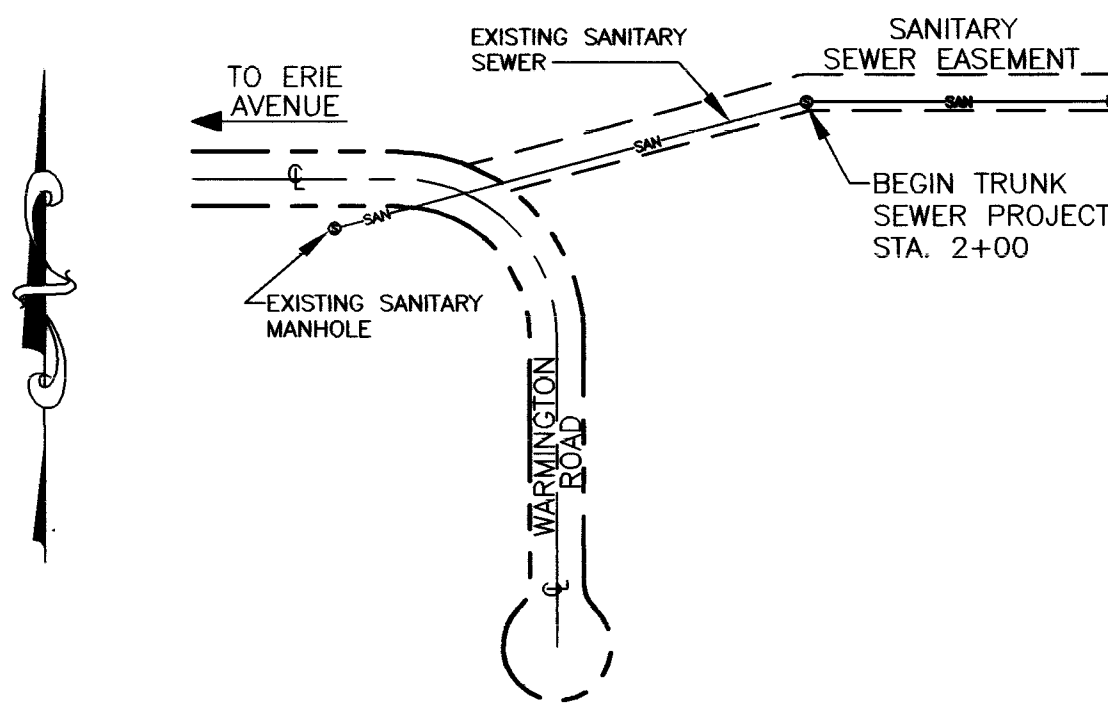


SOUTH MASSILLON
SANITARY TRUNK SEWER EXTENSION
CITY OF MASSILLON, STARK COUNTY, OHIO
MAY 2007

CITY OFFICIALS

MAYOR
SAFETY SERVICE DIRECTOR
CITY ENGINEER
WASTEWATER TREATMENT DEPARTMENT MANAGER

FRANCIS H. CICCHINELLI, JR.
MIKE LOUDIANA
KEITH DYLEWSKI, P.E.
JOSEPH R. ULRICH



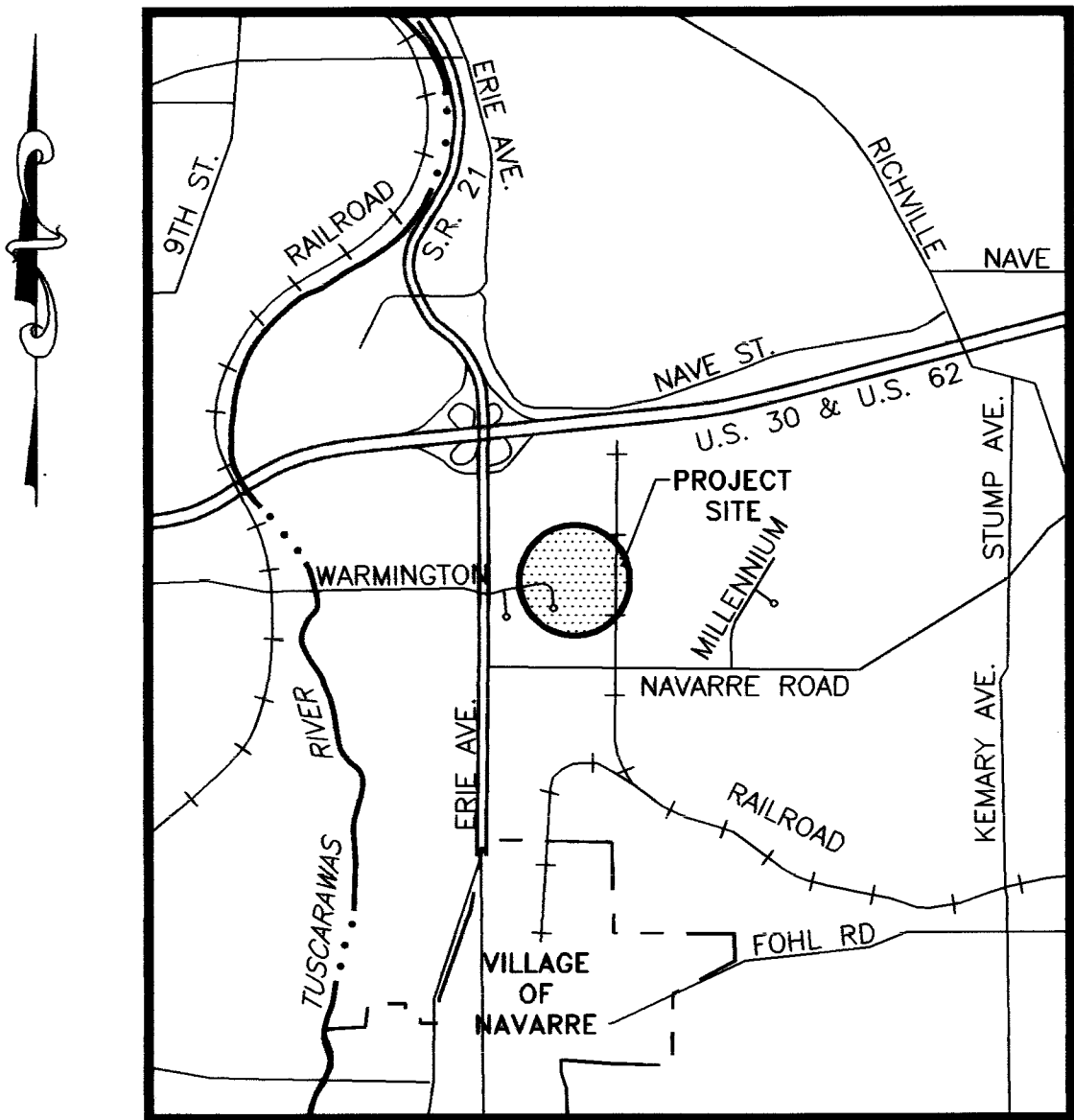
WARMINGTON ROAD
PROJECT LOCATION SCHEMATIC
NOT TO SCALE

