Section 00 9113
Addendum No. 01

SECONDARY WATER SUPPLY
CITY OF FLINT, MICHIGAN

To all prospective bidders and others concerned, YOU ARE HEREBY ADVISED THAT the Contract Documents for the above referenced Project are revised in the following particulars:

Pre-Bid Meeting

A mandatory pre-bid meeting was held on Thursday, February 20, 2020, at 10:00 AM. The sign-in sheets and meeting minutes are attached.

Section	Description of Change
01 7700	The following shall be added to Article 1.02.C of Section 01 7700, Closeout Procedures: A. The following items are to have GPS locations (on State Plane Coordinates) provided as part of the Record Documents: a. Fittings; b. Bends; c. Valves; and d. Hydrants B. Depths shall also be provided for buried utilities every 500 feet, or at grade changes greater than ±2 feet.
33 1100	Delete the following phrase from Article 2.21.B of Section 33 1100, Water Distribution Piping: "Griffin Pipe Products Company, 'Snap-Lok' or 'Bolt-Lok'"
33 1100	Delete Article 2.09.A of Section 33 1100, Water Distribution, in its entirety and replace it with the following: A. Tapping Sleeve shall be of split mechanical joint design with separate end and side gaskets. The fitting shall be constructed of high strength steel, ASTM A285 Grade C, ASTM A-36 or equal. The mechanical joint end dimensions shall conform to AWWA Standard C-110/C-111. Split coupling designs are not acceptable. Tapping Sleeves shall be JCM 414 Mechanical Joint Tapping Sleeve or approved equal. Tapping sleeve shall be ANSI/NSF Standard 61, Annex G and ANSI/AWWA 372 Certified.
40 7123.13	Section 40 7123.13, Venturi Flow Meters, shall be deleted from the Contract Documents in its entirety and replaced with the Section 40 7123.13 accompanying this Addendum.

Section	Description of Change
40 9000	Article 2.04.A of Section 40 9000, Process Instrumentation, Control and Monitroing Equipment, shall be deleted in its entirety and replaced with the following: A. Available Control System Suppliers: 1. To ensure unit responsibility, equpment specified and shown on the Drawings shall be designed as a system, fabricated or purchased, shipped to job site and started up by a qualified and approved Control System Supplier listed hereing: a. For work related to the GCDC-WWS vault, work shall be completed by Dmytryka Jacobs Engineers, Inc., 1101 Research Drive, Toledo, Ohio 43614. Contact: Alex Gyurgyak, P.E. and 419-380-4900 or agyurgyak@djeinc.com b. For work related to the City of Flint Water Treatment Plant, work shall be completed by: (1) MAK Controls (2) Outbound Technologies (3) Aggressive Systems (4) Commerce Controls (5) ENGINEER-approved equal
Exhibit 2	A portion of Exhibit 2 was not legible with the Issued for Bid Contract Documents. As a result, please delete Exhibit 2 in its entirety from the Contract Documents and replace it with Exhibit 2 accompanying this Addendum.
Exhibit 10	The "Subsurface Utility Investigation" described in Article 1.02.b and Article 1.16.B of Section 01 1100, Summary of Work, is depicted in Exhibit 10, which accompanies this Addendum.
Exhibit 11	Records for the PCCP related to the City of Flint's Water Treatment Plant were obtained from Thomas Group (via Price Brothers.) The information contained in this exhibit may or may not contain information related to the existing 36-inch, 48-inch and 60-inch PCCP onsite. It is up to potential Bidders to determine if this information is beneficial.

Sheet	Description of Change
27	The proposed tapping sleeve depicted on Sheet 27 of the Contract Drawings shall have an epoxy coated finish with stainless steel fasteners and draw hardware.
65	Delete the original Sheet 65 that was with the Issued for Bid Contract Documents and replace it with Sheet 65 accompanying this Addendum.
65	The GCDC-WWS "North Water Loop" depicted on Sheet 65 of the Contract Drawings is a 36-inch transmission main constructed of ductile iron pipe.

Sheet	Description of Change
P-1	Delete the original Sheet P-1 included with the Issued for Bid Contract Documents and replace it with Sheet P-1 accompanying this Addendum.
P-8	The existing 36-inch piping depicted entering/exiting the Pressure Reducing Meter Pit on Sheet P-8 of the Contract Drawings is 36-inch Class 53 ductile iron pipe inside the vault and 36-inch SP-12 Class 159 outside of the vault, according to drawings obtained from the City of Flint.

This Addendum is hereby incorporated into the original Contract Documents for the above-referenced bidding and is considered as binding as though originally appearing therein. RECEIPT OF THIS ADDENDUM MUST BE NOTED in the place provided on the Proposal page 00 4243-1, dated **February 26, 2020**.

Pre-Bid Meeting Minutes

City of Flint Secondary Water Supply
Thursday, February 20, 2020 at 10:00 AM

Items to Discuss:

1. Welcome
    a. Please register on the sign-in sheets available; this meeting is mandatory in order to submit a responsive bid. *Copies of the sign-in sheet are attached.*
    b. Minutes from this meeting will be distributed as part of Addendum No. 1
2. Introduction
    a. Owner: City of Flint
    Robert Bincsik, Director of Public Works
    Genesee County Drain Commissioner
    Matthew Raysin, Assistant Director of Engineering
    b. Engineer: Wade Trim
    Jason Kenyon, PE, Project Manager
    Tiffany Harrison, PE, Project Engineer
3. Project Summary
    a. Work shall include the construction of the Secondary Water Supply which will be approximately 30,000 lineal feet of 36-inch transmission main originating from the City of Flint's Water Treatment Facility (WTP) and connecting to the Genesee County Drain Commissioner's (GCDC's) North Water Loop near the intersection of Frances Road and Dort Highway, including all specified appurtenances. At either end of the transmission main Work will include the construction of a master meter vault, including meters, valves, instrumentation and SCADA for monitoring by the City, Genesee County Drain Commissioner, and the Great Lakes Water Authority.
    b. In addition to the Secondary Water Supply, other modifications will also be completed in a number of areas at the City's WTP, including work at Control Station #2 which will include removing and replacing sections of 36-inch and 60-inch PCC pipe, as well as meters and control valves; SCADA modifications to Control Station #3; the removal and replacement of a 24-inch double-acting altitude valve at the Tank House, including electrical and SCADA modifications; and meter replacement at the Pressure Reducing Pit, including electrical and SCADA modifications.
    c. Time is of the essence with this project and it is the City's intention that once the Work has been started, it shall proceed expeditiously.
4. Contracting Requirements
    a. Bidder's Qualifications (Section 00 2113, Article 1.05): Indicates information regarding bidder's qualifications to perform the work must be submitted within 48 hours after Owner request.
    b. Examination of Site (Section 00 2113, Article 1.06):
        i. Arrangements to visit the Water Treatment Plant can be made by calling Yolanda Gray 810.787.6537 x 3549.

ii. Examination of the Consumers properties will not be possible at this time. However, contractors and subcontractors are encouraged to review the area(s) at road crossings and via Google Earth.

c. Bid Security (Section 00 2113, Article 1.08): 5% of the Bidder's maximum price in the form of a Bid Bond or Cashier's Check made payable to "Treasurer, City of Flint"

d. Substitutions (Section 00 2113, Article 1.10): Application for acceptance of submittals must be made 5 business days prior to Bid Opening; no substitutions will be allowed after the Bid Opening.

e. Submittal of Bid (Section 00 2113, Article 1.11):

   i. Quantities as shown in the Proposal are approximate only and will be used as a basis of comparison of Bids, and award of Contracts. Payment will be made on basis of actual quantities of Work performed in accordance with the Contract Documents.

   ii. Unit Prices bid, shall include such amounts as the Bidder deems proper for overhead, profit, taxes, General Conditions and such other incidentals as noted in the Contact Documents.

   iii. Bid shall contain an acknowledgment of receipt of all Addenda

   iv. Legal Status of Bidder Form contained in the Contract Documents must be submitted with each Proposal and must clearly state the legal position of a Bidder (see Section 00 4345)

f. Award of Contract (Section 00 2113, Article 1.13): It is the intention of the City to Award the Contract no later than March 23, 2020 and the contract to be fully executed no later than April 15, 2020.

g. American Iron & Steel Requirements (Section 00 2213, Article 1.01): This project is funded with monies made available by the State Revolving Fund and/or Drinking Water Revolving Fund and as such law contains provisions commonly known as "American Iron and Steel (AID" that requires iron and steel products to be produced in the US, including iron and steel provided by the Contractor.

h. Disadvantages Business Enterprise (Section 00 4539.13): Contractors bidding on this project must follow, document, and maintain documentation of their Good Faith Efforts to ensure DBEs have the opportunity to participate in the project.

i. Certification Regarding Debarment, Suspension and Other Responsibility Matters (Section 00 4546.13) must be submitted with each Proposal and must clearly status of the Bidder.

j. Contract Time (Section 00 5200): Work will be substantially completed within two hundred ten (210) calendar days of the issuance of the Notice to Proceed, and completed and ready for final payment in accordance with the General Conditions within two hundred seventy (270) calendar days of said Notice.

k. Liquidated Damages (Section 00 5200): Two Thousand Five Hundred Dollars ($2,500.00) for each day that expires after Substantial Completion until the Work is Substantially Complete; liquidated damages charged shall be deducted from the Contractor's progress payment.

l. Prevailing Federal Wage Rate (Section 00 6521): This project is funded by federal dollars and is subject to the prevailing federal wage rate determination dated 1/3/2020.

m. Substantial Completion (Section 00 7300): Substantial completion will include the following design elements are complete, tested and operational:

i. Connection and meter vault at North Water Loop;

ii. Transmission main;

iii. Modifications to Control Station No. 3;

iv. Modifications to the Tank House;

v. Modifications to the Pressure Reducing Pit; and

vi. Removal and replacement of the 60-inch PCCP pipe in Control Station No. 2 with a 36-inch ductile iron pipe (including butterfly valve, venturi meter, etc.).

n. Insurance Requirements (Section 00 7300): Additional insureds and insurance limits.

o. Payments to Contractor and Completion (Section 00 6276; Section 00 7200, Article 14): Contractor's Application for Payment.

p. Contract Closeout (Section 01 7700): Cleaning, project record documents, O&M data, spare parts and special tools, start-up, substantial completion, warranties, final payment and acceptance.

5. Important Project Elements

a. Construction Sequence (Section 01 1100, Article 1.02)

i. Subsurface Utility Investigation (see also Article 1.16)

ii. Transmission Main

1. Connection to North Water Loop – It will be necessary for CONTRACTOR to install a 36-inch x 36-inch x 24-inch tapping sleeve and 24-inch tapping valve while ensuring the water supply is uninterrupted. Work will be witnessed by GCDC-WWS personnel and in accordance with GCDC-WWS specifications.

2. GCDC-WWS Meter Vault – The vault is to be constructed south of the connection in accordance with GCDC-WWS specifications. Communication from this vault will be sent to GCDC-WWS, the Great Lakes Water Authority, and the City of Flint.

3. Transmission Main – Will be constructed along the proposed alignment which crosses a single private property and a number of properties owned by Consumers Energy.

a. Several bores are required for local and state road crosses, as well as crossing major utilities (Buckeye) and the CSX railroad.

b. There are a number of wetland crossings and it will be necessary to restore these areas per the restoration details provided in the Contract Drawings.

4. Secondary Water Supply Meter Vault – The 48-inch PCCP supply line cannot be shut down – even temporarily – and it will be necessary to install a 48-inch x 48-inch x 36-inch tapping sleeve and 36-inch valve in order to connect the Secondary Water Supply at the City's Water Treatment Plant.

iii. Water Treatment Plant

1. Control Station No. 3: SCADA
2. Tank House: Altitude Valve removal and replacement
3. Pressure Reducing Pit: Valve and meter removal and replacement
4. Control Station No. 2: 60-inch and 36-inch PCCP, valves and meters removal and replacement. Temporary relocation of existing Chemical Feed system. Phased construction in cooperation with Work by Others (e.g., Chemical Feed Building).

b. Work by Others (Section 01 1100, Article 1.03): Chemical Feed Building

c. Physical Conditions, Investigations and Reports (Section 00 7300): Exhibits include:

i. Exhibit 2, Geotechnical Report by Construction Testing Services dated November 11, 2019

ii. Exhibit 3, Wetland Delineation dated October 25, 2019

iii. Exhibit 4, Environmental Corridor Study dated October 8, 2019

iv. Exhibit 5, Due Care Compliance Analysis dated November 27, 2019

d. Right-of-Way Jurisdiction (Section 01 1100, Article 1.04): Roads, drains, railroad, soil erosion control.

e. Allowances (Section 01 2100): Permit fees.

f. Submittal Procedures (Section 01 3300): Schedules, shop drawings, product data, O&M data, audio-video route survey, photographs.

g. Quality Control (Section 01 4500): Certification of materials.

h. Temporary Facilities and Control (Section 01 5000): Site access and parking; public road maintenance, emergency access, public access to roadways, maintaining traffic, temporary utilities (power, sanitary, water, etc.).

i. Erosion and Sedimentation Control (Section 01 5713):

i. Certified Stormwater Operator required of Contractor.

ii. Obtain a permit for work in Genesee County.

iii. Obtain and pay for soil erosion maintenance bond.

iv. SESC information shown on the plans is an absolute minimum and additional information may be required based on Contractor's specific activities

6. Permit Status

a. Joint Permit (Part 301, 303 and 31) – Application has been submitted; awaiting permit

b. EGLE NPDES – Application has been submitted; Contractor to apply for once SESC permit has been issued

c. EGLE Drinking Water Permit, Act 399 – Application has been submitted for the transmission main and work at WTP; application for GCDC-WWS connection and meter vault is pending submittal by GCDC-WW

e. Soil Erosion and Sedimentation Control (Part 91) – Application has been submitted; Contractor to obtain and pay permit fee and bond(s)

f. MDOT Right-of-Way Permit – Permit has been issued; Contractor to obtain and pay bond(s)

g. Genesee County Road Commission Right-of-Way Permit – Application has been submitted; Contractor to obtain and pay permit fee and bond(s)

h. CSX Railroad Right-of-Way Permit – Permit has been issued; Contractor to Contractor to obtain and pay permit fee and bond(s)

i. Buckeye Partners – Has been notified and is aware of the crossing near Schaaf/Coldwater/Dort Highway; requirements detailed in Exhibit 9

7. Easement Status

    a. Consumers Energy

    b. Private Property at Frances Road

8. Project Timeline

a.	Addendum No. 1 Issued	02/23/2020
b.	Final Date for Questions	03/05/2020
c.	Bid Opening	03/12/2020
d.	Anticipated Contract Award	03/23/2020
e.	Anticipated Notice to Proceed	04/15/2020
f.	*Substantial Completion	11/11/2020
g.	*Final Completion	01/10/2021

**Assumes NTP issued 4/15/2020 and 210 calendar days until SC and 270 calendar days to FC.*

9. Addenda

    a. Addendum No. 1 will be issued and will include pre-bid meeting minutes, revised specifications, reissued Contract Drawings, and any other contract documents necessary for clarification.

Questions from Audience

Q: The permit fee for the railroad, does that include all fees, bonds and costs associated with a flag man?

A: The fee has been paid to obtain the CSXT permit. However, this fee does not include the actual cost of CSXT protection services and/or support services, including all applicable surcharges. For more information related to this permit, please refer to Exhibit 8 of the Contract Documents.

Q: Can the bid date be moved?

A: No.

Q: What is the Engineers Estimate?

A: $8,500,000

Q: Will the connection to the North Water Loop need to be a live tap?

A: Yes.

Q: At the Water Treatment Plant, are details of exploratory excavations spelled out?

A: More details are provided in Section 01 1100, but a drawing will also be issued as part of Addendum No. 1.

Q: Will temporarily relocating the existing Chemical Feed system at Control Station No. 2 be incidental to the price for the work at Control Station No. 2?

A: Yes.

Q: Will the as-builts require GPS locations?

A: Yes, and a clarification to Section 01 7700 will be issued with Addendum No. 1 with regard to GPS locations.

Q: Is it anticipated that there will be any special or custom fabricated fittings?

A: Yes, there may be a number of special or custom fabricated fittings, particular for Control Station No. 2 and the Secondary Water Supply vault at the City's Water Treatment Plant.

Q: Is there a lay schedule from Thompson Group for the PCCP pipe at the Water Treatment Plant?

A: Yes, and it will be part of Addendum No. 1.

Q: Will stored materials be eligible for payment?

A: Payment for stored materials is addressed in Article 14.02 of Section 00 7200, General Conditions.

Meeting Adjourned at 10:32 AM

SIGN IN SHEET

CITY OF FLINT DEPARTMENT OF PURCHASES & SUPPLIES

Mandatory Pre bid Meeting

SECONDARY WATER SUPPLY

*****PLEASE PRINT CLEARLY*****

NAME	COMPANY	PHONE # & FAX #	EMAIL ADDRESS
DAVID ZITO	Zito Construction	810-695-9075	
BRAND BUSCH	ETNA SUPPLY	586-201-8979	BBUSCH@ETNASUPPLY.COM
RICHARD GRAVEL	DAN'S EXCAVATING	(586) 201-4331	rgravel@DANSEXC.com
JOE PARKS	GOYETTE MECHANICAL	810-610-2104 / 810-743-9090	JPARKS@GOYETTEMECHANICAL.com
BHARAT DOSHI	PDE CONSTRUCTION MEDIA	248-866-1220	b.doshi@me.com
MIKE CLARKE	L.A. Clarke Inc	734-481-1565	MI.CLARKE@LACLARKE.COM
Joyce McClane	C.O.F		

BID DATE: February 20, 2020

Rob Binscik was in attendance

SIGN IN SHEET

CITY OF FLINT DEPARTMENT OF PURCHASES & SUPPLIES

Mandatory Pre bid Meeting

SECONDARY WATER SUPPLY

*****PLEASE PRINT CLEARLY*****

NAME	COMPANY	PHONE # & FAX #	EMAIL ADDRESS
RYAN SLYE	SORENSEN GROSS CO.	F (810) 232-2222 P (810) 767-4821	RSLYE@SGCS.NET
Shawn Taslim	Outbound tech	248-500-9090	staslim@outboundtech.com
Nick Brandt	GCDC-WWS	810-394-6760	N.Brandt@GCDCWWS.com
MICHAEL MANCINI	DUM UTILITIES	586 979-0402	USHENOY@DUMUTILITIES.com
Eric Bessolo	Z. To Construction Co	(810) 695-9025	mailbox@z.toconstruction.com
Scott Patrick	ROHDE BROTHERS CO	989-753-0294 989 753-2024	BRIAN@ROHDEBROTHERS.com
Sam Long	D'Agostini & Sons	586-781-5800 586-781-5829	mikeD@ldagostini.com

BID DATE: February 20, 2020

SIGN IN SHEET

CITY OF FLINT DEPARTMENT OF PURCHASES & SUPPLIES

Mandatory Pre bid Meeting

SECONDARY WATER SUPPLY

*****PLEASE PRINT CLEARLY*****

NAME	COMPANY	PHONE # & FAX #	EMAIL ADDRESS
MIKE CATALDO	CATALDO INC	810-638-2020 810-638-2022	CATALDOINC@CENTEL.COM
Ryan Stalmack	Ric-Man Const.	810-459-0508	RStalmack@Ric-Man.com
Phil Marin	American Pipe	630-25-8585	pmarin@amsicanpipe.com
PATRICK DUNIGAN	DUNIGAN BROS, INC	517-787-4720 517-787-3073	PATRICK@dunigansbros.com
RON WESTON	RANGELINE TAPPING	231-499-6808	RWESTON@RANGELINE.COM
Nandish Doshi	Pre Construction Manager	248 320 3018	dish@preconstructionmanager.com

BID DATE: February 20, 2020

Section 40 7123.13
Venturi Flow Meters

Part 1 General

1.01 Scope of Work

A. This Section includes venturi flow meters as indicated on the Plans or as required for a complete and functioning installation. Each flow meter shall be a short form Venturi design utilizing pure static pressure taps in the inlet and throat sections and shall produce a differential pressure, which shall be measured and transmitted by the specified differential pressure transmitter.

1.02 Related Work Specified Elsewhere

A. Division 26: Electrical
B. Section 40 7329: Differential Pressure Transmitters
C. Section 40 0513: Process Piping and Valves

1.03 Reference Standards

A. Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:

1. ANSI - American National Standards Institute
2. ISA - Instrument Society of America
3. NFPA - National Fire Protection Association
4. UL - Underwriters Laboratories

1.04 Submittals

A. Submittals shall be made as required in Section 01 3300.

B. Shop Drawings:

1. Complete and detailed system schematic drawings showing all components and the pneumatic and electrical point to point connections of each system together with a description of the operation of the system and equipment.

2. Instrumentation equipment specifications, outlined dimension drawings, and wiring and piping diagrams for each item of equipment. Duplicate equipment may be covered by 1 set of literature.

3. Submittal shall be organized in a logical manner and have a schematic diagram for each system.

C. Product Data: Provide data for all flow tubes. Include manufacturer's catalog information showing dimensions and configurations.

D. Test Reports: The manufacturer of differential producing equipment shall furnish for approval certified data substantiating dimensions, calculations, and performance. The data must substantiate that the accuracy of the venturi meter is based on calibration of the device being submitted and not taken from other sources. Data shall include:

1. Calculation sheets.
2. Coefficient values and tolerances.
3. Effect of upstream piping configurations.

4. Non-recoverable headloss
5. Flow vs. differential curve.
6. Uncalibrated accuracy.
7. Dimension prints.

E. Manufacturer's Installation Instructions

1. Indicate application conditions and limitations of use stipulated by product testing agency specified under regulatory requirements.

2. Include instructions for storage, handling, protection, examination, preparation, operation and installation of product.

F. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements. Venturi meter shall have a 25-year warranty against defects in workmanship and materials.

1.05 Closeout Submittals

A. Submittals shall be made as required in Sections 01 3300 and 01 7700.

B. Manufacturer's field reports.

C. Project Record Documents: Accurately record actual installed equipment.

D. Operation Data: Include description of system operation, adjusting and testing required.

E. Maintenance Data: Identify system maintenance requirements, servicing cycles, lubrication types required and local spare part sources. Include instructions for testing and cleaning cable andaccessories.

F. Instruction Manuals

1. Complete descriptive literature for each piece of equipment, including a list and description of all parts of each piece ofequipment.

2. Data sheets containing information relative to metering range, indicator or chart range, electrical requirements, system function, and shop drawing data.

3. Process flow diagrams showing location of instrumentation equipment, function of each piece, and description of use of equipment as applied to this Project.

1.06 Delivery, Storage, And Handling

A. Handling: Meters shall be handled in such a manner as to avoid any damage.
B. Storage: Store meters in enclosures or under protective coverings.

1.07 Field Measurements

A. Verify that field measurements are as indicated on shop drawings.

1.08 Project Conditions

A. Verify that field measurements are as shown on Contract Drawings.

B. Verify pipe size, material and compatibility with the fluid prior to rough-in.

C. Meter locations shown on Contract Drawings are approximate locations unless dimensioned. Install meters as required to complete piped system.

1.09 Extra Materials

A. Provide 1 complete set of special tools and equipment per meter that are required for calibration and maintenance including digital calibrators for reading and generating 4-10 mA signals.

Part 2 Products

2.01 Venturi Flow Meters

A. General:

1. Flow meter shall be a short form Venturi design utilizing pure static pressure sensing taps in the inlet and throat sections and shall produce a differential pressure, which shall be measured and transmitted by the specified differential pressure transmitter.

2. Meter supplier shall submit a complete manufacturing plan to include calculations for proper material thicknesses which will be used for this meter(s). In addition, a full quality assurance procedure will be provided to include welders' qualifications, material and welding testing procedures and proof of welders' current certification for all procedures that will be used in the manufacturing of the meter(s).

3. The manufacturer of the Venturi meter shall have a minimum of 20 years' experience in providing differential type flow meters and shall be ISO 9001-2015 Quality Management System in the Design and Manufacturing of Flow Measurement Systems. Manufacturer must hold a current and valid ASME S & U code stamp in order to ensure that all welding is according to ASME code requirements.

B. Performance:

1. Venturi flow meter(s) shall have an accuracy of +/-0.5% of actual flow above a pipe Reynolds number of 75,000 with a discharge coefficient of 0.9900.

2. Temperature: Suitable for an operating temperature up to 165 degrees Fahrenheit, with operating pressure limited only by line pressure rating.

3. Losses: Non-recoverable head loss not to exceed 10 percent of differential at maximum flow rate.

C. Tube Design:

1. Venturi meter shall have a cylindrical inlet section of the same inner diameter as the inlet piping and shall contain two high pressure taps and a single vent and drain tap. Cylindrical throat section shall contain two low-pressure taps.

2. Length of the cylindrical throat section shall be equal to one-half its diameter.

3. Converging section shall be comprised of a single angle of 30 degrees; sections using a radius or multiple inlet angles will not be acceptable.

4. Recovery section shall be comprised of a single angle of 10 degrees and shall be truncated at approximately 90 percent of the downstream pipe inner diameter.

5. Devices such as flow tubes that do not sense true static inlet and throat pressure will not be accepted.

6. Inspection Port: Venturi meter shall be equipped with an inspection port to be located in the meter recovery section. Cover shall be machined of 304 stainless steel and all fastening hardware shall be 304 stainless steel. Cover shall have either an O-ring or gasket seal according to the standard practice of the manufacturer.

7. Manual Cleanout Rods: One tap set shall be equipped with manual cleanout rods. Rod shaft shall be machined 304/316 stainless steel designed to be permanently installed in the 0.75" taps. Cleanout rod material assembly shall be stainless steel and an isolation ball valve shall be included in the assembly.

D. Construction:

1. Meters shall consist of reducing cone inlet sections, straight cylindrical throats, and expanding cone outlets.

2. Meter body shall be cast iron per ASTM A-126, Gr. B, and the foundry shall be located in North America.

3. Throat section and high-pressure tap bushing shall be 304 stainless steel.

4. Interior of the cast iron surfaces shall be coated with NSF-61 2-part epoxy suitable for potable water contact, and the exterior shall be coated with shop primer.

5. Mounting flanges shall hold the flow elements between pipe flanges of the line in which installed and be constructed of cast iron and epoxy coated. Flanges shall be ANSI B16.1 125 1b.

E. Testing:

1. Each meter shall be flow calibrated by an independent flow lab and provided with certified copies of the test results to substantiate the flow meter's accuracy, discharge coefficient and permanent pressure loss.

2. In lieu of lab flow calibration, the manufacturer may provide prior independent lab test data substantiating the flow meter's accuracy, Reynolds number performance, installation effects, discharge coefficient, and head loss. Prior test data shall cover at least 36 lab calibrations in sizes from 2.0 to 48.0 inches. Since the validity of prior test data is based on the quality and tolerance adherence of the fabricator, if laboratory calibration data from prior meter calibrations is presented for consideration, the venturi meters used for those calibrations must have been built by the same fabricator as will be used to fabricate the meter on this contract.

3. The supplier of the venturi meter shall provide a certified statement that all test data has been derived on meters made by the manufacturer of this meter.

4. In the event that the fabricator did not provide the prior calibrated meters, this meter shall be flow calibrated at Utah Water Research Labs. Calibration shall be a 20-point calibration for the minimum to maximum stated flow rate. Headloss shall also be calibrated.

G. Meter Schedule:

1. GCDC-WWS Meter Vault:

a.	Type:	HVT-CI
b.	Number of Meters:	1
c.	Inlet Diameter (inches):	24
d.	Throat Diameter (inches):	12.6
e.	Overall Length Allowed (inches):	50.7
f.	Flow Range (gallons per minute):	700 – 9,000

2. Control Station No. 2:

a.	Type:	HVT-CI
b.	Number of Meters:	2
c.	Inlet Diameter (inches):	36
d.	Throat Diameter (inches):	18
e.	Overall Length Allowed (inches):	96
f.	Average Flow Range (gallons per minute):	6,250 – 17,360

H. Acceptable Manufacturer:

1. Venturi meter shall be manufactured by Primary Flow Signal, Inc., Cranston, RI or ENGINEER-approved equal.

Part 3 Execution

3.01 Contractor's Verification

A. CONTRACTOR shall field measure all dimensions and check possible interferences for the pipe system and accessories.

3.02 Installation

A. Install meter(s) in accordance with manufacturer's instructions.

B. Install the transmitter(s) in an orientation where the sensing diaphragms are in a vertical plane.

C. Allow sufficient clearance overhead for cover removal and around the transmitter(s) to provide an access for necessaryadjustments.

D. Provide connections for drain and vent ports on the transmitter(s) as per manufacturer's recommendations.

E. Locate transmitter(s) as close to the process pipe and pressure tap as practicable with the lengths of meter lead piping/tubing kept to a minimum. Do not exceed 10 feet lead length. Locate the transmitter to minimize exposure to shock and vibration, or with proper vibration protection hardware and rugged frame. Select location to avoid any thermal shocks.

F. Slope horizontal leads a minimum of one inch per foot downward from the pressure taps.

G. Assemble screwed fittings with teflon tape wrapped on the external threads.

H. Do not run horizontal meter leads in excess of 10 feet without supports.

3.03 Field Quality Control

A. Conduct field inspection, testing and adjusting per Section 01 6000, Product Requirements, and Section 01 7700, Closeout Procedures.

B. Field Tests: Verify specification performance criteria and perform tests as recommended by manufacturer.

3.04 Adjusting

A. Requirements for starting and adjusting work per Section 01 7700.
B. Adjust and calibrate flowmeters.

3.05 Manufacturer's Field Services

A. Quality Requirements: Provisions for manufacturer's field services per Section 01 4500, Quality Control.

B. Include services of a factory authorized service technician for up to 2 man-days per meter to supervise adjustments, final connections, and system testing.

3.06 Protection

A. Protect finished installation under provisions of Section 01 6000, Product Requirements.

End of Section

Exhibit 2
Geotechnical Report

Construction **T**esting **S**ervices
3300 E. Bristol Road
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November 11, 2019

Wade Trim
555 S. Saginaw, Suite 201
Flint, MI 48502

Attention: Ms. Tiffany Harrison, P.E.

Reference: City of Flint Secondary Water Supply

Job No: S-19-219

Dear Sir:

In accordance with your request, we have performed a geotechnical investigation for the referenced project.

PROJECT DESCRIPTION

The project is a new water pipeline to provide an additional water supply to the city of Flint.

SUBSURFACE CONDITIONS

Initially, fifteen soil test borings were made in the pipeline area. The boring depths were twenty feet (20') and twenty five feet (25'). Two additional soil test borings were added where the water line crosses Dort Highway. These borings were made to a depth of thirty feet (30'). The locations were selected by the client and staked in the field by the Construction Testing Services personnel. The approximate boring locations are shown on the attached sketch.

The results of this exploration together with the Soil Test Boring Logs may be found below. Standard penetration tests were performed at each boring in accordance with ASTM D-1586 "Penetration Tests and Split Barrel Sampling of Soils".

Boring 1 encountered nine inches (9”) of compact brown possible road gravel over compact brown sand to three feet (3’), stiff variegated clay to four feet six inches (4’6”), medium compact brown sand to five feet six inches (5’6”) compact brown sand to seven feet six inches (7’6”) and stiff blue clay to nineteen feet six inches (19’6”) followed by very compact grey sand to the end of the boring.

Boring 2 encountered seven inches (7”) of medium compact black topsoil over medium compact brown sand to two feet six inches (2’6”), firm variegated clay to three feet six inches (3’6”), very stiff brown clay to eight feet (8’), very stiff brown and blue clay to nine feet three inches (9’3”) and stiff blue clay to twelve feet (12’) followed by extremely stiff blue clay to the end of the boring.

Boring 3 encountered nine inches (9”) of medium compact black topsoil over medium compact brown fill sand to three feet (3’), compact brown fill sand to four feet six inches (4’6”), compact brown sand to six feet nine inches (6’9”), compact grey silt to nine feet six inches (9’6”), stiff blue clay to thirteen feet (13’) and firm blue clay to sixteen feet (16’) followed by stiff blue clay to the end of the boring.

Boring 4 encountered one foot (1’) of medium compact black topsoil over firm brown clay to seven feet nine inches (7’9”) followed by compact brown sand to the end of the boring.

Boring 5 encountered nine inches (9”) of medium compact black topsoil over medium compact brown sand to three feet (3’), firm to stiff brown clay to seven feet six inches (7’6”) and medium compact brown sand to nineteen feet six inches (19’6”) followed by compact grey sand to the end of the boring.

Boring 6 encountered five inches (5”) of medium compact black topsoil over stiff brown clay to five feet six inches (5’6”), very stiff brown clay to eight feet six inches (8’6”) followed by compact brown sand to the end of the boring.

Boring 7 encountered one foot (1’) of medium compact brown topsoil over firm variegated clay to six feet (6’), very stiff brown clay to eight feet (8’), very stiff brown and blue clay to ten feet (10’), stiff to very stiff blue clay to sixteen feet six inches (16’6”) followed by extremely stiff blue clay to the end of the boring.

Boring 8 encountered six inches (6”) of medium compact black topsoil over stiff variegated clay to six feet (6’), stiff brown clay to nine feet six inches (9’6”), stiff blue clay to thirteen feet (13’) and compact brown sand to seventeen feet (17’) followed by stiff blue clay to the end of the boring.

Boring 9 encountered six inches (6”) of compact black topsoil over compact brown sand to three feet nine inches (3’9”) and compact to very compact brown sand to thirteen feet (13’) followed by compact brown sand to the end of the boring.

Boring 10 encountered four inches (4”) of medium compact black topsoil over medium compact brown sand to eleven feet six inches (11’6”) and compact grey sand to fourteen feet six inches (14’6”) followed by stiff blue clay to the end of the boring.

Boring 11 encountered five inches (5”) of compact dark brown topsoil over medium compact to compact brown sand to six feet nine inches (6’9”), stiff brown clay to seven feet six inches (7’6”) and stiff blue clay to seventeen feet (17’) followed by very stiff blue clay to the end of the boring.

Boring 12 encountered five inches (5”) of compact dark brown topsoil over compact brown possible fill sand to three feet six inches (3’6”), medium compact brown possible fill sand to seven feet seven inches (7’7”), stiff variegated clay to eight feet six inches (8’6”) and stiff blue clay to nine feet six inches (9’6”) followed by compact grey sand to the end of the boring.

Boring 13 encountered six inches (6”) of medium compact dark brown topsoil over medium compact brown sand to three feet six inches (3’6”), very stiff variegated clay to six feet (6’), very stiff brown and blue clay to eight feet three inches (8’3”) and stiff blue clay to eleven feet six inches (11’6”) followed by very stiff blue clay to the end of the boring.

Boring 14 encountered four inches (4”) of medium compact dark brown topsoil over medium compact brown sand to four feet six inches (4’6”), stiff variegated clay to seven feet (7’) and very stiff to extremely stiff brown clay to eleven feet six inches (11’6”) followed by very stiff blue clay to the end of the boring.

Boring 15 encountered six inches (6”) of medium compact dark brown topsoil over medium compact brown sand to two feet six inches (2’6”) stiff variegated clay to six feet (6’) and very stiff brown clay to twelve feet six inches (12’6”) followed by very stiff blue clay to the end of the boring.

Boring 16 encountered four inches (4”) of asphalt over medium compact fill sand to one foot (1’), medium compact brown sand to two feet eight inches (2’8”), firm variegated clay to three feet six inches (3’6”), loose brown sand to twelve feet (12’), stiff blue clay to seventeen feet (17’) followed by extremely stiff blue clay to the end of the boring.

Boring 17 encountered four inches (4”) of medium compact black topsoil over medium compact brown sand to two feet nine inches (2’9”), firm variegated clay to six feet (6’), stiff brown clay to nine feet six inches (9’6”), very stiff blue clay to eleven feet nine inches (11’9”) and stiff blue clay to seventeen feet (17’) followed by extremely stiff blue clay to the end of the boring.

LABORATORY TESTING

One sample from each soil boring was subjected to additional testing. A mechanical analysis was performed for sand samples and unconfined compression tests were performed for clay samples.

In general the sand samples contained significant amounts of silt and clay sized particles and would be classified as either SM (Silty Sand) or SC (Clayey Sand). The exception was sample 11B which would meet the specification for Class II material.

The unconfined compressive strengths on the clay samples ranged from approximately 2,000 psf to more than 11,000 psf.

The test results are appended.

GROUNDWATER

The drillers measured the depth at which water was encountered in each boring and the depth to water immediately after completion of the boring. The drillers also estimated the volumes of water flowing into the borings. These measurements are listed in the table below.

Boring	Depth to Water Encountered	Depth to Water After Completion	Approximate Water Volume
1	4’6”	18’0”	Light
2	None	None	None
3	6’0”	6’7”	Heavy
4	18’0”	18’0”	Heavy
5	17’9”	18’2”	Heavy
6	17’9”	16’4”	Heavy
7	6’0”	4’2”	Heavy
8	5’0”	7’0”	Heavy
9	13’0”	11’7”	Heavy
10	6’0”	6’6”	Heavy
11	7’0”	11’6”	Light
12	13’0”	12’7”	Heavy
13	None	None	None
14	None	None	None
15	None	None	None
16	3’6”	2’6”	Heavy

17	15’0”	23’6”	Heavy

The groundwater level is relatively shallow at some locations and dewatering may be required at these locations. It should be noted that short-term groundwater observations such as these may not provide a reliable indication of the depth of the water table. Water levels in clay soils are influenced by the slow rate of water infiltrating the borehole as well as the potential for water to become trapped in overlying layers of granular material during periods of heavy rainfall. Water levels in granular soils fluctuate with seasonal and climatic changes as well as the amount of rainfall in the area immediately prior to measurement.

FOUNDATIONS

It appears that the pipeline could be supported by the existing naturally deposited soil. The anticipated bearing depths and the maximum net allowable soil bearing pressures are given below.

Boring No.	Anticipated Bearing Depth	Maximum Net Allowable Soil Pressure (psf)
1	3’6” to 7’6” 7’6” to 20’0”	2,000 4,000
2	3’6” to 20’0”	4,000
3	3’6” to 20’0”	3,000
4	3’6” to 8’0” 8’0” to 20’0”	2,000 4,000
5	3’6” to 7’6” 7’6” to 20’0”	2,000 3,000
6	3’6” to 20’0”	4,000
7	3’6” to 20’0”	4,000
8	3’6” to 6’0” 6’0” to 20’0”	2,000 3,000
9	3’6” to 10’0” 10’0” to 20’0”	4,000 2,500
10	3’6” to 20’0”	2,500
11	3’6” to 7’0” 7’0” to 20’0”	2,000 4,000

12	3’6” to 7’6”	2,000
	7’6” to 20’0”	2,500
13	3’6” to 20’0”	4,000
14	3’6” to 4’6”	2,000
	4’6” to 20’0”	4,000
15	3’6” to 6’0”	2,500
	6’0” to 20’0”	4,000
16	12’0” to 17’0”	3,500
	17’0” to 30’0”	4,000
17	1’6” to 6’0”	1,000
	6’0” to 9’6”	3,000
	9’6” to 30’0”	4,000

SUBGRADE PREPARATION

The upper topsoil layer along with any peat, marl, organic soils, soft soils or other unsuitable materials should be removed from the building or paving areas. The resulting grade should then be proof rolled with a loaded tandem truck or front loader to develop any weak areas in the grade. The soil in any weak area should be removed and replaced with drier similar soils and proof rolled to proven compaction.

Any fill placed in the building or paving areas should be an approved material free of frozen soil, organic or other deleterious material. The clay soils on the site could be used for fill material provided that they are free of organic materials. It should be understood that controlling moisture content in clay soil will be very difficult during cold or wet weather. It is recommended that any additional fill soil brought in from off the site consist of a granular material meeting the gradation requirements for MDOT Class II backfill.

Fill soils should be placed in 9” loose lifts and uniformly compacted to at least 95.0% of its maximum dry density as determined by ASTM D-1557 (Modified Proctor).

EXCAVATIONS

All excavations should be sloped, shored or braced in accordance with MI-OSHA requirements. The contractor should provide an adequately constructed and braced shoring system for employees working in an excavation that may expose employees to the danger of moving ground. If material is stored or heavy equipment is operated near an excavation, stronger shoring must be used to resist the extra pressure due to superimposed loads.

FIELD MONITORING

The Soil Boring Log represents the sub-surface conditions at a specific location. The subsurface conditions sometimes vary away from the boring location. It is recommended therefore, that a qualified geotechnical engineer be retained to provide soils engineering services during the construction phase of the proposed project. This is to observe compliance with the design concepts, specification and recommendations. This also allows modifications to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction.

GENERAL COMMENTS

In the process of obtaining and testing samples and preparing this report, procedures are followed that represent reasonable and accepted practice in the field of soils and foundation engineering. Field logs are prepared during the drilling and sampling operations that describe field occurrences, sampling locations and other information.

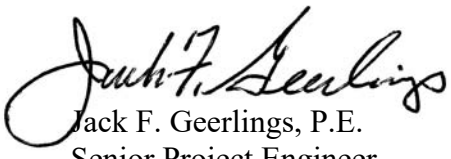
The samples obtained in the field are subjected to additional testing and reclassification in the laboratory and recommendations are based on the driller's observations, laboratory tests of samples and our reconnaissance of the site. Stratification lines shown on the Boring Logs are approximate indications of change from one-soil strata to another and are not intended to represent an area of exact geological change. Where the soils have the appearances of fill, we have shown them as fill. The possibility exists that there is fill present that was not detected as such.

Water levels shown on the Logs of Soil Test Borings are those observed at the time of the drilling operation and are subjected to seasonal fluctuations. The long term high water table may be higher than that which is shown on the boring logs.

The analysis and recommendations submitted in this report are based upon the data obtained from the Soil Boring locations. This report does not reflect variations, which may occur between borings. The nature and extent of the variations may not become evident until the time of construction.

This report has been prepared in accordance with generally accepted geotechnical engineering practices to aid in the evaluation of this project and to assist the Engineer in the design of this project. In the event of changes in the design criteria, the Geotechnical Engineer should be consulted to determine if significant changes in recommendations are required. This exploration does not include an environmental evaluation of the site.

