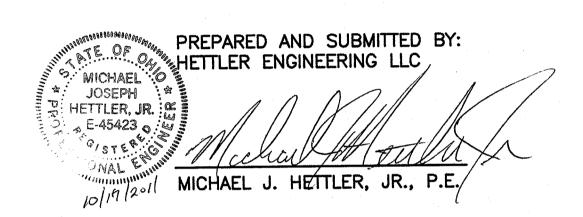
SITE IMPROVEMENT PLANS FOR

MARTIN PALLET, INC.

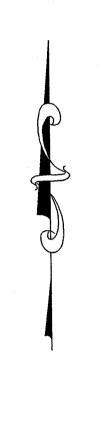
TRUCK REPAIR FACILITY CITY OF MASSILLON STARK COUNTY, OHIO

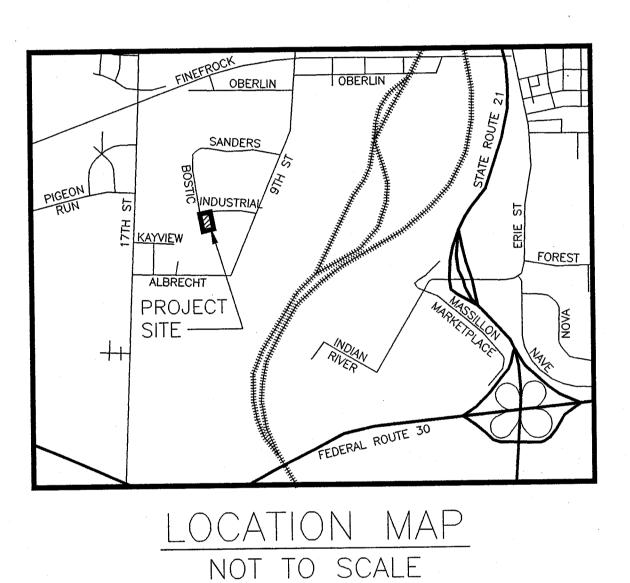
OCTOBER 2011



KEITH A. DYLEWSKI, P.E. CITY ENGINEER

ONLY APPROVED PLANS SIGNED BY THE CITY ENGINEER ARE TO BE USED FOR CONSTRUCTION.





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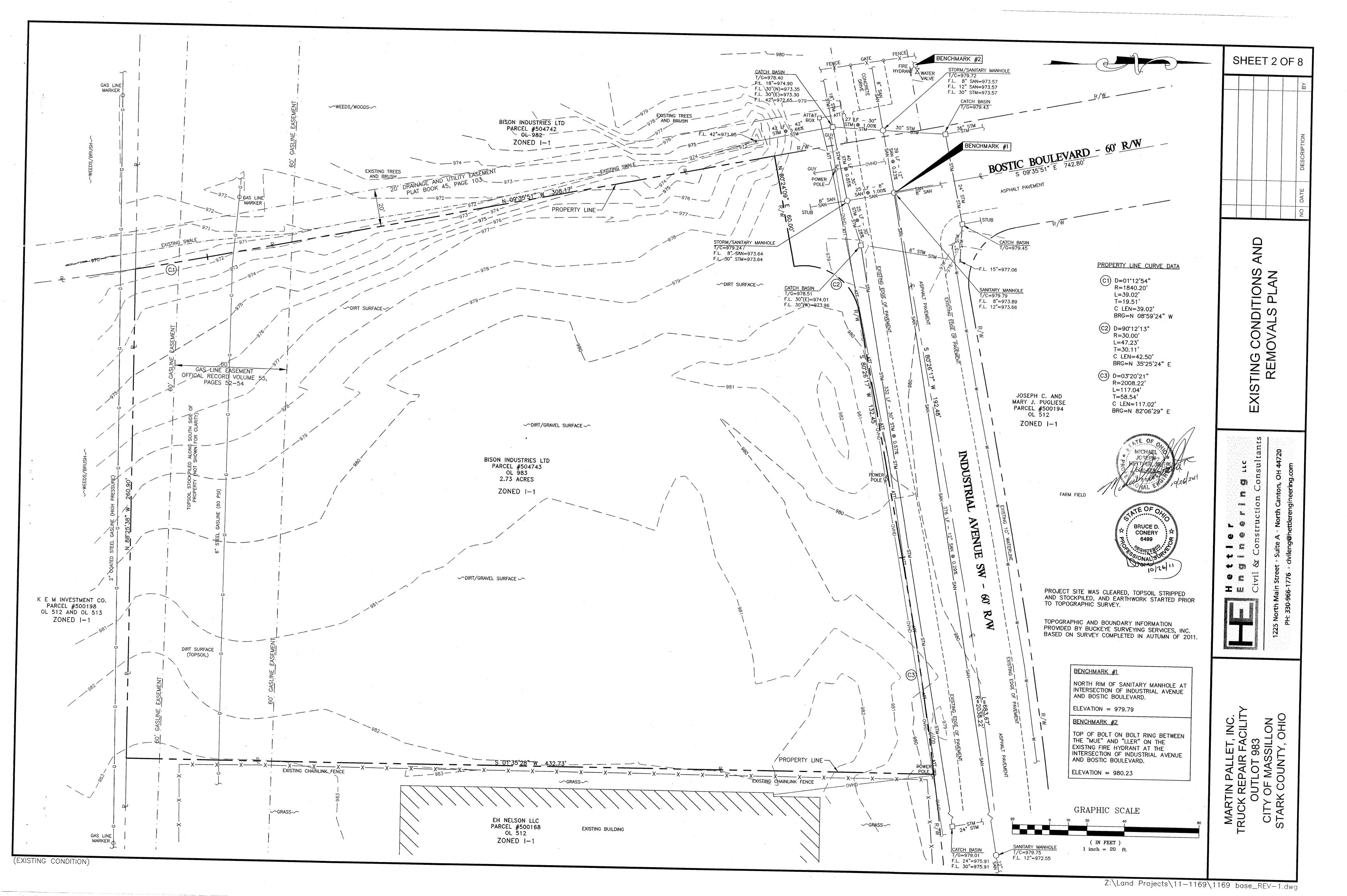


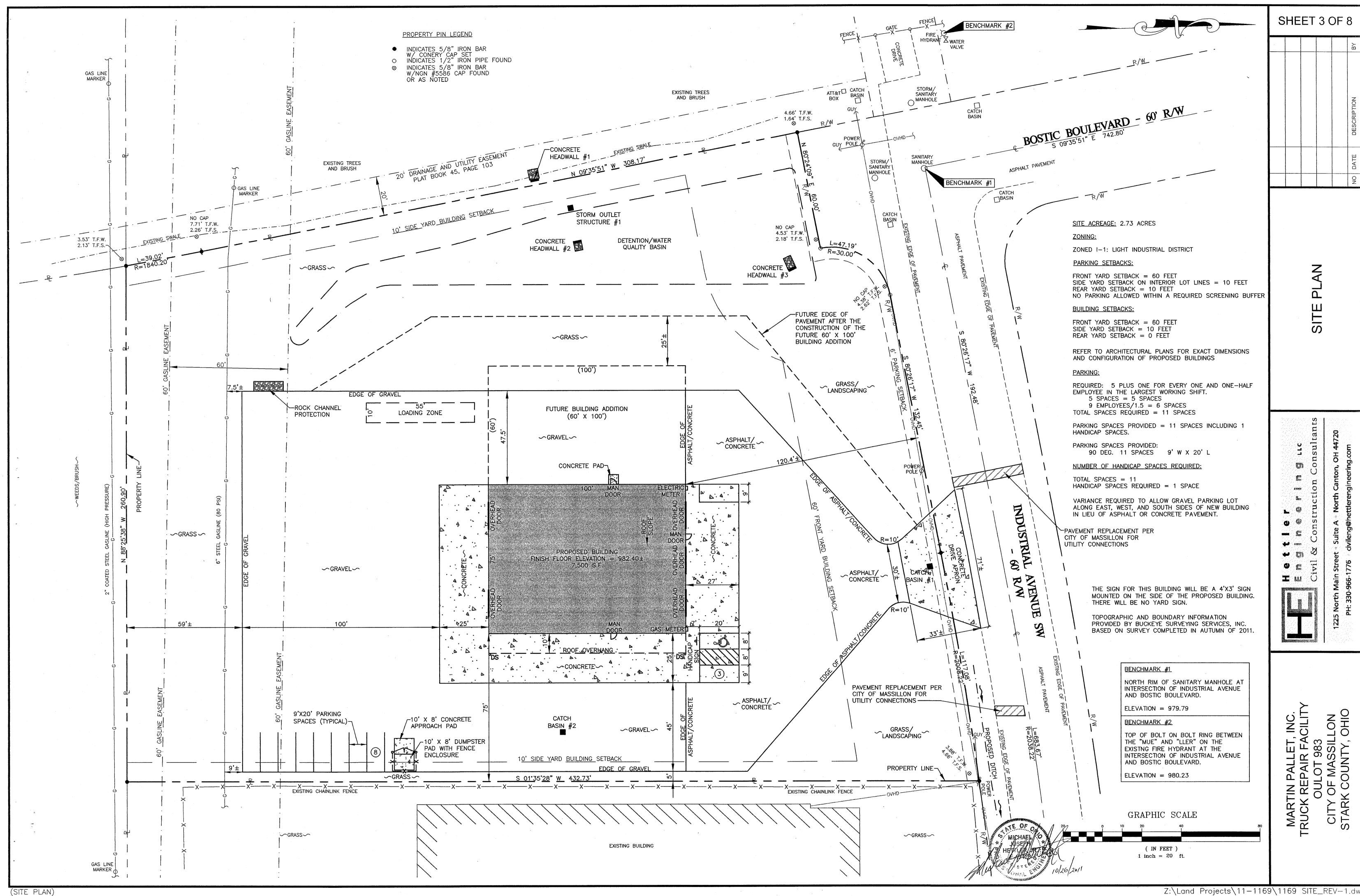
PH: 330-966-1776 · civileng@hettlerengineering.com

