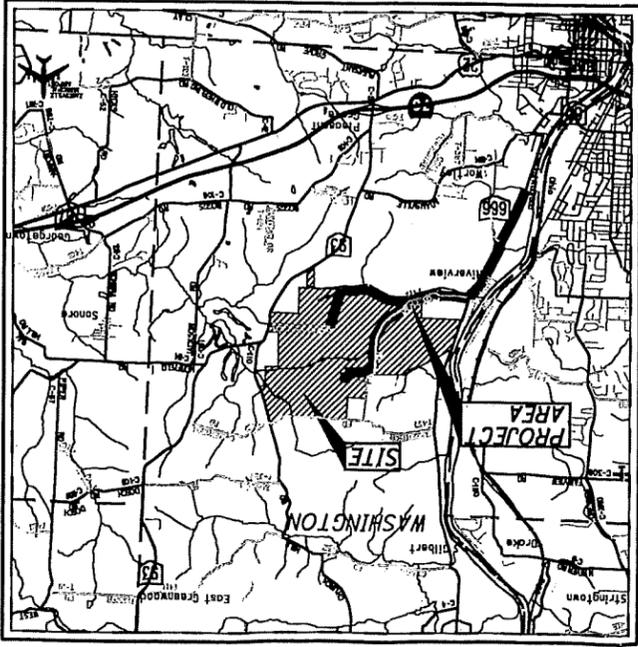


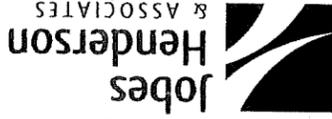
ZANESVILLE - MUSKINGUM COUNTY PORT AUTHORITY EASTPOINTE BUSINESS PARK - OFFSITE UTILITIES MUSKINGUM COUNTY, OHIO



LOCATION MAP
 LATITUDE: 39°29'24" LONGITUDE: 81°57'39"
 SCALE IN MILES



PORTION TO BE IMPROVED
 INTERSTATE & DIVIDED HIGHWAY
 UNDIVIDED STATE & FEDERAL ROUTES
 OTHER ROADS



Clayton McCoy
 Project Engineer
 cmccoy@jobshenderson.com
 59 Grant Street
 Newark, Ohio 43055
 Tel: 740.344.5451
 Fax: 740.344.5746

PLAN PREPARED BY:



Tel: 740.344.5451
 Fax: 740.344.5746
 59 Grant Street
 Newark, Ohio 43055
 www.jobshenderson.com

SIGNED: _____
 DATE: _____

Ohio Department of Transportation
 Ted Strickland, Governor • James G. Beasley, P.E., P.S., Director
 Brian F. Bosch, P.E.
 District Traffic / Access
 Management Engineer
 9600 Jacksonville Road
 Jacksonville, Ohio 43030
 740-323-5182
 Fax: 740-323-6125
 brian.bosch@dot.state.oh.us
 Call 614-565-6375

UNDERGROUND UTILITIES
 CONTACT BOTH SERVICES
 CALL TWO WORKING DAYS
 BEFORE YOU DIG
 CALL
 1-800-362-2764 (TOLL FREE)
 OHIO UTILITIES PROTECTION SERVICE
 NON-MEMBERS
 MUST BE CALLED DIRECTLY
 OIL & GAS PRODUCERS PROTECTIVE
 SERVICE CALL: 1-800-929-0988

STANDARD CONSTRUCTION DRAWINGS

SUPPLEMENTAL SPECIFICATIONS

TOM PHILLIPS
 Project Superintendent
 P.O. Box 670
 8555 Georgetown Road
 Cambridge, Ohio 43725



Office: 740-432-5648
 Fax: 740-439-4205
 Cell: 740-680-5404
 E-Mail: trp@nicolozakes.com
 Website: www.nicolozakes.com

SPECIAL PROVISIONS

APPROVED DATE _____
 ZANESVILLE - MUSKINGUM COUNTY
 PORT AUTHORITY
 EXECUTIVE DIRECTOR

APPROVED DATE _____
 ZANESVILLE CITY ENGINEER

APPROVED DATE _____
 MUSKINGUM COUNTY ENGINEER

INDEX OF SHEETS:

- 1 TITLE SHEET
- 2 SCHEMATIC PLAN
- 3 GENERAL NOTES
- 4 GENERAL SUMMARY
- 5 OUTSIDE DROP MANHOLE/AIR RELEASE VALVE DETAIL
- 6 JACK & BORE DETAIL
- 7 TRENCH BUILD-UP DETAILS
- 8 GRAVITY #1 PLAN AND PROFILES
- 9 GRAVITY #2 PLAN AND PROFILES
- 10-11 FORCEMAIN #1 PLAN AND PROFILES
- 12-17 FORCEMAIN #2 PLAN AND PROFILES
- 18-21 FORCEMAIN #1 LIFT STATION CALCS AND NOTES
- 22-29 FORCEMAIN #2 LIFT STATION CALCS AND NOTES
- 30-36 WATERLINE LOWERING SCHEMATIC PLAN
- 37-38 WATERLINE LOWERING GENERAL NOTES
- 39-44 WATERLINE LOWERING PLAN AND PROFILE

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE CONSTRUCTION OF 2 LIFT STATIONS, APPROXIMATELY 11650 LF OF GRAVITY SANITARY SEWER, APPROXIMATELY 13650 LF OF SANITARY FORCEMAIN AND APPROXIMATELY 455 LF OF 18" WATERLINE. PROJECT EARTH DISTURBED AREA: 15.00 ACRES ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 2.00 ACRES NOTICE OF INTENT EARTH DISTURBED AREA: 18.00 ACRES

2008 SPECIFICATIONS

THE CURRENT REQUIREMENTS OF MUSKINGUM COUNTY, THE CITY OF ZANESVILLE, THE CONSTRUCTION AND MATERIALS SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING ALL SUPPLEMENTS THERETO, AS WELL AS THE MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION SHALL GOVERN THE MATERIALS AND WORKMANSHIP TO COMPLETE THE IMPROVEMENTS SET FORTH IN THESE PLANS.

SIGNATURES BELOW SIGNIFY ONLY AGREEMENT WITH THE GENERAL PURPOSES AND INTENT OF THE PROJECT. OHIO UTILITIES PROTECTION SERVICE (TOLL FREE) 1-800-362-2764

RAILROAD INVOLVEMENT
CSX TRANSPORTATION

EASTPOINTE BUSINESS PARK
 OFFSITE UTILITIES

JHA JOB NO.
Z10-04

FEDERAL PROJECT NO.
 NONE

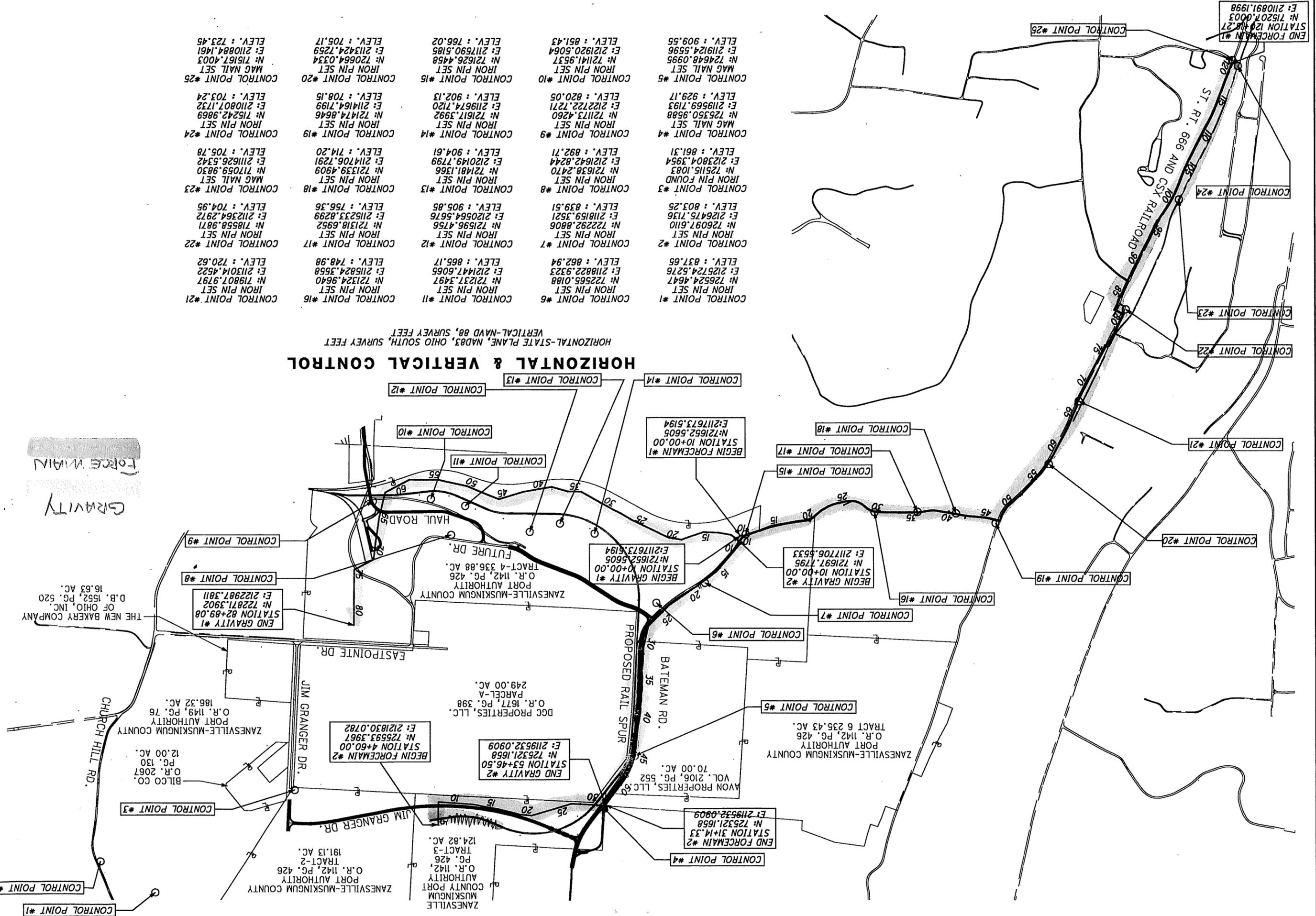
CONSTRUCTION PROJECT NO.

47

CALCULATED BY
CTM
CHECKED
KBS

600
300
150
HORIZONTAL
SCALE IN FEET

↑ N



CONTROL POINT #1 IRON PIN SET ELEV.: 837.65 E: 2125724.5276 N: 725624.4647 MAG NAIL SET E: 219569.7193 N: 725350.9588 ELEV.: 929.17 E: 2119569.7193 N: 724648.0995 MAG NAIL SET E: 2119124.5596 N: 724648.0995 ELEV.: 909.55	CONTROL POINT #2 IRON PIN SET ELEV.: 837.65 E: 2125724.5276 N: 725624.4647 IRON PIN SET E: 2126097.6110 N: 726097.6110 ELEV.: 803.25 E: 2126475.7136 N: 725115.1083 IRON PIN FOUND E: 2123804.3954 N: 725115.1083 ELEV.: 861.31	CONTROL POINT #3 IRON PIN SET ELEV.: 862.94 E: 2118822.9233 N: 722565.0188 IRON PIN SET E: 2118822.9233 N: 722565.0188 ELEV.: 862.94 E: 2118159.3521 N: 722292.8806 IRON PIN SET E: 2121642.8244 N: 721638.2470 ELEV.: 892.71	CONTROL POINT #4 IRON PIN SET ELEV.: 865.17 E: 2121447.6065 N: 721237.3497 IRON PIN SET E: 2121447.6065 N: 721237.3497 ELEV.: 865.17 E: 2120564.5676 N: 721596.4756 IRON PIN SET E: 2120564.5676 N: 721596.4756 ELEV.: 905.85	CONTROL POINT #5 IRON PIN SET ELEV.: 748.98 E: 2115824.3558 N: 721324.9640 IRON PIN SET E: 2115824.3558 N: 721324.9640 ELEV.: 748.98 E: 2114706.7291 N: 721339.4909 IRON PIN SET E: 2114706.7291 N: 721339.4909 ELEV.: 714.20	CONTROL POINT #6 IRON PIN SET ELEV.: 720.62 E: 2113014.4522 N: 719807.9197 IRON PIN SET E: 2113014.4522 N: 719807.9197 ELEV.: 720.62 E: 2112364.2972 N: 718558.9871 IRON PIN SET E: 2112364.2972 N: 718558.9871 ELEV.: 704.95	CONTROL POINT #7 IRON PIN SET ELEV.: 705.78 E: 2110807.1732 N: 715242.9869 IRON PIN SET E: 2110807.1732 N: 715242.9869 ELEV.: 705.78 E: 210884.1461 N: 715167.4003 MAG NAIL SET E: 210884.1461 N: 715167.4003 ELEV.: 723.45	CONTROL POINT #8 IRON PIN SET ELEV.: 705.17 E: 210664.0334 N: 720664.0334 IRON PIN SET E: 210664.0334 N: 720664.0334 ELEV.: 705.17 E: 210419.7799 N: 721481.1366 IRON PIN SET E: 210419.7799 N: 721481.1366 ELEV.: 904.61	CONTROL POINT #9 IRON PIN SET ELEV.: 820.05 E: 2122722.7271 N: 721173.4260 IRON PIN SET E: 2122722.7271 N: 721173.4260 ELEV.: 820.05 E: 2119674.7120 N: 721617.3992 IRON PIN SET E: 2119674.7120 N: 721617.3992 ELEV.: 902.13	CONTROL POINT #10 IRON PIN SET ELEV.: 851.43 E: 2121920.5064 N: 721141.9537 IRON PIN SET E: 2121920.5064 N: 721141.9537 ELEV.: 851.43 E: 2117590.5185 N: 721626.4458 IRON PIN SET E: 2117590.5185 N: 721626.4458 ELEV.: 766.02	CONTROL POINT #11 IRON PIN SET ELEV.: 862.94 E: 2118822.9233 N: 722565.0188 IRON PIN SET E: 2118822.9233 N: 722565.0188 ELEV.: 862.94 E: 2117673.5194 N: 721652.5605 STATION 10+00.00 E: 2117673.5194 N: 721652.5605	CONTROL POINT #12 IRON PIN SET ELEV.: 865.17 E: 2121447.6065 N: 721237.3497 IRON PIN SET E: 2121447.6065 N: 721237.3497 ELEV.: 865.17 E: 2120564.5676 N: 721596.4756 IRON PIN SET E: 2120564.5676 N: 721596.4756 ELEV.: 905.85	CONTROL POINT #13 IRON PIN SET ELEV.: 748.98 E: 2115824.3558 N: 721324.9640 IRON PIN SET E: 2115824.3558 N: 721324.9640 ELEV.: 748.98 E: 2114706.7291 N: 721339.4909 IRON PIN SET E: 2114706.7291 N: 721339.4909 ELEV.: 714.20	CONTROL POINT #14 IRON PIN SET ELEV.: 705.78 E: 2110807.1732 N: 715242.9869 IRON PIN SET E: 2110807.1732 N: 715242.9869 ELEV.: 705.78 E: 210884.1461 N: 715167.4003 MAG NAIL SET E: 210884.1461 N: 715167.4003 ELEV.: 723.45	CONTROL POINT #15 IRON PIN SET ELEV.: 820.05 E: 2122722.7271 N: 721173.4260 IRON PIN SET E: 2122722.7271 N: 721173.4260 ELEV.: 820.05 E: 2119674.7120 N: 721617.3992 IRON PIN SET E: 2119674.7120 N: 721617.3992 ELEV.: 902.13	CONTROL POINT #16 IRON PIN SET ELEV.: 851.43 E: 2121920.5064 N: 721141.9537 IRON PIN SET E: 2121920.5064 N: 721141.9537 ELEV.: 851.43 E: 2117590.5185 N: 721626.4458 IRON PIN SET E: 2117590.5185 N: 721626.4458 ELEV.: 766.02	CONTROL POINT #17 IRON PIN SET ELEV.: 862.94 E: 2118822.9233 N: 722565.0188 IRON PIN SET E: 2118822.9233 N: 722565.0188 ELEV.: 862.94 E: 2117673.5194 N: 721652.5605 STATION 10+00.00 E: 2117673.5194 N: 721652.5605	CONTROL POINT #18 IRON PIN SET ELEV.: 748.98 E: 2115824.3558 N: 721324.9640 IRON PIN SET E: 2115824.3558 N: 721324.9640 ELEV.: 748.98 E: 2114706.7291 N: 721339.4909 IRON PIN SET E: 2114706.7291 N: 721339.4909 ELEV.: 714.20	CONTROL POINT #19 IRON PIN SET ELEV.: 705.78 E: 2110807.1732 N: 715242.9869 IRON PIN SET E: 2110807.1732 N: 715242.9869 ELEV.: 705.78 E: 210884.1461 N: 715167.4003 MAG NAIL SET E: 210884.1461 N: 715167.4003 ELEV.: 723.45	CONTROL POINT #20 IRON PIN SET ELEV.: 820.05 E: 2122722.7271 N: 721173.4260 IRON PIN SET E: 2122722.7271 N: 721173.4260 ELEV.: 820.05 E: 2119674.7120 N: 721617.3992 IRON PIN SET E: 2119674.7120 N: 721617.3992 ELEV.: 902.13	CONTROL POINT #21 IRON PIN SET ELEV.: 851.43 E: 2121920.5064 N: 721141.9537 IRON PIN SET E: 2121920.5064 N: 721141.9537 ELEV.: 851.43 E: 2117590.5185 N: 721626.4458 IRON PIN SET E: 2117590.5185 N: 721626.4458 ELEV.: 766.02	CONTROL POINT #22 IRON PIN SET ELEV.: 862.94 E: 2118822.9233 N: 722565.0188 IRON PIN SET E: 2118822.9233 N: 722565.0188 ELEV.: 862.94 E: 2117673.5194 N: 721652.5605 STATION 10+00.00 E: 2117673.5194 N: 721652.5605	CONTROL POINT #23 IRON PIN SET ELEV.: 748.98 E: 2115824.3558 N: 721324.9640 IRON PIN SET E: 2115824.3558 N: 721324.9640 ELEV.: 748.98 E: 2114706.7291 N: 721339.4909 IRON PIN SET E: 2114706.7291 N: 721339.4909 ELEV.: 714.20	CONTROL POINT #24 IRON PIN SET ELEV.: 705.78 E: 2110807.1732 N: 715242.9869 IRON PIN SET E: 2110807.1732 N: 715242.9869 ELEV.: 705.78 E: 210884.1461 N: 715167.4003 MAG NAIL SET E: 210884.1461 N: 715167.4003 ELEV.: 723.45	CONTROL POINT #25 IRON PIN SET ELEV.: 820.05 E: 2122722.7271 N: 721173.4260 IRON PIN SET E: 2122722.7271 N: 721173.4260 ELEV.: 820.05 E: 2119674.7120 N: 721617.3992 IRON PIN SET E: 2119674.7120 N: 721617.3992 ELEV.: 902.13
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END FORCEMAIN #1
STATION 120+18.27
N: 715207.0003
E: 2110891.1998

