

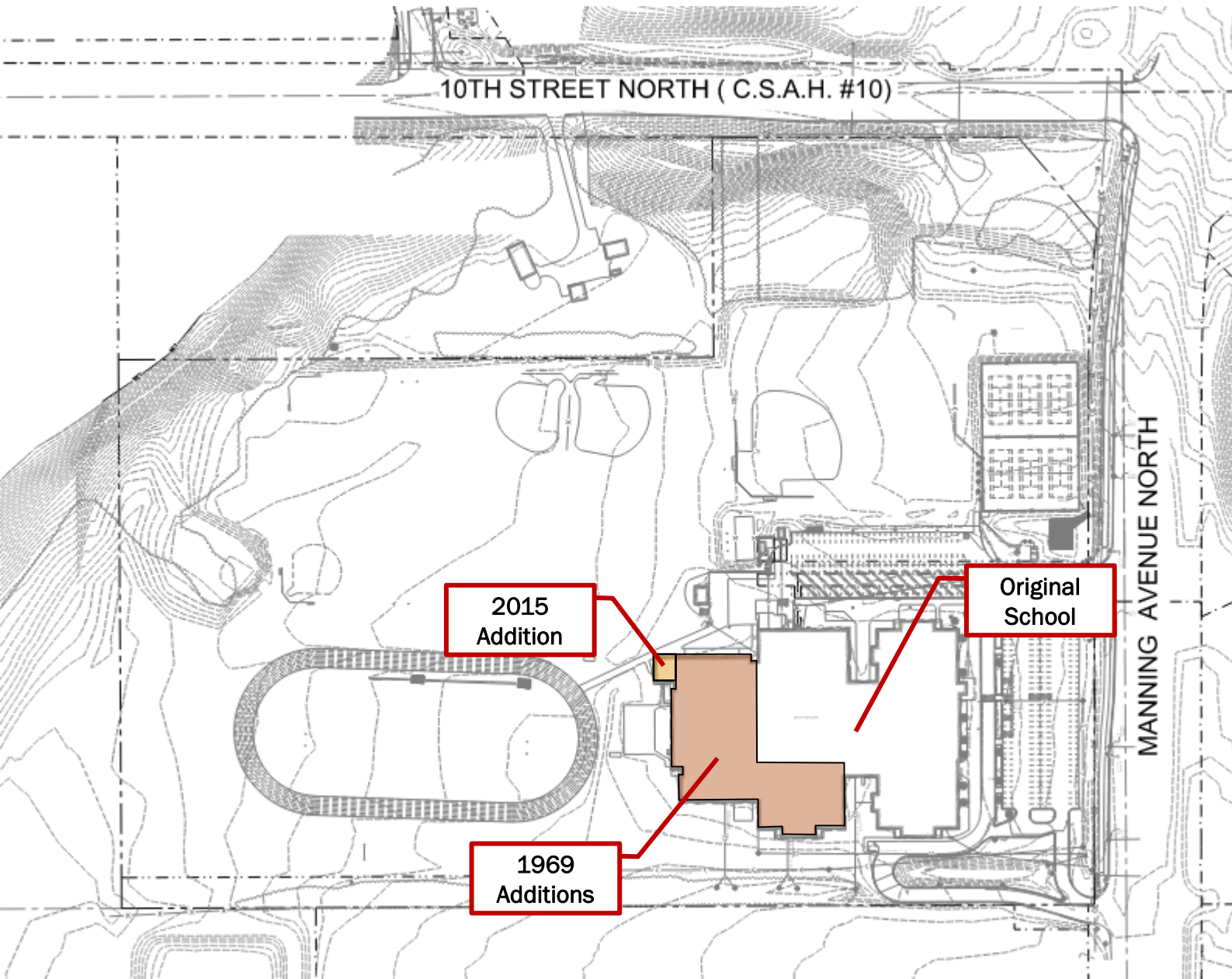


Oak-Land Middle School 2025-26 Addition and Renovation

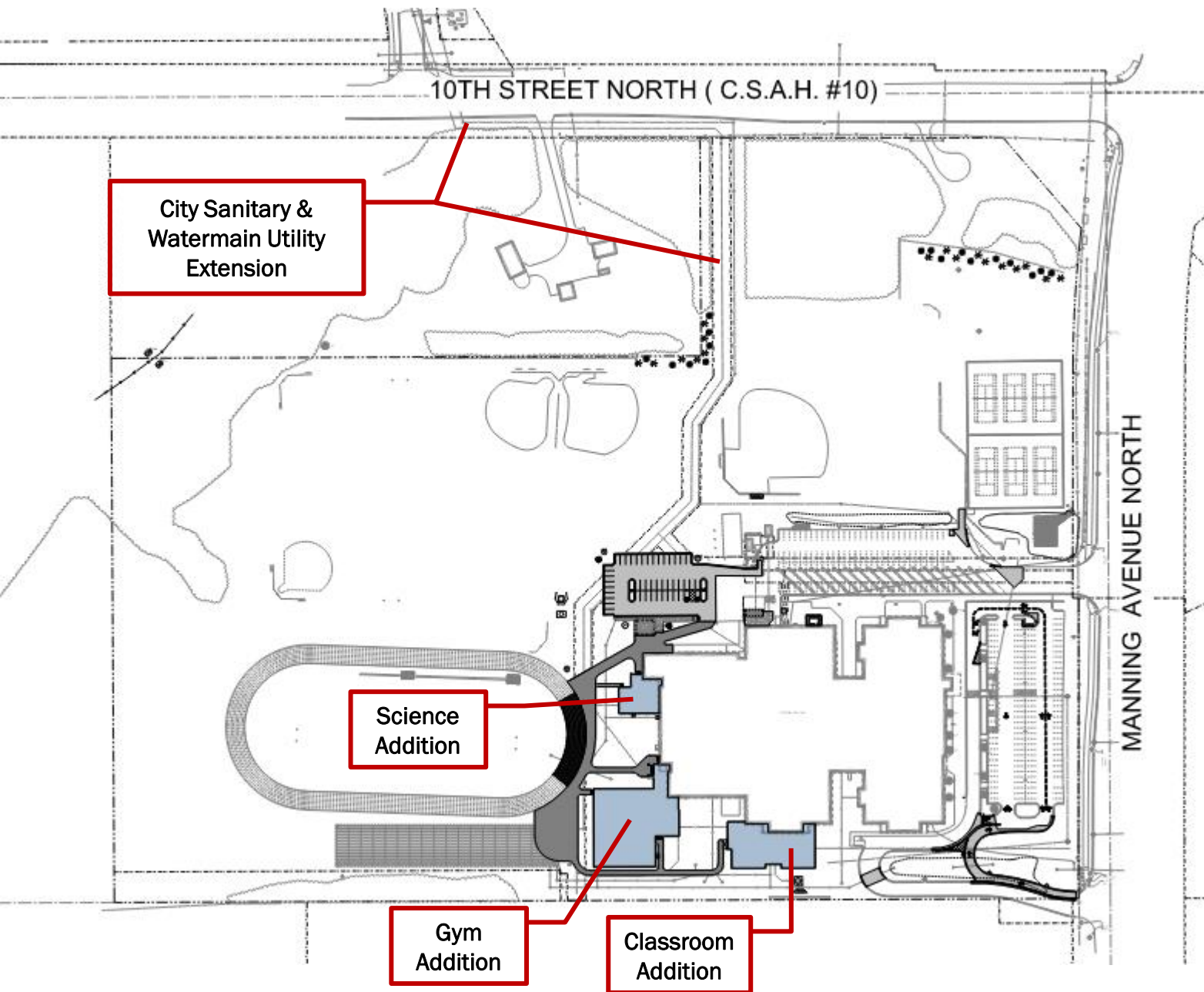
INDEPENDENT SCHOOL DISTRICT #834
820 MANNING AVENUE NORTH