Very truly yours,
CONSTRUCTION TESTING SERVICES



Jack F. Geerlings, P.E.
Senior Project Engineer

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 1
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/9/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			9" **Sand -** Compact, Moist, Brown w/Gravel, Possible Road Gravel					
	1							
1A	2		**Sand -** Compact, Moist, Brown	5				
SS				6				
	3		3'0"	6				
	4		**Clay -** Stiff, Moist, Silty, Variegated					
1B			4'6"	3				
SS	5		**Sand -** Medium Compact, Wet, Brown w/Pebble	4	14.7	115.1		
			5'6" **(SM - Silty Sand)**	4				
	6							
1C	7		**Sand -** Compact, Wet, Silty, Brown	3				
SS			7'6"	5				
	8			6				
	9							
1D				4				
SS	10			6				
			Clay - Stiff, Moist, Silty, Sandy, Blue w/Grey Sand Seams	7				
	11							
	12							
	13		13'0"					
	14							
1E				4				
SS	15			4				
				7				
	16							
			Clay - Stiff, Moist, Sandy, Blue					
	17							
	18							
	19							
1F			19'6"	8				
SS	20			16				
			20'6" **Sand -** Very Compact, Wet, Silty, Grey	23				
	21		**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	4	FT.	6	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	18	FT.	0	INS.
G.W. AFTER 1 HOUR		FT.		INS.

G.W. VOLUMES Light

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 2
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/9/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		7" **Topsoil -** Medium Compact, Moist, Sandy, Black w/Roots					
	1						
		Sand - Medium Compact, Moist, Brown					
2A	2		2				
SS		2'6"	3				
	3		4				
		3'6" **Clay -** Firm, Moist, Silty, Sandy, Variegated					
	4						
2B			5				
SS	5		7	17.6	129.4	3938	13.8
			9				
	6	**Clay -** Very Stiff, Moist, Silty, Brown **(CL - Low Plasticity Clay)**					
2C	7		4				
SS			8				
	8	8'0"	10				
	9	**Clay -** Very Stiff, Moist, Brown & Blue					
		9'3"					
2D			3				
SS	10		6				
			6				
	11	**Clay -** Stiff, Moist, Silty, Blue w/Brown Sand Seams					
	12	12'0"					
	13						
	14						
2E			6				
SS	15		13				
			17				
	16						
		Clay - Extremely Stiff, Moist, Blue w/occ Pebble & Stone					
	17						
	18						
	19						
2F			9				
SS	20		13				
			21				
	21	**Continued**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. ON COMPLETION	FT.	INS.
G.W. AFTER 1 HOUR	FT.	INS.
G.W. VOLUMES None		

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 2
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/9/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	21							
	22							
	23		**Clay -** Extremely Stiff, Moist, Blue w/occ Pebble & Stone					
	24							
2G				8				
SS	25			14				
			25'6"	19				
	26		**End of Boring**					
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. ON COMPLETION	FT.	INS.
G.W. AFTER 10 HOURS	FT.	INS.
G.W. VOLUMES None		

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 3
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/9/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		9" **Topsoil -** Medium Compact, Moist, Sandy, Black w/Roots					
	1						
3A	2	**Fill Sand -** Medium Compact, Moist, Brown	3				
SS			3				
	3	3'0"	3				
	4	**Fill Sand -** Compact, Moist, Brown w/Topsoil					
3B		4'6"	5				
SS	5	**Sand -** Compact, Moist, Brown w/Pebble **(SM - Silty Sand)**	6	12.4	99.6		
			7				
	6	6'0"					
		6'9" **Sand -** Compact, Wet, Brown w/Grey Silt Seams					
3C	7		4				
SS			4				
	8		6				
		Silt - Compact, Wet, Clayey, Grey					
	9						
3D		9'6"	3				
SS	10		5				
			7				
	11						
		Clay - Stiff, Moist, Silty, Sandy, Blue					
	12						
	13	13'0"					
	14						
3E		**Clay -** Firm, Moist, Blue w/Red Sand Layers	2				
SS	15		3				
			5				
	16	16'0"					
	17						
	18						
		Clay - Stiff, Moist, Blue w/Pebble					
	19						
3F			4				
SS	20		5				
		20'6"	5				
	21	**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	6	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	18	FT.	0	INS.
G.W. AFTER 3 HOURS	6	FT.	7	INS.
G.W. VOLUMES	Heavy			

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 4
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/9/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	1		1'0" **Topsoil -** Medium Compact, Moist, Sandy, Clayey, Black w/Roots					
4A	2			2				
SS				2				
	3			4				
	4		**Clay -** Firm, Moist, Sandy, Brown w/occ Pebble	2				
4B								
SS	5		**(CL - Low Plasticity Clay)**	3	10.9	130.8	1778	15.5
				3				
	6							
4C	7			2				
SS				3				
	8		7'9"	4				
	9							
4D				5				
SS	10			7				
				7				
	11							
	12							
	13		**Sand -** Compact, Moist, Brown					
	14							
4E				8				
SS	15			10				
				11				
	16							
	17							
	18		18'0"					
	19							
4F			**Sand -** Compact, Wet, Brown w/occ Pebble	3				
SS	20			5				
			20'6"	5				
	21		**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	18	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	18	FT.	0	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES	Heavy			

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 5
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/9/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			9" **Topsoil -** Medium Compact, Moist, Sandy, Clayey, Black w/Roots					
	1							
5A	2		**Sand -** Medium Compact, Moist, Brown	2				
SS				2				
	3		3'0"	3				
	4							
5B				2				
SS	5		**Clay -** Firm to Stiff, Moist, Sandy, Brown w/occ Pebble &	3	18.5	122.3	2097	15.5
				4				
	6		Oxidation **(CL - Low Plasticity Clay)**					
5C	7			3				
SS			7'6"	5				
	8			8				
	9							
5D				3				
SS	10			4				
				6				
	11							
	12							
	13		**Sand -** Medium Compact, Moist, Brown					
	14							
5E				2				
SS	15			3				
				4				
	16							
	17							
	18		17'9"					
	19		**Sand -** Medium Compact, Wet, Brown					
5F			19'6"	4				
SS	20		**Sand -** Compact, Wet, Grey	5				
			20'6"	12				
	21		**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	17	FT.	9	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	18	FT.	2	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES Heavy				

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 6
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/9/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			5" **Topsoil -** Medium Compact, Moist, Sandy, Black w/occ Pebble					
	1							
6A	2			3				
SS				5				
	3		**Clay -** Stiff, Moist, Sandy, Brown w/occ Pebble & Oxidation	5				
			(CL - Low Plasticity Clay)					
	4							
6B				5				
SS	5			8	16.7	140.1	11264	14.7
			5'6"	9				
	6							
6C	7		**Clay -** Very Stiff, Moist, Brown w/Pebble	6				
SS				13				
	8			16				
			8'6"					
	9							
6D				8				
SS	10			11				
				16				
	11							
	12							
	13		**Sand -** Compact, Moist, Silty, Brown					
	14							
6E				7				
SS	15			11				
				13				
	16							
	17		17'0"					
	18							
	19		**Sand -** Compact, Wet, Brown					
6F				4				
SS	20			5				
			20'6"	8				
	21		**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	17	FT.	9	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	16	FT.	4	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES Heavy				

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 7
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	1	**Topsoil -** Medium Compact, Moist, Sandy, Brown w/Roots					
		1'0"					
7A SS	2		2				
	3		3				
			5				
	4	**Clay -** Firm, Moist, Silty, Sandy, Variegated					
7B		**(CL - Low Plasticity Clay)**	3				
SS	5		3	24.3	129.4	4867	15.5
			5				
	6						
		6'0"					
7C SS	7	**Clay -** Very Stiff, Moist, Silty, Sandy, Brown w/Wet Sand Seams	3				
			7				
	8		9				
		8'0"					
	9	**Clay -** Very Stiff, Moist, Silty, Sandy, Brown & Blue					
7D			8				
SS	10		9				
		10'0"	10				
	11						
	12						
	13						
		Clay - Stiff to Very Stiff, Moist, Silty, Blue					
	14						
7E			6				
SS	15		6				
			7				
	16						
		16'6"					
	17						
	18						
		Clay - Extremely Stiff, Moist, Silty, Blue					
	19						
7F			11				
SS	20		16				
			20				
	21	**Continued**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	6	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	13	FT.	4	INS.
G.W. AFTER 10 HOURS	4	FT.	2	INS.
G.W. VOLUMES	Heavy			

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 7
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	21							
	22							
	23		**Clay -** Extremely Stiff, Moist, Silty, Blue					
	24							
7G				15				
SS	25			16				
			25'6"	19				
	26		**End of Boring**					
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	6	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	13	FT.	4	INS.
G.W. AFTER 10 HOURS	4	FT.	2	INS.
G.W. VOLUMES	Heavy			

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 8
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		6" **Topsoil -** Medium Compact, Moist, Sandy, Clayey, Black w/Roots					
	1						
8A	2		3				
SS			4				
	3	**Clay -** Stiff, Moist, Silty, Sandy, Variegated	5				
		(CL - Low Plasticity Clay)					
	4						
8B			3				
SS	5	5'0"	4	25.8	125.2	2040	15.5
			4				
	6	6'0" **Clay -** Stiff, Moist, Silty, Sandy, Variegated w/Brown Sand Seams					
8C	7		4				
SS			6				
	8	**Clay -** Stiff, Moist, Silty, Sandy, Brown	10				
	9						
8D		9'6"	6				
SS	10		7				
			7				
	11						
		Clay - Stiff, Moist, Silty, Blue					
	12						
	13	13'0"					
	14						
8E			3				
SS	15	**Sand -** Compact, Wet, Brown	4				
			7				
	16						
	17	17'0"					
	18						
	19	**Clay -** Stiff, Moist, Silty, Sandy, Blue					
8F			5				
SS	20		5				
		20'6"	5				
	21	**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	5	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	7	FT.	0	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES Heavy				

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 9
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			6" **Topsoil -** Compact, Moist, Sandy, Black w/Roots					
	1							
9A	2			6				
SS			**Sand -** Compact, Moist, Brown w/Pebbles	7				
	3			7				
			3'9"					
	4							
9B				10				
SS	5			10	5.9			
				13				
	6							
9C	7			12				
SS				15				
	8			17				
			Sand - Compact to Very Compact, Moist, Brown w/Pebble & Stone **(SM - Silty Sand)**					
	9							
9D				13				
SS	10			14				
				16				
	11							
	12							
	13		13'0"					
	14							
9E				4				
SS	15			5				
				6				
	16							
	17		**Sand -** Compact, Wet, Brown w/Gravel					
	18							
	19							
9F				4				
SS	20			4				
			20'6"	6				
	21		**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	13	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	11	FT.	7	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES	Heavy			

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 10
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		4" **Topsoil -** Medium Compact, Moist, Sandy, Black w/Roots					
	1						
10A	2		2				
SS			3				
	3		3				
		Sand - Medium Compact to Compact, Moist, Brown					
	4						
10B			3				
SS	5		5				
			5				
	6	6'0"					
10C	7		3				
SS			3	16.5	106.3		
	8		5				
		Sand - Medium Compact to Compact, Wet, Brown					
	9	**(SM - Silty Sand)**					
10D			3				
SS	10		4				
			6				
	11						
		11'6"					
	12						
	13	**Sand -** Compact, Wet, Grey					
	14						
10E		14'6"	2				
SS	15		4				
			5				
	16						
	17						
	18	**Clay -** Stiff, Moist, Sandy, Blue w/Wet Sand Seams					
	19						
10F			5				
SS	20		6				
		20'6"	6				
	21	**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	6	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	6	FT.	6	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES Heavy				

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 11
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/9/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		5" **Topsoil -** Compact, Moist, Sandy, Dark Brown w/Roots					
	1						
11A	2		4				
SS			7				
	3		7				
		Sand - Medium Compact to Compact, Moist, Brown					
	4	**(SP - Poorly Graded Sand)**					
11B			3				
SS	5		4	3.1	93.5		
			5				
	6						
		6'9"					
11C	7		3				
SS		7'6" **Clay -** Stiff, Moist, Sandy, Brown	6				
	8		7				
		8'6" **Clay -** Stiff, Moist, Silty, Sandy, Blue w/Wet Sand Seams					
	9						
11D			7				
SS	10		6				
			10				
	11						
	12						
	13	**Clay -** Stiff, Moist, Blue w/Wet Sand Seams					
	14						
11E			4				
SS	15		6				
			9				
	16						
	17	17'0"					
	18						
	19	**Clay -** Very Stiff, Moist, Silty, Sandy, Blue					
11F			6				
SS	20		9				
		20'6"	11				
	21	**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	7	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	11	FT.	6	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES	Light			

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 12
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		5" **Topsoil -** Compact, Moist, Sandy, Dark Brown w/Roots					
	1						
12A	2	**Possible Fill Sand -** Compact, Moist, Brown w/Pebble &	5				
SS		occ/Stone	7				
	3		7				
		3'6"					
	4						
12B			2				
SS	5		3	12.2	121.8		
		Possible Fill Sand - Medium Compact, Moist, Clayey, Brown	4				
	6	w/occ Pebble & Stone **(SC - Clayey Sand)**					
12C	7		3				
SS		7'7"	4				
	8		5				
		8'6" **Clay -** Stiff, Moist, Sandy, Variegated w/Black Tint					
	9						
12D		9'6" **Clay -** Stiff, Moist, Silty, Blue	8				
SS	10		9				
			11				
	11						
	12						
	13						
	14						
12E			4				
SS	15	**Sand -** Compact, Wet, Fine, Grey	4				
			7				
	16						
	17						
	18						
	19						
12F			7				
SS	20		8				
		20'6"	9				
	21	**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	13	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	12	FT.	7	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES Heavy				

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 13
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		6" **Topsoil -** Medium Compact, Moist, Sandy, Dark Brown w/Roots					
	1						
13A	2	**Sand -** Medium Compact, Moist, Brown w/occ Pebble & Stone	3				
SS			4				
	3		4				
		3'6"					
	4						
13B		**Clay -** Very Stiff, Moist, Silty, Sandy, Variegated	4				
SS	5	**(CL - Low Plasticity Clay)**	7	18.6	132.2	8029	15.5
			9				
	6	6'0"					
13C	7	**Clay -** Very Stiff, Moist, Silty, Sandy, Brown & Blue	5				
SS			7				
	8	8'3"	10				
	9						
13D			4				
SS	10	**Clay -** Stiff, Moist, Silty, Sandy, Blue	6				
			8				
	11						
		11'6"					
	12						
	13						
	14						
13E			7				
SS	15		9				
			10				
	16	**Clay -** Very Stiff, Moist, Silty, Sandy, Blue w/occ Pebble					
	17						
	18						
	19						
13F			8				
SS	20		11				
		20'6"	12				
	21	**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. ON COMPLETION	FT.	INS.
G.W. AFTER HOURS	FT.	INS.
G.W. VOLUMES None		

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 14
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			4" **Topsoil -** Medium Compact, Moist, Sandy, Dark Brown w/Roots					
	1							
14A	2			3				
SS			**Sand -** Medium Compact, Moist, Slightly Clayey, Brown w/Pebble	3				
	3			5				
	4							
14B			4'6"	3				
SS	5			5	12.9	134.5	4988	12.1
				8				
	6		**Clay -** Stiff, Moist, Sandy, Variegated **(CL - Low Plasticity Clay)**					
14C	7		7'0"	8				
SS				12				
	8			13				
	9							
14D			**Clay -** Very Stiff to Extremely Stiff, Moist, Silty, Sandy, Brown	10				
SS	10		w/occ Pebble & Stone	15				
				19				
	11							
			11'6"					
	12							
	13							
	14							
14E				8				
SS	15			9				
				9				
	16		**Clay -** Very Stiff, Moist, Sandy, Blue w/occ Pebble					
	17							
	18							
	19							
14F				7				
SS	20			8				
			20'6"	10				
	21		**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. ON COMPLETION	FT.	INS.
G.W. AFTER HOURS	FT.	INS.
G.W. VOLUMES None		

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 15
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 9/7/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		6" **Topsoil -** Medium Compact, Moist, Sandy, Dark Brown w/Roots					
	1						
		Sand - Medium Compact, Moist, Brown w/Pebble					
15A	2		3				
SS		2'6"	4				
	3		5				
	4	**Clay -** Stiff, Moist, Silty, Sandy, Variegated w/occ Pebble					
15B			3				
SS	5	**(CL - Low Plasticity Clay)**	4	14.3	131.5	2482	15.5
			6				
	6	6'0"					
15C	7		5				
SS			8				
	8		14				
	9						
15D		**Clay -** Very Stiff, Moist, Sandy, Brown	8				
SS	10		13				
			17				
	11						
	12						
		12'6"					
	13						
	14						
15E			10				
SS	15		11				
			12				
	16						
	17	**Clay -** Very Stiff, Moist, Silty, Sandy, Blue w/occ Pebble					
	18						
	19						
15F			10				
SS	20		12				
		20'6"	15				
	21	**End of Boring**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. ON COMPLETION	FT.	INS.
G.W. AFTER HOURS	FT.	INS.
G.W. VOLUMES None		

Construction Testing Services
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FAX: (810) 603-0786

JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 16
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 10/25/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
			4" **Asphalt**					
	1		1'0" **Fill Sand -** Medium Compact, Moist, Dark Brown w/Broken Asphalt					
16A	2			2				
SS			**Sand -** Medium Compact, Moist, Brown w/Pebble	3				
	3		2'8"	5				
			3'6" **Clay -** Firm, Moist, Silty, Sandy, Variegated w/Green Tint					
	4							
16B				1				
SS	5			1	15.2			
				1				
	6							
16C	7			0				
SS				0				
	8		**Sand -** Loose, Wet, Fine, Brown **(SM-Silty Sand)**	1				
	9							
16D				0				
SS	10			0				
				1				
	11							
	12		12'0"					
	13							
	14							
16E				4				
SS	15		**Clay -** Stiff, Moist, Silty, Sandy, Blue w/occ Pebble	5				
				7				
	16							
	17		17'0"					
	18							
	19		**Clay -** Extremely Stiff, Moist, Sandy, Blue w/occ Pebble					
16F				9				
SS	20			16				
				18				
	21		**Continued**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	3	FT.	6	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	2	FT.	6	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES Heavy				

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 16
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 10/25/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	21							
	22							
	23							
	24							
16G				9				
SS	25		**Clay -** Extremely Stiff, Moist, Sandy, Blue w/occ Pebble	19				
				22				
	26							
	27							
	28							
	29							
16H				11				
SS	30			18				
			30'6"	24				
	31		**End of Boring**					
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	3	FT.	6	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	2	FT.	6	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES	Heavy			

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 17
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 10/25/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
		4" **Topsoil -** Medium Compact, Moist, Sandy, Black w/Roots					
	1						
		Sand - Medium Compact, Moist, Brown w/Pebble & occ/Stone					
17A	2		3				
SS		2'9"	3				
	3	**Clay -** Firm, Moist, Silty, Sandy, Variegated w/Green Tint,	2				
		Possible Swamp Bottom					
	4	4'0"					
17B			1				
SS	5	**Clay -** Firm, Moist, Silty, Sandy, Variegated w/occ Pebble	2				
			2				
	6	6'0"					
17C	7		2				
SS			3	14.7	132.8	2982	15.5
	8	**Clay -** Stiff, Moist, Silty, Sandy, Brown **(CL - Low Plasticity Clay)**	6				
	9						
17D		9'6"	3				
SS	10		5				
			14				
	11	**Clay -** Very Stiff, Moist, Silty, Sandy, Blue w/Brown Sand Seams					
		11'9"					
	12						
	13						
		Clay - Stiff, Moist, Silty, Sandy, Blue w/occ Pebble					
	14						
17E			3				
SS	15	15'0"	4				
			6				
	16	**Clay -** Stiff, Moist, Silty, Sandy, Blue w/occ Pebble & Wet Grey					
		Sand Seams					
	17	17'0"					
	18						
	19	**Clay -** Extremely Stiff, Moist, Silty, Sandy, Blue w/occ Pebble					
17F			10				
SS	20		18				
			22				
	21	**Continued**					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	15	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	23	FT.	6	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES Heavy				

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JOB NO. S-19-219 **LOG OF SOIL BORING NO.** 17
PROJECT: City of Flint Secondary Water Supply
LOCATION: Flint, Michigan
DATE: 10/25/19 **SURFACE ELEVATION:** Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	21							
	22							
	23							
	24							
17G				10				
SS	25		**Clay -** Extremely Stiff, Moist, Silty, Sandy, Blue w/occ Pebble	13				
				14				
	26							
	27							
	28							
	29							
17H				12				
SS	30			17				
			30'6"	18				
	31		**End of Boring**					
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
OTHER -

BORING PLUGGED WITH NATURAL SOIL

*** The soil descriptions shown on the logs are from visual observations. No classification tests were performed.**

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	15	FT.	0	INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. ON COMPLETION	23	FT.	6	INS.
G.W. AFTER HOURS		FT.		INS.
G.W. VOLUMES Heavy				

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MECHANICAL ANALYSIS REPORT

Date:	**1/19/2019**	**Job No.**	**S-19-219**	**Client:**	**Wade Trim**
Project:	**Secondary Water Supply**	**Location:**	**Flint, MI**	**Supplier:**	**On-Site**
Material:	**Granular**	**Sample Location:**	**1B**	**Spec.:**	

SIEVE SIZE	SPEC	WEIGHT RETAINED	FRACTION RETAINED	% RETAINED	CUM. PASS
1 1/2"		0.0	0.0	0.0	100
1"		0.0	0.0	0.0	100
3/4"		0.0	0.0	0.0	100
1/2"		4.1	3.1	3.1	97
3/8"		1.2	0.9	4.1	96
#4		6.8	5.2	9.3	91
#8		6.1	4.7	14.0	86
#16		2.4	1.8	15.8	84
#30		12.2	9.4	25.2	75
#50		15.7	12.1	37.3	63
#100		35.3	27.1	64.4	36
#200		13.6	10.4	74.8	25
LBW		32.8	25.2	100.0	0
TOTAL		130.2			

			WT (gm)	%	SPEC %
DRY WT.	130.2	CRUSHED PARTICLES			
WASH WT.	99.0	CLAY-IRONSTONE			
LOSS	31.2	(1) SOFT PARTICLES INCLUDING			
PAN	1.6	CLAY-IRONSTONE			
TOTAL LBW	32.8	(2) CHERT			
% LBW	25.2	SUM of (1)+(2)	0.0		

Under the Unified Classification System this material would be classified SM or Silty Sand

Tested By: Jack F. Geerlings, P.E. Reviewed by: Jack F. Geerlings, P.E.

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MECHANICAL ANALYSIS REPORT

Date:	**1/19/2019**	**Job No.**	**S-19-219**	**Client:**	**Wade Trim**
Project:	**Secondary Water Supply**	**Location:**	**Flint, MI**	**Supplier:**	**On-Site**
Material:	**Granular**	**Sample Location:**	**3B**	**Spec.:**	

SIEVE SIZE	SPEC	WEIGHT RETAINED	FRACTION RETAINED	% RETAINED	CUM. PASS
1 1/2"		0.0	0.0	0.0	100
1"		0.0	0.0	0.0	100
3/4"		0.0	0.0	0.0	100
1/2"		0.0	0.0	0.0	100
3/8"		0.0	0.0	0.0	100
#4		0.0	0.0	0.0	100
#8		0.0	0.0	0.0	100
#16		1.0	0.9	0.9	99
#30		4.7	4.2	5.1	95
#50		5.9	5.2	10.3	90
#100		50.6	44.9	55.2	45
#200		33.6	29.8	85.0	15
LBW		16.9	15.0	100.0	0
TOTAL		112.7			

			WT (gm)	%	SPEC %
DRY WT.	112.7	CRUSHED PARTICLES			
WASH WT.	97.0	CLAY-IRONSTONE			
LOSS	15.7	(1) SOFT PARTICLES INCLUDING			
PAN	1.2	CLAY-IRONSTONE			
TOTAL LBW	16.9	(2) CHERT			
% LBW	15.0	SUM of (1)+(2)	0.0		

Under the Unified Classification System this material would be classified SM or Silty Sand

Tested By: Jack F. Geerlings, P.E. Reviewed by: Jack F. Geerlings, P.E.

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MECHANICAL ANALYSIS REPORT

Date:	**1/19/2019**	**Job No.**	**S-19-219**	**Client:**	**Wade Trim**
Project:	**Secondary Water Supply**	**Location:**	**Flint, MI**	**Supplier:**	**On-Site**
Material:	**Granular**	**Sample Location:**	**9B**	**Spec.:**	

SIEVE SIZE	SPEC	WEIGHT RETAINED	FRACTION RETAINED	% RETAINED	CUM. PASS
1 1/2"		0.0	0.0	0.0	100
1"		0.0	0.0	0.0	100
3/4"		0.0	0.0	0.0	100
1/2"		0.0	0.0	0.0	100
3/8"		2.8	2.6	2.6	97
#4		21.0	19.2	21.8	78
#8		22.1	20.3	42.1	58
#16		10.1	9.3	51.3	49
#30		18.9	17.3	68.7	31
#50		4.2	3.8	72.5	27
#100		6.5	6.0	78.5	22
#200		5.0	4.6	83.0	17
LBW		18.5	17.0	100.0	0
TOTAL		109.1			

			WT (gm)	%	SPEC %
DRY WT.	109.1	CRUSHED PARTICLES			
WASH WT.	91.3	CLAY-IRONSTONE			
LOSS	17.8	(1) SOFT PARTICLES INCLUDING			
PAN	0.7	CLAY-IRONSTONE			
TOTAL LBW	18.5	(2) CHERT			
% LBW	17.0	SUM of (1)+(2)	0.0		

Under the Unified Classification System this material would be classified SM or Silty Sand

Tested By: Jack F. Geerlings, P.E. Reviewed by: Jack F. Geerlings, P.E.

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MECHANICAL ANALYSIS REPORT

Date:	**1/19/2019**	**Job No.**	**S-19-219**	**Client:**	**Wade Trim**
Project:	**Secondary Water Supply**	**Location:**	**Flint, MI**	**Supplier:**	**On-Site**
Material:	**Granular**	**Sample Location:**	**10C**	**Spec.:**	

SIEVE SIZE	SPEC	WEIGHT RETAINED	FRACTION RETAINED	% RETAINED	CUM. PASS
1 1/2"		0.0	0.0	0.0	100
1"		0.0	0.0	0.0	100
3/4"		0.0	0.0	0.0	100
1/2"		0.0	0.0	0.0	100
3/8"		0.0	0.0	0.0	100
#4		0.0	0.0	0.0	100
#8		0.3	0.2	0.2	100
#16		0.8	0.7	0.9	99
#30		6.4	5.3	6.2	94
#50		9.9	8.2	14.5	86
#100		48.0	39.9	54.4	46
#200		33.2	27.6	82.0	18
LBW		21.7	18.0	100.0	0
TOTAL		120.3			

			WT (gm)	%	SPEC %
DRY WT.	120.3	CRUSHED PARTICLES			
WASH WT.	100.1	CLAY-IRONSTONE			
LOSS	20.2	(1) SOFT PARTICLES INCLUDING			
PAN	1.5	CLAY-IRONSTONE			
TOTAL LBW	21.7	(2) CHERT			
% LBW	18.0	SUM of (1)+(2)	0.0		

Under the Unified Classification System this material would be classified SM or Silty Sand

Tested By: Jack F. Geerlings, P.E. Reviewed by: Jack F. Geerlings, P.E.

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MECHANICAL ANALYSIS REPORT

Date:	**1/19/2019**	**Job No.**	**S-19-219**	**Client:**	**Wade Trim**
Project:	**Secondary Water Supply**	**Location:**	**Flint, MI**	**Supplier:**	**On-Site**
Material:	**Granular**	**Sample Location:**	**11B**	**Spec.:**	

SIEVE SIZE	SPEC	WEIGHT RETAINED	FRACTION RETAINED	% RETAINED	CUM. PASS
1 1/2"		0.0	0.0	0.0	100
1"		0.0	0.0	0.0	100
3/4"		0.0	0.0	0.0	100
1/2"		0.0	0.0	0.0	100
3/8"		0.0	0.0	0.0	100
#4		0.0	0.0	0.0	100
#8		0.0	0.0	0.0	100
#16		0.0	0.0	0.0	100
#30		0.0	0.0	0.0	100
#50		1.7	1.7	1.7	98
#100		86.6	84.4	86.1	14
#200		10.5	10.2	96.3	4
LBW		3.8	3.7	100.0	0
TOTAL		102.6			

			WT (gm)	%	SPEC %
DRY WT.	102.6	CRUSHED PARTICLES			
WASH WT.	99.2	CLAY-IRONSTONE			
LOSS	3.4	(1) SOFT PARTICLES INCLUDING			
PAN	0.4	CLAY-IRONSTONE			
TOTAL LBW	3.8	(2) CHERT			
% LBW	3.7	SUM of (1)+(2)	0.0		

Under the Unified Classification System this material would be classified SP or Poorly Graded Sand

Tested By: Jack F. Geerlings, P.E. Reviewed by: Jack F. Geerlings, P.E.

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MECHANICAL ANALYSIS REPORT

Date:	**1/19/2019**	**Job No.**	**S-19-219**	**Client:**	**Wade Trim**
Project:	**Secondary Water Supply**	**Location:**	**Flint, MI**	**Supplier:**	**On-Site**
Material:	**Granular**	**Sample Location:**	**12B**	**Spec.:**	

SIEVE SIZE	SPEC	WEIGHT RETAINED	FRACTION RETAINED	% RETAINED	CUM. PASS
1 1/2"		0.0	0.0	0.0	100
1"		0.0	0.0	0.0	100
3/4"		0.0	0.0	0.0	100
1/2"		0.0	0.0	0.0	100
3/8"		1.7	1.2	1.2	99
#4		4.0	2.9	4.1	96
#8		4.1	3.0	7.1	93
#16		2.9	2.1	9.2	91
#30		10.1	7.3	16.5	83
#50		6.2	4.5	21.0	79
#100		22.5	16.3	37.4	63
#200		14.9	10.8	48.2	52
LBW		71.4	51.8	100.0	0
TOTAL		137.8			

			WT (gm)	%	SPEC %
DRY WT.	137.8	CRUSHED PARTICLES			
WASH WT.	68.0	CLAY-IRONSTONE			
LOSS	69.8	(1) SOFT PARTICLES INCLUDING			
PAN	1.6	CLAY-IRONSTONE			
TOTAL LBW	71.4	(2) CHERT			
% LBW	51.8	SUM of (1)+(2)	0.0		

Under the Unified Classification System this material would be classified SC or Silty Clay. The loss by wash on this sample is over 50% so it could also be classified as CL or a Clay with Low Plasticity.

Tested By: Jack F. Geerlings, P.E. Reviewed by: Jack F. Geerlings, P.E.

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MECHANICAL ANALYSIS REPORT

Date:	**11/8/2019**	**Job No.**	**S-19-219**	**Client:**	**Wade Trim**
Project:	**Secondary Water Supply**	**Location:**	**Flint, MI**	**Supplier:**	**On-Site**
Material:	**Granular**	**Sample Location:**	**16B**	**Spec.:**	

SIEVE SIZE	SPEC	WEIGHT RETAINED	FRACTION RETAINED	% RETAINED	CUM. PASS
1 1/2"		0.0	0.0	0.0	100
1"		0.0	0.0	0.0	100
3/4"		0.0	0.0	0.0	100
1/2"		0.0	0.0	0.0	100
3/8"		0.0	0.0	0.0	100
#4		0.0	0.0	0.0	100
#8		0.0	0.0	0.0	100
#16		0.0	0.0	0.0	100
#30		0.0	0.0	0.0	100
#50		1.6	1.5	1.5	98
#100		85.6	82.1	83.7	16
#200		10.7	10.3	94.0	6
LBW		6.3	6.0	100.0	0
TOTAL		104.2			

			WT (gm)	%	SPEC %
DRY WT.	104.2	CRUSHED PARTICLES			
WASH WT.	98.3	CLAY-IRONSTONE			
LOSS	5.9	(1) SOFT PARTICLES INCLUDING			
PAN	0.4	CLAY-IRONSTONE			
TOTAL LBW	6.3	(2) CHERT			
% LBW	6.0	SUM of (1)+(2)	0.0		

Under the Unified Classification System this material would be classified SP or Poorly Graded Sand

Tested By: Jack F. Geerlings, P.E. Reviewed by: Jack F. Geerlings, P.E.

Construction Testing Services
3300 E. Bristol Rd
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www.constructiontesting.net

UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**2B**	**Depth:**	**5'**		
Unconfined Compression Strength (lb./ft.^{2})			**3938**		
Strain at Failure (%)			**13.8**		
Natural Unit Weight (lb./ft.^{3})			**129.4**		

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	3.3	317
0.050	1.7	1.51	6.7	639
0.075	2.6	1.52	9.7	916
0.100	3.4	1.54	12.8	1198
0.125	4.3	1.55	16.0	1485
0.150	5.2	1.57	19.2	1766
0.175	6.0	1.58	23.0	2096
0.200	6.9	1.59	26.3	2375
0.225	7.8	1.61	29.9	2675
0.250	8.6	1.62	33.9	3004
0.275	9.5	1.64	36.5	3204
0.300	10.3	1.66	39.3	3417
0.325	11.2	1.67	42.1	3625
0.350	12.1	1.69	44.2	3769
0.375	12.9	1.71	45.9	3876
0.400	13.8	1.72	47.1	3938
0.425	14.7	1.74		0
0.450	15.5	1.76		0

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	146.3
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	124.4
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	17.6
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	129.4

* Moisture content was determined on entire sample after compression test

Construction Testing Services
3300 E. Bristol Rd
Burton, MI 48529
(810) 603-0766 (bus.) (810) 603-0786 (fax)
www.constructiontesting.net

UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**4B**	**Depth:**	**5'**		

Unconfined Compression Strength (lb./ft.^{2})	**1778**
Strain at Failure (%)	**15.5**
Natural Unit Weight (lb./ft.^{3})	**130.8**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	2.6	250
0.050	1.7	1.51	4.5	429
0.075	2.6	1.52	5.7	538
0.100	3.4	1.54	7.1	665
0.125	4.3	1.55	8.4	779
0.150	5.2	1.57	9.7	892
0.175	6.0	1.58	11.1	1011
0.200	6.9	1.59	12.3	1111
0.225	7.8	1.61	13.5	1208
0.250	8.6	1.62	14.7	1303
0.275	9.5	1.64	15.8	1387
0.300	10.3	1.66	16.8	1461
0.325	11.2	1.67	17.8	1533
0.350	12.1	1.69	18.7	1595
0.375	12.9	1.71	19.6	1655
0.400	13.8	1.72	20.3	1697
0.425	14.7	1.74	21.0	1738
0.450	15.5	1.76	21.7	1778

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	147.9
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	133.4
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	10.9
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	130.8

* Moisture content was determined on entire sample after compression test

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UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**5B**	**Depth:**	**5'**		

Unconfined Compression Strength (lb./ft.^{2})	**2097**
Strain at Failure (%)	**15**
Natural Unit Weight (lb./ft.^{3})	**122.3**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	1.6	154
0.050	1.7	1.51	2.5	238
0.075	2.6	1.52	3.4	321
0.100	3.4	1.54	4.3	403
0.125	4.3	1.55	5.3	492
0.150	5.2	1.57	6.4	589
0.175	6.0	1.58	7.5	683
0.200	6.9	1.59	8.7	786
0.225	7.8	1.61	10.1	903
0.250	8.6	1.62	11.5	1019
0.275	9.5	1.64	12.9	1132
0.300	10.3	1.66	14.4	1252
0.325	11.2	1.67	16.2	1395
0.350	12.1	1.69	18.0	1535
0.375	12.9	1.71	20.2	1706
0.400	13.8	1.72	21.9	1831
0.425	14.7	1.74	23.9	1978
0.450	15.5	1.76	25.6	2097

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	138.3
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	116.7
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	18.5
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	122.3

* Moisture content was determined on entire sample after compression test

Construction Testing Services
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www.constructiontesting.net

UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**6B**	**Depth:**	**5'**		

Unconfined Compression Strength (lb./ft.^{2})	**11264**
Strain at Failure (%)	**14.7**
Natural Unit Weight (lb./ft.^{3})	**140.1**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	15	1442
0.050	1.7	1.51	24.7	2354
0.075	2.6	1.52	34.1	3221
0.100	3.4	1.54	44.5	4167
0.125	4.3	1.55	52.5	4872
0.150	5.2	1.57	61.6	5665
0.175	6.0	1.58	70.5	6424
0.200	6.9	1.59	77.6	7006
0.225	7.8	1.61	85.1	7612
0.250	8.6	1.62	91.7	8126
0.275	9.5	1.64	97.8	8585
0.300	10.3	1.66	104.0	9042
0.325	11.2	1.67	109.1	9394
0.350	12.1	1.69	113.8	9704
0.375	12.9	1.71	118.8	10031
0.400	13.8	1.72	122.2	10216
0.425	14.7	1.74	136.1	11264
0.450	15.5	1.76	129.7	10626

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	158.4
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	135.7
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	16.7
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	140.1

* Moisture content was determined on entire sample after compression test

Construction Testing Services
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UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**7B**	**Depth:**	**5'**		

Unconfined Compression Strength (lb./ft.^{2})	**4867**
Strain at Failure (%)	**15.5**
Natural Unit Weight (lb./ft.^{3})	**129.4**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	6.9	663
0.050	1.7	1.51	11.1	1058
0.075	2.6	1.52	15.0	1417
0.100	3.4	1.54	19.2	1798
0.125	4.3	1.55	23.1	2144
0.150	5.2	1.57	27.1	2492
0.175	6.0	1.58	30.8	2807
0.200	6.9	1.59	34.4	3106
0.225	7.8	1.61	37.9	3390
0.250	8.6	1.62	41.1	3642
0.275	9.5	1.64	44.2	3880
0.300	10.3	1.66	47.1	4095
0.325	11.2	1.67	49.7	4280
0.350	12.1	1.69	52.2	4451
0.375	12.9	1.71	54.3	4585
0.400	13.8	1.72	56.1	4690
0.425	14.7	1.74	57.9	4792
0.450	15.5	1.76	59.4	4867

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	146.3
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	117.7
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	24.3
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	129.4

* Moisture content was determined on entire sample after compression test

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UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**8B**	**Depth:**	**5'**		

Unconfined Compression Strength (lb./ft.^{2})	**2040**
Strain at Failure (%)	**15.5**
Natural Unit Weight (lb./ft.^{3})	**125.2**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	1.4	135
0.050	1.7	1.51	2.3	219
0.075	2.6	1.52	3.5	331
0.100	3.4	1.54	4.8	449
0.125	4.3	1.55	6.0	557
0.150	5.2	1.57	7.4	681
0.175	6.0	1.58	8.8	802
0.200	6.9	1.59	10.3	930
0.225	7.8	1.61	12.0	1073
0.250	8.6	1.62	13.6	1205
0.275	9.5	1.64	15.3	1343
0.300	10.3	1.66	17.0	1478
0.325	11.2	1.67	18.8	1619
0.350	12.1	1.69	20.4	1740
0.375	12.9	1.71	21.9	1849
0.400	13.8	1.72	23.1	1931
0.425	14.7	1.74	24.0	1986
0.450	15.5	1.76	24.9	2040

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	141.6
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	112.6
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	25.8
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	125.2

* Moisture content was determined on entire sample after compression test

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UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**13B**	**Depth:**	**5'**		

Unconfined Compression Strength (lb./ft.^{2})	**8029**
Strain at Failure (%)	**15.5**
Natural Unit Weight (lb./ft.^{3})	**132.3**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	4.6	442
0.050	1.7	1.51	8.3	791
0.075	2.6	1.52	12.0	1134
0.100	3.4	1.54	16.1	1507
0.125	4.3	1.55	20.6	1912
0.150	5.2	1.57	25.7	2363
0.175	6.0	1.58	31.2	2843
0.200	6.9	1.59	36.7	3314
0.225	7.8	1.61	42.7	3820
0.250	8.6	1.62	49.5	4387
0.275	9.5	1.64	56.1	4924
0.300	10.3	1.66	62.4	5425
0.325	11.2	1.67	69.2	5959
0.350	12.1	1.69	76.0	6481
0.375	12.9	1.71	82.2	6941
0.400	13.8	1.72	88.0	7357
0.425	14.7	1.74	93.4	7730
0.450	15.5	1.76	98.0	8029

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	149.6
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	126.1
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	18.6
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	132.3

* Moisture content was determined on entire sample after compression test

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UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**14B**	**Depth:**	**5'**		

Unconfined Compression Strength (lb./ft.^{2})	**4988**
Strain at Failure (%)	**12.1**
Natural Unit Weight (lb./ft.^{3})	**134.5**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	9.4	904
0.050	1.7	1.51	14.8	1411
0.075	2.6	1.52	18.4	1738
0.100	3.4	1.54	23.1	2163
0.125	4.3	1.55	27.1	2515
0.150	5.2	1.57	31.5	2897
0.175	6.0	1.58	36.0	3280
0.200	6.9	1.59	40.0	3612
0.225	7.8	1.61	44.4	3972
0.250	8.6	1.62	47.7	4227
0.275	9.5	1.64	51.2	4494
0.300	10.3	1.66	54.5	4738
0.325	11.2	1.67	57.0	4908
0.350	12.1	1.69	58.5	4988
0.375	12.9	1.71	58.9	4973
0.400	13.8	1.72		0
0.425	14.7	1.74		0
0.450	15.5	1.76		0

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	152.1
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	134.7
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	12.9
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	134.5

* Moisture content was determined on entire sample after compression test

Construction Testing Services
3300 E. Bristol Rd
Burton, MI 48529
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UNCONFINED COMPRESSION TEST

Date:	**9/19/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**15B**	**Depth:**	**5'**		

Unconfined Compression Strength (lb./ft.^{2})	**2482**
Strain at Failure (%)	**15.5**
Natural Unit Weight (lb./ft.^{3})	**131.5**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	1.8	173
0.050	1.7	1.51	3.5	334
0.075	2.6	1.52	5.0	472
0.100	3.4	1.54	6.7	627
0.125	4.3	1.55	8.3	770
0.150	5.2	1.57	10.0	920
0.175	6.0	1.58	11.7	1066
0.200	6.9	1.59	13.5	1219
0.225	7.8	1.61	15.3	1369
0.250	8.6	1.62	17.0	1506
0.275	9.5	1.64	18.8	1650
0.300	10.3	1.66	20.6	1791
0.325	11.2	1.67	22.3	1920
0.350	12.1	1.69	24.0	2047
0.375	12.9	1.71	25.8	2178
0.400	13.8	1.72	27.4	2291
0.425	14.7	1.74	28.9	2392
0.450	15.5	1.76	30.3	2482