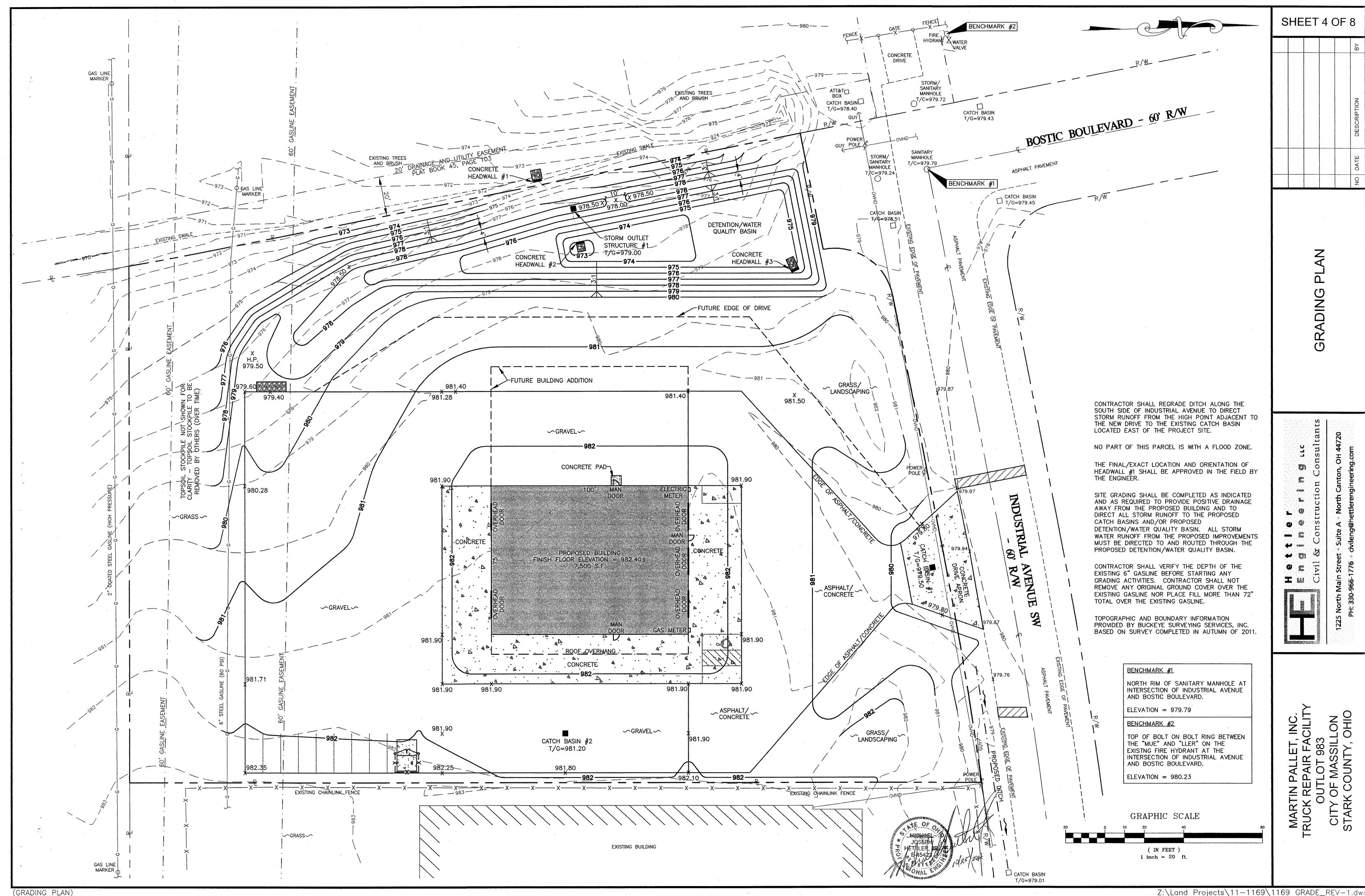
BUCKEYE SURVEYING SERVICES, INC. 1050 LIBERTY LANE N.W. NORTH CANTON, OHIO 44720 (330) 966-5259

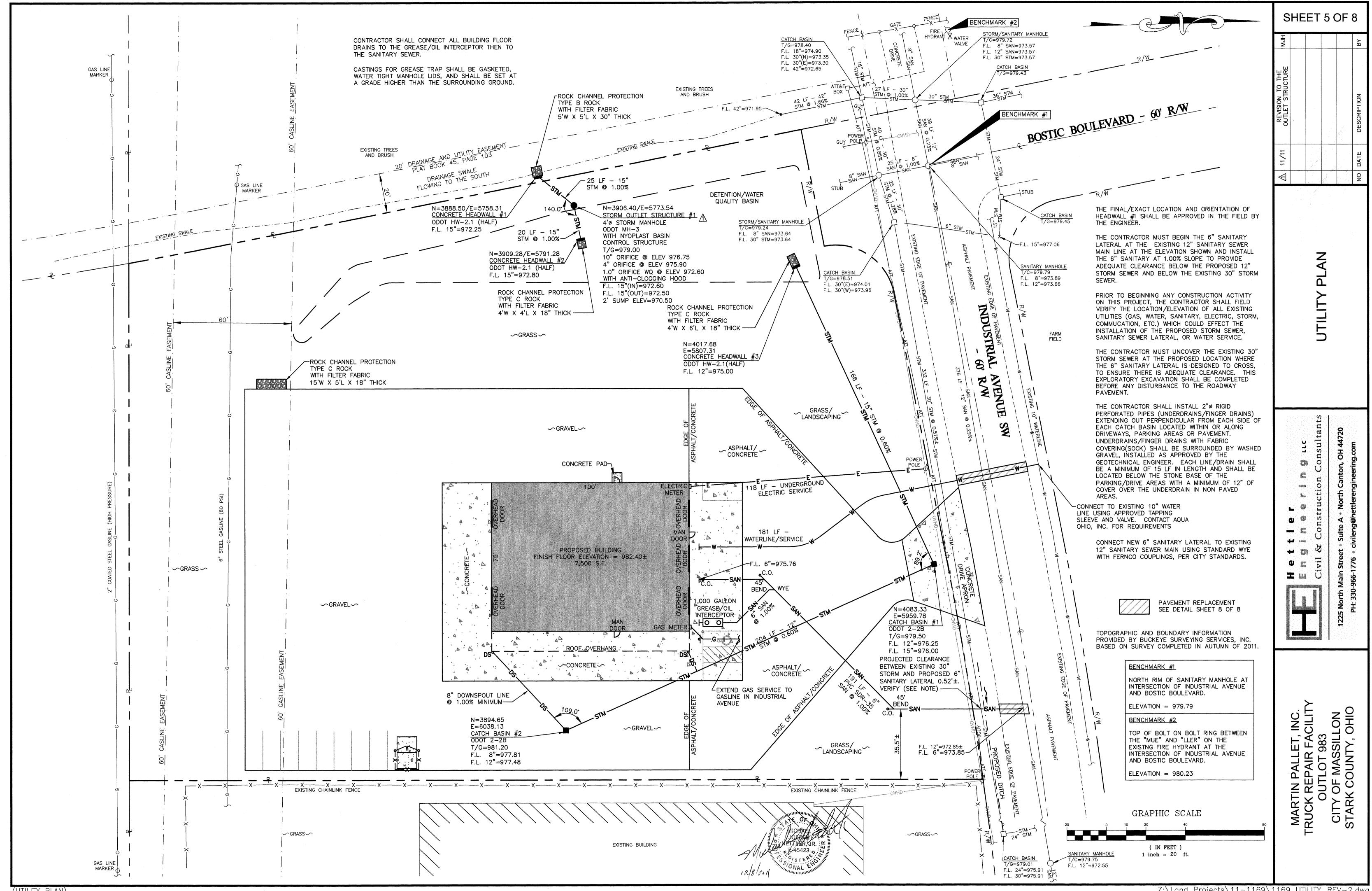
SURVEYING SERVICES BY

CALL 2 WORKING DAYS
BEFORE YOU DIG
1-800-362-2764
OHIO UTILITIES PROTECTION SERVICE
(CONTACT NON-MEMBERS DIRECTLY)









GENERAL NOTES FOR STORM WATER POLLUTION PREVENTION PLAN: 1. TEMPORARY SOIL STABILIZATION (ODOT ITEM 207) SHALL OCCUR WITHIN SEVEN (7) DAYS AFTER ROUGH GRADING IF A DISTURBED AREA WILL REMAIN IDLE LONGER THAN TWENTY ONE (21) DAYS. PERMANENT SOIL STABILIZATION (ODOT ITEM 659) SHALL BE INSTALLED WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE (2 DAYS FOR AREAS WITHIN 50' OF STREAM). PERMANENT VEGETATION IS A GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE AND MATURE ENOUGH TO SURVIVE WINTER WEATHER CONDITION. - 2. ALL SEDIMENT AND EROSION CONTROLS SHALL BE INSPECTED ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL. A WRITTEN LOG OF THESE INSPECTIONS MUST BE KEPT. (DATES OF INSPECTION, WEATHER CONDITIONS, OBSERVATIONS, ACTIONS TAKEN TO CORRECT PROBLEM, AND DATE INFORMATION WAS TAKEN.) WHEN SEDIMENT AND EROSION CONTROL STRUCTURES/DEVICES NEED REPAIRED/ALTERED, THE WORK SHALL BE COMPLETED WITHIN THREE (3) DAYS OF INSPECTION (SEDIMENT PONDS - REPAIR WITHIN 10 DAYS) 3. NO SOLID OR LIQUID WASTE SHALL BE DISCHARGED INTO STORM WATER RUNOFF. 4. CONSTRUCTION VEHICLES ARE LIMITED TO THE CONSTRUCTION ACCESS ROAD NOTED ON THE PLAN. (STABILIZED CONSTRUCTION ENTRANCE). 5. OTHER EROSION CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS. 6. THE SOIL EROSION FOR THE SITE WILL BE CONTROLLED WITH THE USE OF SILT FENCE, INLET PROTECTION, AND A CONSTRUCTION DRIVE ENTRANCE. 7. FOR DRAINAGE AREAS AND CALCULATIONS, SEE THE DRAINAGE REPORT FOR THIS PROJECT. TOTAL SITE APPROXIMATE DISTURBED AREA = 2.70± ACRES TOTAL SITE DRAINAGE AREA = 2.38 ACRES CONSTRUCTION SEQUENCE: 1. INSTALL ALL SEDIMENT CONTROL DEVICES (SILT FENCE, INLET PROTECTION, AND STABILIZED DEVELOPMENT AND URBAN STREAM PROTECTION, RAINWATER AND LAND DEVELOPMENT MANUAL.