LAKE ELMO, MN 55042

SITE HISTORY

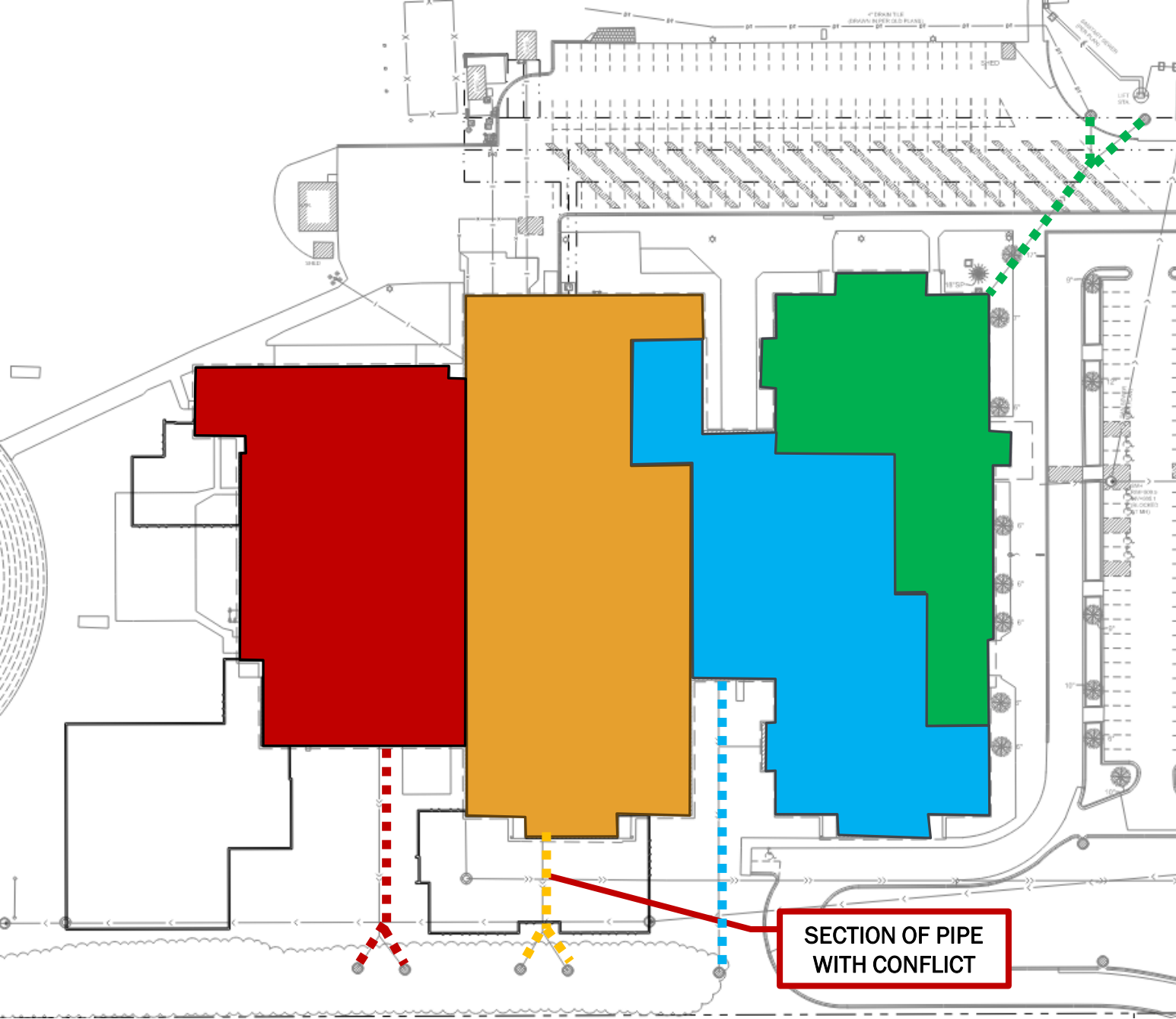
- 1966 THE ORIGINAL BUILDING WAS CONSTRUCTED
- 1969 THE WEST AND SOUTH ADDITIONS WERE CONSTRUCTED
- 2015 NORTHWESTERN CLASSROOM ADDITION



