

CITY OF MASSILLON, OHIO

CITY ENGINEER DEPARTMENT

LEVEE INFRASTRUCTURE IMPROVEMENT PROJECT

PROJECT DESCRIPTION

SLIP LINING OF VARIOUS SIZE STORM SEWER THAT PENETRATE THRU THE EXISTING LEVEE STRUCTURE; MODIFICATION AND REHABILITATION OF EXISTING SANITARY CHAMBERS AND PLACEMENT OF SHUT OFF VALVES; CLEANING EXISTING SANITARY LINES AND EPOXY LINING ALONG WITH CAST IN PLACE PIPE.

LEGEND

RIGHT OF WAY . . . EXISTING: _____, PROPOSED: _____
COUNTY LINE . . . _____
TOWNSHIP LINE . . . _____
CORPORATION LINE . . . _____
FENCE LINE . . . EXISTING: , PROPOSED: 
GUARDRAIL . . . EXISTING: , PROPOSED: 
MANHOLES . . . EXISTING: , PROPOSED: , REHABILITATED: 
CATCH BASINS . . . EXISTING: , PROPOSED: , REHABILITATED: 
SIGNS 1-POST: , 2-POST: , 3-POST: 
EXISTING POLES . . . POWER: , TELEPHONE , LIGHT , SPAN 
PROPOSED POLES . . . POWER: , TELEPHONE , LIGHT , SPAN 
EXIST. UTILITIES . . . VALVE: , HYDRANT: , METERS: , GUY: 
CB . . . CATCH BASIN PF . . . PLUG AND FILL
CC . . . CONCRETE COLLAR R . . . REMOVAL
CIP . . . CURED IN PLACE PIPE SC . . . SIPHON CHAMBER
CM . . . CHAMBER MODIFICATION SCR . . . SIPHON CHAMBER
DIP . . . DUCTILE IRON PIPE REHABILITATION
DG . . . WALL MOUNT AUTOMATIC SL . . . HOST PIPE SLIP LINING
DRAINAGE GATE SP . . . SANITARY PIPE
DM . . . DRAINAGE MANHOLE SM . . . SANITARY MANHOLE
DP . . . DRAINAGE PIPE SSS . . . CAST IN PLACE GROUTING
JR . . . JOINT REPAIR SLEEVE

PERMIT TO INSTALL

SANITARY SEWER PERMIT TO INSTALL (P.T.I.) HAS BEEN RECEIVED FROM THE OHIO ENVIROMENTAL PROTECTION AGENCY THIS _____ DAY OF _____, 20____.

PTI No. _____



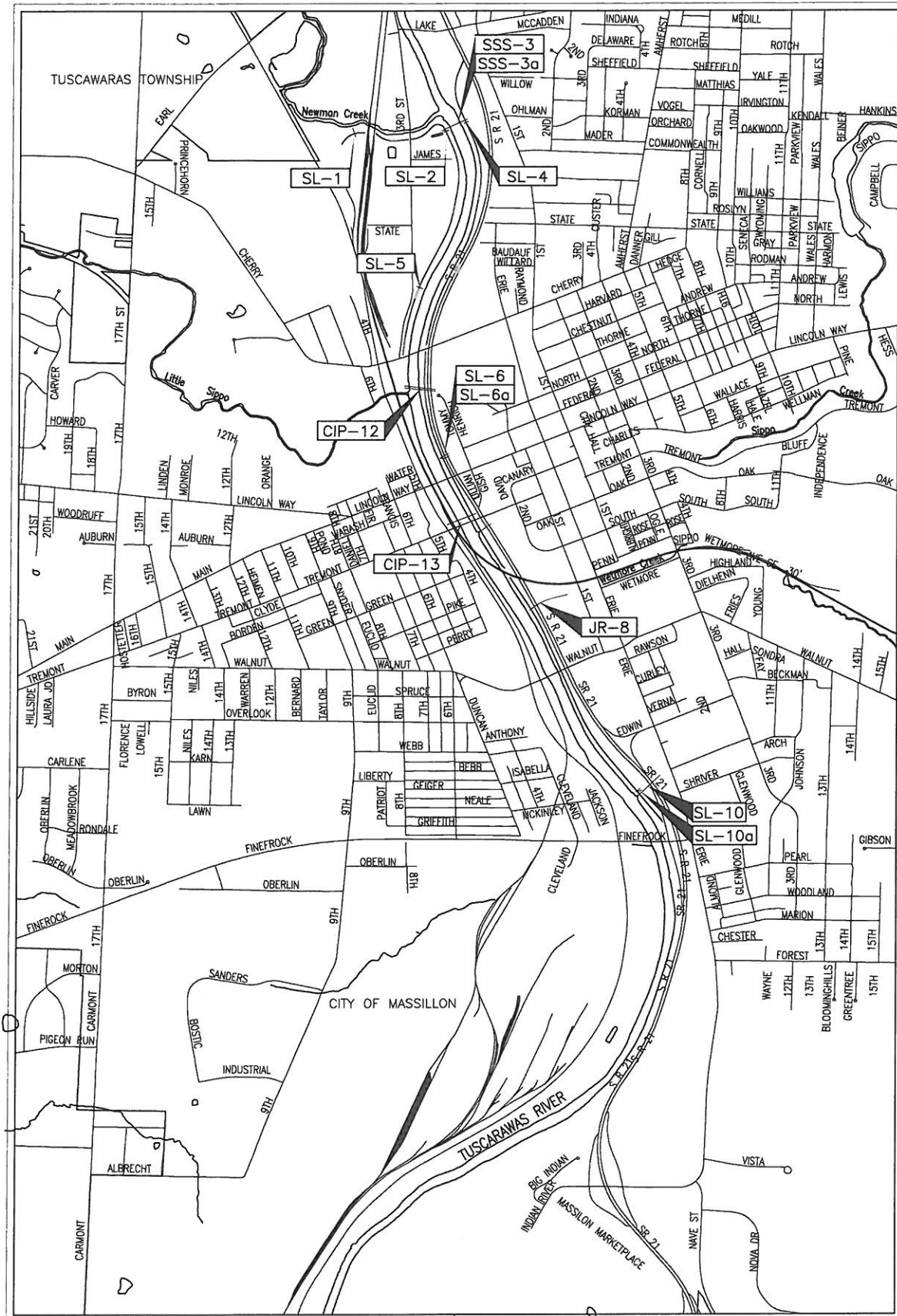
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY



TWO WORKING DAYS
BEFORE YOU DIG
1-800-925-0988 (TOLL FREE)
OIL & GAS PRODUCERS UNDERGROUND
PROTECTION SERVICE

PLAN PREPARED BY:
CITY OF MASSILLON
Engineering Department

OWNER:
CITY OF MASSILLON
151 Lincoln Way East
Massillon, Ohio 44646



LOCATION MAP

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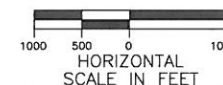
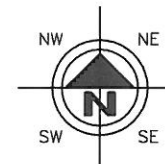
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APPROVALS

DIRECTOR OF PUBLIC SAFETY AND SERVICE MICHAEL J. LOUDIANA DATE _____
CITY ENGINEER KEITH A. DYLEWSKI, P.E., P.S. DATE _____

CITY OF MASSILLON ELECTED OFFICIALS

FRANCIS H. CICCHINELLI, Jr. MAYOR
PERICLES G. STERGIOS LAW DIRECTOR/PROSECUTOR
JAYNE FERRERO AUDITOR
PAUL LAMBERT TREASURER
COUNCIL
GLEN E. GAMBER PRESIDENT
RONALD E. MANG 1st WARD
GARY ANDERSON 2nd WARD
KATHERINE CATAZARO-PERRY 3rd WARD
TONY M. TOWNSEND 4th WARD
DONNIE PETERS JR. 5th WARD
DAVID K. McCUNE 6th WARD
PAUL MANSON AT LARGE
LARRY SLAGLE AT LARGE
DAVID HERSHER AT LARGE



DRAWN BY: FPW CHECKED BY: KAD
DATE: July, 2011 DATE: July, 2011

Levee Infrastructure Improvement Project

Title Sheet
City of Massillon
Stark County, Ohio

Francis H. Cicchinelli, Jr.



REVISIONS:

DATE	DESCRIPTION

FILE NAME: Leveetitle.dwg
ACCOUNT NUMBER 10LV01

* THE FOLLOWING NOTES ARE CITY OF MASSILLON STANDARD NOTES AND MAY NOT BE APPLICABLE TO ALL PROJECTS.

UTILITIES

LISTED BELOW ARE ALL KNOWN UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

AT&T 50 W.BOWERY, 6TH FLOOR AKRON, OH 44308 800-384-8057 RICK DELAGRANGE	AQUA OHIO WATER P.O. BOX 584 MASSILLON, OH 44648 (330) 833-4156	OHIO EDISON STARK DIVISION 2600 S. ERIE ST. MASSILLON, OH 44545 (330) 833-3141	MASSILLON CABLE TV P.O. BOX 814 MASSILLON, OH 44648 (330) 833-4134	GREAT LAKES 104 6TH ST. S.W. CANTON, OH 44702 (330) 456-2454
CITY OF MASSILLON SANITARY SEWER 151 LINCOLN WAY EAST MASSILLON, OH 44646 (330) 830-1722	AT&T COMMUNICATIONS 2535 E. 40TH AVE. DENVER, CO 80205-3601 (800) 852-3786	DOMINION EAST OHIO GAS COMPANY 4725 SOUTHWAY ST. S.W. CANTON, OH 44706 (330) 478-3142 NANCY KOVACH	NORTHEAST OHIO NATURAL GAS CORP. 9081 S.R. 250 STRASBURG, OH 44680-9766 (330) 878-5589	

THE CONTRACTOR SHALL NOTIFY ALL UTILITIES 48 HOURS PRIOR TO COMMENCING WORK.

THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES ARE NOT SHOWN ON THE PLANS, BUT CAN BE OBTAINED FROM THE OWNERS OF THE UTILITIES, THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THE UTILITIES.

OUPS - 1-800-362-2764
OGPUPS - 1-800-925-0988

NOTIFICATION OF SAFETY FORCES AND BUS GARAGES

THE CONTRACTOR SHALL NOTIFY ALL AGENCY LISTED BELOW AT LEAST 48 HOURS IN ADVANCE OF ANY STREET CLOSING OR TRAFFIC CHANGE.

MASSILLON SAFETY SERVICE 330-830-1702	MASSILLON FIRE DEPARTMENT 330-833-1053	PERRY TOWNSHIP HALL 330-833-2141	NORTH LAWRANCE FIRE DEPT. 330-832-6347
TUSCARAWAS TOWNSHIP HALL 330-832-4337	JACKSON FIRE DEPARTMENT 330-832-1553	MASSILLON POLICE DEPARTMENT 330-830-1735	MASSILLON SCHOOL BUS GARAGE 330-830-1849
JACKSON TOWNSHIP HALL 330-832-7416	PERRY FIRE DEPARTMENT 330-478-5121	JACKSON POLICE DEPARTMENT 330-497-7440	JACKSON SCHOOL BUS GARAGE 330-830-8042
PERRY POLICE DEPARTMENT 330-833-3865	PERRY SCHOOL BUS GARAGE 330-477-1300	STARK COUNTY SHERIFF 330-430-3887	TUSCARAWAS SCHOOL BUS GARAGE 330-837-7805

SARTA
330-454-5333

QUANTITIES

QUANTITIES ARE INDICATED FOR COMPARISON OF BIDS ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY QUANTITIES BEFORE ORDERING MATERIALS. VARIATIONS FROM THE PLAN QUANTITIES SHALL BE APPROVED BY THE ENGINEER OR OWNER BEFORE MATERIAL ORDERS ARE PLACED. MATERIALS REJECTED DUE TO INCOMPATIBILITY BETWEEN ORDERED QUANTITIES AND FIELD CONDITIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION SPECIFICATIONS & STANDARDS

ALL CONSTRUCTION IS TO BE COMPLETED PER THE CITY OF MASSILLON SPECIFICATIONS AND STANDARDS ALONG WITH THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. IN THE EVENT OF A CONFLICT THE MORE STRINGENT STANDARD/SPECIFICATION SHALL GOVERN AT THE DISCRETION OF THE CITY ENGINEER. CONTRACTOR IS TO FOLLOW ALL OSHA AND ADA REGULATIONS AND REQUIREMENTS.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE CONTRACTOR SHALL PROVIDE FOR THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

PROFILE AND ALIGNMENT

THE PROPSD PAVEMENT RESURFACING SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE PROPOSED ASPHALT CONCRETE OVERLAY SHALL BE AS SHOWN ON THE TYPICAL SECTIONS.

