

# WATER AND SANITARY SEWER UTILITIES THE RETREAT AT BUNN HILL BUNN HILL ROAD

TOWN OF VESTAL

COUNTY OF BROOME

STATE OF NEW YORK

### APPLICANT/DEVELOPER:

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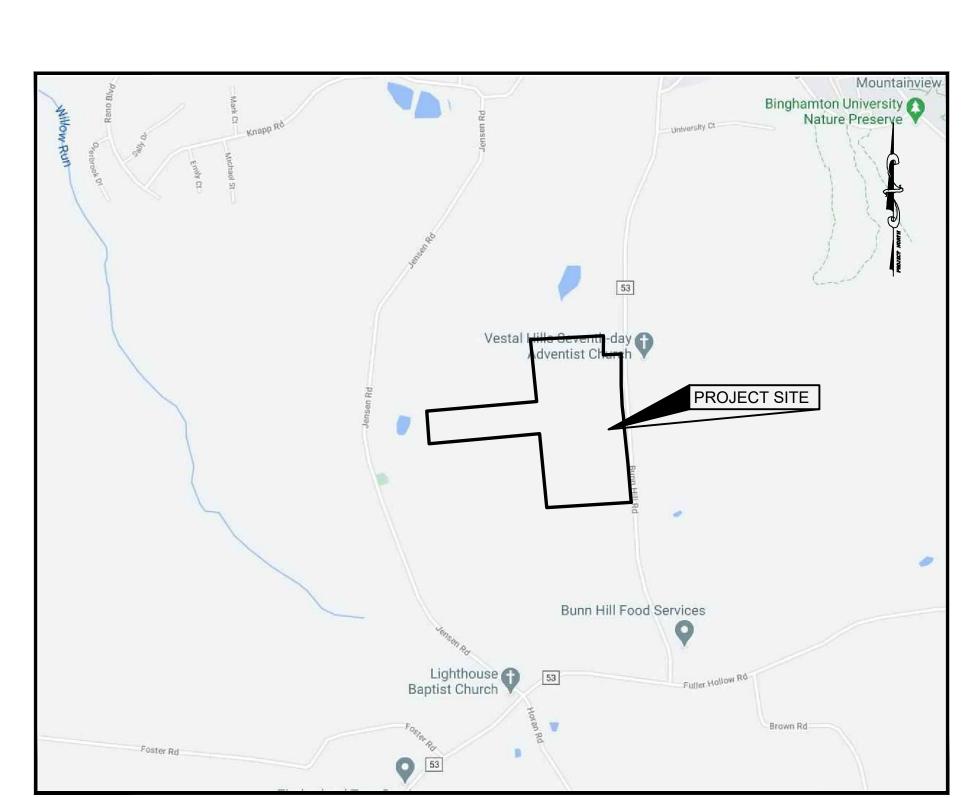
# DRAWINGS PREPARED BY



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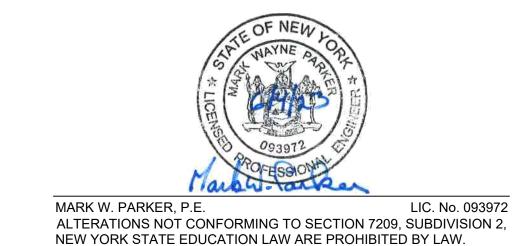
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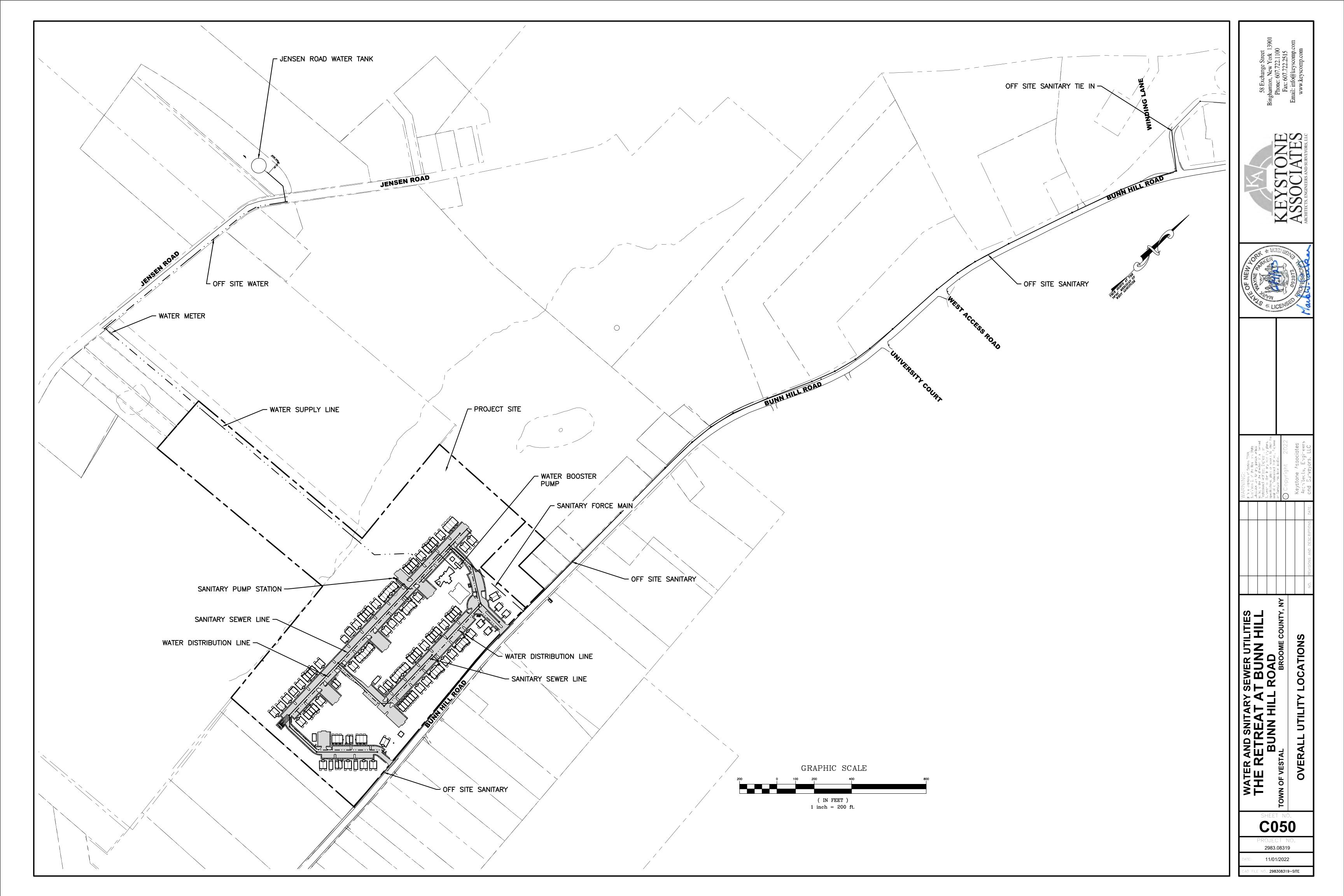
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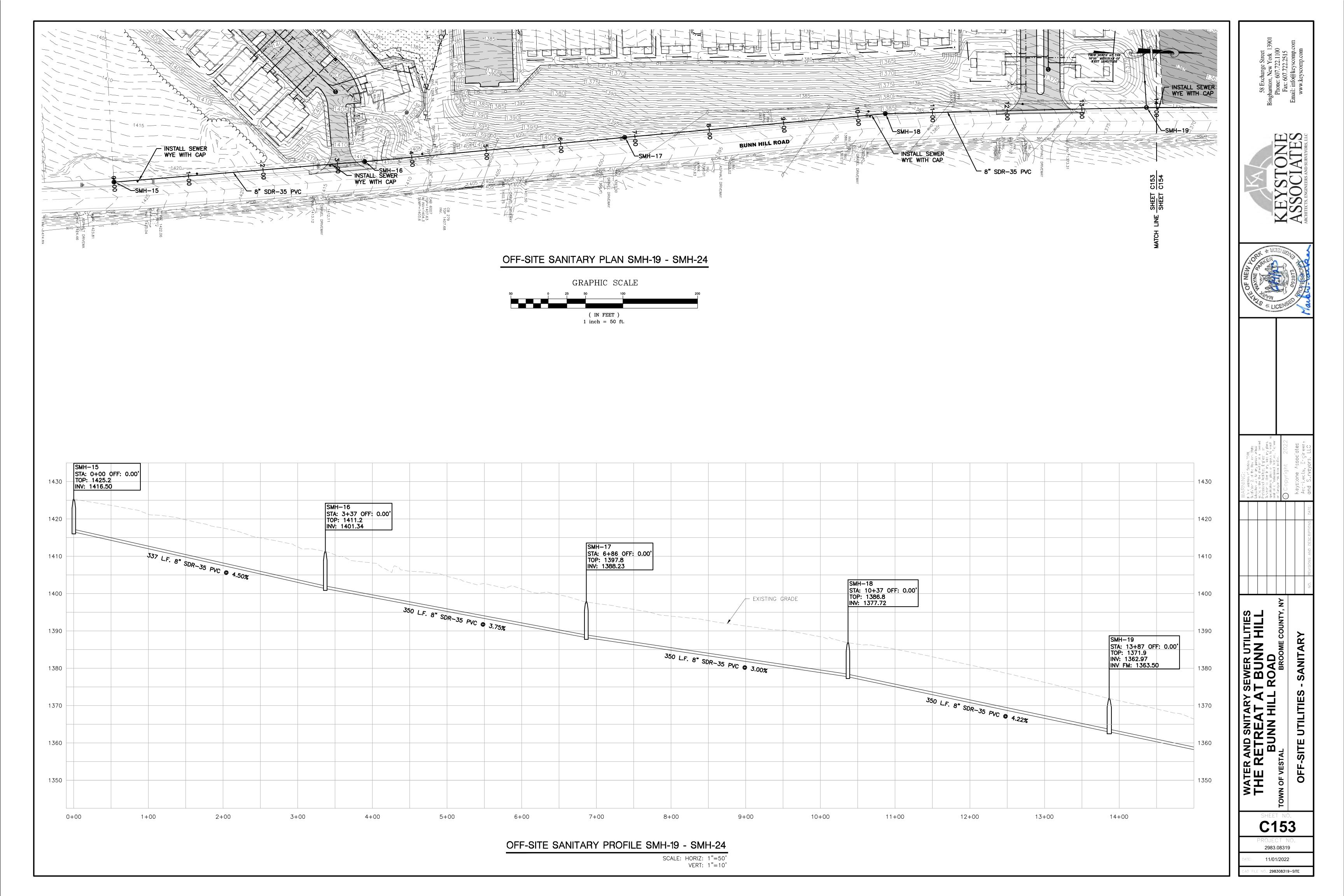