- CONSTRUCTION ENTRANCES) AS PER THE OHIO STANDARDS FOR STORM WATER MANAGEMENT LAND
- 2. THE CITY OF MASSILLON OR THEIR REPRESENTATIVE MUST INSPECT AND APPROVE ALL SEDIMENT CONTROL DEVICES PRIOR TO ANY EARTH MOVING ACTIVITY. A PRE-CONSTRUCTION MEETING IS REQUIRED. CONTACT THE CITY OF MASSILLON ENGINEER AT (330) 830-1722 TO SCHEDULE PRE-CONSTRUCTION MEETING.
- 3. CLEAR AND GRADE THE PROJECT SITE LOCATED WITHIN THE LIMITS OF DISTURBANCE AS INDICATED ON THE CONSTRUCTION DRAWINGS. CONSTRUCT ALL PROPOSED IMPROVEMENTS AND ALL UTILITIES.
- 4. PERMANENTLY STABILIZE ALL DISTURBED AREAS (ODOT 659). THE CITY OF MASSILLON OR THEIR REPRESENTATIVE MUST APPROVE ALL STABILIZATION PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL
- 5. INSTALL ALL POST CONSTRUCTION BMP's AS SOON AS CONSTRUCTION IS COMPLETE AND STABILIZATION HAS OCCURRED AS REQUIRED.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE CONTRACTOR SHALL PREVENT AND/OR REDUCE AND CONTROL SOIL EROSION RESULTING FROM THE PROPOSED IMPROVEMENTS. THE USE OF SILT FENCING, JUTE MATTING, TEMPORARY SEEDING, SOD, SILT CHECKS, INLET PROTECTIONS AROUND ALL CATCH BASINS, STABILIZED CONSTRUCTION ENTRANCE(S), ETC. WILL BE REQUIRED. SEDIMENT CONTROL STRUCTURES/DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL, <u> 'RAINWATER AND LAND DEVELOPMENT — OHIO'S STANDARDS FOR STORMWATER MANAGEMENT LAND DEVELOPMENT</u> AND URBAN STREAM PROTECTION' THIRD EDITION DATED 2006. SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS SET FORTH ON THE APPROVED STORM WATER POLLUTION PREVENTION PLAN IN APPLICABLE, OR AS DETAILED ON THE CONSTRUCTION PLANS, AS SPECIFIED BY THE CITY OF MASSILLON.

DISPOSAL OF SOLID, SANITARY AND TOXIC WASTE

SOLID, SANITARY AND TOXIC WASTE MUST BE DISPOSED OF IN A PROPER MANNER IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. IT IS PROHIBITED TO BURN, BURY OR POUR OUT ONTO THE GROUND OR INTO STORM SEWERS ANY SOLVENTS, PAINTS, STAINS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREEZE, CEMENT CURING COMPOUNDS AND OTHER SUCH TOXIC OR HAZARDOUS WASTES. WASH OUT OF CEMENT TRUCKS SHOULD OCCUR IN A DIKED, DESIGNATED AREA WHERE THE WASTE CAN BE COLLECTED AND DISPOSED OF PROPERLY WHEN THEY HARDEN. STORAGE TANKS SHOULD BE LOCATED IN DIKED AREAS AWAY FROM DRAINAGE CHANNELS. THE DIKED AREA SHOULD HOLD A VOLUME 110% OF THE LARGEST TANK.

PROJECT DESCRIPTION AND NARRATIVE

THE PROPOSED PROJECT CONSISTS OF EARTHWORK, GRADING, ASPHALT/CONCRETE PARKING AREAS AND DRIVES, AND A NEW BUILDING FACILITY. THE SITE WORK WILL INCLUDE CLEARING & GRUBBING, REMOVALS, EARTHWORK, UTILITIES, GRADING, ASPHALT/CONCRETE PAVEMENT, CONCRETE, AND DRIVE APRONS.

SEED, MULCH, FERTILIZE AND LIME REQUIREMENTS SHALL MEET THE OHIO DEPARTMENT OF TRANSPORTATION - CONSTRUCTION MATERIAL SPECIFICATIONS - ITEM 207 TEMPORARY SEDIMENT AND EROSION CONTROLS AND ITEM 659 SEEDING AND MULCHING. SEEDING METHODS SHALL BE PER ODOT 659.12 (INCLUDING SEEDING SCHEDULE INFORMATION).

TOPSOIL NOTE:

EXCESS TOPSOIL NOT NEEDED FOR RESPREAD WILL BE REMOVED FROM THE PROJECT SITE.

INLET PROTECTION

THE CONTRACTOR MAY USE A GEOTEXTILE-STONE INLET PROTECTION ON ALL EXISTING INLETS, OR MAY SUBSTITUTE WITH "DANDY BAGS" OR APPROVED EQUAL, WITHIN THE LIMITS OF THE DISTURBED AREAS.

SOIL TYPES

COMMERCIAL

CpB - CHILI SILT LOAM, SOIL GROUP "B" WrB - WHEELING SILT LOAM, SOIL GROUP "B"

POST-CONSTRUCTION WATER QUALITY DESIGN

WATER QUALITY VOLUME IS DETERMINED USING WQV = 0.75 X C X A/12 PER OHIO EPA PHASE 2 REQUIREMENTS.

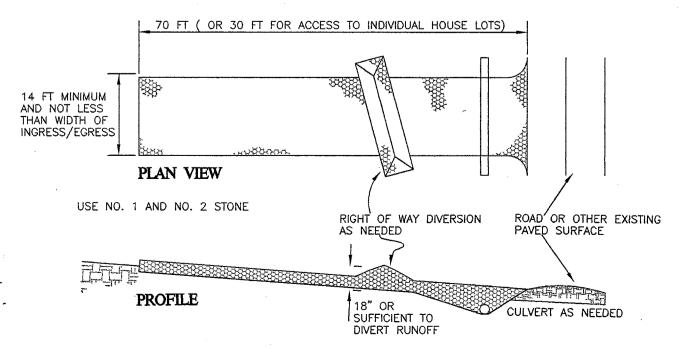
DRAINAGE AREA AND RUNOFF INFORMATION TYPE OF LAND USE

TOTAL DRAINAGE AREA = 2.38 WEIGHTED RUNOFF COEFFICIENT = 0.80

 $WQV = 0.75 \times 0.80 \times 2.38/12 \times 43560 \text{ SF/AC} = 5183 \text{ C.F.} + 20\% \text{ FOR SILTATION} = 6219 \text{ C.F.}$

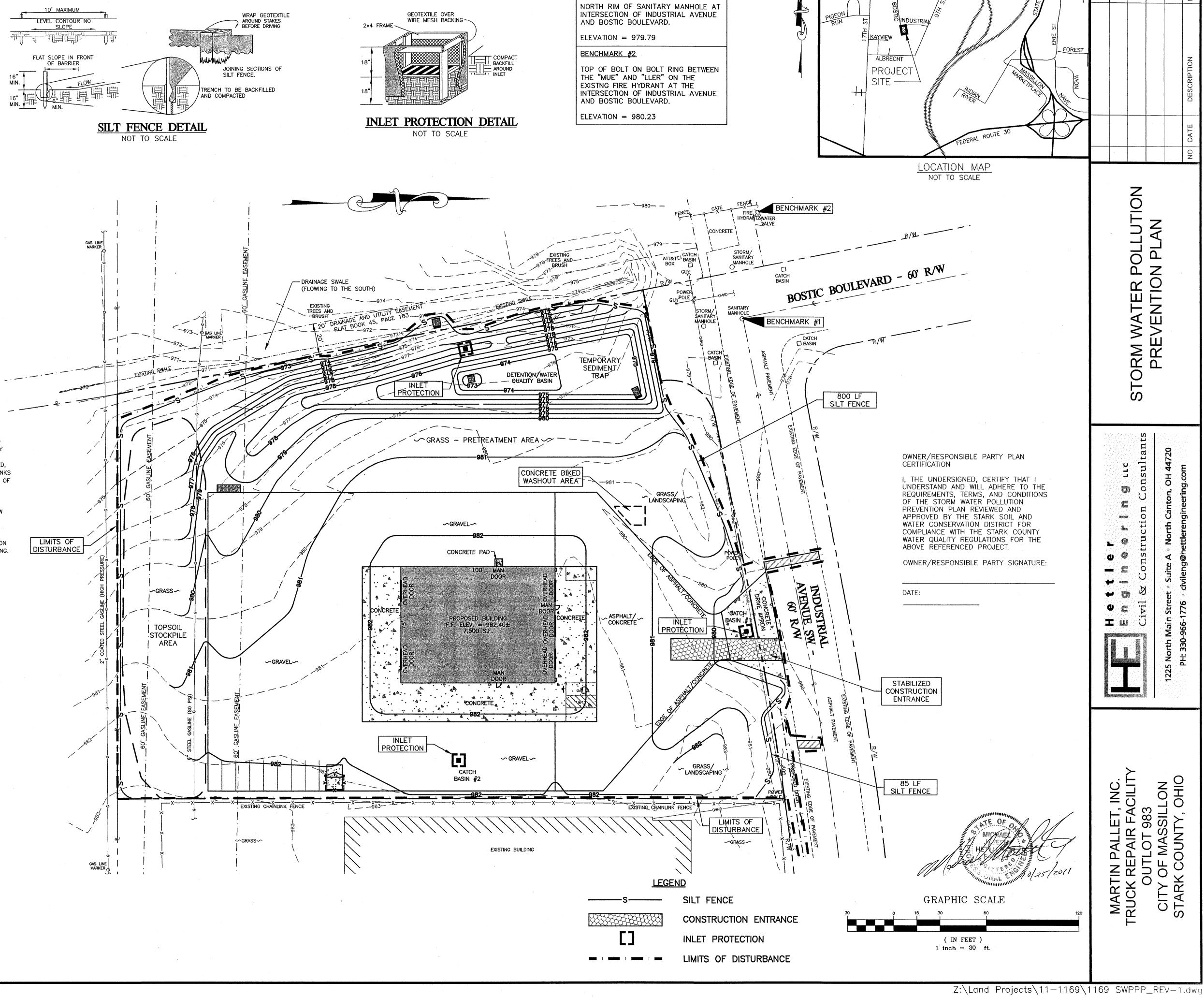
WATER QUALITY VOLUME (C.F.) =6219 C.F. REQUIRED

WATER QUALITY VOLUME OF 6603 C.F. PROVIDED AT ELEVATION 975.90 IN PROPOSED DRY DETENTION BASIN



STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



BENCHMARK #1

OBERLÍN

SHEET 6 OF 8

PROJECT SPECIFICATIONS

ALL WORK REQUIRED TO COMPLETE THIS IMPROVEMENT SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE DETAILED CONSTRUCTION DRAWINGS, THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, EXCEPT AS HEREIN AMENDED, AND PER THE CITY OF MASSILLON SPECIFICATIONS/REQUIREMENTS/STANDARDS. THE CONSTRUCTION DRAWINGS WILL TAKE PRECEDENCE OVER THE OTHER REQUIREMENTS. IN THE CASE OF A CONFLICT BETWEEN T'E CITY OF MASSILLON AND THE OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS/REQUIREMENTS, THE MORE STRICT OF THE TWO SPECIFICATIONS WILL OVERN. AS DÉTERMINED BY THE ENGINEER. STATE OF OHIO, DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DRAWINGS SHALL APPLY TO THIS IMPROVEMENT EXCEPT AS OTHERWISE PROVIDED.