GRADING AND FILLING OPERATIONS

THE PLACEMENT OF COMPACTED AGGREGATE SHALL NOT EXTEND PAST THE EXISTING GRADED SHOULDERS. NO EXCAVATION, GRADING, OR FILLING OPERATIONS SHALL BE PERFORMED IN ANY WETLANDS OR STREAMS, UNLESS THE REQUIRED STATE AND/OR FEDERAL PERMITS HAVE BEEN OBTAINED IN ACCORDANCE WITH ALL APPLICABLE STATE AND/OR FEDERAL LAWS AND REGULATIONS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR STORE EQUIPMENT AND/OR MATERIALS IN ANY WETLANDS OR STREAMS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT. A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE BID FORM FOR ITEM201SPEC, CLEARING AND GRUBBING. THIS ITEM SHALL INCLUDE ALL PROVISIONS AS SET FORTH IN THE 2008 ODOT SPECIFICATIONS. REMOVAL ITEMS MAY INCLUDE TREES, STUMPS, AND BRUSH AS DETERMINED BY THE CITY ENGINEER.

ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201SPEC, CLEARING AND GRUBBING.

PRESERVATION OF PROPERTY CORNERS AND SURVEY MARKERS

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

ACCESSIBILITY TO PRIVATE PROPERTY

ACCESS TO ALL DRIVEWAYS AND PARKING AREAS WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES.

REMOVAL AND RELOCATION OF EXISTING UTILITIES

THE CONTRACTOR IS REQUIRED TO COOPERATE WITH EACH RESPECTIVE UTILITY OWNER FOR THE REMOVAL AND RELOCATION OF ANY AND ALL UTILITIES THAT CREATE A CONFLICT WITH CONSTRUCTION OF THE PROJECT.

ITEM 623 - CONSTRUCTION STAKING

CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT. THIS WORK IS TO BE UNDER ITEM 623 CONSTRUCTION STAKING.

CONDITIONS OF WORK

ALL WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH THE U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ACT, STATE, COUNTY, AND CITY OF MASSILLON LAWS AND REGULATIONS. ALL WORK, AT ALL TIMES SHALL BE SUBJECT TO OBSERVATION BY THE OWNER AND/OR ENGINEER. ALL WORK SHALL COMPLY WITH THE CONDITIONS OF THE CONTRACT DOCUMENTS AND OHIO EPA, AND STANDARDS OF THE CITY OF MASSILLON. ALL ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, AND APPLICABLE CITY, COUNTY, STATE AND FEDERAL CODES.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE AND SATISFACTORY ACCESS TO ALL ABUTTING PROPERTIES TO THE PROJECT SITE. ADJACENT ROADS SHALL BE MAINTAINED AND KEPT CLEAN OF MUD AND OTHER DEBRIS THAT MAY BE CAUSED BY TRAFFIC EXITING THE WORK SITE. THE CONTRACTOR SHALL COORDINATE AND PROVIDE FOR ALL NECESSARY TRAFFIC CONTROL. TRAFFIC CONTROL SHALL FOLLOW THE MORE STRINGENT GUIDELINES OF THE CITY OF MASSILLON OR ODOT.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AND MAINTAIN FACILITIES FOR A CONSTRUCTION OFFICE, EMPLOYEE PARKING, AND EMPLOYEE SANITARY FACILITIES. ON STREET PARKING WILL NOT BE PERMITTED. THE CONTRACTOR SHALL PROVIDE FOR THE LAWFUL OFF-SITE DISPOSAL OF DEMOLITION DEBRIS AND CONSTRUCTION WASTE.

EXISTING DATA

EACH CONTRACTOR SHALL VISIT THE SITE PERSONALLY TO ASCERTAIN THE NATURE OF THE WORK AND BECOME THOROUGHLY FAMILARIZED WITH THE SITE PRIOR TO BID SUBMISSION.

EXISTING STRUCTURES, GRADES, PIPING, ETC. ARE INDICATED IN APPROXIMATE LOCATION ON THE PLAN. INFORMATION SHOWN IS NOT GUARANTEED TO BE CORRECT AND COMPLETE. THE DATA SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE EXISTENCE OF FACILITIES ABOVE OR BELOW GROUND, WHICH MAY NOT BE SHOWN, WILL NOT BE A BASIS FOR A CLAIM FOR EXTRA WORK.

EXISTING UNDERGROUND UTILITIES SHOWN ARE RECORDS PROVIDED BY UTILITY COMPANIES AND ARE APPROXIMATE ONLY. SERVICE LATERALS ARE NOT SHOWN.

IT IS THE RESPONSIBILITY OF CONTRACTOR TO NOTIFY THE CITY, PRIOR TO BID OPENING OF NON-CONNFORMING OR CONFLICTING INFORMATION.

PRESERVATION OF EXISTING UTILITY SERVICES

ANY EXISTING WATER LINE, SANITARY SEWER, STORM SEWER, GAS LINE OR OTHER UTILITY IN OR OUTSIDE OF THE CONSTRUCTION LIMITS, DAMAGED DURING CONSTRUCTION OF THE PROPOSED PROJECT, WILL BE REPLACED AT THAT CONTRACTORS EXPENSE.

CONTRACTOR AVAILABILITY

THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH A 24 HOUR PHONE NUMBER WHERE THE CONTRACTOR SHALL BE AVAILABLE FOR EMERGENCIES.

PRESERVATION OF PRIVATE PROPERTY

THE CONTRACTOR SHALL PERFORM WORK AS TO NOT DISTURB, DAMAGE OR DESTROY ANY TELEPHONE OR POWER POLES, SIGNS, LANDSCAPING ITEMS, ETC.. ANY ITEM DAMAGED OR DESTROYED SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND ANY ITEM DISTURBED OR IN CONFLICT WITH THE WORK TO BE PERFORMED SHALL BE REMOVED AND RESET AT THE CONTRACTOR'S EXPENSE. PRIOR APPROVAL BY THE ENGINEER IS REQUIRED BEFORE ANY OF THE ABOVE ITEMS ARE PERFORMED.

RESTORATION

FOR SANITARY SEWER INSTALLED, TESTED, AND ACCEPTED UP TO MAY 15TH OF ANY CALENDAR YEAR, RESTORATION SHALL BE COMPLETE BY JUNE 30th OF THAT YEAR. FOR INSTALLATION OF SANITARY SEWER TESTED AND ACCEPTED FROM MAY 15th TO SEPTEMBER 30th OF ANY CALANDAR, YEAR RESTORATION SHALL BE COMPLETE BY NOVEMBER 15th OF THAT CALENDAR YEAR. FOR SANITARY SEWER INSTALLED, TESTED, AND ACCEPTED AFTER NOVEMBER 15TH OF ANY CALENDAR YEAR. RESTORATION SHALL BE COMPLETE BY MAY 15th OF THE NEXT CALENDAR YEAR.

ALL SOIL AREAS DISTURBED BY THE CONTRACTOR SHALL BE TOPSOILED, SEEDED AND MULCHED. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR EACH ITEM OF AFFECTED WORK. TOPSOIL, SEEDING AND MULCHING SHALL NOT BE A SEPARATE PAY ITEM. THIS INCLUDES BACKFILLING, SEEDING AND MULCHING ALONG THE EDGE OF ALL PAVEMENT RESTORATION.

PAVEMENT CROSSINGS WILL RECEIVE TYPE C PAVEMENT REPLACEMENT WITH FULL WIDTH PAVEMENT OVERLAY.

CONTRACTOR TO REPLACE ALL PAVEMENT MARKINGS. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR PAVEMENT.

CONTRACTOR TO USE HOT APPLIED JOINT CRACK SEALER ON ASPHALT PAVEMENT AT ALL ENDS AND INTERSECTIONS.

ALL TRENCHES IN ROAD RIGHT OF WAY WILL RECEIVE FULL DEPTH PREMIUM GRANULAR BACKFILL.

CONTRACTOR'S EQUIPMENT - OPERATION STORAGE

A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT. THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE R/W. THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. WHEN PARKING ALONG THE HIGHWAY, THE EQUIPMENT SHALL BE PLACED AND DELINEATED AS PER 614.03. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADE AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. NO EQUIPMENT SHALL BE PARKED ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL OF THE OWNER AND THE PROJECT ENGINEER/SUPERVISOR HAS BEEN GRANTED.

ITEM 604SPEC - SANITARY SIPHON CHAMBER REHAB.

THIS WORK CONSISTS OF REPLACING, REPAIRING, PATCHING, AND RECOATING OF EXISTING SANITARY SIPHON CHAMBER. ALL MECHANICAL PARTS SHALL BE REPAIRED OR REPLACED TO WORK PROPERLY. ALL RAILING AND STEPS SHALL BE REPLACED AND PAINTED. ALL CONCRETE AND BRICK WALLS, FLOORS AND SLABS SHALL BE PATCHED OR REPOINTED, EXTERIOR WALLS SHALL BE PAINT MORTAR. ACCESSES HATCHES AND LIDS SHALL BE REPLACED WITH NEW SAME SIZE AND LOCKABLE HATCHES.

DRAWN BY: FPW	CHECKED BY: KAD
DATE: July, 2011	DATE: July, 2011

LEVEE INFRASTRUCTURE IMPROVEMENT PROJECT
General Notes
City of Massillon
Stark County, Ohio

Francis H. Cicchinelli, Jr.
MEP

Massillon

Means More!

REVISIONS:	
DATE	DESCRIPTION
FILE NAME: Leveegnote1.dwg	
PROJECT NUMBER 10LV01	

SANITARY SEWER SPECIFICATIONS

SANITARY SEWER CONSTRUCTION PROPOSED FOR THIS PROJECT SHALL CONFORM TO THE LATEST CITY OF MASSILLON STANDARD CONSTRUCTION AND MATERIALS SPECIFICATIONS, TEN STATE STANDARDS, AND THE LATEST EDITION OF THE ODOT CMS, OR MODIFIED BY THE CONTRACT DRAWINGS. IF A CONFLICT ARISES BETWEEN SAID STANDARDS IT SHALL BE AT THE DISCRETION OF THE CITY ENGINEER AS TO WHICH STANDARD SHALL GOVERN. THE PROJECT CONTRACT DRAWINGS SHALL GOVERN UNLESS NOTED OTHERWISE.

SANITARY GRAVITY SEWER PIPE AND FITTINGS SHALL BE PVC SDR 35 CONFORMING TO ASTM D-3034 UNLESS OTHERWISE NOTED. PVC COMPOUNDS SHALL CONFORM TO ASTM D-1784 PVC PIPE AND FITTINGS SHALL HAVE BELL AND SPIGOT TYPE JOINTS CONFORMING TO ASTM D-3212 AND GASKETS CONFORMING TO ASTM F-477

BACKFILL IN SEWER TRENCHES SHALL BE PLACED IN LAYERS SUFFICIENT TO MEET THE COMPACTION REQUIREMENT OF 100% OF MAXIMUM LABORATORY DRY DENSITY PER ASTM D-698 AND THOROUGHLY COMPACTED WITH MACHINE MOUNDED COMPACTION EQUIPMENT. THE PLACING OF BACKFILL MATERIAL SHALL BE CONTINUED UNTIL THE TRENCH IS ENTIRELY FILLED AND COMPACTED TO THE GRADE CALLED FOR ON THE CONTRACT DRAWINGS. EXCAVATED MATERIAL CONFORMING TO ODOT ITEM 203 SHALL BE USED FOR BACKFILLING EXISTING STRUCTURES (AFTER REMOVAL) ONLY. CRUSHED GRAVEL CONFORMING TO GRADATION REQUIREMENTS OF ODOT ITEM 304 AS SHOWN IN ODOT TABLE 703-1 SHALL BE USED FOR BACKFILLING ALL SEWER TRENCHES, AREAS SHOWN ON THE PLANS AND AS DIRECTED BY THE CITY ENGINEER. FLOODING, JETTING, OR PUDDLING OF BACKFILL MATERIAL WILL NOT BE PERMITTED. COMPACTION TESTING OF THE BACKFILL BY A GEOTECHNICAL ENGINEER MAY BE REQUIRED BY THE OWNER AT THE EXPENSE OF THE CONTRACTOR.

