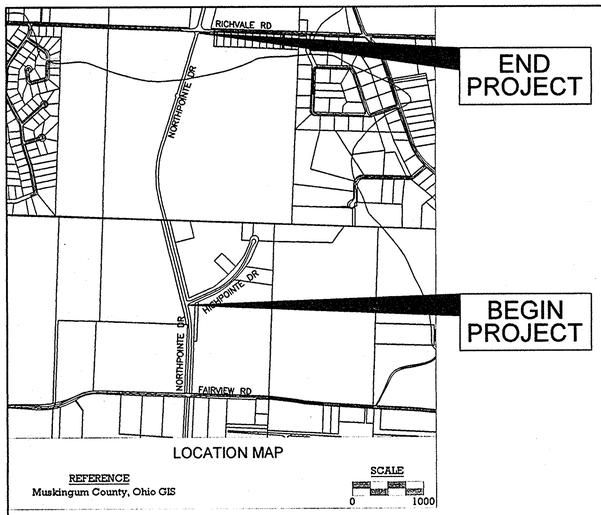


2006
NORTHPOINTE DRIVE
WATER LINE AND
SANITARY SEWER EXTENSION

FOR THE

CITY OF ZANESVILLE

PWS #6002712

REFERENCE MONUMENTS

Bearings are based on Ohio State Plane Coordinate System, NAD83, South Zone, Grid North, per GPS Observations of Muskingum County.

Survey control points are shown on the plan and profile sheets.

STANDARD DRAWINGS		
CITY OF ZANESVILLE		
	No. 21A	
OHIO DEPARTMENT OF TRANSPORTATION		
MH-1.2	DM-4.4	

LIST OF DRAWINGS

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

CURRENT / ULTIMATE OWNER:

City of Zanesville
401 Market Street
Zanesville, Ohio 43701

STATE OF OHIO
KAREN J. SITES
67377
REGISTERED
PROFESSIONAL ENGINEER

Karen J. Sites — 1/12/06
PROFESSIONAL ENGINEER — DATE

Signatures below only signify concurrence with the general purposes and locations of the project. All technical details remain the responsibiltiy of the Engineer preparing the plans.

Michael A. Sims — 1-17-06
MICHAEL A. SIMS, DIRECTOR OF PUBLIC SERVICE — DATE

D L Smith — 1/17/06
DANNY SMITH, WWTP SUPERINTENDENT — DATE

Paul Mills — 1-26-06
PAUL MILLS, WATER DEPARTMENT SUPERINTENDENT — DATE

KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
TITLE SHEET

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS
Date:	January 12, 2006
Scale:	Horiz: As Noted Vert: N/A
Project No.:	COZ0509
Sheet	1 Of 11

GENERAL SPECIFICATIONS
The latest edition of the State of Ohio Department of Transportation, Construction and Material Specifications (ODOT–CMS) together with the codes and requirements of the City of Zanesville, Ohio, including all supplements thereto, in force on the date of the contract shall govern all materials and workmanship involved in the improvements shown on these plans and are hereby considered a part of these plans.

The latest edition of the Recommended Standards for Wastewater Facilities and the Recommended Standards for Water Works (aka, EPA Ten State Standards) are hereby made part of these plans and specifications. Where reference is made to either Environmental Protection Agency (EPA) standards, work and materials shall conform to these specifications. For this project, all construction methods and materials used for sanitary sewers, water lines, manholes, fire hydrants, valves, testing, and other related items shall conform to these standards.

When there is, or appears to be, a conflict between the referenced specifications and these construction drawings, the most stringent requirement shall govern.

CONTRACT BID SPECIFICATIONS
Each bidder must inform himself fully to the conditions relating to the construction project. The Contractor shall make an on–site inspection of the area to familiarize himself with the scope of construction. Failure to do so will not relieve a successful bidder of his obligation to furnish all materials and labor necessary to carry out the provisions of the contract.

The Contactor's bid shall be comprehensive and include all labor, material, and equipment to complete all aspects of the project in accordance with engineering and specifications.

Any modification to the work as shown on these drawings must have prior written approval.

The Engineer will not be responsible for means, methods, procedures, techniques, or sequences of construction that are not specified herein.

Where reference is made to "No Additional Cost to the Owner" or "At the Contractor's Expense" throughout the plans and specifications, it is understood that the additional costs are included in the bid price for the various project items.

All items of work called for in the construction drawings for which no specific method of payment is provided shall be performed by the Contractor as required to complete the project as designed and intended. The cost for these items shall be included in the price bid for various related or associated items.

NOTIFICATION OF CONSTRUCTION
The Contractor shall notify Dan Smith, City of Zanesville Wastewater Superintendent (740–455–0641), Paul Mills, City of Zanesville Water Department Superintendent (740–452–7111), and KCS Engineering (740–819–7804), a minimum of two (2) days before beginning work, holidays and weekends excluded. When the Contractor suspends operations for two (2) or more working days, he shall notify the City a minimum of 24 hours before resuming work.

Minimizing the construction impacts to area residents and businesses is a primary concern of the Engineer. The Contractor should plan his work such that he provides the least disturbance as well as being prepared to respond to residents' concerns in a professional and timely manner.

CONSTRUCTION LIMITS
The Contractor shall confine his activities to the project site under development per the existing rights–of–way, permanent and/or construction easements. The Contractor shall not trespass upon other private property without the written consent of the owner. The cost necessary to fulfill this requirement shall be included in the price bid for the various related items.

PERMITS
The Contractor shall be responsible for obtaining and complying to all Federal, State, and Local permits as well as paying all required inspection and construction fees.

SAFETY
The Contractor shall solely be responsible for complying with all federal, state, and local safety requirements, 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.

The Contractor shall be solely responsible for securing the project site from the general public both during and after working hours. The Contractor shall provide, erect, and maintain all lights, signs, fences, or any other safety device to prevent unauthorized personnel from hazardous or dangerous conditions on the project site. The cost of such work shall be included in the various items bid for furnishing and installing materials on this project.

The Engineer will not be responsible for safety on the work site or for failure by the Contractor to perform work according to contract documents.

NON–RUBBER TIRED VEHICLES
Non–rubber tired vehicles shall be prohibited on any asphalt or concrete street. Exceptions may be granted where short distances and special circumstances are involved. Request for an exception must be made in writing and any damage occurring shall be repaired to the satisfaction of and at no additional cost to the owner.

SURPLUS EXCAVATION
Unless otherwise noted in these construction plans, the Contractor shall dispose of surplus excavation at his own expense in a legal and professional manner. Disposal within floodplains is not permitted without the written consent of the local regulating agency. In any case, no disposal will be permitted within twenty feet of floodway boundaries.

SURVEY MONUMENTS
The Contractor shall reference all iron pins and monuments before excavating at or near them. The Contractor shall carefully preserve bench marks, property corners, reference points, stakes, and other survey reference monuments or markers.

If any iron pins or monuments are damaged or destroyed, they shall be accurately replaced by an Ohio Registered Surveyor approved by the Engineer or the owner. The cost of such shall be at the expense of the Contractor.

CONTINGENCY QUANTITIES
The Contractor shall not order materials nor perform work listed in the general summary for items designated by plan note to be used "as directed by the Engineer". Payment for these items will be made only when the work under the particular item has been performed.

NOISE
The Contractor shall conform to the provisions of the City of Zanesville Noise Ordinance.

OHIO UTILITY PROTECTION SERVICE (OUPS)
The Contractor shall contact the Ohio Utilities Protection Service (OUPS) a minimum of forty–eight hours prior to beginning any construction. Non–member utilities must be called directly. All utilities damaged or disturbed during construction shall be restored in accordance with and approval of the affected utility at no additional cost to the owner or project.

UTILITY LOCATIONS
The location of underground utilities shown on the plans are as obtained from the owners of the utilities as required by the Ohio Revised Code (ORC) Section 153.64. Locations and elevations of existing underground utilities and structures shown on the plans are approximate only. It shall be the responsibility of the Contractor to determine their exact location and elevation when working in their vicinity. When unknown or incorrectly located underground utilities are encountered, the contractor shall immediately notify the Owner and the Engineer.

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. Location, support, protection, and restoration of all utility lines, services, and appurtenances shall be the responsibility of the Contractor. Cost of the above, if any, will be included in the price bid for the pertinent item.

The following utilities and owners are located within the work limits of the project.

WATER
City of Zanesville
Water Division
1750 N . River Road
Zanesville, Ohio 43701
(740) 452–7111
Attn: Paul Mills

SEWER
City of Zanesville
Wastewater Division
1730 Moxahala Avenue
Zanesville, Ohio 43701
(740) 455–0641
Attn: Dan Smith

TELEPHONE
SBC
150 E. Gay Street, Room 6C
Columbus, Ohio 43215
(614) 223–6984

CABLE
Time Warner
737 Howard Street
Zanesville, Ohio 43701
(740) 455–9705

GAS
Columbia Gas
200 Civic Center Drive
Columbus, Ohio 43215
(800) 282–0157

National Oil and Gas
1500 Granville Road
Newark, Ohio 43058–4970
(740) 348–1254

ELECTRIC
AEP
850 Tech Center Drive
Gahanna, Ohio 43230–6605
(740) 455–4684

RESTORATION AND DAILY/FINAL CLEANUP
The Contractor shall remove all debris, rubble, spoils, and construction materials from the adjacent streets, alleys, and/or drives and leave the site in a neat and orderly manner at the end of each day. If the construction operations encounter muddy conditions, mud shall not be allowed to accumulate in the streets. Affected streets, alleys, and/or drives shall be swept on a regular basis either with the use of equipment or by hand. The accumulated debris shall be disposed of in a proper and legal manner.

When performing final cleanup, the Contractor shall clean up all materials and debris resulting from work and dispose of them in a proper and legal manner. The Contractor shall restore all disturbed areas to equal or better condition than existed before construction. Drainage ditches or water courses that are disturbed by construction shall be restored to the grades and cross–sections that existed before construction.

All signs, landscaping, structures, or other appurtenances within rights–of–way disturbed or damaged during construction shall be replaced or repaired to the satisfaction of the Engineer. The cost of this work shall be the responsibility of the Contractor and shall be included in the bid price for the various related items.