SPECIFICATIONS

THE CURRENT REQUIREMENTS OF MUSKINGUM COUNTY, THE CITY OF ZANESVILLE, THE CONSTRUCTION AND MATERIALS SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING ALL SUPPLEMENTS THERETO, AS WELL AS THE MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION SHALL GOVERN THE MATERIALS AND WORKMANSHIP TO COMPLETE THE IMPROVEMENTS SET FORTH IN THESE PLANS.

UTILITY OWNERS

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THE PROJECT:

- WATER:**
MUSKINGUM COUNTY WATER DEPARTMENT
375 RICHARDS ROAD
ZANESVILLE, OH 43701
ATTN: ERIC EWING
(740) 453-0678
- GAS:**
NATIONAL GAS & OIL COMPANY
120 O'NEIL DRIVE
HEBRON, OHIO 43025
ATTN: GREG WILSON
(740)348-1254
- ELECTRIC:**
AMERICAN ELECTRIC POWER
1648 MARION DRIVE
COSHOCTON, OHIO 43812
ATTN: PAUL PRATER
(740)622-7984
- GAS:**
CAMERON BROTHERS
3636 ADAMSVILLE ROAD
ZANESVILLE, OHIO 43701
ATTN: CLINT CAMERON
(740)453-3300
- ELECTRIC:**
GUESNEY-MUSKINGUM
ELECTRIC COOP
17 S. LIBERTY STREET
NEW CONCORD, OHIO 43762
ATTN: JIM HINZE
(740)826-7661
- TELECOMMUNICATIONS:**
AT&T
3935 NORTHPOINTE DRIVE
ZANESVILLE, OHIO 43701
ATTN: JACK STOVER
(740)454-3416

SURVEYS

WHERE POTENTIAL GRADE CONFLICTS MIGHT OCCUR WITH EXISTING UTILITIES, THE CONTRACTOR SHALL UNCOVER SUCH UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT THE EXACT ELEVATION MAY BE DETERMINED AND THE NECESSARY ADJUSTMENTS MADE. COST OF THE ABOVE, IF ANY, WILL BE INCLUDED IN THE PRICE BID FOR THE PERTINENT LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL UTILITY LINES, SERVICES AND APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF THIS WORK SHALL BE INCLUDED WITH THE PRICE BID FOR THE PERTINENT ITEM, UNLESS OTHERWISE NOTED ON THE PLANS. ESTIMATED QUANTITIES SHOWN ON THE PLANS FOR RELOCATIONS ARE FOR THOSE ITEMS ACTUALLY CALLED FOR AND SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL DETAIL SURVEYS NEEDED FOR CONSTRUCTION.

MODIFICATIONS

ANY MODIFICATIONS OR CHANGES TO THE WORK, AS SHOWN ON THE DRAWINGS, MUST HAVE PRIOR WRITTEN APPROVAL BY THE ENGINEER.

SAFETY

THE CONTRACTOR SHALL SOLELY BE RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REGULATIONS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS INCLUDING EMPLOYEES AND PROPERTY. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

REVIEW OF PROJECT SITE

PRIOR TO BIDDING THE CONTRACTOR SHALL, BY PERSONAL EXAMINATION, SATISFY HIMSELF AS TO THE LOCATION OF THE PROPOSED WORK AND TO ACQUAINT HIMSELF THOROUGHLY WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT ARE LIKELY TO BE ENCOUNTERED IN THE PERFORMANCE OF THE PROPOSED WORK.

IRON PINS AND MONUMENTS

THE CONTRACTOR SHALL REFERENCE ALL IRON PINS AND MONUMENTS BEFORE EXCAVATING AT OR NEAR THEM. IF ANY IRON PINS OR MONUMENTS ARE DESTROYED OR DAMAGED BY THE CONTRACTOR, THEY SHALL BE ACCURATELY REPLACED BY A REGISTERED SURVEYOR EMPLOYED BY THE CONTRACTOR AT THE COMPLETION OF THE PROJECT AND AT NO EXPENSE TO THE GOVERNING MUNICIPALITY OR THE PROPERTY OWNER.

PRIOR TO COMMENCEMENT OF WORK:

A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CONTRACTOR, MUSKINGUM COUNTY, THE CITY OF ZANESVILLE, THE OHIO DEPARTMENT OF TRANSPORTATION, CSX TRANSPORTATION, THE DEVELOPER/OWNER SHALL SECURE ALL NECESSARY PERMITS, PAY ANY INSPECTION, TAP, OR CONNECTION FEES. NO CONNECTION TO ANY COUNTY OR CITY OWNED LINE SHALL BE MADE UNTIL THESE ITEMS HAVE BEEN RECEIVED BY THE GOVERNING MUNICIPALITY.

AT LEAST SEVENTY-TWO HOURS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UTILITY FACILITY SHOWN IN THE PLANS.

CONSTRUCTION STAKING

ALL CONSTRUCTION STAKING SHALL BE DONE BY OR UNDER THE DIRECTION OF A PROFESSIONAL REGISTERED SURVEYOR.

SANITARY FACILITIES

THE CONTRACTOR SHALL FURNISH AND MAINTAIN SANITARY CONVENIENCE FACILITIES FOR THE WORKERS AND INSPECTORS FOR THE DURATION OF THE WORK.

LEGAL DIMENSION AND WEIGHT LIMITS

PURSUANT TO SECTIONS 5577.04 AND 5577.05 OHIO REVISED CODE (ORC), LEGAL LIMITS FOR DIMENSIONS AND WEIGHTS FOR HIGHWAY VEHICLES WERE AMENDED EFFECTIVE OCTOBER 1, 1992. THE AMENDED ORC MAY AFFECT THE CONTRACTOR'S COST FOR PERFORMING THE VARIOUS ITEMS OF WORK ON THIS PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FACTOR ANY ADDITIONAL COSTS RESULTING FROM THE AMENDED ORC INTO THE UNIT BID PRICE FOR THE VARIOUS ITEMS OF WORK TO BE PERFORMED ON THIS PROJECT. NO ADDITIONAL REIMBURSEMENT FOR THE COSTS WILL BE PAID BY THE DEVELOPER OR GOVERNING MUNICIPALITY.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS NOR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED UNDER THE PARTICULAR ITEM HAS BEEN PERFORMED. PAYMENT FOR THESE ITEMS WILL BE MADE ONLY WHEN THE WORK IS COMPLETED.

USE OF FIRE HYDRANTS

THE CONTRACTOR IS HEREBY NOTIFIED THAT THE USE OF FIRE HYDRANTS WILL NOT BE PERMITTED AND THAT THE USE OF FIRE THERT OF A PUBLIC UTILITY. THE CONTRACTOR SHALL COORDINATE WITH THE DIVISION(S) OF WATER TO ACCESS THE COUNTRY OR CITIES WATER SUPPLIES.

EMERGENCY PHONE NUMBER

THE CONTRACTOR SHALL PROVIDE MUSKINGUM COUNTY, THE CITY OF ZANESVILLE, THE OHIO DEPARTMENT OF TRANSPORTATION, AND CSX TRANSPORTATION WITH A 24 HOUR TELEPHONE NUMBER TO READILY CONTACT A RESPONSIBLE PARTY IN THE CASE OF AN EMERGENCY. COSTS AND/OR DAMAGES INCURRED RELATED TO WORK PERFORMED BY THE CONTRACTOR IN SUCH EMERGENCIES ARE THE CONTRACTOR'S RESPONSIBILITY AND THAT OF THE GOVERNING AUTHORITY.

INCLUSIVE BID

THE CONTRACTOR'S BID SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE PROJECT. COMPENSATION FOR ANY WORK WHICH DOES NOT HAVE A SPECIFIC PAY ITEM WILL BE INCLUDED IN THE PRICE BID FOR THE INDIVIDUAL ITEMS.

WORKING HOURS

WORKING HOURS ARE LIMITED TO 7:00AM TO 7:00PM MONDAY THROUGH FRIDAY & 7:00AM TO 5:00PM ON SATURDAY. CONTRACTOR MUST CALL THE CITY OF ZANESVILLE AND THE MUSKINGUM COUNTY ENGINEERS OFFICE A MINIMUM OF TWO WORKING DAYS IN ADVANCE IF WORK IS TO BE DONE ON SATURDAYS. NO WORK SHALL BE PERFORMED ON SUNDAYS OR GOVERNMENT HOLIDAYS WITHOUT PRIOR WRITTEN APPROVAL.

ESTIMATED QUANTITIES

THE QUANTITIES LISTED IN THE "GENERAL SUMMARY" ARE APPROXIMATE ONLY, AND SHALL BE USED IN DETERMINING THE TOTAL AMOUNTS OF BIDS FOR THE PURPOSE OF DETERMINING THE LOWEST AND BEST BIDDER. THE QUANTITIES MAY BE INCREASED OR DIMINISHED AT THE OPTION OF THE ENGINEER.

ITEM SPECIAL - RECORD CONSTRUCTION DRAWINGS

THE CONTRACTOR SHALL PREPARE AND MAINTAIN A SET OF RECORD CONSTRUCTION DRAWINGS AS THEIR WORK ON THE PROJECT PROGRESSES. THE RECORD DRAWINGS SHALL DOCUMENT ALL DEVIATIONS FROM THE ORIGINAL DRAWINGS AS WELL AS DOCUMENT THE LOCATION AND EXTENT OF ANY UNFORESEEN CONDITIONS OR OBSTRUCTIONS. THE RECORD CONDITIONS SHALL BE SHOWN BY IN RED AND ANY PLAN CHANGES SHALL BE OUTLINED. THE CONTRACTOR SHALL BRING THE RECORD DRAWINGS TO ALL CONSTRUCTION PROGRESS MEETINGS FOR REVIEW BY THE GOVERNING MUNICIPALITY.

THE CONTRACTOR SHALL COMPLETE AND SUBMIT 4 COPIES OF THE RECORD DRAWINGS WITH THE PORT AUTHORITY FOR REVIEW UPON SUBSTANTIAL COMPLETION OF THE PROJECT. UPON REVIEW AND ACCEPTANCE BY THE PORT AUTHORITY, MUSKINGUM COUNTY, AND THE CITY OF ZANESVILLE. THE CONTRACTOR WILL SUBMIT A FINAL COPY ON MYLAR. THE PORT AUTHORITY WILL WITHHOLD THE FINAL PAYMENT TO THE CONTRACTOR UNTIL THE RECORD DRAWINGS HAVE BEEN SUBMITTED.

FINAL RECORD DRAWINGS WILL BE PERFORMED BY A LICENSED PROFESSIONAL SURVEYOR AND SHALL CONTAIN THE FOLLOWING:

- (a) LOCATIONS OF ALL SEWER LINES, AIR RELEASE VALVES AND MANHOLES. (b) IDENTIFY ALL FIELD MODIFICATIONS TO THE APPROVED SHOP DRAWINGS AND/OR PRODUCT DATA.

NON-RUBBER TIRE VEHICLES

NO NONRUBBER TIRE VEHICLES SHALL BE MOVED ON PUBLIC STREETS. EXCEPTIONS MAY BE GRANTED BY THE GOVERNING AUTHORITY WHERE SHORT DISTANCES AND SPECIAL CIRCUMSTANCES ARE INVOLVED. GRANTING OF EXCEPTIONS MUST BE IN WRITING AND ANY RESULTING DAMAGE MUST BE REPAIRED TO THE SATISFACTION OF THE GOVERNING AUTHORITY. *NOTE# - NO EXCEPTIONS WILL BE ALLOWED BY THE CITY OF ZANESVILLE WITHIN THE CITY LIMITS. WHERE EXCEPTIONS ARE GRANTED THE CONTRACTOR SHALL USE EXTREME CARE WHEN OPERATING NONRUBBER TIRE VEHICLES ON STREETS OR DRIVEWAYS TO AVOID MARKING OR DAMAGING THE PAVEMENT. PROTECTION OF THE PAVEMENT FROM DAMAGE RESULTING FROM THE TRACKS OF NON-RUBBER TIRE VEHICLES UTILIZED IN TRENCH EXCAVATION SHALL BE REQUIRED. A WOOD PLANK SYSTEM, USED TIRES, RUBBER MATS OR OTHER MEANS AS APPROVED BY THE GOVERNING AUTHORITY'S REPRESENTATIVE TO PROTECT THE PAVEMENT. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS ITEMS OF THE CONTRACT.

PROTECTION AND RESTORATION OF PROPERTY

THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND RESTORATION OF ALL PRIVATE AND PUBLIC PROPERTY IMPACTED BY THE CONTRACTOR'S OPERATIONS IN ACCORDANCE WITH 107.10.

WORK LIMITS

THE CONTRACTOR SHALL CONFINE THEIR ACTIVITIES TO THE PROJECT SITE UNDER DEVELOPMENT OR THE EXISTING RIGHT-OF-WAYS, CONSTRUCTION AND/OR PERMANENT EASEMENTS AND SHALL NOT TRESPASS UPON OTHER PRIVATE PROPERTY WITHOUT THE WRITTEN CONSENT OF THE OWNER.

MISCELLANEOUS WORK

ALL ITEMS OF WORK CALLED FOR ON THE PLANS FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST OF SAME SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS RELATED ITEMS.

FINAL CLEAN-UP

THE CONTRACTOR SHALL CLEAN UP ALL DEBRIS AND MATERIALS RESULTING FROM THEIR OPERATIONS AND RESTORE ALL SURFACES, STRUCTURES, DITCHES, AND PROPERTY TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE GOVERNING AUTHORITY.

INDEMNIFICATION

THE CONTRACTOR WILL INDEMNIFY AND HOLD HARMLESS ALL MUNICIPALITIES, THE ENGINEER, THEIR AGENTS AND EMPLOYEES FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEYS' FEES ARISING OUT OF OR RESULTING FROM PERFORMANCE OF THE WORK, PROVIDED THAT ANY SUCH CLAIMS, DAMAGE, LOSS OR EXPENSE IS ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DISEASE OR DEATH, OR INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY, INCLUDING THE LOSS OF USE RESULTING THEREFROM, AND IS CAUSED IN WHOLE OR IN PART BY ANY NEGLIGENCE OR WILLFUL ACT OR OMISSION OF THE CONTRACTOR, ANY SUBCONTRACTOR, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE.

