Specifications

l.01 TECHNICAL SPECIFICATIONS:

All item numbers referenced to in the drawings refer to the State of Ohio Department of Transportation Construction and Material Specifications, 2016 Edition. All equipment, material and workmanship shall be performed according to these specifications and any Ohio Department of Transportation Standard Construction Drawings (SCD) referenced on the plans.

1.02 SUPPLEMENTAL SPECIFICATIONS:

02567 – Manhole Rehabilitation – Lining Material Specifications and Requirements

Supplemental Specification 02567

MANHOLE REHABILITATION – LINING MATERIAL SPECIFICATIONS AND REQUIREMENTS

September 2019

07.01 - DESCRIPTION.

This specification includes all work, materials and equipment required for the structural rehabilitation of manhole structures including circular and non-circular construction. The purpose is to eliminate infiltration, repair voids, restore structural integrity and provide corrosion protection by the application of a spray-applied monolithic resin liner to the wall and bench surfaces of brick/concrete structures or structures produced with any other masonry construction material. These structures include, but are not limited to manholes, special structures, wet wells, lift stations and pump stations.

07.02 - SPECIFICATIONS AND MATERIALS

07.021 References:

ASTM D638: Test Method for Tensile Properties of Plastics
ASTM D695: Test Method for Compressive Properties of Rigid Plastics
ASTM D790: Test Methods for Flexural Properties of Unreinforced and reinforced Plastics and Electrical Insulating Materials
ASTM C1244: Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill
ASTM D2240: Standard Test Method for Rubber Property - Durometer Hardness
ASTM D412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers -Tension
ASTM D624: Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

7.022 Plugging and Repair Materials:

Plugging and repair materials should not be used unless their manufacturer provides information as to its suitability and procedures for topcoating with the approved coating. Project specific submittals should be provided including application, cure time and surface preparation procedures which permit optimum bond strength with the approved coating.

Repair materials shall be used to fill voids, structurally reinforce and/or rebuild surfaces, etc. as determined necessary by the protective coating applicator. Repair materials must be compatible with the specified coating and shall be applied in accordance with the manufacturer's recommendations

The following products may be accepted and approved as compatible repair basecoat materials for approved topcoating for use within the specifications:

a) 100% solids, solvent-free grout specifically formulated for approved topcoating compatibility. The grout manufacturers shall provide instructions for trowel or spray application and for approved topcoating procedures.

b) Factory blended, rapid setting, high early strength, non-shrink repair mortar that can be troweled or pneumatically spray applied may be approved if specifically formulated to be suitable for approved topcoating. Such repair mortars should not be used unless their manufacturer provides information as to its suitability for topcoating with the approved topcoating. Projvet specific submittals should be provided including application, cure time and surface preparation procedures which permit optimum bond strength with the approved coating.

c) In case of excessive infiltration, a hydraulic cement or plug may be used to stop the flow of the infiltration. Hydraulic cement shall cure sufficiently prior to any topcoating. Manufacturer's include *Strong*, *Sika*, *Preco* or approved equal. The hydraulic cement shall be compatible with the spray applied resin coating.

7.023 Structural Repairs:

Loose or protruding brick, mortar and concrete shall be removed using a masons hammer and chisel. All structural repairs necessary to complete the lining process shall be made with a non-shrink grout compatible with the lining system manufacturer's recommendations. This material shall be applied to patch cracks, fill voids, make structural repairs, and build-up deteriorated manhole or wet well surfaces back to original thickness. All repair and/or patching materials shall be submitted to the Engineer for approval prior to material usage.

7.024 Lining Materials:

The lining materials shall be a self-priming monolithic system that eliminates infiltration, is designed and manufactured to provide chemical resistance to hydrogen sulfide and be third-party tested and certified for a design life of no less than 50 years. The approved lining systems and manufacturers are:

a) *Armour 1000* by OBIC

b) *SprayWall* by SprayRoq

07.03 - EQUIPMENT

Equipment for installation of lining materials shall be high quality grade and be as recommended by the manufacturer. The equipment utilized shall be specialized equipment which shall reduce the amount of time the manhole or wet well is out of service. It is the intent that whatever method of lining is approved, that the down time for a standard manhole is kept to a maximum of 3 hours.

07.04 - WEATHER LIMITATIONS

Application Temperatures:

No lining shall be made to any manhole or wet well when ambient temperature is below 50° Fahrenheit or when the substrate surface temperature is below 55° Fahrenheit.

07.05 - APPLICATION

7.051 Bypassing Sewage:

Unless otherwise noted on the Plan Sheet and/or in the Bid Documents the Contractor shall bypass the sewage around existing manholes or wet wells that are to be lined; an existing upstream manhole shall be plugged and the sewage shall be pumped into a downstream manhole or adjacent system. Use of any invert "flow-through" device shall be limited to an as-needed basis, and only upon the written approval of the Engineer. The bypass system shall be of adequate capacity and size to handle the existing peak flows (See Item 51). Under no circumstances will the dumping of raw sewage on private property or in streets be permitted.

7.052 Surface Preparation:

All manhole or wet well surface preparation shall conform to the manufacturer's recommendations for the intended substrate - refer to Appendix A and B of this item for specific product requirements. New precast concrete manholes or wet wells shall not be lined prior to 28 days following their manufacture date. All water used shall be clean and potable.

7.053 Plugging Active Water:

The Contractor shall stop all active water infiltration in said manholes or wet wells by troweling, injecting and/or pumping a quick setting non-shrinking Cementitious grout or polyurethane chemical grout into any dislodged section joints, pipe connections, cracks or spalled areas greater than 3/4".

This material and procedure shall be for the stopping of active water only. Any areas that require structural repair shall utilize the non-shrinking grout as specified above. All excess material shall be removed from internal wall surfaces.

7.054 Structural Repairs:

After all active infiltration has been stopped the Contractor shall utilize a non-shrinking grout to structurally repair or build-up any deteriorated manhole or wet well surface back to the original surface thickness. The Contractor shall repair any dislodged section joints, pipe connections, cracks or spalled areas greater than 3/4".

7.055 Application of the Lining System:

All pipe inverts shall be plugged with a removable plug to protect the pipes from lining over-spray. The Contractor shall apply the lining system per the manufacturer's recommendations. The minimum total lining system thickness shall be 250 mils for OBIC and 500 mils for SprayRoq. The interior surface shall be considered to include the entire area from the inside top of the manhole or wet well casting to the bench/invert. In cases where moisture or temperature is a concern a propane-fired heater shall be utilized to assist in reduction of curing time. No solvents shall be used.

7.056 Lining Repair Procedure:

After the application of the lining system, it shall be visually inspected to identify any defects such as pinholes, bug holes, etc. If any defects or deficiencies are found they shall be repaired per the manufacturer's recommendations.

07.06 - QUALITY CONTROL

Completed manholes shall be vacuum tested in accordance with ASTM C1244, as applicable.

07.07 - DOCUMENTATION

The Contractor shall be a certified applicator of the lining system, and provide documentation from the manufacturer that all employees are also certified. The Contractor shall have performed similar work on at least 200 manholes, wet wells, or a combination thereof. The Contractor shall provide a list of five (5) project references including the following information: project owner, description, location, scope, quantity lined, start and completion dates. Contractors not meeting the above credentials shall submit in writing their past experience in manhole lining to be considered.

07.08 - ACCEPTANCE

All lined manholes or wet wells shall be guaranteed against material delamination and all other defects in workmanship and materials for a minimum of five (5) years after the completion of the lining, but in no case shall be less than the manufacturer's published standard warranty. Any defect or failure shall be repaired within four (4) weeks from the date of notification, at no additional cost to the city.

The Contractor shall provide a final written report detailing the location, date of installation, description of the lining for each manhole or wet well lined, testing results and a copy of the manufacturer's standard published warranty.

07.09 - METHOD OF MEASUREMENT

The number of manholes to be paid for under Item 07 shall be the number of manholes lined.

07.10 - BASIS OF PAYMENT

Payment will be made at contract price for:

Item	Unit	Description
07	EA.	Manhole Lining

APPENDIX

Structural Rehabilitation & Corrosion Protection for Circular and Non-Circular Structures in Wastewater Collection Systems

SECTION 1: GENERAL

1.01 DESCRIPTION

This specification includes all work, materials and equipment required for the structural rehabilitation of circular structures. The purpose is to eliminate infiltration, repair voids, restore structural integrity and provide corrosion protection by the application of a spray-applied monolithic resin liner to the wall and bench surfaces of brick/concrete structures or structures produced with any other masonry construction material. These structures include, but are not limited to manholes, wet wells, lift stations and pump stations.

1.02 QUALITY ASSURANCE

A. Furnish materials of quality required by the American Society for Testing and Materials (ASTM) standards or other approved standards and specifications.

B. Provide guarantee against defective materials and workmanship in accordance with the requirements of these specifications.

C. The contractor installing the finished protective liner will be a certified trained applicator of the specified process.

D. Provide verifiable independent third party creep test results documenting no less than 70% retention of flexural modulus of elasticity after 50 years of service. The third party testing firm may not be affiliated with the manufacturer in any way.

1.03 REFERENCES

American Society for Testing and Materials (ASTM) Annual Book of Standards:

A. ASTM D638: Test Method for Tensile Properties of Plastics.

B. ASTM D695: Test Method for Compressive Properties of Rigid Plastics.

C. ASTM D790: Test Methods for Flexural Properties of unreinforced and reinforced Plastics and Electrical Insulating Materials.

1.04 PROJECT/SITE CONDITIONS

Coordinate with the Construction Manager for traffic control during rehabilitation work at each designated location.

1.05 SEQUENCING

All required interruptions of flow through manholes, wet wells, pump stations or any other portion of the sanitary sewer collection system shall be coordinated with and approval received from the Facility Manager or Construction Manager prior to the interruption.

SECTION 2: PRODUCTS

2.01 MATERIALS

I. Infiltration Control mix:

A. Minor Infiltration - Cementitious Grout (De Neef Industrial Products)

1) A rapid-setting cementitious grout or chemical grout specifically formulated for leak control should be used to stop minor water infiltration. It should be mixed and applied according to the manufacturer's recommendations and should meet the following minimum requirements.

Compressive strength	ASTM C 109	1,800 psi @ ½ hr 4,000 psi @ 24 hrs 5,000 psi @ 7 days
Tensile strength	ASTM C 190	300 psi @ 7 days 350 psi @ 28 days

B. Very Active Infiltration - Chemical Grout (De Neef Industrial Chemicals)

1) A chemical grout must be used for stopping very active infiltration, filling voids and should be mixed and applied according to manufacturer’s recommendations. The cementitious grout should be volume stable having a minimum 1 day compressive strength of 50 psi and a 28 day compressive strength of 250 psi.

2) Chemical grouts can be used for stopping very active infiltration and should be mixed and applied per manufacturer’s recommendations.

II. Patching and Profiling Mix:

A. Cementitious Compound (Strong Seal or equivalent product)

A quick-setting cementitious material can be used to bring the substrate to profile by filling voids, cracks, missing mortar and other substrate defects. It should be mixed and applied according to the manufacturer's recommendations and should meet the following minimum requirements.

Compressive strength	ASTM C 109	1000 psi @ 1 hr 3500 psi @ 48 hrs 5000 psi @ 28 days
Tensile strength	ASTM C 307	200 psi @ 24 hrs 300 psi @ 7 days

III. Resin Based Liner:

A. The resin based material shall be used to form the sprayed on/structural enhanced monolithic liner covering all interior surfaces of the structure including benches and inverts of manholes. The finished liner shall conform to the minimum physical requirements listed below.

Compressive strength	ASTM D 695	10,500 psi
Tensile strength	ASTM D 638 ASTM D 412	7,000 psi 2,250 psi
Flexural Strength	ASTM D 790	12,000 psi
Flexibility (1/8" Mandrel)	ASTM D 522	Pass
Bond		Shall exceed tensile strength of substrate
Flexural modulus (initial)	ASTM D 790	735,000 psi
Density		87 pcf
Hardness (Shore D)	ASTM D2240	52

1. The finished structure shall be corrosion resistant to: Hydrogen Sulfide; 20% sulfuric Acid; 17% Nitric Acid; 5% Sodium Hydroxide; road salts for winter conditions as well as other common ingredients of the sanitary sewage environment.

2. The wall of the resin based liner will be structurally designed to withstand the hydraulic load generated by the groundwater table & restore structural integrity. The long term (50 yr.) value of the flexural modulus of elasticity will be a minimum of 500,000 psi and is an integral part of the engineering equation used to design the wall thickness of the structural liner.

For this reason, the value of the long term flexural modulus of the proposed product will be certified by an independent, third party testing lab and submitted with the design calculations for each individual structure.

Definition- Long term value will be identified as initial flexural modulus less the reduction in value caused by Creep over a fifty (50) year minimum period and verified by DMA testing.

B. Other Materials: Because of the advantages associated with rapid cure and infinite thickness capabilities, no resin based materials other than polyurethane shall be used to achieve the structural enhancement without prior approval of the Construction Manager.

SECTION 3: EXECUTION

3.01 INSPECTION

A. Evaluation of Atmosphere: Prior to entering structures, an evaluation of the atmosphere will be conducted to determine the presence of toxic, flammable vapors or possible lack of oxygen. The evaluation shall be in accordance with local, state or federal safety regulations.

3.02 PREPARATION

A. Place covers over all pipe openings to prevent extraneous material from entering the sewer system. All foreign material shall be removed from the structures' wall and bench/floor using a pressure water spray (minimum 2500 psi). The use of acid for cleaning purposes, no matter how dilute, will not be allowed. Loose or protruding brick, mortar and concrete shall be removed by using a mason's hammer and chisel. Fill any large voids with quick setting patch mix as described in Paragraph (2.01 IIA). The surface to be repaired must be clean and free of any loose materials.

B. Minor leaks shall be stopped using the quick-setting specially formulated infiltration control mix (paragraph 2.01 IA) and shall be mixed and applied per manufacturer's recommendations. When severe infiltration is present, drilling may be required in order to pressure grout outside the structure using either a cementitious or chemical grout (paragraph 2.01 IB). Manufacturer's recommendations shall be followed when pressure grouting is required.

3.03 INSTALLATION/APPLICATION

A. Application Temperatures: Application of liner shall not be made unless the ambient temperature inside the structure is 50° degrees or higher.

B. Bench/Invert Repair:

1. The manhole bench must be sprayed but depending on availability and future plans, some judgment consideration will have to be made regarding the invert. Important issue here is the necessity to insure a monolithic system is achieved.

2. After blocking flow through the structure and thorough cleaning/preparatory work has been achieved. The sprayed on resin-based liner shall be applied to the invert, bench and wall areas in the same manner as specified for the liner application below. The spray shall be applied such that the entire structure receives a structurally enhanced monolithic liner.

3. The finished invert surfaces shall be smooth, free of ridges and will be sloped in the direction of flow. Special care shall be used to insure a smooth transition between the new manhole invert and intersecting pipeline inverts such that flow will not be impaired.

C. Liner Application: The resin based liner shall be manually sprayed on to all surfaces by a trained technician who is experienced in the application of a spray applied resin and has been certified by the manufacturer. Appropriate personal protection equipment shall be utilized but in every case when applying the liner, the sprayer and personnel in direct contact with the spray atmosphere, will always be protected by supplied air.

The minimum thickness of the material applied is to be no less than 250 mils in order to support structural integrity. No other products such as cement or grouts may be used as part of the structural reinstatement, however, said products may be used as part of the repair process prior to sprayed application of the structure as specified in 2.01 IIA.

Application of the spray applied material must be completed in one (1) mobilization in order to minimize the disruption and cost of excessive bypassing, pipeline plugging, traffic control and all other support services.

The finished manhole must be returned to full service immediately after the spray application is complete.

D. Curing: The structure should be allowed to cure for 24 hours and return to ambient temperature prior to any physical testing, including vacuum testing.

3.04 FIELD QUALITY CONTROL

A. The following test/inspection will be performed by the Construction Manager.

B. Visually verify the absence of leaks from infiltration.

3.05 WARRANTY

A. All products are to be applied by trained and approved Certified Partners only and in strict accordance with the directions for usage and installation of the product. The contractor guarantees products to conform to the quality assurance procedures established by the manufacturer and its resin blending partners. Liability, if any, is limited to replacement of the product for a period of three (3) years from the date of application.

Signature and Proposal Pages

Signature Page
44th Street Water Main Replacement

To the Director of Public Service of the City of Canton:

The undersigned, having carefully examined the complete invitation to bid, herewith proposes to furnish all the labor and materials required to complete the **44th Street Water Main Replacement** in accordance with the specifications on file, including any and all work and materials that may be necessary to complete the project in a proper and workmanlike manner, and in accordance with the instructions in the bid packet and under the direction of and to the satisfaction of the Director of Public Service of said City.

The bidder hereby agrees that the Director of Public Service has the right to reject any and all bids and to accept the bid(s) deemed most beneficial to the City of Canton.

The bidder hereby certifies that the undersigned _____ is the only person interested in the bid and the bidder herewith certifies that no officer or employee of the City of Canton is in any manner interested therein.

The bidder herewith encloses a _____**(BID BOND, CERTIFIED/CASHIER'S CHECK)** in the sum of $ _____ dollars made payable to the CITY OF CANTON as a guaranty that if awarded the contract for the work included in the proposal, will enter into contract therefore, with sureties satisfactory to the Director of Public Service, within the prescribed time of ten (10) days from the date of service of notice of award, otherwise such bond or checks shall become the property of said City, as liquidated damages of the failure on the bidder's part to do said contract within the specified time.

The bidder acknowledges receipt of Addenda Numbers: _____.

SIGNATURE OF BIDDER: _____.

NOTE: If bidder is a corporation, set forth the legal name of the corporation, together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If bidder is a partnership, set forth the name of the firm, together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Proposal Page

We (I), the above signed hereby propose to furnish the following article(s) and/or service(s) at the price(s) and terms stated subject to all instructions, conditions, specifications, and all attachments hereto. We (I) have read all attachments including the specifications and fully understand what is required.

BID ITEM	ODOT ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE LABOR	UNIT PRICE MATERIAL	TOTAL UNIT PRICE	ITEM TOTAL
ROADWAY								
1	201	CLEARING AND GRUBBING	1	LUMP				
2	254	PAVEMENT PLANING, ASPHALT CONCRETE	19050	S.Y.				
3	301	6 " ASPHALT CONCRETE BASE, PG 64-22	828	C.Y.				
4	304	6 " AGGREGATE BASE	544	C.Y.				
5	407	TACK COAT AT 0.075 GAL/SY	1801	GAL				
6	441	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG70-22M	1003	C.Y.				
7	608	CURB RAMP, TYPE A1	1120	S.F.				
8	608	CURB RAMP, TYPE A2	50	S.F.				
9	609	CANTON TYPE 2 STANDARD COMBINED CONCRETE CURB AND GUTTER	466	L.F.				
10	609	CANTON TYPE 1 STANDARD CONCRETE CURB	75	L.F.				
11	611	CATCH BASIN, MISC.: CURB INLET CATCH BASIN SCD#1, AS PER PLAN	23	EACH				
12	611	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	20	EACH				
13	SPECIAL	MANHOLE SEALING WITH A PROTECTIVE POLYMER LINING	29	EACH				
14	611	12" CONDUIT, TYPE B	20	L.F.				
15	644	CENTER LINE	1.34	MILE				
16	644	CHANNELIZING LINE, 8"	408	FT				

BID ITEM	ODOT ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE LABOR	UNIT PRICE MATERIAL	TOTAL UNIT PRICE	ITEM TOTAL
17	644	STOP LINE	288	FT				
18	644	CROSSWALK LINE	1278	FT				
19	644	TRANSVERSE/DIAGONAL LINE, 8"	52	FT				
20	644	SCHOOL SYMBOL MARKING, 72"	2	EACH				
21	644	LANE ARROW	8	EACH				
22	644	WORD ON PAVEMENT, 72"	5	EACH				
23	653	4" TOPSOIL FURNISHED AND PLACED	1	LUMP				
24	659	SEEDING AND MULCHING	1	LUMP				
25	816	VIDEO DETECTION SYSTEM, AS PER PLAN	3	EACH				
WATER WORKS								
26	638	ABANDON VALVE	35	EACH				
27	638	FIRE HYDRANT AND GATE VALVE REMOVED, HYDRANT TEE PLUGGED	7	EACH				
28	638	1" WATER SERVICE, COMPLETE - LONG SIDE	10	EACH				
29	638	1" WATER SERVICE, COMPLETE - SHORT SIDE	45	EACH				
30	638	1 1/2" WATER SERVICE, COMPLETE - SHORT SIDE	1	EACH				
31	638	2" WATER SERVICE, COMPLETE - SHORT SIDE	1	EACH				
32	638	4" WATER MAIN DUCTILE IRON PIPE, CLASS 52	12	L.F.				
33	638	6" WATER MAIN DUCTILE IRON PIPE, CLASS 52	840	L.F.				
34	638	8" WATER MAIN DUCTILE IRON PIPE, CLASS 52	6675	L.F.				
35	638	12" WATER MAIN DUCTILE IRON PIPE, CLASS 53	720	L.F.				
36	638	24" WATER MAIN DUCTILE IRON PIPE, CLASS 54	6	L.F.				

BID ITEM	ODOT ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE LABOR	UNIT PRICE MATERIAL	TOTAL UNIT PRICE	ITEM TOTAL
37	638	4 INCH GATE VALVE AND VALVE BOX, COMPLETE	1	EACH				
38	638	4 INCH 45 DEGREE BEND	2	EACH				
39	638	4 INCH PLUG	1	EACH				
40	638	4 INCH CUT-IN SLEEVE	2	EACH				
41	638	6 INCH GATE VALVE AND VALVE BOX, COMPLETE	8	EACH				
42	638	6 INCH 45 DEGREE BEND	16	EACH				
43	638	6 INCH 11.25 DEGREE BEND	2	EACH				
44	638	6 INCH PLUG	8	EACH				
45	638	6 INCH X 6 INCH TEE	2	EACH				
46	638	6 INCH x 6 INCH x 4 INCH TEE	1	EACH				
47	638	6 INCH CUT IN SLEEVE	5	EACH				
48	638	HYDRANT ASSEMBLY	15	EACH				
49	638	8 INCH GATE VALVE AND VALVE BOX, COMPLETE	25	EACH				
50	638	8 INCH 45 DEGREE BEND	45	EACH				
51	638	8 INCH 22.5 DEGREE BEND	1	EACH				
52	638	8 INCH CUT IN SLEEVE	6	EACH				
53	638	8 INCH PLUG	13	EACH				
54	638	8 INCH x 8 INCH x 4 INCH TEE	1	EACH				
55	638	8 INCH x 8 INCH x 6 INCH TEE	4	EACH				
56	638	8 INCH x 8 INCH x 8 INCH TEE	8	EACH				
57	638	8 INCH x 8 INCH CROSS	2	EACH				

BID ITEM	ODOT ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE LABOR	UNIT PRICE MATERIAL	TOTAL UNIT PRICE	ITEM TOTAL
58	638	12 INCH GATE VALVE AND VALVE BOX, COMPLETE	6	EACH				
59	638	12 INCH 45 DEGREE BEND	16	EACH				
60	638	12 INCH PLUG	3	EACH				
61	638	12 INCH CUT IN SLEEVE	2	EACH				
62	638	12 INCH x 12 INCH x 12 INCH TEE	1	EACH				
63	638	12 INCH x 12 INCH CROSS	1	EACH				
64	638	12 INCH x 8 INCH REDUCER	1	EACH				
65	638	12 INCH x 6 INCH REDUCER	2	EACH				
66	638	24 INCH x 12 INCH CROSS	1	EACH				
INCIDENTALS								
67	614	MAINTAINING TRAFFIC	1	LUMP				
68	623	CONSTRUCTION LAYOUT STAKES AND SURVEYING	1	LUMP				
69	624	MOBILIZATION	1	LUMP				
70	832	EROSION CONTROL, COMPLETE	1	LUMP				
TOTAL BASE BID =								

Total Base Bid Price in Figures _____

Total Base Bid Price in Words _____

Base Bid Prices are for Informational Purposes Only.
Total Unit Prices will govern.

THE CITY OF CANTON WATER DEPARTMENT

44TH ST. WATER IMPROVEMENTS

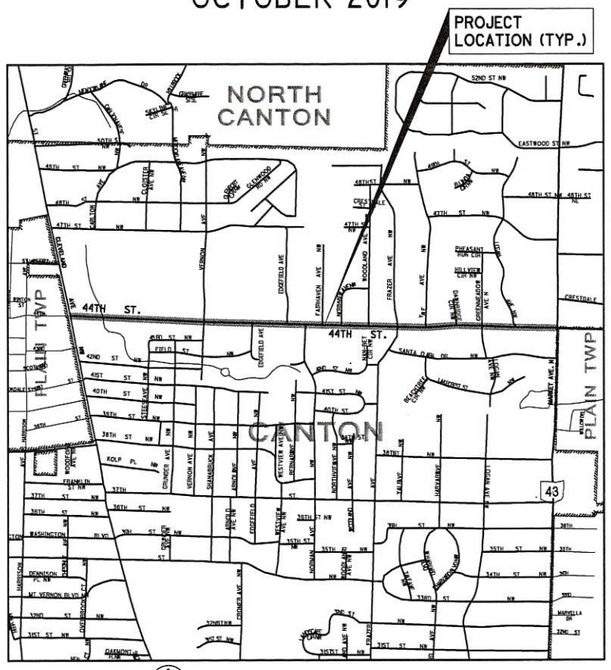
LOCATED IN THE CITY OF CANTON
STARK COUNTY, OHIO

OCTOBER 2019

INDEX OF SHEETS:

LEGEND:

- PROPERTY LINE
- CENTERLINE
- Ex R/W — EXIST. RIGHT–OF–WAY
- R/W — PROP. RIGHT–OF–WAY
- Ex U — EXIST. UTILITY EASEMENT
- U — PROP. UTILITY EASEMENT
- QUARTER SECTION LINE
- SECTION LINE
- CORPORATION LINE
- SAN — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- W — PROP. WATER MAIN
- G — EXIST. GAS LINE
- #+### — BASELINE
- SL — EXIST. SANITARY LATERAL
- *SL — EXIST. SANITARY LATERAL (SHALLOW)
- EXIST. STORM MANHOLE
- EXIST. CATCH BASIN
- EXIST. YARD DRAIN
- EXIST. HYDRANT
- EXIST. WATER SERVICE VALVE
- EXIST. WATER GATE VALVE
- EXIST. UTILITY POLE
- DECIDUOUS TREE
- EXIST. GAS METER
- PROPOSED FIRE HYDRANT
- PROPOSED WATER GATE VALVE
- EXIST. VALVE (NOT FIELD LOCATED)
- PROPOSED BLOW OFF ASSEMBLY
- PROPOSED PLUG OR CAP
- H.P. HIGH PRESSURE ZONE
- L.P. LOW PRESSURE ZONE
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 34)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS (SEE DETAIL SHT. 34)
- PROPOSED (#–SIZE) INCH, WATER SERVICE BRANCH
- (H##, V##) CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)



LOCATION MAP
(NOT TO SCALE)

CANTON CITY OFFICIALS:

MAYOR	THOMAS M. BERNABEI
DIRECTOR OF PUBLIC SERVICE	JOHN M. HIGHMAN
CANTON WATER DEPT. SUPERINTENDENT	TYLER S. CONVERSE

MEMBERS OF CANTON CITY COUNCIL:

COUNCIL PRESIDENT	ALLEN SCHULMAN
WARD 1	GREG HAWK
WARD 2	NATE CHESTER III
WARD 3	JASON SCAGLIONE
WARD 4	CHRIS SMITH
WARD 5	ROBERT FISHER
WARD 6	KEVIN D. HALL
WARD 7	JOHN MARIOL II
WARD 8	PETER FERGUSON
WARD 9	FRANK MORRIS
AT LARGE	COREY MINOR SMITH
AT LARGE	BILL SMUCKLER
AT LARGE	JAMES BABCOCK

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1–800–362–2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON–MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: 1–800–925–0988

PLAN APPROVALS:

WATERLINE IS APPROVED BY THE CITY OF CANTON WATER DEPARTMENT THIS 7 DAY OF October, 2019.

TYLER S. CONVERSE – SUPERINTENDENT

ENGINEERS SEAL:

STATE OF OHIO
SAID W. ABOUABDALLAH
E–53224
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Said W. Abouabdallah

DATE: 10/04/2019

TAG 557

CALCULATED | CHECKED SWA

TITLE SHEET

44TH ST. WATER IMPROVEMENTS

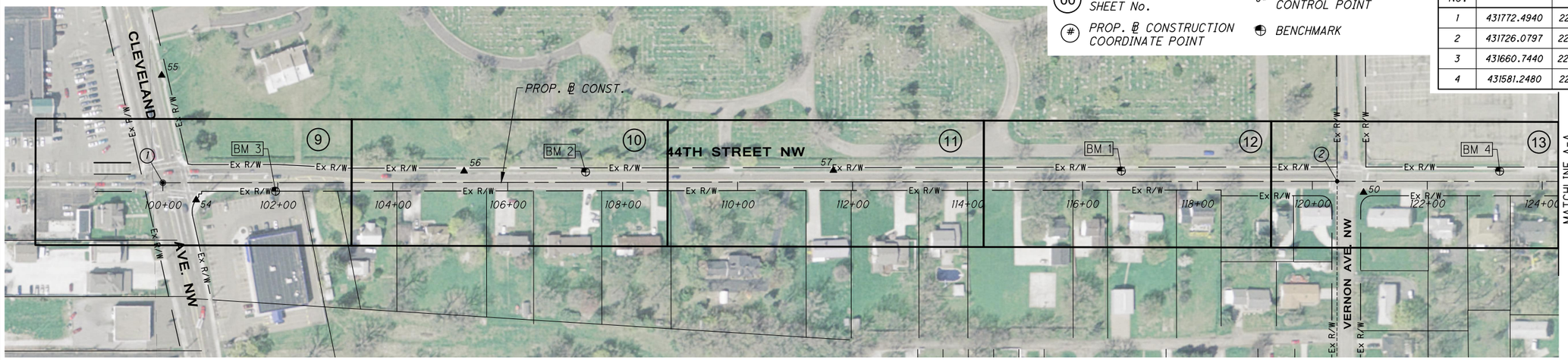
ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

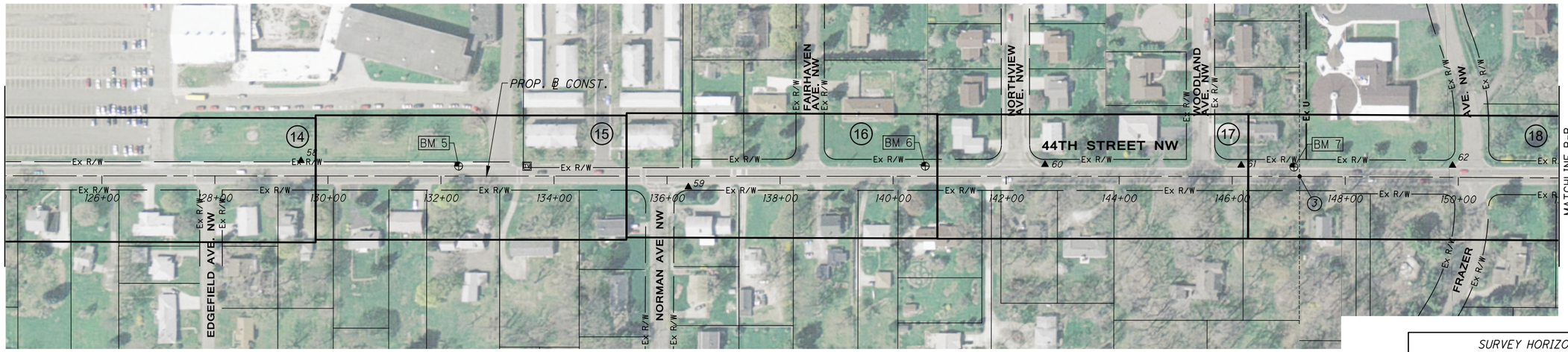
LEGEND

- (00) PLAN AND PROFILE SHEET No.
- (#) PROP. ℄ CONSTRUCTION COORDINATE POINT
- ▲C# SURVEY HORIZONTAL CONTROL POINT
- ⊕ BENCHMARK

PROPOSED ℄ CONSTRUCTION COORDINATES

POINT No.	NORTHING	EASTING	PI STA., STREET
1	431772.4940	2275249.5881	STA. 100+00.00, 44TH ST.
2	431726.0797	2277292.2659	STA. 120+43.21, 44TH ST.
3	431660.7440	2279967.4804	STA. 147+19.22, 44TH ST.
4	431581.2480	2282644.5710	STA. 173+97.49, 44TH ST.





SURVEY HORIZONTAL CONTROL

POINT No.	NORTHING	EASTING	DESCRIPTION
50	431705.669	2277337.768	5/8" REBAR, ARCADIS CAP
54	431741.189	2275306.789	DRILL HOLE SET IN CONC.
55	431959.517	2275252.090	DRILL HOLE SET IN CONC.
56	431780.140	2275774.065	5/8" REBAR, ARCADIS CAP
57	431765.960	2276416.473	5/8" REBAR, ARCADIS CAP
58	431730.662	2278201.724	5/8" REBAR, ARCADIS CAP
59	431667.874	2278885.801	5/8" REBAR, ARCADIS CAP
60	431692.570	2279517.642	5/8" REBAR, ARCADIS CAP
61	431683.048	2279864.638	5/8" REBAR, ARCADIS CAP
62	431673.613	2280238.393	5/8" REBAR, ARCADIS CAP
63	431614.699	2280890.176	5/8" REBAR, ARCADIS CAP
64	431633.186	2281623.370	5/8" REBAR, ARCADIS CAP
65	431576.164	2282084.757	5/8" REBAR, ARCADIS CAP
66	431660.704	2282608.833	5/8" REBAR, ARCADIS CAP
67	430806.258	2282656.810	5/8" REBAR, ARCADIS CAP

HORIZONTAL SCALE IN FEET: 0, 50, 100, 200

CALCULATED CAS CHECKED SWA

SCHEMATIC PLAN

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

GENERAL NOTES

I. PRECONSTRUCTION INCIDENTALS

(A) PROJECT SPECIFICATIONS/REQUIREMENTS:

ALL WORK REQUIRED TO COMPLETE THIS IMPROVEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS/REQUIREMENTS OF THE CITY OF CANTON AND THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, EXCEPT AS HEREIN AMENDED. IN THE CASE OF A CONFLICT BETWEEN THE CITY OF CANTON AND THE OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS/REQUIREMENTS, THE CITY OF CANTON REQUIREMENTS WILL TAKE PRECEDENCE, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

THE DEVELOPER/CONTRACTOR SHALL COMPLY WITH THE CITY OF CANTON SUPPLEMENTAL SPECIFICATION 01-00 PROJECT DOCUMENTATION AND SUBMITTAL REQUIREMENTS.

(B) ADMINISTRATIVE REQUIREMENTS:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY COMPLYING WITH ALL THE ADMINISTRATIVE DUTIES HEREIN CONTAINED.

THE DEVELOPER/CONTRACTOR SHALL DESIGNATE TO THE CITY AN EMPLOYEE RESPONSIBLE FOR CORRESPONDENCE, NOTIFICATIONS, AND SUBMITTALS PERTINENT TO THE PROJECT.

(C) PRECONSTRUCTION MEETING:

A PRECONSTRUCTION MEETING WITH THE DEVELOPER, CONTRACTOR, REPRESENTATIVES OF ALL UTILITY COMPANIES, THE CITY OF CANTON ENGINEERING DEPARTMENT AND THE CITY OF CANTON WATER DEPARTMENT IS REQUIRED FOR THIS PROJECT PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.

2 ~~FOR SUBDIVISION DEVELOPMENTS, THE DEVELOPER SHALL CONTACT THE CITY ENGINEER'S OFFICE TO ARRANGE A MEETING DATE. THE DEVELOPER WILL CONTACT THE ABOVE AGENCIES TO CONFIRM THE MEETING DATE.~~

FOR CITY GENERAL PROJECTS, THE CITY ENGINEER WILL CONTACT THE CONTRACTOR TO ARRANGE A MEETING DATE. THE CITY ENGINEER WILL CONTACT THE ABOVE AGENCIES TO CONFIRM THE MEETING DATE.

IF THE PROPOSED PROJECT LAND-DISTURBANCE AREA IS ONE (1) OR MORE ACRES, A SEPARATE PRE-CONSTRUCTION MEETING IS ALSO REQUIRED. THIS MEETING SHALL OCCUR ON-SITE BETWEEN THE CONTRACTOR AND THE STARK SOIL & WATER CONSERVATION DISTRICT (SWCD). THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING THIS MEETING. NO LAND-DISTURBANCE ACTIVITIES SHALL START UNTIL SAID MEETING HAS OCCURRED AND APPROVAL HAS BEEN GRANTED BY STARK SWCD.