EXISTING FEATURES
All signs, fences, drainage structures, or other physical features disturbed or damaged during work under this contract shall be restored to their original condition by the Contractor, at no additional cost to the Owner.

BEDDING
All bedding shall be constructed in accordance with ODOT 603.04 except as modified in the typical pipe trench details.

BACKFILL
All backfill shall be constructed in accordance with ODOT 603.08, except as modified in the typical pipe trench details.

EXCAVATION
All existing pavements, including driveways, shall be sawcut by the Contractor. Trenches shall be excavated to a width that will allow for proper jointing of the conduit and thorough compaction of the bedding and backfill.

PAVEMENT REPLACEMENT
All streets excavated by the Contractor shall be restored according to the pavement replacement detail as per the "Typical Pipe Trench Detail (Pavement Areas)" as shown on the Details Sheet of these plans.

VERIFY PIPE SIZES
The Contractor shall verify all pipe outside diameters prior to cutting to insure proper fittings are available. The Contractor shall expose the existing utility sufficiently in advance of laying the sanitary main and water line in order to verify the proposed location.

TREE PRESERVATION
All trees, whether shown or not on the plans, are to preserved unless called out in the plans to be removed.

CONNECTION TO EXISTING MANHOLES
Where new sewers are connected to existing manholes, the Contractor shall core drill any new openings into the existing manhole. The pipe to the 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.

PIPE CROSSINGS
All sanitary sewers and manholes shall be placed with at least 10 feet of horizontal separation from water lines. Whenever a water line and sewer must cross, the sewer main 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 walls.

CLEAN WATER CONNECTIONS
Roof drains, foundations drains, and other clean water connections to the sanitary sewer system are prohibited.

EXISTING SEWERS
Existing sanitary flows shall be maintained at all times. Costs for pumping and bypassing shall be included in the Contractor's unit price for the related items.

USE OF FIRE HYDRANTS
The Contractor is hereby notified that it is his/her responsibility to contact the local water authority to make arrangements to take water from fire hydrants. All arrangements shall be made before opening any fire hydrant. The taking of water from fire hydrants without authorization will result in the Contactor's prosecution for theft of a public utility. The Contractor shall be responsible for any damage to fire hydrants caused by his/her or employee's actions.

MANHOLES
Manholes shall be constructed and installed as shown on the City of Zanesville Standard Detail Drawings No. 8 and 9 and as indicated on the plans. New precast concrete manholes and drop manholes shall conform to ASTM C–478.

Joints between manhole sections shall conform to the requirements of ASTM C–443 as it pertains to the use of a confined gasket.

Resilient connections shall be used between new precast manholes and connecting pipe. Material and performance requirements shall meet the standards of ASTM C–923 and be approved by the Engineer. The actual joint may be one of the following designs:

A. Rubber Sleeve with Stainless Steel Band
B. Rubber Gasket Compression
C. Rubber Gasket Expansion

Manhole frame and cover shall be as shown on the City of Zanesville Standard Detail Drawing No. 7 or approved equal.

All manholes must be tested per ASTM C1244.

The Contractor shall make allowances in his bid for possible adjustment of manhole lids and shall receive no additional payment for these adjustments.

The Contractor shall furnish all materials, equipment, and labor to make connections to existing manholes. The sewer pipe to manhole connections for all sanitary sewers shall be flexible and watertight. All holes shall be neatly cored. The cost for this work shall be included in the unit bid price for the related items of work.

SANITARY SEWER TESTING
Leaking tests shall be the appropriate (hydrostatic) water or air pressure testing performed by the Contractor.

Water (hydrostatic) test: The leakage exfiltration of infiltration shall not exceed 100 gal. per inch of pipe diameter per mile per day for any section of pipe. An exfiltration or infiltration test shall be performed with a positive head of 2 feet.

Air test: The air test, as a minimum, shall conform to the test procedure described in ASTM C–828 for clay pipe, ASTM C–P24 for concrete pipe, ASTM F–1417 for plastic pipe.

Damage caused to existing lines or service connections shall be repaired by the Contractor at no additional cost to the owner.

Deflection test shall be performed on all gravity sewer mains. The test shall be conducted after the final backfill has been in place for at least 30 days. If the deflection test is to be run using a rigid ball or mandrel, it shall have a diameter equal to 95% of the base inside diameter of the pipe. For 8–inch SDR 35 pipe, the mandrel must have a diameter of at least 7.28 inches. The test shall be performed without mechanical pulling devices, at no additional cost. All testing must be conducted under the supervision of Muskingum County Health Department, Plumbing Inspector, (740) 454–9741.

DEWATERING
Any well, well point, pit, or other device installed for the purpose of lowering the groundwater level to facilitate construction of this project shall be properly abandoned in accordance with the provisions of Section 3745–9–10 of the Ohio Administrative Code or in accordance with the provisions of this plan or as directed by the Engineer.

Do not use sanitary sewers for disposal of trench water. Discharging water into storm sewers requires the approval of the City of Zanesville. Do not discharge water onto adjacent properties without the property owner's written approval. All costs of dewatering shall be included in the unit price bid for the installation of sanitary sewer pipe and water main.

ROCK OR UNSTABLE SOILS IN TRENCH BOTTOM
Notify the Engineer prior to over–excavation. The Engineer shall determine the need for trench bottom stabilization prior to the installation of pipes and structures. Remove rock or soft areas of the trench bottom to a depth of 1 foot below the base of the pipe or structure, and backfill with earth or stabilization material, as required.

MAINTENANCE OF TRAFFIC
It shall be the responsibility of the Contractor to maintain traffic within the project area. The Contractor shall erect, maintain, and remove necessary control devices, barricades, flaggers, and lights to safely maintain traffic around his operations. Traffic shall be maintained in accordance with the "Ohio Manual of Uniform Traffic Control Devices for Construction and Maintenance Operations" (OMUTCD).

Type C, Steady–burn lights shall be used on all barricades, drums, and similar traffic control devices in use at night.

Traffic shall be maintained for local residents and emergency vehicles at all times.

A minimum of one–lane, two–way traffic shall be maintained during non–working hours.

All trenches shall be backfilled or securely plated during non–working hours. Street plates shall be adequately secured at all times to prevent movement and objectionable noise. Plates shall be removed from the rights–of–way as soon as possible.

The Contractor shall notify the Zanesville Police and Fire Departments as well as local Emergency Squads of all work schedules.

Costs associated with maintaining traffic shall be included under Item 614 – Maintaining Traffic.

REPLACEMENT OF DRAIN TILE AND STORM SEWER
All drain tile and storm sewers damaged, disturbed, or removed as a result of the Contractor's operations shall be replaced with the same quality of pipe or better, maintaining the same gradient as existing. Replaced drain tile/storm sewer shall be laid on compacted bedding equal in density to surrounding stratum. Cost of this work shall be included in the price bid for pipe installed.

WATER LINE INSTALLATION
The Contractor shall notify the City of Zanesville Water Department (740–452–7111) at least 24 hours before tapping into an existing water line.

The Contractor shall give written notice to all affected property owners at least one working day but not more than three working days prior to any temporary interruption of water service. Interruption of water service shall be minimized and must be approved by the City of Zanesville.

All water lines shall be placed at a minimum depth of 4 feet measured from the top of the finished grade to top of water line. Water lines shall be set deeper at all points where necessary to clear restrictions by a minimum of 18 inches.

Water mains shall be laid at least 10 feet horizontally from any existing or proposed gravity sewer, septic tank, ot subsoil treatment system. The system shall be measured edge to edge.

All bends, joint deflections, and fittings shall be backed with concrete.

No service connection permits shall be issued or connections made to any service taps until water lines have been disinfected.

The Contractor shall paint all fire hydrants according to the City of Zanesville standards. The cost of painting fire hydrants shall be included in the contract unit price for fire hydrants.

WATER LINE TESTING
A hydrostatic test shall be performed in accordance with AWWA C–600, except that the testing pressure shall be 1.5 times the working pressure of the area. Pressure tests shall be conducted with all watch valves open and hydrant foot valves closed. Any testing performed against existing valves shall be at the Contractor's risk. If satisfactory results cannot be obtained against an existing valve, the new line shall be disonnected from the existing, plugged and retested. Damage caused to existing lines, valves, service connections, or other appurtenances shall be repaired by the Contractor at no additional cost to the Owner. Water line testing will be done under the supervision of the City of Zanesville representative.

TRACER TAPE
Metallic tracer tape shall be furnished and installed above all PVC pipe as part of the PVC pipe item. The tape shall be continuous over the length of the PVC pipe, shall be color coded (blue) with appropriate marking (Buried Water Line Below), and buried 12 to 14 inches directly above the pipe.

VALVES
Valves shall be counter–clockwise opening resilient wedge gate valves meeting AWWA C509. If the top of the operating nut is more than 36 inches below final grade, an extension stem shall be furnished and installed to bring the top of the operating nut within 24 inches of final grade.

VALVE BOXES
All valve boxes shall be furnished with regular duty, two–piece valve boxes. Covers for the regular duty boxes shall be marked "Water". All boxes shall be provided with the necessary extensions to bring the tip of the box to final grade.

BLOCKING SUPPORTS
Concrete blocking supports and/or buttresses shall be provided at all tees, bends, and valves as directed by the Engineer.

DISENFECTING WATER LINES
All water lines shall be disinfected in accordance with sections of AWWA C–651. No segment of water line shall be accepted until satisfactory bacteriological results are obtained through the lab used by the City of Zanesville. Calcium Hypochlorite tablets shall be used for chlorination. Disinfection will be done under the supervison of the City of Zanesville.

MATERIAL SPECIFICATIONS

Water Main: 12" Diameter – AWWA C900, DR14, CL200
Joints:
Tyton Push–on Restrained Joints, AWWA C111
Mechanical Joint Restrained Fittings, AWWA C153
Field–Lok Rubber Gasket, AWWA C111
Valves: AWWA 509, Counter–Clockwise Opening, Resilient Wedge Seat
Valve Box: Tyler #21, Regular Duty
Fittings: AWWA C153, Compact, Mechanical Joint
Fire Hydrant: American Darling B84B, Painted Yellow

SHEETING, SHORING, AND BRACING
Provide and install sheeting, shoring, and bracing or trench boxes as required to safely perform work and protect nearby structures. Sheeting and bracing of all excavations shall conform to the latest state and federal regulations governing safety of workers in the construction industry. It shall be the Contractor's responsibility to select sheeting and bracing material of sufficient dimensions and strength to adequately support the sides of trenches and excavations, shall not split when driving and shall be free of imperfections that may impair its strength or durability.