IN ANY AND ALL CLAIMS AGAINST MUNICIPALITIES, THE ENGINEER, OR ANY OF THEIR AGENTS OR EMPLOYEES, BY ANY EMPLOYEE OF THE CONTRACTOR, ANY SUBCONTRACTOR, ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, THE INDEMNIFICATION OBLIGATION SHALL NOT BE LIMITED IN ANY WAY BY ANY LIMITATION ON THE AMOUNT OR TYPE OF DAMAGES, COMPENSATION OR BENEFITS PAYABLE BY OR FOR THE CONTRACTOR OR ANY SUBCONTRACTOR UNDER WORKERS COMPENSATION ACTS, DISABILITY BENEFIT ACTS, OR OTHER EMPLOYEE BENEFIT ACTS.

THE OBLIGATION OF THE CONTRACTOR UNDER THIS PARAGRAPH SHALL NOT EXTEND TO THE LIABILITY OF THE ENGINEER, THEIR AGENTS OR EMPLOYEES ARISING OUT OF THE PREPARATION OR APPROVAL OF MAPS, PLANS, OPINIONS, REPORTS, SURVEYS, CHANGE ORDERS, DESIGNS OR SPECIFICATIONS.

PROTECTION OF WORK SITE

THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN SUFFICIENT TRAFFIC CONTROL DEVICES OR METHODS TO PREVENT UNAUTHORIZED ENTRANCE ONTO THE WORK SITE.

PAVEMENT CLEANING

THE CONTRACTOR IS HEREBY NOTIFIED THAT HE/SHE SHALL BE RESPONSIBLE FOR CLEANING OF STREETS OR ANY MUD, DIRT, SAND, GRAVEL, STONES, OR ANY KIND OF MATERIAL THAT HAVE DEPOSITED AS A RESULT OF HIS/HER OR SUB-CONTRACTORS OPERATIONS. PAVEMENTS SHALL BE CLEANED AT THE END OF EACH WORK DAY OR MORE OFTEN AS DETERMINED BY THE GOVERNING MUNICIPALITY OR THEIR REPRESENTATIVE.

DUST CONTROL

THE CONTRACTOR IS ADVISED THAT THEIR WORK WILL BE IN PROXIMITY TO OCCUPIED RESIDENCES. THEREFORE, IT IS EXPECTED THE CONTRACTOR WILL PERFORM HIS/HER EARTHWORK OPERATIONS TO MINIMIZE DUST. WHEN CONDITIONS ARE SUCH THAT DUST BECOMES A MAJOR PROBLEM OR AS ADVISED BY THE GOVERNING AUTHORITY, THE CONTRACTOR WILL APPLY A DUST PALLIATIVE PER ITEM 616.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER-OPERATED CONSTRUCTION-TYPE DEVICE SHALL NOT BE OPERATED BETWEEN THE HOURS OF 9:00PM AND 7:00AM. IN ADDITION, ANY SUCH NOISE SHALL NOT BE OPERATED AT ANY TIME IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

EROSION AND SEDIMENTATION CONTROL

THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING SOIL EROSION RESULTING FROM THEIR OPERATIONS. IT SHALL BE THE OBJECTIVE OF THE CONTRACTOR TO CONTAIN EROSION SILTATION AND SEDIMENTATION ON NON-PROJECT SITE PROPERTIES. SUFFICIENT TO CONTROL THE EFFECTS OF EROSION, SILTATION WHEN AND WHERE THE WORK AS SET FORTH HEREIN IS NOT PRACTICAL. THE ENGINEER MAY REQUIRE ADDITIONAL ACTIVITIES TO CONTROL THE EFFECTS OF EROSION, SILTATION AND SEDIMENTATION AND EROSION CONTROL MATERIALS SHALL BE IN ACCORDANCE WITH THE PERTINENT ODOT CMS 207, 659, AND 601 ITEMS.

SEEDING AND MULCHING

THE ABOVE WORK, WHERE NOT SPECIFICALLY ITEMIZED IN THE QUANTITIES, SHALL BE CONSIDERED INCIDENTAL TO THE EARTH-WORK AND SEEDING WORK AS SET FORTH IN THE PLANS AND THE COST OF MATERIALS, LABOR AND EQUIPMENT SHALL BE INCLUDED IN THE UNIT PRICES BID FOR EARTHWORK AND SEEDING AND MULCHING.

AREAS OUTSIDE THE SEEDING LIMITS WHICH ARE DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE SEEDED AND MULCHED PER ITEM 659, THE COST OF WHICH SHALL BE BORNE BY THE CONTRACTOR. WHERE THE CONTRACTOR'S PROPOSED METHOD OF OPERATION WILL DISTURB AN AREA OUTSIDE THE SEEDING LIMITS IT SHALL BE THEIR RESPONSIBILITY TO DETERMINE THE ACTUAL SEEDING AND MULCHING AREA AND TO INCLUDE THE ADDITIONAL COST IN HIS UNIT BID FOR SEEDING AND MULCHING.

DRAINAGE

THE FLOW IN ALL STORM SEWERS, DRAINS AND WATERCOURSES ENCOUNTERED SHALL BE MAINTAINED BY THE CONTRACTOR AT THEIR OWN EXPENSE, AND WHENEVER SUCH STORM SEWERS, DRAINS, OR WATERCOURSES ARE DISTURBED OR DESTROYED DURING THE PROSECUTION OF THE WORK, THEY SHALL BE RESTORED TO A CONDITION AT THEIR OWN EXPENSE TO THE GOVERNING MUNICIPALITY.

ITEM 625 - POWER SERVICE, AS PER PLAN

POWER SERVICE SHALL BE AS PER SPECIFICATION 625 AND STANDARD CONSTRUCTION DRAWINGS HL-40.10 AND TC-83.10. THE CONTRACTOR WILL COORDINATE WITH THE GOVERNING POWER COMPANY(S) AND THE PORT AUTHORITY FOR THE POWER SERVICE.

THE CONTRACTOR SHALL CONTACT THE METER SECTION OF THE POWER COMPANY(S) FOR REQUESTING SERVICE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY(S) MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE POWER COMPANY(S) FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE INSTALLATION IS ACCEPTED BY THE MAINTAINING AGENCY.

ALL LABOR, EQUIPMENT, MATERIALS AND FEES REQUIRED TO PROVIDE POWER SERVICE ACCORDING TO ITEM 625 AND THE SPECIFICATIONS ABOVE FROM THE METER BASE TO THE POWER COMPANIES INCLUDING ALL FEES TO RUN POWER TO THE METER BASE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM. THE CONTRACTOR IS RESPONSIBLE FOR SANITARY SEWER AND ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED IN MUSKINGUM COUNTY AND THE CITY OF ZANESVILLE.

ALL SANITARY MANHOLES SHALL BE STAKED UNDER THE DIRECTION OF A REGISTERED SURVEYOR, THE STATION AND OFFSET OF THE MANHOLES SHOWN ON THE PLANS ARE TO THE CENTER OF THE MANHOLE BASE.

NO PERSON SHALL UNCOVER, MAKE ANY CONNECTIONS WITH OR APPURTENANCE THEREOF WITHOUT FIRST OBTAINING A WRITTEN PERMIT FROM THE DIVISION OF UTILITIES.

ALL WATER LINES SHALL BE INSTALLED WITH AT LEAST 10 FEET HORIZONTAL SEPARATION FROM SANITARY SEWER AND STORM SEWER LINES. WHENEVER A WATER LINE AND SEWER MUST CROSS, THE SEWER MAIN (STORM OR SANITARY) SHALL BE LAID SUCH THAT THE CROWN OF THE SEWER IS AT LEAST 18 INCHES BELOW THE INVERT OF THE WATER LINE MEASURED BETWEEN THE OUTSIDE PIPE WALLS. IN CASES WHERE THE REQUIRED SEPARATION CANNOT BE

GENERAL (CONT)

MAINTAINED, CLOSER INSTALLATION MAY BE PERMITTED ON A CASE-BY-CASE BASIS ONLY AFTER RECEIPT OF WRITTEN CONCURRENCE FROM THE OHIO EPA DIVISION OF DRINKING WATER. 2003 RECOMMENDED STANDARDS FOR WATER WORKS, SECTIONS 8.8.2 AND 8.8.3 SHALL GOVERN AS TO THE SEPARATION OF WATER LINE FROM CONTAMINATION SOURCES.

ALL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND ODOT ITEM 603 AND ODOT ITEM 604, MANHOLES, IN ADDITION TO ANY MODIFICATIONS LISTED IN THE PLANS.

GRAVITY SEWERS:
ALL GRAVITY SEWER SHALL BE PVC PIPE (ASTM D-3034 SDR 35) AND ALL SHALL BE IN ACCORDANCE WITH ODOT ITEM 603 CONDUIT, 707.44. PVC PIPE FITTINGS SHALL CONFORM TO, SDR 26 GASKETED HEAVY WALL SEWER FITTINGS MEETING ASTM D 3034 AND ASTM F 1336.
WHERE SPECIFICALLY CALLED OUT IN PLANS THE GRAVITY SEWERS WILL BE PROTECTED BY A 24" STEEL CASING PIPE INSTALLED BY EITHER OPEN CUT OR JACK AND BORE. REFER TO THE PLANS FOR DETAILS.

SANITARY MANHOLES:
ALL MANHOLES SHALL BE IN ACCORDANCE WITH ODOT ITEM 604. CHIMNEY SEALS SHALL BE INSTALLED ON ALL MANHOLES DURING CONSTRUCTION. ALL MANHOLES HAVING A VERTICAL DIFFERENCE OF TWO (2) FEET OR MORE FROM FLOWLINE OF THE SANITARY SEWER ENTERING THE MANHOLE TO THE BOTTOM OF THE STRUCTURE SHALL HAVE AN OUTSIDE DROP.

SANITARY MANHOLE LIDS:
ALL MANHOLE LIDS SHALL BE NEENAH R-1916-F STAMPED "MUSKINGUM COUNTY".
FORCE MAINS SHALL BE DUCTILE IRON PIPE CONFORMING TO (ASTM A 536) OR PVC SDR-21 PUSH ON PIPE CONFORMING TO (ASTM D 2241). BOTH PIPE TYPES SHALL BE IN ACCORDANCE WITH ODOT ITEM 603, 748.01 AND 748.02.

FITTINGS SHALL BE DUCTILE IRON OR PVC SDR-21. DUCTILE IRON FITTINGS SHALL CONFORM TO EITHER ANS/AWWA C 151/A21.10 OR ANS/AWWA C153/A21.53, AND SHALL HAVE A STANDARD ASPHALTIC COATING ON THE EXTERIOR. DUCTILE IRON FITTINGS SHALL BE ADEQUATELY RESTRAINED WITH CONCRETE OR RESTRAINED JOINTS PER 638.06 TL OR M. IF CONCRETE IS USED, FITTINGS MUST BE WRAPPED IN PLASTIC SHEETING PRIOR TO CONCRETE PLACEMENT.

GREEN MAGNETIC FIELD LOCATOR TAPE PLACED 18" BELOW FINISHED GROUND AND A 12 GAUGE TRACER WIRE PLACED WITHIN 6" OF THE CONDUIT SHALL BE INSTALLED WITH ALL TRENCHED FORCE MAINS. WHERE SPECIFICALLY CALLED OUT IN PLANS THE FORCE MAINS WILL BE PROTECTED BY A 24" STEEL CASING PIPE INSTALLED BY EITHER OPEN CUT OR JACK AND BORE. REFER TO THE PLANS FOR DETAILS.

INSTALLATION
EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH ODOT STANDARD DRAWING DM-1.4.
PIPE BEDDING SHALL BE PROVIDED FOR ALL SANITARY SEWERS THE BEDDING SHALL BE 2" MINIMUM THICKNESS BELOW PIPE AND EXTEND TO 6" ABOVE THE PIPE. BEDDING MATERIAL SHALL BE CLEAN #57 LIMESTONE PASSING A NO. 8 SIEVE.

THE COST OF ALL BEDDING SHALL BE INCLUDED IN THE PRICE FOR FURNISHING AND INSTALLING THE PIPE.

THE COST OF ANY DEMATERING OPERATIONS REQUIRED FOR THE CONSTRUCTION OF THE IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS ITEMS.

ALL EXCAVATION IS CONSIDERED UNCLASSIFIED. THE COST OF ANY ROCK EXCAVATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS ITEMS.

THE LAYING OF THE PIPE IN THE FINISHED TRENCHES SHALL BE COMMENCED AT THE LOWEST POINT SO THAT THE SPIGOT ENDS POINT IN THE DIRECTION OF THE FLOW.

FORCEMANS (UNDER CITY OF ZANESVILLE ROADWAYS):
WHEN OPEN CUTTING THROUGH ROADWAYS IN THE CITY OF ZANESVILLE THE CONTRACTOR SHALL USE THE FOLLOWING BUILD-UP TO BACKFILL THE OPEN TRENCH:
#8 LIMESTONE OR #304'S FROM 6" ABOVE PIPE TO 9" BELOW FINISHED GRADE
#6 OF ITEM 305 PORTLAND CEMENT CONCRETE BASE
#3 OF ASPHALT CONCRETE, SURFACE COURSE, TYPE I, PG64-22
SEE DETAIL SHEETS FOR THE STANDARD CONSTRUCTION DRAWING

CONTRACTOR MUST OBTAIN A STREET CUT PERMIT FROM THE CITY OF ZANESVILLE BEFORE ANY CONSTRUCTION BEGINS. A PROVISION OF THE PERMIT IS THAT THE CONTRACTOR WILL BE RESPONSIBLE FOR THE STREET CUT (SETTLING OF PAVEMENT) FOR ONE YEAR AFTER THE DATE OF COMPLETION.

SANITARY TESTING

FORCE MAINS:
ALL FORCE MAINS SHALL BE PRESSURE AND LEAKAGE TESTED AT 150 PSI FOR TWO (2) HOURS. THE TESTING SHALL BE IN ACCORDANCE WITH AWWA C 600.

ALL TESTING SHALL BE PERFORMED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER OR A REPRESENTATIVE OF MUSKINGUM COUNTY OR THE CITY OF ZANESVILLE. THE COST OF THE ABOVE INCLUDING ANY REPAIRS AND RE-TESTING NECESSARY TO ACHIEVE A SUCCESSFUL TEST WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE SANITARY SEWER.

PAYMENT

ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY FOR EACH ITEM, FURNISHED, EXCAVATED, INSTALLED IN PLACE, JOINTING MADE, FITTINGS, BENDS, BEDDING, BACKFILL, TRENCH DAMS AND TESTING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ODOT ITEMS 603 CONDUIT AND ITEM 604 MANHOLES.

CONNECTION TO EXISTING PIPE

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING CONDUIT, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING CONDUIT BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE ITEMS BID FOR FURNISHING AND INSTALLING PIPE.

INSTALLATION (CONT.)

WHERE NEW SEWERS ARE CONNECTED TO EXISTING MANHOLES, THE CONTRACTOR SHALL CORE DRILL ANY NEW OPENINGS INTO THE EXISTING MANHOLE. THE PIPE TO MANHOLE SHALL HAVE A WATER TIGHT JOINT OF A FLEXIBLE RUBBER GASKET EXPANSION BOOT. THE CONTRACTOR SHALL THEN CLEAN THE MANHOLE OF ALL DEBRIS BEFORE MAKING THE CONNECTION. THE CONTRACTOR SHALL CONSTRUCT A SEMI-CIRCULAR, CONCRETE CHANNEL TO THE NEW PIPE TO PROVIDE SMOOTH, UNINTERRUPTED FLOW THROUGH THE MANHOLE. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE ITEM BID FOR FURNISHING AND INSTALLING PIPE.

EXISTING SEWAGE FLOWS

THE CONTRACTOR SHALL MAKE PROVISIONS TO MAINTAIN FLOWS IN THE EXISTING SEWER AT ALL TIMES DURING CONSTRUCTION. METHODS FOR MAINTAINING FLOWS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. AT NO TIME WILL SANITARY SEWAGE BE ALLOWED TO DISCHARGE TO ANY RIVER OR STREAM NOR SPILL OUT ON THE GROUND. APPROVAL OF PLANS BY THE ENGINEER TO MAINTAIN FLOWS SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY TO ADEQUATELY PROVIDE FOR ALL FLOWS.

EXISTING SEWAGE FLOWS (CONT.)

THE CONTRACTOR SHALL BE AWARE THAT THE EXISTING SEWERS MAY BE OPERATING UNDER PRESSURE (HEAD) DURING TIMES OF RAINFALL; THEREFORE THE CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING ON THESE SEWERS.
PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE ITEM BID FOR FURNISHING AND INSTALLING PIPE.

EXISTING SEWERS AND STRUCTURES

THE CONTRACTOR SHALL REPLACE TO THE SATISFACTION OF THE ENGINEER ALL EXISTING MANHOLES, CATCH BASINS, DRAINS, SEWERS AND APPURTENANCES REMOVED OR DAMAGED DURING CONSTRUCTION. THE ABOVE IS NOT APPLICABLE TO STRUCTURES TO BE ABANDONED. THE CONTRACTOR SHALL REMOVE DEBRIS, SILT, ETC. FROM EXISTING MANHOLES AND CATCH BASINS AND VARIOUS SEWER PIPE WHICH ARE CONNECTED IN THE NEW SYSTEM.