APPROVED BY THE CITY OF MASSILLON ENGINEER
THIS 30th DAY OF MAY, 2007.

Keith Dylewski
KEITH DYLEWSKI, P.E. - CITY ENGINEER

SURVEYING SERVICES BY:

AKINS' LAND SURVEYING
776 NORTH UNION AVENUE
ALLIANCE, OHIO 44601
(330) 821-4602



LOCATION MAP

PLANS PREPARED BY HETTLER•LARGENT ENGINEERING, LLC

Michael J. Hettler, Jr.
MICHAEL J. HETTLER, JR., P.E.
STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER
E-45423

Hettler • Largent
Engineering LLC
Civil & Construction Consultants
1225 North Main Street - Suite A - North Canton, OH 44720
PH: 330-966-1776 • www.hettler-largent-eng.com

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PIPE CROSSING - DATA SHEET

	CARRIER PIPE	CASING PIPE
	PVC	
CONTENTS TO BE HANDLED	SAN. SEWAGE	-
NOMINAL OPERATING PRESSURE	GRAVITY	-
NOMINAL SIZE OF PIPE	18 INCH	36 INCH
OUTSIDE DIAMETER	18.701" BARREL	37.064" BARREL
	20.690" ± BELL	-
INSIDE DIAMETER	17.26 INCHES	36 INCHES
WALL THICKNESS	0.719 INCHES	0.532 INCHES
WEIGHT PER FOOT	28.41 #/LF	189.57 #/LF
MATERIAL	STEEL	
PROCESS OF MANUFACTURE	PVC	DOMESTIC
SPECIFICATION	ASTM F-697	ASTM A 252
GRADE OR CLASS	SDR-26	GRADE B
TEST PRESSURE	-	-
TYPE OF JOINT	O-RING (GASKET SEAL)	WELDED
TYPE OF COATING	NONE	NONE
DETAILS OF CATHODIC PROTECTION	N/A	N/A
DETAILS OF SEAL OR PROTECTION AT	N/A	N/A
ENDS OF CASING	N/A	BRICK & MORTAR BLKHD
METHOD OF INSTALLATION	-	BORING
CHARACTER OF SUBSURFACE MATERIAL	-	-
AT THE CROSSING LOCATION	-	UNKNOWN
APPROXIMATE GROUND WATER	UNKNOWN	UNKNOWN
SOURCE OF INFORMATION ON SUBSURFACE	-	-
CONDITIONS (BORING, TEST PITS, ETC.)	N/A	N/A

SANITARY SEWER PERMIT TO INSTALL (P.T.I.) HAS BEEN
RECIEVED FROM THE OHIO ENVIROMENTAL PROTECTION AGENCY
THIS _____ DAY OF _____, 20 ____.

PTI NO. _____



PROJECT SPECIFICATIONS

ALL WORK REQUIRED TO COMPLETE THIS IMPROVEMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION AND MAINTENANCE SPECIFICATIONS, EXCEPT AS HEREIN AMENDED, AND PER THE CITY OF MASSILLON SPECIFICATIONS/REQUIREMENTS/STANDARDS. IN THE CASE OF A CONFLICT BETWEEN THE CITY OF MASSILLON AND THE OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS/REQUIREMENTS, THE MORE STRINGENT OF THE TWO SPECIFICATIONS WILL GOVERN, AS DETERMINED BY THE DESIGN ENGINEER. STATE OF OHIO, DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DRAWINGS SHALL APPLY TO THIS IMPROVEMENT, INCLUDING MC-11.