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	148.7
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	130.1
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	14.3
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	131.5

* Moisture content was determined on entire sample after compression test

Construction Testing Services
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UNCONFINED COMPRESSION TEST

Date:	**11/6/2019**	**Job No.**	**S-19-219**	**Project:**	**Flint Secondary Water Supply**
Sample:	**17C**	**Depth:**	**7.5"**		

Unconfined Compression Strength (lb./ft.^{2})	**2982**
Strain at Failure (%)	**15.5**
Natural Unit Weight (lb./ft.^{3})	**132.8**

Deflection in.	Strain %	Area in^2	Load lb.	Pressure lb/ft^2
0.025	0.9	1.50	2.1	202
0.050	1.7	1.51	4.3	410
0.075	2.6	1.52	6.0	567
0.100	3.4	1.54	8.1	758
0.125	4.3	1.55	9.9	919
0.150	5.2	1.57	11.8	1085
0.175	6.0	1.58	14.0	1276
0.200	6.9	1.59	16.2	1463
0.225	7.8	1.61	18.0	1610
0.250	8.6	1.62	20.4	1808
0.275	9.5	1.64	22.5	1975
0.300	10.3	1.66	24.7	2148
0.325	11.2	1.67	26.7	2299
0.350	12.1	1.69	28.8	2456
0.375	12.9	1.71	30.9	2609
0.400	13.8	1.72	32.8	2742
0.425	14.7	1.74	34.7	2872
0.450	15.5	1.76	36.4	2982

SAMPLE DIAMETER (in.)	1.375	WET WEIGHT (g)	150.2
SAMPLE LENGTH (in.)	2.900	DRY WEIGHT (g)	131.0
SAMPLE VOLUME (in.^{3})	4.306	MOISTURE (%) *	14.7
SAMPLE VOLUME (cm^3)	70.566	WET DENSITY pcf	132.8

* Moisture content was determined on entire sample after compression test

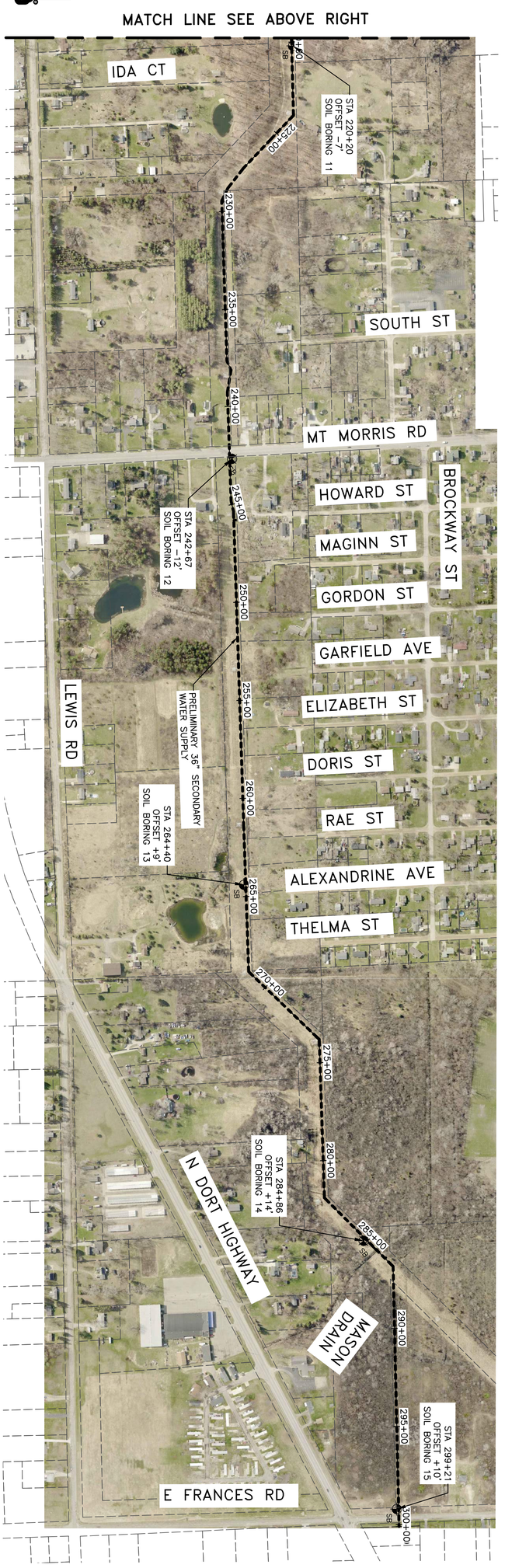
Know what's below. Call before you dig. 811

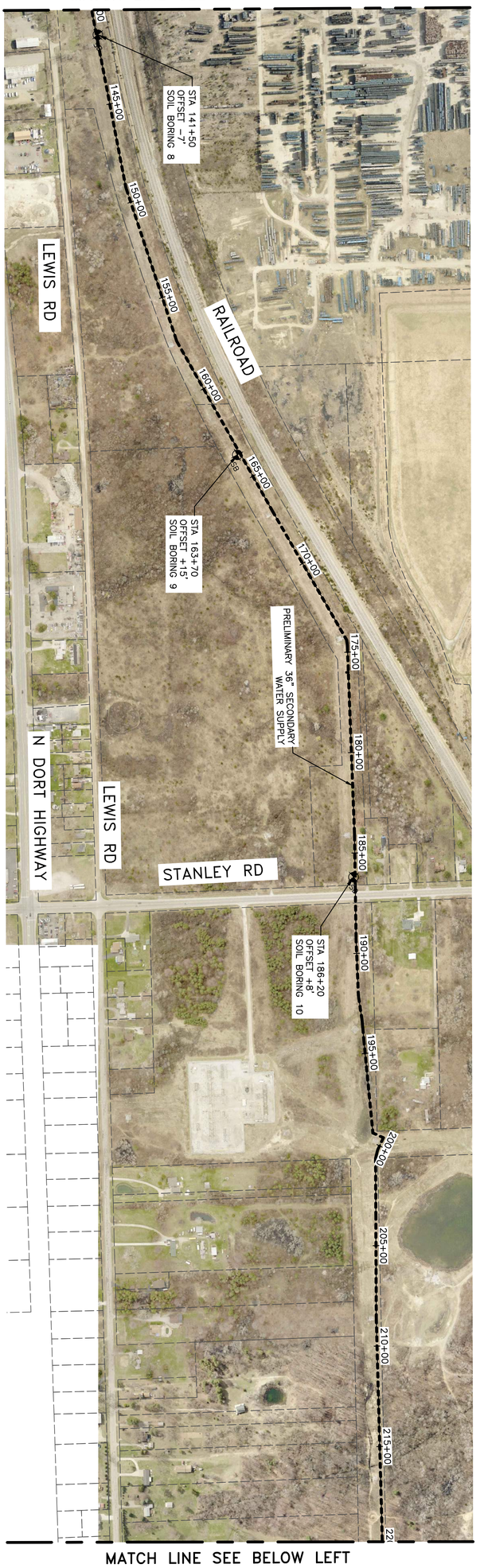
SHEET	JOB NO.	ISSUED FOR:	DATE:	BY:
1	COF1068.01F			

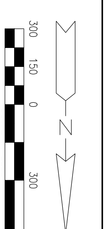
CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
PRELIMINARY ROUTE SHEET 1

WADE TRIM
555 S. Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555
www.wadetrim.com

REV#	DATE	DESCRIPTION	BY





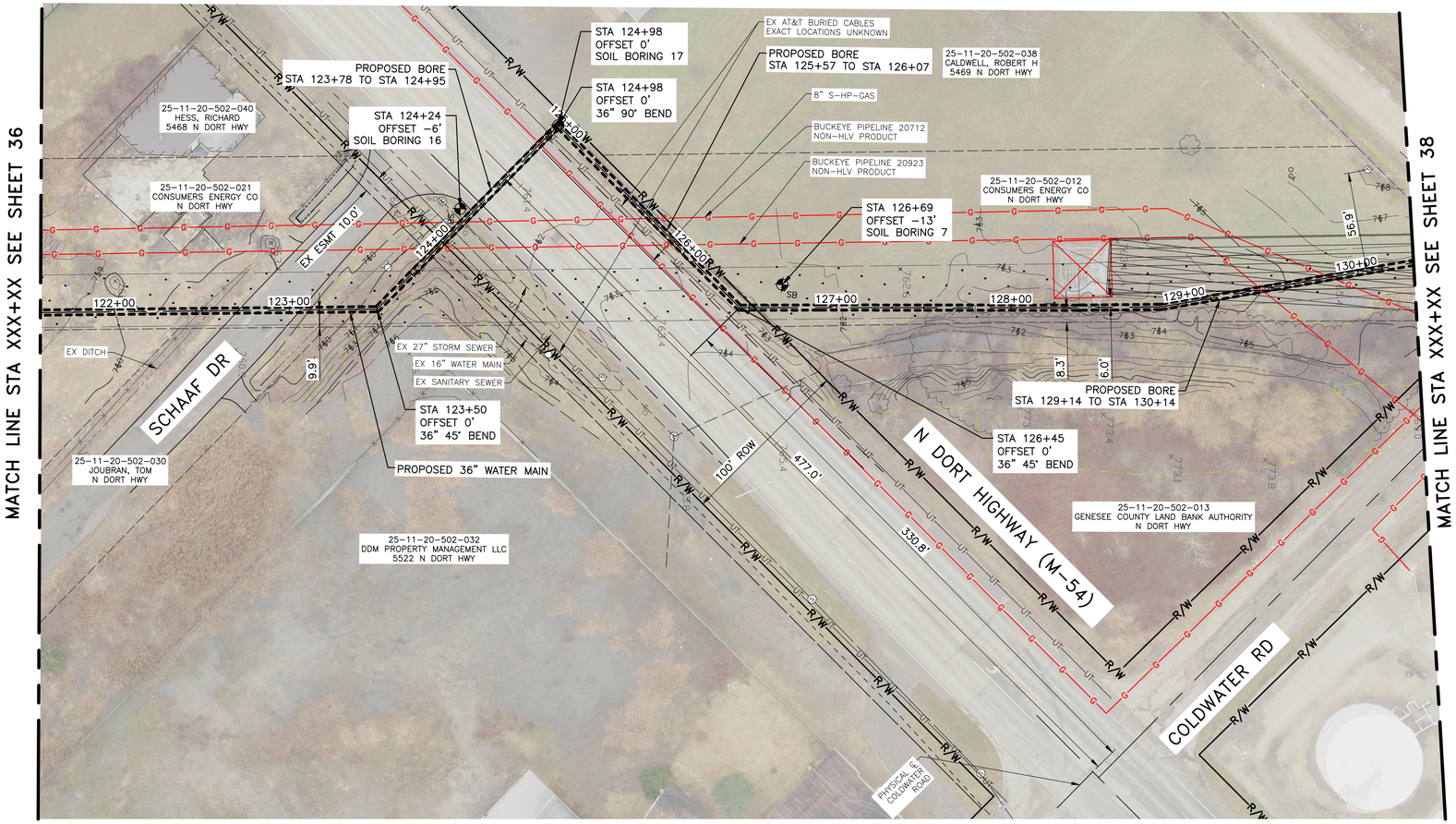


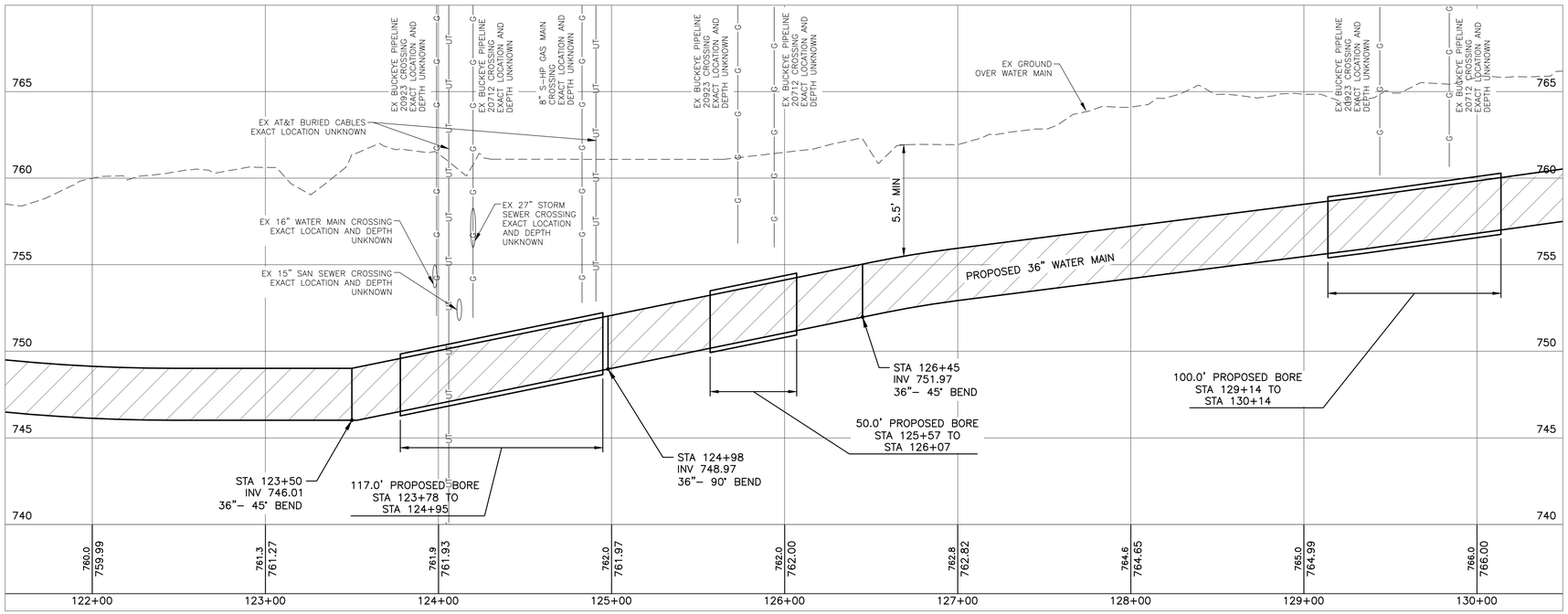
SHEET	JOB NO.	ISSUED FOR:	DATE:	BY:
2	COF1068.01F			

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
PRELIMINARY ROUTE SHEET 2

WADE TRIM
555 S. Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555
www.wadetrim.com

REV#	DATE	DESCRIPTION	BY





PRELIMINARY
10/14/19

811 Know what's below. Call before you dig.

PROJECT MANAGER: Jason R. Kenyon, PE
C:\PW_WORK2\D0948736\C1UP-PLTS-PLAN-PROF-3.DWG - PP-17 - PLOTTED 10/14/2019 4:17 PM BY RUGGLES, TIMOTHY
FIELD BOOK INFORMATION:

REV#	DATE	DESCRIPTION	BY

WADE TRIM
555 S. Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555
www.wadetrim.com

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502

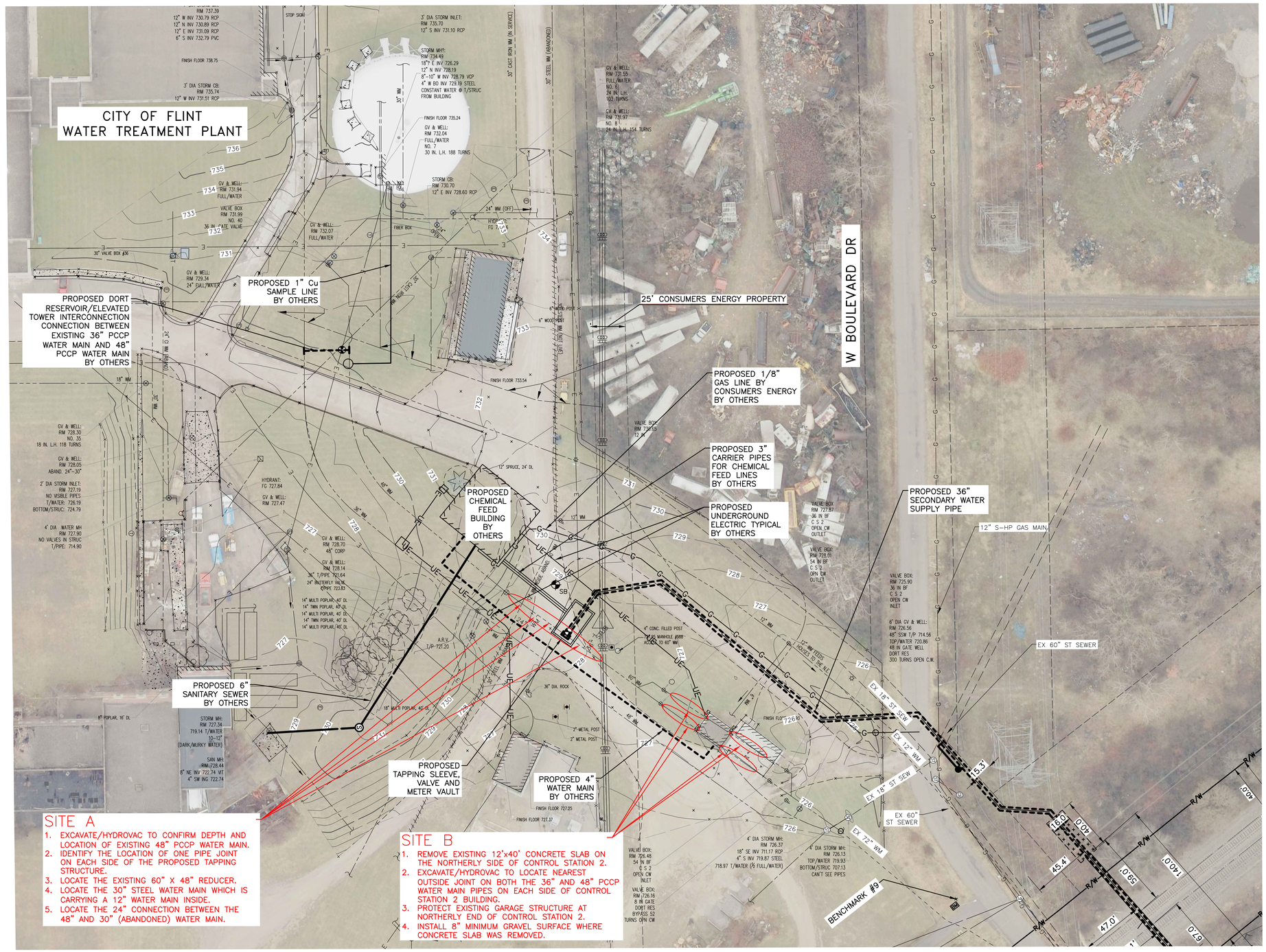
36" SECONDARY WATER SUPPLY
PLAN AND PROFILE SHEEET 17

ISSUED FOR: DATE: BY:

JOB NO. COF1068.01F

SHEET 37

Exhibit 10
Subsurface Utility Investigation



PROJECT MANAGER:Jason R. Kenyon, PE
C:\PW_WORK2\D0948736\CUP-PLTS-PLAN-PROF-1.DWG – SUBSURFACE UTILITY INVESTIGATION – PLOTTED 2/21/2020 10:07 AM BY RUGGLES, TIMOTHY
FIELD BOOK INFORMATION:

Know what's **below.** **Call** before you dig.

REV#	DATE	DESCRIPTION	BY

WADE TRIM
555 S. Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555
www.wadetrim.com

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY EXHIBIT
SUBSURFACE UTILITY INVESTIGATION

ISSUED FOR: DATE: BY:

JOB NO.
COF1068.01F

SHEET
EXHIBIT 10

SITE A
ITEMS 1-5

SITE B
ITEMS 1-4

EXHIBIT 10-A

Match Line - See Sheet 30 for Continuation

NORTH

2 - AIR RELEASE
1 - CORP.
ONLY

LIMITTOQUE
LYNCHBURG VA.
TYPE H
SERIAL # 321349
VALVE 30415
POS.-A
ORDER # 369507A

DIESEL ROOM
PUMPING STATION NO. 1
BOILER ROOM
SCREEN ROOM
INSPECTION COVER
UNDERGROUND RESERVOIR NO. 1
UNDERGROUND RESERVOIR NO. 2
OIL TANKS
ELECTRIC SUB-STATION
TRANS-FORMER
CONSUMERS POWER LINE
BURIED CABLE
Overhead Power Cable
Asphalt
Gravel
Road
Dirt Drive
WARE

Proposed 48" Water Main
Proposed 36" Water Main
Proposed 36" B.F. Valve
Proposed 48" Butterfly Valve
Proposed 36" Butterfly Valve
Proposed 36" Butterfly Valve and 36" Blind Flange
Proposed 36" Butterfly Valve and 36" Blind Flange for Possible Future Connection
Proposed 24" Butterfly Valve
Proposed 24" Gate Valve
Proposed 48" Gate Valve and Valve Basin
Proposed 1" O.D. Type K Copper Tube Air Line
Proposed Flow and Pressure Control Valve Building at No. 2 Underground Reservoir See Sheet 34 for Detail
Station No. 4
Proposed 72" Water Main
Proposed 24" Tee and Connection to Existing 36" Water Main
Contractor to remove & replace existing 36" C.I. 90° Bend with a 36" Tee and connect to proposed 36" Conc. Water Main.
Harness all joints of connection between 48" lines & 30" lines.
Note: Stockpile of Piping & Miscellaneous Material in area of Pipeline to be removed by City prior to Construction.
3" C.I. pipe drain from Sump pump discharge
3" C.I. Pipe drain from Sump pump Discharge
Elevated Transmission Line Proposed 36" Butterfly Valve
Proposed 24" Butterfly Valve
Proposed Flow and Pressure Control Valve Building at No. 2 Underground Reservoir See Sheet 34 for Detail
Proposed 1" O.D. Type K Copper Tube Air Line
Proposed 36" Butterfly Valve
Proposed 48" Gate Valve and Valve Basin
Proposed 72" Water Main
Proposed 24" Tee and Connection to Existing 36" Water Main
Proposed 36" Water Main
Proposed 48" Water Main
Proposed 24" Butterfly Valve
Proposed 36" Butterfly Valve and 36" Blind Flange
Proposed 36" Butterfly Valve and 36" Blind Flange for Possible Future Connection
Proposed 24" Gate Valve
Proposed 1" O.D. Type K Copper Tube Air Line
Proposed Flow and Pressure Control Valve Building at No. 2 Underground Reservoir See Sheet 34 for Detail
Station No. 4
Proposed 72" Water Main
Proposed 24" Tee and Connection to Existing 36" Water Main
Proposed 36" Water Main
Proposed 48" Water Main

Note:
See Sheet No. 31 for Profile of the Proposed Water Main Construction

Elevations shown on this Sheet are based on City Datum Elev. 711.87 at N.E. corner of the existing South Intake Headwall in Flint River near the Water Treatment Plant. To convert to elevations shown on Pipe line plan and Profile Sheet No. 3 thru 28 inclusive, deduct 1.25 Feet.

All utilities within Plant Site to be verified by Contractor in the field.

March Line

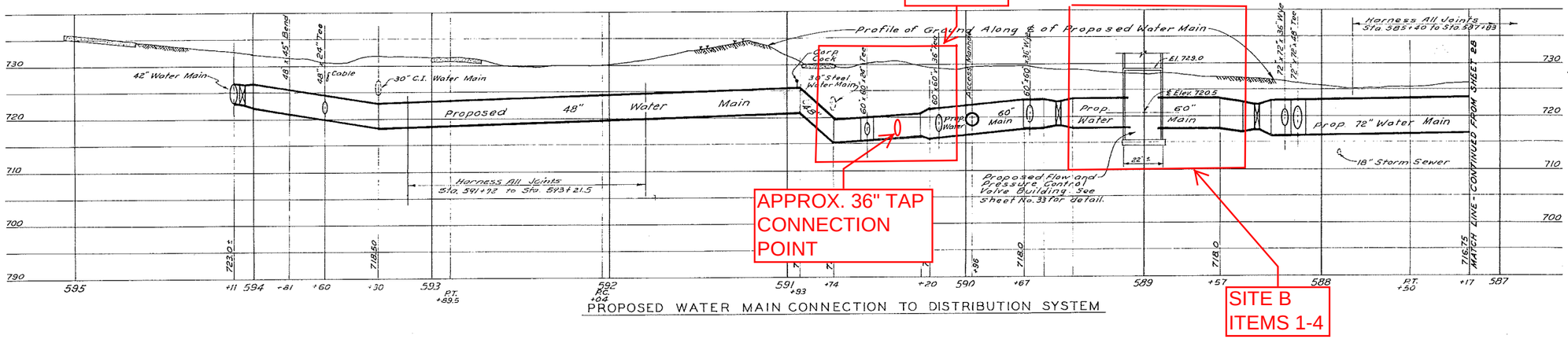
For Continuation See Sheet No. 28

CITY OF FLINT, MICHIGAN
FLINT DETROIT WATER SUPPLY PROJECT
SITE PLAN
AT EXISTING WATER TREATMENT PLANT

DRAWN BY K.N.	CONSOER, TOWNSEND & ASSOCIATES IN MICHIGAN CONSULTING ENGINEERS	SCALE 1"=30'-0"
DATE JAN. 1966		REVISED
CHECKED BY A.G.W.		SHEET NO. 29 OF 43 SHEETS
APPROVED BY Lee F. Nelson		

DIVISION A 64-117

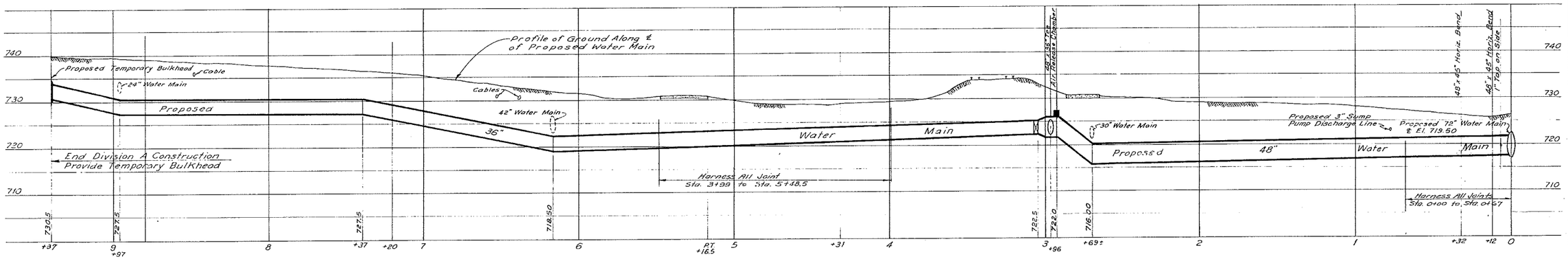
SITE A
ITEMS 1-5



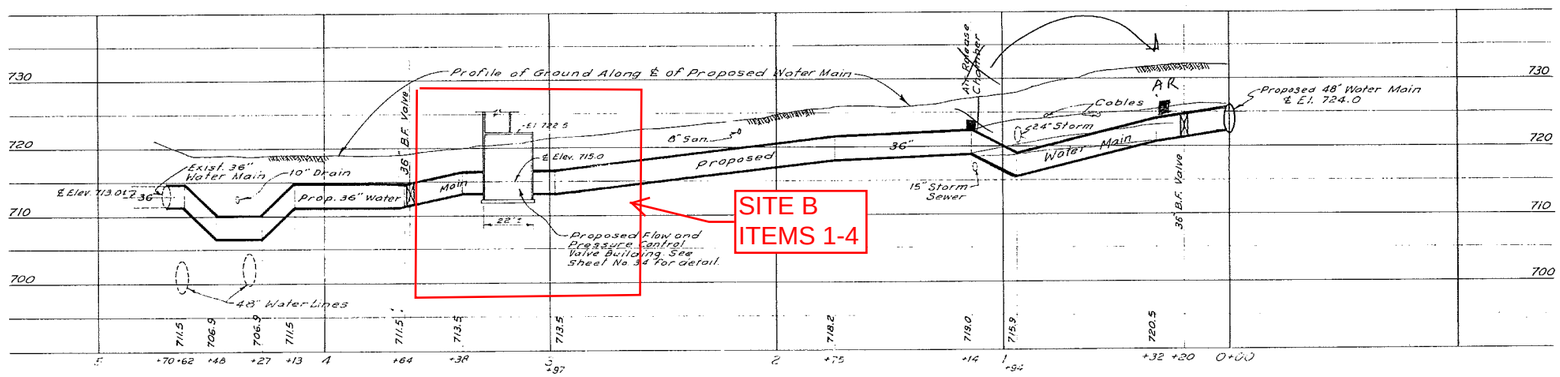
APPROX. 36" TAP CONNECTION POINT

SITE B
ITEMS 1-4

PROPOSED WATER MAIN CONNECTION TO DISTRIBUTION SYSTEM



PROPOSED WATER MAIN CONNECTION TO DORT RESERVOIR



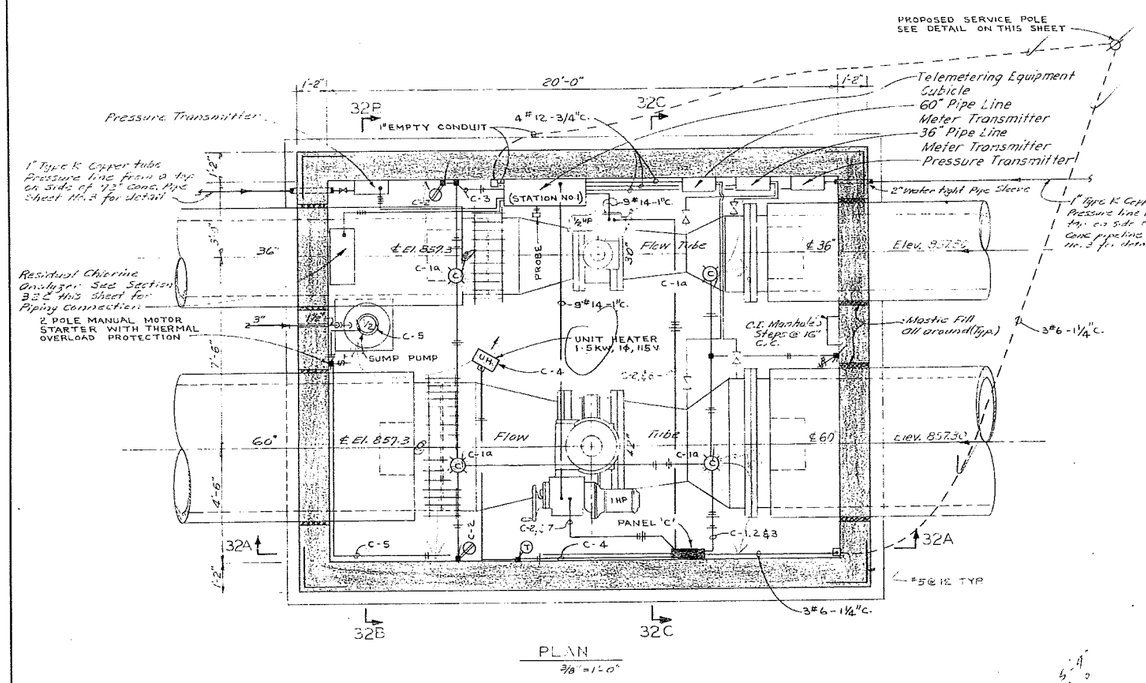
PROPOSED WATER MAIN TO EXISTING UNDERGROUND RESERVOIR NO.2

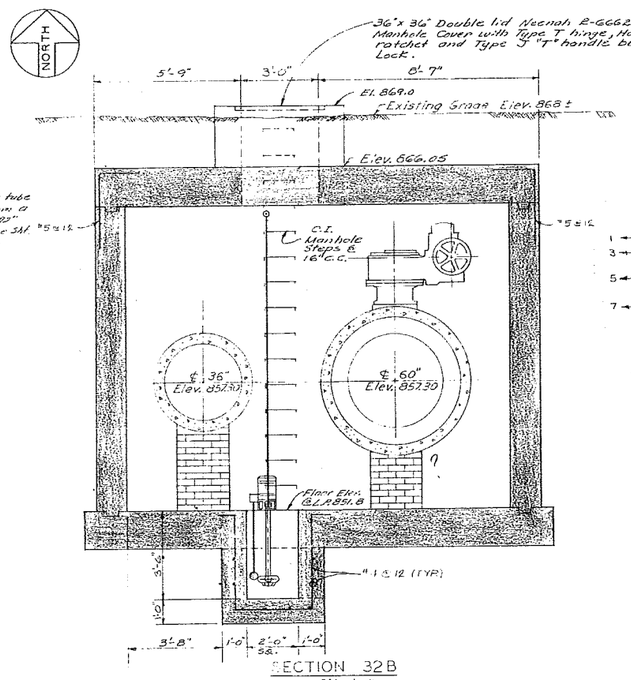
Note:
Elevations shown on this Sheet are based on City Datum Elev. 711.87 at N.E. corner of the existing South Intake Headwall in Flint River near the Water Treatment Plant. To Convert to elevations shown on Pipe Line Plan and Profile Sheet No. 3 thru 28 inclusive, deduct 1.85 Feet.

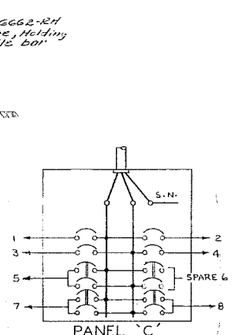
EXHIBIT 10-B

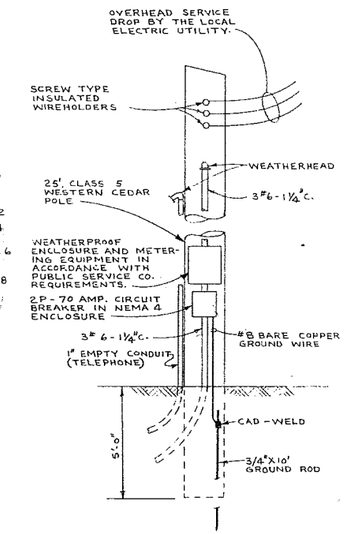
CITY OF FLINT, MICHIGAN
FLINT-DETROIT WATER SUPPLY PROJECT
PROFILE AT
EXISTING WATER TREATMENT PLANT
DRAWN BY
AN
CONSOER, TOWNSEND

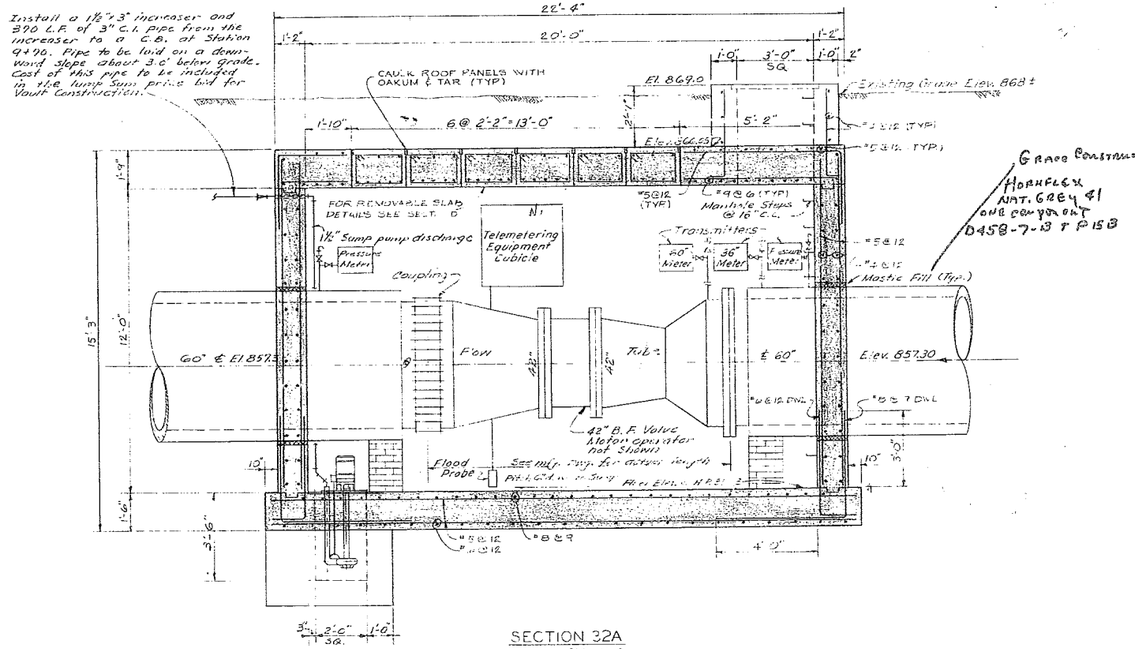
28463-1 Alum
28431-1
1938 Sprinkler Plant Addition
57 Elem Rehab Subfinal

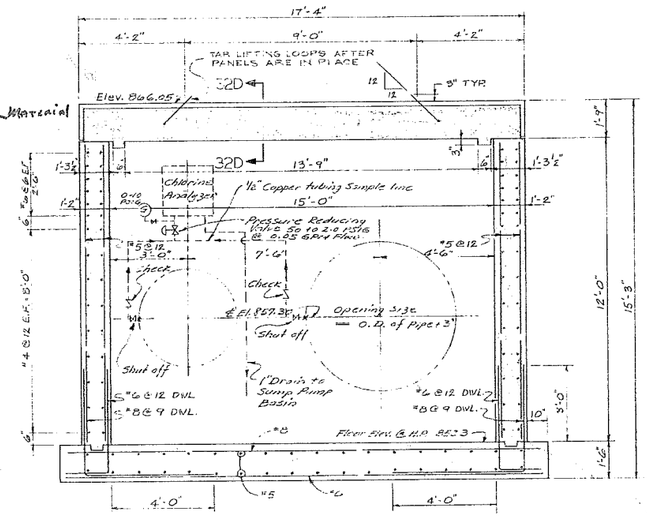


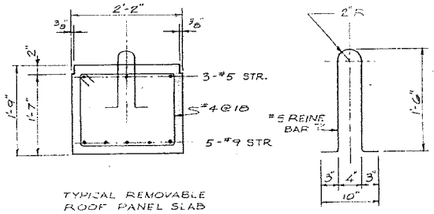












This structure is located at approximately Station 6+00 of the 72" pipe line. See Sheet No. 3 of 43 for site details.