SANITARY SEWER-MANHOLE CONNECTIONS

THE SANITARY SEWER PIPE TO MANHOLE CONNECTIONS SHALL BE OF A FLEXIBLE WATER TIGHT JOINT OF APPROVED MANUFACTURER. THE JOINT MAY BE OF THE FOLLOWING DESIGN (A) RUBBER SLEEVE WITH STAINLESS STEEL BANDING, (B) RUBBER GASKET COMPRESSION, OR (C) RUBBER GASKET EXPANSION.

ITEM SPECIAL - AIR RELEASE VALVES

AIR RELEASE VALVES SHALL BE INSTALLED AT THE LOCATIONS SHOWN WITHIN THESE PLANS AND TO THE SPECIFICATIONS SHOWN WITHIN THE CONSTRUCTION DETAILS. ALL ITEMS SHOWN ON THE DETAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

ITEM SPECIAL - OUTSIDE DROP MANHOLES

OUTSIDE DROP MANHOLES SHALL BE CONSTRUCTED/PLACED AT THE LOCATIONS SHOWN WITHIN THESE PLANS AND TO THE SPECIFICATIONS SHOWN WITHIN THE STANDARD DETAILS. ALL ITEMS SHOWN ON THE DETAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

ALL EROSION CONTROL MEASURES ARE SUBJECT TO FIELD MODIFICATION AT THE DIRECTION OF MUSKINGUM COUNTY, THE CITY OF ZANESVILLE AND/OR THE OSPA

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE NEW CONSTRUCTION OF APPROXIMATELY 11636 LINEAR FEET OF 8" GRAVITY SEWER, 11025 LINEAR FEET OF 8" FORCEMAIN, 2615 LINEAR FEET OF 6" FORCEMAIN, 2 LIFT STATIONS AND APPROXIMATELY 455 LINEAR FEET OF 18" WATERLINE.

CRITICAL AREAS

PROPER INSTALLATION AND MAINTENANCE OF SILT FENCE. ALSO, PROPER INSTALLATION AND MAINTENANCE OF DITCH CHECKS.

EROSION CONTROL MEASURES

EROSION AND SITE RUNOFF WILL BE CONTROLLED THROUGH THE USE OF SILT FENCE AND DITCH CHECKS.

SWP3 GENERAL NOTES

EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO INITIAL DISTURBANCE ACTIVITIES OR AS SOON AS PRACTICAL. THE CONTRACTOR SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE GENERAL CONSTRUCTION STORMWATER NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS UNDER THE OHIO ENVIRONMENTAL GENERAL PERMIT AND THE STORMWATER POLLUTION PREVENTION PLAN (SWP3) DEVELOPED FOR THE PROJECT. UNDER PROVISIONS OF THAT PERMIT, THE CONTRACTOR SHALL BE DESIGNATED A CO-PERMITTEE AND SHALL BE RESPONSIBLE FOR PROVIDING NECESSARY MATERIAL AND FOR TAKING APPROPRIATE MEASURES TO MINIMIZE POLLUTANTS IN STORMWATER RUNOFF FROM THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING SOIL EROSION RESULTING FROM THEIR OPERATIONS. IT SHALL BE THE OBJECTIVE OF THE CONTRACTOR TO CONTAIN EROSION SILTATION AND SEDIMENTATION TO THE PROJECT SITE INSOFAR AS PRACTICAL. THE ENGINEER MAY REQUIRE ADDITIONAL ACTIVITIES WHEN AND WHERE THE WORK AS SET FORTH HEREIN IS NOT SUFFICIENT TO CONTROL THE EFFECTS OF EROSION, SILTATION AND SEDIMENTATION ON NON-PROJECT SITE PROPERTIES. ALL INSTALLATION AND EROSION CONTROL MATERIALS SHALL BE IN ACCORDANCE WITH THE PERTINENT ODOT CMS 207, 659, AND 601 ITEMS. ALL REASONABLE ATTEMPTS SHOULD BE MADE TO MINIMIZE THE TOTAL AREA OF DISTURBED LAND.

SCHEDULE

THE CONTRACTOR SHALL PROVIDE A SCHEDULE OF OPERATIONS TO THE OWNER. SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE PLACED IN ACCORDANCE WITH THIS SCHEDULE.

DETAILS AND SPECIFICATIONS:

DETAILS AND SPECIFICATIONS HAVE BEEN PROVIDED ON THE PLANS IN AN ATTEMPT TO HELP THE CONTRACTOR PROVIDE EROSION AND SEDIMENTATION CONTROL. THE DETAILS SHOWN ON THE PLANS SHALL BE CONSIDERED A MINIMUM. ADDITIONAL OR ALTERNATE DETAILS CAN BE FOUND IN THE ODMR MANUAL RAINWATER AND LAND DEVELOPMENT."

CONSTRUCT THE FOLLOWING FEATURES ACCORDING TO THE ODOT STANDARD CONSTRUCTION DRAWINGS AS LISTED ON THE PLAN TITLE SHEET:

- PERIMETER FILTER FABRIC FENCE ----- DM-4.4
- FILTER FABRIC DITCH CHECKS ----- DM-4.4

MAINTENANCE

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SEDIMENT CONTROL FEATURES USED ON THIS PROJECT. THE SITE MAY BE INSPECTED AT A MINIMUM OF ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS OF A 1/2" RAINFALL EVENT (OR GREATER). RECORDS OF THESE INSPECTIONS SHALL BE KEPT AND MADE AVAILABLE TO JURISDICTIONAL AGENCIES IF REQUESTED. ANY SEDIMENT OR DEBRIS WHICH HAS REDUCED THE EFFICIENCY OF A STRUCTURE SHALL BE REMOVED IMMEDIATELY. SHOULD A STRUCTURE OR FEATURE BECOME DAMAGED, THE CONTRACTOR SHALL REPAIR OR REPLACE AT NO ADDITIONAL COST TO THE OWNER.

STORM WATER POLLUTION PREVENTION PLAN

THE CONDITIONS OF THE NPDES CONSTRUCTION STORM WATER GENERAL PERMIT SHALL BE MET DURING ALL STAGES OF CONSTRUCTION. THE LOCATION AND TIMING OF ALL EROSION AND SEDIMENT CONTROL ITEMS SHALL BE FIELD ADJUSTED TO PREVENT SIGNIFICANT IMPACTS ON RECEIVING WATERS. IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN SHALL CON-TINUE THROUGHOUT THE DURATION OF THE PROJECT OR UNTIL SUCH TIME THAT THE UPSLOPE DISTURBED AREAS ARE STABILIZED.

PAYMENT

THE LISTED WORK, WHERE NOT SPECIFICALLY ITEMIZED IN THE QUANTITIES, SHALL BE CONSIDERED INCIDENTAL TO THE EARTHWORK AND SEEDING WORK AS SET FORTH IN THE PLANS AND THE COST OF MATERIALS, LABOR FOR EARTHWORK AND BE INCLUDED IN THE UNIT PRICES FOR EARTHWORK AND SEEDING AND MULCHING.

THE CONTRACT PRICES SHALL INCLUDE ALL MATERIAL, LABOR, AND OTHER PERMITS AND INCIDENTAL COSTS RELATED TO:

1. PREPARING, UPDATING AND REVISING THE SWP3;
2. INSTALLING AND MAINTAINING ALL STRUCTURAL AND NONSTRUCTURAL ITEMS CHOSEN BY CONTRACTOR TO COMPLY WITH THE CONSTRUCTION SWP3;
3. CLEANUP AND DISPOSAL COSTS ASSOCIATED WITH CLEANUP AND REPAIR FOLLOWING STORM EVENTS OR CONTRACTOR CAUSED SPILLS ON THE PROJECT.

4. IMPLEMENTING AND MAINTAINING BEST MANAGEMENT PRACTICES TO COMPLY WITH THE OWNER'S STORMWATER CODE;

TEMPORARY STABILIZATION

TEMPORARY STABILIZATION MEANS THE ESTABLISHMENT OF TEMPORARY VEGETATION, MULCHING, GEOTEXTILES, SOD, PRESERVATION OF EXISTING VEGETATION AND OTHER TECHNIQUES CAPABLE OF QUICKLY ESTABLISHING COVER OVER DISTURBED AREAS TO PROVIDE EROSION BETWEEN CONSTRUCTION OPERATIONS.

AREAS REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS	Any areas within 50 feet of a stream and NOT of final grade. Within two days of the most recent disturbance if the area will remain idle for more than 21 days.
For all construction activities, any disturbed areas that will be dormant for more than 21 days but less than one year, and not within 50 feet of a stream.	For residential subdivisions, disturbed areas must be stabilized of least seven days prior to transfer of permit coverage for the individual lot(s).	Disturbed areas that will be idle over winter.

Ohio EPA Permit No.: OHK000002

PERMANENT STABILIZATION

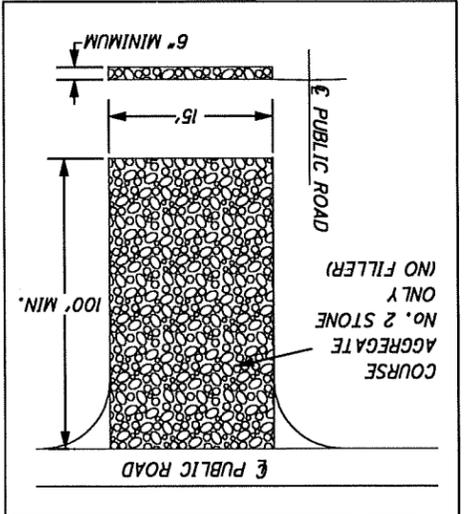
PERMANENT STABILIZATION MEANS THE ESTABLISHMENT OF PERMANENT VEGETATION, DECORATIVE LANDSCAPE MULCHING, MATTING, SOD, RIP RAP, AND LANDSCAPING TECHNIQUES TO PROVIDE PERMANENT EROSION CONTROL ON AREAS WHERE CONSTRUCTION OPERATIONS ARE COMPLETE OR WHERE NO FURTHER DISTURBANCE IS EXPECTED FOR AT LEAST ONE YEAR.

AREAS REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS	Any areas that will be dormant for one year or more. Within seven days of the most recent disturbance.
Any other areas of final grade.	Within seven days of reaching final grade within that area.	Ohio EPA Permit No.: OHK000002

TEMPORARY AND PERMANENT SEEDING

PERMANENT SEEDING	ODOT ITEM 659 (IF NO CLASS IS SPECIFIED IN THE PLANS OR GENERAL SUMMARY, INSTALL PER CLASS 1, LAWN MIXTURE)	INSTALL PER ODOT SS832 (MULCH AT 3 TONS/ACRE)
TEMPORARY SEEDING	ODOT ITEM 207 - CONSTRUCTION SEEDING & MULCHING REFER TO SS832 FOR SEEDING MIXTURE AND APPLICATION RATES	INSTALL PER ODOT SS832 (MULCH AT 3 TONS/ACRE)

STABILIZED CONSTRUCTION ENTRANCE



100' x 15' x 6" deep

CALCULATED
CTM
CHECKED
KBS

**STORM WATER POLLUTION PREVENTION PLAN
GENERAL NOTES AND DETAILS**

**EASTOINTE BUSINESS PARK
OFFSITE UTILITIES**

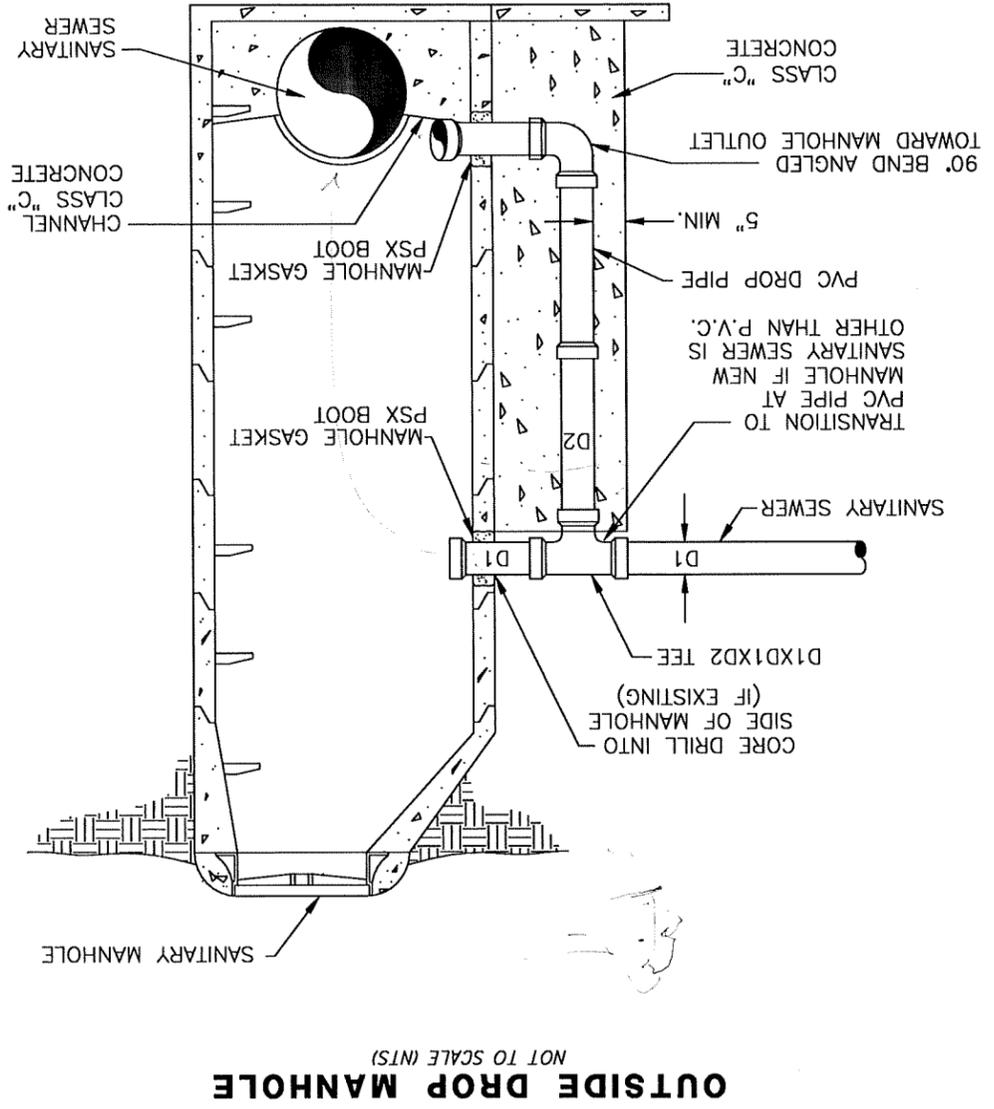
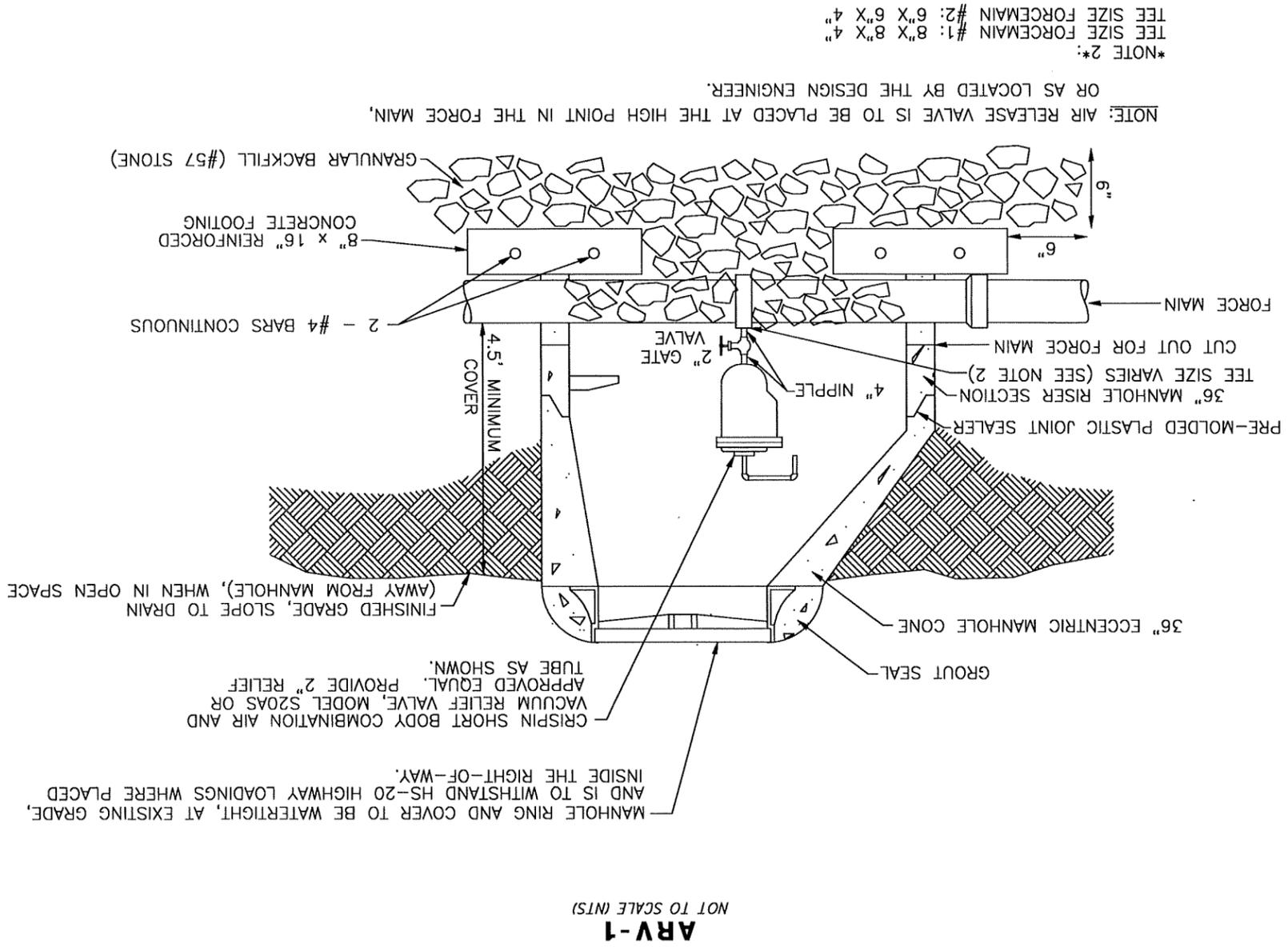
GENERAL SUMMARY