PROJECT SAFETY

THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT 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 ERCTED 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 UNAUTHORIZED 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 TIMES.

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 OR WITHIN THE VICINITY OF 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 LOCATION SHALL BE COORDINATED TO STAY APPROXIMATELY TWO 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.). ANY 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 WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ANY CHANGES NECESSARY TO COMPLETE THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION.

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 MAINTAIN TRAFFIC ADJACENT TO THE PROJECT 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, OR BARRIERS. ACCESS SHALL BE MAINTAINED AT ALL TIMES FOR EMERGENCY AND FIRE DEPARTMENT VEHICLES. ANY TEMPORARY ROADWAY 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.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE CONTRACTOR SHALL PREVENT AND/OR REDUCE OR 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 AND URBAN STREAM PROTECTION, SECOND EDITION DATED 1996. 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.

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 THE 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/CONSTRUCTION MANAGER/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 OVERALL PROJECT SITE WITHOUT PERMISSION OF THE OWNER/ENGINEER.

RESTORATION OF DISTURBED AREAS

EXISTING DRIVES, BERMS, LAWNS, PAVEMENTS, CURBS, SIDEWALKS, SIGNS, MAILBOXES OR OTHER APPURTENANCES DISTURBED DURING CONSTRUCTION BUT NOT SPECIFICALLY DESIGNATED FOR REMOVAL/REPLACEMENT SHALL BE RESTORED TO A CONDITION EQUAL TO THAT WHICH EXISTED PRIOR TO CONSTRUCTION AND TO THE COMPLETE SATISFACTION OF THE ENGINEER. RESTORATION OF EXISTING ROADWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MASSILLON, TOWNSHIP, STARK COUNTY, AND/OR OTHER AGENCIES HAVING AUTHORITY. COST FOR THE RESTORATION OF THESE ITEMS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. 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.

INSPECTION

ALL WORK REQUIRED FOR THIS IMPROVEMENT SHALL BE INSPECTED BY THE CITY OF MASSILLON OR THEIR DESIGNATED REPRESENTATIVE. 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 SHALL BE PERFORMED UNLESS AN AUTHORIZED INSPECTOR IS PRESENT.

SUBSURFACE INVESTIGATIONS

SUBSURFACE INVESTIGATIONS HAVE NOT BEEN PERFORMED FOR THIS PROJECT. THE CONTRACTOR MAY PERFORM SUCH 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 RESTORATION OF AREAS DISTURBED BY TEST HOLES OR BORINGS, TO THE SATISFACTION OF THE ENGINEER.

SUITABILITY OF SITE

THE ENGINEER/DEVELOPER/OWNER WILL NOT BE RESPONSIBLE FOR THE TYPE AND/OR SUITABILITY OF THE MATERIAL UNDERLYING THE PROJECT SITE. THE CONTRACTOR MUST APPRAISE HIMSELF OF ANY EXISTING SITE CONDITIONS WHICH MAY EFFECT HIS/HER 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 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 CONSULT WITH THE ENGINEER. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR UNANTICIPATED AND/OR UNFORESEEN CONDITIONS.

PROHIBITED CONNECTIONS TO SANITARY SEWERS

RIO DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO SANITARY SEWER ARE PROHIBITED.

ESTIMATED QUANTITIES

ESTIMATED QUANTITIES ARE SHOWN TO INDICATE APPROXIMATE QUANTITIES FOR THE VARIOUS WORK/PAYMENT ITEMS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM ALL QUANTITIES PRIOR TO SUBMITTING A BID AND ALERT THE OWNER/ENGINEER OF ANY DISCREPANCIES. WORK/PAYMENT ITEMS NOT SPECIFICALLY LISTED AND/OR REFERENCED BUT REQUIRED TO PROPERLY COMPLETE THE IMPROVEMENTS SHALL BE PERFORMED AND THE COST INCLUDED IN THE VARIOUS OTHER ASSOCIATED PAY ITEMS.

SANITARY SEWERS

ALL SANITARY SEWERS AND LATERALS (EXCEPT CARRIER PIPE WITHIN CASING) SHALL BE POLYVINYL CHLORIDE PVC SDR 35 MEETING THE REQUIREMENTS OF ASTM F-679 WITH JOINTS MEETING ASTM D-3212. MINIMUM COVER OVER SANITARY SEWERS SHALL BE 4 FEET.

SANITARY SEWERS AND LATERALS SHALL BE INSTALLED PER O.D.O.T. ITEM 603 AS TYPE B OR TYPE C CONDUITS. SANITARY SEWERS AND LATERALS LOCATED WITHIN THE LIMITS OF OR WITHIN A 1 TO 1 SLOPE OF EXISTING AND/OR PROPOSED LAYDOWN AREAS, ROADWAYS, PARKING AREAS, BUILDINGS, SIDEWALKS, FOOTINGS/FOUNDATIONS, AND/OR DRIVES SHALL BE INSTALLED AS TYPE B CONDUITS. ALL OTHER SANITARY SEWERS MAY BE INSTALLED AS TYPE C CONDUITS. BEDDING SHALL BE AS SPECIFIED AND APPROVED BY THE PIPE MANUFACTURER.