CITY OF FLINT, MICHIGAN

FLINT DETROIT WATER SUPPLY PROJECT

METER AND FLOW CONTROL VALVE VAULT AT DETROIT CONNECTION

DRAWN BY: CGG R.H.S. A.N.	CONSOER, TOWNSEND & ASSOCIATES IN MICHIGAN CONSULTING ENGINEERS	SCALE: As Shown
DATE: MAY 1965		REVISED:
CHECKED BY: J.S. S.T. G.S.E. A.G.W.		SHEET NO. 32 OF 43 SHEETS
APPROVED BY:		

EXHIBIT 10-C

Exhibit 11
Historical PCCP Records for
City of Flint Water Treatment Plant

RESULTANT STEEL STRESS	115,385	113,679	114,054	
PIPE SIZE AND TYPE (Internal Dia.)	72"	72"	60"	
INTERNAL PRESSURE	150 psi	150 psi	150 psi	
EXTERNAL 3-EDGE LOAD	4470	7160	5889	
MAXIMUM ALLOWABLE COVER (Ordinary Bedding)	6'	10'	10'	
CORE THICKNESS (Including Cylinder)	5-1/2"	5-1/2"	4-1/2"	
COATING THICKNESS (Minimum Over Wire)	3/4"	3/4"	3/4"	
COATING THICKNESS (Nominal)	1"	1"	1"	
CYLINDER GAUGE ASTM 245-C (Not Harnessed or Harnessed One End Only)	16	16	16	
CYLINDER GAUGE HARNESSED	16 ga. w/bars	16 ga. w/bars	16 ga. w/bars	
ELBOW CYLINDER THICKNESS	1/2"	1/2"	3/8"	
ELBOW REINFORCEMENT	Mesh	Mesh	Mesh	
REINFORCING BAND THICKNESS	1/2"	1/2"	3/8"	
WIRE AREA PER LINEAL FT.	.70	.77	.64	
WIRE SIZE & INCHES OF PITCH ASTM A-227-65 Class I	#6 Wire .496	#6 Wire .451	#6 Wire .542	
GROSS WRAPPING STRESS	150,000	150,000	150,000	
P_o = ZERO COMPRESSION	166	181	177	
P_1 = WIRE ELASTIC LIMIT PRESSURE	256	279	282	
F_{ci} = INITIAL CONCRETE CORE STRESS	1255	1375	1376	
F_{cr} = RESULTANT CONCRETE CORE STRESS	1020	1108	1087	
D_y = OUTSIDE DIAMETER OF CYLINDER	75-1/2"	75-1/2"	63"	
R_1 / R_2	.05 / .05	.05 / .05	.05 / .05	
N_1 / N_r	7 / 6	7 / 6	7 / 6	
DYNAMOMETER READING	4350#	4350#	4350#	
CYLINDER TEST PRESSURE	36	36	43	
RODDED TEST CYLINDER STRENGTH (Min. at Wrapping)	3000	3000	3000	

REMARKS:

AWT

PRICE BROTHERS COMPANY
Dayton, Ohio

Flint, Michigan
Division A
72" Water Supply Line

DESIGN SHEET

Project No. 95.66P-1

Design by JCW
Approved

RESULTANT STEEL STRESS	121,006	124,567		
PIPE SIZE AND TYPE (Internal Dia.)	36"	24"		
INTERNAL PRESSURE	150 psi	150 psi		
INTERNAL 3-EDGE LOAD	8760	2925		
MAXIMUM ALLOWABLE COVER (Ordinary Bedding)	28'	18'		
CORE THICKNESS (Including Cylinder)	4"	3-1/2"		
COATING THICKNESS (Minimum Over Wire)	3/4"	3/4"		
LINING THICKNESS (Nominal)	1"	1"		
CYLINDER GAUGE ASTM 245-C [Spacing per Helix] (One End Only)	16	16		
CYLINDER GAUGE HARDDRAWN	16 ga.	16 ga.		
STEEL CYLINDER THICKNESS	1/4"	3/16"		
STEEL REINFORCEMENT	Mesh	Mesh		
REINFORCING BAND THICKNESS	1/4"	3/16"		
WIRE AREA PER LINEAL FT.	#6 Wire .35	#6 Wire .24		
WIRE STEEL ENDING OF PITCH ASTM A 227-61 Class I	#6 Wire .901	#6 Wire 1.44		
WIRE WRAPPING STRESS	150,000	150,000		
CONCRETE COMPRESSION	162	188		
WIRE ELASTIC LIMIT PRESSURE	274	294		
INITIAL CONCRETE CORE STRESS	862	674		
RESULTANT CONCRETE CORE STRESS	696	542		
OUTSIDE DIAMETER OF CYLINDER	38-1/2"	26-1/2"		
E_2	.05 .05	.05 .05		
N_T	7 6	7 6		
TRANSMITTER READING	4990#	4350#		
CYLINDER TEST PRESSURE	67	105		
CALCULATED TEST CYLINDER STRENGTH (Time of Wrapping)	3000	3000		

24" W_o = 9,000
36" W_o = 9,000

RECEIVED
NOV 25 1966
PRICE BROTHERS COMPANY

PRICE BROTHERS COMPANY
Dayton, Ohio

Flint, Michigan
Division A
72" Water Supply Line

DESIGN SHEET

Project No.	Design by JCW
95.66P-1A	Approved

JOB NO. 95.66P-Unit II

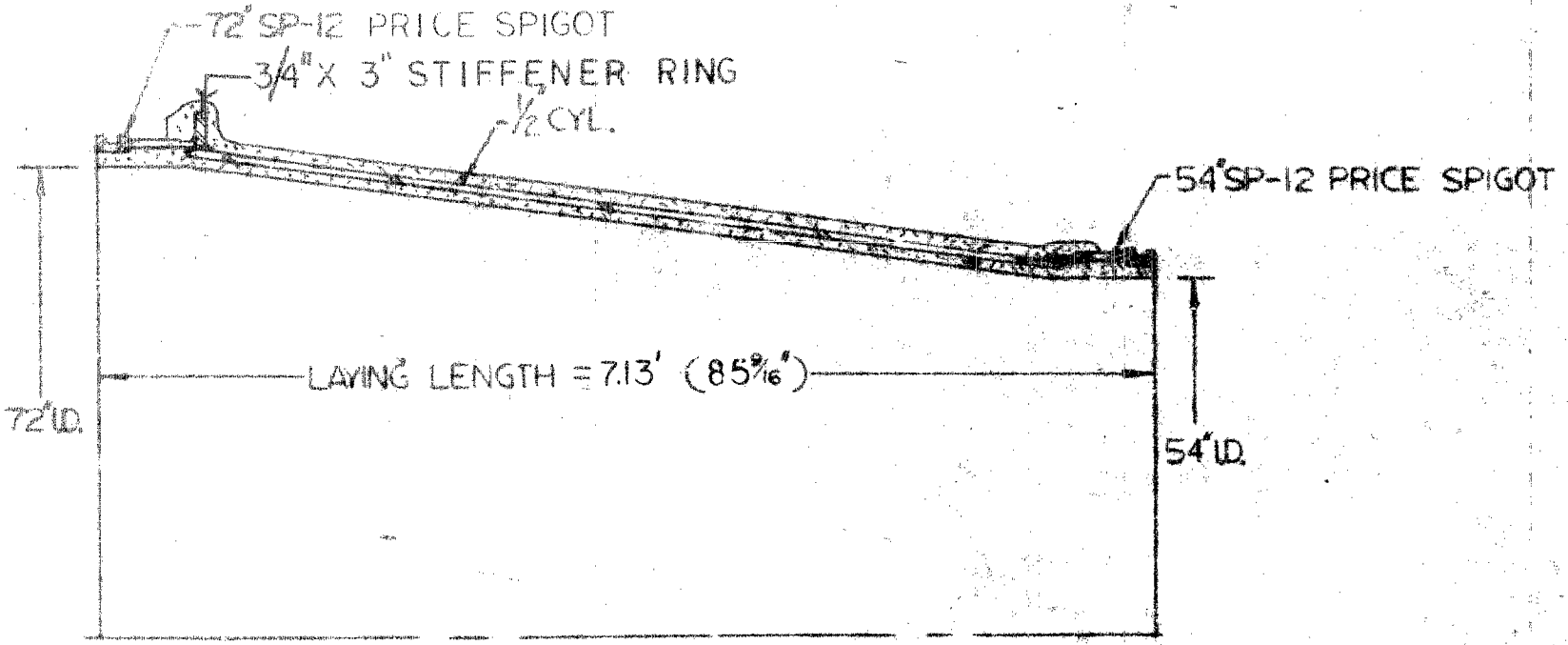
Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1966
REVISED
PREPARED BY: Jerome C. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 151 for 6' Cover					344+04.62	.00		749.90
S-60	1	72" P.S. x 54" P.S. Reducer	7.13	7.13		7.13	344+11.75	.00		749.90
	1	54" P.B. end valve (not by P.B. Co.)	1.50	1.50		1.50	344+12.65	.00		749.90
F-61	1	54" P.S. x 72" P.B. Reducer	6.78	6.78		6.78	344+19.43	.00		749.90
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	344+39.48	.65	+.13	750.03
S-62 S-62A	1	Lgth., open jt. bottom @20.03 w/24" flg. OL. 7° fr. S.E. w/24" blind flg.	20.05	20.05		20.05	344+59.53	1.29	+.26	750.29
	16	Lengths	20.03	320.48	.02	320.46	347+79.99	1.29	+4.11	754.40
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	348+00.04	1.35	+.39	754.79
	1	Lgth., open jt. bottom @20.03	20.05	20.05	.01	20.04	348+20.08	2.61	+.52	755.31
	4	Lengths	20.03	80.12	.03	80.09	349+00.17	2.61	+2.09	757.40
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	349+20.22	1.90	+.38	757.78
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	349+40.27	1.20	+.24	758.02
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	349+60.32	.70	+.14	758.16
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	349+80.36	.39	+.08	758.24
	14	Lengths	20.03	280.42		280.42	352+60.78	.39	+1.08	759.32



NOTES:
(1) All welds full & continuous.
(2) Mesh welded inside & outside.
(3) Mortar hand placed
(4) Exposed steel coated with Davies Shop Coat Black.

RECEIVED
AUG 31 1966
PRICE BROTHERS COMPANY

QTY	CHANGE NO	BY	DATE
B			
A	Rev	JCW	7-30-66

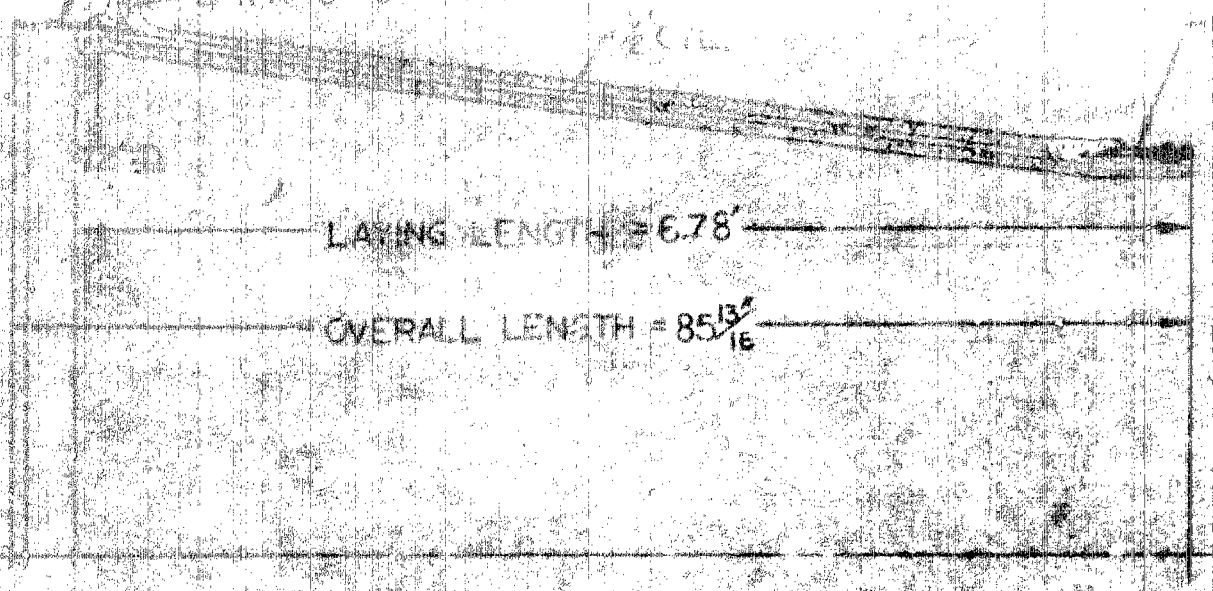
PRICE BROTHERS CO.
DAYTON, OHIO

Flint, Michigan
Division A
72" Water Supply Line

72" P.S. x 54" P.S. REDUCER

SCALE 1" = 1" | DATE 6-13-66
DRAWN MSK | DRAWING NO. 95.66-3E
APPROVED [illegible]

USED ON



NOTES:

1) All welds 5/16" & continuous, unless specified otherwise & outside.
2) Interior round-glossed.
3) Exposed steel painted w/ [illegible] Shop Coat Black.

RECEIVED
AUG
TRUCK SHOP

72" PB X 54" PS

NONE

85,66[illegible]

JOB NO. 95,669-Unit A

Price Brothers Company
LAYING SCHEDULE

DATE August 26, 1966

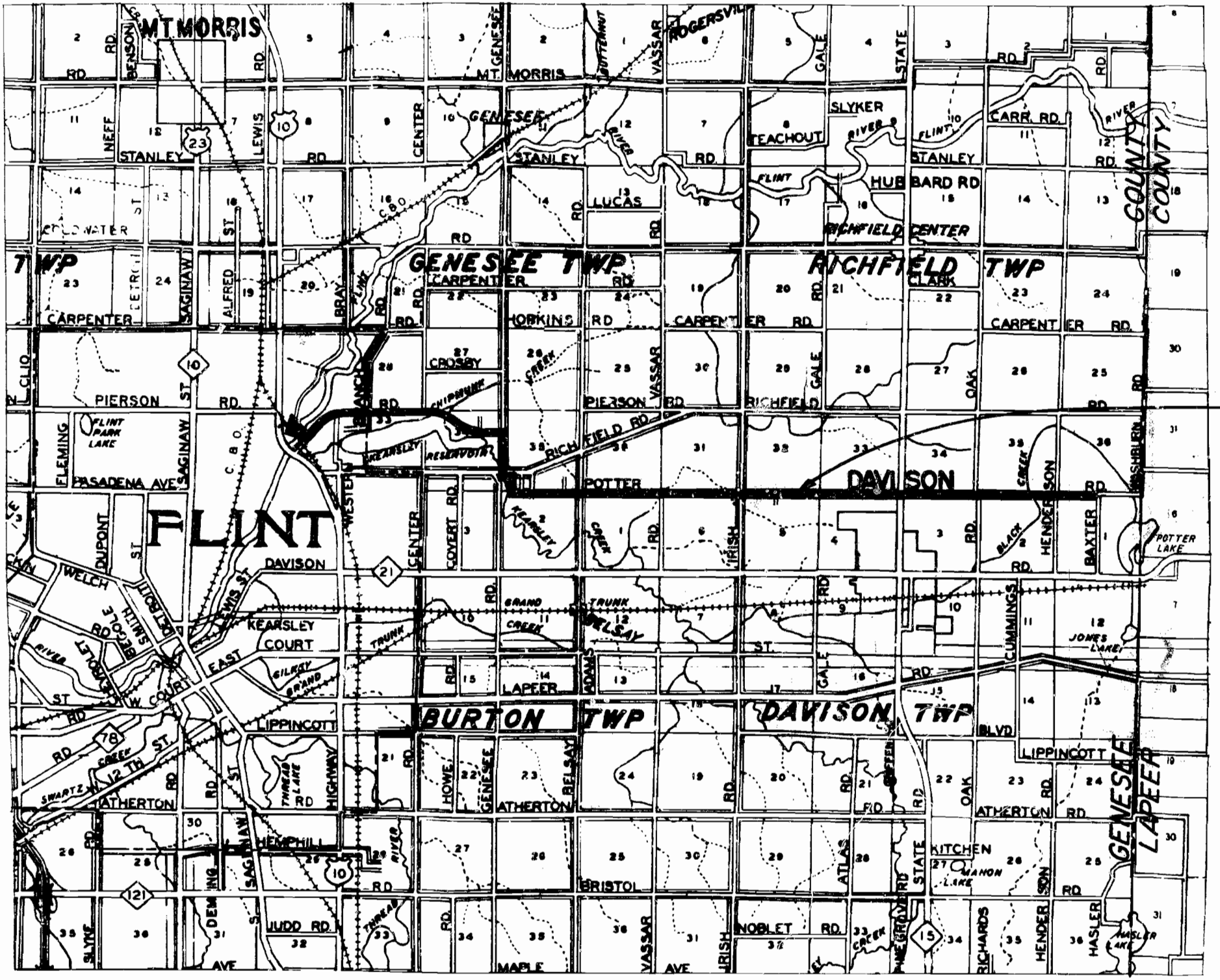
PROJECT Flint, Michigan, Div. A. 72" Water Supply Line

REVISED

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

PREPARED BY: JCW

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		Proceed to Station 134+83 near intersection of Potter and Slate Roads and begin laying North from branch of 72"x24" Double OL.					0+00.00N			
		24" SP-12 CLASS 150								
S-30		P.I.-P.B. of OL.	4.00			4.00	0+04.00N			781.90
F-67	1	P.S. x flg. adapter	1.44			1.44	0+05.44N			781.90
	1	Flg. End Valve (not by P.B. Co.)	.67			.67	0+06.11N			781.90
F-68	1	Flg. x P.B. adapter	1.21			1.21	0+07.32N			781.90
	1	Length	16.03			16.03	0+23.35N			781.90
F-69	1	Ribbed type B.H. plug								
		Proceed to South OL. from trunk line and lay South with the following					0+00.00S			
	4	Lengths	16.03	64.12		64.12	0+64.12S			781.90
F-70	1	P.S. x flg. adapter	1.44			1.44	0+65.56			781.90
	1	flg. end valve (not by P.B. Co.)	.67			.67	0+66.23			781.90
F-71	1	Flg. x P.B. adapter	1.21			1.21	0+67.44			781.90
	1	Length	16.03			16.03	0+83.47			781.90
F-72	1	Ribbed type B.H. plug								


MT MORRIS
MT. MORRIS
GENESEE
STANLEY
SLYKER
TEACHOUT
CARR RD.
HUBBARD RD
RICHFIELD CENTER
LUCAS
GENESEE TWP
RICHFIELD TWP
CARPENTER
HOPKINS
CROSBY
PIERSON
POTTER
DAVISON
FLINT
FLINT PARK LAKE
POTTER LAKE
JONES LAKE
KEARSLEY COURT
LAPEER
BURTON TWP
DAVISON TWP
LIPPINCOTT
ATHERTON
HEMPHILL
BRISTOL
JUDD RD
NOBLET RD
KITCHEN
MAHON LAKE
HASLER LAKE
MAPLE
CLIO
FLEMING
PASADENA AVE
DUPONT ST
WELCH
DAVISON
LEWIS ST
SMITH
CHEVROLET
RIVER
WEST COURT
EAST COURT
SWARTZ
W. 12 TH ST
CREEK
GILKEY
GRAND TRUNK
W. RAILWAY
BELSAY
ADAMS
GALE
CUMMINGS
BLVD
OAK
ATLAS
STATE
HENDERSON
BAXTER
BLACK
IRISH
VASSAR
RICHARDS
HASLER
GENESEE
LAPEER
COUNTY
COUNTY
NEFF
LEWIS
CENTER
BRAY
ALFRED
SAGINAW
DEMING
SLYNE
THREAD LAKE
HIGHWAY
HOWE
FID
PINE GROVE
CHIPPEWA
CREEK
RESERVOIR
KEARSLEY
COVERT RD
WESTERN
C & O
DETROIT
FLINT
RIVER
BENSON
BUTTERNUT
ROGERSVILLE
YASSAR
GALE
STATE
CARR RD.
RICHFIELD
CLARK
OAK
HENDERSON
BASSHBURN
CUMMINGS
JONES LAKE
POTTER LAKE
HASLER LAKE
MANON LAKE
KITCHEN
PINE GROVE
RICHARDS
NOBLET RD.
MAPLE AVE
JUDD RD
BRISTOL
ATHERTON
LIPPINCOTT
HEMPHILL
KEARSLEY COURT
DAVISON
FLINT
PIERSON
CROSBY
CARPENTER
HOPKINS
LUCAS
STANLEY
MT MORRIS
GENESEE TWP
RICHFIELD TWP
BURTON TWP
DAVISON TWP
10
23
78
21
121
15

Wu, Ricky (Grand Prairie) NA

From: Jurgerson, Billie (Grand Prairie) NA
Sent: Wednesday, January 28, 2009 3:28 PM
To: Wu, Ricky (Grand Prairie) NA; Stieler, Geoffrey (Tecumseh); Deremiah, Rick (Dayton) NA; Arnaout, Sam (Grand Prairie) NA
Cc: Serafin, Rick (Succasunna); White, Danny (Grand Prairie) NA; Thomsen, Nels (Grand Prairie) NA
Subject: FW: 72 inch water main - drawing release from City of Flint, MI

Importance: High

All,

See below e-mail from City of Flint releasing information to Dean Holmes, Holmes Excavation. Call if you need anything else. Thanks! bj

Geoff,
Dean said this morning he was meeting you on Tuesday and would appreciate your bringing drawings to him then.

Billie Jurgerson
Field Service Administrative Assistant

Hanson Pressure Pipe
1003 N. MacArthur Blvd
Grand Prairie, Texas 75050

Tel: 972-266-7555
Fax: 972-266-7540
Billie.Jurgerson@Hanson.com
www.Hanson.com

-----Original Message-----
From: Cheri Priest [mailto:cpriest@cityofflint.com]
Sent: Wednesday, January 28, 2009 12:33 PM
To: Jurgerson, Billie (Grand Prairie) NA; billie.jurgeson@hanson.com
Cc: Lyle Hippensteel
Subject: 72 inch water main

Per Lyle Hippensteel, it is OK to release to Dean Holmes the specifications on the 72 inch water main.

If you have any questions, please feel free to call at 810-766-7202 or email Lyle at LHippensteel@cityofflint.com.

Thank you

Cheri Priest
WSC Support Technician
City of Flint - Water Service Center

PRICE BROTHERS COMPANY LAYING SCHEDULE

95.66P-Unit VI

PAGE 1 OF 2 PAGES

DATE October 14, 1966

PROJECT Flint, Michigan Division A
12" Water Supply Line

REVISED (1) 1-23-67 (2) 2-22-67

PREPARED BY J C Wilson

LINE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		MISC. MATERIALS SHIPPING LIST			Revisions:			
	5	25# Pails Price Lube			(1) 1-23-67 Sheets 1, 2, 5, 6, 10, 12, 15, 16, 18, 19, & MSL			
	12	60" Laying Gaskets						
	3	60" Diapers						
	3	60" Wide Diapers			(2) COMPLETE			
	8	60" Harn. Clamp Ring Assemblies						
	5	54" Laying Gaskets						
	4	54" Wide Diapers						
	4	54" Harn. Clamp Ring Assemblies SPEC. DESIGN FOR VALVES	2- 15432C	2- 15437C				
	49	48" Laying Gaskets (SP-12)						
	20	48" Diapers (SP-12)						
	29	48" Wide Diapers (SP-12)						
	29	48" Harn. Clamp Ring Assemblies						
	11	36" SP-5 Laying Gaskets						
	81	36" SP-12 Laying Gaskets						
	4	36" SP-5 DIAPERS						
	44	36" Diapers (SP-12)						
	6	36"-SP5 WIDE DIAPERS						
	37	36" Wide Diapers (SP-12)						

PRICE BROTHERS COMPANY LAYING SCHEDULE

95.66P-Unit VI

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1)11-23-67
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		MMSL CONT'D.						
	6	36" SP-5 Harn. Clamp Ring Assemblies SPECIAL DESIGN FOR VALVES: 3-154-48C, 3-154-49C						
	37	36" SP-12 Harn. Clamp Ring Assemblies						
	9	24" SP-12 Laying Gaskets						
	9	24" Wide Diapers						
	8	24" SP-12 Harn Clamp Ring Assemblies						
	1	24" Flange Gasket						
	20	1-1/4" x 4-1/2" Cadmium Plated Bolts W/HEX NUTS } SHIP W/S-326A						
	1	36" FLANGE GASKET						
	32	1 1/4" x 5 1/2" Cad. Plated Bolts W/HEX NUTS } SHIP W/F-385						
	1	36" DRESSER COUPLING, STYLE 38 - SHIP W/F-383						
	2	External Feeler Gauges						

JOB NO. 95.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1) 1-23-67
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		Begin Laying at end of Unit IV						
		60" SP-12 Class 166 for 10' Cover			588+44.06			718.49
		Convert to City Datum Elevations					+1.25	719.74
	1	54" Harn. P.J. End Value (Not by P.P. Co.)	1.40	1.40	588+45.46	.00		719.74
F-318	1	54" Harn. P.S. x 60" Harn. P.B. Reducer	6.30	6.30	588+51.76	.00		719.74
	1	Harn. Half Bevel L.S. Bottom Open Jt. Top @ 19.93	19.94	19.93	588+71.69	3.91	+ .76	720.50
S-319	1	Half Bevel, L.S. Top Harn. S.E. Tied B.E. w/MJ. Thd. OL. 18.75' fr. S.E. on L.S. Shopweld B.E. to S.E. of F-320 Open Jt. Bottom	19.94	19.94	588+91.63	.00		720.50
F-320	1	Tied P.S. x Flg. Adapter Shopweld S.E. to B.E. of S-319	1.75	1.75	588+93.38	.00		720.50
	1	Flow Tube and Valve Assem. (Not by P.B. Co.	13.63	13.63	589+07.01	.00		720.50
F-321	1	P.E. x Harn. P.B. Adapter w/1" Mu. Thd. OL. 4.08' fr. P.E. w/3-2" I.P. Thd. OL's @ 2.33' fr. P.E.	6.25	6.25	589+13.26	.00		720.50
	1	Harn. Length	20.03	20.03	589+33.29	.00		720.50
F-322	1	Harn. Short	7.03	7.03	589+40.32	.00		720.50
F-323	1	60" Harn. P.S. x 54" Harn. P.B. Reducer	6.18	6.18	589+46.50	.00		720.50
	1	54" Harn. PJ End Valve (not by PB Co.)	1.40	1.40	589+47.90	.00		720.50

JOB NO. 95.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		36" SP-12 Class 159 for 10' Cover			589+52.80			720.50
A-43	1	36" Harn. SP-5 P.S. x Harn. SP-12 P.S. Adapter	1.04	1.04	589+51.76	.00		720.50
	1	Harn. Length (Lay Bell over Spigot)	20.03	20.03	589+31.73	.00		720.50
		Procede Upstation and Lay the Following Back to Closure				.00		720.50
					589+04.91	.00		720.50
F-404	1	36" P.E. x Tied P.S. Adapter Shopweld S.E. to B.E. of Tied Length	2.33	2.33	589+07.24	.00		720.50
F-405	1	[illegible] Length, Harn. S.E. Tied B.E. Shopweld P.E. to S.E. of F-404 (Lay Bell over Spigot)	20.03	20.03	589+27.27	.00		720.50
F-14	1	Harn. F.R. Closure @ 6'0" Cut to Fit in Field	4.46	4.46	589+31.73	.00		720.50
		Procede to 30" Cast Iron Line near 24" O.L. at Sta. 593+60. Make Cut and Insert the Following:						
		24" SP-12 Class 160 for 10' Cover			0+00.00			
X-65	1	30" P.S. x 30" P.S. x 24" Flg. Tee						
		W/ SPEC. CLOSURE ACCESSORIES TO FIT EXIST. C.I. PIPE						
		Branch P.E. Flg.	2.66	2.66	0+02.66			
	1	24" Flg. End Valve (Not by P.B. Co.)	2.00	2.00	0+04.66			
F-403	1	24" Flg. x Harn. P.B. Adapter (HOLD FOR FIELD MEASURE)	5.34	5.34	0+10.00			

JOB NO. 95.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan -- Division A
72" Water Supply Line

DATE October 14, 1966
REVISED 11 1 23 67
PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		60" SP-12 Class 166 for 10' Cover			589+47.90			720.50
F-324	1	54" Harn. P.S. x 60" Harn. P.B. Red.	6.30	6.30	589+54.20	.00		720.50
F-325	1	60" Harn. P.S. x 50" Harn. P.B. x 36" Harn. P.B. 45° Wye P.S. - P.I.	8.56	8.56	589+62.76	.00		720.50
		P.I. - P.B.	2.21	2.21	589+64.97	.00		720.50
	1	Harn. Half Bevel L.S. Top Open Jt.	19.95	19.94	589+84.91	3.34	- .56	719.84
		Bottom						
S-326	1	[illegible] Length, Harn. S.E. Only	20.03	20.02	590+04.93	3.34	.67	719.17
S-326A		w/24" Neck Flg. OL. 11' fr. S.E. w/24" Blind Flg.						
S-326B	1	Short	6.53	6.53	590+11.46	3.34	- .22	718.95
X-25 X-32	1	60" P.S. x P.B. x 36" P.B. Tee W/36" RIB TYPE B.H. PLUG	6.79	6.79	590+18.25	3.34	- .23	718.72
F-326	1	60" P.S. x 48" P.B. Reducer	6.19	6.19	590+24.44	3.34	- .21	718.51
		48" SP-12 Class 168 for 10' Cover						
	1	Length, Open Jt. Top	20.05	20.05	590+44.49	2.38	.48	718.03
S-328A	1	Short	7.59	7.59	590+52.08	2.38	- .18	717.85
X-26	1	48" P.S. x P.B. x 24" Harn. P.B. Tee	5.55	5.55	590+57.63	2.38	- .13	717.72
X-27	1	[illegible] Short, Harn. B.E. Only, Open Jt.	15.31	15.31	590+72.94	1.50	- .23	717.49
F-330	1	Harn. 17° El. L.S. Bottom						
		P.S. - P.I.	1.05	1.05	590+73.99	1.50	- .02	717.47
		P.I. - P.B.	.69	.66	590+74.65	28.68	+ .19	717.66

95.65P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

DATE October 14, 1966

PROJECT Flint, Michigan - Division A
72" Water Supply Line

REVISED

PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		48" SP-12 Class 168 for 10' Cover			590+74.65			717.66
S-331	1	Harn. Short Length	18.03	17.33	590+91.98	28.68	+4.97	722.63
332	1	Harn. 16°30' El L.S. Top P.S. to P.I	.99	.95	590+92.93	28.68	+ .27	722.90
		w/1" I.P. th.i. OL @ B.E. P.I. to P.B	.62	.62	590+93.55	.98	- .01	722.89
	1	Harn. Length Clamp S.E. Only	20.03	20.03	591+13.58	.98	- .19	722.70
	2	Lengths	40.06	40.06	591+53.64	.98	- .39	722.31
	1	Harn. Length Clamp B.E. Only	20.03	20.03	591+73.67	.98	- .19	722.12
	1	Harn. Length	20.03	20.03	591+93.70	.98	- .19	722.93
S-333	1	[illegible] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-334	11.23	11.23	592+04.93	.98	- .11	721.82
F-334	1	[illegible] 7° El., L.S. Left Tied P.E. Harn B.E. Shopweld P.E. to B.E. of S-333						
		P.E. to P.I.	.66	.66	592+05.59	.98	- .01	721.81
		P.I. to P.B.	.34	.34	592+05.93	.98		
S-335	1	[illegible] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-336	11.23	11.23	592+17.16	.98	- .11	721.70
F-336	1	[illegible] 7° EL, L.S. Left Tied P.E. Harn. BE. Shopweld P.E. to B.E. of S-335						
		P.E. to P.I.	.66	.66	592+17.82	.98	- .01	721.69
		P.I. to P.B.	.34	.34	592+18.16	.98		

JOB NO. 95.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan -Division A
72" Water Supply Line

DATE October 14, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		48" SP-12 Class 168 for 10' Cover			592+18.16			721.69
S-337	1	[illegible] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-338	11.23	11.23	592+29.39	.98	- .11	721.58
F-338	1	[illegible] 7° El, L.S. Left Tied P.E. Harn. B.E. Shopweld P.E. to B.E. of S-337						
		P.E. to P.I.	.66	.66	592+30.05	.98	- .01	721.57
		P.I. to P.B.	.34	.34	592+30.39	.98		721.57
S-339	1	[illegible] Short, Harn S.E Tied B.E. Shopweld B.E. to P.E. of F-340	11.23	11.23	592+41.62	.98	- .11	721.46
F-340	1	[illegible] 7° El, L.S. Left Tied P.E. Harn. B.E. Shopweld P.E. to B.E. of S-339						
		P.E. to P.I.	.66	.66	592+42.28	.98	- .01	721.45
		P.I. to P.B.	.34	.34	592+42.62	.98		721.45
S-341	1	[illegible] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-342	11.23	11.23	592+53.85	.98	- .11	721.34
F-342	1	[illegible] 7° El, L.S. Left Tied P.E. Harn B.E. Shopweld P.E. to B.E. of S-341						
		P.E. to P.I.	.66	.66	592+54.51	.98	- .01	721.33
		P.I. to P.B.	.34	.34	592+54.35	.98		721.33
S-343	1	[illegible] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-344	11.23	11.23	592+66.08	.98	- .11	721.22
F-344	1	[illegible] 7° El, L.S. Left Tied P.E. Harn. B.E. Shopweld P.E. to B.E. of S-343						
		P.E. to P.I.	.66	.66	592+66.74	.98	- .01	721.21
		P.I. to P.B.	.34	.34	592+67.08	.98		721.21

JOB NO. 95.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan -- Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1)1-23-67
PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		48" SP-12 Class 168 for 10' Cover			592+67.08			721.21
S-345	1	[redacted] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-346	11.23	11.23	592+78.31	.98	- .11	721.10
F-346	1	[redacted] 7° El., L.S. Left Tied P.E. Harn. B.E. Shopweld						
		P.E. to P.I.	.66	.66	592+78.97	.98	- .01	721.09
		P.I. to P.B.	.34	.34	592+79.31	.98		721.09
	3	Harn. Lengths	60.09	60.09	593+39.40	.98	- .58	720.51
	1	Harn. Half Bevel L.S. Bottom Open Jt. Top @ 19.91	19.93	19.89	593+59.29	6.25	+ 1.24	721.75
X-28	1	Harn. 48" P.S. x P.B. x 24" Harn. P.S. Tee	5.55	5.54	593+64.83	6.25	+ .35	722.10
S-345A	1	Harn. Short	14.44	14.41	593+79.20	6.25	+ .90	723.00
F-348	1	Harn. 45° El. L.S. Left						
		P.S. to P.I.	2.11	2.11	593+81.35	6.25	+ .12	723.12
		P.I. to P.B.	1.75	1.75	593+83.10	6.25	+ .11	723.23
X-29	1	Harn. Short	14.58	14.55	593+97.65	6.25	+ .91	724.14
F-350	1	48" Harn. P.S. x 30" Flg. Reducer	7.03	7.03	594+04.68	6.25	+ .44	724.58
	1	30" Flg. End Tapping Valve (Not by P.B. Co.)	6.33	6.32	594+11.00	6.25	+ .40	724.98

JOB NO. 95.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan -- Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1) 1-23-67
PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		Proceed to 72" x 48" Tee at Station 588+21.93 and begin laying East.						
		48" SP12 Class 168 for 10' Cover			0+00.00			719.50
		Branch P.I.-Harn. P.B.	4.39	4.39	0+04.39	.57	- .02	719.48
F-351	1	48" Harn. P.S. x Flg. Adapter w/1" OL.	1.62	1.62	0+06.01	.57	- .01	719.47
	1	48" Flg. Gate Valve (Not by P.B. Co.)	3.52	3.52	0+09.53	.57	- .02	719.45
F-352	1	48" Flg. x Harn. P.B. Adapter	1.26	1.26	0+10.79	.57	- .01	719.44
F-352A	1	Harn. 45° El. L.S. Left						
		P.S. - P.I.	2.11	2.11	0+12.90	.57	- .01	719.43
		P.I. - P.B.	1.75	1.75	0+14.65	.57	- .01	719.42
	1	Harn. Length	20.03	20.03	0+34.68	.57	- .11	719.31
F-353	1	Harn. 45° El. L.S. Left						
		P.S. - P.I.	2.11	2.11	0+36.79	.57	- .01	719.30
		P.I. - P.B.	1.75	1.75	0+38.54	.57	- .01	719.29
	1	Harn. Length	20.03	20.03	0+58.57	.57	- .11	719.18
	2	Harn. Lengths	40.06	40.06	0+98.6.	.57	- .22	718.96
	1	Harn. Length Clamp S.E. Only	20.03	20.03	1+18.66	.57	- .11	718.85
	7	Lengths	140.21	140.21	2+58 87	.57	- .80	718.05
S-354	1	Short Length	9.34	9.34	2+68.21	.57	- .05	718.00

S.O. 35.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		48" SP-12 Class 168 for 10' Cover			2+68.21			718.00
F-355	1	15° El. L.S. Bottom P.S.-P.I.	.94	.94	2+69.15	.57		718.00
		P.I.-P.B.	.62	.60	2+69.75	26.09	+ .16	718.16
	1	Length	20.03	19.38	2+89.13	26.09	+5.05	723.21
F-356	1	15°30' El. L.S. Top P.S.-P.I. w/2" I.P. Thd. O L on L.S.	3.12	3.02	2+92.15	26.09	+ .79	724.00
		P.I.-P.B.	.64	.64	2+92.79	26.09	+ .01	723.99
F-357	1	48" Sp-12 P.S. x 36" SP-5 P.B. x 36"						
	SP-12 1	P.B. REDUCING TEE P.S.-P.I.	3.42	3.42	2+96.21	1.23	- .04	723.95
		P.I.-P.B	7.00	7.00	3+03.21	1.23	- .09	723.86
		36" SP-12 Class 159 for 10' Cover						
	1	36" P.J. (SP-5) End Valve (Not by P.B. Co.)	1.05	1.05	3+04.26	1.23	- .01	723.85
F-358	1	36" SP-5 P.S. x SP-12 P.B. Adapter	.83	.83	3+05.09	1.23	- .01	723.84
	4	Lengths	80.12	80.12	3+85.21	1.23	- .98	722.86
	1	Harn. Length Clamp B.E. Only	20.03	20.03	4+05.24	1.23	- .25	722.61
	1	Harn. Length	20.03	20.03	4+25.27	1.23	- .25	722.36
F-359	1	Short, Harn S.E. Tied B.E. Shopweld B.E. to P.E. of F-360	11.39	11.39	4+36.66	1.23	- .14	722.22

W NO. 33.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		36" SP-12 Class 159 for 10' Cover			4+36.66			722.22
S-360	1	[redacted] 7°0' El., Tied P.E. Harn. B.E. Shopweld P.E. to B.E. of S-359						
		P.E. - P.I.	.53	.53	4+37.19	1.23	- .01	722.21
		P.I. - P.B.	.29	.29	4+37.48	1.23		722.21
S-361	1	[redacted] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-362	11.39	11.39	4+48.87	1.23	- .14	722.07
F-362	1	[redacted] 7°0' El., Tied P.E. Harn. B.E. L.S. Left Shopweld B.E. to P.E. of S-361						
		P.E. - P.I.	.53	.53	4+49.40	1.23	- .01	722.06
		P.I. - P.B.	.29	.29	4+49.69	1.23		722.06
S-363	1	[redacted] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-364	11.39	11.39	4+61.08	1.23	- .14	721.92
F-364	1	[redacted] 7°0' El, Tied P.E. Harn. B.E. Shopweld B.E. to P.E. of S-363 L.S. Left						
		P.E. - P.I.	.53	.53	4+61.61	1.23	- .01	721.91
		P.I. - P.B.	.29	.29	4+61.90	1.23		721.91
S-365	1	[redacted] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-366	11.39	11.39	4+73.29	1.23	- .14	721.77
F-366	1	[redacted] 7°0' El., Tied P.E. Harn. B.E. L.S. Left Shopweld P.E. to B.E. of S-365						
		P.E. - P.I.	.53	.53	4+73.82	1.23	- .01	721.76
		P.I. - P.B.	.29	.29	4+74.11	1.23		721.76
S-367	1	[redacted] Short, Harn S.E. Tied B.E. Shopweld B.E. to P.E. of F-368	11.39	11.39	4+85.50	1.23	- .14	721.62

PRICE BROTHERS COMPANY LAYING SCHEDULE

PS 66P-Unit VI

DATE October 14, 1966

PROJECT Flint, Michigan Division A
72 Water Supply Line

REVISED

PREPARED BY J.C. Wilson

PS SC	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		36" SP-12 Class 159 for 10' Cover			4+85.50			721.62
S-368	1	[redacted] 7°0' El, Tied P.E. Harn. B.E., L.S. Left Shopweld P.E. to B.E. of S-367						
		P.E. - P.I.	.53	.53	4+86.03	1.23	- .01	721.61
		P.I. - P.B.	.29	.29	4+86.32	1.23		721.61
S-369	1	[redacted] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-370	11.39	11.39	4+97.71	1.23	- .14	721.47
F-370	1	[redacted] 7°0' El., Tied P.E. Harn. B.E.L.S. Left Shopweld P.E. to B.L. of S-369						
		P.E. - P.I.	.53	.53	4+98.24	1.23	- .01	721.46
		P.I. - P.B.	.29	.29	4+98.53	1.23		721.46
S-371	1	[redacted] Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-372	11.39	11.39	5+09.92	1.23	- .14	721.32
F-372	1	[redacted] 7°0' El., Tied P.E. Harn B.E. L.S. Left Shopweld P.E. to B.E.						
		of S-371 P.E. - P.I.	.53	.53	5+10.45	1.23	- .01	721.31
		P.I. - P.B.	.29	.29	5+10.74	1.23		721.31
	1	Harn. Length	20.03	20.03	5+30.77	1.23	- .25	721.06
	1	Harn. Length, Clamp S.E. Only	20.03	20.03	5+50.80	1.23	- .25	720.81
	3	Lengths	60.09	60.09	6+10.89	1.23	- .74	720.07
S-373	1	Short Length	6.03	6.03	6+10.92	1.23	- .07	720.00

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit VI

DATE October 14, 1966
REVISED (1)11-23-67
PREPARED BY J. C. Wilson

PROJECT Flint, Michigan - Division A
72" Water Supply Line

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		36" SP-12 Class 159 for 10' Cover			6+16.92			720.00
	1	Full Bevel L.S. Bottom Open Jt. Bottom P.I. Sta. 6+17.31 @ 19.91	19.92	19.87	6+36.79	7.00	+ 1.39	721.39
	1	Length Open Jt. Bottom @ 20 03	20.04	19.98	6+56.77	7.61	+ 1.52	722.91
	4	Lengths	80.12	79.89	7+36.66	7.61	+ 6.09	729.00
	1	Full Bevel L.S. Top, Open Jt. Top P.I. Sta. 7+37.04	19.91	19.91	7+56.57	.00		729.00
	5	Lengths	100.15	100.15	8+56.72	.00		729.00
	1	Harn. Length Clamp B.E. Only	20.03	20.03	8+76.75	.00		729.00
	1	Harn. Length	20.03	20.03	8+96.78	.00		729.00
20	1	Harn. Short Full Bevel L.S. Bottom, Open Jt. Bottom P.I. Sta. 8+97.16	9.88	9.85	9+06.63	7.54	+ .74	729.74
78	1	Harn. Dished B.H. Plug						

PRICE BROTHERS COMPANY LAYING SCHEDULE

95.66P-Unit VI

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		Procede to 48" x 36" Tee from the Dort Reservoir Connection and Begin Laying East.						
		36" SP-12 Class 159 for 10' Cover			0+00.00			724.00
		Branch P.I. - P.B.	3.30	3.29	0+03.29	6.18	- .20	723.80
S-375	1	Short Length	5.90	5.89	0+09.18	6.18	- .36	723.44
F-376	1	17° El. L.S. Right P.S.-P.I.	.81	.81	0+09.99	6.18	- .05	723.39
		P.I.-P.B.	.57	.57	0+10.56	6.18	- .03	723.36
F-377	1	36" SP-12 P.S. x 36" SP-5 P.B. Adapter	.55	.55	0+11.11	6.18	- .03	723.33
	1	36" P.J. SP-5 End Valve (Not by P.B. Co.)	1.05	1.05	0+12.16	6.18	- .06	723.27
F-378	1	36" SP-5 P.S. x SP-12 P.B. Adapter	.55	.55	0+12.71	6.18	- .03	723.24
	1	Length	20.03	19.99	0+32.70	6.18	-1.24	722.00
	1	Length, Open Jt. Top @ 20.03	20.04	19.99	0+52.69	7.18	-1.44	720.56
	1	Length, Open Jt. Top	20.03	19.97	0+72.66	7.53	-1.50	719.06
	1	Length	20.03	19.97	0+92.63	7.53	-1.50	717.56

JOB NO. 22.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1) 1-23-67
PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		36" SP-12 Class 150 for 10' Cover			0+92.63			717.56
F-379	1	12°30' El. L.S. Bottom Special PS-PI	2.06	2.06	0+94.69	7.53	- .16	717.40
		PI-PB	.44	.44	0+95.13	14.89	+ .07	717.47
	1	Length	20.03	19.81	1+14.94	14.89	+2.95	720.42
F-380	1	9°30'El. L.S. Top P.S.-P.I	.58	.57	1+15.51	14.89	+ .08	720.50
		w/2" I.P. Thd. O.L. @ B.E. L.S. P.I.-P.B	.34	.34	1+15.85	1.33		720.50
	3	Lengths	60.09	60.09	1+75.94	1.33	- .80	719.70
	1	Half Bevel L.S. Top P.I. Sta. 1+76.33 Open Jt. Bottom	19.98	19.97	1+95.91	3.92	- .78	718.92
	5	Lengths	100.15	100.07	2+95.98	3.92	-3.92	715.00
S 381	1	Harn. Short Half Bevel L.S. Bottom Clamp B.E. Only Open Jt. Bottom P.I. Sta. 2+96.36	8.60	8.60	3+0458	.00		715.00
F 382	1	36" Harn. P.S. x Flg. Adapter Wallpiece w/1" I.P. Thd. O.L. 1' from Face of Flg.	5.00	5.00	3+09.58	.00		715.00
	1	36" Flow Tube (Not by P.B. Co.)	6.29	6.29	3+15.87	.00		715.00
F-383	1	36" Flg. x P.E. Adapter [redacted]	1.00	1.00	3+16.87	.00		715.00