ITEM	TOTAL	UNIT	DESCRIPTION
201	LUMP	LUMP	EARTHWORK
201	LUMP	LUMP	CLEARING AND GRUBBING
202	LIN FT	337	PIPE REMOVED
207	LIN FT	16760	PERIMETER FILTER FABRIC FENCE 3.2 MILES
207	EACH	5	STABILIZED CONSTRUCTION ENTRANCE
207	LIN FT	300	FILTER FABRIC DITCH CHECKS
659	SO YD	75553	SEEDING & MULCHING, CLASS 2
659	ACRE	16	LIME
659	TON	7	COMMERCIAL FERTILIZER
659	MGAL	201	WATER
603	LUMP	LUMP	DRAINAGE
603	LUMP	LUMP	PLACEMENT OF DRAINS ALONG ST. RT. 666, AS DIRECTED BY THE ENGINEER
614	LUMP	LUMP	MAINTAINENCE OF TRAFFIC
614	LUMP	LUMP	MAINTAINING TRAFFIC
603	LIN FT	11574	8" CONDUIT, 707.45, SDR-35
603	LIN FT	2635	6" CONDUIT, 748.02, SDR-21
603	LIN FT	9944	8" CONDUIT, 748.02, SDR-21
603	LIN FT	1074	8" DUCTILE IRON PIPE, (ANSI/AWWA C151 & C150/A21.51 & A21.50), 748.01
604	EACH	39	SANITARY MANHOLE
604	EACH	4	OUTSIDE DROP SANITARY MANHOLE
625	EACH	2	POWER SERVICE
SPECIAL	EACH	2	8" SHUT-OFF VALVES, COMPLETE
SPECIAL	EACH	10	AIR RELEASE VALVES, COMPLETE
SPECIAL	LIN FT	740	24" CONDUIT, STEEL CASING PIPE (JACKED AND BORED)
SPECIAL	LIN FT	346	24" CONDUIT, STEEL CASING PIPE (OPEN CUT)
SPECIAL	EACH	2	LIFT STATION, COMPLETE
638	LIN FT	452	18" WATER LINE AND FITTINGS (DUCTILE IRON)
638	EACH	1	FIRE HYDRANT ASSEMBLY
638	EACH	1	FIRE HYDRANT REMOVED AND RESET
SPECIAL	LIN FT	38	36" CONDUIT, STEEL CASING PIPE (OPEN CUT)
104	LUMP	LUMP	MISCELLANEOUS
104	LUMP	LUMP	PREMIUM FOR PERFORMANCE BOND AND FOR PAYMENT BOND
623	LUMP	LUMP	CONSTRUCTION LAYOUT STAKING
624	LUMP	LUMP	MOBILIZATION
SPECIAL	LUMP	LUMP	RECORD CONSTRUCTION DRAWINGS

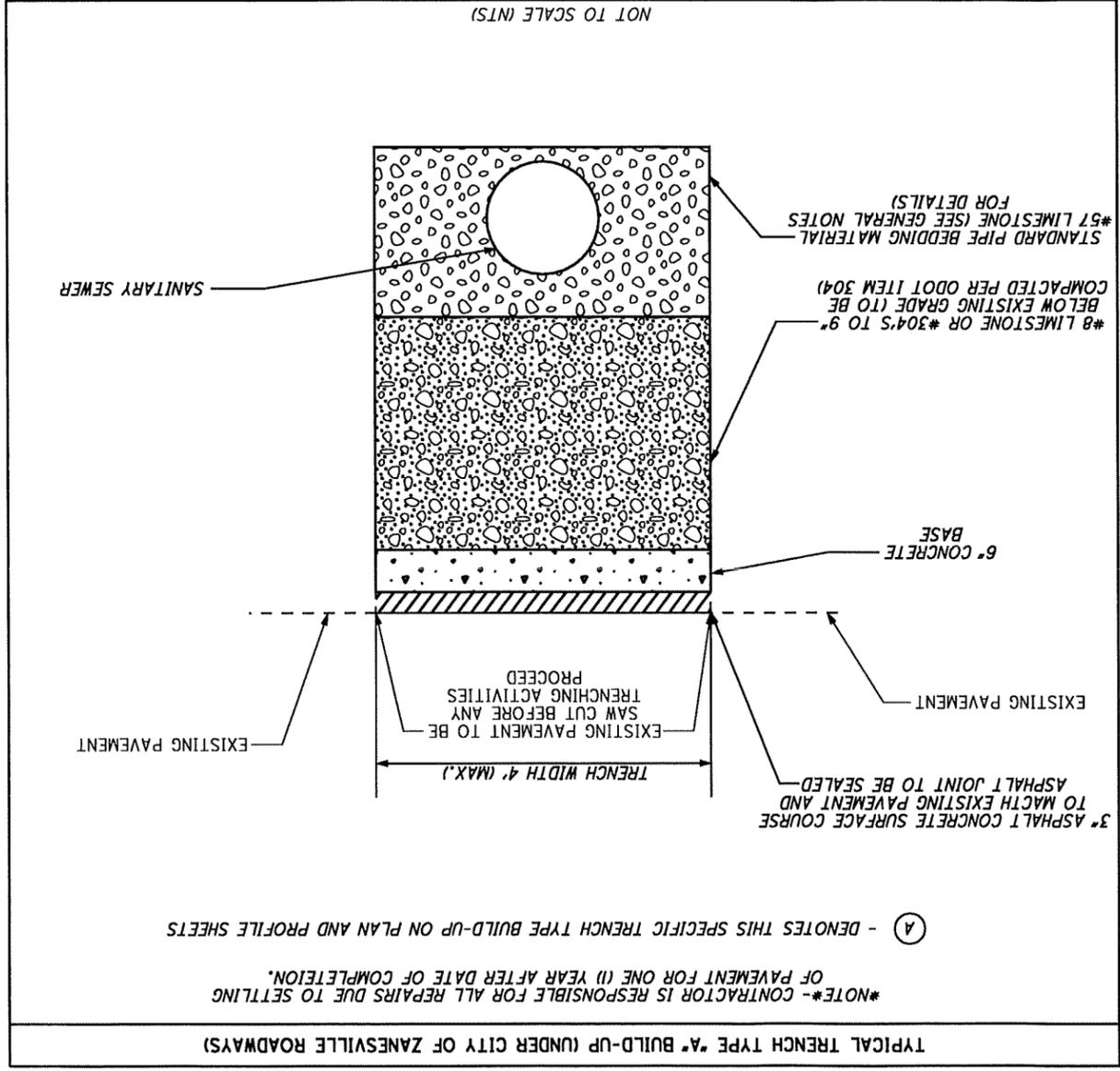
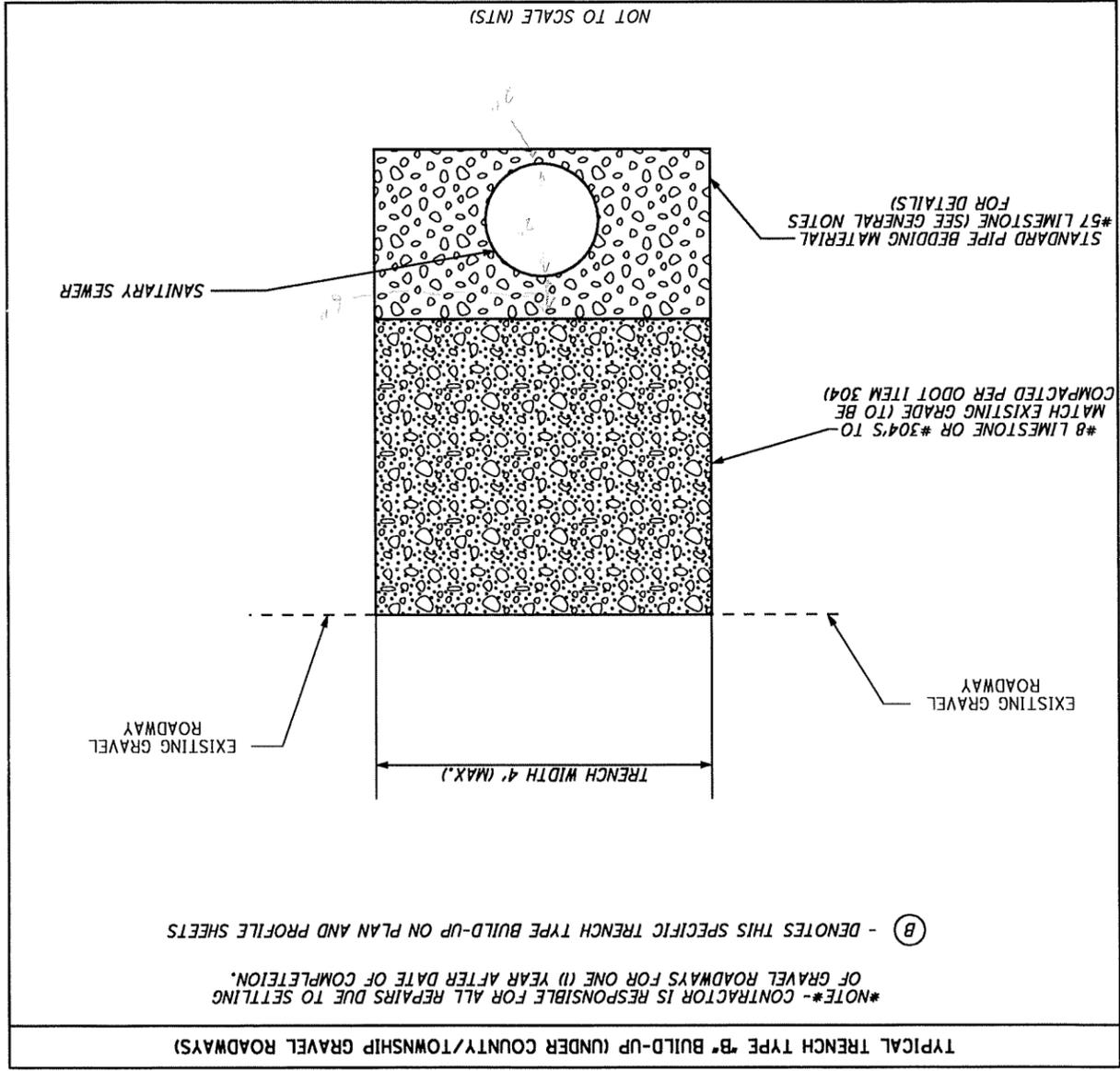
10' 5.27-09 13.5' 5.28