Move trench boxes carefully to avoid excavated wall displacement or damage. Any damage due to settlement because of failure to use sheeting or because of inadequate bracing, or through negligence or fault of the Contractor in any other manner, shall be repaired at the Contractor's expense.

Sheeting and bracing shall not be removed before completion of the work, unless otherwise directed in writing by the Engineer. Sheeting left in place must have the written permission of the City of Zanesville Sewer and Water Departments and shall be cut off 18 inches for clearance below the bottom of the pavement in streets and 18 inches below the original ground surface.

The cost for the above described work shall be included in the unit price bid for the installation of pipe.

SEEDING AND MULCHING
The contractor shall furnish all labor, equipment, and materials required to accomplish both temporary and permanent seeding.

All non–impervious areas disturbed during construction shall be seeded and mulched, or sodded.

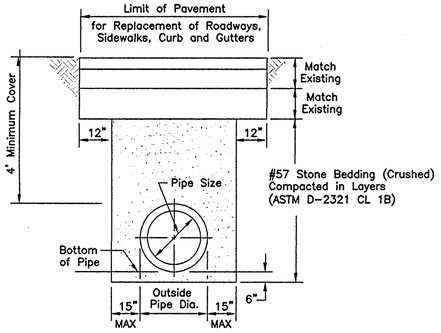
KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
GENERAL NOTES

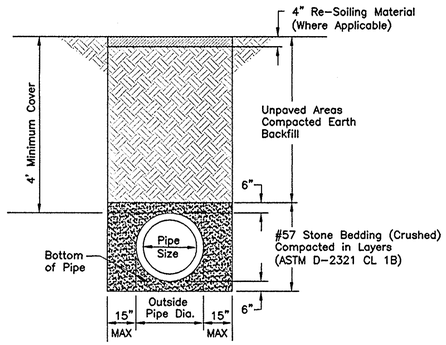
No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS

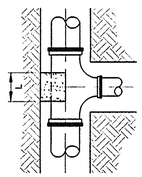
Date: January 12, 2006
Scale: Horiz: N/A Vert: N/A
Project No.: COZ0509
Sheet 2 of 11



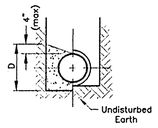
TYPICAL PIPE TRENCH DETAIL
(PAVEMENT AREAS)
Not to Scale



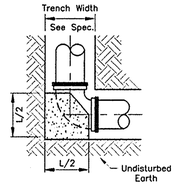
TYPICAL PIPE TRENCH DETAIL
(NON-PAVEMENT AREAS)
Not to Scale



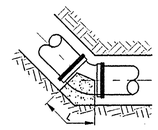
TEES



TYPICAL SECTION



90° BENDS



BENDS LESS THAN 90°

BENDS									
Size of Pipe	Degree of Bend								
	11 1/4°		22 1/2°		45°		90°		
	L	D	L	D	L	D	L	D	
3",4"	8"	6"	10"	6"	20"	6"	36"	6"	
6"	8"	6"	10"	6"	20"	6"	36"	6"	
8"	9"	8"	14"	8"	24"	9"	50"	8"	
12"	14"	12"	22"	12"	30"	16"	60"	15"	
16"	18"	16"	24"	18"	33"	36"	70"	22"	

TEES									
Run	Branch								
	3",4",6"		8"		12"		16"		
	L	D	L	D	L	D	L	D	
3",4"	16"	7"							
6"	16"	7"							
8"	14"	8"	18"	12"					
12"	9"	12"	18"	12"	24"	18"			
16"	8"	16"	14"	16"	28"	16"	30"	26"	

NOTES:

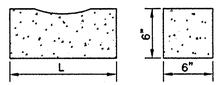
Dimensions above and excavation limits shall determine volume of Class "C" concrete blocking to be paid as blocking.

Concrete blocking is required on all pressure piping outside of structures.

The face of each block must be perpendicular to the line of thrust.

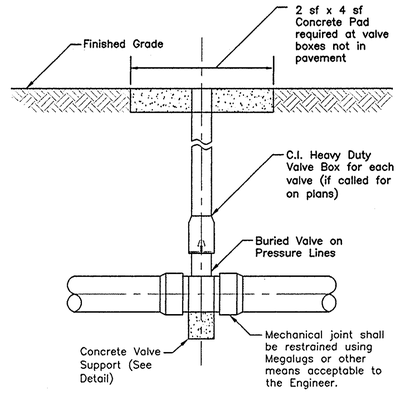
PIPE BLOCKING DETAIL
Not to Scale

Size of Pipe	L
3"	14
4"	15
6"	17
8"	20
10"	24
12"	24

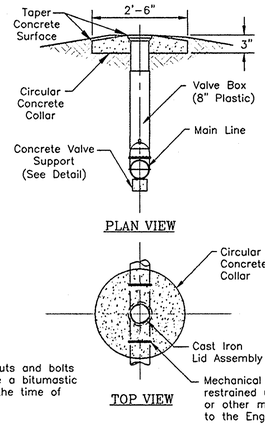


Support to be used under all valves except service valves.

VALVE SUPPORT
Not to Scale

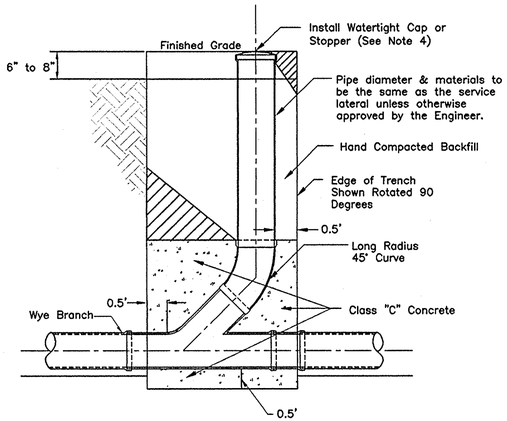


WATER VALVE DETAIL
Not to Scale



NOTE:
All buried nuts and bolts shall receive a bituminous coating at the time of installation.

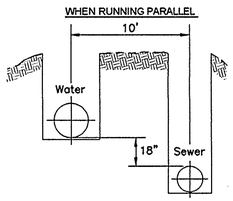
VALVE BOX SETTING DETAIL
Not to Scale



STANDARD CLEANOUT DETAIL
Not to Scale

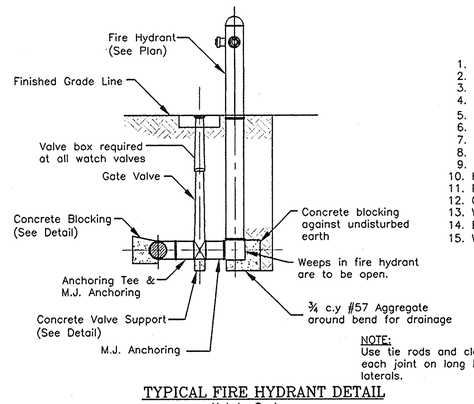
NOTES:

1. Install within 2'-0" of the Right-of-Way or as directed by the Engineer.
2. All clean-out pipe & fittings shall be accepted by the Engineer prior to consruction.
3. Sewer mains and service laterals with clean-outs shall conform to all requirements of the applicable specifications except as herein modified.
4. Provide cast iron stopper, modified non-metallic stopper, or special construction approved by the Engineer which shall render the clean-out terminus detectable by standard magnetic subsurface locators. Provide 6" ASTM D3034 PVC Gasketed Adapter (to accept SDR-35 PVC pipe) fitted with cast iron top, internally threaded, and fitted with Southern Code Countersunk Brass Screw Plug (GENECO Type 6COH sewer lateral cleanout top w/ Cat. No. USP-429, Southern Code Countersunk Brass Screw Plug, or approved equal).



*Water main crossings shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is above or below the sewer with preference to the water main located above the sewer.

MINIMUM SEPARATION DISTANCES
SEWER-WATER LINE CROSSING DETAIL
Not to Scale



NOTE:
Use tie rods and clamps at each joint on long hydrant laterals.

TYPICAL FIRE HYDRANT DETAIL
Not to Scale

1. Model: American Darling, B54B
2. Working Pressure: 150 psi
3. Test Pressure: 300 psi
4. Basic Size - 6"
5. Connections: 2 @ 2½" and 1 @ 4½"
6. Type Inlet M.J. Shoe
7. Depth of Bury: 4 feet (As Directed)
8. Operating Nut: 1-inch square
9. Direction of Opening - Clockwise
10. Hose Nozzle Threading: Clockwise
11. Pumper Nozzle Threading: National Fire Standard
12. Color: Safety Yellow
13. Weep Holes: Open
14. Branch Line: 6" (MIN) Diameter, Same Pipe as Main Line
15. Watch Valve - 6" (MIN), Same as Branch Line
Resilient Wedge Gate Valve

ESTIMATED QUANTITIES

REF #	ITEM	DESCRIPTION	UNIT	SHEET NUMBER					TOTAL QUANTITY
				4	5	6	7	8	
1	201	Clearing and Grubbing	LS						LS
2	207	Temporary Erosion Control	LS						LS
3	603	8"ø PVC Pipe, ODOT 707.44, Type C	LF	750	800	800	750	735	3,835
4	603	6"ø Sanitary Lateral Service, ODOT 707.44	LF		75				75
5	604	Manhole, ODOT Type 3	EA	2	3	3	3	3	14
6	614	Maintaining Traffic	LS						LS
7	623	Construction Staking	LS						LS
8	624	Mobilization	LS						LS
9	638	12" Water Main & Fittings, AWWA C900, DR14, CL200	LF	750	800	800	750	740	3,840
10	638	Fire Hydrant w/ Valve	EA	2	1	1	1	2	7
11	638	12" Valve	EA	2	1	1	1	2	7
12	638	Curb Stop	EA		1				1
13	638	2" PE Service Branch	LF		30				30
14	659	Seeding and Mulching	LS						LS
15	Special	Sanitary Clean Out	EA		1				1
16	Special	8" x 6" Sanitary Sewer Wye	EA		1				1