(D) PROJECT SAFETY:

THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT THE PROJECT SITE AT ALL TIMES. THE CONTRACTOR SHALL PROPERLY SUPPORT AND/OR MAINTAIN ALL EXCAVATIONS PER APPLICABLE SAFETY REQUIREMENTS AND COMPLY WITH ALL O.S.H.A. REGULATIONS. APPROPRIATE BARRICADES, WARNING LIGHTS, SIGNS, FENCING, ETC. SHALL BE ERECTED AROUND THE CONSTRUCTION AREA DURING ALL NON-WORKING HOURS TO ALERT PERSONS OF THE POTENTIAL DANGER ASSOCIATED WITH THE AREA UNDER CONSTRUCTION AS WELL AS TO PREVENT ACCESS BY UNAUTHORIZED PERSONNEL TO THE CONSTRUCTION SITE/AREA. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE GENERAL PUBLIC AS WELL AS ALL CONSTRUCTION PERSONNEL. PUBLIC STREETS SHALL BE KEPT CLEAN AND FREE OF DEBRIS (MUD, STONE, ETC.) AT ALL TIMES. THE CONTRACTOR SHALL ALERT ALL LOCAL EMERGENCY AGENCIES (FIRE, POLICE, AMBULANCE, ETC.) OF THE NATURE OF THE PROPOSED PROJECT PRIOR TO BEGINNING AND CONSTRUCTION ACTIVITY. ACCESS FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.

(E) UNDERGROUND UTILITIES:

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS WERE OBTAINED BY FIELD OBSERVATIONS, FROM EXISTING RECORDS, AND/OR FROM THE OWNERS OF THE RESPECTIVE UTILITIES. THE INFORMATION AS SHOWN IS BELIEVED TO BE CORRECT; HOWEVER, THE COMPLETENESS AND ACCURACY OF THIS INFORMATION CANNOT BE GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ALL THE VARIOUS UTILITY COMPANIES (PUBLIC AND PRIVATE) TO VERIFY THE EXISTENCE, LIMITS AND/OR LOCATION OF ANY UTILITIES WHICH MAY BE ALONG THE ROUTE OR WITHIN THE VICINITY OF THIS IMPROVEMENT.

(F) UTILITY NOTIFICATION:

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING OPERATIONS ON THIS PROJECT, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER, THE REGISTERED UTILITY PROTECTION AGENCY/SERVICE, AND THE OWNERS OF ANY OTHER UTILITIES (PUBLIC AND/OR PRIVATE) THAT MAY HAVE UTILITY LINES OR FACILITIES WITHIN THE VICINITY OF THIS PROJECT BUT WHO ARE NOT MEMBERS OF THE REGISTERED UTILITY PROTECTION SERVICE. THE OWNERS OF ANY UNDERGROUND UTILITY FACILITY SHALL, WITHIN 48 HOURS AFTER NOTICE IS RECEIVED, EXCLUDING SATURDAYS, SUNDAYS AND OTHER LEGAL HOLIDAYS; STAKE, MARK OR OTHERWISE DESIGNATE THE EXISTENCE AND/OR LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING AND/OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO WORKING DAYS AHEAD OF THE PLANNED CONSTRUCTION.

OHIO UTILITIES PROTECTION SERVICE: 1-800-362-2764 (CONTACT NON-MEMBERS DIRECTLY).

THE PRIMARY UTILITIES WITHIN THE CITY OF CANTON AREA:

NATURAL GAS DIST./TRANS.
DOMINION EAST OHIO GAS
320 SPRINGSIDE DR., SUITE 320
AKRON, OHIO 44333
330-664-2409
ATTN: BRYAN DAYTON
RELOCATION@DOM.COM
EMERGENCY NO.
1-800-521-4400

TELEPHONE
AT&T
50 WEST BOWERY STREET
AKRON, OHIO 44308
ATTN: RICH WILSON
330-384-2245
CINDY ZUCHEGNO
330-384-3561
EMERGENCY NO. - 24 HRS.
1-800-572-4545 OPTION#4

COMMUNICATIONS CABLE
TIME WARNER CABLE
5520 WHIPPLE AVE N.W.
NORTH CANTON, OHIO 44720
330-494-9200
ATTN: JUSTIN FREUDEMAN
330-555-3192
330-472-4449(CELL)

ELECTRIC
AMERICAN ELECTRIC POWER
301 CLEVELAND AVE. S.W.
P.O. BOX 24400
CANTON, OHIO 44701-4400
330-438-7718
ATTN: RAY ZITNEY
EMERGENCY No.
1-800-672-2017

SANITARY AND STORM SEWER
CITY ENGINEER'S OFFICE
2436-30TH ST. N.E.
CANTON, OHIO 44705
330-489-3381
ATTN: DAN MOEGLIN

WATER
WATER DEPARTMENT
2664 HARRISBURG RD. N.E.
CANTON, OHIO 44705
330-489-3310
ATTN: LEWIS MILLER OR
BRENT BURRIER

TRAFFIC INTERCONNECT
CITY ENGINEER'S OFFICE
2436-30TH ST. N.E.
CANTON, OHIO 44705
330-489-3381
ATTN: NICK LOUKAS

THE CITY ENGINEER'S OFFICE IS TO BE CONTACTED DIRECTLY FOR SANITARY AND STORM SEWER AND TRAFFIC INTERCONNECT FACILITIES LOCATION: 330-489-3381.

(G) PROPOSED PUBLIC UTILITY LOCATION IN PROPOSED SUBDIVISIONS:

2

(H) EXPLORATORY BORINGS:

EXPLORATORY SOIL BORING INFORMATION IS NOT THE RESPONSIBILITY OF THE CITY OF CANTON. IT IS THE DEVELOPER/CONTRACTOR RESPONSIBILITY TO REVIEW ANY AND ALL INFORMATION AVAILABLE. IF DEVELOPER/CONTRACTOR REQUESTS TO DRILL AND OR EXCAVATE WITHIN THE CITY'S R/W, THE DEVELOPER/CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AT LEAST 3 WORKING DAYS PRIOR TO THIS WORK. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY NOTIFICATION, AS SPECIFIED, ALL TRAFFIC CONTROL, PREMIUM BACKFILL, AND COMPACTION AND RESTORATION, AS NECESSARY.

(I) CONTINGENCY QUANTITIES:

WHEN SPECIFIED ON PLANS OR SPECIFICATIONS, CONTINGENCY QUANTITIES ARE TO BE PERFORMED ONLY UNDER DIRECTION OF THE CITY ENGINEER. THE DEVELOPER/CONTRACTOR SHALL NOT ORDER ANY CONTINGENCY MATERIAL OR PERFORM ANY WORK UNTIL DIRECTED BY THE ENGINEER. THE ACTUAL WORK LOCATION AND QUANTITIES FOR SUCH ITEMS SHALL BE DOCUMENTED BY THE DEVELOPER/CONTRACTOR AND THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 611 -	CATCH BASIN, MISC.: CURB INLET CATCH BASIN SCD#1	23 EACH
ITEM 611 -	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	20 EACH
ITEM 611 -	12" CONDUIT, TYPE B	20 FT

II. CONSTRUCTION INCIDENTALS

(A) PLAN DISCREPANCIES:

ANY DISCREPANCIES FROM THE PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER SO THAT THE APPROPRIATE ADJUSTMENTS IN ALIGNMENT AND/OR GRADE MAY BE MADE PRIOR TO THE START OF CONSTRUCTION OR THE CONTINUATION OF THE SAME.

FAILURE BY THE DEVELOPER/CONTRACTOR TO VERIFY AND/OR DETERMINE EXISTING INFORMATION AS INDICATED WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ANY CHANGES NECESSARY TO COMPLETE THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION.

(B) VERIFICATION OF UNDERGROUND UTILITIES:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AS WELL AS THE ACTUAL LOCATION, ALIGNMENT, AND ELEVATIONS OF ALL EXISTING UTILITIES/FACILITIES WITHIN AND/OR ADJACENT TO THE GENERAL LIMITS OF THESE IMPROVEMENTS INCLUDING WATERLINES, SANITARY AND STORM SEWERS, GAS LINES, COMMUNICATION LINES/BANKS, ELECTRIC LINES, ETC. THIS MAY REQUIRE EXPLORATORY EXCAVATIONS TO BE PERFORMED BY THE CONTRACTOR FOR WHICH HE WILL NOT BE REIMBURSED. THE CONTRACTOR SHALL NOT ASSUME THAT EXISTING UTILITIES/CONDUITS WERE INSTALLED AT TYPICAL/STANDARD DEPTHS OR AT UNIFORM SLOPES/GRADES/DEPTHS BETWEEN ACCESS POINTS (CATCH BASINS, MANHOLES, JUNCTION CHAMBERS, ETC.)

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO INSTALL THE PROPOSED CONDUIT.

(C) PROTECTION OF UTILITIES:

THE DEVELOPER/CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES ENCOUNTERED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS AS APPROVED BY THE OWNERS OF THE UTILITY AND THE CITY ENGINEER.

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO CLOSELY COORDINATE THEIR WORK WITH ALL UTILITY COMPANIES; ANY POTENTIAL DELAYS WILL NOT BE THE RESPONSIBILITY OF THE CITY.

THE CONTRACTOR SHOULD EXPECT AT A MINIMUM ONE SANITARY SEWER LATERAL, ONE ROOF DRAIN, ONE WATER SERVICE, AND ONE GAS SERVICE FOR EACH LOT. ANY OF THE ABOVE UTILITIES DAMAGED DUE TO THE CONTRACTOR'S WORK SHALL BE RESTORED TO THE UTILITY OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.

(D) MAINTENANCE OF UTILITY SERVICES:

THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN UTILITY SERVICES AT ALL TIMES.

WATER SERVICE MAY BE INTERRUPTED FOR LIMITED PERIODS (4 HOURS MAXIMUM) DURING CONNECTION BETWEEN EXISTING WATER LINES AND RELOCATED/NEW WATER MAINS WHICH CANNOT BE COMPLETED OTHERWISE. NO SHUT DOWN SHALL OCCUR WITHOUT WRITTEN PERMISSION OF THE CITY OF CANTON WATER DEPARTMENT. PROPERTY OWNERS AFFECTED BY APPROVED INTERRUPTED SERVICE SHALL BE NOTIFIED 48 HOURS IN ADVANCE BY THE CONTRACTOR.

STORM SEWER AND SANITARY SEWER SERVICES SHALL BE MAINTAINED WITHOUT INTERRUPTION, UNLESS APPROVED BY THE CITY ENGINEER.

IN THE EVENT THAT CONSTRUCTION DISRUPTS THE FLOW OF A SANITARY SEWER, THE CONTRACTOR SHALL IMMEDIATELY RECTIFY THE DISRUPTED SEWER BY EITHER TEMPORARILY FLUMING WITH MATERIALS ACCEPTABLE TO THE ENGINEER OR BYPASSING WITH PUMPS. COST OF MAINTAINING AND REPAIR OF SANITARY SEWERS DISTURBED BY CONSTRUCTION SHALL BE AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.

(E) CONSTRUCTION NOISE:

CONSTRUCTION NOISE ASSOCIATED WITH ANY IMPROVEMENT PROJECT SHALL BE LIMITED TO LEVELS COMMENSURABLE WITH ADJOINING LAND AND THEIR ASSOCIATED USAGE AS DETERMINED BY THE CITY ENGINEER. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER-OPERATED CONSTRUCTION-TYPE DEVICES SHALL NOT BE OPERATED BETWEEN THE HOURS OF 7:00 P.M. AND 7:00 A.M. UNLESS AUTHORIZED BY THE CITY ENGINEER.

(F) OPEN TRENCH CONSTRUCTION:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION/TRENCHING PRACTICES FOR THE PROPOSED IMPROVEMENT, OR AS FURTHER SHOWN ON THE PLANS AND SPECIFICATIONS.

THE DEVELOPER/CONTRACTOR SHALL FOLLOW ALL APPLICABLE LOCAL AND STATE SAFETY REGULATIONS, INCLUDING CODE OF FEDERAL REGULATIONS, PART 1926 (SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION), SUBPART P (EXCAVATIONS), FOR ALL APPLICABLE REQUIREMENTS AND RESPONSIBILITIES.

PRIOR TO COMMENCING CONSTRUCTION, THE DEVELOPER/CONTRACTOR SHALL NOTIFY THE CITY ENGINEER OF THE PROJECT'S ASSIGNED "COMPETENT PERSON" IN OSHA EXCAVATION STANDARDS.

(G) TRENCH CLOSING AND TEMPORARY TOPPING:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE THE NECESSARY LEVELS OF PROTECTION AND SAFEGUARDING OF ALL OPEN TRENCHES, WHEN WORK IS EITHER COMPLETED AT THE END OF THE DAY OR SUSPENDED FOR ANY OTHER REASON.

2 ~~FOR TRENCH SURFACE REQUIREMENTS, REFER TO NOTE 4 ON CITY STANDARD DRAWING NO. 19.~~

FOR TRENCH SURFACE REQUIREMENTS, REFER TO THE MISCELLANEOUS DETAILS.

(H) DUST CONTROL:

THE DEVELOPER/CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. SUFFICIENT QUANTITIES OF CALCIUM CHLORIDE SHALL BE STORED ON THE JOB SITE AT ALL TIMES TO BE USED FOR DUST CONTROL.

(I) TESTING OF UTILITIES: 3

(J) PRESERVATION AND RESTORATION OF DISTURBED FEATURES:

EXISTING DRIVES, BERMS, LAWNS, PAVEMENTS, CURBS, SIDEWALKS, SIGNS, MAILBOXES, FENCES, RETAINING WALLS, LANDSCAPING ITEMS, OR OTHER APPURTENANCES DISTURBED DURING CONSTRUCTION BUT NOT SPECIFICALLY DESIGNATED FOR REMOVAL/REPLACEMENT SHALL BE RESTORED BY THE DEVELOPER/CONTRACTOR AT HIS EXPENSE TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO DISTURBANCE AND TO THE COMPLETE SATISFACTION OF THE CITY ENGINEER.

RESTORATION OF EXISTING ROADWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY, TOWNSHIP, COUNTY, AND/OR OTHER AGENCIES HAVING AUTHORITY. COST FOR THE RESTORATION OF THESE ITEMS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR SPECIFICATIONS. NO PUBLIC ROADWAY SHALL BE DISTURBED WITHOUT PRIOR WRITTEN APPROVAL FROM THE GOVERNING AGENCY AND ACQUISITION OF NECESSARY PERMITS.

(K) SALVAGED CASTINGS:

WHEN DIRECTED BY THE CITY ENGINEER, ALL METAL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED ON SITE OR DELIVERED TO A LOCATION DESIGNATED BY THE CITY ENGINEER.

(L) PLUG EXISTING CONDUIT:

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULKHEADS IN AN EXISTING CONDUIT TO BE ABANDONED.

BULKHEADS SHALL CONSIST OF BRICK AND/OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

PAYMENT FOR PLUGGING OF EXISTING CONDUIT FOR ABANDONMENT SHALL BE INCLUDED IN THE UNIT BID OF THE VARIOUS ITEMS OF THE PROJECT.

REVISIONS/COMMENTS:

1 ANY REFERENCE TO "THE CITY ENGINEER" WITHIN THE GENERAL NOTES SHALL MEAN THE CANTON WATER DEPARTMENT SUPERINTENDENT.

2 NOT APPLICABLE TO THIS PROJECT

3 REFER TO SECTION VIII. WATER MAIN/SERVICES

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44TH ST. WATER IMPROVEMENTS

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222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

II. CONSTRUCTION INCIDENTALS (continued)

(M) CONSTRUCTION LAYOUT:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT UTILIZING PERTINENT PLAN DATA. THE CITY ENGINEER WILL NOT BE RESPONSIBLE FOR STAKING HORIZONTAL OR VERTICAL CONTROL. CONSTRUCTION LAYOUT SHALL BE IN ACCORDANCE WITH ODOT 623 CONSTRUCTION LAYOUT STAKES.

AT THE CITY ENGINEER'S REQUEST, THE CONTRACTOR SHALL MAKE AVAILABLE ALL SURVEY FIELD NOTES FOR REVIEW.

(N) EXISTING MONUMENTATION:

THE CONTRACTOR SHALL PRESERVE ALL CORNERSTONES, IRON PINS, CONCRETE MONUMENTS AND/OR ANY TYPE OF LAND MONUMENT. THE CONTRACTOR SHALL HAVE ALL MONUMENTS IN THE PROXIMITY OF THE WORK REFERENCED. THE CONTRACTOR SHALL REPLACE/RESET ANY DISTURBED OR DAMAGED MONUMENTS AND SHALL FURNISH A CERTIFICATION BY A REGISTERED SURVEYOR THAT THE MONUMENTS HAVE BEEN RESTORED.

(O) ELEVATION DATUM:

ALL ELEVATIONS ARE BASED ON THE **NAVD 1988 DATUM.**

(P) DEWATERING OPERATIONS:

WHEN DEEMED NECESSARY, THE DEVELOPER/CONTRACTOR MAY INSTALL DEWATERING EQUIPMENT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

THE PROPOSED LOCATION OF WELL POINTS, HEADER PIPE, ELECTRICAL DISTRIBUTION, GENERATORS AND DISCHARGE PIPES, ETC. SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR.

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS FOR THE INSTALLATION AND SUBSEQUENT REMOVAL OF DEWATERING EQUIPMENT AS WELL AS PROPER WATER DISCHARGE PROCEDURES AS MAY BE REQUIRED PER STATE AND LOCAL GOVERNING AGENCIES.

INSTALLATION OF ALL ELECTRICAL EQUIPMENT, INCLUDING GROUNDING AND PROTECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR.

DEVELOPER/CONTRACTOR SHALL PROVIDE ALL COMBUSTIBLE ENGINE DRIVEN GENERATORS WITH "HOSPITAL GRADE" MUFFLERS. MUFFLERS SHALL BE RATED, AT A MAXIMUM OF 67 dB AT 23 FEET AWAY RUNNING FULL LOAD.

(Q) INSPECTION:

FOLLOWING THE PRE-CONSTRUCTION MEETING(S) AND ESTABLISHMENT OF AN APPROVED SCHEDULE, THE CONTRACTOR SHALL GIVE A MINIMUM 48 HOUR NOTICE BEFORE STARTING ANY WORK ON THIS PROJECT AND SHALL KEEP THE CITY INFORMED OF HIS/HER CONSTRUCTION SCHEDULE. ALL WORK REQUIRED FOR THIS IMPROVEMENT SHALL BE SUBJECT TO INSPECTION BY THE CITY OF CANTON OR THEIR DESIGNATED REPRESENTATIVE. NO WORK SHALL BE PERFORMED WITHOUT AN AUTHORIZED INSPECTOR PRESENT, UNLESS OTHERWISE APPROVED.

(R) FIELD OFFICE:

IF A PAY ITEM IS PROVIDED, THE DEVELOPER/CONTRACTOR SHALL PROVIDE A FIELD OFFICE IN ACCORDANCE WITH ODOT 619. THE FIELD OFFICE SHALL BE TYPE 'A', UNLESS OTHERWISE SPECIFIED.

III. EARTHWORK / SITE WORK

(A) EASEMENTS AND RIGHT-OF WAY:

THE DEVELOPER/CONTRACTOR SHALL STAY WITHIN THE DESIGNATED PROPERTIES, EASEMENTS, AND/OR RIGHT-OF-WAY PROVIDED FOR THE PROJECT AT ALL TIMES. NO MATERIAL SHALL BE STORED NOR ANY WORK PERFORMED ON PRIVATE PROPERTY UNLESS OTHERWISE APPROVED. DISTURBANCE OF EXISTING FEATURES AND/OR IMPROVEMENTS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AND AS APPROVED BY THE CITY ENGINEER/PROPERTY OWNER.

(B) SUITABILITY OF SITE:

THE CITY OF CANTON SHALL NOT BE RESPONSIBLE FOR THE TYPE AND/OR SUITABILITY OF THE MATERIAL UNDERLYING THE PROJECT SITE. THE DEVELOPER/CONTRACTOR MUST APPRAISE THEMSELVES OF ANY EXISTING SITE CONDITIONS WHICH MAY AFFECT THEIR BID OR THE PERFORMANCE OF THE REQUIRED WORK. THE DEVELOPER/CONTRACTOR SHALL PERFORM ANY INVESTIGATIONS AND/OR TESTING NECESSARY TO ADEQUATELY DETERMINE/ESTIMATE TO THEIR SATISFACTION ALL SITE CONDITIONS WHICH COULD AFFECT THE PERFORMANCE OF THE PROPOSED IMPROVEMENTS. THIS COULD INCLUDE, BUT NOT BE LIMITED TO, UNSUITABLE AND/OR UNSTABLE SOIL/SUBSURFACE CONDITIONS, ROCK, WATER (PERCHED OR FREE), SPRINGS, ETC.

(C) REMOVAL/REPLACEMENT OF UNSUITABLE MATERIAL:

THE DEVELOPER/CONTRACTOR SHALL UNDERCUT AND REPLACE UNSUITABLE MATERIAL ENCOUNTERED DURING INSTALLATION OF THE PROPOSED UTILITIES AND ROADWAY UNTIL SUCH CONDITIONS ARE CORRECTED AND APPROVED BY THE PROJECT ENGINEER.

THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR THE UTILITY UNLESS THE PLANS ALLOW FOR A CONTINGENCY ITEM FOR REMOVAL/REPLACEMENT OF UNSUITABLE MATERIAL. IF SO, THE CITY WILL DOCUMENT THE LOCATION OF SUCH AREAS FOR FINAL QUANTITY TABULATION.

IV. ROADWAY / DRIVE APPROACHES / WALK / CURB

(A) PAVEMENT STANDARDS:

SEE MISCELLANEOUS DETAILS

(B) RESTRICTED WORK SCHEDULE:

NO CONCRETE FINISH WORK OR PERMANENT ASPHALT SHALL BE PLACED FROM NOVEMBER 15TH TO APRIL 15TH UNLESS WRITTEN APPROVAL IS GRANTED BY THE CITY ENGINEER.

(C) ASPHALT/CONCRETE:

IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE OF BEGINNING WORK WHICH REQUIRES COMPACTION TESTING AND/OR PRE-POUR INSPECTION PRIOR TO PLACEMENT OF ASPHALT OR CONCRETE. WORK SHALL NOT PROCEED UNTIL TESTING AND/OR INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE CITY ENGINEER.

(D) PAVEMENT MARKINGS:

THIS WORK SHALL MEET THE REQUIREMENTS OF ITEM 644 WITH THE FOLLOWING EXCEPTIONS AND ADDITIONS:

1. THE CONTRACTOR SHALL SUPPLY A LOG TO THE ENGINEER OF ALL EXISTING PAVEMENT MARKINGS AND THEIR LOCATIONS PRIOR TO PERFORMING THE PAVEMENT PLANING. THE CONTRACTOR SHALL ALSO SUPPLY A LOG OF THE PROPOSED PAVEMENT MARKINGS AND THEIR LOCATIONS, FOR USE DURING APPLICATION, PRIOR TO ANY ACTIVITY OF FINAL PAVEMENT MARKINGS.
2. THE CONTRACTOR SHALL NOTIFY THE CITY 72 HOURS PRIOR TO THE PLACEMENT OF ANY PAVEMENT MARKINGS.
3. FINAL PAVEMENT MAKINGS SHALL BE APPLIED WITHIN 7 CALENDAR DAYS OF THE INSTALLATION OF THE SURFACE COURSE.

(E) CONCRETE CURB AND GUTTER:

AS SHOWN IN THE PLANS, THE CONTRACTOR SHALL REPLACE CURB AND GUTTER AT THE LOCATION OF EACH OF THE PROPOSED CURB RAMPS (WHEEL CHAIR RAMPS). THE PROPOSED CURB AND GUTTER SHALL MATCH TO ADJACENT EXISTING CURB AND GUTTER AND CONSTRUCTED FLUSH TO PAVEMENT. THE LIMITS OF THE CURB AND GUTTER REPLACEMENT SHALL BE THE LENGTH OF THE PROPOSED CURB RAMPS UNLESS NOTED OTHERWISE IN THE PLANS.

V. SANITARY SEWERS / STORM SEWERS

(A) SEWER STANDARDS:

ALL SANITARY/STORM SEWER CONDUITS AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO APPLICABLE CITY STANDARD DRAWINGS AND SPECIFICATIONS (LISTED BELOW) AND ODOT SPECIFICATIONS EFFECTIVE AT THE TIME OF CONSTRUCTION, UNLESS SPECIFIED OTHERWISE ON THE PLANS.

CITY STANDARD DRAWING NO.:

CATCH BASINS
1 "CURB INLET CATCH BASIN"
2 "CURB INLET WATER QUALITY CATCH BASIN"
3 "HILLSIDE CURB INLET CATCH BASIN"
4 "SQUARE-TOP CATCH BASIN"
5 "SQUARE-TOP WATER QUALITY CATCH BASIN"

MANHOLES
10 "PRECAST STORM OR SANITARY MANHOLE"
11 "OUTSIDE DROP CONNECTION FOR SANITARY MANHOLE"
12 "MANHOLE COVER"

CONDUITS AND TRENCHES
18 "HOUSE CONNECTION STACK"
19 "UTILITY TRENCH REQUIREMENTS"
20 "SANITARY SEWERS AND LATERALS"
21 "CONCRETE ENCASEMENT DETAIL"
22 "DOWNSPOUT OUTLET (NON-CURBED STREET)
23 "DOWNSPOUT OUTLET (CURBED STREET)
24 "GROUNDWATER DRAIN LINE CONNECTION"

DRIVEWAYS, CURBS, AND PAVEMENT
32 "TYPICAL SECTION - LOCAL STREET"

(B) ITEM 611 - CATCH BASIN, MISC.: CURB INLET CATCH BASIN SCD#1 (CONTINGENCY ITEM)

THIS ITEM SHALL CONSIST OF REMOVAL OF EXISTING CURB INLET CATCH BASIN PER ITEM 202 AND CONSTRUCTING A CURB INLET CATCH BASIN PER CITY OF CANTON STANDARD DRAWING #1 AT LOCATIONS DESIGNATED BY THE ENGINEER.

THE CONTRACTOR SHALL INSTALL THE NEW DRAINAGE STRUCTURE FLUSH WITH ADJACENT CURB & GUTTER AND PAVEMENT. ALL EXISTING PIPES SHALL BE CONNECTED INTO IT AT THE SAME ELEVATIONS AND ORIENTATIONS UNLESS SPECIFICALLY CALLED OUT DIFFERENTLY IN THE PLANS.

(C) ITEM 611 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN (CONTINGENCY ITEM)

THIS ITEM SHALL CONSIST OF ADJUSTING MANHOLE GRATES TO GRADE PER CITY OF CANTON STANDARD DRAWING #13 AT LOCATIONS DESIGNATED BY THE ENGINEER.

(D) ITEM SPECIAL - MANHOLE SEALING WITH A PROTECTIVE POLYMER LINING

ALL SANITARY MANHOLES WITHIN THE PROJECT LIMITS SHALL BE SEALED. MANHOLE SEALING SHALL BE PERFORMED PER SPECIFICATION 02567.

(E) ITEM 611 - 12" CONDUIT, TYPE B (CONTINGENCY ITEM)

IT MAY BE NECESSARY TO REPLACE PORTIONS OF EXISTING CONDUIT THAT ARE BEING TIED INTO PROPOSED MANHOLES OR CATCH BASINS. IF IT IS DETERMINED BY THE ENGINEER THAT THE EXISTING CONNECTION IS SUBSTANDARD, THIS ITEM SHALL BE USED.

IF NECESSARY, CONNECT WITH A MASONRY COLLAR AS PER ODOT SCD DM-1.1.

VI. STORM WATER POLLUTION PREVENTION:

(A) FOR PROJECTS ONE (1) ACRE OR MORE OF TOTAL LAND-DISTURBANCE:

THE OWNER/DEVELOPER SHALL APPLY FOR AND OBTAIN AN OHIO EPA NPDES PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY. SAID PERMIT REQUIRES THE PREPARATION AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWP3) TO ADDRESS CONSTRUCTION SITE STORM WATER RUNOFF AS WELL AS POST-CONSTRUCTION STORM WATER MANAGEMENT. THE SWP3 MUST BE REVIEWED AND APPROVED BY THE STARK COUNTY SOIL & WATER CONSERVATION DISTRICT (SWCD).

THE OWNER/DEVELOPER AND HIS REPRESENTATIVES SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE PERMIT AS WELL AS THE SWP3. ALL ACTIVITIES AND PRACTICES SHALL ALSO COMPLY WITH THE CURRENT EDITIONS OF THE CITY OF CANTON STORM WATER MANAGEMENT MANUAL AND THE OHIO DEPARTMENT OF NATURAL RESOURCES' RAINWATER AND LAND DEVELOPMENT MANUAL, AS APPLICABLE. SUCH PROJECTS ARE ALSO SUBJECT TO INSPECTION BY THE CITY OF CANTON AND/OR ITS AUTHORIZED REPRESENTATIVES (I.E. STARK SWCD) TO ENSURE COMPLIANCE WITH PERMIT AND SWP3 REQUIREMENTS AND LOCAL STORM WATER QUALITY REGULATIONS.

A PRE-CONSTRUCTION MEETING INITIATED BY THE DEVELOPER/CONTRACTOR IS REQUIRED ON-SITE WITH THE STARK SWCD PRIOR TO ANY LAND-DISTURBING ACTIVITIES. THE DEVELOPER/CONTRACTOR SHALL ABIDE BY ALL ORDERS ISSUED BY THE CITY AND/OR STARK SWCD PURSUANT TO INSPECTION OF THE PROJECT SITE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUBMIT CO-PERMITTEE APPLICATION TO OHIO EPA PRIOR TO BEGINNING WORK ON THE PROJECT. AS APPLICABLE, THE CONTRACTOR SHALL OBTAIN A COPY OF THE SWP3 AND FAMILIARIZE HIMSELF WITH IT, IMPLEMENTING ALL ITEMS AND ABIDING BY ALL PERMIT REQUIREMENTS AND REGULATIONS.

(B) FOR PROJECTS LESS THAN ONE (1) ACRE OF TOTAL LAND-DISTURBANCE:

AN EPA NPDES CONSTRUCTION STORM WATER PERMIT AND SWP3 IS NOT REQUIRED. HOWEVER, THE DEVELOPER/ CONTRACTOR SHALL STILL ENSURE THAT APPROPRIATE PRACTICES ARE IN PLACE TO PROVIDE CONSTRUCTION RUNOFF AND EROSION AND SEDIMENT CONTROLS WITHIN THE PROJECT LIMITS. SUCH PRACTICES MAY INCLUDE THE USE OF SILT FENCE, STORM DRAIN INLET PROTECTION, JUTE MATTING, TEMPORARY SEEDING, MULCHING, CHECK DAMS, CONSTRUCTION ENTRANCES, CONCRETE WASHOUT AREAS, ETC. ALL PRACTICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE OHIO DEPARTMENT OF NATURAL RESOURCES' RAINWATER AND LAND DEVELOPMENT MANUAL, AS APPLICABLE.

EROSION AND SEDIMENT CONTROL PRACTICES MUST BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL PRACTICES AND WILL BE HELD RESPONSIBLE FOR ADDRESSING ANY ON- OR OFF-SITE EROSION/SEDIMENT ISSUES RELATED TO THE PROJECT. THE OWNER/DEVELOPER/CONTRACTOR SHALL ABIDE BY ALL ORDERS ISSUED BY THE CITY PURSUANT TO INSPECTION OF THE PROJECT SITE.

REVISIONS/COMMENTS:

1. ANY REFERENCE TO "THE CITY ENGINEER" WITHIN THE GENERAL NOTES SHALL MEAN THE CANTON WATER DEPARTMENT SUPERINTENDENT.
2. NOT APPLICABLE TO THIS PROJECT
3. REFER TO SECTION VIII. WATER MAIN/SERVICES

CALCULATED CAS CHECKED SWA

GENERAL NOTES

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

VII. TRAFFIC:

(A) MAINTAINING TRAFFIC:

THE CONTRACTOR SHALL MAINTAIN TRAFFIC ADJACENT TO AND THROUGH THE PROJECT AS DESCRIBED BELOW AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE OHIO DEPARTMENT OF TRANSPORTATION MANUAL OF CONSTRUCTION AND MATERIALS SPECIFICATIONS ITEM 614 MAINTAINING TRAFFIC. THE CONTRACTOR SHALL FURNISH, MAINTAIN, AND REMOVE ALL SIGNS, FLAGS, FLAGMEN, WATCHMEN, BARRICADES, SIGN SUPPORTS, CONES, BARRELS, AND INCIDENTALS IN CONFORMANCE WITH THE MOST RECENT REVISIONS OF THE CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. INTERFERENCE WITH VEHICULAR TRAFFIC SHALL BE KEPT TO A MINIMUM AT ALL TIMES. ALL OPEN TRENCHES AND EXCAVATIONS SHALL BE PROTECTED WITH DRUMS, BARRICADES, OR BARRIERS. ACCESS SHALL BE MAINTAINED AT ALL TIMES FOR EMERGENCY AND FIRE DEPARTMENT VEHICLES.

ANY TEMPORARY ROADWAY CLOSING MUST BE APPROVED IN WRITING BY THE CITY TRAFFIC ENGINEER AND ANY OTHER PUBLIC AGENCY HAVING JURISDICICTION. THE CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEER AT LEAST 72 HOURS IN ADVANCE OF ANY SUCH CLOSINGS FOR PUBLICATION AND EMERGENCY AGENCY NOTIFICATION.

(B) RESIDENTIAL AND BUSINESS AREAS:

THE CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL RESIDENCES AND BUSINESSES DURING CONSTRUCTION. IN THE EVENT A DRIVE ACCESS NEEDS TO BE CLOSED, THE CONTRACTOR SHALL GIVE NOTICE OF CLOSURE AND DURATION TO THE PROPERTY OWNER 24 HOURS IN ADVANCE. CONTRACTOR SHALL ARRANGE FOR ALTERNATE PARKING AND REASONABLE ACCESS FOR THOSE PROPERTY OWNERS AFFECTED BY DRIVE CLOSURES.

(C) EXISTING STREET NAME AND TRAFFIC CONTROL SIGNS:

WHERE WORK REQUIRES THE MOVEMENT OF EXISTING SIGNS (STOP SIGNS, SPEED LIMIT SIGNS, NO PARKING SIGNS, ETC.). THE CONTRACTOR IS REQUIRED TO MAINTAIN THE FUNCTION OF ALL TRAFFIC CONTROL SIGNS. ALL SIGNS REMOVED BY THE CONTRACTOR SHALL BE STORED ON SITE AND REINSTALLED BY THE CONTRACTOR.

(D) NEW STREET NAME & TRAFFIC CONTROL SIGNS:

2 ~~ALL STREET NAME AND TRAFFIC CONTROL SIGNS SHALL COME COMPLETE AND BE MADE IN ACCORDANCE WITH THE CITY OF CANTON SIGN AND PAINT DEPARTMENT SPECIFICATIONS. GENERALLY, ALL SIGNS SHALL HAVE HI-INTENSITY SHEETING AND BE MADE WITH .080 50/52 ALUMINUM. STREET NAME SIGNS SHALL BE MADE WITH WHITE UPPER AND LOWER CASE LETTERING ON GREEN BACKGROUND USING 9" BLANKS, BE DOUBLED SIDED W/RADIUS CORNERS AND HAVE 6" NAME AND 3" SUFFIXES. ALL SIGN RELATED HARDWARE IS TO BE INCLUDED, SUCH AS 6" HEAVY DUTY U-CHANNEL CAPS AND STREET NAME CROSSES.~~

~~FOR SUBDIVISION DEVELOPMENTS, ALL PERMANENT STREET NAME SIGNS AND TRAFFIC CONTROL SIGNS SHALL BE FURNISHED AND INSTALLED BY THE DEVELOPER/CONTRACTOR.~~

(E) EXISTING TRAFFIC SIGNALS:

WHERE WORK REQUIRES INTERFERENCE WITH EXISTING SIGNALIZATION IN THE INTERSECTIONS, ALL WORK SHALL BE COORDINATED THROUGH THE CITY ENGINEER. THE CONTRACTOR SHALL NOT ALTER ANY SIGNALIZATION WITHOUT THE CITY ENGINEER'S AUTHORIZATION.

(F) NEW TRAFFIC SIGNALIZATION:

ALL NEW OR MODIFIED TRAFFIC SIGNALIZATION AT INTERSECTIONS SHALL BE IN ACCORDANCE WITH CITY TRAFFIC ENGINEERING TRAFFIC CONTROL GENERAL NOTES AND ODOT SPECIFICATIONS; WITH SPECIAL EMPHASIS ON ODOT ITEMS 625, 632, 633, 732, AND 733 WHICH DEALS WITH TRAFFIC CONTROL.

DETECTOR LOOPS WHICH ARE DAMAGED AS RESULT OF THIS PROJECT SHALL BE REPLACED WITH VIDEO DETECTION. SEE THE FOLLOWING:

ITEM 816 – VIDEO DETECTION SYSTEM, AS PER PLAN

THIS ITEM OF WORK SHALL MEET STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) SUPPLEMENTAL SPECIFICATION 816, VIDEO DETECTION SYSTEM. IN ADDITION TO THE REQUIREMENTS OF ODOT'S SUPPLEMENTAL SPECIFICATION 907 THE FOLLOWING REQUIREMENTS SHALL ALSO APPLY:

THE THERMAL TRAFFIC SENSOR AND DETECTION MODULE MUST BE INTEGRATED IN ONE HOUSING WITHOUT THE NEED FOR ANY ADDITIONAL DETECTION SOFTWARE OUTSIDE OF THIS HOUSING. BY USING ONE OR MORE PREDEFINED DETECTION ZONES, THE DETECTION SOFTWARE WILL HAVE THE ABILITY TO DETECT VEHICLES AND BICYCLES ON MULTIPLE LANES. BICYCLE DETECTION ZONES WILL BE SEPARATE FROM VEHICLE DETECTION ZONES AND WILL UTILIZE A DIFFERENT SET OF DETECTION ALGORITHMS.