SANITARY SEWERS SHALL BE AIR TESTED FOR LEAKAGE AND MANDREL TESTED FOR DEFLECTION. THE MAXIMUM ALLOWABLE PIPE DEFLECTION SHALL BE 5%.

PRIOR TO FINAL PAYMENT FOR AND ACCEPTANCE OF SANITARY SEWER INSTALLATION THE RESULTS OF THE AIR PRESSURE TESTS, TELEVISION TESTS AND MADREL TESTS SHALL BE FORWARDED TO THE CITY ENGINEER.

DEFLECTION TESTING

MAXIMUM ALLOWABLE PIPE DEFLECTION (REDUCTION IN VERTICAL INSIDE DIAMETER) SHALL BE 5%. DEFLECTION TESTS OF PIPE SHALL BE PERFORMED NOT SOONER THAN 30 DAYS AFTER THE BACKFILL HAS BEEN PLACED AND BEFORE FINAL ACCEPTANCE. LOCATIONS WITH EXCESS DEFLECTION SHALL BE EXCAVATED AND REPAIRED BY RE-BEDDING OR REPLACEMENT OF THE PIPE AT THE CONTRACTOR'S EXPENSE. DEVICES FOR TESTING INCLUDE A DEFLECTOMETER METER, OR PROPERLY SIZED "60, NO-GO" MANDREL OR SEWER BALL. THE DEFLECTION TESTING MUST BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES. FOR THE PURPOSE OF DEFLECTION MEASUREMENTS, THE BASE INSIDE PIPE DIAMETERS WITHOUT DEFLECTION ARE PROVIDED IN TABLE A. THE MAXIMUM ALLOWABLE DEFLECTION SHALL BE APPLIED TO THE BASE INSIDE DIAMETER IN DETERMINING THE MINIMUM PERMISSIBLE DIAMETER. IT MUST BE EMPHASIZED THAT TO INSURE ACCURATE TESTING, THE LINES MUST BE THOROUGHLY CLEANED.

TABLE A
INSIDE DIAMETERS FOR DEFLECTION MEASUREMENTS
OF ASTM D 3034 SDR 35 / SDR 21 PVC SEWER PIPE

SIZE	SDR	AVG. O.D.	t	1.06t or t'	AVG. I.D.	TOLERANCE	BASE I.D.	DEFLECTION MANDREL
6"	35	6.275	0.241	0.255	5.764	0.102	5.662	5.38
8"	35	8.400	0.323	0.342	7.715	0.127	7.588	7.21
10"	35	10.500	0.404	0.428	9.644	0.153	9.491	9.02

TELEVISION TESTING

ALL SEWERS, 8-INCH DIAMETER AND LARGER, MUST PASS AN INTERNAL TELEVISION INSPECTION. THE CONTRACTOR SHALL PROVIDE COMPLETE INTERNAL INSPECTION DVD DISC TO THE CITY OF MASSILLON ENGINEERING DEPARTMENT. THE DVD PROCEDURE SHALL BE IN ACCORDANCE WITH CITY OF MASSILLON ENGINEERING DEPARTMENT STANDARDS.

LEAKAGE TESTS

LEAKAGE TESTS SHALL BE SPECIFIED. THIS MAY INCLUDE APPROPRIATE WATER OR LOW PRESSURE AIR TESTING. THE TESTING METHODS SELECTED SHOULD TAKE INTO CONSIDERATION THE RANGE IN GROUNDWATER ELEVATIONS DURING THE TEST AND ANTICIPATED DURING THE DESIGN LIFE OT THE SEWER COMPLETED AND ACCEPTED.

WATER (HYDROSTATIC) TEST

THE LEAKAGE EXFILTRATION OR INFILTRATION SHALL NOT EXCEED 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY [9L/(MM OF PIPE DIAMETER KM D)] FOR ANY SECTION OF THE SYSTEM. AN EXFILTRATION OR INFILTRATION TEST SHALL BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET (0.6 M).

AIR TESTING AS PER ASTM F1417

AIR TESTING WILL BE CONDUCTED AS THE PROJECT IS BEING INSTALLED. AT NO TIME WILL MORE THAN 900 FEET OF PIPE BE INSTALLED BEFORE AIR TESTING IS PERFORMED. SEWAGE WILL NOT BE DIVERTED TO ANY SECTION OF PIPE, REGARDLESS OF LENGTH, UNTIL ALL TESTING IS COMPLETED AND ACCEPTED.

AFTER BACKFILLING A MANHOLE TO MANHOLE REACH OF SANITARY SEWER LINE, THE CONTRACTOR SHALL, AT HIS EXPENSE, CONDUCT THE LINE ACCEPTANCE TESTS. THE TESTS SHALL BE PERFORMED ACCORDING TO THE STATED PROCEDURES AND UNDER THE SUPERVISION OF THE CITY ENGINEER OR HIS REPRESENTATIVE.

EQUIPMENT USED SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS AND BE APPROVED BY THE ENGINEER:

1. PNEUMATIC PLUGS SHALL HAVE A SEALING LENGTH EQUAL TO OR A GREATER THAN THE DIAMETER OF THE PIPE BEING INSPECTED.
2. PNEUMATIC PLUGS SHALL RESIST INTERNAL TEST PRESSURES WITHOUT REQUIRED EXTERNAL BRACING OR BLOCKING.
3. ALL AIR USED SHALL PASS THROUGH A SINGLE CONTROL PANEL.
4. THREE INDIVIDUAL HOSES SHALL BE USED FOR THE FOLLOWING CONNECTIONS:

a. FROM CONTROL PANEL TO PNEUMATIC PLUGS FOR INFLATION.

b. FROM CONTROL PANEL TO SEALED LINE FOR INTRODUCING THE LOW PRESSURE AIR.

c. FROM SEALED LINE TO CONTROL PANEL FOR CONTINUALLY MONITORING AIR PRESSURE RISE IN THE SEALED LINE.

TEST EQUIPMENT TESTING PROCEDURES SHALL BE AS FOLLOWS:
ALL PNEUMATIC PLUGS SHALL BE SEAL TESTED BEFORE BEING USED IN THE ACTUAL TEST INSTALLATION. ONE LENGTH OF PIPE SHALL BE LAID ON THE GROUND AN SEALED AT BOTH ENDS WITH THE PNEUMATIC PLUGS TO BE CHECKED. THE SEALED PIPE SHALL BE PRESSURED TO 5 PSIG. THE PLUGS MUST HOLD AGAINST THIS PRESSURE WITHOUT HAVING TO BE BRACED.

AFTER A MANHOLE TO MANHOLE REACH OF PIPE HAS BEEN BACKFILLED AND CLEANED, AND THE PNEUMATIC PLUGS ARE CHECKED BY THE ABOVE PROCEDURE, THE PLUGS SHALL BE PLACED IN THE LINE AT EACH MANHOLE. LOW PRESSURE AIR SHALL BE SLOWLY INTRODUCED INTO THIS SEALED LINE UNTIL THE INTERNAL AIR PRESSURE REACHES APPROXIMATELY 4 PSIG.

AT LEAST TWO MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE. WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE 3.5 PSIG, THE AIR HOSE FROM THE CONTROL PANEL TO THE AIR SUPPLY SHALL BE DISCONNECTED. THE PORTION OF THE LINE BEING TESTED SHALL BE TERMED "ACCEPTABLE" IF THE TIME REQUIRED IN MINUTES FOR THE PRESSURE TO DECREASE FROM 3.5 TO 2.5 PSIG (GREATER THEN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE) SHALL NOT BE LESS THAN THE TIME SHOWN FOR THE GIVEN DIAMETERS IN THE FOLLOWING TABLE:

PIPE DIAMETER IN.	MINIMUM TIME MINUTES	LENGTH FOR MINUTES TIME, FT.	TIME FOR LONGER LENGTH, S	SPECIFICATION TIME LENGTH (L) SHOWN, MINUTES							
				100 FT.	150 FT.	200 FT.	250 FT.	300 FT.	350 FT.	400 FT.	450 FT.
4	3:46	597	0.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	0.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:36	7:36	8:52	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	198	3.416 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	6.342 L	14:10	14:10	17:46	22:15	26:42	31:09	35:36	40:04
18	17:0	133	7.692 L	17:00	19:13	25:38	32:09	38:27	44:52	51:16	57:41
21	19:50	114	10.470 L	19:50	26:10	36:54	43:37	52:21	81:00	69:48	78:31
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15
33	31:10	72	25.852 L	49:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	170:29	205:07	230:46

IN AREAS WHERE GROUND WATER IS KNOWN TO EXIST, THE CONTRACTOR SHALL INSTALL A 1/2 INCH DIAMETER CAPPED PIPE NIPPLE APPROXIMATELY 10 INCHES LONG, THROUGH THE MANHOLE WALL ON TOP OF ONE OF THE SANITARY SEWER LINES ENTERING THE MANHOLE. THIS SHALL BE DONE AT THE TIME THE SANITARY SEWER LINE IS INSTALLED. IMMEDIATELY PRIOR TO THE PERFORMANCE OF THE LINE ACCEPTABILITY TEST, THE GROUND WATER SHALL BE DETERMINED BY REMOVING THE PIPE CAP, BLOWING AIR THROUGH THE PIPE NIPPLE IN THE GROUND SO AS TO CLEAR IT, AND THEN CONNECTING A CLEAR PLASTIC TUBE TO THE NIPPLE. THE PLASTIC TUBE SHALL BE VERTICAL AND A MEASUREMENT OF THE HEIGHT, IN FEET OF WATER OVER THE INVERT OF THE PIPE, SHALL BE TAKEN AFTER THE WATER HAS STOPPED RISING IN THIS PLASTIC TUBE. AIR TEST PRESSURE IS TO BE INCREASED BY 0.433 PSI FOR EACH FOOT THE GROUND WATER IS ABOVE THE INVERT OF THE SEWER LINE BEING TESTED. THE ALLOWABLE DROP OF ONE POUND AND THE TIMING OF THE TEST REMAIN THE SAME.

IF A LINE ACCEPTABILITY TEST IS BEING CONDUCTED ON MORE THAN ONE MANHOLE REACH OF PIPE, THE ENTIRE SECTION BEING TESTED SHALL MEET THE LINE ACCEPTABILITY REQUIREMENTS AS IF ONLY ONE (1) OF THE MANHOLE REACHES IN THE SECTION WERE BEING TESTED.

NEGATIVE AIR PRESSURE (VACUUM) TESTING OF MANHOLES AS PER ASTM C-1244

PREPARATION OF THE MANHOLE:

- A. ALL LIFT HOLES SHALL BE PLUGGED.
- B. ALL PIPES ENTERING THE MANHOLE SHALL BE TEMPORARILY PLUGGED, TAKING CARE TO SECURELY BRACE THE PIPES AND PLUGS TO PREVENT THEM FROM BEING DRAWN INTO THE MANHOLE.

PROCEDURE:

- A. THE TEST HEAD SHALL BE PLACED AT THE TOP OF THE MANHOLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B. A VACUUM OF 10 IN. OF MERCURY SHALL BE DRAWN ON THE MANHOLE, THE VALVE ON THE VACUUM LINE OF THE TEST HEAD CLOSED, AND THE VACUUM PUMP SHUT OFF. THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9 IN. OF MERCURY.
- C. THE MANHOLE SHALL PASS IF THE TIME FOR THE VACUUM READING TO DROP FROM 10 IN. OF MERCURY TO 9 IN. OF MERCURY MEETS OR EXCEEDS THE VALUES INDICATED IN TABLE BELOW.