PRICE BROTHERS COMPANY LAYING SCHEDULE

95 66P-Unit #1

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		36" SP-12 Class 159 for 10' Cover			3+16.87			715.00
S-386	1	36" P.E. x 16" Flg. Reducer	4.08	4.08	3+20.95	.00		715.00
	1	Flg. End Valve (Not by P.B. Co.)	3.38	3.38	3+24.33	.00		715.00
S-385	1	16" Flg. x 36" Flg. Reducer	3.00	3.00	3+27.33	.00		715.00
S-386	1	36" Flg. x Harn. P.B. Adapter Wall-piece w/Three 2" I.P. Thd O.L. x S 11" fr. Flg.	5.00	5.00	3+32.33	.00		715.00
	1	Harn. Full Bevel L.S. Top, Open Jt. Bottom P.I. Sta. 3+32.72	19.92	19.88	3+52.21	6.30	-1.25	713.75
S-387	1	Harn. Short Length	7.25	7.25	3+59.46	6.30	- .46	713.29
S-388	1	36" Harn. SP-12 P.S. x 36" Harn. SP-5 P.B. Adapter	.55	.55	3+60.01	6.30	- .03	713.26
	1	36" Harn. SP-5 P.J. End Valve	1.05	1.05	3+61.06	6.30	- .07	713.19
S-389	1	36" Harn. SP-5 P.S. x 36" Harn. SP-12 P.B. Adapter	.55	.55	3+61.61	6.30	- .03	713.16
S-390	1	Harn. 65° El. L.S. Left P.S. - P.I.	2.47	2.47	3+64.08	6.30	- .16	713.00
		Rotate for Horiz. & Vert. Defl. P.I. - P.B.	2.21	2.21	3+66.29	.00		713.00
	2	Harn. Lengths	40.06	40.06	4+06.35	.00		713.00
S-391	1	Harn. Short	5.70	5.70	4+12.05	.00		713.00

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95 56P-Unit VI

PAGE 19 OF 42 PAGES

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 19, 1966
REVISED
PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION		TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		36" SP-12 Class 159 for 10' Cover				4+12.05			713.00
F-392	1	Harn. 18° El. L.S. Top	P.S.-P.I.	95	.95	4+13.00	.00		713.00
			P.I.-P.B.	59	.56	4+13.56	32.78	.18	712.82
F-393	1	Harn. Short		13.25	12.59	4+26.15	32.78	-4.13	708.69
F-394	1	Harn. 18° El. L.S. Bottom	P.S. P.I	.95	.90	4+27.05	32.78	- .29	708.40
			P.I.-P.B.	59	.59	4+27.64	00		708.40
	1	Harn. Length		20.03	20.03	4+47.67	00		708.40
F 395	1	Harn. 18° El. L.S. [redacted] Bottom	P.S.-P.I.	95	.95	4+48.62	00		708.40
			P.I.-P.B.	59	.56	4+49.18	32.78	+ .18	708.58
F-396	1	Harn. Short		13.25	12.59	4+61.77	32.78	+4.13	712.71
F-397	1	Harn. 18° El. L.S. Top	P.S.-P.I.	.95	.90	4+62.67	32.78	+ .29	713.00
			P.I.-P.S.	95	95	4+63.62	00		713.00
		Procede to Existing 36" CI Line Remove 90° El and Insert the Following, w/(2) C.I. SLEEVES (NOT BY P.B. Co.)							
		36" SP-12 Class 159 for 10' Cover				4+70.00	00		713.00
F 398	1	36" C.I.S. [redacted] x 36" Harn. P.S. x 36" [redacted] Toe C.I.S.	P.I.-P.S.	3.33	3.33	4+66.67	.00		713.00

JOB NO. 95.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan -- Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1)1-23-67
PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		36" SP-12 Class 159 for 10' Cover			4+66.67			713.00
X-10	1	36" Harn. FR. Closure @ 6'9" Cut to Fit in Field	3.05	3.05	4+63.62	.00		713.00
		Proceed to 72" x 72" x 36" 45° Wye at Sta. 588+28.28 and begin to lay S.W.						
		36" SP-12 Class 159 for 10' Cover.			588+28.28			718.49
		Convert to City Datum Elevation.					+1.25	719.74
		Branch P.I. - P.B.	8.10	8.10	588+36.38	.00		719.74
F-399	1	36" Harn. 45° El. L.S. Right						
		SP-12 P.S. to P.I.	2.51	2.51	588+38.89	.00		719.74
		SP-5 P.I. to P.B.	1.41	1.41	588+40.30	.00		719.74
	Sta. Equation: Sta. 588+40.30 Ahead = Sta. 588+37.19				588+37.19	.00		719.74
		Harn. SP-5						
	1	36"/P.J. End Valve (Not by P.B. Co.)	1.05	1.05	588+38.24	.00		719.74
X-11	1	36" Harn. SP-5 P.S. x Harn. SP-12 P.B. Adapter	.68	.68	588+38.92	.00		719.74
	1	Harn. Half Bevels L.S. Bottom Open Jt. Bottom	19.97	19.96	588+58.88	3.81	+ .76	720.50
	1	Harn. Half Bevel L.S. Top Open Jt. Top	19.97	19.97	588+78.85	.00		720.50

JOB NO. 95.66P-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1) 1-23-67
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		36" SP-12 Class 159 for 10' Cover			588+78.85			720.50
S-400	1	[redacted] Short Harn. S.E. Tied B.E. Shopweld B.E. to S.E. of F-401	14.34	14.34	588+93.19	.00		720.50
F-401	1	Tied P.S. x Flg. Adapter Shopweld S.E. to B.E. of S-400	1.47	1.47	588+94.66	.00		720.50
	1	Flow Tube and Valve Assembly	5.92	5.92	589+00.58	.00		720.50
		(Not by P.B. Co.)						
[redacted]	1	30" Flg. x 36" P.E. Reducer (NOT BY P.B. Co) Procede Upstation to the 60" x 60" x 36" Wye and Lay Back to Valve Building to Close.	4.33	4.33	589+04.91	.00		720.50
					589+62.76			720.50
		Branch P.I.-Harn. P.B.	7.09	7.09	589+55.67	.00		720.50
F-403	1	Harn. 36"45° El SP-12 P.S. x SP-5P.B.						
		SP-12 P.S.-P.I.	3.52	3.52	589+52.15	.00		720.50
		SP-5 P.I.-P.B.	1.41	1.41	589+50.74	.00		720.50
		Station Equation: Sta. 589+50.74 Back=Sta.	589+53.85 Ahead		589+53.85	.00		720.50
	1	36" Harn. P.J. SP-5 End Valve (Not by P.B. Co.)	1.05	1.05	589+52.80	.00		720.50

96 66F-Unit VI

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1)1-23-67
PREPARED BY J. C Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		24" SP-12 Class 160 for 10' Cover			0+10.00			
407	1	Harn. 45° El. Special P.S.-P.I.	3.00	3.00	0+13.00			
		HOLD FOR FIELD MEASURE Special P.I.-P.S.	1.49	1.49	0+14.49			
		Procede to 24" Branch and Lay Back to Close			0+25.00			
		Branch P.I. - P.S.	3.62	3.62	0+21.38			
406	1	Harn. Short (Lay Bell over Spigot)	3.03	3.03	0+10.35			
16	1	24" Harn. F.R. Closure @ 6'0" Cut to Fit in Field	3.86	3.86	0+14.49			
		Procede to 24" C.L. near Sta 590+55.00			0+00.00			
17	1	24" Neck Flg. O.L., HOLD FOR FIELD MEASURE w/Saddle Plate for 30" Std. Pipe	2.00	2.00	0+02.00			
	1	24" Flg. End Valve (Not by P.B. Co.)	2.00	2.00	0+04.00			
409	1	24" Flg. x Harn. P.S. Adapter, HOLD FOR FIELD MEASURE	5.00	5.00	0+09.00			
		Procede to Branch of O.L. and Lay Back to Closure						

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit VI

PROJECT Flint, Michigan -- Division A
72" Water Supply Line

DATE October 14, 1966
REVISED (1)1-23-67
PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		24" SP-12 Class 160 for 10' Cover			0+26.00			
		Branch P.I. Harn. P.B.	3.31	3.31	0+22.69			
S 410	1	Harn. Short Length	6.64	6.64	0+16.05			
F-411	1	Harn. 65° El. L.S. Left						
		HOLD FOR FIELD MEASURE P.S. - P.I.	2.05	2.05	0+14.00			
		P.I. - P.S.	2.05	2.05	0+11.95			
X 9	1	Harn. F.R. Closure @ 6'0" Cut to Fit in Field	2.95	2.95	0+09.00			
		END OF PROJECT						

95 66p - Unit V

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint Detroit Water Supply

DATE
REVISED
PREPARED BY Jerome C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		Misc. Materials Shipping List						
	1	25# Pails price Lube						
	4	54" Wide diapers						
	12	36" SP-12 laying gaskets						
	5	36" SP-5 laying gaskets						
	13	36" wide diapers						
	4	54" harn clamp ring assemblies						
	9	35" SP-12 harn clamping rings assemblies						
	4	36" SP-5 harn. clamp ring assemblies						
	6	5/16" 120° segments filler rpds for shopwelded joints.						

Greenfield Construction Co.
APPROVED
By
Date

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit V

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE 9-28-66
REVISED
PREPARED BY Jerome C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		Begin laying at intersection of Davison & Baxter Roads by making connection with City of Detroit Pipeline and laying west P.S. to P.E.						
		72" SP-12 Class 162 for ~~10~~ 14' Cover			3+01.00			853.60
	1	Length	20.03	20.03	3+21.03	.00		853.60
	1	Half bevel, L.S. bottom P.I. sta 3+21.52, open jt. bottom @19.91	19.94	19.92	3+40.95	6.75	+.95	854.55
	1	lgth. open jt. bottom @20.03	20.05	20.02	3+60.97	6.40	+1.08	855.63
		72" SP-12 Class 162 for 10' Cover						
	1	lgth. open jt bottom @20.03	20.05	20.01	3+80.98	6.10	+1.22	856.85
	1	Lgth., open jt. bottom @20.03	20.05	20.00	4+00.98	6.80	+1.36	858.21
	1	Lgth., open jt. bottom @20.03	20.05	20.00	4+20.98	7.45	+1.49	859.70
S-1	1	Full bevel L.S. top P I. sta 4+21.47 w/8" tan flg. OL. 10' fr. SE top RT. side open jt. top @19.78	19.79	19.79	4+40.77	.00		859.70
	1	Harn half bevel L.S. top P.I. sta 4+41.26 open jt. top @19.91 clamp B E. Only	19.92	19.90	4+60.67	4.02	-.80	858.90
	2	Harn Lgths	40.06	40.03	5+00.70	4.02	-1.60	857.30
F-2	1	Harn. Short half bevel L.S. bottom w/36" 45° wye 5' fr S.E., w/1" OL. @ S.E., open jt. bottom @ 13.03'	13.04	13.04	5+13.74	.00		857.30
		1" O.L. on Side of 72" Pipe						

JOB NO. 95.66P Unit V

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan, Division A-72
Flint Detroit Water Supply

DATE 9-28-66
REVISED
PREPARED BY Jerome C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			S 13.74	.00		857.30
P-3	1	72" harn P.S. x 54" Harn P.B. reducer	6.18	6.18	5+19.92	.00		857.30
	1	54" Harn P.J. end valve (not by P.B. CO.)	1.40	1.40	5+21.32	.00		857.30
P-4	1	54" Harn P.S. x60" harn. P.B. reducer	6.30	6.30	5+27.62	.00		857.30
		60" SP-12 Class 166 for 10' Cover						
	8	Harn lengths	40.06	40.06	5+67.68	.00		857.30
S-5	1	Harn short lngth	7.43	7.43	5+75.11	.00		857.30
P-6	1	Harn P.S. x flg. adapter	5.50	5.50	5+80.61	.00		857.30
		Flow Tube and Valve Assem. (not by P B Co.)	13.63	13.63	5+95.24	.00		857.30
F-7	1	P.B. x harn. P.B. adapter with (1) ½" nipple 1'-6" from P.B. for Shlevins Residual	6.25	6.25	6+00.49	.00		857.30
	1	Harn length	20.03	20.03	6+20.52	.00		857.30
S-8	1	Harn. Short	11.03	11.03	6+31.55	.00		857.30
P-9	1	60" harn P.S. x 54" Harn P.B. reducer	6.18	6.18	6+37.73	.00		857.30
	1	54" ha rn. P.J. end valve (not by P.B. co.)	1.40	1.40	6+39.13	.00		857.30
		72" SP-12 Class 162 for 10' Cover						
P10	1	54" harn. P.S. x72" harn. PB reducer	6.78	6.78	6+45.91	.00		857.30
P-11	1	72" harn P.S. xharn. PB x36" harn P.B. 45° wye w/1" OL @ B.E.	11.85	11.85	6+57.76	.00		857.30
	1	Harn lgth. open it. top @20.03 1" O L on side of 72" Pipe	20.05	20.05	6+77.81	.50	-.10	857.29

PRICE BROTHERS COMPANY LAYING SCHEDULE

95 66P

PAGE 3 OF 3 PAGES

PROJECT Flint, Michigan, Division A - 72"
Flint Detroit Water Supply

DATE 9-28-66
REVISED
PREPARED BY Jerome L. Wilson Jr.

PIECE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 162 For 10' Cover			6+77.81	.50		857.20
	1	Harn. length, clamp S.E. only open jt. top @20.03	20.05	20.05	6+97.86	1.00	-.20	857.00
S-12 (1) S-12A	1	Length w/24" flg. OL. 3' fr. S.E. w/24" blind flg.	20.03	20.03	7+17.89	1.00	-.20	856.80
		Begin laying at west end of valve vault at Detroit connection by making connection with the 36" branch from the 72" pipeline (F-11) Laying East						
		36" SP-12 Class 159			6+55.51			857.30
F-11		Branch PI - Harn PB	8.10	8.10	6+47.41	.00		857.30
F-~~318~~	1	36" Harn 45° EL L.S. left						
		SP-12 PS-PI	2.51	2.51	6+44.90	.00		857.30
		SP-5 PI-PB	1.41	1.41	6+43.49	.00		857.30
		Sta. Equation sta 6+43.49 ahead = Sta. 6+46.60 back			6+46.60	.00		837.30
	1	36" Harn PJ end valve (not by PB Co.)	1.05	1.05	6+45.55	.00		837.30
X-5	1	38" Harn SP-5 PSxHarn. SP-12 PB Adapt	.68	.68	6+44.87	.00		837.30
	2	Harn. lengths	40.06	40.06	6+04.81	.00		837.30
S-~~319~~	1	Tied short lgth. harn. SE Tied BE	9.88	9.88	5+94.93	.00		837.30
		shopweld BE to SE of F-~~320~~						

JOB NO. 95 66P Unit V

PRICE BROTHERS COMPANY LAYING SCHEDULE

9-28-66

PROJECT Flint, Michigan Division A 72"
Flint Detroit Water Supply

REVISED

PREPARED BY Jerome C. Wilson Jr

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		36" SP-12 Class 159			5+94.93	.00		837.30
F-320	1	Tied PSxPE adapter w/couplings shopweld SE to BE of S-319 with (1) ½" nipple 1'-6" from P.E for Chlorine Residual	2.33	2.33	5+92.60	.00		837.30
X-7	1	36" PEx30" flg reducer	4.33	4.33	5+88.27	.00		837.30
	1	Flow tube and valve assbly (not by PB)	5.92	5.92	5+82.35	.00		837.30
F-321	1	36" FlgxTied PB adapter shopweld BE to SE of S-322	1.23	1.23	5+81.12	.00		837.30
S-322	1	Tied lgth tied PS harn. PB shopweld SE to BE of F-321	20.03	20.03	5+61.09	.00		837.30
	1	Harn length	20.03	20.03	5+41.06	.00		837.30
X-8	1	36" SP-12 Harn. PSxSP-5 Harn. PB adapter.	.68	.68	5+40.38	.00		837.30
	1	36" harn PJ end valve (not PB co)	1.05	1.05	5+39.33	.00		837.30
X-9	1	36" harn. SP-5PSx harn. SP-12 PS adapter	1.04	1.04	5+38.29	.00		837.30
	1	Harn Lgth (lay bell over spigot)	20.03	20.03	5+18.26	.00		837.30

½" (36") ½" (60")

Chlorine sample taps looking toward East.

JOB NO. 95.66P Unit V

PRICE BROTHERS COMPANY LAYING SCHEDULE

DATE 9-28-66
REVISED
PREPARED BY Jerome C. Wilson Jr.

PROJECT Flint, Michigan Division A 72 "
Flint Detroit Water Supply

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		36" SP-12 Class 159						
		Procede downstation to 36" wye (F-2) and begin laying west to closure			5+05.70			837.30
F-2		Branch PI - PB	8.10	8.10	5+13.80	.00		837.30
F-325	1	36" Harn 45° double spigot EL L.S. right special PS-PI	2.51	2.51	5+16.31	.00		837.30
		PI-PS	1.76	1.76	5+18.08	.00		837.30
		Station Equation: STa 5+18.07 ahead = sta. 5+14.96 back			5+14.96			
F-324	1	36" SP-12 Harn F.R. closure @6'0" cut to fit in field	3.30	3.30	5+18.26	.00		837.30
		END OF UNIT V						

95.66P - Unit V

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint Detroit Water Supply

DATE
REVISED
PREPARED BY Jerome C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		Misc. Materials Shipping List						
	1	25# Pails price Lube						
	4	54" Wide diapers						
	12	36" SP-12 laying gaskets						
	5	36" SP-5 laying gaskets						
	13	36" wide diapers						
	4	54" harn clamp ring assemblies						
	9	35" SP- 12 harn clamping ring assemblies						
	4	36" SP-5 harn. clamp ring assemblies						
	6	5/16" 120° segments filler rpds for shopwelded joints.						

Greenfield Construction Co.
APPROVED
By
Date 10/

JOB NO. 95.65P Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PAGE 20 OF 30 PAGES

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE 10-4-66
REVISED
PREPARED BY Jerome C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER ELEV.
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" RP-12 Class 151 for 6' Cover			568+51.62			71[illegible]
	1	Lgth, open jt top @20.03	20.04	20.04	568+71.65	.53	-.11	71[illegible]
	3	Lengths	180.15	180.15	569+71.80	.53	-.53	71[illegible]
F-259	1	7°30' EL LS Right	1.64	1.64	569+73.44	.53		71[illegible]
	4	Lengths	80.32	80.32	570+53.76	.53	-.42	71[illegible]
	1	Lgth, open jt bottom @20.03	20.04	20.04	570+73.80	.20	-.01	[illegible]
	18	Lengths	360.54	360.54	57[illegible]+34.14	.20	.72	70[illegible]
	1	Horn lgth, clamp BE only	20.03	20.03	57[illegible]+54.17	.20	-.09	70[illegible]
	1	Horn length	20.03	20.03	57[illegible]+74.20	.20	-.02	70[illegible]
S-260	1	Tied short Horn SE Tied BE Shoulder BE to PE of S-261	10.74	10.74	57[illegible]+84.95	.20	-.02	70[illegible]
F-261	1	Tied 45° el Tied PE Horn BE shoulder PE to BE of S-260 PE-PI	1.39	1.39	57[illegible]+86.33	.20		70[illegible]
		PI-PB	1.04	1.04	57[illegible]+87.37	.20		70[illegible]
S-262	1	Tied short Horn SE tied BE shoulder BE to PE of S-263	10.74	10.74	57[illegible]+98.11	.20	-.02	70[illegible]

FOR CONTINUATION SEE SHEET 21 THRU 29 OF UNIT III - DATED 10/4/66

JOB NO. 95.66P Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

DATE 10-4-66

PROJECT Flint, Michigan Division A
[illegible] water supply

PREPARED BY Jerome C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION		TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LIN ELEVATIO
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions. 72" SP-12 Class 151 for 6' Cover				574+98.11			709.52
F-263	1	Tied 15° EL tied PE Harn BE							
		shopweld PE to BE of S-262	PE-PI	1.39	1.39	574+99.50	.20		709.52
			PI-PB	1.04	1.04	575+00.54	.20		709.52
S-264	1	Tied shat Harn SE ed BE		10.74	10.74	575+11.28	.20	-.02	709.50
		shopweld BE to PE of S-265							
F-265	1	Tied 15° el Tied PE Harn BE							
		Shopweld PE to BE of S-264	PE-PI	1.39	1.39	575+12.67	.20		709.50
			PI-PB	1.04	1.04	575+13.71	.20		709.50
S-266	1	Tied short harn SE tied BE		10.74	10.74	575+24.45	.20	-.02	709.48
		shopweld BE to PE of F-267							
F-267	1	Tied 15° el Tied PE Harn BE							
		Shopweld PE to BE of S 266	PE- PI	1.39	1.39	575+25.84	.20		709.48
			PI-PB	1.04	1.04	575+26.88	.20		709.48
S-268	1	Tied short harn SE Tied BE		10.74	10.74	575+37.62	.20	-.02	709.46
		shopweld BE to PE of F-269							
F-269	1	Tied 15° EL tied PE Harn BE							
		Shopeweld PE to BE of S-268	PE-PI	1.39	1.39	575+39.01	.20		709.46
			PI-PB	1.04	1.04	575+40.05	.20		709.46

JOB NO. 95.66P Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE 10-4-66
REVISED
PREPARED BY Jerome C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENT. & ELEV.
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			575+40.05			709.46
S-270	1	Harn Short	16.03	16.03	575+56.08	.20	-.03	709.43
F-271	1	12" Harn PSx72" Harn PBx48" PB Tee						
		PS-PI	4.10	4.10	575+60.18	.20	-.01	709.42
		PI-PB	3.75	3.75	575+63.93	.20	-.01	709.41
	1	Harn full bevel LS top PI sta 575+6444	19.81	19.76	575+83.69	7.20	-1.42	707.99
		open jt bottom @19.78						
	1	Harn lgth, open jt bottom @20.03	20.05	20.01	576+03.70	6.50	-1.30	706.69
		Clamp SE only						
	1	LENGTH, open jt bottom @20.03	20.06	20.03	576+23.73	5.73	-1.15	705.54
	1	Length	20.03	20.00	576+43.73	5.73	-1.14	704.40
	1	Half bevel LS bottom PI sta 576+4423	19.93	19.93	576+63.66	1.25	-.25	704.15
		open jt top @19.91						
	/	Lengths	140.21	140.20	578+03.86	1.25	-1.75	702.40
	1	Length, Open Jt. Bottom @20.03	20.05	20.05	578+23.91	.60	- .12	702.28
S-272	1	Length	20.03	20.03	578+43.94	.60	-.12	702.16
		w/24" neck flg OL 17' fr SE						
S-272A		w/24" blind flg						

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P Unit IV

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE 10-4-65
REVISED
PREPARED BY Jerome C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER L ELEVATI
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for 6' Cover			578+43.94			702.16
S-273	1	Harn short Harn BE only	11.03	11.03	578+54.97	.60	-.06	702.10
S-274	1	Harn Length w/18" Tan MJB BOOL 14' fr SE bottom right	20.03	20.03	578+75.00	.60	-.12	701.98
F-275	1	72" Harn PSx54" Harn PB reducer	6.18	6.18	578+81.18	60	-.04	701.94
	1	54" Harn PJ end valve (not by PB co.)	1.40	1.40	578+82.58	.60	-.01	701.93
F-276	1	54" Harn PSx72" Harn PB reducer	6.78	6.78	578+89.36	.60	-.04	701.89
		72" SP-12 Class 162 for 10' Cover						
	1	Harn full bevel LS top 578+8987 open jt bottom @19.78	19.80	19.80	579+09.16	8.00	-1.58	700.31
	1	Harn full bevel LS top open jt bottom @19.78	19.79	19.55	579+28.71	15.63	-3.06	697.25
	1	Harn Length	20.03	19.79	579+48.50	15.63	-3.09	694.16
		72" SP-12 Class 151 for 6' Cover						
	1	Harn. Length	20.03	19.79	579+68.29	15.63	-3.09	691.07
F-277	1	Harn 9°0' EL PS-PI	1.08	1.07	579+69.36	15.63	-.17	690.90
		PI-PB	.72	.72	579+70.08	.00		690.90

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P Unit IV

PAGE 24 OF 30 PAGES

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE 10-4-66
REVISED
PREPARED BY Jerome C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			579+70.08			690.90
	2	Harn lengths	40.06	40.06	580+10.14	.00		690.90
S-278	1	Harn short	8.03	8.03	580+18.17	.00		690.90
F-279	1	Harn 17°0' el LS bottom PS-PI	1.50	1.50	580+19.67	.00		690.90
		PI-PB	1.15	1.10	580+20.77	30.37	+.33	691.23
		72" SP-12 Class 162 for 10' Cover						
	2	Harn Lengths	40.06	38.33	580+59.10	30.37	+11.64	702.87
S-280	1	Harn short	14.25	13.64	580+72.74	30.37	+4.14	707.01
F-281	1	Harn 13°30' el LS top PS-PI	1.31	1.25	580+73.99	30.37	+.38	707.39
		PI-PB	.95	.95	580+74.94	6.03	+.06	707.45
		72" SP-12 Class 151 for 6' Cover						
	2	Harn. lengths	40.06	39.99	581+14.93	6.03	+2.41	709.86
S-282	1	Tied lgths., harn. SE tied BE shopweld BE to PE of F-283	20.03	19.99	581+34.92	6.03	+1.20	711.06
F-283	1	Tied 15° el LS right Tied PE Harn BE shopweld PE to BE of S-282 PE-PI	1.39	1.39	581+36.31	6.03	+.08	711.14
		PI-PB	1.04	1.04	581+37.35	6.03	+.06	711.20

JOB NO. 95.66P Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE [illegible]
REVISED
PREPARED BY Jerome C. Wilson, Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			581+37.35			713.70
S-284	1	Tied short Harn SE tied BE shopweld BE to PE of F-285	10.74	10.72	581+48.07	6.03	+.65	714.35
F-285	1	Tied 15° el. tied PE Harn BE LS right shopweld PE to BE of S-284 PE-PI	1.39	1.39	581+49.46	6.03	+.08	714.43
		P.I.-P.B	1.04	1.04	581+50.50	6.03	+.06	714.49
S-286	1	Tied short half bevel LS top Harn SE tied BE, shopweld BE to PE of F-287 @10.74	10.76	10.76	581+61.26	1.43	+.15	714.64
F-287	1	Tied 15° el tied PE Harn BE LS right shopweld PE to BE of S-286 PE-PI	1.39	1.39	581+62.65	1.43	+.02	714.66
		PI-PB	1.04	1.04	581+63.69	1.43	+.01	714.67
		72" SP-12 Class 162 for 10' Cover						
S-288	1	Tied short harn SE tied BE shopweld BE to PE of F-289	10.74	10.74	581+74.43	1.43	+.15	714.82
F-289	1	Tied 15° el tied PE Harn BE LS right shopweld PE to BE of S-288 PE-PI	1.39	1.39	581+75.82	1.43	+.02	714.84
		PI-PB	1.04	1.04	581+76.86	1.43	+.01	714.85
F-291	1	72" Harn PS x 54" harn PB reducer	6.18	6.18	581+83.04	1.43	+.09	714.94
	1	54" Harn PB end valve (not by PB Co)	1.40	1.40	581+84.44	1.43	+.02	714.96

JOB NO. 95 66P Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE 10-4-66
REVISED
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CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			581+84.44			712.[illegible]
F-292	1	54" Harn PSx72" Harn PB reducer	6.78	6.78	581+91.22	1.43	+.10	712.[illegible]
	1	Harn length, clamp SE only	20.03	20.03	582+11.25	1.43	+.29	712.85
S-293 S-293A	1	Length w/24" neck flg ol 15' fr SE w/24" glind flg	20.03	20.03	582+31.28	1.43	+.29	713.[illegible]
	1	Length	20.03	20.03	582+51.31	1.43	+.29	713.43
		72" SP-12 Class 151 for 6' Cover						
	2	Lengths	40.06	40.06	582+91.37	1.43	+.57	714.00
	1	Half bevel LS bottom PI sta 582+9186 open jt top @19 91	19.93	19.91	583+11.28	4.65	+.93	715.93
	1	Lgth, open jt top @20.03	20.05	20.05	583+31.33	4.09	+.82	715.75
	3	Lengths	60.09	60.04	583+91.37	3.05	+2.45	718.20
S-294	1	Full bevel LS top PI 583+31.83 w/2" IP thd OL 9' fr SE on LS @19.78 open jt bottom	19.80	19.79	584+11.16	3.10	-.62	717.[illegible]
	1	lgth, open jt bottom @20.03	20.05	20.05	584+31.21	2.45	-.49	717.09
	1	Lgth open jt bottom @20.03	20.05	20.05	584+51.26	1.80	-.36	716.73
	1	Lgth open jt bottom @20.03	20.05	20.05	584+71.31	1.15	-.23	716.50

95.66P Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE 10-4-66
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CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 For 6' Cover			584+71.31			716.50
	1	Lgth, open bottom @20.03	20.06	20.06	584+91.37	.432	-.09	716.41
	2	Lengths	40.06	40.06	585+31.43	.432	-.17	716.24
	1	Harn lgth, clamp BE only	20.03	20.03	585+51.46	.432	-.09	716.15
S-295	1	Harn Short	4.03	4.03	585+55.49	.432	-.02	716.13
S-296	1	Tied lgth, harn SE tied BE shopweld BE to PE of F-297	20.03	20.03	585+75.52	.432	-.09	716.04
F-297	1	Tied 7°30' el LS right Tied PE Harn BE, shopweld PE to BE of S-296						
		PE-PI	1.00	1.00	585+76.52	.432		716.04
		PI-PB	.64	.64	585+77.16	.432		716.04
S-298	1	Tied short Harn SE tied BE shopweld PE to BE of F-299	11.46	11.46	585+88.62	.432	-.05	715.99
F-299	1	Tied 7°30' el LS right Tied PE Harn BE shopweld PE to BE of S-298						
		PE-PI	1.00	1.00	585+89.62	.432		715.99
		PI-PB	.64	.64	585+90.26	.432		715.99
S-300	1	Tied Short half bevel LS bottom Harn SE tied BE 20.46 Shopweld BE to PE of F-301	11.47	11.46	586+61.72	3.48	+.40	716.39

JOB NO. 95.66P Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

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CODE NO.	QTY.	DESCRIPTION		TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTERLINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for 6' Cover				586+01.72			715.37
F-301	1	Tied 7°30' el LS right Tied PE Harn BE, shopweld PE to BE of S-300	PE-PI	1.00	1.00	586+02.72	3.48	+.03	715.40
			PI-PB	.64	.64	586+0336	3.48	+.02	715.42
S-302	1	Tied SHort lgth, harn SE tied BE shopweld BE to PE of F-303		11.46	11.45	586+14.81	3.48	+.40	715.84
F-303	1	Tied 7°30' el LS right Tied PE harn BE, shopweld PE to BE of S-302	PE-PI	1.00	1.00	586+15.81	3.48	+.03	715.87
			PI-PB	.64	.64	586+16.45	3.48	+.02	715.89
S-304	1	Tied short Harn SE tied BE shopweld BE to PE of F-305		11.46	11.45	586+27.90	3.48	+.40	716.29
F-305	1	Tied 7°30' el LS right Tied PE Harn BE, shopweld PE to BE of S-304	PE-PI	1.00	1.00	586+28.90	3.48	+.03	716.32
			PI-PB	.64	.64	586+29.54	3.48	+.02	716.34
S-306	1	Tied short Harn SE Tied BE shopweld BE to Pe of F-307		11.46	11.45	586+40.99	3.48	+.40	716.74
F-307	1	Tied 7°30' el LS right Tied PE harn BE, shopweld PE to BE of S-306	PE-PI	1.00	1.00	586+40.99	3.48	+.01	716.77
			PI-PB	.64	.64	586+42.63	3.48	+.02	716.79
	1	Harn Length		20.03	20.02	586+62.65	3.48	+.70	716.49

JOB: 0. 95.66P Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE 10-4-66
REVISED
PREPARED BY Jerome C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CE[illegible] EL
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 CLass 151 for 6' Cover			586+62.65			
S-308	1	Harn short half bevel LS top open jt bottom @10.03	10.05	10.05	586+72.70	.00		
S-309	1	Tied length harn SE tied BE shopweld BE to PE of F-310	20.03	20.03	586+92.73	.00		
F-310	1	Tied 7°30' el, LS left tied PE Harn						
		BE, shopweld PE to BE of S-309 PE-PI	1.00	1.00	586+93.73	.00		
		PI-PB	64	.64	586+94.37	.00		
S-311	1	Tied lgth, harn SE tied BE shopweld BE to PE of F312	20.03	20.03	587+14.40	.00		
F-312	1	Tied 7°30' el LS left Tied PE Harn BE						
		shopweld PE to BE of S-311 PE-PI	1.00	1.00	587+15.40	00		
		PI-PB	.64	.64	587+16.04	.00		
S-313	1	Tied lgths. Harn SE tied BE shopweld BE to PE of F-314	20.03	20.03	587+36.07	.00		
F-314	1	Tied 7°30' el LS left Tied PE harn BE						
		shopweld PE to BE of S-313 PE-PI	1.00	1.00	587+37.07	.00		
		PI-PB	.64	.64	587+37.71	.00		
	4	Harn Lengths	80.12	80.12	588+17.83	00		

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit IV

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED See Below
PREPARED BY Clarde A. Moore

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		MISC. MATERIALS SHIPPING LIST			Revisions:			
	42	25# Pails Price Lube			(1) 12-16-66 Sheets 1, 2, 3, 6, & 7			
	2	38# Pails Sohio Lube						
	624	72" Laying Gaskets			(2) 2-21-67 Complete Schedule			
	537	72" Diapers						
	87	72" Wide Diapers			(3) 3-7-67 Sheets 16, 19 & 20			
	9	54" Laying Gaskets						
	5	54" Diapers			(4) 3-13-67 MMSL			
	5	54" Wide Diapers						
	85	72" Harn. Clamp Ring Assemblies						
	4	54" Harn. Clamp Ring Assemblies						
		Spec. Design for Valves, 2-15432C, 2-15437C						
	1	18" M.J. Glands, Gaskets & Accessories						
	80	1-1/4" x 4-1/2" Cadmium Plated Bolts Hex Head Nuts						
	4	24" Flange Gaskets						
	104	1-1/4" x 30" Subaqueous Draw Bolts						
		w/Nuts & Washers for SP-18 Pipe						

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit IV

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		MISC. MATERIALS SHIPPING LIST (CONT'D)						
	208	Lugs for Subaqueous Pipe (6-3/4" High)						
	208	5/8" x 1" Cap Screws (Ship w/Subaqueous Lugs)						
	1	48" Harn. Clamp Ring Assembly						
	2	48" Laying Gaskets						
	2	48" Wide Diapers						

PRICE BROTHERS COMPANY LAYING SCHEDULE

DE NO. 95.66P-Unit IV

PROJECT Flint, Michigan -- Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		Begin laying at end of Unit III.			472+47.15			742.40
		72" SP-12 Class 151 for 6' Cover						
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	472+67.20	1.05	- .21	742.19
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	472+87.25	1.55	- .31	741.88
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	473+07.30	1.94	- .39	741.49
	3	Lengths	60.09	60.08	473+67.38	1.94	- 1.16	740.33
		72" SP-18 Class 151 for 6' Cover						
S-188	1	Length w/Subaqueous B.E. Only	20.05	20.05	473+87.43	1.94	- .39	739.94
S-189	1	Short Length	9.14	9.14	473+96.57	1.94	- .18	739.76
F 190	1	72" P.S. x 54" P.B. Reducer	8.61	8.61	474+05.18	1.94	- .16	739.60
	1	54" P.J. End Valve (Not by P.B. Co.)	1.40	1.40	474+06.58	1.94	- .03	739.57
F 191	1	54" P.S. x 72" P.B. Reducer	8.71	8.71	474+15.29	1.94	- .17	739.40
	1	Full Bevel, L.S. Top-P.I. Sta.474+15.79 Open Jt. Bottom @ 19.78	19.80	19.72	474+35.01	9.14	- 1.80	737.60
S-192	1	Half Bevel, L.S. Top P.I. Sta. 474+35.52 w/24" Flg. OL 8' from S.E. on Right Side	19.94	19.75	474+54.76	13.80	- 2.72	734.88
S-192A		w/24" Blind Flg. Open Jt. Top @ 10.91						

JOB NO. 95.66P-Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

DATE October 4, 1966
REVISED (2) 2-21-67
PREPARED BY Claude A. Hoopa

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-18 Class 151 for 6' Cover			474+54.76			734.88
S 193	1	Length w/18" Tan. M.J.B. B.O. OL. 9' fr. S.E. Bottom Right	20.03	19.84	474+74.60	13.80	- 2.74	732.14
	1	Length	20.03	19.84	474+94.44	13.80	- 2.74	729.40
	1	Full Bevel, L.S. Bottom	19.81	19.79	475+14.23	5.02	- .99	728.41
		P.I. Station 474+94.95 Open Jt. Bottom @ 19.78						
	2	Lengths	40.06	40.01	475+54.24	5.02	- 2.01	726.40
		72" SP-18 Class 162 for 10' Cover						
	1	Full Bevel, L.S. Top P.I. Station 475+54.74 Open Jt. Bottom @ 19.78	19.80	19.65	475+73.89	12.25	- 2.41	723.99
S 194	1	Short Length	11.77	11.68	475+85.57	12.25	- 1.42	722.57
	1	Half Bevel, L.S. Bottom P.I. Station 475+86.07 Open Jt. Bottom @ 19.91	19.93	19.87	476+05.44	7.90	- 1.57	721.00
	1	Full Bevel, L.S. Bottom P.I. Station 476+05.92	19.78	19.78	476+25.22	.00		721.00

JOB NO. 95.66P-Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint - Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-18 Class 162 for 10' Cover			476+25.22			721.00
	1	Full Bevel, L.S. Bottom P.I. Station 476+25.71 Open Jt. Bottom @ 19.78	19.79	19.73	476+44.95	7.50	+ 1.50	722.50
	1	Full Bevel, L.S. Bottom P.I. Station 476+45.44 Open Jt. Top @ 19.78	19.79	19.55	476+64.50	15.75	+ 3.08	725.58
S-195	1	Short Full Bevel, L.S. Top P.I. Station 476+65.03 Open Jt. Top @ 11.03	11.04	11.01	476+75.51	7.50	+ .82	726.40
		72" SP-18 Class 151 for 6' Cover						
	1	Full Bevel, L.S. Top P.I. Station 476+76.00 Open Jt. Bottom @ 19.78	19.79	19.79	476+95.30	.00	.00	726.40
	4	Lengths	80.12	80.12	477+75.42	.00	.00	726.40
	1	Half Bevel, L.S. Bottom P.I. Station 477+75.92 Open Jt. Bottom @ 19.91	19.93	19.91	477+95.33	4.60	+ .92	727.32
	1	Length, Open Jt. Bottom @ 20.03	20.05	20.02	478+15.35	5.20	+ 1.04	728.36
	1	Length	20.03	20.00	478+35.35	5.20	+ 1.04	729.40
	1	Half Bevel, L.S. Top P.I. Station 478+35.85 Open Jt. Bottom @ 19.91	19.93	19.93	478+55.28	2.00	+ .40	729.80

JOB NO. 95.66P-Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoods

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-18 Class 151 for 6' Cover			478+55.28			729.80
S-196	1	Length, Subaqueous P.S. Only Open Jt. Bottom	20.05	20.04	478+75.32	2.47	+ .49	730.29
		72" SP-12 Class 151 for 6' Cover						
F-197	1	7°30' Elbow, L.S. Right	1.64	1.64	478+76.96	2.47	+ .04	730.33
F-198	1	7°30' Elbow, L.S. Right	1.64	1.64	478+78.60	2.47	+ .04	730.37
F-199	1	7°30' Elbow, L.S. Right	1.64	1.64	478+80.24	2.47	+ .04	730.41
	2	Lengths	40.06	40.06	479+20.30	2.47	+ .99	731.40
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	479+40.35	1.80	+ .36	731.76
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	479+60.40	1.10	+ .22	731.98
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	479+80.45	.605	+ .12	732.10
	19	Lengths	380.57	380.56	483+61.01	.605	+ 2.30	734.40
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	483+81.06	.156	+ .03	734.43
	15	Lengths	300.45	300.45	486+81.51	.156	+ .47	734.90

PRICE BROTHERS COMPANY LAYING SCHEDULE

Job No. 95.66P-Unit IV

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2) 2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 162 for 10' Cover			486+81.51			734.90
	1	Length, Open Jt. Bottom @ 20.03	20.03	20.03	487+01.54	.18	+ .04	734.94
	13	Lengths	260.39	260.39	489+61.93	.18	+ .46	735.40
	1	Length, Open Jt. Bottom @ 20.03	20.05	20.05	489+81.98	.67	+ .13	735.53
	3	Lengths	60.09	60.09	490+42.07	.67	+ .40	735.93
		72" SP-12 Class 151 for 6' Cover						
	6	Lengths	120.18	120.18	491+62.25	.67	+ .80	736.73
S-200	1	Length w/18" M.J.B. OL. 3' from S.E.	20.03	20.03	491+82.28	.67	+ .13	736.86
	4	Lengths	80.12	80.12	492+62.40	.67	+ .54	737.40
	1	Length, Open Jt. Bottom @ 20.03	20.05	20.05	492+82.45	1.11	+ .22	737.62
	35	Lengths	701.05	701.02	499+83.47	1.11	+ 7.78	745.40
	1	Length, Open Jt. Top @ 20.03	20.04	20.04	500+03.51	.78	+ .16	745.56
	15	Lengths	300.45	300.44	503+03.95	.78	+ 2.34	747.90
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	503+24.00	.04	+ .01	747.91
	74	Lengths	1482.22	1482.22	518+06.22	.04	+ .58	748.49
S-201	1	Length, w/2" I.P. Thd. OL. 14' fr. S.E.	20.03	20.03	518+26.25	.04	+ .01	748.50
	1	Length, Open Jt. Top @ 20.03	20.04	20.04	518+46.29	.06	- .01	748.49

