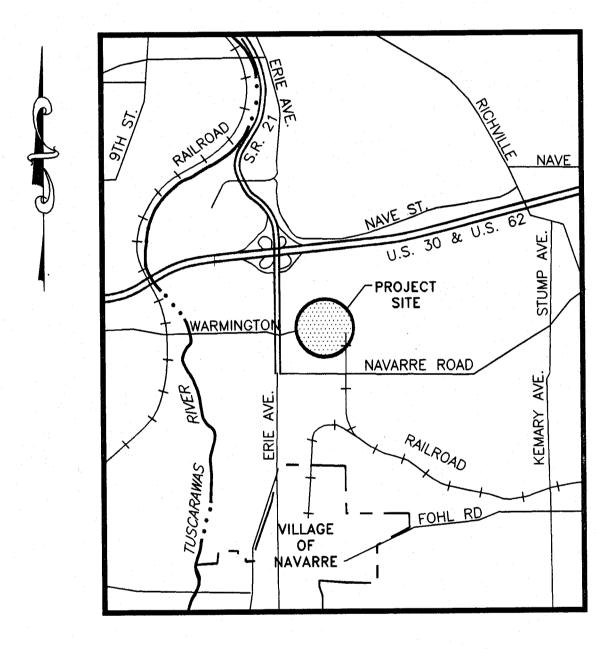
WARMINGTON ROAD SANITARY SEWER EXTENSION

CITY OF MASSILLON, STARK COUNTY, OHIO NOVEMBER 2000

CITY OFFICIALS

MAYOR
SAFETY SERVICE DIRECTOR
CITY ENGINEER/PLANNING DIRECTOR
WASTEWATER TREATMENT DEPARTMENT MANAGER

FRANCIS J. CICCHINELLI, JR. ALAN W. CLIMER
JAMES J. BENEKOS
JOSEPH R. ULRICH



LOCATION MAP

APPROVED BY THE CITY OF MASSILLON ENGINEER THIS ______ DAY OF ______, 200____.

CITY ENGINEER

ENGINEERING SERVICES BY:

HETTLER ENGINEERING SERVICES 1225 NORTH MAIN STREET NORTH CANTON, OHIO 44720 (330) 966-1776

SURVEYING SERVICES BY:

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

INDEX OF SHEETS

TITLE SHEET

NOTES, DETAILS & QUANTITIES

SANITARY SEWER EXTENSION - STA. 0+00 TO STA. 6+00

SANITARY SEWER EXTENSION - STA. 6+00 TO STA. 11+20

4

PIPE CROSSING - DATA SHEET

	CARRIER PIPE		CASING PIPE
	CONCRETE	VCP	
CONTENTS TO BE HANDLED	SAN. SEWAGE	SAN. SEWAGE	
NOMINAL OPERATING PRESSURE	GRAVITY	GRAVITY	-
NOMINAL SIZE OF PIPE	18 INCH	18 INCH	36 INCH
O.S. DIAMETER	23" BARREL	21.93" BARREL	37.064" BARREL
	27.5"± BELL	27.29"± BELL	_
I.S. DIAMETER	18 INCHES	17.90 INCHES	36 INCHES
WALL THICKNESS	2.5 INCHES	2.015 INCHES	0.532 INCHES
WEIGHT PER FOOT	168 #/LF	140 #/LF	189.57 #/LF
MATERIAL	RCP	VČP	STEEL
PROCCESS OF MANUFACTURE	PRECAST	EXTRUDED	DOMESTIC
SPECIFICATION	ASTM C-76	ASTM C-700	ASTM A 252
GRADE OR CLASS	CLASS IV	EXTRA STRENGTH	GRADE B
TEST PRESSURE	_		
TOPE OF IOINT	O-RING	O-RING	WELDED
TYPE OF JOINT	NONE	NONE	NONE
TYPE OF COATING DETAILS OF CATHODIC PROTECTION	N/A	N/A	N/A
DETAILS OF SEAL OR PROTECTION AT	11/ ^	IN/A	N/A
ENDS OF CASING	N/A	N/A	BRICK & MORTAR BLKHI
METHOD OF INSTALLATION	IN/A	IN/A	BORING
CHARACTER OF SUBSURFACE MATERIAL			
AT THE CROSSING LOCATION			UNKNOWN
APPROXIMATE GROUND WATER	UNKNOWN	UNKNOWN	UNKNOWN
SOURCE OF INFORMATION ON SUBSURFACE	J.1113.13.1111	SLII VISIONI I	
CONDITIONS (BORING, TEST PITS, ETC.)	N/A	N/A	N/A

CALL 2 WORKING DAYS
BEFORE YOU DIG
1-800-362-2764
OHIO UTILITIES PROTECTION SERVICE

PRELIMINARY
Not For Construction

NOV 0 3 2000

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 CONSTRUCTION AND MATERIAL 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 STRICT 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.

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 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 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 (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.

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.