SANITARY SEWER PIPE USED AS THE CARRIER PIPE WITHIN THE CASING AT THE RAILROAD CROSSING/BORING SHALL BE PVC SDR-26 MEETING THE REQUIREMENTS OF ASTM F-679 WITH JOINTS MEETING D-3212. THE CONTRACTOR SHALL USE 18" PVC SDR-26 PIPE BETWEEN SANITARY MANHOLE NO. 3 AND SANITARY MANHOLE NO. 4.

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

THE ACTUAL LOCATION OF EACH SANITARY SEWER LATERAL SHALL BE DETERMINED IN THE FIELD AND APPROVED BY A REPRESENTATIVE OF THE OWNER.

A BULKHEAD SHALL BE PLACED IN THE UPSTREAM (NEW) SEWER LINE WITHIN THE EXISTING SANITARY MANHOLE LOCATED AT STA. 2+00, BASELINE. THIS BULKHEAD MUST REMAIN IN PLACE UNTIL THE SANITARY SEWER AND LATERALS HAVE BEEN COMPLETED, TESTED AND APPROVED.

THE CONTRACTOR SHALL CAREFULLY AND ACCURATELY CORE DRILL ANY REQUIRED OPENING INTO EXISTING MANHOLES AND PROVIDE A WATERTIGHT CONNECTION.

DUST CONTROL

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 PROPERTIES. METHODS FOR DUST CONTROL MUST BE APPROVED BY THE ENGINEER.

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.

SEEDING AND MULCHING/STABILIZATION

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

REPLACEMENT OF SANITARY SEWERS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUOUS OPERATION OF THE SANITARY SEWER SYSTEM THROUGHOUT THE DURATION OF THIS PROJECT. THE CONTRACTOR MUST PROVIDE SANITARY SEWER SERVICE TO ALL RESIDENTS EFFECTED BY THIS IMPROVEMENT PROJECT AT ALL TIMES. BULKHEADS, TEMPORARY PUMPING AND/OR PIPING, ETC. SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE COST FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE SANITARY SEWER WORK. THE CONTRACTOR MUST SUBMIT A PLAN FOR MAINTAINING THE SEWAGE FLOW DURING CONSTRUCTION TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.

RECONNECTION OF EXISTING SANITARY LATERALS

THE CONTRACTOR SHALL RECONNECT EXISTING LATERALS TO THE PROPOSED SANITARY SEWER SYSTEM USING APPROVED EJECTION COUPLINGS (FERROUS OR EQUAL) STANDARD FITTINGS AND BENDS AND AS APPROVED BY THE ENGINEER.

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 THE PROJECT. 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 APPRAISE 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 CONTRACTOR AND THE MASSILLON CITY ENGINEER IS REQUIRED FOR THIS PROJECT PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL CONTACT THE CITY OF MASSILLON ENGINEER AT (330) 830-1722 SEVENTY-TWO (72) HOURS PRIOR TO THE ANTICIPATED MEETING DATE.

TESTING OF SANITARY SEWERS

ALL SANITARY SEWERS (INCLUDING LATERALS) MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH APPLICABLE STANDARDS, PER THE OHIO ENVIRONMENTAL PROTECTION AGENCY, AND PER THE REQUIREMENTS OF THE LOCAL AGENCY (CITY AND/OR COUNTY) HAVING THE AUTHORITY BEFORE THEY CAN BE ACCEPTED. SANITARY SEWERS SHALL BE SUBJECTED TO LEAKAGE TESTING WHICH WOULD INCLUDE APPROPRIATE WATER (EXFILTRATION/INFILTRATION) OR LOW PRESSURE AIR TESTING. DEFLECTION TESTING SHALL BE REQUIRED OF ALL FLEXIBLE CONDUIT/PIPE (PVC) AND SHALL BE PERFORMED THIRTY (30) DAYS AFTER INSTALLATION OF THE PIPE. DEFLECTION 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.

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

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. COST FOR CORRECTION OF SEWERS NOT MEETING REQUIRED SPECIFICATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

ALL GRAVITY SEWER, EIGHT (8) INCHES AND LARGER IN DIAMETER, SHALL BE INTERNALLY INSPECTED AFTER CONSTRUCTION AND DEFLECTION TESTING IS COMPLETE. IT IS REQUIRED THAT THE SEWER LINES TO BE TESTED BE CLEANED AND FUSHED NO MORE THAN FORTY-EIGHT (48) HOURS BEFORE TAPING OCCURS. ALL VIDEO RECORDINGS SHALL BE DONE IN COLOR ON VHS 1/2 INCH TAPE CASSETTES SHOWING CONTINUOUS COVERAGE OF THE SANITARY SEWER FROM MANHOLE TO MANHOLE. THE VIDEO RECORDING SHALL BE SUPPLIED ON 1-120 TAPES RECORDED AT "SP" OR STANDARD PLAY SPEED. 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.

MANHOLES SHALL BE LEAKAGE TESTED IN ACCORDANCE WITH ASTM C-1244.