B NO. 95.66P-Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1967
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for 6' Cover			518+46.29			748.49
	20	Lengths	400.60	400.60	522+46.89	.06	- .24	748.25
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	522+66.94	.80	- .16	748.09
	1	Length, Open Jt. Top @ 20.03	20.04	20.04	522+86.98	1.19	- .24	747.85
	4	Lengths	80.12	80.12	523+67.10	1.19	- .95	746.90
	1	Length, Open Jt. Bottom @ 20.03	20.05	20.05	523+87.15	.59	- .12	746.78
	16	Lengths	320.48	320.48	527+07.63	.59	- 1.88	744.90
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	527+27.68	1.30	- .26	744.64
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	527+47.73	2.07	- .41	744.23
	2	Lengths	40.06	40.05	527+87.78	2.07	- .83	743.40
		72" SP-12 Class 162 for 10' Cover						
	7	Lengths	140.20	140.18	529+27.96	2.07	- 2.90	740.50
	1	Length, Open Jt. Top @ 20.03	20.05	20.04	529+48.00	2.80	- .56	739.94
	1	Length, Open Jt. Top @ 20.03	20.05	20.04	529+68.04	3.44	- .69	739.25
	4	Lengths	80.12	80.07	530+48.11	3.44	- 2.75	736.50

JOB NO. 95.66P-Unit IV

Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			530+48.11	3.44		736.50
	1	Half Bevel, L.S. Bottom (@ 19.91) Open Jt. Top	19.94	19.94	530+68.05	.44	- .09	736.41
	1	Full Bevel, L.S. Left (@ 19.78) Open Jt. Left Side	19.81	19.81	530+87.86	.44	- .09	736.32
X-32	1	Length	20.03	20.03	531+07.89	.44	- .09	736.23
		w/12" M.J.B. OL 18.0' from S.E.						
	4	Lengths	80.12	80.12	531+88.01	.44	- .35	735.88
		72" SP-12 Class 151 for 6' Cover						
	1	Length	20.03	20.03	532+08.04	1.02	- .09	735.79
F-215	1	72" P.S. x 54" P.B. Reducer	6.18	6.18	532+14.22	.44	- .03	735.76
		54" P.J. End Valve (Not by P.B. Co.)	1.40	1.40	532+15.62	.44	- .01	735.75
F-216	1	54" P.S. x 72" P.B. Reducer	6.78	6.78	532+22.40	.44	- .03	735.72
	1	Length	20.03	20.03	532+42.43	.44	- .09	735.63
S-217	1	Length w/24" Flg. OL 16.0' from S.E.	20.03	20.03	532+62.46	.44	- .09	735.54
F-217A	1	w/24" Blind Flg. (F-217A)						
	5	Lengths	100.15	100.15	533+62.61	.44	- .44	735.10
	5	Full Bevels, L.S. Left	98.90	98.90	534+61.51	.44	- .44	734.66

JOB NO. 95.66P-Unit IV

Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for 6' Cover			534+61.51	.44		34.65
	1	Length	20.03	20.03	534+81.54	.44	- .09	734.57
	1	Tied Length Shopweld B.E. to P.E. of X-33	20.03	20.03	535+01.57	.44	- .09	731.48
X-33	1	7°-0' Elbow, L.S. Top Tied P.E.						
		Harn. B.E. (Shopweld P.E. to B.E. of Tied Length)						
		P.E. to P.I.	1.00	1.00	535+02.57	.44	- .00	734.48
		P.I. to P.B.	.64	.63	535+03.20	12.70	- .08	734.40
		72" SP-12 Class 162 for 10' Cover						
X-34	1	Length Harn. S.E. Tied B.E. (Shopweld B.E. to P.E. of X-35)	20.03	19.87	535+23.07	12.70	- 2.49	731.91
X-35	1	7°-0' Elbow, L.S. Bottom Tied P.E. Harn. B.E. (Shopweld P.E. to B.E. of X-34)						
		P.E. to P.I.	1.00	.92	535+23.99	12.70	- .12	731.79
		P.I. to P.B.	.64	.64	535+24.63	1.32	- .01	731.78
	1	Harn. Length Clamp S.E. Only	20.03	20.03	535+44.66	1.32	- .26	731.52
	3	Lengths	60.09	60.09	536+04.75	1.32	- .79	730.73
	3	Full Bevels, L. Right	98.90	98.90	537+03.65	1.32	- 1.30	729.43

JOB NO. 95.66P-Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

Revised

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2) 2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 162 for 10' Cover			537+03.65	1.32		729.43
	3	Lengths	60.09	60.09	537+63.74	1.32	- .79	728.64
	1	Length, Open Jt. Top (@ 20.03)	20.06	20.05	537+83.79	2.30	- .46	728.18
		72" SP-12 Class 151 for 6' Cover						
	1	Length, Open Jt. Top (@ 20.03)	20.04	20.03	538+03.82	2.62	- .52	727.66
	4	Lengths	80.12	80.09	538+83.91	2.62	- 2.10	725.56
	1	Length, Open Jt. Bottom (@ 20.03)	20.06	20.06	539+03.97	1.64	- .33	725.23
	1	Length, Open Jt. Bottom (@ 20.03)	20.05	20.05	539+24.02	1.90	- .18	725.05
	36	Lengths	721.08	721.04	546+45.06	.90	- 6.50	718.55
		72" SP-12 Class 191 for 14' Cover						
	1	Length, Open Jt. Top (@ 20.03)	20.06	20.06	546+65.12	1.88	- .38	718.17
	1	Half Bevel, L.S. Top Open Jt. Top (@ 19.91)	19.94	19.89	546+85.01	6.79	- 1.36	716.81
	1	Length, Open Jt. Top (@ 20.03)	20.05	20.00	547+05.01	7.26	- 1.45	715.36
	3	Lengths	60.09	59.93	547+64.94	7.26	- 4.36	711.00
	1	Full Bevel, L.S. Bottom (@ 19.78) Open Jt. Top	19.80	19.80	547+84.74	.00	.00	711.00
	1	Length	20.03	20.03	548+04.77	.00	.00	711.00

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit IV

Revised

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	NOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 191 for 14' Cover			548+04.77	.00		711.00
	1	Half Bevel, L.S. Bottom Open Jt. Top (@ 19.91)	19.92	19.91	548+24.68	3.43	+ .68	711.68
	7	Lengths	140.21	140.12	549+64.30	3.43	+ 4.82	716.50
		72" SP-12 Class 151 for 6' Cover						
X-36	1	Half Bevel, L.S. Top (@ 19.91)	19.92	19.92	549+84.72	.88	- .17	716.33
		Open Jt. Top w/2" I.P. OL. @ S.E.						
	6	Lengths	120.18	120.18	551+04.90	.88	- 1.06	715.27
	3	Full Bevels, L.S. Left	59.34	59.34	551+64.24	.88	- .53	714.74
	8	Lengths	160.24	160.24	553+24.48	.88	- 1.41	713.33
	1	Length, Open Jt. Bottom (@ 20.03)	20.05	20.05	553+44.53	.28	- .06	713.27
	5	Lengths	100.15	100.15	554+44.68	.27	- .28	712.99
		72" SP-12 Class 191 for 14' Cover						
	1	Harn. Half Bevel, L.S. Top (@ 19.91) Open Jt. Top Clamp B.E. Only	19.93	19.91	554+64.59	4.70	- .94	712.05
X-37	1	Harn. Short Length	14.16	14.14	554+78.73	4.70	- .66	711.39
-202	1	Length -- Harn. S.E. -- Tied B.E. Shopweld B.E. to P.E. of F-203)	20.03	20.00	554+98.73	4.70	- .94	710.45

JOB NO. 95.65P-Unit IV

Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 191 for 14' Cover			554+98.73	4.70		710.45
F-203	1	7°-30' Elbow, L.S. Right Tied P.E. Harn. B.E. (Shopweld P.E. to B.E. of S-202)						
		P.E. to P.I.	1.00	1.00	554+99.73	4.70	- .05	710.40
		P.I. to P.B.	.64	.64	555+00.37	4.70	- .03	710.37
S-204	1	Short Length Harn. S.E. Tied B.E. (Shopweld B.E. to P.E. of F-205)	11.46	11.44	555+11.81	4.70	- .54	709.83
F-205	1	7°-30' Elbow, L.S. Right Tied P.E. Harn. B.E. (Shopweld P.E. to B.E. of S-204)						
		P.E. to P.I.	1.00	1.00	555+12.81	4.70	- .05	709.78
		P.I. to P.B.	.64	.64	555+13.45	4.70	- .03	709.75
S-206	1	Short Length Harn. S.E. Tied B.E. (Shopweld B.E. to P.E. of F-207)	11.46	11.44	555+24.89	4.70	- .54	709.21
F-207	1	7°-30' Elbow, L.S. Right Tied P.E. -- Harn. B.E. (Shopweld P.E. to B.E. of S-206)						
		P.E. to P.I.	1.00	1.00	555+25.89	4.70	- .05	709.16

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.60 Unit IV — PAGE 12 OF 31 PAGES

Revised — PROJECT Flint, Michigan - Division A — DATE October 4, 1966

72" Flint-Detroit Water Supply — REVISED (2)2-21-67

PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 191 for 14' Cover			555+26.53	4.70		709.13
S-209	1	Short Length Harn. S.E. Tied B.E. (Shopweld B.E. to P.E. of 210)	11.46	11.44	555+37.97	4.70	- .54	708.59
F-210	1	7°-30' Elbow, L.S. Right Tied P.E.						
		Harn. B.E. (Shopweld P.E. to B.E. of S-209)						
		P.E. to P.I.	1.00	1.00	555+38.97	4.70	- .05	708.54
		P.I. to P.B.	.64	.64	555+39.61	4.70	- .03	708.51
S-211	1	Short Length Harn. S.E Tied B.E. (Shopweld B.E. to P.E. of F-212)	11.46	11.44	555+51.05	4.70	- .54	707.97
F-212	1	7°-30' Elbow, L.S. Right Tied P.E. Harn. B.E.						
		(Shopweld P.E. to B.E. of F-211)						
		P.E. to P.I.	1.00	1.00	555+52.05	4.70	- .05	707.92
		P.I. to P.B.	.64	.64	555+52.69	4.70	- .04	707.88
X-38	1	Short Full Bevel, L.S. Bottom Open Jt. Toy (@ 11.46) Harn. P.S. Tied B.E.	11.49	11.49	555+64.18	7.17	+ .25	708.13
		(Shopweld B.E. to P.E. of X-39)						

PRICE BROTHERS COMPANY LAYING SCHEDULE

95.66P-Unit IV

Revision

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2) 2-21-67
PREPARED BY Claude A. Hoops

CURVE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 191 for 14' Cover			555+64.18	2.17		708.13
X-39	1	7°-30' Elbow, L.S. Right						
		Tied P.E.						
		Harn. B.E.						
		(Shopweld P.E. to B.E. of X-38)						
		P.E. to P.I.	1.00	1.00	555+65.18	2.17	+ .02	708.15
		P.I. to P.B.	.64	.64	555+65.82	2.17	+ .01	708.16
S-213	1	Short Length	11.46	11.46	555+77.28	2.17	+ .25	708.41
		Harn. S.E.						
		Tied B.E.						
		(Shopweld B.E. to P.E. of F-214)						
F-214	1	7°-30' Elbow, L.S. Right						
		Tied P.E.						
		Harn. B.E.						
		(Shopweld P.E. to B.E. of S-213)						
		P.E. - P.I.	1.00	1.00	555+78.28	2.17	+ .02	708.43
		P.I. - P.B.	.64	.64	555+78.92	2.17	+ .01	708.44
X-40	1	Short Length	11.46	11.46	555+90.38	2.17	+ .25	708.69
		Harn. S.E.						
		Tied B.E.						
		(Shopweld B.E. to P.E. of X-41)						
X-41	1	7°-30' Elbow, L.S. Right						
		Tied P.E.						
		Harn. B.E.						
		(Shopweld P.E. to B.E. of X-40)						
		P.E. to P.I.	1.00	1.00	555+91.38	2.17	+ .02	708.71
		P.I. to P.B.	.64	.64	555+92.02	2.17	+ .01	708.72

JOB NO. 95.66P-Unit IV

PRICE BROTHERS COMPANY LAYING SCHEDULE

Revision

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 191 for 14' Cover			555+92.02	2.17		708.72
X-42	1	Short Full Bevel, L.S. Bottom Open Jt. Bottom Harn. S.E. Tied B.E. (Shopweld B.E. to P.E. of X-43)	11.46	11.42	556+03.44	7.76	+ .89	709.61
X-43	1	7°-30' Elbow, L.S. Right Tied P.E. Harn. B.E. (Shopweld P.E. to B.E. of X-42)						
		P.E. to P.I.	1.00	1.00	556+04.44	7.76	+ .08	709.69
		P.I. to P.B.	.64	.64	556+05.08	7.76	+ .05	709.74
X-44	1	Short Length Harn. S.E. Tied B.E. (Shopweld B.E. to P.E. of X-45)	11.46	11.42	556+16.50	7.76	+ .89	710.63
X-45	1	7°-30' Elbow, L.S. Right Tied P.E. Harn. B.E. (Shopweld P.E. to B.E. of X-44)						
		P.E. to P.I.	1.00	1.00	556+17.50	7.76	+ .08	710.71
		P.I. to P.B.	.64	.64	556+18.14	7.76	+ .05	710.76
X-46	1	Short Length Harn. S.E. Tied B.E. (Shopweld B.E. to P.E. of X-47)	11.46	11.42	556+29.56	7.76	+ .89	711.65

Revised

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2) 2 21 67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	OT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 191 for 14' Cover			556+29.56	7.76		711.65
X-47	1	7°-30' Elbow, L.S. Right Tied P.E. Harn. B.E. (Shopweld P.E. to B.E. of X-46)						
		P.E. to P.I.	1.00	1.00	556+30.56	7.76	+ .08	711.73
		P.I. to P.T.	.64	.64	556+31.20	7.76	+ .05	711.78
	2	Harn. Lengths	40.06	39.93	556+71.13	7.76	+ 3.11	714.89
	1	Harn. Length Clamp S.E. Only	20.03	19.99	556+91.12	7.76	+ 1.55	716.44
		72" SP-12 Class 151 for 8' Cover						
S 242	1	Full Bevel, L.S. Top (@ 19.78) Open Jt. Bottom w/2" T.P. OL. 6.0' @ S.E.	19.80	19.80	557+10.92	.41	- .08	716.36
X 48	1	Short Length	9.66	9.66	557+20.58	.41	- .04	716.32

JOB NO. 95.66P-Unit IV

Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoope

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for (10') 46' Cover			557+20.58			716.32
	2	Lengths	40.06	40.06	557+60.64	.41	- .16	716.16
F-243	1	7°-30' Elbow, L.S. Left	1.64	1.64	557+62.28	.41	- .01	716.15
	6	Lengths	120.18	120.18	558+82.46	.41	- .49	715.66
F-244	1	7°-30' Elbow, L.S. Left	1.64	1.64	558+84.10	.41	- .01	715.65
F-245	1	7°-30' Elbow, L.S. Left	1.64	1.64	558+85.74	.41	- .01	715.64
	3	Lengths	60.09	60.09	559+45.83	.41	- .24	715.40
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	559+65.88	1.14	- .23	715.17
	1	Length	20.03	20.03	559+85.91	1.14	- .23	714.94
	1	Harn. Length, Clamp B.E. Only	20.03	20.03	560+05.94	1.14	- .23	714.71
	1	Harn. Length	20.03	20.03	560+25.97	1.14	- .23	714.48
F-246	1	Harn. 7°-30' Elbow, L.S. Left	1.64	1.64	560+27.61	1.14	- .02	714.46
F-247	1	Harn. 7°-30' Elbow, L.S. Left	1.64	1.64	560+29.25	1.14	- .02	714.44
F-248	1	Harr 9° Elbow, L.S. Top						
		Special P.S. to P.I.	4.75	4.75	560+34.00	1.14	- .05	714.39
		P.I. to P.B.	.72	.71	560+34.71	16.66	- .12	714.27

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit IV

Revised

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED (2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			560+34.71			714.27
	2	Harn. Lengths	40.06	39.52	560+74.23	16.66	- 6.58	707.69
P-249	1	Harn. Short	6.77	6.68	560+80.91	16.66	- 1.11	706.58
P-250	1	Harn. 9°-30' Elbow, L.S. Bottom						
		P.S. to P.I.	1.10	1.09	560+82.00	16.66	- .18	706.40
		P.I. to P.B.	.74	.74	560+82.74	.00		706.40
	1	Harn. Length	20.03	20.03	561+02.77	.00		706.40
	1	Harn. Full Bevel, L.S. Bottom @ 19.78 Open Jt. Bottom P.I. Station 561+03.27	19.80	19.73	561+22.50	8.50	+ 1.68	708.08
P-251	1	Harn. 7°-30' Elbow, L.S. Left	1.64	1.63	561+24.13	8.50	+ .14	708.22
	1	Harn. Length, Open Jt. Bottom @ 20.03	20.04	19.97	561+44.10	8.65	+ 1.73	709.95
	2	Harn. Lengths	40.06	39.91	561+84.01	8.65	+ 3.45	713.40
		72" SP-12 Class 151 for 6' Cover						
	1	Harn. Full Bevel, L.S. Top P.I. Station 561+84.46 Open Jt. Top @ 19.78	19.80	19.80	562+03.81	.27	+ .05	713.45
	1	Harn. Length, Clamp S.E. Only	20.03	20.03	562+23.84	.27	+ .05	713.50
	9	Lengths	180.27	180.27	564+04.11	.27	+ .50	714.00

JOB NO. 55.66P-Unit IV

Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED 12-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for 6' Cover			564+04.11			714.00
S-252	1	Length, Open Jt. Top w/2" I.P. Thd. OL. 3' from S.E.@20.03	20.05	20.05	564+24.16	.35	- .07	713.93
	2	Lengths	40.06	40.06	564+64.22	.35	- .14	713.79
S-253	1	Short Length	10.03	10.03	564+74.25	35	- .03	713.76
F-254	1	7°-30' Elbow, L.S. Right	1.64	1.64	564+75.89	.35	- .01	713.75
	5	Lengths	100.15	100.15	565+76.04	.35	- .35	713.40
	1	Half Bevel, L.S. Top Open Jt. Bottom @ 19.91	19.94	19 93	565+95.97	3.45	- .69	712.71
	1	Length, Open Jt. Bottom @ 20.03	20.05	20.05	566+16.02	2.75	- .55	712.16
	1	Length, Open Jt. Bottom @ 20.03	20.05	20.05	566+36.07	2.05	- .41	711.75
F-255	1	7°-30' Elbow, L.S. Right Rotate for Horiz. & Vert. Deflection	1.64	1.64	566+37.71	1.61	.03	711.72
	1	Length	20.03	20.03	566+57.74	1.61	- .32	711.40
	1	Full Bevel, L.S. Top Open Jt. Bottom @ 19.78	19.81	19.74	566+77.48	8.56	- 1.69	709.71

JOB NO. 9".66P-Unit IV

Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

DATE October 4, 1966
REVISED(2)2-21-67
PREPARED BY Claude A. Hoops

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			566+77.48			709.71
	1	Length	20.03	19.96	566+97.44	8.56	- 1.71	708.00
	1	Full Bevel, L.S. Bottom P.I. Station 566+97.94 Open Jt. Bottom @ 17.78	19.80	19.80	567+17.24	.00		708.00
	1	Full Bevel, L.S. Bottom P.I. Station 567+17.74 Open Jt. Top @ 19.78	19.80	19.75	567+36.99	7.30	+ 1.44	709.44
	1	Length	20.03	19.98	567+56.97	7.30	+ 1.46	710.90
		72" SP-12 Class 151 for 6' Cover						
	1	Full Bevel, L.S. Top P.I. Station 567+57.48 Open Jt. Bottom @ 19.78	19.81	19.81	567+76.78	.40	+ .08	710.98
S-256	1	Short Length, Open Jt. Bottom @ 13.03	13.06	13.06	567+89.84	1.21	+ .16	711.14
S-257	1	7°-30' Elbow, L.S. Right	1.64	1.64	567+91.48	1.21	+ .02	711.16
S-258	1	Length w/2" I.P. Thd. OL. 18' from S.E.	20.03	20.03	568+11.51	1.21	+ .24	711.40
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	568+31.56	.51	+ .10	711.50
	1	Length, Open Jt. Top @ 20.03	20.05	20.05	568+51.61	.20	- .04	711.46
								HOLD 711.40

JOB NO. 95.66P-Unit IV

Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

DATE October 4, 1966
REVISED (2) 2-21-67
PREPARED BY Claude A. Hoops

PROJECT Flint, Michigan - Division A
72" Flint-Detroit Water Supply

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						HOLD 711.40 711.46
		72" SP-12 Class 151 for 6' Cover			568+51.61			
	1	Length, Open Jt. Top @ 20.03	20.04	20.04	568+71.65	.53	- .11	711.35
	5	Lengths	100.15	100.15	569+71.80	.53	- .53	710.82
F-259	1	7°-30' Elbow, L.S. Right	1.64	1.64	569+73.44	.53		710.80
	4	Lengths	80.12	80.12	570+53.56	.53	- .42	710.40
	1	Length, Open Jt. Bottom @ 20.03	20.04	20.04	570+73.60	.20	- .04	710.36
	20	Lengths	400.60	400.60	574+74.20	.20	- .80	709.56
	1	Length, Open Jt. Top (@ 20.03)	20.06	20.06	574+94.26	.96	- .19	709.37
	4	Lengths	80.12	80.12	574+74.38	.96	- .77	708.60
X-49	1	Short Length	5.66	5.66	575+80.04	.96	- .05	708.55
	1	Harn. Length, Clamp B.E. Only	20.03	20.03	576+00.07	.96	- .19	708.36
	1	Harn. Length	20.03	20.03	576+20.10	.96	- .19	708.17
S-230	1	Length Harn. S.E. Tied B.E. (Shopweld B.E. to P.E. of F-231)	20.03	20.03	576+40.13	.96	- .19	707.98
F-231	1	15° Elbow, L.S. Left Tied P.E. -- Harn. B.E.						
		(Shopweld P.E. to B.E. of S-238)						
		P.E. to P.I.	1.39	1.39	576+41.52	.96	- .01	707.97
		P.I. to P.B.	1.04	1.04	576+42.56	.96	- .01	707.96

FOR CONTINUATION SEE SHEET 20 OF UNIT III - DATED 10/4/66

JOB NO. 95.66P Unit III Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED Add Revision Date
PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		Misc. Materials Shipping List						
	33	25# Pails Price Lube			**Revisions**			
	510	72" laying gaskets			(1) Complete Schedule			
	426	72" diapers						
	74	72" wide diapers						
	73	72" Harn. clamp ring assemblies						
	5	54" laying gaskets						
	3	54" diapers						
	3	54" wide diapers						
	2	54" Harn. clamp ring assemblies						
	1	18" M.J. glands, gaskets & accessories						
	1	12" M.J. gland, gasket & accessories						
	20	1 1/4" x 4 1/2" cadmium plated bolts w/hex. head nuts						
	1	24" flange gaskets						

JOB NO. 95.66P - Unit III Revised

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detr. Water Supply

DATE September 9, 1966
REVISED Add Revision Date - All Sheets
PREPARED BY J.C. Nilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		Begin laying 180' South of intersection of Eggleston Ave. and Potter Rd. at end of Unit II						
		72" SP-12 Class 151 for 6' Cover			387+52.73			754.40
	1	Half bevel L.S. top Pi Sta. 387+53.21 open jt bottom @19.91	19.92	19.90	387+72.63	4.57	-.91	753.49
	8	Lengths	160.24	160.08	389+32.71	4.57	-7.32	746.17
	1	Harn. length clamp bell end only	20.03	20.01	389+52.72	4.57	-.91	745.26
	1	Harn. length	20.03	20.01	389+72.73	4.57	-.91	744.35
S-73A	1	Harn Short	16.03	16.01	389+88.74	4.57	-.73	743.62
S-73	1	Tied lgth., harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-74	20.03	20.01	390+08.75	4.57	-.91	742.71
F-74	1	15° elbow L.S. left tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-73						
		P.E. to P.I.	1.39	1.39	390+10.14	4.57	-.06	742.65
		P.I. to P.B. (Thrust Block)	1.04	1.04	390+11.18	4.57	-.05	742.60
S-75	1	Tied short harn. S.E. tied B.E. Shopweld B.E. to P.E. of F-76	10.74	10.73	390+21.91	4.57	-.49	742.11
F-76	1	15° elbow L.S. left tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-75	1.39	1.39	390+23.30	4.57	-.06	742.05
		(Thrust Block)	1.04	1.04	390+24.34	4.57	-.05	742.00
S-77	1	Tied short, full bevel L.S. bottom open jt. top Harn. S.E., tied B.E. Shopweld B.E. to S.E. of F-78	10.77	10.77	390+35.11	2.25	+.24	742.24
F-78	1	15° elbow, L.S. left, tied P.E.,harn.B.E. Shopweld P.E. of S.E. of S-77						
		P.E. to P.I.	1.39	1.39	390+36.50	2.25	+.03	742.27

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			390+37.54			742.29
S-79	1	Tied short harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-80	10.74	10.74	390+48.28	2.25	+.24	742.53
F-80	1	15° elbow L.S. left, tied P.E., harn.B.E. Shopweld P.E. to B.E. of S-79						
		P.E. to P.I.	1.39	1.39	390+49.67	2.25	+.03	742.56
		P.I. to P.B. (Thrust Block)	1.04	1.04	390+50.71	2.25	+.02	742.58
S-81	1	Tied short harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-82	10.74	10.74	390+61.45	2.25	+.24	742.82
F-82	1	15° elbow, L.S. left, tied P.E., harn.B.E. Shopweld P.E. to B.E. of S-81						
		P.E. to P.I.	1.39	1.39	390+62.84	2.25	+.03	742.85
		P.I. to P.B.	1.04	1.04	390+63.88	2.25	+.02	742.87
		(Thrust Block)						
S-83	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of S-84	10.74	10.74	390+74.62	2.25	+.24	743+11
F-84	1	15° elbow, L.S. left, tied P.E., harn.B.E. Shopweld P.E. to B.E. of S-83						
		P.E. to P.I.	1.39	1.39	390+76.01	2.25	+.03	743.14
		P.I. to P.B.	1.04	1.04	390+77.05	2.25	+.02	743.16
		(Thrust Block)						
	2	Harn. lengths	40.06	40.05	391+17.13	2.25	+.90	744.06
	1	Harn. length, clamp S.E. only	20.03	20.03	391+37.13	2.25	+.45	744.51

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			391+37.13			744.51
8-84A	1	Short Length	3.98	3.98	391+41.11	2.25	+.09	744.60
	8	Lengths	160.24	160.24	393+01.31	2.25	+3.60	748.20
		72" SP-12 Class 162 for 10' Cover						
	1	Lgth., open jt. top @20.03	20.05	20.05	393+21.36	1.45	+.29	748.49
	1	Lgth., open jt. top @20.03	20.05	20.05	393+41.41	.80	+.16	748.65
	1	Lgth., open jt. top @20.03	20.05	20.05	393+61.46	.375	+.07	748.72
	9	Lengths	180.27	180.27	395+41.73	.375	+.68	749.40
	1	Full bevel, L.S. bottom Open jt. top @19.78	19.80	19.74	395+61.47	7.70	+1.52	750.92
	2	Lengths	40.06	39.94	396+01.41	7.70	+3.08	754.00
	1	Full bevel L.S. top Open jt. bottom @19.78	19.80	19.80	396+21.21	.50	+.10	754.10
	1	Lgth., open jt. bottom @20.03	20.05	20.05	396+41.26	1.20	+.24	754.34
	4	Lengths	80.12	80.11	397+21.37	1.20	+.96	755.30
	1	Lgth., open jt. top @20.03	20.05	20.05	397+41.42	.50	+.10	755.40

JOB NO. 95.66P - Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE Sept. 9, 1966
REVISED
PREPARED BY J.C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover	39		397+41.42			755.40
S-85	1	Lgth., open jt. top @20.03 w/8" Tan. flg. OL. top left 7' fr. SE	20.05	20.05	397+61.47	.00		755.40
	1	Lgth., open jt. top @20.03	20.05	20.05	397+81.52	.68	-.14	755.26
	1	Lgth, open jt. top @20.03	20.05	20.05	398+01.57	1.35	-.27	754.99
	1	Lgth., open jt. top @20.03	20.05	20.05	398+21.62	1.99	-.40	754.59
	2	Lengths	40.06	40.05	398+61.67	1.99	-.79	753.80
	1	Harn. Lgth., clamp B.E. only	20.03	20.03	398+81.70	1.99	-.40	754.40
	1	Harn. Lgth.,	20.03	20.03	399+01.73	1.99	-.40	753.00
S-86	1	Tied half bevel harn. S.E. tied B.E. L.S. top open jt. bottom Shopweld B.E. to P.E. of F-87	19.94	19.91	399+21.64	5.10	-1.02	751.98
F-87	1	15° elbow, L.S. right, tied P.E. Harn B.E. Shopweld P.E. to B.E. of S-86						
		P.E. to P.I.	1.39	1.39	399+23.03	5.10	-.07	751.91
		P.I. to P.B.	1.04	1.04	399+24.07	5.10	-.05	751.86
		(Thrust Block						
S-88	1	Tied short, Harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-89 Open jt bottom @10.74	10.76	10.75	399+34.82	4.64	-.50	751.36

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

DATE September 9, 1966

PROJECT Flint Michigan Div. Unit
72" Flint-Detroit Water Supply

PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			399+34.82			751.36
F-89	1	15° elbow, L.S. right, tied P.E., harn. B.E. Shopweld P.E. to B.E. of S-88						
		P.E. to P.I.	1.39	1.39	399+36.21	4.64	-.06	751.30
		P.I. to P.B. (Thrust Block)	1.04	1.04	399+37.25	4.64	-.05	751.25
S-90	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-91	10.74	10.73	399+47.98	4.64	-.50	750.75
F-91	1	15° elbow, L.S. right, tied P.E., harn. B.E. Shopweld P.E. to B.E. of S-90						
		P.E. to P.I.	1.39	1.39	399+49.37	4.64	-.06	750.69
		P.I. to P.B. (Thrust Block)	1.04	1.04	399+50.41	4.64	-.05	750.64
S-92	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-93	10.74	10.73	399+61.14	4.64	-.50	750.14
F-93	1	15° elbow, L.S. right, tied P.E., harn. B.E. Shopweld P.E. to B.E. of S-92						
		P.E. to P.I.	1.39	1.39	399+62.53	4.64	-.06	750.08
		P.I. to P.B. (Thrust Block)	1.04	1.04	399+63.57	4.64	-.05	750.03
S-94	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-95	10.74	10.73	399+74.30	4.64	-.50	749.53
F-95	1	15° elbow, L.S. right, tied P.E., harn. B.E. Shopweld P.E. to B.E. of S-94						
		P.E. to P.I.	1.39	1.39	399+75.69	4.64	-.06	749.47

JOB NO. 95.66P - Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J.C. Wilson Jr.

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			399+76.73			749.42
S-96	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E of F-97 w/12" M.J.B. OL. 2' fr. S.E. on right side	10.74	10.73	399+87.46	4.64	-.50	748.92
F-97	1	15° elbow L.S. right, tied P.E. harn B.E.. shopweld P.E. to B.E. of S-96						
		P.E. to P.I.	1.39	1.39	399+88.85	4.64	-.06	748.86
		P.I. to P.B.	1.04	1.04	399+89.89	4.64	-.05	~~748.81~~ 748.80
		(Thread Block)						
	1	Harn. half bevel LS bottom open jt. top @19.91	19.94	19.94	400+09.83	1.54	-.31	~~750.50~~ 748.49
	1	Harn. lgth., clamp S.E. only open jt. top @20.03	20.05	20.05	400+29.88	2.14	-.43	~~750.07~~ 748.07
	10	Lengths	200.30	200.26	402+30.14	2.14	4.27	743.80

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit III

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			402+30.14			743.80
	1	Half Bevel L.S. Top Open Jt. Top @19.91	19.93	19.89	402+50.03	6.72	-1.34	742.46
		72" SP-12 Class 191 for 14' Cover						
	1	Half Bevel, L.S. Top	19.91	19.80	402+69.83	10.60	-2.11	740.35
	1	Length	20.03	19.92	402+89.75	10.60	-2.11	738.24
	1	Harn. Lgth., Clamp B.E. Only	20.03	19.92	403+09.67	10.60	-2.11	736.13
	2	Harn. Lengths	40.06	39.84	403+49.51	10.60	-4.22	731.91
S-98	1	Tied Short Length, Harn. S.E., Tied B.E. Shopweld B.E. to P.E. of F-99	7.58	7.54	403+57.05	10.60	- .80	731.11
F-99	1	7°30' Elbow L.S. Left, Tied P.E., Harn. B.E. Shopweld P.E. to B.E. of S-98						
		P.E. - P.I.	1.00	1.00	403+58.05	10.60	- .11	731.00
		P.I. - P.B.	.64	.64	403+58.69	10.60	- .07	730.93
		72" SP-12 Class 162 for 10' Cover						
S-100	1	Tied Short Full Bevel Harn. S.E., Tied B.E. Shopweld B.E. to P.E. of F-101 w/18" Tan. M.J.B. B.O. O.L.6'fr S.E. Bottom Left Side Open Jt. Bottom @ 11.46	11.48	11.48	403+70.17	2.10	- .24	730.69

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit III

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			403+70.17			730.69
F-101	1	7°30' Elbow, L.S. Left, Tied P.E., Harn. B.E. Shopweld P.E. to B.E. of S-100						
		P.E. to P.I.	1.00	1.00	403+71.17	2.10	- .02	730.67
		P.I. to P.B.	.64	.64	403+71.81	2.10	- .01	730.66
S-102	1	Tied Short Full Bevel, L.S. Bottom	11.49	11.48	403+83.29	4.93	+ .57	731.23
		Harn. S.E., Tied B.E. @ 11.46 Shopweld B.E. to P.E. of F-103 Open Jt. Top @ 11.46						
F-103	1	7°30' Elbow, L.S. Left, Tied P.E., Harn. B.E. Shopweld P.E. to B.E. of S-102						
		P.E. to P.I.	1.00	1.00	403+84.29	4.93	+ .05	731.28
		P.I. to P.B.	.64	.64	403+84.93	4.93	+ .04	731.32
		72" SP-12 Class 151 for 6' Cover						
S-104	1	Tied Short, Harn. S.E., Tied B.E. Shopweld B.E. to P.E. of F-105 Open Jt. Top @ 11.46	11.48	11.47	403+96.40	4.25	+ .49	731.81
F-105	1	7°30' Elbow, L.S. Left, Tied P.E., Harn. B.E. Shopweld P.E. to B.E. of S-104						
		P.E. to P.I.	1.00	1.00	403+97.40	4.25	+ .04	731.85
		P.I. to P.B.	.64	.64	403+98.04	4.25	+1.33	731.88
S-106	1	Tied Short Lgth. Harn. S.E. Tied B.E.	11.49	11.49	404+09.53	3.47	+ .40	732.28

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P-Unit III

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J. C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			404+09.53			732.28
F-107	1	7°30' Elbow, L.S. Left, Tied P.E., Harn. B.E.						
		Shopweld P.E. to B.E. of S-106						
		P.E. to P.I.	1.00	1.00	404+10.53	3.47	+ .03	732.31
		P.I. to P.B.	.64	.64	404+11.17	3.47	+ .02	732.33
S-108	1	Tied Short Lgth., Harn. S.E. TiedB.E.	11.46	11.46	404+22.63	3.47	+ .40	732.73
		Shopweld B.E. to P.E. of F-109						
F-109	1	7°30' Elbow, L.S. Left, Tied P.E. Harn. B.E.						
		Shopweld P.E. to B.E. of F-109						
		P.E. to P.I.	1.00	1.00	404+23.63	3.47	+ .03	732.76
		P.I. to P.B.	.64	.64	404+24.27	3.47	+ .02	732.78
S-110	1	Tied Short Lgth., Harn S.E.,Tied B.E.	11.46	11.46	404+35.73	3.47	+ .40	733.18
		Shopweld B.E. to P.E. of F-111						
F-111	1	7°30' Elbow, L.S. Left, Tied P.E., Harn. B.E.						
		Shopweld P.E. to B.E. of S-111						
		P.E. to P.I.	1.00	1.00	404+36.73	3.47	+ .03	733.21
		P.I. to P.B.	.64	.64	404+37.37	3.47	+ .02	733.23
S-112	1	Tied Short Lgth. Harn. S.E.,Tied B.E.	11.46	11.46	404+48.83	3.47	+ .40	733.63
		Shopweld B.E. to P.E. of F-113						
F-113	1	7°30' Elbow L.S. Left Tied P.E. Harn.						
		B.E. Shopweld P.E. to B.E. of S-112						
		P.E. to P.I.	1.00	1.00	404+49.83	3.47	+ .03	733.66
		P.I. to P.B.	.64	.64	404+50.47	3.47	+ .02	733.68

JOB NO. 95.66P-Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for 6' Cover			404+50.47			733.68
S-114	1	Tied Short Lgth. Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-115 w/36" Neck Flg. O.L. 7' fr.S.E. on L.S.	11.46	11.46	404+61.93	3.47	+ .40	734.08
F-115	1	7°30' Elbow, L.S. Left, Tied P.E. Harn. B.E.			404			
		Shopweld P.E. to B.E. of S-114						
		P.E. to P.I.	1.00	1.00	404+62.93	3.47	+ .03	734.11
		P.I. to P.B.	.64	.64	404+63.57	3.47	+ .02	734.13
S-116	1	Tied Short, Harn. S.E. Tied B.E. Shopweld B.E. to P.E. of F-117	11.46	11.46	404+75.03	3.47	+ .40	734.53
F-117	1	7°30'Elbow L.S. Left Tied P.E., Harn. B.E. Shopweld P.E. to B.E. of S-116						
		P.E. to P.I.	1.00	1.00	404+76.03	3.47	+ .03	734.56
		P.I. to P.B.	.64	.64	404+76.67	3.47	+ .02	734.58
S-118	1	Tied Short, Harn. S.E., Tied B.E. Shopweld B.E. to P.E. of F-119	11.46	11.46	404+88.13	3.47	+ .40	734.98
F-119	1	7°30' Elbow, L.S. Left, Tied P.E., Harn. B.E. Shopweld P.E. to B.E. of S-118						
		P.E. to P.I.	1.00	1.00	404+89.13	3.47	+ .03	735.01
		P.I. to P.B.	.64	.64	404+89.77	3.47	+ .02	735.03
S-120	1	Tied Short, Harn., S.E. Tied B.E. Shopweld B.E. to P.E. of F-121	11.46	11.46	405+01.23	3.47	+ .40	735.43

JOB NO. 95.66P-Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

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CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			405+01.23			735.43
F-121	1	7°30' Elbow, L.S. Left, Tied P.E. Harn B.E.						
		Shopweld P.E. to B.E. of S-120						
		P.E. to P.I.	1.00	1.00	405+02.23	3.47	+ .03	735.46
		P.I. to P.B.	.64	.64	405+02.87	3.47	+ .02	735.48
	1	Harn. Length, Open Jt. Top @20.03	20.06	20.05	405+22.92	2.62	+ .52	736.00
F-122	1	72" Harn. P.S. x 54" Harn. P.B. Reducer	6.18	6.18	405+29.10	2.62	+ .16	736.16
	1	54" Harn. P.J. End Valve (Not by P.B. Co.)	1.40	1.40	405+30.50	2.62	+ .04	736.20
F-123	1	54" Harn. P.S. x 72" Harn. P.B. Reducer	6.78	6.78	405+37.28	2.62	+ .18	736.38
	1	Harn. Lgth., Open Jt. Top @ 20.03	20.05	20.05	405+57.33	2.00	+ .40	736.78
S-124	1	Harn. Lgth., Open Jt. Top @ 20.03 w/2" Neck Flg. O.L 17' Fr. S.E. w/24" Blind Flg. Clamp S.E. Only	20.05	20.05	405+77.38	1.54	+ .31	737.09
	3	Lengths	60.09	60.08	406+37.46	1.54	+ .92	738.01
S-125	1	Length w/2" I.P. Thd. O.L. 18' Fr. S.E.	20.03	20.03	406+57.49	1.54	+ .31	738.32
F-126	1	8°13' Elbow, L.S. Top						
		P.S. to P.I.	5.29	5.29	406+62.78	1.54	+ .08	738.40
		P.I. to P.B.	.68	.68	406+63.46	12.90	- .09	738.31

JOB NO. 95.66P - Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			406+63.46			738.31
	2	Lengths	40.06	39 73	407+03.19	12.90	-5.12	733.19
		72" SP-12 Class 191 for 14' Cover						
	1	Length	20.03	19.86	407+23.05	12.90	-2.56	730.63
F-127	1	7°22' elbow, L.S. bottom						
		P.S. to P.I.	1.00	1.00	407+24.05	12.90	-.13	730.50
		P.I. to P.B.	.64	.64	407+24.69	.00		730.50
	1	Length (Bearing Block)	20.03	20.03	407+44.72	.00		730.50
		72" SP-12 Class 151 for 6' Cover						
	4	Lengths	80.12	80.12	408+24.84	.00		730.50
		72" SP-12 Class 191 for 14' Cover						
	1	Length	20.03	20.03	408+44.87	.00		730.50
	1	Full bevel, L.S. bottom Open jt. top @19.78	19.80	19.75	408+64.62	7.20	+1.42	731.92
	1	Full bevel, L.S. bottom Open jt. bottom @19.78	19.79	19.57	408+84.19	15.17	+2.97	733.89
S-128	1	Short length	9.03	8.93	408+93.12	15.17	+1.35	736.24

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			408+93.12			736.24
		NOTE: Open joints as required for horizontal deflection						
F-129	1	8°24' elbow, L.S. top						
		P.S. to P.I.	1.05	1.04	408+94.16	15.17	+.16	736.40
		P.I. to P.B.	.69	.69	408+94.85	.415		736.40
	7	Lengths (Thrust Block)	140.21	140.21	410+35.06	.415	+.58	736.98
		72" SP-12 Class 151 for 6' Cover						
	5	Lengths	100.15	100.15	411+35.21	.415	+.42	737.40
		72" SP-12 Class 162 for 10' Cover						
	1	Length, open jt. top @20.03	20.05	20.05	411+55.26	.00		737.40
	25	Lengths	500.75	500.75	416+56.01	.00		737.40
	1	Length open jt. bottom @20.03	20.04	20.04	416+76.05	.317	+.06	737.46
	1	Length	20.03	20.03	416+96.08	.317	+.06	737.52
		72" SP-12 Class 151 for 6' Cover						
	39	Lengths	781.17	781.17	424+77.25	.317	+2.48	740.00
	1	Length, open jt. bottom @20.03	20.05	20.05	424+97.30	1.00	+.20	740.20
	1	Length, open jt. bottom @20.03	20.05	20.05	425+17.35	1.05	+.33	740.53