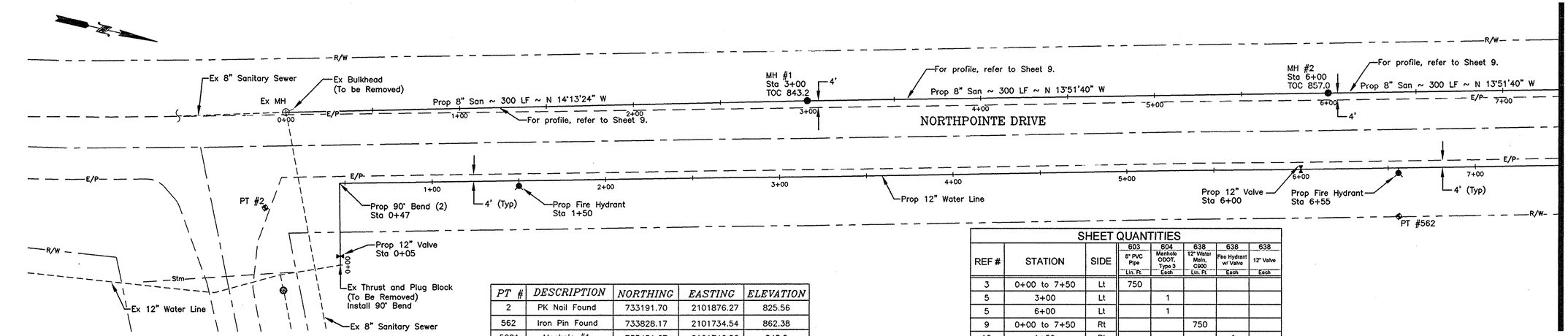
These quantities are approximate and are intended merely to serve as a uniform basis for the comparison of bids. The Contractor shall be responsible for delivering a complete project within the intent of these construction documents.

KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
DETAILS AND QUANTITIES

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS
Date:	January 12, 2006
Scale:	Horiz: As Noted Vert: As Noted
Project No.:	COZ0509
Sheet	3 Of 11



MATCHLINE ~ STATION 7+50
SEE SHEET 5

PT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
2	PK Nail Found	733191.70	2101876.27	825.56
562	Iron Pin Found	733828.17	2101734.54	862.38
5001	Manhole #1	733481.67	2101746.56	843.2
5002	Manhole #2	733772.93	2101674.68	857.0

SHEET QUANTITIES

REF #	STATION	SIDE	603 8" PVC Pipe Lin. Ft.	604 Manhole CDOT, Type 3 Each	638 12" Water Main, C900 Lin. Ft.	638 Fire Hydrant w/ Valve Each	638 12" Valve Each
3	0+00 to 7+50	Lt	750				
5	3+00	Lt		1			
5	6+00	Lt		1			
9	0+00 to 7+50	Rt			750		
10	1+50	Rt				1	
10	6+55	Rt				1	
11	0+05	Rt					1
11	6+00	Rt					1
Totals Carried to Sheet 3			750	2	750	2	2

0 30 60
Scale: 1" = 30'

NOTES

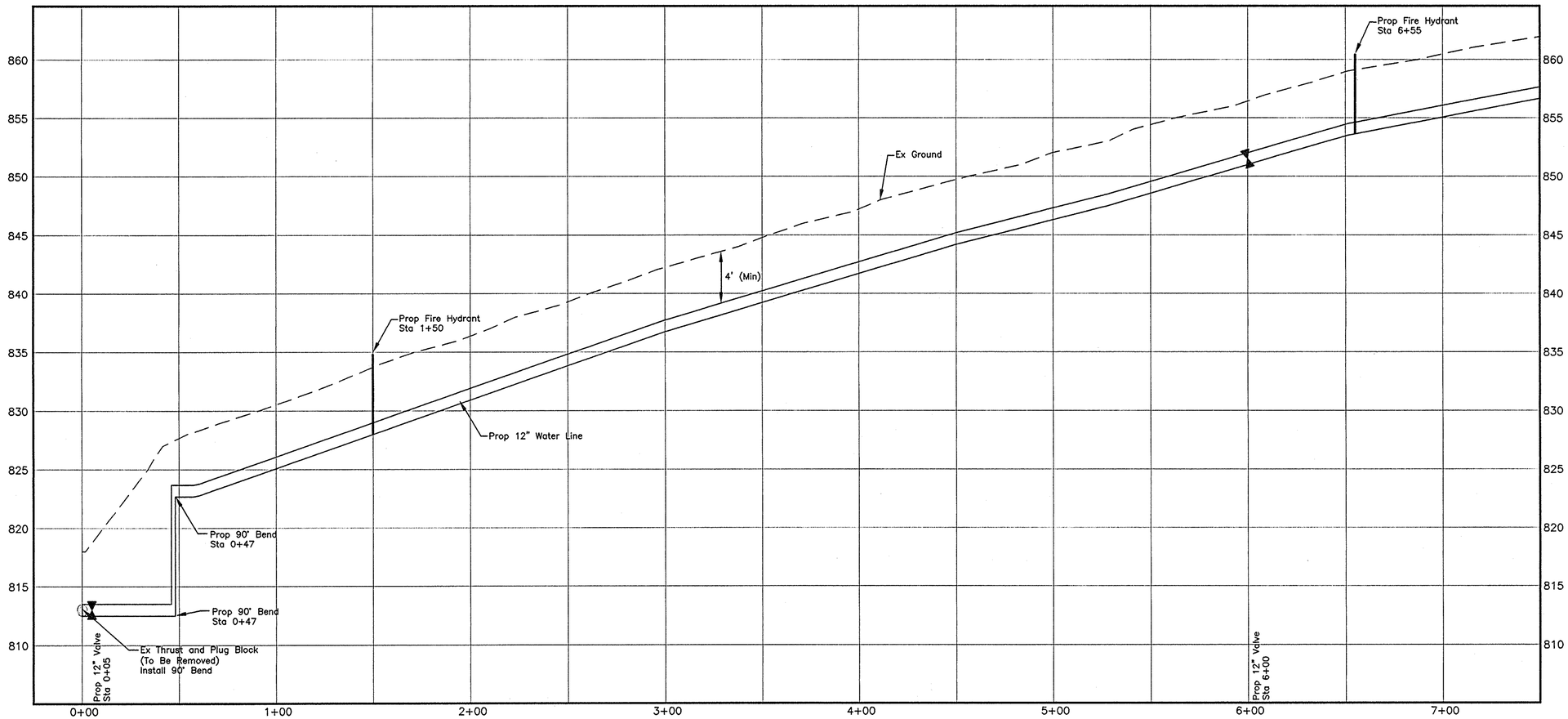
All field data is shown as provided by Bowman Surveying.

Sheet stationing is based on the centerline of the proposed water line.

Refer to Sheets 9 and 10 for sanitary sewer profile.

LEGEND

TOC	Top of Casting
W	Existing Meter
	Existing Manhole
	Survey Control Point
	Proposed Valve
	Proposed Fire Hydrant
	Proposed Manhole
R/W	Ex. Right-of-Way
E/P	Ex. Edge of Pavement
Stm	Ex. Storm Sewer
WL	Ex. Water Line
San	Ex. Sanitary Sewer



WATER LINE PROFILE
STA 0+00 to STA 7+50

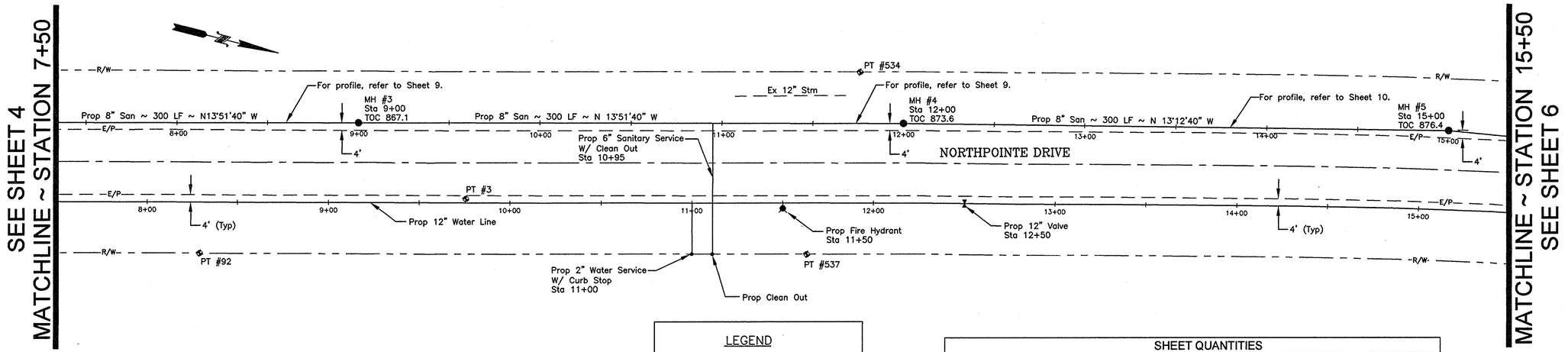
KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
PLAN AND PROFILE

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS

Date: January 12, 2006
Scale: Horiz: 1" = 30' Vert: 1" = 5'
Project No.: COZ0509
Sheet 4 Of 11



0 30 60

Scale: 1" = 30'

NOTES

All field data is shown as provided by Bowman Surveying.

Sheet stationing is based on the centerline of the proposed water line.

Refer to Sheets 9 and 10 for sanitary sewer profile.

