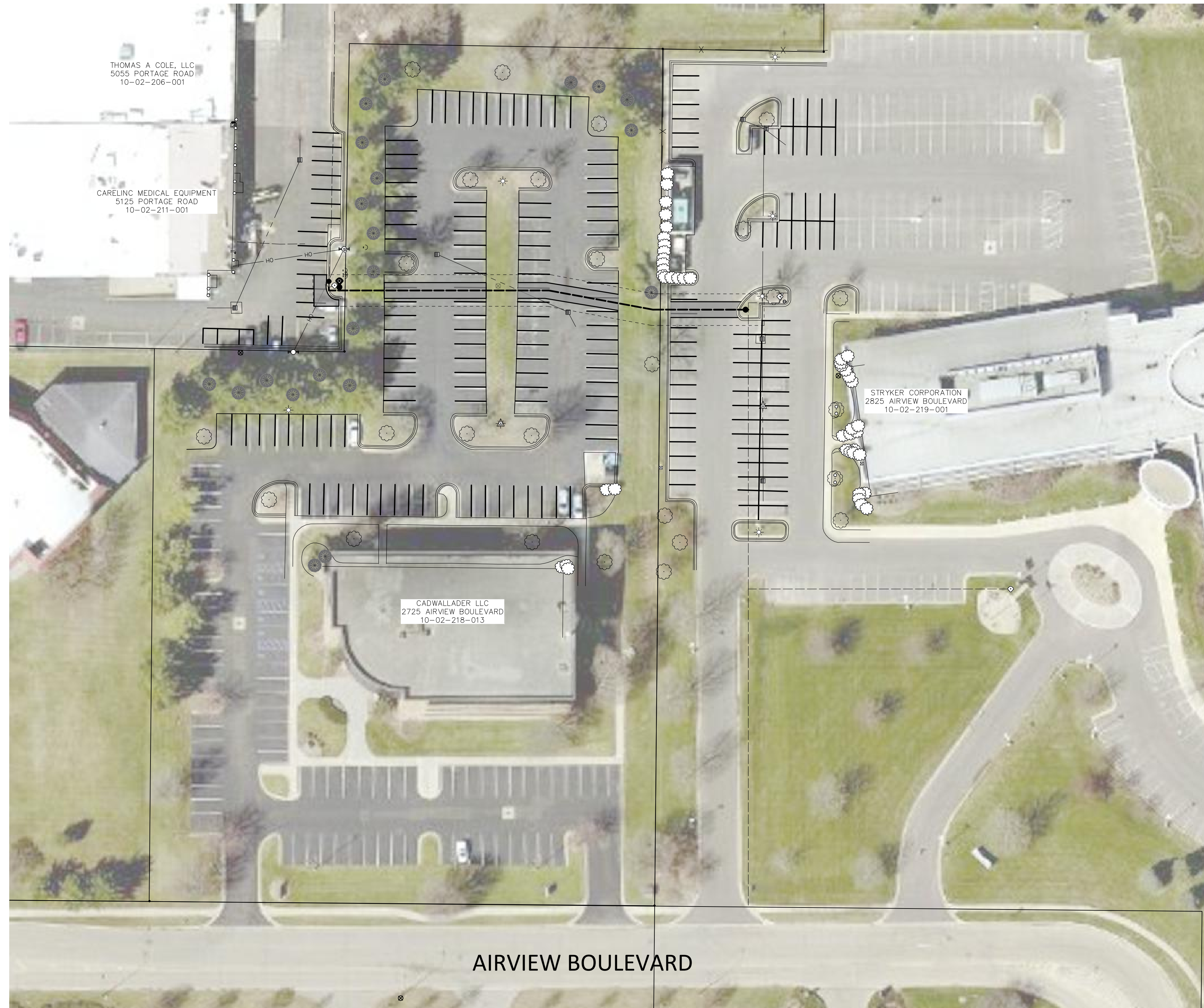
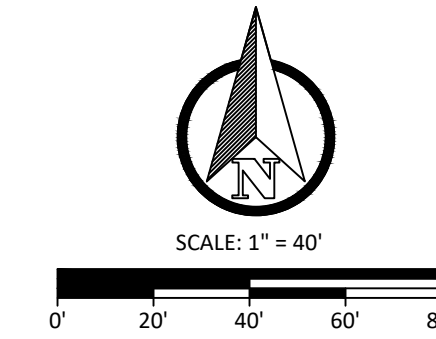