JOB NO. 95.66P - Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			425+17.35			740.53
	1	Length, open jt. bottom @20.03	20.05	20.05	425+37.40	2.15	+.43	740.96
	1	Length, open jt. bottom @20.03	20.04	20.03	425+57.43	2.47	+.49	741.45
	5	Lengths	100.15	100.12	426+57.55	2.47	+2.48	743.93
		72" SP-12 Class 162 for 10' Cover						
	7	Lengths	140.21	140.17	427+97.72	2.47	+3.47	747.40
	1	Length, open jt. top @20.03	20.05	20.05	428+17.77	1.80	+.36	747.76
	1	Length, open jt. top @20.03	20.05	20.05	428+37.82	1.30	+.26	748.02
	1	Length, open jt. top @20.03	20.04	20.04	428+57.86	1.04	+.21	748.23
	7	Lengths	140.21	140.20	429+98.06	1.04	+1.45	749.68
		72" SP-12 Class 151 for 6' Cover						
	1	Length	20.03	20.03	430+18.09	1.04	+.21	749.89
	1	Harn. length, clamp B.E. only	20.03	20.03	430+38.12	1.04	+.21	750.10
	1	Harn. length	20.03	20.03	430+58.15	1.04	+.21	750.31
S-130	1	Harn. length, open jt. top @20.03 w/2" I.P. thd. OL. 14' fr. S.E.	20.05	20.05	430+78.20	.45	+.09	750.40

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.86P - Unit III

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J.C. McMahon

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			430+78.20			750.40
S-131	1	Tied short length, harn.S.E., tied B.E. Shopweld B.E. to P.E. of F-132 Open jt. top @ 11.46	11.46	11.46	430+89.66	.00		750.00
F-132	1	7°30' elbow, L.S.right, tied P.E., harn.E.E. Shopweld P.E. to B.E. of S-131						
		P.E. to P.I.	1.00	1.00	430+90.66	.00		750 00
		P.I. to P.B.	.64	.64	430+91.30	00		750 00
S-133	1	Tied short lgth., harn E., tied B.E. Shopweld B.E. to P.E. F-134	11.46	11.46	431+02.76	00		750 00
F-134	1	7°30'elbow, L.S.right, tied P.E., harn B.E. Shopweld P.E. to B.E. of S-133						
		P.E. to P.I.	1.00	1.00	431+03.76	.00		750 00
		P.I. to P.B.	.64	.64	431+04.40	.00		750 00
S-135	1	Tied short length, harn.S.E., tied B.E. Shopweld B.E. to P.E. of F-136	11.46	11 46	431+15.86	.00		750 00
F-136	1	7°30'elbow, L.S.right, tied P.E., harn.B.E. Shopweld P.E. to B.E. of S-136						
		P.E. to P.I	1.00	1.00	431+16.90	00		750 00
		P.I. to P.B.	.64	64	431+17.50	.00		750 00

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

DATE September 9, 1966

PROJECT Flint, Michigan Division
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for 6' Cover			431+17.50			750 40
S-137	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-138	11.46	11.46	431+28.96	.00		750 40
F-138	1	7°30'elbow,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-137						
		P.E. to P.I.	1.00	1.00	431+29.96	.00		750 40
		P.I. to P.B.	.64	.64	431+30.60	.00		750 40
S-139	1	Tied short, harn. S.E.,tied B.E. Shopweld B.E. to P.E. of F-140	11.46	11.46	431+42.06	.00		750 40
F-140	1	7°30'elbow,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-139						
		P.E. to P.I.	1.00	1.00	431+43.06	.00		750 40
		P.I. to P.B.	.64	.64	431+43.70	.00		750 40
S-141	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-142 ~~w/30" flg. OL. 6' fr. S.E.~~	11.46	11.46	431+55.16	.00		750 40
F-142	1	7°30' el. L.S.right, tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-141						
		P.E. to P.I.	1.00	1.00	431+56.16	.00		750 40
		P.I. to P.B.	.64	.64	431+56.80	.00		750 40

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LIN ELEVATIO
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			431+56.80			750.40
S-143	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-144 W/36" flg. O.L. 6' from S.E.	11.46	11.46	431+68.26	.00		750.40
F-144	1	7°30'el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-143						
		P.E. to P.I.	1.00	1.00	431+69.26	.00		750.40
		P.I. to P.B.	.64	.64	431+69.90	.00		750.40
S-145	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-146	11.46	11.46	431+81.36	.00		750.40
F-146	1	7°30'el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-145						
		P.E. to P.I.	1.00	1.00	431+82.36	.00		750.40
		P.I. to P.B.	.64	.64	431+83.00	.00		750.40
S-147	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-148	11.47	11.47	431+94.47	.00		750.40
F-148	1	7°30'el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-147						
		P.E. to P.I.	1.00	1.00	431+95.47	.00		750.40
		P.I. to P.B.	.64	.64	431+96.11	.00		750.40

JOB NO. 95.66P - Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			431+96.11			750.40
S-149	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-150	11.46	11.46	432+07.57	.00		750.40
F-150	1	7°30'el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-149						
		P.E. to P.I.	1.00	1.00	432+08.57	.00		750.40
		P.I. to P.B.	.64	.64	432+09.21	.00		750.40
S-151	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-152	11.46	11.46	432+20.67	.00		750.40
F-152	1	7°30'el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-151						
		P.E. to P.I.	1.00	1.00	432+21.67	.00		750.40
		P.I. to P.B.	.64	.64	432+22.31	.00		750.40
S-153	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-154	11.46	11.46	432+33.77	.00		750.40
F-154	1	7°30'el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-153						
		P.E. to P.I.	1.00	1.00	432+34.77	.00		750.40
		P.I. to P.B.	.64	.64	432+35.41	.00		750.40

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 25.662 - Unit III

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			432+35.41			750.40
	1	Harn. length	20.03	20.03	432+55.44	.00		750.40
STATION EQUATION		Sta. 432+55.44 back = Sta. 432+33.44	ahead		432+33.44	.00		750.40
	1	Harn. lgth.	20.04	20.04	432+53.48	.00		750.40
	1	Harn. lgth., clamp S.E. only	20.03	20.03	432+73.51	.00		750.40
	8	Lengths	160.24	160.24	434+33.75	.00		750.40
	1	Lgth., open jt. top @20.03	20.05	20.05	434+53.80	.71	-.14	750.26
	6	Lengths	120.18	120.18	435+73.98	.71	-.86	749.40
	1	Lgth., open jt. top @20.03	20.04	20.04	435+94.02	1.09	-.22	749.18
	10	Lengths	200.30	200.29	437+94.31	1.09	-2.18	747.00
	1	Lgth., open jt. top @20.03	20.05	20.05	438+14.36	1.75	-.35	746.65
	1	Lgth., open jt. top @20.03	20.05	20.04	438+34.40	2.40	-.48	746.17
	1	Lgth., open jt. top @20.03	20.04	20.03	438+54.43	2.76	-.55	745.62
	12	Lengths	240.36	240.27	440+94.70	2.76	-6.62	739.00

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			440+94.70			739.00
	1	Lgth., open jt. bottom @20.03	20.05	20.05	441+14.75	2.10	-.42	738.58
	1	Lgth., open jt. bottom @20.03	20.05	20.05	441+34.80	1.40	-.28	738.30
	1	Lgth., open jt. bottom @20.03	20.05	20.05	441+54.85	.90	-.18	738.12
	1	Lgth., open jt. bottom @20.03	20.05	20.05	441+74.90	.325	-.06	738.06
	10	Lengths	200.30	200.30	443+75.20	.325	-.65	737.41
F-155	1	72" P.S. x 54" P.B. reducer	6.18	6.18	443+81.38	.325	-.02	737.39
	1	54" P.J. end valve (not by P.B. Co.)	1.40	1.40	443+82.78	.325		737.39
F-156	1	54" P.S. x 72" P.B. reducer	6.78	6.78	443+89.56	.325	-.02	737.37
	1	Harn. length, clamp B.E. only	20.03	20.03	444+09.59	.325	-.06	737.31
	1	Harn. length	20.03	20.03	444+29.62	.325	-.06	737.25
S-157 S-157A	1	Tied length, harn. S.E., tied B.E. w/24" neck flg. OL. 17' fr.S.E. left side w/24" blind flg. Shopweld B.E. to P.E. of S-158	20.03	20.03	444+49.65	.325	-.06	737.19

PECK BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

DATE September 9, 1966

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

REVISED

PREPARED BY J.C. Nilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an instruction guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			444+49.65			737.19
F-158	1	15°0' el.,L.S.left,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-157						
		P.E. to P.I.	1.39	1.39	444+51.04	.325		737.19
		P.I. to P.B. (Thrust Block)	1.04	1.04	444+52.08	.325		737.19
S-159	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-160	10.74	10.74	444+62.82	.325	-.03	737.16
F-160	1	15°0'el.,L.S. left,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-159						
		P.E. to P.I.	1.39	1.39	444+64.21	.325		737.16
		P.I. to P.B. (Thrust Block)	1.04	1.04	444+65.25	.325		737.16
S-161	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-162	10.74	10.74	444+75.99	.325	-.03	737.13
F-162	1	15° elbow,L.S.left,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of F-161						
		P.E. to P.I.	1.39	1.39	444+77.38	.325		737.13
		P.I. to P.B. (Thrust Block)	1.04	1.04	444+78.42	.325		737.13
S-163	1	Tied short, harn. S.E.,tied B.E. Shopweld B.E. to P.E. of F-164	10.74	10.74	444+89.16	.325	-.03	737.10

JOB NO. 95.66P - Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			444+89.16			737.10
F-164	1	15° elbow, L.S. left, tied P.E., harn. B.E. Shopweld P.E. to B.E. of S-163						
		P.E. to P.I.	1.39	1.39	444+90.55	.325		737.10
		P.I. to P.B.	1.04	1.04	444+91.59	.325		737.10
		Thrust Block						
S-165	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-166	10.74	10.74	445+02.33	.325	-.03	737.07
F-166	1	15°0'el., L.E. left, tied P.E., harn. B.E. Shopweld P.E. to B.E. of S-165						
		P.E. to P.I.	1.39	1.39	445+03.72	.325		737.07
		P.I. to P.B.	1.04	1.04	445+04.76	.325		737.07
		Thrust Block						
S-167	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-168	10.74	10.74	445+15.50	.325	-.03	737.04
F-168	1	15° elbow, L.S. left tied P.E., harn. B.E. Shopweld P.E. to B.E. of S-167						
		P.E. to P.I.	1.39	1.39	445+16.89	.325		737.09
		P.I. to P.B.	1.04	1.04	445+17.93	.325		737.04
		Thrust Block						
	1	Harn. length	20.03	20.03	445+37.96	.325	-.06	736.99
	1	Harn. lgth., clamp S.E. only	20.03	20.03	445+57.99	.325	.06	736.93

JOB NO. 95.66P - Unit III

PRICE BROTHERS COMPANY LAYING SCHEDULE

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 151 for 6' Cover			445+57.99			736.92
	1	Half bevel, L.S. bottom Open jt. bottom @19.91	19.94	19.92	445+77.91	4.60	+.92	737.84
	1	Lgth., open jt. bottom @20.03	20.06	20.03	445+97.94	5.40	+1.08	738.92
	6	Lengths	120.18	120.00	447+17.94	5.40	+6.48	745.40
	1	Half bevel, L.S. top Open jt. top @19.91	19.94	19.94	447+37.88	.485	+.10	745.50
	2	Lengths	40.06	40.06	447+77.94	.485	+.19	745.69
		72" SP-12 Class 162 for 10' Cover						
	4	Lengths	80.12	80.12	448+58.06	.485	+.39	746.08
	1	Harn. lgth., clamp B.E. only	20.03	20.03	448+78.09	.485	+.10	746.18
S-169	1	Tied lgth.,harn.S.E., tied B.E. Shopweld B.E. to P.E. of F-170	20.03	20.03	448+98.12	.485	+.10	746.28
F-170	1	15°el.,L.S.right tied S.E.,harn.B.E. Shopweld P.E. to B.E. of S-169						
		P.E. to P.I.	1.39	1.39	448+99.51	.485	+.01	746.29
		P.I. to P.B.	1.04	1.04	449+00.55	.485		746.29

Thrust Block

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 162 for 10' Cover			449+00.55			746.29
S-171	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-172	10.74	10.74	449+11.29	.485	+.05	746.34
F-172	1	15°el.L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-171						
		P.E. to P.I.	1.39	1.39	449+12.68	.485	+.01	746.35
		P.I. to P.B. (Thrust Block)	1.04	1.04	449+13.72	.485		746.35
S-173	1	Tied short,harn.S.E., tied B.E. w/8" tan. flg. OL. 7' fr.S.E.,top left Shopweld B.E. to P.E. of F-174	10.74	10.74	449+24.46	.485	+.05	746.40
F-174	1	15°el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-173						
		P.E. to P.I.	1.39	1.39	449+25.85	.485	+.01	746.41
		P.I. to P.B. (Thrust Block)	1.04	1.04	449+26.89	.485		746.41
S-175	1	Tied short, harn.S.E., tied B.E. Shopweld B.E. to P.E. of F-176 Open jt. top @10.74	10.77	10.77	449+37.66	.40	-.04	746.37
F-176	1	15°el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-175						
		P.E. to P.I.	1.39	1.39	449+39.05	.40	-.01	746.36
		P.I. to P.B. (Thrust Block)	1.04	1.04	449+40.09	.40		746.36

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	TOT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
		This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.						
		72" SP-12 Class 162 for 10' Cover			449+40.09			746.36
S-177	1	Tied short, harn. S.E., tied B.E. Shopweld B.E. to P.E. of F-178	10.74	10.74	449+50.83	.40	-.04	746.32
F-178	1	15° el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-177						
		P.E. to P.I.	1.39	1.39	449+52.22	.40	-.01	746.31
		P.I. to P.B. (Thrust Block)	1.04	1.04	449+53.26	.40		746 31
S-179	1	Tied short, harn.S.E., tied B.E. Shopweld B.E. to P.E. of F-180	10.74	10.74	449+64.00	.40	-.04	746.27
F-180	1	15° el.,L.S.right,tied P.E.,harn.B.E. Shopweld P.E. to B.E. of S-179						
		P.E. to P.I.	1.39	1.39	449+65.39	.40	-.01	746.26
		P.I. to P.B. (Thrust Block)	1.04	1.04	449+66.43	.40		746.26
	1	Harn. lgth.	20.03	20.03	449+86.46	.40	-.08	746.18
	1	Harn. lgth., clamp S.E. only	20.03	20.03	450+06.49	.40	-.08	746.10
		72" SP-12 Class 151 for 6' Cover						
	1'	Lengths	300.45	300.45	453+06.94	.40	-1.20	744 90
	1	Lgth., open jt. top @20.03	20.04	20.04	453+26.98	.49	-.10	744.80

PRICE BROTHERS COMPANY LAYING SCHEDULE

JOB NO. 95.66P - Unit III

PROJECT Flint, Michigan Division A
72" Flint-Detroit Water Supply

DATE September 9, 1966
REVISED
PREPARED BY J.C. Wilson

CODE NO.	QTY.	DESCRIPTION	VT. LAID LENGTH	HOR. LAID LENGTH	STATION	% GRADE	ELEVATION CHANGE	CENTER LINE ELEVATION
	This schedule supplied only as an installation guide. Adjustments must be made to adapt to field conditions.							
		72" SP-12 Class 151 for 6' Cover			453+26.98			744.80
		Lengths	120.18	120.18	454+47.16	.49	-.60	744.20
F-181	1	7°30' elbow, L.S. left Thrust Block	1.64	1.64	454+48.80	.49	-.01	744.19
F-182	1	7°30' elbow L.S. left " "	1.64	1.64	454+50.44	.49	-.01	744.18
	18	Lengths	360.54	360.54	458+10.98	.49	-1.78	742.40
	1	Lgth., open jt. top @20.03	20.04	20.04	458+31.02	.70	-.14	742.26
	20	Lgths.	400.60	400.59	462+31.61	.70	-2.80	739.46
S-183	1	Short lgth.	7.03	7.03	462+38.64	.70	-.05	739.41
F-184	1	7° 30' elbow, L.S. left Thrust Block	1.64	1.64	462+40.28	.70		739.40
F-185	1	7° 32' elbow, L.S. left, rotate for horiz. and vert. defl.	1.64	1.64	462+41.92	.665	+.01	739.41
	15	Lengths	300.45	300.44	465+42.36	.665	+1.99	741.40
	1	Lgth., open jt. top @20.03	20.05	20.05	465+62.41	.178	+.04	741.44
	13	Lengths	260.39	260.39	468+22.80	.178	+.46	741.90

JOB NO. 95 66P-Unit 1

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, - 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY Jerome ... W...

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE ELEVATION
		72" SP-12 Class 151 for 6' Cover					286+75.21	.45	
	6	Lengths	20.03	120.18		120.18	287+95.39	.45	+.54
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	288+15.43	.15	+.03
	12	Lengths	20.03	240.36		240.36	290+55.79	.15	+.36
S-56	1	Length w/two - 12" M.J.B. OL's. 15' fr. S.E. 180° apart	20.03	20.03		20.03	290+75.82	.15	+.03
	3	Lengths	20.03	60.09		60.09	291+35.91	.15	+.09
	1	Length, open jt. bottom @20.03	20.05	20.05		20.05	291+55.96	.625	+.12
	15	Lengths	20.03	300.45	.01	300.44	294+56.40	.625	+1.88
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	294+76.44	.481	+.10
	25	Lengths	20.03	500.75	.01	500.74	299+77.18	.481	+2.40
S-57	1	Length, open jt. top @20.03 w/2" I.P. thd. OL. 3° fr. S.E.	20.05	20.05		20.05	299+97.23	.08	+.02
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	300+17.27	.30	-.06
	33	Lengths	20.03	660.99		660.99	306+78.26	.30	-1.96
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	306+98.30	.65	-.13
	26	Lengths	20.03	520.78	.01	520.77	312+19.07	.65	-3.37

Job No. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY Jerome C. Wilson, Jr

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 151 for 6' Cover					312+19.07	.65		754.90
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	312+39.12	.00		754.90
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	312+59.17	.455	+.09	754.99
	10	Lengths	20.03	200.30		200.30	314+59.47	.455	+.91	755.90
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	314+79.52	1.10	+.22	756.12
	20	Lengths	20.03	400.60	.02	400.58	318+80.10	1.10	+4.42	760.54
		72" SP-12 Class 162 for 10' Cover								
	8	Lengths	20.03	160.24	.01	160.23	320+40.33	1.10	+1.76	762.30
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	320+60.38	.50	+.10	762.40
S-58	1	Lgth., open jt. top @20.03 w/8" tan. fig. OL. 13' fr. S.E. top right	20.05	20.05		20.05	320+80.43	.00		762.40
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	321+00.47	.236	-.05	762.35
	11	Lengths	20.03	220.33		220.33	323+20.80	.236	-.52	761.83
		72" SP-12 Class 151 for 6' Cover								
	41	Lengths	20.03	821.23		821.23	331+42.03	.236	-1.93	759.90
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	331+62.07	.357	-.07	759.83
	6	Lengths	20.03	120.18		120.18	332+82.25	.357	-.43	759.40
	1	Lgth., open jt. bottom @20.03	20.04	20.04		20.04	333+02.29	.25	-.05	759.35

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1956

REVISED

PREPARED BY Jerome L. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 151 for 6' Cover					333+02.29	.25		759.35
	19	Lengths	20.03	380.57		380.57	336+82.86	.25	-.95	758.40
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	337+02.91	.25	-.05	758.35
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	337+22.95	1.10	-.22	758.13
	8	Lengths	20.03	160.24	.01	160.23	338+83.18	1.10	1.76	756.37
		72" SP-12 Class 162 for 10' Cover								
	4	Lengths	20.03	80.12		80.12	339+63.30	1.10	-.88	755.49
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	339+83.35	1.665	-.33	755.16
	8	Lengths	20.03	160.24	.02	160.22	341+43.57	1.665	-2.67	752.49
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	341+63.61	1.76	-.35	752.14
	5	Lengths	20.03	100.15	.01	100.14	342+63.75	1.76	-1.76	750.38
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	342+83.80	1.30	-.26	750.12
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	343+03.85	.65	-.13	749.99
S-59	1	Lgth., open jt. bottom @20.03 w/two 18" M.J.B. OL's. 12' fr. S.E. 180° apart	20.05	20.05		20.05	343+23.90	.00		749.99
	4	Lengths	20.03	80.12		80.12	344+04.02	.00		749.99

95 66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY Jerome F. Wilson, Jr.

RY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
	72" SP-12 Class 151 for 6' Cover					344+14.62	00		780.00
1	72" P.S. x 54" P.S. Reducer	7.13	7.13		7.13	344+11.15	00		780.00
1	54" P.B. end valve (not by P.B. Co.)	1.50	1.50		1.50	344+12.65	00		780.00
1	54" P.S. x 72" P.B. Reducer	6.78	6.78		6.78	344+19.43	00		780.00
1	Lgth. open jt. bottom @20.03	20.05	20.05		20.05	344+39.48	65	+ .13	780.13
1	Lgth. open jt. bottom @20.03 w/24" flg OL. 7° fr S.E. w/24" blind flg.	20.05	20.05		20.05	344+59.53	1.29	+.26	780.39
15	Lengths	20.03	320.48	.02	320.46	347+79.99	1.29	+4.11	784.50
1	Lgth. open jt. bottom @20.03	20.05	20.05		20.05	348+00.04	1.35	+.39	784.89
1	Lgth. open jt. bottom @20.03	20.05	20.05	.01	20.04	348+20.08	2.61	+.52	785.41
4	Lengths	20.03	80.12	.03	80.09	349+00.17	2.61	+2.09	787.50
1	Lgth. open jt. top @20.03	20.05	20.05		20.05	349+20.22	1.90	+.38	787.88
1	Lgth. open jt. top @20.03	20.05	20.05		20.05	349+40.27	1.20	+.24	788.12
1	Lgth. open jt. top @20.03	20.05	20.05		20.05	349+60.32	.70	+.14	788.26
1	Lgth. open jt. top @20.03	20.04	20.04		20.04	349+80.36	.39	+.08	788.34
14	Lengths	20.03	280.42		280.42	352+60.78	.39	+1.08	789.42

66P Unit II

Price Brothers Company
LAYING SCHEDULE

	[illegible]					[illegible]		
	[illegible]			20.04	[illegible]			
	[illegible]			20.04	353+00.87		.07	759.32
	[illegible]	20.01	520.8	520.74	358+21.65		1.93	757.04
	[illegible]	20.04	20.04	20.04	358+41.69	.20	.04	756.98
05	[illegible]	20.01	901.35	901.35	367+43.04	.20	-1.70	755.56
	[illegible]	20.04	20.04	20.04	367+43.05	.043	-.01	755.55
6	[illegible]	20.01	120.18	120.18	368+ 6	.043	-.05	755.50
	[illegible]	20.04	20.04	20.04	369+03.30	.03	-.01	755.49
	[illegible]	20.03	320.48	320.48	372+23.78	.03	-.09	755.40
	[illegible]	20.04	20.04	20.04	372+43.82	.263	-.05	755.35
	[illegible]	20.03	160.24	160.24	374+04.06	.263	-.42	754.93
	[illegible] Class 16J for 10' Cover							
10	[illegible]	20.03	200.30	200.30	376+04.36	.263	.53	754.40
	[illegible] Sta 376+04.8 [illegible]	19.94	19.94	.01	19.93	376+24.29	3.35	-.66	753.74

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1966
REVISED
PREPARED BY Jerome C. Wilson, Jr

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
	72" SP-12 Class 162 for 10' Cover					376+24.29	3.35		[illegible]
2	Lengths	20.03	40.06	.02	40.04	376+64.33	3.35	1.34	[illegible]
1	Half bevel, L.S. bottom, P.I. Sta. 376+64.83 open jt top @19.91	19.93	19.93		19.93	376+84.26	.00		[illegible]
1	Length	20.03	20.03		20.03	377+04.29	.00		[illegible]
1	Half bevel, L.S. bottom, P.I. Sta. 377+04.79 open jt bottom @19.91	19.93	19.93	.02	19.91	377+24.20	4.51	+.90	[illegible]
2	Lengths	20.03	40.06	.04	40.02	377+64.22	4.51	+1.80	755.10
	72" SP-12 Class 151 for 6' Cover					[illegible]			
1	Lgth.	20.03	20.03	.02	20.01	[illegible]	4.51	+.90	[illegible]
1	Half bevel, L.S. top, P.I. Sta. 377+84.73 open jt. top @19.91	19.93	19.93		19.93	378+04.16	.143	+.03	[illegible]
13	Lengths	20.03	260.39		260.39	380+64.55	.43	+.37	[illegible]
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	380+84.60	.75	+.15	[illegible]
6	Lengths	20.03	120.18		120.18	382+04.78	.75	+.90	[illegible]
1	Length w/2" I.P. thd. OL. 14' fr. S.E.	20.03	20.03		20.03	382+24.81	.75	+.15	[illegible]
1	Half bevel, L.S. top, P.I. Sta. 382+25.32 open jt. top @19.91	19.94	19.94	.02	19.92	382+44.73	4.00	.80	[illegible]

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

DATE August 1, 1966
REVISED
PREPARED BY Jerome C. Wilson, Jr.

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
	Begin laying on Potter Rd. 200' West of Oak Rd. at end of Unit I and lay West P.S. to P.B.								
	72" SP-12 Class 151 for 6' Cover					104+98.03			[illegible]
1	Lgth., open jt. top @20.03	20.04	20.04		20.04	105+18.07	.16	.03	[illegible]
49	Lengths	20.03	981.47		981.47	114+99.54	.16	1.57	[illegible]
1	Lgth., open jt. top @20.03	20.06	20.06		20.06	115+19.60	.93	.19	[illegible]
14	Lengths	20.03	280.42		280.42	118+00.02	.93	2.61	[illegible]
1	Lgth., open jt. top @20.03	20.06	20.06		20.06	118+20.08	1.[illegible]	.[illegible]	[illegible]
1	Lgth., open jt. top @20.03	20.06	20.06	.01	20.05	118+40.13	2.[illegible]	.[illegible]	[illegible]
1	Lgth., open jt top @20.03	20.05	20.05	.01	20.04	118+60.17	3.23	- .55	[illegible]
2	Lengths	20.03	40.06	.02	40.04	119+00.21	3.23	1.29	[illegible]
1	Half bevel, L. S. bottom, P.I. Sta. 119+00.72 open jt. top @19.91	19.94	19.94		19.94	119+20.15	.13	.03	[illegible]
1	Lgth., open jt top @20.03	20.04	20.04		20.04	119+40.19	.40	.08	95.69
16	Lengths	20.03	320.48		320.48	122+60.67	.40	-1.29	94.40
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	122+80.72	.25	+ .05	94.45

95 66P-Unit 11

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A — Flint Detroit Water Supply

PAGE

DATE August 15, 1950

REVISED

PREPARED

VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS

NO	DESCRIPTION	UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	GRADE	CHANGE IN ELEVATION	ELEV. @ PIPE
	72" SP-12 Class 151 for 6' Cover					122+80.72			
	Lgth., open jt bottom @20.03	20.05	20.05		20.05	123+00.77	88	- .17	98
8	Lengths	20.03	160.24	.01	160.23	129+61.00	88	- 1.38	96.79
1	Lgth., open jt top @20.03	20.05	20.05		20.05	129+81.05	88	- .18	96.61
14	Lengths	20.03	280.42		280.42	127+61.47	88	- 2.42	94.01
1	Length w/8" tan. fig. # 0 OL 2'fr.St top right open jt top @20.03	20.05	20.05		20.05	127+81.52	88	- .18	93.83
1	Lgth., open jt top @20.03	20.05	20.05		20.05	128+01.57	90	- .18	93.65
1	Lgth., open jt top @20.03	20.04	20.04		20.04	128+21.61	1.21	- .24	93.41
5	Lengths	20.03	100.15	.01	100.14	129+21.75	1.21	- 1.21	92.20
1	Lgth., open jt top @20.03	20.05	20.05		20.05	129+41.80	1.90	- .38	91.82
1	Lgth., open jt top @20.03	20.05	20.05	.01	20.04	129+61.84	2.60	- .53	91.29
1	Lgth., open jt top @21.03	20.05	20.05	.01	20.04	129+81.88	3.26	- .65	90.64
13	Lengths	20.03	260.39	.14	260.25	132+42.13	3.26	5.08	85.56

NOTE. All pipe between Station 132+42.13 and Station 134+22.25 is to be paint seal coated on outside with two coats of Davies Shop Coat Black #119

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY: Jerome C. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 151 for 6' Cover					132+42.13			785.16
	5	Lengths	20.03	100.15	.05	100.10	133+42.23	3.26	3.26	781.90
S-28	1	Half bevel, L.S.bottom, P.I.Sta.133+42.73 w/18" tan. M.J.B. B.O. OL. 8' fr. S.E. bottom right, open jt. top @19.91	19.93	19.93		19.93	133+62.16	00		781.90
	1	Length	20.03	20.03		20.03	133+82.19	00		781.90
		72" SP-12 Class 162 for 10' Cover								
	2	Lengths	20.03	40.06		40.06	134+22.25	00		781.90
End of section to be coated.										
	2	Lengths	20.03	40.06		40.06	134+62.31	00		781.90
S-29	1	Short length	10.03	10.03		10.03	134+72.34	00		781.90
S-30	1	Length w/two - 24" P.B. OL's. 11" fr. S.E. 180° apart	20.03	20.03		20.03	134+92.37	00		781.90
	1	Length	20.03	20.03		20.03	135+12.40	.00		781.90
	1	Length, open jt. bottom @20.03	20.04	20.04		20.04	135+32.44	38	+ 08	781.98
	1	Length	20.03	20.03		20.03	135+52.47	.38	+.08	782.06
F-31	1	72" P.S. x 54" P.S. Reducer	7.13	7.13		7.13	135+59.60	.38	+.03	782.09
	1	54" P.B. End valve (not by P.B. Co.)	1.50	1.50		1.50	135+61.10	.38	+.01	782.10

O 95 66P-Unit 11

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY J. W. Wilson

VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

		DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SKEW CUTS	TOTAL LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 162 for 10' Cover					[illegible] 10	38		782 [illegible]
	1	54" P.S. x 72" P.E. Reducer	6.78	[illegible]		[illegible]	[illegible] 03	38	+ .03	782 [illegible]
	1	Length	20.03	20.03		[illegible] 03	[illegible] 03	38	+ .08	[illegible]
S 3	1	Length w/24" neck flg OL 12' fr. S.E	20.03	20.03		[illegible] 03	136+08.94	38	+ .08	82 [illegible]
S 3A		w/24" blind flg								
	6	Lengths	20.03	120.18		120.18	137+28.12	38	+ .46	782 [illegible]
		72" SP-12 Class 151 for 6' Cover								
	2	Lengths	20.03	40.06		40.06	137+68.18	38	+ .15	782 [illegible]
NOTE:		All pipe between Station 137+68.18 and Station 140+08.54 is to be paint seal coated with two coats of Davies Shop Coat Black #119.								
	12	Lengths	20.03	240.36		240.36	140+08.54	38	+ .92	783 [illegible]
	2	Lengths	20.03	40.06		40.06	140+48.60	38	+ .15	783 [illegible]
	1	Lgth , open jt bottom @20.03	20.05	20.05		20.05	140+68.65	1.08	+ .22	784 [illegible]
	1	Lgth , open jt bottom @20.03	20.05	20.05		20.05	140+88.70	1.78	+ .36	784 95
	1	Lgth. , open jt bottom @20.03	20.04	20.04		20.04	141+08.74	2.02	+ .40	784 96
	10	Lengths	20.03	200.30	.04	200.26	143+09.00	2.02	+4.05	789.00
		72" SP-12 Class 162 for 10' Cover								
	1	Lgth. open jt top @20.03	20.05	20.05		[illegible]	[illegible] 29.05	1.32	+ .26	789 26

JOB NO. 95,66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY: Jerome C Wilson, Jr

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 162 for 10' Cover					143+29.05	1.32		789.26
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	143+49.10	.80	+.16	789.42
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	143+69.15	.36	+.07	789.49
	7	Lengths	20.03	140.21		140.21	145+09.36	.36	+.51	790.00
S-34	1	Length w/8" tan. flg. B.O. OL. 2' fr. S.E. top right, open jt. top @20.03	20.05	20.05		20.05	145+29.41	.30	.06	789.94
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	145+49.46	.80	-.16	789.78
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	145+69.50	1.11	-.22	789.56
		72" SP-12 Class 151 for 6' Cover								
	7	Lengths	20.03	140.21	.01	140.20	147+09.70	1.11	-1.56	788.00
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	147+29.75	.50	-.10	787.90
	1	Lgth., open jt. bottom @20.03	20.04	20.04		20.04	147+49.79	.146	-.03	787.87
	64	Lengths	20.03	1281.92		1281.92	160+31.71	.146	-1.87	786.00
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	160+51.76	.65	-.13	785.87
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	160+71.80	1.02	-.20	785.67
	23	Lengths	20.03	460.69	.02	460.67	165+32.47	1.02	-4.67	781.00
	1	Half bevel, L.S. bottom, P.I. Sta. 165+31.97 open jt. top	19.93	19.93		19.93	165+52.40	2.25	+.45	781.45

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY: Jerome C. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
	72" SP-12 Class 151 for 6' Cover					165+52.40			781.48
1	Lgth., open jt. top @20.03	20.05	20.05		20.05	165+72.45	1.76	+ 35	81.80
5	Lengths	20.03	100.15	.02	100.13	166+72.58	1.76	+1.76	783.56
1	Lgth., open jt. top @20.03	20.04	20.04		20.04	166+92.62	1.40	+ 28	83.84
1	Lgth., open jt. top @20.03	20.05	20.05		20.05	167+12.67	.78	+ 16	84.00
1	Lgth., open jt. top @20.03	20.05	20.05		20.05	167+32.72	.08	+ 02	84.02
11	Lengths	20.03	220.33		220.33	169+53.05	.08	+ 18	784.20
	72" SP-12 Class 162 for 10' Cover								
3	Lengths	20.03	60.09		60.09	170+13.14	.08	+ 05	784.25
	72" SP-12 Class 151 for 6' Cover								
9	Lengths	20.03	180.27		180.27	171+93.41	.08	+ 15	784.40
1	Lgth., open jt. bottom @20.03	20.04	20.04		20.04	172+13.45	.00		784.40
25	Lengths	20.03	500.75		500.75	177+14.20	.00		784.40
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	177+34.25	.50	+.10	784.50
1	Lgth., open jt. bottom @20.03	20.04	20.04		20.04	177+54.29	.792	+ 16	784.66
17	Lengths	20.03	340.51		340.51	180+94.80	.792	+2.69	787.35

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1966
REVISED
PREPARED BY Jerome C. Wilson, Jr.

VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEV.
	12" SP-12 Class 151 for 6" Cover								744.90
1	72" P.S. x 54" P.S. Reducer	7.13	7.13		7.13	344+11.15	00		744.90
1	54" P.B. end valve (not by P.B. Co.)	1.50	1.56		1.50	344+12.65	00		744.90
1	54" P.S. x 72" P.B. Reducer	6.	6.78		6.78	344+19.93	00		744.90
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	344+39.48	65	+.13	745.03
1	Lgth., open jt. bottom @20.03 w/24" flg. OL 7" fr. S.E. w/28" blind flg.	20.05	20.05		20.05	344+59.53	1.29	+.26	745.29
16	Lengths	20.03	320.48	.02	320.46	347+79.99	1.29	+4.11	754.40
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	348+00.04	1.35	+.39	754.79
1	Lgth., open jt. bottom @20.03	20.05	20.05	.01	20.04	348+20.08	2.61	+.52	755.31
4	Lengths	20.03	80.12	.03	80.09	349+00.17	2.61	+2.09	757.40
1	Lgth., open jt. top @20.03	20.05	20.05		20.05	349+20.22	1.90	+.38	757.78
1	Lgth., open jt. top @20.03	20.05	20.05		20.05	349+40.27	1.20	+.24	758.02
1	Lgth., open jt. top @20.03	20.05	20.05		20.05	349+60.32	.70	+.14	758.16
1	Lgth., open jt. top @20.03	20.04	20.04		20.04	349+80.36	.39	+.08	758.24
14	Lengths	20.03	280.42		280.42	352+60.78	.39	+1.08	759.32

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1966
REVISED

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

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PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1966
REVISED
PREPARED BY Jerome L. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID	SLOPE	HOR. DEF.	STATION	%	CHANGE IN	CENTER LINE
	72" SP-12 Class 151 for 6' Cover					352+60.78	39		759.32
1	Length w/2° LP thd 01 18 fr S E	20.03	20.03		20.03	352+80.81	39	.08	759.40
1	Lgth open jt top @20.03	20.06	20.06		20.06	353+00.87	39	.07	759.33
26	Lengths	20.03	520.78		520.78	358+21.65	39	1.03	759.46
1	Lgth open jt bottom @20.03	20.04	20.04		20.04	358+41.69	.20	.04	759.36
45	Lengths	20.03	901.35		901.35	367+4304	.20	1.80	755/56
1	Lgth open jt bottom @20.03	20.04	20.04		20.04	367+43.05	.043	-.01	755.55
6	Lengths	20.03	120.18		120.18	368+83.26	.043	-.05	755.50
1	Lgth open jt top @20.03	20.04	20.04		20.04	369+03.30	.03	.01	755.49
16	Lengths	20.03	320.48		320.48	372+23.78	.03	.08	755.00
1	Lgth open jt top @20.03	20.04	20.04		20.04	372+43.82	.263	.05	755.35
8	Lengths	20.03	160.24		160.24	374+04.06	.263	.42	754.93
	72" SP-12 Class 162 for 10' Cover								
10	Lengths	20.03	200.30		200.30	376+04.36	.263	.53	754.40
1	Half bevel, L S top, P.I Sta 376+04.87 open jt bottom @19.91	19.94	19.94	01	19.93	376+24.29	3.35	.66	753.74

Price Brothers Company
LAYING SCHEDULE

PAGE 19 OF 19 PAGES

JOB NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY James C. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
	72" SP-12 Class 162 for 10' Cover					376+24.29	3.35		753.74
2	Lengths	20.03	40.06	.02	40.04	376+64.33	3.35	-1.34	752.40
1	Half bevel, L.S. bottom, P.I. Sta. 376+64.83 open jt top @19.91	19.93	19.93		19.93	376+84.26	.00		752.40
1	Length	20.03	20.03		20.03	377+04.29	.00		752.40
1	Half bevel, L.S. bottom, P.I. Sta. 377+04.79 open jt. bottom @19.91	19.93	19.93	.02	19.91	377+24.20	4.51	+.90	753.30
2	Lengths	20.03	40.06	.04	40.02	377+64.22	4.51	+1.80	755.10
	72" SP-12 Class 151 for 6' Cover								
1	Lgth.	20.03	20.03	.02	20.01	377+84.23	4.51	+.90	756.00
1	Half bevel, L.S. top, P.I. Sta. 377+84.73 open jt. top @19.91	19.93	19.93		19.93	378+04.16	.143	+.03	756.03
13	Lengths	20.03	260.39		260.39	380+64.55	.43	+.37	756.40
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	380+84.60	.75	+.15	756.55
6	Lengths	20.03	120.18		120.18	382+04.78	.75	+.90	757.45
1	Length w/2" I.P thd. OL. 14' fr. S.E.	20.03	20.03		20.03	382+24.81	.75	+.15	757.60
1	Half bevel, L.S. top, P.I. Sta. 382+25.32 open jt. top @19.91	19.94	19.94	.02	19.92	382+48.73	4.00	-.80	756.80

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Price Brothers Company
LAYING SCHEDULE

NO. 95.66P-Unit II

Price Brothers Company
LAYING SCHEDULE

PAGE 19 OF 19 PAGES

PROJECT Flint, Michigan, Division A, 72" Flint Detroit Water Supply

DATE August 1, 1966

REVISED

PREPARED BY Jerome C. Wilson, Jr

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 162 for 10' Cover					382+44.73			756 80
	1	Lgth . open jt top @20 03	20.05	20.05	.02	20 03	382+64 76	4 76	- 95	755 85
	3	Lengths	20.03	60.09	07	60.02	383+24 78	4 6	2.85	53 00
	1	Half bevel, L.S bottom, P.I. Sta. 383+25 29 open jt. bottom @19.91	19.94	19.94		19.94	383+44. 2	00		53.00
S 65	1	Short length	8.03	8.03		8.03	383+52.75	00		53 00
	1	Full bevel, L.S. bottom, P.I. Sta. 383+53 25 open jt top @19.78	19.80	19.80	05	19 75	383+72.50	7.3?	+1 46	54 46
	1	Length	20.03	20.03	.05	19.98	383+92.48	3	+1.47	755.93
		72" SP-12 Class 151 for 6' Cover								
S 66	1	Length w/2" I.P. thd OL @ B E.	20.03	20.03	.05	19.98	384+12.46	7 37	+1.47	75 40
	1	Full bevel, L.S top, P.I. Sta. 384+12.95 open jt. top @19.78	19.79	19.79		19.79	384+32.25	83	16	757 24
	11	Lengths	20.03	220.33	01	220.32	386+52.57	.83	1.84	755 40
	1	Lgth., open jt. top @20.03	20.04	20.04		20.04	3.7+72.61	1.00	-.20	755 20
	4	Lengths	20.03	80.12		80.12	387+52.73	1.00	.80	754 40
		END OF UNIT II								

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JOB NO

NOTE: VA

. 66P - Unit A

Price Brothers Company
LAYING SCHEDULE

PAGE 1 OF 1 PAGES

PROJECT Flint, Michigan Div. A 72" Water Supply Line

DATE September 13, 1966

REVISED

Price Brothers Company

LAYING SCHEDULE

PROJECT Flint, Michigan, Division A, - 72" Flint Detroit Water Supply

DATE MAY 23, 1966

REVISED See below

PREPARED BY [illegible] Wilson

OTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
	Misc. Materials Shipping List					Revisions:			
33	25# pails Price Lube					(1) 7-21-66 Pages 3, 5, 6, 7, 8, 9, 10, 11, 12, and 13.			
500	72" laying gaskets								
492	72" diapers								
8	72" wide diapers								
8	60" laying gaskets								
7	60" wide diapers								
6	54" laying gaskets								
6	54" diapers								
8	72" harn. clamp ring assemblies								
7	60" harn. clamp ring assemblies								
1	72" nite plug								
2	Joint stops								
2	External feeler gauges								

☐ APPROVED
☒ APPROVED AS NOTED
☐ DISAPPROVED

REVIEW OF THIS DOCUMENT HAS BEEN MADE ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND APPROVAL OR APPROVAL AS NOTED SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS THEREIN OR FOR FURNISHING THE MATERIALS AND EQUIPMENT OF PROPER DIMENSION, SIZE, QUANTITY, QUALITY, AND ALL PERFORMANCE CHARACTERISTICS TO MEET THE REQUIREMENTS AND INTENT OF THE CONTRACT DOCUMENTS.