DEPTH (FT)	MINIMUM TEST TIMES FOR MANHOLES									
	DIAMETER, IN.									
	30	33	36	42	48	54	60	66	72	
TIME, IN SECONDS										
8	11	12	14	17	20	23	26	29	33	
10	14	15	18	21	25	29	33	36	41	
12	17	18	21	25	30	35	39	43	49	
14	20	21	25	30	35	41	46	51	57	
16	22	24	39	34	40	46	52	58	67	
18	25	27	32	38	45	52	59	65	73	
20	28	30	35	42	50	53	65	72	81	
22	31	33	39	46	55	64	72	79	89	
24	33	36	42	51	59	64	78	87	97	
26	36	39	46	55	64	75	85	94	105	
28	39	42	49	59	69	81	91	101	113	
30	42	45	53	63	74	87	98	108	121	

CLEAN WATER STATEMENT

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

RELATION TO WATER MAINS

SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.

SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER.

WORKING AREA

NO EXCAVATION WITH SIDE SLOPES STEEPER THAN 2:1 AND/OR DEEPER THAN 2', OPEN CASTINGS AND PIPES SHALL BE LEFT EXPOSED WHEN THE SITE IS UNATTENDED BY THE CONTRACTOR. THE CONTRACTOR SHALL SECURE ALL SUCH EXCAVATIONS, OPEN CASTINGS AND PIPES AGAINST UNAUTHORIZED ENTRY COVERING WITH STEEL PLATES, TEMPORARY BACKFILLING, FENCING AND SECURITY SERVICES SHALL BE INCLUDED IN THE PRICE BID FOR THE WORK.

FINAL APPROVAL

A DVD WILL BE MADE BY THE CONTRACTOR AND SUBMITTED TO THE CITY PRIOR TO THE PROJECT COMMENCING. AFTER THE FINAL INVOICE IS RECEIVED THE SITE WILL BE DVD DISC AGAIN BY THE CONTRACTOR. ANY DISCREPANCIES WILL BE RESOLVED PRIOR TO FINAL PAYMENT. AS BUILT DRAWINGS SHALL BE CREATED BY THE CONTRACTOR AND SUBMITTED TO THE CITY IN A CLEAR AND LEGENDABLE MANNER PRIOR TO FINAL INVOICE.

COST OF THIS WORK SHALL BE INCLUDED IN ITEM 623 CONSTRUCTION STAKING

DRAWN BY: FPW	CHECKED BY: KAD
DATE: July, 2011	DATE: July, 2011

Levee Infrastructure Improvement Project

General Notes
City of Massillon
Stark County, Ohio

Francis H. Cicchinelli, Jr.
MEP



REVISIONS:

DATE	DESCRIPTION

FILE NAME:
Leveegnote2.dwg

PROJECT NUMBER
10LV01

[illegible]

DRAWN BY: FPW	CHECKED BY: KAD
DATE: Aug., 2011	DATE: Aug., 2011

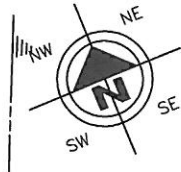
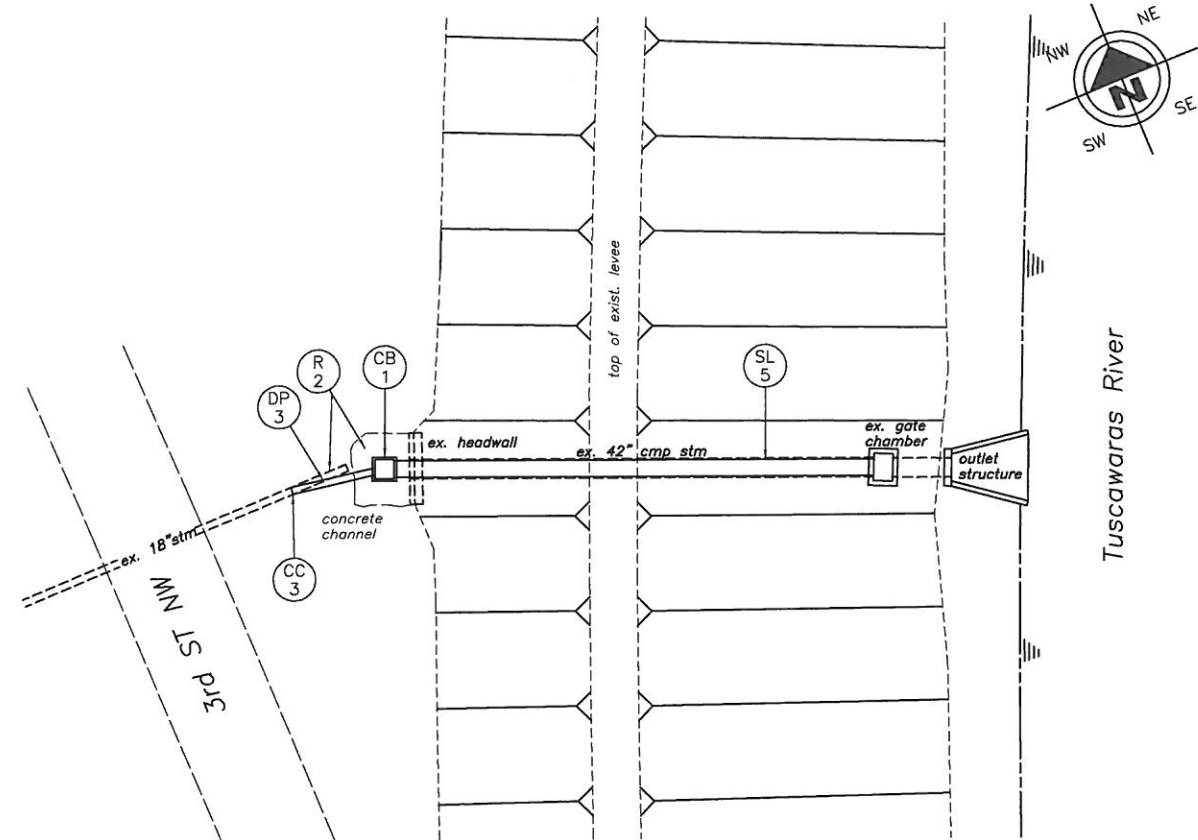
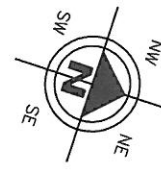
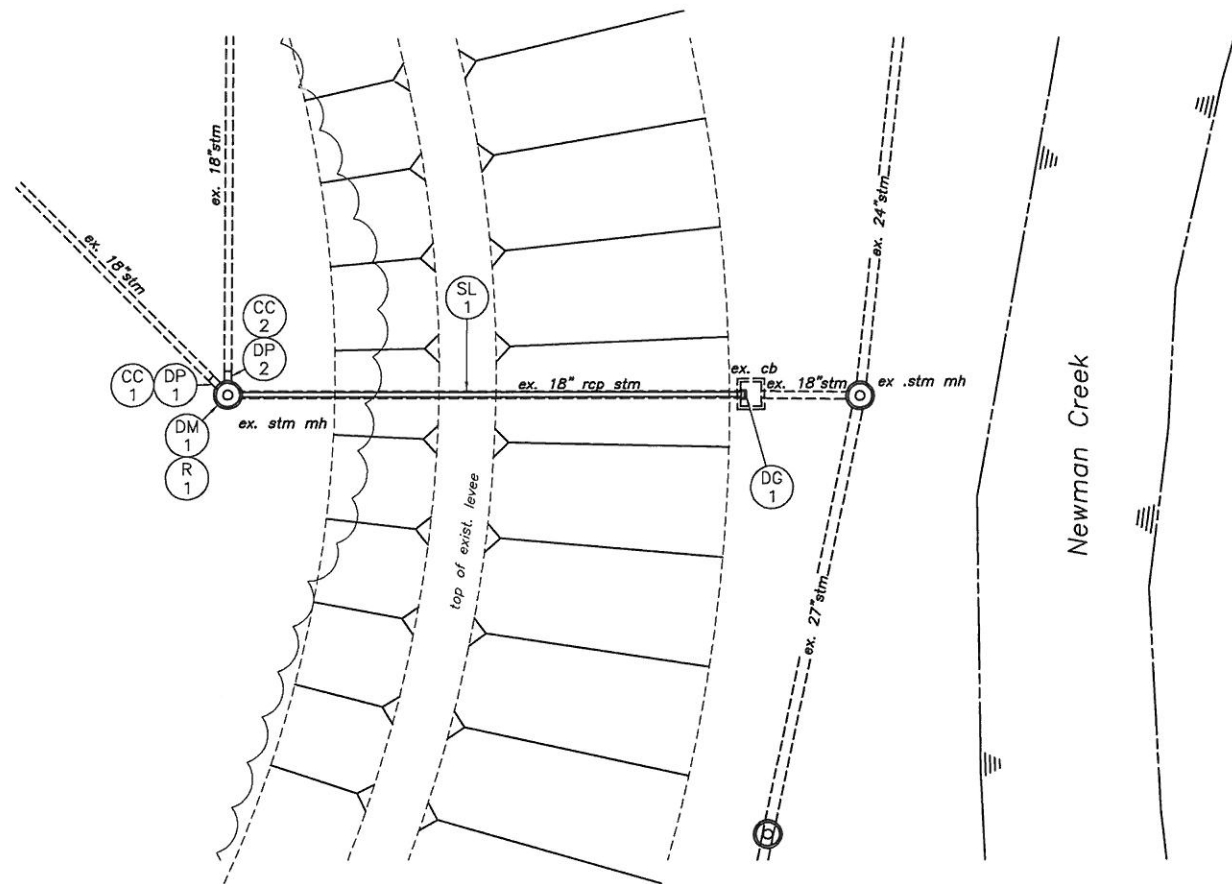
Levee Infrastructure Improvement Project

General Summary
City of Massillon
Stark County, Ohio

[illegible]

FILE NAME:
Leveegsum1.dwg

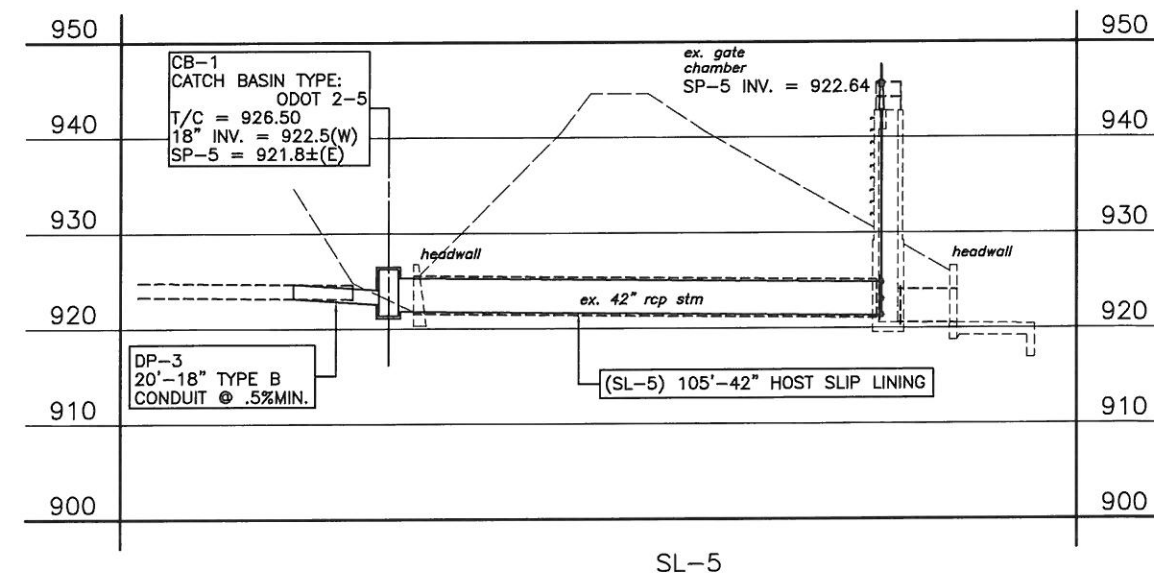
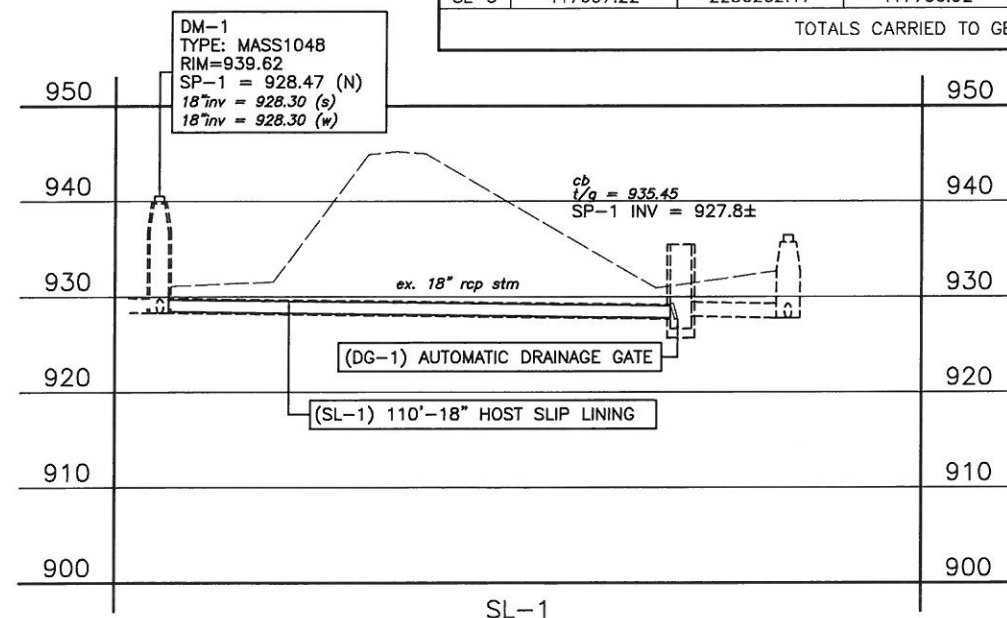
PROJECT NUMBER
01GM2010