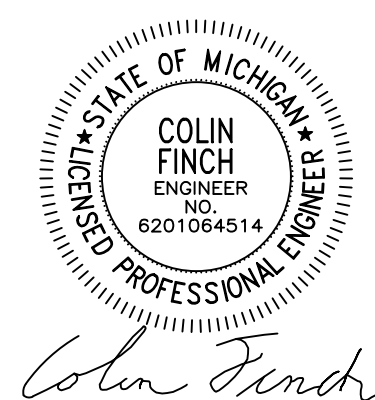
**CITY OF KALAMAZOO
KALAMAZOO COUNTY, MICHIGAN**

AIRPORT WATERMAIN LOOP



OWNER
CITY OF KALAMAZOO
JAMIE BARNIER
(269) 337-8000
BARNIERA@KALAMAZOOCITY.ORG

DESIGN ENGINEER
VK CIVIL
COLIN FINCH, P.E.
616-277-2185
COLIN@VKCIVIL.COM



Know what's below.
Call before you dig.

NOTE:
ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE THE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

NO.	DATE	REVISION	BY
1	03/13/24	PRELIMINARY PLAN	NEF
2	04/22/24	80% PLAN	NEF
3	04/25/24	FOR PERMITS	NEF
4	06/13/24	PER EGLE	NEF

CITY OF KALAMAZOO
KALAMAZOO COUNTY, MICHIGAN
**AIRPORT WATERMAIN LOOP
COVER**

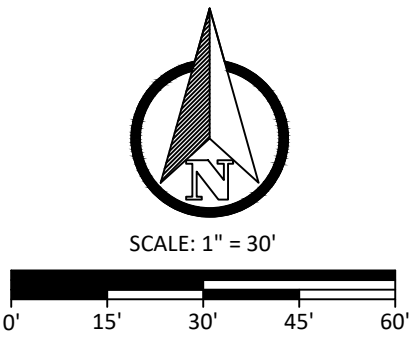


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FILE NO. 1326
CHECKED CMF
Sheet No. COVER

SYMBOL LEGEND

- EXISTING TREE
- TREE STUMP
- BOLLARD
- LIGHT POLE
- POWER POLE
- CLEANOUT
- SANITARY SEWER MANHOLE
- STORM CATCH BASIN
- STORM MANHOLE
- STORM FLARED END SECTION
- STORM CULVERT
- SIGN
- HYDRANT
- VALVE
- MAILBOX
- FLOW DIRECTION ARROW
- COMMUNICATION STRUCTURE
- ELECTRICAL
- SECTION CORNER
- PROPERTY CORNER - SET
- PROPERTY CORNER - FOUND
- BENCHMARK/CONTROL POINT
- SOIL BORING
- WELL