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 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 NECESSARY TO PROTECT AND SUPPORT ANY EXISTING UTILITIES ENCOUNTERED DURING THE COMPLETION OF THE PROPOSED IMPROVEMENTS AS DIRECTED BY THE OWNERS OF THE RESPECTIVE UTILITIES AND APPROVED BY THE ENGINEER. UTILITIES MUST BE KEPT IN SERVICE AT ALL

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 AND CONTROL SOIL EROSION RESULTING FROM THE PROPOSED IMPROVEMENTS. THE USE OF SILT FENCING, JUTE MATING, 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, 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.

MAINTENANCE OF UTILITY SERVICES

THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN UTILITY SERVICE TO THE EXISTING RESIDENCE HALL AS WELL AS THE REST OF THE CAMPUS AT ALL TIMES. WATER SERVICE MAY BE INTERRUPTED FOR LIMITED PERIODS OF TIME (2 HOURS MAXIMUM) DURING CONNECTION BETWEEN EXISTING WATER LINES AND RELOCATED MAINS WHICH CANNOT BE COMPLETED WITHOUT SHUTTING DOWN WATER SERVICE. NO SHUT DOWN SHALL OCCUR WITHOUT PRIOR WRITTEN PERMISSION OF MOUNT UNION COLLEGE. FORTY-EIGHT HOURS NOTICE TO THE OWNER AND ENGINEER IS REQUIRED. STORM AND SANITARY SERVICES SHALL BE MAINTAINED WITHOUT INTERRUPTION.

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 TOWNSHIP, 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.

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 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.

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 ASSUME THE WORST CASE. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR UNANTICIPATED AND/OR UNFORESEEN CONDITIONS.

PROHIBITED CONNECTIONS TO SANITARY SEWERS

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

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.

ALL SANITARY SEWERS AND LATERALS SHALL BE EXTRA STRENGTH VITRIFIED CLAY PIPE MEETING THE REQUIREMENTS OF ASTM C-700 WITH JOINTS MEETING ASTM C-425 OR REINFORCED CONCRETE PIPE MEETING THE REQUIREMENTS OF ASTM C-76 WITH JOINTS MEETING ASTM C-443. MINIMUM COVER OVER SANITARY SEWERS

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 1/2 TO 1 SLOPE OF EXISTING AND/OR PROPOSED ROADWAYS, PARKING AREAS, BUILDINGS, SIDEWALKS, 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.

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 (TEN STATE STANDARDS). THE PROPOSED SANITARY SEWER SYSTEMS SHALL BE TESTED, APPROVED, AND ACCEPTED PRIOR TO BEING PUT INTO SERVICE.

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

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

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 PIPE PAY ITEMS. THE CONTRACTOR MUST SUBMIT A PLAN FOR MAINTAINING THE SEWAGE FLOW DURING CONSTRUCTION TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.

ALL PROPOSED SANITARY SEWERS SHALL BE INSTALLED PER THE REQUIREMENTS OF O.D.O.T. ITEM 603 FOR TYPE B OR TYPE C CONDUITS. ALL SEWERS LOCATED WITHIN THE LIMITS OF OR WITHIN A 1/2 TO 1 SLOPE OF ROADWAYS, DRIVES, OR PARKING LOTS SHALL BE INSTALLED AS TYPE B CONDUITS. ALL OTHER PIPES SHALL BE INSTALLED AS TYPE C CONDUITS. GRANULAR BACKFILL MATERIAL REQUIRED FOR BACKFILLING TYPE B CONDUITS WILL BE PAID FOR AS A SEPARATE PAY ITEM BASED UPON A MAXIMUM TRENCH WIDTH OF FOUR (4) FEET. NO ADDITIONAL SEPARATE PAYMENT WILL BE MADE FOR EXCAVATED MATERIAL APPROVED BY THE ENGINEER FOR USE AS BACKFILL.

RECONNECTION OF EXISTING SANITARY LATERALS

THE CONTRACTOR SHALL RECONNECT EXISTING LATERALS TO THE PROPOSED SANITARY SEWER USING APPROVED FLEXIBLE WATERTIGHT COUPLINGS, (FERNCO OR EQUAL) STANDARD FITTINGS AND BENDS AND AS APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, PLACING AND MAINTAINING CONSTRUCTION LAYOUT STAKES NECESSARY FOR THE PROPER COMPLETION OF THE WORK ASSOCIATED WITH THE SITE PACKAGE. 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 AN/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.

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 DEVELOPER, 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.

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 THE 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. 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.

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 ENGINEER. THESE CORRECTIONS SHALL BE REQUIRED IF WARRANTED BY EITHER INITIAL OR SECONDARY TESTING.

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 TELEVISED BE CLEANED AND FLUSHED 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 T-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.