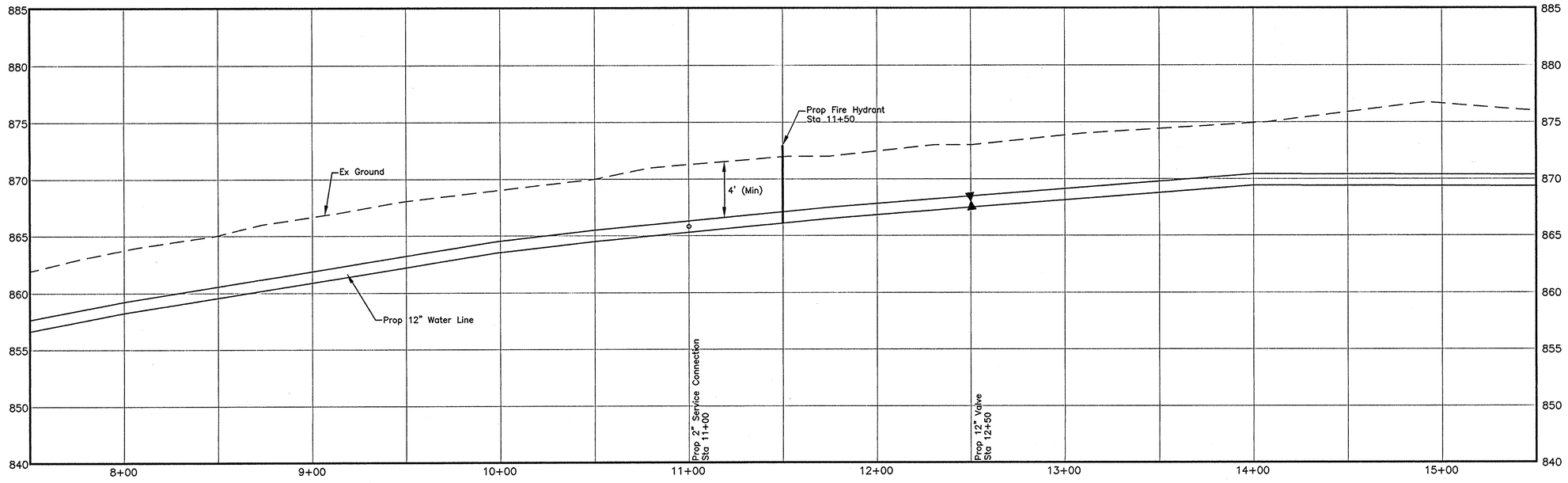
PT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
3	Iron Pin Set	734131.91	2101629.08	868.98
92	Iron Pin Found	733996.56	2101693.15	868.28
534	Iron Pin Found	734325.34	2101509.46	873.45
537	Iron Pin Found	734321.05	2101613.44	876.07
5003	Manhole #3	734064.19	2101602.81	867.1
5004	Manhole #4	734355.46	2101530.94	873.6
5005	Manhole #5	734647.52	2101462.38	876.4

LEGEND

TOC	Top of Casting
W	Existing Meter
	Existing Manhole
	Survey Control Point
	Proposed Valve
	Proposed Fire Hydrant
	Proposed Manhole
R/W	Ex. Right-of-Way
E/P	Ex. Edge of Pavement
Stm	Ex. Storm Sewer
WL	Ex. Water Line
San	Ex. Sanitary Sewer

SHEET QUANTITIES

REF #	STATION	SIDE	603 6" PVC Pipe Lin. Ft.	603 6" San Service Lateral Lin. Ft.	604 Manhole ODOT, Type 3 Each	638 12" Water Main, C900 Lin. Ft.	638 Fire Hydrant w/ Valve Each	638 12" Valve Each	638 Curb Stop Each	638 2" Service PE Pipe Lin. Ft.	Special Sanitary Clean Out Each	Special 6" x 6" San Sewer Wye Each
3	7+50 to 15+50	Lt	800									
4	11+00	Lt		75								
5	9+00	Lt			1							
5	12+00	Lt			1							
5	15+00	Lt			1							
9	7+50 to 15+50	Rt				800						
10	11+50	Rt					1					
11	12+50	Rt						1				
12	11+00	Rt							1			
13	11+00	Rt								30		
15	11+00	Rt									1	
16	11+00	Rt										1
Totals Carried to Sheet 3			800	75	3	800	1	1	1	30	1	1



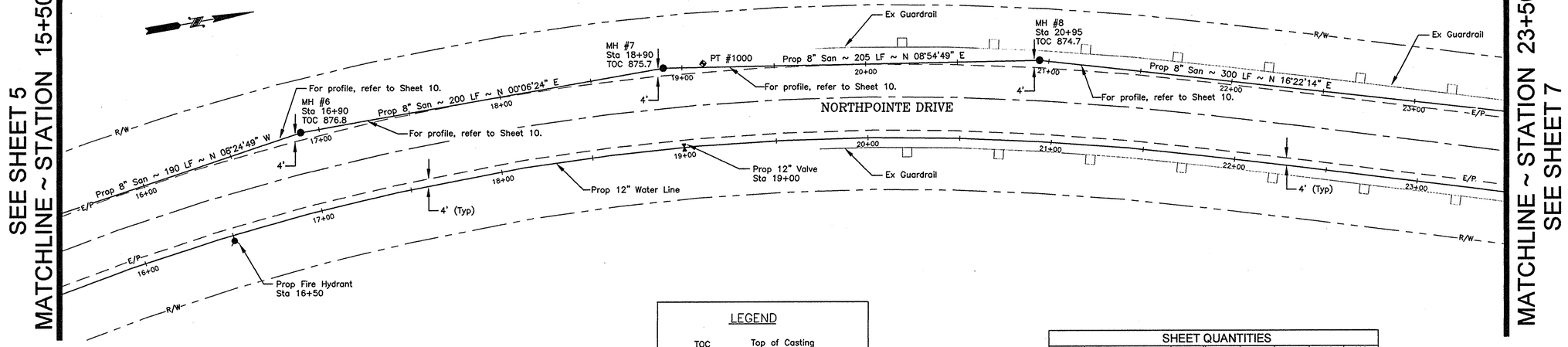
WATER LINE PROFILE
STA 7+50 to STA 15+50

KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
PLAN AND PROFILE

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS
Date:	January 12, 2006
Scale:	Horiz: 1" = 30' Vert: 1" = 5'
Project No.:	COZ0509
Sheet	5 Of 11



0 30 60

Scale: 1" = 30'

NOTES

All field data is shown as provided by Bowman Surveying.

Sheet stationing is based on the centerline of the proposed water line.

Refer to Sheets 9 and 10 for sanitary sewer profile.

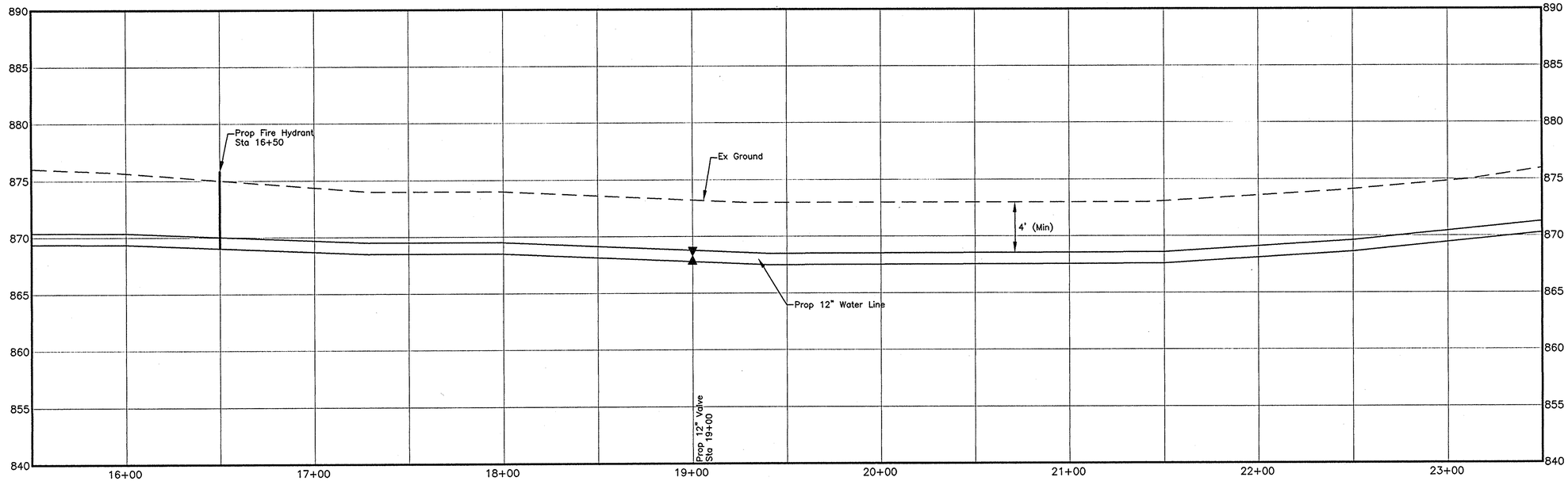
PT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
1000	Railroad Spike	735056.92	2101436.26	875.32
5006	Manhole #6	734835.47	2101434.58	876.8
5007	Manhole #7	735035.47	2101434.95	875.7
5008	Manhole #8	735238.00	2101466.72	874.7

LEGEND

TOC	Top of Casting
W	Existing Meter
	Existing Manhole
	Survey Control Point
	Proposed Valve
	Proposed Fire Hydrant
	Proposed Manhole
R/W	Ex. Right-of-Way
E/P	Ex. Edge of Pavement
Stm	Ex. Storm Sewer
WL	Ex. Water Line
San	Ex. Sanitary Sewer

SHEET QUANTITIES

REF #	STATION	SIDE	603 6" PVC Pipe Lin. Ft.	604 Manhole ODOT, Type 3 Each	638 12" Water Main, C900 Lin. Ft.	638 Fire Hydrant w/ Valve Each	638 12" Valve Each
3	15+50 to 23+50	Lt	800				
5	16+90	Lt		1			
5	18+90	Lt		1			
5	20+95	Lt		1			
9	15+50 to 23+50	Rt			800		
10	16+50	Rt				1	
11	19+00	Rt					1
Totals Carried to Sheet 3			800	3	800	1	1