THE THERMAL IMAGING SENSOR SHALL BE FLIR ITS TRAFISENSE.

THE DETECTION SOFTWARE WILL HAVE THE ABILITY TO DIFFERENTIATE BETWEEN VEHICLES AND BICYCLES WITH A HIGH LEVEL OF ACCURACY AND ALLOW FOR SEPARATE OUTPUTS TO BE USED FOR VEHICLE PRESENCE AND BICYCLE PRESENCE.

THE DETECTION SYSTEM SHALL GENERATE SEPARATE VEHICLE AND BICYCLE PRESENCE EVENTS AND COUNTING DATA. THE GENERATED VEHICLE AND BICYCLE PRESENCE EVENTS WILL BE SENT TO A TRAFFIC SIGNAL CONTROLLER.

IT MUST BE POSSIBLE TO PUT 4 VIRTUAL BICYCLE PRESENCE DETECTION ZONES IN THE IMAGE. STORAGE OF BICYCLE COUNT INFORMATION SHALL BE POSSIBLE.

THE NECESSARY VIDEO DETECTION CAMERAS MUST PROVIDE A COMMUNICATIONS INTERFACE THAT FULLY SUPPORTS AN ETHERNET IEEE 802.3 COMPLIANT 10/100BASE T AUTO SENSING PORT FOR ADVANCED SYSTEMS COMMUNICATIONS. THE ETHERNET PORT SHALL PROVIDE AN UPSTREAM CONNECTION TO OTHER ETHERNET DEVICES IN THE CABINET. AN INDUSTRY STANDARD RJ-45 TYPE CONNECTOR SHALL BE INCLUDED THAT SUPPORTS A SIMPLE CATS 5E PATCH CABLE INTERFACE.

THE THERMAL TRAFFIC SENSOR SHALL INCLUDE A 10-YEAR WARRANTY ON THE THERMAL DETECTOR.

THE VIDEO DETECTION CAMERAS SHALL ALSO HAVE THE CAPABILITIES TO DETECT BICYCLES.

ALL SOFTWARE UPGRADES NECESSARY TO MAINTAIN THE FUNCTIONALITY OF THIS ITEM IS INCLUDED IN THE COST OF THIS ITEM.

ALL CAMERAS SHALL HAVE THE CAPABILITY TO REACH 350 FEET TO DETECT SYSTEM DETECTION ZONES.

VIDEO DETECTION RACK SHALL BE EXPANDABLE TO ACCOMMODATE 16 OUTPUTS.

VIDEO DETECTION CAMERA IN PLACE AND FULLY OPERATIONAL AS SHOWN IN THE PLANS. ALL MATERIALS AND WORK REQUIRED TO COMPLETE THIS ITEM, INCLUDING ATTACHMENT BRACKETS, SHALL BE INCLUDED IN THE UNIT COST.

VIDEO DETECTION WILL BE INSTALLED AS DIRECTED BY THE ENGINEERING AT THE FOLLOWING LOCATION:

44th ST. AND CLEVELAND AVE. (1 UNIT)
44th ST. AND VERNON AVE. (2 UNITS)

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 816 – VIDEO DETECTION SYSTEM, AS PER PLAN – 3 EACH

(G) TRAFFIC CONTROL PLAN:

THE DEVELOPER/CONTRACTOR SHALL SUBMIT TO THE CITY ENGINEER A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH CITY SUPPLEMENTAL SPECIFICATION 01-00. DETOURS, IF NECESSARY, SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO PLAN SUBMISSION.

VIII. WATER MAIN / SERVICES:

1. ALL WATER MAINS, SERVICES AND APPURTENANCES SHALL BE DESIGNED AND CONSTRUCTED ACCORDING TO THE CITY OF CANTON WATER DEPARTMENT REQUIREMENTS AND SPECIFICATIONS IN EFFECT AT THE TIME OF CONSTRUCTION.

2. MAINS – WATER MAINS SHALL BE CLASS 52 (8" AND UNDER), CLASS 53 (12") OR CLASS 54 (OVER 12") DUCTILE IRON, MEETING AWWA C151 WITH PUSH JOINTS. THE OUTSIDE SURFACE OF ALL DUCTILE IRON PIPE, FITTINGS AND APPURTENANCES SHALL BE SHOP COATED WITH ASPHALTIC MATERIAL. IF THE COATING MATERIAL IS FOUND TO BE DAMAGED PRIOR TO THE PIPE TRENCH BEING BACKFILLED, THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL APPROVED MATERIAL AS REQUIRED TO REPAIR AS DIRECTED. THE CONTRACTOR SHALL HAVE SUFFICIENT COATING MATERIALS AVAILABLE AT THE JOB SITE PRIOR TO LAYING THE PIPE. THE INTERIOR OF ALL PIPES AND FITTINGS SHALL BE LINED WITH CEMENT MORTAR AND SEAL COATED IN COMPLETE CONFORMANCE WITH AWWA C104, OR THE LATEST REVISION.

3. ALL DUCTILE IRON PIPE, INCLUDING FITTINGS, BENDS, TEES, VALVES AND APPURTENANCES BURIED UNDERGROUND, SHALL BE ENCASED WITH 8 MIL. POLYETHYLENE FILM CONFORMING TO AWWA C105.

4. PLASTIC PIPE LARGER THAN 2" SHALL BE JM EAGLE, ULTRA BLUE PVCO AWWA C909 PRESSURE PIPE, PRESSURE CLASS 235 OR APPROVED EQUAL AND INSTALLED PER MANUFACTURER RECOMMENDATION.

5. WHEN PLASTIC PIPE IS USED, A TRACER WIRE SHALL BE INSTALLED ON TOP OF THE PIPE.
   A. THE TRACER WIRE SHALL BE #14 AWG COPPER CLAD STEEL WIRE WITH 30 MILS OF HIGH-DENSITY POLYETHYLENE (HDPE) INSULATION.
   B. THE TRACER WIRE SHALL BE INSTALLED IN A CONTINUOUS FASHION WITH THE WIRE ON TOP OF THE WATER MAIN AND SECURE TO THE MAIN EVERY FIVE (5) FEET WITH TAPE.
   C. THE TRACER WIRE SHALL BE BROUGHT TO THE SURFACE AT EVERY VALVE BOX AND/OR AS CALLED OUT IN THE DRAWINGS. TRACER WIRE SHALL BE BROUGHT TO THE SURFACE AT LEAST EVERY ONE THOUSAND (1,000) FEET.
   D. IF THE WIRE COATING GETS DAMAGED, REPAIR DAMAGED COATING WITH ELECTRICAL TAPE.
   E. THE TRACER WIRE SHALL PASS A CONTINUITY TEST BEFORE THE WATERLINE INSTALLATION IS ACCEPTED.

6. THE MINIMUM COVER OVER WATER MAINS SHALL BE 4'-6" FROM GROUND SURFACE TO THE BARREL OF THE PIPE.

7. PIPE LENGTHS MAY BE DEFLECTED AT THE JOINT, IF REQUIRED, AT ONE-HALF THE DEGREE RECOMMENDED BY THE MANUFACTURER.

8. FITTINGS SHALL BE DUCTILE IRON AND BE RATED FOR 250 PSI WORKING PRESSURE IN ACCORDANCE WITH AWWA C110 OR AWWA C153. FITTINGS SHALL INCLUDE, BUT NOT LIMITED TO BENDS, TEES, SLEEVES, COUPLINGS, CROSSES, REDUCERS AND CAPS.

9. ANY FITTINGS OR VALVES ADJACENT TO A TEE OR CROSS SHALL BE ANCHORED TO THE TEE OR CROSS WITH EITHER THE USE OF AN ANCHOR TEE OR ANCHOR CROSS OR ANCHOR COUPLINGS.

10. VALVES – THE ITEMS COVERED BY THIS SPECIFICATION SHALL MEET ALL APPLICABLE AWWA C509 OR C515 STANDARDS AND THE FOLLOWING: ALL VALVES SHALL BE NON-RISING STEM, IRON BODY, RESILIENT WEDGE DISC. THE DESIGN OF THE THRUST COLLAR SHALL BE SUCH THAT THE THRUST COLLAR IS SEALED FROM LINE PRESSURE BY MEANS OF AN "O" RING SEAL. ALL VALVES SHALL BE FURNISHED WITH A TWO (2) INCH SQUARE OPERATING NUT, OPEN RIGHT. ALL VALVES SHALL BE FURNISHED WITH MECHANICAL JOINT END CONNECTIONS. THE STEM SHALL BE PROTECTED FROM EXTERNAL GRIT BY A WEATHER SHIELD AND AN UPPER "O" RING. STEM SHALL BE LUBRICATED. GATE COATING SHALL HAVE A MINIMUM THICKNESS OF 10 MILS. VALVE SHALL BE TESTED AT THE RATED WORKING PRESSURE OF 250 PSI WITH NO LEAKAGE. SHELL TEST OF 500 PSI SHALL BE APPLIED TO BODY WITH VALVE IN THE OPEN POSITION WITH NO LEAKAGE THROUGH THE METAL, STEM SEALS OR JOINTS. VALVE MUST HAVE TRADITIONAL STUFFING BOX. ALL BOLTING MATERIAL IN THE THRUST COLLAR AND BONNET SHALL BE #316 SS BOLTS. ALL VALVES WITH ACCESSORIES PACK (FLANGES, RUBBERS, NUTS, BOLTS).

11. ALL VALVE BOXES SHALL BE HEAVY DUTY, THREE (3) PIECE SCREW TYPE, WITH "WATER" LIDS.

12. FLUSHING AND DISINFECTION OF WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C651.

13. ALL WATER LINE PRESSURE TESTING SHALL CONFORM TO AWWA C600.

14. WATER MAINS SHALL BE INSTALLED AND BACKFILLED PER O.D.O.T. ITEM 638.

15. WATER LINES LOCATED WITHIN THE LIMITS OF OR WITHIN A 1/2 TO 1 SLOPE OF EXISTING AND/OR PROPOSED ROADWAYS, PARKING AREAS, BUILDINGS, SIDEWALKS, AND/OR DRIVES SHALL BE INSTALLED AS TYPE B CONDUITS. ALL OTHER WATER MAINS SHALL BE INSTALLED AS TYPE C CONDUITS. BEDDING SHALL BE AS SPECIFIED, EXCEPT THAT SLAG WILL NOT BE PERMITTED.

16. ALL BENDS, FITTINGS, TEES, VALVES, DEAD ENDS, ETC. SHALL BE SECURED EQUAL. POURED-IN-PLACE CONCRETE THRUST BLOCKS SHALL ALSO BE PROVIDED AT/FOR EACH BENDS, FITTING, TEE, DEAD END, ETC. THIS BLOCKING SHALL BE CAREFULLY PLACED TO ENSURE IT IS POSITIONED PROPERLY TO WITHSTAND THE RESULTANT FORCES AT EACH BEND, FITTING, ETC. AND SHALL BEAR ON STABLE UNDISTURBED GROUND CAPABLE OF WITHSTANDING THE POTENTIAL LOADING. WHEN DIRECTED BY THE CITY, TIE RODS ARE TO BE 3/4 INCH DIAMETER. TWO TIE RODS ARE REQUIRED FOR AN 8 INCH PIPE, AND FOUR TIE RODS ARE REQUIRED FOR 12 INCH AND GREATER PIPE.

17. IN ADDITION TO THE RESTRAINT OF ALL BENDS, FITTINGS, TEES, VALVES, DEAD ENDS, ETC. THE CONTRACTOR SHALL ALSO SECURE/RESTRAIN ALL JOINTS FOR AT LEAST THREE (3) PIPE JOINTS (50 LF MIN.) BEYOND EACH DEAD END, BEND, FITTING, VALVE, TEE, ETC. UTILIZING MEGALUGS, FIELD LOK GASKETS, OR APPROVED EQUALS.

18. THE CONTRACTOR SHALL PROVIDE 18" VERTICAL CLEARANCE BETWEEN PROPOSED WATERLINES AND ANY SANITARY OR STORM SEWERS. WHEN 18" CLEARANCE BETWEEN A WATERLINE AND A SANITARY OR STORM SEWER CANNOT BE OBTAINED, THE CONTRACTOR SHALL PROVIDE CONCRETE ENCASEMENT AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL MAINTAIN TEN (10) FOOT HORIZONTAL CLEARANCE BETWEEN WATERLINES/SERVICES AND SANITARY OR STORM SEWERS.

19. HYDRANTS – THE FIRE HYDRANT SETTING SHALL INCLUDE THE HYDRANT, ANCHOR TEE, VALVE, VALVE BOX, 6 INCH DUCTILE IRON (CLASS 52) PIPING AND ALL FITTINGS NEEDED FOR PROPER INSTALLATION TO FINAL GRADE. FIRE HYDRANTS SHALL BE MUELLER A423 MEETING THE CITY OF CANTON WATER DEPARTMENT STANDARDS AND REQUIREMENTS. ALL COSTS FOR THE 6" PIPING ASSOCIATED WITH THE INSTALLATION OF FIRE HYDRANTS SHALL BE INCLUDED WITH THE FIRE HYDRANT PAY ITEM. ALL HYDRANTS SHALL BE INSTALLED WITH THE PUMPER NOZZLE FACING THE STREET. ALL FIRE HYDRANT THREADS SHALL BE LUBRICATED WITH A FOOD GRADE LUBRICANT AND OPERATED UPON INSTALLATION.

20. CUT-IN SLEEVES FOR TIE-IN TO EXISTING WATER MAINS SHALL BE SMITH BLAIR 441 SLEEVES WITH #316 SS BOLTS.

21. ALL WATER TAPS AND SERVICES MUST BE INSTALLED BEFORE ANY PAVEMENT FOR THE PROPOSED ROADWAY HAS BEEN PLACED. CONTRACTOR SHALL MAKE ALL SERVICE TAPS ON THE WATER MAIN.

22. PRIOR TO MAKING THE TAP, THE CONTRACTOR SHALL EXPOSE THE EXISTING CURB BOX AND VERIFY THE SIZE OF THE WATER SERVICE LINE ON THE OWNER'S SIDE. THE PROPOSED TAP AND SERVICE SHALL MATCH THE SIZE OF THE OWNER'S SERVICE LINE, WITH 1" BEING A MINIMUM. AN EXISTING 1 1/4" SERVICE SHALL BE REPLACED WITH A 1 1/2" SERVICE AND TAP.

23. THE PROPOSED WATER SERVICES AND TAPS SHALL BE 1" UNLESS NOTED OTHERWISE ON THE PLANS OR DETERMINED OTHERWISE PER PREVIOUS NOTE.

24. ANY SERVICE TO THE FAR SIDE OF THE STREET SHALL BE PUSHED OR BORED UNDER THE PAVEMENT. TRENCHING ACROSS THE ROAD IS NOT PERMITTED.

25. THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY PRECAUTIONS TO PROTECT AND MAINTAIN IN SERVICE, ANY EXISTING WATER MAINS AND/OR SERVICES EXPOSED DURING CONSTRUCTION.

26. ANY WATER SERVICE LINE THAT IS BROKEN, CUT OR OTHERWISE DAMAGED, SHALL BE REPLACED FROM THE CORPORATION STOP TO THE CURB STOP WITH A SINGLE PIECE OF HDPE TUBING, CTS, PE4710. NO SPLICING OF THE SERVICE LINE WILL BE PERMITTED.

27. SERVICE BRANCHES WILL BE INSTALLED AS PER O.D.O.T ITEM 638.16, WITH THE FOLLOWING EXCEPTIONS:
   A. WHEN A SERVICE BRANCH IS DISTURBED FOR LOWERING, RAISING, EXTENDING OR SHORTENING ON THE PROPERTY SIDE ON THE SERVICE STOP, IT SHALL BE REPLACED WITH NEW MATERIALS FROM THE CORPORATION STOP TO THE SERVICE STOP.

28. POLYETHYLENE WATER MAIN AND SERVICE TUBING 2" AND UNDER SHALL BE COPPER TUBE SIZE, SDR 9, WITH A MINIMUM PRESSURE CLASS OF 200 PSI AND MEET STANDARDS ASTM-D2737 PE4710 AND AWWA C901. THE ACCEPTABLE TUBING IS CP CHEM PERFORMANCE PIPE DRISCOPLEX 5100-ULTRA-LINE, CHARTER PLASTICS INC. BLUE ICE, ENDOT ENDOPURE AND ADS POLYFLEX.

REVISIONS/COMMENTS:

1 ANY REFERENCE TO "THE CITY ENGINEER" WITHIN THE GENERAL NOTES SHALL MEAN THE CANTON WATER DEPARTMENT SUPERINTENDENT.

2 NOT APPLICABLE TO THIS PROJECT

3 REFER TO SECTION VIII. WATER MAIN/SERVICES

CALCULATED CAS CHECKED SWA

GENERAL NOTES

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
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VIII. WATER MAIN / SERVICES (continued):

29. THE PROPOSED FACILITIES SHALL MAINTAIN A MINIMUM 35 PSI PRESSURE DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.
30. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.
31. WHEN AN EXISTING WATER MAIN MUST BE SHUT DOWN TO PERFORM REQUIRED WORK, THE CONTRACTOR SHALL NOTIFY THE PROPERTIES TO BE AFFECTED A MINIMUM OF 24 HOURS IN ADVANCE OF SAID SHUT DOWN. THE WORK WILL BE SCHEDULED AND COORDINATED TO MINIMIZE THE TIME THE MAIN IS OUT OF SERVICE.
32. THE CONTRACTOR SHALL NOTIFY THE CITY 48 HOURS IN ADVANCE OF ANY SHUT DOWN OF AN EXISTING MAIN. THE CONTRACTOR WILL NOT OPERATE ANY VALVES. VALVES WILL BE OPERATED BY CANTON WATER DEPARTMENT PERSONNEL ONLY. VALVES DAMAGED BY THE CONTRACTOR'S OPERATION WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
33. ALL VALVE BOXES WILL BE ADJUSTED TO FINAL GRADE OF SURROUNDING PAVEMENT OR FINISHED SURFACE TREATMENTS WHEN THE PROJECT IS COMPLETED.
34. ANY DIGGING WITHIN THE RIGHT-OF-WAY OF ANY STREET REQUIRES A ROAD OPENING PERMIT. PLEASE CONTACT THE APPROPRIATE GOVERNMENTAL ENTITY FOR INFORMATION REGARDING THE PERMITTING PROCESS AND/OR FEES DUE.
35. THE CONTRACTOR SHALL REPLACE ANY TRAFFIC SIGNAL LOOP DETECTOR WIRE DAMAGED DURING THE WATERLINE INSTALLATION. THIS COST SHALL BE INCLUDED IN THE UNIT PRICES BID FOR ALL ITEMS IN THE PROPOSAL.
36. THE CONTRACTOR SHALL REPLACE ANY ROADWAY PAVEMENT MARKINGS DAMAGED OR REMOVED DURING THIS PROJECT. THE PAVEMENT MARKINGS SHALL BE PER THE GOVERNING AUTHORITY'S SPECIFICATIONS. THIS COST SHALL BE INCLUDED IN THE UNIT PRICES BID FOR ALL ITEMS IN THE PROPOSAL.
37. THE CONTRACTOR SHALL REPLACE ANY PRIVATE IRRIGATION SYSTEMS AND/OR UNDERGROUND ELECTRIC FENCES THAT ARE DAMAGED OR REMOVED DURING THE WATERLINE CONSTRUCTION. THIS COST SHALL BE INCLUDED IN THE UNIT PRICES BID FOR ALL ITEMS IN THE PROPOSAL.
38. VALVES THAT ARE CALLED OUT TO BE ABANDONED SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO ABANDON EXISTING WATER VALVES. THIS ITEM SHALL ALSO INCLUDE ANY NECESSARY EXCAVATION AND BACKFILL REQUIRED. VALVES SHALL BE CLOSED AND HAVE THE TOP 6" OF THE CASTING REMOVED. VALVES IN PAVEMENT SHALL BE FILLED WITH CONCRETE WITH THE TOP 6" MATCHING THE EXISTING PAVEMENT COMPOSITION. VALVES IN YARD AREA SHALL BE FILLED WITH SAND.
39. FIRE HYDRANTS THAT ARE CALLED OUT TO BE REMOVED SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO REMOVE THE FIRE HYDRANT, HYDRANT VALVE AND PLUG THE HYDRANT TEE.
40. FOR WATERLINES CALLED OUT TO BE ABANDONED, THE CONTRACTOR SHALL PLUG AND ABANDON THE EXISTING WATERLINE WITH A DUCTILE IRON PLUG OR AS DIRECTED BY THE CANTON WATER DEPARTMENT.
41. REMOVAL OF ANY EXISTING THRUST BLOCKS WILL BE CONSIDERED INCIDENTAL TO THE OVERALL PROJECT COST.

IX. POST CONSTRUCTION INCIDENTALS

(A) AS-BUILT DRAWINGS:

AS-BUILT REPRODUCIBLE MYLARS SHALL BE PROVIDED TO THE CITY OF CANTON BY THE DESIGN ENGINEER AT THE COMPLETION OF THE PROJECT. AS-BUILT INFORMATION CONSISTS OF POST-CONSTRUCTION FIELD SURVEY DATA OF THE LOCATION, FLOWLINE ELEVATIONS, AND TOP-OF-GRATE/RIM ELEVATIONS FOR ALL STORM AND SANITARY STRUCTURES CONSTRUCTED AND/OR IMPACTED BY THE PROJECT.

FOR PRIVATE PROJECTS, THE CONSTRUCTION BOND WILL NOT BE RELEASED UNTIL THE AS-BUILT DRAWINGS HAVE BEEN ACCEPTED.

(B) PROPOSED MONUMENTATION:

THE DEVELOPER'S/CONTRACTOR'S SURVEYOR SHALL NOTIFY THE CITY ENGINEER IN WRITING UPON THE COMPLETION OF MONUMENTS BEING SET AS PER PLAN OR RECORD PLAT.

(C) RELEASE OF RETAINER/BONDS:

PRIOR TO THE RELEASE OF RETAINER/CONSTRUCTION BOND BY THE CITY OF CANTON, THE CONTRACTOR SHALL HAVE COMPLETED THE ENGINEER'S PROJECT PUNCHLIST AND SUBMIT FINAL WAIVER OF LIEN, IN ACCORDANCE WITH CITY SS 01-00.

X. SEQUENCE OF CONSTRUCTION

THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES LISTED BELOW UNLESS AN ALTERNATIVE METHOD IS APPROVED, IN WRITING, BY THE CANTON WATER DEPARTMENT.

(A) INTERSECTION OF VERNON AVENUE NW AND 44TH STREET NW

1. INSTALL THE 8" (LOW PRESSURE) WATERLINE AND THE FIVE (5) 8" VALVES FROM WEST TO EAST THROUGH THE INTERSECTION. TEST/APPROVE THE WATERLINE TO PUT INTO SERVICE.
2. MAKE ALL SERVICE CONNECTIONS ONTO THE NEW (LOW PRESSURE) WATERLINE WEST OF VERNON AVENUE.
3. OUT OF CROSS, INSTALL 8" (HIGH PRESSURE) WATERLINE TO THE NORTH. TEST/APPROVE TO PUT INTO SERVICE, AND THEN TIE INTO EXISTING VALVE ON HIGH PRESSURE WATERLINE. PRIOR TO OPENING THE EXISTING VALVE TO BRING THIS SECTION OF WATERLINE INTO SERVICE, THE WEST VALVE ON THE PROPOSED 8" CROSS MUST BE CLOSED AND SHALL REMAIN CLOSED.
4. OUT OF 8" TEE, INSTALL 8" (LOW PRESSSURE) WATERLINE TO THE NORTH ON VERNON AVENUE, TEST/APPROVE TO PUT INTO SERVICE AND TIE INTO THE EXISTING CLOSED VALVE.
5. OUT OF 8" CROSS, INSTALL 8" (HIGH PRESSURE) WATERLINE TO THE SOUTH, TEST/APPROVE TO PUT INTO SERVICE AND TIE INTO THE EXISTING 8" (HIGH PRESSURE) WATERLINE THAT RUNS SOUTH DOWN VERNON.

(B) INTERSECTION OF WOODLAND AVENUE NW AND 44TH STREET NW

1. INSTALL THE 8" WATERLINE TO THE NORTH ON WOODLAND UP TO THE POINT OF TYING INTO THE EXISTING 8" WATERLINE. TEST/APPROVE TO PUT INTO SERVICE.
2. PRIOR TO TYING INTO THE EXISTING 8" AND 24" WATERLINE, THE CONTRACTOR SHALL:
   a. EXPOSE THE EXISTING 24" WATERLINE TO VERIFY THE SIZE, TYPE, HORIZONTAL AND VERTICAL LOCATION OF THE EXISTING 24"x8" TEE.
   b. CONTACT THE CANTON WATER DEPARTMENT AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED TIE-IN. THIS TIE-IN SHALL BE SCHEDULED AND COORDINATED WITH THE CANTON WATER DEPARTMENT TO MINIMIZE THE TIME THE 24" WATERMAIN IS OUT OF SERVICE.
3. SHUT THE EXISTING WATERLINES DOWN AND MAKE THE CONNECTION INTO THE EXISTING 24"x8" TEE BY ANCHORING THE 8" VALVE TO THE TEE. THEN INSTALL ALL ADJACENT BENDS, FITTINGS AND TIE INTO THE EXISTING 8" WATERLINE. TURN THE 24" WATERLINE BACK INTO SERVICE.

(C) INTERSECTION OF YALE AVENUE NW AND 44TH STREET NW

1. INSTALL THE 6" WATERLINE TO THE NORTH ON YALE UP TO THE POINT OF TYING INTO THE EXISTING 6" WATERLINE. TEST/APPROVE TO PUT INTO SERVICE.
2. PRIOR TO TYING INTO THE EXISTING 6" AND 24" WATERLINE, THE CONTRACTOR SHALL:
   a. EXPOSE THE EXISTING 24" WATERLINE TO VERIFY THE SIZE, TYPE, HORIZONTAL AND VERTICAL LOCATION OF THE EXISTING 24"x6" TEE.
   b. CONTACT THE CANTON WATER DEPARTMENT AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED TIE-IN. THIS TIE-IN SHALL BE SCHEDULED AND COORDINATED WITH THE CANTON WATER DEPARTMENT TO MINIMIZE THE TIME THE 24" WATERMAIN IS OUT OF SERVICE.
3. SHUT THE EXISTING WATERLINES DOWN AND MAKE THE CONNECTION INTO THE EXISTING 24"x6" TEE BY ANCHORING THE 6" VALVE TO THE TEE. THEN INSTALL ALL ADJACENT BENDS, FITTINGS AND TIE INTO THE EXISTING 6" WATERLINE. TURN THE 24" WATERLINE BACK INTO SERVICE.

(D) INTERSECTION OF GREENMEADOW/LOGAN AVENUE NW AND 44TH STREET NW

1. INSTALL THE WATERMAIN, TEES, CROSSES AND VALVES ALONG 44TH STREET. TEST/APPROVE TO PUT INTO SERVICE.
2. MAKE ALL SERVICE CONNECTIONS ONTO THE NEW WATERLINE ALONG 44TH STREET.
3. AT LOGAN AVENUE (NORTH OF 44TH STREET), TIE THE PROPOSED 12" WATERLINE INTO THE EXISTING 12" WATERLINE THAT RUNS NORTH ALONG LOGAN AVENUE.
4. AT GREENMEADOW AVENUE, OUT OF THE NEW 12" X 12" CROSS, INSTALL 12" WATERLINE TO THE SOUTH, TEST/APPROVE TO PUT INTO SERVICE AND TIE INTO EXISTING 12" WATERLINE THAT RUNS SOUTH ALONG LOGAN AVENUE.
5. AT GREENMEADOW AVENUE, OUT OF THE NEW 12" X 12" CROSS, INSTALL THE SHORT (25' +/-) SEGMENT OF 12" WATERLINE TO THE NORTH, STOPPING JUST SHORT OF THE PROPOSED VALVE. TEST/APPROVE TO PUT INTO SERVICE.
6. PRIOR TO TYING INTO THE EXISTING 24" WATERLINE, THE CONTRACTOR SHALL CONTACT THE CANTON WATER DEPARTMENT AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED TIE-IN. THIS TIE-IN SHALL BE SCHEDULED AND COORDINATED WITH THE CANTON WATER DEPARTMENT TO MINIMIZE THE TIME THE 24" WATERMAIN IS OUT OF SERVICE.
7. INSTALL THE 24" X 12" CROSS, ALL ADJACENT FITTINGS AND VALVES, AND TIE INTO THE NEW 12" WATERLINE THAT WAS STUBBED ACROSS 44TH STREET. TURN THE 24" WATERMAIN BACK INTO SERVICE.
8. OUT OF THE 6" 45 DEGREE BEND, NORTH OF THE 24" X 12" CROSS,, INSTALL THE 6" WATERLINE TO THE NORTH, TEST/APPROVE TO PUT INTO SERVICE AND TIE INTO THE EXISTING 6" WATERLINE THAT RUNS NORTH ALONG GREENMEADOW AVENUE.

REVISIONS/COMMENTS:

1. ANY REFERENCE TO "THE CITY ENGINEER" WITHIN THE GENERAL NOTES SHALL MEAN THE CANTON WATER DEPARTMENT SUPERINTENDENT.
2. NOT APPLICABLE TO THIS PROJECT
3. REFER TO SECTION VIII. WATER MAIN/SERVICES
4. NOTE REVISED

CALCULATED CAS CHECKED SWA

GENERAL NOTES

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

Appendix C

SHEET NUMBER																		ITEM	GRAND TOTAL	UNIT	DESCRIPTION	REF. SHEET No.
3	5		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
																					ROADWAY	
																		201	LS		CLEARING AND GRUBBING	
			1006	1319	1279	1139	1311	1301	1265	1330	1399	1389	1334	1107	1340	1885	646		254	19050	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
			28	51	53	51	64	59	57	73	75	63	66	52	59	61	16		301	828	CY	6" ASPHALT CONCRETE BASE, PG64-22	
			19	39	34	32	41	39	37	50	51	40	43	33	38	38	10		304	544	CY	6" AGGREGATE BASE	
			88	122	120	108	127	124	121	133	138	132	130	106	127	169	56		407	1801	GAL	TACK COAT (0.075 GAL/SY)	
			49	68	67	60	71	69	67	74	77	74	72	59	71	94	31		441	1003	CY	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG70-22M	
							45	85		180	180	180	90	90	180	90			608	1120	SF	CURB RAMP, TYPE A1	
									50										608	50	SF	CURB RAMP, TYPE A2	
				40			11	28	16	56	77	56	41	28	85	28			609	466	FT	CANTON TYPE 2 STANDARD COMBINED CONCRETE CURB AND GUTTER	
			75																609	75	FT	CANTON TYPE 1 STANDARD CONCRETE CURB	
23																			611	23	EACH	CATCH BASIN, MISC.: CURB INLET CATCH BASIN SCD#1, AS PER PLAN	4
20																			611	20	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	4
			3	3	2	2	1	2	3	2	2	2	1	1	2	2	1		SPECIAL	29	EACH	MANHOLE SEALING WITH A PROTECTIVE POLYMER LINING	4
20																			611	20	FT	12" CONDUIT, TYPE B	4
			0.08	0.11	0.10	0.09	0.09	0.10	0.09	0.10	0.09	0.10	0.10	0.08	0.09	0.10	0.02		644	1.34	MILE	CENTER LINE	
			152													256			644	408	FT	CHANNELIZING LINE, 8"	
			22				59	11		26	26	36	13	14	23	13	45		644	288	FT	STOP LINE	
			132				214	53	52	155	139	181	66	73	131	82			644	1278	FT	CROSSWALK LINE	
			50	2															644	52	FT	TRANSVERSE/DIAGONAL LINE, 8"	
					1					1									644	2	EACH	SCHOOL SYMBOL MARKING, 72"	
			2													3	3		644	8	EACH	LANE ARROW	
			2													3			644	5	EACH	WORD ON PAVEMENT, 72"	
																		653	LS		4" TOPSOIL FURNISHED AND PLACED	
																		659	LS		SEEDING AND MULCHING	
	3																	816	3	EACH	VIDEO DETECTION SYSTEM, AS PER PLAN	5
																					WATERWORK	
			1	2	3	3	1	1	2	3	3	3	1	2	7	2	1		638	35	EACH	ABANDON VALVE	
			1		1			1			1	1				1	1		638	7	EACH	FIRE HYDRANT AND GATE VALVE REMOVED, HYDRANT TEE PLUGGED	
				1						2	1	1	1	1	3				638	10	EACH	1" WATER SERVICE, COMPLETE - LONG SIDE	
				5	3	4	4	4	5	4	3	2	3	3	2	3			638	45	EACH	1" WATER SERVICE, COMPLETE - SHORT SIDE	
			1																638	1	EACH	1 1/2" WATER SERVICE, COMPLETE - SHORT SIDE	
											1								638	1	EACH	2" WATER SERVICE, COMPLETE - SHORT SIDE	
									12										638	12	FT	4" WATER MAIN DUCTILE IRON PIPE, CLASS 52	
								19					84	74	61	445	157		638	840	FT	6" WATER MAIN DUCTILE IRON PIPE, CLASS 52	
			305	550	550	500	634	550	550	645	703	631	550	450	57				638	6675	FT	8" WATER MAIN DUCTILE IRON PIPE, CLASS 52	
															523	197			638	720	FT	12" WATER MAIN DUCTILE IRON PIPE, CLASS 53	
															6				638	6	FT	24" WATER MAIN DUCTILE IRON PIPE, CLASS 54	
									1										638	1	EACH	4" GATE VALVE AND VALVE BOX, COMPLETE	
									2										638	2	EACH	4" 45° BEND	
									1										638	1	EACH	4" PLUG	
									1								1		638	2	EACH	4" CUT-IN SLEEVE	
					1			1					2	1	1	1	1		638	8	EACH	6" GATE VALVE AND VALVE BOX, COMPLETE	
					2			2					4	6	2				638	16	EACH	6" 45° BEND	
																	2		638	2	EACH	6" 11.25° BEND	
					1			1					2	1	1		2		638	8	EACH	6" PLUG	
													2						638	2	EACH	6"x6"x6" TEE	
																	1		638	1	EACH	6"x6"x4" TEE	
					1			1					1	1	1				638	5	EACH	6" CUT-IN SLEEVE	
			1	2	1	1	1	1	1	1	1	1	1	1		1	1		638	15	EACH	HYDRANT ASSEMBLY	

CALCULATED CAS
CHECKED SWA

GENERAL SUMMARY

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

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Appendix C

SHEET NUMBER																		ITEM	GRAND TOTAL	UNIT	DESCRIPTION	REF. SHEET No.
3	5		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
																					WATERWORK (CONTINUED)	
			2		2		5	2		4	4	3	1	1	1			638	25	EACH	8" GATE VALVE AND VALVE BOX, COMPLETE	
			1															638	1	EACH	8" 22.5° BEND	
			2	4			7			14	10	8						638	45	EACH	8" 45° BEND	
			1				1			2	2							638	6	EACH	8" CUT-IN SLEEVE	
			2				3			2	4	2						638	13	EACH	8" PLUG	
									1									638	1	EACH	8"x8"x4" TEE	
					1			1					1	1				638	4	EACH	8"x8"x6" TEE	
			1				1			2	4							638	8	EACH	8"x8"x8" TEE	
							1					1						638	2	EACH	8"x8" CROSS	
															4	2		638	6	EACH	12" GATE VALVE AND VALVE BOX, COMPLETE	
															10	6		638	16	EACH	12" 45° BEND	
															1	2		638	3	EACH	12" PLUG	
															1	1		638	2	EACH	12" CUT-IN SLEEVE	
																1		638	1	EACH	12"x12"x12" TEE	
															1			638	1	EACH	12"x12" CROSS	
															1			638	1	EACH	12"x8" REDUCER	
															1	1		638	2	EACH	12"x6" REDUCER	
															1			638	1	EACH	24"x12" CROSS	
																					INCIDENTALS	
																		614	LS		MAINTAINING TRAFFIC	
																		623	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
																		624	LS		MOBILIZATION	
																		832	LS		EROSION CONTROL, COMPLETE	

CALCULATED CAS
CHECKED SWA

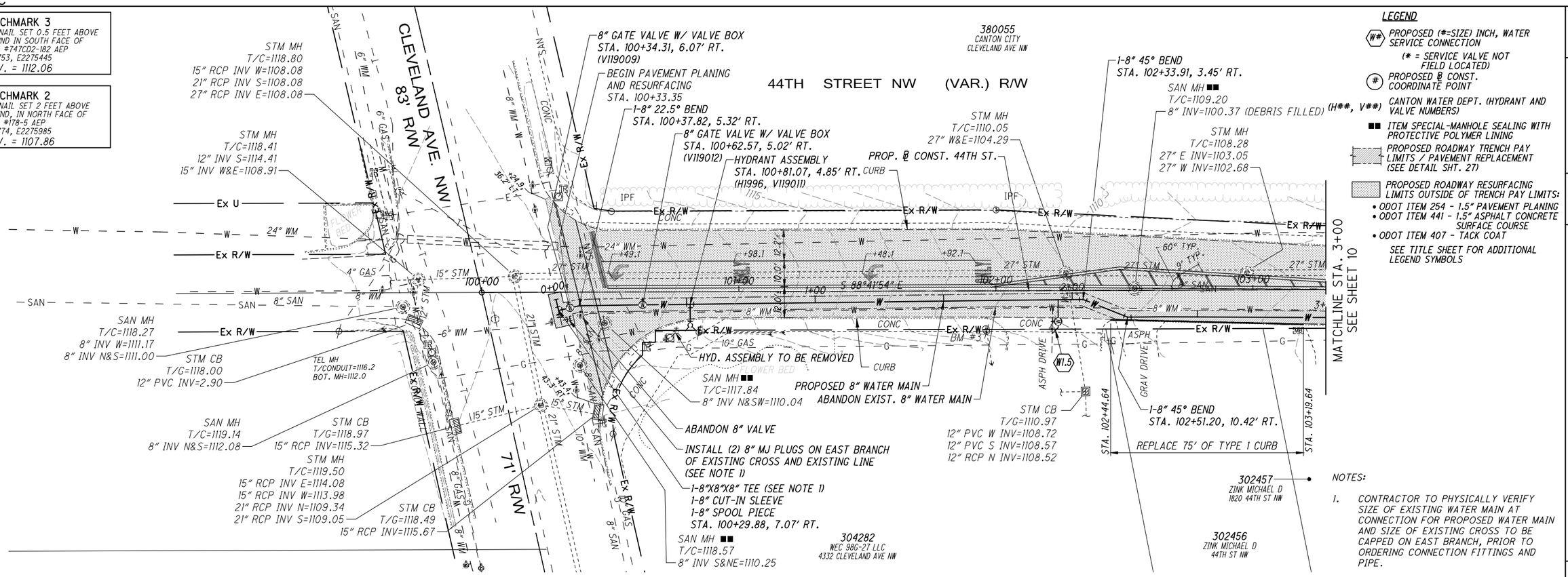
GENERAL SUMMARY

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

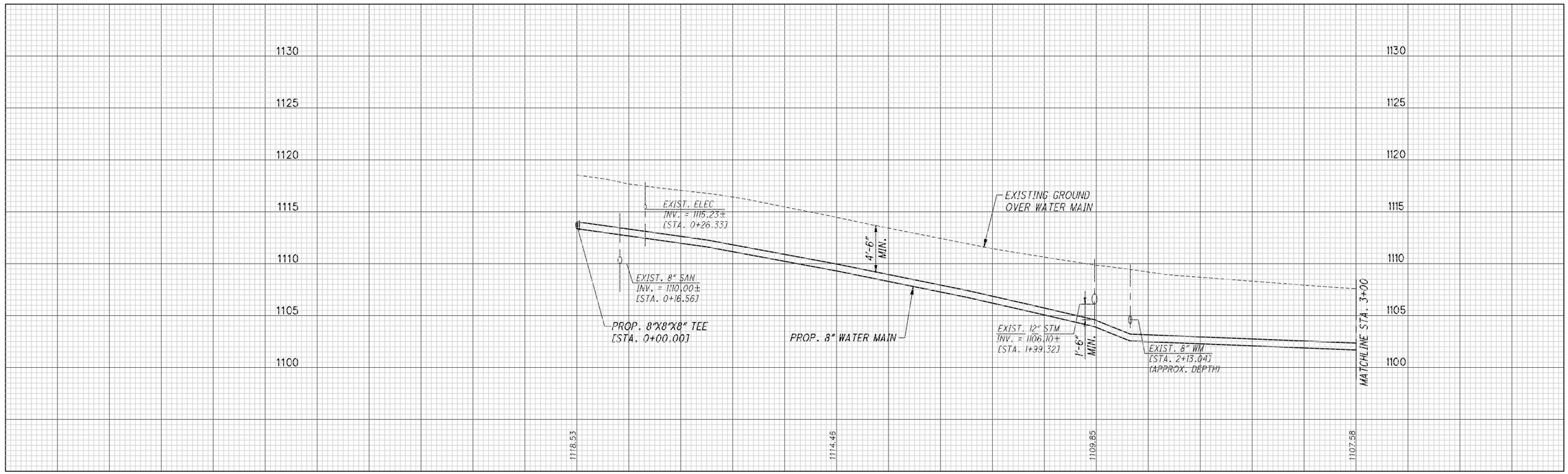
BENCHMARK 3
MAG NAIL SET 0.5 FEET ABOVE GROUND IN SOUTH FACE OF POLE #747CD2-182 AEP
N431753, E2275445
ELEV. = 1112.06

BENCHMARK 2
MAG NAIL SET 2 FEET ABOVE GROUND, IN NORTH FACE OF POLE #178-5 AEP
N431774, E2275985
ELEV. = 1107.86



NOTES:

1. CONTRACTOR TO PHYSICALLY VERIFY SIZE OF EXISTING WATER MAIN AT CONNECTION FOR PROPOSED WATER MAIN AND SIZE OF EXISTING CROSS TO BE CAPPED ON EAST BRANCH, PRIOR TO ORDERING CONNECTION FITTINGS AND PIPE.