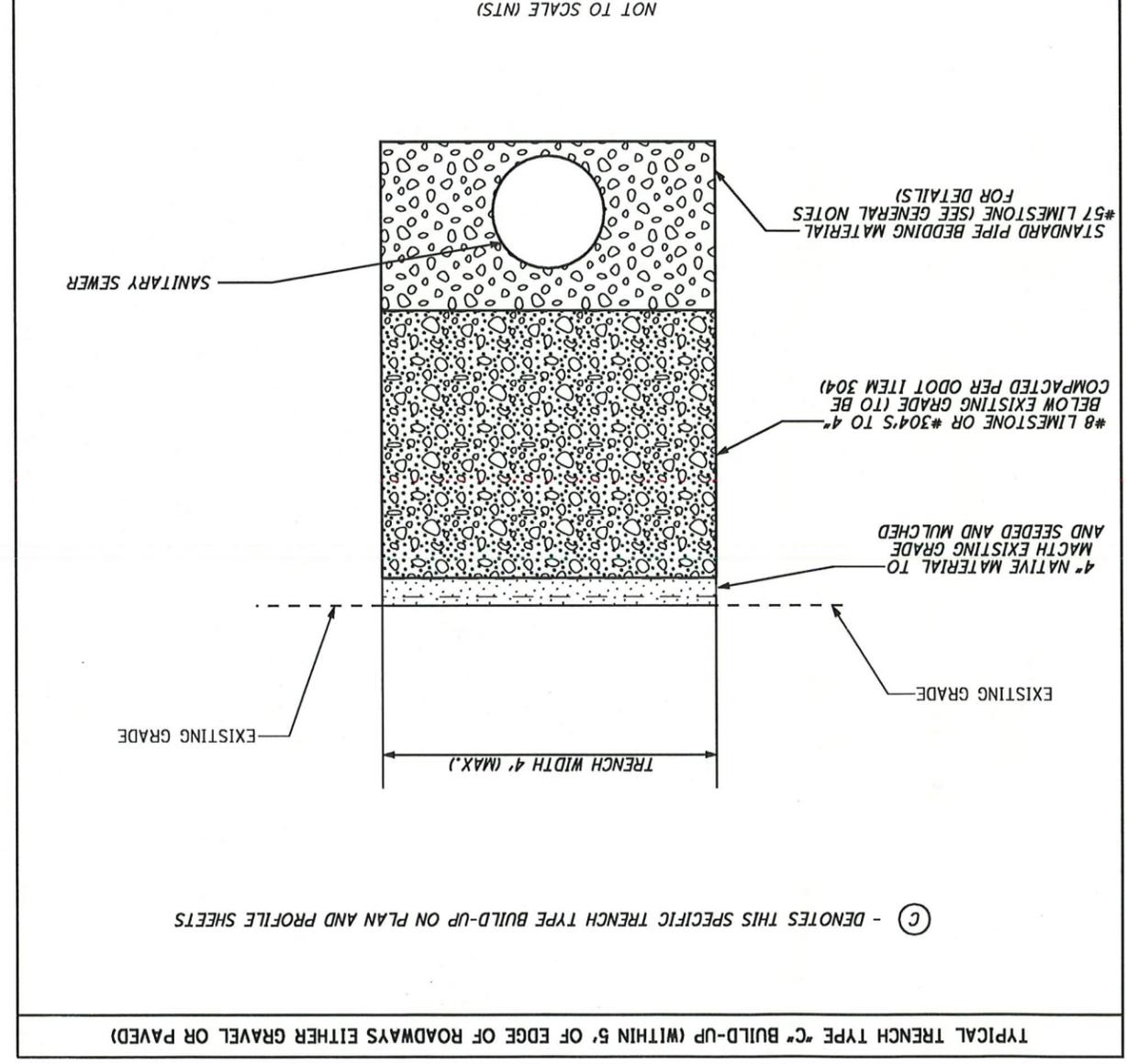
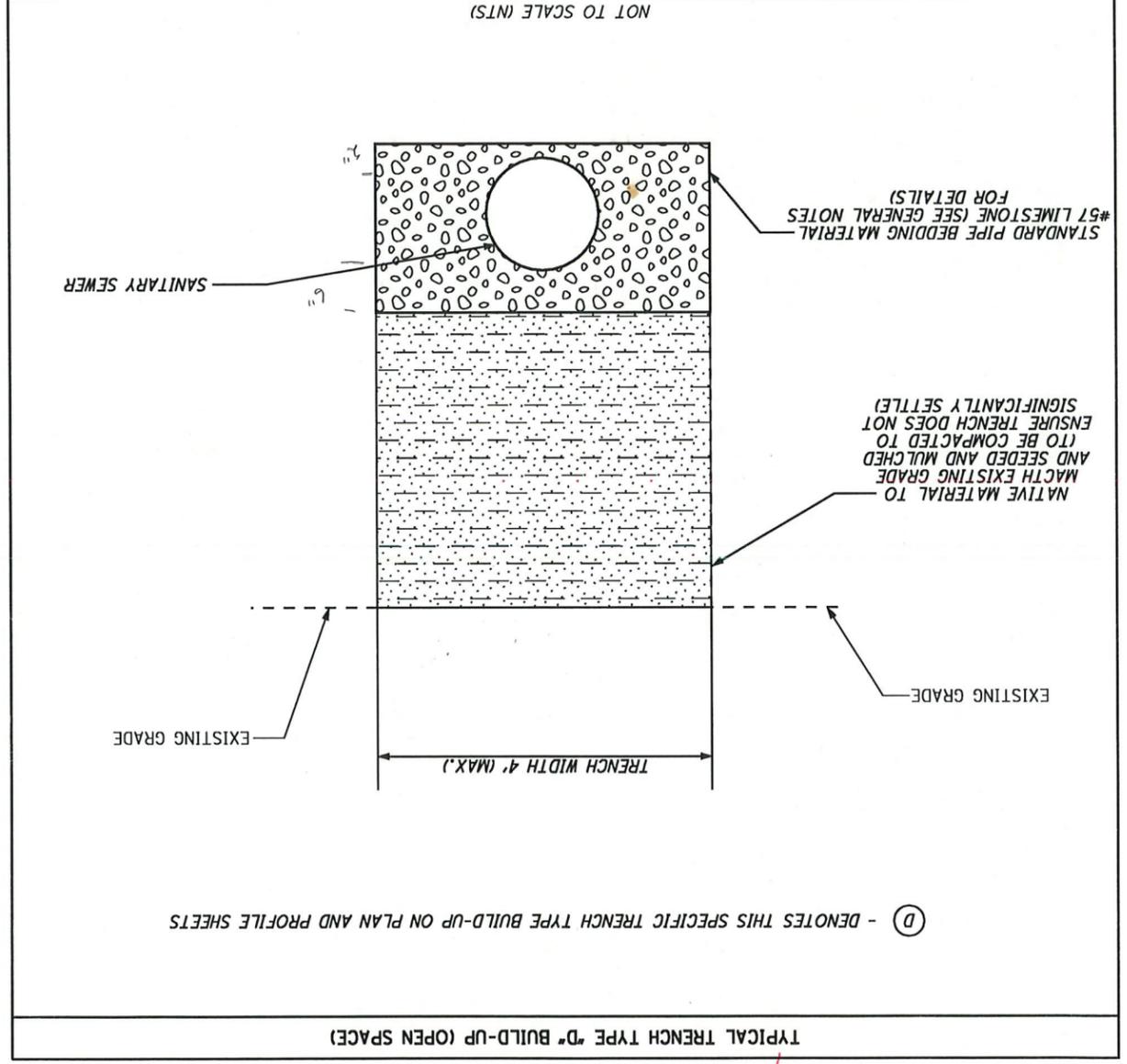
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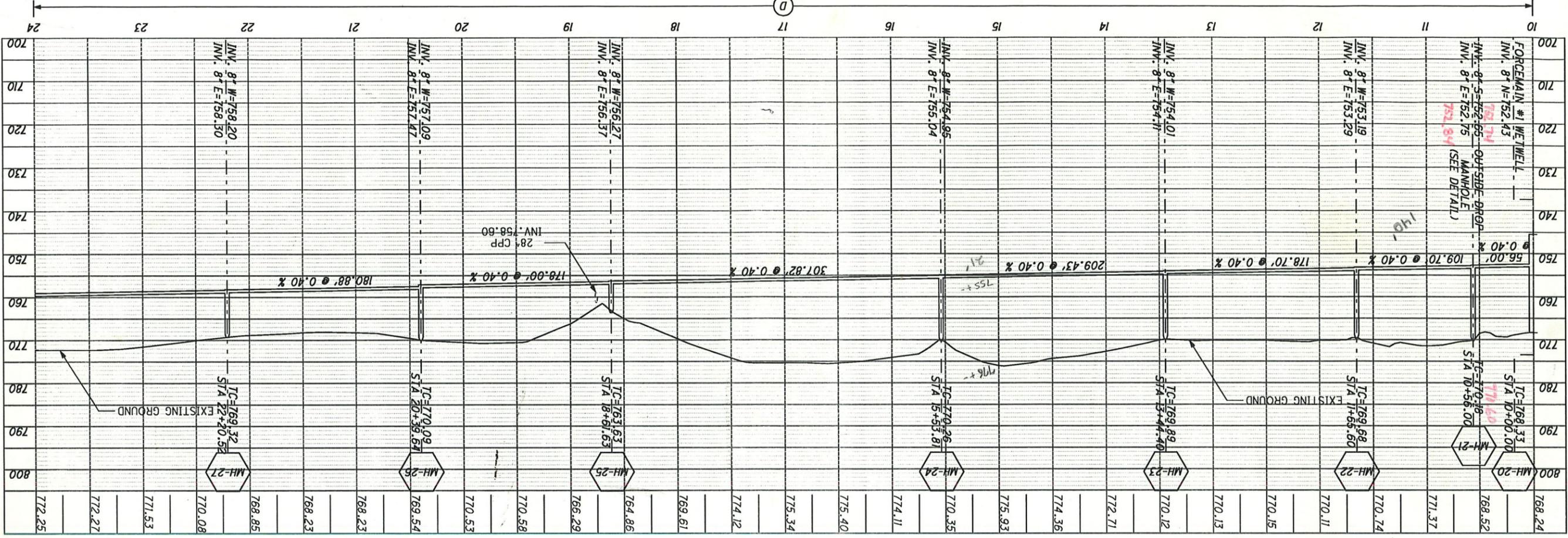
THE CONTRACTOR SHALL FOLLOW THE PLANS AND SPECIFICATIONS AND SHALL NOT RELY ON QUANTITIES LISTED OR NOT LISTED HEREON. THE CONTRACTOR SHALL CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND SHALL NOT RELY ON QUANTITIES LISTED OR NOT LISTED HEREON. THE QUANTITIES SHOWN MAY NOT BE COMPLETE. ITEMS LISTED ARE FOR INFORMATION AND ARE ESTIMATES ONLY. THE CONTRACTOR SHALL CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND SHALL NOT RELY ON QUANTITIES LISTED OR NOT LISTED HEREON.



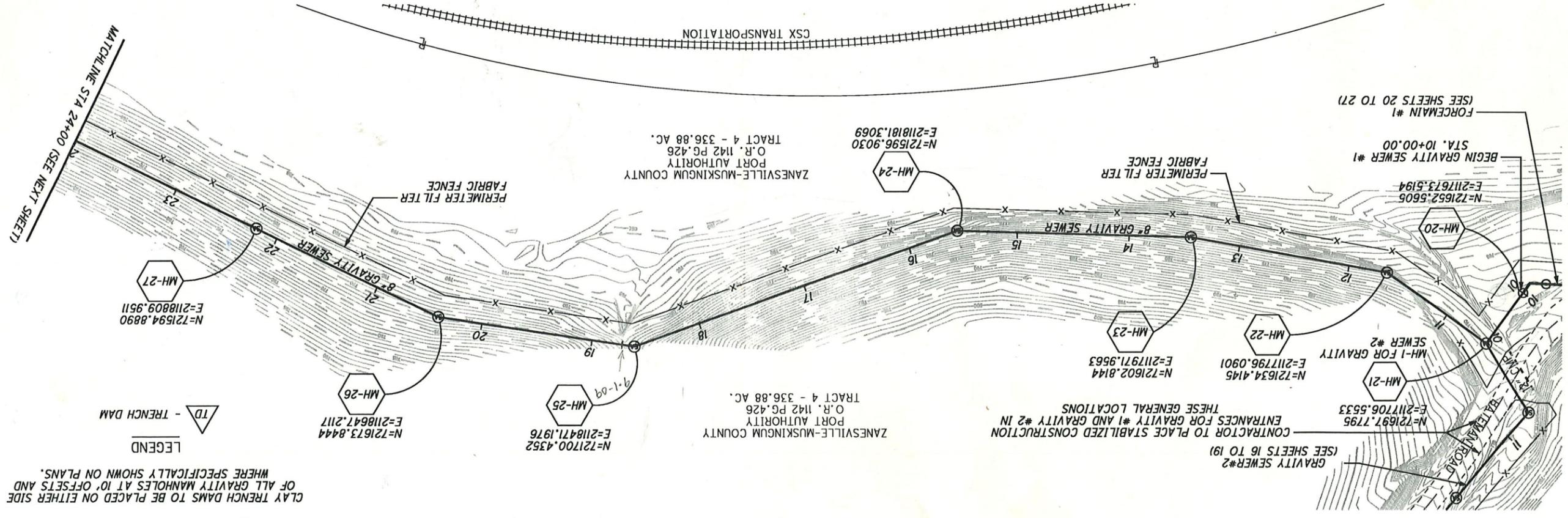
TYPICAL TRENCH BUILD-UP



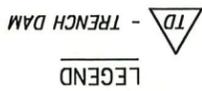




CONTRACTOR TO SEE SHEETS 10 & 11 FOR TRENCH TYPE DETAILS AND SPECIFICATIONS
 LETTER DENOTES TRENCH TYPE



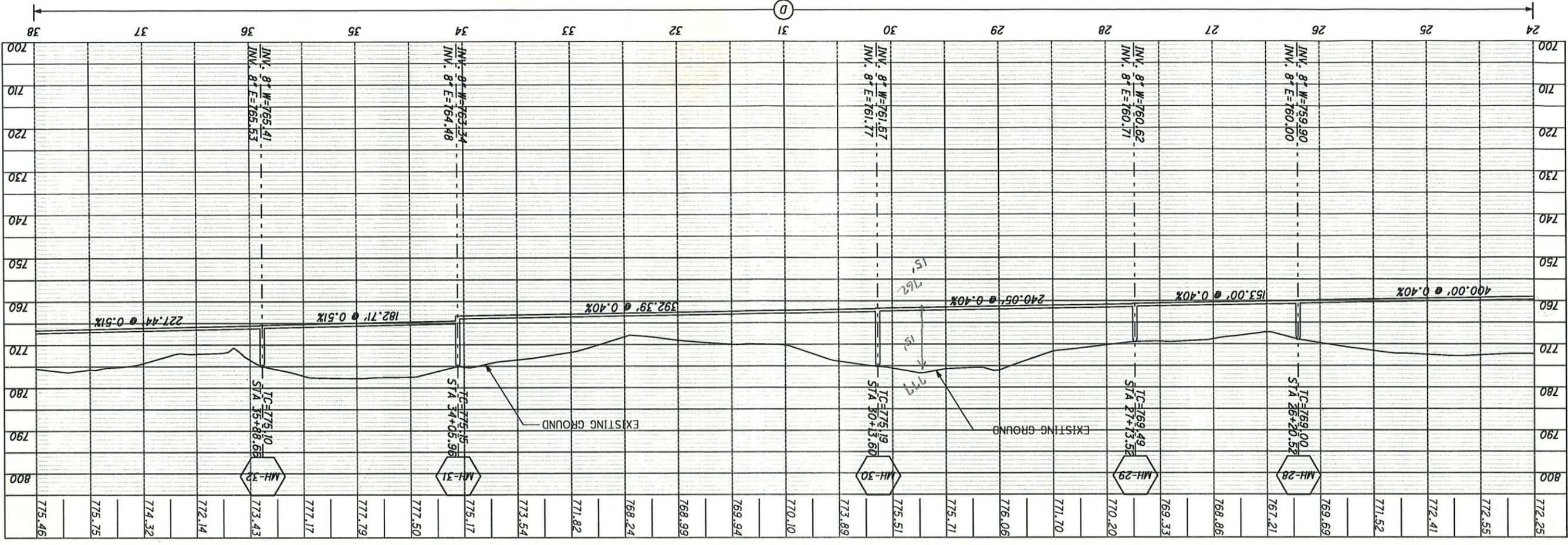
CLAY TRENCH DAMS TO BE PLACED ON EITHER SIDE OF ALL GRAVITY MANHOLES AT 10' OFFSETS AND WHERE SPECIFICALLY SHOWN ON PLANS.



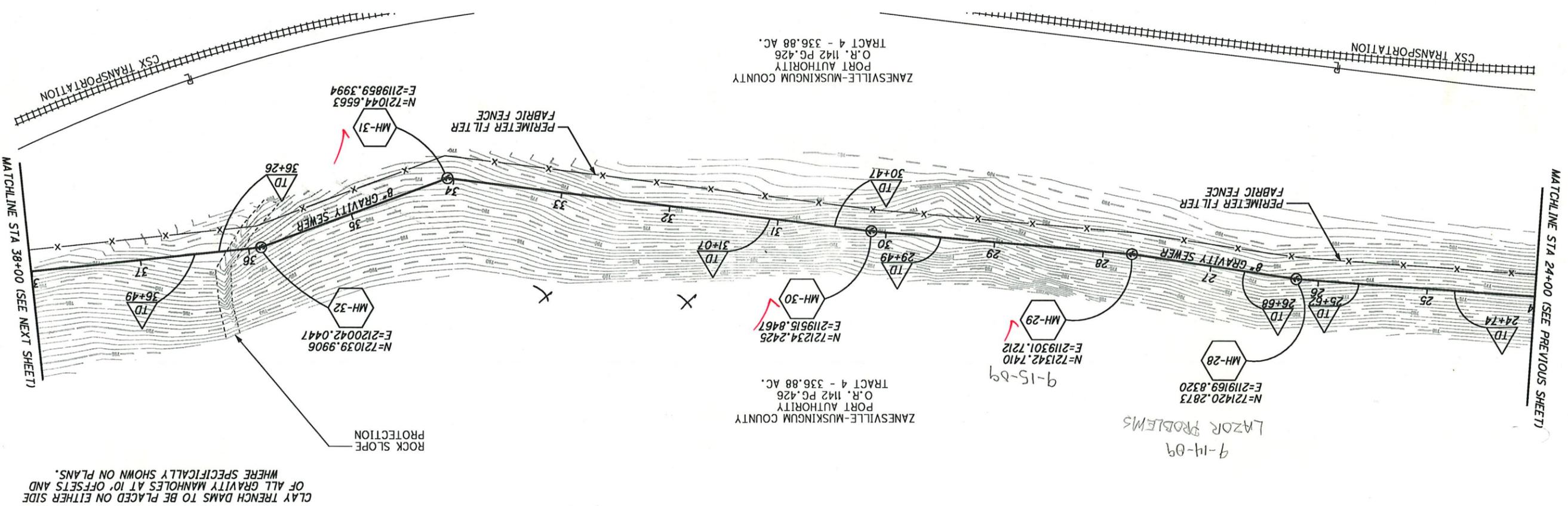
CALCULATED BY: CTM
 CHECKED BY: KBS

SCALE: 25' HORIZONTAL
 1" = 25'

SCALE: 1" = 10' VERTICAL



CONTRACTOR TO SEE SHEETS 10 & 11 FOR TRENCH TYPE DETAILS AND SPECIFICATIONS
LETTER DENOTES TRENCH TYPE

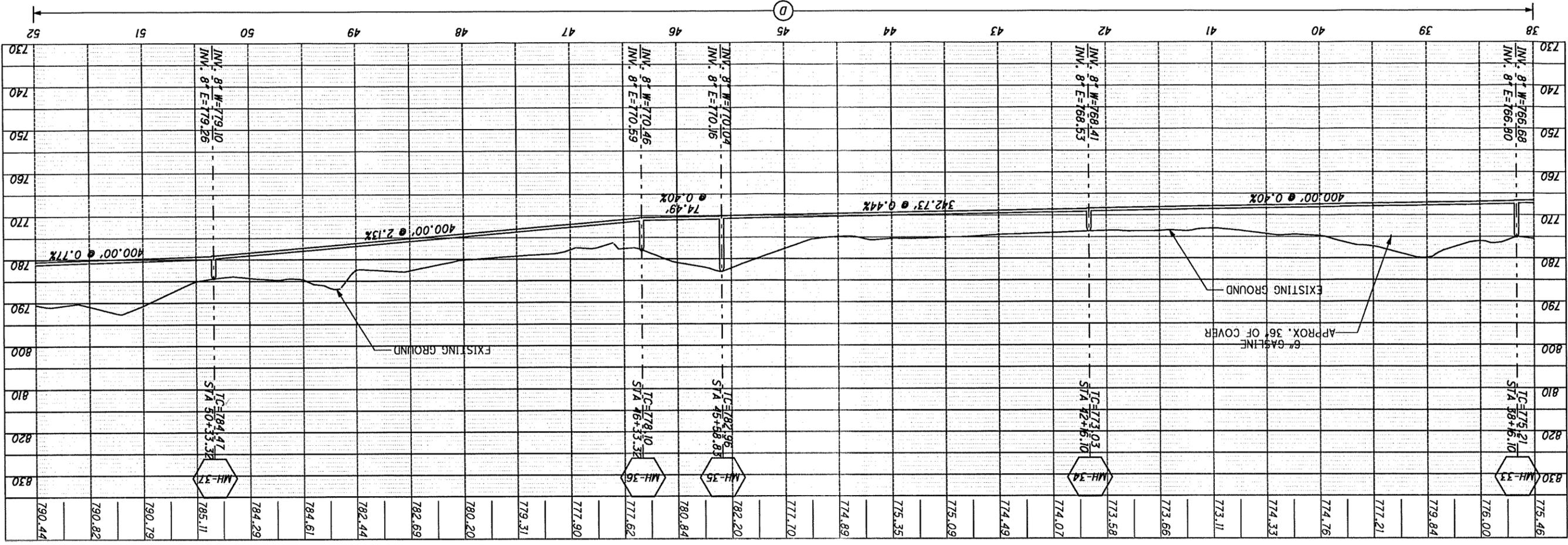


CLAY TRENCH DAMS TO BE PLACED ON EITHER SIDE
OF ALL GRAVITY MANHOLES AT 10' OFFSETS AND
WHERE SPECIFICALLY SHOWN ON PLANS.