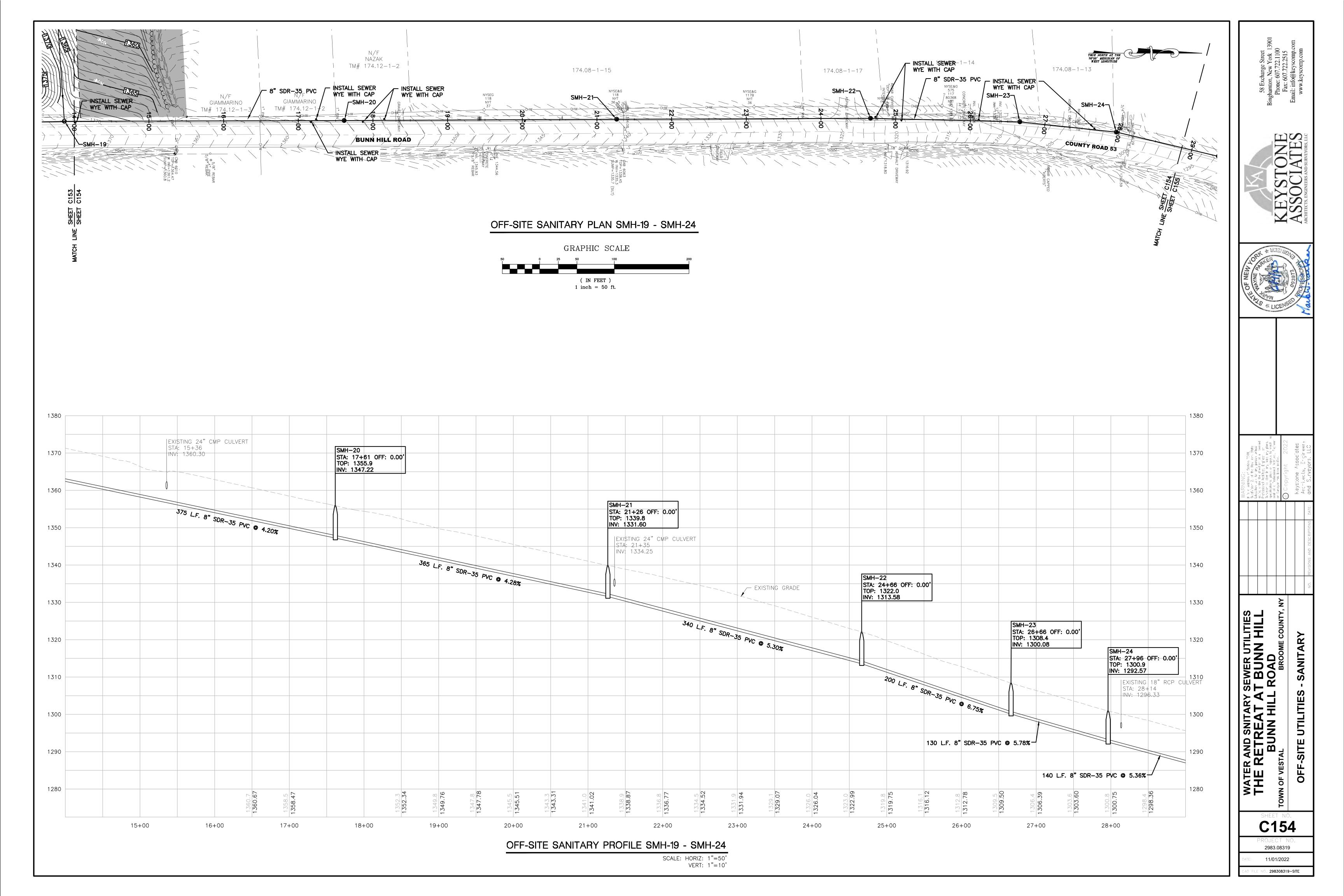
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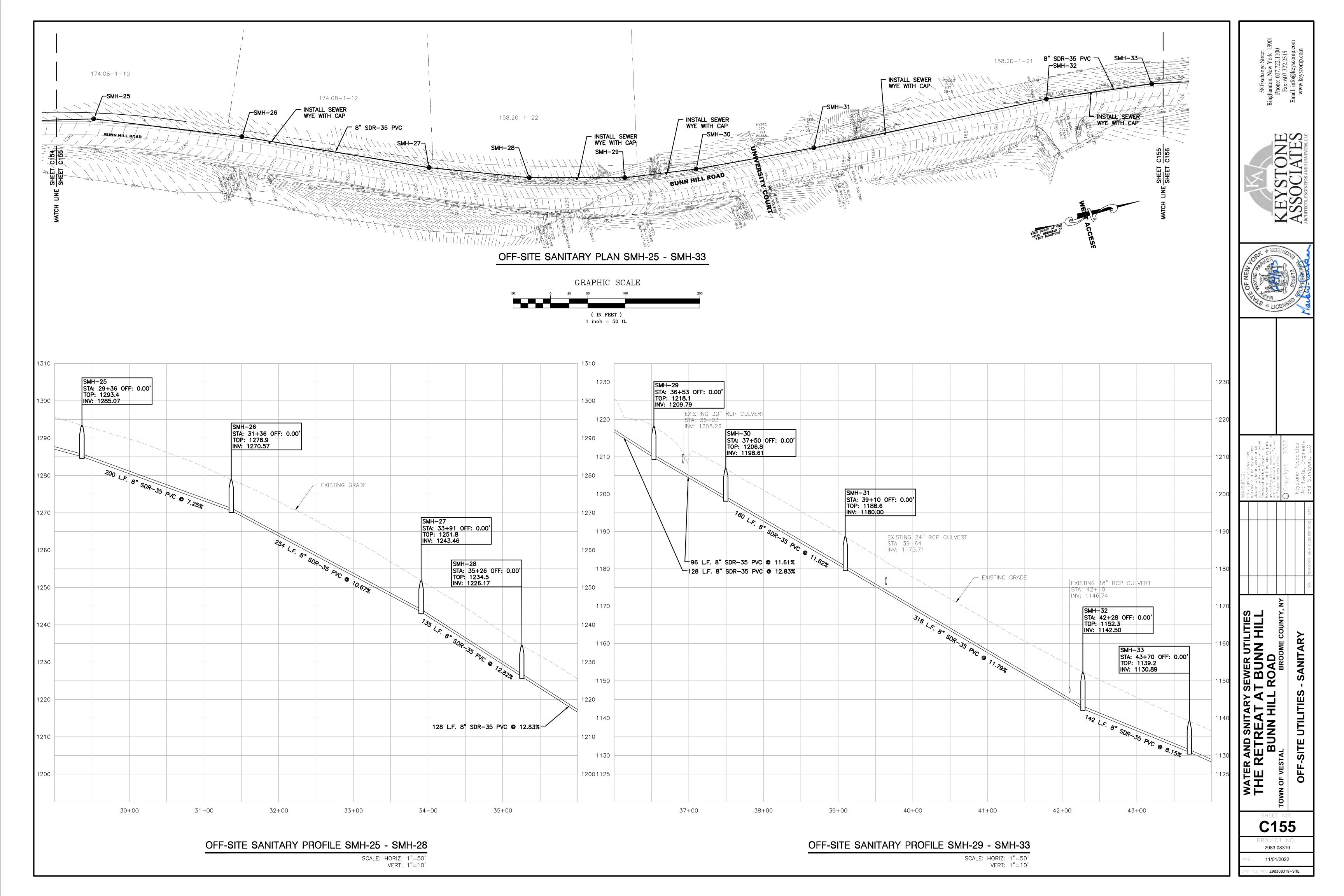