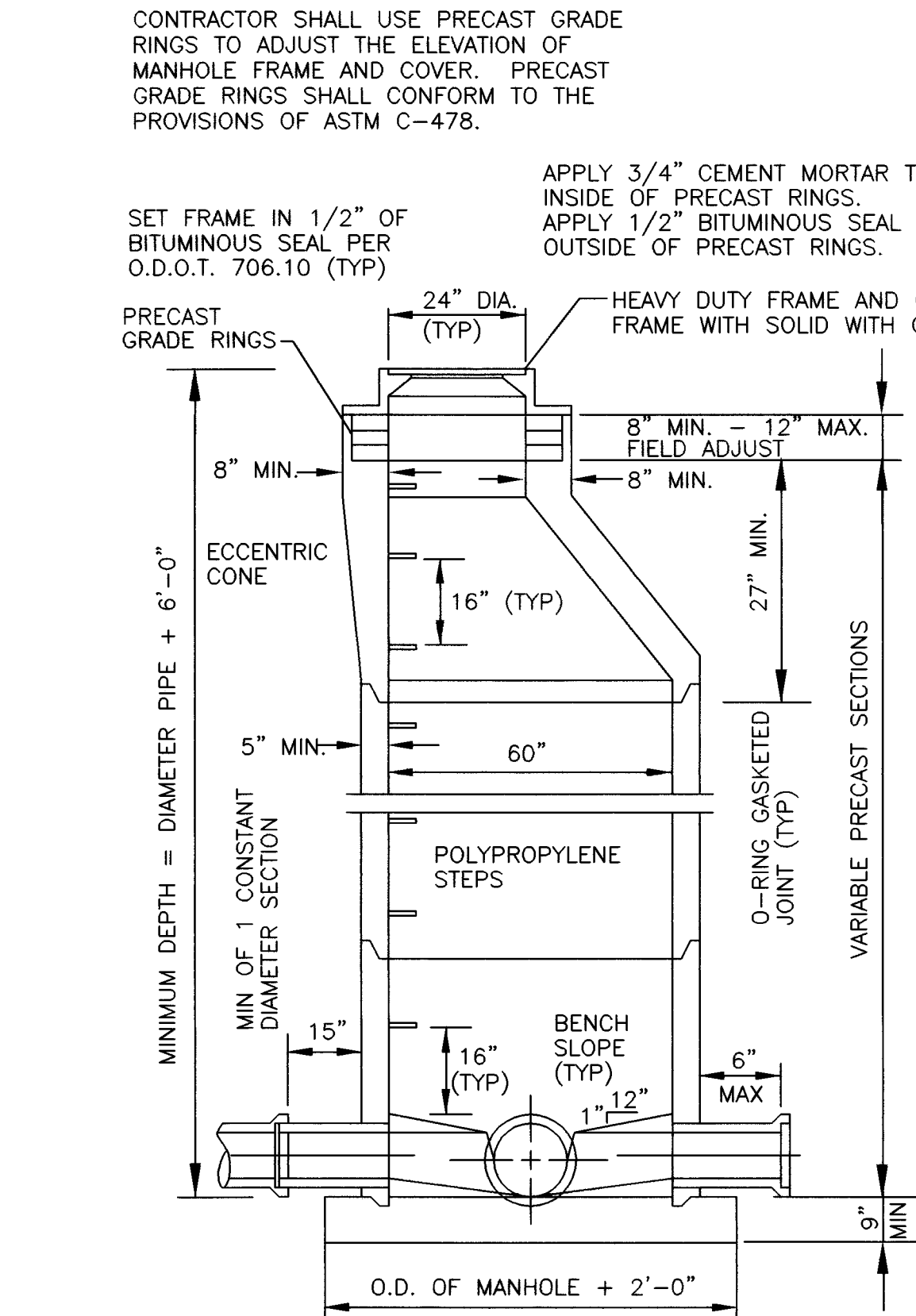
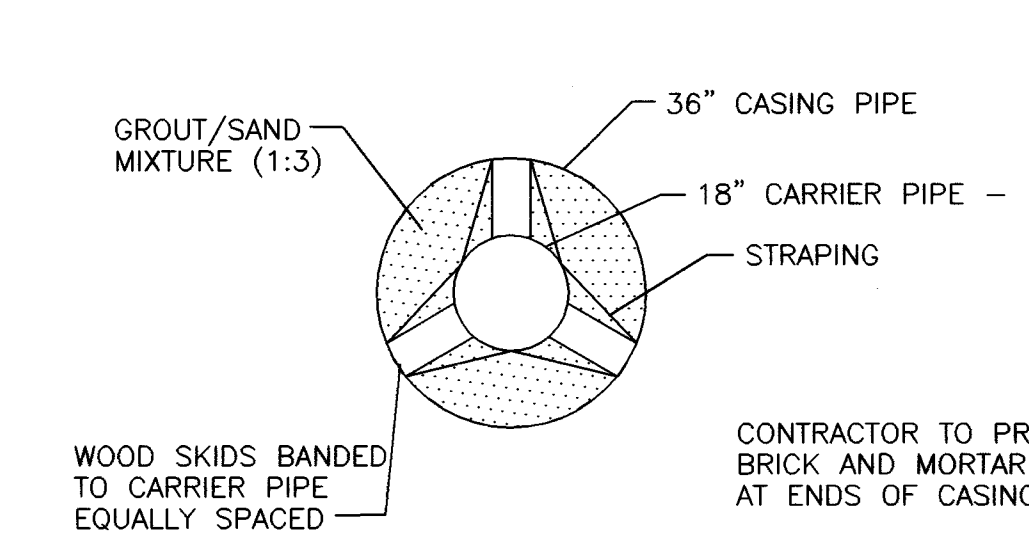
COST FOR ALL TESTING SHALL BE INCLUDED IN THE SANITARY SEWER PIPE PAY ITEMS.