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

AS-BUILTS

THE CONTRACTOR SHALL PROVIDE AS-BUILT PLAN INFORMATION TO THE CITY OF MASSILLON ENGINEERING DEPARTMENT WITHIN THIRTY (30) DAYS OF PROJECT

ITEM QUANT UNIT

201 LUMP SUM CLEARING AND GRUBBING 207 LUMP SUM TEMPORARY SOIL EROSION AND SEDIMENT CONTROL	
207 LUMP SUM TEMPORARY SOIL EROSION AND SEDIMENT CONTROL	
623 LUMP SUM CONSTRUCTION LAYOUT	
624 LUMP SUM MOBILIZATION	
659 LUMP SUM SEEDING AND MULCHING	
SAN 941 L.F. 18" SANITARY SEWER	
SAN 4 EACH 4' DIAMETER SANITARY MANHOLE	

L.F. 36" DIAMETER STEEL CASING (0.532" WALL THICKNESS) BORING

ESTIMATED QUANTITIES

DESCRIPTION

CONTRACTOR SHALL USE PRECAST GRADE RINGS TO ADJUST THE ELEVATION OF MANHOLE FRAME AND COVER.

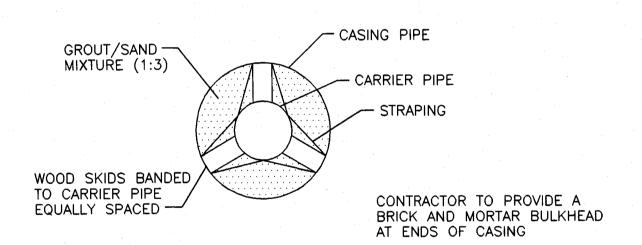
INSIDE OF PRECAST RINGS. SET FRAME IN 1/2" OF APPLY 1/2" BITUMINOUS SEAL TO BITUMINOUS SEAL PER OUTSIDE OF PRECAST RINGS. O.D.O.T. 706.10 (TYP) -HEAVY DUTY FRAME AND COVER EJIW 1020 FRAME WITH SOLID WITH GASKET SEAL COVER. PRECAST (TYP) GRADE RINGS-FIELD ADJUST 8" MIN.-- **─**8" MIN. ----**ECCENTRIC** CONE Ω 5" MIN. - 48" POLYPROPYLENE STEPS 93 BENCH SLOPE (TYP) MAX

APPLY 3/4" CEMENT MORTAR TO

MANHOLE SECTIONS SHALL CONFORM TO THE PROVISIONS OF ASTM C-478. O-RING GASKETS SHALL BE PROVIDED AT ALL MANHOLE JOINTS AND SHALL CONFORM TO THE PROVISIONS OF ASTM C-443.

ALL MANHOLE JOINTS SHALL BE SEALED WITH A FLEXIBLE BUTYL RESIN SEALANT -CONSEAL OR APPROVED EQUAL (AS MANUFACTURED BY CONCRETE SEALENT)

FOR P.V.C. PIPE CONNECTIONS USE ASTM C-923 FLEXIBLE GASKET SUCH AS A-LOK, DURA SEAL II, KOR-N-SEAL OR APPROVED EQUAL.



PRECAST SANITARY MANHOLE

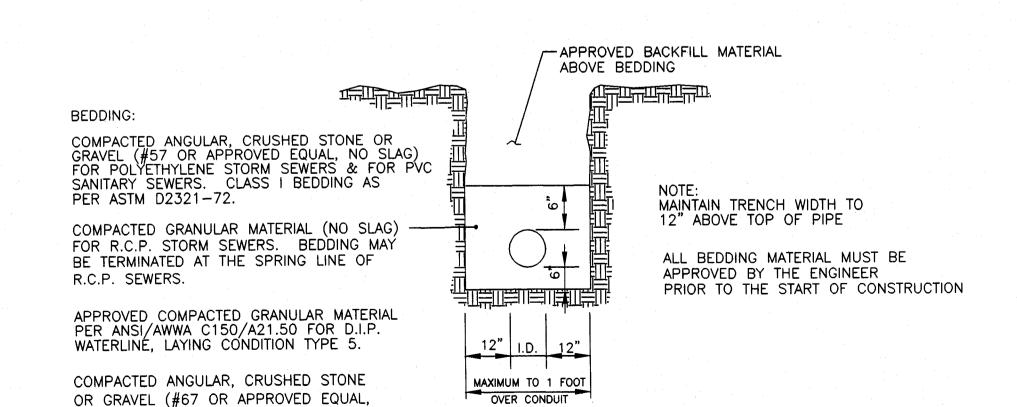
NOT TO SCALE

NO SLAG) FOR VITRIFIED CLAY SEWERS.

TYPE B BEDDING AS PER ASTM C-12.

O.D. OF MANHOLE + 2'-0"

BORING DETAIL NOT TO SCALE



PIPE BEDDING DETAIL NOT TO SCALE

1225 NORTH MAIN STREET, SUITE A

HETTLER ENGINEERING SERVICES NORTH CANTON, OHIO 44720 (330) 966-1776

CITY OF MASSILLON

SANITARY SEWER EXTENSION

NOTES, DETAILS & QUANTITIES