REF. No.	COORDINATE				202	202	202	603	603	604	604	810	810	810		
	FROM		TO		MANHOLE REMOVED	PIPE REMOVED	CONCRETE CHANNEL AND HEADWALL REMOVED	CONCRETE COLLAR	18" TYPE B CONDUIT	DRAINAGE MANHOLE MASS 1048A	CATCH BASIN TYPE: ODOT 2-5 AUTOMATIC DRAINAGE GATE	WALL MOUNTED PIPE SLIP LINING	18" HOST PIPE SLIP LINING	42" HOST PIPE SLIP LINING		
	NORTH	EAST	NORTH	EAST	EACH	L.F.	LUMP	EACH	L.F.	EACH	EACH	EACH	L.F.	L.F.		
CB-1	417607.22	2236262.17									1					
CC-1	417272.28	2236347.78						1								
CC-2	417275.18	2236345.28						1								
CC-3	417590.13	2236272.55						1								
DP-1	417272.28	2236347.78	417276.75	2236350.03					5							
DP-2	417275.18	2236345.28	417276.75	2236350.03					5							
DP-3	417590.13	2236272.55	417607.22	2236262.17					20							
DM-1	417276.75	2236350.03								1						
DG-1	417381.16	2236315.39										1				
R-1	417607.22	2236262.17			1	5										
R-2	417276.75	2236350.03				5	1									
SL-1	417276.75	2236350.03	417381.16	2236315.39									110			
SL-5	417607.22	2236262.17	417706.92	2236229.23										105		
TOTALS CARRIED TO GENERAL SUMMARY					1	10	1	3	30	1	1	1	110	105		

NOTE:

DG-1 SHALL BE A NEENAH R-505-SF OR APPROVED EQUAL SIZE SHALL BE DETERMINED BY LINER DIAMETER

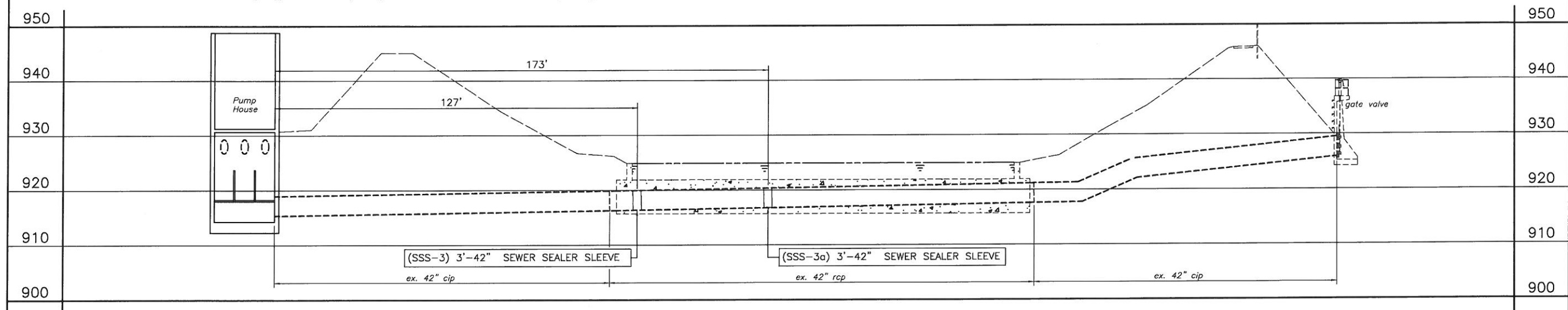
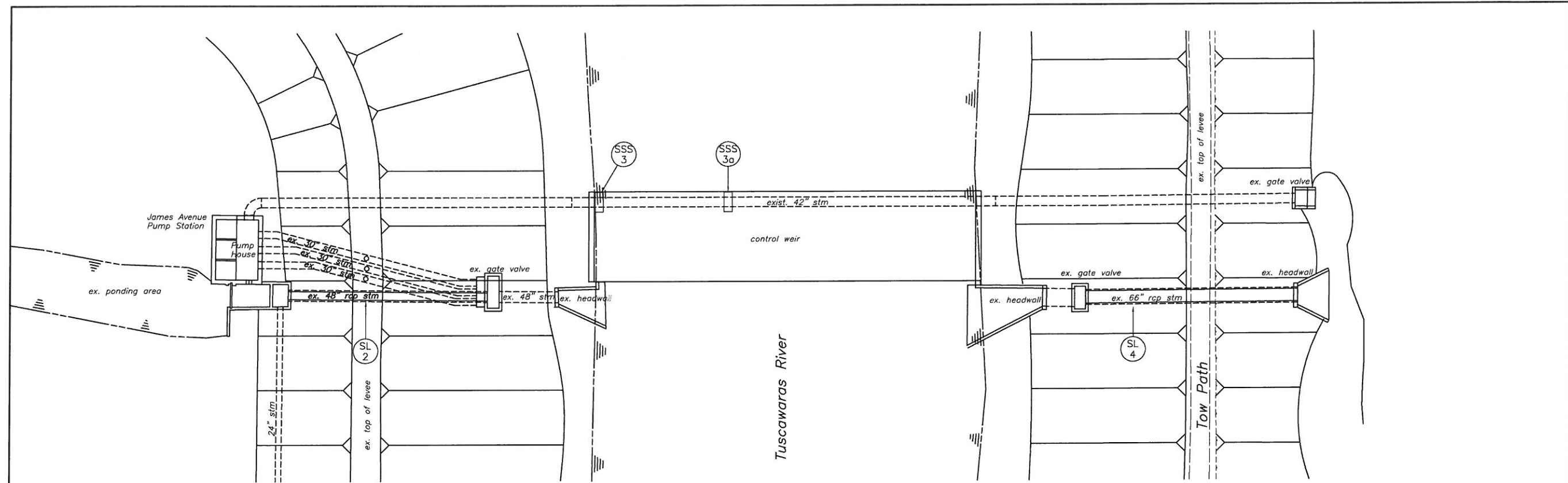


Levee Infrastructure Improvement Project
SL-1, SL-5 Plan and Profile
City of Massillon
Stark County, Ohio

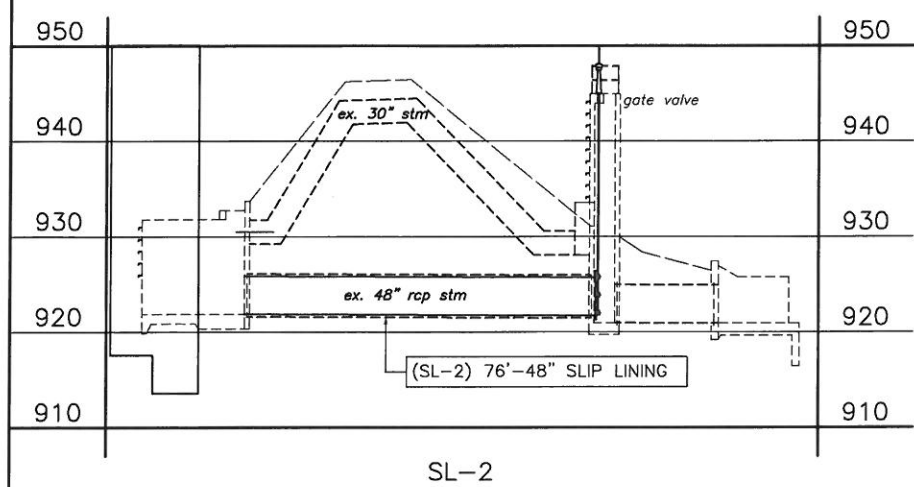


REVISIONS:	
DATE	DESCRIPTION

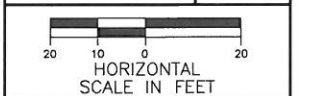
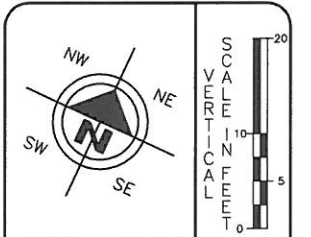
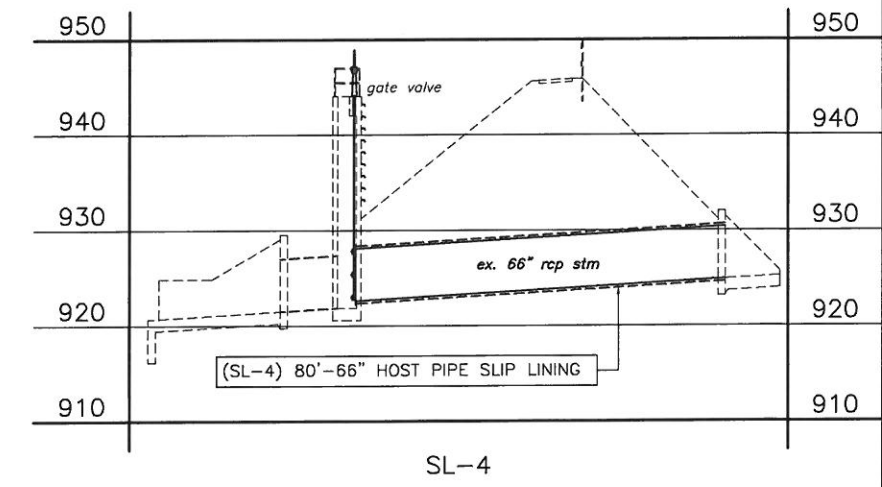
FILE NAME:
Leveepipe1-5pp.DWG
ACCOUNT NUMBER
10LV01



SSS-3 and SSS-3a- (Sta. 1+38.75)



REF. No.	COORDINATE				810	810	811SPEC
	FROM		TO		48" HOST PIPE SLIP LINING	66" HOST PIPE SLIP LINING	42" HOST PIPE CAST IN PLACE GROUTING SLEEVE
	NORTH	EAST	NORTH	EAST	L.F.	L.F.	EACH
SSS-3	417415.56	2237650.06					1
SSS-3a	417435.59	2237692.78					1
SL-2	417337.19	2237561.41	417367.23	2237627.73	76		
SL-4	417458.35	2237826.62	417491.36	2237896.68		80	
TOTALS CARRIED TO GENERAL SUMMARY					76	80	2