WATER LINE PROFILE
STA 15+50 to STA 23+50

KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
PLAN AND PROFILE

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS

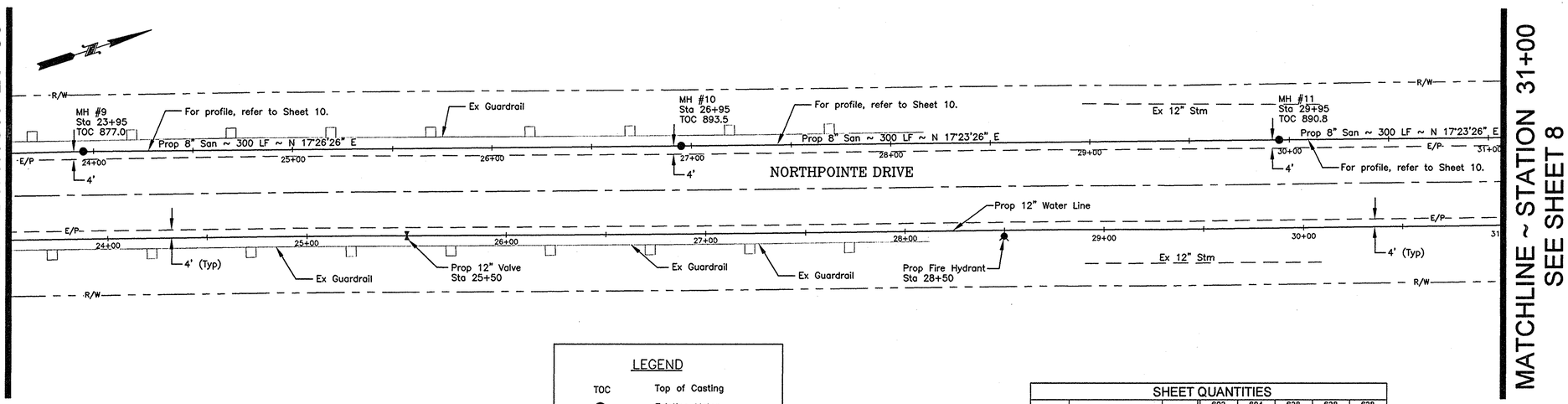
Date: January 12, 2006

Scale: Horiz: 1" = 30' Vert: 1" = 5'

Project No.: COZ0509

Sheet 6 Of 11

SEE SHEET 6
MATCHLINE ~ STATION 23+50



SEE SHEET 8
MATCHLINE ~ STATION 31+00

PT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
5009	Manhole #9	735525.84	2101551.27	877.0
5010	Manhole #10	735812.05	2101641.19	893.5
5011	Manhole #11	736098.34	2101730.86	890.8

0 30 60
Scale: 1" = 30'

NOTES

All field data is shown as provided by Bowman Surveying.

Sheet stationing is based on the centerline of the proposed water line.

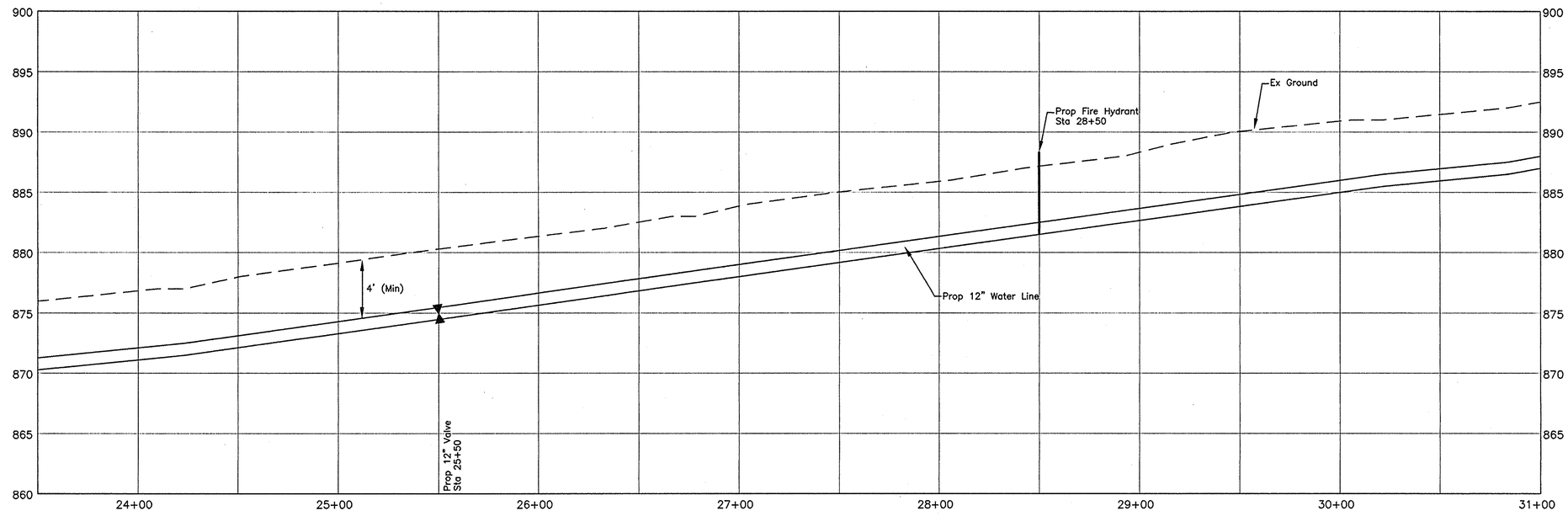
Refer to Sheets 9 and 10 for sanitary sewer profile.

LEGEND

TOC	Top of Casting
W	Existing Meter
	Existing Manhole
	Survey Control Point
	Proposed Valve
	Proposed Fire Hydrant
	Proposed Manhole
R/W	Ex. Right-of-Way
E/P	Ex. Edge of Pavement
Stm	Ex. Storm Sewer
WL	Ex. Water Line
San	Ex. Sanitary Sewer

SHEET QUANTITIES

REF #	STATION	SIDE	603 8" PVC Pipe Lin. Ft.	604 Manhole ODOT, Type 3 Each	638 12" Water Main, C900 Lin. Ft.	638 Fire Hydrant w/ Valve Each	638 12" Valve Each
3	23+50 to 31+00	Lt	750				
5	23+95	Lt		1			
5	26+95	Lt		1			
5	29+95	Lt		1			
9	23+50 to 31+00	Rt			750		
10	28+50	Rt				1	
11	25+50	Rt					1
Totals Carried to Sheet 3			750	3	750	1	1



WATER LINE PROFILE
STA 23+50 to STA 31+00

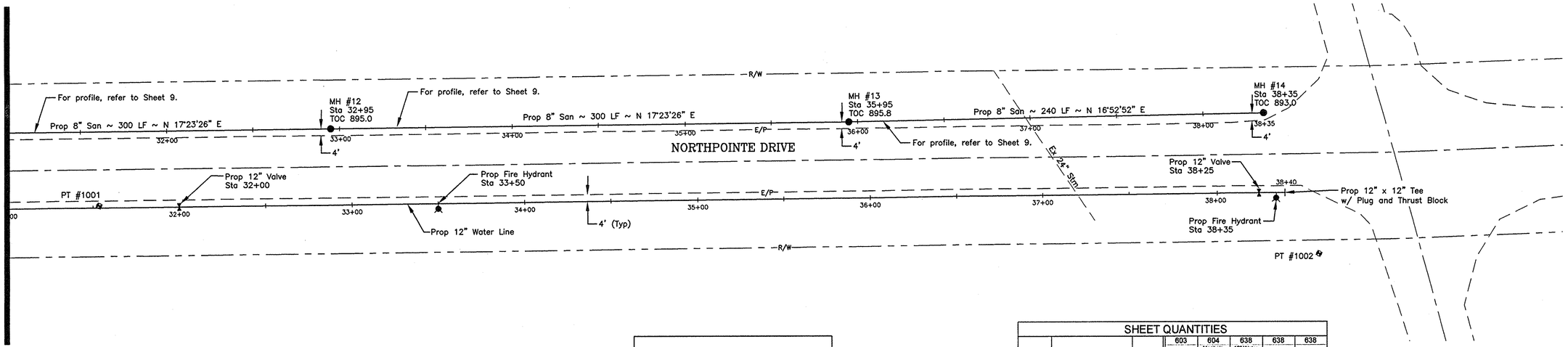
KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
PLAM AND PROFILE

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS
Date:	January 12, 2006
Scale:	Horiz: 1" = 30' Vert: 1" = 5'
Project No.:	COZ0509
Sheet	7 Of 11

SEE SHEET 7
MATCHLINE ~ STATION 31+00



0 30 60

Scale: 1" = 30'

PT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
1001	Railroad Spike	736243.34	2101820.87	875.32
1002	Railroad Spike	736906.20	2102066.99	896.84
5012	Manhole #12	736384.62	2101820.86	895.0
5013	Manhole #13	736670.91	2101910.19	895.8
5014	Manhole #14	736900.57	2101979.88	893.0

NOTES

All field data is shown as provided by Bowman Surveying.

Sheet stationing is based on the centerline of the proposed water line.