LINE AND HATCH LEGEND

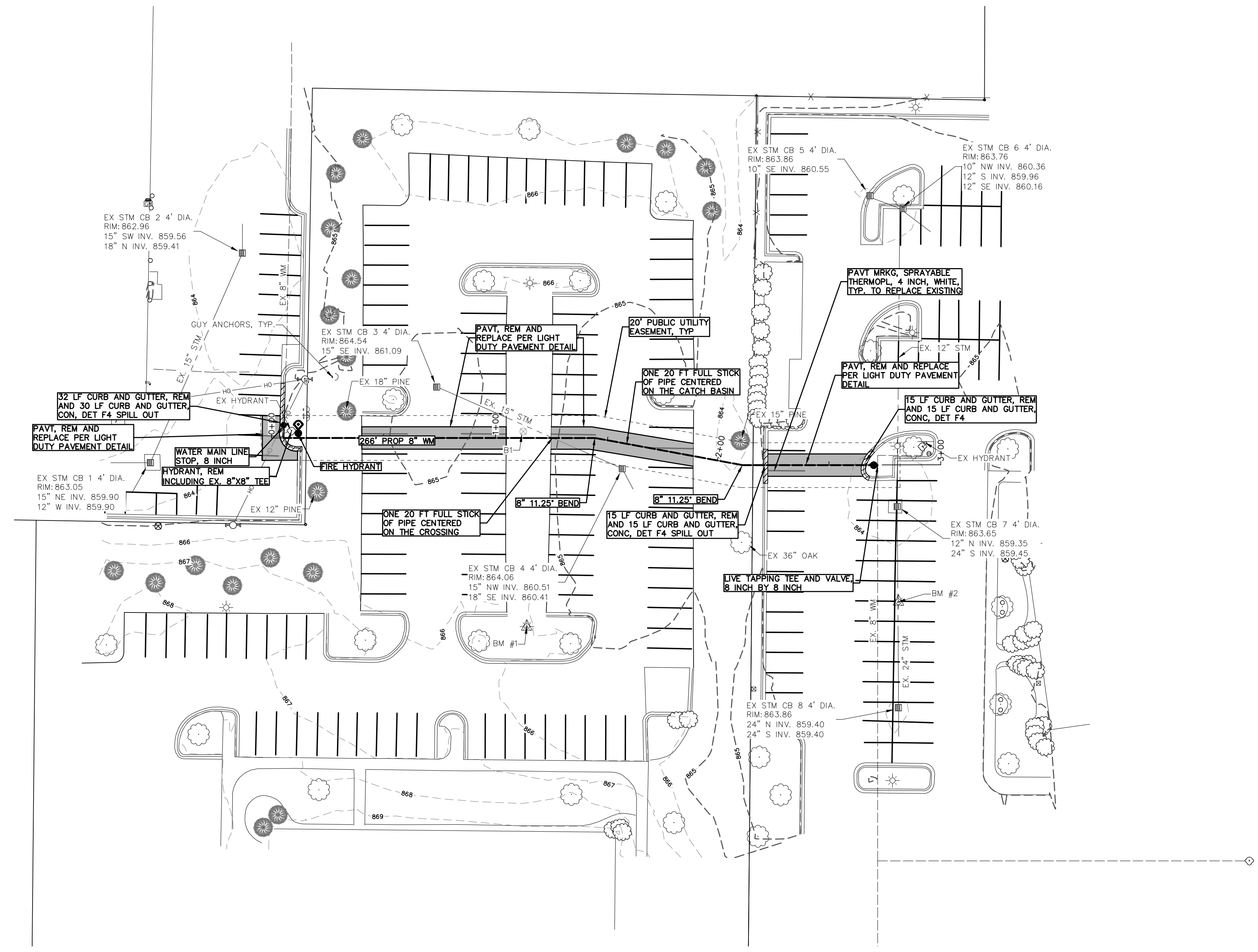
- LANDSCAPING
- EXISTING OVERHEAD ELECTRIC
- PROPOSED OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- PROPOSED UNDERGROUND ELECTRIC
- EXISTING GAS
- PROPOSED GAS
- EXISTING COMMUNICATIONS
- PROPOSED COMMUNICATIONS
- EXISTING FENCE
- PROPOSED FENCE
- RIGHT OF WAY
- EASEMENT
- SETBACK
- EXISTING GRAVEL
- PROPOSED GRAVEL
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING FORCEMAIN
- PROPOSED FORCEMAIN
- EXISTING WATERMAIN
- PROPOSED WATERMAIN
- EXISTING HOT MIXED ASPHALT
- PROPOSED HOT MIXED ASPHALT
- EXISTING GRAVEL
- PROPOSED GRAVEL
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING DRAIN

- BORING - B1 2/22/2024
- 0-12" TOPSOIL - DARK BROWN-MOIST-LOOSE TO MEDIUM DENSE (SC)
 - 12"-16" FILL - FINE TO COARSE SAND WITH SILT AND GRAVEL - FREQUENT CLAYEY LOCATIONS OR SHOWING ALL UTILITIES IN THE AREA. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF EXISTING UTILITY INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY FOR ACCURACY, LOCATION, AND CONDITION.
 - 16"-28" FILL - SANDY LEAN CLAY - MOIST-MEDIUM DENSE (SF-SM)
 - 28"-30" FILL - SANDY LEAN CLAY - DARK BROWN - VERY STIFF (CL)
 - 30"-36" FILL - FINE TO COARSE CLAYEY SAND WITH SILT - FREQUENT SANDY CLAY SEAMS-BROWN-MOIST (SC)
 - 36"-54" SANDY LEAN CLAY - BROWN - VERY STIFF (CL)
 - 54"-72" FINE TO MEDIUM CLAYEY SAND - BROWN - MOIST - MEDIUM DENSE (SC)
 - GROUNDWATER NOT ENCOUNTERED