PROJECT SAFETY

THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT/ALONG THE PROJECT SITE AT ALL TIMES. THE CONTRACTOR SHALL PROPERLY SUPPORT AND/OR MAINTAIN ALL EXCAVATIONS PER APPLICABLE SAFETY REQUIREMENTS AND COMPLY WITH ALL O.S.H.A. REGULATIONS. THIS SHALL INCLUDE STRICT COMPLIANCE WITH ALL APPLICABLE REGULATIONS/REQUIREMENTS REGARDING TRENCH SAFETY. ADEQUATE BARRICADES, WARNING LIGHTS, SIGNS, FENCING, ETC. SHALL BE ERECTED AROUND THE CONSTRUCTION AREA DURING ALL NON-WORKING HOURS TO ALERT PERSONS OF THE POTENTIAL DANGER ASSOCIATED WITH THE AREA UNDER CONSTRUCTION AS WELL AS TO PREVENT ACCESS BY LINAUTHORIZED PERSONNEL TO THE CONSTRUCTION SITE/AREA. TRENCHES SHALL BE BACKFILLED AT THE END OF EACH WORK DAY OR PROPERLY SECURED AS APPROVED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE SAFETY OF THE GENERAL PUBLIC AS WELL AS ALL CONSTRUCTION PERSONNEL. PUBLIC STREETS SHALL BE KEPT CLEAN AND FREE OF DEBRIS (MUD, STONE, ETC.) AT ALL TIMES. THE CONTRACTOR SHALL ALERT ALL LOCAL EMERGENCY AGENCIES/SERVICES (FIRE, POLICE, AMBULANCE, ETC.) OF THE NATURE OF THE PROPOSED PROJECT PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. ACCESS FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL

AT NO TIME SHALL ANY PERSONNEL ENTER EXISTING STRUCTURES/CHAMBERS WITHOUT PROPER SAFETY EQUIPMENT. INCLUDING BUT NOT LIMITED TO AIR PACKS, AIR MONITORS AND/OR AIR SENSORS, PROTECTIVE CLOTHING, BODY HARNESS WITH POSITIVE MEANS OF REMOVING A PERSON FROM THE STRUCTURE/CHAMBER, ETC. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. REQUIREMENTS INCLUDING THOSE SPECIFIED FOR ENTERING CONFINED SPACES.

UNDERGROUND UTILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS WERE OBTAINED BY FIELD OBSERVATIONS, FROM EXISTING RECORDS, AND/OR FROM THE OWNERS OF THE RESPECTIVE UTILITIES. THE INFORMATION AS SHOWN IS BELIEVED TO BE CORRECT, HOWEVER, THE COMPLETENESS AND ACCURACY OF THIS INFORMATION CANNOT BE GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ALL THE VARIOUS UTILITY COMPANIES (PUBLIC AND PRIVATE) TO VERIFY THE EXISTENCE, LIMITS, AND/OR LOCATION OF ANY UTILITIES WHICH MAY BE ALONG THE ROUTE, WITHIN, AND/OR ADJACENT TO THIS IMPROVEMENT

UTILITY NOTIFICATION

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING OPERATIONS ON THIS PROJECT THE CONTRACTOR(S) SHALL NOTIFY THE ENGINEER, THE REGISTERED UTILITY PROTECTION AGENCY/SERVICE, AND THE OWNERS OF ANY OTHER UTILITIES (PUBLIC AND/OR PRIVATE) THAT MAY HAVE UTILITY LINES OR FACILITIES WITHIN THE VICINITY OF THIS PROJECT BUT WHO ARE NOT MEMBERS OF THE REGISTERED UTILITY PROTECTION SERVICE OF HIS/HER INTENTION TO BEGIN CONSTRUCTION ACTIVITY ON THIS PROJECT. THE OWNERS OF ANY UNDERGROUND UTILITY FACILITY SHALL, WITHIN 48 HOURS AFTER NOTICE IS RECEIVED, EXCLUDING SATURDAYS, SUNDAYS, AND OTHER LEGAL HOLIDAYS; STAKE, MARK OR OTHERWISE DESIGNATE THE EXISTENCE AND/OR LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING AND/OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY FIVE WORKING DAYS AHEAD OF THE PLANNED CONSTRUCTION. OHIO UTILITIES PROTECTION SERVICE: 1-800-362-2764 (CONTACT NON-MEMBERS DIRECTLY).

VERIFICATION OF UNDERGROUND UTILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AS WELL AS THE ACTUAL LOCATION, ALIGNMENT, AND ELEVATIONS OF ALL EXISTING UTILITIES/FACILITIES WITHIN AND/OR ADJACENT TO THE GENERAL LIMITS OF THESE IMPROVEMENTS INCLUDING WATERLINES, SANITARY AND STORM SEWERS, GAS LINES, COMMUNICATION LINES/BANKS, ELECTRIC LINES, ETC. PRIOR TO ORDERING MATERIALS OR BEGINNING WORK. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK UNTIL THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES WHICH COULD EFFECT COMPLETION OF THIS IMPROVEMENT HAVE BEEN FIELD CHECKED AND VERIFIED. THIS WILL LIKELY REQUIRE EXPLORATORY EXCAVATIONS TO BE PERFORMED BY THE CONTRACTOR FOR WHICH HE WILL NOT BE DIRECTLY REIMBURSED. THE CONTRACTOR SHALL NOT ASSUME THAT EXISTING UTILITIES/CONDUITS WERE INSTALLED AT TYPICAL/STANDARD DEPTHS OR AT UNIFORM SLOPES/GRADES/DEPTHS BETWEEN ACCESS POINTS (CATCH BASINS, MANHOLES, JUNCTION CHAMBERS, ETC.). WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE, GRADE, AND ELEVATION BEFORE STARTING TO INSTALL THE PROPOSED CONDUIT. ANY CONFLICTS AND/OR DISCREPANCIES FROM THE PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER SO THAT THE APPROPRIATE ADJUSTMENTS IN ALIGNMENT AND/OR GRADE MAY BE MADE PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO VERIFY AND/OR DETERMINE EXISTING INFORMATION AS INDICATED/REQUIRED WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ANY CHANGES NECESSARY TO COMPLETE THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION.

CLEAN UP AT END OF PROJECT

PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL SWALES, DITCHES, STORM SEWERS, CATCH BASINS, STORM MANHOLES, SANITARY SEWERS, SANITARY MANHOLES, GUTTERS, AND OTHER IMPROVEMENTS ARE CLEAN AND FREE OF ANY AND ALL DEBRIS.

BACKFILL OF TRENCHES ADJACENT TO UTILITY POLES

WHERE PROPOSED UTILITIES ARE ADJACENT TO AN EXISTING UTILITY POLE. THE UTILITY TRENCH SHALL BE PROPERLY AND COMPLETELY BACKFILLED AND COMPACTED IMMEDIATELY AFTER INSTALLATION. THE UTILITY SHALL BE INSTALLED AND BACKFILLED AS A TYPE B CONDUIT PER ODOT ITEM 603 FOR A MINIMUM LENGTH OF 10 LF, 5' ON EACH SIDE OF THE UTILITY POLE.

REMOVAL AND/OR DEMOLITION OF EXISTING IMPROVEMENTS AND/OR UTILITIES

THE CONTRACTOR SHALL REMOVE AND/OR DEMOLISH ALL EXISTING IMPROVEMENTS AS SPECIFIED AND/OR REQUIRED TO PROPERLY COMPLETE THE PROPOSED IMPROVEMENTS. EXISTING IMPROVEMENTS SHALL BE REMOVED COMPLETELY UNLESS OTHERWISE SPECIFIED BY THE GEOTECHNICAL ENGINEER. ALL TRENCHES, EXCAVATIONS, VOIDS RESULTING FROM THE REMOVAL OR DEMOLITION SHALL BE BACKFILLED WITH APPROVED GRANULAR MATERIAL COMPACTED TO 98% MAXIMUM DAY DENSITY PER ASTM D-698 AND AS REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL BE LIABLE AND RESPONSIBLE TO SUPPORT AND PROTECT ALL EXISTING STRUCTURES, BUILDINGS, FOUNDATIONS, UTILITIES, AND/OR OTHER IMPROVEMENTS DURING THE REMOVAL AND/OR REPLACEMENT OR BACKFILL OF ITEMS SPECIFIED OR REQUIRED TO BE REMOVED.

PROTECTION OF UTILITIES

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS/MEASURES NECESSARY TO PROTECT AND SUPPORT ANY EXISTING UTILITIES/FACILITIES LOCATED ALONG THE ROUTE OF THE PROPOSED IMPROVEMENTS, WITHIN THE GENERAL PROJECT LIMITS. AND/OR ENCOUNTERED DURING THE COMPLETION OF THE PROPOSED IMPROVEMENTS AS DIRECTED/APPROVED BY THE OWNERS OF THE RESPECTIVE UTILITIES AND THE ENGINEER. UTILITIES MUST BE KEPT IN SERVICE AT ALL TIMES.

THE CONTRACTOR SHALL BE RESPONSIBLE TO CLOSELY COORDINATE THEIR WORK WITH ALL UTILITY COMPANIES TO MINIMIZE/AVOID POSSIBLE DELAYS IN THE COMPLETION OF THE REQUIRED IMPROVEMENTS. DELAYS WILL NOT BE THE RESPONSIBILITY OF THE OWNER NOR THE ENGINEER.