2025-26 PROPOSED ADDITION AND RENOVATION IMPROVEMNETS



- ADDITIONAL CLASSROOM WING
- SCIENCE WING
- NEW GYMNASIUM/FIELD HOUSE
- RENOVATION OF THE OLD GYMNASIUM INTO A MEDIA CENTER
- BRINGING CITY UTILITIES TO THE SITE (SANITARY & WATER)
- PROVIDING FIRE ACCESS LOOP AROUND THE SITE TO PROVIDE BETTER COVERAGE
- RE-WORKING ON-SITE QUEUING AND TRAFFIC FLOW TO REDUCE CONGESTION ON MANNING AVENUE NORTH
- PROVIDING UNDERGROUND INFILTRATION SYSTEM TO TREAT NEW ADDITIONS & PARKING LOT ALONG WITH SOME OF THE EXISTING SITE.



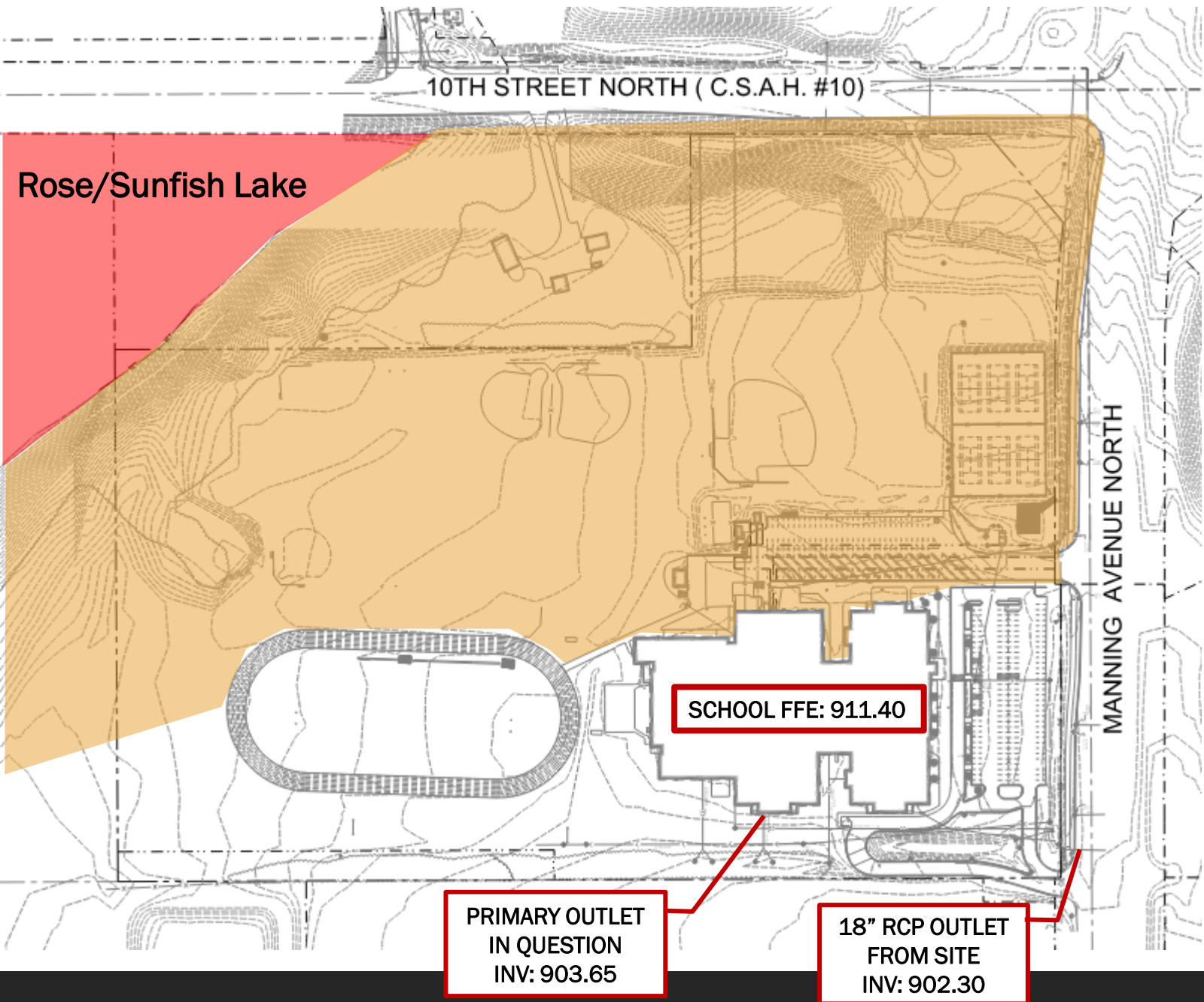
EXISTING ROOF DRAINAGE AND SCHOOL ADDITION CONTRUCTION IMPLICATIONS

- ALL EXISTING ROOF LEADERS DRAIN TO A SERIES OF DRYWELLS THROUGHOUT THE SITE
- THE ADDITION ON THE SOUTH OF THE BUILDING IS BEING PLACED OVER SOME OF THE EXTERIOR PIPING.
- THE ROOF DRAIN IN QUESTION IS A 8 INCH DIAMATER VITRIFIED CLAY PIPE MATERIAL. THIS IS NOT A BUILDING CODE APPROVE MATERIAL.
- THIS 8 INCH ROOF LEADER CURRENTLY SERVICES ABOUT 44,000 SF OF ROOF WHICH IS DEPICTED IN ORANGE
- CURRENTLY BUILDING CODE STANDARDS WOULD REQUIRE THIS PIPE TO BE A PVC PIPE WITH A DIAMETER OF 15 INCHES AND FOR THE PROPJECT TO BRING UP TO CODE ALL DOWNSTREAM FACILITIES