AS-BUILTS

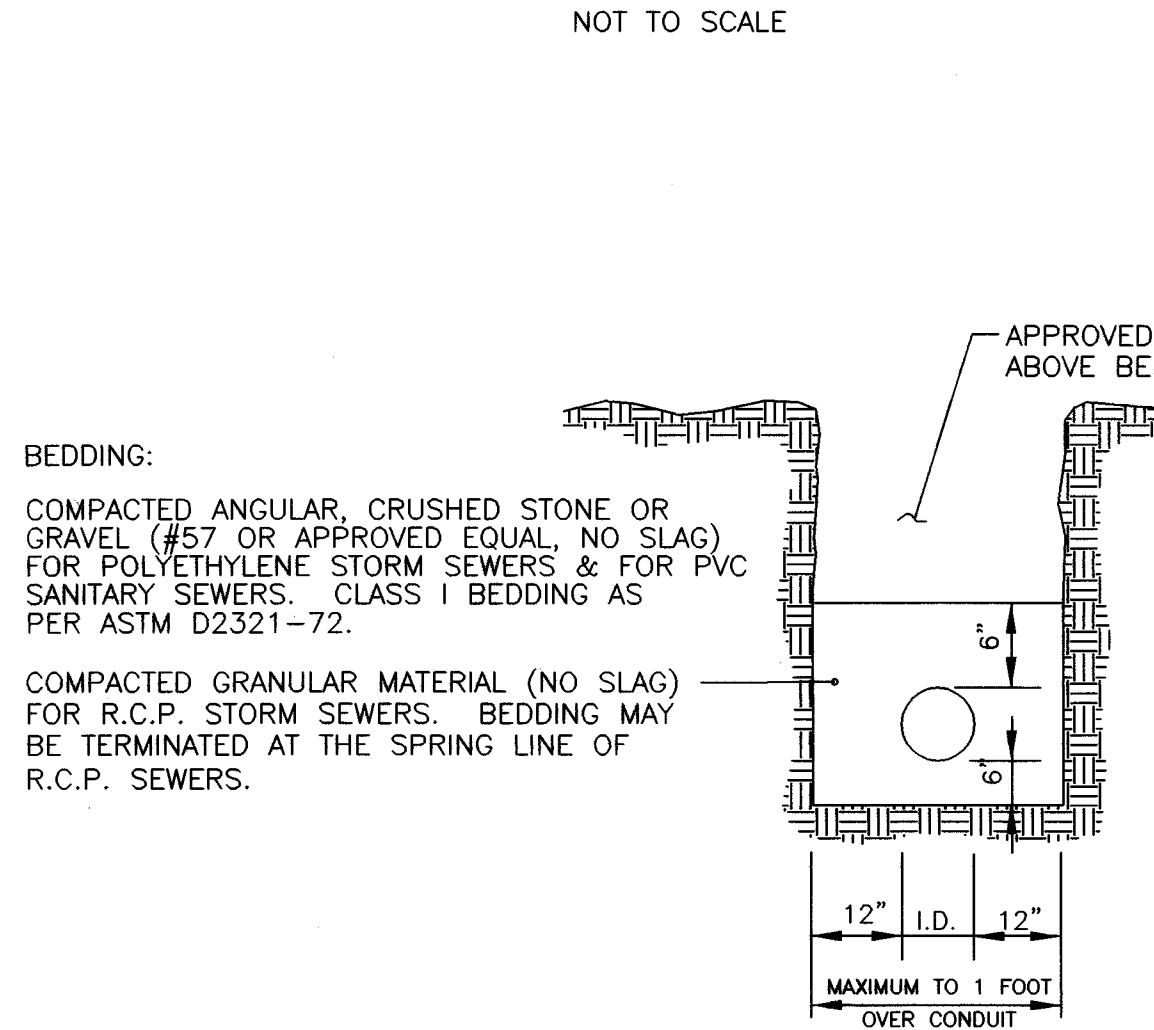
THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS TO THE CITY OF MASSILLON ENGINEERING DEPARTMENT WITHIN THIRTY (30) DAYS OF PROJECT COMPLETION.