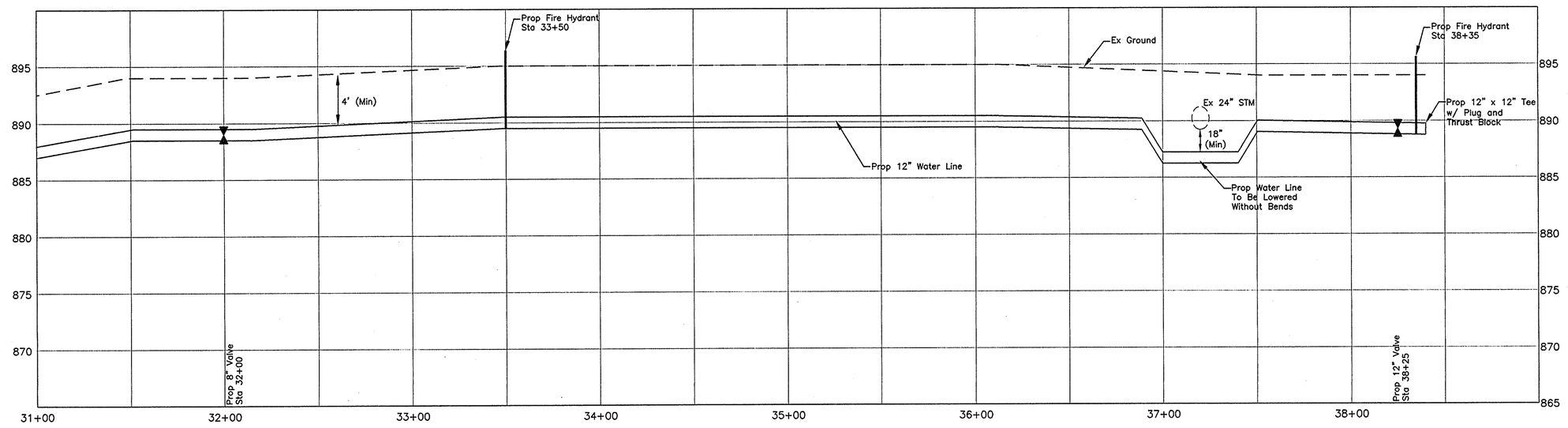
Refer to Sheets 9 and 10 for sanitary sewer profile.

LEGEND

TOC	Top of Casting
W	Existing Meter
	Existing Manhole
	Survey Control Point
	Proposed Valve
	Proposed Fire Hydrant
	Proposed Manhole
R/W	Ex. Right-of-Way
E/P	Ex. Edge of Pavement
Stm	Ex. Storm Sewer
WL	Ex. Water Line
San	Ex. Sanitary Sewer

SHEET QUANTITIES

REF #	STATION	SIDE	603 8" PVC Pipe Lin. Ft.	604 Manhole ODOT, Type 3 Each	638 12" Water Main, C900 Lin. Ft.	638 Fire Hydrant w/ Valve Each	638 12" Valve Each
3	31+00 to 38+35	Lt	735				
5	32+95	Lt		1			
5	35+95	Lt		1			
5	38+35	Lt		1			
9	31+00 to 38+40	Rt			740		
10	33+50	Rt				1	
10	38+35	Rt				1	
11	32+00	Rt					1
11	38+25	Rt					1
Totals Carried to Sheet 3			735	3	740	2	2



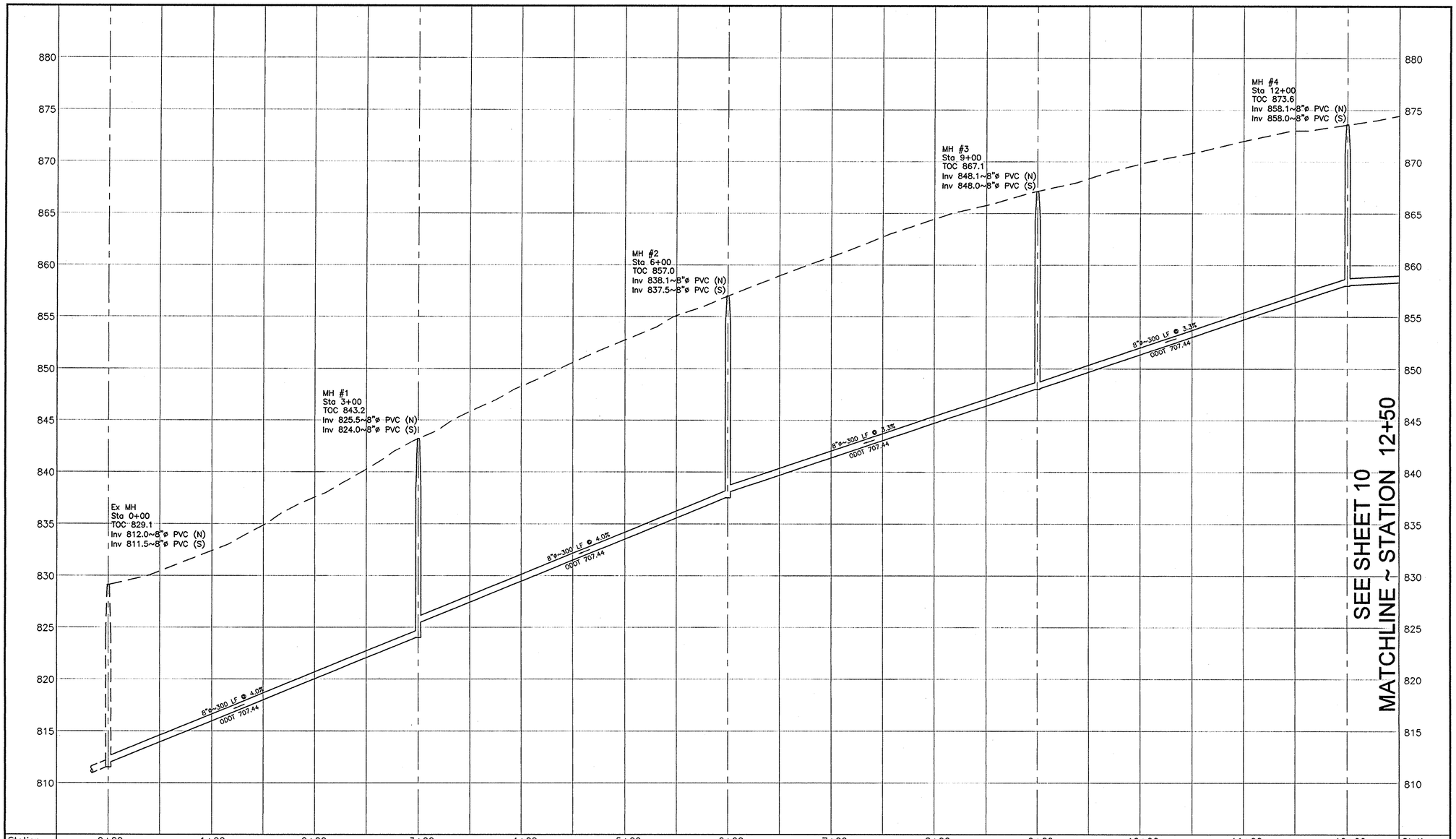
WATER LINE PROFILE
STA 31+00 to STA 38+40

KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
PLAN AND PROFILE

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS
Date:	January 12, 2006
Scale:	Horiz: 1" = 30' Vert: 1" = 5'
Project No.:	COZ0509
Sheet	8 Of 11



Station	0+00	1+00	2+00	3+00	4+00	5+00	6+00	7+00	8+00	9+00	10+00	11+00	12+00	Station
Ex Grade	829.1	832.4	837.5	843.2	848.3	852.7	857.0	860.8	864.4	867.1	869.8	872.0	873.6	Ex Grade
Invert	812.0	816.0	820.0	824.0	829.5	833.5	837.5	841.4	844.7	848.0	851.4	854.7	858.0	Invert
Cut	17.1	16.4	17.5	19.2	18.8	19.2	19.5	19.4	19.7	19.1	18.4	17.3	15.6	Cut

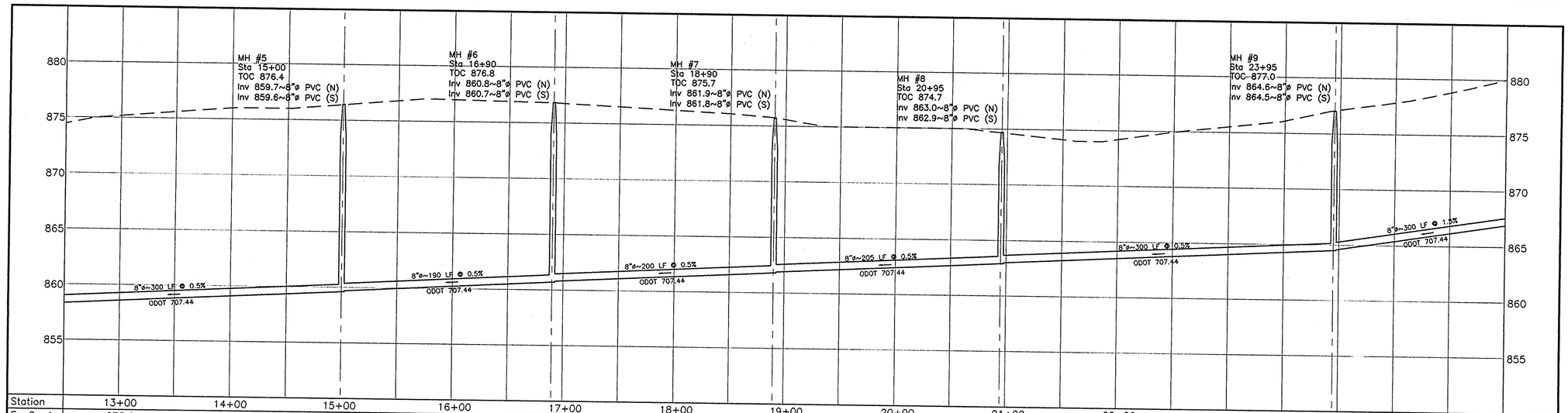
SANITARY SEWER PROFILE
STA 0+00 to STA 12+50

KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
SANITARY SEWER PROFILE

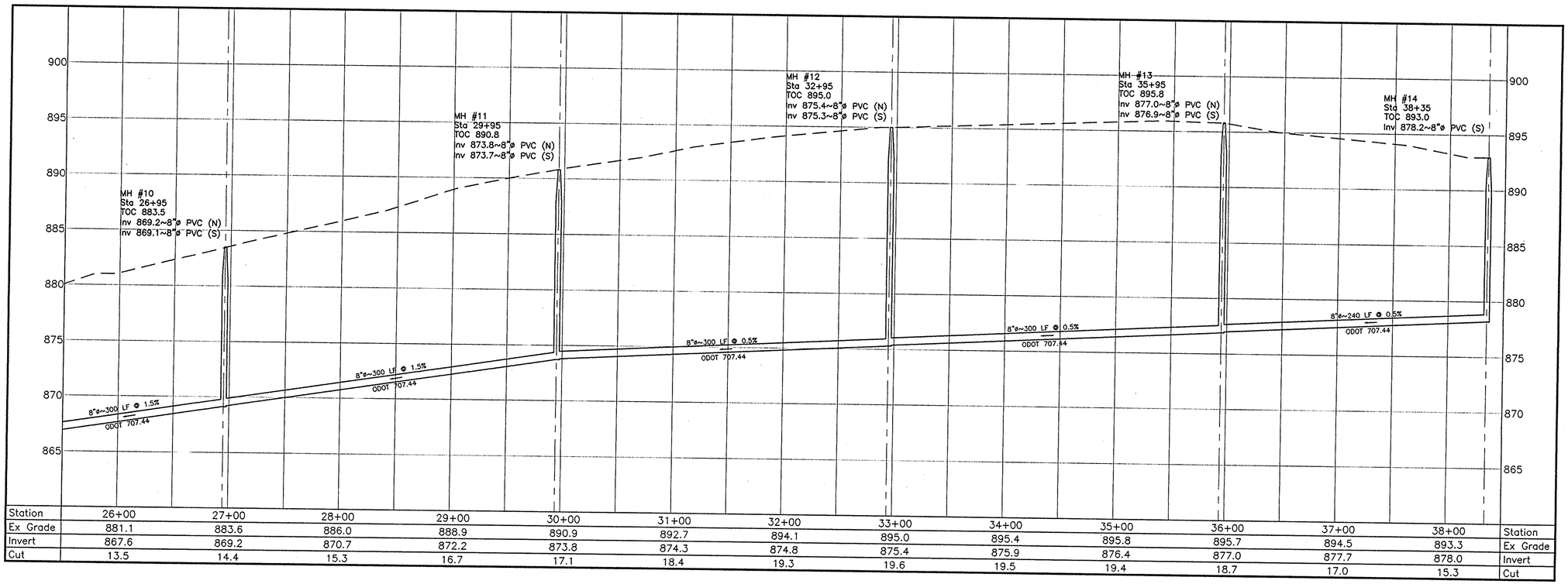
No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS
Date:	December 30, 2005
Scale:	Horiz: 1" = 30' Vert: 1" = 5'
Project No.:	COZ0509
Sheet	9 Of 11



Station	13+00	14+00	15+00	16+00	17+00	18+00	19+00	20+00	21+00	22+00	23+00	24+00	25+00	Station
Ex Grade	875.2	876.0	876.4	877.0	876.7	876.3	875.6	875.0	874.6	874.2	875.5	877.1	878.8	Ex Grade
Invert	858.6	859.1	859.6	860.2	860.8	861.3	861.9	862.4	863.0	863.5	864.0	864.6	866.1	Invert
Cut	16.6	16.9	16.8	16.8	15.9	15.0	13.7	12.6	11.6	10.7	11.5	12.5	12.7	Cut

SANITARY SEWER PROFILE
STA 12+50 to STA 25+50



Station	26+00	27+00	28+00	29+00	30+00	31+00	32+00	33+00	34+00	35+00	36+00	37+00	38+00	Station
Ex Grade	881.1	883.6	886.0	888.9	890.9	892.7	894.1	895.0	895.4	895.8	895.7	894.5	893.3	Ex Grade
Invert	867.6	869.2	870.7	872.2	873.8	874.3	874.8	875.4	875.9	876.4	877.0	877.7	878.0	Invert
Cut	13.5	14.4	15.3	16.7	17.1	18.4	19.3	19.6	19.5	19.4	18.7	17.0	15.3	Cut

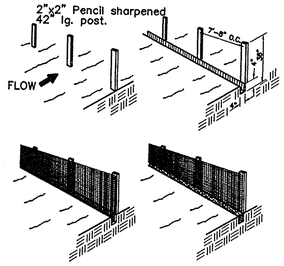
SANITARY SEWER PROFILE
STA 25+50 to STA 38+35

KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE
AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
SANITARY SEWER PROFILE

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS
Date:	January 12, 2006
Scale:	Horiz: 1" = 30' Vert: 1" = 5'
Project No.:	COZ0509



MAINTENANCE:
Silt fences and filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

FABRIC FILTER FENCE:
This sediment barrier utilizes standard strength or extra strength synthetic filter fabrics. It is designed for situations in which only sheet or overland flows are expected.

1. The height of a silt fence shall not exceed 36 inches. Higher fences may impound volumes of water sufficient to cause failure of the structure.

2. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum of a 6-inch overlap, and securely sealed.

3. Posts shall be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When extra strength fabric is used without support fence, post spacing shall not exceed 6 feet.

4. A trench shall be excavated approximately 4 inches wide and 4 inches deep along the line of posts and upslope from the barrier.

5. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least one inch long tie wires or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.

6. The standard strength filter fabric shall be stapled or wired to the fence, and 8 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.

7. When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of Item No. 6 applying.

8. The trench shall be backfilled and soil compacted over the filter fabric.

9. Silt fences shall be removed when they have served their useful purpose but not before the upslope area has been permanently stabilized.

FILTER FABRIC DETAIL
Not to Scale

CONTRACTOR RESPONSIBILITY: Details have been provided on the plans in an effort to help the Contractor provide erosion and sedimentation control. The details shown on the plan shall be considered a minimum. Additional or alternate details may be found in the NRCS (formerly S.C.S.) Manual "Water Management and Sediment Control for Urbanizing Areas." The Contractor shall be solely responsible for providing necessary and adequate measures for proper control of erosion and sediment runoff from the site along with proper maintenance and inspection.

GENERAL LAND CONSERVATION NOTES
The Contractor shall provide sediment control at all points where storm water runoff leaves the project, including waterways, overland sheet flow and storm sewers.

Accepted methods of providing erosion/sediment control include but are not limited to: Sediment Basins, Silt Filter Fence, Aggregate Check Dams, and Temporary Ground Cover.

No disturbed area will be denuded for more than 30 days if it is to remain dormant for more than 45 days unless authorized by the City. Permanent or temporary soil stabilization shall be applied to disturbed areas within 14 days after final grade is reached on any portion of the site.

All structural erosion and sediment control shall be placed prior to or as the first step in grading.

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.

Topsoil from the installation of service laterals should be removed and stockpiled. Immediately after approval, the topsoil shall be spread over exposed areas and graded as required to prepare areas for permanent seeding. Application of permanent seeding and mulching shall be as per the Items 659.

All constructed slopes and cuts shall be seeded as each vertical interval of no more than ten (10) feet is completed. The Contractor shall irrigate or water as necessary to establish a healthy, erosion resistant cover crop or grass stand.

If construction takes place from October 1 to February 28, all exposed areas are to be temporarily mulched until March 1 and then permanently seeded as previously specified. Mulching shall be applied at a rate of 100 pounds per 1000 square feet. It shall be anchored with liquid asphalt rapid curing (R.C. 70, 250, or 800) at a rate of 0.04 gallons per square yard. When applied during freezing weather it shall be cut back with a kerosene-like product. In areas where runoff water is concentrated, mulch netting of jute, biodegradable synthetic materials or light-weight paper shall be used to hold the mulch in place. Substitute anchoring methods may be used, such as straight disk or notched disk, to tuck the straw into the seedbed three (3) inches horizontal to the slope.

In addition to the above described work, other notes, contingency quantities, or construction and material specifications may be set forth or called out in the plans or bidding documents. In such cases, the other work shall be performed in addition to the work described above.

The above 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 and equipment shall be included in the unit prices bid for seeding and mulching.

At the completion of construction, all temporary sediment controls shall be removed and all denuded areas shall be stabilized.

MAINTENANCE NOTES
All erosion and sediment control measures will be checked by the owner's representative weekly and within 24 hours after each rainfall to insure that the measures are functioning adequately.

SILT FENCE
Silt fence and filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be immediately.

Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced immediately.

Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier.

Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

INLET PROTECTION
Structures shall be inspected after each rain and repairs made as needed.

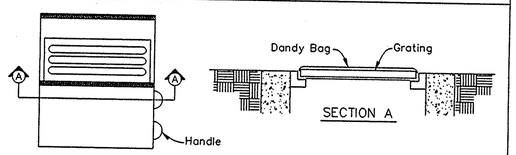
Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

Erosion control structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.

SEEDING AND MULCHING
The contractor shall furnish all labor, equipment, and materials required to accomplish both temporary and permanent seeding.

All non-impervious areas disturbed during construction shall be seeded and mulched, or sodded.

DANDY BAG SEDIMENT FILTER DETAIL



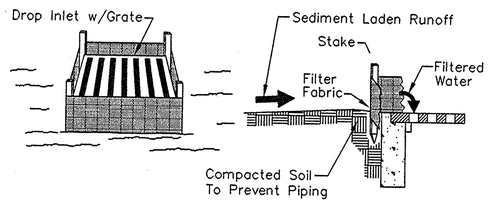
INSTALLATION:

Stand grate on end. Place Dandy Bag over grate. Roll grate over so that open end is up. Pull up slack. Tuck flap in. Be sure end of grate is completely covered by flap or Dandy Bag will not fit properly. Holding handles, carefully place Dandy Bag with grate inserted into catch basin frame so that red dot on the top of the Dandy Bag is visible.

MAINTENANCE:

With a stiff bristle broom or square point shovel remove silt & other debris off surface after each event.

FILTER FABRIC DROP INLET SEDIMENT FILTER DETAIL



SPECIFIC APPLICATION:

This method of inlet protection is applicable where the inlet drains a relatively flat area (slopes no greater than 5 percent) where sheet or overland flows (not exceeding 0.5 cfs) are typical. This method shall not apply to inlets receiving concentrated flows, such as in street and highway medians.

KCS ENGINEERING, LLC
1612 Bennett Avenue
Zanesville, Ohio 43701-5151
Phone: 740-819-7804
Fax: 740-452-7403
email: csites@columbus.rr.com

NORTHPOINTE DRIVE WATER LINE AND SANITARY SEWER EXTENSION
CITY OF ZANESVILLE, OHIO
EROSION CONTROL DETAILS

No.	Revision Description	By	Date

Designed	KJS
Drawn	CMS
Checked	CPS
Approved	KJS

Date: January 12, 2006

Scale: Horiz: As Noted Vert: N/A

Project No.: COZ0509