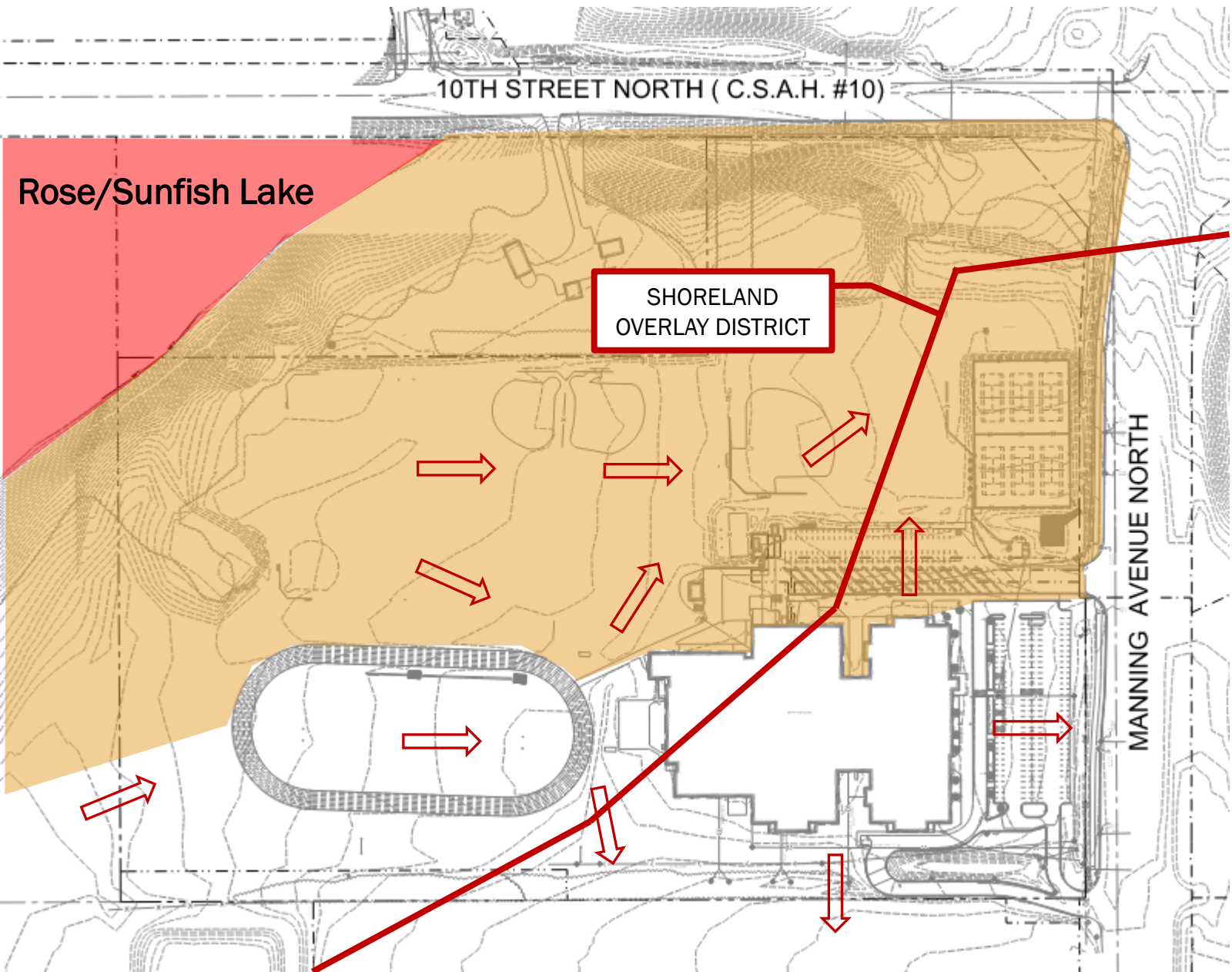
AFFECTED PLUMBING CODE SECTIONS

- SECTION 1101.4.4: UNDERGROUND BUILDING STORM DRAINS SHALL COMPLY WITH THE APPLICABLE STANDARDS REFERENCED IN TABLE 701.2 FOR UNDERGROUND DRAIN, WASTE, AND VENT PIPE.
- SECTION 310.5: [N]O FITTING, FIXTURE AND PIPING CONNECTION, APPLIANCE, DEVICE, OR METHOD OF INSTALLATION THAT OBSTRUCTS OR RETARDS THE FLOW OF WATER, WASTES, SEWAGE, OR AIR IN THE DRAINAGE OR VENTING SYSTEMS . . . SHALL BE USED UNLESS IT IS INDICATED AS ACCEPTABLE IN THIS CODE OR IS APPROVED IN ACCORDANCE WITH SECTION 301.2 OF THIS CODE.”
 - FINAL INTERPRETATION PB01060: NO, A DRAINAGE SYSTEM IS NOT SURCHARGED BY DESIGN WHEN THE INLET PIPE ENTERS A STORMWATER RETENTION POND ABOVE THE LEVEL ATTAINED BY THE WATER QUALITY VOLUME, WHICH EQUALS THE MPCA REQUIRED POND LEVEL OF 1800 CUBIC FEET PER ACRE OF DRAINAGE AREA PLUS THE VOLUME OF 1.0 INCH OF RUNOFF FROM THE NET INCREASE IN IMPERVIOUS SURFACES

PRIMARY EXTERIOR ISSUES



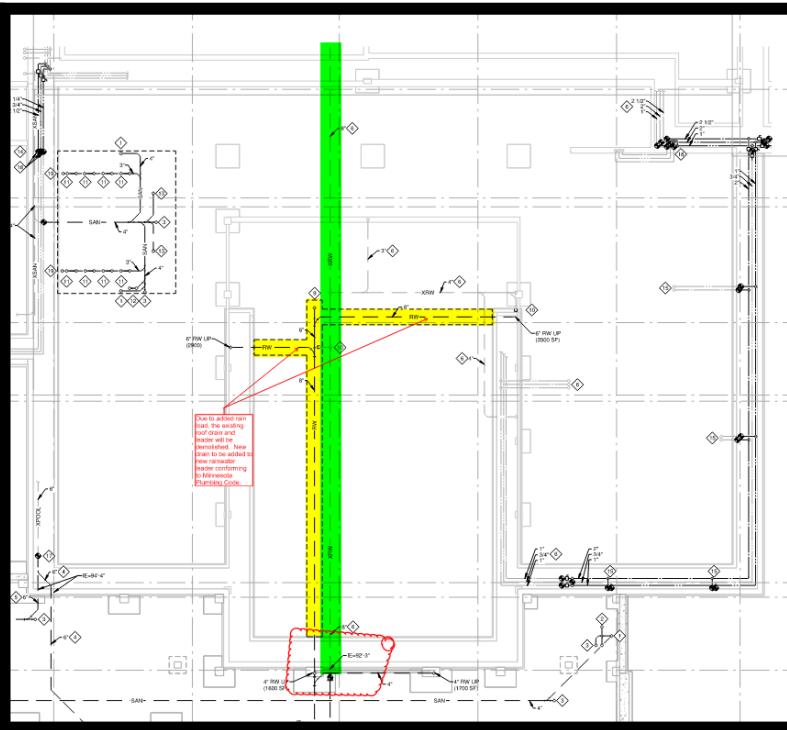
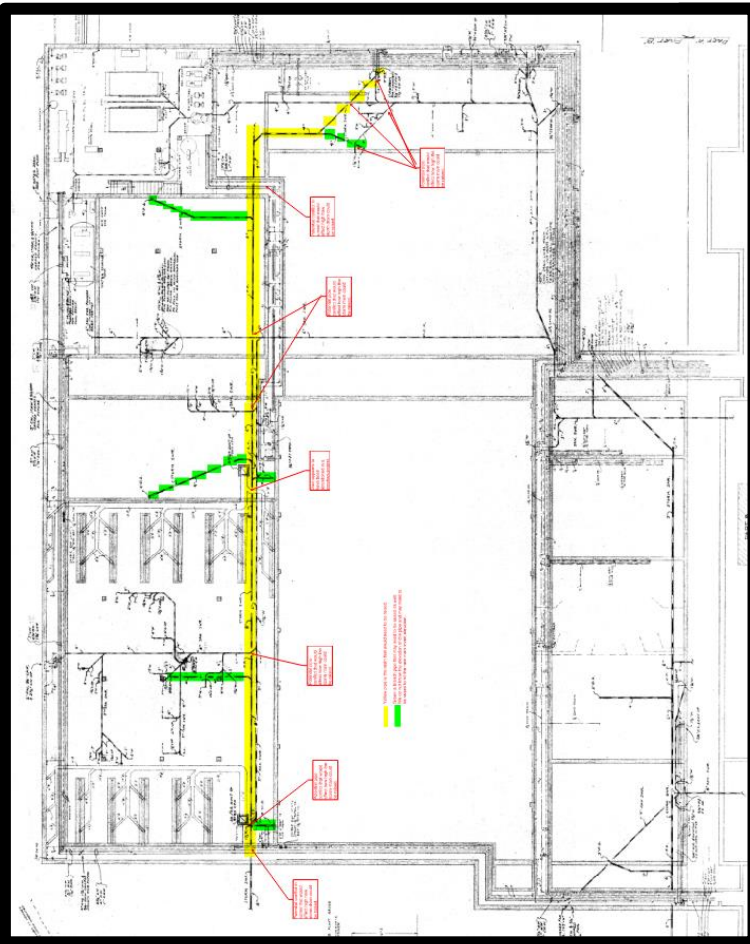
- EXTERIOR ELEVATION THE ROOF LEADER LEAVES THE BUILDING