CLEARING AND GRUBBING

ALL CLEARING AND GRUBBING REQUIRED TO COMPLETE THESE IMPROVEMENTS SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ODOT ITEM 201. CLEARING AND GRUBBING LIMITS SHALL EXTEND NO MORE THAN 20' ON THE NORTH SIDE OF THE PROPOSED SANITARY SEWER AND 10' ON THE SOUTH SIDE OF THE SEWER. NO WORK SHALL BE PERFORMED OUTSIDE THE LIMITS OF THE EXISTING OR PROPOSED EASEMENTS. TREES WITHIN THE CLEARING LIMITS SHALL BE REMOVED AND THE STUMPS EITHER CUT FLUSH WITH THE GROUND SURFACE OR REMOVED AND DISPOSED OF OFF SITE AT AN APPROVED LEGAL LOCATION. PRIOR APPROVAL OF THE DISPOSAL SITE MUST BE OBTAINED FROM THE ENGINEER/CITY. TREES OUTSIDE THE CLEARING LIMITS MAY BE REMOVED WITH THE PRIOR APPROVAL OF THE CITY. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT ALL TREES AND VEGETATION OUTSIDE THE CLEARING AND GRUBBING LIMITS AND WILL BE RESPONSIBLE FOR UNNECESSARY DAMAGE, AS DETERMINED BY THE CITY.



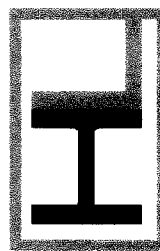
PRECAST SANITARY MANHOLE



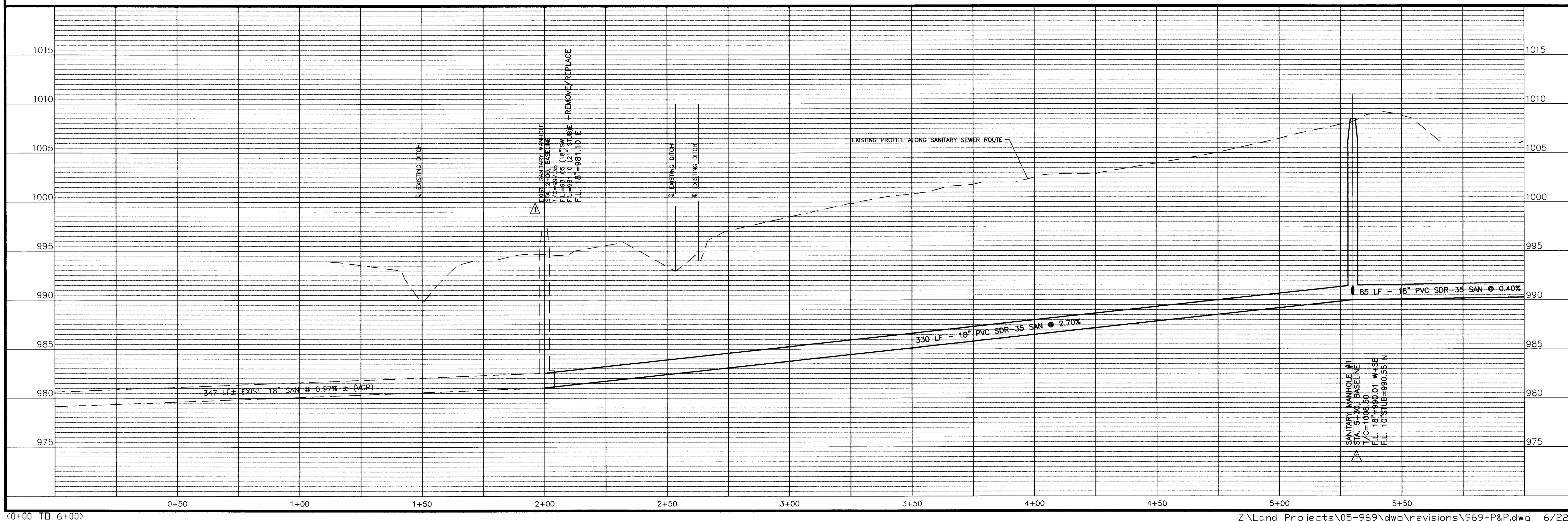
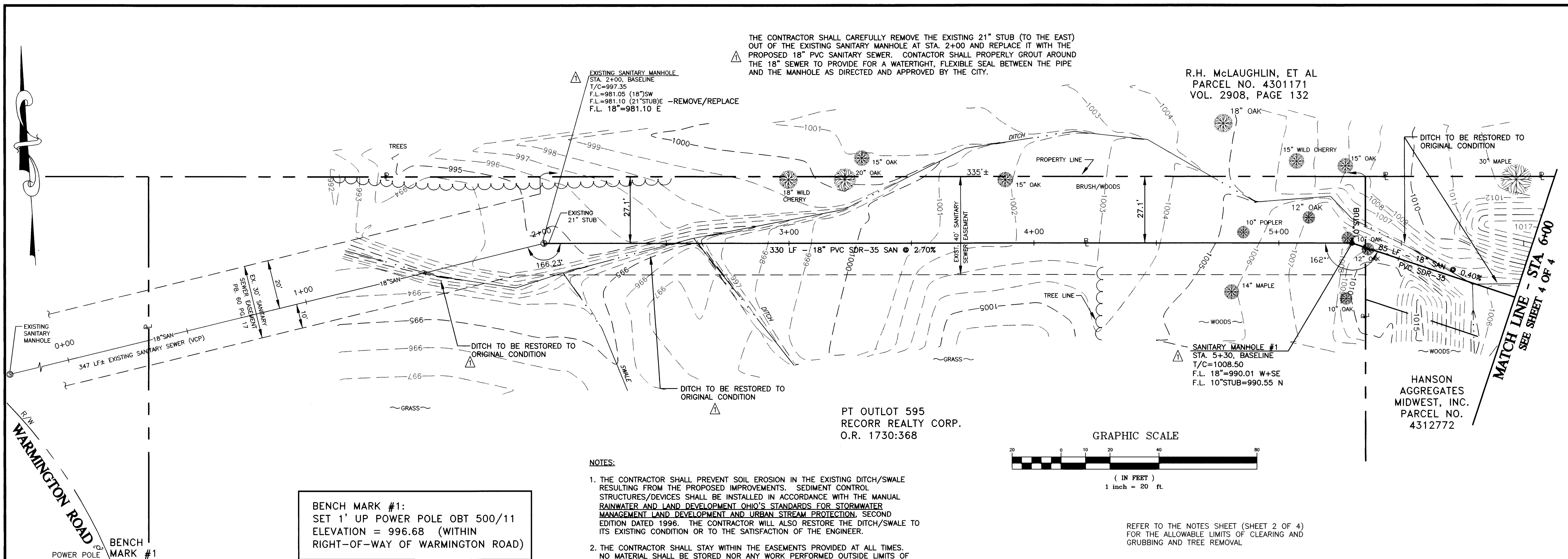
SHEET 2 OF 4