MAINTAINING TRAFFIC

THE CONTRACTOR SHALL SAFELY AND PROPERLY MAINTAIN TRAFFIC ADJACENT TO, THROUGH, AND/OR ALONG THE PROJECT ROUTE/SITE AS DESCRIBED BELOW AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE OHIO DEPARTMENT OF TRANSPORTATION MANUAL OF CONSTRUCTION AND MATERIALS SPECIFICATIONS ITEM 614 MAINTAINING TRAFFIC. THE CONTRACTOR SHALL FURNISH, MAINTAIN, AND REMOVE ALL SIGNS, FLAGS, FLAGMEN, WATCHMEN, BARRICADES, SIGN SUPPORTS, CONES, BARRELS, AND INCIDENTALS IN CONFORMANCE WITH THE MOST RECENT REVISIONS OF THE CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. INTERFERENCE WITH VEHICULAR TRAFFIC SHALL BE KEPT TO A MINIMUM AT ALL TIMES. ALL OPEN TRENCHES AND EXCAVATIONS SHALL BE PROTECTED WITH DRUMS, BARRICADES, BARRIERS, ETC. ACCESS SHALL BE MAINTAINED AT ALL TIMES FOR EMERGENCY AND FIRE DEPARTMENT VEHICLES. ANY TEMPORARY LANE CLOSING MUST BE APPROVED BY THE ENGINEER AND THE PUBLIC AGENCY HAVING JURISDICTION OF THE ROADWAY IN WRITING WITH PRIOR NOTIFICATION GIVEN TO FIRE. POLICE AND OTHER EMERGENCY AGENCIES. TRAFFIC MUST BE MAINTAINED AT ALL TIMES IN A SAFE MANNER.

RESTORATION OF DISTURBED AREAS

EXISTING DRIVES, BERMS, LAWNS, TELEPHONE/POWER POLES, PAVEMENTS, RETAINING WALLS, CURBS, SIDEWALKS, SIGNS, MAILBOXES, FENCING, PAPER BOXES, STORM SEWERS, UTILITIES, LANDSCAPING ITEMS/AREAS OR OTHER APPURTENANCES DISTURBED/DAMAGED DURING CONSTRUCTION BUT NOT SPECIFICALLY DESIGNATED FOR REMOVAL AND/OR REPLACEMENT SHALL BE RESTORED TO A CONDITION EQUAL TO THAT WHICH EXISTED PRIOR TO CONSTRUCTION AND TO THE COMPLETE SATISFACTION OF THE ENGINEER/OWNER. COST FOR THE RESTORATION OF THESE ITEMS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE OR PROVIDED FOR IN THE PLANS/SPECIFICATIONS.

RESTORATION OF EXISTING ROADWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWNSHIP, COUNTY, CITY, AND/OR OTHER AGENCIES HAVING AUTHORITY. COST FOR THE RESTORATION OF ROADWAYS WILL BE PER THE APPROPRIATE PAY ITEMS. NO PUBLIC ROADWAY SHALL BE DISTURBED WITHOUT PRIOR WRITTEN APPROVAL AND ACQUISITION OF ANY AND ALL NECESSARY PERMITS.

EASEMENTS AND RIGHTS-OF-WAY

THE CONTRACTOR SHALL STAY WITHIN THE PROPERTIES, EASEMENTS, AND RIGHTS-OF-WAY PROVIDED AT ALL TIMES. NO MATERIAL SHALL BE STORED NOR ANY WORK PERFORMED ON PRIVATE PROPERTY. DISTURBANCE OF EXISTING FEATURES AND/OR IMPROVEMENTS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AND AS APPROVED BY THE ENGINEER/OWNER.

ALL WORK REQUIRED/ASSOCIATED WITH THIS PROJECT SHALL BE INSPECTED BY THE CITY OF MASSILLON OR THEIR DESIGNATED REPRESENTATIVE AND THE OWNER OF THE RESPECTIVE UTILITY IF DIFFERENT. THE CONTRACTOR SHALL GIVE A 48 HOUR NOTICE BEFORE STARTING ANY WORK ON THIS PROJECT AND SHALL KEEP THE CITY INFORMED OF HIS/HER CONSTRUCTION SCHEDULE. NO WORK AS SPECIFIED ABOVE SHALL BE PERFORMED UNLESS AN AUTHORIZED INSPECTOR IS PRESENT.

SUBSURFACE INVESTIGATIONS HAVE NOT BEEN PERFORMED FOR THIS PROJECT. THE CONTRACTOR MAY PERFORM SUBSURFACE INVESTIGATIONS AT HIS OWN RISK, EXPENSE, AND RESPONSIBILITY. THE CONTRACTOR MUST CONTACT THE OWNER, ENGINEER AND ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, WHICH MAY HAVE FACILITIES WITHIN THE PROJECT LIMITS, 48 HOURS PRIOR TO PERFORMING ANY SUBSURFACE INVESTIGATIONS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE PROPER AND COMPLETE RESTORATION OF AREAS DISTURBED BY TEST HOLES OR BORINGS, TO THE SATISFACTION OF THE ENGINEER AND FOR PROPER TRAFFIC CONTROL DURING THE PERFORMANCE OF THE INVESTIGATIONS. THE ENGINEER MUST APPROVE TEST HOLE/PIT LOCATIONS.

THE ENGINEER/OWNER WILL NOT BE RESPONSIBLE FOR THE TYPE AND/OR SUITABILITY OF THE MATERIAL UNDERLYING THE LIMITS OF THE PROJECT. THE CONTRACTOR MUST APPRAISE HIMSELF OF ANY EXISTING SITE CONDITIONS WHICH MAY EFFECT HIS BID OR PERFORMANCE OF THE REQUIRED WORK. THE CONTRACTOR SHALL PERFORM WHATEVER INVESTIGATIONS AND/OR TESTING WHICH MAY BE NECESSARY TO ADEQUATELY DETERMINE/ESTIMATE TO THE SATISFACTION OF THE CONTRACTOR HIMSELF ANY AND ALL SITE CONDITIONS WHICH COULD EFFECT THE PERFORMANCE/COMPLETION OF THE PROPOSED IMPROVEMENTS. THIS COULD INCLUDE BUT NOT BE LIMITED TO UNSUITABLE AND/OR UNSTABLE SOIL/SUBSURFACE CONDITIONS, ROCK, WATER (PERCHED OR FREE). SPRINGS, ETC. IF THE CONTRACTOR IS UNSURE OR UNABLE TO DETERMINE THE NATURE OF THE SUBSURFACE CONDITIONS, HE SHALL ASSUME THE WORST CASE. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR UNANTICIPATED AND/OR UNFORESEEN CONDITIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY CONTROL DUST FROM THE PROJECT SITE AS NECESSARY/REQUIRED TO MAINTAIN SAFE VISIBILITY WITHIN AND/OR ADJACENT TO THE SITE AND TO AVOID IMPACT ON ADJACENT BUILDINGS AND/OR PROPERTIES. METHODS FOR DUST CONTROL MUST BE APPROVED BY THE ENGINEER.

DISPOSAL OF EXCESS OR UNSUITABLE MATERIALS

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DISPOSE OF ANY EXCESS, UNSUITABLE AND/OR UNUSABLE MATERIALS RESULTING FROM THE COMPLETION OF THE PROPOSED IMPROVEMENTS THAT ARE NOT OTHERWISE NEEDED/REQUIRED WITHIN THE LIMITS OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN WRITTEN PERMISSION FROM ANY PROPERTY OWNER PRIOR TO PLACEMENT OF ANY MATERIALS FROM THIS PROJECT ONTO OTHER PROPERTIES AND SHALL FURNISH THE OWNER/ENGINEER WITH COPIES OF THESE WRITTEN AGREEMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL CLAIMS RESULTING FROM THE PLACEMENT/DISPOSAL OF EXCESS, UNSUITABLE, AND/OR UNUSABLE MATERIALS ONTO OTHER PROPERTIES, INCLUDING BUT NOT LIMITED TO ENVIRONMENTAL ISSUES. NO MATERIAL SHALL BE REMOVED FROM THE PROJECT SITE WITHOUT PERMISSION OF THE CONSTRUCTION MANAGER OR ENGINEER.

IT IS THE INTENT THAT THE WORK HEREIN REQUIRED SHALL BE COMPLETED IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO COMPLETE THE WORK, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR WITHOUT ADDITIONAL

THE COST OF MATERIALS, EQUIPMENT, AND/OR LABOR NECESSARY FOR THE PROPER COMPLETION OF THE PROPOSED IMPROVEMENTS BUT FOR WHICH NO SPECIFIC PAY ITEM HAS BEEN LISTED, SHALL BE INCLUDED WITH ONE OF THE OTHER PAY ITEMS LISTED.

THE CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO THE ENGINEER SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS REQUIRED FOR THE COMPLETION OF THE PROPOSED IMPROVEMENTS WITH REASONABLE PROMPTNESS AND IN SUCH SEQUENCE AS TO CAUSE NO DELAY IN THE WORK. CONTRACTOR SHALL NOT BEGIN WORK NOR ORDER MATERIALS UNTIL ENGINEER HAS REVIEWED AND APPROVED REQUIRED

SEWER SEPERATIONS

A TEN FOOT MINIMUM HORIZONTAL SEPERATION (OUT-TO-OUT, CLEAR) SHALL BE MAINTAINED BETWEEN WATERLINES AND SANITARY SEWERS.

AN 18-INCH MINIMUM VERTICAL SEPERATION (OUT-TO-OUT. CLEAR) SHALL BE MAINTAINED BETWEEN WATERLINES AND SANITARY SEWERS AT ALL CROSSINGS.

A FOUR FOOT MINIMUM HORIZONTAL SEPERATION (OUT-TO-OUT, CLEAR) SHALL BE MAINTAINED BETWEEN WATERLINES AND STORM SEWERS.

A TWELVE-INCH MINIMUM VERTICAL SEPERATION (OUT-TO-OUT, CLEAR) SHALL BE MAINTED BETWEEN WATERLINES AND STORM SEWERS AT ALL CROSSINGS. CATCH BASIN ADJUSTMENT

THE CONTRACTOR SHALL ADJUST AS NECESSARY ALL TOP OF GRATE/TOP OF CASTING ELEVATIONS FOR PROPOSED/EXISTING CATCH BASINS OR MANHOLES TO MATCH FINAL ELEVATIONS AND GRADES AS APPROVED BY ENGINEER. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR THIS WORK.

PROHIBITED CONNECTIONS TO SANITARY SEWERS

ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO SANITARY SEWERS ARE PROHIBITED.