 - BUILDING FINISH FLOOR ELEVATION = 911.40 (100' 00")
 - OUTLET ELEVATION = 903.65 (92' 3")
 - 7' 9" FROM FFE TO INVERT OF ROOF LEADER
- EXISTING STORMWATER INFRASTRUCTURE WAS DESIGNED PRIOR TO RECENT SUCHARGING CONCERNS
 - STANDARD DESIGN OF DRY WELLS ONLY HAVE TWO WAYS OF OUTLETTING
 - OPTION 1: EXFILTRATION WHICH OCCURS AT THE BOTTOM AND SIDES OF THE DRYWELL
 - OPTION 2: OVERFLOWING VIA THE RIM OF THE DRYWELL STRUCTURE THIS OCCURS WHEN THE DRYWELL IS UNABLE TO EXFILTRATE WATER AT THE RATE IT RECEIVES WATER.
 - DRYWELLS WERE NEVER DESIGNED TO PROVIDE WATER QUALITY VOLUME.
 - CURRENT DRYWELL SERVICING THE ROOF LEADER IN QUESTION PROVIDES ROUGHLY 200 CF OF WATER QUALITY VOLUME (WQV) WHICH WOULD BE SUFFICIENT FOR A ROOF WITH AN AREA 2,400 SF
- LACK OF LOCATIONS ON SITE WITH LOW ELEVATION.
 - ROSE/SUNFISH LAKE WATERSHED: CAN'T INCREASE RATES OR VOLUME TO THE LAKE IN ANY STORM EVENT.
 - LOWEST GRADE AT SOUTH PROPERTY LINE = 906.00
 - LOW STORM INVERT LEAVING THE SITE = 902.30
- POSSIBLE OUTLET LOCATION IS JUST OVER 500 FEET FROM EXISTING ROOF LEADER CONNECTION POINT



