

GENERAL NOTES

City of Delaware detailed specifications together with the State of Ohio, Department of Transportation and City of Columbus Construction and Material Specifications, including all supplements thereto, most recent edition, shall govern all material and workmanship involved in the improvements shown in these plans unless otherwise noted.

All work to be completely acceptable to City of Delaware officials. No work to be commenced until arrangements have been made with City of Delaware Engineer for inspection. Necessary line and grade staking to be provided by the Owner.

The Contractor shall provide written notification to the City of Delaware Engineer at least (7) seven working days prior to any construction.

The Contractor shall secure and pay for all permits and government fees, licenses, and inspections necessary for the proper execution and completion of the improvements shown on the plan.

All pertinent Standard Construction Drawings are available upon request at the office of the City Engineer.

Approval of these plans shall be in accordance with City of Delaware.

It is the responsibility of the Contractor to visit the site and verify the extent of the work to be performed prior to making his bid. This is especially true with regard to any removal items.

The Contractor and Subcontractor shall be solely 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 sole responsibility of the Contractor and Subcontractor to initiate, maintain and supervise all safety requirements, precautions and programs in connection with the work. The Contractor and Subcontractor shall also abide by all ordinances of the City of Delaware.

The identity and locations of the existing underground facilities known to be located in the construction area have been shown on the plans as accurately as provided by the Owner of the Utility. The City of Delaware and/or the Engineer assumes no responsibility as to the accuracy or the depths of the underground facilities as shown on the plans.

Investigation, location, support, protection and restoration of all existing utilities and appurtenances shall be the responsibility of the contractor. The cost of this work shall be included in the price bid for the various items.

The Contractor is responsible for the investigation, location, support, protection, and restoration of all existing utilities and appurtenances whether shown on these plans or not. The Contractor shall expose all utilities or structures prior to construction to verify the vertical and horizontal effect on proposed construction. The Contractor shall call, toll free, The Ohio Utilities Protection Service (1-800-362-2764) 72 hours prior to construction and shall notify all utility companies at least 48 hours prior to work in the vicinity of their underground lines.

The Contractor is responsible for coordinating the relocation of any utilities as required by the plan with the owner of the affected utility.

Where potential grade conflicts might occur with existing utilities, the Contractor will be required to uncover such utilities sufficiently in advance of laying pipe or duct in order that the Engineer may determine the exact elevation and make any necessary adjustments. Cost of the above shall be included in the price bid for the various items in the Contract.

All field tile broken during excavation shall be replaced to original condition or connected to the curb subdrain or to the storm sewer system as directed by the Engineer.

All traffic control devices shall be furnished, erected, maintained and removed by the Contractor in accordance with the "Ohio Manual of Traffic Control Devices for Construction and Maintenance Operations" copies of which are available from the Ohio Department of Transportation, Bureau of Traffic, 25 South Front Street, Columbus, Ohio 43215.

All traffic lanes shall be fully open to traffic on U.S. Route 36 and Grand Circuit Blvd. at all times. Ingress and egress shall be maintained to public and private property.

The Contractor shall repair or replace any and all existing work damaged during or due to the execution of this contract at his own expense. All said work to be repaired or replaced to the satisfaction of the Owner's Engineer and City of Delaware Engineer.

All signs, fences, shrubs, drainage structures, or other physical features that are to remain in place which are disturbed or damaged during work under the Contract shall be restored to their original condition by the Contractor. Unless otherwise provided in the Contract, the cost of all such work shall be included in the price bid for the various storm sewer items.

The Contractor shall leave the area disturbed by his work to as good of condition as the area was prior to commencement of this work. Any damage to other utilities during this work by the Contractor shall be repaired by the appropriate utility owner at the Contractor's expense.

Any property corner pins or permanent survey markers disturbed during construction shall be reset by a registered surveyor at the Contractor's expense.

Care shall be exercised when working the area around existing trees and shrubs. Any trees or shrubs not marked for removal, and damaged by the Contractor will have to be replaced by the Contractor to the satisfaction of the Owner.

Monument boxes shall be installed at intersections designated on the plan. Boxes shall be Neenah R-1988, Type 36-B, East Jordan Iron Works No. 8365. Monuments to be set in concrete filled 18-inch diameter cored hole, flush with top of pavement.

The contractor shall contact Jeff Huff, Area Plant Supervisor, at (614) 362-0621 one week prior to scheduled roadway construction for the delivery of gas sleeves and line markers.

All pavement joints, particularly where a proposed pavement abuts an existing pavement, and all pavement joints abutting utility structures such as manholes, catch basins, valve boxes, etc., shall be filled in accordance with Item 413.02 of the City of Columbus Construction and Material Specifications or with a material as specified by Item 705.04 of the Ohio Department of Transportation Construction and Material Specifications.

ROADWAY

City streets are to be kept clean and free from mud, stone, dirt, etc.. A temporary construction entrance comprised of a 20x50 Ft. Mat of No. 2 Stone is to be maintained at all sites.

Placement of the surface course of 404 asphalt may be delayed until the majority of local housing construction traffic has diminished at the option of the developer.

Concrete curbs are to be branded during construction as follows:

- "S" - on top of curb for sanitary lateral locations
- "W" - on face of curb for water service box locations
- "WV" - on face of curb for hydrant watch valve locations
- "WM" - on face of curb for main line valve locations.

Brands that are missed must be ground into the curb after it has set.

UTILITY COMPANIES

Columbus & Southern Power Company
61 West William Street
Delaware, Ohio 43015
Attn: Roger Lawrence
(614) 363-1935

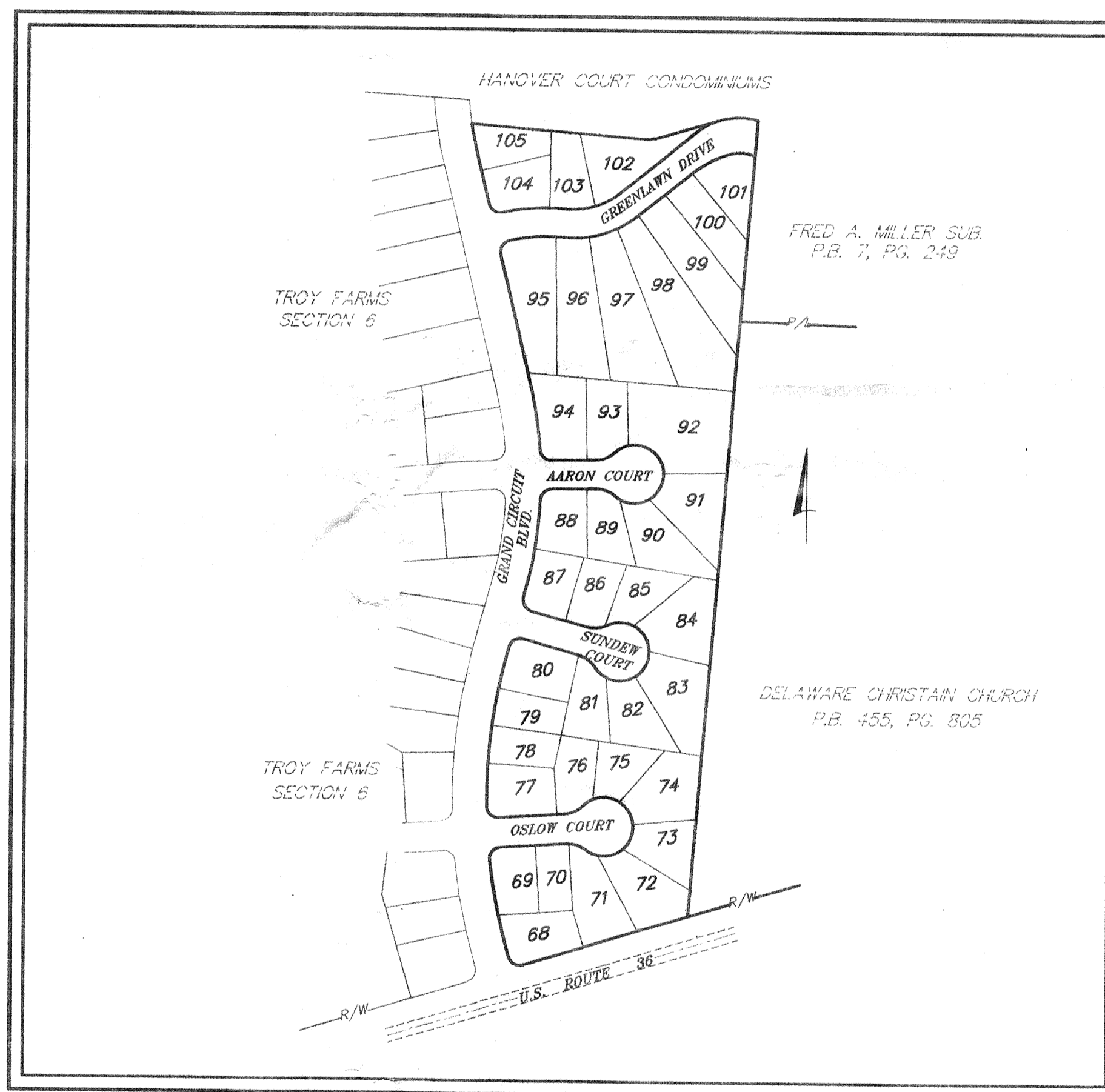
City of Delaware
1 South Sandusky Street
Delaware, Ohio 43015
Attn: Tom Galitza
(614) 368-1504

Warner Cable T.V.
599 Sunbury Road
Delaware, Ohio 43015
Attn: Ken Conn
(614) 363-8944

Columbia Gas of Ohio
28 Estelle Street
Delaware, Ohio 43015
Attn: Jeff Huff
(614) 362-7701

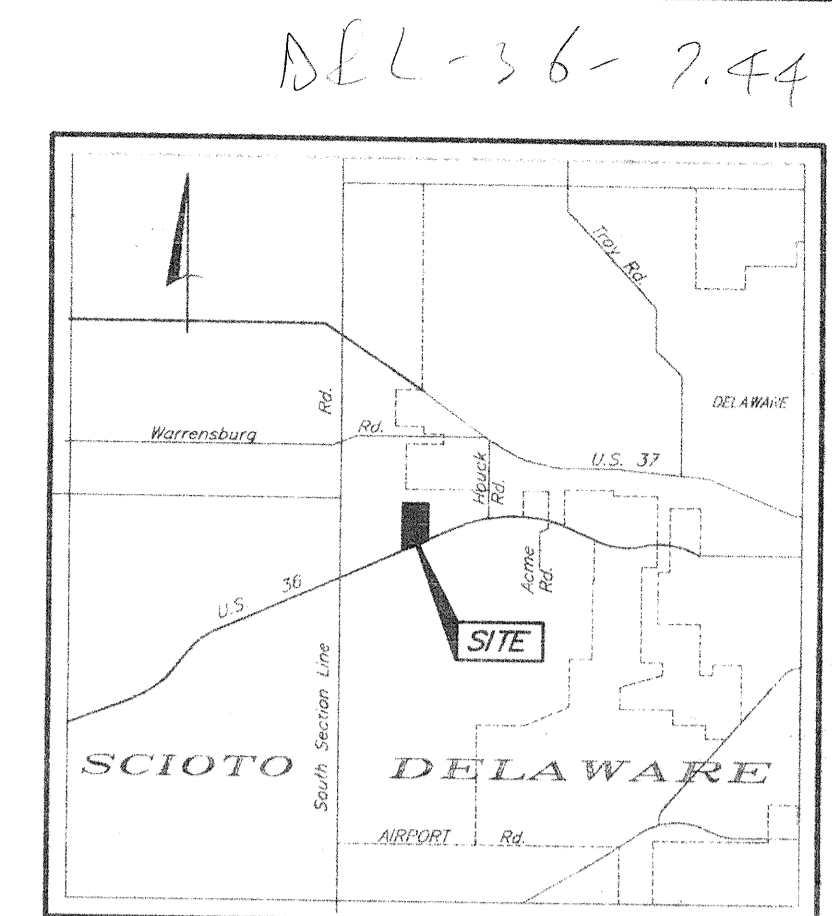
General Telephone Company
19 East Central Avenue
Delaware, Ohio 43015
Attn: Gerry Ownings
(614) 369-0576

CITY OF DELAWARE SUBDIVISION PLAN FOR TROY FARMS SECTION 7 1996



INDEX MAP

SCALE: 1" = 200'



LOCATION MAP

(NO SCALE)

BENCH MARKS

Spike set in 16" Elm 50'± West of V & H #6 at N.E. Corner of Woods. Elev. 949.66

Concrete on Electric Box at East Prop. Line and Greenlawn Drive. Elev. 953.54

STANDARD DRAWINGS

City of Delaware	ODOT
P-1	
P-1a	
P-3	
P-3A	
P-4	
SA-1	
SA-2	
SA-3	
SA-4	
ST-1	
ST-2	
ST-3	
S-1	
WC-1	D-2
WC-2	R-1
WC-3	R-2
WC-4	R-3
W-1	SP-2
W-2	
W-3	SW-1
W-3a	
W-4	
W-5	
W-6	

INDEX OF SHEETS

FACE SHEET	
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APPROVED BY:
CITY OF DELAWARE, OHIO

John R. Ray 6-27-96
John R. Ray, Director of Planning and Community Development

Paul A. Hammersmith 6-27-96
Paul A. Hammersmith, P.E., City Engineer, Ohio Registered Professional Engineer - #54530

William L. Ferrigno 6-27-96
William L. Ferrigno, P.E., Assistant City Engineer, Ohio Registered Professional Engineer - #56942

REVIEWED BY: Burgess & Niple Ltd.

William D. Garrett 6-20-96
Burgess & Niple Ltd., Review Engineer for the City of Delaware, William D. Garrett-P.E., Ohio Reg. Prof. Eng. No. 35201

PREPARED BY
EVANS, MECHWART, HAMBLETON & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS
GAHANNA, OHIO

Scott McClintock
Scott McClintock, Ohio Registered Professional Engineer - #54890

5/9/96
Date

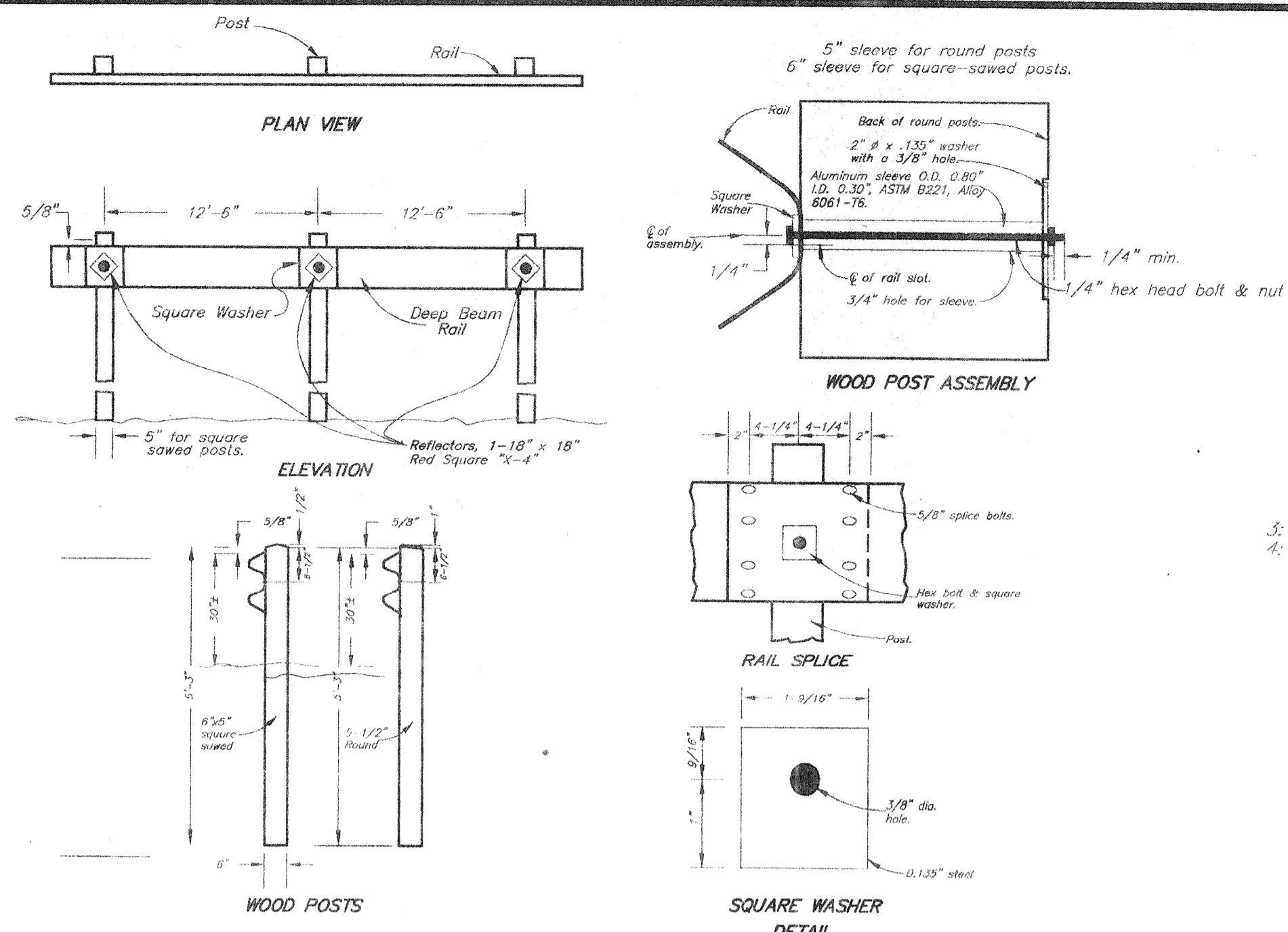
Council Ordinance No.