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CALCULATED CAS CHECKED SWA

HORIZONTAL SCALE IN FEET 0 10 20 40

PLAN AND PROFILE
STA. 0+00 TO STA. 3+00

44TH ST. WATER IMPROVEMENTS

ARCADIS
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Akron, Ohio 44308 Tel: 330-434-1995

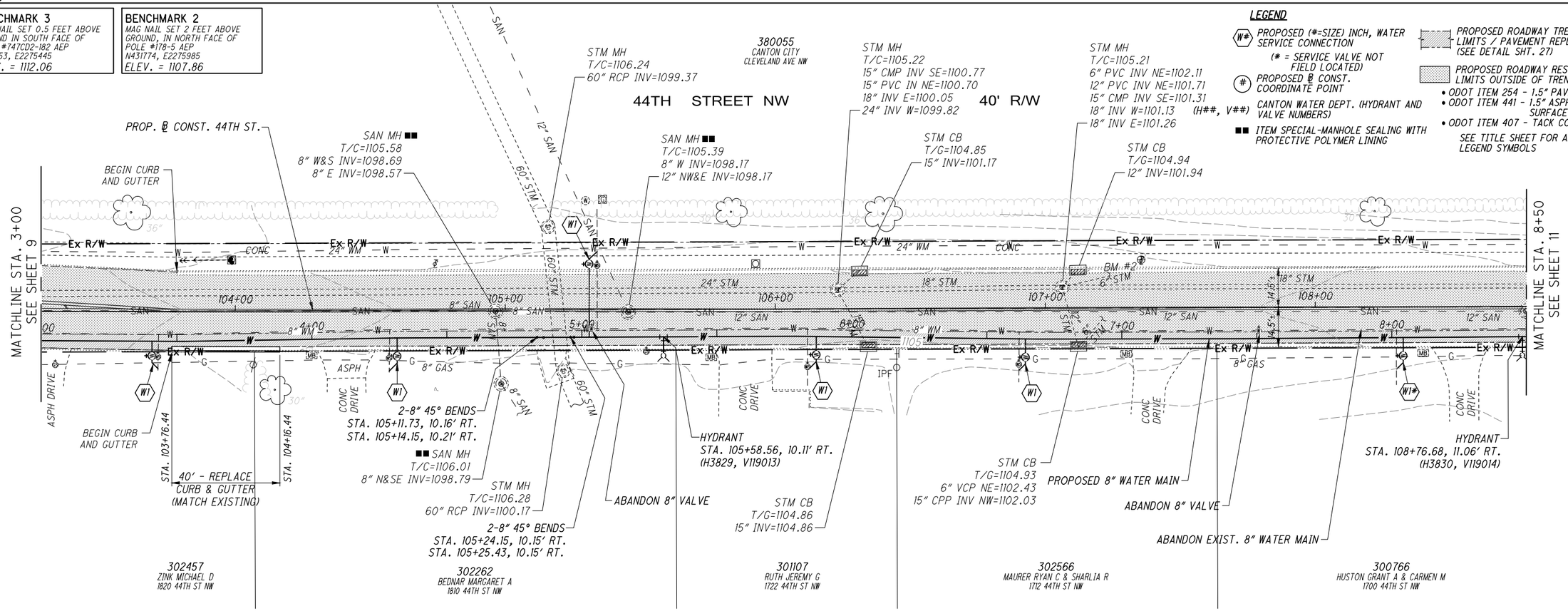
BENCHMARK 3
MAG NAIL SET 0.5 FEET ABOVE GROUND IN SOUTH FACE OF POLE #747CD2-182 AEP
N431753, E2275445
ELEV. = 1112.06

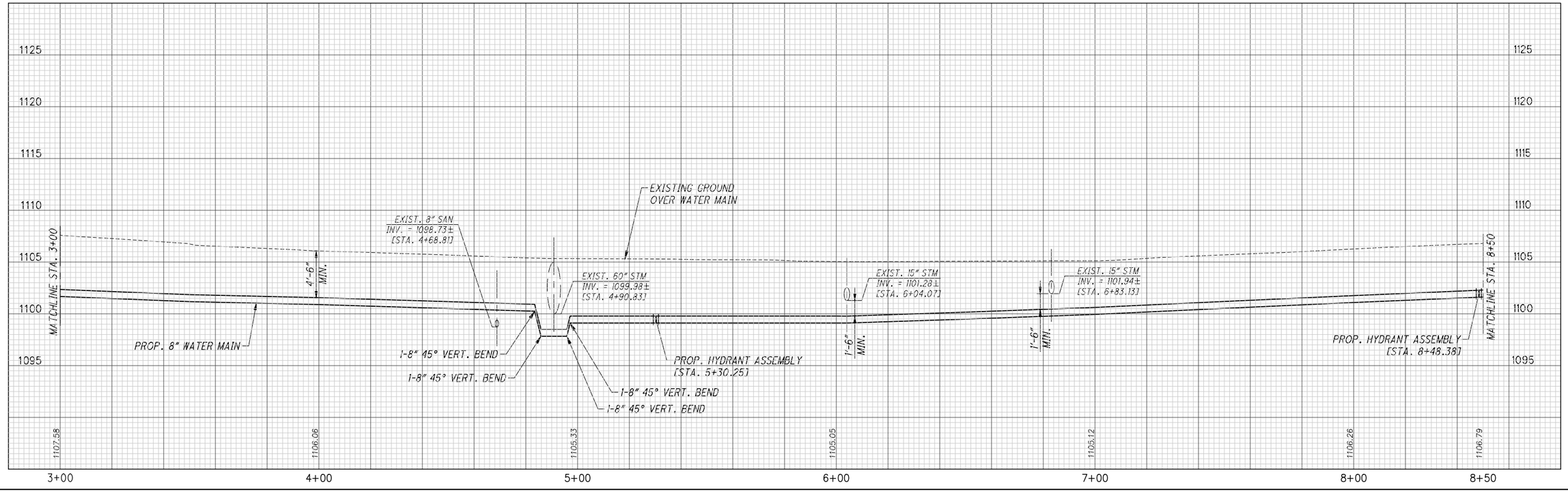
BENCHMARK 2
MAG NAIL SET 2 FEET ABOVE GROUND, IN NORTH FACE OF POLE #178-5 AEP
N431774, E2275985
ELEV. = 1107.86

LEGEND

- (W#) PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION (* = SERVICE VALVE NOT FIELD LOCATED)
- (#) PROPOSED ℄ CONST. COORDINATE POINT
- CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS) (H##, V##)
- ■■ ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT

SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS





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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CAS
CHECKED SWA

PLAN AND PROFILE
STA. 3+00 TO STA. 8+50

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

BENCHMARK 2
MAG NAIL SET 2 FEET ABOVE GROUND, IN NORTH FACE OF POLE #178-5 AEP
N431774, E2275985
ELEV. = 1107.86

BENCHMARK 1
MAG NAIL SET 2 FEET ABOVE GROUND, IN NORTH FACE OF POLE #747C2-51
N431753, E2276917
ELEV. = 1130.31

LEGEND

- W# — PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION (* = SERVICE VALVE NOT FIELD LOCATED)
- # — PROPOSED ℄ CONST. COORDINATE POINT
- (H##, V##) — CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
- ■■ — ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT

SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS

44TH STREET NW 40' R/W

MATCHLINE STA. 8+50 SEE SHEET 10

MATCHLINE STA. 14+00 SEE SHEET 12

SAN MH ■■ T/C=1106.87 12" INV W&E=1098.98

STM MH T/C=1107.96 15" PVC INV NE=1104.82 15" INV SE=1104.51 18" INV E=1104.07 18" CMP INV W=1104.03

STM CB T/G=1107.77 15" PVC INV=1105.05

PROP. ℄ CONST. 44TH ST.

ABANDON 8" VALVE

1-8"X8"X6" TEE
2-8" GATE VALVE W/VALVE BOX (V119015, V119095)
STA. 112+06.30, 9.97' RT.

380055
CANTON CITY
CLEVELAND AVE NW

STONE WALL

ASPH DRIVE

CURB AND GUTTER

CONC DRIVE

PROPOSED 8" WATER MAIN

STM CB T/G=1108.08 15" CPP INV=1105.08

ABANDON EXIST. 8" WATER MAIN

HYDRANT ASSEMBLY TO BE REMOVED

ABANDON 6" VALVE INSTALL 6" PLUG

EX. 1" WATER SERVICE (TO REMAIN)

SAN MH ■■ T/C=1110.54 8" INVE=1101.06 12" INV S&W=1099.84

6" GATE VALVE W/ VALVE BOX (V119115)
STA. 112+06.34, 16.14' RT.

1-6" 45° BEND
STA. 112+06.33, 20.16' RT.

1-6" 45° BEND
1-6" CUT-IN SLEEVE
STA. 112+03.56, 22.95' RT.

HYDRANT ASSEMBLY
STA. 113+07.51, 9.84' RT.
(H1995, V119137)

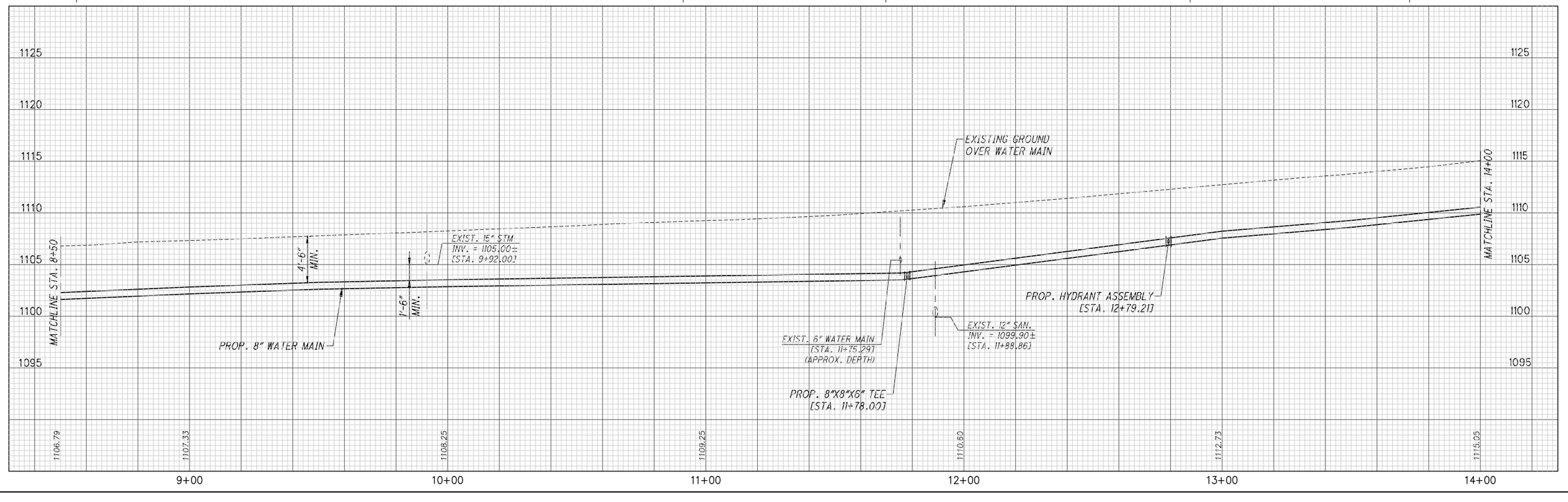
300498
FRENCH W MAYNARD
1620 44TH ST NW

305375
ZIMMERMAN MARINA A
1600 44TH ST NW

305374
FRENCH WILLIAM M & CHARLENE K
1532 44TH ST NW

303541
CATLIN RONALD E & LORI A
1522 44TH ST NW

303540
WACKERLY PAUL J & JEAN M
1500 44TH ST NW



HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED CAS CHECKED SWA

PLAN AND PROFILE
STA. 8+50 TO STA. 14+00

44TH ST. WATER IMPROVEMENTS

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BENCHMARK 2
MAG NAIL SET 2 FEET ABOVE GROUND, IN NORTH FACE OF POLE #178-5 AEP
N431774, E2275985
ELEV. = 1107.86

BENCHMARK 1
MAG NAIL SET 2 FEET ABOVE GROUND, IN NORTH FACE OF POLE #747C2-51
N431753, E2276917
ELEV. = 1130.31

380055
CANTON CITY
CLEVELAND AVE NW

44TH STREET NW 40'-50' R/W

STM MH
T/C=1120.26
15" INV NE=1117.16
12" INV SE=1116.96
12" INV E=1116.92
18" INV W=1116.62

STM CB
T/G=1120.56
15" INV=1117.36

ABANDON EXIST. 8" WATER MAIN
PROP. ℄ CONST. 44TH ST.
CURB AND GUTTER
ABANDON BLOW-OFF VALVE & ASSEMBLY
ABANDON 8" VALVES (3)

■■ SAN MH
T/C=1143.99
8" VCP E&W INV=1134.33

MATCHLINE STA. 14+00
SEE SHEET 11

MATCHLINE STA. 19+00
SEE SHEET 13

CURB AND GUTTER
CONC DRIVE
CONC DRIVE
CONC DRIVE
ASPH DRIVE
CONC

PROPOSED 8" WATER MAIN

HYDRANT ASSEMBLY
STA. 117+56.98, 9.76' RT.
(H3831, V119149)

SAN MH ■■
T/C=1122.58
8" INV W&E=1111.98

STM CB
T/G=1120.37
15" CMP INV E=1118.37
12" INV=1117.77

STM CB
T/G=1127.76
15" CMP INV=1125.11

303540
WACKERLY PAUL J & JEAN M
1500 44TH ST NW

302968
COATES TODD L
1432 44TH ST NW

300317
BLOCK GEORGE J & JANET M TRUSTEES
1422 44TH ST NW

301463
HOFFMAN ROBERT A
1414 44TH ST NW

302126
LUTZ DAVID B
1402 44TH ST NW

LEGEND

- (W#) PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION
  (* = SERVICE VALVE NOT FIELD LOCATED)
- (#) PROPOSED ℄ CONST. COORDINATE POINT
- (H##, V##) CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
- ■■ ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT

SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS

HORIZONTAL SCALE IN FEET
0 10 20 40

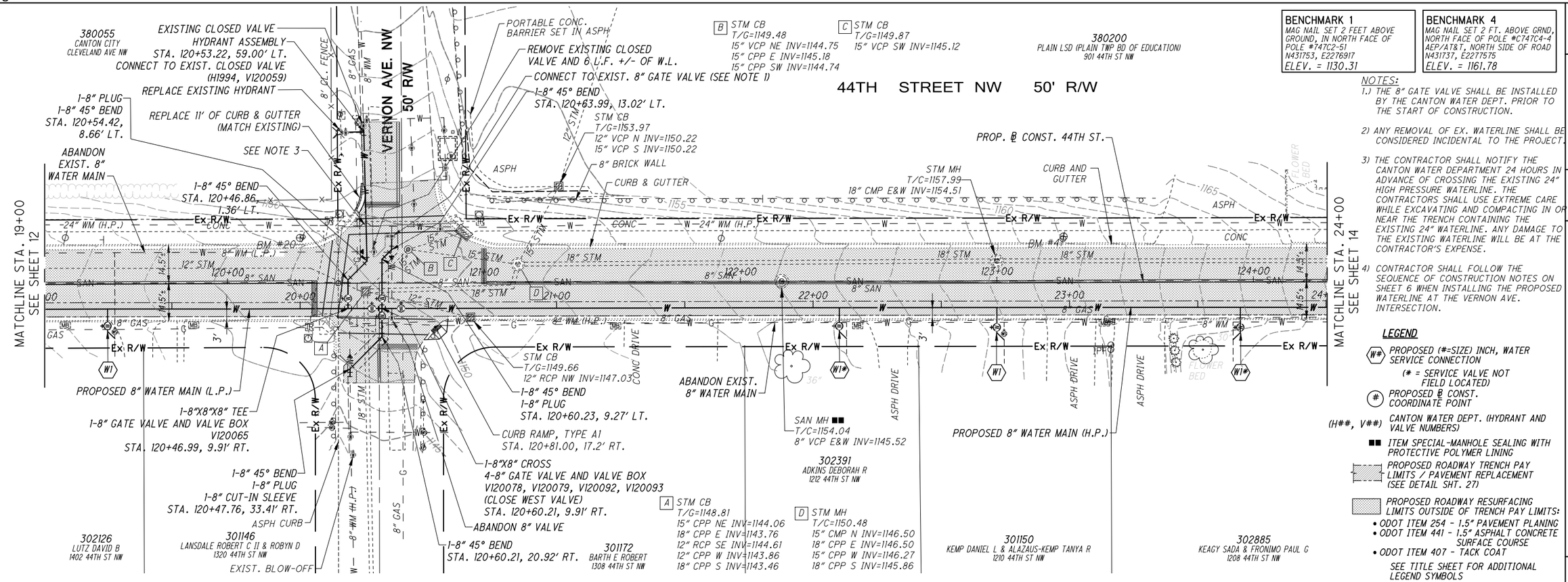
CALCULATED CAS
CHECKED SWA

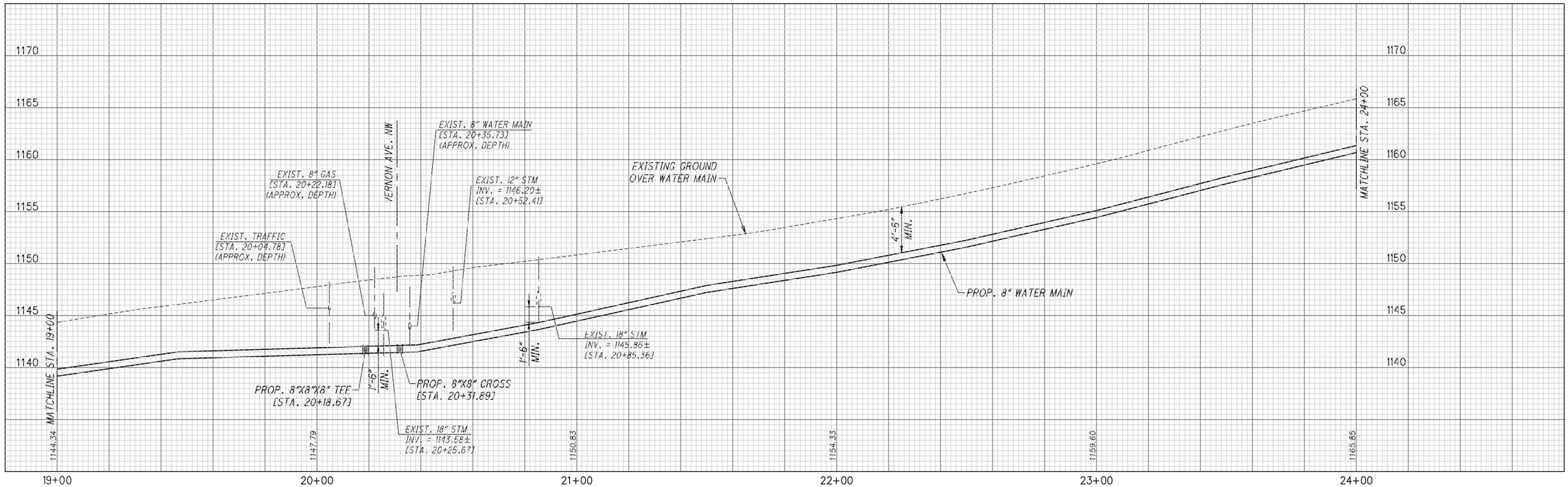
PLAN AND PROFILE
STA. 14+00 TO STA. 19+00

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

EXISTING GROUND OVER WATER MAIN
EXIST. 12" STM INV. = 1117.61± [STA. 15+37.63]
1'-6" MIN.
4'-6" MIN.
PROP. 8" WATER MAIN
PROP. HYDRANT ASSEMBLY [STA. 17+28.68]
MATCHLINE STA. 14+00
MATCHLINE STA. 19+00
1115.05
1116.60
1124.66
1132.56
1139.33
1144.34
1145
1140
1135
1130
1125
1120
1115
14+00
15+00
16+00
17+00
18+00
19+00





PLAN AND PROFILE
STA. 19+00 TO STA. 24+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CAS CHECKED SWA

44TH ST. WATER IMPROVEMENTS

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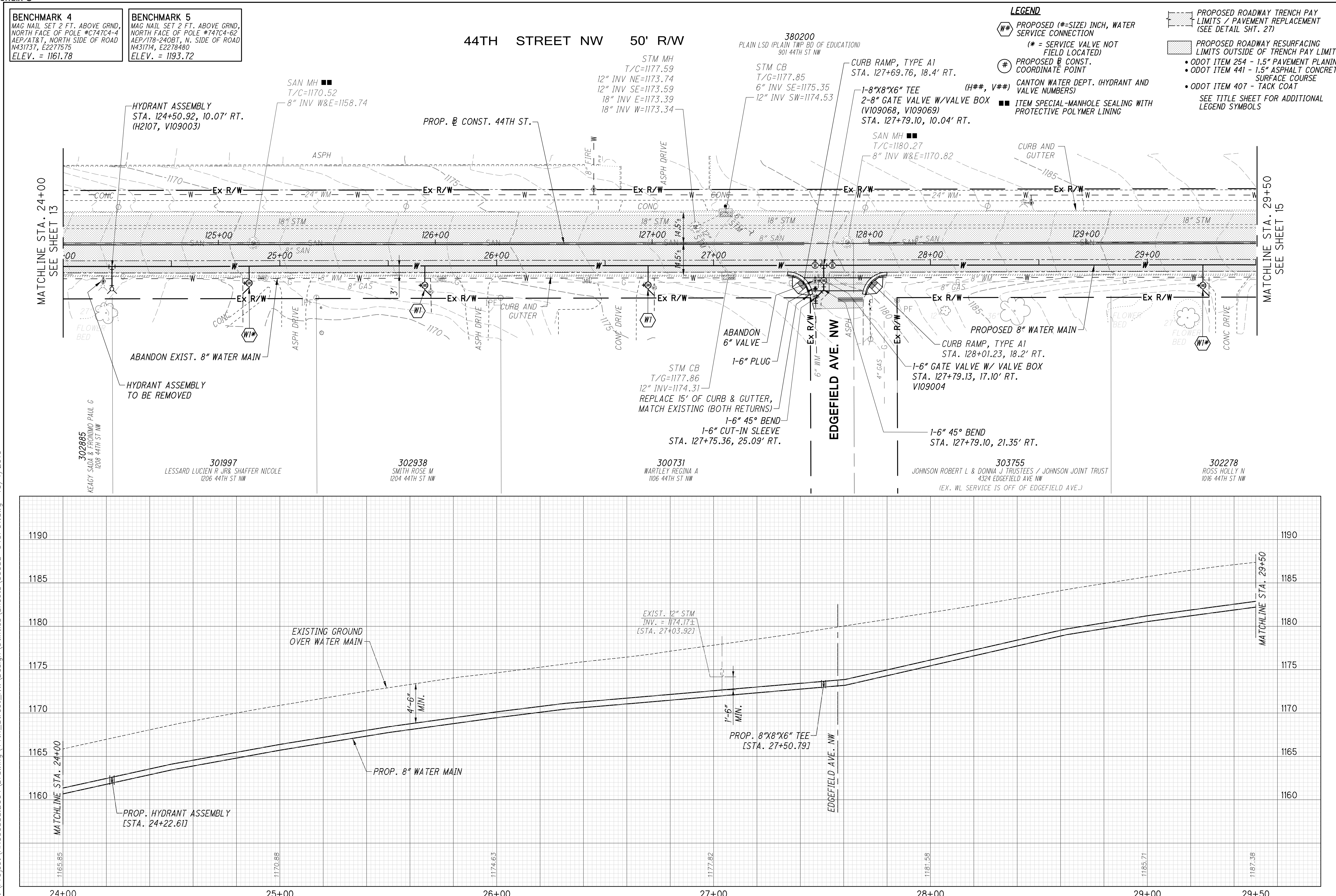
BENCHMARK 4
MAG NAIL SET 2 FT. ABOVE GRND, NORTH FACE OF POLE #C747C4-4 AEP/AT&T, NORTH SIDE OF ROAD N431737, E2277575
ELEV. = 1161.78
BENCHMARK 5
MAG NAIL SET 2 FT. ABOVE GRND, NORTH FACE OF POLE #747C4-62 AEP/178-240BT, N. SIDE OF ROAD N431714, E2278480
ELEV. = 1193.72
44TH STREET NW 50' R/W
380200
PLAIN LSD (PLAIN TWP BD OF EDUCATION)
901 44TH ST NW
LEGEND
PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION
(* = SERVICE VALVE NOT FIELD LOCATED)
PROPOSED ℄ CONST. COORDINATE POINT
(H##, V##) CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
• ODOT ITEM 254 - 1.5" PAVEMENT PLANING
• ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
• ODOT ITEM 407 - TACK COAT
SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS
HORIZONTAL SCALE IN FEET
0 10 20 40
HYDRANT ASSEMBLY
STA. 124+50.92, 10.07' RT.
(H2107, V109003)
SAN MH
T/C=1170.52
8" INV W&E=1158.74
PROP. ℄ CONST. 44TH ST.
STM MH
T/C=1177.59
12" INV NE=1173.74
12" INV SE=1173.59
18" INV E=1173.39
18" INV W=1173.34
STM CB
T/G=1177.85
6" INV SE=1175.35
12" INV SW=1174.53
CURB RAMP, TYPE A1
STA. 127+69.76, 18.4' RT.
1-8"X8"X6" TEE
2-8" GATE VALVE W/VALVE BOX
(V109068, V109069)
STA. 127+79.10, 10.04' RT.
SAN MH
T/C=1180.27
8" INV W&E=1170.82
CURB AND GUTTER
MATCHLINE STA. 24+00
SEE SHEET 13
MATCHLINE STA. 29+50
SEE SHEET 15
ABANDON EXIST. 8" WATER MAIN
HYDRANT ASSEMBLY TO BE REMOVED
CURB AND GUTTER
ABANDON 6" VALVE
1-6" PLUG
STM CB
T/G=1177.86
12" INV=1174.31
REPLACE 15' OF CURB & GUTTER, MATCH EXISTING (BOTH RETURNS)
1-6" 45° BEND
1-6" CUT-IN SLEEVE
STA. 127+75.36, 25.09' RT.
EDGEFIELD AVE. NW
PROPOSED 8" WATER MAIN
CURB RAMP, TYPE A1
STA. 128+01.23, 18.2' RT.
1-6" GATE VALVE W/ VALVE BOX
STA. 127+79.13, 17.10' RT.
V109004
1-6" 45° BEND
STA. 127+79.10, 21.35' RT.
302885
KEAGY SADA & FRONIMO PAUL G
1208 44TH ST NW
301997
LESSARD LUCIEN R JR& SHAFFER NICOLE
1206 44TH ST NW
302938
SMITH ROSE M
1204 44TH ST NW
300731
WARTLEY REGINA A
1106 44TH ST NW
303755
JOHNSON ROBERT L & DONNA J TRUSTEES / JOHNSON JOINT TRUST
4324 EDGEFIELD AVE NW
(EX. WL SERVICE IS OFF OF EDGEFIELD AVE.)
302278
ROSS HOLLY N
1016 44TH ST NW
EXISTING GROUND OVER WATER MAIN
EXIST. 12" STM
INV. = 1174.17±
[STA. 27+03.92]
4'-6" MIN.
1'-6" MIN.
PROP. 8"X8"X6" TEE
[STA. 27+50.79]
PROP. 8" WATER MAIN
PROP. HYDRANT ASSEMBLY
[STA. 24+22.61]
MATCHLINE STA. 24+00
MATCHLINE STA. 29+50
EDGEFIELD AVE. NW
1190 1185 1180 1175 1170 1165 1160
1165.85 1170.88 1174.63 1177.82 1181.58 1185.71 1187.38
24+00 25+00 26+00 27+00 28+00 29+00 29+50

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CALCULATED CAS
CHECKED SWA

PLAN AND PROFILE
STA. 24+00 TO STA. 29+50

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

LEGEND

- PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION
- (* = SERVICE VALVE NOT FIELD LOCATED)
- PROPOSED ℄ CONST. COORDINATE POINT
- (H##, V##) CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
- ■■ ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT
- SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS

BENCHMARK 5
MAG NAIL SET 2 FT. ABOVE GRND, NORTH FACE OF POLE #747C4-62 AEP/178-240BT, N. SIDE OF ROAD
N431714, E2278480
ELEV. = 1193.72

BENCHMARK 6
MAG NAIL SET 2 FEET ABOVE GROUND, IN SOUTH FACE OF POLE #747C4-17, NORTH SIDE OF ROAD
N431695, E2279306
ELEV. = 1204.38

44TH STREET NW 50'-40' R/W

MATCHLINE STA. 29+50 SEE SHEET 14

MATCHLINE STA. 35+00 SEE SHEET 16

380200 PLAIN LSD (PLAIN TWP BD OF EDUCATION) 901 44TH ST NW

380056 CANTON CITY 44TH ST NW

SAN MH ■■ T/C=1189.93 4" INV S=1179.16 8" INV W&E=1178.16

HYDRANT ASSEMBLY STA. 131+93.32, 10.24' RT. (H3832, V109062)

REPLACE 7' OF CURB & GUTTER, (MATCH EXISTING)

CURB RAMP, TYPE A2 STA. 132+69.98, 14.90' LT.

PROP. ℄ CONST. 44TH ST.

CURB AND GUTTER

BM. #5

ASPH DRIVE

STM MH T/C=1192.37 12" CMP INV NE=1189.08 12" INV S=1188.07 18" INV E=1187.89 18" INV W=1187.82

1-4" 45° BEND STA. 134+75.93, 2.63' RT.

1-4" 45° BEND 1-4" CUT-IN SLEEVE STA. 134+73.88, 0.60' RT.

STM CB T/G=1192.50 12" CPP INV=1189.88

STM CB T/G=1192.65 12" CPP INV NE=1189.35 15" RCP INV SW=1188.70

STM CB T/G=1192.27 12" CMP INV=1189.42

STM MH T/C=1192.88 15" INV NE=1188.48 18" INV W&E=1188.02

STM CB T/G=1192.61 10" CMP INV=1191.26

FLOWER BED

SIGN

ABANDON EXIST. 8" WATER MAIN

PROPOSED 8" WATER MAIN

REPLACE 7' OF CURB & GUTTER, (MATCH EXISTING)

TYPE A2 CURB RAMP STA. 132+69.93, 15.0' RT.

STM CB T/G=1192.31 6" CMP INV NE=1189.86 12" INV N=1188.39

ABANDON 8" VALVE

■■ SAN MH T/C=1192.83 8" INV W&E=1082.83

4" GATE VALVE W/ VALVE BOX STA. 134+75.91, 6.01' RT. (V109007)

ABANDON 4" VALVE

1-8"X8"X4" TEE 1-4" PLUG STA. 134+75.92, 9.39' RT.

SAN MH ■■ T/C=1193.22 8" INV N=1183.72 8" INV W&E=1183.57

302278 ROSS HOLLY N 1016 44TH ST NW

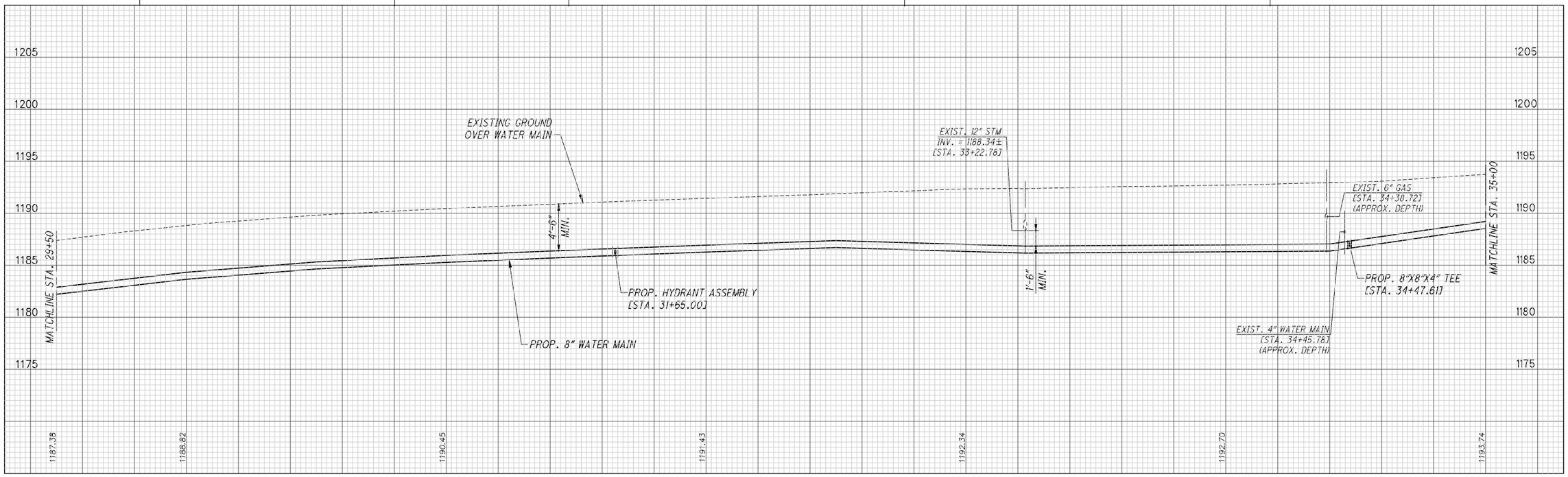
301982 GERBER RILEY P & GWEN E 1006 44TH ST NW

302902 GOODRICH SEAN & CATRINA 918 44TH ST NW

301739 GUTSCHER LORAINE L 906 44TH ST NW

300870 CATALDE FRANK 846 44TH ST NW

301277 BLYER ROBERT E & JOYE B 4341 NORMAN AVE NW



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HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED CAS CHECKED SWA

PLAN AND PROFILE STA. 29+50 TO STA. 35+00

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

Appendix C

BENCHMARK 5
MAG NAIL SET 2 FT. ABOVE GRND, NORTH FACE OF POLE #747C4-62 AEP/1178-240BT, N. SIDE OF ROAD N431714, E2278480
ELEV. = 1193.72

BENCHMARK 6
MAG NAIL SET 2 FEET ABOVE GROUND, IN SOUTH FACE OF POLE #747C4-17, NORTH SIDE OF ROAD N431695, E2279306
ELEV. = 1204.38

1 CURB RAMP, TYPE A1 STA. 135+64.72, 23.0' RT.
2 CURB RAMP, TYPE A1 STA. 136+08.11, 23.4' RT.
3 CURB RAMP, TYPE A1 STA. 138+31.03, 22.8' LT.
4 CURB RAMP, TYPE A1 STA. 138+75.11, 22.8' LT.