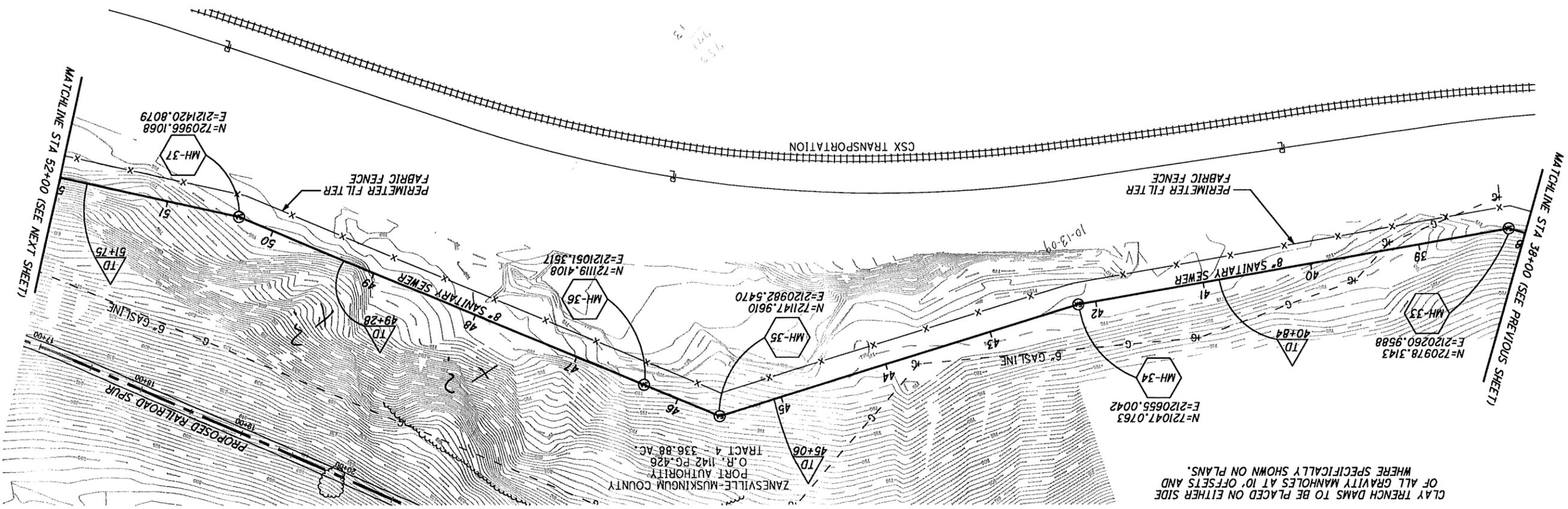
ROCK SLOPE
PROTECTION

MATCHLINE STA 38+00 (SEE NEXT SHEET)

MATCHLINE STA 24+00 (SEE PREVIOUS SHEET)



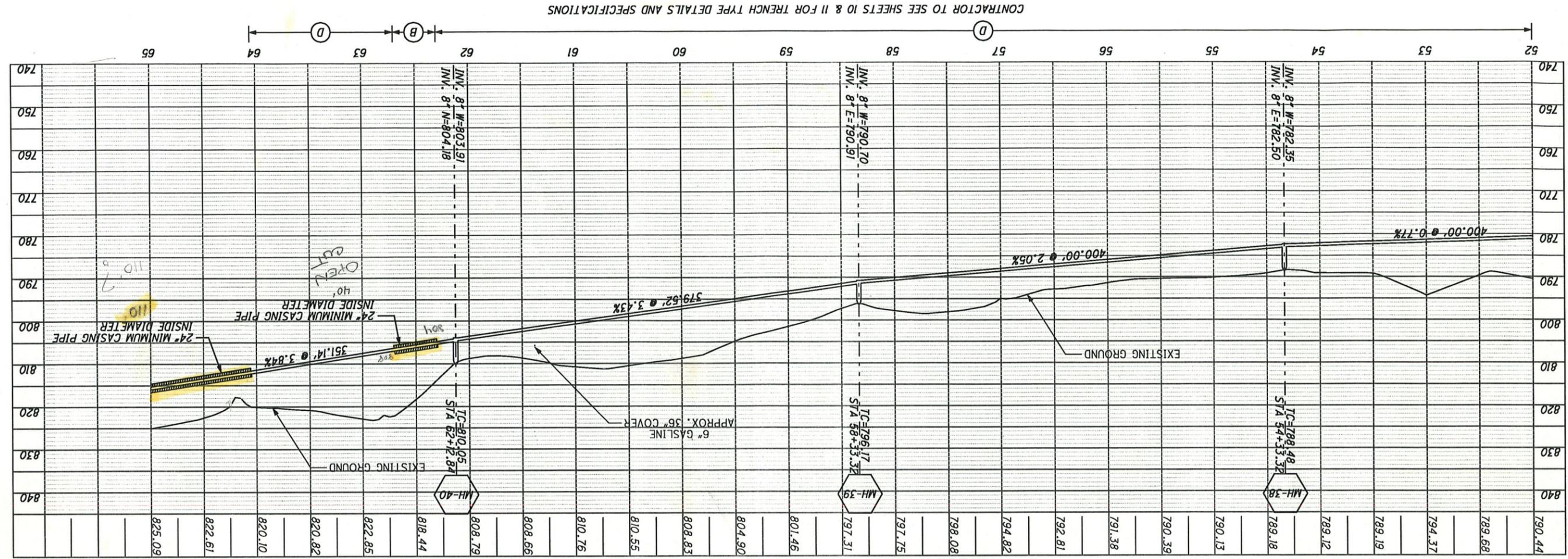
CONTRACTOR TO SEE SHEETS 10 & 11 FOR TRENCH TYPE DETAILS AND SPECIFICATIONS
LETTER DENOTES TRENCH TYPE



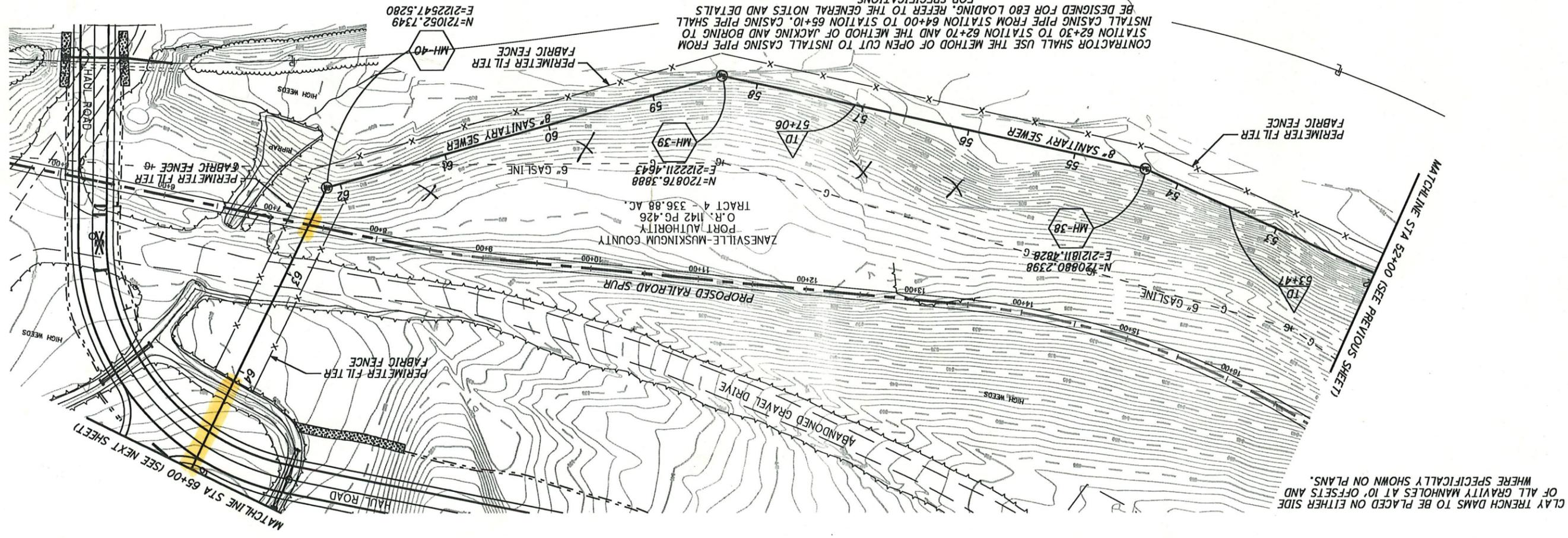
CLAY TRENCH DAMS TO BE PLACED ON EITHER SIDE OF ALL GRAVITY MANHOLES AT 10' OFFSETS AND WHERE SPECIFICALLY SHOWN ON PLANS.

MATCHLINE STA 52+00 (SEE NEXT SHEET)

MATCHLINE STA 38+00 (SEE PREVIOUS SHEET)



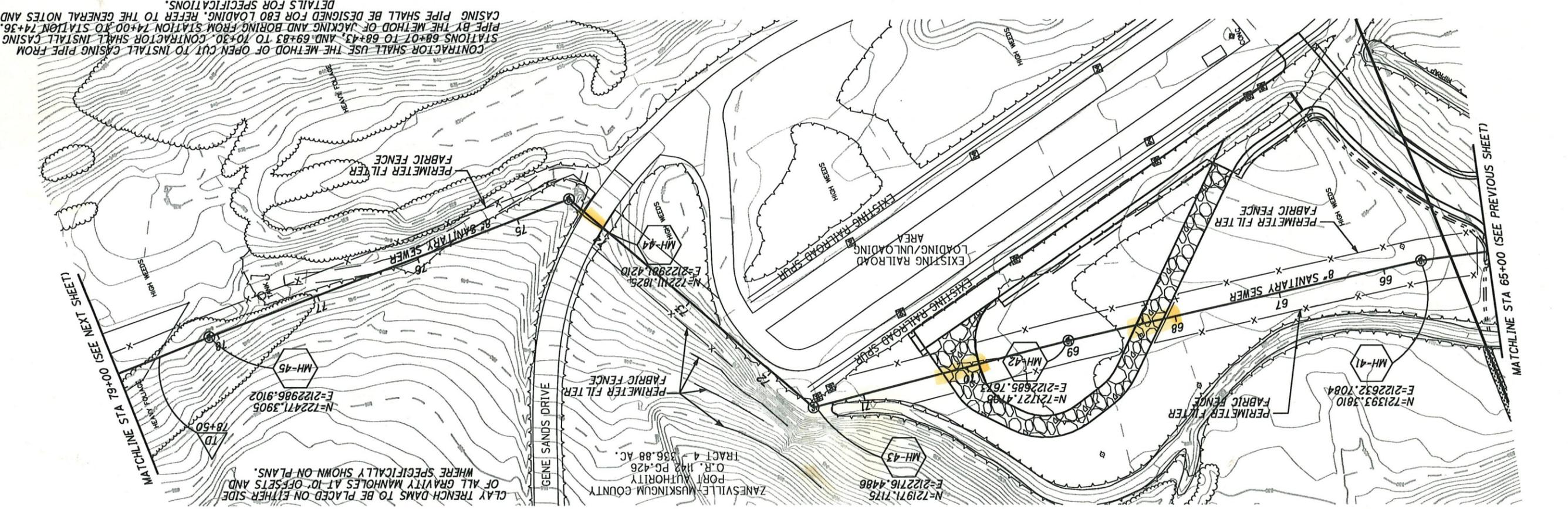
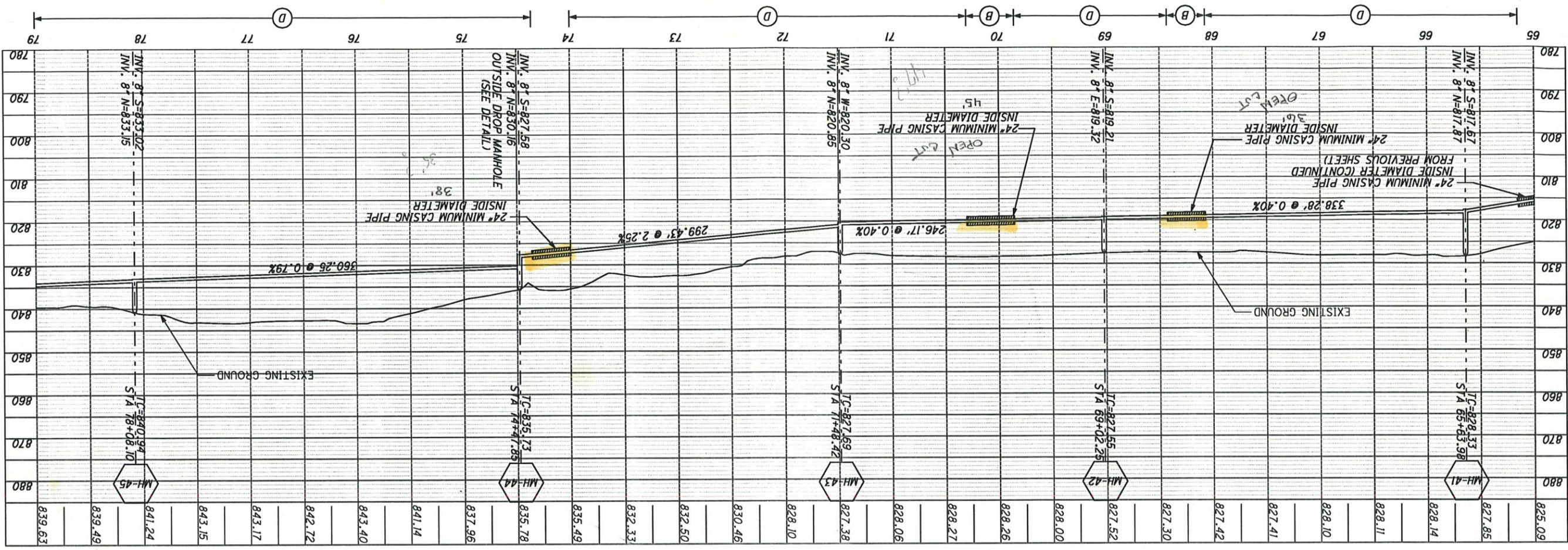
CONTRACTOR TO SEE SHEETS 10 & 11 FOR TRENCH TYPE DETAILS AND SPECIFICATIONS



CLAY TRENCH DAMS TO BE PLACED ON EITHER SIDE OF ALL GRAVITY MANHOLES AT 10' OFFSETS AND WHERE SPECIFICALLY SHOWN ON PLANS.

MATCHLINE STA 62+00 (SEE PREVIOUS SHEET)

MATCHLINE STA 65+00 (SEE NEXT SHEET)



CONTRACTOR SHALL USE THE METHOD OF OPEN CUT TO INSTALL CASING PIPE FROM STATIONS 68+01 TO 68+43, AND 69+83 TO 70+30. CONTRACTOR SHALL INSTALL CASING PIPE BY THE METHOD OF JACKING AND BORING FROM STATION 74+00 TO STATION 74+36. CASING PIPE SHALL BE DESIGNED FOR 80 LADING. REFER TO THE GENERAL NOTES AND DETAILS FOR SPECIFICATIONS.

CLAY TRENCH DAMS TO BE PLACED ON EITHER SIDE OF ALL GRAVITY MANHOLES AT 10' OFFSETS AND WHERE SPECIFICALLY SHOWN ON PLANS.