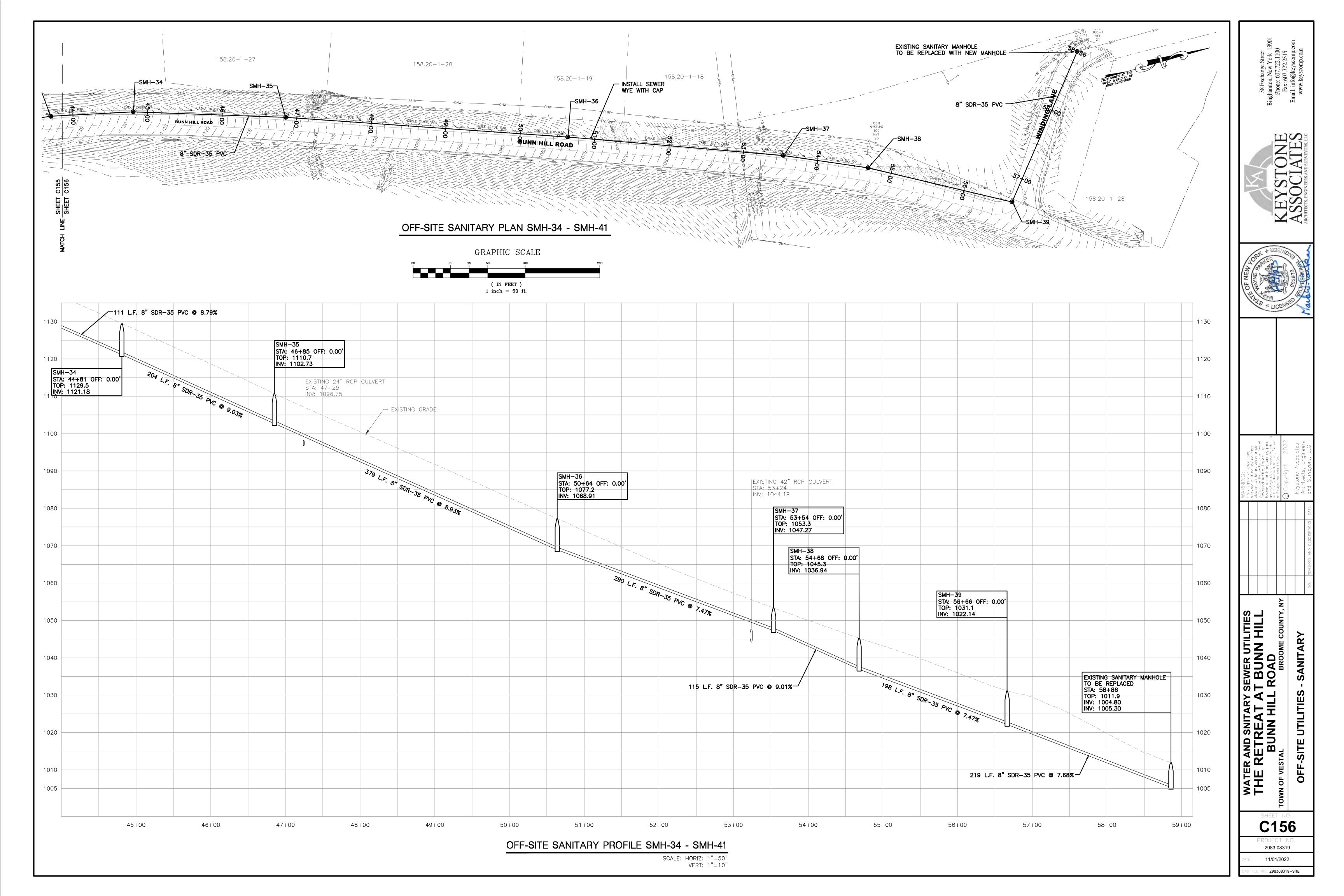


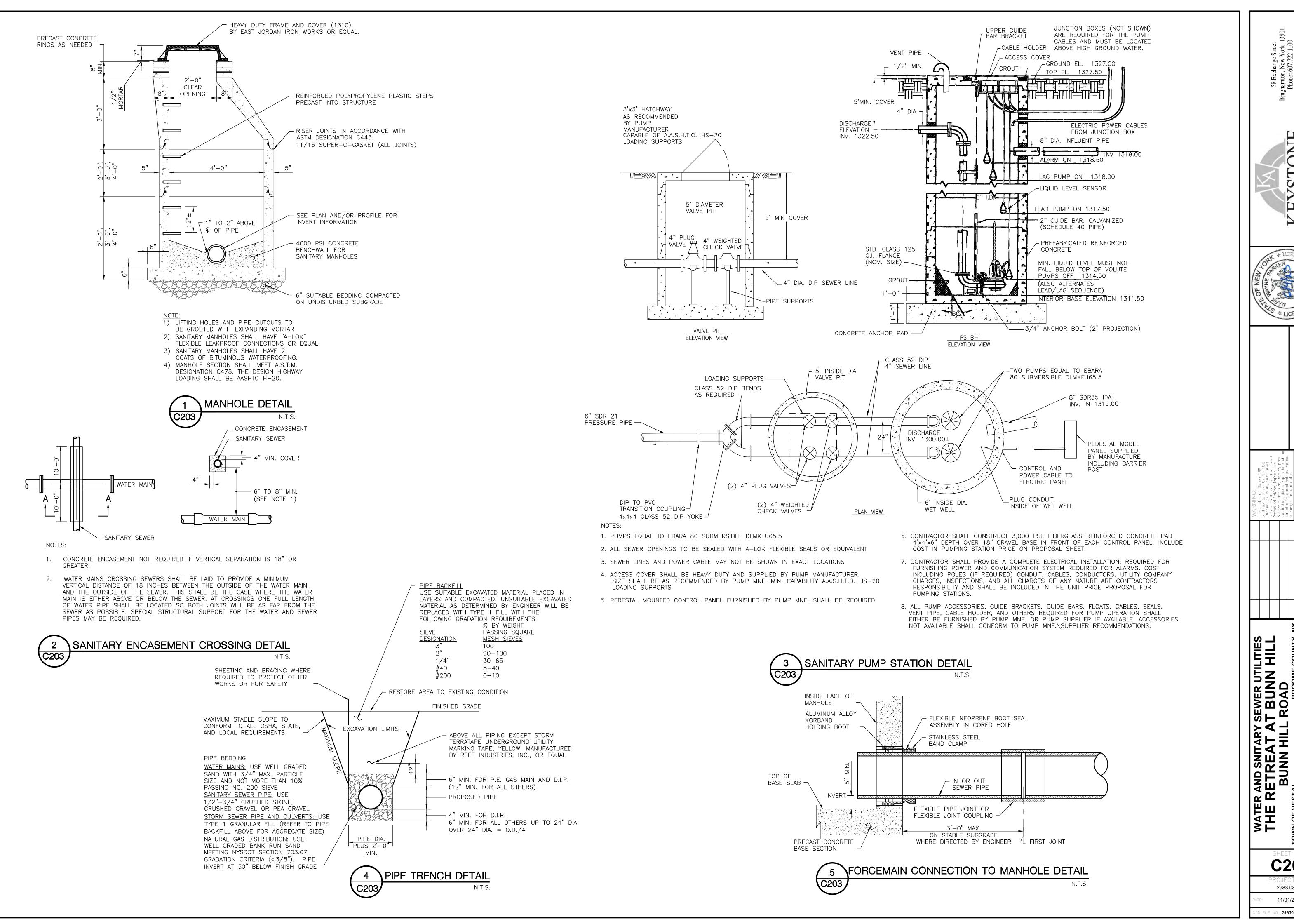












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- THE TERM OF OWNER AS USED IN THESE SPECIFICATIONS AND NOTES SHALL INCLUDE THE OWNER OF THE PROPERTY, THE COMPANY OR PARTY THAT HIRED THE CONTRACTOR, THE COMPANY OR PARTY THAT SIGNED THE CONTRACT FOR THIS WORK AND THE AGENTS OF EACH. THE OWNER'S REPRESENTATIVE SHALL BE THE INDIVIDUAL OR PARTY ASSIGNED BY THE OWNER TO BE THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PERMITS, CONNECTION PERMITS, FEES, INSPECTIONS AND RECORD KEEPING REQUIRED BY ALL MUNICIPAL, UTILITY, HEALTH, ENVIRONMENTAL, STATE OR FEDERAL AGENCIES THAT MAY HAVE JURISDICTION, FURTHERMORE, THE CONTRACTOR SHALL BE RESPONSIBLE TO MEET OR EXCEED ALL REQUIREMENTS OF THE AGENCIES OR AUTHORITIES HAVING JURISDICTION OVER HIS WORK. ALL CONFLICTS IN REQUIREMENTS OF DIFFERENT AGENCIES, AUTHORITIES AND/OR THE DESIGN SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND MAINTAIN THE PROPERTY AND PROJECT LIMITS THROUGHOUT THE PROJECT. ALL CONFLICTS BETWEEN THE DESIGN AND THE PROJECT/PROPERTY LIMITS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING. UNLESS DESCRIBED IN THE CONTRACT DOCUMENTS OR SHOWN ON THE DRAWINGS THE OWNER HAS NOT SECURED ANY RIGHT OF WAYS, EASEMENTS OR AGREEMENTS WITH OTHER PROPERTY OWNERS OR PROPERTY USERS. THEREFORE, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SECURE AND MAINTAIN ANY TEMPORARY RIGHT OF WAYS, EASEMENTS, PERMITS OR AGREEMENTS HE MAY NEED TO PERFORM HIS WORK. ALL SUCH AGREEMENTS SHALL HOLD THE OWNER, ENGINEER AND HIS AGENTS HARMLESS AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BEAR ALL COSTS. THE CONTRACTOR SHALL COPY THE OWNER ON RELEASES OF ALL AGREEMENTS PRIOR TO FINAL PAYMENT BY THE OWNER TO
- UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE CONTRACT DOCUMENTS THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEY, LAYOUT AND RECORD DRAWINGS FOR THIS CONTRACT. ANY CONFLICTS IN SURVEY/LAYOUT AND THE DESIGN OR AGENCIES REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL PROTECT AND SAFEGUARD ALL EXISTING SURVEY MONUMENTS. CONTROL AND TIE-DOWNS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH ERRORS IN THE STAKE-OUT AND LOCATION OF HIS WORK. THE CONTRACTOR SHALL PAY ALL COSTS TO REPAIR OR REPLACE DAMAGED SURVEY MONUMENTS, CONTROL AND TIE-DOWNS.

NO CHANGES TO THE DESIGN OR MATERIALS SPECIFIED MAY BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE ENGINEER OR IN THE CASE OF UTILITIES OR ROAD WORK TO BE DEDICATED, THE AUTHORITY RECEIVING DEDICATION. THE CONTRACTOR SHALL PROVIDE TO THE OWNER AT THE END OF THE CONTRACT A RECORD SET OF DRAWING REFLECTING ALL CHANGES MADE BY THE CONTRACTOR DURING CONSTRUCTION.

EROSION CONTROL IS NECESSARY WHEN SEDIMENT, DUST, EROSION, OR CONTAMINATED RUN-OFF MAY OCCUR. THE CONTRACTOR SHALL BE RESPONSIBLE TO PLACE AND MAINTAIN EROSION CONTROL OR RUN-OFF PROTECTION AS REQUIRED TO PROTECT HIS WORK, THE WORK OF HIS SUBCONTRACTORS. OR OTHER PARTIES ASSOCIATED WITH THE PROJECT. ADJACENT PROPERTIES AND THE HEALTH AND WELL BEING OF THE WORKERS, PUBLIC AND SURROUNDING NATURAL RESOURCES. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS REGARDING EROSION AND RUN-OFF CONTROL AND SHALL SIGN A CERTIFICATION STATEMENT INDICATING THAT HE UNDERSTANDS AND WILL COMPLY WITH THE SITE'S STORMWATER POLLUTION

PREVENTION PLAN IF ONE WAS PREPARED FOR THE PROJECT. THE CONTRACTOR SHALL BE FAMILIAR WITH THE PROJECT SITE AND ALL ADJACENT PEDESTRIAN, TRAFFIC AND BUSINESS USES. THE CONTRACTOR SHALL TAKE WHAT EVER PRECAUTIONS AND STEPS NECESSARY TO MAINTAIN SAFETY AND OPERATION OF THESE USES IN ACCORDANCE WITH FEDERAL STATE, COUNTY AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS AND DAMAGES CAUSED FROM HIS FAILURE TO TAKE PROPER AND ADEQUATE PRECAUTIONS. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS REGARDING THESE USES INCLUDING BUT NOT LIMITED TO THE MAINTENANCE AND PROTECTION OF TRAFFIC REQUIRED BY THE STATE DEPARTMENT OF TRANSPORTATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS AND DELAYS ASSOCIATED WITH WEATHER, GROUNDWATER, AND OTHER OCCURRENCES THAT COULD BE EXPECTED OR ARE COMMON WITH THIS TYPE WORK. THE CONTRACTOR SHALL REVIEW ALL PERTINENT DOCUMENTS INCLUDING SOILS REPORTS, SOILS BORINGS AND OTHER SOIL OR SITE DATA.

THE CONTRACTOR SHALL BE RESPONSIBLE TO SAVE AND PROTECT HIS WORK THROUGHOUT THE CONTRACT. ANY DAMAGES REQUIRING REPAIRS OR REPLACEMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.

10. WHEN WORK IS DONE WITHIN A ROAD, UTILITY OR PRIVATE EASEMENT, RIGHT-OF-WAY, OR OTHER PROPERTY AGREEMENT THE CONTRACTOR SHALL DO ALL WORK WITHIN THAT AREA PER THE AUTHORITY HAVING JURISDICTION.

11. WHEN SEPARATE SITE AND BUILDING CONTRACTS ARE PERFORMED THE SITE CONTRACTOR SHALL BE RESPONSIBLE TO BRING UTILITIES TO WITHIN 5 FEET OF BUILDING FACE UNLESS NOTED OTHERWISE ON DRAWINGS OR CONTRACT DOCUMENTS.

12. ALL EXISTING UTILITIES ARE SHOWN PER SURFACE SURVEYS AND/OR RECORD MAPS AND MAY VARY FROM ACTUAL IN FIELD LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY STAKEOUTS AND LOCATING UTILITIES PRIOR TO COMMENCING WORK, ANY DAMAGE TO UTILITIES DUE TO IMPROPER STAKEOUT, LACK OF STAKEOUT OR THE FAILURE TO VERIFY DIFFERENCES BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR, REPLACE, OR PAY DAMAGES AT NO EXPENSE TO THE CONTRACT.

CONTRACTOR SHALL FURNISH AND APPLY WATER AND/OR CALCIUM CHLORIDE AS NECESSARY TO CORRECT DUSTY CONDITIONS RESULTING FROM LOCAL TRAFFIC ON THE STREET OR CONTRACTORS

14. REFER TO PROJECT MANUAL, IF APPLICABLE, FOR ADDITIONAL CONTRACT REQUIREMENTS AND SPECIFICATIONS.

CLEAR AND GRUB

THE CONTRACTOR SHALL REVIEW PLANS AND IDENTIFY AND SAFELY MARK ALL PLANTS AND TREES TO BE SAVED. THE CONTRACTOR SHALL PROTECT ALL PLANTS AND TREES TO BE SAVED THROUGHOUT THE CONTRACT. THIS SHALL INCLUDE PROHIBITING ANY WORK WITHIN THE DRIP LINE OF THE TREE EXCEPT UNDER THE SUPERVISION OF A LICENSED LANDSCAPE ARCHITECT. ALL AREAS TO BE CLEARED AND GRUBBED SHALL BE SURVEYED IN THE FIELD TO ESTABLISH THE APPROPRIATE LIMITS OF WORK.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES NECESSARY TO LOCATE AND PROTECT EXISTING UTILITIES, STRUCTURES, AND OTHER FACILITIES TO REMAIN.

4. ALL TREES, SHRUBS, STUMPS, ROOTS AND OTHER DEBRIS SHALL BE REMOVED FROM SITE AND

DISPOSED OF IN A LEGAL MANNER. 5. NO BURNING OR BURYING WILL BE ALLOWED ON SITE.

### **EARTHWORK**

PRIOR TO STARTING ANY CUTS OR FILLS THE CONTRACTOR SHALL STRIP AND STOCKPILE ALL TOPSOIL. STRIPPING OF TOPSOIL CAN ONLY COMMENCE AFTER THE CLEAR AND GRUB OPERATIONS ARE COMPLETE IN THAT AREA. TOPSOIL SHALL BE STOCKPILED IN AREAS DESIGNATED ON THE PLANS OR APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL REVIEW THE SOILS REPORTS, BORING LOGS AND WHEN NECESSARY HIS OWN FIELD VERIFICATION SO AS TO BE FAMILIAR WITH THE DEPTH OF TOPSOIL. THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT OVER AND UNDER REMOVAL OF TOPSOIL

THE GRADES SHOWN ON THE PLANS UNLESS OTHERWISE NOTED ARE FINISHED GRADES, THEREFORE, PAVEMENT, FLOORS, SUBBASE AND OTHER IMPROVEMENTS MUST BE SUBTRACTED TO CALCULATE SUBGRADE ELEVATIONS.

THE CONTRACTOR SHALL MAINTAIN A SURVEY GRID OF NOT LESS THAN 100' X 100' OR OTHER MEANS ACCEPTABLE TO THE OWNER'S REPRESENTATIVE THAT WILL INDICATE LOCATION AND AMOUNT OF CUT OR FILLS REMAINING. AT SUBGRADE THIS GRID SHALL BE 50' X 50' WITH LOCATION AND FINAL GRADE MARKED CLEARLY OR SURVEY SHALL BE COMPLETED DEMONSTRATING THAT THE SUBGRADE IS ±0.1FEET OF REQUIRED SUBGRADE.

UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE CONTRACT DOCUMENTS THE CONTRACTOR SHALL RETAIN AND PAY ALL COST FOR SOIL COMPACTION TESTING TO BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY. TESTING FOR COMPACTION SHALL BE DONE EVERY 2000 SQ. FT. EACH LIFT. IN TRENCHES COMPACTION TESTING SHALL BE DONE EVERY 100 LF. EVERY OTHER LIFT, BUT NOT LESS THAN 1 TEST EVERY OTHER LIFT.

COMPACTION REQUIREMENTS SHALL BE THOSE OUTLINED IN THE SOILS REPORT. IF THE SOILS REPORT IS NOT CLEAR OR DOES NOT GIVE REQUIREMENTS THE FOLLOWING WILL BE USED. UNDER AND TO 20 FEET OUTSIDE THE BUILDING ENVELOPE THE SOILS SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM D1557 (MODIFIED PROCTOR). UNDER PROPOSED OR FUTURE PAVEMENT AREAS INCLUDING 10 FEET OUTSIDE SUCH AREAS THE SOIL SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM D1557 (MODIFIED PROCTOR). ALL LANDSCAPE AND LAWN AREAS SHALL BE COMPACTED TO 90% MAXIMUM DRY DENSITY PER ASTM D1557 (MODIFIED PROCTOR). THE TESTING LAB SHALL TEST SOILS IN

ACCORDANCE WITH ASTM D2922 (NUCLEAR METHOD) WITH PROCTORS FOR EACH SOIL TYPE. UNLESS OTHERWISE NOTED IN THE SOILS REPORT OR ON THE DRAWINGS THE ON SITE MATERIAL SHALL BE USED TO MAKE FILLS. ALL MATERIAL TO BE USED FOR FILL SHALL BE FREE OF ORGANICS, FROZEN MATERIAL, CONTAMINATED MATERIAL, DEBRIS AND ANY ROCKS LARGER THAN 4 INCHES. FOR FILL PLACED WITHIN 1 FOOT OF SUBGRADE NO ROCK SHALL BE GREATER THAN 2 INCHES IN DIAMETER. THE CONTRACTOR SHALL BEAR ALL COST ASSOCIATED WITH DRYING, SEGREGATING OR OTHER REQUIRED METHODS TO TREAT SOILS TO MEET COMPACTION AND OTHER REQUIREMENTS.

FILLS SHALL BE PLACED IN LIFTS NOT TO EXCEED 1 FOOT IN MASS FILLS AND 8 INCHES IN

TRENCH OR RESTRICTED AREAS. IF IMPORTED MATERIAL IS REQUIRED THE SOURCE AND A RANDOM COMPOSITE SAMPLE SHALL BE REVIEWED BY THE TESTING LABORATORY PRIOR TO BEING BROUGHT TO SITE. IMPORTED MATERIAL SHALL HAVE 100% PASSING THE 3 INCH SIEVE FOR FILL UP TO 1 FOOT OF SUBGRADE AND 100% PASSING THE 2 INCH SIEVE FOR FILLS WITHIN 1 FOOT OF SUBGRADE. THE IMPORTED MATERIAL SHALL HAVE NO MORE THAN 40% PASSING THE NO. 40 SIEVE AND 15% PASSING THE NO. 200 SIEVE. WAIVERS TO THESE REQUIREMENTS ONLY BE GIVEN JOINTLY BY THE OWNER AND

THE GEOTECHNICAL ENGINEER THAT PREPARED THE SOILS REPORT. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EARTHWORK OPERATIONS FROM WEATHER AND GROUND WATER INCLUDING KEEPING POSITIVE DRAINAGE, DIVERT DRAINAGE, DEWATERING, AND SEALING DISTURBED AREAS WITH A STEEL DRUM ROLLER

PRIOR TO INCLEMENT WEATHER.

10. PRIOR TO PLACEMENT OF FILLS THE AREA SHALL BE PROOF ROLLED WITH A 10 TON ROLLER OR A LOADED 10 WHEEL DUMP TRUCK. SOFT AREAS SHALL BE SCARIFIED, DRIED, AND RECOMPACTED PRIOR TO FILL BEING PLACED. RETEST BY PROOF ROLL AS NECESSARY

11. ALL FINAL SUBGRADE UNDER PROPOSED PAVEMENT, BUILDING OR OTHER STRUCTURE SHALL BE PROOF ROLLED AS DESCRIBED ABOVE FOR IDENTIFYING OF SOFT AREAS. AREAS FOUND TO BE UNACCEPTABLE SHALL BE SCARIFIED, DRIED, AND RECOMPACTED. RETEST BY PROOF ROLL AS

12. TRENCH EXCAVATION REQUIRING SHEETING, SHORING, OR OTHER STABILIZING DEVICES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER AND MEET ALL O.S.H.A. REQUIREMENTS. ALL EXCAVATIONS SHALL MAINTAIN SAFE SIDE SLOPES IN ACCORDANCE WITH LOCAL, STATE, AND O.S.H.A. REQUIREMENTS. NO STOCKING OF MATERIAL CLOSE TO AN OPEN CUT OR STEEP SLOPE WILL BE PERMITTED IN AN EFFORT TO PREVENT CAVE-INS.

13. TRENCH EXCAVATIONS SHALL BE MADE UNIFORM AND STRAIGHT TO THE FOLLOWING WIDTHS: (FOR PIPES 36 INCHES OR LESS THE TRENCH WIDTH SHALL BE THE DIAMETER PLUS 2 FEET ), (FOR PIPES 36 INCHES OR GREATER THE WIDTH SHALL BE THE DIAMETER PLUS 3 FEET). ADDITIONAL WIDTH WILL ONLY BE ALLOWED WHEN COMPACTION EQUIPMENT LIMITATIONS REQUIRE AND ONLY AFTER APPROVAL OF THE ENGINEER. NO MORE TRENCH SHALL BE OPEN IN ONE DAY THAN CAN BE PROPERLY BACKFILLED IN THAT SAME DAY TO MINIMIZE WEATHER AND SAFETY CONCERNS. WHEN BACKFILLING AROUND PIPES PROVIDE UNIFORM SUPPORT AT INVERT AND PROPER COMPACTION UNDER, ALONG AND OVER THE PIPE. CARE SHALL BE GIVEN WHILE BACKFILLING AROUND PIPES TO PREVENT DAMAGE TO THE PIPES INCLUDING PLACING BACKFILL/BEDDING BY HAND, USING HAND OPERATED PLATE TAMPS OR JUMPING JACKS AND OTHER LOAD RESTRICTIVE TECHNIQUES UNTIL FILLS ARE A MINIMUM OF 2 FEET, OR MANUFACTURER'S RECOMMEND DEPTH, WHICHEVER IS GREATER, ABOVE THE TOP OF THE PIPE. COMPACTION REQUIREMENTS ARE NOT

RELIEVED IN THESE AREAS AND WILL REMAIN AS STATED ON THE DRAWINGS OR ABOVE. 14. IF ROCK IS ENCOUNTERED THAT WAS NOT INDICATED ON THE PLANS OR SOILS REPORT, THE AREA FOR REMOVAL SHOULD BE MEASURED AND REVIEWED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROCK REMOVAL. ROCK WILL BE DEFINED AS THE NATURAL EARTH MATERIALS THAT CAN NOT BE

REMOVED WITH CONVENTIONAL EARTH WORKING EQUIPMENT. 15. WHERE ROCK IS ADJACENT TO A STRUCTURE OR UTILITY THE ROCK SHALL BE REMOVED TO A MINIMUM OF 6 INCHES BELOW AND 1 TIMES THE DIAMETER BUT NOT LESS THAN 1 FOOT OR

16. NO EXPLOSIVES WILL BE ALLOWED UNTIL ALL PERMITS ARE GRANTED AND THE OWNER HAS SIGNED OFF. PRE AND POST BLAST REPORTS MUST BE KEPT AND RECORDED. ALL STRUCTURES WITHIN THE AREA OF THE BLAST MUST RECEIVE A PRE-BLAST SURVEY. ALL BLASTING MUST BE PERFORMED BY A LICENSED BLASTER.

17. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR SHALL REMOVE ALL EXCESS TOPSOIL, CUT MATERIAL OR WASTE FROM SITE AND DISPOSE OF IN A LEGAL MANNER.

GREATER THAN 3 FEET ON ANY SIDE OF THE UTILITY OR STRUCTURE.

<u>EROSION CONTROL</u> 1. PRIOR TO CONSTRUCTION EQUIPMENT ENTERING OR EXITING THE SITE, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE BUILT UNLESS EXISTING CONDITIONS PREVENT ANY TRACKING OF DIRT, MUD, OR DEBRIS OFF THE SITE. THE CONTRACTOR WILL BE RESPONSIBLE TO KEEP ALL ROADS, PARKING LOTS, SIDEWALKS AND ADJACENT PROPERTIES FREE OF DIRT, MUD OR OTHER DEBRIS. THIS WILL INCLUDE BUILDING THE CONSTRUCTION ENTRANCE, SWEEPING, SCRAPING AND WASHING THE PAVEMENT SURFACES WHENEVER NEEDED. THE CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS. IF A DETAIL IS NOT PROVIDED CONSTRUCT THE ENTRANCE WITH CLEAN 2 TO 3 INCH STONE, 6 INCHES THICK, OVER STABILIZING FABRIC TO THE DIMENSIONS OF 12 FEET WIDE (MINIMUM), BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS, AND 50 LONG. WIDTH SHALL BE 24 FEET IF SINGLE ENTRANCE TO SITE. LENGTH IS REDUCED TO 30 FEET IF FOR A SINGLE RESIDENCE. THE ENTRANCE SHOULD BE LOCATED SO THAT ALL VEHICLES LEAVING THE SITE WILL UTILIZE IT.

2. ALL EROSION CONTROL DEVICES SHALL BE PLACED AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH FEDERAL, STATE, LOCAL AND MANUFACTURES RECOMMENDATIONS. THE CONTRACTOR SHALL PLACE AND MAINTAIN ALL EROSION CONTROL DEVICES AS NEEDED THROUGHOUT THE PROJECT.

3. SILT FENCE SHALL HAVE HARD WOOD STAKES 2X2 INCH AND 4 FEET LONG WOVEN INTO THE FABRIC. THE BASE OF THE SILT FENCE SHALL BE EXCAVATED SO AS TO PROVIDE AN AREA TO BURY THE BOTTOM OF THE FABRIC AT LEAST 6 INCHES INTO THE GROUND. THE STAKES SHALL BE DRIVEN TO A DEPTH THAT WILL PLACE THE BOTTOM FABRIC AT THE BOTTOM OF THE TRENCH. THEN BACKFILL THE BOTTOM FABRIC ON THE UPSTREAM SIDE WITH THE MATERIAL THAT WAS EXCAVATED.

4. SILT FENCE SHALL BE PLACED WHEREVER SURFACE DRAINAGE CAN LEAVE THE SITE. 5. STONE FILTERS SHALL BE PLACED IN ALL DRAINAGE WAYS BUT NOT IN STREAMS, CREEKS OR RIVERS. STONE FILTERS SHALL CONSIST OF A UNIFORM MIX OF 1/4 TO 3/4 INCH CLEAN STONE WRAPPED IN FILTER FABRIC AND COVERED WITH 4 INCH STONE.

6. SEDIMENT TRAPS SHALL BE PLACED AND MAINTAINED AS NEEDED. THEY SHALL BE SIZED TO PROVIDE ADEQUATE STORAGE TO ALLOW SEDIMENT TO PRECIPITATE OUT PRIOR DISCHARGING DOWN

7. TEMPORARY SEEDING SHALL CONSIST OF LIME @ 1/2 TON PER ACRE, FERTILIZER 5-10-10 @ 600 POUNDS PER ACRE, RYEGRASS (ANNUAL OR PERENNIAL) @ 40 POUNDS PER ACRE AND STRAW MULCH @ 2 TON PER ACRE. JUTE MESH SHALL BE PLACED OVER MULCH AND STAKED WHENEVER WINDS OR SLOPE WILL CAUSE THE MULCH AND SEED TO BECOME DEPLETED OR ERODED. AREAS SHALL BE TEMPORARY SEEDED WHEN THEY ARE SUBJECT TO EROSION AND WILL LIE DORMANT FOR A MONTH OR MORE.

WATER SYSTEMS AND SERVICES

1. THE WATER SYSTEMS AND SERVICES SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS.

2. ALL WATER PIPING, FITTINGS AND APPURTENANCES SHALL BE PLACED A MINIMUM OF 6 INCHES BELOW FROST LINE OR 5 FEET WHICHEVER IS GREATER.

3. THE MINIMUM SEPARATION BETWEEN WATER SERVICES AND SEWER LINES SHALL BE 18 INCHES MEASURED VERTICALLY FROM OUTSIDE TO OUTSIDE OF PIPE AT THE CROSSING. A STANDARD LENGTH OF WATER PIPE SHALL BE CENTERED AT THE CROSSING TO MAXIMIZE THE DISTANCE BETWEEN THE CROSSING AND THE NEAREST WATER SERVICE PIPE JOINT. WHEN THE WATER SERVICE RUNS UNDER THE SEWER LINE A GRAVEL OR CRUSHED STONE BACKFILL MEETING THE REQUIREMENTS OF SUBBASE SHALL BE PLACED AND COMPACTED AROUND THE WATER PIPE UP HALF THE DIAMETER OF THE SEWER PIPE TO PROVIDE ADEQUATE SUPPORT TO THE SEWER LINE. WATER SERVICES AND SEWER LINES RUNNING PARALLEL SHALL HAVE A MINIMUM SEPARATION OF 10 FEET MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.

4. D.I.P. (DUCTILE IRON PIPE) PIPE SHALL BE FURNISHED IN ACCORDANCE WITH AWWA C600-93 AND ASTM STANDARDS. C900 DR18 PVC PIPE SHALL BE FURNISHED IN ACCORDANCE WITH AWWA C900-07 AND ASTM STANDARDS.

5. CURB STOPS SHALL HAVE A BRONZE BODY, GROUND KEY PLUG OR BALL WITH WIDE TEE HEAD. THE CURB STOP SHALL BE COMPATIBLE WITH ADJOINING PIPES. THE SERVICE BOX SHALL HAVE A TELESCOPING TOP SECTION WITH A LENGTH THAT WILL PLACE THE ADJUSTMENT CENTERED WHEN BURIED TO THE APPROPRIATE DEPTH. THE SERVICE BOX SHALL BE OF A SIZE AND TYPE THAT IS

COMPATIBLE WITH THE CURB STOP. THE COVER SHALL HAVE THE LETTERING "WATER". 6. D.I.P. AND C900 DR18 PVC PIPE SHALL BE PLACED PER MANUFACTURES RECOMMENDATIONS AND EMBEDDED IN SAND ENCASEMENTS MEASURED FROM OUTSIDE SURFACE OF THE PIPE TO THE OUTSIDE OF SAND ENCASEMENT. THE SAND SHALL BE WELL GRADED WITH 3/4" MAX. PARTICLE SIZE AND NOT MORE THAN 10% PASSING THE NO. 200 SIEVE.

7. WATER LINES WITH SLOPES GREATER THAN 15% SHALL CONTAIN GASKET SYSTEM WHICH WILL PREVENT JOINT SEPARATION. THE GASKET SHALL BE CAPABLE OF WITHSTANDING MAXIMUM WORKING PRESSURES OF 250PSI. PRODUCT MEETING THESE SPECIFICATIONS IS FIELD LOK GASKET SYSTEM BY GRIFFIN PIPE PRODUCTS CO.

8. ALL BEDDING AND ENCASEMENTS SHALL BE COMPACTED WITH CARE TO ACHIEVE PROPER COMPACTION WITHOUT DAMAGING THE PIPE, FITTINGS, OR APPURTENANCES.

9. ALL MAIN LINES AND APPROPRIATE APPURTENANCES SHALL BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH AWWA C651 AND THE REQUIREMENTS OF THE APPROPRIATE HEALTH DEPARTMENT. 10. THE CONTRACTOR WILL COORDINATE ALL TESTING AND DISINFECTING WITH THE HEALTH DEPARTMENT. IF PROFESSIONAL ENGINEER CERTIFICATION IS REQUIRED THE CONTRACTOR SHALL NOTIFY THE

OWNER'S REPRESENTATIVE AT LEAST TEN DAYS PRIOR TO THE START OF WORK. 11. FAILURE OF ANY TESTING SHALL REQUIRE THE CONTRACTOR TO REPAIR OR REPLACE THE FAILED SECTION AT NO ADDITIONAL EXPENSE TO THE CONTRACT.

1. THE STORMWATER SYSTEM SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE LOCAL STORMWATER AUTHORITY FOR THIS PROJECT IS THE TOWN OF VESTAL. 2. STORM DESIGN INCLUDES MANY VARIABLES SUCH AS PIPE ROUGHNESS COEFFICIENT THAT CAN

EFFECT THE ACTUAL FINAL RUN-OFF. IF NO ALTERNATIVE MATERIALS ARE LISTED ON THE UTILITY DRAWINGS NO SUBSTITUTIONS MAY BE MADE BY THE CONTRACTOR UNLESS FIRST REVIEWED AND ACCEPTED BY THE ENGINEER. 3. ALL STORM MATERIAL SIZES, TYPES AND SPECIFICS ARE LISTED ON THE DRAWINGS. IF THE PLANS

DO NOT LIST ALL INFORMATION OR ARE UNCLEAR USE THE FOLLOWING. 4. CORRUGATED POLYETHYLENE PIPE (HDPE) SHALL BE IN ACCORDANCE WITH AASHTO M252 AND M294 AND ASTM F405 & F667 WITH A MANNING FRICTION NUMBER (N) OF 0.011 OR LESS. UNLESS SOILS ARE CONSISTENTLY SAND OR SAND AND GRAVEL WITH NOT MORE THAN 15% PASSING THE 200 SIEVE AND 100% PASSING THE 2 INCH SIEVE THE PIPE WILL BE ENCASED IN TYPE 1 GRANULAR FILL FROM 6 INCHES BELOW TO 12 INCHES ABOVE THE OUTSIDE OF PIPE.

FILL GRADATION REQUIREMENTS ARE: % BY WEIGHT PASSING <u> SIEVE DESIGNATION</u> <u>SQUARE MESH SIEVES</u>

INSTALL IN ACCORDANCE WITH ASTM F449 AND THE MANUFACTURES RECOMMENDATIONS. TYPE 1

90-100 30-65 5-40 0-10

5. CONCRETE PIPE SHALL BE REINFORCED. PIPE 18" IN DIAMETER OR LESS SHALL BE OF THE BELL AND SPIGOT TYPE. PIPE OVER 18" IN DIAMETER SHALL BE OF THE TONGUE AND GROOVE TYPE (SLIP JOINT). NO PIPE SHALL BE LESS THAN 15" IN DIAMETER.

6. END SECTIONS SHALL BE THE SAME MATERIAL AS THE PRECEDING PIPE WITH APPROPRIATE COLLAR. MANHOLES (MH) AND CATCH BASINS (CB) SHALL BE PROVIDED PER ASTM C478 WITH STEEL CORE POLYETHYLENE STEPS. SIZE TO BE A MINIMUM OF 2 FOOT GREATER THAN THE LARGEST DIAMETER PIPE ENTERING OR EXITING. INCREASE SIZE IF IN THE SAME HORIZONTAL PLANE THERE IS TWO SUPPORTING AREAS BETWEEN PIPES THAT IS LESS THAN 8 INCHES OR THE CIRCUMFERENCE IS SUPPORTED BY LESS THAN 1/2 OF THE DIAMETER OF THE MH OR CB. INVERTS SHALL BE SMOOTH CAST IN PLACE CONCRETE UNLESS SUMPS ARE INDICATED ON THE DETAILS. UNLESS OTHERWISE INDICATED 4 INCH WEEPS COVERED WITH FILTER FABRIC AND 2 INCH STONE SHALL BE PROVIDED AT THE CROWN OF PIPES AND AT SUBGRADE ELEVATION. GASKETS BETWEEN RISERS SHALL BE RUBBER PER ASTM C443.

DROP INLETS SHALL BE PRECAST REINFORCED CONCRETE UNIT WITH INTEGRAL PRECAST BASE. FRAMES AND GRATES AND COVERS SHALL BE GRAY IRON MATERIAL, MEETING ASTM A48-83 CLASS

30B WITH A TENSILE STRENGTH OF 30,000PSI. CASTINGS TO BE FULLY COATED. 10. CLEANOUTS SHALL BE MADE OF THE SAME PIPE MATERIAL AS THE CARRIER PIPE. A CAST IRON FRAME AND COVER SHALL BE PROVIDED FOR ACCESS AT GRADE AND DESIGNED FOR H-20 LOADING. THE CLEANOUT SHALL BE ENCASED IN SAND OF THE SAME TYPE AS THE PIPE BEDDING FOR THE FULL DEPTH OF THE CLEANOUT

11. PERFORATED STORM PIPE SHALL BE POLYETHYLENE PIPE WITH ALL THE REQUIREMENTS LISTED ABOVE EXCEPT THAT IT IS NOT REQUIRED TO BE SMOOTH-LINED. OR PERFORATED STORM PIPE MAY BE POLYVINYL CHLORIDE (PVC) MEETING THE REQUIREMENTS LISTED ABOVE BOTH PERFORATED THE ENTIRE LENGTH OF THE PIPE SECTION. THE PIPE SHALL BE ENCASED IN A MIX OF 1 INCH AND 2 INCH STONE AND WRAPPED IN FILTER FABRIC. IN CLEAN GRAVELS THE FILTER FABRIC SHOULD BE REMOVED UNDER THE PIPE.

ADDITION OF OPENINGS OF APPROXIMATELY 15% OF THE RINGS INTERIOR SURFACE. THE OPENINGS SHALL BE 1 X 3 INCH SLOTS OR 1.75 INCH DIAMETER ON THE INSIDE SURFACE. DRY WELLS SHALL BE BACKFILLED WITH A MINIMUM OF 2 FEET OF CLEAN COMPACTED NYSDOT #2 CRUSHED STONE. 13. TRENCH DRAINS UNLESS OTHERWISE NOTED SHALL BE MADE WITH 4 INCH PERFORATED CORRUGATED POLYETHYLENE PIPE ENCASED IN CLEAN STONE SIZED BETWEEN 2 INCH AND 1/4

12. DRY WELLS SHALL MEET THE SAME REQUIREMENTS AS THOSE LISTED FOR MANHOLES WITH THE

NOT BE LESS THAN 1 FOOT. 14. RIP RAP SHALL BE PLACED AT THE END OF ALL OUTFALL STRUCTURES. THE RIP RAP UNLESS OTHERWISE NOTED SHALL BE A CLEAN DURABLE STONE WITH AVERAGE WEIGHTS OF 100 POUNDS. THE RIP RAP SHALL BE PLACED ON 1 FOOT OF GRAVEL SUBBASE OR STABILIZING FABRIC

INCH AND THEN WRAPPED IN FILTER FABRIC. OUTSIDE DIMENSIONS OF THE TRENCH DRAIN WILL

15. ALL JOINTS BETWEEN PIPES AND PRECAST STRUCTURES SHALL BE MORTARED TIGHT. 16. ALL PIPE SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATION AND TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. CARE SHALL BE GIVEN DURING BACKFILL OPERATIONS NOT TO MOVE OR DAMAGE PIPE OR APPURTENANCES WHILE ACHIEVING THE APPROPRIATE COMPACTION REQUIREMENTS.

17. ALL SYSTEMS SHALL BE VISUALLY INSPECTED FOR ALIGNMENT AND WORKMANSHIP. ALL DEBRIS, DIRT OR OTHER FOREIGN OBJECTS SHALL BE REMOVED AND THE SYSTEM FLUSHED CLEAN. 18. ANY PIPES FOUND WITH DIAMETER DEFLECTIONS GREATER THAN 5% OF THE SPECIFIED PIPE DIAMETER WILL BE REPAIRED OR REPLACED. ANY ALIGNMENT DIFFERENTIALS GREATER THAN 5% OF

THE DIAMETER OF THE PIPE WILL BE CORRECTED OR REPLACED. 19. ANY CLEANING, REPAIRS OR REPLACEMENT REQUIRED DUE TO FAILURE OF TESTING OR POOR WORKMANSHIP SHALL BE DONE BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE CONTRACT. SANITARY SEWER SYSTEMS

1. THE SANITARY SEWER SYSTEM SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE LOCAL SANITARY SEWER AUTHORITY FOR THIS PROJECT IS THE TOWN OF VESTAL.

2. ALL SANITARY SEWER MATERIAL SIZES, TYPES AND SPECIFICS ARE LISTED ON THE DRAWINGS. IF THE PLANS DO NOT LIST ALL INFORMATION OR ARE UNCLEAR USE THE FOLLOWING.

3. UNLESS OTHERWISE NOTED SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D3034, SDR 35, WITH GASKETS PER ASTM D3212, ELASTOMERIC SEAL. THE PIPE SHALL BE BED 6 INCHES BELOW AND 12 INCHES ABOVE WITH 1/2" - 3/4" CRUSHED STONE, CRUSHED GRAVEL, OR PEA GRAVEL.

CLEANOUTS SHALL BE MADE OF THE SAME PIPE MATERIAL AS THE CARRIER PIPE. A CAST IRON FRAME AND COVER SHALL BE PROVIDED FOR ACCESS AT GRADE AND DESIGNED FOR H-20 LOADING. THE CLEANOUT SHALL BE ENCASED IN STONE OF THE SAME TYPE AS THE PIPE BEDDING FOR THE FULL DEPTH OF THE CLEANOUT. CLEANOUTS SHOULD BE NO MORE THAN 90 FEET APART ON LATERALS.

5. ALL PIPE SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATION AND TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. CARE SHALL BE GIVEN DURING BACKFILL OPERATIONS NOT TO MOVE OR DAMAGE PIPE OR APPURTENANCES WHILE ACHIEVING THE APPROPRIATE COMPACTION REQUIREMENTS.

6. ALL SYSTEMS SHALL BE VISUALLY INSPECTED FOR ALIGNMENT AND WORKMANSHIP. ALL DEBRIS, DIRT OR OTHER FOREIGN OBJECTS SHALL BE REMOVED AND THE SYSTEM FLUSHED CLEAN

7. ALL TAPS TO MAIN LINES SHALL BE MADE WITH SADDLES WHEN THE TAP IS 1/2 THE DIAMETER OR LESS OF THE EXISTING PIPE BUT MADE WITH A SLEEVE WHEN THE TAP IS GREATER THAN 1/2 THE DIAMETER OR EQUAL TO THE EXISTING PIPE. IF CONNECTIONS ARE REQUIRED TO EQUAL SIZE PIPES OF 8 INCHES OR GREATER A MANHOLE SHOULD BE INSTALLED OVER THE CONNECTION POINT AND INVERTS FORMED. WHEN CONNECTING TO AN EXISTING MANHOLE THE CONNECTING PIPE HOLE SHALL BE CORED AND A PRESS WEDGE INSTALLED. THE CONNECTION SHALL BE MORTARED UP WITH WATERPROOF/PLUG MORTAR. INSIDE THE EXISTING MANHOLE THE EXISTING INVERT SHALL BE BROKE OUT IN A MANNER THAT PROTECTS FROM DEBRIS ENTERING THE LIVE SYSTEM, WHILE A NEW INVERT IS FORMED.

8. THE CONTRACTOR SHALL PROVIDE ANY TESTING REQUIRED BY THE AUTHORITY HAVING JURISDICTION INCLUDING INSPECTION.

9. THE WORK WITHIN THE NYSDOT RIGHT OF WAY SHALL BE DONE IN ACCORDANCE WITH THE PERMIT ISSUED BY NYSDOT.

PAVEMENT AND STRUCTURAL SUBBASE 1. THE TYPE OF SUBBASE REQUIRED FOR EACH USE SHALL BE CALLED OUT ON THE DRAWINGS. IF NO REFERENCE IS MADE ON THE DRAWINGS OR DETAILS TO THE TYPE OF SUBBASE REQUIRED THE FOLLOWING SHALL BE USED. THE SOURCE OF THE MATERIAL SHALL BE ONE APPROVED FOR USE BY THE APPLICABLE STATE'S "DEPARTMENT OF TRANSPORTATION". THE MATERIAL SHALL BE A CRUSHED STONE CONFORMING TO AASHTO M147-65 (1980 OR LATEST REVISION), GRADE A. GRAVEL OR OTHER MATERIALS CAN ONLY BE SUBSTITUTED FOR CRUSHED STONE WHEN APPROVED IN WRITING BY THE OWNER AND ENGINEER. MATERIAL SUPPLIED FOR USE AS SUBBASE SHALL HAVE 100% PASSING THE 2 INCH SIEVE, 30% TO 65% PASSING THE 3/8 INCH SIEVE, 25% TO 55% PASSING THE NO. 4 SIEVE, 15% TO 40% PASSING THE NO. 40 SIEVE AND 2% TO 10% PASSING THE NO. 200 SIEVE.

SUBBASE SHALL BE PLACED IN LIFTS NOT TO EXCEED 12 INCHES AND COMPACTED TO THE REQUIREMENTS STATED IN THE SOILS REPORT. IF NOT STATED THE COMPACTION REQUIREMENT SHALL BE 95% OF MAXIMUM DRY DENSITY PER ASTM D1557 (MODIFIED PROCTOR).

3. FINAL GRADING OF SUBBASE SHALL BE TO ±1 INCH OF THAT DESIGNATED ON THE DRAWINGS AND  $\pm 1$  INCH OF THE REQUIRED THICKNESS FOR THICKNESS OF 8 INCHES OR GREATER AND  $\pm$  1/2 INCH FOR THICKNESS LESS THAN 8 INCHES.

4. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS IN PREPARING THE SUBGRADE TO RECEIVE SUBBASE. THIS SHALL INCLUDE FINE GRADING AND COMPACTING AS NECESSARY TO MEET THE REQUIREMENTS STATED HERE AND UNDER EARTHWORK.

5. THE AMOUNT OF TESTING REQUIRED TO VERIFY THE COMPACTION SHALL BE THE SAME AS STATED UNDER EARTHWORK.

CONCRETE CURB, SIDEWALKS AND GUTTERS

1. THE DIMENSIONS SHALL BE THOSE SHOWN ON THE DRAWINGS. THE CONCRETE MIX SHALL BE 4500 PSI AT 28 DAYS MADE WITH TYPE I OR TYPE II CEMENT PER ASTM C150 AND AGGREGATES MEETING STATE DEPARTMENT OF TRANSPORTATION REQUIREMENTS. SLUMP FOR SLIP FORMING SHALL BE 1 INCH  $\pm$  1/2 INCH AND FOR FORMED CONCRETE THE SLUMP SHALL BE 3 INCH  $\pm$  1 INCH. AIR ENTRAINING MIXTURE SHALL MEET THE REQUIREMENTS OF ASTM C260  $4\% \pm 1-1/2\%$ FOR SLIP FORM WORK AND  $6\% \pm 1 \, 1/2\%$  FOR FORMED AND PLACED CONCRETE. WATER REDUCING AGENT SHALL CONFORM TO ASTM C 494, TYPE A. CURING COMPOUNDS SHALL CONFORM WITH ASTM C309, TYPE I, CLASS A MOISTURE LOSS OF NOT MORE THAN 0.055 GR/SQ CM WHEN APPLIED AT 200 SQ FT PER GALLON.

SIDEWALKS, GUTTERS AND CURBS SHALL BE PLACED ON COMPACTED SUBBASE CONSISTENT WITH THE PAVEMENT SUBBASE AS SHOWN ON THE DRAWINGS. WHEN SUBBASE DETAILS ARE MISSING AND NO AGENCY HAS JURISDICTION USE THE FOLLOWING: SIDEWALKS AND GUTTERS SHALL BE PLACED ON A MINIMUM OF 6 INCHES OF COMPACTED SUBBASE AND CURBS SHALL BE PLACED ON A MINIMUM OF 4 INCHES OF COMPACTED SUBBASE

ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND ALL SIMILAR STATE DEPARTMENT OF TRANSPORTATION REQUIREMENTS. REINFORCING SHALL BE IN ACCORDANCE WITH THAT SPECIFIED ON THE DRAWINGS AND THE

3. ALL FORMING, PLACEMENT, MATERIALS AND CURING SHALL CONFORM TO THE LATEST ADDITION OF

CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICES". REINFORCING STEEL SHALL BE ASTM A615, GRADE 60, DEFORMED. WELDED WIRE FABRIC SHALL BE ASTM A185, WELDED WIRE STEEL FABRIC.

5. SIDEWALKS, AND GUTTERS SHALL HAVE A BROOM FINISH PERPENDICULAR TO FLOW WITH A PICTURE FRAME EDGE JOINT ALL THE WAY AROUND. CURBS SHALL HAVE A SMOOTH FINISH OR LIGHT RUB FINISH BUT CONSISTENT THROUGH OUT THE PROJECT.

EXPANSION JOINTS SHALL BE PLACED EVERY 20 FEET MAXIMUM IN RUNS OF WALKS, 30 FEET MAXIMUM IN CURBS AND WHERE WALKS ABUT CONCRETE CURBS, STRUCTURES OR OTHER FIXED OBJECTS. EXPANSION JOINT MATERIAL SHALL BE PREMOLDED, 1/2 INCH MATERIAL WITH 23/64 INCH CAP IN ACCORDANCE WITH ASST. D1751. AFTER CONCRETE HAS SET THE CAP SHOULD BE REMOVED AND VOID FILLED WITH WATERPROOF JOINT FILLER. CURB AND GUTTER SHALL BE CUT OR TOOL JOINTED TO 1/3 THE DEPTH EVERY 10 FEET. SIDEWALKS SHOULD HAVE TOOLED OR CUT JOINTS TO 1/3 THE DEPTH IN SQUARES OR AS CLOSE TO SQUARE AS POSSIBLE NOT EXCEEDING

ASPHALT PAVEMENT

ASPHALT SHALL BE THE TYPE OR TYPES SPECIFIED ON THE DRAWINGS. IF NO TYPE IS INDICATED THE CONTRACTOR SHALL USE A MIX SPECIFIED BY THE APPROPRIATE STATE DEPARTMENT OF TRANSPORTATION FOR TOP AND BINDER. ALL ASPHALT SHALL BE PRODUCED IN STATE APPROVED

PLANTS WITH STATE APPROVED PRODUCTS. 2. ASPHALT WILL ONLY BE PLACED WHEN THE OUTSIDE TEMPERATURE IS 45 DEGREES F AND RISING. ASPHALT WILL NEVER BE PLACED ON FROZEN MATERIAL, DURING MEDIUM OR HEAVY PRECIPITATION, OR WHEN PRECEDING PRECIPITATION HAS SATURATED THE SUBBASE AND/OR SUBGRADE.

3. SURFACES THAT WILL ABUT THE NEW ASPHALT SHALL BE TACK COATED PRIOR PLACEMENT OF ASPHALT INCLUDING CURBS, GUTTER, EXISTING ASPHALT, AND STRUCTURES. TACK COAT SHALL BE APPLIED NEATLY TO MATCH THE LINES AND GRADES OF THE PROPOSED ABUTTING ASPHALT AT A RATE OF .05 TO .15 GALLONS PER SQUARE YARD.

4. ASPHALT SHALL BE PLACED IN LAYERS EQUAL TO THOSE SPECIFIED ON THE PLANS. THICKNESS OF EACH LAYER OR THE THICKNESS OF ALL LAYERS COMBINED SHALL NOT VARY MORE THAN 1/4 INCH FOR THICKNESS OF 0 TO 4 INCHES AND 1/2 INCH FOR THICKNESS OF 4 INCHES OR GREATER, FROM THOSE SPECIFIED ON THE DRAWINGS. IF MORE THAN 60% OF TEST CORES SAMPLED FAIL TO EQUAL OR EXCEED THE REQUIRED DEPTH THE PAVEMENT SHALL BE CONSIDERED FAILED AND BE SUBJECT TO REPAIRS, REPLACEMENT OR REASONABLE COMPENSATION OF WHICH THE CONTRACTOR WILL BEAR ALL COSTS. THE ASPHALT SHALL ALSO BE TESTED FOR SMOOTHNESS BY LAYING A 16 FOOT STRAIGHT EDGE ON THE PAVEMENT AND VERIFYING THAT THERE ARE NO GAPS GREATER THAN 1/4 INCH IN ANY DIRECTION.

5. PLACEMENT AND COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE SPECIFIED BY THE STATE DEPARTMENT OF TRANSPORTATION OF WHICH THE PROJECT IS LOCATED IN. THE ROLLING SHALL BE DONE IN SUCH A MANNER THAT WILL MATCH JOINTS AND LEAVE A SMOOTH UNIFORM SURFACE WHILE PROVIDING THE PROPER COMPACTION WHICH WILL BE 95% OF LABORATORY

6. WHEN MATCHING INTO EXISTING PAVEMENT ALL MATCH JOINTS SHALL BE SAW CUT TO PROVIDE A STRAIGHT SMOOTH JOINT. THE ASPHALT DEPTH AT THE MATCH POINT SHALL BE EQUAL TO THAT OF THE PROPOSED OR EXISTING WHICH EVER IS GREATER.

7. PAVING EQUIPMENT SHALL BE OF GOOD CONDITION AND QUALITY. ASPHALT SHALL BE PLACED BY MECHANICAL EQUIPMENT EXCEPT IN SMALL AREAS THAT ARE INACCESSIBLE TO A PAVER. ASPHALT SHALL BE TRANSPORTED IN COVERED TRUCKS AND SCHEDULED IN SUCH A MANNER THAT WILL MAINTAIN ASPHALT TEMPERATURE. ASPHALT SHALL BE REJECTED WHEN TEMPERATURES FALL BELOW 250 DEGREES F OR THE MINIMUM TEMPERATURES SPECIFIED BY THE STATE DEPARTMENT OF TRANSPORTATION.

SEEDING AND LANDSCAPING 1. ALL DISTURBED AREAS SHALL BE FINE GRADED REMOVING ALL ROOTS, STICKS, STONES AND

DEBRIS GREATER THAN 2 INCHES IN ANY DIMENSION. SEED, MULCH AND FERTILIZE AS NECESSARY TO RESTORE ALL DISTURBED AREAS TO ORIGINAL

CONDITION OR BETTER. 3. LAWN FERTILIZER SHALL BE 55% NITROGEN, 10% PHOSPHORUS AND 10% POTASH WHERE 50% OF THE NITROGEN IS DERIVED FROM UREAFORM SOURCE.

4. LAWN SEED WHEN NOT GIVEN ON THE PLANS SHALL BE 50% BY WEIGHT. 85% PURITY. 85% GERMINATION OF PENNFINE PERENNIAL RYE, 30% BY WEIGHT, 97% PURITY, 85% GERMINATION OF PENNLAWN RED FESCUE, 20% BY WEIGHT, 85% PURITY, 80% GERMINATION OF COMMON

WHEN PLACING BY HYDROSEEDING APPLICATION SEED SHALL BE PLACED AT 80 POUNDS PER ACRE, HYDROMULCH AT 1,200 POUNDS PER ACRE, WATER AT 500 GALLONS PER ACRE AND FERTILIZER AT A MINIMUM OF 220 POUNDS PER ACRE.

6. IF PLACING BY MECHANICAL MEANS FERTILIZER SHALL BE PLACED AT 25 POUNDS PER 1,000 SQUARE FEET, SEED AT 5 POUNDS PER 1,000 SQUARE FEET AND STRAW MULCH AT 2 TONS PER ACRE. PLACE FERTILIZER AND SEED THEN LIGHTLY RAKE AND THEN ROLL WITH 200 POUND ROLLER. MULCH THE AREA THEN WATER. STRAW MAY NEED TO BE SECURE TO PREVENT IT BLOWING AWAY.

WATER LAWN AREAS AS NEEDED TO PROMOTE GROWTH. THE CONTRACTOR WILL BE RESPONSIBLE TO WATER, RESEED OR WHATEVER WORK NECESSARY TO INSURE THE GROWTH OF THE LAWN UNTIL A COMPLETE AND UNIFORM STAND OF GRASS HAS GROWN AND BEEN CUT AT LEAST TWICE.

TRAFFIC SIGNAGE AND PAVEMENT MARKINGS

1. PAVEMENT MARKINGS SHALL BE THE TYPE, COLOR, SIZE AND LOCATIONS SHOWN ON THE PLANS. IF THE INFORMATION ON THE PLANS IS NOT COMPLETE AND AUTHORITY HAVING JURISDICTION DOES NOT HAVE REQUIREMENTS REGARDING THIS USE THE FOLLOWING: PAINT SHALL BE SUPPLIED IN ACCORDANCE WITH AASHTO: M248 LATEST ADDITION. COLORS SHALL BE AS FOLLOWS (YELLOW-PARKING STALLS, HANDICAP PARKING AND CHARACTERS, PARKING ISLANDS, TRAFFIC CONTROL LETTERING AND CHARACTERS AND FIRE LANES) (WHITE - STOP BARS, PEDESTRIAN CROSSINGS AND STOP LETTERING).

2. THE PAVEMENT SHALL BE CLEAN AND FREE OF DIRT, DUST, MOISTURE, OILS AND OTHER FOREIGN MATERIALS. ANY OLD PAVEMENT MARKINGS SHALL BE REMOVED UNLESS PAINTS ARE COMPATIBLE AND OVERLAY IDENTICALLY. THE SURFACE OF THE PAVEMENT PRIOR APPLICATION SHALL BE 45 DEGREES FAHRENHEIT AND RISING UNLESS MANUFACTURER'S RECOMMENDATIONS ARE GREATER.

THE SIGNAGE SHALL BE THE TYPE AND LOCATION PER THE DRAWINGS. THE SIGNAGE SHALL BE PROVIDED IN ACCORDANCE WITH THE LOCAL HIGHWAY, COUNTY HIGHWAY AND STATE DEPARTMENT OF TRANSPORTATION. IF LOCAL, COUNTY, OR STATE CODES DO NOT EXIST USE AASHTO: M268. 4. POSTS, BRACKETS AND FRAMES SHALL BE STEEL PER ASTM A36, A242, A441, A572, A588, GRADE

50 AND HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. ALL CUTTING, DRILLING OR OTHER POLE MODIFICATIONS SHALL BE PAINTED WITH GALVANIZING PAINT. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL. POST HOLES SHALL BE A MINIMUM OF FOUR FEET DEEP AND 12 INCHES IN DIAMETER UNLESS POOR SOILS OR FROST CONDITIONS REQUIRE GREATER DEPTH. SIGN POSTS SHALL BE KEPT PLUMB, 6 INCHES OFF BOTTOM AND CENTERED AS 3000 PSI CONCRETE IS PLACED AROUND THE POST. THE OVERALL SIGN AND POST SYSTEM SHOULD BE ABLE TO WITHSTAND 33 POUNDS PER

SQUARE FOOT. POSTS MAY BE DRIVEN WHEN ACCEPTABLE TO LOCAL AUTHORITIES AND BY OWNERS REPRESENTATIVE. 6. CONTRACTOR CAN PLACE SIGNS ON POSTS AFTER CONCRETE HAS CURED FOR SEVEN DAYS OR 3/4 STRENGTH IS ACHIEVED.

7. ALL HANDICAP STRIPING AND SIGNAGE SHALL MEET AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. FIRE LANE STRIPING AND SIGNAGE SHALL MEET THE REQUIREMENTS OF THE LOCAL BUILDING INSPECTOR AND FIRE DEPARTMENT.

1. PROVIDE CERTIFICATIONS STATING THAT THE MATERIALS COMPLY WITH THE SPECIFIED REQUIREMENTS 2. ALL GEOTEXTILES SHALL BE NEW, CLEAN AND IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS, UNLESS SPECIFICALLY NOTED ON THE PLANS. 3. TAKE ALL REQUIRED MEASURES TO ENSURE THAT ALL GEOTEXTILES ARE PROTECTED FROM DAMAGE.

4. SPECIAL CARE SHALL BE EXERCISED DURING DELIVERY AND STORAGE TO AVOID DAMAGE TO THE 5. ALL MATERIALS SHALL BE DELIVERED AND STORED WITHIN THE CONTRACTOR'S WORK LIMITS OR IN

AN AREA APPROVED BY THE OWNER. 6. PRODUCTS THAT ARE DAMAGED WILL BE REMOVED AND REPLACED, UNLESS THE PRODUCT CAN BE REPAIRED IN AN ACCEPTABLE MANNER.

7. FILTER FABRIC SHALL BE A NON-WOVEN GEOTEXTILE AND MEET THE FOLLOWING REQUIREMENTS:

WEIGHT 4.0 OZ/SY. GRAB STRENGTH 105 LBS. GRAB ELONGATION 50 % TRAPEZOID TEAR STRENGTH 45 LBS. MULLEN BURST STRENGTH 210 PSI PUNCTURE STRENGTH 65 LBS. THICKNESS 60 MILS WATER FLOW RATE 140 GPM/FT SQ.

8. THE SEPARATION/STABILIZATION FABRIC SHALL BE A WOVEN GEOTEXTILE AND MEET THE FOLLOWING REQUIREMENTS:

WEIGHT 4.0 OZ/SY. GRAB STRENGTH 200 LBS. TRAP TEAR STRENGTH 75 LBS. MULLEN BURST STRENGTH 400 PSI PUNCTURE STRENGTH 90 LBS.

9. THE SURFACE THE GEOTEXTILE IS TO BE PLACED ON SHALL BE SMOOTH AND FREE OF SHARP STONES TO PREVENT PUNCTURE OF THE GEOTEXTILE. 10. GEOTEXTILES MAY BE JOINED BY OVERLAPPING OR SEWING, OVERLAPPED SEAMS SHALL HAVE A

MINIMUM OVERLAP OF 18 INCHES. SEWN SEAMS SHALL BE LAPPED A MINIMUM OF 4" AND SEWN WITH NYLON OR POLYPROPYLENE THREAD. 11. GEOTEXTILE THAT IS PUNCTURED OR TORN SHALL BE REPLACED OR PATCHED. A PATCH SHALL

EXCEED THE DAMAGED PERIMETER BY 3 FEET IN ALL DIRECTIONS. 12. GEOTEXTILE SHALL BE PLACED LOOSELY SO THAT OVERLAPPING MATERIALS WILL NOT STRETCH OR

13. GEOTEXTILES SHALL BE UNROLLED FROM TOP TO BOTTOM OF SLOPES AND OVERLAY MATERIAL SHALL BE PLACED FROM THE TOE OF THE SLOPE TOWARDS THE TOP.

14. OVERLAY MATERIAL SHALL BE PLACED IN THE DIRECTIONS OF SEAMS OR THE DIRECTION OF OVERLAPS ONLY. 15. OVERLAY MATERIALS SHALL NOT BE DROPPED ON GEOTEXTILE WHEN AVOIDABLE. 16. WHEN USED FOR UNDERDRAIN, GEOTEXTILE SHALL BE PLACED TO CONFORM LOOSELY TO THE

SHAPE OF THE TRENCH. AFTER PLACING THE DRAINAGE MATERIAL, THE GEOTEXTILE SHALL BE FOLDED OVER THE TOP TO FORM A 12-INCH MINIMUM OVERLAP. 17. GEOTEXTILES SHALL BE PROTECTED FROM SUNLIGHT DURING TRANSPORT AND STORAGE. AFTER PLACEMENT, THE GEOTEXTILE SHALL NOT BE LEFT UNCOVERED FOR MORE THAN 2 WEEKS.

18. TRAFFIC OR CONSTRUCTION EQUIPMENT WILL NOT BE PERMITTED DIRECTLY ON GEOTEXTILES.

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