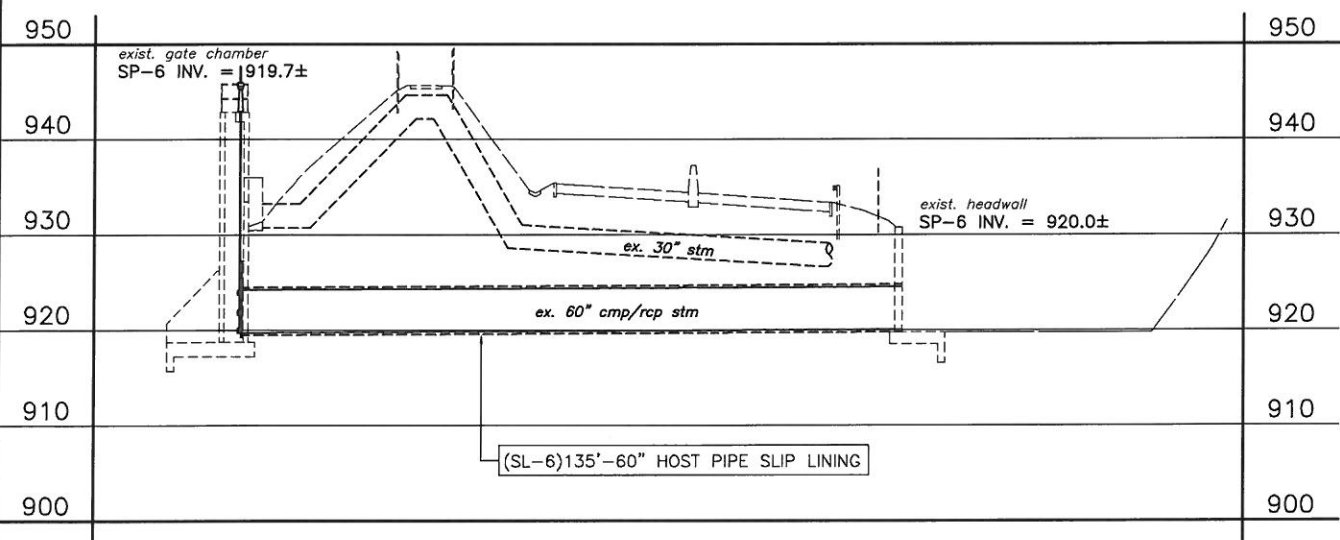
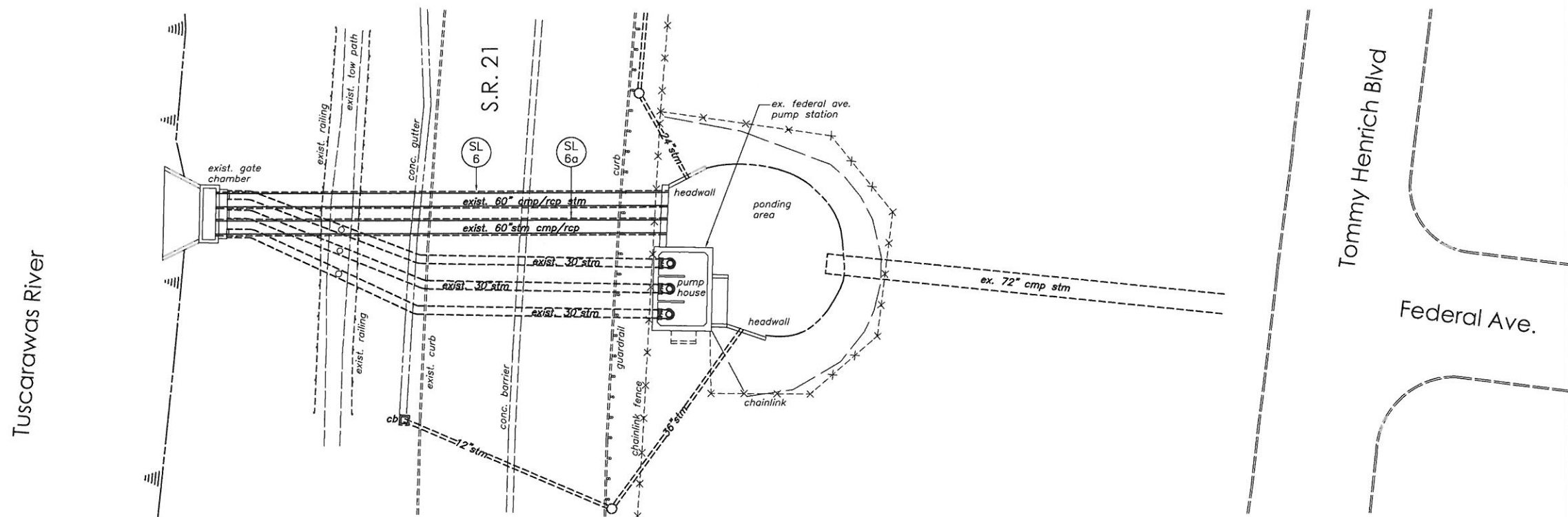
DRAWN BY: FPW
CHECKED BY: KAD
DATE: July, 2011
DATE: July, 2011

Levee Infrastructure Improvement Project
SL-2, SSS-3, SSS-3a, SL-4 Plan and Profile
City of Massillon
Stark County, Ohio

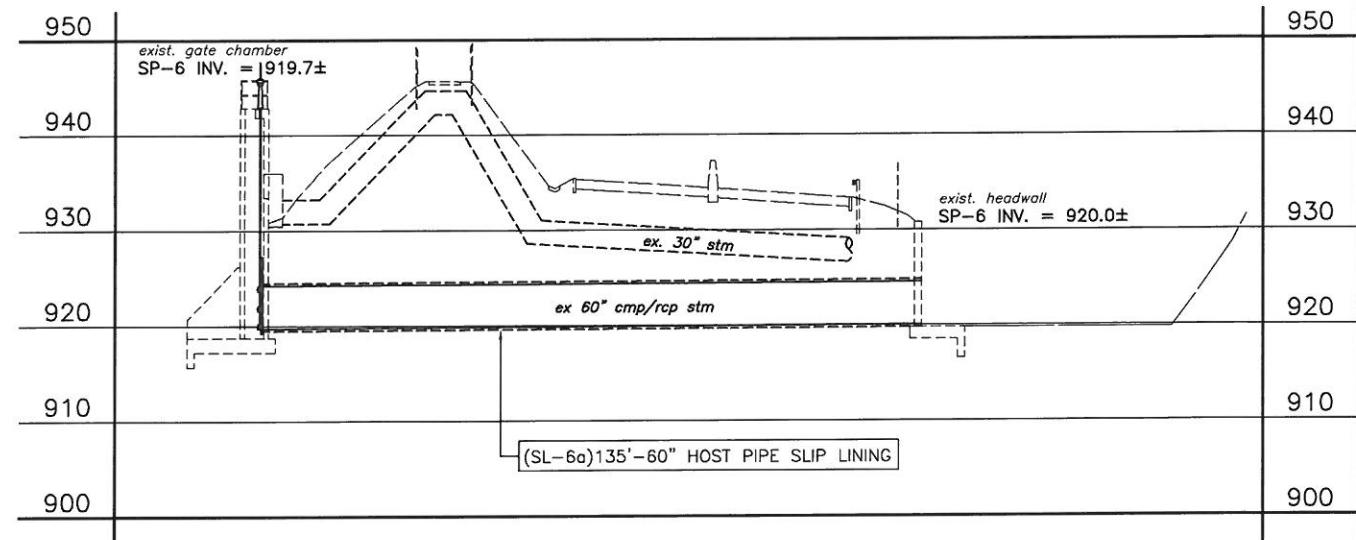


REVISIONS:	
DATE	DESCRIPTION

FILE NAME:
Levee2-4pp.dwg
ACCOUNT NUMBER
01SM2010



SL-6



SL-6a

REF. No.	COORDINATE				810
	FROM		TO		60" HOST PIPE SLIP LINING
	NORTH	EAST	NORTH	EAST	L.F.
SL-6	412891.24	2237519.22	412956.15	2237640.97	135
SL-6a	412883.82	2237523.03	412948.63	2237644.66	135
TOTALS CARRIED TO GENERAL SUMMARY					270

SCALE
VERTICAL
IN FEET
0 2.5 5 10

20 10 0 10 20
HORIZONTAL
SCALE IN FEET

DRAWN BY: FPW	CHECKED BY: KAD
DATE: July, 2011	DATE: July, 2011

Levee Infrastructure Improvement Project

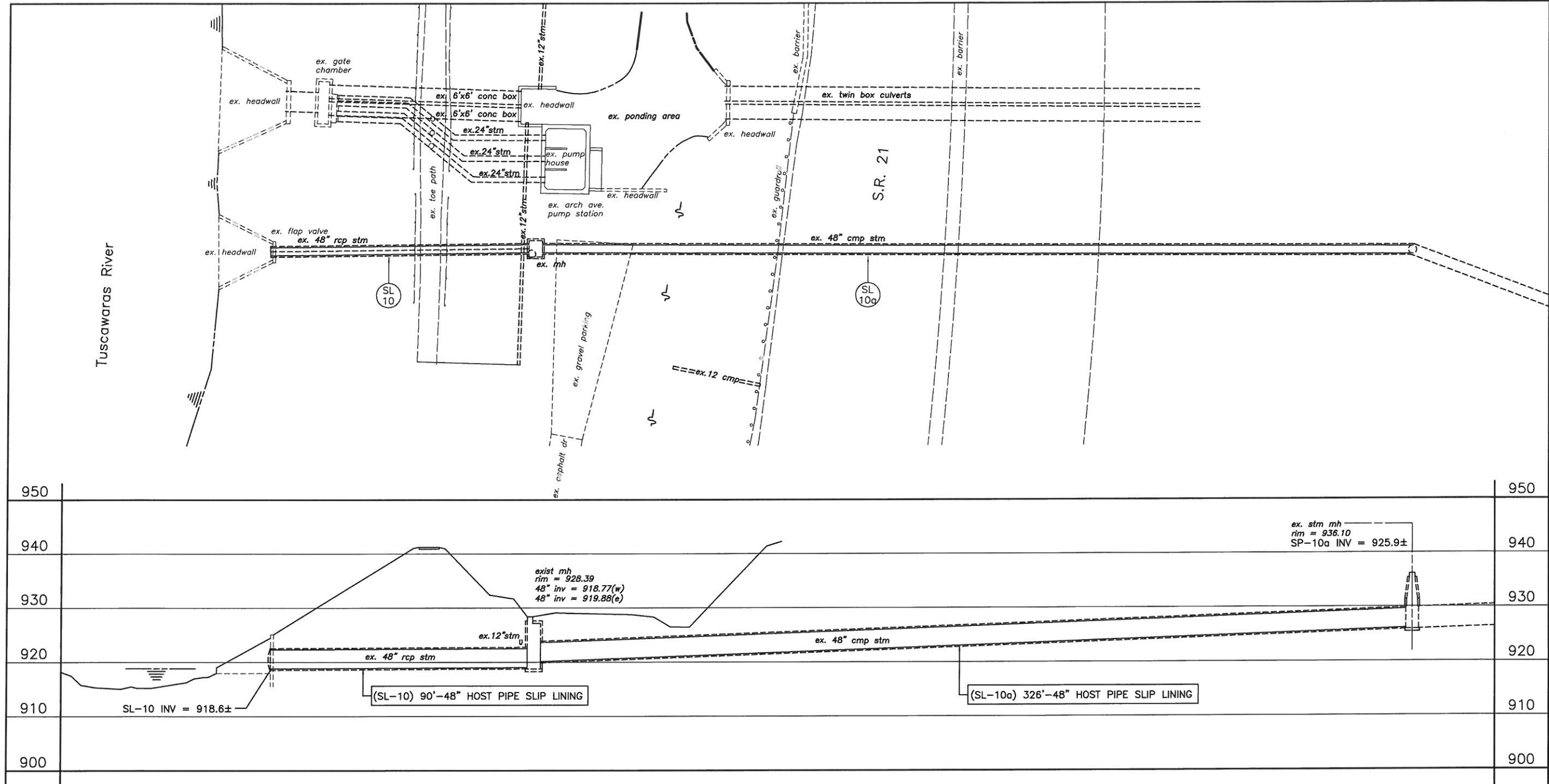
SL-6, SL-6a Plan and Profile
City of Massillon
Stark County, Ohio

REVISIONS:	
DATE	DESCRIPTION

FILE NAME:
Leveepip32-36pp.dwg

ACCOUNT NUMBER
10LV01

7
18



SP-10 and SP-10a

REF. No.	COORDINATE				810	
	FROM		TO		48" HOST PIPE SLIP LINING	
	NORTH	EAST	NORTH	EAST	L.F.	
SL-10	408278.51	2240233.53	408342.00	2240306.27	90	
SL-10a	408342.00	2240306.27	408559.54	2240549.32	326	
TOTALS CARRIED TO GENERAL SUMMARY					416	

NW

NE

SW

SE

20

10

0

10

20

HORIZONTAL
SCALE IN FEET

DRAWN BY:
FPW

CHECKED BY:
KAD

DATE:
July, 2011

DATE:
July, 2011

Levee Infrastructure Improvement Project
SP-10, SP-10a Pump Station Plan and Profile
City of Massillon
Stark County, Ohio

Francis H. Cicchinelli, Jr.
Mayor

Massillon

Means More!