- UTILITY PLAN NOTES:
- 1) CONTRACTOR SHALL CONTACT PRIVATE AND PUBLIC UTILITY COMPANIES IF ANY COORDINATION IS NEEDED BETWEEN PROPOSED WORK AND EXISTING UTILITIES.
 - 2) UTILITIES SHOWN (IF ANY) ARE APPROXIMATE LOCATIONS DERIVED FROM MEASUREMENTS OR AVAILABLE RECORDS. THIS MAP IS NOT TO BE INTERPRETED AS SHOWING EXACT LOCATIONS OR SHOWING ALL UTILITIES IN THE AREA. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF EXISTING UTILITY INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY FOR ACCURACY, LOCATION, AND CONDITION.
 - 3) ALL WATERMAIN TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF KALAMAZOO STANDARD SPECIFICATIONS FOR WATER MAIN AND SERVICE INSTALLATION 2021 AND EGLE STANDARDS.
 - 4) CONTRACTOR SHALL COVER ALL WATERMAIN AND FITTINGS WITH POLYWRAP. POLYWRAP MUST BE TAPED AND SEALED AT EACH JOINT. TEARS AND PUNCTURES MUST BE SEALED PRIOR TO BACKFILL.
 - 5) ALL 6" UNDERDRAIN TO BE CORRUGATED PLASTIC PIPE WITH SOCK, ADS N-12 OR APPROVED EQUAL.
 - 6) ALL STORM SEWER SHALL BE SMOOTH LINED CORRUGATED PLASTIC PIPE, ADS N-12 OR EQUAL, UNLESS OTHERWISE LABELED ON THE PLANS.
 - 7) ALL EXISTING CASTINGS FOR STRUCTURES TO BE ADJUSTED OR RECONSTRUCTED TO GRADE SHALL BE FIELD VERIFIED AT THE TIME OF CONSTRUCTION AND MARKED SUITABLE FOR SALVAGE AND REUSE OR REPLACED.
 - 8) ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
 - 9) CATCH BASINS WITHIN CONCRETE HEAD CURB SHALL HAVE EJ 7045 CASTINGS.
 - 10) CATCH BASINS WITHIN BIT VALLEY CURB SHALL HAVE EJ 7065 CASTINGS WITH M1 GRATE.
 - 11) CATCH BASINS WITHIN PAVED AREAS SHALL HAVE EJ 1020M1 RADIAL FLATE GRATE CASTINGS.
 - 12) STORM SEWER MANHOLES SHALL HAVE EJ 1020 CASTINGS WITH SOLID COVERS.
 - 13) STORM SEWER YARD DRAINS SHALL HAVE EJ 650B CASTINGS.
 - 14) ROOF DRAINS SHALL BE PVC SCH-40.
 - 15) CONTRACTOR IS TO UNCOVER AND VERIFY ALL TAP LOCATIONS AND INVERTS. LOCATION AND INVERT DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION FOR RESOLUTION PRIOR TO CONTINUING WORK.
 - 16) SANITARY AND STORM STRUCTURES SHALL BE PRECAST AND HAVE A MAXIMUM OF 2 ADJUSTING RINGS FOR FINISH GRADE ADJUSTMENT.
 - 17) THE CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICE TO ALL ADJOINING PROPERTIES.