Date Adopted

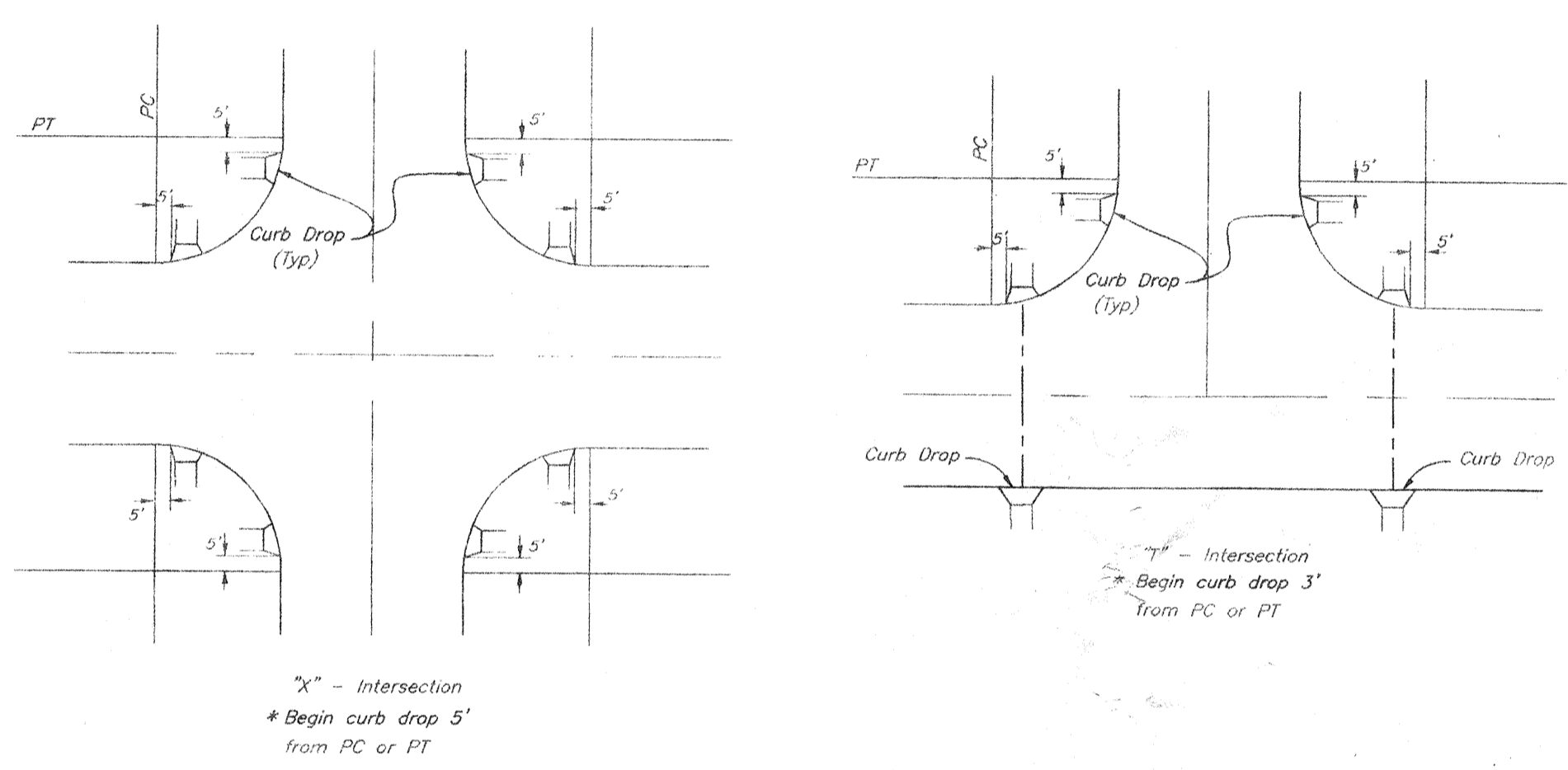
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ESTIMATE OF QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
STREET			
201	Lump	Sum	Clearing and Grubbing
202	3	Each	Temporary Barricade Removed
203	4065	C.Y.	Excavation Including Embankment (R/W Only)
Spec.	2	Each	Temporary Barricade
*301	975	Tons	Bituminous Aggregate Base
*304	40	C.Y.	8" Aggregate Base (Temporary Turn Around)
*402	435	Tons	Asphalt Concrete
*404	325	Tons	Asphalt Concrete
*404	20	Tons	2" Asphalt Concrete (Temporary Turn Around)
*408	1,365	Gal.	Prime Coat
605	2,395	L.F.	4" Pipe Underdrain
609	2,395	L.F.	Curb & Gutter
STREET (U.S. 36 Widening)			
202	50	S.Y.	Ex. Berm Removed and Disposed Of
202	20	L.F.	Ex. Curb and Gutter Removed and Replaced
*301	40	Tons	Bituminous Aggregate Base
*304	60	C.Y.	Aggregate Base
*402	10	Tons	Asphalt Concrete
*404	10	Tons	Asphalt Concrete
605	210	L.F.	Aggregate Underdrain
641	Lump	Sum	Pavement Marking
659	1670	S.Y.	Seeding & Mulching
809	1	Each	Fire Hydrant, Relocated
STORM SEWER			
601	15	C.Y.	Rock Channel Protection, Type "B"
603	905	L.F.	12" Storm Sewer, Cl. III Pipe
603	170	L.F.	12" Storm Sewer, Cl. IV Pipe
603	330	L.F.	18" Storm Sewer, Cl. III Pipe
603	80	L.F.	18" Storm Sewer, Cl. IV Pipe
604	3	Each	Manhole, As Per ST-2
604	8	Each	Curb and Gutter Inlet
604	4	Each	Catch Basin 2-2B
604	2	Each	Catch Basin 2-2B w/Window
604	3	Each	O.D.O.T. HW-1
WATER			
*801	900	L.F.	2" Ductile Iron Watermain
*801	20	L.F.	6" Ductile Iron Watermain
*801	865	L.F.	8" Ductile Iron Watermain
*802	4	Each	6" Valves W/ Box (Including Hydrant Valves)
*802	2	Each	8" Valves W/ Box
*805	6	Each	3/4" Water Service, Long (Complete)
*805	29	Each	3/4" Water Service, Short (Complete)
*805	1	Each	3/4" Water Service, Long (Complete), Install on Ex. 8"W.M. (To Be Pushed Under Ex. Pavement)
*809	4	Each	Fire Hydrant, Type "A"
SANITARY			
604	3	Each	Manhole
*901	680	L.F.	8" Sanitary Sewer
*914	61	L.F.	6" Riser Pipe
*915	20	Each	8" x 6" Wye
*915	2	Each	8" x 6" Wye, Install on Ex. 8" Sanitary Sewer
*918	265	L.F.	6" Service Pipe, Long (1 Per Trench)
*918	470	L.F.	6" Service Pipe, Long (2 Per Trench)
*918	145	L.F.	6" Service Pipe, Long (1 Per Trench) Extend from Ex. Wye
*918	150	L.F.	6" Service Pipe, Long (2 Per Trench) Extend from Ex. Wye
*918	145	L.F.	6" Service Pipe, Long (2 Per Trench) Install on Ex. 8" Sanitary Sewer

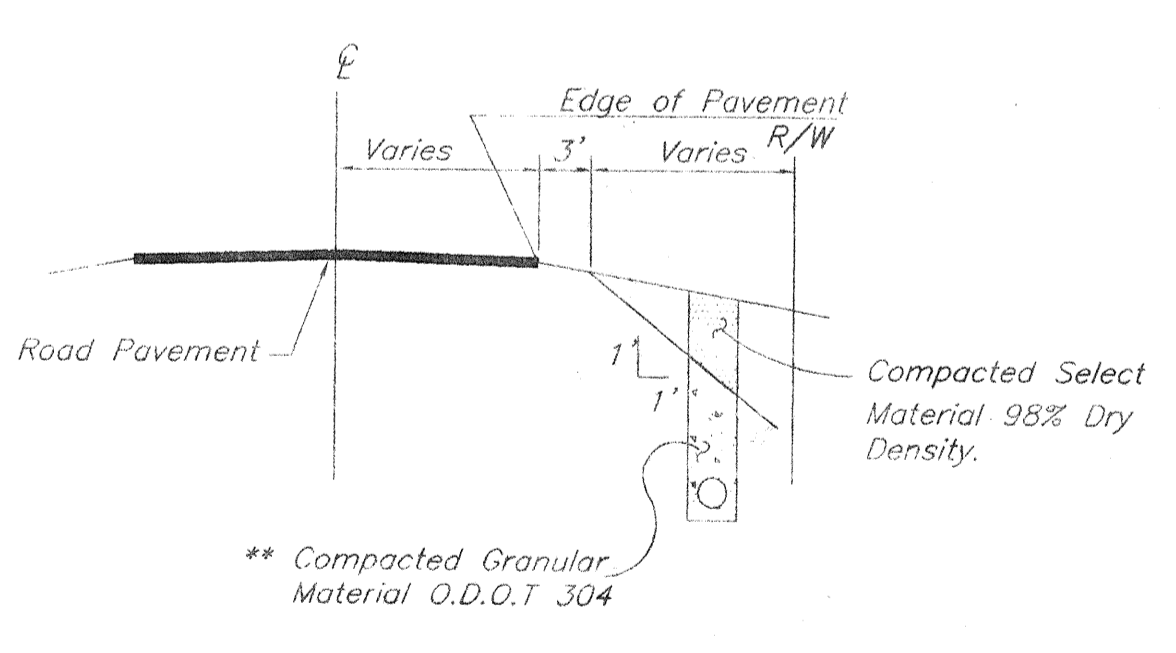
Calc. By: _____ Date: _____ Chk'd By: _____ Date: _____
 Refer to Erosion Control Plan For Pertinent Pay Items.
 * Item Referenced From The City Of Columbus Construction & Materials Specifications.



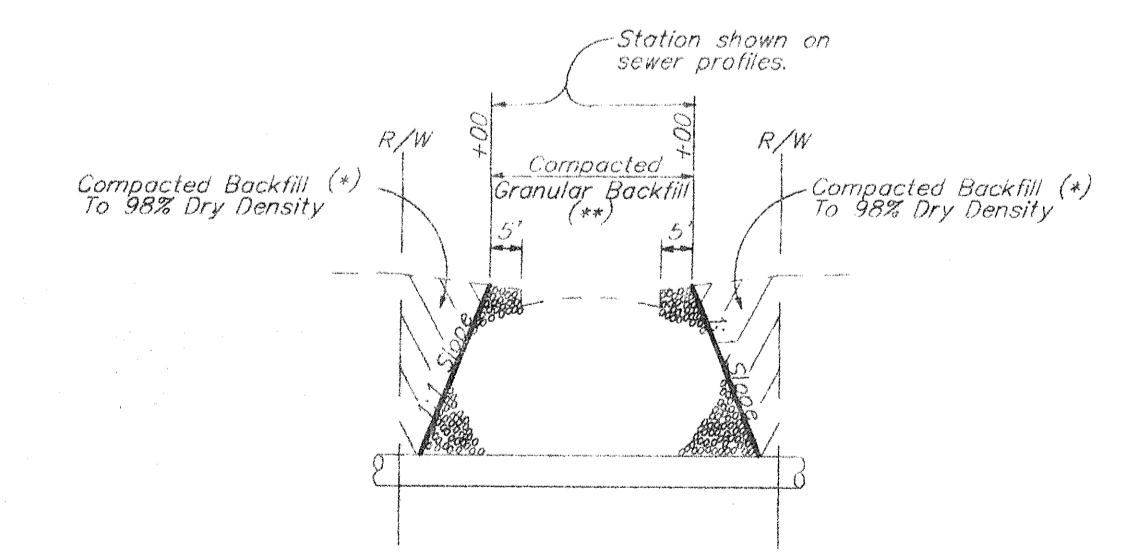
TEMPORARY BARRICADE DETAIL



CURB DROP DETAILS



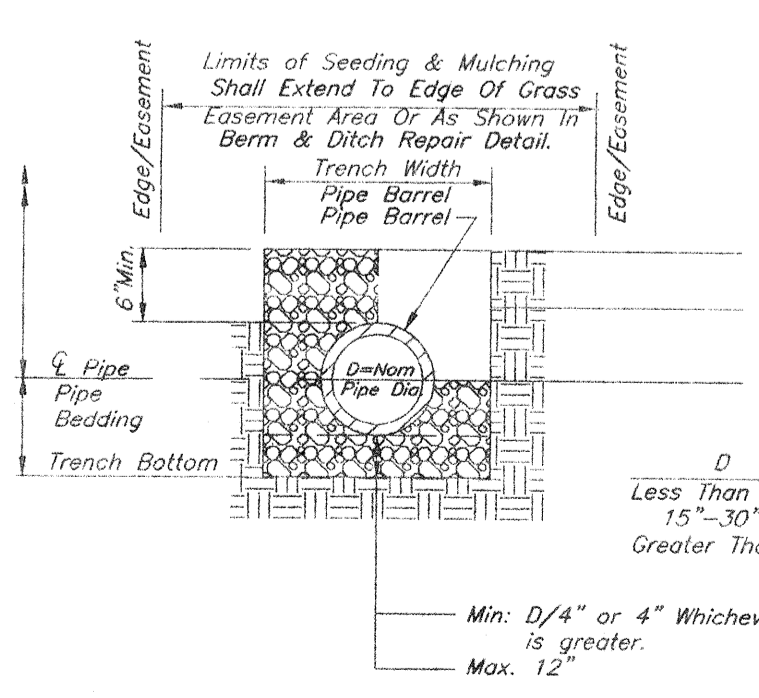
BACKFILLING WITHIN RIGHT-OF-WAY (No Scale)



DETAIL OF BACKFILL IN R/W (No Scale)

BACKFILL NOTES

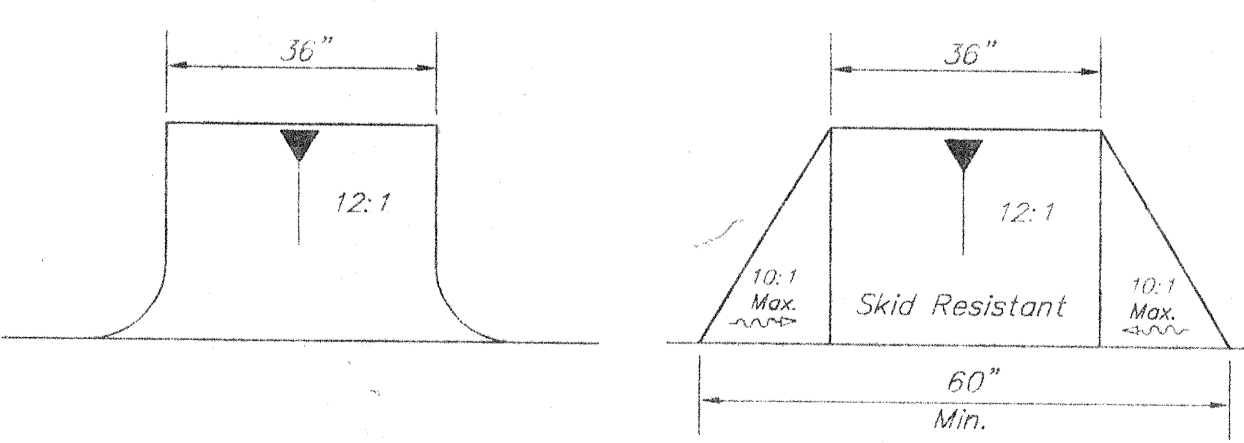
Utility trenches outside the right-of-way are to be backfilled with soils meeting the requirements of item 203 (100pcf or greater). These trenches are to be compacted to 95% of maximum dry laboratory weight at 42% of optimum moisture.



SEWER PIPE INSTALLATION (No Scale)

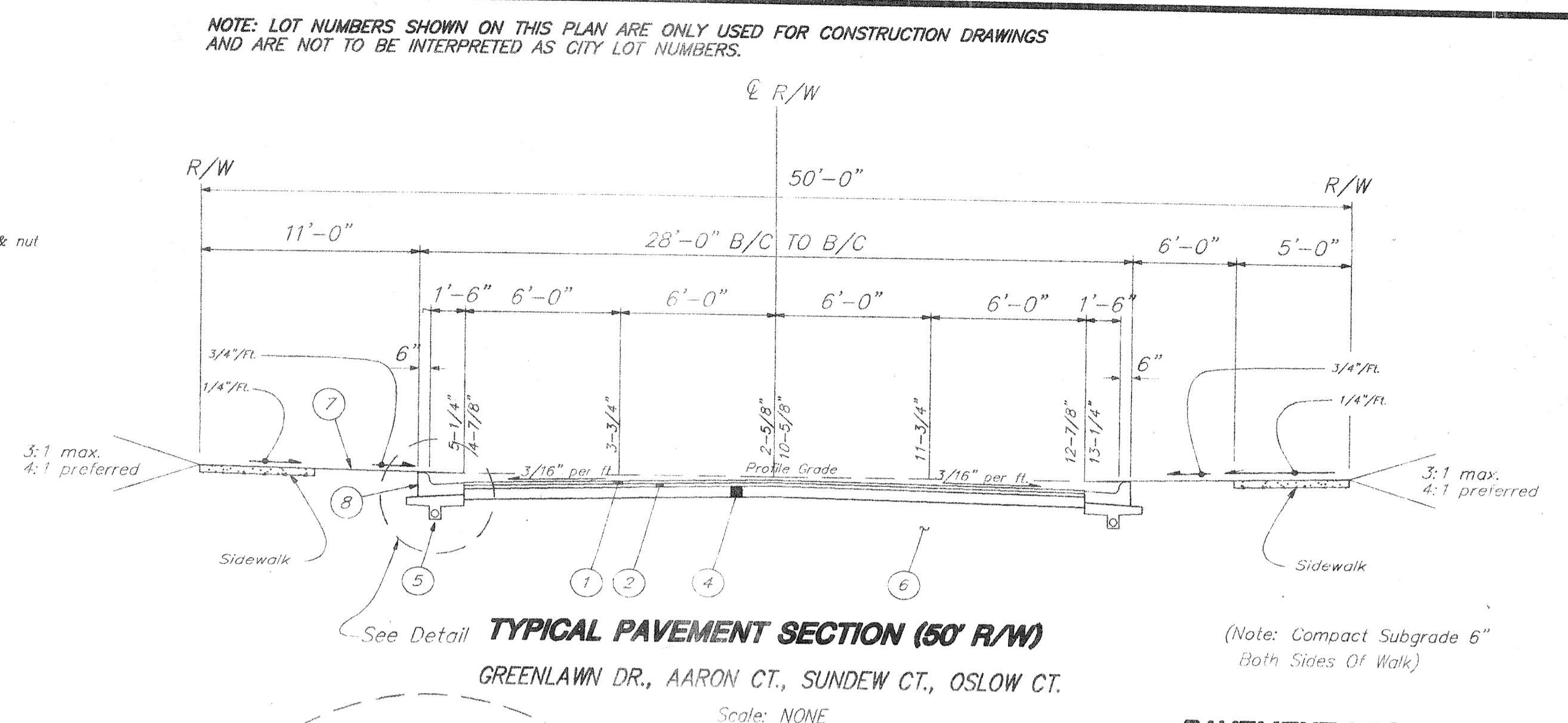
BEDDING MATERIAL		AASHTO M43 SIZE	
D	Less Than 15"	67.7 OR 3	
	15"-30"	6 OR 67	
	Greater Than 30"	57 OR 67	

* PVC Pipe Use Compacted Granular Backfill For Sewer Pipe 6" To 27". Bedding Material Shall Extend From Trench Bottom To 6" Minimum Above The Top Of Pipe.



CURB RAMP DETAIL

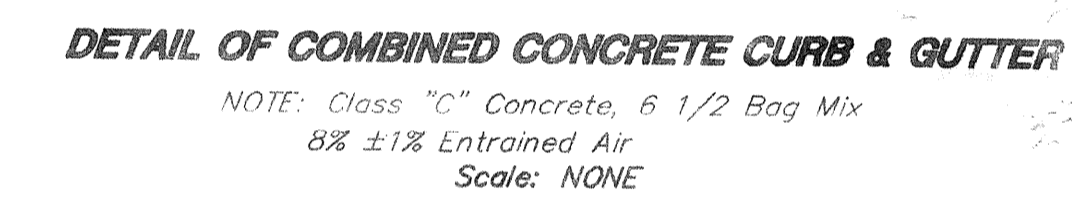
Curb ramps shall be constructed to the latest A.D.A. Standards, meeting all requirements as to shape, materials and finish and in accordance with Std Dwg WC-3.



TYPICAL PAVEMENT SECTION (50' R/W)
 GREENLAWN DR., AARON CT., SUNDEW CT., OSLOW CT.

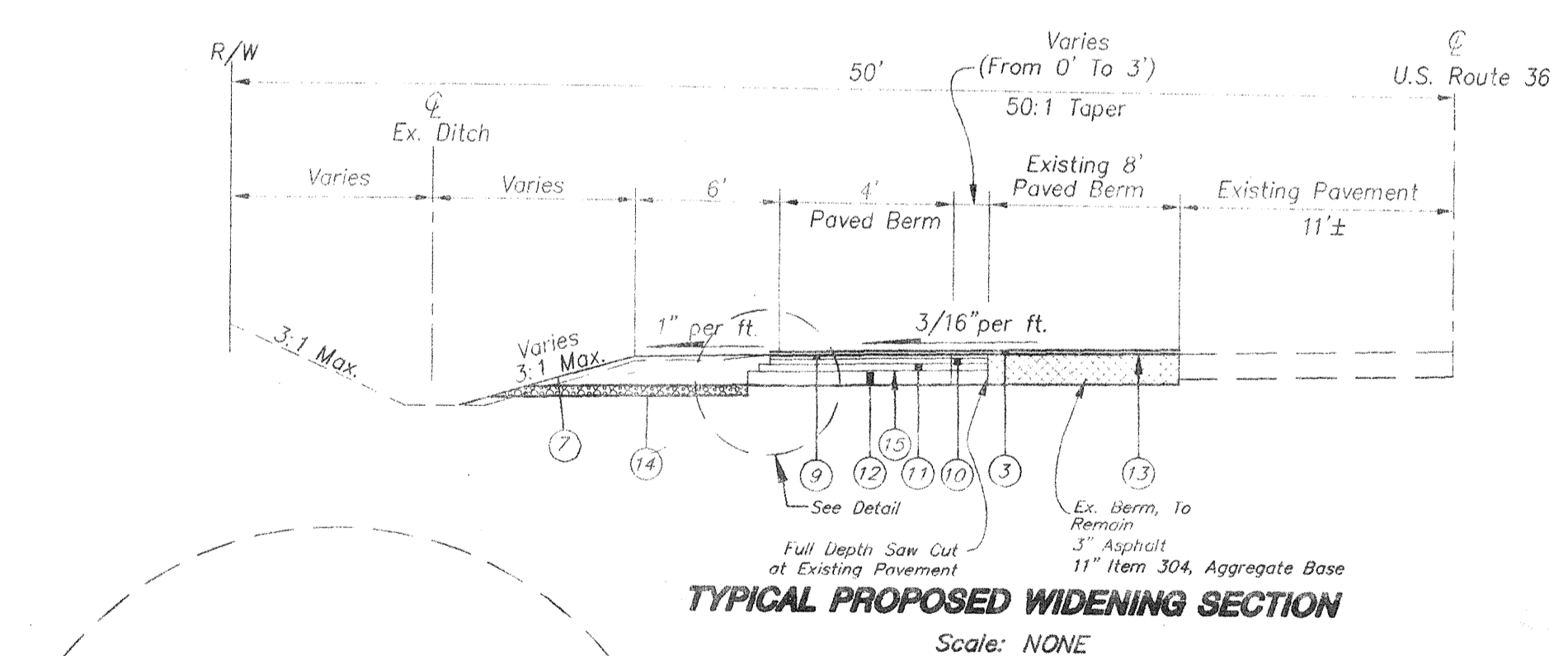
PAVEMENT LEGEND

- 1 Item 404, 1 1/2" Asphalt Concrete (Shall not be placed until after a substantial number of housing units have been completed, and local construction traffic minimized. Final timing to be determined at the preconstruction meeting.)
- 2 Item 402, 1/2" Asphalt Concrete
- 3 Item 404, Variable Depth Asphalt Concrete Leveling Course, As Required (See Sheet 7).
- 4 Item 301, 4 1/2" Bituminous Aggregate Base
- 5 Item 605, 4" Pipe Underdrain
- 6 Item 203, Subgrade Preparation
- 7 Item 659, Seeding & Mulching (See Erosion and Sedimentation Control Plan)
- 8 Item 609, Combined Concrete Curb and Gutter
- 9 Item 404, 1-1/2" Asphalt Concrete
- 10 Item 402, 1-1/2" Asphalt Concrete
- 11 Item 301, 6" Bituminous Aggregate Base
- 12 Item 304, 6" Aggregate Base
- 13 Item 407, Tack Coat, Bituminous, 0.10 Gal/Sq Yd
- 14 Item 605, Aggregate Underdrain (50' Spacing)
- 15 Item 408, Bituminous Prime Coat MC-20 Applied @ 0.35 Gal/Sq Yd



DETAIL OF COMBINED CONCRETE CURB & GUTTER
 NOTE: Class "C" Concrete, 6 1/2 Bag Mix 8% +/-1% Entrained Air
 Scale: NONE

Concrete curb and gutter shall be placed continuously with no driveway knockouts. All driveway knockouts shall be sawcut at the time of house construction.