ZANESVILLE, MUSKINGUM COUNTY
 PORT AUTHORITY
 O.R. 1142 PG. 426
 TRACT 4 - 356.88 AC.

CONTRACTOR TO SEE SHEETS 10 & 11 FOR TRENCH TYPE DETAILS AND SPECIFICATIONS
 LETTER DENOTES TRENCH TYPE

16
47

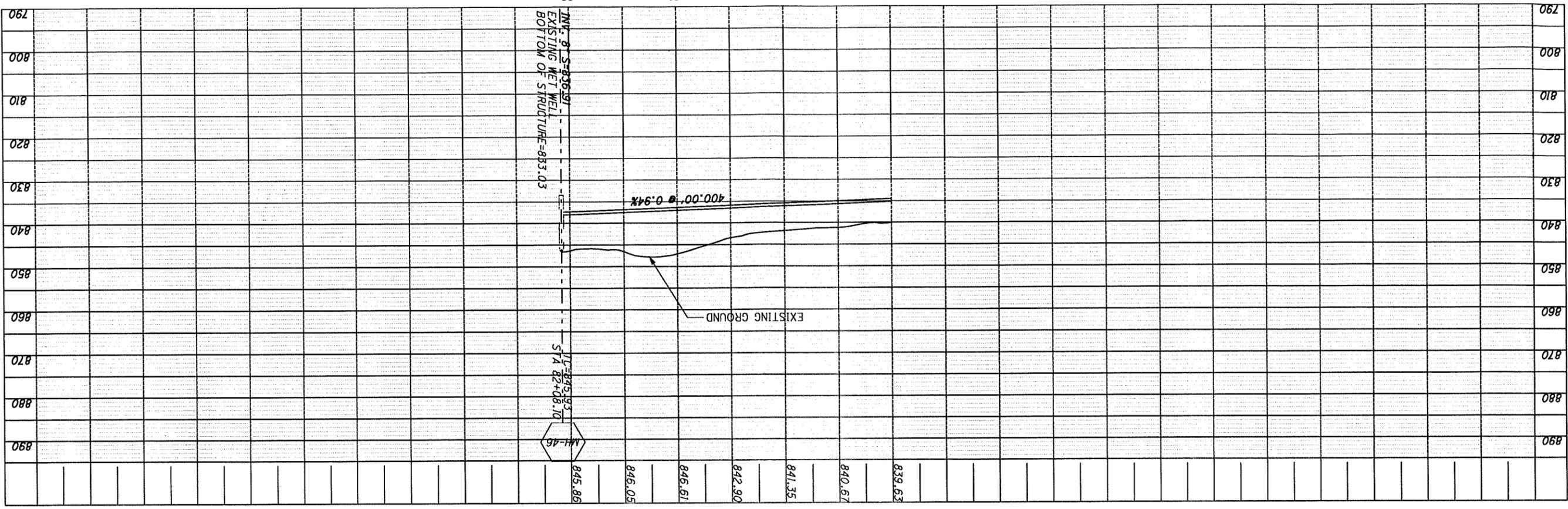
EASTPOINTE BUSINESS PARK
 OFFSITE UTILITIES

GRAVITY 1- PLAN AND PROFILE
 STA 65+00 TO STA 79+00

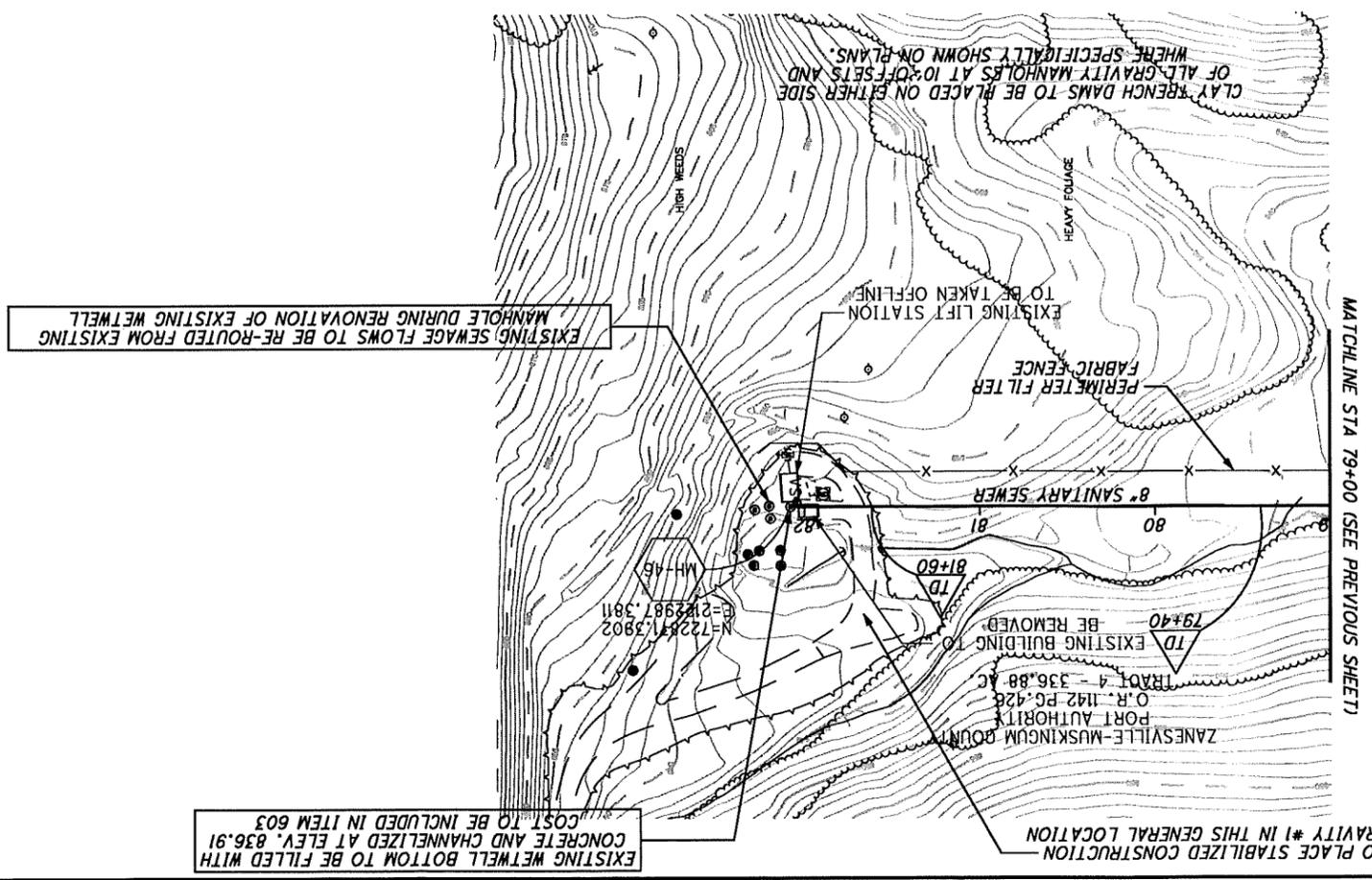
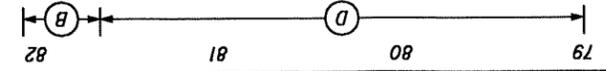
CALCULATED 0
 CTM
 CHECKED
 KBS
 25
 HORIZONTAL
 SCALE IN FEET
 100



MATCHLINE STA 65+00 (SEE PREVIOUS SHEET)



CONTRACTOR TO SEE SHEETS 10 & 11 FOR TRENCH TYPE DETAILS AND SPECIFICATIONS
LETTER DENOTES TRENCH TYPE

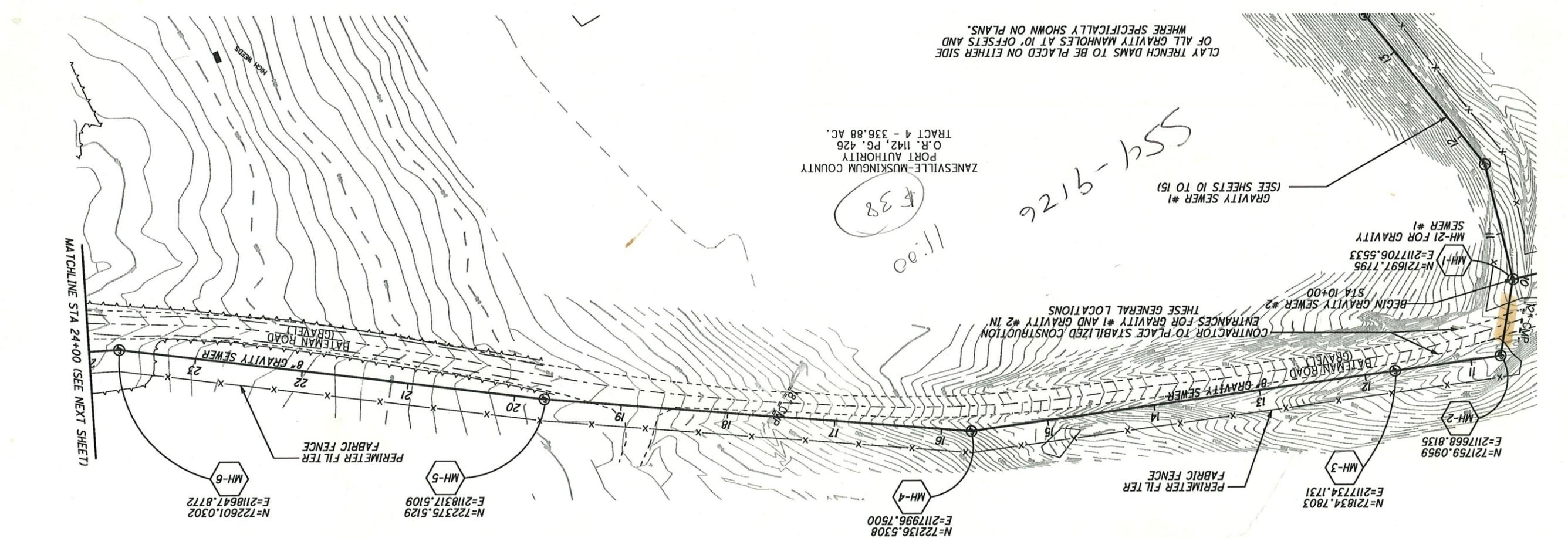
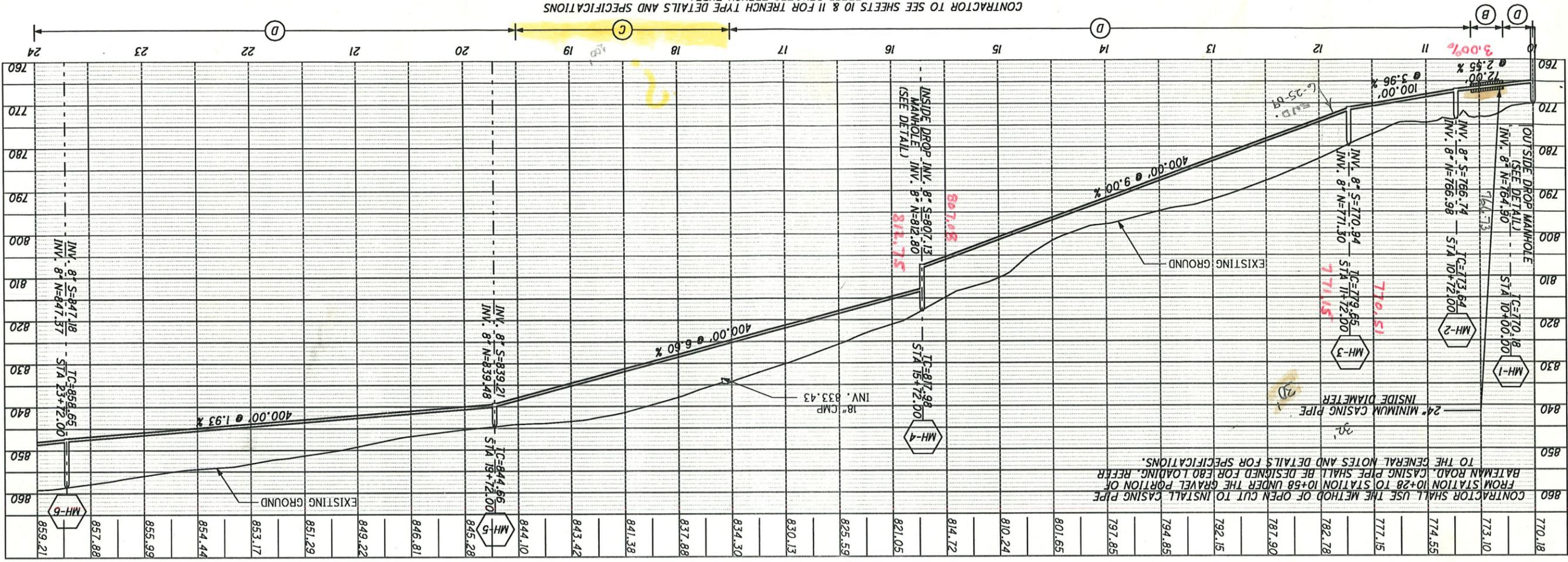


CONTRACTOR TO PLACE STABILIZED CONSTRUCTION ENTRANCE FOR GRAVITY #1 IN THIS GENERAL LOCATION
EXISTING WETWELL BOTTOM TO BE FILLED WITH CONCRETE AND CHANNELIZED AT ELEV. 836.91
COST TO BE INCLUDED IN ITEM 603

EXISTING SEWAGE FLOWS TO BE RE-ROUTED FROM EXISTING MANHOLE DURING RENOVATION OF EXISTING WETWELL

CLAY TRENCH DAMS TO BE PLACED ON EITHER SIDE OF ALL GRAVITY MANHOLES AT 10' OFFSETS AND WHERE SPECIFICALLY SHOWN ON PLANS.

MATCHLINE STA 79+00 (SEE PREVIOUS SHEET)



CONTRACTOR TO SEE SHEETS 10 & 11 FOR TRENCH TYPE DETAILS AND SPECIFICATIONS
 LETTER DENOTES TRENCH TYPE

18
47

EASTPOINTE BUSINESS PARK
 OFFSITE UTILITIES

GRAVITY 2- PLAN AND PROFILE
 STA 10+00 TO STA 24+00

CALCULATED BY
 CTM
 CHECKED
 KBS

25
50
100
HORIZONTAL SCALE IN FEET

ZANESVILLE-MUSKINGUM COUNTY
 PORT AUTHORITY
 O.R. 1142, P.G. 426
 TRACT 4 - 336.88 AC.

54-9126

11:00

38

CONTRACTOR TO PLACE STABILIZED CONSTRUCTION ENTRANCES FOR GRAVITY #1 AND GRAVITY #2 IN THESE GENERAL LOCATIONS

GRAVITY SEWER #1
 (SEE SHEETS 10 TO 15)

BEGIN GRAVITY SEWER #2
 STA 10+00
 MH-1 N=721697.7195
 E=2117706.5533
 MH-21 FOR GRAVITY SEWER #1

N=721834.7803
 E=211734.1731
 MH-3

N=722136.5308
 E=2117996.7500
 MH-4

N=722375.5129
 E=2118317.5109
 MH-5

N=722601.0302
 E=2118647.8772
 MH-6

CONTRACTOR SHALL USE THE METHOD OF OPEN CUT TO INSTALL CASING PIPE FROM STATION 10+28 TO STATION 10+58 UNDER THE GRAVEL PORTION OF BATEMAN ROAD. CASING PIPE SHALL BE DESIGNED FOR E80 LOADING. REFER TO THE GENERAL NOTES AND DETAILS FOR SPECIFICATIONS.

24" MINIMUM CASING PIPE
 INSIDE DIAMETER

EXISTING GROUND

INSIDE DROP MANHOLE
 INV. 8" S=807.13
 MANHOLE INV. 8" N=812.80
 (SEE DETAIL)
 807.05
 812.75

OUTSIDE DROP MANHOLE
 (SEE DETAIL)
 INV. 8" N=764.90
 STA 10+00.00
 TC=770.18

INV. 8" S=766.74
 INV. 8" N=766.98
 STA 10+12.00
 TC=773.64
 MH-2

INV. 8" S=770.94
 INV. 8" N=771.50
 STA 11+12.00
 TC=779.65
 MH-3

INV. 8" S=817.98
 INV. 8" N=817.98
 STA 15+12.00
 TC=817.98
 MH-4

18" CMP
 INV. 833.43

INV. 8" S=839.21
 INV. 8" N=839.148
 STA 19+12.00
 TC=844.66
 MH-5

INV. 8" S=847.18
 INV. 8" N=847.57
 STA 23+12.00
 TC=858.65
 MH-6