LEGEND
- W# PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION (* = SERVICE VALVE NOT FIELD LOCATED)
- # PROPOSED ℄ CONST. COORDINATE POINT
- (H##, V##) CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
- ■■ ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT

SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS

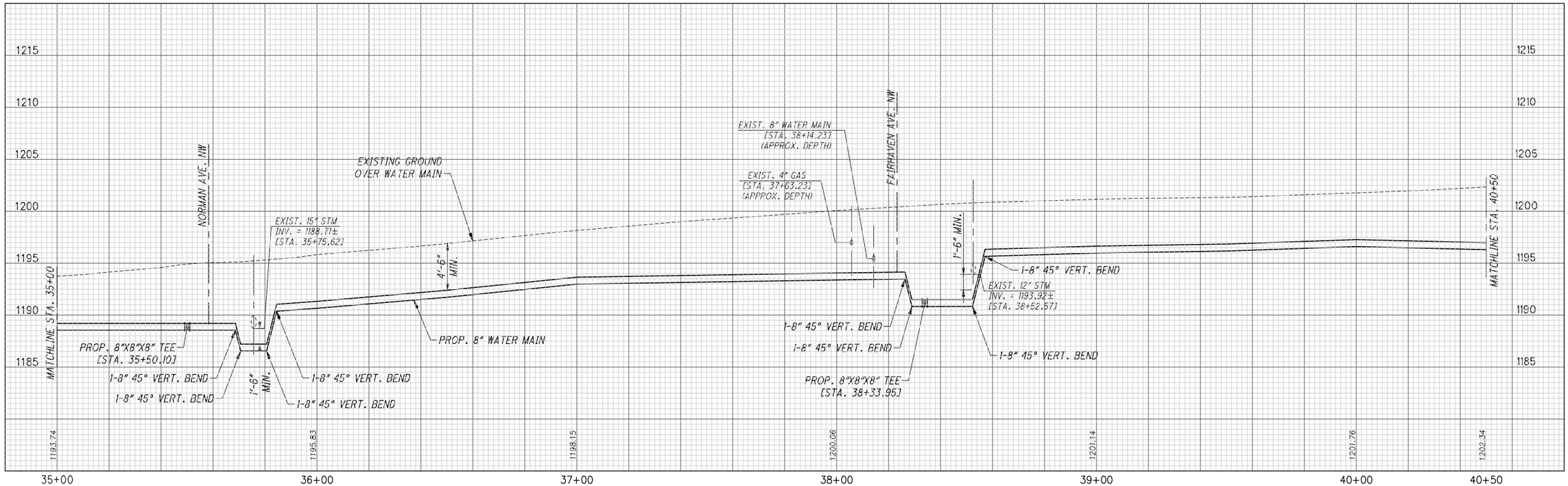
MATCHLINE STA. 35+00 SEE SHEET 15

8" GATE VALVE W/VALVE BOX STA. 135+61.05, 9.50' RT. (V109008)
1-8"X8"X8" TEE STA. 135+78.41, 9.53' RT.
380056 CANTON CITY 44TH ST NW
STM MH T/C=1195.00 15" INV SE=1188.96 15" INV NE=1188.79 18" INV W&E=1188.56
STM CB T/G=1194.89 6" PVC INV N=1191.64 15" INV SW=1188.89
380044 CANTON CITY 44TH ST NW
STM CB B T/G=1201.15 12" RCP INV W=1196.08 12" RCP INV SE=1195.35
300654 COX PETER W & DONNAR TRUSTEES 833 44TH ST NW
SAN MH ■■ T/C=1198.49 8" INV W&E=1186.21
301571 JOHNSTON HILLARY A 823 44TH ST NW (EX. WL SERVICE IS OFF FAIRHAVEN AVE.)
STM CB T/G=1202.80 12" CPP INV N&S=1202.80
8" CUT-IN SLEEVE
1-8" 45° BEND, 1-8" PLUG STA. 138+43.58, 66.79' LT.
STM CB T/G=1201.17 12" CPP INV N=1199.41 12" RCP INV E=1196.77
8" GATE VALVE W/ VALVE BOX STA. 138+62.27, 4.65' RT. (V109011)
FAIRHAVEN AVE. NW 50' R/W
A STM CB T/G=1200.74 12" INV NW=1193.94 12" INV SW=1193.79
1-8" 45° BEND STA. 138+62.34, 47.98' LT.
HYDRANT ASSEMBLY STA. 138+62.34, 45.30' LT. (H3833, V109063)
STM MH T/C=1200.88 12" INV SE=1193.78 12" INV NE=1193.56 18" INV E=1193.38 18" INV W=1193.00
SEE NOTE 1
44TH STREET NW 40'-55' R/W
300734 BAXTER VIRGINIA L 805 44TH ST NW
PROP. ℄ CONST. 44TH ST.
CURB AND GUTTER
BM #6
MATCHLINE STA. 40+50 SEE SHEET 17

2-8" 45° BEND (VERT.) STA. 136+08.94, 9.56' RT. STA. 136+12.77, 9.57' RT.
2-8" 45° BEND (VERT.) STA. 135+96.94, 9.46' RT. STA. 135+98.94, 9.46' RT.
8" GATE VALVE W/ VALVE BOX STA. 135+78.40, 15.39' RT. (V109006)
1-8" 45° BEND 1-8" PLUG STA. 135+78.41, 19.36' RT.
1-8" 45° BEND 1-8" CUT-IN SLEEVE STA. 135+76.37, 21.40' RT.
ABANDON 8" VALVE
NORMAN AVE. NW 50' R/W
301277 BLYER ROBERT E & JOYE B 4341 NORMAN AVE NW
10007594 ASHLEY LUCINDA L TRUSTEE 814 44TH ST NW
C STM CB T/G=1195.16 15" INV=1188.71

PROPOSED 8" WATER MAIN
ABANDON EXIST. 8" WATER MAIN
8" GATE VALVE W/ VALVE BOX STA. 138+27.77, 8.57' RT. (V109010)
ABANDON 8" VALVE (2)
1-8" 45° BEND (VERT.) STA. 138+54.62, 8.56' RT.
1-8" 45° BEND (VERT.) STA. 138+57.27, 8.55' RT.
1-8"X8"X8" TEE STA. 138+62.26, 8.53' RT.
304508 GARTNER THOMAS 746 44TH ST NW
2-8" 45° BENDS (VERT.) STA. 138+85.44, 8.56' RT. STA. 138+80.62, 8.55' RT.
STM CB T/G=1200.62 12" VCP NW=1193.97
305340 JACKSON DOLORES J 740 44TH ST NW
■■SAN MH T/C=1202.37 8" INV W&E=1189.42
304831 FORAKER WILLIAM TTEE OF THE WILLIAM FORAKER TRUST 724 44TH ST NW

NOTES:
1. THE CONTRACTOR SHALL NOTIFY THE CANTON WATER DEPARTMENT 24 HOURS IN ADVANCE OF CROSSING THE EXISTING 24" HIGH PRESSURE WATERLINE. THE CONTRACTORS SHALL USE EXTREME CARE WHILE EXCAVATING AND COMPACTING IN OR NEAR THE TRENCH CONTAINING THE EXISTING 24" WATERLINE. ANY DAMAGE TO THE EXISTING WATERLINE WILL BE AT THE CONTRACTOR'S EXPENSE.



PLAN AND PROFILE
STA. 35+00 TO STA. 40+50

44TH ST. WATER IMPROVEMENTS

CALCULATED CAS CHECKED SWA

HORIZONTAL SCALE IN FEET 0 10 20 40

ARCADIS
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16
36

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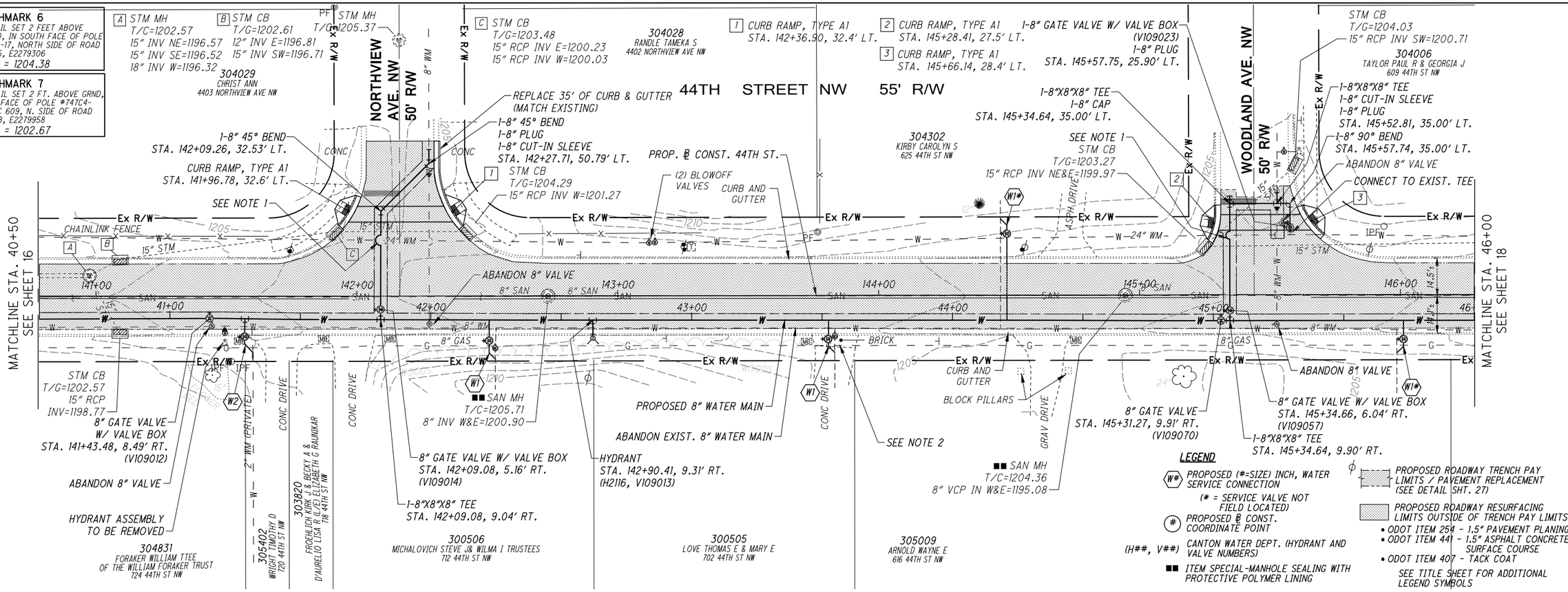
Appendix C

BENCHMARK 6
MAG NAIL SET 2 FEET ABOVE GROUND, IN SOUTH FACE OF POLE #747C4-17, NORTH SIDE OF ROAD
N431695, E2279306
ELEV. = 1204.38

BENCHMARK 7
MAG NAIL SET 2 FT. ABOVE GRND, SOUTH FACE OF POLE #747C4-101/ABC 609, N. SIDE OF ROAD
N431678, E2279958
ELEV. = 1202.67

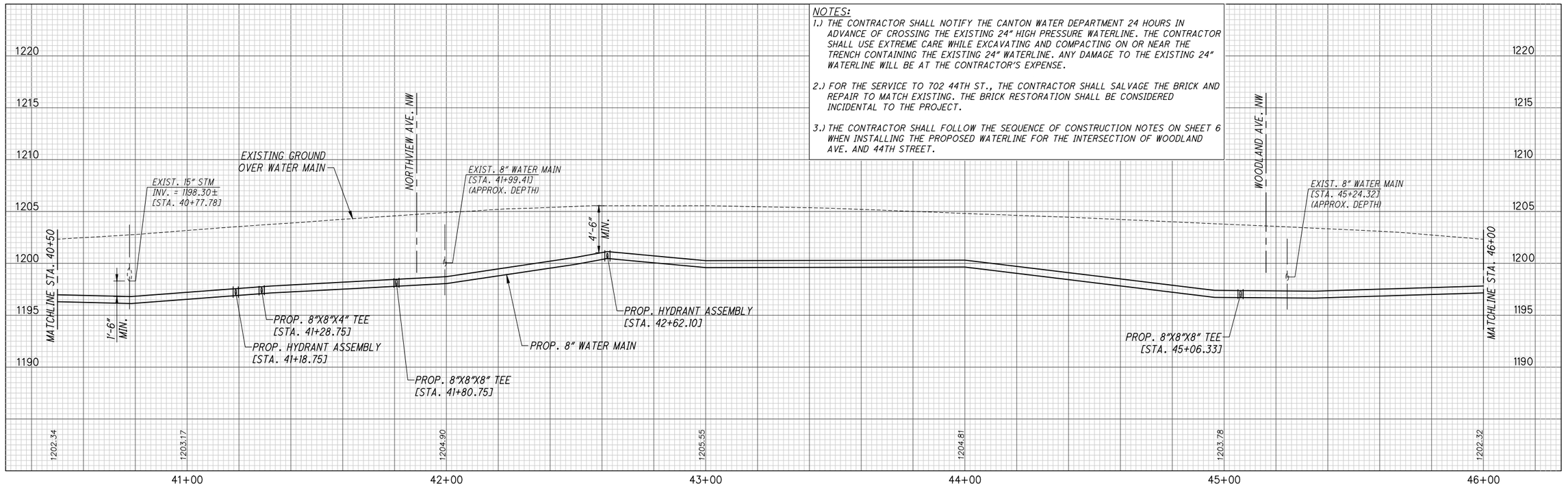


NOTES:

1.) THE CONTRACTOR SHALL NOTIFY THE CANTON WATER DEPARTMENT 24 HOURS IN ADVANCE OF CROSSING THE EXISTING 24" HIGH PRESSURE WATERLINE. THE CONTRACTOR SHALL USE EXTREME CARE WHILE EXCAVATING AND COMPACTING ON OR NEAR THE TRENCH CONTAINING THE EXISTING 24" WATERLINE. ANY DAMAGE TO THE EXISTING 24" WATERLINE WILL BE AT THE CONTRACTOR'S EXPENSE.

2.) FOR THE SERVICE TO 702 44TH ST., THE CONTRACTOR SHALL SALVAGE THE BRICK AND REPAIR TO MATCH EXISTING. THE BRICK RESTORATION SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

3.) THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES ON SHEET 6 WHEN INSTALLING THE PROPOSED WATERLINE FOR THE INTERSECTION OF WOODLAND AVE. AND 44TH STREET.



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CALCULATED CAS CHECKED SWA

HORIZONTAL SCALE IN FEET 0 10 20 40

PLAN AND PROFILE
STA. 40+50 TO STA. 46+00

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

BENCHMARK 7
MAG NAIL SET 2 FT. ABOVE GRND, SOUTH FACE OF POLE #747C4-101/ABC 609, N. SIDE OF ROAD
N431678, E2279958
ELEV. = 1202.67

BENCHMARK 8
MAG NAIL SET 2 FT. ABOVE GRND, SOUTH FACE OF POLE #748A2-19/431, NORTH SIDE OF ROAD
N431664, E2280506
ELEV. = 1181.55

1 CURB RAMP, TYPE A1
STA. 150+47.75, 25.9' LT.

2 CURB RAMP, TYPE A1
STA. 150+01.16, 25.9' RT.

3 CURB RAMP, TYPE A1
STA. 150+55.68, 25.8' RT.

44TH STREET NW 55'-60' R/W

304006
TAYLOR PAUL R & GEORGIA J
609 44TH ST NW

380023
GREENWOOD CHRISTIANCHURCH
4425 FRAZER AVE NW
(EX. WL SERVICE IS OFF FRAZER AVE.)

STM MH B
T/C=1184.30
12" RCP INV S=1177.65
15" RCP INV N=1177.28
18" RCP INV W=1177.18
18" RCP INV E=1176.88

EX. 8"X8" TAPPING SLEEVE AND VALVE
STM CB
T/G=1181.74
15" RCP INV SW=1178.92
1-8" CUT-IN SLEEVE
1-8" 45° BEND
STA. 150+13.82, 31.48' LT.
1-8" 45° BEND, 1-8" PLUG
STA. 150+10.79, 28.35' LT.
CURB RAMP, TYPE A1
STA. 150+01.17, 25.8' LT.
STM CB
T/G=1184.00
15" RCP INV NE=1178.55
15" RCP INV S=1177.18

FRAZER AVE. NW
60' R/W

SEE NOTE 1

STM CB
T/G=1180.45
15" RCP INV=1176.91
STM MH
T/C=1180.65
15" RCP INV NW=1176.55
21" RCP INV E&SW=1173.05

STM CB
T/G=1179.40
15" VCP INV N=1176.03
18" RCP INV W=1174.08

304934
TREADON THOMAS A & MARTHA M
FRAZER AVE NW

STM MH
T/C=1180.34
15" RCP INV S=1174.49
18" INV E=1173.94
21" INV W=1173.94

PROP. ℄ CONST. 44TH ST.

CURB AND GUTTER

ABANDON 8" VALVE

MATCHLINE STA. 46+00
SEE SHEET 17

MATCHLINE STA. 51+50
SEE SHEET 19

STM CB
T/G=1201.98
15" RCP INV N=1197.56
12" RCP INV S=1197.50
18" RCP INV E=1196.86
STM CB
T/G=1201.72
15" RCP INV W&S=1197.40

STM CB
T/G=1201.72
12" VCP INV=1199.54

305011
ARNOLD WAYNE
44TH ST NW

WOOD FENCE

ASPH. DRIVE

SAN MH ■■
T/C=1199.79
8" VCP INV W&E=1192.09

302626
OPHARDT MICHAEL J & EDITH M
536 44TH ST NW

WOOD FENCE

CURB AND GUTTER

PROPOSED 8" WATER MAIN
ABANDON EXIST. 8" WATER MAIN

8" GATE VALVE W/ VALVE BOX
STA. 149+65.08, 9.80' RT.
(V109024)

HYDRANT ASSEMBLY
STA. 149+68.68, 9.75' RT.
(H2117, V109025)

HYDRANT ASSEMBLY TO BE REMOVED

1-8"X8" CROSS
2-8" GATE VALVE W/VALVE BOX
(V109027), (V109064)
STA. 150+11.02, 9.51' RT.

1-8" 45° BEND
STA. 150+11.08, 30.85' RT.
1-8" 45° BEND
1-8" PLUG
STA. 150+17.51, 38.28' RT.

302625
OPHARDT MICHAEL J & EDITH M
44TH ST NW

302676
RUBIN ROBERT G (L/E) RUBIN JEANNE S
44TH ST NW

302675
RUBIN ROBERT G (L/E) RUBIN JEANNE S
518 44TH ST NW

STM CB C
T/G=1184.30
12" VCP INV=1180.85

ABAND. 8" VALVE

STM MH
T/C=1181.58
18" RCP INV W=1174.73
18" RCP INV N=1173.33
21" RCP INV INV NE=1172.11
24" RCP INV S=1171.86

STM MH
T/C=1181.23
COVER RUSTED TO RIM
COULD NOT OPEN

STM CB
T/G=1179.04
15" VCP INV=1175.61

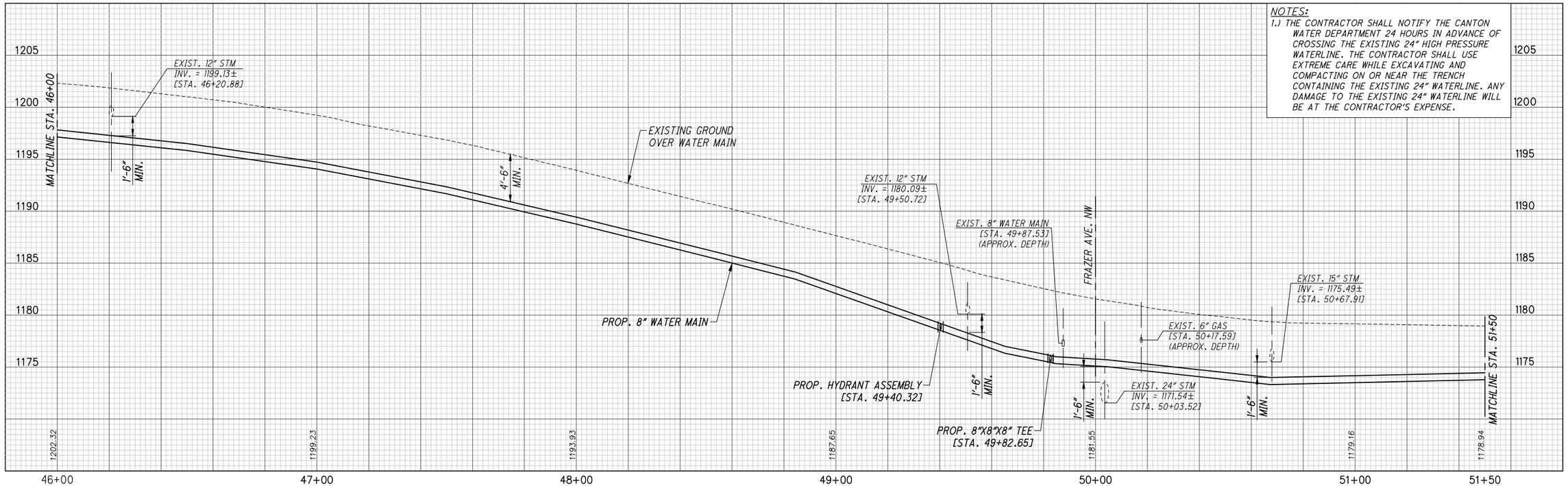
A SAN MH ■■
T/C=1181.99
8" VCP INV N=1165.17
8" VCP INV W&E=1164.79

302049
DEROSA JOSEPH W & SHARP CAITLIN
4324 FRAZER AVE NW
(EX. WL SERVICE IS OFF FRAZER AVE.)

LEGEND

- W# PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION (* = SERVICE VALVE NOT FIELD LOCATED)
- # PROPOSED ℄ CONST. COORDINATE POINT
- (H##, V##) CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
- ■■ ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT

  SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS



NOTES:
1.) THE CONTRACTOR SHALL NOTIFY THE CANTON WATER DEPARTMENT 24 HOURS IN ADVANCE OF CROSSING THE EXISTING 24" HIGH PRESSURE WATERLINE. THE CONTRACTOR SHALL USE EXTREME CARE WHILE EXCAVATING AND COMPACTING ON OR NEAR THE TRENCH CONTAINING THE EXISTING 24" WATERLINE. ANY DAMAGE TO THE EXISTING 24" WATERLINE WILL BE AT THE CONTRACTOR'S EXPENSE.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CAS
CHECKED SWA

PLAN AND PROFILE
STA. 46+00 TO STA. 51+50

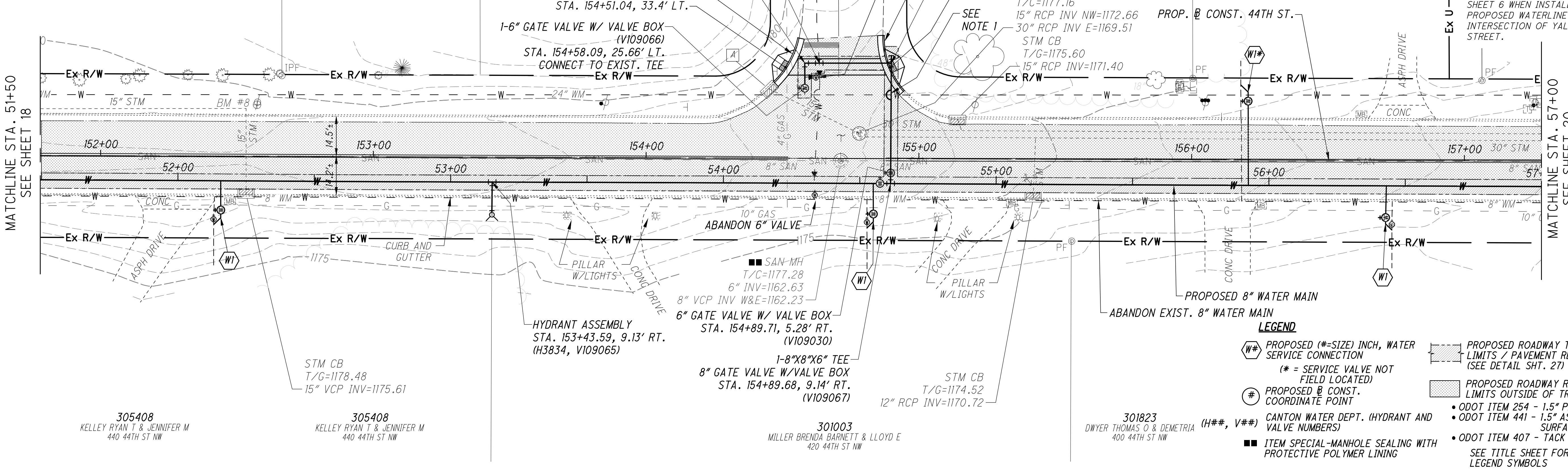
44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

Appendix C

BENCHMARK 7
MAG NAIL SET 2 FT. ABOVE GRND, SOUTH FACE OF POLE #747C4-101/ABC 609, N. SIDE OF ROAD
N431678, E2279958
ELEV. = 1202.67

BENCHMARK 8
MAG NAIL SET 2 FT. ABOVE GRND, SOUTH FACE OF POLE #748A2-19/431, NORTH SIDE OF ROAD
N431664, E2280506
ELEV. = 1181.55

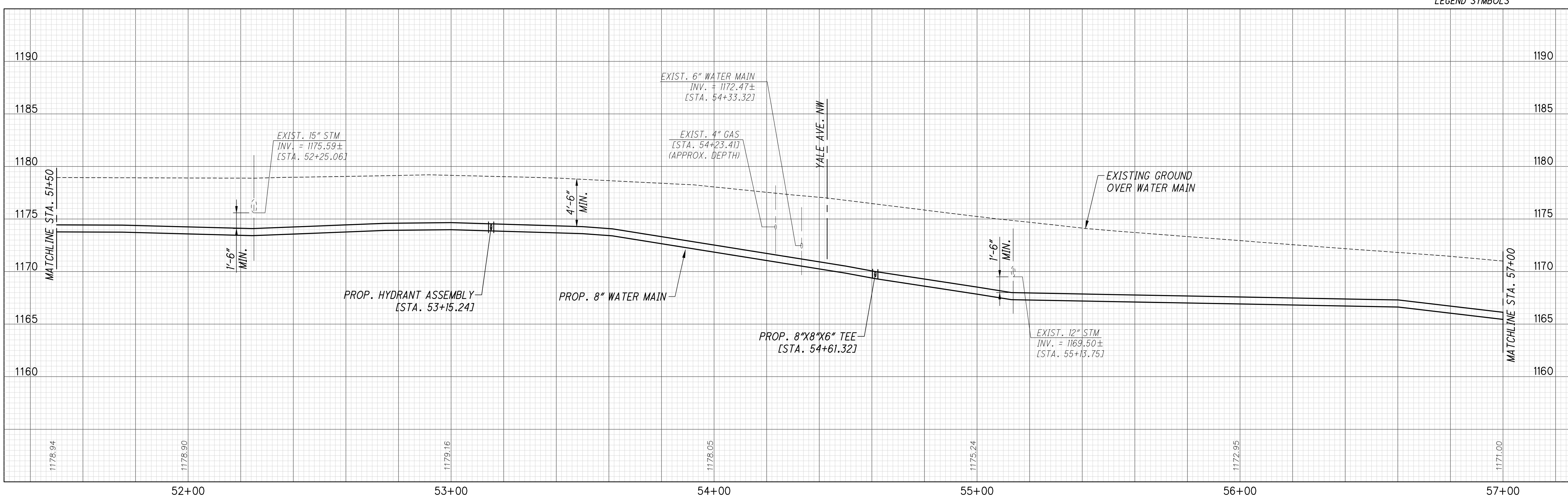


NOTES:
1.) THE CONTRACTOR SHALL NOTIFY THE CANTON WATER DEPARTMENT 24 HOURS IN ADVANCE OF CROSSING THE EXISTING 24" HIGH PRESSURE WATERLINE. THE CONTRACTOR SHALL USE EXTREME CARE WHILE EXCAVATING AND COMPACTING ON OR NEAR THE TRENCH CONTAINING THE EXISTING 24" WATERLINE. ANY DAMAGE TO THE EXISTING 24" WATERLINE WILL BE AT THE CONTRACTOR'S EXPENSE.
2. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES ON SHEET 6 WHEN INSTALLING THE PROPOSED WATERLINE AT THE INTERSECTION OF YALE AVE. AND 44TH STREET.

HORIZONTAL SCALE IN FEET: 0 10 20 40

LEGEND
- W# — PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION (* = SERVICE VALVE NOT FIELD LOCATED)
- # — PROPOSED ℄ CONST. COORDINATE POINT
- (H##, V##) — CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
- ■■ — ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT

SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS



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CALCULATED CAS
CHECKED SWA

PLAN AND PROFILE
STA. 51+50 TO STA. 57+00

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

304849
SOEHNLEN DANIEL P &JENNIFER A
361 44TH ST NW
(EX. WL SERVICE IS OFF DAWNBRIDGE CIR.)

306227
AUSTIN JOHN W & MARION C
345 44TH ST NW
(EX. WL SERVICE IS OFF DAWNBRIDGE CIR.)

304425
BROWN RICHARD L & EATHEL M
4405 GREENMEADOW AVE NW

BENCHMARK 8
MAG NAIL SET 2 FT. ABOVE GRND, SOUTH FACE OF POLE #748A2-19/431, NORTH SIDE OF ROAD
N431664, E2280506
ELEV. = 1181.55

BENCHMARK 9
MAG NAIL SET 2 FEET ABOVE GROUND, IN SOUTH SIDE OF POLE #345, NORTH SIDE OF ROAD
N431645, E2281172
ELEV. = 1168.80

STM CB T/G=1170.08
15" RCP INV=1166.88
STM MH T/C=1170.15
15" RCP INV NW=1166.30
15" RCP INV SW=1165.57
30" RCP INV W&E=1163.47
STM CB T/G=1168.47
15" RCP INV=1163.92
STM CB T/G=1167.37
15" RCP INV NE=1162.37
15" RCP INV E=1162.02
CURB AND GUTTER
DAWNRIDGE CIRCLE NW 50' R/W
1-6" 45° BEND
1-6" CUT-IN SLEEVE
STA. 158+78.43, 61.20' LT.
1-6" 45° BEND
1-6" PLUG
STA. 158+81.98, 57.73' LT.
STM CB T/G=1168.24
12" RCP INV=1164.36
SEE NOTE 1
A STM MH T/C=1167.83
12" RCP INV NE=1161.37
15" RCP INV W=1161.33
15" RCP INV N=1161.33
15" RCP INV S=1159.38
44TH STREET NW 60' R/W
STM MH T/C=1160.25
15" RCP INV S=1154.65
30" RCP INV W&E=1152.63
PROP. ℄ CONST. 44TH ST.
CURB AND GUTTER
MATCHLINE STA. 57+00
SEE SHEET 19
MATCHLINE STA. 61+50
SEE SHEET 21
PROPOSED 8" WATER MAIN
8" GATE VALVE W/ VALVE BOX
STA. 157+77.09, 9.42' RT.
(V209067)
ABANDON 8" VALVE
HYDRANT ASSEMBLY
STA. 157+70.74, 9.36' RT.
(H3835, V209066)
STM CB T/G=1170.02
15" RCP INV=1167.07
STM MH T/C=1167.74
15" RCP INV N=1159.27
30" RCP INV W&E=1159.27
SAN MH ■■ T/C=1168.25
6" GATE VALVE W/ VALVE BOX
STA. 158+82.43, 5.55' RT.
(V209020)
1-8"X8"X6" TEE
STA. 158+82.40, 9.41' RT.
ABANDON 6" VALVE
1 CURB RAMP, TYPE A1
STA. 158+50.14, 32.7' LT.
2 CURB RAMP, TYPE A1
STA. 158+91.78, 32.9' LT.
ABANDON EXIST. 8" WATER MAIN
STM CB T/G=1159.53
15" RCP INV=1156.25
CURB AND GUTTER
301823
DWYER THOMAS O & DEMETRIA
400 44TH ST NW
303090
DWYER THOMAS O & DEMETRIA
352 44TH ST NW
301693
HODELL ROBERT L
344 44TH ST NW
301086
SWAUGER SHARON E
332 44TH ST NW
303469
DELGATTO FRANK J & ANICIA
4325 LOGAN AVE NW

NOTES:
1.) THE CONTRACTOR SHALL NOTIFY THE CANTON WATER DEPARTMENT 24 HOURS IN ADVANCE OF CROSSING THE EXISTING 24" HIGH PRESSURE WATERLINE. THE CONTRACTOR SHALL USE EXTREME CARE WHILE EXCAVATING AND COMPACTING ON OR NEAR THE TRENCH CONTAINING THE EXISTING 24" WATERLINE. ANY DAMAGE TO THE EXISTING 24" WATERLINE WILL BE AT THE CONTRACTOR'S EXPENSE.

LEGEND
- W# — PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION (* = SERVICE VALVE NOT FIELD LOCATED)
- (#) — PROPOSED ℄ CONST. COORDINATE POINT
- (H##, V##) — CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
- ■■ — ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT

SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED CAS CHECKED SWA

PLAN AND PROFILE
STA. 57+00 TO STA. 61+50

EXIST. 15" STM
INV. = 1166.82±
(STA. 57+27.32)
1'-6" MIN.
4'-6" MIN.
EXIST. 4" GAS
(STA. 58+24.50)
(APPROX. DEPTH)
DAWNRIDGE CIRCLE NW
EXIST. 6" WATER MAIN
(STA. 58+51.23)
(APPROX. DEPTH)
PROP. 8"X8"X6" TEE
(STA. 58+54.05)
EXIST. GAS
(STA. 59+45.68)
(APPROX. DEPTH)
EXIST. GAS
(STA. 59+56.39)
(APPROX. DEPTH)
PROP. 8" WATER MAIN
EXIST. 12" STM
INV. = 1155.96±
(STA. 59+94.80)
EXISTING GROUND OVER WATER MAIN
1'-6" MIN.
MATCHLINE STA. 57+00
MATCHLINE STA. 61+50
1171.00
1168.53
1165.53
1159.66
1154.97
1153.27
1180
1175
1170
1165
1160
1155
1150
57+00
58+00
59+00
60+00
61+00
61+50

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

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304425
BROWN RICHARD L & EATHEL M
4405 GREENMEADOW AVE NW

304424
DUTKA ALAN J & BONITA G
4406 GREENMEADOW AVE NW

302204
MORELLO PHILLIP J TRUSTEE
OF THE PHILLIP J MORELLO REVOCABLE TRUST
235 44TH ST NW

300811
DICOLA CHRISTINE
229 44TH ST NW

303469
DELGATTO FRANK J & ANICIA
4325 LOGAN AVE NW

305407
SMITH RYAN R & CHRISTINE M
244 44TH ST NW

305406
COPE CAROLANN G
224 44TH ST NW

GREENMEADOW AVE. NW 50' R/W

LOGAN AVE. NW 50' R/W

44TH STREET NW 60' R/W

MATCHLINE STA. 61+50
SEE SHEET 20

MATCHLINE STA. 66+50
SEE SHEET 22

REPLACE 31 L.F. OF CURB AND GUTTER (MATCH EXISTING)

CURB RAMP, TYPE A1 STA. 162+47.70, 37.8' LT.

1-6" 45° BEND STA. 162+39.71, 36.61' LT.

1-6" 45° BEND
1-6" PLUG
1-6" CUT-IN SLEEVE
STA. 162+73.72, 70.84' LT.

ABANDON VALVES (2)

CURB RAMP, TYPE A1 STA. 162+82.35, 31.8' LT.