TYPICAL PROPOSED WIDENING SECTION
 Scale: NONE

City of Delaware, Ohio
TROY FARMS
 SECTION 7
 TYPICAL SECTIONS AND DETAILS

SCALE: None
 Jan., 1996
 06-0077-97
 EVANS, MECHWART, HAMILTON & TILTON, INC.
 CONSULTING ENGINEERS & SURVEYORS

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NOTES CONTINUED

WATER

All water pipe and fittings, and methods of construction and workmanship for water lines and appurtenances shown on these plans shall conform to the rules and regulations of the City of Delaware, Division of Water, current on the date of contract, unless the requirements of such rules and regulations are approved by the following specifications or by the construction details set forth herein.

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.

Water mains shall be ductile iron pipe, Class 52 (AWWA C151) with cement mortar lining and seal coating (AWWA C104) in accordance with City Specifications. Joints shall be rubber gasket push-on mechanical (AWWA C111). Water main fittings shall be of ductile iron with cement mortar lining and seal coating with mechanical joints and shall conform to AWWA C153.

All pipe from the water main connection to the control valve shall be Type K, soft tempered copper tubing conforming in all respects to ASTM B 88. Fittings shall be high quality copper brass with AWWA Approved compression type joints. In general, there will be no fittings permitted between the water main connection and the control valve.

All gate valves shall be resilient wedge to meet or exceed the requirements of ANSI/AWWA C509 or the latest revision.

Water lines shall be laid with a minimum of 4' of cover from the finished grade to the top of water main.

If there are any conflicts in grade between water lines and gravity sewers, the water lines shall be lowered during construction.

The Contractor shall be responsible for the horizontal/vertical deflections or bends of the waterlines in accordance with the manufacturers specifications. Deflect waterlines to provide 1'-6" vertical and 10'-0" horizontal clearance with sewers.

A permit for each water service must be obtained from the City of Delaware, Division of Water prior to making a connection to the water service installed as part of this project and prior to making any additional taps into these water lines.

The water service taps shall consist of all pipe, valves, fittings and appurtenances required from and including the water main connection to and including the control valve and the water service (water services).

For water service tap, the water main connection shall be made using a Mueller H-1500B corporation stop. Control valves shall be Mueller H-1504-2 curb stops without drain. Boxes shall be Tyler, size 94E or equal.

The caps and inside of all mainline water valve boxes shall be painted blue, and the caps and inside of all hydrant gate valve boxes shall be painted red with Rustolam.

Water service boxes are to be located in pairs along property line, 6'-0" apart and 6'-0" inside of right-of-way line.

If the top of the operating run is more than 36" below finished grade, an extension stem shall be furnished to bring the top of the operating run to within 24" of finished grade elevation.

Transverse water lines within pavement limits shall be backfilled with compacted granular material to within 6-inches of the subgrade or to existing ground. Granular material shall meet the requirements of Item 310, Grading B (no grits), of the Ohio Department of Transportation Specifications.

Longitudinal water lines under the pavement or sidewalk shall be backfilled with compacted granular material as per Item 310. Longitudinal water lines not within the pavement, driveway or sidewalk may be backfilled with suitable soil compacted in accordance with Item 203 in lieu of granular material. (Note: Also applicable to water services.)

All water lines shall be tested (AWWA 600) and stenoized (AWWA C601) by the contractor in accordance with the City of Delaware and AWWA specifications. Testing shall be done under the supervision of the City Engineer or his authorized representative of the contractor's expense.

The cost of any dewatering operations required for the construction of the water line shall be included in the price bid for the various items.

All fittings shall be adequately restrained with concrete blocking. All mechanical fasteners, bolts, allthread ect. are to receive one coat of rust inhibitive paint. Fittings to be backed with concrete must be thoroughly wrapped in plastic sheeting prior to placing concrete.

Cut sheets shall be submitted and approved by the City prior to the beginning of construction.

Prior to beginning construction the Contractor shall make all arrangements necessary to coordinate and provide full-time inspection service by the City for the proposed work. Cost of inspection shall be paid for by the developer.

It is the policy of the City of Delaware that the design of water distribution system improvements be such that the working pressure shall not be less than 35 pounds per square inch (psi) during peak flow conditions, or minimum of 20 psi during peak flow plus fire flow conditions. Individual booster pumps for the purpose of raising supply line pressure shall not be permitted for residential services.

Fire hydrants are to be Mueller Super Centurion 200" A-423 on Type "A" setting. Hydrants are to be painted with two coats of Federal Safety Yellow, Mojaistic Point E-6069.

For water service taps, the water main connection shall be made using a Mueller B-2500B or Ford FB1000-C corporation stop.

Control valves shall be Mueller B-25209 or Ford B44-G. Boxes shall be Tyler 6500 screw type.

Tapping sleeves are to be Clow F-5205 or Mueller H-616.

SANITARY

The Contractor's specific attention is directed to the requirements of either the infiltration or exfiltration as specified by the City of Delaware, Ohio. Leakage through the joints of the sewer shall not exceed the following allowable limits: 100 gallons per inch of tributary sewer diameter per 24 hours per mile of length or the computed equivalent for shorter lengths and shorter periods of time. All sanitary sewers and services shall be tested. All sanitary sewers shall be subject to and pass the infiltration or exfiltration test prior to acceptance. An air test is acceptable to the City of Delaware. This air test shall be performed according to the current regulations of the City's Engineering Department.

Where the sanitary sewer & storm sewer crosses a proposed storm sewer and waterline the trench shall be backfilled to the bottom of the proposed storm sewer and waterline with compacted granular material, Item 310 grading A, 10 L.F. centered on the storm sewer or waterline. The cost of this work is to be included in the price bid for the various sewer items.

The face of curb shall be marked with a "W" to indicate the location of water services, "H" for hydrant water valves, "W" for water main valves and the top of curb shall be marked with an "S" to indicate the location of sanitary services.

The contractor shall furnish and place approved wye poles made of 2 inches X 2 inches hardwood lumber at all wye locations, ends of extended services, or at the end of each riser where risers are required. The poles shall extend 4'-0" above finished grade, and be painted green on the top 1'-0" and be wired together at splice if more than one pole is required to mark the location. The cost of these poles shall be included in the contract unit price for the various sewer items.

Prior to construction, the Contractor shall verify manhole construction and top of casting elevation. Manholes shall be built or adjusted so the tops conform to the elevations shown on these plans. All manhole adjustments shall be accomplished with precast concrete adjustment rings.

Risers shall be placed on wyes as directed by the Engineer.

Where the cover on the wye branch is in excess of 12 feet below average ground surface, a 45° bend and sufficient riser pipe shall be added to terminate (to the nearest even length of riser pipe) at a depth of ten feet below the ground surface, provided the property being served will not require additional depth.

The Contractor shall obtain all necessary permits prior to construction.

The minimum requirements for sewer pipe on this project shall be extra strength vitrified clay C-700 with ASTM C425 compression joints, or SDR 35, ASTM D3034 polyvinyl chloride (PVC) sewer pipe with an ASTM D1724 Cell Classification of 12454 B or 12454 C, unless otherwise shown on the plans.

Pipe for all 6" services shall be vitrified clay pipe C-700 or PVC sewer pipe ASTM D-3034, SDR-35. The services are subject to either the infiltration or exfiltration test. All service extensions shall be laid at a minimum grade of 1/4" per foot and shall be constructed of the time of construction of the main sewer, unless otherwise directed by the Engineer.

Sanitary manhole lids are to be East Jordan Type 1600A2 and embossed "City of Delaware Sanitary Sewer."

All pipes shall be laid with stone or gravel backing as shown in the details.

Sanitary trench detail shall be in accordance with Standard Drawing ST-4 (Storm Trench Detail).

Roof drains, foundation drains and other clean water connections to the sanitary sewer system are prohibited on this project.

Prior to construction, the Contractor shall verify manhole construction and top of casting elevation. Each manhole shall be constructed with a minimum 5' of brick work under the casting. Manhole adjustment shall be by adjustment rings.

All PVC pipe shall be deflection tested 30 days or more after the trench has been backfilled to finished grade. A rigid mandrel shall be used for the testing. No mechanical pulling devices shall be used. Pipe deflection shall not exceed .5%.

Temporary bulkheads shall be placed, where indicated on the plans, and shall remain in place until removal is directed by the City Engineer.

All 6-inch sanitary service laterals are to be clay dammed at one point along the line to be performed by the builder.

All sanitary lines and laterals are to be designed and installed so as to provide basement service unless otherwise noted.

Sanitary laterals should be installed 2'-0" minimum apart c/c in a 4'-0" minimum trench with 1'-0" minimum bedding around pipes. Ends are to flare to 10'-0" apart or 5'-0" off property line.

The minimum requirements for storm sewer pipe on this project shall be Reinforced Concrete Pipe ASTM C 655 or ASTM C 76 and Non-Reinforced Concrete Pipe ASTM C 14 as per Ohio Department of Transportation Construction and Material Specifications.

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.

Openings shall be provided in the drainage structures to accommodate underdrain outlets. Underdrains to be constructed in accordance with details on the site plan.

The cost of any dewatering operations required for the construction of the storm sewer shall be included in the price bid for the various sewer items.

The cost of any rock excavation shall be included in the price bid for the storm sewer. The bidder shall determine if any rock excavation will be required and adjust his bids accordingly.

Pavement cuts for utility line installations shall be subject to the backfill requirements of Item 912. Pavement shall be placed to match existing grade or 9 inches of 404 asphalt, whichever is greater. Deep trenches may not be partially filled with large size aggregate.

Utility trenches parallel to the road shall be filled and compacted per Item 912 in all areas within the influence of the pavement or berm. Areas within the right-of-way, but outside the roadway influence shall be filled with compactible native material to 98 percent.

Storm sewers, sanitary sewers, and water mains constructed in fill areas shall be constructed after compacted fill has been installed to proposed grade. The storm sewers, sanitary sewers, or water mains, shall be installed as per specified trench installation details.

The flow in all sewers, drains and watercourses encountered shall be maintained by the Contractor at his own expense, and whenever such watercourses and drains are disturbed or destroyed during the prosecution of the work, they shall be restored by the Contractor at his own cost and expense to a condition satisfactory to the Engineer.

All earthwork operations, especially pavement subgrade construction, shall be inspected by a Registered Soils Engineer employed and paid for by the Owner. Additionally, all final grades shall be field checked by the Construction Manager upon completion of Contractor's operations to determine if the site has been constructed to the grades indicated.

All pavement subgrade shall be constructed in accordance with Item 203 of the CMS, the soils report and as directed by the Registered Soils Engineer present onsite. Section 203.12 shall be modified such that all compaction shall be to 100% of the maximum dry unit weight obtained in the laboratory by the "Standard Proctor" compaction test (ASTM D 698). Moisture content of the new fill shall be in the range of ± 2 percent of the optimum moisture content determined by ASTM D 698.

Erosion control measures are to be installed per plan or as directed by the City and is to be maintained until such time that it is no longer required.

CAUTION - NOTICE TO CONTRACTOR The Contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans is based on records of the various utility companies and, where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The Contractor must call the appropriate utility company at least 7 days before any excavation to request exact field location of utilities. It shall be the responsibility of the Contractor to relocate all existing utilities which conflict with the proposed improvements shown on the plans.

For Gas Main Conduits: Columbus Gas of Ohio, Inc. 460-2103 Luther Bleyley

For Electric (CSP), Telephone (General Telephone Co.), and Cable T.V. Conduits: Columbus Southern Power Company 464-7253 Robin Hand

Wheelchair ramps shall be located along the curb radius at intersections beginning 5'-0" in from the PT.

Lane restrictions or closures required during construction must be approved by City Engineering and Public Works Departments a minimum of 2 weeks prior to any work being performed.

Storm manhole lids are to be East Jordan Type 1600A1 and embossed "City of Delaware Storm Sewer."

Contractor is responsible for the provision and maintenance of a portable toilet on the site during all phases of construction.

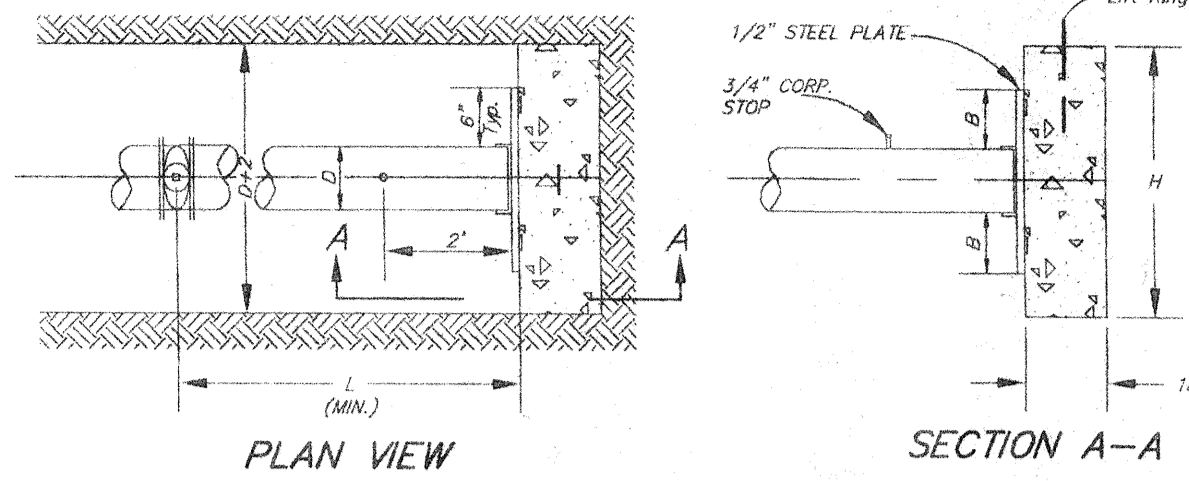
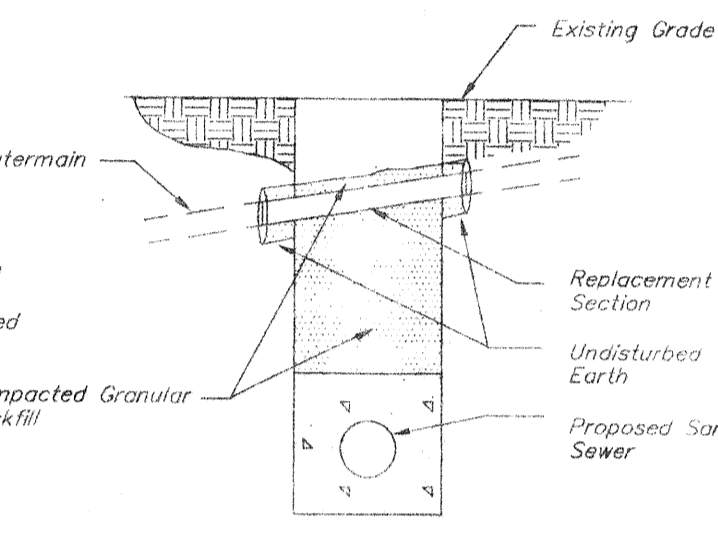


Table with columns: PIPE DIAMETER, H, B, L, VOLUME CU-FT. Rows for diameters 6", 8", 12", 16".

NOTE:

- 1. BACKER DESIGNED FOR 3000 PSF SOIL BEARING.
2. END OF PIPE CAPPED OR PLUGGED.
3. GREASE STEEL PLATE WHERE IN CONTACT WITH CONCRETE BACKER.
4. PLACE CONCRETE AGAINST UNDISTURBED SOIL.
5. THOROUGHLY COMPACT BACKFILL BETWEEN VALVE AND END OF PIPE.

THRUST BLOCK DETAIL END OF PIPE

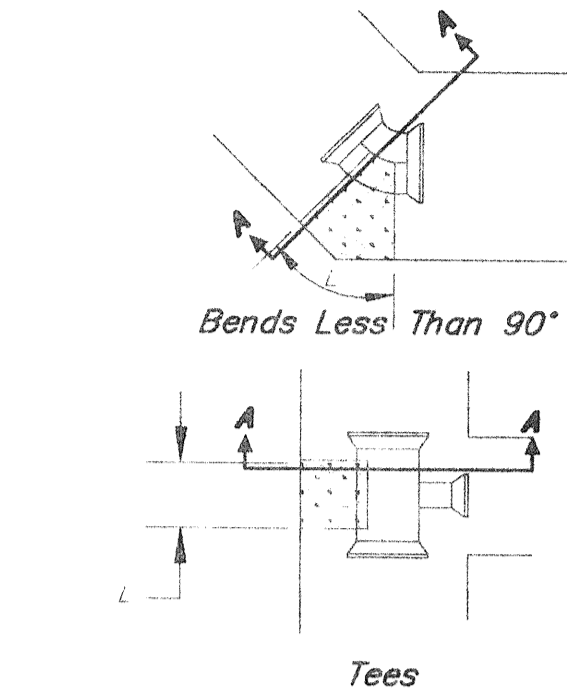


WATERMAIN CROSSINGS DETAIL

(No Scale)

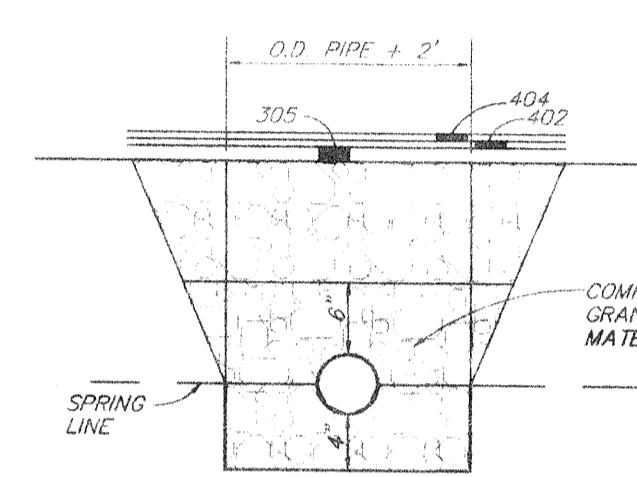
Table with columns: SIZE OF PIPE, DEGREE OF BEND, RUN. Rows for diameters 6", 8", 12", 16", 20", 24".