REVISIONS:

DATE	DESCRIPTION

FILE NAME:

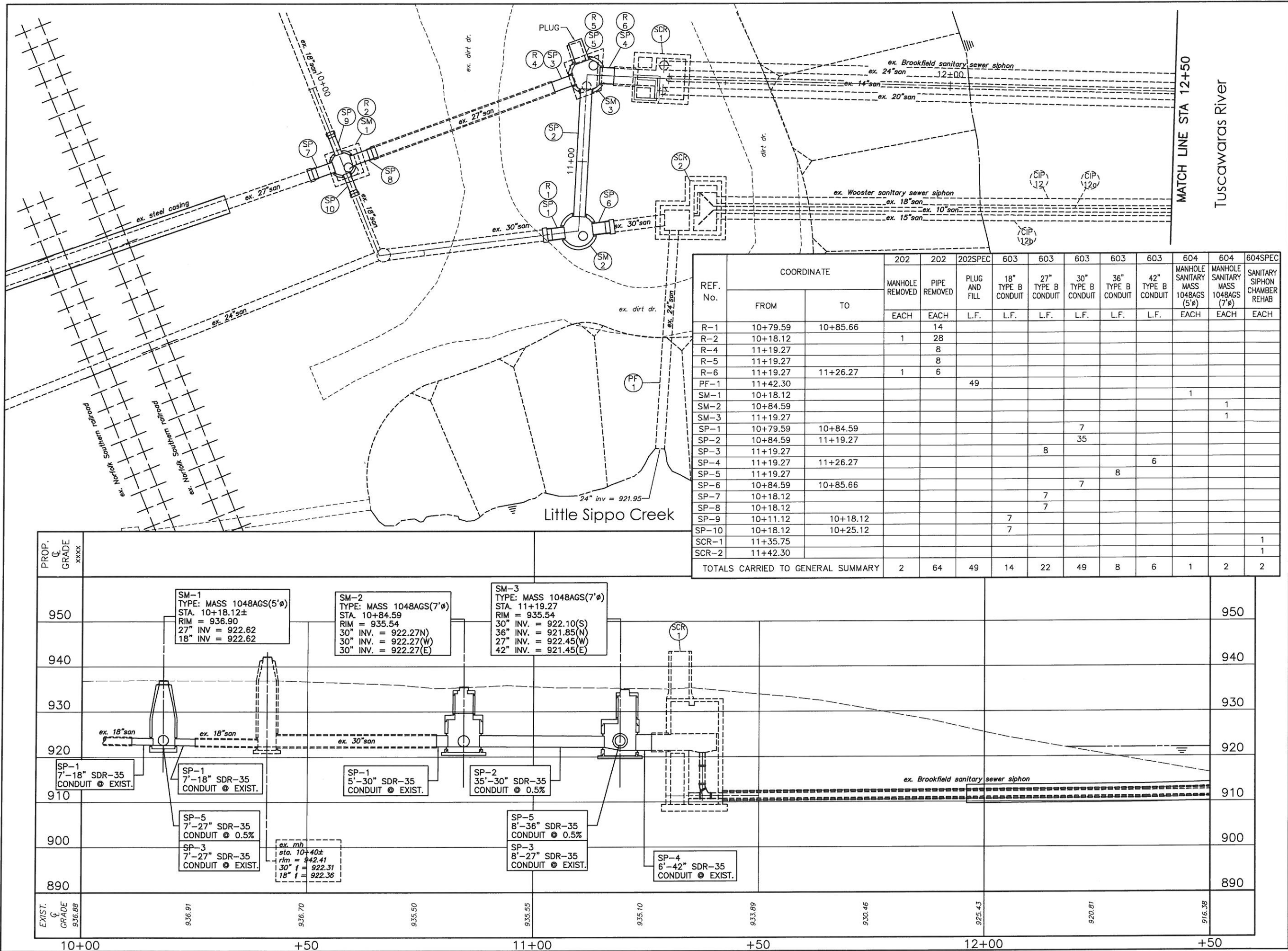
Leveepipe10-10app.dwg

ACCOUNT NUMBER

10LV01

9

18



NW

NE

SW

SE

N

0

5

10

20

0

5

10

0

5

10

DRAWN BY:

FPW

CHECKED BY:

KAD

DATE:

July, 2011

DATE:

July, 2011

Levee Infrastructure Improvement Project

Plan and Profile Sta. 10+00 to Sta. 12+50

City of Massillon

Stark County, Ohio

Francis H. Cicchinelli, Jr.

Massillon

Means More!

REVISIONS:

DATE

DESCRIPTION

ELECTRONIC FILE NAME:

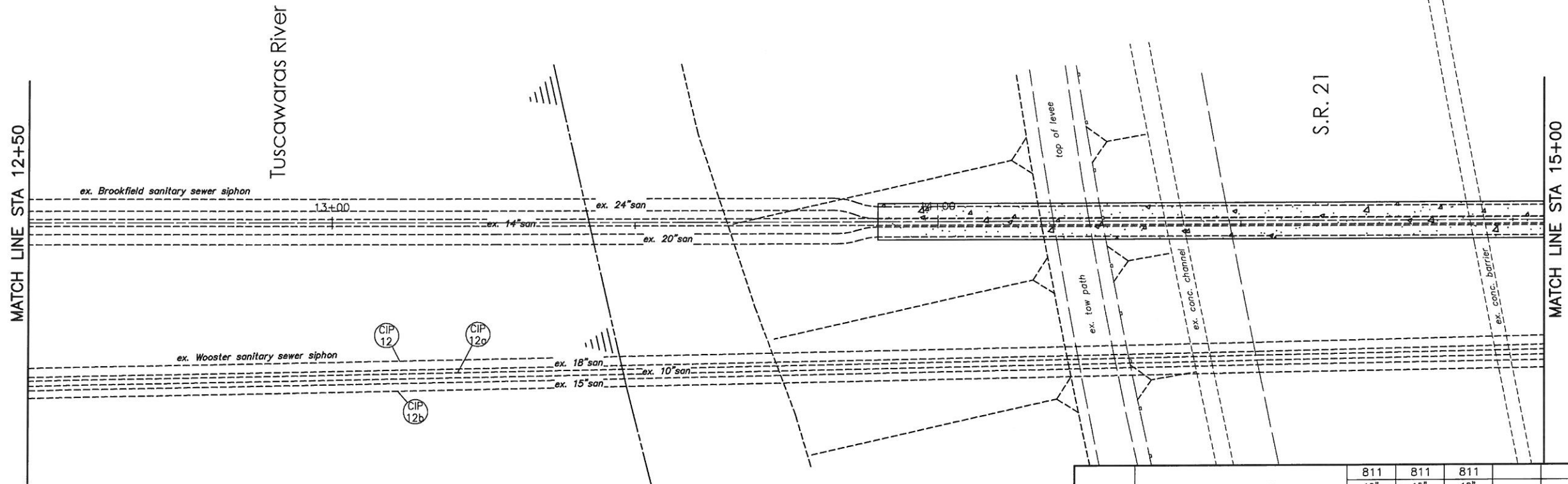
BrookfieldSiphonPP1.DWG

ACCOUNT NUMBER

10LV01

10

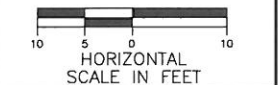
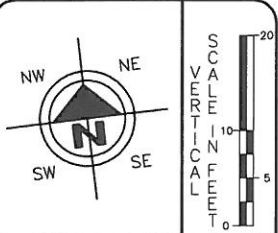
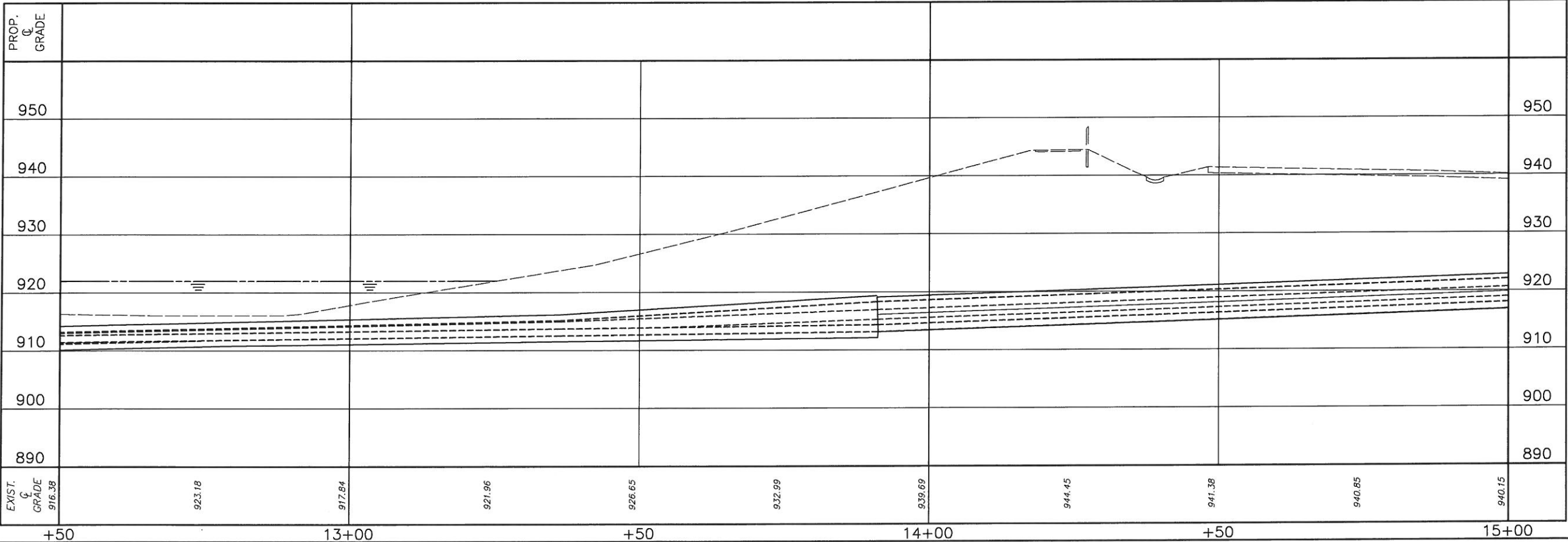
17



202SPEC - PLUG AND FILL

PROCEDURES AND SPECIFICATIONS TO ABANDON IN PLACE AN EXISTING PIPE SHALL BE AS FOLLOWS: THE EXISTING PIPE SHALL BE COMPLETELY FILLED WITH A SHRINKAGE-COMPENSATING GROUT MEETING THE REQUIREMENTS OF ASTM C-1107 SUCH AS SIKKA 212, EDOCO GROUT OR APPROVED EQUAL. THE LINE SHALL BE COMPLETELY FILLED; THE QUANTITY OF GROUT REQUIRED TO FILL THE PIPE SHOULD BE DETERMINED IN ADVANCE TO EQUAL THE VOLUME OF THE INSIDE OF THE PIPE FOR ITS FULL LENGTH BETWEEN THE INLET AND OUTLET. FILLING OF THE PIPE SHOULD BE MONITORED AND INSPECTED TO INSURE THAT THE PIPE HAS BEEN COMPLETELY FILLED FOR ITS ENTIRE LENGTH.