2-12" 45° VERT. BENDS
STA. 162+47.98, 9.61' RT.
STA. 162+58.31, 9.57' RT.

ABANDON EXIST. 8" WATER MAIN

PROPOSED 8" WATER MAIN

1-12" 45° BEND STA. 162+39.94, 24.50' RT.

REPLACE 29 L.F. OF CURB AND GUTTER (MATCH EXISTING)

1 CURB RAMP, TYPE A1 STA. 162+41.72, 24.5' RT.

ABANDON 6" VALVES (2)

CURB RAMP, TYPE A1 STA. 162+83.35, 24.5' RT.

ABAND. 12" VALVES (2)

ABANDON 8" VALVE

1-12"X12" CROSS
1-8"X12" REDUCER
3-12" GATE VALVE/VALVE BOX (V209023, V209022, V209024)
1-8" GATE VALVE/VALVE BOX (V209021)
STA. 162+39.89, 9.64' RT.

C STM CB
T/G=1150.27
15" RCP INV=1147.30

D STM CB
T/G=1150.34
15" RCP INV=1147.09

E SAN MH ■■
T/C=1152.91
8" VCP
INV W&E=1141.99

STM MH
T/C=1149.31
15" RCP INV S=1145.43
15" RCP INV N=1145.16
18" RCP INV E=1144.36
18" RCP INV W=1144.19

STM CB
T/G=1149.00
15" RCP INV NW=1145.82
15" RCP INV S=1144.95

STM CB
T/G=1148.55
15" RCP INV=1146.35

STM MH
T/C=1148.97
15" RCP INV N=1145.59
15" RCP INV S=1145.30
18" RCP INV W=1145.05

■■SAN MH
T/C=1149.11
8" VCP INV W&E=1137.46

STM CB
T/G=1148.54
15" RCP INV=1145.49

PROP. ℄ CONST. 44TH ST.

STM CB
T/G=1148.90
15" RCP INV=1145.95

PROPOSED 12" WATER MAIN
ABANDON EXIST. 6" WATER MAIN

B STM MH
T/C=1151.10
15" RCP INV NW=1146.48
15" RCP INV NE=1146.20
18" RCP INV E=1143.35
30" RCP INV W=1142.76
30" RCP INV S=1142.60

STM CB
T/G=1148.38
8" PVC INV=1146.67

STM CB
T/G=1148.53
6" PVC INV S=1146.78
8" PVC INV SE=1146.38
15" RCP INV N=1145.88

STM CB
T/G=1148.54
15" RCP INV=1145.29

A STM CB
T/G=1148.46
15" RCP INV=1143.86

BENCHMARK 9
MAG NAIL SET 2 FEET ABOVE GROUND, IN SOUTH SIDE OF POLE #345, NORTH SIDE OF ROAD
N431645, E2281172
ELEV. = 1168.80

BENCHMARK 10
MAG NAIL SET 2 FEET ABOVE GRND, SOUTH FACE OF POLE #748A2-142 AEP, NORTH SIDE OF ROAD
N431620, E2282338
ELEV. = 1138.20

1 1-24"X12" CROSS
1-12" GATE VALVE/VALVE BOX (V209028)
1-12"X6" REDUCER
1-6" GATE VALVE/VALVE BOX (V209027)
STA. 162+39.75, 24.56' LT.

2 REMOVE EX. 24"X12" TEE
6 L.F. 24" D.I.P.
24" MECHANICAL SLEEVE (LONG)
12" PLUG

3 1-12" 45° BEND
1-12" PLUG
1-12" CUT-IN SLEEVE
STA. 162+54.08, 38.62' RT.

LEGEND

W# PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION
(* = SERVICE VALVE NOT FIELD LOCATED)

PROPOSED ℄ CONST. COORDINATE POINT

(H##, V##) CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)

■■ ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING

PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)

PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
- ODOT ITEM 254 - 1.5" PAVEMENT PLANING
- ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
- ODOT ITEM 407 - TACK COAT

SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS

NOTES:
1.) THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES ON SHEET 6 WHEN INSTALLING THE PROPOSED WATERLINE FROM THE INTERSECTION OF 44TH ST. AND GREENMEADOW/LOGAN AVE. TO LOGAN AVENUE.

EXIST. 12" WATER MAIN [STA. 62+24.15] (APPROX. DEPTH)

EXIST. 4" GAS [STA. 62+17.63] (APPROX. DEPTH)

GREENMEADOW AVE. NW

EXIST. 30" STM INV. = 1141.99± [STA. 62+41.15]

EXISTING GROUND OVER WATER MAIN

MATCHLINE STA. 61+50

4'-6" MIN.

1'-6" MIN.

1-8"X12" REDUCER

PROP. 12"X12" CROSS [STA. 62+11.53]

1-12" 45° VERT. BEND

PROP. 8" WATER MAIN

1-12" 45° VERT. BEND

1-12" 45° VERT. BEND

PROP. 12" WATER MAIN

EXIST. 15" STM INV. = 1145.77± [STA. 63+91.11]

MATCHLINE STA. 66+50

EXIST. 15" STM INV. = 1145.77± [STA. 65+22.70]

1153.27 1151.80 1150.25 1149.20 1148.87 1149.00 1148.49

1170 1165 1160 1155 1150 1145 1140

62+00 63+00 64+00 65+00 66+00 66+50

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CAS CHECKED SWA

PLAN AND PROFILE
STA. 61+50 TO STA. 66+50

44TH ST. WATER IMPROVEMENTS

ARCADIS
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Akron, Ohio 44308 Tel: 330-434-1995

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302203
MORELLO FRANK & MARY
215 44TH ST NW
(EX. WL SERVICE IS OFF LOGAN AVE.)

305137
NAMEY JOHN
201 44TH ST NW
(EX. WL SERVICE IS OFF LOGAN AVE.)

305030
STEFFJAY LLC
125 44TH ST NW
(EX. WL SERVICE IS OFF MARKET AVE.)

BENCHMARK 9
MAG NAIL SET 2 FEET ABOVE GROUND, IN SOUTH SIDE OF POLE #345, NORTH SIDE OF ROAD
N431645, E2281172
ELEV. = 1168.80

BENCHMARK 10
MAG NAIL SET 2 FT. ABOVE GRND, SOUTH FACE OF POLE #748A2-142 AEP, NORTH SIDE OF ROAD
N431620, E2282338
ELEV. = 1138.20

1 CURB RAMP, TYPE A1
STA. 167+49.69, 23.5' LT.

2 CURB RAMP, TYPE A1
STA. 167+96.60, 23.6' RT.

44TH STREET NW 60'-65' R/W

LOGAN AVE. NW 50' R/W

MATCHLINE STA. 66+50
SEE SHEET 21

MATCHLINE STA. 72+00
SEE SHEET 21

1-12" CUT-IN SLEEVE
1-12" 45° BEND
1-12" PLUG
STA. 167+61.04, 71.22' LT.

HYDRANT ASSEMBLY TO BE REMOVED

1-12" 45° BEND
STA. 167+80.01, 52.28' LT.

1-HYDRANT ASSEMBLY
STA. 167+80.00, 49.52' LT.
(H2126, V209029)

ABANDON 12" VALVE

SEE NOTE 1

STM CB
T/G=1146.22
15" RCP INV=1143.02

STM CB
T/G=1144.22
15" RCP INV W&E=1140.95

STM CB
T/G=1136.73
20" RCP INV SE=1132.38

STM CB
T/G=1137.22
15" RCP W&E=1132.77

STM CB
T/G=1134.60
20" RCP INV E=1130.57

PROP. @ CONST. 44TH ST.

CURB AND GUTTER

FROM 1980 CONST. PLAN

BM #10

ASPH DRIVE

CONC DRIVE

TRAFFIC SIGNS-POLE

PROPOSED 12" WATER MAIN

ABANDON 12" VALVE

■■ SAN MH
T/C=1147.32
6" VCP INV N=1136.22
8" VCP INV W&E=1136.12

ABANDON EXIST. 6" WATER MAIN

PROPOSED 6" WATER MAIN

■■ SAN MH
T/C=1135.97
8" VCP INV W&E=1126.11

1-12"X12"X12" TEE
2-12" GATE VALVES/VALVE BOXES (V209064), (V209065)
1-12"X6" REDUCER
1-6" GATE VALVE/VALVE BOX (V209060)
STA. 167+80.07, 9.51' RT.

301705
KIELSON DAVID P
208 44TH ST NW

300021
AGUILAR KENNETH & RHONDA A
144 44TH ST NW

300639
COATES TODD L TTEE/ TODD L COATES REVOCABLE TRUST
130 44TH ST NW

304099
REED MARCUS M.
MARKET AVE N

LEGEND

(W#) PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION
(* = SERVICE VALVE NOT FIELD LOCATED)

(#) PROPOSED @ CONST. COORDINATE POINT

(H##, V##) CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)

■■ ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING

PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)

PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
- ODOT ITEM 254 - 1.5" PAVEMENT PLANING
- ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
- ODOT ITEM 407 - TACK COAT

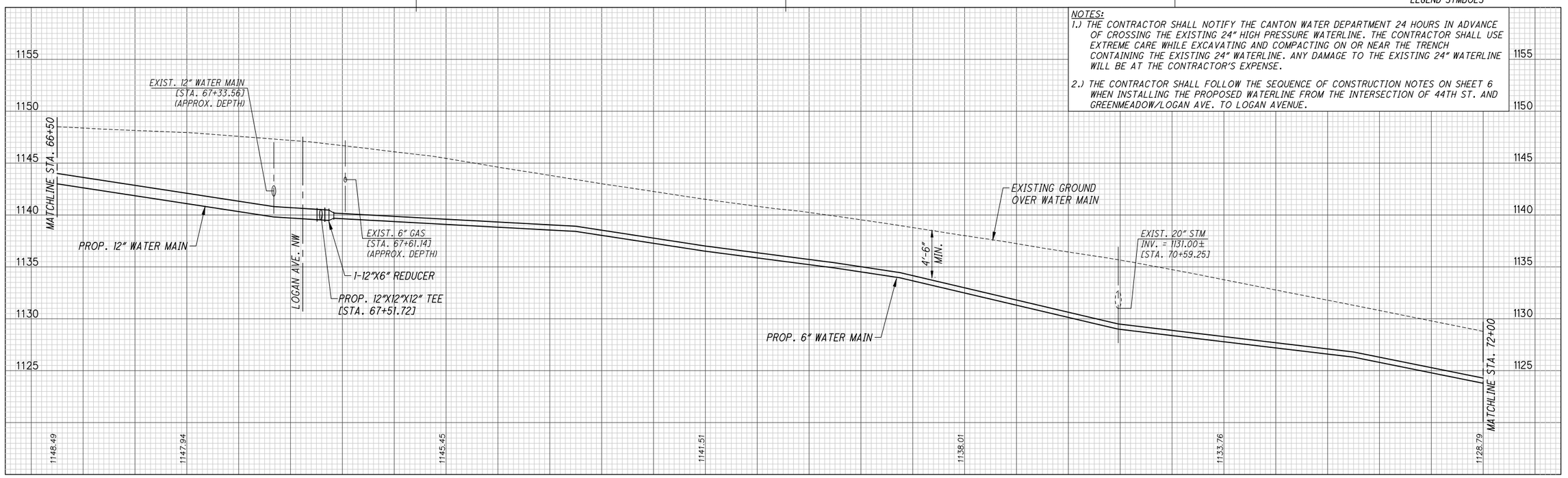
SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CAS CHECKED SWA

PLAN AND PROFILE
STA. 66+50 TO STA. 72+00

44TH ST. WATER IMPROVEMENTS

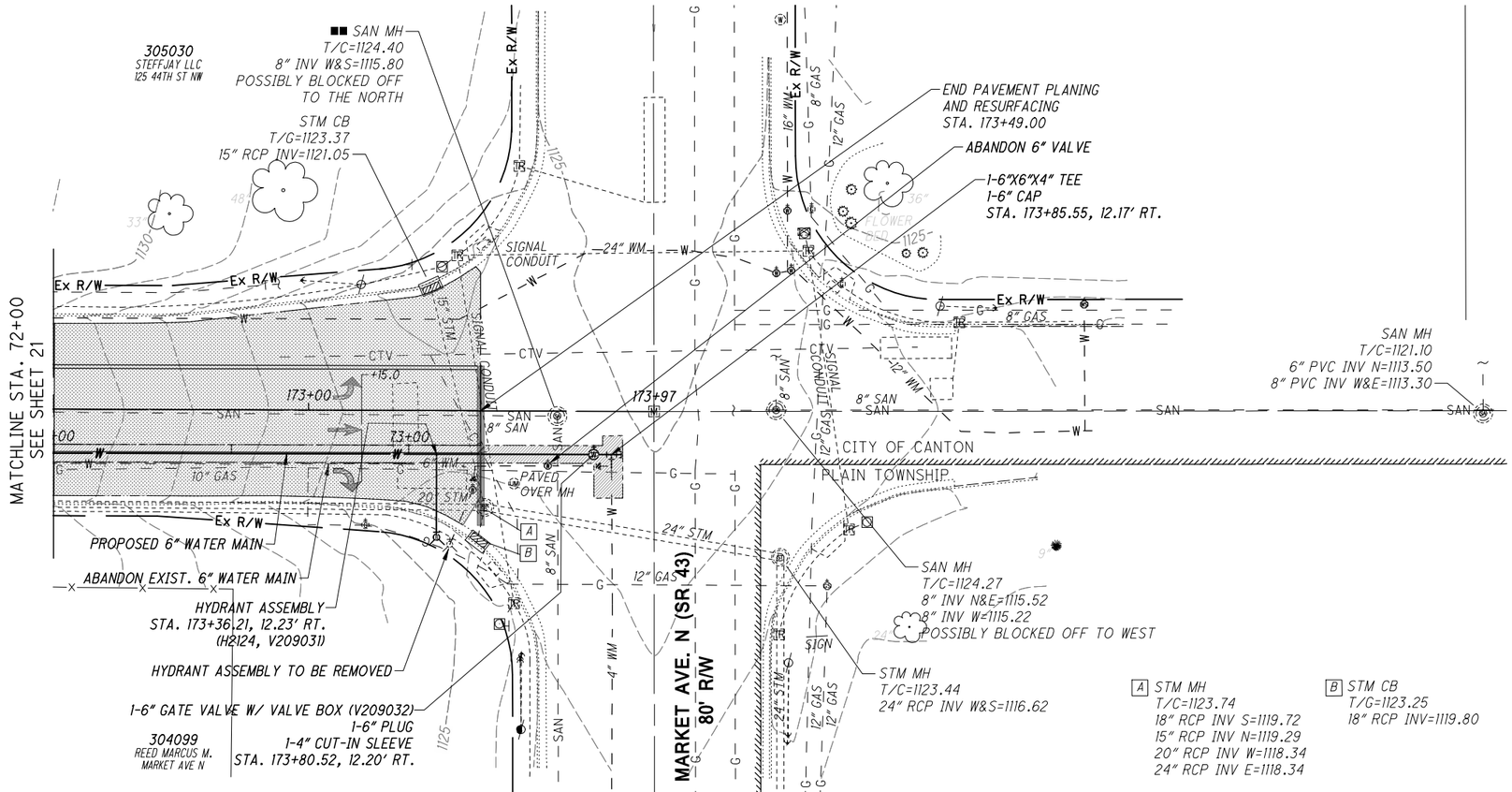


NOTES:
1.) THE CONTRACTOR SHALL NOTIFY THE CANTON WATER DEPARTMENT 24 HOURS IN ADVANCE OF CROSSING THE EXISTING 24" HIGH PRESSURE WATERLINE. THE CONTRACTOR SHALL USE EXTREME CARE WHILE EXCAVATING AND COMPACTING ON OR NEAR THE TRENCH CONTAINING THE EXISTING 24" WATERLINE. ANY DAMAGE TO THE EXISTING 24" WATERLINE WILL BE AT THE CONTRACTOR'S EXPENSE.

2.) THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES ON SHEET 6 WHEN INSTALLING THE PROPOSED WATERLINE FROM THE INTERSECTION OF 44TH ST. AND GREENMEADOW/LOGAN AVE. TO LOGAN AVENUE.

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

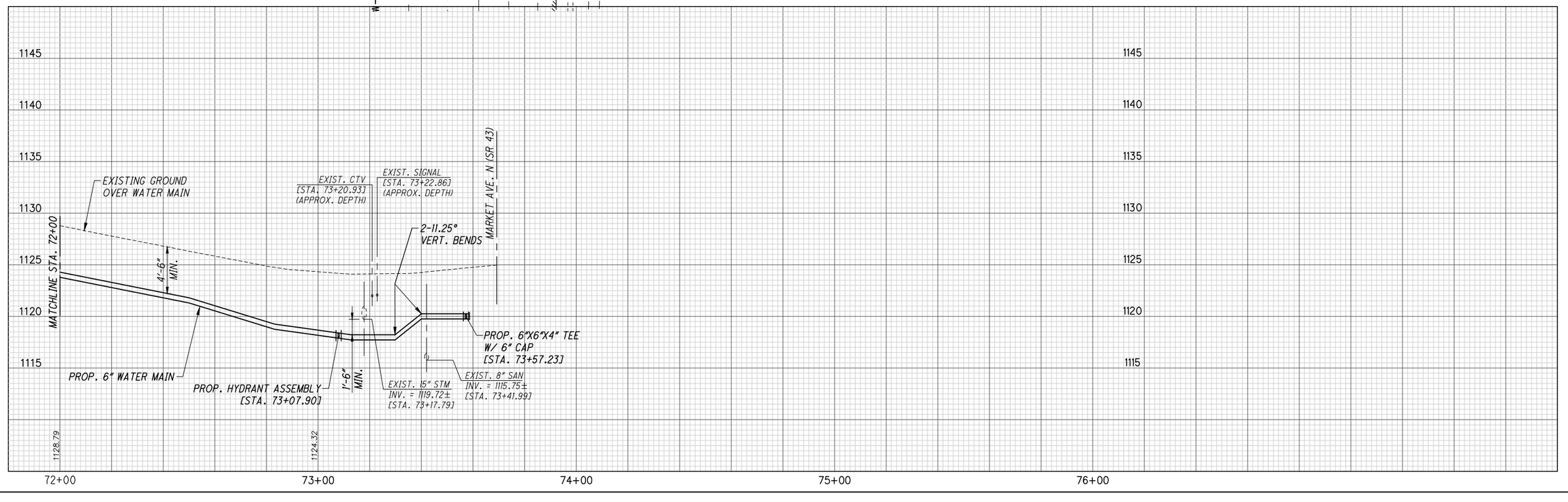
BENCHMARK 9	BENCHMARK 10
MAG NAIL SET 2 FEET ABOVE GROUND, IN SOUTH SIDE OF POLE #345, NORTH SIDE OF ROAD N431645, E2281172	MAG NAIL SET 2 FT. ABOVE GRND, SOUTH FACE OF POLE #748A2-142 AEP, NORTH SIDE OF ROAD N431620, E2282338
ELEV. = 1168.80	ELEV. = 1138.20



LEGEND

- W# — PROPOSED (#=SIZE) INCH, WATER SERVICE CONNECTION
  (* = SERVICE VALVE NOT FIELD LOCATED)
- # — PROPOSED ℄ CONST. COORDINATE POINT
- (H##, V##) — CANTON WATER DEPT. (HYDRANT AND VALVE NUMBERS)
- ■■ — ITEM SPECIAL-MANHOLE SEALING WITH PROTECTIVE POLYMER LINING
- PROPOSED ROADWAY TRENCH PAY LIMITS / PAVEMENT REPLACEMENT (SEE DETAIL SHT. 27)
- PROPOSED ROADWAY RESURFACING LIMITS OUTSIDE OF TRENCH PAY LIMITS:
  - ODOT ITEM 254 - 1.5" PAVEMENT PLANING
  - ODOT ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE
  - ODOT ITEM 407 - TACK COAT

SEE TITLE SHEET FOR ADDITIONAL LEGEND SYMBOLS



HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED CAS | CHECKED SWA

PLAN AND PROFILE
STA. 66+50 TO STA. 72+00

44TH ST. WATER IMPROVEMENTS

ARCADIS
222 South Main Street, Suite 200
Akron, Ohio 44308 Tel: 330-434-1995

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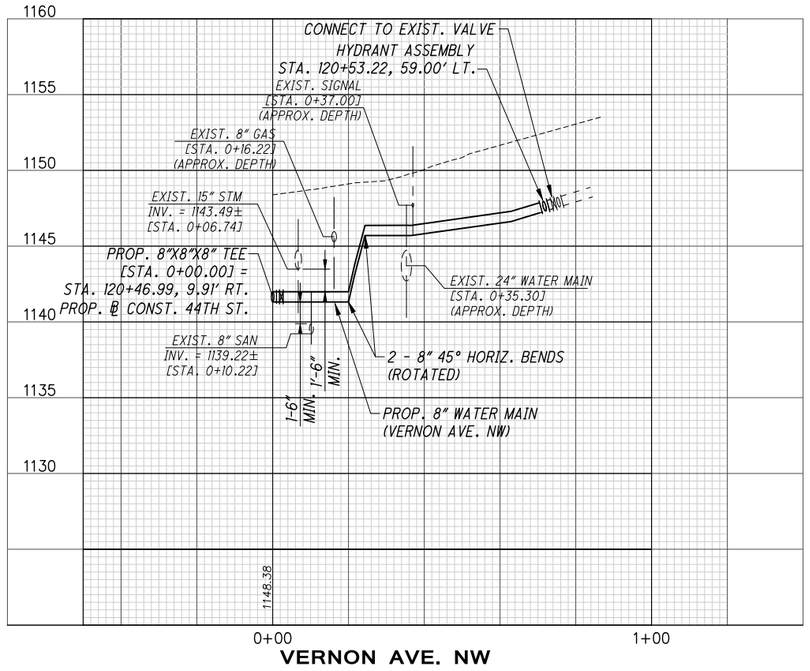

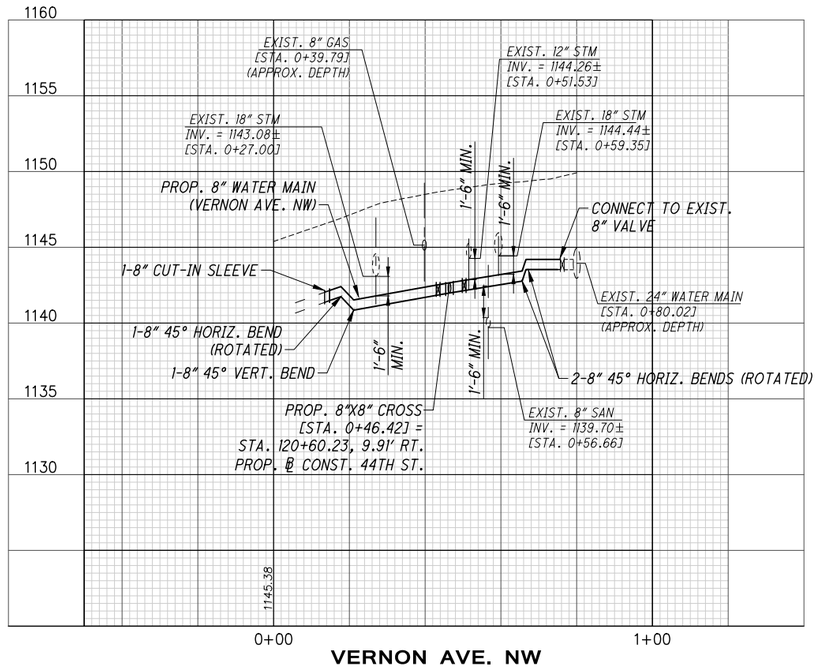

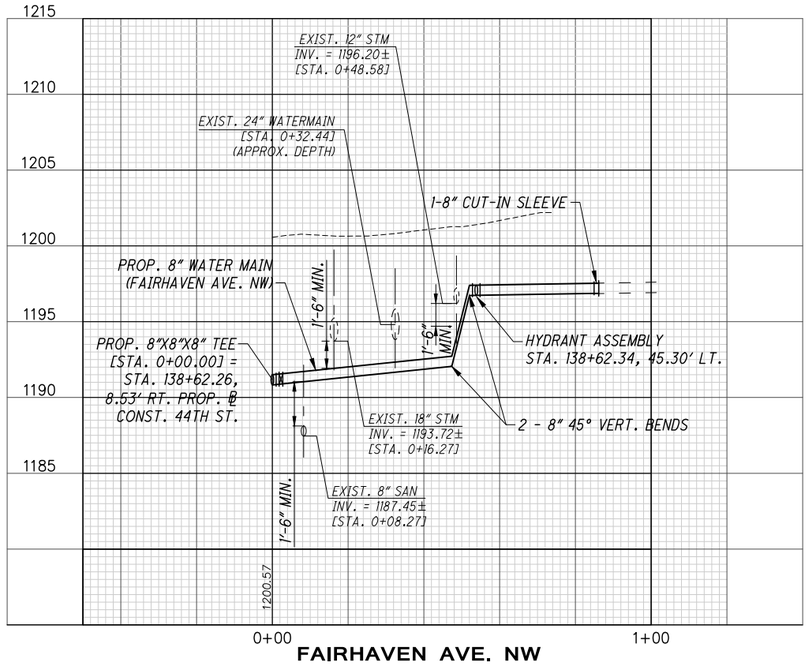

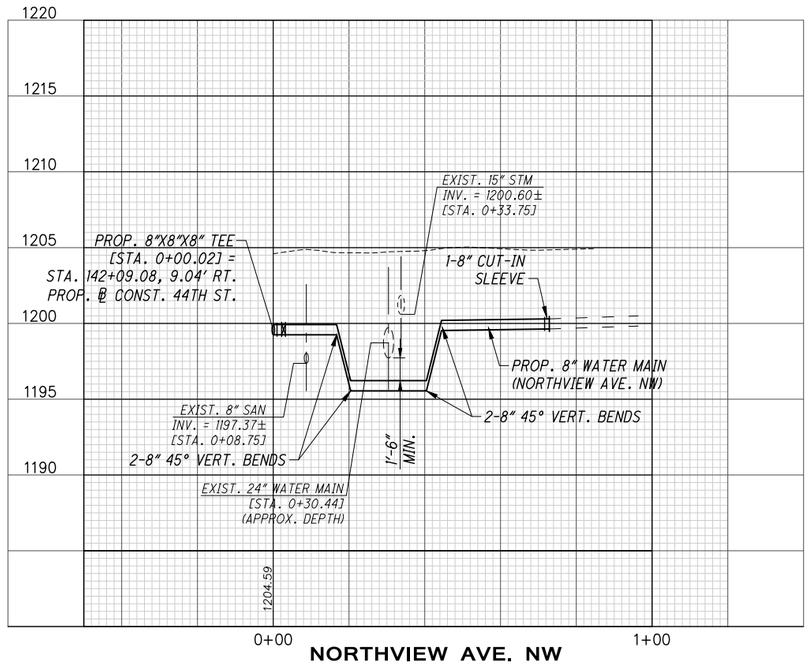

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CAS
CHECKED SWA

CROSS ROAD PROFILES

44TH ST. WATER IMPROVEMENTS

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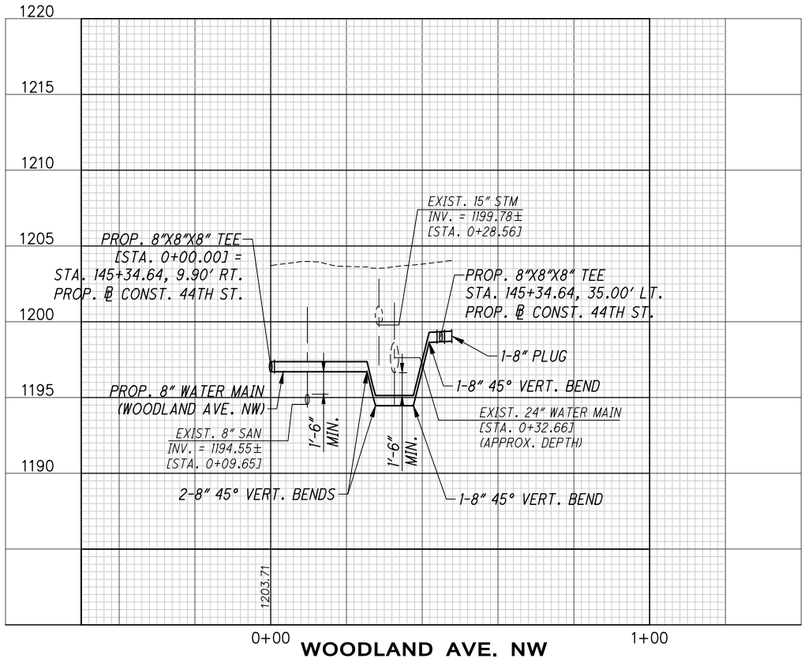

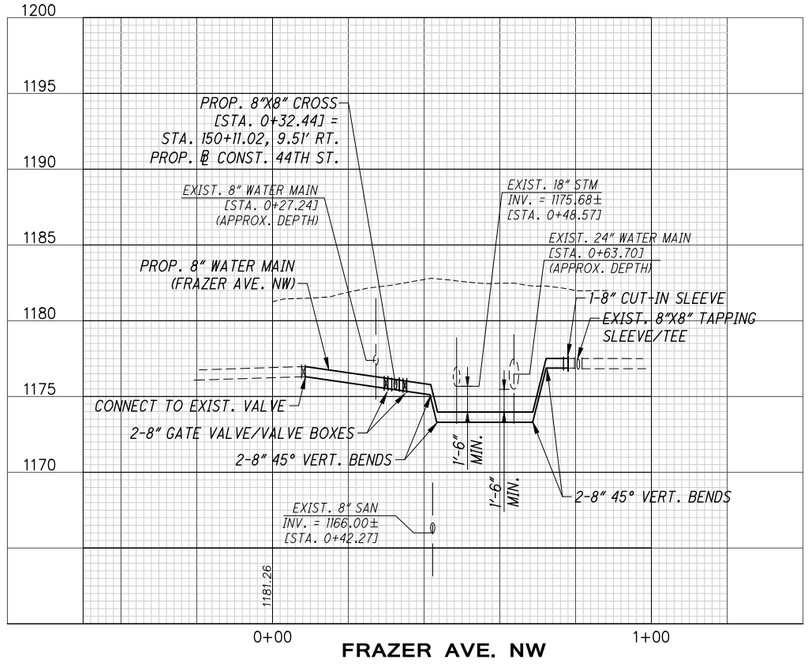

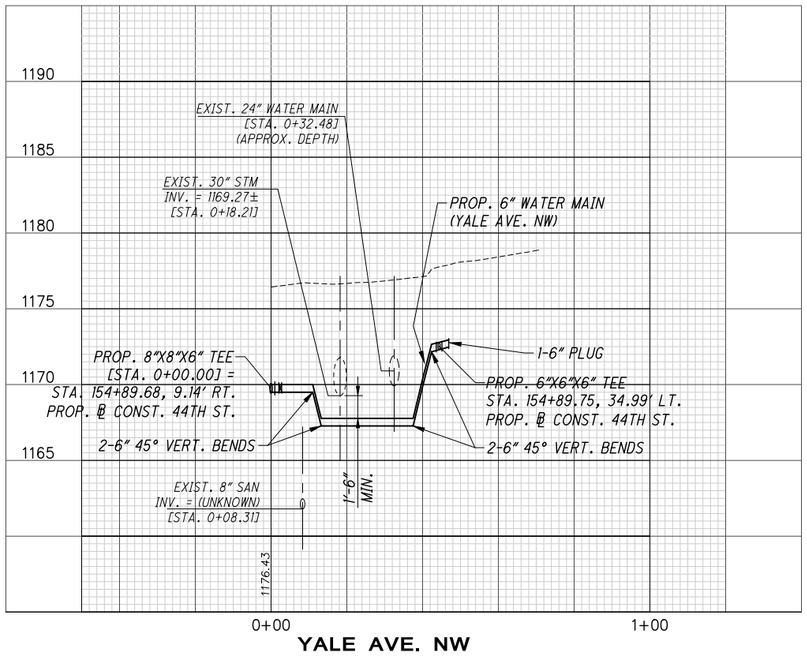

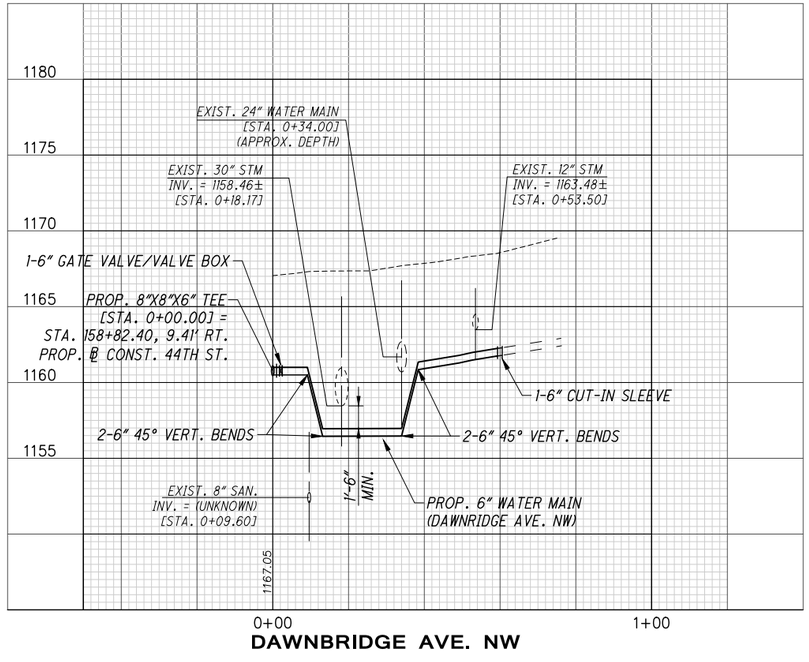

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CAS
CHECKED SWA

CROSS ROAD PROFILES

44TH ST. WATER IMPROVEMENTS

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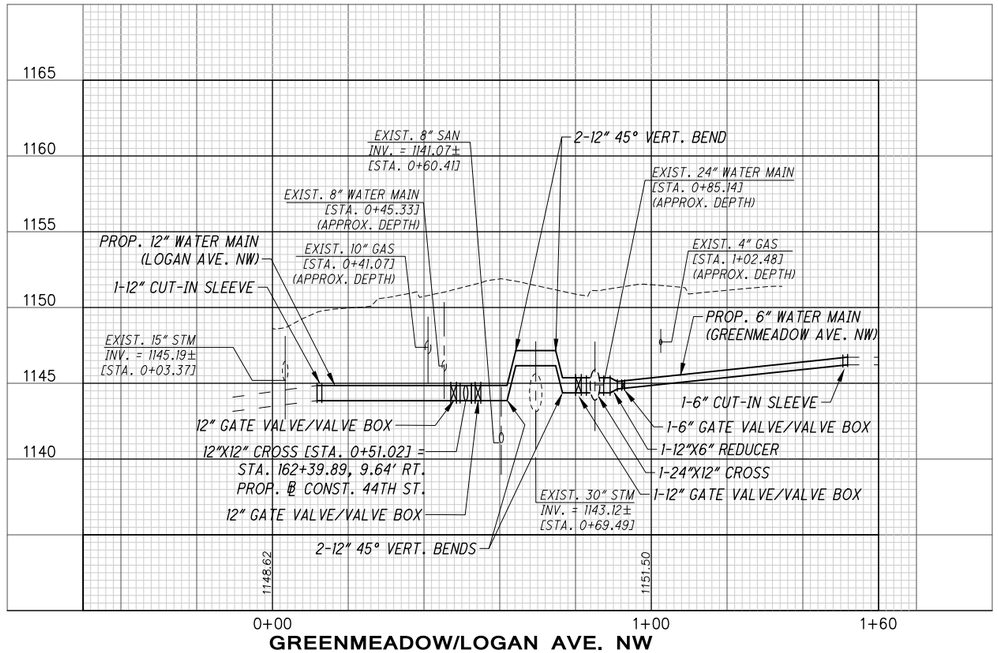
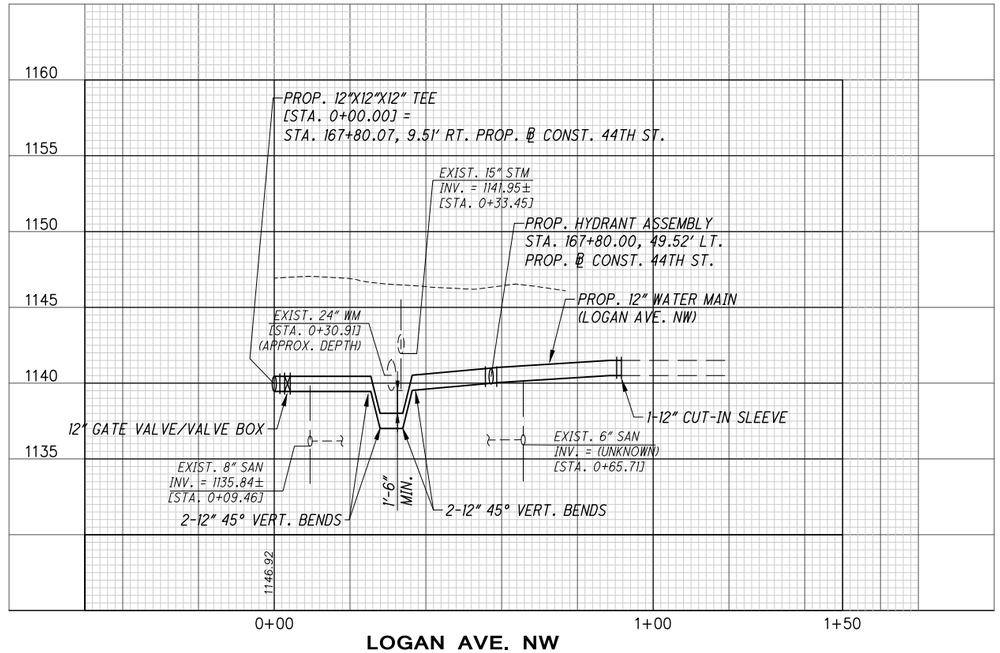


GREENMEADOW/LOGAN AVE. NW



LOGAN AVE. NW

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED CAS
CHECKED SWA

CROSS ROAD PROFILES

44TH ST. WATER IMPROVEMENTS

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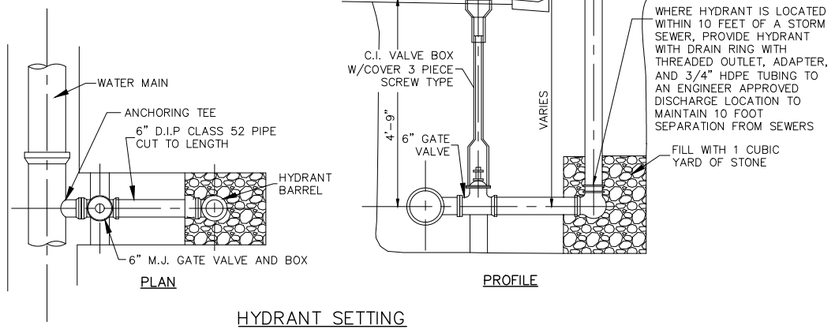
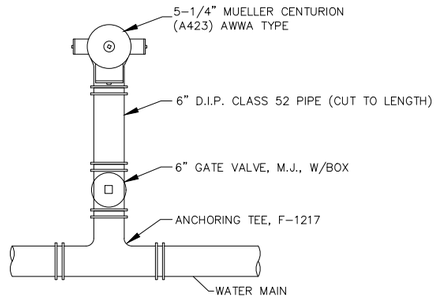


HYDRANT SETTING
(C71)



HYDRANT SETTINGS CONSIST OF HYDRANT, VALVE, VALVE BOX, FITTINGS AND MATERIALS SHOWN OR SPECIFIED WHICH ARE NEEDED FOR PROPER INSTALLATION.