STEEL WILL BE USED AS REQUIRED BY THE ENGINEER



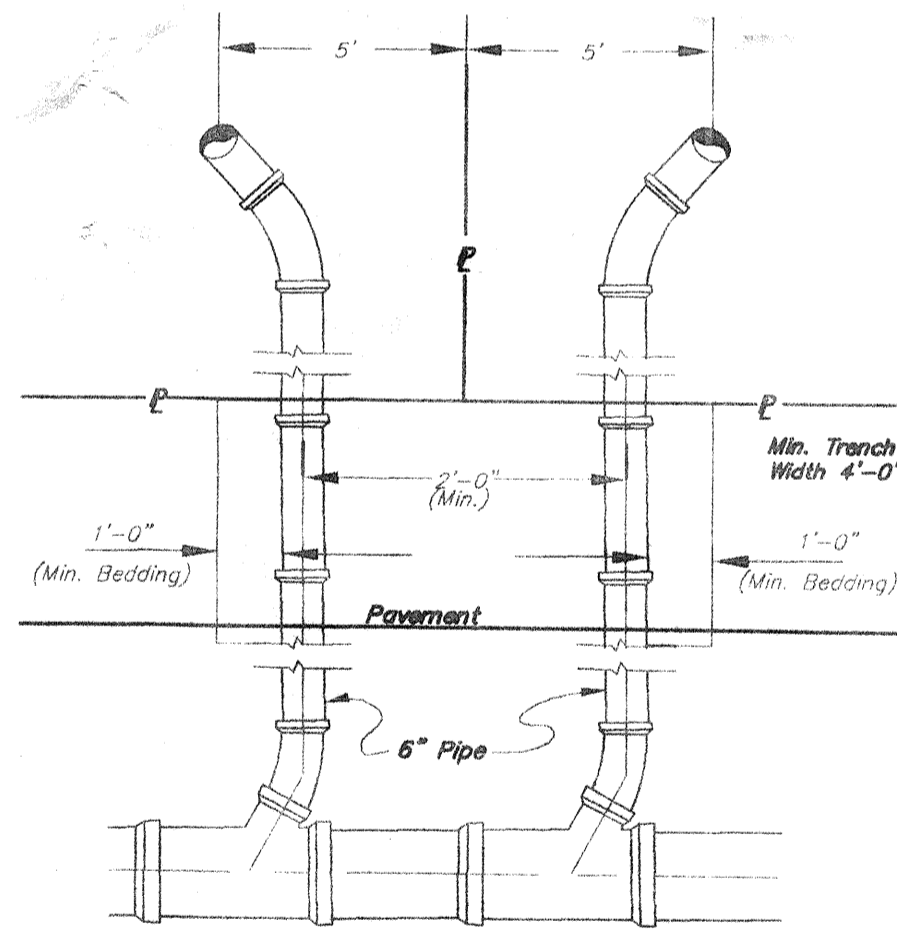
BLOCKING DETAILS

(No Scale)



STORM TRENCH DETAIL

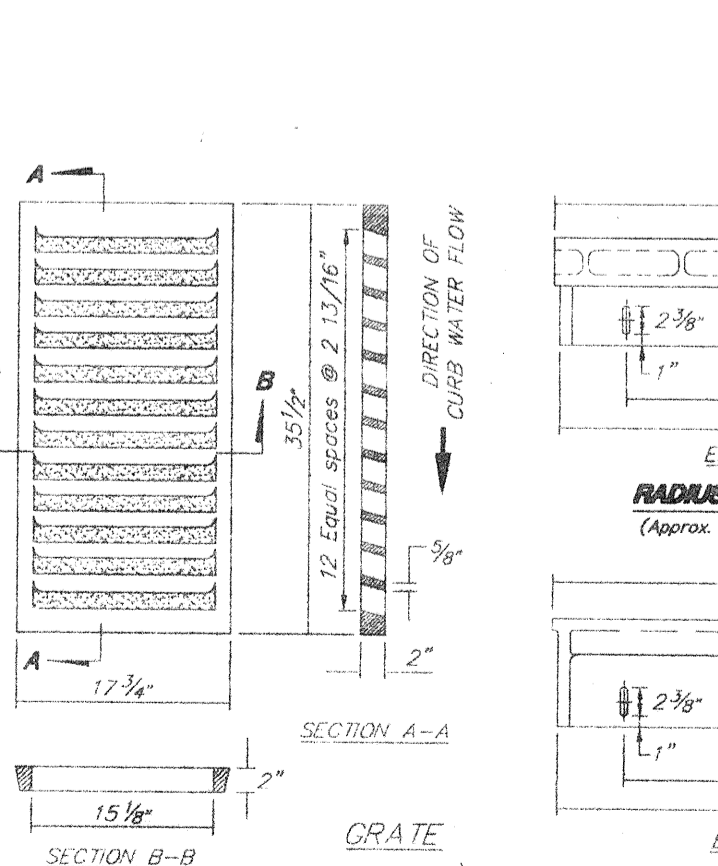
CITY OF DELAWARE, STD. DWG. - ST-4



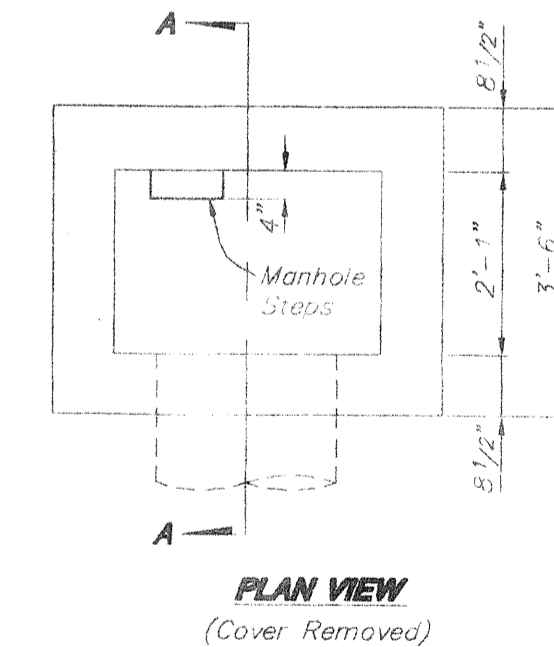
OPTIONAL DUAL LATERAL EXTENSION

ISOMETRIC VIEW FRAME, CURB BOX & GRATE ASSEMBLY

APPROX. WEIGHT = 525 LBS



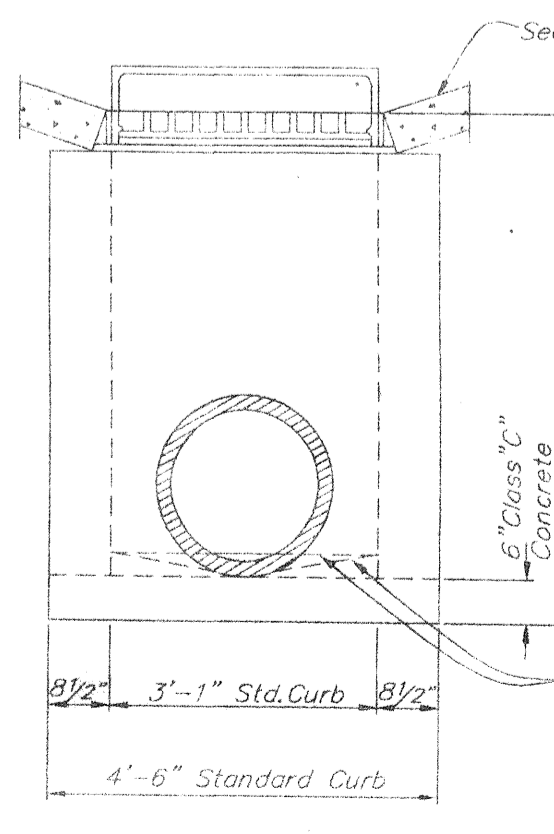
CAST IRON FRAME & GRATE FOR CURB & GUTTER INLET



TYPICAL HYDRANT SETTING TYPE "A"

- NOTE A: The inlet bottom shall be shaped to provide slope of 3" to 4" to outlet pipe.
NOTE B: Outlet pipe may be located in front or back and the outlet pipe shall be directed towards the center of the inlet.
NOTE C: The existing gutter within the area around the inlet where cut out, shall be replaced with Class "C" Concrete or Asphaltic Concrete Paving as ordered.
NOTE D: The backfilling within proposed paved areas shall be well tamped in layers not exceeding 4" in thickness loose measurement and shall be Item 304 compacted granular material.
NOTE E: Walls may be brick, precast sand concrete blocks or cast in place concrete, Class "C".
NOTE F: Place 4" curb drain stubs 30" below top of curb or as directed.
NOTE G: In accordance with standard drawing ST-3, the gutter grate shall be depressed 2" at inlet.

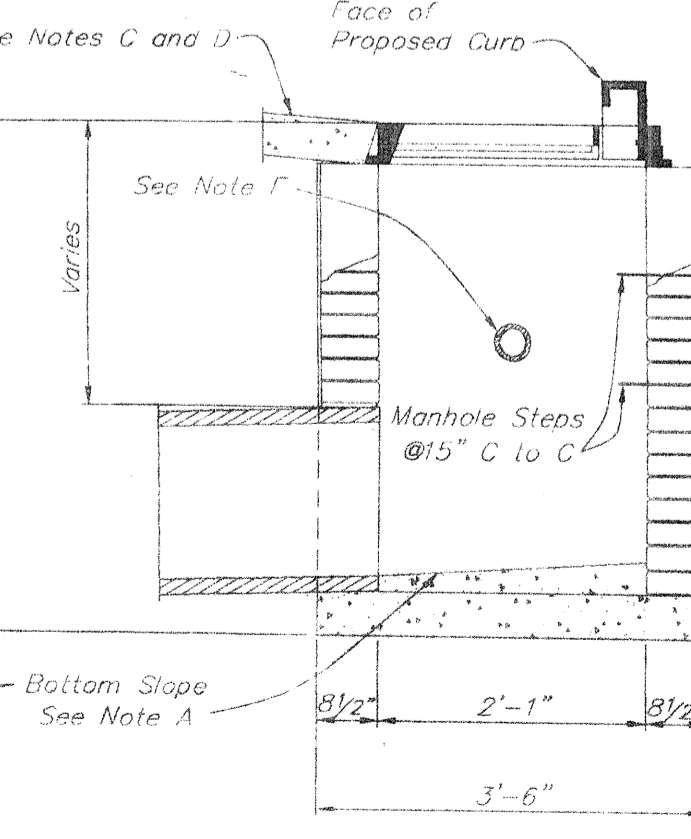
PLAN VIEW (Cover Removed)



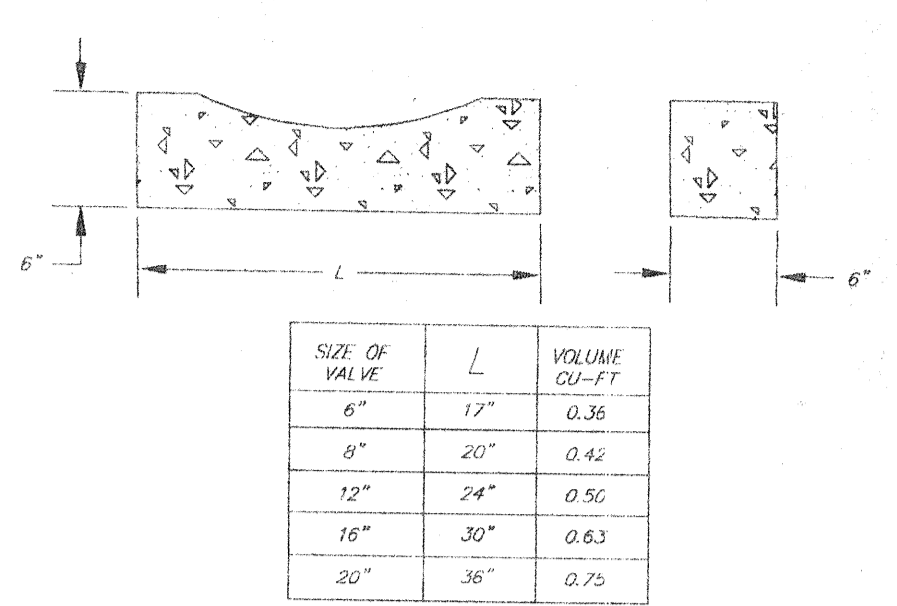
ELEVATION



CURB AND GUTTER INLET



SECTION A-A



CONCRETE VALVE SUPPORTS

(No Scale)

Table with columns: SIZE OF VALVE, L, VOLUME CU-FT. Rows for valve sizes 6", 8", 12", 16", 20".

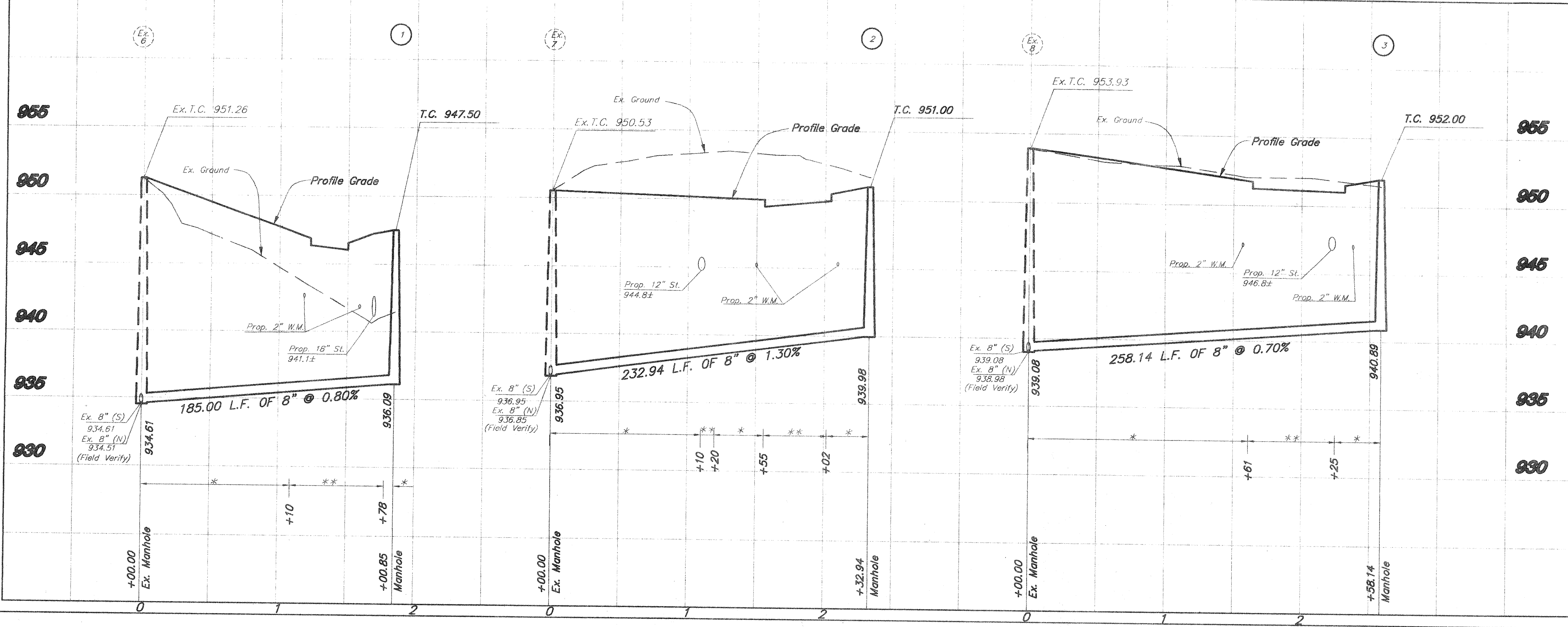
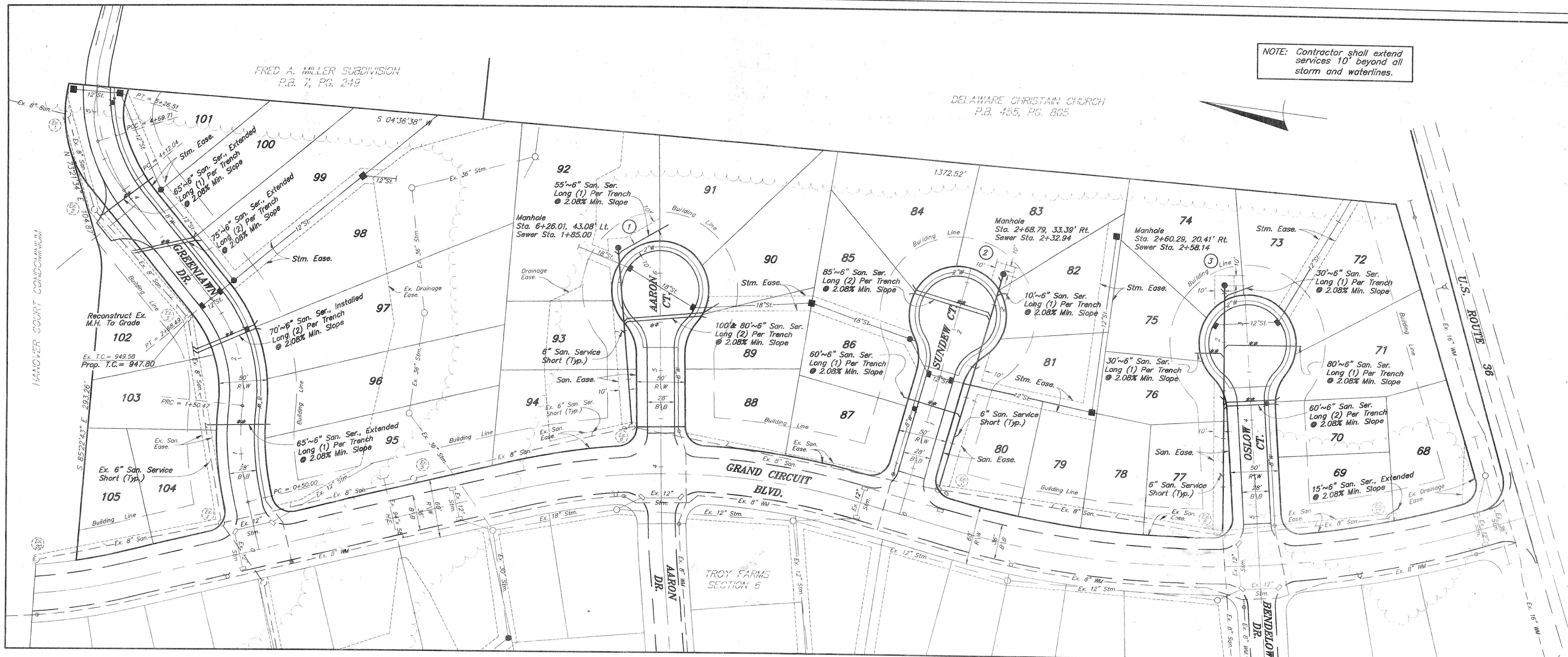
SCALE As Noted

Jan., 1996

City Of Delaware, Ohio TROY FARMS SECTION 7 DETAILS AND NOTES

06-0077-97 EVANS, MECHWART, HAMBLETON & TILTON, INC. CONSULTING ENGINEERS & SURVEYORS

NOTE: Contractor shall extend services 10' beyond all storm and waterlines.



SERVICE SCHEDULE						
LOT NO.	WYE STA.	SHEET NO.	MH - MH	LENGTH OF RISER	LENGTH OF SERVICE	ELEV. @ END OF SERVICE
101	Ex. 3+45	4	Ex.2-Ex.3	7	65'	940.6
100	Ex. 3+95	4	Ex.2-Ex.3	5	75'	939.0
99	Ex. 3+95	4	Ex.2-Ex.3	5	75'	939.0
102	Ex. 4+67	4	Ex.2-Ex.3	6	937.9	937.9
98	5+20	4	Ex.3-Ex.4	2	70'	937.3
97	5+20	4	Ex.3-Ex.4	2	70'	937.3
103	Ex. 5+65	4	Ex.3-Ex.4	3	935.4	935.4
96	Ex. 5+95	4	Ex.3-Ex.4	1	65'	935.7
104	Ex. 6+35	4	Ex.3-Ex.4	2	934.7	934.7
95	Ex. 7+70	4	Ex.4-Ex.5	2	935.5	935.5
105	Ex. 1+20	4	Ex.4-Ex.20	1	935.9	935.9
94	Ex. 10+90	4	Ex.5-Ex.6	4	940.0	940.0
88	Ex. 12+35	4	Ex.6-Ex.7	3	940.2	940.2
87	Ex. 13+40	4	Ex.6-Ex.7	2	939.9	939.9
79	Ex. 15+75	4	Ex.7-Ex.8	4	943.6	943.6
78	Ex. 16+40	4	Ex.7-Ex.8	5	944.1	944.1
69	Ex. 0+95	4	Ex.8-Ex.12	1	943.0	943.0
68	Ex. 1+67	4	Ex.8-Ex.12	15'	942.2	942.2
93	1+00	4	Ex.6 - 1	2	938.7	938.7
89	1+10	4	Ex.6 - 1	80'	938.1	938.1
90	1+10	4	Ex.6 - 1	100'	938.1	938.1
92	1+75	4	Ex.6 - 1	55'	936.5	936.5
91	1+80	4	Ex.6 - 1	55'	937.7	937.7
80	0+58	4	Ex.7 - 2	1	940.0	940.0
86	0+75	4	Ex.7 - 2	1	939.9	939.9
81	1+30	4	Ex.7 - 2	60'	939.7	939.7
84	1+90	4	Ex.7 - 2	85'	941.7	941.7
85	1+90	4	Ex.7 - 2	85'	941.7	941.7
82	2+15	4	Ex.7 - 2	10'	940.5	940.5
83	2+25	4	Ex.7 - 2	10'	940.4	940.4
77	0+60	4	Ex.8 - 3	2	942.8	942.8
70	1+35	4	Ex.8 - 3	60'	941.8	941.8
71	1+35	4	Ex.8 - 3	60'	941.8	941.8
76	1+40	4	Ex.8 - 3	1	942.4	942.4
75	1+80	4	Ex.8 - 3	30'	941.5	941.5
72	1+90	4	Ex.8 - 3	80'	942.6	942.6
73	2+45	4	Ex.8 - 3	30'	941.9	941.9
74	2+50	4	Ex.8 - 3	30'	950.3	950.3

* = Compacted Backfill (203.12)
 ** = Compacted Granular Backfill (See Note Sheet 2)

NOTES:
 * = INSTALL PROPOSED 6" SERVICE ON EXISTING 8" SANITARY SEWER
 ** = EXTEND PROPOSED 6" SERVICE FROM EXISTING 8" x 6" WYE (STATIONS SHOWN REFLECT EXISTING SEWER STATIONING)