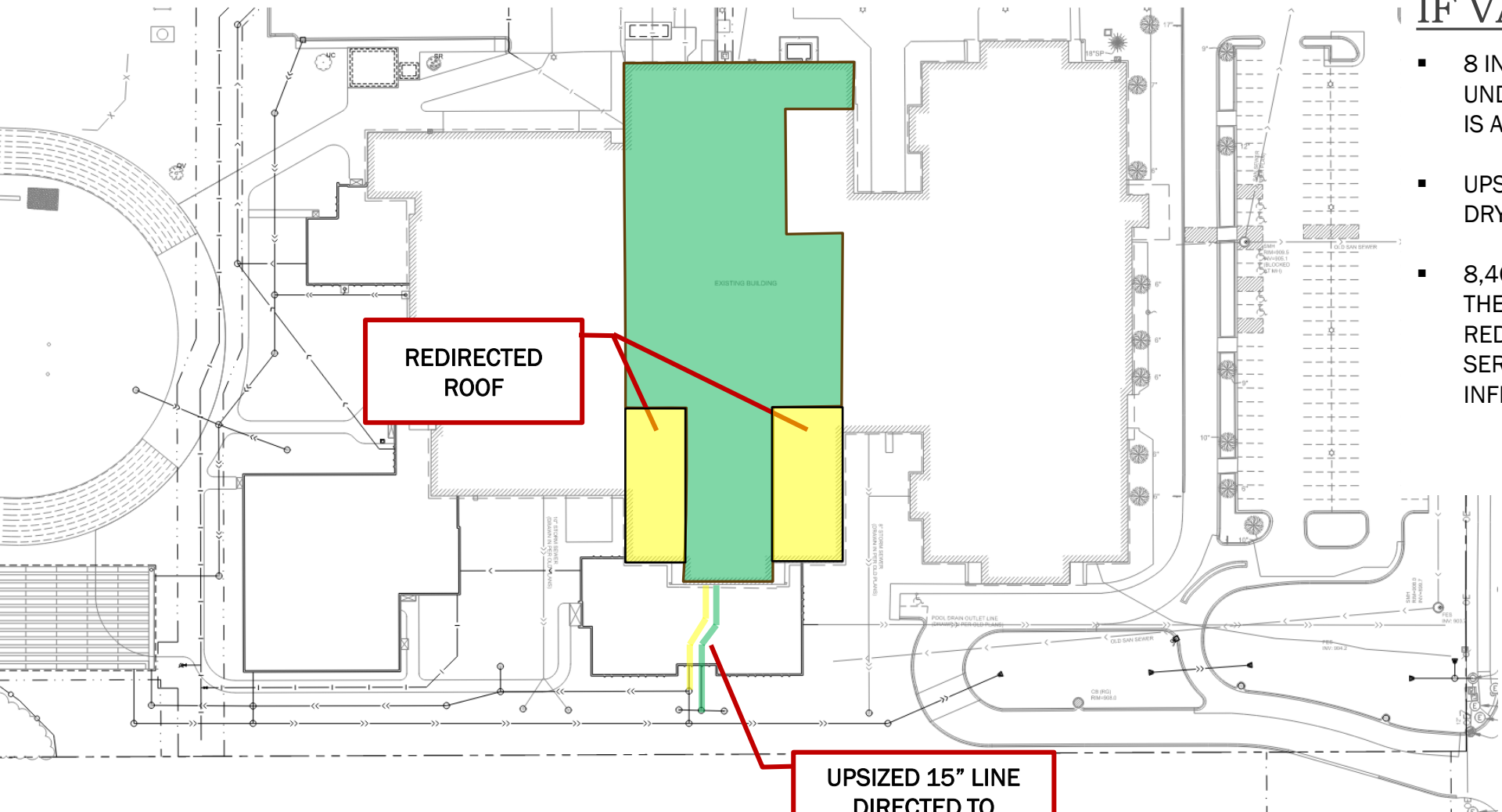
PRIMARY EXTERIOR ISSUES (CONTINUED)

- ROSE/SUNFISH LAKE - CURRENTLY EXPERIENCES PERIODIC FLOODING THROUGHOUT THE SPRING AND SUMMER AND IS REGULARLY PUMPED. VALLEY BRANCH WATERSHED DISTRICT IS THE AUTHORITY HAVING JURISDICTION (AHJ) PROHIBITS THE REDIRECTION OF STORMWATER RUNOFF TO THE LAKE
- SHORELAND DISTRICT - THE CITY OF LAKE ELMO HAS A SHORELAND OVERLAY DISTRICT FOR ROSE/SUNFISH LAKE. THIS LIMITS THE AMOUNT OF HARD SURFACE THAT CAN BE CREATED WITHIN THE OVERLAY DISTRICT. 15% OF THE OVERLAY DISTRICT CAN BE HARD SURFACE.
- EXISTING DRAINAGE PATTERNS - CURRENTLY DRAINS THE DRAIN FROM WEST TO EAST DIRECTING THE MAJORITY OF RUNOFF TOWARDS THE SCHOOL.
- CITY/COUNTY INFRASTRUCTURE - THE ONLY CITY/COUNTY INFRASTRUCTURE CURRENTLY ADJACENT TO THE SITE IS STORM SEWER AND IT WAS ONLY DESIGNED TO SERVICE THE DITCH INFRASTRUCTURE ADJACENT TO THE COUNTY ROADWAYS. THIS MEANS THE STORM SEWER INFRASTRUCTURE IS ALL RELATIVELY SHALLOW ADJACENT TO THE SCHOOL SITE.
- PROPOSED INFRASTRUCTURE - THERE IS A LARGE AMOUNT OF STORMWATER INFRASTRUCTURE BEING INSTALLED ON THE SOUTH END OF THE PROJECT TO TREAT/DIRECT THE RUNOFF FROM THE NEW IMPROVEMENTS.