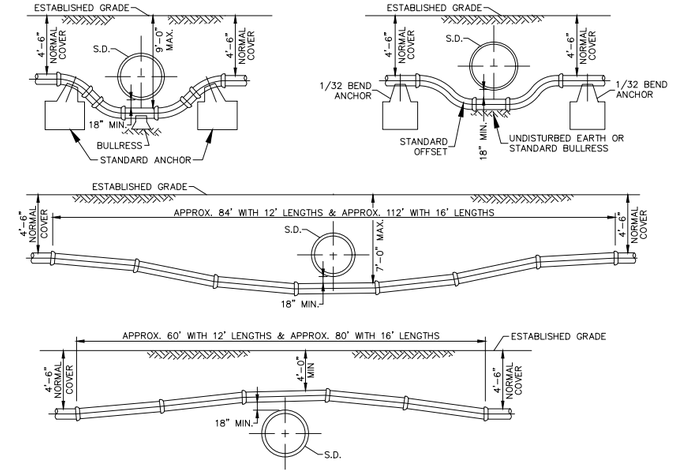
SEE SPECIFICATIONS FOR MORE INFORMATION ABOUT MATERIALS, SETTING HYDRANTS AND DRAINAGE REQUIREMENTS.

IF RESTRAINED JOINT FITTINGS CANNOT BE USED, (2) TIE RODS AND (4) EYE BOLTS WITH NUTS AND WASHERS MUST BE USED.

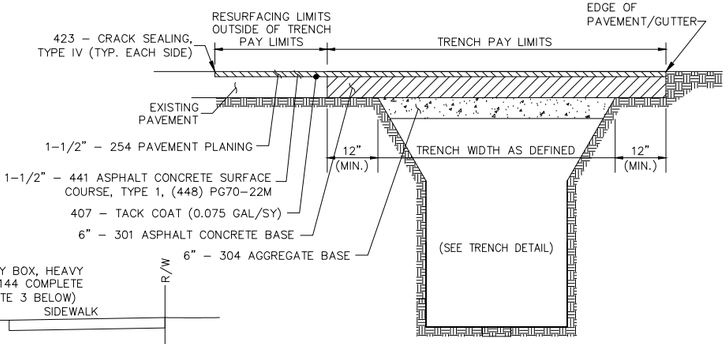
FIGURES SUCH AS F-1217 INDICATE CLOW CORPORATION STYLES. USE THIS BRAND OR APPROVED EQUAL.

ALL HYDRANTS ARE TO BE INSTALLED WITH THE PUMPER NOZZLE FACING THE STREET.

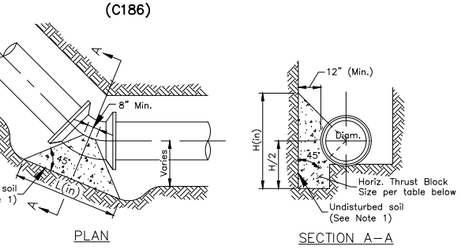
HYDRANT CONNECTION
(C70)



WATER MAIN CROSSING STORM DRAIN
(C187)



PAVEMENT REPLACEMENT DETAIL

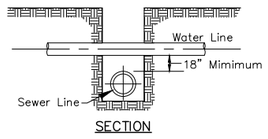


NOTES:

1. Thrust blocks shall be placed against undisturbed soil. Where it is not possible, the fill between the bearing surface and undisturbed soil must be compacted to at least 90% Standard Proctor density.
2. Pipe, bolts, nuts and fittings shall be wrapped with polyethylene film to prevent corrosion and concrete adhesion.
3. All joints to be Megalugged.

SIZE OF PIPE	DEGREE OF BEND							
	11 ¼°		22 ½°		45°		90°	
	L	H	L	H	L	H	L	H
6"	16	8	16	10	24	14	32	18
8"	16	10	21	14	31	18	44	24
12"	21	16	32	20	48	26	66	36
16"	29	20	42	28	66	34	90	46
20"	37	24	50	36	73	48	107	60
24"	46	28	64	40	93	54	128	72

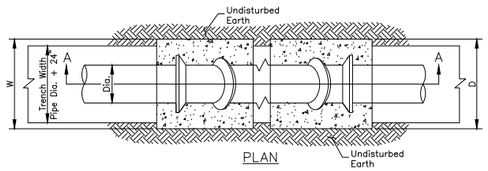
HORIZONTAL THRUST BLOCKS
(C130)

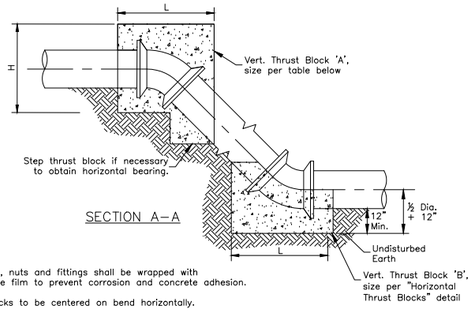


SECTION

NOTES:
1. If joint on water main is within limits of sewer trench, install mechanical bell joint clamp
2. If clearance is less than 18", encase sewer pipe 6 ft. each side of water main. Cost shall be included in the unit prices bid for all items in the proposal.
3. In no case shall the sewer pipe contact any water main, service line or appurtenance.

VERTICAL WATER MAIN CLEARANCE
(C186)





NOTES:

Pipe, bolts, nuts and fittings shall be wrapped with polyethylene film to prevent corrosion and concrete adhesion.

Thrust blocks to be centered on bend horizontally.

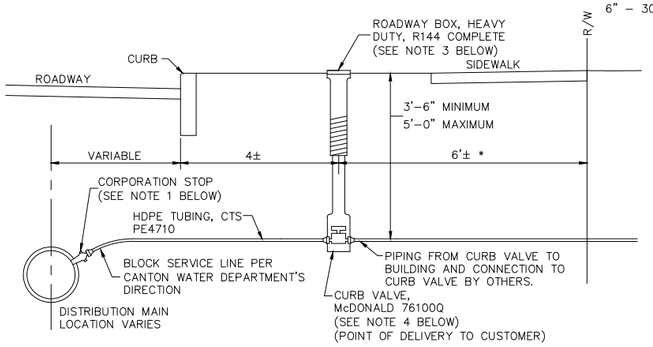
Thrust block 'A' shall be off centered on bend vertically to shift the majority of the block above the fitting.

All joints to be Megalugged.

Concrete thrust blocks to be placed on all vertical bends.

SIZE OF PIPE	DEGREE OF BEND											
	11 ¼°				22 ½°				45°			
	L	W	H	V (cy)	L	W	H	V (cy)	L	W	H	V (cy)
6"	12	48	18	0.2	15	43	36	0.5	28	55	24	0.8
8"	12	63	24	0.4	18	57	34	0.7	36	57	33	1.4
12"	20	54	36	0.8	37	62	37	1.7	48	62	51	3.1
16"	31	65	38	1.6	55	65	39	3.0	65	65	65	5.6
20"	40	56	50	2.4	57	66	59	4.8	82	74	68	8.8
24"	48	60	60	3.5	67	72	66	6.9	91	91	72	12.7

CONCRETE THRUST BLOCKS FOR VERTICAL BENDS ON WATER MAINS
(POURED IN PLACE, CLASS C)
(C147)



NOTES:

1.) CORPORATION STOP AND ASSEMBLY SHALL BE AS FOLLOWS:
- 1" CORP. STOP ON DIP: INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION.
- 1" CORP. STOP ON PVC C909: INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION WITH A COMPRESSION CONNECTION AND A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).
- 1 ½" CORP. STOP: INSTALL AT THE 2:00 POSITION, A MUELLER B-25008 CORPORATION STOP WITH A COMPRESSION CONNECTION AND A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).
- 2" CORP. STOP: INSTALL AT A 45° ANGLE, A MUELLER H-10003 CORPORATION STOP WITH 2" IRON TOP, A STANDARD NO LEAD BRASS 45° ELBOW AND A MUELLER H-15428 COMPRESSION MALE WITH INSERT COUPLING. ASSEMBLY SHALL ALSO CONSIST OF A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).

2.) A SERVICE CLAMP MUST BE USED WHEN THE MAIN SIZE IS 2 INCH OR SMALLER.

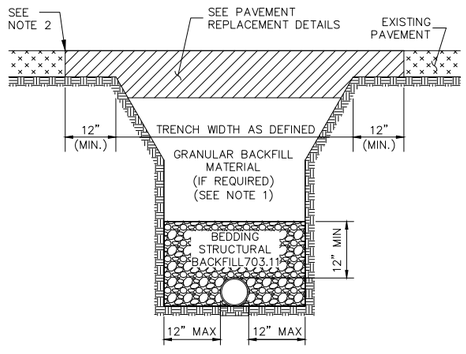
3.) HEAVY DUTY VALVE BOXES, COMPLETE, MUST BE USED IN PLACE OF ROADWAY BOXES WHEN THE CURB VALVE IS LOCATED IN ROADWAYS OR ASPHALT DRIVES.

4.) WHEN CONNECTING A NEW 1" SERVICE TO AN EXISTING 3/4" SERVICE, THE CURB VALVE SIZE SHALL BE A 1"x3/4" REDUCING CURB VALVE.

5.) BRASS REDUCING BUSHINGS OR SWIVEL ELLS WILL NOT BE ALLOWED.

6.) APPROVED EQUALS MAY BE USED IN PLACE OF SPECIFIED ITEMS.

TYPICAL WATER SERVICE
(C94)



NOTES:
1. CHECK WITH LOCAL AUTHORITY HAVING JURISDICTION WITHIN THE RIGHT-OF-WAY REGARDING BACKFILL REQUIREMENTS.
2. SAW CUT EXISTING PAVEMENT, SEAL ASPHALT JOINT PER ODOT ITEM 423 - CRACK SEALING, TYPE IV. INCLUDE COST IN BID PRICE FOR THE PROPOSED PAVEMENT.
3. IF ADJACENT PAVEMENT IS DAMAGED OR UNDERMINED DURING CONSTRUCTION, ADDITIONAL PAVEMENT SHALL BE SAW CUT AND REMOVED IN ORDER TO PROVIDE A SOUND PAVEMENT EDGE.
4. IN THE EVENT THAT THE SAW CUT WOULD LIE WITHIN 3 FEET OF THE EDGE OF PAVEMENT OR FACE OF CURB, THE PAVEMENT REPLACEMENT SHALL EXTEND TO THE EDGE OF PAVEMENT OR FACE OF CURB.

TRENCH DETAIL FOR D.I.P.
(C175)

CALCULATED CAS CHECKED SWA

MISCELLANEOUS DETAILS

44TH ST. WATER IMPROVEMENTS

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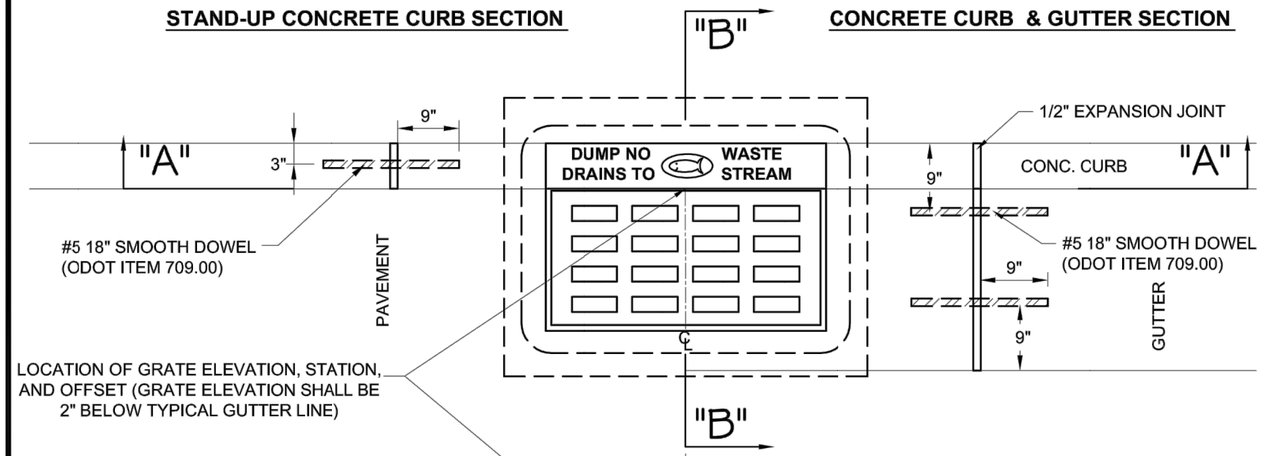
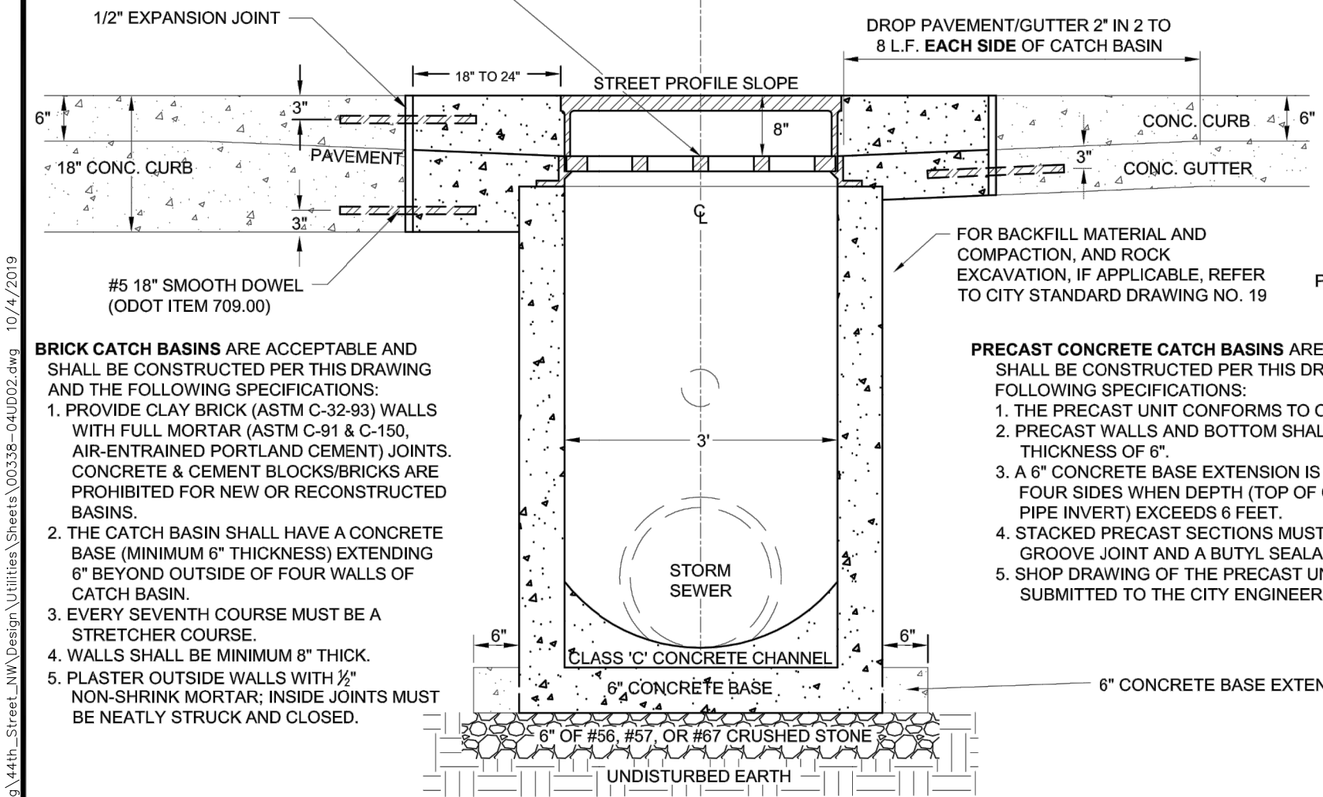
2864 Harrisburg Rd. N.E. • Canton, Ohio 44705
(330) 489-3310

PLAN VIEW
NOT TO SCALE

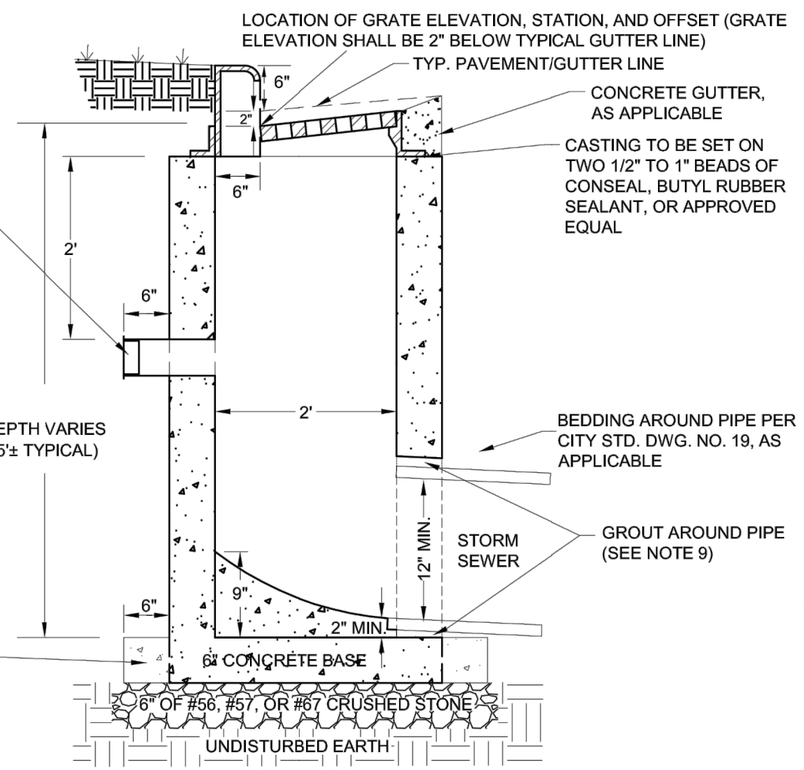


STAND-UP CONCRETE CURB SECTION



SECTION A-A
NOT TO SCALE

CONCRETE CURB & GUTTER SECTION



SECTION B-B
NOT TO SCALE

(PRECAST CONCRETE CATCH BASIN SHOWN)

NOTES:
1. ALL WORK SHALL CONFORM TO ODOT ITEM 604 EXCEPT AS OTHERWISE NOTED HEREIN.
2. PRECAST CONCRETE OR BRICK CATCH BASINS ARE ALLOWED AS NOTED HEREIN.
3. ALL CONCRETE SHALL CONFORM TO ODOT ITEM 499 CLASS C (4000 psi).
4. WHEN STREET PROFILE SLOPE IS 5% OR STEEPER, CONSTRUCT CATCH BASIN IN ACCORDANCE WITH CITY STD. DWG. NO. 3.
5. A CONCRETE CHANNEL SHALL BE POURED INTO THE BOTTOM OF THE CATCH BASIN USING CLASS 'C' CONCRETE. THE CHANNEL SHALL TAPER FROM 9" THICKNESS TO 2" MIN. THICKNESS AT THE LOWEST SEWER INVERT AND SHALL BE FINISHED WITH A SMOOTH SURFACE.
6. THE EXCAVATED AREA AROUND THE CATCH BASIN SHALL BE BACKFILLED WITH ODOT ITEM 703.11, TYPE 1 (304, 411, OR 617) COMPACTED IN 8" LIFTS OR ODOT ITEM 613. NO FOUNDRY SAND OR SLAG PERMITTED.
7. EXPANSION JOINT MATERIAL SHALL CONFORM TO ODOT ITEM 705.03. 1" OF JOINT SEALER (705.04) SHALL BE PLACED OVER EXPANSION JOINTS.
8. CASTINGS SHALL BE EAST JORDAN 7030 CURB INLET WITH TYPE T1 BACK AND TYPE M6 VANE GRATE, NEENAH R-3067-L, OR EQUAL APPROVED BY CITY ENGINEER (GRATE USED SHALL NOT BE SPECIFICALLY IDENTIFIED BY MANUFACTURER AS NOT SUITABLE FOR BICYCLE TRAFFIC). THE CASTING BACK (HOOD) MUST INCLUDE "ECO-SENSITIVE" MARKINGS SUCH AS: "DUMP NO WASTE; DRAINS TO STREAM" AND AN AQUATIC LIFE LOGO. THE LETTERING AND LOGO SHALL BE RAISED OR RECESSED AND INTEGRAL WITH THE CASTING OF THE BACK. ALTERNATE NOTATION OR LOGO IS SUBJECT TO THE CITY ENGINEER'S APPROVAL.
9. ALL OPENINGS AND KNOCKOUTS FOR INLET AND OUTLET PIPING SHALL BE FASHIONED NEATLY. ALL ANNULAR SPACE SHALL BE FILLED WITH CEMENT GROUT, BRICK AND MORTAR, OR CLASS 'C' CONCRETE.
10. ONE 4" DIAMETER INLET PIPE SHALL BE INSTALLED ON THE SIDE OF THE CATCH BASIN OPPOSITE THE STREET (AS SHOWN).
11. KNOCK-OUT PANELS ARE NOT ALLOWED UNLESS PRE-APPROVED BY THE CITY ENGINEER.
12. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

BRICK CATCH BASINS ARE ACCEPTABLE AND SHALL BE CONSTRUCTED PER THIS DRAWING AND THE FOLLOWING SPECIFICATIONS:
1. PROVIDE CLAY BRICK (ASTM C-32-93) WALLS WITH FULL MORTAR (ASTM C-91 & C-150, AIR-ENTRAINED PORTLAND CEMENT) JOINTS. CONCRETE & CEMENT BLOCKS/BRICKS ARE PROHIBITED FOR NEW OR RECONSTRUCTED BASINS.
2. THE CATCH BASIN SHALL HAVE A CONCRETE BASE (MINIMUM 6" THICKNESS) EXTENDING 6" BEYOND OUTSIDE OF FOUR WALLS OF CATCH BASIN.
3. EVERY SEVENTH COURSE MUST BE A STRETCHER COURSE.
4. WALLS SHALL BE MINIMUM 8" THICK.
5. PLASTER OUTSIDE WALLS WITH ½" NON-SHRINK MORTAR; INSIDE JOINTS MUST BE NEATLY STRUCK AND CLOSED.

PRECAST CONCRETE CATCH BASINS ARE ACCEPTABLE AND SHALL BE CONSTRUCTED PER THIS DRAWING AND THE FOLLOWING SPECIFICATIONS:
1. THE PRECAST UNIT CONFORMS TO ODOT ITEM 706.13.
2. PRECAST WALLS AND BOTTOM SHALL HAVE A MINIMUM THICKNESS OF 6".
3. A 6" CONCRETE BASE EXTENSION IS REQUIRED ON ALL FOUR SIDES WHEN DEPTH (TOP OF GRATE TO LOWEST PIPE INVERT) EXCEEDS 6 FEET.
4. STACKED PRECAST SECTIONS MUST HAVE A TONGUE/ GROOVE JOINT AND A BUTYL SEALANT.
5. SHOP DRAWING OF THE PRECAST UNIT SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.

OFFICE OF THE CITY ENGINEER
CANTON, OHIO
DANIEL J. MOEGLIN, P.E., CITY ENGINEER
2436 30th St. NE 44705 330-489-3381 www.cantonohio.gov/engineering

APPROVED DATE: MAR. 2012

APPROVED BY: CDB, RMB, SLH

DRAWING FILE NAME: **ce_01.dwg**

REVISIONS

DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 1

CURB INLET CATCH BASIN

SHEET 1 OF 1

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44TH ST. WATER IMPROVEMENTS

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1. CUT AND REMOVE THE ASPHALT PAVEMENT, AROUND THE EXISTING MANHOLE CASTING, IN A CIRCULAR FASHION WITH A MINIMUM DIAMETER OF 54" AND CENTERED ABOUT THE FRAME. DISPOSE OF ALL ASPHALT, CONCRETE, BRICK AND ROAD DEBRIS.

2. REMOVE THE CASTING (MANHOLE RIM AND COVER) FROM THE TOP OF THE MANHOLE. INSPECT THE RIM AND COVER FOR DEFECTS. IF DEFECTS ARE PRESENT, REPLACE WITH NEW RIM/COVER AS NEEDED. IF DEFECTS ARE NOT PRESENT, CLEAN & RETAIN FOR USE IN RECONSTRUCTION.

3. CONCRETE MANHOLE
   REMOVE ALL ADJUSTING RINGS TO THE TOP OF THE CONCRETE CONE. DISPOSE OF THIS MATERIAL
   MASONRY MANHOLE
   REMOVE MASONRY TO THE LEVEL SPECIFIED IN FIG. 2.M. DISPOSE OF THIS MATERIAL.

4. REMOVE ALL AGGREGATE AROUND THE MANHOLE THAT HAS BEEN EXPOSED BY THE ASPHALT REMOVAL AND DISPOSE OF THIS AGGREGATE. THE AGGREGATE MUST BE REMOVED TO A MINIMUM OF 3" BELOW THE LEVEL OF THE TOP OF THE CONCRETE CONE/REMAINING MASONRY.

5. CONCRETE MANHOLE
   CLEAN AND INSPECT THE TOP SURFACE OF THE CONCRETE CONE SECTION. THE SURFACE SHOULD BE SMOOTH AND FREE OF BUMPS AND PITS THAT MAY PREVENT A GOOD WATER TIGHT SEAL. GRIND THE SURFACE AS NEEDED TO REMOVE PROTRUSIONS. UTILIZE COMPRESSED AIR TO BLOW DUST AND DEBRIS FROM THE SURFACE AFTER GRINDING. UTILIZE A HYDRAULIC CEMENT, ACCORDING TO MANUFACTURERS RECOMMENDATIONS, TO FILL IN DEPRESSIONS.
   MASONRY MANHOLE
   CLEAN AND INSPECT THE TOP SURFACE OF THE MASONRY. THE SURFACE MUST BE STRUCTURALLY SOUND. UTILIZE COMPRESSED AIR TO BLOW DUST AND DEBRIS FROM THE SURFACE. THE ENGINEER SHALL INSPECT THE MASONRY MANHOLE FOR STRUCTURAL INTEGRITY.

6. BRING THE AREA AROUND THE CONE/MASONRY BACK TO FLUSH WITH THE TOP OF THE MASONRY USING ODOT 703.01 #57 AGGREGATE.

Existing Manhole (Sectional View)

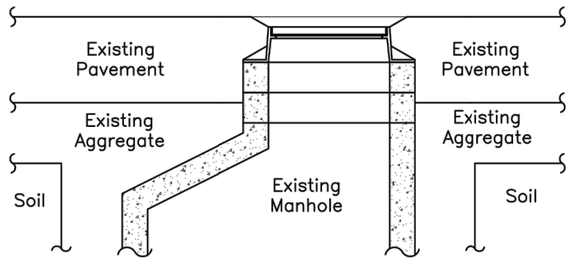

FIG. 1.C

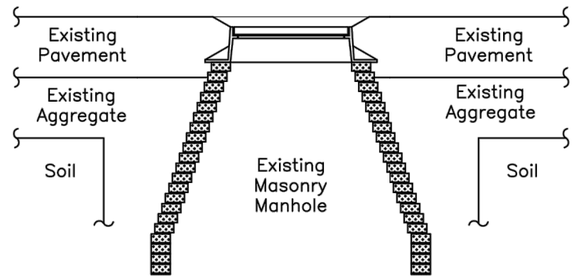

FIG. 1.M

Legend

= Concrete

= Masonry

Chimney Removed (Sectional View)

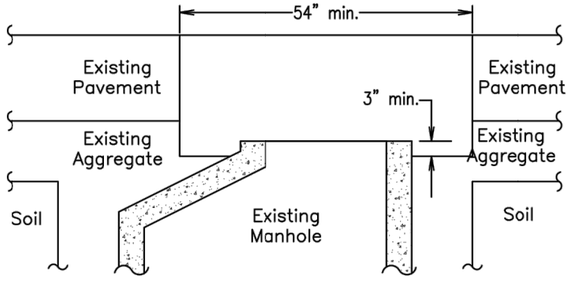

FIG. 2.C

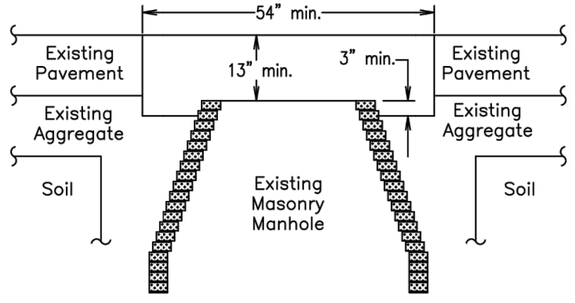

FIG. 2.M

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APPROVED DATE: APRIL 2015

APPROVED BY: NJL

DRAWING FILE NAME: **ce_13.dwg**

REVISIONS		
DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 13

MANHOLE ADJUSTMENTS

SHEET 1 OF 2

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MISCELLANEOUS DETAILS

44TH ST. WATER IMPROVEMENTS

The City of Canton
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G:\Project\AK000338.B004\Drawing\44th_Street_NW\Design\Utilities\Sheets\00338-04UD02.dwg 10/4/2019

7. APPLY MORTAR TO THE TOP OF THE MASONRY AND IMMEDIATELY INSTALL A CONCRETE COLLAR/ADJUSTING RING (2" MIN. THICKNESS) ON TOP OF THE MORTAR. THE CONCRETE COLLAR/ADJUSTING RING MUST HAVE AN INSIDE DIAMETER OF 24 INCHES. THE OUTSIDE DIAMETER MUST BE SUCH THAT THERE IS A MINIMUM OF 3 INCHES OF THE CONCRETE COLLAR/ADJUSTING RING BEARING ON MASONRY ALL THE WAY AROUND THE MANHOLE. (MASONRY MANHOLES ONLY)

8. A PVC PIPE SHALL BE USED AS A CHIMNEY LINER (SEE CHIMNEY LINER SPECIFICATIONS) AND MUST BE CUT TO THE EXACT PROFILE OF THE ROAD IN ALL DIRECTIONS SUCH THAT WHEN THE MANHOLE RIM AND COVER ARE RESTING ON TOP OF THE LINER, THE TOP OF THE CASTING SHALL BE EXACTLY 0.25" BELOW FLUSH WITH THE PAVEMENT SURFACE IN ALL DIRECTIONS.

9. THE LINER SHALL BE MARKED IN SUCH A WAY, UPON COMPLETION OF THE CUTTING PROCESS, THAT ROTATION DOES NOT OCCUR, WHICH COULD BE DETRIMENTAL TO THE END PRODUCT. THE TOP AND/OR BOTTOM OF THE LINER SHALL ALSO BE MARKED TO PREVENT THE LINER FROM BEING INSTALLED UP SIDE DOWN, WHICH COULD BE DETRIMENTAL TO THE END PRODUCT.

10. APPLY A LIBERAL AMOUNT OF SEALANT TO THE BOTTOM OF THE LINER AND SET IN PLACE ON TOP OF THE CONCRETE COLLAR/ADJUSTING RING WHILE MAKING SURE IT IS PROPERLY ALIGNED. THIS WILL CREATE A WATER TIGHT SEAL BETWEEN THE LINER AND THE CONCRETE COLLAR/ADJUSTING RING.

11. APPLY A LIBERAL AMOUNT OF SEALANT TO THE TOP OF THE LINER. SET THE MANHOLE RIM CASTING ON THE LINER WHILE MAKING SURE IT IS PROPERLY ALIGNED. THIS WILL CREATE A WATER TIGHT SEAL BETWEEN THE LINER AND THE MANHOLE RIM CASTING.

12. PLACE THE MANHOLE LID ON THE RIM CASTING TO LESSEN THE POSSIBILITY OF DEBRIS ENTERING THE MANHOLE.

13. PLACE EPOXY COATED #3 REBARS AS SHOWN IN FIG. 3.C & 3.M. THE CIRCULAR SHAPED REBARS SHALL HAVE A 6" MINIMUM OVERLAP.

14. APPLY WATERSTOP AS SHOWN IN FIG. 3.C & 3.M AND SPECIFIED IN THIS STANDARD DRAWING. THIS WILL ADD AN ADDITIONAL WATER TIGHT SEAL WHERE THE LINER MEETS THE CONCRETE COLLAR/ADJUSTING RING.

15. UTILIZE ODOT–CLASS C CONCRETE WITH BLACK DYE TO CAST A CONCRETE COLLAR AROUND THE RIM CASTING AND LINER. THE SURFACE OF THE CONCRETE SHALL BE FINISHED FROM FLUSH WITH THE PAVEMENT TO FLUSH WITH THE RIM CASTING. THE EDGE OF THE CONCRETE SHALL BE ROUNDED (1/4" RADIUS) WHERE IT MEETS THE ASPHALT. THIS WILL CREATE A SMALL GROOVE FOR A JOINT SEALER AT THIS LOCATION.

16. FILL THE GROOVE WITH A COLD POUR CRACK SEALER. THIS WILL PREVENT WATER FROM ENTERING THE CIRCULAR SEAM WHERE THE CONCRETE COLLAR MEETS THE ASPHALT.

17. APPLY AN ACRYLIC POLYMER CONCRETE CURING AND SEALING COMPOUND TO THE SURFACE OF THE CONCRETE COLLAR.

18. BARRICADE THE AREA AROUND THE CONCRETE TO PROTECT IT UNTIL THE CONCRETE ATTAINS A MODULUS OF RUPTURE OF 400 POUNDS PER SQUARE INCH. A CHEMICAL ADMIXTURE THAT ACTS AS A CONCRETE ACCELERATOR MAY BE USED TO SPEED UP THE PROCESS IF THE ROADWAY NEEDS TO BE OPENED SOONER.

19. IN ORDER TO MINIMIZE INCONVENIENCE TO MOTORISTS, THE CONTRACTOR PERFORMING THE WORK DESCRIBED IN THIS SPECIFICATION MUST BE CAPABLE OF PERFORMING ALL OF BOTH STEPS OF THIS SPECIFICATION IN 1.5 HOURS OR LESS.

20. THE CONTRACTOR SHALL WARRANT THE RECONSTRUCTED MANHOLE CHIMNEY TO BE LEAK FREE AND STRUCTURALLY SOUND FOR A MINIMUM OF 5 YEARS FROM THE DATE OF RECONSTRUCTION.