Colin Finch



CONTROL MEASURE KEY

- 2 P** SELECTIVE GRADING & SHAPING, PERMANENT
- 7 P** HYDROSEEDING, PERMANENT. TYPICAL IN ALL NON-PAVED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES
- 14 t** AGGREGATE COVER, TEMPORARY. TYPICAL ON ALL STREETS DISTURBED BY CONSTRUCTION ACTIVITIES
- 15 P** PAVING, PERMANENT, TYPICAL ON ALL STREETS DISTURBED BY CONSTRUCTION ACTIVITIES.
- 36 t** SILTSACK, TEMPORARY, TYPICAL AT ALL CATCH BASINS WITHIN OR DISTURBED BY CONSTRUCTION ACTIVITIES
- FIL-8 t** FILTER BMP EXHIBIT 8A, SILT FENCE, TEMPORARY. TYPICAL IN ALL AREAS, ESPECIALLY ADJACENT TO STREAMS, PONDS, ETC. AND ALONG PROJECT UNITS.
- TP** TREE PROTECTION, INCLUDES TUNNELING UNDER TREES, TYPICAL FOR ALL TREES ENCOUNTERED UNLESS TREE REMOVAL IS DIRECTED BY THE ENGINEER.

GENERAL SOIL EROSION MEASURES (APPLICABLE TO ENTIRE SITE)

7 P **15 P** **FIL-8 t**
14 t **36 t** **TP**

LEGEND

34 t MICHIGAN UNIFIED KEYING SYSTEM (MUKS)

BEST MANAGEMENT PRACTICE (BMP)

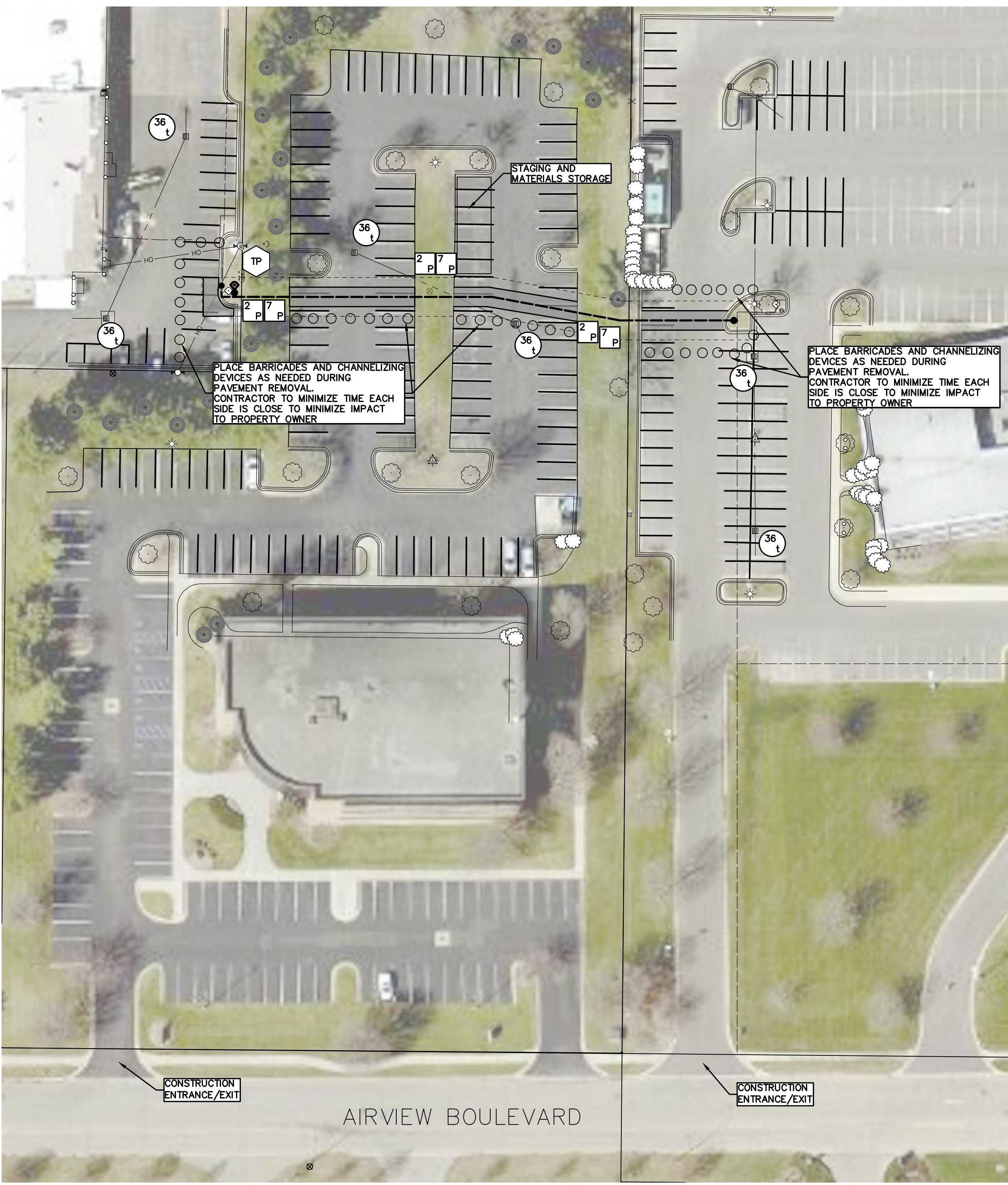
t TEMPORARY CONTROL MEASURE (DURING CONSTRUCTION AND UNTIL PERMANENT MEASURES ARE ESTABLISHED)