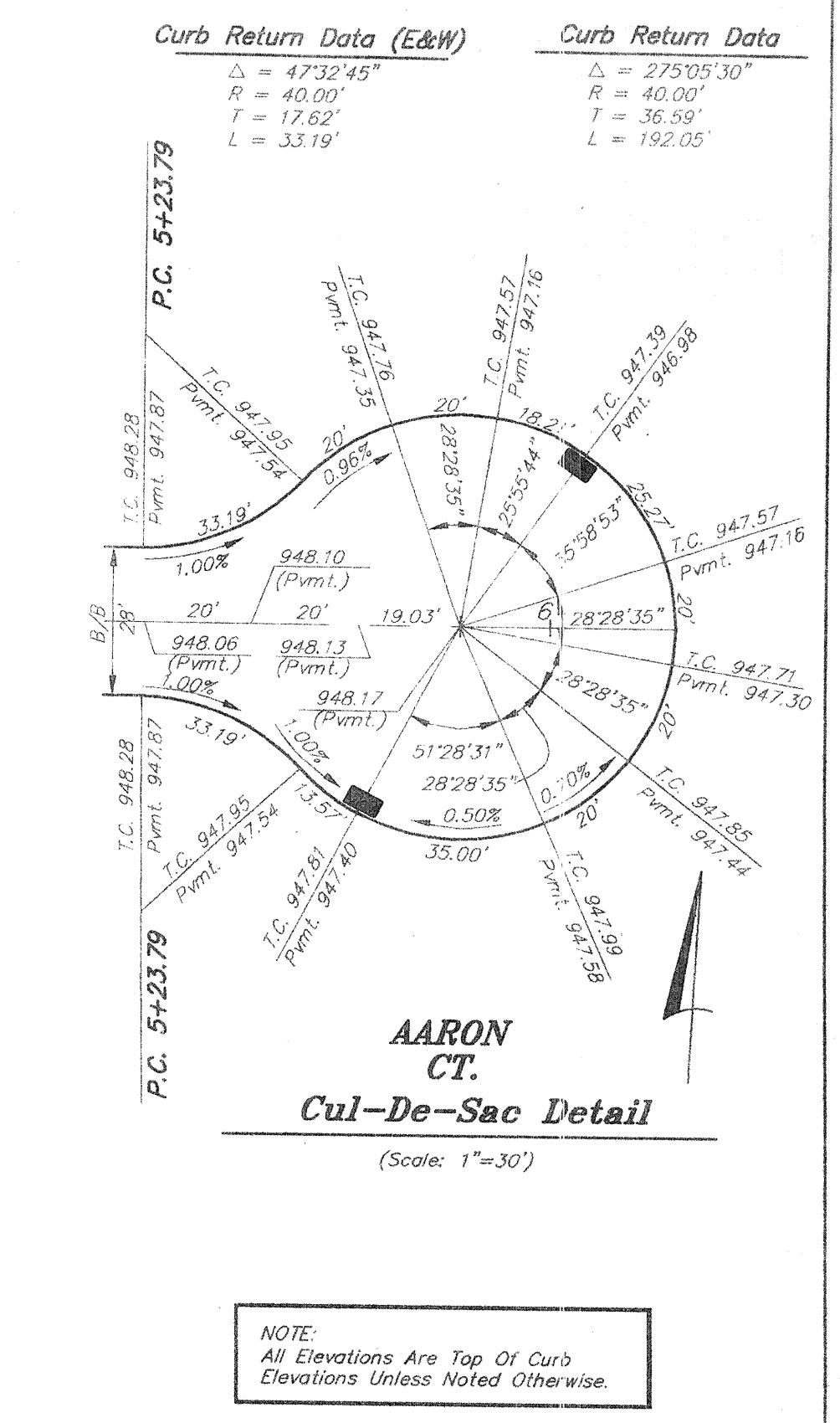
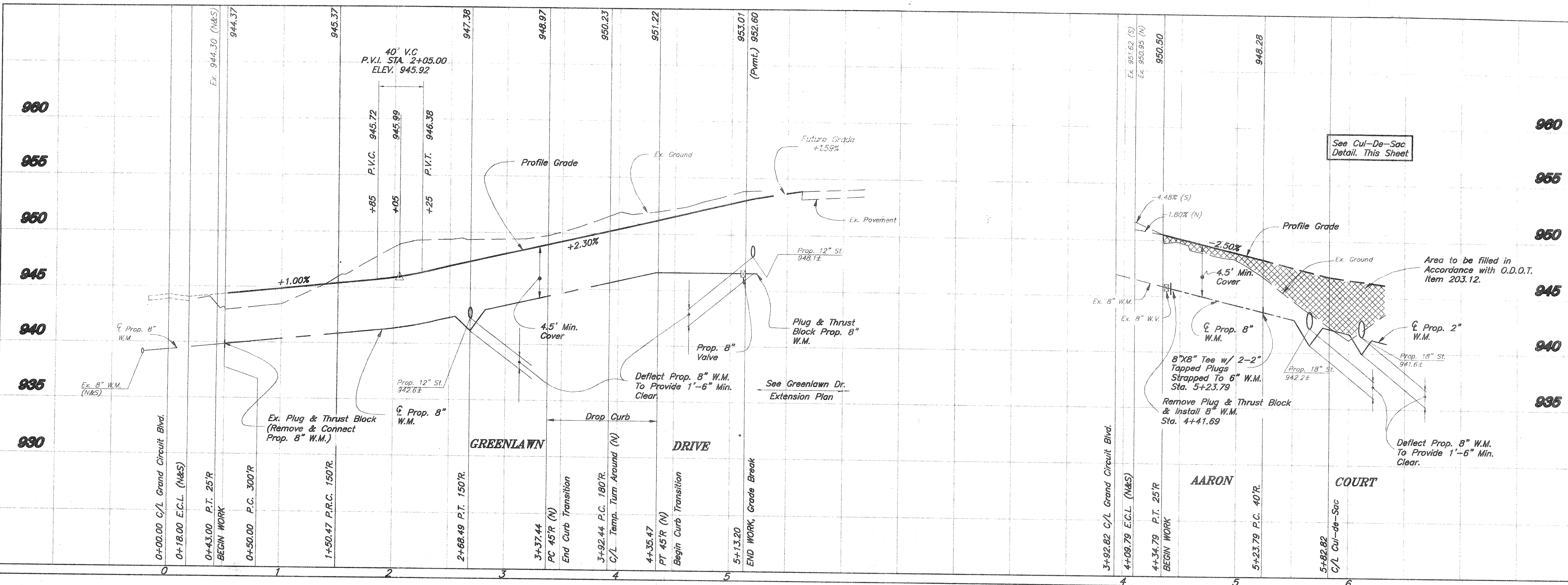
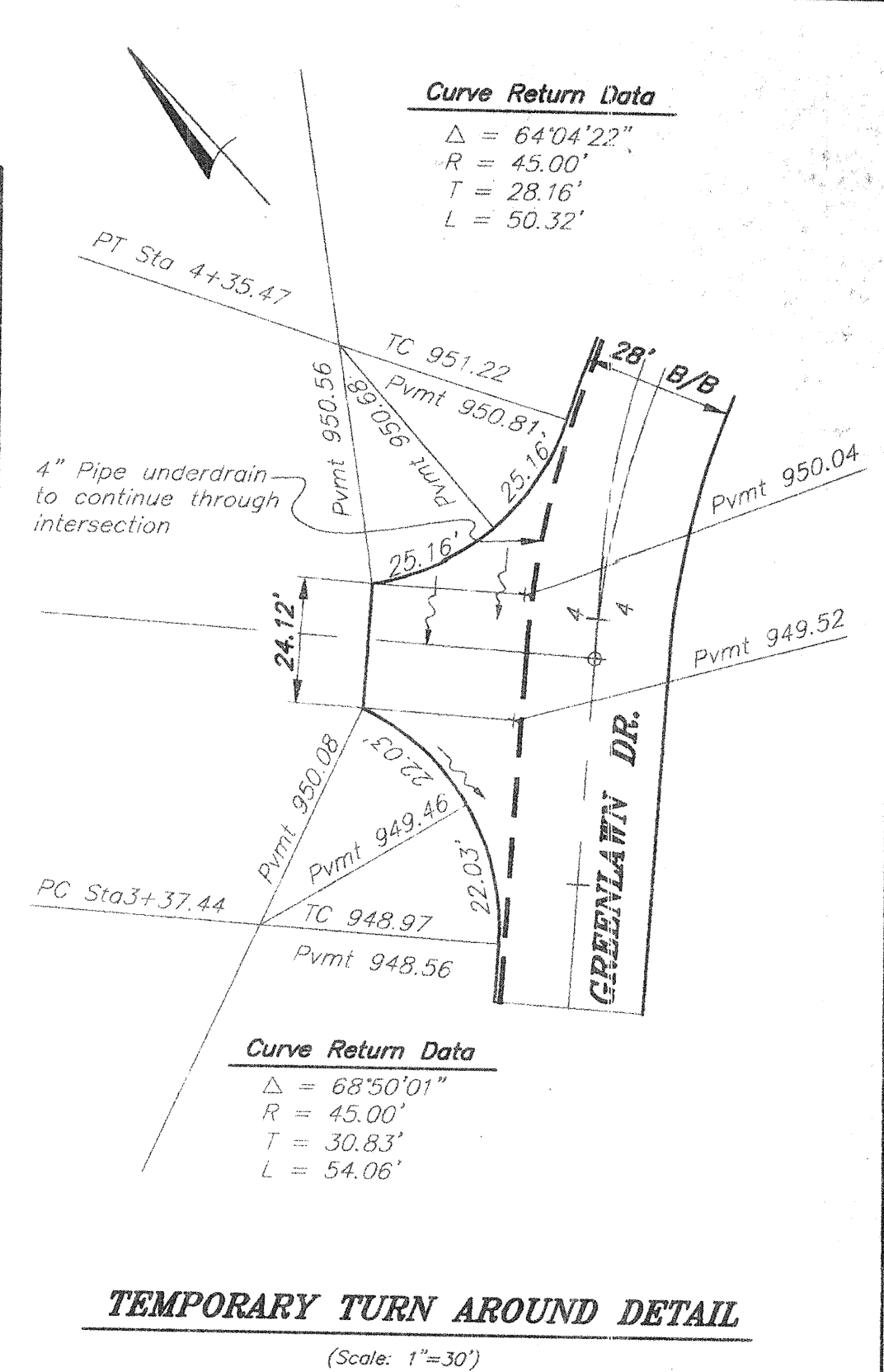
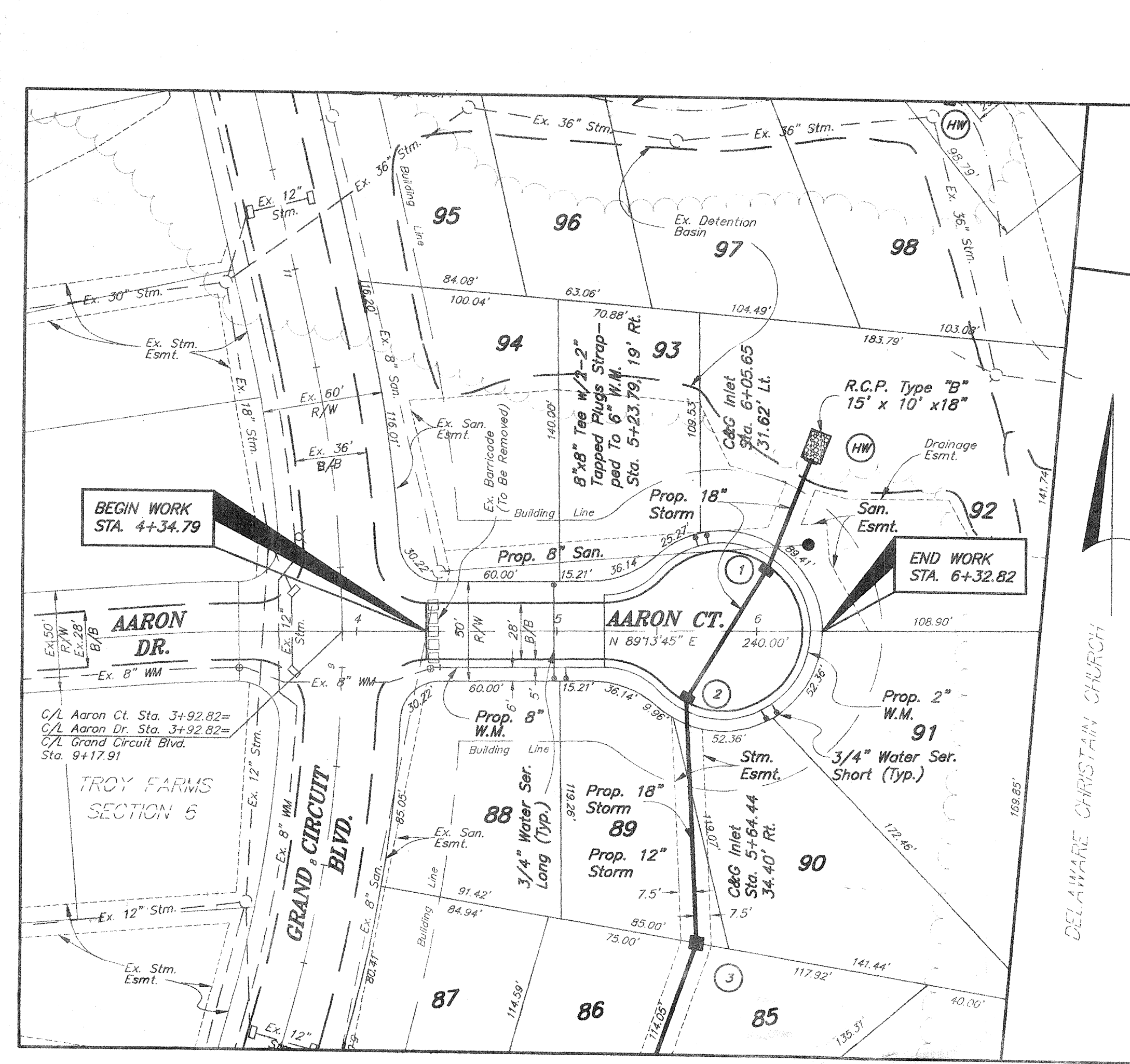
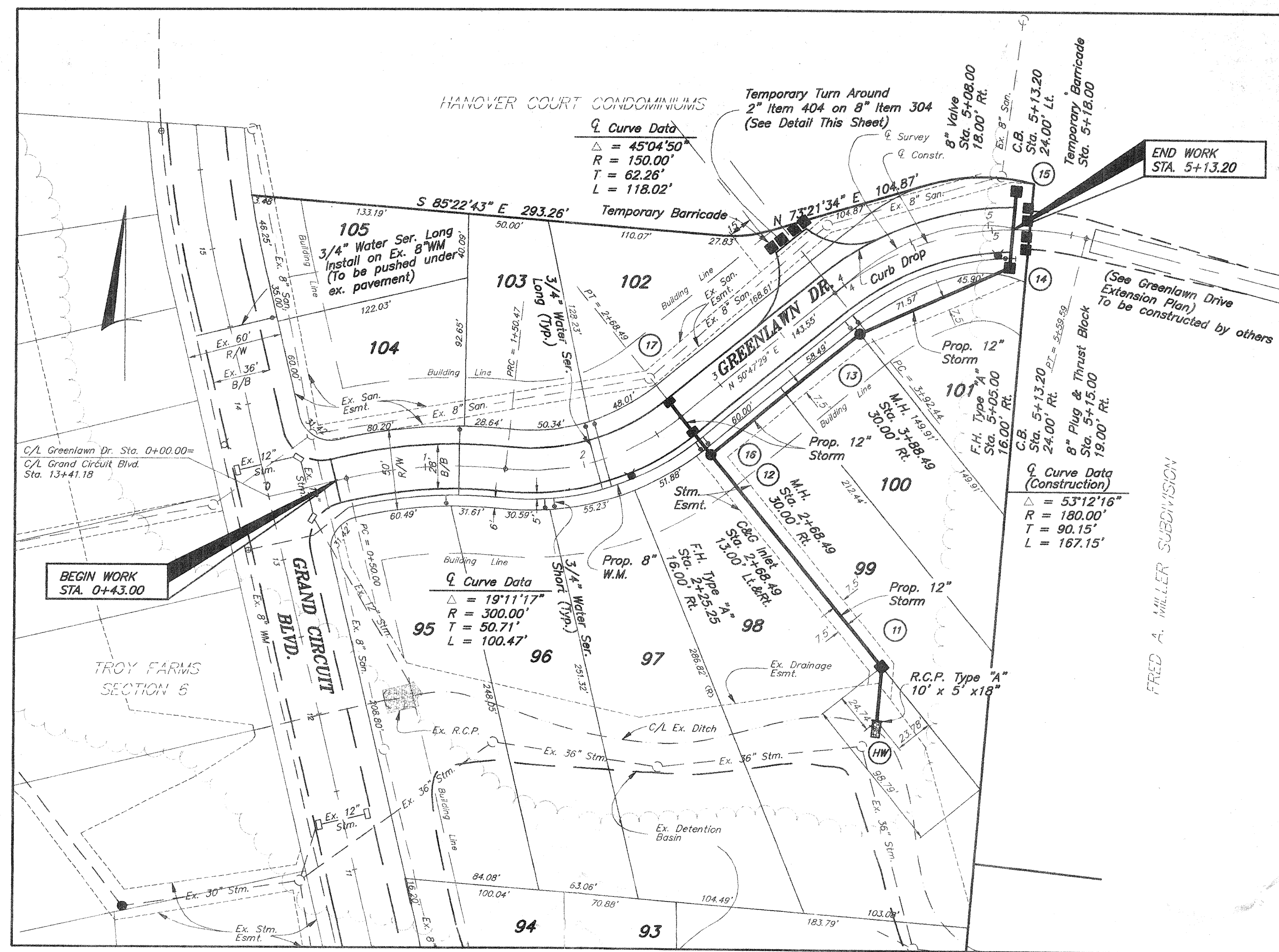
CHECKED BY: _____ DATE: _____

City of Delaware, Ohio
TROY FARMS SECTION 7
 SANITARY PLAN

SCALE Horiz. 1"=50'
 Vert. 1"=5' DATE Jan., 1996

06-1077-97
 EVANS, MECHWART, HAMBLETON & TILTON, INC.
 CONSULTING ENGINEERS & SURVEYORS

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City of Delaware, Ohio
TROY FARMS SECTION 7
 STREET, STORM AND WATER PLAN
 GREENLAWN DRIVE AND AARON COURT

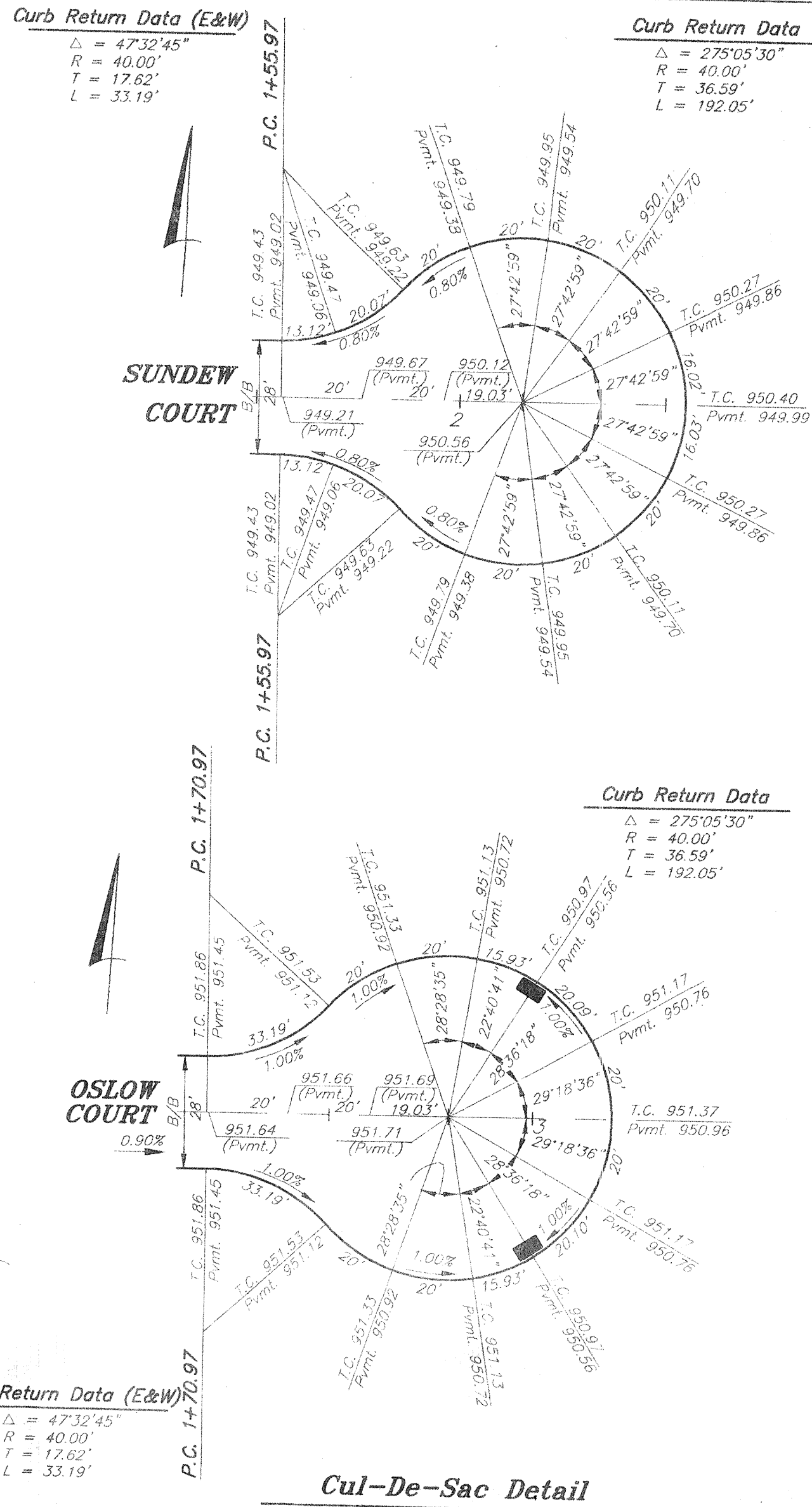
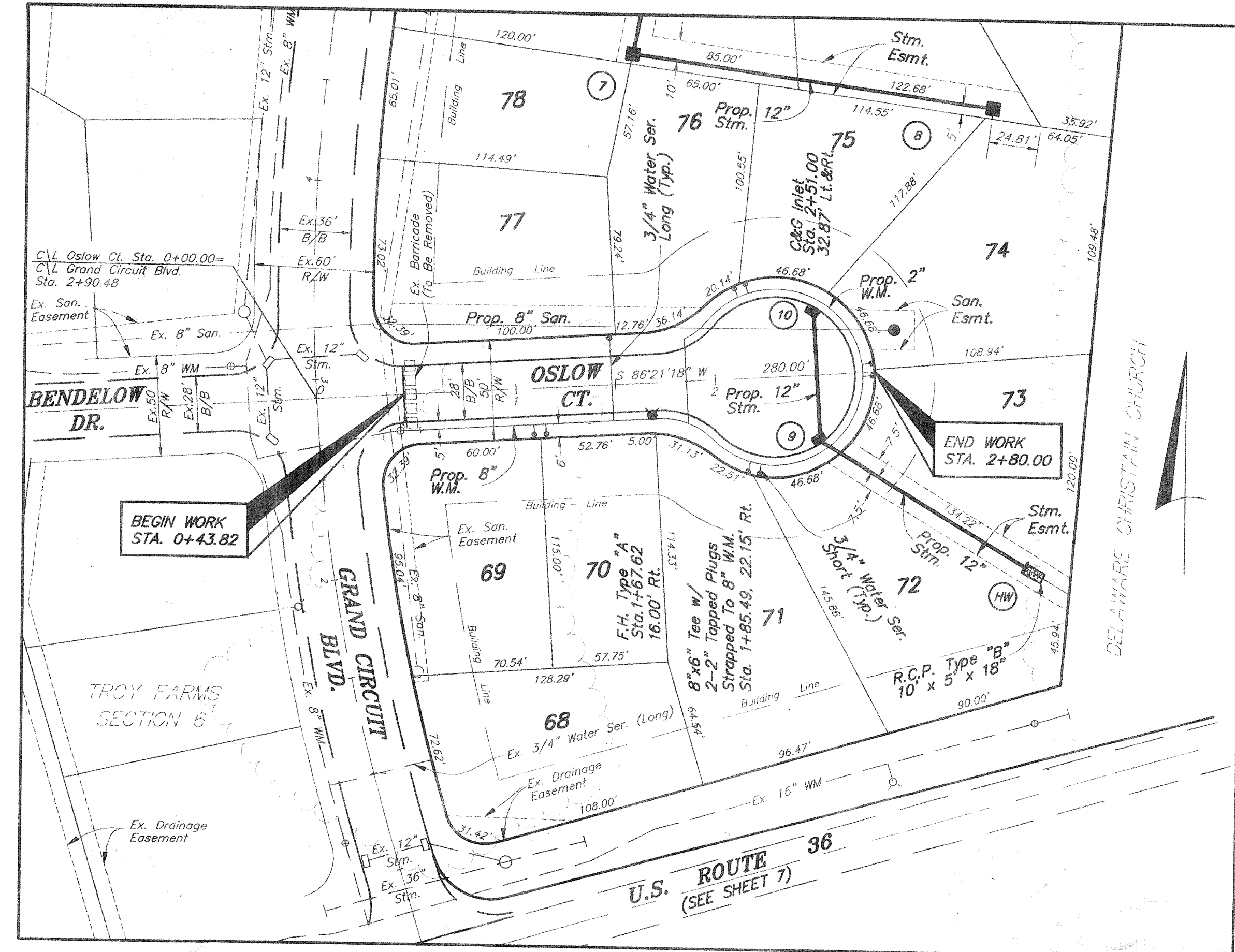
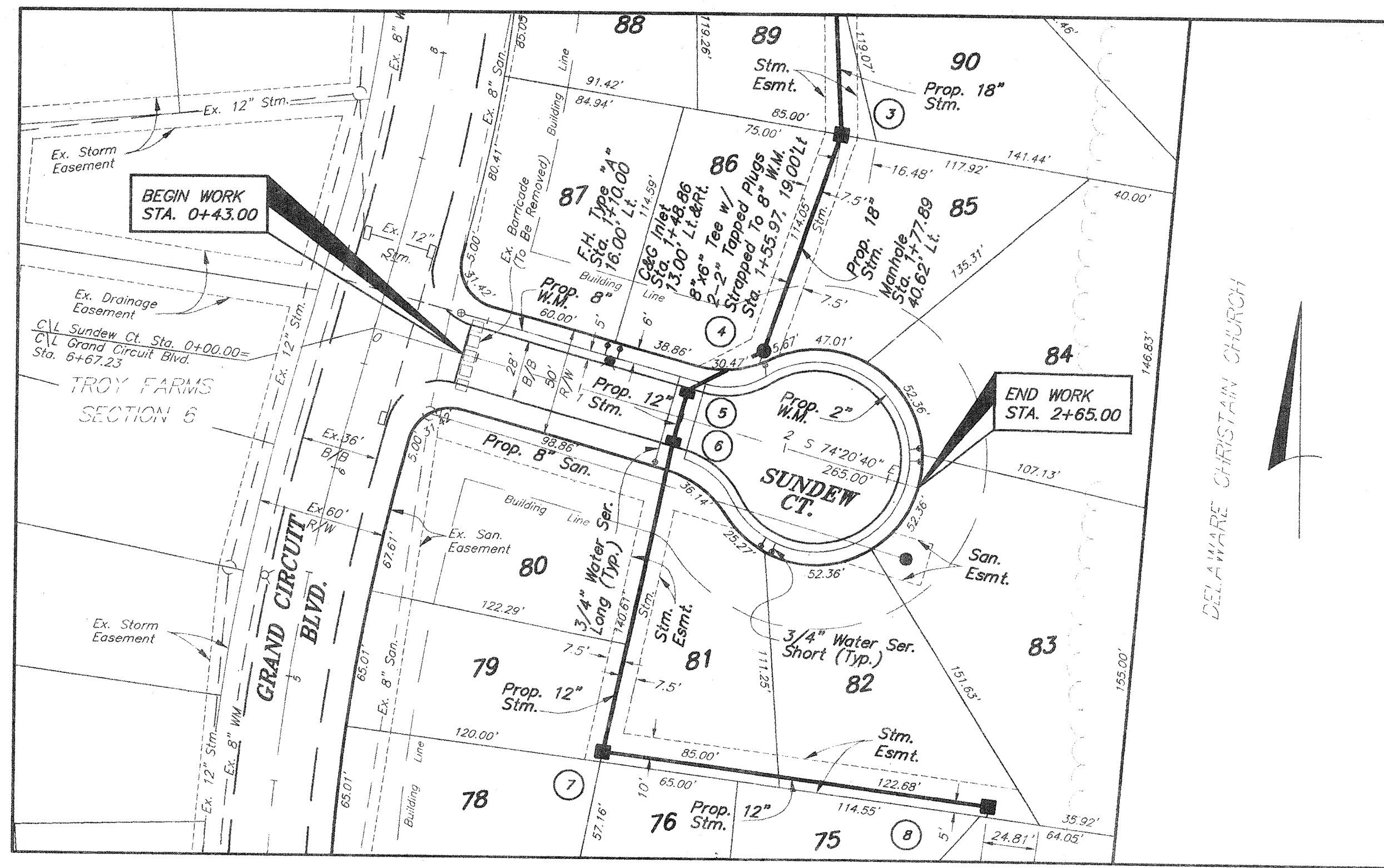
SCALE: Horiz. 1"=50'
 Vert. 1"=5'

Jan., 1996

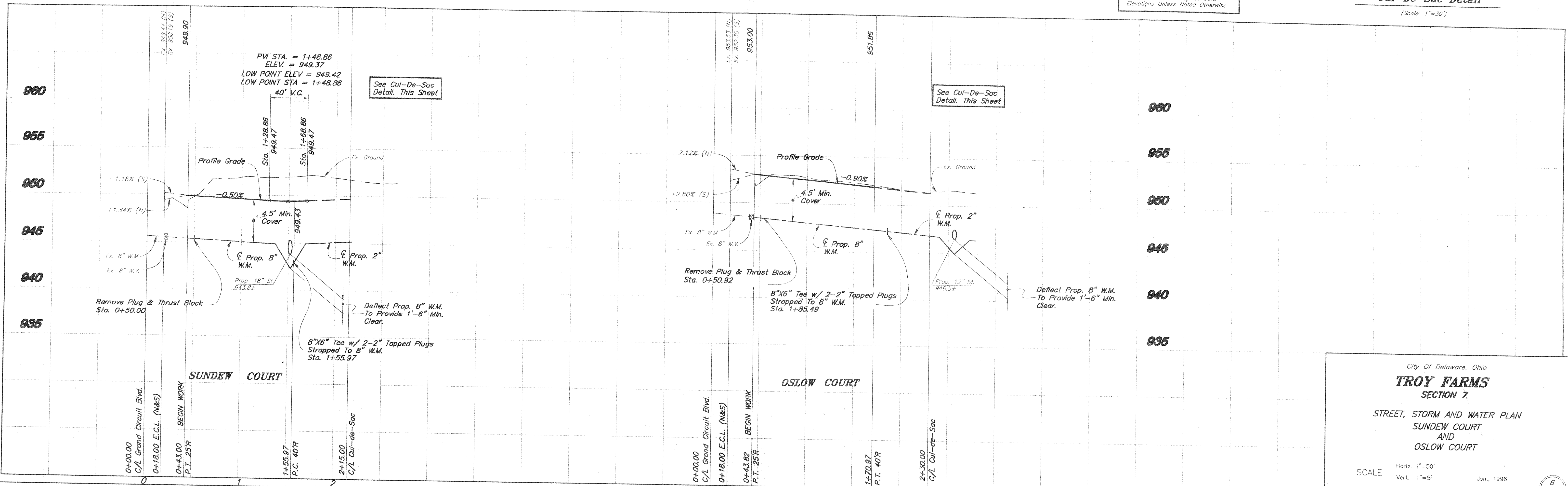
EVANS, MECHWART, HAMBLETON & TILTON, INC.
 CONSULTING ENGINEERS & SURVEYORS

06-0077-97

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NOTE:
All Elevations Are Top Of Curb
Elevations Unless Noted Otherwise



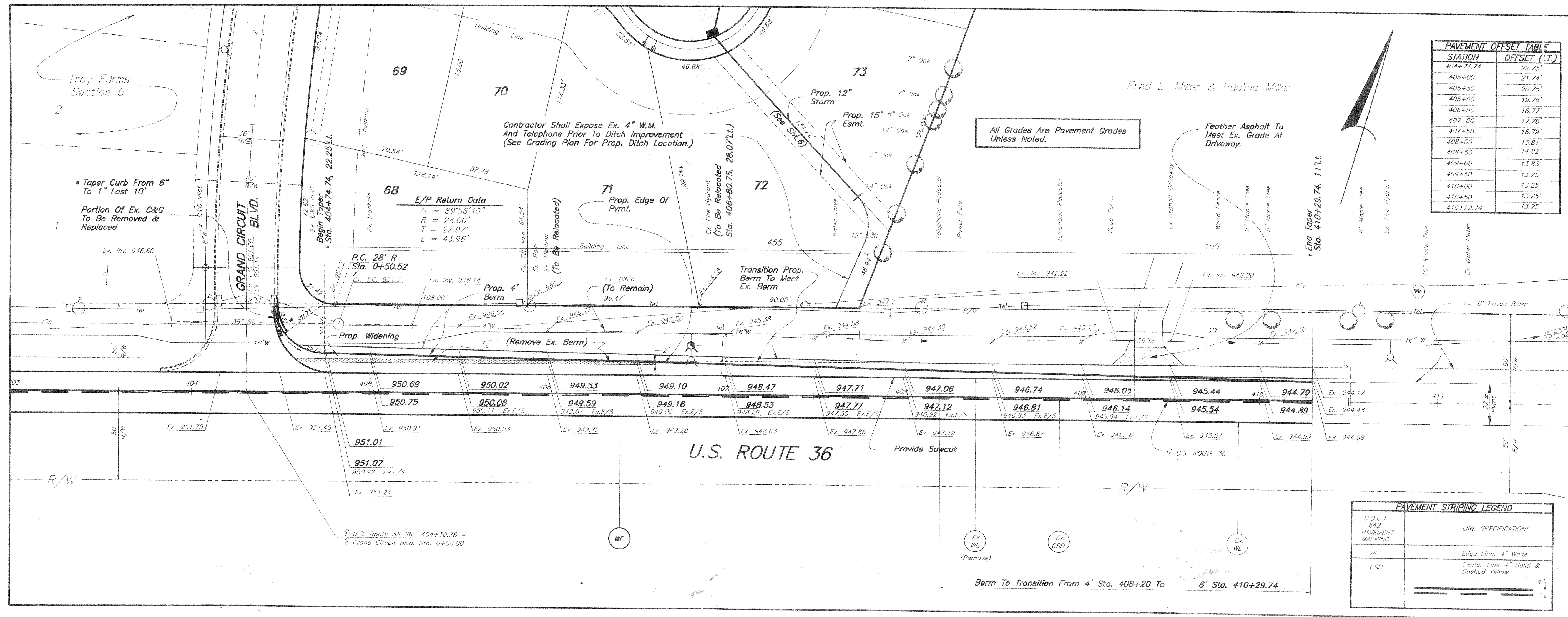
City of Delaware, Ohio
TROY FARMS SECTION 7
 STREET, STORM AND WATER PLAN
 SUNDEW COURT
 AND
 OSLOW COURT

SCALE Horiz. 1"=50'
 Vert. 1"=5'

Jan., 1996
 EVANS, MECHWART, HAMBLETON & TILTON, INC.
 CONSULTING ENGINEERS & SURVEYORS

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06-0077-97



PAVEMENT OFFSET TABLE	
STATION	OFFSET (L.T.)
404+74.74	22.75'
405+00	21.74'
405+50	20.75'
406+00	19.76'
406+50	18.77'
407+00	17.78'
407+50	16.79'
408+00	15.81'
408+50	14.82'
409+00	13.83'
409+50	12.85'
410+00	11.87'
410+50	10.88'
410+74.74	9.90'

PAVEMENT STRIPING LEGEND	
O.D.O.T. 542 PAVEMENT MARKING	LINE SPECIFICATIONS
WE	Edge Line, 4" White
CSD	Center Line, 4" Solid & Dashed Yellow



City of Delaware, Ohio

TROY FARMS
SECTION 7
STREET, STORM AND WATER PLAN
U.S. ROUTE 36 WIDENING

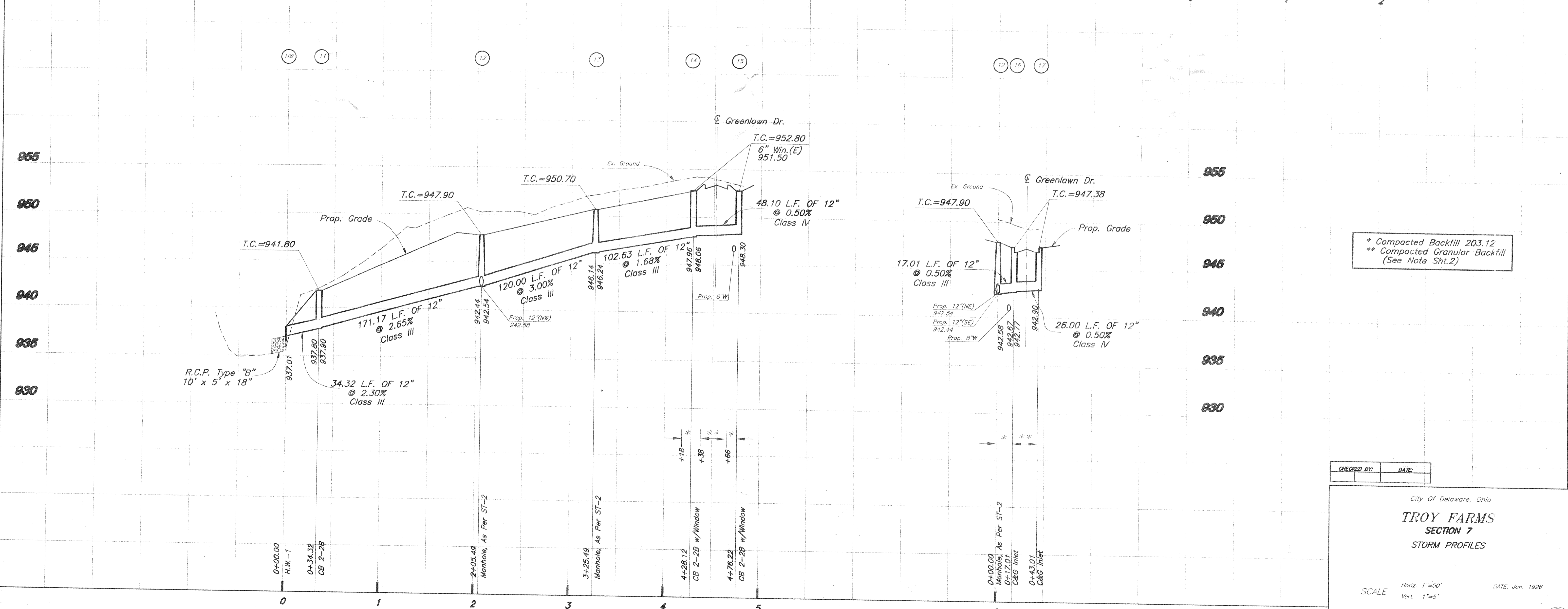
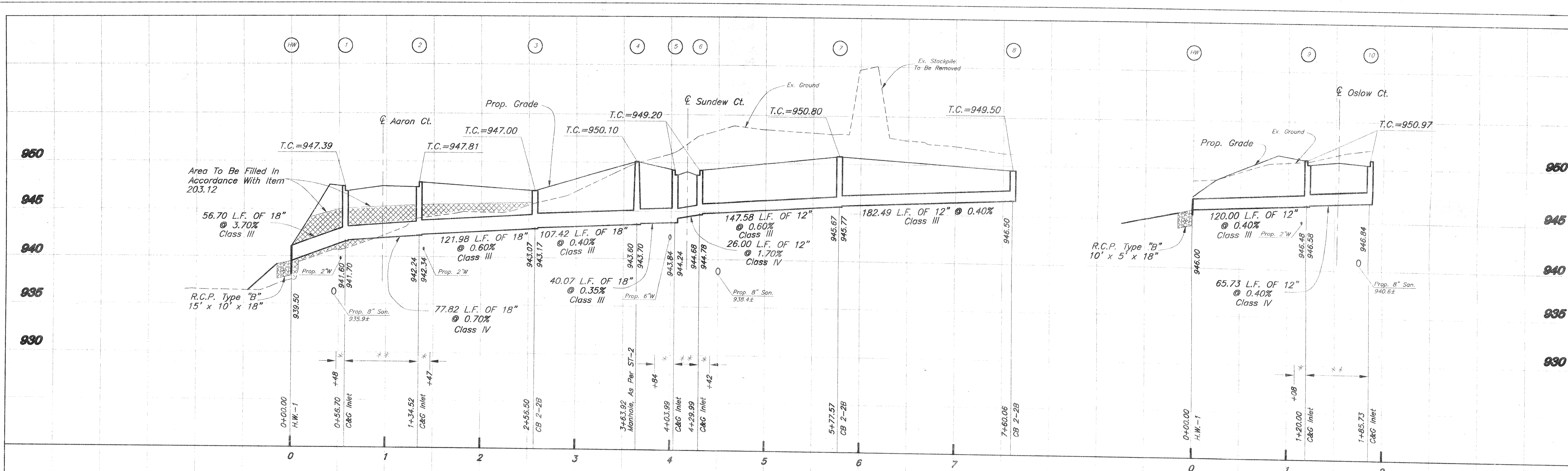
SCALE: Horiz. 1"=30'
Vert. 1"=5'