Chimney Reconstruction (Sectional View)

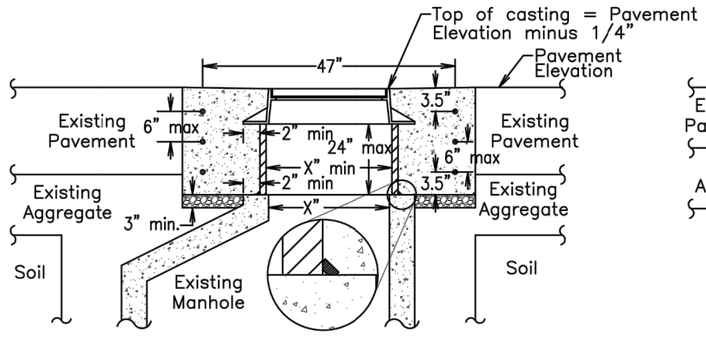

FIG. 3.C

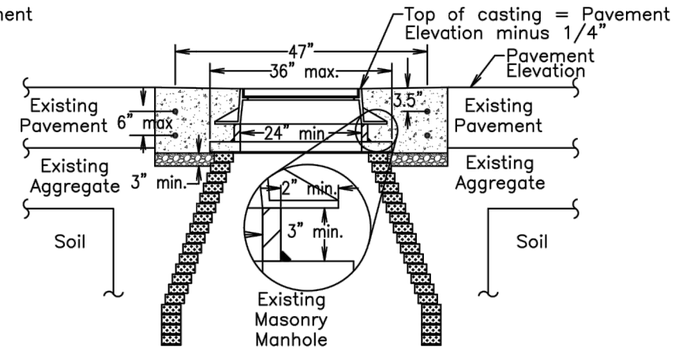

FIG. 3.M

Legend

- = Concrete
- = Epoxy Coated #3 Rebar
- = PVC pipe
- = ODOT #57 Aggregate
- = Waterstop
- = Masonry

CHIMNEY LINER SPECIFICATIONS:

THE CHIMNEY LINER MUST BE MADE FROM POLYVINYL CHLORIDE COMPOUNDS WHICH COMPLY WITH THE REQUIREMENTS FOR A MINIMUM CELL CLASSIFICATION OF 12364 AS DEFINED BY ASTM D–1784.

THE CHIMNEY LINER MUST ALSO MEET ALL THE FOLLOWING PHYSICAL REQUIREMENTS:

PIPE STIFFNESS – MINIMUM PIPE STIFFNESS SHALL BE 46 PSI WHEN TESTED IN ACCORDANCE WITH ASTM D–2412

IMPACT RESISTANCE – NO VISUAL CRACKING OR SPLITTING OF THE WATERWAY WALL SHALL BE EVIDENCED WHEN TESTED IN ACCORDANCE WITH ASTM D–2444 WITH A 20 LB. WEIGHT, TUP B, FLAT PLATE HOLDER B TO A LEVEL OF 220 FT. LBS.

FUSION QUALITY – THERE SHALL BE NO SIGN OF FLAKING OR DISINTEGRATION WHEN IMMERSED IN ANHYDROUS ACETONE FOR 20 MINUTES AS DESCRIBED IN ASTM D–2152.

DUCTILITY – THERE SHALL BE NO EVIDENCE OF CRACKING OR SPLITTING WHEN PIPE IS FLATTENED IN A CIRCUMFERENTIAL ORIENTATION BETWEEN TWO FLAT PLATES BY SIXTY PERCENT (60%) OF THE ORIGINAL DIAMETER.

AIR TIGHTNESS – EACH LENGTH OF PIPE SHALL PASS A FACTORY 3.5 PSI AIR TEST AS DESCRIBED IN ASTM F–1803.

WATERSTOP SPECIFICATIONS:

THE WATERSTOP MUST MEET ALL OF THE FOLLOWING PHYSICAL REQUIREMENTS:

SPECIFIC GRAVITY – SHALL BE 1.55 +/– 5% WHEN TESTED IN ACCORDANCE WITH ASTM D–71.

VOLATILE MATTER – SHALL NOT EXCEED 1% WHEN TESTED IN ACCORDANCE WITH ASTM D–6.

APPLICATION TEMPERATURE – MUST BE ABLE TO BE APPLIED FROM –10 DEGREES F TO 125 DEGREES F AS A MINIMUM.

SERVICE TEMPERATURE – MUST BE ABLE TO FUNCTION PROPERLY IN SERVICE FROM –30 DEGREES F TO 180 DEGREES F AS A MINIMUM.

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APPROVED DATE: APRIL 2015

APPROVED BY: NJL

DRAWING FILE NAME: **ce_13.dwg**

REVISIONS

DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 13

MANHOLE ADJUSTMENTS

SHEET 2 OF 2

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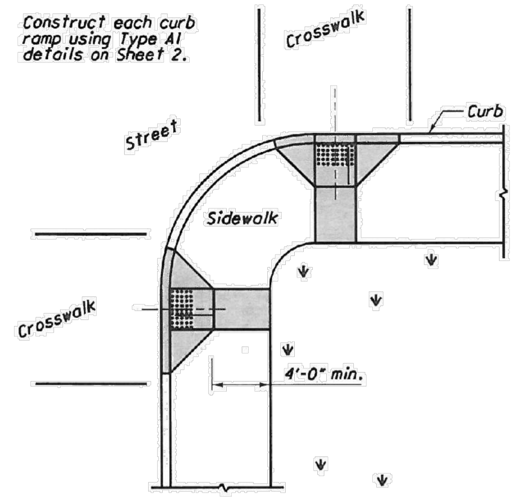
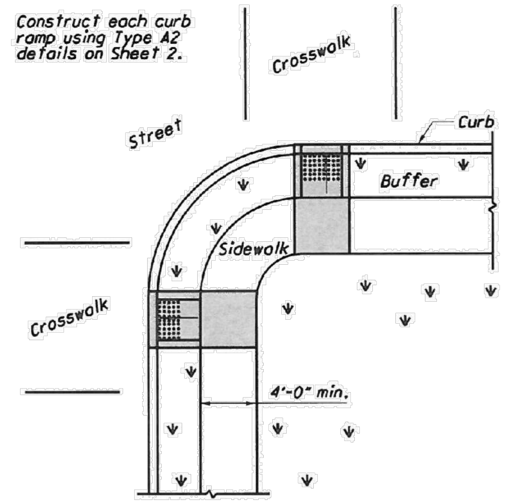
Construct each curb ramp using Type A1 details on Sheet 2.



Use curb ramps with flared sides at locations with wide sidewalks.

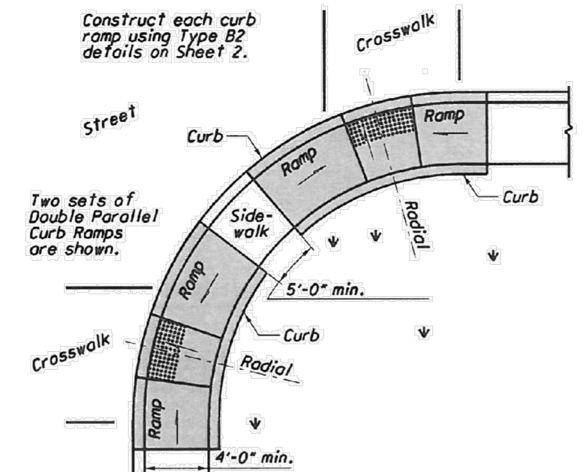
Construct each curb ramp using Type A2 details on Sheet 2.



Use curb ramps with returned curbs where buffer is wide enough to accommodate ramp slope.

PERPENDICULAR CURB RAMPS

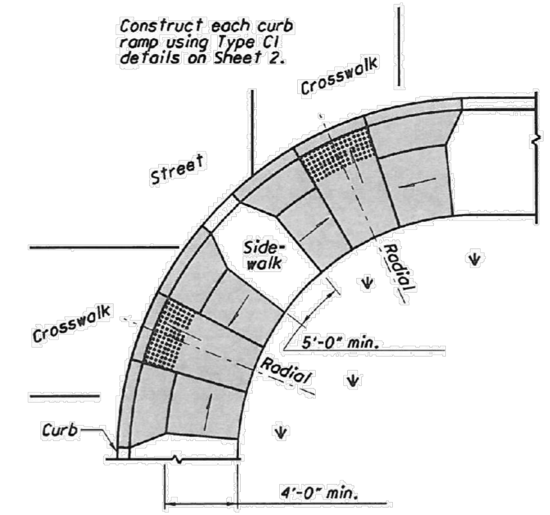
Construct each curb ramp using Type B2 details on Sheet 2.



Place on streets having wide turning radius and where sidewalks are narrow.

PARALLEL CURB RAMPS

Construct each curb ramp using Type C1 details on Sheet 2.



Curb ramp placement where streets have wide turning radius, and sufficient sidewalks width.

COMBINATION CURB RAMPS

PREFERRED CONSTRUCTION PLACEMENT

NOTES

GENERAL: This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.

Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.

Curb ramps added to an existing intersection or walk should be individually detailed on the project plans to assure that the design is appropriate for site constraints and all items can be constructed to ADA standards. The contractor may adjust the placement of curb ramps if existing field conditions warrant with the approval of the Engineer.

DETECTABLE WARNINGS: Install Detectable Warnings on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer's written instructions.

DRAINAGE: Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 1/8" between the 1) pavement and gutter, and 2) gutter and ramp, are not allowed.

SURFACE TEXTURE: Texture concrete surfaces by coarse brooming transverse to the ramp slopes to be rougher than the adjacent walk.

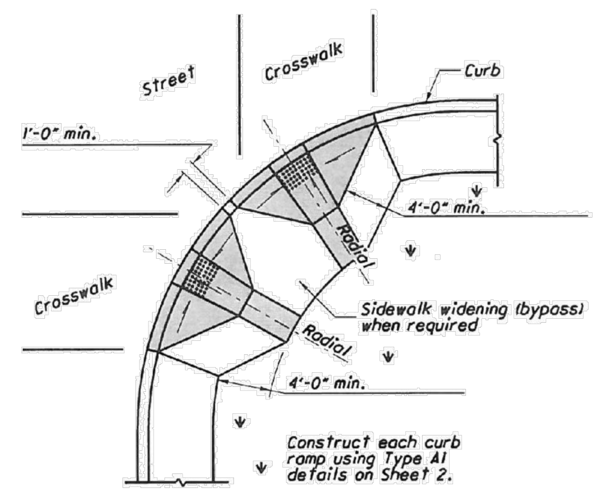
JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a 1/2" Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp edges and slope changes, and do not necessarily indicate joint lines.

PAYMENT: Measure and pay for the ramp area within the shaded limits of this drawing as Item 608 Curb Ramp, Square Foot. This includes the cost of the ramp curbing, detectable warnings, landing areas and any additional materials, installation, grading, forming, and finishing required within the shaded area.

Work beyond the shaded ramp/landing area is paid for as curb (609) and walk (608). Removal of existing curb, walk (or existing curb ramps) are paid under Item 202.

For at-grade crossing locations where only detectable warnings are required in order to acheive ADA compliance, measure and pay for the strip of detectable warnings as Item 608 Detectable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

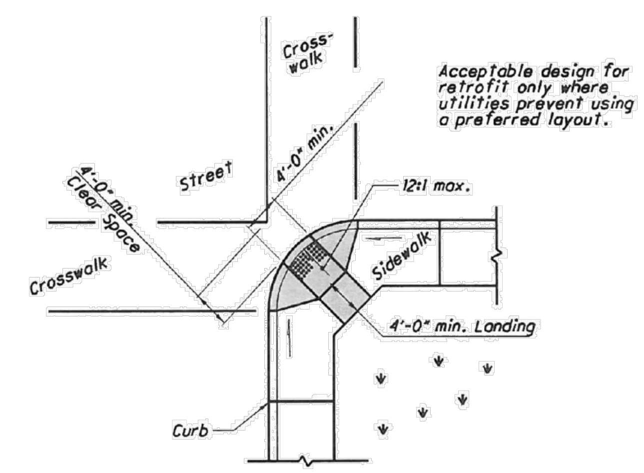
Acceptable design on corners with wide turning radius where user is able to maneuver within crosswalk limits so as not to encroach into adjacent traveled lanes.



Construct each curb ramp using Type A1 details on Sheet 2.

PERPENDICULAR RAMPS

Acceptable design for retrofit only where utilities prevent using a preferred layout.



Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0".

DIAGONAL RAMP (Type D)

ACCEPTABLE CONSTRUCTION PLACEMENT

THIS DRAWING REPLACES BP-7.1 DATED 1-19-07.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
ADMINISTRATOR
10-15-10
DATE
STDS. ENGINEER M. Bline
OFFICE OF ROADWAY ENGINEERING
STANDARD ROADWAY CONSTRUCTION DRAWING
NEW CURB RAMPS (with Detectable Warnings)
SCD NUMBER BP-7.1
1/3

THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED.
SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

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44TH ST. WATER IMPROVEMENTS

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APPROVED DATE: MAY 2012

APPROVED BY: RMB

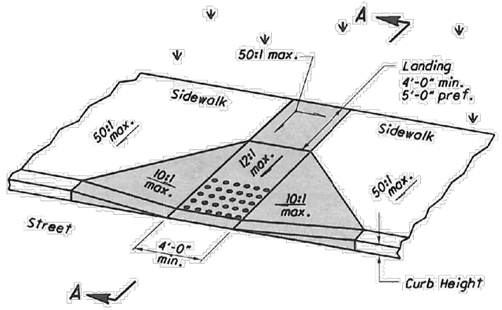
DRAWING FILE NAME: **ce_33.dwg**

REVISIONS

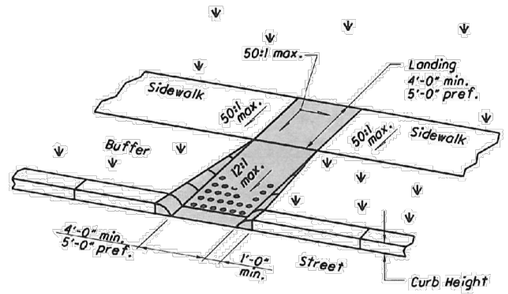
DESCRIPTION	DATE	BY
REVISIONS	6/29/12	RMB
WET PANELS PRIMARY DOME MAT	JAN 2015	RMB

STANDARD DRAWING NO. 33

WHEEL CHAIR RAMP

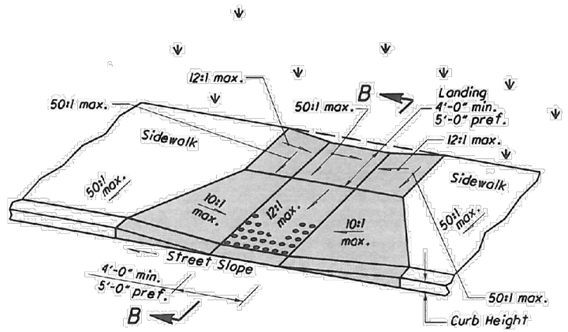


Type A1 (Perpendicular with flared sides)

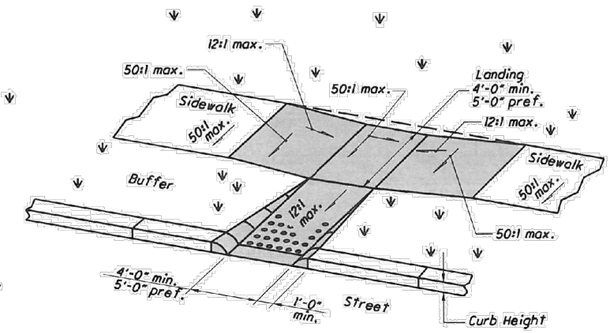


Type A2 (Perpendicular with returned curb)

PERPENDICULAR CURB RAMP DETAILS

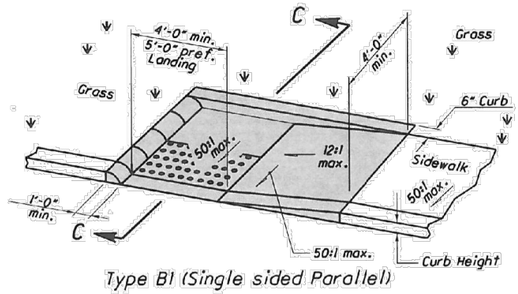


Type C1 (Combined with flared sides)

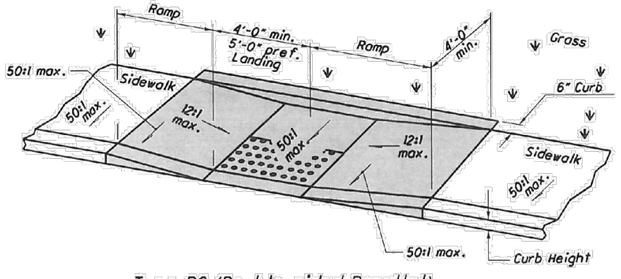


Type C2 (Combined with returned curb)

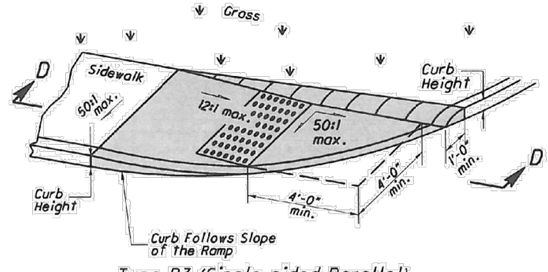
COMBINED CURB RAMP DETAILS



Type B1 (Single sided Parallel)



Type B2 (Double sided Parallel)



Type B3 (Single sided Parallel)

PARALLEL CURB RAMP DETAILS

NOTES

The running slope of the ramp is preferred to be 12:1 or flatter. In existing sidewalks, where the maximum ramp slope is not feasible due to site constraints (e.g. utility poles or vaults, right-of-way limits) it may be reduced as follows:

A) 10:1 for a max. rise of 6".
B) 8:1 for a max. rise of 3".
C) 6:1 over a max. run of 2'-0" for historic areas where a flatter slope is not feasible.

To prevent chosing the grade indefinately, the transition from exisiting sidewalk to the shaded curb ramp area is not required to exceed 15 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the cross walk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 20:1 or flatter.

The bottom edge of the ramp shall change planes perpendicular to the landing.

The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush.

Ramp landings shall be 4' min. x 4' min. with a 50:1 or flatter cross slope and running slope.

See Sheet 3 for Sections.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
ADMINISTRATOR — DATE: 10-15-10

STDS. ENGINEER: M. Bline

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING
NEW CURB RAMPS (with Detectable Warnings)

SCD NUMBER: BP-7.1

THIS DRAWING REPLACES BP-7.1 DATED 1-19-07.

2 / 3

THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED.
SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

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MISCELLANEOUS DETAILS

44TH ST. WATER IMPROVEMENTS

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APPROVED DATE: MAY 2012

APPROVED BY: RMB

DRAWING FILE NAME: **ce_33.dwg**

REVISIONS

DESCRIPTION	DATE	BY
REVISIONS	6/29/12	RMB

STANDARD DRAWING NO. 33

WHEEL CHAIR RAMP

SHEET 2 OF 4

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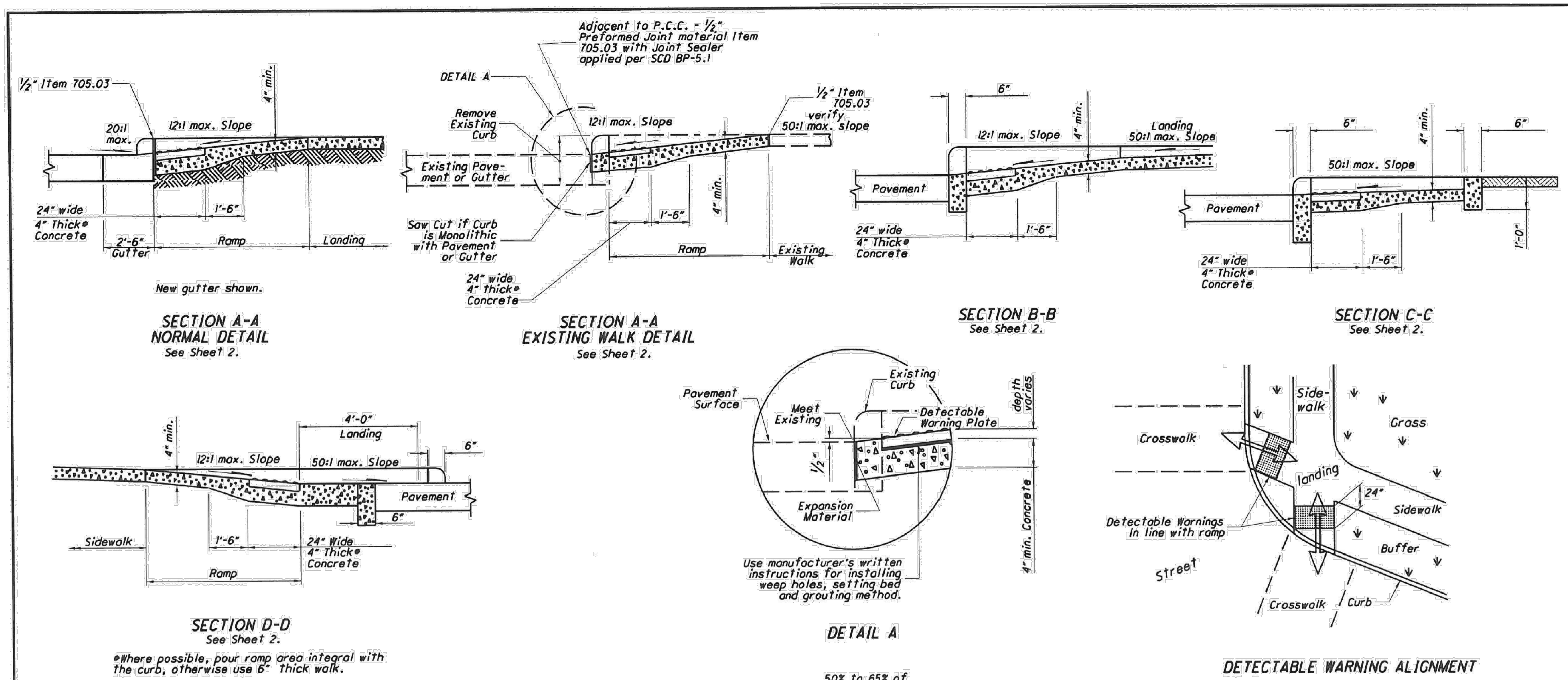


DETECTABLE WARNINGS NOTES

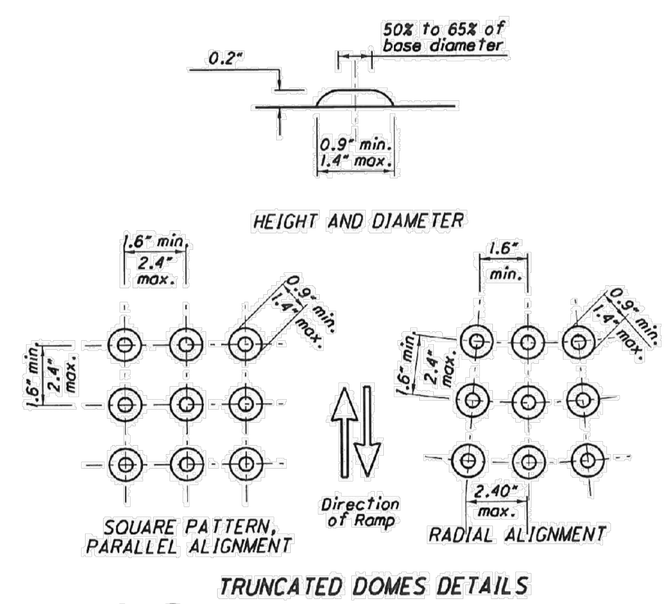
GENERAL: Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert people with vision impairments of their approach to streets and hazardous drop-offs.

PLACEMENT: Detectable warnings are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps or at blended curbs. A 24" strip of domes is to be installed for the full width of the ramp or walk. Typical street corner placement locations are shown on Sheet 1.

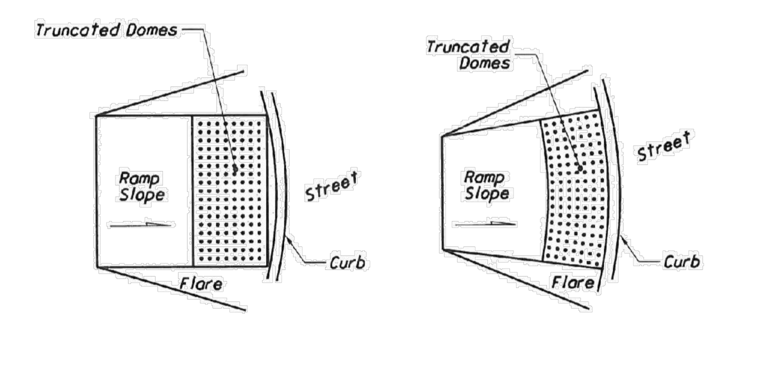
The depth of concrete underneath detectable warning products shall be a minimum of 4". See DETAIL A.

ALIGNMENT: Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally the detectable warnings should be flush with the back of the curb, but in skewed conditions at least one corner of the 24" strip should be adjacent to the back of curb. For non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

PRODUCTS & COLORS: Color of the detectable warnings should contrast with surrounding concrete walk and ramp. Black is not an acceptable color. Approved products and guidance on color may be found on the Office of Roadway Engineering Service's Detectable Warnings Approved List. Install products as per manufacturer's printed instructions.



TRUNCATED DOMES DETAILS



DOME ALIGNMENT ON RADIUSED CURB

SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

THIS DRAWING REPLACES BP-7.1 DATED 1-19-07.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION — ADMINISTRATOR — DATE 10-15-10

STDS. ENGINEER M. Bline

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING: NEW CURB RAMPS (with Detectable Warnings)

SCD NUMBER BP-7.1 — 3/3

THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED.
SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

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APPROVED DATE: MAY 2012

APPROVED BY: RMB

DRAWING FILE NAME: ce_33.dwg

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DESCRIPTION	DATE	BY
REVISIONS	6/29/12	RMB

STANDARD DRAWING NO. 33

WHEEL CHAIR RAMP

SHEET 3 OF 4

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MISCELLANEOUS DETAILS

44TH ST. WATER IMPROVEMENTS

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DETECTABLE WARNING DOMES

PANELS, WET SET

REPLACEABLE TRUNCATED DOME PANELS SET IN WET CONCRETE MUST BE USED IN RAMPS WITHININ THE CITY OF CANTON, UNLESS APPROVED OTHERWISED BY THE CITY ENGINEER.

Acceptable manufacturers and prducts are:

1) Armorcast Products Company
   North Hollywood, CA 818-982-3800
   Armorcast Detectable Warning Panels (Wet Set Panels)
   24"x24", 24"x36", 24"x48"; also 6'-15' Radius
   Polymer Concrete, Red Brick color

2) ADA Solutions, Inc.
   N. Billerica, MA 01862
   Cast-in-Place Replaceable Tactile (Wet Set)
   2'x3', 2'x4', 2'x5', and 2' w/radius
   Glass and Carbon Composite, Brick Red color

OR APPROVED EQUAL

BRICK PAVERS

TRUNCATED DOME BRICK PAVERS ARE ONLY TO BE USED/INSTALLED AT THE DISCRETION OR APPROVAL OF THE CITY ENGINEER.

Brick Pavers will meet ASTM C 902 Class SX, Type 1, or C 936, or C 1272 Type R.
Acceptable manufacturers and products are:

1) Whitacre-Greer Fireproofing Company,
   1400 S. Mahoning Ave, Alliance, OH, 44601, (800) WG PAVER
   ADA Paver, 4"x8"x2-1/4", Clear Red (Rustic) #30.

2) The Belden Brick Company
   PO Box 20910, Canton, OH 44701 330-456-0031
   City Line ADA Paver, Regimental Red 2-1/4"x4"x8" or 2-1/4"x8"x8"

OR APPROVED EQUAL.

Pavers will be laid on top of a 4" unreinforced concrete base. Setting bed to be mortared in accordance with manufacturer's instruction, or with a maximum 1/2" thick bed of latex modified cement mortar. SWEEP POLYMERIC SAND (TECHNI SEAL OR APPROVED EQUAL) INTO JOINTS. Joint width must not exceed 1/8" or be less than 1/16" wide.

Pavers shall be laid such that joints are level with adjoining joints so as to provide a smooth transition from brick to brick and brick to concrete surface.

The surface of any two adjacent units should not differ by more than 1/8" [3] in height. Bricks shall be placed in a running bond pattern. Face of all brick shall be clean of cement and protected so as to avoid chipping during constructionn.

ADHESIVE MATS

REPLACEABLE TRUNCATED DOME MATS THAT SET ON CONCRETE RAMPS BY ADHESIVE WILL ONLY BE CONSIDERED IN THE EVENT AN EXISTING WHEEL CHAIR RAMP NEEDS DETECTABLE WARNING DOMES INSTALLED AND THE RAMP REQUIRES NO OTHER MODIFICATIONS. USE OR INSTALLATION OF ADHESIVE MATS IS SUBJECT TO THE CITY ENGINEER'S DISCRETION OR APPROVAL.

Acceptable manufacturers and prducts are:

1) Submit product specification, color and sample for review/approval by the City Engineer

OFFICE OF THE CITY ENGINEER
CANTON, OHIO
DANIEL J. MOEGLIN, P.E., CITY ENGINEER
2436 30th St. NE 44705 : 330-489-3381 : www.cantonohio.gov/engineering

APPROVED DATE: MAY 2012

APPROVED BY: RMB

DRAWING FILE NAME: **ce_33.dwg**

REVISIONS

DESCRIPTION	DATE	BY
REVISIONS	6/29/12	RMB
WET PANELS PRIMARY DOME MAT	JAN 2015	RMB

STANDARD DRAWING NO. 33

WHEEL CHAIR RAMP

SHEET 4 OF 4

CALCULATED CAS CHECKED SWA

MISCELLANEOUS DETAILS

44TH ST. WATER IMPROVEMENTS

The City of Canton
Water Department
2664 Harrisburg Rd. N.E. • Canton, Ohio 44705
(330) 489-3310

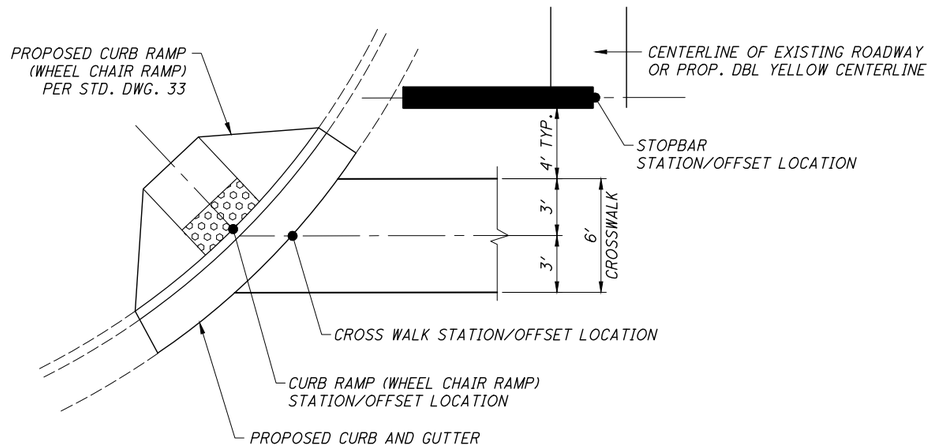
PROPOSED PAVEMENT MARKINGS LAYOUT

DOUBLE YELLOW CENTERLINE					
STREET	STA.	OFFSET	TO	STA.	OFFSET
44TH STREET	100+49.10	1.9' LT.	-	101+98.10	1.9' LT.
44TH STREET	101+98.10	1.9' LT.	-	120+32.90	0.5' LT.
44TH STREET	121+01.00	0' LT.	-	127+70.00	0' LT.
44TH STREET	128+00.00	0' LT.	-	132+66.95	0.5' RT.
44TH STREET	133+34.23	0.3' RT.	-	135+64.81	0.4' RT.
44TH STREET	136+08.22	0.4' RT.	-	138+31.36	0.4' RT.
44TH STREET	138+75.13	0' RT.	-	141+96.76	0.5' RT.
44TH STREET	142+36.78	0.5' RT.	-	145+30.17	0.5' RT.
44TH STREET	145+65.87	0.5' RT.	-	150+02.09	0' RT.
44TH STREET	150+47.12	0.3' LT.	-	154+52.00	0' RT.
44TH STREET	154+88.04	0.3' RT.	-	158+51.18	0' RT.
44TH STREET	158+90.71	0' RT.	-	162+41.79	0.2' RT.
44TH STREET	162+82.71	0.3' RT.	-	167+49.82	0' LT.
44TH STREET	167+96.55	0' LT.	-	169+45.00	0' LT.
44TH STREET	169+45.00	0' LT.	-	170+85.00	12.0' LT.
44TH STREET	170+85.00	12.0' LT.	-	173+47.57	12.0' LT.
44TH STREET	101+98.10	1.9' LT.	-	102+48.10	8.6' LT.
44TH STREET	102+48.10	8.6' LT.	-	103+78.20	0.0' LT.
VERNON AVE.*	120+66.65	31.6' LT.	-	120+66.61	62.7' LT.
VERNON AVE.*	120+59.04	25.8' RT.	-	120+59.16	34.8' RT.

8" WHITE CHANNELIZING LINE					
STREET	STA.	OFFSET	TO	STA.	OFFSET
44TH STREET	100+46.70	11.9' LT.	-	101+98.10	11.9' LT.
44TH STREET	171+00.00	0' LT.	-	173+47.58	0' LT.
44TH STREET	171+00.00	0' LT.	-	173+47.58	0' LT.

CROSS WALK					
STREET	STA.	OFFSET	TO	STA.	OFFSET
44TH STREET	100+32.93	30.5' LT.	-	100+48.70	34.2' RT.
44TH STREET	120+39.83	13.7' RT.	-	120+44.28	18.5' LT.
VERNON AVE.*	120+47.53	21.9' LT.	-	120+86.44	23.3' LT.
VERNON AVE.*	120+42.44	16.4' RT.	-	120+81.00	17.2' RT.
EDGEFIELD AVE.*	127+72.42	18.8' RT.	-	127+98.50	18.8' RT.
44TH STREET	132+69.98	13.0' LT.	-	132+69.93	13.1' RT.
NORMAN AVE.*	135+67.57	22.9' RT.	-	136+05.50	23.4' RT.
FAIRHAVEN AVE.*	138+34.11	23.0' LT.	-	138+72.18	23.0' LT.
NORTHVIEW AVE.*	141+98.69	31.4' LT.	-	142+34.88	31.4' LT.
WOODLAND AVE.*	145+30.94	27.7' LT.	-	145+63.59	27.7' LT.
FRAZIER AVE.*	150+04.03	25.8' RT.	-	150+52.77	25.8' RT.
FRAZIER AVE.*	150+04.00	25.8' LT.	-	150+44.86	25.8' LT.
YALE AVE.*	154+53.89	33.4' LT.	-	154+86.65	33.4' LT.
DAWNRIDGE AVE.*	158+52.96	32.7' LT.	-	158+88.93	32.9' LT.
GREENMEADOW AVE.*	162+50.19	37.8' LT.	-	162+79.43	31.8' LT.
LOGAN AVE. *	162+44.87	24.5' RT.	-	162+80.10	24.5' RT.
LOGAN AVE. *	167+52.85	23.3' LT.	-	167+93.42	23.3' LT.

24" STOP BAR **					
STREET	STA.	OFFSET	TO	STA.	OFFSET
44TH STREET	100+48.19	1.6' LT.	-	100+42.84	23.5' LT.
44TH STREET	120+33.90	1.0' LT.			
44TH STREET	121+00.00	0.0' LT.			
VERNON AVE.*	120+67.17	30.6' LT.			
VERNON AVE.*	120+59.04	24.8' RT.			
EDGEFIELD AVE.*	127+85.70	26.8' RT.			
NORMAN AVE.*	135+86.62	31.1' RT.			
FAIRHAVEN AVE.*	138+51.68	31.0' LT.			
NORTHVIEW AVE.*	142+16.23	39.4' LT.			
WOODLAND AVE.*	145+44.65	35.7' LT.			
FRAZIER AVE.*	150+26.20	33.8' LT.			
FRAZIER AVE.*	150+29.61	33.8' RT.			
YALE AVE.*	154+70.55	41.4' LT.			
DAWNRIDGE AVE.*	158+71.00	40.7' LT.			
GREENMEADOW AVE.*	162+63.24	45.5' LT.			
LOGAN AVE. *	162+63.21	32.5' RT.			
LOGAN AVE. *	167+72.98	31.3' LT.			
44TH STREET	173+48.57	12.7' LT.			



NOTES:

* STATION/OFFSET LOCATIONS ARE MEASURED FROM THE PROPOSED ℄ CONSTRUCTION OF 44TH STREET.

** STATION/OFFSET LOCATIONS OF 24" STOP BAR ARE AS SHOWN ON THE DETAIL ABOVE. STOP BAR IS PERPENDICULAR TO ROADWAY UNLESS SECOND STATION/OFFSET IS PROVIDED (LOCATED AT EDGE OF ROADWAY)

CALCULATED CAS CHECKED SWA

PAVEMENT MARKING DETAILS

44TH ST. WATER IMPROVEMENTS

The City of Canton
Water Department
2664 Harrisburg Rd. N.E. • Canton, Ohio 44705
(330) 489-3310

A

STREET NAME
D3-1
DETOUR
M4-9
30X24

B

STREET NAME
D3-1
DETOUR
M4-9L
30X24

C

STREET NAME
D3-1
DETOUR
M4-9R
30X24

D

ROAD CLOSED
TO
THRU TRAFFIC
R11-4
60X30
TYPE III BARRICADE (PORTABLE)
WITH TYPE A WARNING LIGHT

E

ROAD CLOSED
__ MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3A
60X30

F

STREET NAME
D3-1
ROAD
WORK
AHEAD
W20-1
36X36

G

STREET NAME
D3-1
DETOUR
AHEAD
W20-2
36X36

H

STREET NAME
D3-1
ROAD
CLOSED
AHEAD
W20-3
36X36

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC

44TH ST. WATER IMPROVEMENTS

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