P PERMANENT CONTROL MEASURE

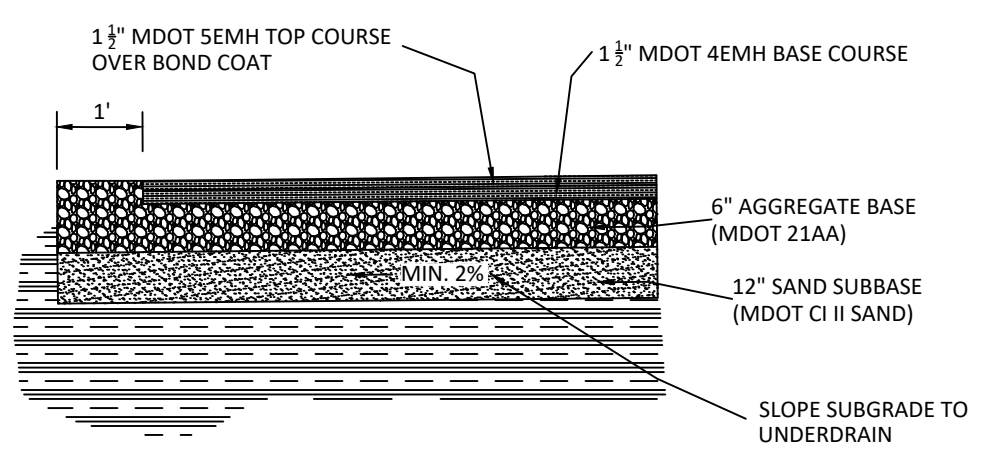
NOTE:

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES INDICATED ARE KNOWN OR ANTICIPATED CONTROL MEASURES NEEDED DURING TYPICAL CONSTRUCTION ACTIVITIES. ADDITIONAL CONTROL MEASURES MAY BE REQUIRED DUE TO CONSTRUCTION ACTIVITY, LOCATION, SOIL TYPE, WEATHER EVENT, ETC. ALL ADDITIONAL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE INCIDENTAL TO THE CONSTRUCTION CONTRACT.