Jan., 1996

EVANS, MECHWART, HAMBLETON & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

06-0077-97

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* Compacted Backfill 203.12
 ** Compacted Granular Backfill
 (See Note Sht.2)

CHECKED BY: _____ DATE: _____

City of Delaware, Ohio
TROY FARMS
 SECTION 7
 STORM PROFILES

SCALE Horiz. 1"=50'
 Vert. 1"=5'

DATE: Jan. 1996

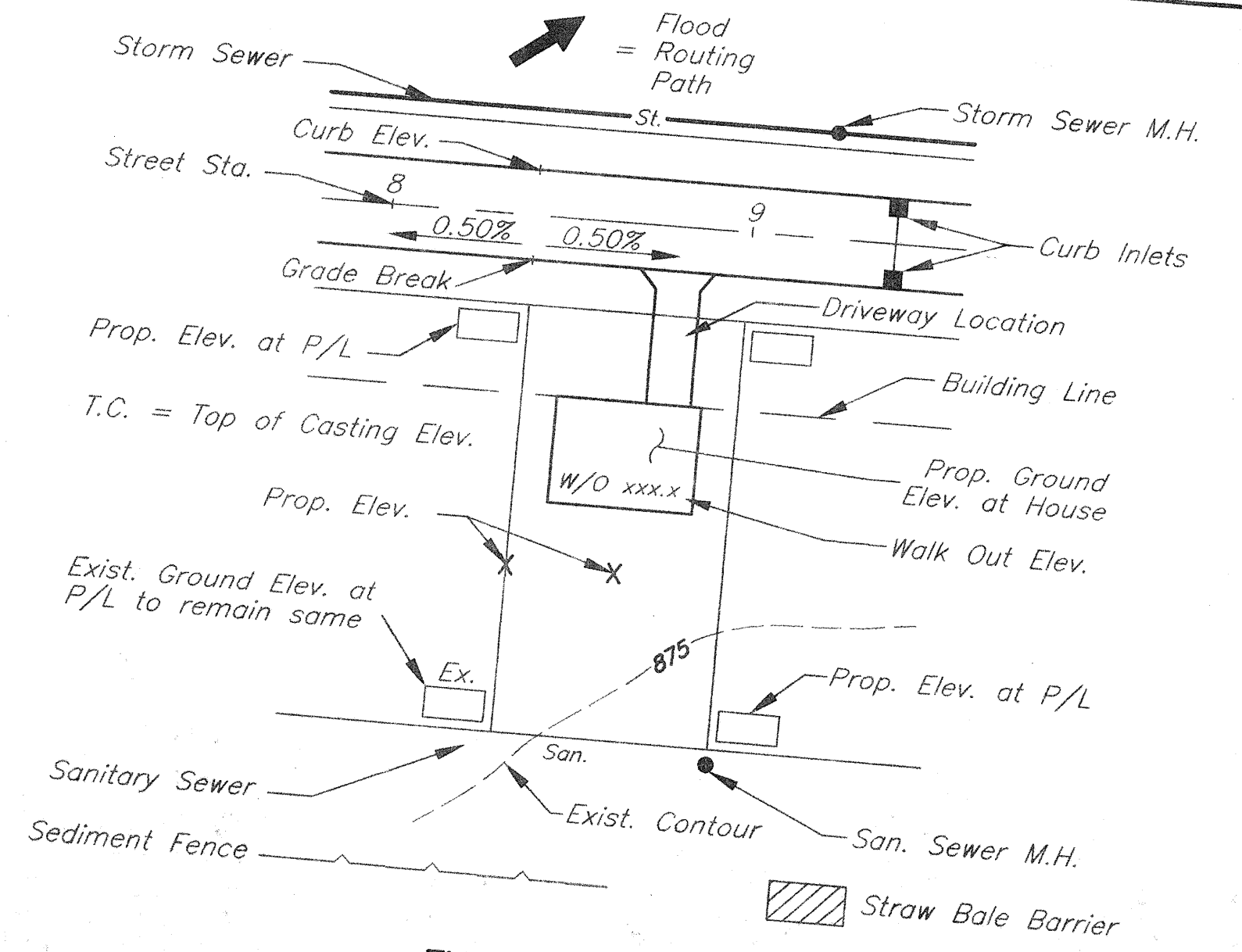
EVANS, MECHWART, HAMBLETON & TILTON, INC.
 CONSULTING ENGINEERS & SURVEYORS

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06-0077-97



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TYPICAL LAYOUT

NOTE:
House Locations Shown On Grading Plan Are Based On Assumed Locations Provided By Developer. All Grades At House May Vary According To Actual Building Location And Setback.

The house Top Of foundation elevation shall be set a minimum of 2'-8" above the top of curb for 25' lot setback.
Grades shown within the house locations represent Prop. Ground Elevation at house.

NOTE:
It shall be the responsibility of the Earthwork Contractor to maintain drainage or provide diversions at all times during earthwork operations. The cost for all materials required for this work (i.e. temporary temporary swales) is to be included in the price bid for Item 203.

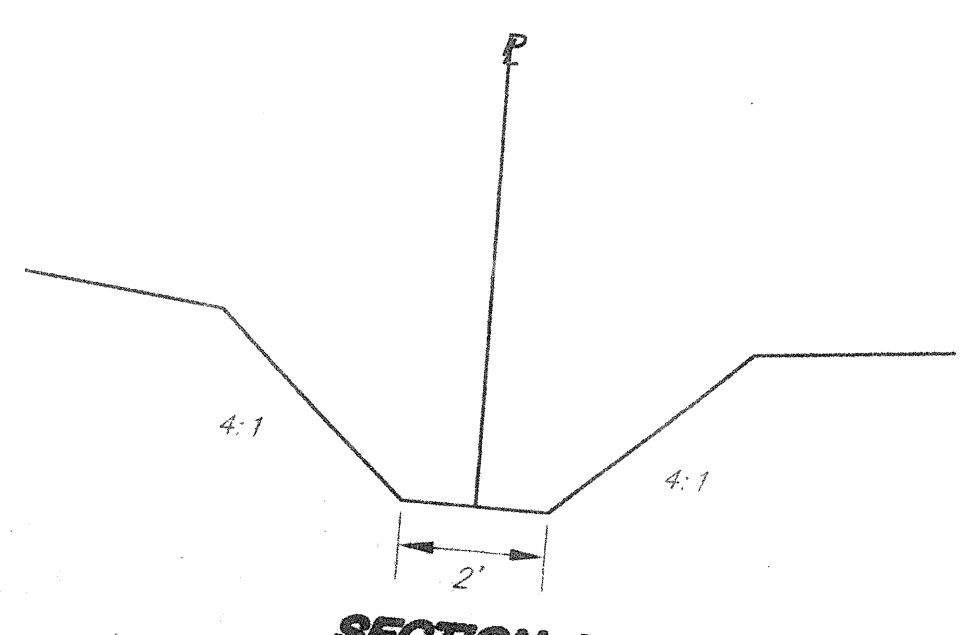
It shall be the responsibility of the Earthwork Contractor to grade pads, within the limits of earthworks, to an elevation 1' below finished grade at the house unless directed by the Owner. It is recommended that basement windows not be placed on side of house next to flood routing and that depressed driveways not be used on the following lots: #72, 73, 74, 85, 86, 89, 90

EARTHWORK SUMMARY

Street Overlot	Suitable Soil		Topsoil	
	CUT	FILL	CUT	FILL
1685	7310	2550	2380	-
Total	8995	9810	2380	2380

NOTE:
* = Signifies Lots That Require Engineered Filled Prior To Construction Of House.

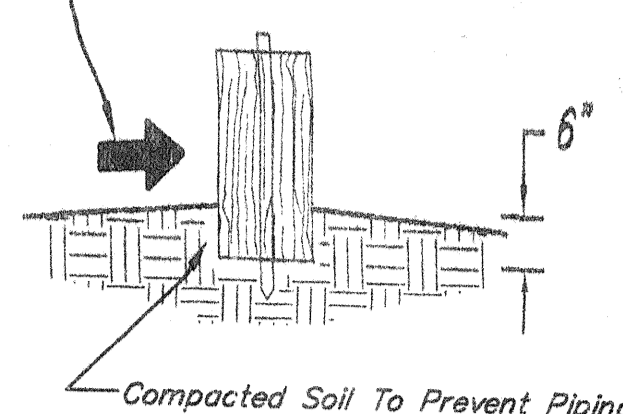
NOTE:
Lots requiring engineered fill; Fill must be included with earthwork being performed during utility construction.



SECTION A-A

City Of Delaware, Ohio
TROY FARMS SECTION 7
MASTER GRADING

Sediment Laden Runoff



Channel Flow Applications

Bales shall be placed in a single row, lengthwise, oriented perpendicular to the contour, with ends of adjacent bales tightly abutting one another.

The remaining steps for installing a straw bale barrier for sheet flow applications apply here, with the following addition.

The barrier shall be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale to assure that sediment-laden runoff will flow either through or over the barrier but not around it.

NOTE: Hay bales may be used in place of straw bales.

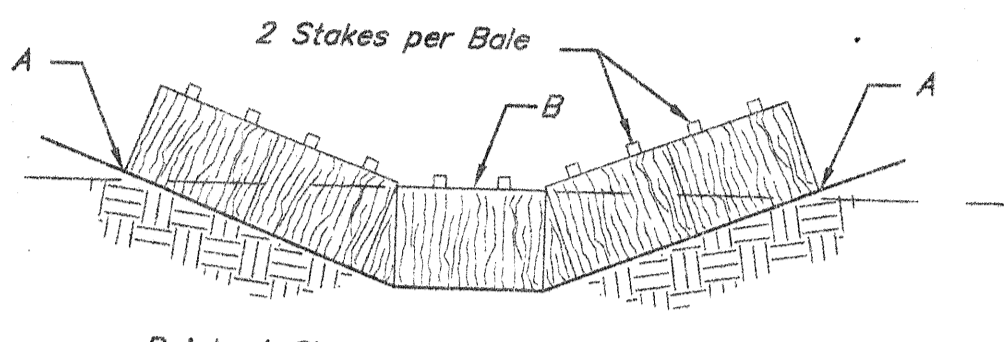
Maintenance

Straw bales shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Close attention shall be paid to the repair of damaged bales, and runs and undercutting beneath bales.

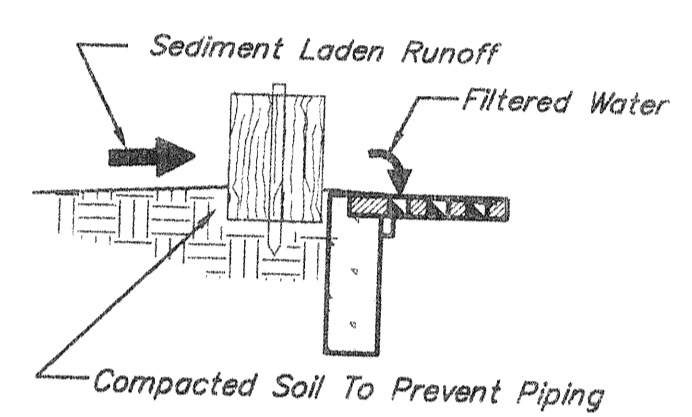
Necessary repairs to barriers or replacement of bales shall be accomplished promptly.

Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.

Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.



STRAW BALE BARRIER FOR DRAINAGE WAY OR SHEET FLOW



STRAW BALE DROP INLET STRUCTURE

Bales shall be either wire-bound or string-tied with the bindings oriented around the sides rather than over and under the bales.

Bales shall be placed lengthwise in a single row surrounding the inlet, with the ends of adjacent bales pressed together. The filter barrier shall be entrenched and backfilled. A trench shall be excavated around the inlet the width of a bale to a minimum depth of 4-inches. After the bales are staked, excavated soil shall be backfilled and compacted against the filter barrier.

Each bale shall be securely anchored and held in place by at least two stakes or rebar driven through the bale. Loose straw shall be wedged between bales to prevent water from entering between bales.

NOTE: Hay bales may be used in place of straw bales.

Maintenance
Straw bale barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Close attention shall be paid to the repair of damaged bales, and runs and undercutting beneath bales.

Necessary repairs to barriers or replacement of bales shall be accomplished promptly.

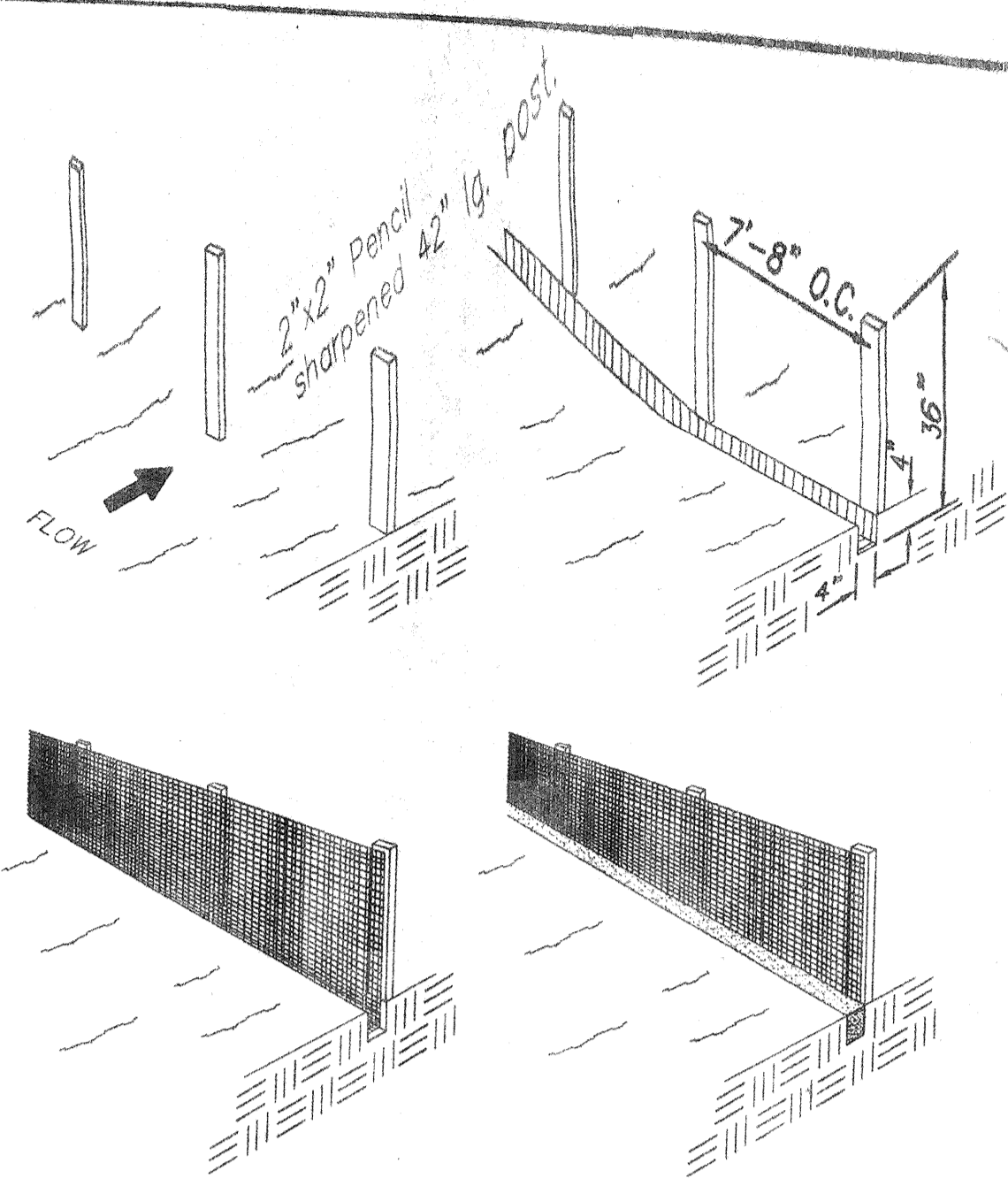
Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.

Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

Alternates: Block and Gravel Drop Inlet Sediment Filter Sediment Fence Filter

Provide for Inlets: 3, 7, 8, 11, 14, 15

STRAW BALE DROP INLET SEDIMENT FILTER DETAIL



SEDIMENT FENCE DETAIL

Silt 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.

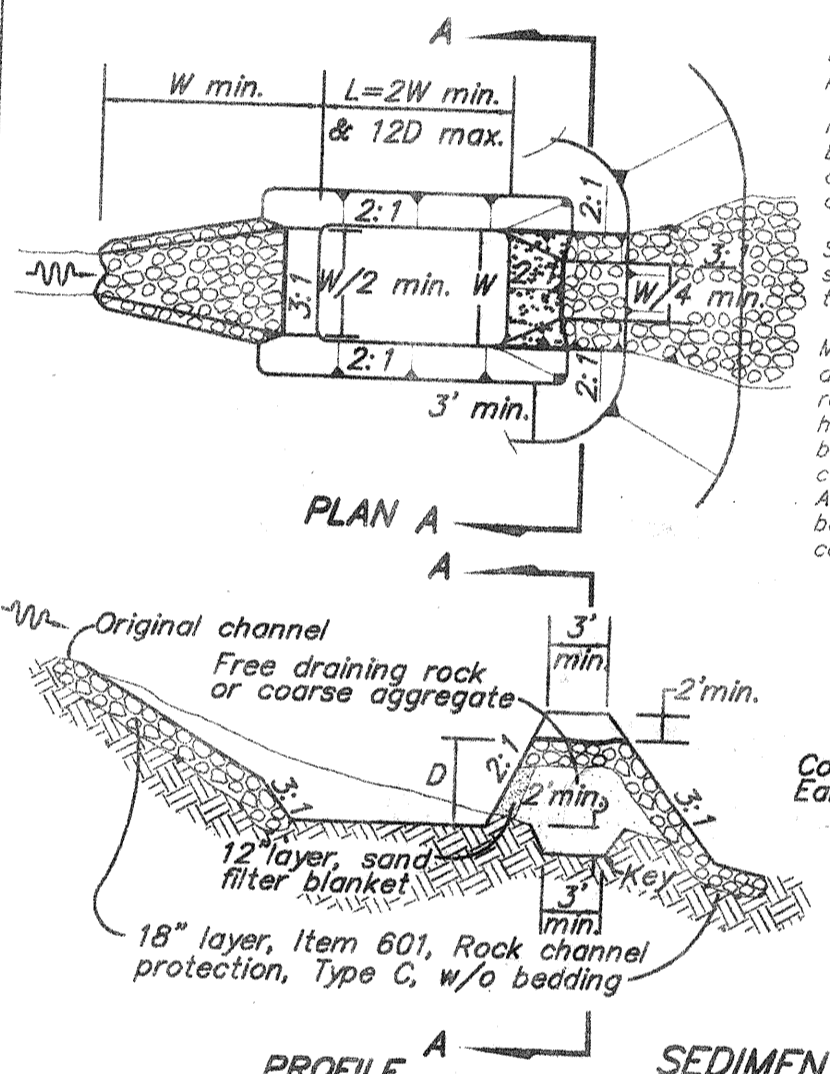
- The height of a silt fence shall not exceed 36-inches (higher fences may impound volumes of water sufficient to cause failure of the structure).
- The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum of a 6 inch overlap, and securely sealed.
- 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 the wire support fence, post spacing shall not exceed 6 feet.
- A trench shall be excavated approximately 4-inches wide and 4 inches deep along the line of posts and upslope from the barrier.
- 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 1-inch long, tie wires or hog rings. The wire mesh shall extend into the trench a minimum of 2-inches and shall not extend more than 36-inches above the original ground surface.
- 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 filter shall not be stapled to existing trees.
- 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. 5 applying.
- The trench shall be backfilled and soil compacted over the filter fabric.
- Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

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 useful 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.



SEDIMENT DAM
In-line w/ Ditch

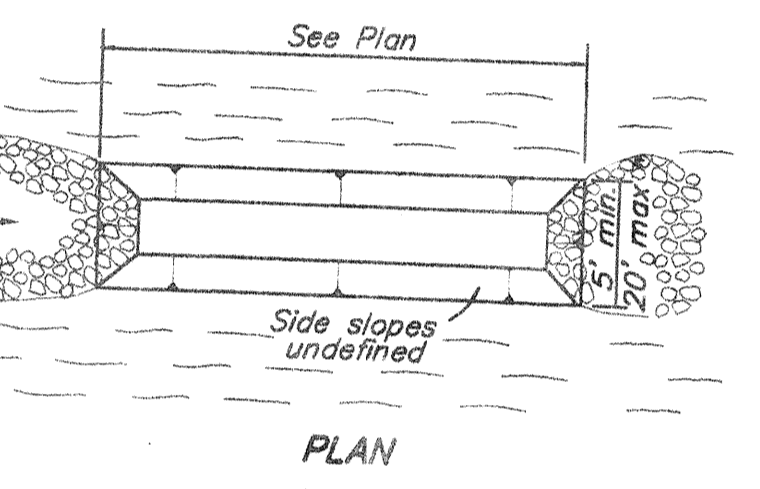
EMBANKMENT for sediment basin construction shall be as per ODOT Item 203, compacted as directed by the Engineer.