NOTES, DETAILS AND QUANTITIES

Hettler Largent Engineering, Inc. Civil & Construction Consultants 1225 North Main Street - Suite A - North Canton, OH 44720 PH: 330-966-1776 www.hettler-largent-eng.com

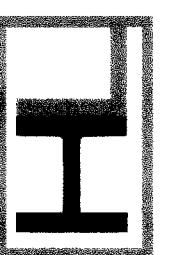


SOUTH MASSILLON SANITARY TRUNK SEWER EXTENSION CITY OF MASSILLON STARK COUNTY, OHIO



SANITARY SEWER EXTENSION
PLAN AND PROFILE
STA. 0+00 TO 6+00

Hettler Largent
Engineering, LLC
Civil & Construction Consultants



SOUTH MASSILLON
SANITARY TRUNK SEWER EXTENSION
CITY OF MASSILLON
STARK COUNTY, OHIO

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SANITARY SEWER EXTENSION
PLAN AND PROFILE
STA. 6+00 TO 11+16

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SOUTH MASSILLON
SANITARY TRUNK SEWER EXTENSION
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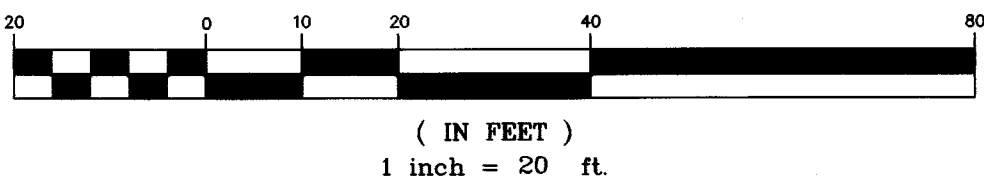
IF THE EXISTING SWALE LOCATED ALONG THE NORTH SIDE OF THE PROPOSED
SANITARY SEWER IS DISTURBED DURING COMPLETION OF THESE IMPROVEMENTS, IT
SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR, AS APPROVED
BY THE CITY.

R.H. McLAUGHLIN, ET AL
PARCEL NO. 4301171
VOL. 2908, PAGE 132

O.L. 569
MILLER LAND DEVELOPMENT, LTD.
O.R.I. 97024283

O.L. 570
RAILROAD

GRAPHIC SCALE



NOTES:

1. THE CONTRACTOR SHALL PREVENT SOIL EROSION IN THE EXISTING DITCH/SWALE RESULTING FROM THE PROPOSED IMPROVEMENTS. 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, SECOND EDITION DATED 1996. THE CONTRACTOR WILL ALSO RESTORE THE DITCH/SWALE TO ITS EXISTING CONDITION OR TO THE SATISFACTION OF THE ENGINEER.
2. THE CONTRACTOR SHALL STAY WITHIN THE EASEMENTS PROVIDED AT ALL TIMES. NO MATERIAL SHALL BE STORED NOR ANY WORK PERFORMED OUTSIDE LIMITS OF EASEMENTS. DISTURBANCE OF EXISTING FEATURES AND/OR IMPROVEMENTS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AND AS APPROVED BY THE ENGINEER/OWNER.
3. CONTRACTOR TO REPLACE EXISTING GRAVEL DISTURBED DURING CONSTRUCTION ALONG THE ROUTE OF PROPOSED SANITARY SEWER ON THE HANSON AGGREGATES MIDWEST, INC. PROPERTY. REPLACEMENT MATERIAL SHALL CONSIST OF 6" OF ODOT 304 AGGREGATE BASE. MATERIAL AND LIMITS OF REPLACEMENT MUST BE APPROVED BY HANSON AGGREGATES MIDWEST, INC. AND THE ENGINEER. A LUMP SUM PAYMENT ITEM HAS BEEN INCLUDED IN THE ESTIMATED QUANTITIES FOR THIS GRAVEL REPLACEMENT.

HANSON AGGREGATES MIDWEST, INC.
PARCEL NO. 4312772

SEE SHEET 3 OF 4
MATCH LINE - STA. 6+00