STORM SEWERS

ALL PROPOSED STORM SEWERS SHALL MEET THE REQUIREMENTS OF O.D.O.T. ITEM 603 AS SPECIFIED AND AS DIRECTED BY THE ENGINEER. BEDDING AND BACKFILL SHALL BE PER THE APPLICABLE DETAIL. (SLAG NOT PERMITTED) STORM SEWER PIPE MATERIALS (EXCEPT AS SPECIFICALLY NOTED OTHERWISE) SHALL MEET THE REQUIREMENTS OF O.D.O.T. 706.02 (REINFORCED CONCRETE CIRCULAR PIPE), OR 707.33 (SMOOTH LINED CORRUGATED POLYFTHYLENE). PIPE MEETING 707.33 SHALL HAVE BELL AND SPIGOT ENDS WITH A GASKET SEAL TO PROVIDE A WATERTIGHT JOINT. (ASTM F-477) LEAKAGE TESTING WILL BE PERFORMED AS DIRECTED BY THE ENGINEER.

ALL DOWNSPOUT LINES AND/OR EXTENSIONS OF ROOF DRAINS/DOWNSPOUT LINES SHALL BE POLYVINYL CHLORIDE PIPE, (PVC) SDR-35 MEETING THE REQUIREMENTS OF O.D.O.T. 707.45. STANDARD BENDS AND FITTINGS SHALL BE USED FOR CHANGES IN DIRECTION AND/OR ELEVATION OF THE DOWNSPOUT/ROOF DRAINS AND FOR THE CONNECTION OF DOWNSPOUT LINES TO THE HEADER LINE. HEADER STORM LINES SHALL MEET ODOT 707.33 &/OR 707.45 & AS SPECIFIED HEREIN.

BEDDING MATERIAL SHALL MEET THE REQUIREMENTS/SPECIFICATIONS OF THE PIPE MANUFACTURER AND SHALL BE AS SPECIFIED.

STORM SEWERS LOCATED WITHIN THE ROAD RIGHT-OF-WAY SHALL MEET THE REQUIREMENTS OF ODOT 706.02 ONLY.

CATCH BASINS & STORM MANHOLES

ALL STORM SEWER CATCH BASINS AND MANHOLES SHALL MEET THE REQUIREMENTS OF O.D.O.T. ITEM 604. PIPE OPENINGS SHALL BE CAST INTO ALL PRECAST CATCH BASINS AND MANHOLES. KNOCKOUT PANELS/SIDES ARE UNACCEPTABLE. CATCH BASINS SHALL BE CB 2-2B, CB-2-3. BICYCLE SAFE GRATES ARE REQUIRED. STORM MANHOLES SHALL BE

ALL YARD DRAINS, WHERE SPECIFIED, SHALL BE 12" DIAMETER PVC INLETS, NYLOPLAST OR APPROVED EQUAL W/ H-25 CASTINGS APPROVED BY THE ENGINEER.

TEMPORARY SEEDING AND MULCHING

THE CONTRACTOR SHALL BE RESPONSIBLE TO SEED AND MULCH WITHIN SEVEN (7) DAYS ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY HAS OCCURRED BUT WILL TEMPORARILY REMAIN IDLE FOR A PERIOD OF MORE THAN 21 DAYS, AND OTHER DISTURBED AREAS WHERE EROSION MAY BECOME A PROBLEM AS DETERMINED BY THE ENGINEER.

DAMAGE TO EXISTING UTILITIES/SERVICES

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE AND/OR DISRUPTION TO EXISTING UTILITY LINES/MAINS AND SERVICES. ALL COSTS ASSOCIATED WITH THE REPAIR, REPLACEMENT, AND/OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE PROVIDED BY THE OWNER OR THE ENGINEER. ALL LIABILITY SHALL BE BORNE BY THE CONTRACTOR.

CONSTRUCTION LAYOUT

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, PLACING, AND MAINTAINING CONSTRUCTION LAYOUT STAKES NECESSARY FOR THE PROPER COMPLETION OF THE WORK ASSOCIATED WITH THIS PROJECT. THE OWNER AND/OR ENGINEER WILL NOT BE RESPONSIBLE FOR STAKING HORIZONTAL OR VERTICAL CONTROL. BENCH MARKS WILL BE PROVIDED WITHIN AND/OR ADJACENT TO THE PROJECT SITE. THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE A BENCH CIRCUIT BETWEEN AT LEAST TWO (2) SEPARATE BENCH MARKS WHENEVER ELEVATIONS ARE BEING TRANSFERRED AND/OR SET. ANY DISCREPANCIES OUTSIDE NORMAL SURVEYING STANDARDS/LIMITS WITH THE BENCH MARK ELEVATIONS SHOWN SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.

EXAMINATION OF SITE

THE CONTRACTOR SHALL BE RESPONSIBLE TO CLOSELY EXAMINE THE PROJECT SITE AND ALL ADJACENT AREA(S) AND APPRISE HIMSELF OF ANY ITEMS AND/OR CONDITIONS THAT COULD AFFECT HIS/HER BID AND/OR ABILITY TO COMPLETE THE PROPOSED IMPROVEMENTS. THIS SITE INSPECTION/EVALUATION SHALL BE COMPLETED PRIOR TO SUBMITTING A PROPOSAL OR BID.

PRECONSTRUCTION MEETING

A PRECONSTRUCTION MEETING WITH THE ENGINEER, CITY OF MASSILLON, CONTRACTOR, AND THE STARK COUNTY SOIL AND WATER CONSERVATION DISTRICT IS REQUIRED FOR THIS PROJECT PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL CONTACT THE CITY OF MASSILLON AND STARK SOIL AND WATER SEVENTY-TWO (72) HOURS PRIOR TO THE ANTICIPATED MEETING DATE TO SCHEDULE THIS MEETING.

ALL AREAS DISTURBED DURING CONSTRUCTION, SHALL BE PERMANENTLY STABILIZED BY SEEDING, LIMING, FERTILIZING, MULCHING, ETC. IN ACCORDANCE WITH ODOT ITEM 659, SEEDING AND MULCHING. STABILIZATION SHALL OCCUR WITHIN SEVEN (7) DAYS FOLLOWING THE COMPLETION OF THE IMPROVEMENTS.

ALL SITE PREPARATION AND EARTHWORK ACTIVITIES INCLUDING THOSE REQUIRED TO COMPLETE THE PROPER CONSTRUCTION OF THE DETENTION BASIN SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, INCLUDING DIVISION 200 EARTHWORK AND THE RECOMMENDATIONS AND REQUIREMENTS OF THE PROJECT GEOTECHNICAL ENGINEER AS OUTLINED IN THE SUBSURFACE INVESTIGATION REPORT. THIS SHALL INCLUDE ALL REMOVALS, CLEARING AND GRUBBING, TOPSOIL REMOVAL/STRIP, PROOF ROLLING, SUBGRADE PREPARATION, SUITABILITY OF MATERIALS. PERFORMANCE OF ALL EXCAVATION(S). PLACEMENT OF EMBANKMENT AND BACKFILL, COMPACTION, SLOPE STABILITY, CORE TRENCH CONSTRUCTION, AND ALL OTHER RELATED AND/OR NECESSARY OPERATIONS/PROCEDURES. ALL EXCAVATION SHALL BE CONSIDERED AS UNCLASSIFIED EXCAVATION. ALL EARTHWORK ACTIVITY SHALL BE PERFORMED IN THE PRESENCE OF A QUALIFIED GEOTECHNICAL REPRESENTATIVE FURNISHED BY THE OWNER WHO WILL BE RESPONSIBLE TO DETERMINE COMPLIANCE WITH O.D.O.T. SPECIFICATIONS AND/OR THE GEOTECHNICAL RECOMMENDATIONS/REQUIREMENTS. IN CASE OF A CONFLICT BETWEEN THE O.D.O.T. SPECIFICATIONS AND THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS/REQUIREMENTS, THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS/REQUIREMENTS SHALL GOVERN.

COMPACTION REQUIREMENTS MAY VARY THROUGHOUT THE PROJECT SITE DEPENDENT UPON THE INTENDED USE/AREA (BUILDING AREA, ROADWAY, LAWN, ETC.).

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING, BRACING, RESTRAINING, AND MAINTAINING ALL EXISTING WATERLINES DURING CONSTRUCTION OF THE PROPOSED

TOPOGRAPHIC INFORMATION

THE FXISTING TOPOGRAPHIC INFORMATION USED FOR THE DESIGN OF THIS IMPROVEMENT AND DEPICTED THROUGHOUT THE CONSTRUCTION DRAWINGS WAS OBTAINED FROM AN ACTUAL TOPOGRAPHIC SURVEY PERFORMED BY BUCKEYE SURVEYING SERVICES. INC. AND/OR FROM STARK COUNTY TOPOGRAPHIC MAPPING. THE CONTRACTOR SHALL VERIFY EXISTING DATA THAT COULD EFFECT COMPLETION OF THE PROPOSED IMPROVEMENTS PRIOR TO STARTING CONSTRUCTION.

CLEARING AND GRUBBING

UNDER THIS ITEM, THE CONTRACTOR WILL BE RESPONSIBLE TO COMPLETE ALL CLEARING AND GRUBBING OPERATIONS NECESSARY TO COMPLETE THE PROPOSED IMPROVEMENTS, IN ACCORDANCE WITH ODOT ITEM 201. THIS SHALL INCLUDE REMOVAL FROM THE PROJECT SITE OF ALL BRUSH, VEGETATION, AND UNSUITABLE MATERIALS AS DIRECTED AND APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ANY UNSUITABLE MATERIALS REMAINING/RESULTING FROM CLEARING OPERATIONS INCLUDING THE GRINDING OF THE TREE

MAINTENANCE OF UTILITY SERVICES

THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN UTILITY SERVICES ALONG THE PROJECT ROUTE AT ALL TIMES. WATER SERVICE MAY BE INTERRUPTED FOR LIMITED PFRIODS OF TIME (4 HOURS MAXIMUM) DURING CONNECTION BETWEEN EXISTING WATER LINES AND RELOCATED/NEW WATER MAINS WHICH CANNOT BE COMPLETED OTHERWISE. SHUTDOWN/DISRUPTION OF WATER SERVICE TO BUSINESSES, SCHOOLS, CHURCHES, OR OTHER COMMERCIAL USERS SHALL BE SCHEDULED TO AVOID DISRUPTION DURING OPERATING HOURS OF BUSINESS. NO SHUT DOWN SHALL OCCUR WITHOUT PRIOR WRITTEN PERMISSION OF AQUA OHIO, INC. PROPERTY OWNERS/BUSINESSES AFFECTED BY THE APPROVED INTERRUPTION OF SERVICE SHALL BE NOTIFIED 48 HOURS IN ADVANCE BY THE CONTRACTOR. STORM, SANITARY SERVICES, AND OTHER UTILITIES SHALL BE MAINTAINED/PROVIDED WITHOUT INTERRUPTION.

WORK IN THE RIGHT-OF-WAY

A PERMIT MUST BE OBTAINED FROM THE CITY OF MASSILLON ENGINEER PRIOR TO ANY WORK BEING PERFORMED INSIDE CITY'S RIGHT-OF-WAY. THE CONTRACTOR MUST NOTIFY THE CITY ENGINEER'S OFFICE 72 HOURS PRIOR TO ANY CONSTRUCTION INSIDE THE RIGHT-OF-WAY IN ORDER TO COORDINATE INSPECTION.

WATER MAINS/SERVICES

ALL WATER MAINS, SERVICES AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO AQUA OHIO, INC. REQUIREMENTS AND SPECIFICATIONS IN EFFECT AT THE TIME OF

WATER MAINS SHALL BE CLASS 53, DUCTILE IRON MEETING AWWA C-151 WITH PUSH ON JOINTS. THE MINIMUM COVER OVER WATER MAINS SHALL BE 5'-0" FROM THE GROUND SURFACE TO THE BARREL OF THE PIPE. THE OUTSIDE SURFACE OF ALL DUCTILE IRON PIPE, FITTINGS, AND APPURTENANCES SHALL BE SHOP COATED WITH EITHER A COAL TAR OR ASPHALT BASE BITUMINOUS MATERIAL. IF THIS COATING MATERIAL IS FOUND TO BE DAMAGED PRIOR TO THE PIPE TRENCH BEING BACKFILLED, THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL APPROVED MATERIAL AS REQUIRED TO REPAIR THE DAMAGES. THE CONTRACTOR SHALL HAVE SUFFICIENT COATING MATERIAL AVAILABLE AT THE JOB SITE PRIOR TO LAYING THE PIPE. THE INTERIOR OF ALL PIPES AND FITTINGS SHALL BE LINED WITH DOUBLE CEMENT MORTAR AND SEAL COATED IN COMPLETE CONFORMANCE WITH AWWA C-104, OR THE LATEST REVISION. FITTINGS SHALL BE RATED FOR 250 PSI WORKING PRESSURE IN ACCORDANCE WITH AWWA C-110/AWWA C-153. PIPE LENGTHS MAY BE DEFLECTED AT THE JOINT IF REQUIRED, AT ONE-HALF THE DEGREE RECOMMENDED BY THE MANUFACTURER. THE CONTRACTOR IS NOT TO MAKE ANY SERVICE TAPS ON THE WATER MAIN. DISINFECTION OF WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C-651. ALL WATERLINE PRESSURE TESTING SHALL CONFORM TO AWWA C-600. DISINFECTION AND TESTING SHALL MEET CITY OF MASSILLON

ALL DUCTILE IRON PIPE, INCLUDING FITTINGS AND APPURTENANCES BURIED UNDERGROUND, SHALL BE ENCASED WITH 8 MIL POLYETHYLENE FILM/TUBING CONFORMING TO AWWA C-105 PROPERLY INSTALLED AND SEALED PER MANUFACTURERS REQUIREMENTS. COST FOR POLYETHYLENE TUBING (POLYWRAP) TO BE INCLUDED IN DIP

WATER MAINS SHALL BE INSTALLED AS AND SHALL MEET THE REQUIREMENTS OF O.D.O.T. ITEM 638 AND AS SPECIFIED AND AS DIRECTED BY THE ENGINEER. WATERLINES SHALL BE BEDDED AND BACKFILLED PER THE APPLICABLE DETAIL. BEDDING MATERIAL SHALL MFFT THE REQUIREMENTS/SPECIFICATIONS OF THE PIPE MANUFACTURER AND SHALL BE AS SPECIFIED AND APPROVED BY THE ENGINEER. SLAG IS NOT PERMITTED.

ALL BENDS, FITTINGS, TEES, VALVES, DEAD ENDS, ETC. SHALL BE SECURED/ RESTRAINED USING MECHANICAL JOINT RESTRAINT, MEGALUG OR APPROVED EQUAL POURED-IN-PLACE CONCRETE THRUST BLOCKS SHALL ALSO BE PROVIDED AT/FOR EACH BEND, FITTING, TEE, DEAD END, ETC. THIS BLOCKING SHALL BE CAREFULLY PLACED TO ENSURE IT IS POSITIONED PROPERLY TO WITHSTAND THE RESULTANT FORCES AT EACH BEND, FITTING, ETC. AND SHALL BEAR ON STABLE UNDISTURBED GROUND CAPABLE OF WITHSTANDING THE POTENTIAL LOADING. IN ADDITION TO THE RESTRAINT OF ALL BENDS. FITTINGS, TEES, VALVES, DEAD ENDS, ETC, THE CONTRACTOR SHALL ALSO SECURE/RESTRAIN ALL JOINTS FOR AT LEAST THREE (3) PIPE JOINTS (50 LF MIN) BEYOND EACH DEAD END, BEND, FITTING, VALVE, TEE, ETC. UTILIZING MEGALUGS, FIELD LOK GASKETS, OR APPROVED EQUAL. TIE RODS WHERE USED SHALL BE 3/4"

THE CONTRACTOR SHALL PROVIDE 18" VERTICAL CLEARANCE BETWEEN PROPOSED WATERLINES AND SANITARY SEWERS. WHEN 18" CLEARANCE BETWEEN A WATERLINE AND SANITARY SEWER CANNOT BE OBTAINED. THE CONTRACTOR SHALL PROVIDE CONCRETE ENCASEMENT AS DIRECTED BY THE CITY.

FIRE HYDRANTS SHALL BE MUELLER A423 MEETING AQUA OHIO, INC. STANDARDS AND REQUIREMENTS. ALL COSTS FOR THE 6" PIPING ASSOCIATED WITH THE INSTALLATION OF FIRE HYDRANTS SHALL BE INCLUDED WITH THE FIRE HYDRANT PAY ITEM. ALL HYDRANTS WILL BE INSTALLED WITH PUMPER NOZZLE FACING THE STREET. ALL WATER SERVICES MUST BE INSTALLED BEFORE ANY PAVEMENT FOR THE PROPOSED

WHEN AN EXISTING WATER MAIN MUST BE SHUT DOWN TO PERFORM REQUIRED WORK, THE PROPERTIES TO BE EFFECTED SHALL BE GIVEN A MINIMUM 48 HOUR NOTICE OF SAID SHUT DOWN. THE WORK WILL BE SCHEDULED AND COORDINATED TO MINIMIZE THE TIME THE MAIN IS OUT OF SERVICE AND AS SPECIFIED.

THE CONTRACTOR SHALL NOTIFY THE CITY 48 HOURS IN ADVANCE OF ANY REQUEST FOR SHUTDOWN OF AN EXISTING MAIN. THE CONTRACTOR SHAL NOT OPERATE ANY VALVES. VALVES WILL BE OPERATED BY CITY WATER DEPARTMENT PERSONNEL ONLY. VALVES DAMAGED BY THE CONTRACTOR'S OPERATION WILL BE REPLACED AT THE CONTRACTOR'S

A MINIMUM OF 35 PSI SHALL BE MAINTAINED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.

BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.

ROADWAYS HAS BEEN PLACED.

NEW SERVICE BRANCHES SHALL BE INSTALLED PER ODOT ITEM 638.16. ALL VALVE BOXES SHALL BE ADJUSTED TO FINAL GRADE OF THE SURROUNDING

IMPROVEMENTS ONCE THE PROJECT HAS BEEN COMPLETED.

WATER SERVICES 2 1/2" DIAMETER & UNDER SHALL BE TYPE "K" COPPER PER

ALLIANCE STANDARDS & REQUIREMENTS.

CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE INSTALLATION OF WATER SERVICES. TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE CONTRACTOR SHALL PREVENT AND/OR REDUCE AND CONTROL SOIL EROSION RESULTING FROM THE PROPOSED IMPROVEMENTS. THE USE OF SILT FENCING, JUTE MATTING, TEMPORARY SEEDING, SOD, SILT CHECKS, INLET PROTECTION AROUND ALL CATCH BASINS, STABILIZED CONSTRUCTION ENTRANCE(S), ETC. WILL BE REQUIRED. SEDIMENT CONTROL STRUCTURES/DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL RAINWATER AND LAND DEVELOPMENT - OHIO'S STANDARDS FOR STORMWATER MANAGEMENT LAND DEVELOPMENT AND URBAN STREAM PROTECTION, LATEST EDITION. SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS SET FORTH ON THE APPROVED STORM WATER POLLUTION PREVENTION PLAN IF APPLICABLE, OR ON THE DETAILED CONSTRUCTION PLANS.

TESTING OF UTILITIES

ALL WATERLINES AND SANITARY SEWERS (INCLUDING LATERALS) MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH APPLICABLE STANDARDS (AWWA, ETC.), PER THE OHIO ENVIRONMENTAL PROTECTION AGENCY, AND PER THE REQUIREMENTS OF THE LOCAL AGENCY (TOWNSHIP, CITY, VILLAGE AND/OR COUNTY) HAVING AUTHORITY BEFORE THEY CAN BE ACCEPTED. THIS WILL INCLUDE DISINFECTION AND PRESSURE TESTING OF WATERLINES. SANITARY SEWERS SHALL BE SUBJECTED TO LEAKAGE TESTING WHICH WOULD INCLUDE APPROPRIATE WATER (EXFILTRATION/INFILTRATION) OR LOW PRESSURE AIR TESTING. DEFLECTION TESTING WILL BE REQUIRED OF ALL FLEXIBLE CONDUIT/PIPE (PVC) AND SHALL BE PERFORMED THIRTY (30) DAYS AFTER INSTALLATION OF THE PIPE. DEFLÉCTION TESTING AND LEAKAGE TESTING MUST BE PERFORMED PERIODICALLY AS WORK PROGRESSES AND AS SOON AS TIME RESTRAINTS ALLOW (DEFLECTION TESTING) AND AT THE DIRECTION OF THE ENGINEER.

DEFLECTION TESTING OF FLEXIBLE CONDUIT SHALL BE CONDUCTED THIRTY (30) DAYS AFTER INSTALLATION AND BACKFILLING OF THE PIPE OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ALL NECESSARY EQUIPMENT INCLUDING AN APPROVABLE MANDREL OR OTHER APPROVED DEVICE AND CONDUCT THE DEFLECTION TESTS AT THE DIRECTION OF THE ENGINEER. THE ALLOWABLE DEFLECTION RATE SHALL NOT EXCEED FIVE (5) PERCENT. THE ENGINEER HAS THE OPTION TO REQUIRE A SECOND TEST ANYTIME BETWEEN INITIAL TESTING AND RELEASE OF THE MAINTENANCE BOND. ANY SECTIONS FOUND TO HAVE A DEFLECTION IN EXCESS OF THE SPECIFIED RATE SHALL BE EXCAVATED AND CORRECTED EITHER BY RE-BEDDING, PIPE REPLACEMENT OR BOTH AS DIRECTED/ APPROVED BY THE ENGINEER. THESE CORRECTIONS SHALL BE REQUIRED IF WARRANTED BY EITHER INITIAL OR SECONDARY TESTING.

ALL GRAVITY SANITARY SEWERS, EIGHT (8) INCHES AND LARGER IN DIAMETER, SHALL BE SUBJECTED TO INTERNAL TELEVISION INSPECTION AFTER CONSTRUCTION AND DEFLECTION TESTING IS COMPLETE. IT IS REQUIRED THAT THE SEWER LINES TO BE TELEVISED BE CLEANED AND FLUSHED NO MORE THAN FORTY-EIGHT (48) HOURS BEFORE TAPING OCCURS. ALL VIDEO RECORDINGS SHALL BE PERFORMED/COMPLETED IN ACCORDANCE WITH THE CITY OF MASSILLON STANDARDS. ALL VIDEO RECORDINGS SHALL BE DONE IN COLOR SHOWING CONTINUOUS COVERAGE OF THE SANITARY SEWER FROM MANHOLE TO MANHOLE. THE CAMERA TRAVEL AND VIEW SHALL BE UPSTREAM SO THAT THE BUTT-ENDS OF THE PIPE SPIGOT WILL SHOW CLEARLY. THE VIDEO INSPECTION SEQUENCE SHALL BE FROM THE LOWEST MANHOLE TO THE FARTHEST UPSTREAM "DEAD-END" MANHOLE. EACH SUBSEQUENT BRANCH SHALL BE RECORDED FROM A MANHOLE ALREADY TAPED TO THE DEAD-END MANHOLE OF THE BRANCH. ALL INTERNAL INSPECTION SHALL BE DONE BY PERSONS AND/OR FIRMS QUALIFIED AND APPROVED BY THE ENGINEER. COMPLETED VIDEO RECORDINGS SHALL BE GIVEN TO THE CITY OF MASSILLON ENGINEERING DEPARTMENT.

COST FOR ALL TESTING SHALL BE INCLUDED IN THE APPROPRIATE PIPE PAY ITEMS.

SANITARY SEWERS, FORCE MAINS, AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF MASSILLON SPECIFICATIONS.

ALL SANITARY SEWERS AND LATERALS SHALL BE PVC SDR-35 OR SDR-26 AS SPECIFIED MEETING REQUIREMENTS OF ASTM D-3034 WITH JOINTS MEETING ASTM D-3212. INSTALLATION SHOULD BE IN ACCORDANCE WITH ASTM D-2321. MINIMUM COVER OVER SANITARY SEWERS SHALL BE 4 FEET. FORCE MAINS SHALL BE PRESSURE RATED POLYVINYL CHLORIDE (PVC) PIPE, SDR-21 MEETING THE REQUIREMENTS OF ASTM D-2241 AND ASTM D-1784. ALL JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D-3139. THE MINIMUM COVER OVER A SANITARY FORCE MAIN SHALL BE 5'-0".

SANITARY SEWERS, FORCE MAINS, AND LATERALS SHALL BE INSTALLED AS AND SHALL MEET THE REQUIREMENTS OF O.D.O.T. ITEM 603 AND AS SPECIFIED AND AS DIRECTED BY THE ENGINEER. SANITARY SEWERS, FORCE MAINS, AND LATERALS SHALL BE BEDDED AND BACKFILLED PER THE APPLICABLE DETAIL. BEDDING MATERIAL SHALL MEET THE REQUIREMENTS/SPECIFICATIONS OF THE PIPE MANUFACTURER AND SHALL BE AS SPECIFIED AND APPROVED BY THE ENGINEER. SLAG IS NOT PERMITTED.

DEFLECTION TESTING OF 6" DIAMETER AND LARGER FLEXIBLE CONDUIT (PVC, ETC.) SHALL BE CONDUCTED 30 DAYS AFTER INSTALLATION AND BACKFILLING OF THE PIPE OR AS OTHERWISE DIRECTED BY THE ENGINEER. THE ALLOWABLE DEFLECTION RATE SHALL NOT EXCEED FIVE (5%) PERCENT.

EXFILTRATION TESTING (OR INFILTRATION IF APPLICABLE) SHALL NOT EXCEED A MAXIMUM ALLOWABLE LEAKAGE OF 100 GALLON/INCH OF PIPE DIAMETER/MILE/DAY. IN LIEU OF SAID WATER TESTS. A LOW PRESSURE AIR TEST MAY BE CONDUCTED PER RECOMMENDED STANDARDS FOR SEWAGE WORKS (ASTM F-1417). THE PROPOSED SANITARY SEWER SYSTEMS SHALL BE TESTED, APPROVED, AND ACCEPTED PRIOR TO BEING PUT INTO

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY MAINTAINING ANY EXISTING SANITARY FLOW DURING THE COMPLETION AND/OR TESTING OF THE PROPOSED IMPROVEMENTS, AS APPROVED BY THE ENGINEER.

FIELD. REVISIONS TO THE PLAN LOCATIONS MUST BE APPROVED BY A REPRESENTATIVE OF THE OWNER/ENGINEER. BULKHEADS SHALL BE ERECTED IN EXISTING MANHOLES WHERE TAPS FOR NEW MAINLINE SEWERS ARE MADE AND SHALL REMAIN IN PLACE UNTIL THE NEW SEWERS ARE COMPLETE,

THE ACTUAL LOCATION OF EACH SANITARY SEWER LATERAL SHALL BE VERIFIED IN THE

TESTED AND APPROVED. IN CASES WHERE A BULKHEAD WOULD INTERRUPT THE FLOW FROM EXISTING SERVICE CONNECTIONS, THE BULKHEAD SHALL BE PLACED IN THE FIRST NEW MANHOLE UPSTREAM OF THE EXISTING MANHOLE.

SANITARY SEWER SERVICE LATERALS SHALL BE 6 INCH MINIMUM AND BE LAID AT NO LESS THAN 1.00% GRADE

ALL SANITARY SEWERS, 8-INCH DIAMETER AND LARGER, MUST PASS AN INTERNAL TELEVISION INSPECTION PER THE CITY OF MASSILLON SPECIFICATIONS.

MANHOLE TOP OF CASTING ELEVATIONS MAY REQUIRE ADJUSTMENT FROM THE PLAN ELEVATION TO MATCH EXISTING/PROPOSED GRADES. COST FOR THIS ADJUSTMENT IS THE RESPONSIBILITY OF THE CONTRACTOR. MANHOLE COVERS MAY NOT BE BURIED. UPON COMPLETION OF CONSTRUCTION AND RESTORATION, ALL MANHOLES, PROPOSED AND EXISTING, SHALL BE ADJUSTED TO MATCH FINISHED GRADE.

MANHOLES SHALL BE LEAKAGE TESTED (AIR/VACUUM) IN ACCORDANCE WITH ASTM C-1244 AND PER THE CITY OF MASSILLON STANDARDS/REQUIREMENTS.

ALL FORCE MAIN FITTINGS (TEES, 90° BENDS, 45° BENDS, ETC.) SHALL BE DUCTILE IRON SHORT BODY MECHANICAL JOINT FITTINGS WITH APPROPRIATE TRANSITION GASKETS MEETING ANSI/AWWA C-153/A21.53. ALL FITTINGS SHALL BE RESTRAINED USING SERIES 2000 PV MEGALUG RETAINER GLANDS, AS MANUFACTURED BY EBBA IRON, INC. OR APPROVED EQUAL. THE CONTRACTOR SHALL USE CAUTION TO ENSURE THE INSTALLATION OF THE MEGALUG IS COMPLETED IN TOTAL COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS. IN ADDITION, CONCRETE THRUST BLOCKS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER AT ALL BENDS, FITTINGS, ETC. THRUST BLOCKS SHALL BE CAREFULLY PLACED AND FORMED AS NECESSARY TO ENSURE THEY ARE POSITIONED PROPERLY TO WITHSTAND THE RESULTANT FORCES AT EACH FITTING. MINIMUM BEARING AREA FOR A 45° BEND AGAINST ADJACENT UNDISTURBED, STABLE, SOLID EARTH SHALL BE 5 SQUARE FEET. THRUST BLOCKS SHALL BEAR ON STABLE, UNDISTURBED GROUND, AND SHALL BE CAPABLE OF WITHSTANDING THRUST/RESULTANT FORCES WITHIN THE SANITARY FORCE MAIN WITHOUT RELIANCE ON OTHER RESTRAINTS WITHIN THE SYSTEM. CONTRACTOR SHALL USE EXTREME CARE WHEN EXCAVATING FOR AND INSTALLING THE FITTINGS (45' BENDS, ETC.), SO AS TO LIMIT BOTH THE TRENCH WIDTH AND THE AMOUNT OF DISTURBANCE TO THE TRENCH WALLS (ADJACENT TO THE FORCE MAIN) TO WHICH CONCRETE THRUST BLOCKS WILL BEAR. IF UNSUITABLE MATERIAL IS ENCOUNTERED IN THE AREA WHERE A THRUST BLOCK IS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT APPROPRIATE ALTERNATE MEASURES TO RESTRAIN THE FORCE MAIN CAN BE TAKEN. THESE ALTERNATE MEANS COULD INCLUDE ADDITIONAL JOINT RESTRAINT ADJACENT TO THE FITTING/BEND.

ALL FORCE MAIN CONSTRUCTION SHALL BE SUBJECT TO HYDROSTATIC LEAKAGE TESTING AS LINE SECTIONS ARE COMPLETED PER THE CITY OF MASSILLON STANDARDS AND

CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE DRILLED, WITH BENCHES AND CHANNELS FORMED AND REPAIRED AS NECESSARY.

ALL MANHOLE DROP ATTACHMENTS SHALL BE "OUTSIDE" TYPE DROPS.



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