FILTERS: Plastic filter fabric, as approved by the Engineer, may be substituted for the sand filter blanket on sediment dams. Such fabric may be cleaned in lieu of replacement when approved by the Engineer. **SEE PLAN FOR ACTUAL SIZES**

SIZE: A series of smaller basins or dams may be substituted for a larger basin or dam when approved by the Engineer. **SEE PLAN FOR ACTUAL SIZES**

MAINTENANCE: Sediment pits, dams and basins shall be acceptably maintained. Deposited sediment shall be removed when the initial volume has been reduced one-half. The sand filter blanket on sediment basins shall be replaced when deposited sediment is removed. The cost of maintenance shall be covered by Item 207.

Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.



PROFILE SEDIMENT BASIN
In-line w/ Ditch

18" layer, Item 601, Rock channel protection, Type C, w/o bedding

2' min. 5' max.

Item 601, Rock channel protection, Type C, w/o bedding

2' min. 5' max.

2' min. 5' max.

2' min. 5' max.

2' min. 5' max.

2' min. 5' max.

2' min. 5' max.

2' min. 5' max.

2' min. 5' max.

2' min. 5' max.

2' min. 5' max.

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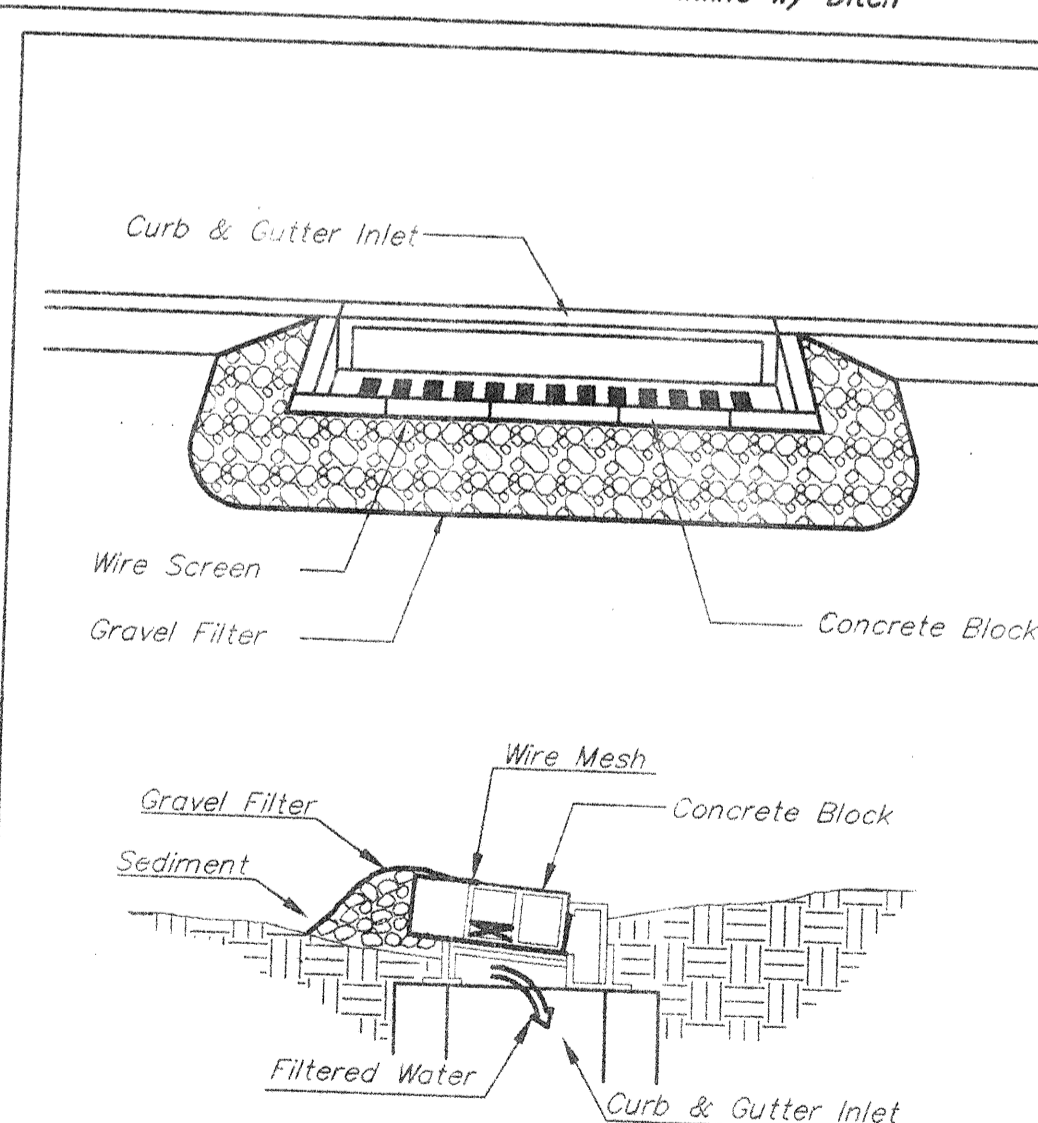
2' min. 5' max.

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2' min. 5' max.

2' min. 5' max.



BLOCK & GRAVEL CURB INLET SEDIMENT FILTER DETAIL

BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER

Two concrete blocks shall be placed on their sides abutting the curb at either side of the inlet opening.

A 2-inch by 4-inch stud shall be placed on their sides across the front blocks in place.

Concrete blocks shall be placed on their sides across the front of the inlet and abutting the spacer blocks as illustrated.

Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Chicken wire or hardware cloth with 1/2 inch openings shall be used.

ODOT No 1 Course Aggregate shall be piled against the wire to the top of the barrier as shown.

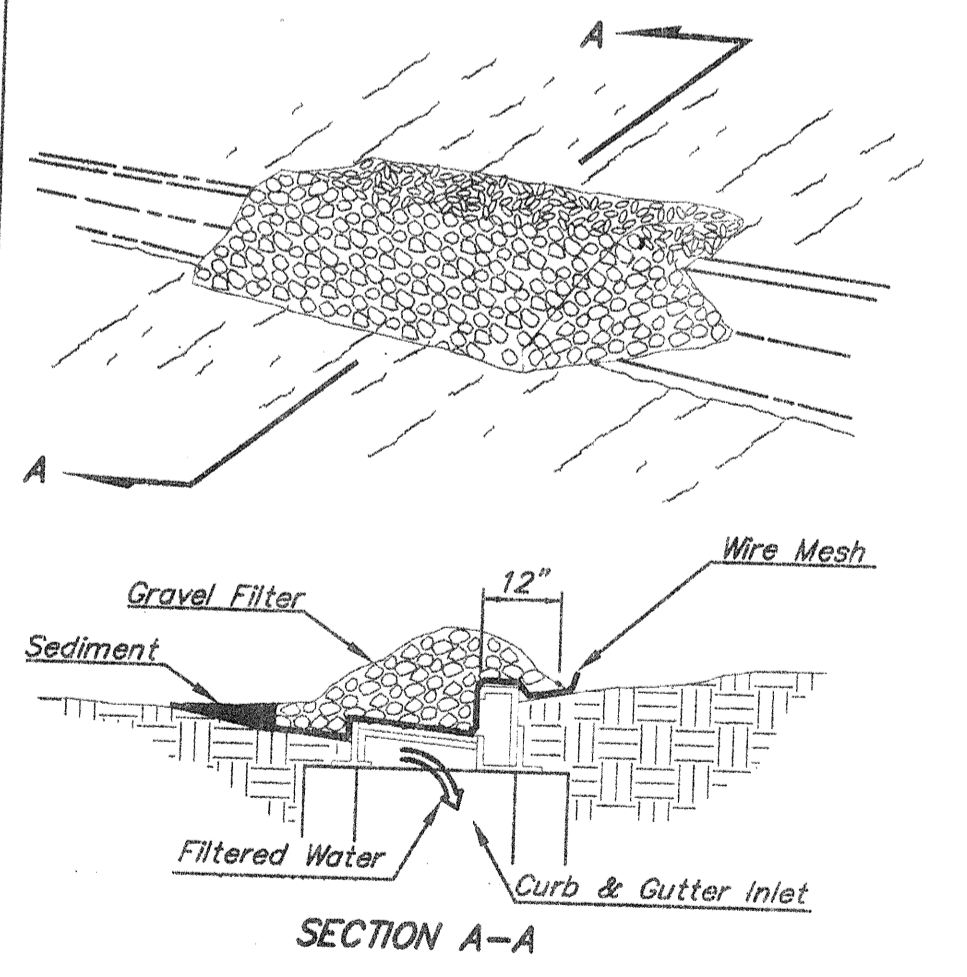
If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and replaced.

MAINTENANCE
The structure 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 1/2 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.

Structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.

Provide for Inlets: 1, 2, 5, 6, 9, 10



GRAVEL CURB INLET SEDIMENT FILTER DETAIL

GRAVEL CURB INLET SEDIMENT FILTER
Hardware cloth or comparable wire mesh with 1/2-inch openings shall be placed over the curb inlet opening so that at least 12 inches of wire extends across the inlet cover and at least 12 inches of wire extends across the concrete gutter from the inlet opening, as illustrated in above detail.

Stone shall be piled against the wire so as to anchor it against the gutter and inlet cover and to cover the inlet opening completely.

ODOT No. 1 Course Aggregate shall be used.

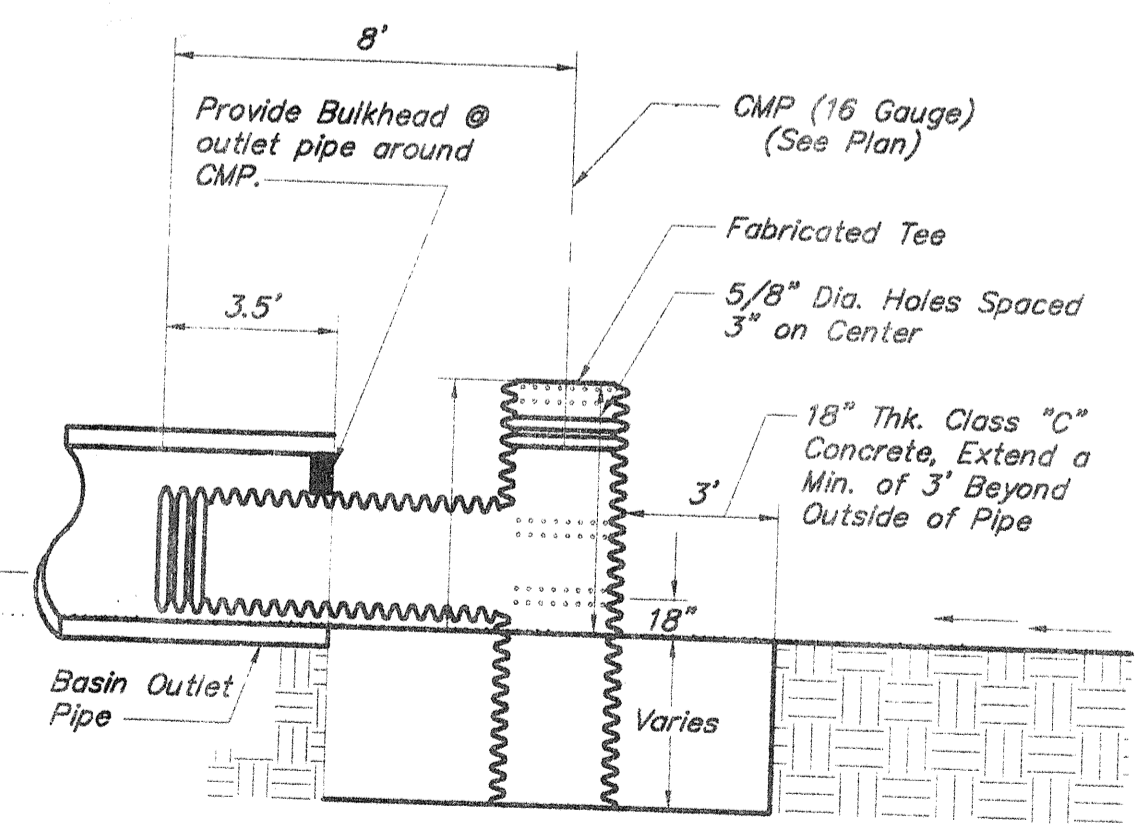
If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the block, cleaned and replaced.

MAINTENANCE
The structure shall be inspected after each rain and repairs made as needed.

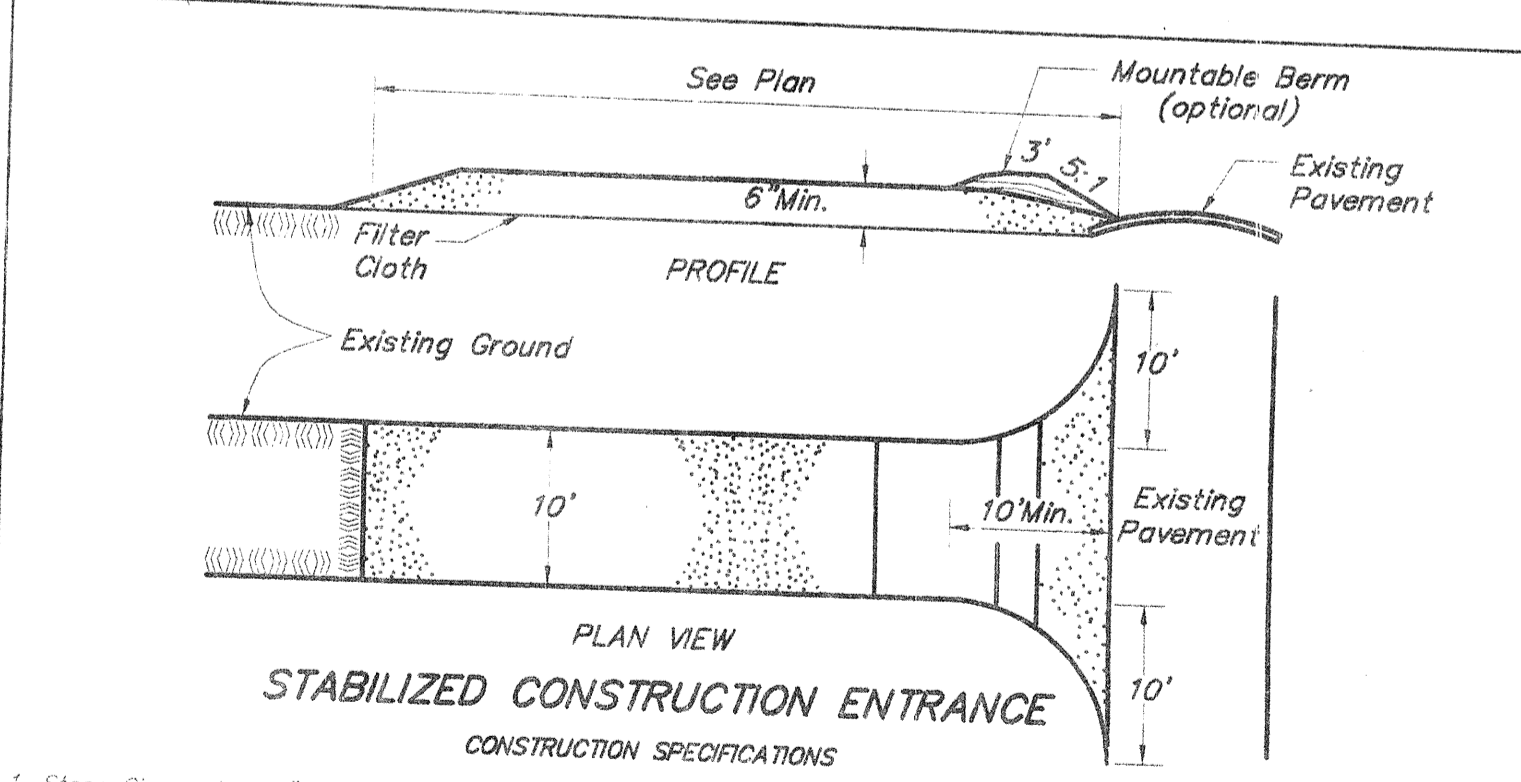
Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

Structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.

Provide for Inlets: 16, 17



TEMPORARY SEDIMENT CONTROL STRUCTURE
No Scale



STABILIZED CONSTRUCTION ENTRANCE
CONSTRUCTION SPECIFICATIONS

- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
- Length - As required.
- Thickness - Not less than six (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width of points where ingress or egress occurs.
- Filter Cloth - will be placed over the entire area prior to paving of stone.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanup of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public right-of-ways. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

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.

City of Delaware, Ohio
TROY FARMS
SECTION 7
EROSION AND SEDIMENTATION CONTROL DETAILS



STREET LIGHTING STANDARDS FOR RESIDENTIAL DISTRICTS

LIGHT FIXTURE:
 Granville Series Luminaire
 Model: GV1A100HP12A3V-P-PR-LAMP-gv1A73A New Albany Green
 By: Unique Solutions, A Division of Halophane
 575 McKinley Avenue
 P.O. Box 3009
 Newark, OH 43085

Any substitution of the above must be approved by the Planning and Community Development Director or his designee.

HEIGHT ABOVE GRADE:

All fixtures shall be installed at fourteen feet-four inches above finished grade, measured from grade to the top of the lighting fixture.

LOCATION:

All street lighting poles shall be installed 2 1/2 feet back of curb in the tree lawn and in the same plane as the property line. If available, the fixtures shall not be installed above sanitary sewers, storm sewers, water mains or other utilities.

SPACING OF LIGHT FIXTURES:

Spacing between fixtures shall not be greater than 150 feet nor less than 120 feet and they shall be alternately spaced on opposite sides of the street. This does not include the area in front of designated parks/open spaces along right-of-ways.

One light fixture must be placed at the end of a cul-de-sac, at an intersection and on a curve exceeding 15'. All street lighting is to meet I.E.S. Standards (Illuminating Engineering Society).

INSTALLATION REQUIREMENTS:
 Fixtures must be wired and installed per the current addition of the National Electrical Code (N.E.C.), manufacturer's specifications, and the following requirements:

- 1) A 40 amp. rain-light service panel with a 15 amp. branch circuit over-current protection device must be installed on a 4 x 6 galvanized post buried 36 inches below grade and exceed a height of 32 inches above finished grade.
- 2) An 8 foot grounding electrode must be installed adjacent to the service panel. The service conductor must be installed in a half inch rigid metallic conduit to protect it from any physical damage.
- 3) The feeder conductor must be a minimum #12-2 Type UF. The conductor must be protected by a one inch rigid metallic conduit and be properly terminated with bushings. Adequate length of the conductors must be provided to facilitate the installation to the transformer.
- 4) The branch circuit conductors that are buried must be installed in a one inch rigid non-metallic conduit and installed a minimum of 18 inches below grade. The conduit must be changed to a rigid metallic conduit where above grade and entering the service panel. The conduit must terminate with proper bushings. The branch circuit conductors shall be not less than #12 A.W.G. copper THHN, one colored black, one white and one green.

FIXTURE POST:
 The post must be a "HAPCO B74514" or approved equal. Color to be powder coated New Albany Green per Herberts #PU-9154-LG, from Herberts Power Coating, 4150 Lyman Dr., Hilliard, OH 43026, (614) 771-7881. For wet spray touch-up paint use "Benjamin Moore" eggshell oil 108 Base SA New Albany Green. The post is a twelve (12) foot fluted aluminum tube, 4" in diameter, with a cast aluminum base and a 3" slip fitter tenon on top.

POST SUPPORT:
 The light post must be anchored to a round 14 inch by 40 inch concrete footing, using the three (3) galvanized anchor bolts provided with the post. The top of the concrete must be formed into a 15" x 15" square.

The concrete footing must be installed approximately four (4) inches above grade to prevent damage to fixtures by mowers and to allow for easy trimming of grass.

ADDITIONAL FIXTURES REQUIRED:
 For every thirty (30) fixtures required in a development or housing project, regardless of the number of phases to the project, the cost of one (1) complete light fixture and pole must be provided to the City of Delaware for replacement cost.

MAINTENANCE:

After the complete installation of the required number of light fixtures in a development and the installation is approved by the Building Inspector, the Developer shall be responsible for the first two (2) years of maintenance. Street lights installed in accordance with these standards shall become Public Improvements and shall be subject to Section 1111.06 of the Subdivision Regulations as amended by Ordinance No. 85-81. This includes the repair of all of the components of the lighting system, such as the replacement of faulty equipment, damaged poles or fixtures and lamps, or any item damaged by contractors or any other means. This includes the painting of marred poles. These repairs shall be made in a timely manner.

PERMIT REQUIRED:

A permit is required and must be obtained after final approval of the submitted plans. Recorded easements must be provided to the City of Delaware for the branch circuit conductors on the property lines. A fee of \$150.00 shall be required.

Inspections:

- 1) Footing of fixtures.
- 2) Underground conduit prior to backfill.
- 3) Electrical service inspection.
- 4) Final installation of fixtures.

All of the above information should be utilized as typical requirements for the City of Delaware Street Lighting. All information shall be verified prior to installation with the City of Delaware Building & Zoning Dept. (Jerry Warner 614-369-3325)

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