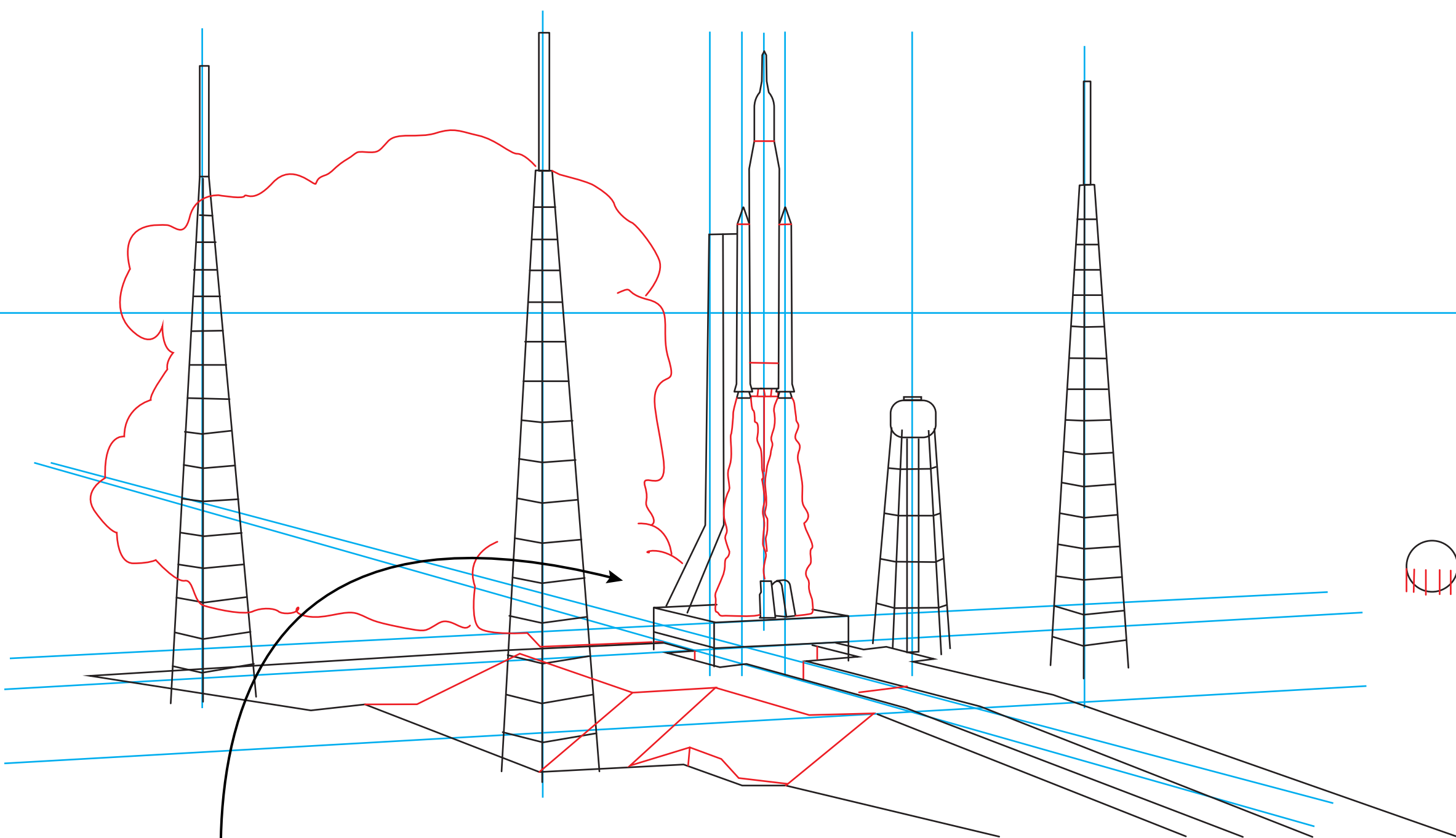
FILL IN BLACK LINES  
USING A **BLACK PEN**



DRAW NEW RED SHAPES  
USING A **PENCIL**



IN THIS PHOTO, SHOWING THE REVERSE  
ANGLE OF THE DRAWING, THE FLAME TRENCH  
AND FLAME DEFLECTOR CAN BE SEEN.



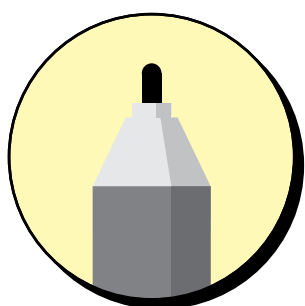
## FUN FACT

THE REFURBISHED FLAME TRENCH  
AND NEW FLAME DEFLECTOR WILL  
BE EXPOSED TO A PEAK  
TEMPERATURE OF 2200 DEGREES  
FAHRENHEIT DURING LAUNCH.

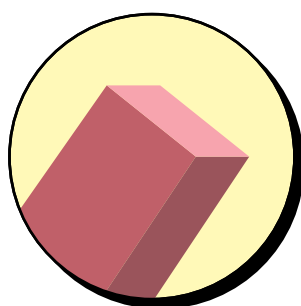
## FUN FACT

MORE THAN 96,000 BRICKS WERE  
INSTALLED ON THE WALLS OF THE  
FLAME TRENCH DURING THE  
REFURBISHMENT PROJECT.

# 5. FINALIZE YOUR BLACK LINES AND ERASE REMAINING BLUE LINES



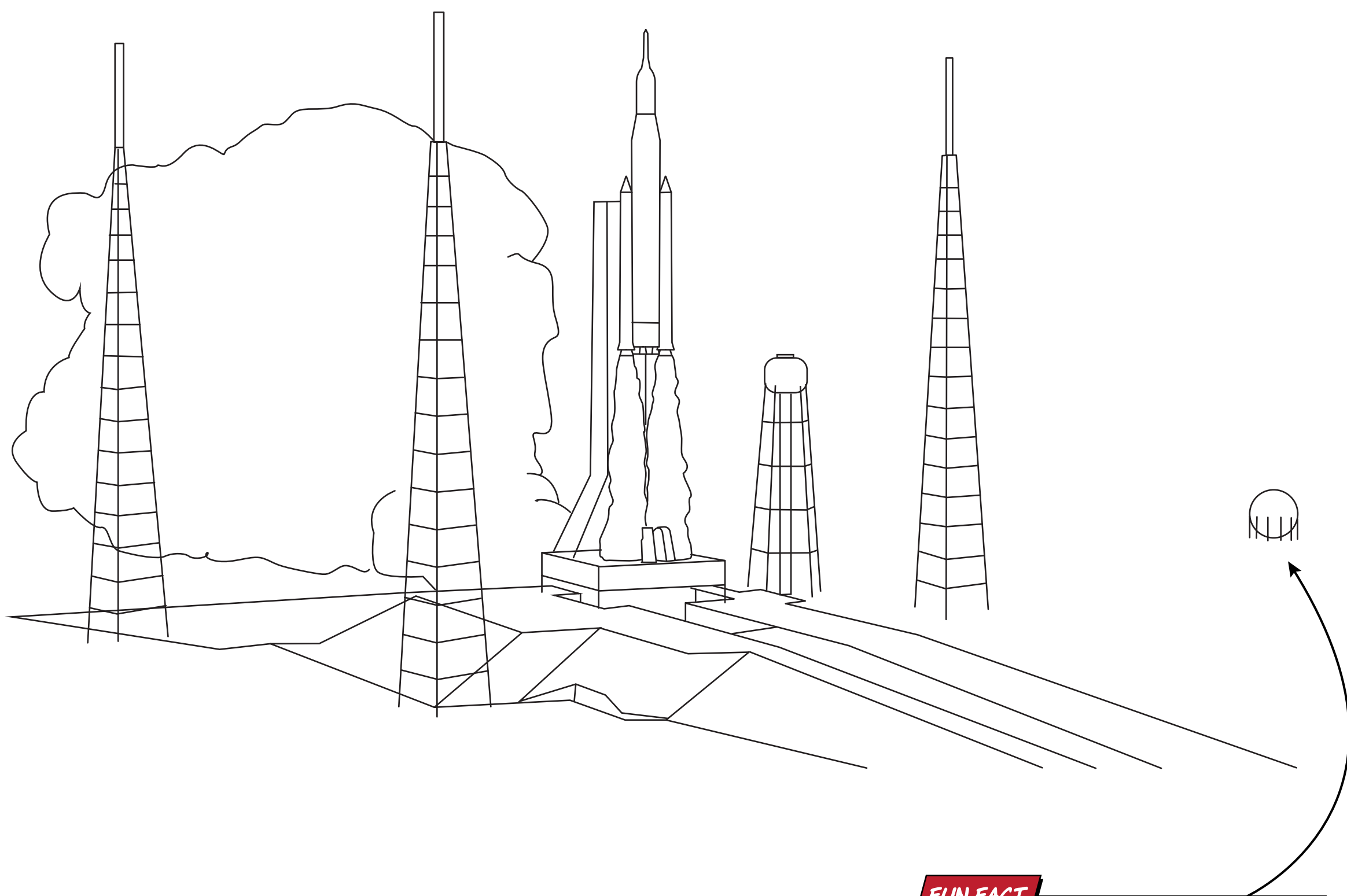
FILL IN BLACK LINES  
USING A **BLACK PEN**



ERASE THE  
REMAINING **PENCIL**  
LINES (IN BLUE)

## FUN FACT

ENGINEERS AND TECHNICIANS ARE PLANNING TO DO ALMOST ALL OF THEIR PREPARATIONS INSIDE THE VEHICLE ASSEMBLY BUILDING (VAB) BEFORE THE LAUNCHER GOES TO THE PAD. THIS MINIMIZES THE AMOUNT OF TIME THE VEHICLE IS EXPOSED TO THE ELEMENTS ON THE LAUNCH PAD PRIOR TO LIFT OFF.



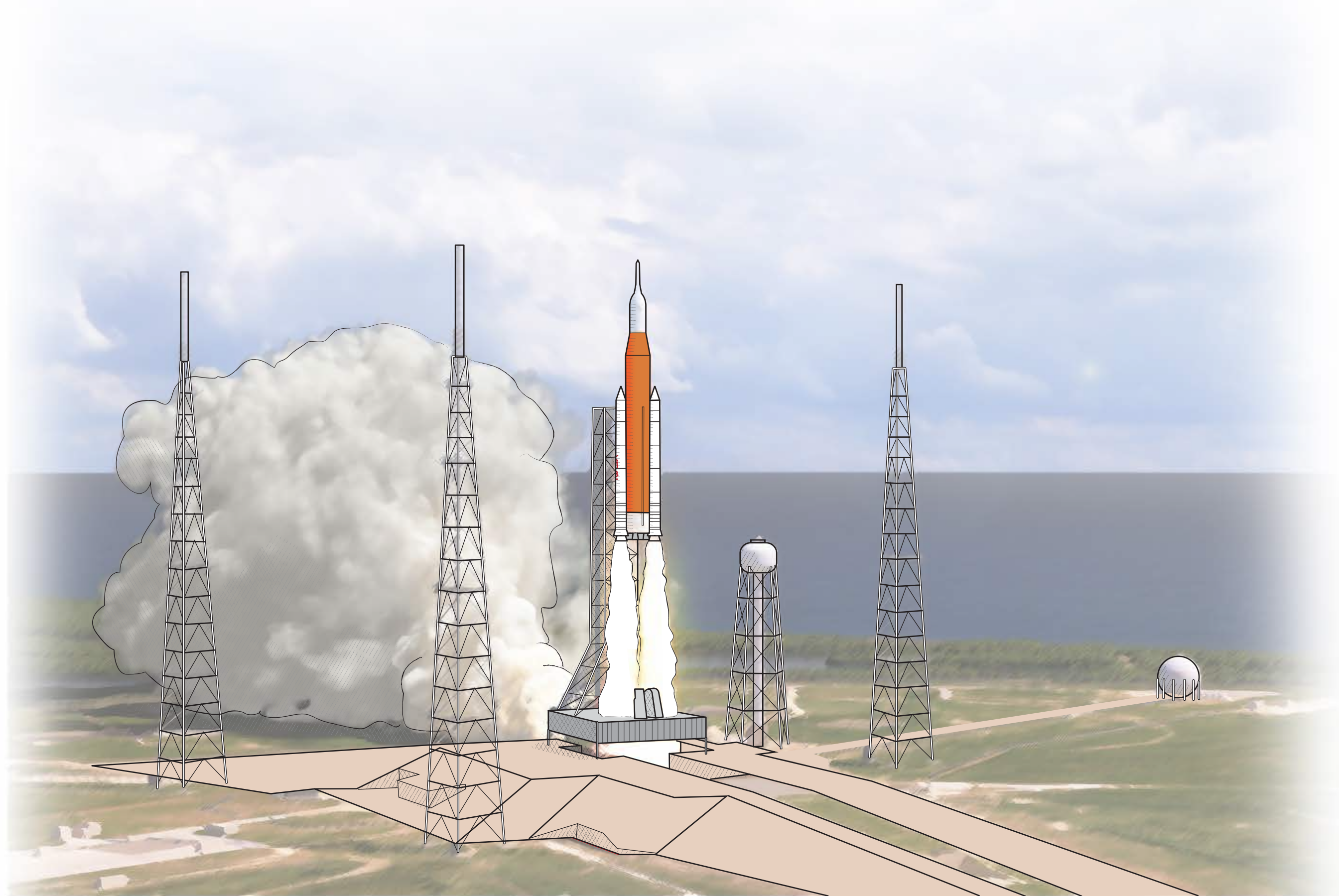
## FUN FACT

LIQUID OXYGEN AND LIQUID HYDROGEN TANKS STORE SUPER-COOLED PROPELLANTS AT MINUS 297 AND MINUS 423 DEGREES FAHRENHEIT, RESPECTIVELY.



## 6. FINISH AND SHARE!

FILL IN YOUR SLS AND PAD SURFACE COLORS, ADD SOME SHADING AND FINISH WITH THE ATLANTIC OCEAN AND HORIZON IN BACK!



MAKE IT YOUR OWN! TRY A NIGHT LAUNCH WITH THE MOON AND STARS!

DON'T FORGET TO SHARE YOUR MASTERPIECE ON SOCIAL MEDIA!

**#DRAWARTEMIS**