PRIMARY INTERIOR ISSUES

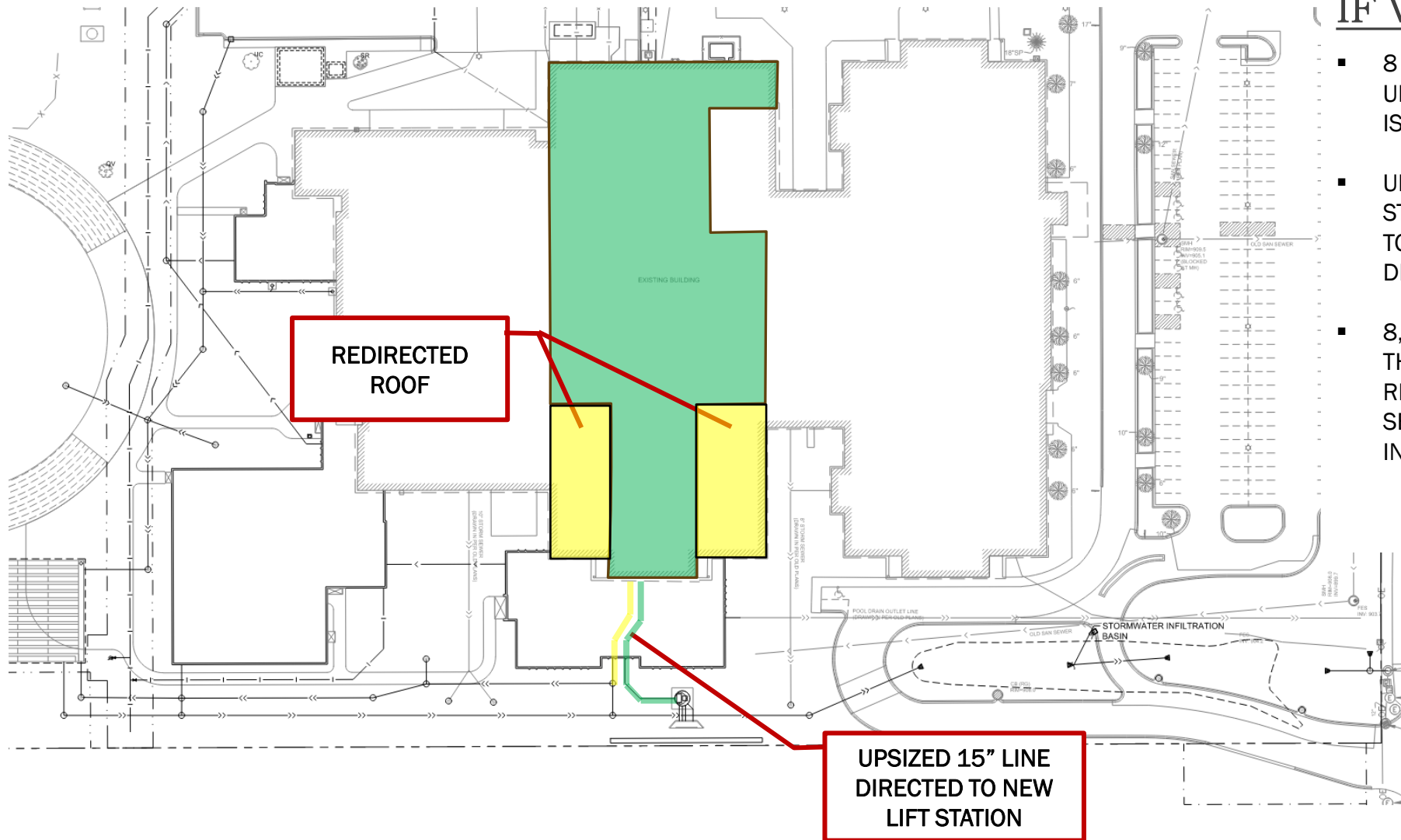


- 8" PIPE RUNS THE WHOLE LENGTH OF THE BUILDING FROM NORTH END TO THE SOUTH END.
- THERE ARE LARGE NUMBER OF KNOWN CONFLICTS WITH RAISING THE STORM PIPE SUCH AS CONDUITS, SANITARY PIPING, OR EXISTING FOOTINGS.
- NUMEROUS BRANCH STORM DRAINS THAT ENTER VARIOUS CLASS ROOM OUTSIDE THE SCOPE OF THE PROJECT. THESE SMALLER OFF SHOOTS WERE NOT DESIGNED TO THE CURRENT PLUMBING CODES FOR RAINFALL RATES.
 - ASSUMING THESE COULD BE WORKED AROUND, THE MOST THE MAIN NORTH/SOUTH LINE COULD BE RAISED IS 36 INCHES
- THE CONSTRUCTION UNKNOWNNS THAT WOULD COME UP IF THE PROJECT TRIED TO RAISE THE ROOF LEADER.



PROPOSED CONDITIONS IF VRAINCE IS APPROVED

- 8 INCH VCP IS REVISED TO A 15 INCH PVC UNDER NEW ADDITION, DOWN STREAM PIPING IS ADJUSTED ACCORDNGLY
- UPSIZED PIPE CONNECTS BACK INTO EXISTING DRYWELLS
- 8,400 SF OF EXISTING ROOF THAT GOES TO THE EXISTING 8 INCH LINE WILL BE REDIRECTED TO A NEW ROOF LEADER SERVICED BY A NEW UNDERGROUND INFILTRATION SYSTEM.



PROPOSED CONDITIONS IF VARAINCE IS DENIED

- 8 INCH VCP IS REVISED TO A 15 INCH PVC UNDER NEW ADDITION, DOWN STREAM PIPING IS ADJUSTED ACCORDNGLY
- UPSIZED PIPE CONNECTS INTO A NEW LIFT STATION STRUCTURE DESIGNED TO BE ABLE TO PUMP 2,900 GALLONS PER MINUTE AND DISCHARGES ON GRADE.
- 8,400 SF OF EXISTING ROOF THAT GOES TO THE EXISTING 8 INCH LINE WILL BE REDIRECTED TO A NEW ROOF LEADER SERVICED BY A NEW UNDERGROUND INFILTRATION SYSTEM.

CONCLUSION

BECAUSE THE ROOF WATER FLOWING TO THE DRY WELL IS AN EXISTING CONDITION, AND THIS CONDITION IS BEING IMPACTED ONLY DUE TO THE PROPOSED BUILDING CLASSROOM ADDITION LOCATION, TO AVOID THE HARDSHIPS RELATED TO CONSTRUCTING AND MAINTAINING A LIFT STATION FOR THIS STORM WATER, WE ARE REQUESTING A VARIANCE BE GRANTED TO THE RULE FOR SURCHARGING PIPES FOR THIS PARTICULAR SITUATION WITH THE DRYWELL WHILE PROVIDING A REDUCTION IN THE ROOF AREA TO THE EXISTING DRYWELL TO HELP REDUCE POTENTIAL SURCHARGING. WE ARE NOT AWARE OF ANYONE THAT WOULD BE ADVERSELY IMPACTED BY THIS VARIANCE.

Questions?

Thank You