CONSOER, TOWNSEND AND ASSOCIATES
CONSULTING ENGINEERS

DATE 7/25/66 BY G. B. Wilson

Glenfield Construction Co.
APPROVED
By DKD
Date 7/25/66

JOB NO. 95.66P-Unit A

Price Brothers Company
LAYING SCHEDULE

PAGE 1 OF 1 PAGE

PROJECT Flint, Michigan, Div. A. 72" Water Supply Line

DATE August 26, 1966

REVISED

PREPARED BY JCW

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		Proceed to Station 134+83 near intersection of Potter and Slate Roads and begin laying North from branch of 72"x24" Double OL. 24" SP-12 CLASS 150					0+00.00N			
S-30		P.I.-P.B. of OL.	4.00			4.00	0+04.00N			781.90
F-67	1	P.S. x flg. adapter	1.44			1.44	0+05.44N			781.90
	1	Flg. End Valve (not by P.B. Co.)	.67			.67	0+06.11N			781.90
F-68	1	Flg. x P.B. adapter	1.21			1.21	0+07.32N			781.90
	1	Length	16.03			16.03	0+23.35N			781.90
F-69	1	Ribbed type B.H. plug								
		Proceed to South OL. from trunk line and lay South with the following					0+00.00S			
	4	Lengths	16.03	64.12		64.12	0+64.12S			781.90
F-70	1	P.S. x flg. adapter	1.44			1.44	0+65.56			781.90
	1	flg. end valve (not by P.B. Co.)	.67			.67	0+66.23			781.90
F-71	1	Flg. x P.B. adapter	1.21			1.21	0+67.44			781.90
	1	Length	16.03			16.03	0+83.47			781.90
F-72	1	Ribbed type B.H. plug								

JOB NO. 95.66P-Unit I

Price Brothers Company
LAYING SCHEDULE

PAGE 3 OF 22

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE June 22, 1966

REVISED

PREPARED BY

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		Begin laying at intersection of ~~Davison~~ Potter & ~~Baxter~~ Roads by making connection with City of Detroit pipeline and laying West P.S. to r.h.								
		72" SP-12 Class 162 for 10' Cover					3+01.00			853.60
	1	Length	20.03	20.03		20.03	3+21.03	.00		853.60
	1	Half bevel, L.S. bottom, P.I. Sta. 3+21.52 open jt. bottom @19.91	19.94	19.94	.02	19.92	3+40.95	4.75	+.95	854.55
	1	Lgth., open jt. bottom @20.03	20.05	20.05	.03	20.02	3+60.97	5.40	+1.08	855.63
	1	Lgth., open jt. bottom @20.03	20.05	20.05	.04	20.01	3+80.98	6.10	+1.22	856.85
	1	Lgth., open jt. bottom @20.03	20.05	20.05	.05	20.00	4+00.98	6.80	+1.36	858.21
	1	Lgth., open jt. bottom @20.03	20.05	20.05	.05	20.00	4+20.98	7.45	+1.49	859.70
S-1	1	Full bevel, L.S. top, P.I. Sta. 4+21.47 w/8" tan. flg. OL. 10' fr. S.E. top right side, open jt. top @19.78	19.79	19.79		19.79	4+40.77	.00		859.70
	1	Harn. half bevel, L.S. top, P.I. Sta. 4+41.26 open jt. top @19.91, clamp S.E. only	19.92	19.92	.02	19.90	4+60.67	4.02	-.80	858.90
	2	Harn. lgths.	20.03	40.06	.03	40.03	5+00.70	4.02	-1.60	857.30
F-2	1	Harn. short half bevel, L.S. bottom w/36" 45° wye 5' fr. S.E., w/1 " OL. @ S.E., open jt. bottom @13.03'	13.04	13.04		13.04	5+13.74	.00		857.30

JOB NO. 95.66P-Unit I

Price Brothers Company
LAYING SCHEDULE

PAGE

JOB NO. 95.66P-Unit I

Price Brothers Company
LAYING SCHEDULE

PAGE ___ OF ___

DATE June 22, 1960

PROJECT Flint, Michigan, Division A 72" Flint Detroit Water Supply

REVISED ___

PREPARED BY [illegible]

NOTE VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 162 for 10' Cover					[illegible]	.00		[illegible]
P-3	1	72" harn. P.S. x 54" P.S. reducer	7.13	7.13		7.13	5+20.87	.00		857.30
	1	54" P.B. end valve (not by P.B. Co.)	1.50 ?	1.50		1.50	5+22.37	.00		857.30
P-4	1	54" P.S. x 60" harn. P.B. reducer	6.80	6.80		6.80	5+29.17	.00		857.30
	2	60" SP-12 Class 166 for 10' Cover Harn. lengths	20.03	40.06		40.06	5+69.23	.00		857.30
S-5	1	Harn. short length	6.38	6.38		6.38	5+75.61	.00		857.30
F-6	1	Harn. P.B. x flg. adapter	5.50	5.50		5.50	5+81.11	.00		857.30
		DIMENSION INCORRECT								
		Flow Tube and Valve Assem. (not by P.B. Co.)	12.08	12.08		12.08	5+93.19	.00		857.30
F-7	1	P.E. x harn. P.B. adapter	6.25	6.25		6.25	5+99.44	.00		857.30
	1	Harn. length	20.03	20.03		20.03	6+19.47	.00		857.30
S-8	1	Harn. short	11.03	11.03		11.03	6+30.50	.00		857.30
F-9	1	60" harn. P.S. x 54" P.S. reducer	7.13	7.13		7.13	6+37.63	.00		857.30
	1	54" P.B. end valve (not by P.B. Co.)	1.50 ?	1.50		1.50	6+39.13	.00		857.30
		72" SP-12 Class 162 for 10' Cover								
P-10	1	54" P.S. x 72" harn. P.B. reducer	6.78	6.78		6.78	6+45.91	.00		857.30
P-11	1	72" harn. P.S. x harn. P.B. x 36" harn. P.B. 45° wye, w/1" OL. @ B.E.	11.85	11.85		11.85	6+57.76	.00		857.30
	1	Harn. lgth., open jt. top @20.03	20.05	20.05		20.05	6+77.81	.50	-.30	857.20

JOB NO. 95.66-Unit (

LAYING SCHEDULE

DATE June 22, 1966
REVISED 7-22-66

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	CR. LAID DIST.	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 162 for 10" Cover					8+[illegible]	-.50		8[illegible]
	1	Spec. length, sloop S.E. only, open jt. top @20.03	20.05	20.05		20.05	8+[illegible].86	-.00	-.26	[illegible]
S-12 (1) S-12A	1	Length w/24" flg. OL (3') fr. S.E. w/1-1/2" bevel flg.	20.03	20.03		20.03	7+[illegible].99	-.50	-.26	8[illegible].50
		72" SP-12 Class 151 for 6" Cover								
	5	Lengths	20.03	100.15		100.15	8+18.04	3.00	-1.66	8[illegible].80
	1	Half bevel, L.S. top, P.I. Sta. 8+18.55 open jt. bottom @19.91	19.94	19.94	.02	19.92	8+37.96	4.15	-.82	8[illegible].08
	6	Lengths	20.03	120.18	.10	120.08	9+58.04	4.15	-4.98	850.00
	1	Full bevel, L.S. bottom, P.I. Sta. 9+58.54 open jt. top @19.78	19.80	19.80	.01	19.79	9+77.83	4.05	+.60	850.60
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	9+97.88	2.95	+.97	851.57
	1	Lgth., open jt. top @20.03	20.06	20.06		20.06	10+17.94	1.565	+.31	851.88
	9	Lengths	20.03	180.27	.02	180.25	11+98.19	1.565	+2.82	854.20
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	12+18.24	1.00	+.20	854.40
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	12+38.29	.50	+.10	854.50
S-13 (1)	1	Length w/2" I.P. thd. OL 2' fr. S.E. open jt. top @20.03	20.05	20.05		20.05	12+58.34	.00		854.50

OB NO. 95.66P-Unit 1

Price Brothers Company
LAYING SCHEDULE

PROJECT [illegible] DIVERSION A[illegible]

DATE June 22, 1965

JOIN VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS

REVISED

PREPARED BY [illegible]

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CHAR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 151 for 6' Cover					24+98.39	.00		852.4
	1	Lgth., open jt. top @20.03	20.05	20.0[illegible]		20.0[illegible]	24+78.39	[illegible].0	.18	852.36
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	22+98.44	1.40	.28	852.08
	1	Lgth., open jt. top @20.03	20.06	20.06		20.06	23+18.50	2.20	.44	851.64
	21	Lengths	20.03	420.63	.10	420.53	27+39.03	2.20	9.24	842.40
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	27+59.08	1.50	.30	842.10
	6	Lengths	20.03	60.09	.01	60.08	28+19.16	1.50	.90	841.20
		72" SP-12 Class 162 for 10' Cover								
	6	Lengths	20.03	120.18	.01	120.[illegible]	29+39.33	[illegible].50	[illegible].80	841.40
	1	Lgth., open jt. top @20.03	20.05	20.0[illegible]		20.0[illegible]	29+59.38	2.15	-.43	840.97
	1	Lgth., open jt. top @20.03	20.05	20.05	.01	20.04	29+79.42	2.80	-.56	840.41
	1	Lgth., open jt. top @20.03	20.05	20.05	.01	20.04	29+99.46	3.30	-.66	839.75
	1	Lgth., open jt. top @20.03	20.05	20.05	.01	20.04	30+19.50	3.75	-.75	839.00
	8	Lengths	20.03	160.24	.11	160.13	31+79.63	3.75	-6.00	833.00
		72" SP-12 Class 151 for 6' Cover								
	1	Half bevel, L.S. bottom, P.I. Sta. 21+80.13 open jt. top @19.91	19.93	19.93		19.93	21+99.56	.50	-.10	832.90
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	22+19.61	1.00	-.20	832.70

Price Brothers Company

JOB NO. 95.66P-Unit 1

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE June 22, 1966
REVISED (1) 7-21-66
PREPARED BY: Jerome W. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP 12 Class 151 for 6' Cover					22+19.67	1.00		832.49
	6	Lengths	20.03	120.18	.01	120.17	23+39.78	1.00	-1.20	831.29
	3	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	23+59.83	.50	-.10	831.40
	4	Lengths	20.03	80.12		80.12	24+39.95	.50	-.40	831.00
		72" SP 12 Class 162 for 10' Cover								
	3	Lengths	20.03	60.09		60.09	25+00.04	.50	-.30	830.70
		72" SP-12 Class 151 for 6' Cover								
	3	Lengths	20.03	60.09		60.09	25+60.13	.50	-.30	830.40
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	25+80.18	1.15	-.23	830.17
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	26+00.23	1.71	-.34	829.83
	13	Lengths	20.03	260.39	.04	260.35	28+60.58	1.71	-4.43	825.40
(1)	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	28+80.63	2.41	-.48	824.92
(1) S-14	1	Lgth., open jt. top @20.03 w/12" M.J.B. OL. 17' fr. S.E.	20.05	20.05	.01	20.04	29+00.67	3.11	-.62	824.30
(1) S-15	1	Lgth., open jt. top @20.03 w/12" M.J.B. OL. 15' fr. S.E.	20.05	20.05	.01	20.04	29+20.71	3.81	-.76	823.54
(1)	1	Lgth., open jt. top @20.03	20.06	20.06	.02	20.04	29+40.75	4.64	-.93	822.61
(1)	2	Lgths.	20.03	40.06	.04	40.02	29+80.77	4.64	-1.85	820.76
(1)	1	Lgth., open jt. top @20.03	20.05	20.05	.03	20.02	30+00.79	5.34	-1.07	819.69

JOB NO. 95.66P-Unit 1

Price Brothers Company
LAYING SCHEDULE

DATE June 22, 1966

JOB NO. 95.66P-Unit I

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE June 22, 1966
REVISED (1) 7-21-66
PREPARED BY: Jerome C. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
	72" SP-12 Class 151 for 6' Cover					30+00.79			819.69
1	Lgth., open jt. top @20.03	20.03	20.05	.04	20.01	30+20.80	6.04	-1.21	818.48
1	Lgth., open jt. top @20.03	20.05	20.05	.04	20.01	30+40.81	6.54	-1.31	817.17
1	Lgth., open jt. top @20.03	20.05	20.05	.05	20.00	30+60.81	6.95	-1.39	815.78
2	Lengths	20.03	40.06	.10	39.96	31+00.77	6.95	-2.78	813.00
1	Half bevel, L.S. bottom, P.I. Sta. 31+01.27 open jt. top @19.91	19.93	19.93	.01	19.92	31+20.69	3.75	-.75	812.25
1	Lgth., open jt. top @20.03	20.05	20.05	.02	20.03	31+40.72	4.46	-.89	811.36
6	Lengths	20.03	120.18	.12	120.06	32+60.78	4.46	-5.36	806.00
1	Lgth., open jt. bottom @20.03	20.05	20.05	.01	20.04	32+80.82	3.80	-.76	805.24
1	Lgth., open jt. bottom @20.03	20.05	20.05	.01	20.04	33+00.86	3.15	-.63	804.61
1	Lgth., open jt. bottom @20.03	20.05	20.05	.01	20.04	33+20.90	2.50	-.50	804.11
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	33+40.95	1.94	-.39	803.72
6	Lengths	20.03	120.18	.02	120.16	34+61.11	1.94	-2.32	801.40
1	Lgth., open jt. top @20.03	20.05	20.05		20.05	34+81.16	2.44	-.49	800.91
17	Lengths	20.03	340.51	.10	340.41	38+21.57	2.44	-8.30	792.61
NOTE:	All pipe between Station 38+21.57 and Station 47+43.89 is to be paint seal coated on outside with two coats of Davies Shop Coat Black #119.								

JOB NO. 95.66P-Unit I

Price Brothers Company
LAYING SCHEDULE

June 22, 1966

OB NO. 95.66P-Unit I

Price Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE June 22, 1966
REVISED (1) 7-21-66
PREPARED BY Jerome C. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 151 for 6' Cover					38+21.57	2.44		792.61
	4	Lengths	20.03	80.12	.02	80.10	39+01.67	2.44	-2.44	790.17
		72" SP-12 Class 162 for 10' Cover								
	3	Lengths	20.03	60.09	.02	60.07	39+61.74	2.44	-.98	789.19
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	39+81.79	2.00	-.40	788.79
S-16	1	Lgth., open jt. bottom @20.03 w/18" tan. M.J.B. B.O. OL. (19') fr. S.E. bottom right (CAUT BE ORDERING TO PRICE CATALOG USE 16')	20.05	20.05		20.05	40+01.84	1.32	-.26	788.53
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	40+21.89	.66	-.13	788.40
	1	Lgth., open jt. 1/2" bottom @20.03	20.05	20.05		20.05	40+41.94	.00		788.40
	2	Lengths	20.03	40.06		40.06	40+82.00	.00		788.40
	1	Half bevel, L.S. bottom, P.I. Sta. 40+82.49 open jt. top @19.91	19.92	19.92	.01	19.91	41+01.91	3.82	+.76	789.16
	10	Lengths	20.03	200.30	.15	200.15	43+02.06	3.82	+7.64	796.80
	1	Half bevel, L.S. top, P.I. Sta. 43+02.56 open jt. bottom @19.91	19.93	19.93		19.93	43+22.99	.00		796.80
S-17	1	Short length	6.05	6.05		6.05	43+28.04	.00		796.80
F-18	1	72" P.S. x 54" P.S. Reducer	7.13	7.13		7.13	43+35.17	.00		796.80
	1	54" P.B. end valve (not by P.B. Co.)	1.50	1.50		1.50	43+36.67	.00		796.80

JOB NO. 95.66P-Unit I

Ph. Brothers Company
LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE June 22, 1966

REVISED (1) 7-21-66

PREPARED BY: Jerome C. Wilson, Jr.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 162 for 10' Cover					43+36.67	.00		796.80
F-19	1	54" P.S. x 72" P.B. Reducer	6.78	6.78		6.78	43+43.45	.00		796.80
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	43+63.50	.43	+.08	796.88
S-20 S-20A	1	Lgth., w/24" flg. Ol. 10' fr. S.E. w/24" blind flg.	20.03	20.03		20.03	43+83.53	.43	+.08	796.96
	9	Lengths	20.03	180.27		180.27	45+63.80	.43	+.78	797.74
		72" SP-12 Class 151 for 6' Cover								
	3	Lengths	20.03	60.09		60.09	46+23.89	.43	+.26	798.00
	1	Half bevel, L.S. bottom, P.I. Sta. 46+24.39 open jt. top @19.91	19.93	19.93	.01	19.92	46+43.81	3.69	+.74	798.74
	5	Lengths	20.03	100.15	.07	100.08	47+43.89	3.69	+3.69	802.43
END OF SECTION TO BE COATED.										
	1	Length	20.03	20.03	.01	20.02	47+63.91	3.69	+.74	803.17
	1	Length, open jt. top @20.03	20.05	20.05	.01	20.04	47+83.95	3.19	+.64	803.81
	26	Lengths	20.03	520.78	.26	520.52	53+04.47	3.19	+16.60	820.41
	1	Lgth., open jt. top @20.03	20.05	20.05	.01	20.04	53+24.51	2.55	+.51	820.92
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	53+44.56	2.10	+.42	821.34
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	53+64.60	1.64	+.33	821.67
	4	Lengths	20.03	80.12	.01	80.11	54+44.72	1.64	+.98	822.65

JOB NO. 5.66P-Unit 1

Pipe Division Company

LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Plant Detroit Water Supply

DATE JUNE 22, 1966

REVISED (1) 7-21-66

PREPARED BY GEORGE E. WILSON JR.

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 152 for 10' Cover					54+44.72			
	3	Lengths	20.03	60.09	.03	60.06	55+04.80			
	1	Length, open jt. top @20.03	20.05	20.05		20.05	55+24.85			824.20
	1	Length, open jt. top @20.03	20.05	20.05		20.05	55+44.90			824.30
S-21	1	Length w/3" tan. flg. 3.0. OL. 2° fr. S.E. top right, open jt. top @20.03	20.05	20.05		20.05	55+64.95	.00		824.30
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	55+85.00	.154	-.03	824.27
	11	Lengths	20.03	220.33		220.33	58+05.33	.154		
		72" SP-12 Class 151 for 6' Cover								
	1	Length	20.03	20.03		20.03	58+25.36	.154		
	1	Half bevel, I.S. bottom P.I. Sta. 58+36.04 open jt. top	19.91	19.91	.02	19.89	58+45.25			
	4	Lengths	20.03	80.12	.06	80.06	59+25.31			
	1	Lgth., open jt. bottom @20.03	20.05	20.05	.01	20.04	59+45.35			
	1	Lgth., open jt. bottom @20.03	20.05	20.05	.01	20.04	59+65.39			
	1	Lgth., open jt. bottom @20.03	20.05	20.05	.01	20.04	59+85.43			
	1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	60+05.68			
	8	Lengths	20.03	160.24	.02	160.22	61+65.70			

JOB NO. 55.66P-Unit 1

LAYING SCHEDULE

PROJECT: Flint, Michigan - Division A - 72" Flint Detroit Water Supply

DATE June 22, 1966

REVISED (1) 7-21-66

PREPARED BY [illegible] W.I.Bond

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
	72" SP-12 Class 151 for 6' Cover					61+65.70	[illegible]		[illegible]
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	61+85.75	[illegible]	- .20	[illegible]
4	Lengths	20.03	80.12		80.12	62+65.87	[illegible]	- .80	814.40
1	Lgth., open jt. top @20.03	20.05	20.05		20.05	62+85.92	[illegible]	- .13	814.27
3	Lengths	20.03	60.09	.01	60.08	63+46.00	[illegible]	- .60	[illegible]
	72" SP-12 Class 162 for 10' Cover								
2	Lengths	20.03	40.06		40.06	63+86.06	[illegible]	- .67	812.00
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	64+06.11	.09	- .20	812.20
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	64+26.16	.30	- .06	812.14
1	Lgth., open jt. bottom @20.03	20.05	20.05		20.05	64+46.21	.39	[illegible]	812.22
5	Lengths	20.03	100.15		100.15	65+46.36	.39	[illegible]	812.61
	72" SP-12 Class 151 for 6' Cover								
5	Lengths	20.03	100.15		100.15	66+46.51	.39	+ .33	813.00
1	Lgth., open jt. bottom @20.03	20.04	20.04		20.04	66+66.55	.70	+ .14	813.14
9	Lengths	20.03	180.27		180.27	68+46.82	.70	[illegible]	814.40
1	Lgth., open jt. bottom	20.03	20.03		20.03	68+66.85	.77	+ .15	814.55
40	Lengths	20.03	801.20	.02	801.18	76+68.03	.77	16.15	820.70

JOB NO. 95.66P-Unit I

[illegible] Contract Company

LAYING SCHEDULE

PROJECT Flint, Michigan, Division A - 72" Flint Detroit Water Supply

DATE June 22, 196[illegible]

REVISED (1) 7-21-66

PREPARED BY [illegible]

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

	NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	CENTER LINE ELEVATION
		72" SP-12 Class 151 for 6' Cover					76+68.03	[illegible]		820.[illegible]
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	76+88.08	.26	+.05	820.[illegible]
	9	Lengths	20.0[illegible]	180.27		180.27	78+68.35	.26	+.47	821.2[illegible]
		72" SP-12 Class 162 for 10' Cover								
	12	Lengths	20.03	240.36		240.36	81+08.71	.26	+.63	821.8[illegible]
S-22	1	Length w/8"tan. fig. B.O. OL. 10' fr. S.E. top right	20.03	20.03		20.03	81+28.74	.26	+.05	821.9[illegible]
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	81+48.79	.24	-.04	821.8[illegible]
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	81+68.84	.65	-.[illegible]	821.7[illegible]
	2	Lengths	20.[illegible]3	40.06		40.06	82+08.90	.65	-.26	821.4[illegible]
S-23	1	Length w/18" M.J.B. OL. (2') fr. S.E. CAST OR According To PRICE CATALOG	20.03	20.03		20.03	82+28.93	.65	-.13	821.3[illegible]
S-24	1	Lgth. w/18" M.J.B. OL (2') fr. S.E.	20.03	20.03		20.03	82+48.96	.65	-.13	P[illegible].21
	7	Lengths	20.03	140.21		140.21	83+89.17	.65	-.91	820.3[illegible]
		72" SP-12 Class 151 for 6' Cover								
	7	Lengths	20.03	140.21		140.21	85+29.38	.65	-.91	819.39
	1	Lgth., open jt. top @20.03	20.05	20.05		20.05	85+49.43	1.30	-.26	819.1[illegible]

JOB NO. [illegible] Unit 1

[illegible] Pipeline Company

LAYING SCHEDULE

PROJECT [illegible] Water Supply

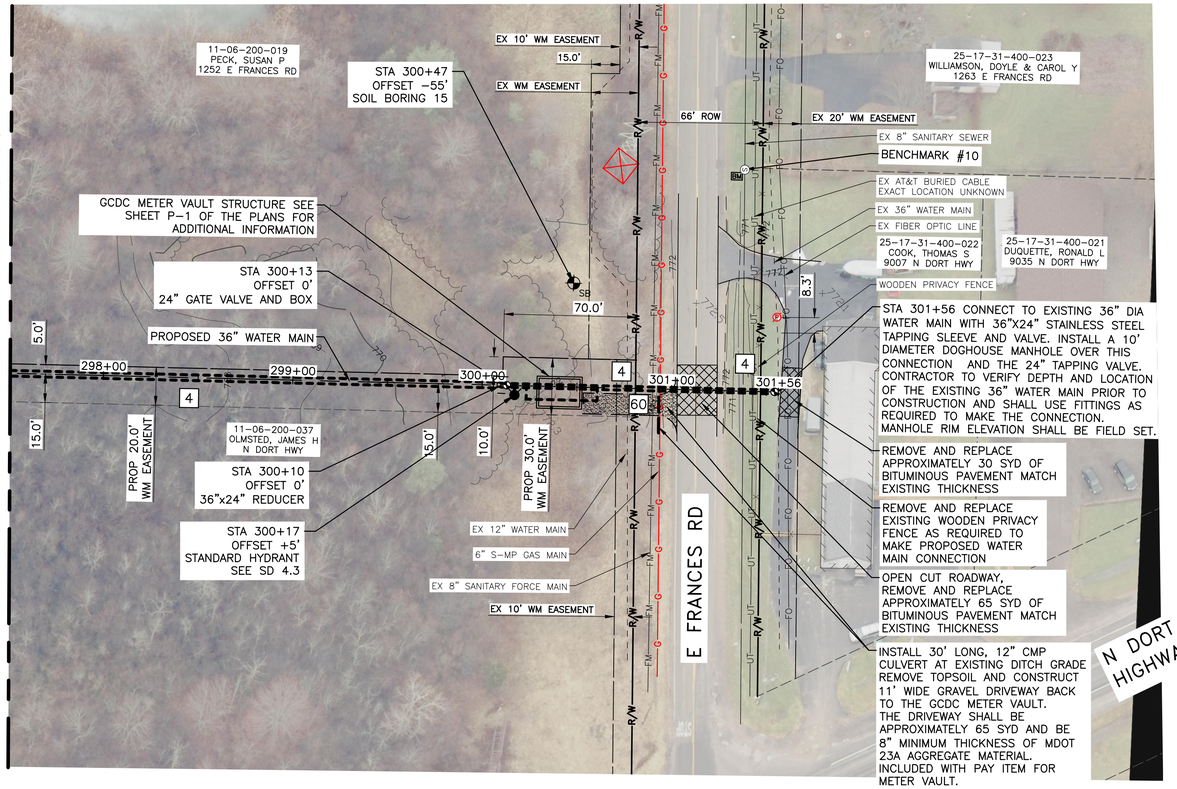
DATE June 22, 1966

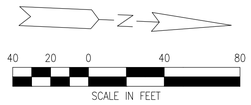
REVISED (1) 7-21-66

NOTE: VARY JOINT OPENINGS TO OBTAIN THE REQUIRED GRADES, ELEVATIONS AND HORIZONTAL DEFLECTIONS.

NO.	DESCRIPTION	AV. UNIT LENGTH	TOTAL LAID LENGTH	SLOPE CORR.	HOR. LAID LENGTH	STATION	% GRADE	CHANGE IN ELEVATION	GRADE ELEVATION
	72" SP-12 Class 162 for 10' Cover					100+17.67	3.80		
3	Lengths	20.03	20.03	.01	20.02	100+37.69	3.80	- .72	[illegible]
1	Half bevel, L.S. bottom, P.I. Sta. 100+38.18 open jt. top @19.91	19.92	19.92		19.92	100+57.61	.00		[illegible]
1	Length	20.03	20.03		20.03	100+77.64	.00		[illegible]
	72" SP-12 Class 151 for 6' Cover								
1	Half bevel, L.S. bottom, P.I. Sta. 100+78.14 open jt. top @19.91	19.93	19.93	.01	19.92	100+97.56	3.27	+ .65	[illegible]
1	Lgth., open jt. top @20.03	20.04	20.04	.01	20.03	101+17.59	2.98	+ .60	800.25
3	Lengths	20.03	60.09	.03	60.06	101+77.65	2.98	+1.78	802.03
1	Lgth., open jt. bottom @20.03	20.04	20.04	.01	20.03	101+97.68	3.37	+.67	802.70
1	Half bevel, L.S. top, P.I. Sta. 101+98.18 open jt. bottom @19.91	19.93	19.93		19.93	102+17.61	.10	+ .02	802.72
13	Lengths	20.03	260.39		260.39	104+78.00	.10	+ .26	802.98
1	Length w/2" I.P. thd. OL @ B.E.	20.03	20.03		20.03	104+98.03	.10	+ .02	803.00
	END OF UNIT I.								

S-26

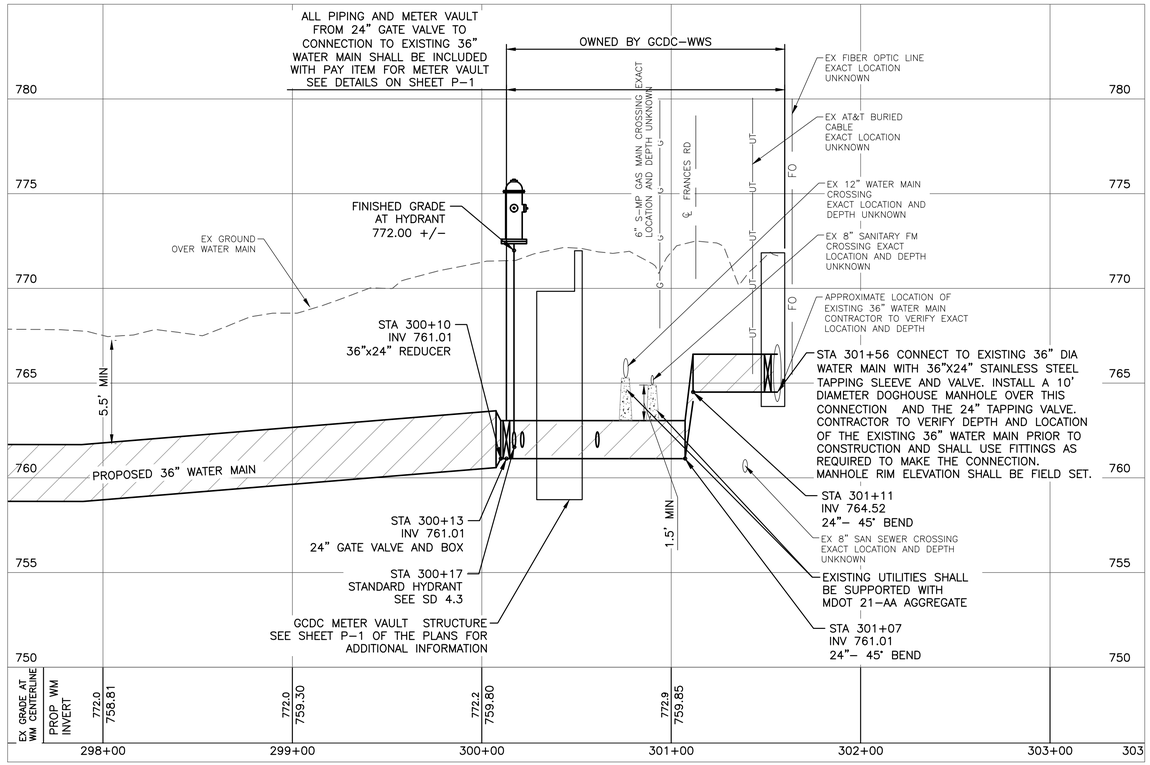




BENCHMARK #10
SOUTH RIM OF SANITARY MANHOLE
ELEVATION=772.89

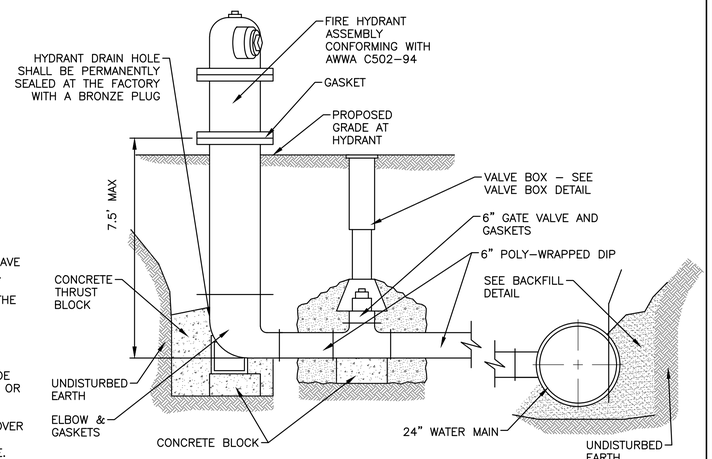
NOTES

1. THE CONTRACTOR SHALL USE A TRENCH BOX IN ANY LOCATION WHERE THE PROPOSED WATER MAIN IS TO BE CONSTRUCTED LESS THAN 20' FROM AN EXISTING ELECTRIC POWER POLE OR TOWER.
2. PRIOR TO BEGINNING THE WORK. THE CONTRACTOR SHALL BE REQUIRED TO EXPOSE ALL EXISTING UTILITIES THAT CROSS OR ARE WITHIN THE INFLUENCE OF THE PROPOSED CONSTRUCTION, SO THE ENGINEER MAY DETERMINE IF A CONFLICT EXISTS BETWEEN AN EXISTING UTILITY AND THE PROPOSED WORK. ALL LABOR REQUIRED TO UNCOVER THE EXISTING UTILITY SHALL BE CONSIDERED INCLUSIVE TO THE UNIT PRICE OF THE WATER MAIN. THE CONTRACTOR SHALL VERIFY THE UTILITY SIZE, MATERIAL, DEPTH AND HORIZONTAL LOCATION OF ALL UTILITIES IN SUFFICIENT TIME SUCH THAT ANY CONFLICTS CAN BE RESOLVED BEFORE WORK IS STARTED.
3. ALL EXISTING UTILITIES SHALL BE PROPERLY SUPPORTED AND REMAIN IN SERVICE AT ALL TIMES DURING THE PROJECT, UNLESS OTHERWISE INDICATED.
4. UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE, OR REPLACED AS CALLED FOR ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SIZE AND MATERIAL REQUIRED PRIOR TO REPLACING.
5. ANY EXISTING STORM OR SANITARY SEWER PIPES THAT COME APART OR ARE DAMAGED WILL NEED TO BE REPLACED WITH SDR-26 OR SCHEDULE 40 PVC PIPE, FROM MANHOLE TO MANHOLE. NEW MANHOLES CAN BE ADDED TO MINIMIZE LENGTH OF SEWER REPLACEMENT. ANY STORM AND SANITARY SEWER PIPES THAT ARE DAMAGED SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
6. REGULATED WETLANDS HAVE BEEN DELINEATED, NUMBERED AND SHOWN ON THE PLANS ALONG THE PROPOSED WATER MAIN ROUTE. FOR WETLAND RESTORATION THE CONTRACTOR SHALL REFER TO THE TABLE LOCATED ON PLAN SHEET 19 ALONG WITH DETAILS ON SHEETS 20-23. CONTRACTOR SHALL LIMIT THE EXTENT OF CONSTRUCTION ACTIVITIES WITHIN DELINEATED WETLANDS TO REDUCE IMPACTS OF SUCH ACTIVITIES TO THE WETLANDS. AREAS DISTURBED BY CONTRACTOR OUTSIDE OF THE AREAS DESIGNATED IN THE WETLAND RESTORATION DETAILS WILL BE AT CONTRACTOR'S EXPENSE.
7. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES ALONG THE TRANSMISSION MAIN ROUTE TO REDUCE IMPACTS OF SUCH ACTIVITIES ON THE REMAINDER OF THE PROPERTY, INCLUDING ON PROPERTIES OWNED BY CONSUMERS ENERGY. AREAS DISTURBED OUTSIDE OF THE DESIGNATED EASEMENT WILL BE AT CONTRACTOR'S EXPENSE.
8. ALL WATER MAIN FITTINGS AND PIPE JOINTS SHALL BE RESTRAINED PER THE CONTRACT DOCUMENTS.



NOTES

1. ALL HYDRANTS SHALL HAVE DOUBLE PUMPER NOZZLES.
2. NOZZLES SHALL FACE THE ROADWAY, EACH AT AN APPROXIMATE 45 DEGREE ANGLE AS SHOWN IN THE DETAIL.
3. SET THE HYDRANT GRADE LINE AT PROPOSED GRADE OR AS FIELD DIRECTED.
4. SET THE VALVE BOX COVER FLUSH WITH THE EXISTING/PROPOSED GRADE.
5. THE CONTRACTOR MAY USE CONCRETE BLOCK AND DRY MIX CONCRETE FOR THRUST BLOCKS.
6. ALL JOINTS SHALL BE RESTRAINED BY AN APPROVED METHOD IN CONJUNCTION WITH THE USE OF THRUST BLOCKING FOR THIS PROJECT.
7. HYDRANTS ARE TO BE FACTORY PAINTED "ORANGE."



SD 4.3 STANDARD FIRE HYDRANT DETAIL
NOT TO SCALE

BY	REV#	DATE	DESCRIPTION
TLH	1	2/21/20	REVISED PER ADDENDUM 1

WADE TRIM
555 S. Saginaw Street, Suite 201
Flint, MI 48502
810.238.2555
www.wadetrim.com

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
PLAN AND PROFILE SHEEET 39

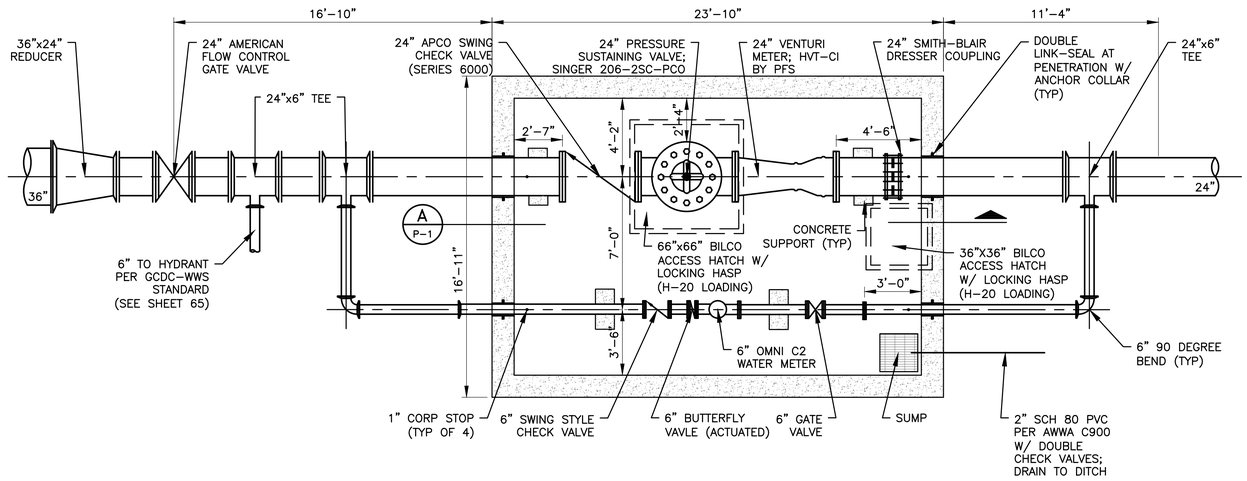
ISSUED FOR: DATE: BY:

JOB NO. COF1068.01F

SHEET 65

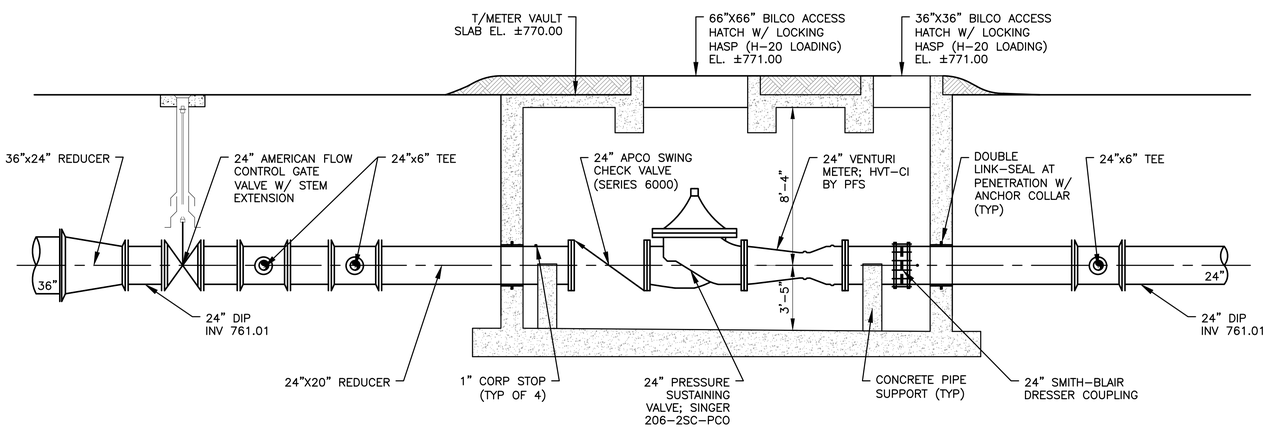
Know what's below. Call before you dig.

PROJECT MANAGER:Jason R. Kenyon, PE
C:\PW_WORK2\D0948736\CUP-PLTS-PLAN-PROF-5.DWG - PP-39 - PLOTTED 2/18/2020 2:21 PM BY RUGGLES, TIMOTHY
FIELD BOOK INFORMATION:



METER VAULT – PLAN

SCALE: ¼"=1'–0"



SECTION A – METER VAULT

SCALE: ¼"=1'–0"

Know what's below. Call before you dig.

REV#	DATE	DESCRIPTION	BY
1	2/20/20	PIPING, VALVES AND VENTURI FROM 20" TO 24"	TLH

WADE TRIM
555 S. Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555
www.wadetrim.com

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502

36" SECONDARY WATER SUPPLY
PROPOSED– GCDC METER VAULT AT FRANCES RD

ISSUED FOR:	DATE:	BY:
IFB	2/10/20	JRK
ADD #1	2/20/20	JRK

JOB NO.
COF1068.01F

SHEET
P–1

PROJECT MANAGER: Jason R. Kenyon, PE
C:\PW_WORK2\D0969948\PPP–PLTS–PROC–PLAN.DWG – SHEET 1 – PLOTTED 2/19/2020 10:10 AM BY HARRISON, TIFFANY
FIELD BOOK INFORMATION: