

Appendix C: Specifications

1.01 TECHNICAL SPECIFICATIONS:

The Technical Specifications and Drawings are provided under separate cover at the Purchasing Department website at (<https://cantonohio.gov/purchasing/?pg=showbids>).

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:

01-00 - Project Documentation and Submittal Requirements for All Public Work Projects and Subdivision Developments

Supplemental Specification 01-00

PROJECT DOCUMENTATION AND SUBMITTAL REQUIREMENTS FOR ALL PUBLIC WORK PROJECTS AND SUBDIVISION DEVELOPMENTS

September, 2000

* Revised August, 2009

Project Submittals: The following listed items are the full responsibility of the Contractor. These items become part of the administrative duties imposed upon this Contract. The Contractor shall be responsible for submitting all detail items prior to the contract Notice of Commencement, or as directed by the City's Project Manager. A typewritten letter shall accompany all items, on Company letterhead; clearly describe each item submitted. If Contractor elects to fax any documentation due to expediency, the Contractor will be responsible for submitting hard copy for project documentation. The City will reject any information not clearly legible. **Submit four copies of the project submittals.**

Contractor will clearly affix a label or stamp identifying the submittal and its status for project review. All actions other than "no exception taken" will require supporting notation or information for project review.

Allow at least 10 business days for City's review and execution. The City Project Manager shall assist the Contractor with any questions or clarification during this process to ensure timely response to the Contractor.

The City will not pay directly for the performance of the work listed. This work is a subsidiary obligation of the Contractor.

1. Shop Drawings
2. Preconstruction Video
3. Progress Schedule
4. Release Statement for Disposal of Excavated Material
5. Traffic Control Plan
6. Contractor and Subcontractor Emergency Contact List
7. Statements of Final Compliance

1. **Shop Drawings**

- a) Upon written request from the Engineer, the Contractor shall submit detailed drawings, acceptable catalog data, specification and material certifications for all materials and/or equipment specialized or required for the proper completion of the work.
- b) Contractor shall submit shop drawings in not less than four (4) copies to the Engineer.
- c) Contractor shall submit shop drawings in proper sequence of construction to cause no delay in the work. The Engineer will have ten (10) business days to review submittals. The Contractor's failure to transmit appropriate submittals to the Engineer sufficiently in advance of work shall not be grounds for time extension. No work shall be performed requiring shop drawings until same the Engineer has approved these shop drawings.
- d) Label each shop drawing with the following:
 1. Project Name
 2. Name of Contractor
 3. Name of Subcontractor (if applicable)
 4. Name and Address of Supplier and/or Manufacturer
 5. Log Reference Number
- e) The Contractor is responsible for reviewing and approving all shop drawings prior to submittal. The Engineer's review does not make him responsible for the accuracy of said drawings.

2. **Preconstruction Video:** Prior to actual construction, the Contractor shall take video recording of the entire length and width of the work site.

- a) The Contractor shall notify the Engineering Department prior to scheduling the video recording of the site. A representative of the Engineering Department shall be present when the recording this video.
- b) The video and audio recordings shall be on DVD or pre-approved alternative for replay. Contractor must submit alternative medium to the Engineer and approval received prior to scheduling.
- c) The video portion shall have continuous time and date incorporated into it, locations and person(s) doing the work.
- d) Audio comments during the recording must address each item in the field of view as it may pertain to the project construction. The recording technician will need to become familiar with the project plans to know what subject matter is pertinent. Further, contractor must incorporate a post recording review and audio comments into the recording.

- e) Submitted copies of all recordings are the property of the Engineer. Contractor must submit the recording and be accepted in full by the Engineering Department prior to the start of construction.
3. **Progress Schedule:** The Contractor shall provide to the City, as mutually agreed upon at the Contract's Preconstruction meeting, a graphic progress schedule, which shall include the following:
- a) Progress schedule as a minimum to be prepared in **CRITICAL PATH METHOD FORMAT (CPM)**. The schedule shall be submitted, as a minimum, on 11" x 17" format for clarity and any necessary notations. Progress schedule shall include all work activities relative to the project, as further described in the Contract. Activities and rate of expected progress to secure completion as set forth in the Contract shall be shown on the schedule. Contractor to annotate any milestones that may be indicated in the Contract. Project completion date shall be clearly defined on the original schedule and all ensuing schedules provided.
 - b) Schedules shall be updated, as a minimum, every 30 days, or as agreed to by the City's Project Manager.
4. **Release Statement for Disposal of Excavated Materials**
- (a) The Contractor shall provide to the City a written consent statement from all property owners whose property is a landfill depository for all surplus or unsuitable excavated material from the project site.
 - (b) The Contractor shall follow ODOT 105.16 for specific guidelines and name the "City of Canton" in lieu of "the Department" on all forwarded documents. The City requires a contract or permit that contains the language stating that the City is not party to the contract or permit, the material is not the City's, and that the contractor and the property owner will hold the City harmless from claims that may arise from this contract or permit.
 - (c) See attached sample copy for referencing purposes.
5. **Traffic Control Plan:** Contractor shall submit a graphical presentation or written document detailing the signage to be used and its location for maintenance of traffic. If traffic control will be performed in stages, submit a plan for each stage. Any proposed detours should be approved by the Engineer prior to plan submission.
6. **Contractor and Subcontractor Emergency Contact List:** Contractor shall submit to the Engineer, prior to commencing construction, a complete list of the Contractor's personnel associated with the project. List should include name, title, and emergency contact phone numbers for each individual.
7. **Statements of Final Compliance:** The Contractor shall submit to the City the following documentation, in addition to the Project's General Conditions. All submittals shall be completed and approved prior to the release of the final retainer.
- a) Certificates of Substantial and Final Completion. Contractor shall submit in writing, the date on which work is substantially completed and upon Final Completion. Any deviation from the stated contract completion date to what is being submitted shall be explained

further by the Contractor. The City, at their discretion, will further review this subject, as needed.

b) Final Waiver of Lien

Contractor shall furnish a written report indicating the resolution of any and all property damage claims filed with Contractor by any party during the contract period. The information shall include the name of claimant; date filed with Contractor; name of Insurance Company and/or Adjustor handling the claim; how the claim was resolved; if claim was not resolved for the full amount, a statement indicating the reason for such action. If there were no damage claims filed with the Contractor, then this shall be so stated in the report.

Supplemental Specification 04-01

STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY THE NEGATIVE AIR PRESSURE TEST

April, 2001

04.01 Scope

04.02 Description

04.01 SCOPE :

This test method covers procedures for testing precast concrete manhole sections when using the vacuum test method to demonstrate the integrity of the installed materials and the construction procedures. This test method is used for testing concrete manhole sections utilizing mortar, mastic, or gasketed joints.

This test method is intended to be used as a preliminary test to enable the installer to demonstrate the condition of the concrete manholes prior to backfill. It may also be used to test manholes after backfilling; however, testing should be correlated with the connector supplier.

This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

04.02 DESCRIPTION

See ASTM C 1244

(SAMPLE COPY)

Waste Disposal Agreement for Projects in the City of Canton

Items 1, 3 - 9 are optional and discretionary to the undersigned

THIS WASTE AGREEMENT, made this _____ day of _____ 20__ , by and between _____ (called "Contractor"), and _____ of _____ (called "Land Owner"), concerning a certain construction contract between the Contractor and _____ in the City of Canton, OH for the _____ (project), as follows:

- 1. MANNER OF WASTING: Land Owner grants to Contractor the exclusive right to place dirt, earth, rock, topsoil, subsurface, unsuitable and/or other excess material (called "waste material") upon the area described in the following paragraph without requirement, limit, or restriction as to depth, amount, manner, or time.
2. WASTE AREA: The property upon which Contractor is permitted to place material is commonly known as _____ (address).
3. TITLE TO WASTE AREA: The Land Owner warrants that it has title to and the right to contract for placement of waste material in said area and agrees to defend and indemnify Contractor against any claim, suit, or damage arising out of such title or right to contract.
4. ACCESS AND USE: Land Owner hereby grants Contractor the right of ingress and egress to the waste area in locations to be selected by Contractor for all purposes necessary to the complete fulfillment of this agreement, and the right of quiet enjoyment in the intended use of such area.
5. PAYMENT: Contractor agrees to pay and Land Owner agrees to accept as full and final compensation for all rights granted and covenants contained herein and all claims of every nature the sum of _____ payable _____.
6. BASIS OF MEASUREMENTS: It is mutually agreed that measurement of the amount of materials wasted, where required, shall be made on the following basis: _____ and said measurement shall be binding upon the parties hereto for all purposes.
7. DAMAGES: Land Owner hereby waives any and all claims for damage to the waste area and to the area of ingress and egress except as specifically noted herein.
8. RELEASE: Upon receipt of final payment hereunder, and provided all terms of this agreement have been fulfilled, Land Owner hereby releases Contractor from further liability of any kind or nature hereunder.

WITNESSES:

CONTRACTOR:

Authorized Signature & Title

LANDOWNER:

Signature

- 9. ENTIRE AGREEMENT: It is agreed that the terms and conditions of this agreement are fully covered in the foregoing, and that any oral or written statements made by either party, or agents claiming to represent either party, not set forth herein, are not binding on the parties and are not considered as part of this Agreement.
10. DISCLAIMER: The City of Canton is not a party to the here above agreement. The Contractor and Landowner shall indemnify and save harmless the City of Canton from any claim that may arise from the here above agreement. The waste material is the property of the Contractor, not the City of Canton.

Supplemental Specification 01-00

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September, 2000

* Revised August, 2009

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Authorized Signature & Title

LANDOWNER:

Signature

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10. DISCLAIMER: The City of Canton is not a party to the here above agreement. The Contractor and Landowner shall indemnify and save harmless the City of Canton from any claim that may arise from the here above agreement. The waste material is the property of the Contractor, not the City of Canton.

Supplemental Specification 05-01

SANITARY SEWER TELEVISION (CLOSED CIRCUIT TV) INSPECTION AND DOCUMENTATION PROCEDURE

June 2001

- 05.01 Description
- 05-02 Equipment
- 05-03 Maintenance of Traffic
- 05-04 Safety
- 05-05 Procedures for Reducing Excessive Sewerage Flow
- 05-06 Documentation of Televised Sewer Inspection

05.01 DESCRIPTION. This item shall consist of furnishing all labor, material and equipment, as specified under this section, to complete closed circuit televising and documenting sewers of various sizes, as shown on the plans or as directed by the City Engineer.

The cost for all work related to this item shall be considered incidental to the cost of the new or modified sewer. No separate payment will be made by the City.

All main lines shall be inspected and documented for acceptability and provide documentation to any potential problems or deviations from the proposed specifications

Televising inspection service may be done simultaneously with deflection test as approved by the City Engineer. However, in the event of deflection failure or low pressure air testing fails and a repair or replacement of the sewer is required, the Contractor shall be obligated to re-televising and document the repaired section of the sewer.

The Contractor shall be responsible for obtaining information such as: depth of flow, sewer velocities, rates of flow, manhole depths, air quality in sewers, traffic conditions and other pertinent information which may be necessary to complete the work as specified.

05.02 EQUIPMENT List of Equipment

05.021 Television Camera: The television camera used for the inspection shall be one specifically designed for such inspection and have radial view capability. The lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100% humidity conditions and shall have either automatic or remote focus and iris controls. The camera, television monitor, video recorder and all other components of the video system shall be capable of producing color picture quality to the satisfaction of the City Engineer. The videotape with audio shall be provided on 2-hour VHS cassettes with a tape

BID PROPOSAL

GP 1221 Shadyside Sanitary Sewer Replacement

Ref. No.	ITEM	Item Description	QTY	Units	BIDDER			
					Unit Material Price	Unit Labor Price	Total Unit Price	Total Item Price
ROADWAY								
1	202	Pavement Removed	265	SY				
2	202	Walk Removed	208	SF				
3	202	Curb Removed	43	FT				
4	202	Pipe Removed 24" & Under	233	FT				
5	202	Manhole Removed	1	EACH				
6	202	Catch Basin or Inlet Removed	1	EACH				
7	202	4" Concrete Walk	25	SF				
8	608	Curb Ramp	183	SF				
DRAINAGE								
9	611	15" Conduit, Type B	22	FT				
10	611	Catch Basin, Misc.: City of Canton Std. Dwg. No. 1 - Curb Inlet Catch Basin	1	EACH				
11	611	Manhole, Misc.: City of Canton Std. Dwg. No. 10 - PreCast Storm Manhole	1	EACH				
PAVEMENT								
12	254	Pavement Planing, Asphalt Concrete	938	SY				
13	441	Asphalt Concrete Surface Course, Type 1 (448), PG70-22	40	CY				
14	609	Curb, Type 6	25	FT				
WATER WORK								
15	638	Abandon Existing Valve	1	EACH				
16	638	6" Water Main Ductile Iron Pipe ANSI Class 52, Push-On Joints and Fittings	267	FT				
17	638	6" Gate Valve	2	EACH				
18	638	1" Water Service Connection, Short Side (Complete)	4	EACH				
19	638	1" Water Service Connection, Long Side (Complete)	4	EACH				
20	638	6" 45 Degree Bend	2	EACH				
21	638	6" 22.5 Degree Bend	4	EACH				
22	638	6" X 6" Tee	1	EACH				
23	638	6" Cut-in Sleeve	3	EACH				
24	638	6" Plug	2	EACH				
SANITARY SEWER								
25	611	8" Conduit, PVC SDR-35, 707.45, As Per Plan	211	FT				
26	611	Manhole, Misc.: SpectraShield, As Per Plan	2	EACH				
27	611	Sanitary Sewer Bypass Pumping, As Per Plan	1	LS				
28	611	Sewer Television Inspection and Documentation, As Per Plan	211	FT				
INCIDENTALS								
29	614	Maintaining Traffic	1	LS				
30	623	Construction Layout Stakes and Surveying	1	LS				
31	624	Mobilization	1	LS				
							Total	

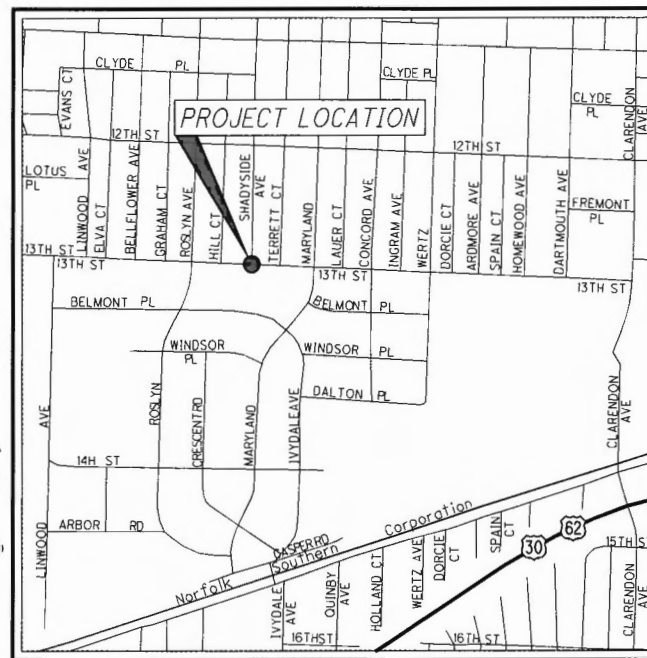
THE CITY OF CANTON COLLECTION SYSTEMS DEPARTMENT

SHADYSIDE AVE. SW-SANITARY SEWER REPLACEMENT PROJECT NO. GP-1221 (13TH ST. SW TO 1ST MANHOLE)

INDEX OF SHEETS:

TITLE SHEET	1
GENERAL NOTES	2-5
GENERAL SUMMARY AND PROJECT CONTROL	6
SANITARY PLAN AND PROFILE	7
MISCELLANEOUS DETAILS	8-13

**CITY OF CANTON
STARK COUNTY, OHIO
MARCH 2019**



**LOCATION MAP
(NOT TO SCALE)**



CANTON CITY OFFICIALS:

MAYOR THOMAS M. BERNABEI
SERVICE DIRECTOR JOHN M. HIGHMAN, JR.

MEMBERS OF CANTON CITY COUNCIL:
COUNCIL PRESIDENT WILLIAM SHERER II
JAMES BABCOCK
MEMBERS-AT-LARGE COREY MINOR SMITH
BILL SMUCKLER

WARD ONE GREG HAWK
WARD TWO NATE CHESTER III
WARD THREE JASON SCAGLIONE
WARD FOUR CHRIS SMITH
WARD FIVE ROBERT FISHER
WARD SIX KEVIN D. HALL
WARD SEVEN JOHN MARIOL II
WARD EIGHT PETER FERGUSON
WARD NINE FRANK MORRIS

LEGEND

County Line	Waterline (Ex)	Waterline (Pr)
Township Line	Tree Line (Ex)	Ownership Hook Symbol
Section Line	Property Line Symbol	Example
Corporation Line	Break Line Symbol	Example
Fence Line (Ex)	Tree (Pr)	Tree (Ex), Shrub (Ex)
Center Line	Tree (Remove)	Shrub (Remove)
Right of Way (Ex)	Evergreen (Ex)	Stump
Right of Way (Pr)	Evergreen (Remove)	Stump (Remove)
Standard Highway Ease.(Ex)	Wetland (Pr)	Grass (Pr), Aerial Target
Temporary Right of Way	Post (Ex)	Mailbox (Ex), Mailbox (Pr)
Channel Ease. (Pr)	Light (Ex)	Telephone Marker (Ex) TEL
Utility Ease. (Ex)	Fire Hydrant (Ex)	Water Meter (Ex)
Railroad	Water Valve (Ex)	Utility Valve Unknown (Ex)
Guardrail (Ex)	Telephone Pole (Ex)	Power Pole (Ex)
Construction Limits	Light Pole (Ex)	Fire Hydrant (Pr)
Edge of Pavement (Ex)		Water Valve (Pr)
Edge of Pavement (Pr)		
Edge of Shoulder (Ex)		
Edge of Shoulder (Pr)		
CANTON WATER DEPARTMENT HYDRANT AND VALVE NUMBERS (H --- , V ---)		

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 UNDERGROUND
PROTECTION SERVICE CALL: **1-800-925-0988**

PLAN PREPARED BY:

IBI GROUP
4150 Belden Village St., Suite 104
Canton, OH 44718 USA
Contact: Kyle M. Koppes, P.E.
Phone: 330-491-9000
Fax: 330-491-9001

ENGINEERS SEAL:

APPROVALS:

SIGNED: DATE: 4/3/19
DANIEL J. MOEGLIN, P.E.,
CANTON CITY ENGINEER

J:\114-93_ShadysideSan\5.0_Design (Work) Phase\STA\114-93\Utilities\sheets\114-93\T100.dgn 2019-03-15 3:12:19 PM william.croxtan\ ODOTcadd_PDF.plt:cfq ODOTV81_Pen-ME.tbi Group

SHADYSIDE AVE. SW SANITARY SEWER	RAILROAD INVOLVEMENT NONE	CONSTRUCTION PROJECT NO. GP1221	PID NO. NONE	FEDERAL PROJECT NO. NONE
1				
13				

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ITEM	TOTAL	ADBE TOTAL	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
ROADWAY						
202	265		265	SY	PAVEMENT REMOVED	
202	183	25	208	SF	WALK REMOVED	
202	18	25	43	FT	CURB REMOVED	
202	233		233	FT	PIPE REMOVED 24" AND UNDER	
202	1		1	EACH	MANHOLE REMOVED	
202	1		1	EACH	CATCH BASIN OR INLET REMOVED	
608		25	25	SF	4" CONCRETE WALK	
608	183		183	SF	CURB RAMP	
DRAINAGE						
611	1		1	FT	15" CONDUIT, TYPE B	
611	1		1	EACH	CATCH BASIN, MISC.: CITY OF CANTON STD. DWG. NO. 1 - CURB INLET CATCH BASIN	
611	1		1	EACH	CATCH BASIN, MISC.: CITY OF CANTON STD. DWG. NO. 10 - PRECAST STORM MANHOLE	
PAVEMENT						
254	938		938	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
441	40		40	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M	
609		25	25	FT	CURB, TYPE 6	
WATER WORK						
638	1		1	EACH	ABANDON EXISTING VALVE	
638	267		267	FT	6" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS	
638	2		2	EACH	6" GATE VALVE	
638	4		4	EACH	1" WATER SERVICE CONNECTION, SHORT SIDE (COMPLETE)	
638	4		4	EACH	1" WATER SERVICE CONNECTION, LONG SIDE (COMPLETE)	
638	2		2	EACH	6" 45 DEGREE BEND	
638	4		4	EACH	6" 22.5 DEGREE BEND	
638	1		1	EACH	6" X 6" TEE	
638	3		3	EACH	6" CUT-IN SLEEVE	
638	2		2	EACH	6" PLUG	
SANITARY SEWER						
611	211		211	FT	8" CONDUIT, PVC SDR-35, 707.45, AS PER PLAN	
611	2		2	EACH	MANHOLE, MISC.: SPECTRASHIELD, AS PER PLAN	6
611	LS		LS	LS	SANITARY SEWER BYPASS PUMPING, AS PER PLAN	4
SPECIAL	211		211	FT	SEWER TELEVISION INSPECTION AND DOCUMENTATION, AS PER PLAN	4
INCIDENTALS						
614				LS	MAINTAINING TRAFFIC	
623				LS	CONSTRUCTION LAYOUT STAKES AND SURVEYING	
624				LS	MOBILIZATION	

NOTE: (ADBE) = "AS DIRECTED BY ENGINEER"

CONTROL POINTS						
POINT NO.	STATION	OFFSET	ELEV.	NORTHING	EASTING	DESCRIPTION
CP#1	9+82.79	0.37' RT	1096.03	410500.900	2269816.000	MAG NAIL SET IN CONC. WALK EXPANSION JOINT SOUTH SIDE OF INTERSECTION OF 13TH ST & SHADYSIDE AVE.
	499+99.63	17.21' LT				
CP#2	13+86.67	20.61' LT.	1096.69	410905.200	2269807.000	MAG NAIL SET IN CONC. WALK EXPANSION JOINT ON NORTH SIDE OF SHADYSIDE AVE.
CP#3	496+86.01	22.50' LT.	1093.62	410486.200	2270129.000	MAG NAIL SET IN CONC. WALK EXPANSION JOINT @ SW CORNER OF INTERSECTION OF 13TH ST. & MARYLAND AVE. &
BENCHMARKS						
POINT NO.	STATION	OFFSET	ELEV.	NORTHING	EASTING	DESCRIPTION
BM#1	501+52.53	23.06' RT	1099.51	410545.746	2269664.440	WORD "ALBERT" ON SW CORNER FLANGE ON FIRE HYDRANT @ NE CORNER OF INTERSECTION OF 13TH ST. & HILL CT.
BM#2	14+40.84	22.80' RT	1097.89	410958.056	2269852.274	SPIKE 1' UP ON SOUTH SIDE OF POWER POLE AEP#819A1-10 ON SOUTH SIDE OF SHADYSIDE AVE.

CALCULATED
WLC
CHECKED
KMK

GENERAL SUMMARY AND PROJECT CONTROL INFO

SHADYSIDE AVE. SW
SANITARY SEWER

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REVISIONS/COMMENTS:

- ① NOT APPLICABLE TO THIS PROJECT.
- ② ANY REFERENCE TO "THE CITY ENGINEER" WITHIN THE WATER GENERAL NOTES SHALL MEAN THE CANTON WATER DEPARTMENT SUPERINTENDENT.

CONTINGENCY ITEMS - AS DIRECTED BY ENGINEER:

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER.

FOR ROADWAY RESTORATION:

ITEM 202-WALK REMOVED	25 SF
ITEM 202-CURB REMOVED	25 FT
ITEM 608-4" CONCRETE WALK	25 SF
ITEM 609-CURB, TYPE 6	25 FT

1. 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.

FOR SUBDIVISION DEVELOPMENTS, THE DEVELOPER SHALL
① 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: 1-800-382-2784 (CONTACT NON-MEMBERS DIRECTLY).

THE PRIMARY UTILITIES WITHIN THE CITY OF CANTON AREA:

AMERICAN ELECTRIC POWER ATTN: RAY ZITNEY 301 CLEVELAND AVE. SW CANTON, OH 44720 OFFICE: 330-438-7718	DOMINION EAST OHIO ATTN: BRYAN DAYTON 320 SPRINGSIDE DR., SUITE 320 AKRON, OH 44333 330-664-2409
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AT&T ATTN: CINDY ZUCHEGNO 50 W. BOWERY ST., 4TH FLOOR AKRON, OH 44308 330-384-3561	CANTON CITY WATER DEPARTMENT ATTN: BRENT BURRIER 2664 HARRISBURG RD. NW CANTON, OH 44705 330-438-6569
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THE CITY ENGINEER'S OFFICE IS TO BE CONTACTED DIRECTLY FOR SANITARY AND STORM SEWER AND TRAFFIC INTERCONNECT FACILITIES LOCATION: 330-489-3381

(G) 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.

(H) 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.

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 O.S.H.A. 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.

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

CALCULATED
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GENERAL NOTES

SHADYSIDE AVE. SW
SANITARY SEWER

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(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:

ALL NEWLY CONSTRUCTED WATERLINES AND SANITARY SEWERS (INCLUDING LATERALS) MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH APPLICABLE STANDARDS (AWWA, ETC.) PER THE OHIO ENVIRONMENTAL PROTECTION AGENCY, AND PER THE REQUIREMENTS OF THE CITY OF CANTON WATER AND ENGINEERING DEPARTMENTS.

SANITARY SEWERS SHALL BE TESTED BY CONTRACTOR IN ACCORDANCE WITH THE CITY OF CANTON'S SUPPLEMENTAL SPECIFICATIONS:

02-00 TESTING FOR EXCESSIVE DEFLECTION FOR NON-PRESSURE THERMOPLASTIC SEWER PIPE.

03-00 TESTING PRACTICES FOR LOW-PRESSURE AIR TESTING OF INSTALLED, NON-PRESURE, THERMOPLASTIC SEWER PIPE.

04-01 STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY THE NEGATIVE AIR PRESSURE TEST.

SANITARY AND STORM SEWERS CONSTRUCTED WITH THIS PROJECT SHALL BE TELEVISED BY THE CONTRACTOR ONLY WHEN A PAY ITEM IS PROVIDED IN ACCORDANCE WITH CITY OF CANTON'S SUPPLEMENTAL SPECIFICATION:

05-01 SEWER TELEVISION INSPECTION AND DOCUMENTATION PROCEDURE.

NOTE: THE CITY OF CANTON WILL PERFORM CCTV UPON COMPLETION OF CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTING ANY IDENTIFIED DEFECTS ASSOCIATED WITH PROPOSED WORK.

(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.

(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 I 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:

CITY STANDARD DRAWING NO.: DRIVEWAYS, CURBS, AND PAVEMENT
#31 "PAVEMENT REPAIR"
#32 "MINIMUM PAVEMENT STANDARD FOR LOCAL STREETS"
#33 "WHEEL CHAIR RAMP"

CITY SPECIFICATIONS:

"CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS"

(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.

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.: CONDUITS AND TRENCHES
#1 "CURB INLET CATCH BASIN"
#10 "STANDARD STORM OR SANITARY MANHOLE"
#19 "UTILITY TRENCH REQUIREMENTS"
#20 "SANITARY SEWERS AND LATERALS"

(B) DRAINAGE CONDUIT CONTINGENCY:

IT MAY BE NECESSARY TO REPLACE PORTIONS OF EXISTING CONDUITS THAT ARE BEING TIED INTO PROPOSED MANHOLES OR CATCH BASINS. IF IT IS DETERMINED BY THE ENGINEER THAT THE EXISTING CONNECTION IS SUBSTANDARD, THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN PROVIDED. IF NECESSARY, CONNECT WITH A MASONRY COLLAR AS PER ODOT, SCD DM-1.1.

NO CONTINGENCY QUANTITIES REQUIRED.

(C) SANITARY CONDUIT CONTINGENCY:

IT MAY BE NECESSARY TO REPLACE PORTIONS OF EXISTING SANITARY CONDUITS THAT ARE FOUND TO BE FAILING DURING THE COURSE OF THE PROJECT. IF IT IS DETERMINED BY THE ENGINEER THAT THE EXISTING CONDUIT IS SUBSTANDARD, THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN PROVIDED:

NO CONTINGENCY QUANTITIES REQUIRED.

(D) REGULATORY REQUIREMENTS:

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

(E) BYPASS PUMPING PLAN REQUIREMENTS:

THE CONTRACTOR SHALL SUBMIT A BYPASS PUMPING PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO MOBILIZATION. AT A MINIMUM, BYPASS PUMPING SHALL INCLUDE:

1. FULLY AUTOMATIC, SELF PRIMING PUMPS.
2. PUMPS AND GENERATORS, IF APPLICABLE, SHALL BE CRITICALLY SILENCED.
3. ALL SUCTION AND DISCHARGE PIPING SHALL BE FREE OF LEAKS
4. ALL PROVISIONS AS SET FORTH IN THE SPECIFICIATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 611-SANITARY SEWER BYPASS PUMPING.

VI. STORM WATER POLLUTION PREVENTION:

① **(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.

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GENERAL NOTES

SHADYSIDE AVE. SW
SANITARY SEWER

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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.

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 JURISDICTION. 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: 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

(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.

② 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. THE MINIMUM COVER OVER WATER MAINS SHALL BE 4'-6" FROM GROUND SURFACE TO THE BARREL OF THE PIPE.

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

6. 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.

7. ANY FITTING OR VALVE 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 AN ANCHOR COUPLING.

8. 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)

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

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

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

12. WATER MAINS SHALL BE INSTALLED AND BACKFILLED PER ODOT ITEM 638.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

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

19. 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.

20. 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.

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

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

23. 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. IF THE CONTRACTOR BREAKS A WATER MAIN AND/OR SERVICE, HE SHALL BE RESPONSIBLE TO REPAIR THE BREAK, AT HIS OWN EXPENSE, AND WILL NOT BE COMPENSATED FOR THIS DOWN TIME.

24. 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.

25. SERVICE BRANCHES WILL BE INSTALLED AS PER ODOT ITEM 638.16, EXCEPTION 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.

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GENERAL NOTES

**SHADYSIDE AVE. SW
SANITARY SEWER**

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26. IN A STREET IMPROVEMENT, NO EXISTING WATER CURB BOX WILL BE LEFT IN THE PAVEMENT, CURB AND GUTTER OR SIDEWALK. THE CURB BOX WILL BE MOVED TO A SUITABLE LOCATION DETERMINED BY THE CANTON WATER DEPARTMENT. WHEN THE CURB BOX IS MOVED, ALL NEW MATERIAL WILL BE USED FROM THE CORPORATION STOP TO THE CURB STOP WHICH IS A SINGLE PIECE OF HDPE TUBING, CTS, PE4710. NO SPLICING OF THE SERVICE LINE WILL BE PERMITTED. A NEW TAP (CORPORATION STOP) AND CURB STOP AND BOX MAY ALSO BE REQUIRED. THE DETERMINATION WILL BE MADE BY THE CANTON WATER DEPARTMENT.

27. 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 DRISCOPLX 5100-ULTRA-LINE, CHARTER PLASTICS INC. BLUE ICE, ENDOT ENDOPURE AND ADS POLYFLEX.

28. THE PROPOSED FACILITIES SHALL MAINTAIN A MINIMUM 35 PSI PRESSURE DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.

29. A MINIMUM PRESSURE OF 20 PSI AT GROUND LEVEL SHALL BE MAINTAINED AT ALL POINTS IN THE DISTRIBUTION SYSTEM UNDER ALL CONDITIONS OF FLOW.

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:

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 SUPPLEMENTAL SPECIFICATION 01-00

X. MISCELLANEOUS GENERAL NOTES:

ITEM 611 - MANHOLE, MISC.: SPECTRASHIELD

THIS ITEM SHALL CONSIST OF APPLYING A MANHOLE-LINING SYSTEM TO THE INSIDE OF EXISTING SANITARY MANHOLES AT LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH SPECTRASHIELD STANDARDS AND SPECIFICATIONS.

SEE SHEET 12 FOR DETAILS.

THE CONTRACTOR SHALL COORDINATE AND INITIATE THIS WORK UPON COMPLETION OF THE PROPOSED SANITARY SEWER LINE REMOVAL AND REPLACEMENT AND ASSOCIATED TIE-IN WORK IN BETWEEN MANHOLES SX-1 AND SX-2 AS SHOWN ON SHEET 7.

THIS WORK MUST BE PERFORMED BY SPECTRASHIELD LICENSED INSTALLERS.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

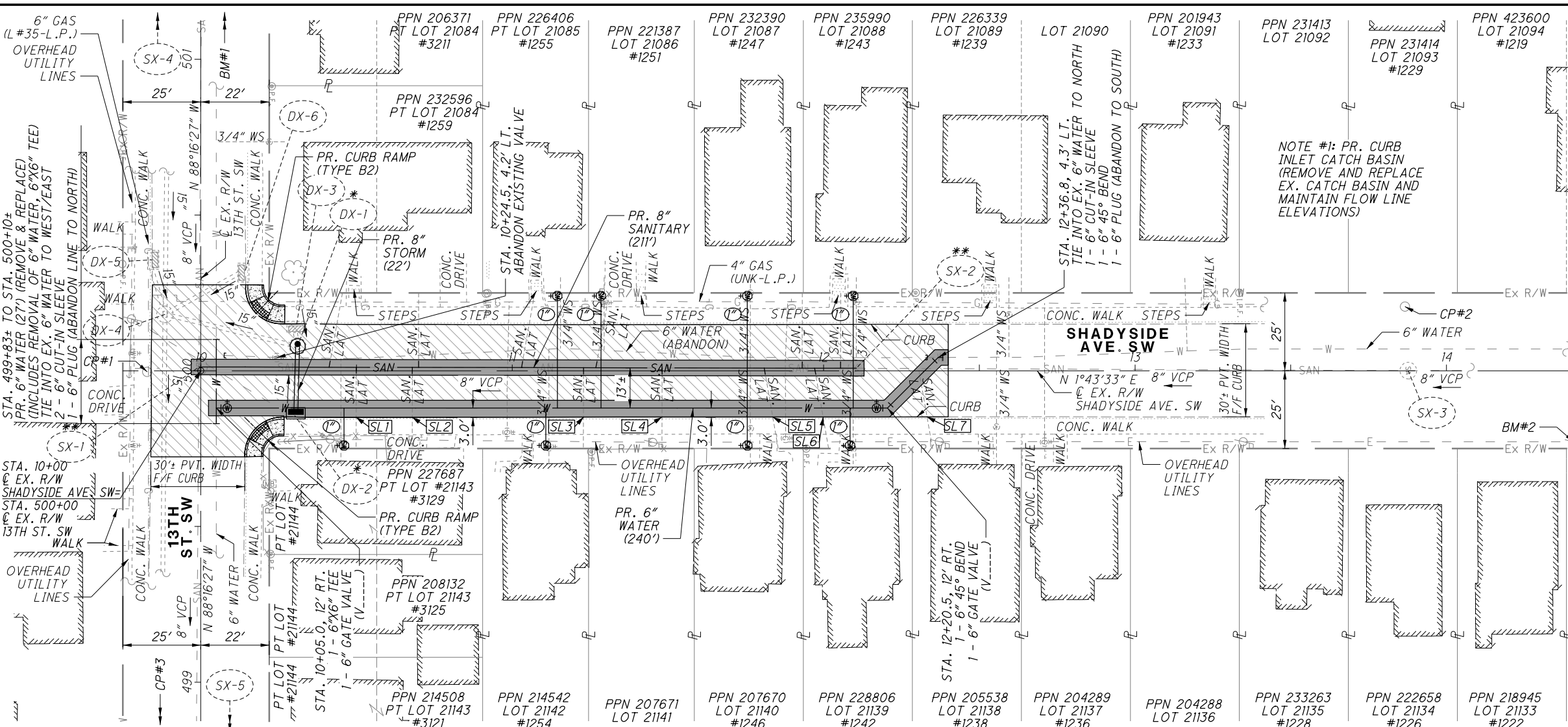
ITEM 611 - MANHOLE, MISC.: SPECTRASHIELD 2 EACH

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GENERAL NOTES

**SHADYSIDE AVE. SW
SANITARY SEWER**

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PLAN NOTES:

- FIELD SURVEY, PROPERTY LINES AND EX. R/W LINES PROVIDED BY THRASHER GROUP.
- EX. SANITARY LATERAL LOCATIONS PROVIDED BY CITY OF CANTON.
- EX. WATER SERVICE LINE AND CURB BOX LOCATIONS PROVIDED BY CANTON WATER DEPARTMENT.
- BACKFILL AND PAVEMENT RESTORATION WITHIN TRENCH AREA SHALL BE INCLUDED WITH COST OF PIPE INSTALLATION, EXCEPT FOR ITEM 254-PAVEMENT PLANING, ASPHALT CONCRETE (1.5") AND ITEM 441-ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (1.5") WHICH ARE ITEMIZED SEPARATELY.
- DX-1 (EX. CATCH BASIN), DX-2 (EX. MANHOLE), AND EX. 15" CONDUIT SHALL BE REMOVED AND REPLACED AT SAME LOCATIONS AND ELEVATIONS. ITEM 611 PAY ITEMS INCLUDE CONNECTIONS INTO EX. AND PR. CONDUITS.

NEW WATER SERVICE CONNECTION
 TRENCH AREA FOR PIPE INSTALLATION (CADD AREA=938 SY) SEE NOTE #4
 REPAVING AREA: (CADD AREA=265 SY) SEE NOTE #4

***SX-1** (SEE NOTE ON SHEET 6)
 STA 9+99.42, 1.20' LT
 STA 500+01.20, 0.58' LT
 EX. SAN MH, RIM ELEV 1096.19
 EX. 4" VCP S 1087.37
 EX. 8" VCP W 1087.31
 EX. 8" VCP N 1086.82
 EX. 8" VCP E 1086.79

***SX-2** (SEE NOTE ON SHEET 6)
 STA 12+10.50, 0.80' LT
 EX. SAN MH, RIM ELEV 1096.87
 EX. 8" VCP N 1088.54
 EX. 8" VCP S 1088.22

SX-3 (DND)
 STA 13+87.74, 0.03' IT
 EX. SAN MH, RIM ELEV 1096.76
 EX. 8" VCP N/S 1089.18

SX-4 (DND)
 STA 502+79.01, 1.28' RT
 EX. SAN MH, RIM ELEV 1098.59
 EX. 8" VCP E 1093.66

SX-5 (DND)
 STA 496+54.12, 2.98' LT
 EX. SAN MH, RIM ELEV 1093.39
 EX. 8" VCP W/E 1081.29
 EX. 8" VCP N/S 1080.64

***DX-1** (TBR) (SEE NOTE #5 THIS SHEET)
 STA 10+31.10, 7.85' LT
 EX. STM MH, RIM ELEV 1096.35
 EX. 15" VCP W 1091.49
 EX. 15" VCP E 1091.10
 EX. 15" VCP S 1090.86

***DX-2** (TBR) (SEE NOTE #5 THIS SHEET)
 STA 10+30.14, 14.43' RT
 EX. STM. CB, GRATE ELEV 1095.60
 EX. 15" VCP W 1091.23

DX-3 (DND)
 STA 10+30.71, 14.42' LT
 EX. STM. CB, GRATE ELEV 1095.77
 EX. 15" VCP E 1091.27

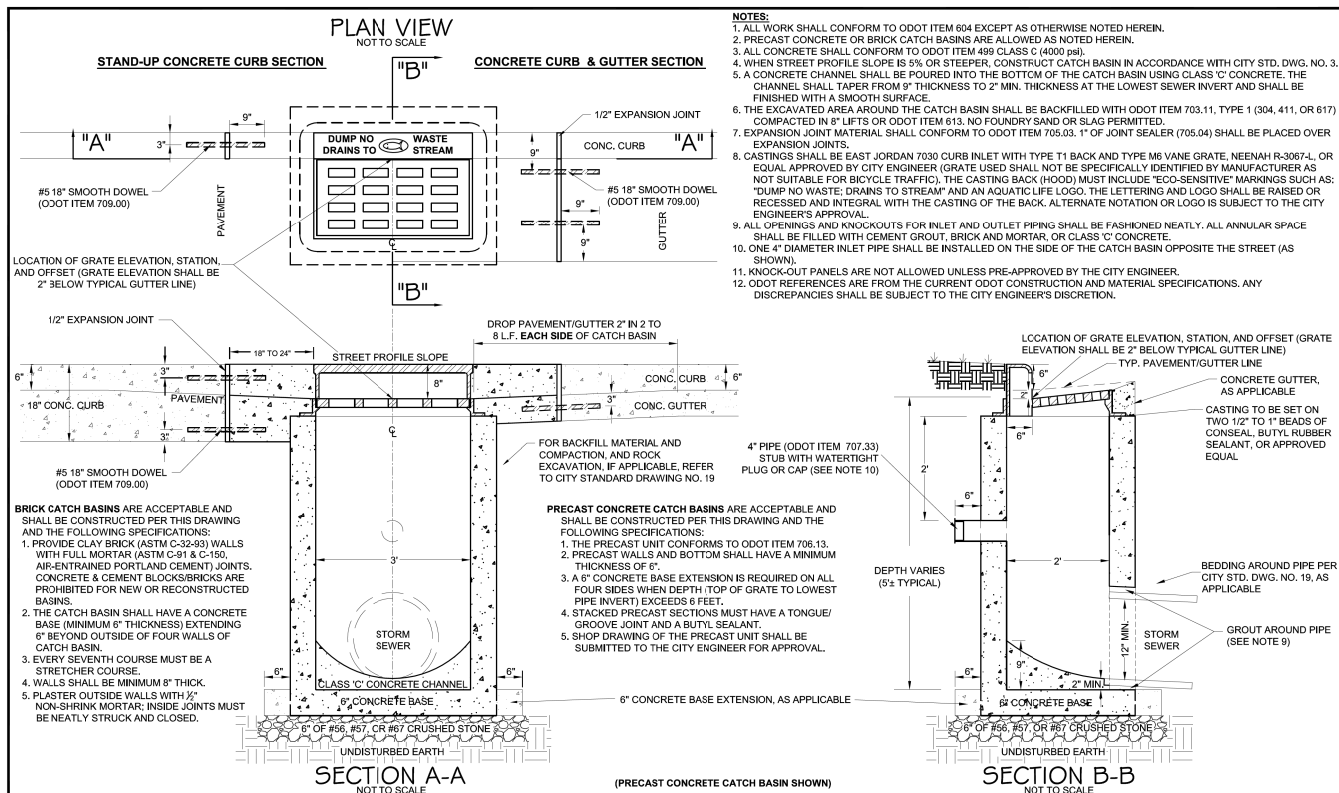
DX-4 (DND)
 STA 9+88.52, 18.10' LT
 STA 500+18.10, 11.48' LT
 EX. STM. MH, RIM ELEV 1096.23
 EX. 15" VCP SW 1091.19
 EX. 15" VCP N 1090.58
 EX. 15" VCP NW 1090.33
 EX. 15" VCP E 1089.82
 EX. 15" VCP W 1089.82

DX-5 (DND)
 STA 500+35.60, 15.64' LT
 EX. STM. MH, GRATE ELEV 1095.82
 NOTE: FULL OF SILT
 EX. 15" VCP NE 1091.20 (ASSUMED)

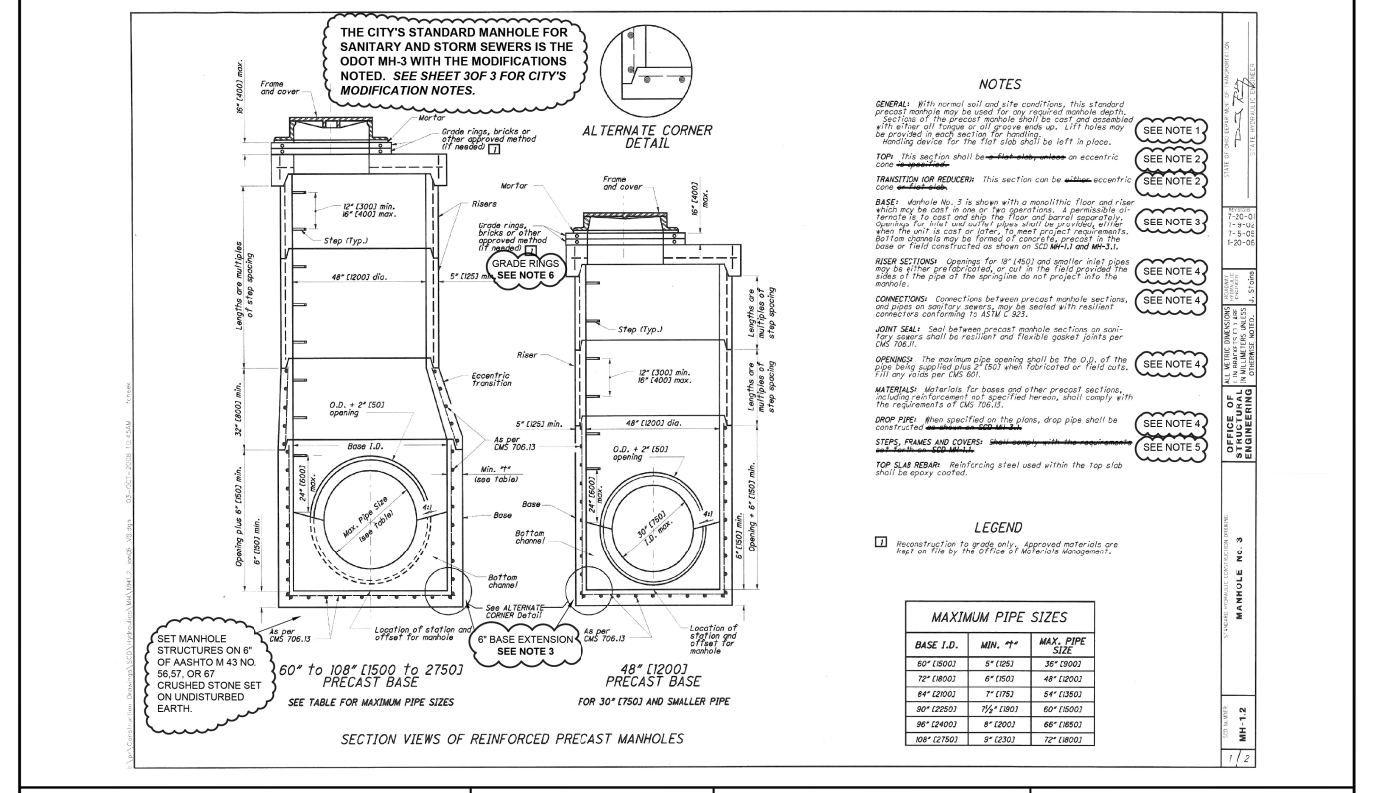
DX-6 (DND)
 STA 500+31.50, 14.06' RT
 EX. STM. MH, GRATE ELEV 1095.95
 EX. 15" VCP SE 1090.85

Station	Elevation	Notes
1110	1095.84	SL# SANITARY LATERAL DEPTHS ALONG EAST CURB AT TIME OF CONSTRUCTION
	1096.17	SL1 HOUSE #3129 - 6.0'± (1941)
	1095.97	SL2 HOUSE #3129 - NOT USED
	1096.16	SL3 HOUSE #1254 - 5.0'± (1925)
	1096.19	SL4 VACANT LOT - NOT USED
	1096.42	SL5 HOUSE #1246 - 6.5'± (1924)
	1096.48	SL6 HOUSE #1242 - 6.0'± (1924)
	1096.72	SL7 HOUSE #1238 - 6.0'± (1926)
	1096.76	
	1096.76	
	1096.85	
	1096.74	
1105		STA. 9+84 TO STA. 12+40 - LIMITS OF REPAVING
1100		
1095		
1090		
1085		
1080		
1075		

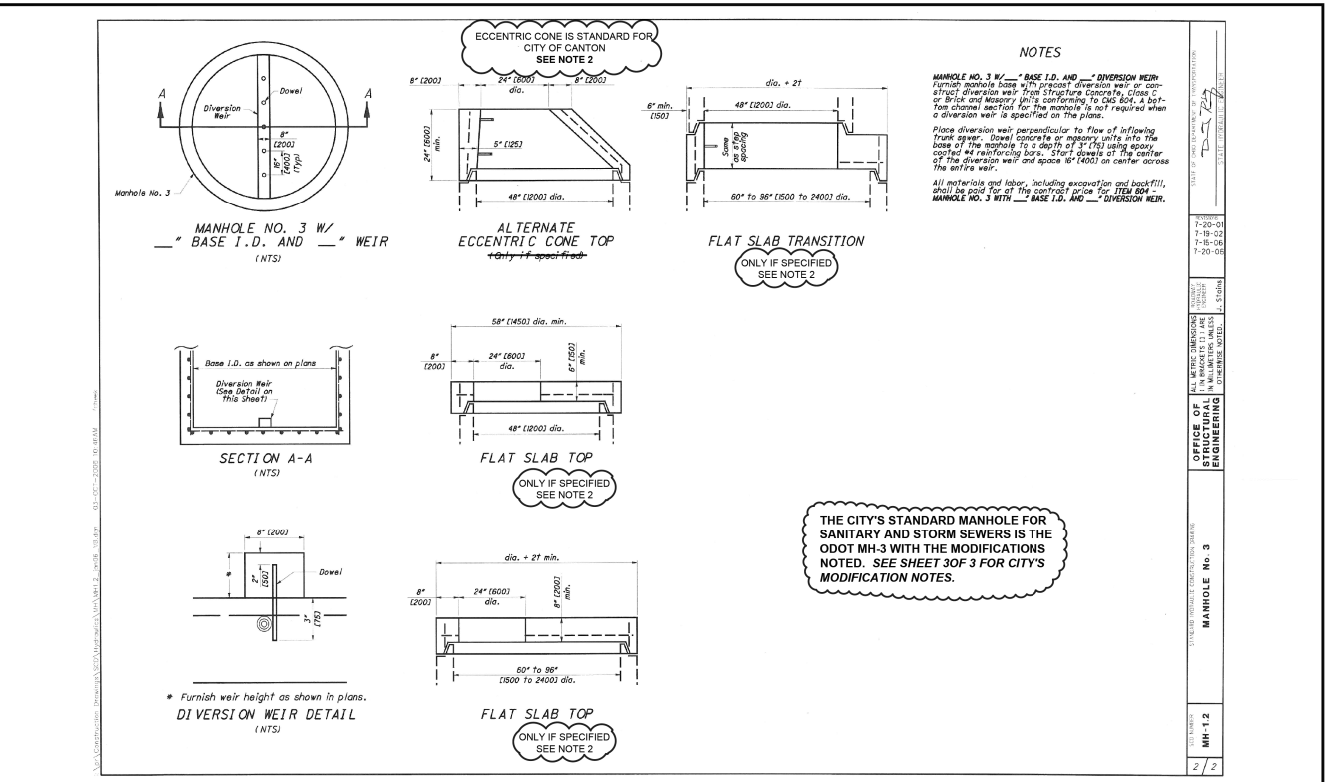
SANITARY PLAN AND PROFILE SHADYSIDE AVE. SW (13TH ST. SW TO 1ST MH.)
 SHADYSIDE AVE. SW
 SANITARY SEWER



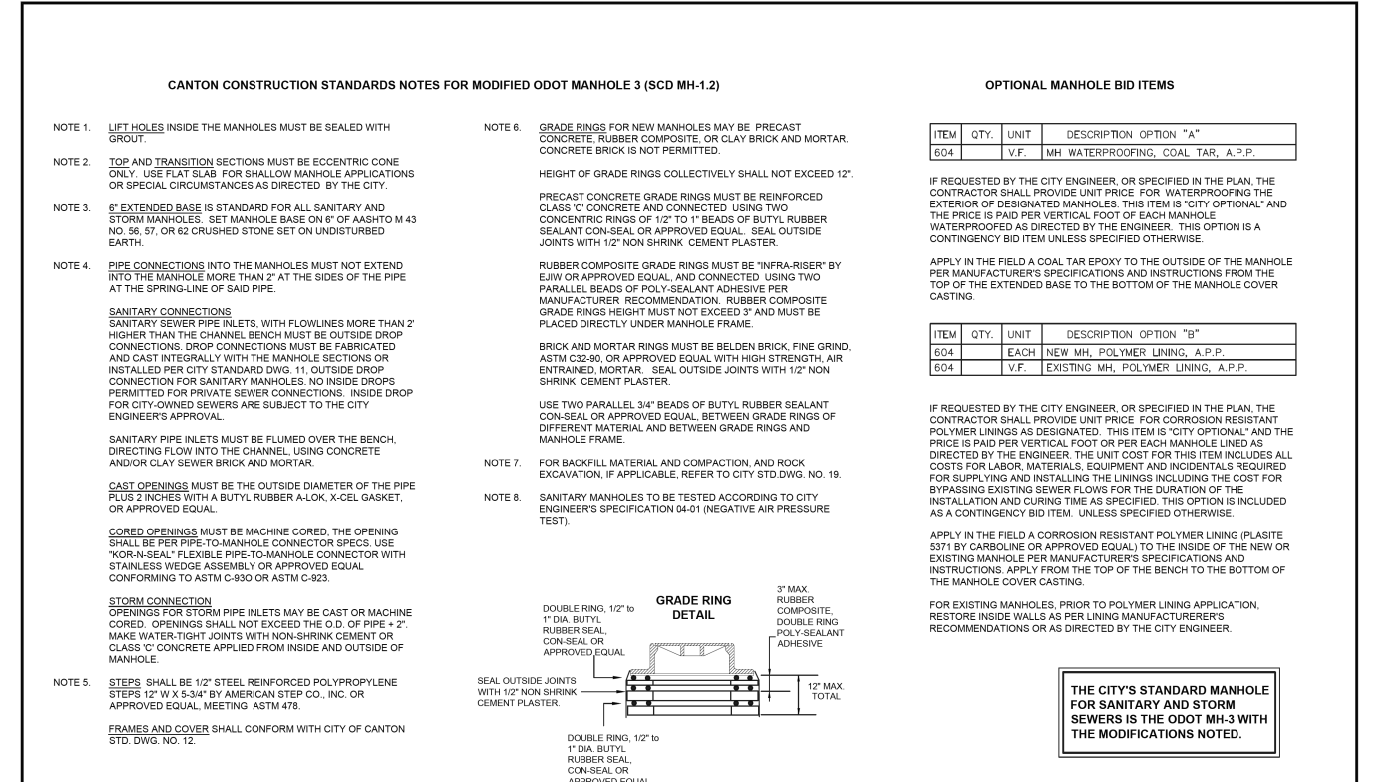
<p>OFFICE OF THE CITY ENGINEER CANTON, OHIO DANIEL J. MOEGLIN, P.E., CITY ENGINEER 2436 30th St. NE 44705 330-489-3381 www.cantonohio.gov/engineering</p>	APPROVED DATE: MAR. 2012	<table border="1"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> <th></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			REVISIONS				DESCRIPTION	DATE	BY						<p>STANDARD DRAWING NO. 1 CURB INLET CATCH BASIN</p> <p>SHEET 1 OF 1</p>
	REVISIONS																
DESCRIPTION	DATE	BY															
APPROVED BY: CDB, RMB, SLH	DRAWING FILE NAME: ce_01.dwg																



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	REVISIONS																
DESCRIPTION	DATE	BY															
APPROVED BY: CDB, RMB, SLH	DRAWING FILE NAME: ce_10.dwg																



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	REVISIONS																
DESCRIPTION	DATE	BY															
APPROVED BY: CDB, RMB, SLH	DRAWING FILE NAME: ce_10.dwg																



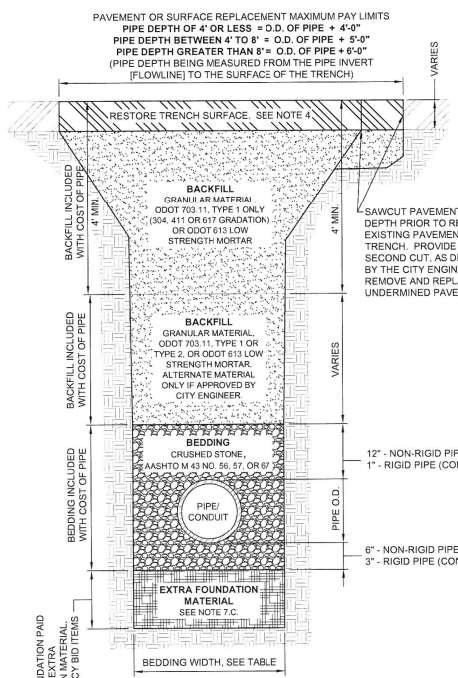
<p>OFFICE OF THE CITY ENGINEER CANTON, OHIO DANIEL J. MOEGLIN, P.E., CITY ENGINEER 2436 30th St. NE 44705 330-489-3381 www.cantonohio.gov/engineering</p>	APPROVED DATE: JAN 2012	<table border="1"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> <th></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			REVISIONS				DESCRIPTION	DATE	BY						<p>STANDARD DRAWING NO. 10 PRECAST STORM OR SANITARY MANHOLE</p> <p>SHEET 3 OF 3</p>
	REVISIONS																
DESCRIPTION	DATE	BY															
APPROVED BY: CDB, RMB, SLH	DRAWING FILE NAME: ce_10.dwg																

NOTES:

- BEDDING:**
MATERIALS SHALL BE AASHTO M 43 NO. 56, 57, OR 67 CRUSHED STONE. NO ALTERNATES UNLESS APPROVED BY THE CITY ENGINEER. PRIVATE UTILITIES MAY TYPICALLY PROVIDE ALTERNATIVE BEDDING MATERIAL AS APPROVED BY THE CITY ENGINEER.
BEDDING WIDTH TABLE

PIPE TYPE	MIN. WIDTH, TYP.	MAX. WIDTH, TYP.
NON-RIGID PIPE (PVC, HDPE, CMP, ALUMINUM)	PIPE I.D. x 1.25 + 1'-0"	PIPE O.D. + 2'-0"
RIGID PIPE (CONC., VIT. CLAY, DUCTILE IRON)	PIPE I.D. x 1.33	PIPE O.D. + 2'-0"

CENTER PIPE HORIZONTALLY WITHIN BEDDING AREA. ANY DEVIATION TO TYPICAL BEDDING REQUIREMENTS ARE SUBJECT TO THE DISCRETION OF THE CITY ENGINEER.
THE BEDDING LIMITS SHOWN APPLY IN ALL CASES EXCEPT FOR WHEN PIPE MANUFACTURER SPECIFIES A BEDDING WIDTH DIFFERENT FROM THAT SHOWN AND THE CITY ENGINEER PERMITS SAME.
- BACKFILL:**
BACKFILL WITHIN THE PUBLIC STREET R/W:
MATERIALS SHALL BE ODOT 703.11, TYPE 1 GRANULAR MATERIAL (304, 411, OR 617 AGGREGATE GRADATION) OR TYPE 2 GRANULAR MATERIAL, OR ODOT 613, LOW STRENGTH MORTAR. DEVIATIONS FROM THIS ARE AS FOLLOWS:
A) NO FOUNDRY SAND OR SLAG IS PERMITTED.
B) ALTERNATE GRANULAR MATERIAL SHALL BE PERMITTED ONLY WITH THE SUPPLEMENTAL APPROVAL OF THE CITY ENGINEER. TO PETITION FOR SUCH SUPPLEMENTAL APPROVAL, THE DEVELOPER/CONTRACTOR SHALL SUBMIT IN WRITING THE FOLLOWING:
* SOURCE OF THE ALTERNATE BACKFILL MATERIAL.
* GRADATION REPORT IN ACCORDANCE WITH AASHTO T 11 AND T 27.
* PROCTOR CURVE ANALYSIS IN ACCORDANCE WITH ASTM D 698.
* PROPOSED COMPACTION METHOD.
THE CITY ENGINEER RESERVES THE RIGHT TO REFUSE ANY ALTERNATE BACKFILL MATERIAL, REGARDLESS OF APPROVAL OF SIMILAR MATERIAL ON A PREVIOUS PROJECT.
THE CITY ENGINEER FURTHER RESERVES THE RIGHT TO REFUSE ANY ALTERNATE BACKFILL MATERIAL THE CITY FINDS NOT CONSISTENT WITH THE APPROVED SOURCE, GRADATION REPORT, PROCTOR REPORT, OR COMPACTION METHOD.
C) ODOT 703.11, TYPE 2, OR ALTERNATE MATERIALS ARE NOT PERMITTED WITHIN 4 FEET OF THE TRENCH SURFACE, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
BACKFILL OUTSIDE OF THE PUBLIC STREET R/W:
FOLLOW MATERIAL AND METHODS FOR BACKFILL IN ACCORDANCE WITH ODOT 603.



NOTES: (CONTINUED)

- COMPACTION:**
ALL BACKFILL SHALL BE PLACED IN LAYERS NOT TO EXCEED 12-INCHES LOOSE DEPTH AND COMPACTED BY APPROVED MECHANICAL MEANS. JETTING IS NOT APPROVED WITHOUT THE CITY ENGINEER'S APPROVAL. BUCKET COMPACTION MUST BE SUPPLEMENTED WITH VIBRATION OR TAMPING EQUIPMENT AS DIRECTED. ANY MODIFICATIONS TO THESE REQUIREMENTS MUST BE APPROVED BY THE CITY ENGINEER.
- SURFACE:**
TRENCHES SHALL BE TOPPED WITH 4" OF ODOT 304 LESTONESTONE OR ASPHALT GRINDINGS WITHIN EXISTING STREET PAVEMENTS WHEN THE STREET WILL BE OPENED TO VEHICULAR TRAFFIC PRIOR TO PAVEMENT REPLACEMENT. THE TRENCH TOPPING MATERIAL SHALL BE ROLLED OR OTHERWISE COMPLETED FLUSH WITH THE ADJOINING PAVEMENT.
STREET RESTORATION:
CONCRETE OR ASPHALT STREET PAVEMENT SHALL BE REPLACED IN ACCORDANCE WITH CITY STD. DWG. NO. 32. BRICK OR ASPHALT-BRICK COMPOSITE STREET PAVEMENT SHALL BE REPLACED IN ACCORDANCE WITH CITY STD. DWG. NO. 31.
SIDEWALK, CURB, AND DRIVEWAY RESTORATION:
DRIVEWAY SURFACES SHALL BE REPLACED IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS, AND CITY STD. DWG. NOS. 28 THRU 33.
LAWN RESTORATION:
LAWN SURFACES SHALL BE REPLACED WITH A MINIMUM OF 4" TOPSOIL, SEED, AND MULCHED. SEED MIX SHALL CONFORM TO ADJOINING LAWN GRASS.
- CONSTRUCTION METHODS FOR BEDDING AND BACKFILL SHALL CONFORM WITH ODOT 603, UNLESS STATED OTHERWISE HEREIN.**
- ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.**

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APPROVED DATE: JAN 2012	REVISIONS		
APPROVED BY: CDB, RMB, SLH	DESCRIPTION	DATE	BY
DRAWING FILE NAME: ce_19.dwg	REVISIONS TO NOTES 7 & 8	6/4/2012	CDB
	REVISIONS TO NOTES 7	6/10/2013	CDB

STANDARD DRAWING NO. 19
UTILITY TRENCH REQUIREMENTS
SHEET 1 OF 2

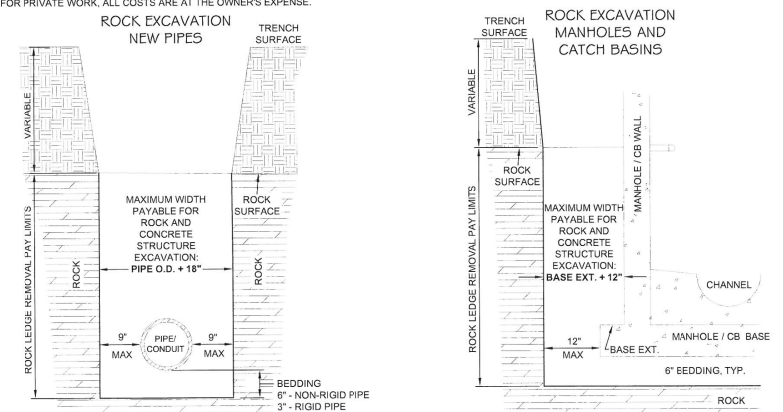
NOTES: (CONTINUED)

- PAY LIMITS FOR CITY PROJECTS**
A) **BEDDING AND BACKFILL** IS INCLUDED WITH THE COST OF PIPE UNLESS DIRECTED TO BID OTHERWISE.
B) **PAVEMENT RESTORATION** IS INCLUDED WITH THE COST OF PIPE UNLESS A SEPARATE PAY ITEM IS PROVIDED, WHEREBY THE WIDTH MEASUREMENT OVER THE TRENCH FOR PAVEMENT RESTORATION SHALL NOT EXCEED THE OUTSIDE DIAMETER (O.D.) OF PIPE PLUS A SET MEASUREMENT DEPENDENT ON DEPTH OF PIPE. AREA MEASUREMENTS AT MANHOLE AND CATCH BASIN STRUCTURES SHALL NOT EXCEED THE AREA OF THE BASE OF THE STRUCTURE + 3'-0" OFFSET AREA AROUND THE STRUCTURE'S BASE.
C) **EXTRA FOUNDATION MATERIAL:** THE CONTRACTOR SHALL BE PAID FOR OVER-EXCAVATION AND BEDDING FOUNDATION MATERIAL UNDER THE CONTINGENCY BID ITEMS FOR EXTRA FOUNDATION MATERIAL.
WHEN IN THE OPINION OF THE CITY ENGINEER, SOFT/UNSTABLE MATERIALS ARE ENCOUNTERED WHICH ARE UNSUITABLE FOR BEDDING FOUNDATION, SAID MATERIAL SHALL BE REMOVED BY THE CONTRACTOR TO THE DEPTH DIRECTED BY THE ENGINEER AND REPLACED WITH SUITABLE MATERIAL.
FOR CITY PROJECTS, THE PAYABLE WIDTH OF THE EXTRA FOUNDATION MATERIAL SHALL NOT EXCEED THE LESSER OF THE APPLICABLE MINIMUM OR MAXIMUM TYPICAL BEDDING WIDTH, AS NOTED ON SHEET 1 OF STD. DWG. NO. 19.
FOR PRIVATE WORK, ALL COSTS ARE AT THE OWNER'S EXPENSE.
EXTRA FOUNDATION MATERIAL, OPTION A, B, C, & D, MAY BE USED IN ANY COMBINATION AS DIRECTED BY THE CITY ENGINEER:
OPTION A: CRUSHED STONE, AASHTO M 43 NO. 56, 57, OR 67
OPTION B: CRUSHED STONE, AASHTO M 43 NO. 56, 57, OR 67
OPTION C: ODOT 703.11, TYPE 1 (304, 411 OR 617 GRADATION)
OPTION D: TENSAR GEOGRID T1100, OR APPROVED EQUAL

ITEM	QTY.	UNIT	DESCRIPTION
603	C.Y.		EXTRA FOUNDATION, OPTION A (#1, #2 STONE)
603	C.Y.		EXTRA FOUNDATION, OPTION B (#56, 57 STONE)
603	C.Y.		EXTRA FOUNDATION, OPTION C (304, 411, 617)
603	S.F.		EXTRA FOUNDATION, OPTION D (GEOGRID)

NOTES: (CONTINUED)

- EXCAVATION OF ROCK OR BURIED/ABANDONED CONCRETE STRUCTURE REMOVAL**
EXCAVATION FOR NEW MANHOLES AND CATCH BASINS, UNLESS OTHERWISE SPECIFIED OR SHOWN ON CONSTRUCTION PLANS, SHALL BE MEASURED BETWEEN VERTICAL PLANES ONE (1) FOOT BEYOND THE OUTSIDE EDGE OF THE FOUNDATION OF THE STRUCTURES ON ALL SIDES, AND PARALLEL THERETO, AND FROM THE SURFACE OF THE ROCK TO THE BOTTOM OF THE ROCK, OR THE NEAT LINES OF THE BOTTOM OF THE STRUCTURES PLUS THE DEPTH OF THE BASE MATERIAL. USE THE MEASUREMENT WHICH IS LESSER.
EXCAVATION FOR NEW PIPES, UNLESS OTHERWISE SPECIFIED OR SHOWN ON CONSTRUCTION PLANS, SHALL BE MEASURED BETWEEN TRENCH WALLS (NOT TO EXCEED PIPE O.D. + 18" AND FROM THE SURFACE OF THE ROCK TO THE BOTTOM OF THE ROCK OR THE BOTTOM OF THE PIPE BEDDING, USE THE MEASUREMENT WHICH IS LESSER.
EXCAVATION OF BURIED AND ABANDONED CONCRETE STRUCTURES SHALL BE MEASURED IN THE SAME MANNER AS ROCK REMOVAL.
FOR CITY PROJECTS, THE CONTRACTOR SHALL BE PAID FOR ROCK REMOVAL AND CONCRETE STRUCTURE REMOVAL UNDER THE CONTINGENCY BID ITEMS FOR ROCK OR CONCRETE STRUCTURE REMOVAL. IF A CONTINGENCY BID ITEM IS NOT INCLUDED IN THE BID PROPOSAL, THE CONTRACTOR MAY SUBMIT A PROPOSAL, PRIOR TO WORK BEING STARTED) TO THE CITY ENGINEER FOR REVIEW AND APPROVAL.
FOR PRIVATE WORK, ALL COSTS ARE AT THE OWNER'S EXPENSE.

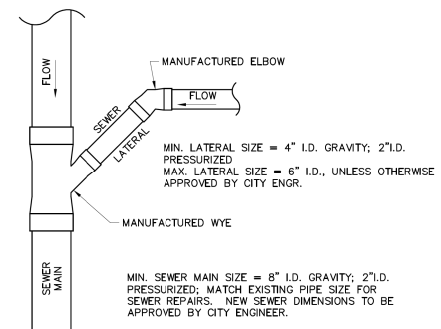


APPROVED DATE: JAN 2012	REVISIONS		
APPROVED BY: CDB, RMB, SLH	DESCRIPTION	DATE	BY
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STANDARD DRAWING NO. 19
UTILITY TRENCH REQUIREMENTS
SHEET 2 OF 2

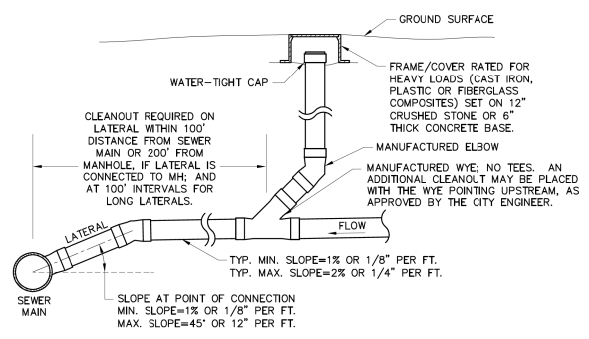
PLAN VIEW
NOT TO SCALE



NOTES:

- SEWER MUST BE LAID IN A MANNER TO MINIMIZE USE OF BENDS. USE TWO 45° BENDS IN LIEU OF 90° BENDS.
 - SEWERS MUST BE BURIED WITH A MINIMUM 36" COVER.
 - IN-LINE PIPE CONNECTIONS BETWEEN EXISTING AND NEW PIPES, 18" INSIDE DIAMETER (I.D.) AND LESS, MAY BE MADE WITH FLEXIBLE COUPLINGS (DEFINED BELOW).
 - NEW WYE CONNECTIONS ON EXISTING SEWER MUST BE MANUFACTURED WYES ON SEWER MAINS 12" I.D. AND LESS. SEWER LATERAL CONNECTION METHOD/TYPE ON MAINS OVER 12" I.D. MUST BE SUBMITTED TO CITY ENGINEER FOR APPROVAL.
 - REDUCERS ARE PERMITTED ON SEWER LATERALS IF THE LARGER DIAMETER PIPE IS DOWNSTREAM OF THE REDUCER. REDUCERS MUST BE MANUFACTURED PVC, VCP, OR DIP REDUCERS; FLEXIBLE REDUCERS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.
 - FOR SEWER LATERAL CONNECTIONS TO MANHOLES, THE MANHOLE MUST HAVE EITHER A CAST-IN-PLACE OPENING AND GASKET SUITABLE FOR THE PIPE TYPE AND SIZE (SEE CITY STD. DWG. NO. 1), PRECAST SANITARY MANHOLE OR THE MANHOLE MUST BE MACHINE CORED AND CONNECTION SEALED WATER-TIGHT (SEE CITY STD. DWG. NO. 11, OUTSIDE DROP CONNECTION FOR SANITARY MANHOLE).
 - ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.
- SEWER MAIN AND LATERAL PIPE, BENDS, COUPLINGS:**
1. LESS THAN 12' OF COVER: PVC SDR 35, ASTM D 3034 (ODOT 707.45); VITRIFIED CLAY PIPE ASTM ER-4-67; DUCTILE IRON PIPE, CLASS 52, CEMENT AND BITUMASTIC LINED AWWA C151-91.
2. 12' TO 24' OF COVER: PVC SDR 26, ASTM D 3034 (ODOT 707.45); VITRIFIED CLAY PIPE ASTM ER-4-67; DUCTILE IRON PIPE, CLASS 52, CEMENT AND BITUMASTIC LINED AWWA C151-91.
3. GREATER THAN 24' OF COVER: PVC EDR 11, ASTM D 3034 (ODOT 707.45); VITRIFIED CLAY PIPE ASTM ER-4-67; DUCTILE IRON PIPE, CLASS 52, CEMENT AND BITUMASTIC LINED AWWA C151-91.
4. ALL JOINTS MUST BE AIR-TIGHT BELL & SPIGOT OR TONGUE & GROOVE JOINT WITH RESILIENT GASKET.
- SEWER MAIN AND LATERAL FLEXIBLE COUPLINGS:**
1. ELASTOMERIC PVC WITH STAINLESS STEEL SHIELD AND BANDS, FERRO-STRONG BACK RC OR 5000 SERIES RC, OR APPROVED EQUAL.
- BEDDING AND BACKFILL**
1. BEDDING AND BACKFILL OF SEWERS MUST COMPLY WITH STANDARD DWG. NO. 19, UTILITY TRENCH REQUIREMENTS.

SECTION VIEW
NOT TO SCALE



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APPROVED BY: RMB	DESCRIPTION	DATE	BY
DRAWING FILE NAME: ce_20.dwg			

STANDARD DRAWING NO. 20
SANITARY SEWERS & LATERALS
SHEET 1 OF 1

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EXISTING BRICK SURFACE PAVEMENT REPAIR

SECTION DETAIL NOT TO SCALE

EXISTING ASPHALT OVER BRICK PAVEMENT SURFACE REPAIR

SECTION DETAIL NOT TO SCALE

EXISTING BRICK SURFACE PAVEMENT REPAIR

- (A) EXISTING BRICK PAVERS
- (B) EXISTING SAND BEDDING LAYER
- (C) EXISTING CONCRETE BASE - DEPTH AND TYPE VARIES
- (D) EXISTING AGGREGATE BASE
- (E) EXISTING RANDOM MATERIAL SUB-GRADE OR FOR NEW TRENCH COMPACTED TYPE I BACKFILL TRENCH REPAIR PER CITY STD. DWG. 19 - ODOT 304 OR 613.

ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

NO FOUNDRY SAND OR SLAG PERMITTED IN AGGREGATE BASE. ODOT ITEM 304, OR LOW STRENGTH MORTAR BACKFILL. ODOT ITEM 613.

PAVEMENT REPLACEMENT SECTION PAYMENT IS FOR CITY PROJ. REPAIR AREAS. PAYMENT INCLUDED IN COST OF PIPE FOR NEW TRENCH.

EXISTING ASPHALT OVER BRICK PAVEMENT SURFACE REPAIR

- (A) EXISTING ASPHALT SURFACE
- (B) EXISTING BRICK PAVERS
- (C) EXISTING SAND BEDDING LAYER
- (D) EXISTING CONCRETE BASE - DEPTH AND TYPE VARIES
- (E) EX. AGGREGATE BASE
- (F) EX. RANDOM MAT'L. SUB-GRADE OR FOR NEW TRENCH COMPACTED TYPE I BACKFILL TRENCH REPAIR PER CITY STD. DWG. 19 - ODOT 304(M) OR 613(M) LSM. LOW STRENGTH MORTAR

ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

PAVEMENT REPLACEMENT SECTION PAYMENT IS FOR CITY PROJ. REPAIR AREAS. PAYMENT INCLUDED IN COST OF PIPE FOR NEW TRENCH.

ALL RESTORATION/REPLACEMENT WORK TO BE AS DIRECTED AND APPROVED BY THE ENGINEER

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STANDARD DRAWING NO. 31
PAVEMENT REPAIR
SHEET 1 OF 2

EXISTING BRICK SURFACE PAVEMENT REPAIR

SECTION DETAIL NOT TO SCALE

EXISTING ASPHALT OVER BRICK PAVEMENT SURFACE REPAIR

SECTION DETAIL NOT TO SCALE

EXISTING BRICK SURFACE PAVEMENT REPAIR

- (A) EX. BRICK PAVERS
- (B) EX. SAND BEDDING LAYER
- (C) EX. CONCRETE BASE - DEPTH AND TYPE VARIES
- (D) EX. AGGREGATE OR RANDOM MATERIAL SUB-GRADE

PAVEMENT REPLACEMENT SECTION PAYMENT IS FOR CITY PROJ. REPAIR AREAS. PAYMENT FOR CONC. BASE INCLUDED IN COST OF NEW CURB.

COST FOR ITEMS 1-2-3-4-6-7 ABOVE ARE CONSIDERED AS 1 PAY ITEM UNDER ROAD PAVEMENT REPLACEMENT QTY.

EXISTING ASPHALT OVER BRICK PAVEMENT SURFACE REPAIR

- (1) VARIES. 0" TO 12" MAX - EX. BRICK TO BE REMOVED AND RESET AS NEEDED, TO ACCESS EX. CONC. BASE. DO NOT SAW CUT BRICK.
- (2) REPLACE/RESET 4" X 8" BRICK PAVERS. SEE NOTE SH. 2/2 FOR CITY PROVIDED BRICK.
- (3) 1" CONCRETE SAND/CEMENT (3:1) BED 703.02 - ASTM C-33
- (4) 6" CONCRETE BASE, CLASS "C", ODOT ITEM 305
- (5) BRICK PAVEMENT REPLACEMENT SECTION PAYMENT ONLY FOR REPAIR AREAS. PAYMENT INCLUDED IN COST OF PIPE FOR NEW TRENCH.
- (6) BROOM SURFACE W/ TECHNI-SEAL POLYMERIC SAND OR EQUAL TO FILL JOINTS. PLATE TAMP W/ MATT PROTECTION & DAMPEN PER MFG. SPEC.
- (7) FOR BRICK PAVEMENT REPAIR SAW CUT A CLEAN EDGE FULL DEPTH TO REMOVE FAILED CONC. BASE AND/OR FAILED AGG. BASE AS DIRECTED.

FOR NEW TRENCH PER STD. DWG. 19. SAW CUT FULL DEPTH TO THE LIMITS SHOWN.

PAVEMENT REPLACEMENT SECTION PAYMENT IS FOR CITY PROJ. REPAIR AREAS. PAYMENT INCLUDED IN COST OF PIPE FOR NEW TRENCH.

THIS EXHIBIT IS FOR BRICK PAVEMENT REPLACEMENT ALONG CURB OR GUTTER PLATE
BRICKS REMOVED ARE TO BE STORED FOR RE-USE - CITY WILL PROVIDE BRICKS AS NEEDED
CONTRACTOR IS TO PICK UP BRICK AT CITY SERVICE CENTER YARD
CONTRACTOR SHOULD BE PREPARED TO SORT BRICK FROM EXISTING STOCKPILES IF NECESSARY

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STANDARD DRAWING NO. 31
PAVEMENT REPAIR
SHEET 2 OF 2

ODOT REFERENCES ARE 2008 CMS - CROSS REFERENCE TO CURRENT CMS AT TIME OF CONSTRUCTION. (M) DENOTES CANTON MODIFICATION TO CMS AS NOTED.

ALL CURB AND WALK CONSTRUCTION TO CONFORM TO CITY OF CANTON 2008 SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR AND REPLACING OF SIDEWALKS, CURBS AND DRIVEWAYS.

GENERAL CRITERIA

PAVEMENT WIDTHS ARE TRADITIONALLY AND TYPICALLY 3/5THS THE RIGHT OF WAY WIDTH
LANE WIDTHS ARE 12 FT. TYP. AND PARKING WIDTHS ARE 8 FT. TYPICAL (2' - 3' APRON EA. SIDE)
BY ORD. - MIN. 28 FT. PAVEMENT REQUIRED FOR PARKING I-SIDE - 32 FT. PREFERRED.
BUSINESS/COMMERCIAL DISTRICTS AND MAJOR STREET CORRIDORS REQUIRE SPECIAL SECTIONS.
SPECIAL IMPROVEMENT DISTRICTS AND CORRIDORS REQUIRE ENHANCEMENTS & SPECIAL SECTIONS.
SIDEWALKS ARE REQUIRED IN THE CITY OF CANTON UNLESS A WAIVER IS GRANTED.
REFER TO CANTON STANDARD DRAWINGS FOR APPROPRIATE CONSTRUCTION STANDARDS.

GENERAL CRITERIA

- (1) 203 - EXCAVATION & EMBANKMENT
- (2) 204 - SUBGRADE COMPACTION
- (3) 304 - 4" AGGREGATE BASE
- (4) 304 - 6" AGGREGATE BASE (M) TYP. - NO FOUNDRY SAND, ACBFS, GRANULATED SLAG OR OTHER SLAG PERMITTED IN 304 BASE
- (5) 659 - 4" TOPSOIL / SEED / MULCH CLASS 1 LAWN MIX 1 YR. WARRANTY - 90% GERMINATION
- (6) 608 - CONC. WALK (UNLESS VARIANCE GRANTED) (M) TYP. - CLASS "C" #57 OR 67 LIMESTONE OPTION 1 MAY 1 TO OCT. 15 ONLY STEEL FORMS ONLY - SEE 2008 CITY SPECS. FOR CURB / WALK CONST.
- (7) 609 - CONC. CURB - CITY STD. 30 OR ODOT TYPE B (M) TYP. - CLASS "C" #57 OR 67 LIMESTONE OPTION 1 MAY 1 TO OCT. 15 ONLY STEEL FORMS ONLY - SEE 2008 CITY SPECS. FOR CURB / WALK CONST.
- (8) 605 - 4" PIPE UNDERDRAIN - (M) TYP. - NO. 8 STONE BEDDING (NO ACBFS) - FILTER SLEEVE - AS DIRECTED
- (9) 705.03 - 1/2" PREFORMED JOINT W/ SEALER
- (10) 452 - 6" PLAIN PORTLAND CEMENT PAVEMENT CLASS "C" - LIMESTONE AGG. ONLY OPTION 1 MAY 1 TO OCT. 15 ONLY
- (11) 608 - CONC. WALK - CITY STD. 29 TYPE III (M) TYP. - CLASS "C" #57 OR 67 LIMESTONE OPTION 1 MAY 1 TO OCT. 15 ONLY STEEL FORMS ONLY - SEE 2008 CITY SPECS. FOR CURB / WALK CONST.
- (12) 441-1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M
- (13) 441-1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)
- (14) 301 4" ASPHALT BASE
- (15) 407 TACK COAT (USE RUBBERIZED TACK FOR ASPHALT OVER CONC. PAVEMENT)
- (16) 408 PRIME COAT

NOTE (11) LAWN STRIPS LESS THAN 3.5' WIDE ARE NOT PERMITTED UNLESS APPROVED BY THE ENGINEER. COMBINED CURB/WALK IS STANDARD IN THIS INSTANCE. USE TYP. 5' WALK SHOWN LEFT IF 3.5' MIN. IS MET.

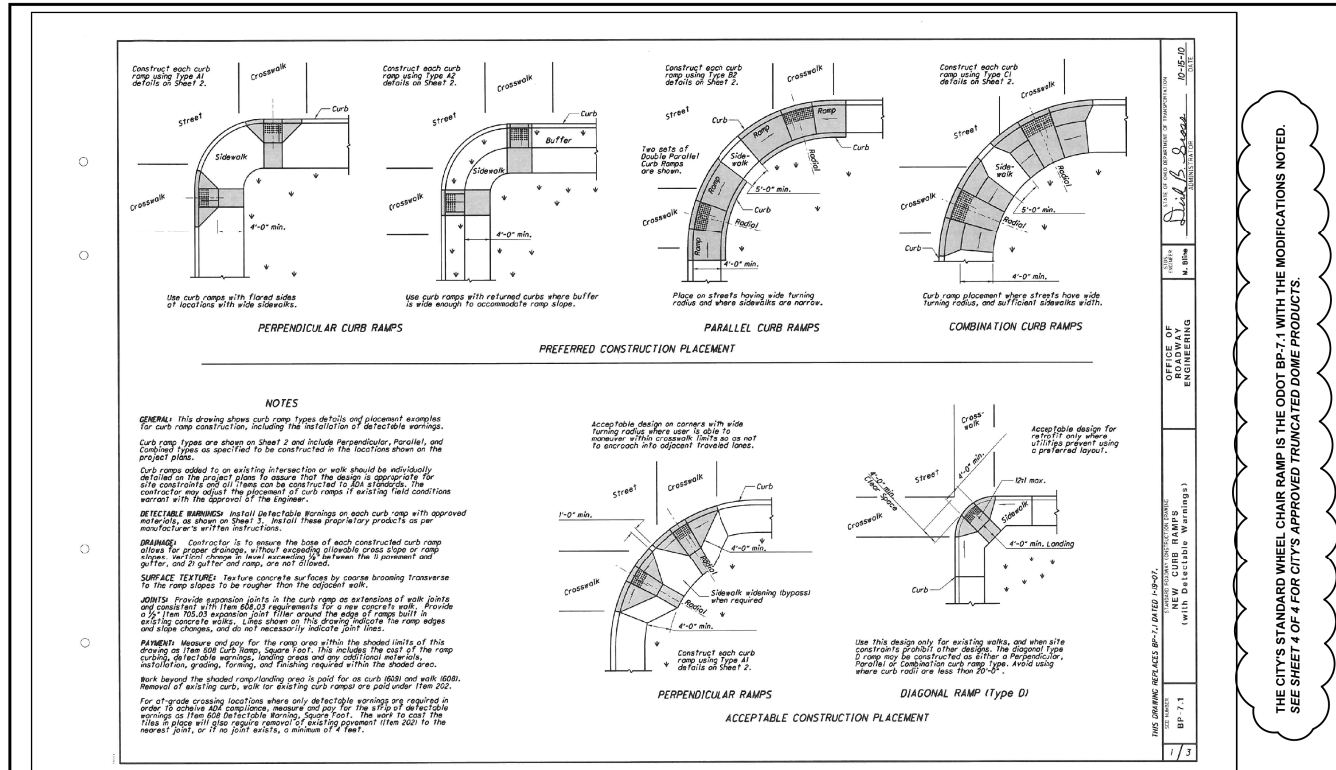
READ FOR ALL STREET CONSTRUCTION AND IMPROVEMENT THE OWNER/DEVELOPER SHALL PROVIDE A TYPICAL SECTION PREPARED BY A PROFESSIONAL ENGINEER TO BE REVIEWED AND APPROVED BY THE CITY ENGINEER.

STANDARD DRAWING NO. 32
MINIMUM PAVEMENT STANDARDS FOR LOCAL STREET

OFFICE OF THE CITY ENGINEER
CANTON, OHIO
DANIEL J. MOEGLIN, P.E., CITY ENGINEER
2436 30th STREET N.E. 44705 (330)489-3381

STANDARD DRAWING NO. 32
MINIMUM PAVEMENT STANDARDS FOR LOCAL STREET
DRAWN BY: OWG
DATE: APR 2009
APP'D BY: RMB
FIELD BK:
DWG# ce_32.DWG
H. SCALE: 1" = 5'
V. SCALE: N/A
SHEET 1 OF 1

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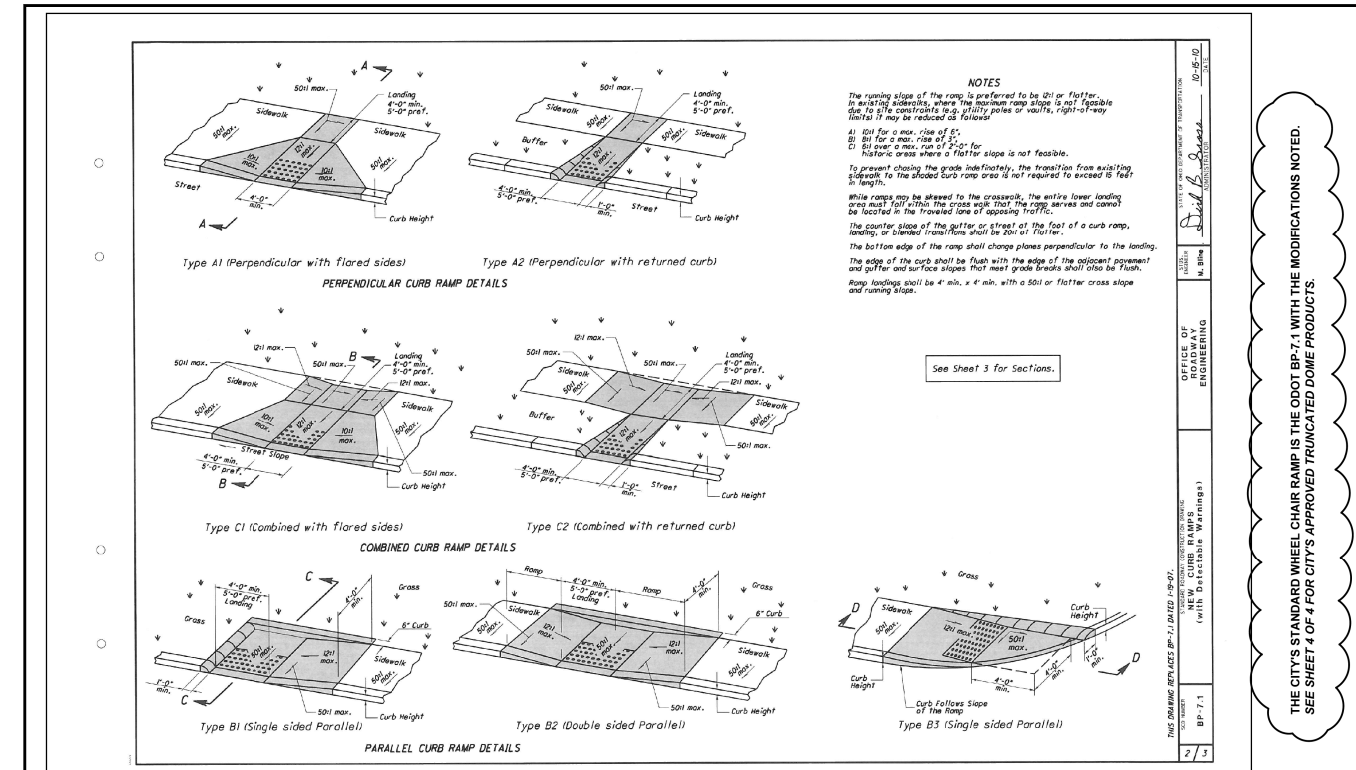
THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED. SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

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			
REVISIONS	DESCRIPTION	DATE	BY
1		6/29/12	RMB

STANDARD DRAWING NO. 33
WHEEL CHAIR RAMP
SHEET 1 OF 4



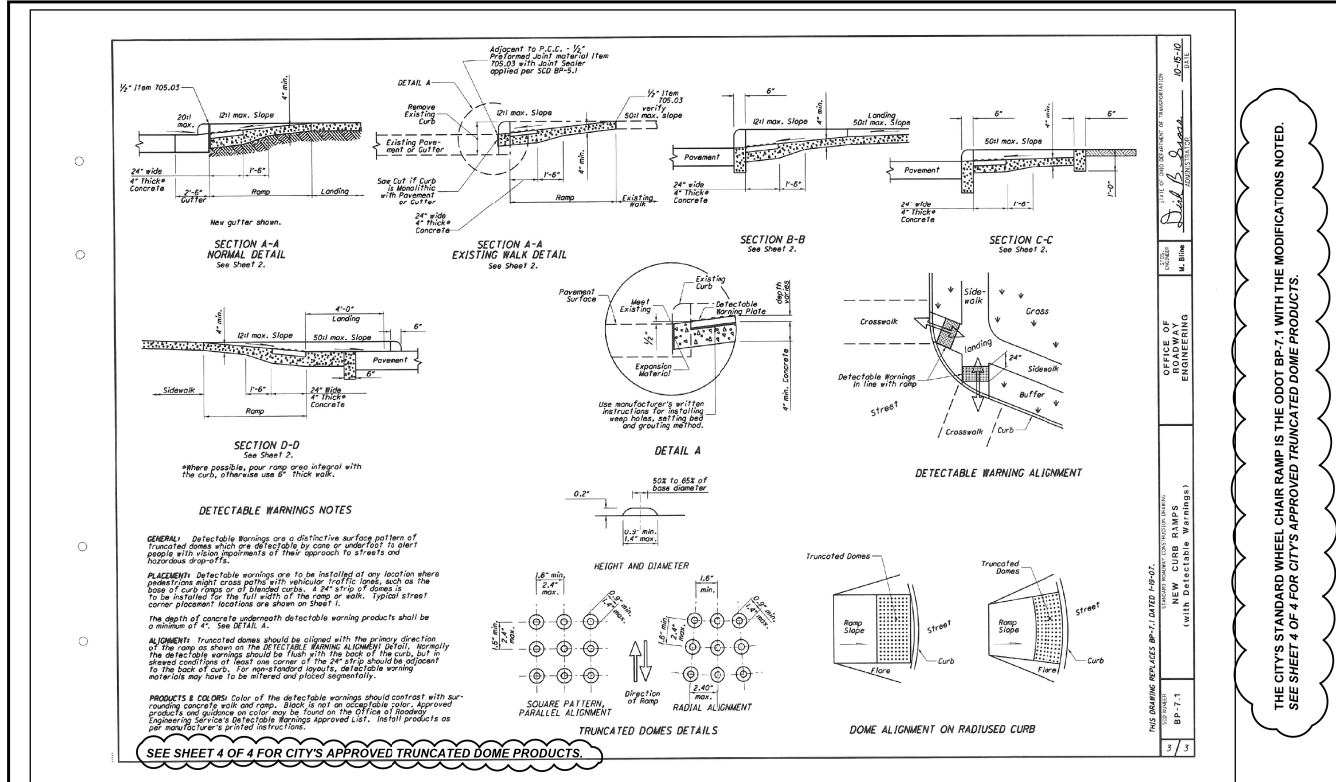
THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED. SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

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REVISIONS			
REVISIONS	DESCRIPTION	DATE	BY
1		6/29/12	RMB

STANDARD DRAWING NO. 33
WHEEL CHAIR RAMP
SHEET 2 OF 4



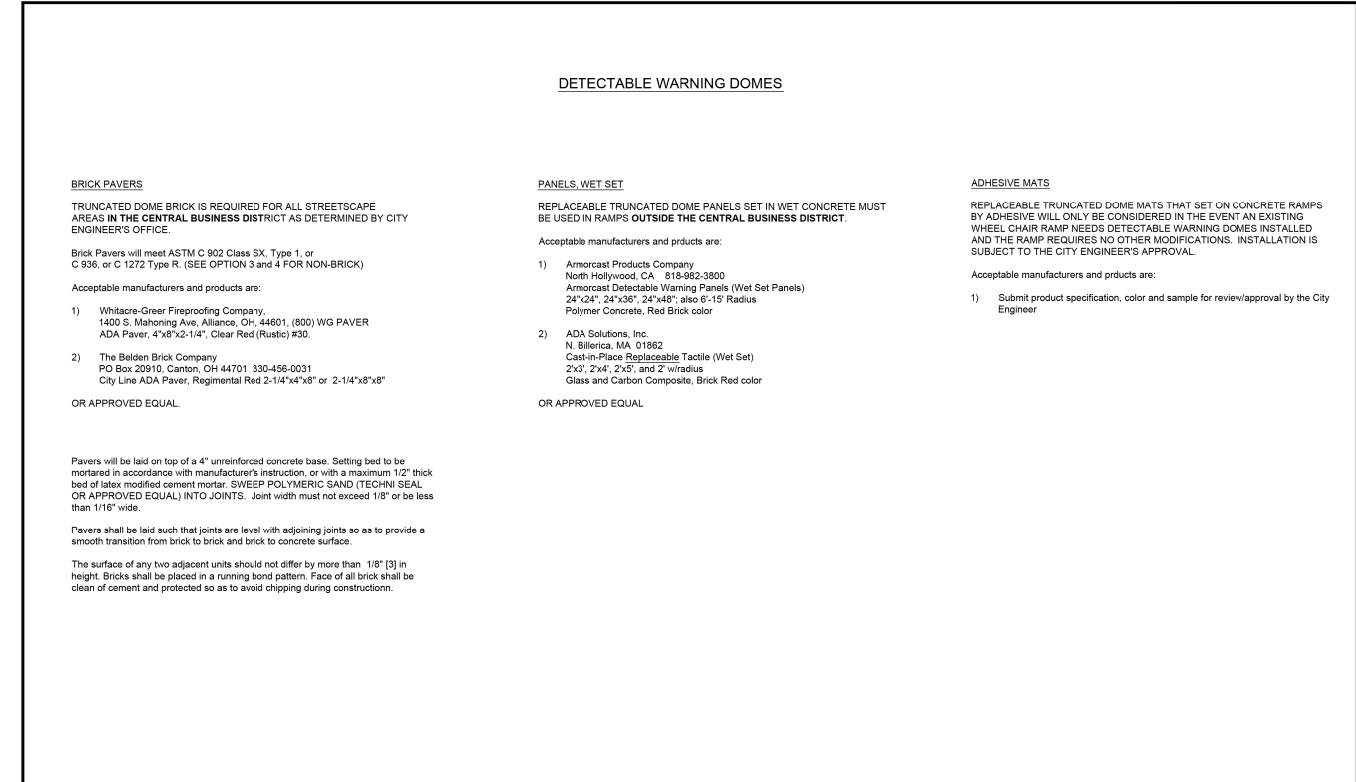
THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED. SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

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APPROVED DATE: MAY 2012
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REVISIONS			
REVISIONS	DESCRIPTION	DATE	BY
1		6/29/12	RMB

STANDARD DRAWING NO. 33
WHEEL CHAIR RAMP
SHEET 3 OF 4



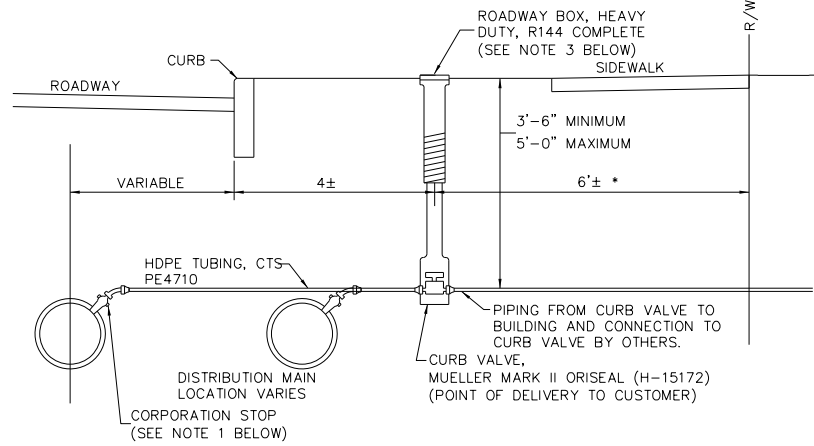
THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED. SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

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APPROVED DATE: MAY 2012
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DRAWING FILE NAME: ce_33.dwg

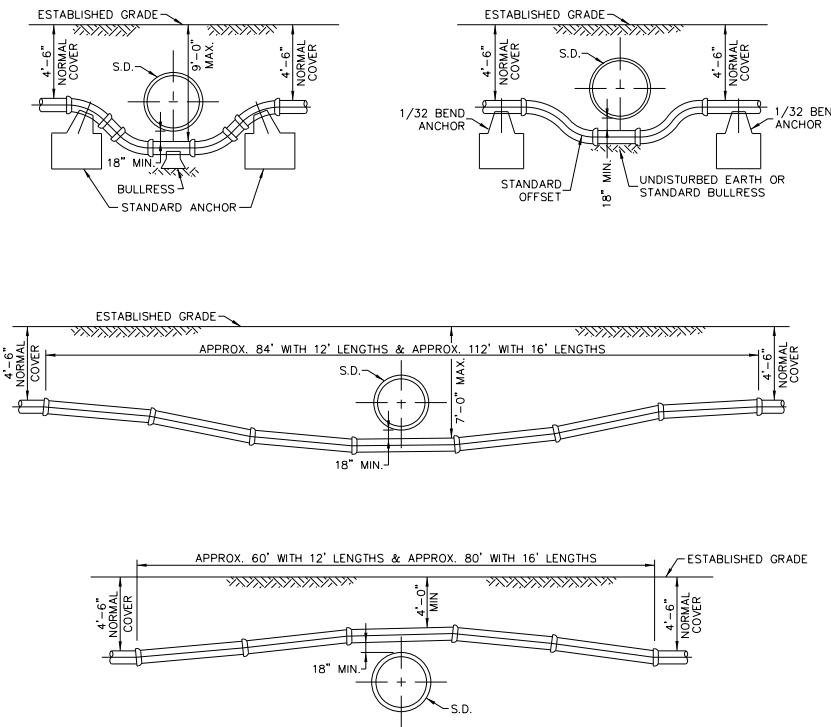
REVISIONS			
REVISIONS	DESCRIPTION	DATE	BY
1		6/29/12	RMB

STANDARD DRAWING NO. 33
WHEEL CHAIR RAMP
SHEET 4 OF 4

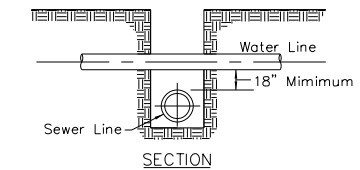


- NOTES:
- CORPORATION STOP AND ASSEMBLY SHALL BE AS FOLLOWS:
 - 1" CORP. STOP ON DIP: INSTALL AT A 45° ANGLE, A MUELLER H-15000 CORPORATION STOP WITH A McDONALD 747500 ELBOW.
 - 1" CORP. STOP ON PVC C909: INSTALL AT A 45° ANGLE, A MUELLER H-15000 CORPORATION STOP WITH A McDONALD 747500 ELBOW AND A FORD, STAINLESS STEEL, EPOXY COATED TAPPING SADDLE (FC202 STYLE).
 - 1 1/2" CORP. STOP: INSTALL AT A 45° ANGLE, A MUELLER H-15000 CORPORATION STOP WITH MUELLER H-15063 ELBOW AND A MUELLER H-15071 COMPRESSION FEMALE WITH INSERT COUPLING. ASSEMBLY SHALL ALSO CONSIST OF 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).
 - NO SWIVEL ELBOWS WILL BE PERMITTED.
 - A SERVICE CLAMP MUST BE USED WHEN THE MAIN SIZE IS 2 INCH OR SMALLER.
 - HEAVY DUTY VALVE BOXES, COMPLETE, MUST BE USED IN PLACE OF ROADWAY BOXES WHEN LOCATED IN ROADWAYS OR ASPHALT DRIVES.
 - APPROVED EQUALS MAY BE USED IN PLACE OF SPECIFIED ITEMS.

TYPICAL WATER SERVICE (C94)

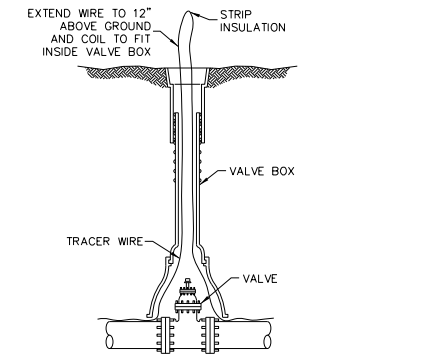


WATER MAIN CROSSING STORM DRAIN (C187)

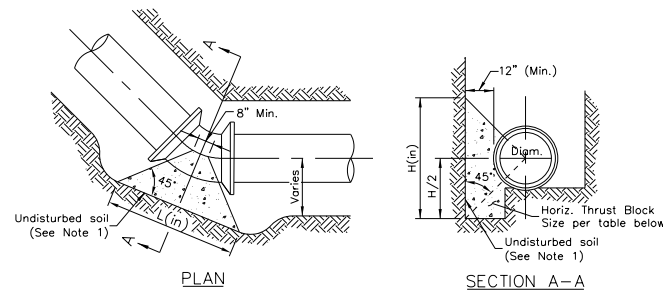


- NOTES:
- IF JOINT ON WATER MAIN IS WITHIN LIMITS OF SEWER TRENCH, INSTALL MECHANICAL BELL JOINT CLAMP.
 - IF CLEARANCE IS LESS THAN 18":
 - FOR STORM SEWERS, CONCRETE ENCASE THE STORM SEWER PIPE, 6 FT. ON EACH SIDE OF WATER MAIN.
 - FOR SANITARY SEWERS, REPLACE THE SANITARY SEWER PIPE WITH PVC C900 PIPE, 10 FT. ON EACH SIDE OF WATER MAIN. APPROVED COUPLINGS SHALL BE USED TO TIE ONTO THE EXISTING SEWER.
 - COST FOR THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICES BID FOR ALL ITEMS IN THIS PROPOSAL.
 - IN NO CASE SHALL THE SEWER PIPE CONTACT ANY WATER MAIN, SERVICE LINE, OR APPURTENANCE.

VERTICAL WATER MAIN CLEARANCE (C186)



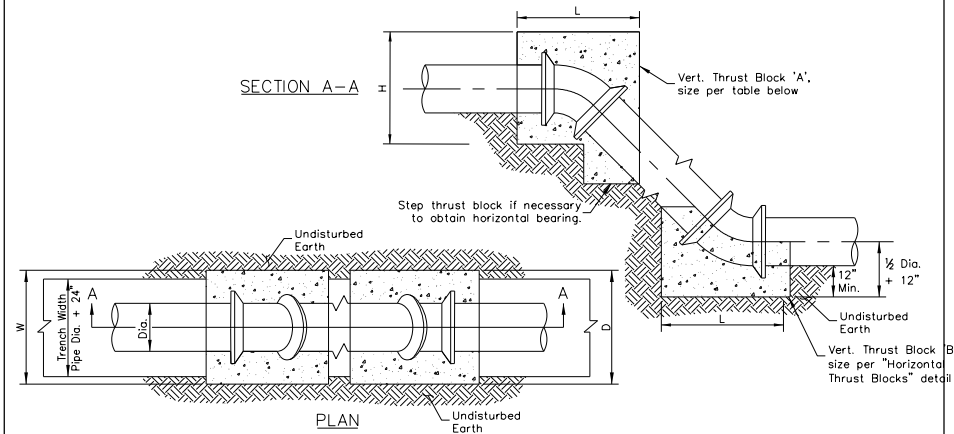
TRACER WIRE AT VALVE BOX DETAIL



SIZE OF PIPE	DEGREE OF BEND							
	11 1/4°		22 1/2°		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

- NOTES:
- 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.
 - PIPE, BOLTS, NUTS, AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE FILM TO PROTECT CORROSION AND CONCRETE ADHESION.
 - ALL JOINTS TO BE MEGALUGGED.

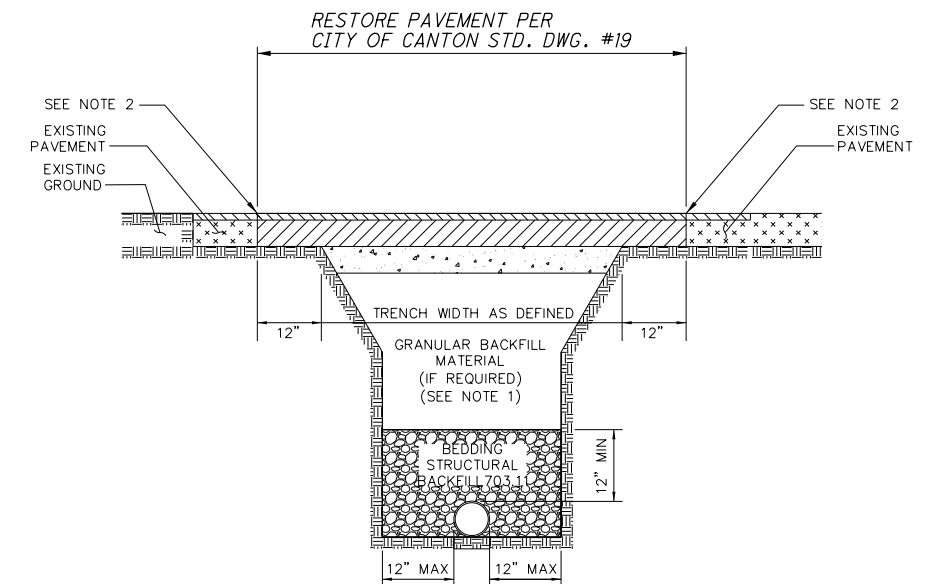
HORIZONTAL THRUST BLOCKS (C130)



SIZE OF PIPE	DEGREE OF BEND											
	11 1/4°				22 1/2°				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

- NOTES:
- PIPE, BOLTS, NUTS, AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE FILM TO PROTECT 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. (POURED IN PLACE, CLASS C)

CONCRETE THRUST BLOCKS FOR VERTICAL BENDS ON WATER MAINS (C147)



- NOTES:
- CHECK WITH LOCAL AUTHORITY HAVING JURISDICTION WITHIN THE RIGHT-OF-WAY REGARDING BACKFILL REQUIREMENTS.
 - 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.
 - 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

PAY LIMITS - TRENCH & ROADWAY DETAIL FOR D.I.P. (C175)

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SPECTRASHIELD
Total Lining System for Manholes
(rehabilitation and new construction)

PART I – GENERAL

1.01 DESCRIPTION

The work described within details a complete program for manhole lining and rehabilitation. This specification details the methods, procedures, materials and equipment as required to produce "A Total System for Manholes". The completed system will provide a corrosion resistant liner that restores walls to original surface levels and eliminates water infiltration and exfiltration.

1.02 REFERENCES

- A. ASTM D4541 - Adhesion
- B. ASTM D7234 - Adhesion
- C. ASTM D412 - Tensile Strength (PSI)
- D. ASTM D412 - Elongation (%)
- E. ASTM D624 - Tear Strength (PLI)
- F. ASTM D2240 - Hardness
- G. ASTM D522 - Flexibility (1/8" mandrel)
- H. ASTM D4060 - Taber Abrasion (mg loss)
- I. CIGMAT Evaluation (UH 96-7) of Spectrashield Liner System for Wastewater Concrete and Clay Brick Facilities. University of Houston Department of Civil Engineering: December 1996

1.03 SUBMITTALS

All materials and procedures required to establish compliance with the specifications shall be submitted to the owner/engineer for review/approval. Submittals shall include at least the following:

1. Technical Data Sheet on each product used.
2. Material Safety Data Sheet (MSDS) for each product used.
3. ASTM References.
4. CIGMAT Evaluation.
5. Manufacturer's Certification of Applicator
6. Certified Applicator Minimum Qualifications (Section 1.05 D)
7. Descriptive literature, bulletins and catalogs of materials.
8. Work procedures including flow diversion plan, method of repair, etc.
9. Material and method for repair of leaks or cracks in manhole
10. Statement of 10 Year Warranty

1.04 10-YEAR LIMITED WARRANTY

CCI Spectrum, Inc. (Manufacturer) and Applicator warrant the SPECTRASHIELD liner against failure for a period of 10 years. "Failure" will be deemed to have occurred if the protective lining fails to (a) prevent the internal deterioration or corrosion of the structure (b) protect the substrate and environment from contamination by effluent or (c) prevent groundwater infiltration. If any such failure occurs within 10 years of initial completion of work on a structure, the damage will be repaired to restore the lining at no cost to the Owner within 60 days after written notification of the failure. "Failure" does not include damage resulting from mechanical or chemical abuse or act of God. Mechanical or chemical abuse means exposing the lined surfaces of the structure to any mechanical force or chemical substance not customarily present or used in connection with structures of the type involved. There are no warranties express or implied other than those specifically stated in this section 1.04. Any liability for consequential and incidental damages is expressly disclaimed. Liability is limited to and shall not exceed the purchase price paid.

3.04 INSPECTION

- A. Final liner system shall be completely free of pinholes or voids. Liner thickness shall be the minimum value as described herein.
- B. Visual inspection shall be made by the Owner/Engineer. Any deficiencies in the finished liner system shall be marked and repaired according to the procedures set forth by Manufacturer.
- C. The sewer system may be returned to full operational service as soon as the final inspection has taken place.

CCI Spectrum, Inc. reserves the rights to charge or amend specifications without prior written notice.
(Revised 8/14)

1.05 QUALITY ASSURANCE

- A. The manufacturer and/or applicator of the total liner system of manholes shall be a company that specializes in the design, manufacture or installation of corrosion protection systems for manholes. Applicator shall be completely trained in leak repair, surface preparation and corrosion materials application on manholes. Corrosion materials/products shall be suitable for installation in a severe hydrogen sulfide environment without any deterioration to the liner.
- B. The applicator shall be trained and certified by the manufacturer for the handling, mixing, application and inspection of the liner system as described herein.
- C. To ensure total unit responsibility, all materials and installation thereof shall be furnished and coordinated by Manufacturer/Certified Applicator.
- D. Certified Applicator must have successfully installed 1,000 vertical feet of Spectrashield in the last three (3) years. A documented installation history must be supplied to include; Owner Name, Contact Information, Project Description, Volume of Product Installed and Contract Duration.

PART II - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. The materials to be utilized in the lining of manholes shall be designed and manufactured to withstand the severe effects of hydrogen sulfide in a wastewater environment. Manufacturer of corrosion protection products shall have long proven experience in the production of the lining products utilized and shall have satisfactory installation record.
- B. Equipment for installation of lining materials shall be high quality grade and be as recommended by the manufacturer.
- C. The lining system to be utilized for manhole structures shall be a multi-component stress skin panel liner system as described below:

1. Liner.	
Installation	Liner
Moisture barrier	Modified Polymer
Surfacer	Polyurethane/Polymeric blend foam
Final corrosion barrier	Modified polymer
- D. Modified polymer shall be sprayable, solvent free, two-component polymeric, moisture/chemical barrier specifically developed for the corrosive wastewater environment.
- E. Polyurethane Rigid Structure Foam, low viscosity two-component, containing flame retardants.
- F. Total thickness of multi-component liner system shall be a minimum of 500 mils.

Product shall be SPECTRASHIELD®, by CCI Spectrum, Inc.

PART III - EXECUTION

3.01 INSPECTION

- A. Applicator shall take appropriate action to comply with all local, state and federal regulations including those set forth by OSHA, EPA, the Owner and any other applicable authorities.
- B. Prior to conducting any work, perform inspection of structure to determine need for protection against hazardous gases or oxygen depleted atmosphere and the need for flow control or flow Diversion.
- C. Submit plan for flow control or bypass to owner/engineer for approval prior to conducting the work.
- D. New Portland cement structures shall have endured a minimum of 28 days since manufacture prior to commencing installation of the liner system.

3.02 SURFACE PREPARATION

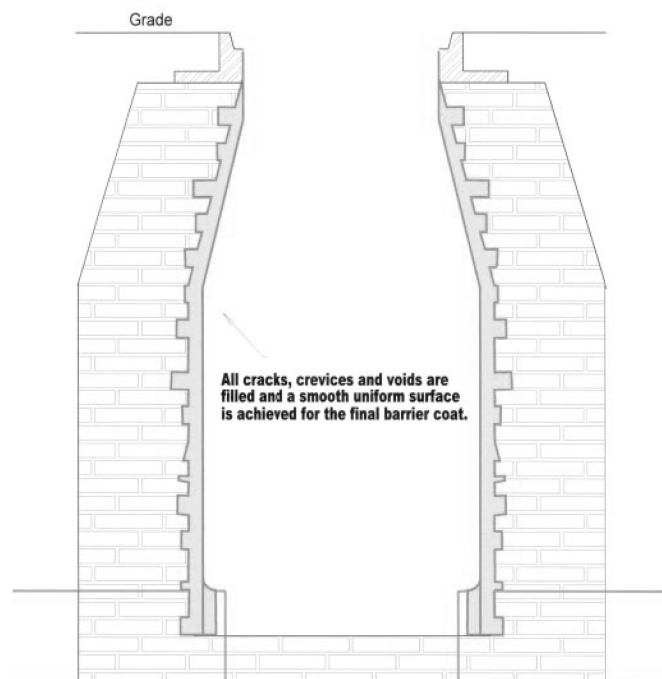
- A. Conduct surface preparation program to include monitoring of atmosphere for hydrogen sulfide, methane, low oxygen or other gases, approved flow control equipment, and surface preparation equipment.
- B. Surface preparation methods may include high pressure water cleaning, hydro blasting, abrasive blasting, grinding, detergent water cleaning and shall be suited to provide a surface compatible for installation of the liner system.
- C. Surface preparation method shall produce a cleaned, abraded and sound surface with no evidence of laitance, loose concrete, brick or mortar, contaminants or debris, and shall display a surface profile suitable for application of liner system.
- D. After completion of surface preparation, perform the seven point check list, which is the inspection for:

1. Leaks	5. Ring and Cover condition
2. Cracks	6. Invert Condition
3. Holes	7. Inlet and Outlet Pipe Condition
4. Exposed Rebar	
- E. After the defects in the structure are identified, repair all leaks with a chemical or hydraulic sealant designed for use in field sealing of ground water. Severe cracks shall be "repaired with a urethane based chemical" sealant. Product to be utilized shall be as approved by owner/engineer prior to installation. Repairs to exposed rebar, defective pipe penetrations or inverts, etc. shall be repaired utilizing non-shrink grout or approved alternative method.

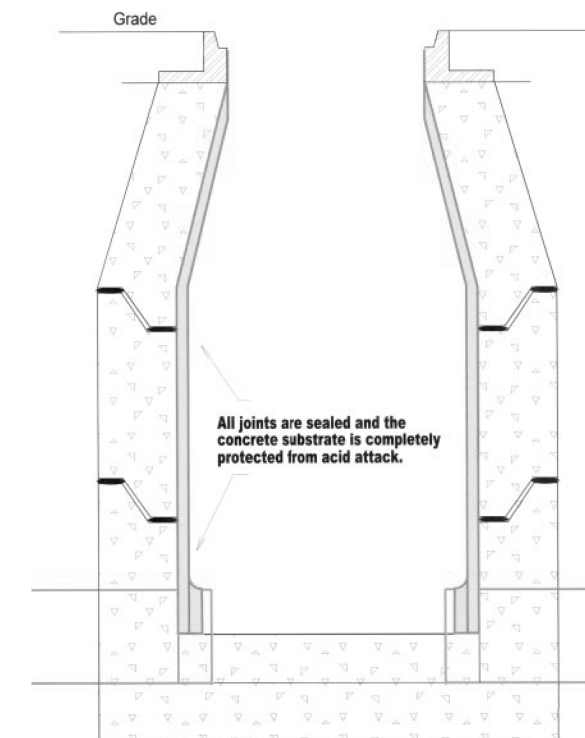
3.03 MATERIAL INSTALLATION

- A. Application procedures shall conform to recommendations of the manufacturer, including materials handling, mixing, environmental controls during application, safety and spray equipment.
- B. Spray equipment shall be specifically designed to accurately ratio and apply the liner system.
- C. Application of multi-component liner system shall be in strict accordance with manufacturer's recommendation. Final installation shall be a minimum of 500 mils. A permanent identification and date of work performed shall be affixed to the structure in a readily visible location.
- D. Provide final written report to owner/engineer detailing the location, date of report, and description of repair.

TYPICAL BRICK MANHOLE



TYPICAL PRECAST MANHOLE



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CALCULATED
WLC
CHECKED
KMK

SPECTRASHIELD DETAILS

**SHADYSIDE AVE. SW
SANITARY SEWER**