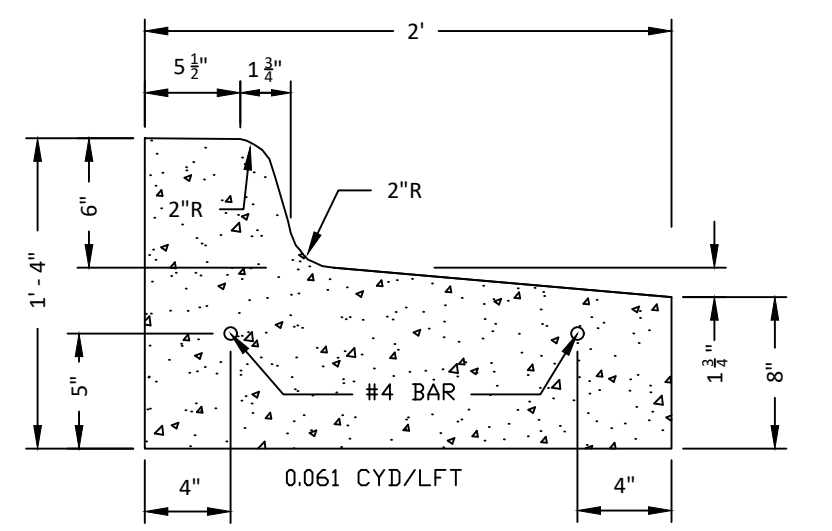
- SITE LAYOUT NOTES:**
- 1) ALL WORK SHALL BE DONE TO ALL FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS.
 - 2) ALL WORK WITHIN ROW SHALL BE DONE IN ACCORDANCE WITH LOCAL ROADWAY JURISDICTION REQUIREMENTS.
 - 3) CONTRACTOR SHALL RESTORE ALL STREET SURFACES, DRIVEWAYS, CULVERTS, ROADSIDE DRAINAGE, AND OTHER INFRASTRUCTURE DISTURBED OR DAMAGED DUE TO CONSTRUCTION ACTIVITIES TO MATCH EXISTING CONDITIONS.
 - 4) ALL DEBRIS SHALL BE REMOVED FROM THE SITE, AND NO STOCKPILING ON SITE SHALL BE ALLOWED UNLESS APPROVED BY OWNER.
 - 5) THE CONTRACTOR SHALL LIMIT SAWCUT AND PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE REQUIRED OR AS SHOWN. ALL PAVEMENTS TO BE SAWCUT AND REMOVED TO FULL DEPTH AT ALL PAVEMENT LIMITS OR EXISTING JOINTS. IF ANY DAMAGE IS INCURRED TO ANY OF THE SURROUNDING PAVEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR AT NO ADDITIONAL COST.
 - 6) CONTRACTOR SHALL CONTACT MISS DIG THREE WORKING DAYS BEFORE YOU DIG. CALL MISS DIG AT 1-800-482-7171 OR 811.
 - 7) ALL WORK SHALL BE DONE TO THE MICHIGAN HANDICAPPED ACCESSIBILITY CODE AND THE AMERICANS WITH DISABILITIES ACT.
 - 8) ADA PARKING SPACES SHALL BE MARKED WITH APPROVED PAVEMENT SYMBOL. MARK ADA SPACES WITH 4" BLUE PAINT AND SIGNS PER MMUTCD.
 - 9) CONTRACTOR SHALL ENSURE ALL ADA RAMPS AND ACCESS MEET CURRENT ADA STANDARDS. IF IT IS DISCOVERED THAT ANY ITEMS WILL NOT MEET ADA STANDARDS IT SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION.
 - 10) ALL SIGNAGE SHALL BE PER MDOT AND MMUTCD STANDARDS.
 - 11) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, DEMOLITION PERMITS, TAP FEES, ASSESSMENTS, UTILITY PERMITS, ROW PERMITS, BONDS, INSURANCE, OR OTHER FEES ASSOCIATED WITH CONSTRUCTION.
 - 12) SITE CONCRETE TO HAVE A COMPRESSIVE STRENGTH OF A MINIMUM 4000 PSI AND SHALL HAVE LIMESTONE AGGREGATE AND SHALL HAVE A 5.5%-8% AIR ENTRAINMENT WITH A BROOM FINISH.
 - 13) INSTALL EXPANSION JOINTS AT ALL LOCATIONS WHERE CONCRETE ABUTS HMA PAVEMENT.
 - 14) CONTRACTOR SHALL REVIEW THE GEOTECHNICAL AND ENVIRONMENTAL REPORTS FOR THE SITE AND INCORPORATE INTO THEIR CONSTRUCTION MEANS AND METHODS.
 - 15) THESE PLANS HAVE BEEN DEVELOPED FOR ELECTRONIC FIELD SURVEY LAYOUT. DIMENSIONS SHOWN ARE FOR GRAPHIC PRESENTATION ONLY AND SHOULD NOT BE USED FOR LAYOUT. CONTACT THE ENGINEER IF ANY DISCREPANCIES BETWEEN THE PLAN AND ELECTRONIC DATA ARE DISCOVERED.
 - 16) THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LIGHTS, BARRICADES, FLAGMEN, ETC. AS REQUIRED TO PERFORM THE WORK. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.
 - 17) THE CONTRACTOR SHALL PROTECT LOCATION OF ALL PROPERTY MARKERS AND BENCHMARKS.
 - 18) THE CONTRACTOR IS RESPONSIBLE FOR ALL SIGNS, BARRICADES, AND SAFETY FENCES TO DETER PEOPLE FROM ENTERING THE WORK AREA AND FOR MAINTAINING AND PROTECTING THE FLOW OF VEHICULAR AND PEDESTRIAN TRAFFIC AROUND THE JOB SITE. TRAFFIC CONTROLS SHALL BE COORDINATED WITH THE LOCAL POLICE DEPARTMENT AND MUNICIPALITY.
 - 19) PRIOR TO CONSTRUCTION OR GRADING A PROTECTIVE BARRIER, FENCE, POST, AND SIGNS CLEARLY INDICATING LIMITS OF DISTURBANCE SHALL BE INSTALLED INDICATING NO TREE REMOVAL OR DISTURBANCES OUTSIDE LIMITS.
 - 20) NO PARKING OF CONTRACTOR OR SUBCONTRACTORS SHALL BE ALLOWED ON PUBLIC STREETS WITHOUT PRIOR APPROVAL.
 - 21) NO BUILDING MATERIAL, EQUIPMENT, VEHICLES, OR CHEMICALS SHALL BE STORED OR PLACED OUTSIDE OF THE LIMITS OF DISTURBANCE.
 - 22) CONSTRUCTION NOISE SHALL BE KEPT TO A MINIMUM DURING NIGHTTIME HOURS AND MUST COMPLY WITH LOCAL MUNICIPAL ORDINANCES.
 - 23) CONTRACTOR SHALL COORDINATE WORK WITH PROPERTY OWNERS TO MINIMIZE DISTURBANCE TO PROPERTY OWNER'S OPERATIONS
 - 24) CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS



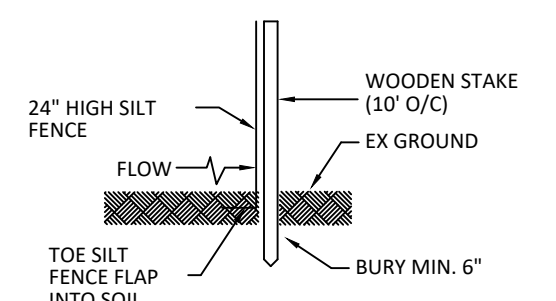
CONSTRUCTION ACCESS
SCALE: 1" = 40'



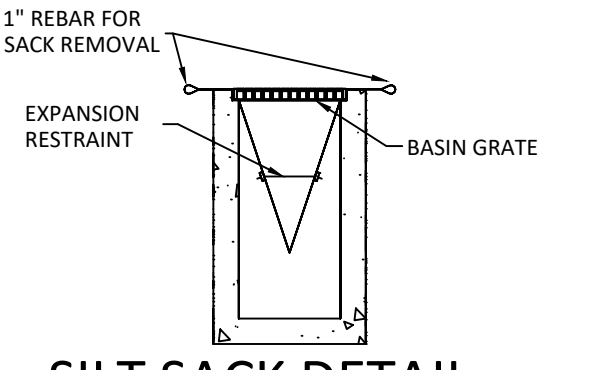
HMA LIGHT DUTY PAVEMENT DETAIL
NOT TO SCALE



MDOT DETAIL F4 SPILL OUT CONCRETE CURB & GUTTER
NOT TO SCALE



SILT FENCE DETAIL
NOT TO SCALE



SILT SACK DETAIL
NOT TO SCALE

STATE OF MICHIGAN
COLIN FINCH
 ENGINEER
 NO. 6201064514
 PROFESSIONAL ENGINEER
Colin Finch

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CITY OF KALAMAZOO
 KALAMAZOO COUNTY, MICHIGAN
AIRPORT WATERMAIN LOOP PROJECT DETAILS

VK CIVIL Vriesman & Korhorn
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 FILE NO. 1326
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