REF. No.	COORDINATE		811	811	811			
	FROM	TO	10" CURED IN PLACE PIPE L.F.	15" CURED IN PLACE PIPE L.F.	18" CURED IN PLACE LINING L.F.			
CIP-12	11+42.30	15+76.90			440			
CIP-12a	11+42.30	15+76.90	440					
CIP-12b	11+42.30	15+76.90		440				
TOTALS CARRIED TO GENERAL SUMMARY			440	440	440			



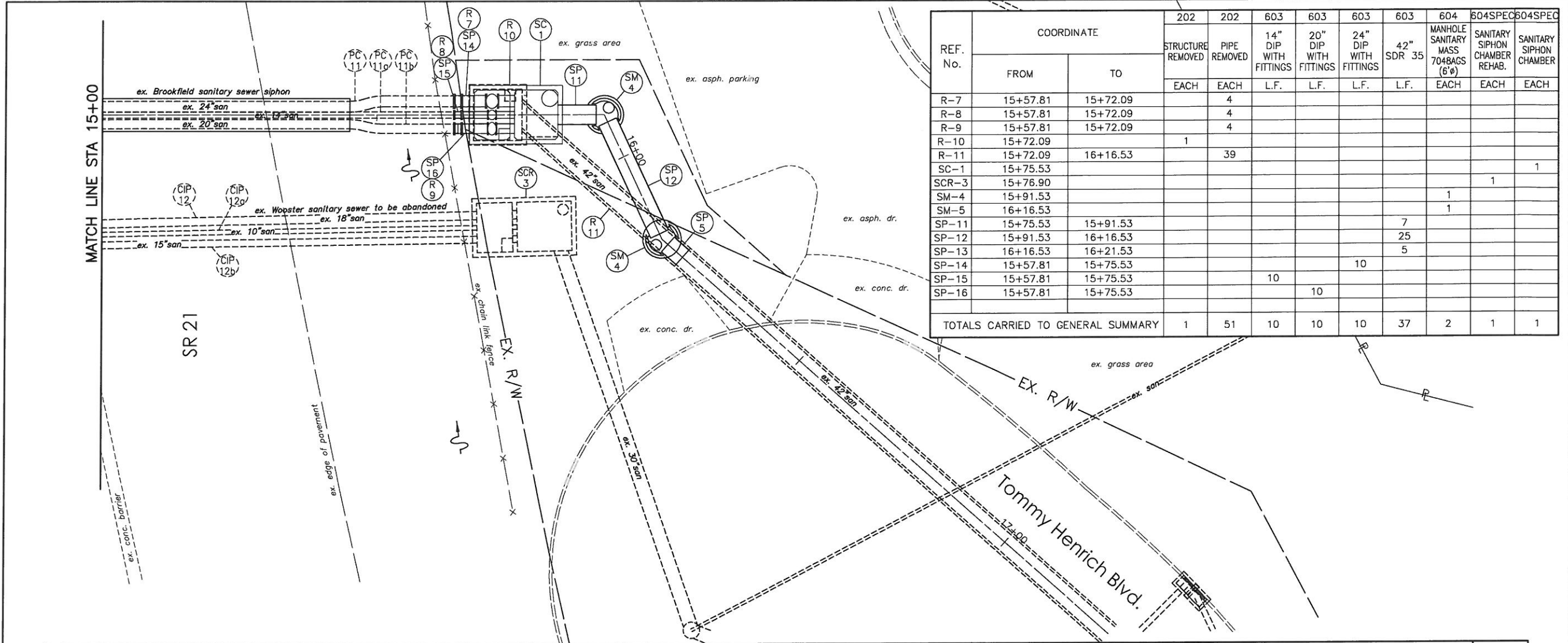
DRAWN BY:	CHECKED BY:
FPW	KAD
DATE:	DATE:
Jan., 2011	Jan., 2011

Levee Infrastructure Improvement Project
Plan and Profile Sta. 12+50 to Sta. 15+00
City of Massillon
Stark County, Ohio

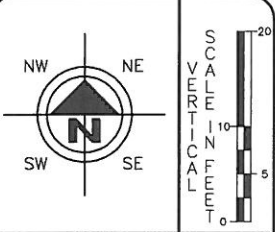
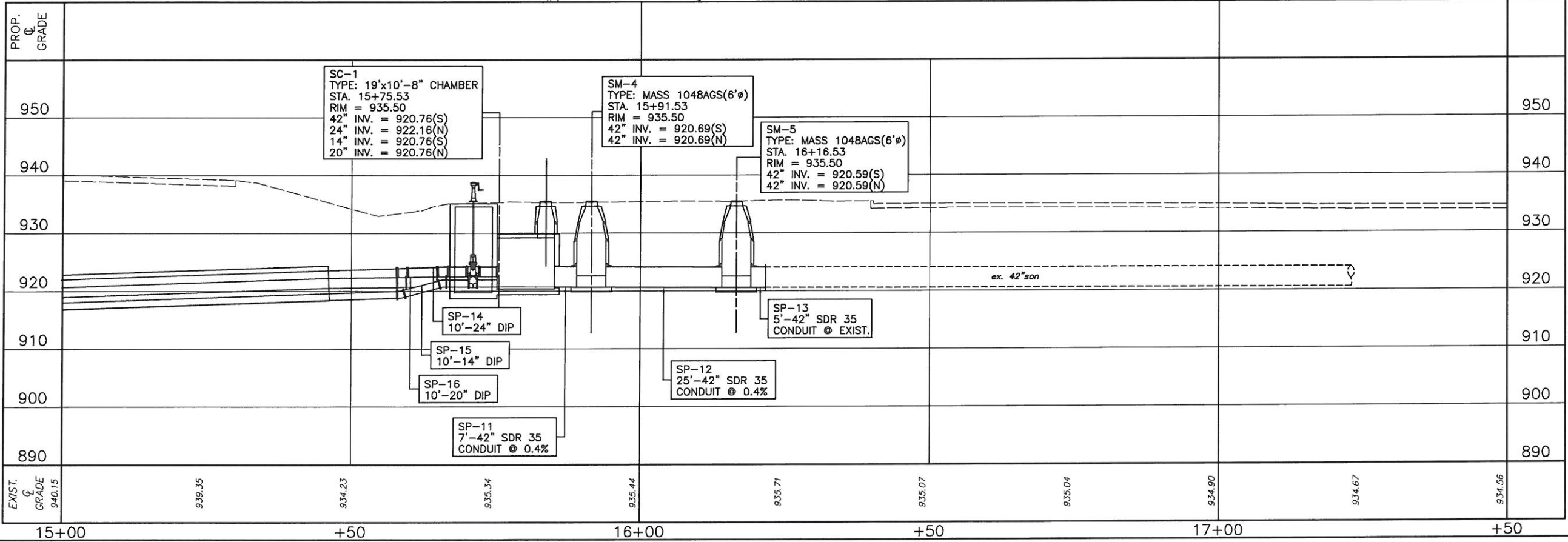


REVISIONS:	
DATE	DESCRIPTION

ELECTRONIC FILE NAME:
BrookfieldSiphonPP2.DWG
ACCOUNT NUMBER
10LV01



REF. No.	COORDINATE		202	202	603	603	603	603	604	604SPEC	604SPEC
	FROM	TO	STRUCTURE REMOVED	PIPE REMOVED	14" DIP WITH FITTINGS	20" DIP WITH FITTINGS	24" DIP WITH FITTINGS	42" SDR 35	MANHOLE SANITARY MASS 704BAGS (6'Ø)	SANITARY SIPHON CHAMBER REHAB.	SANITARY SIPHON CHAMBER
			EACH	EACH	L.F.	L.F.	L.F.	L.F.	EACH	EACH	EACH
R-7	15+57.81	15+72.09		4							
R-8	15+57.81	15+72.09		4							
R-9	15+57.81	15+72.09		4							
R-10	15+72.09	15+72.09	1								
R-11	15+72.09	16+16.53		39							
SC-1	15+75.53										1
SCR-3	15+76.90										
SM-4	15+91.53								1		
SM-5	16+16.53								1		
SP-11	15+75.53	15+91.53						7			
SP-12	15+91.53	16+16.53						25			
SP-13	16+16.53	16+21.53						5			
SP-14	15+57.81	15+75.53					10				
SP-15	15+57.81	15+75.53				10					
SP-16	15+57.81	15+75.53									
TOTALS CARRIED TO GENERAL SUMMARY			1	51	10	10	10	37	2	1	1



HORIZONTAL SCALE IN FEET

DRAWN BY: FPW
CHECKED BY: KAD

DATE: Jan., 2011
DATE: Jan., 2011

Levee Infrastructure Improvement Project
Plan and Profile Sta. 15+00 to Sta. 17+50
City of Massillon
Stark County, Ohio

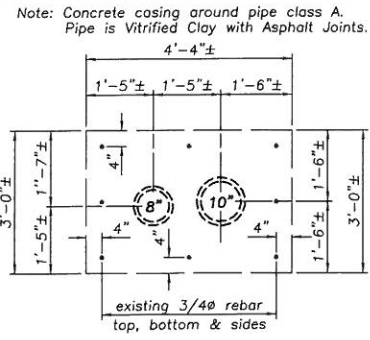
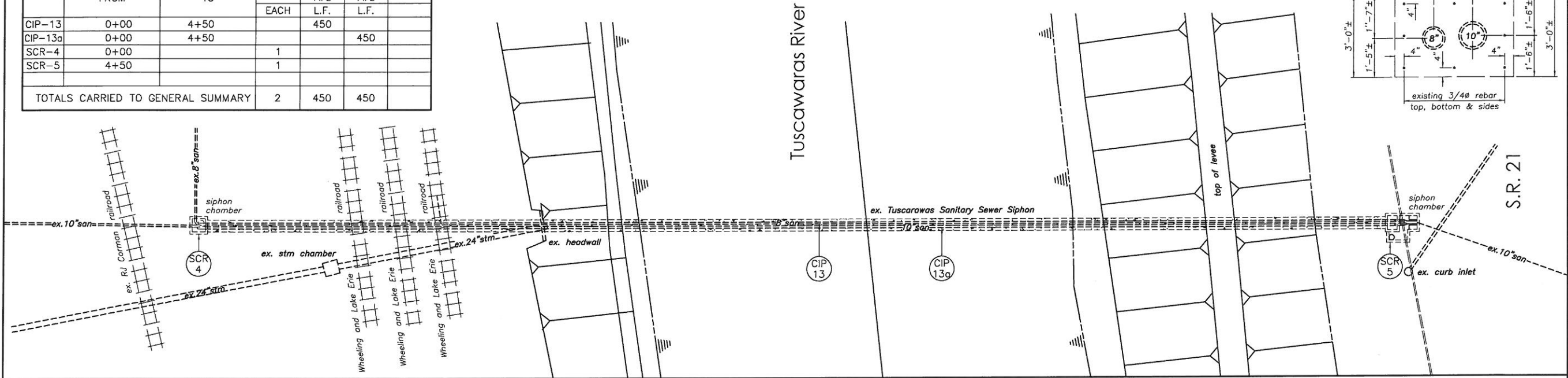


REVISIONS:	
DATE	DESCRIPTION

ELECTRONIC FILE NAME:
BrookfieldSiphonPP3.DWG

ACCOUNT NUMBER
10LV01

REF. No.	COORDINATE		604SPEC SANITARY SIPHON CHAMBER REHAB. EACH	811	811	
	FROM	TO		8" CURED IN PLACE PIPE L.F.	10 CURED IN PLACE PIPE L.F.	
CIP-13	0+00	4+50		450		
CIP-13a	0+00	4+50			450	
SCR-4	0+00		1			
SCR-5	4+50		1			
TOTALS CARRIED TO GENERAL SUMMARY			2	450	450	



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KAD

DATE:
July, 2011

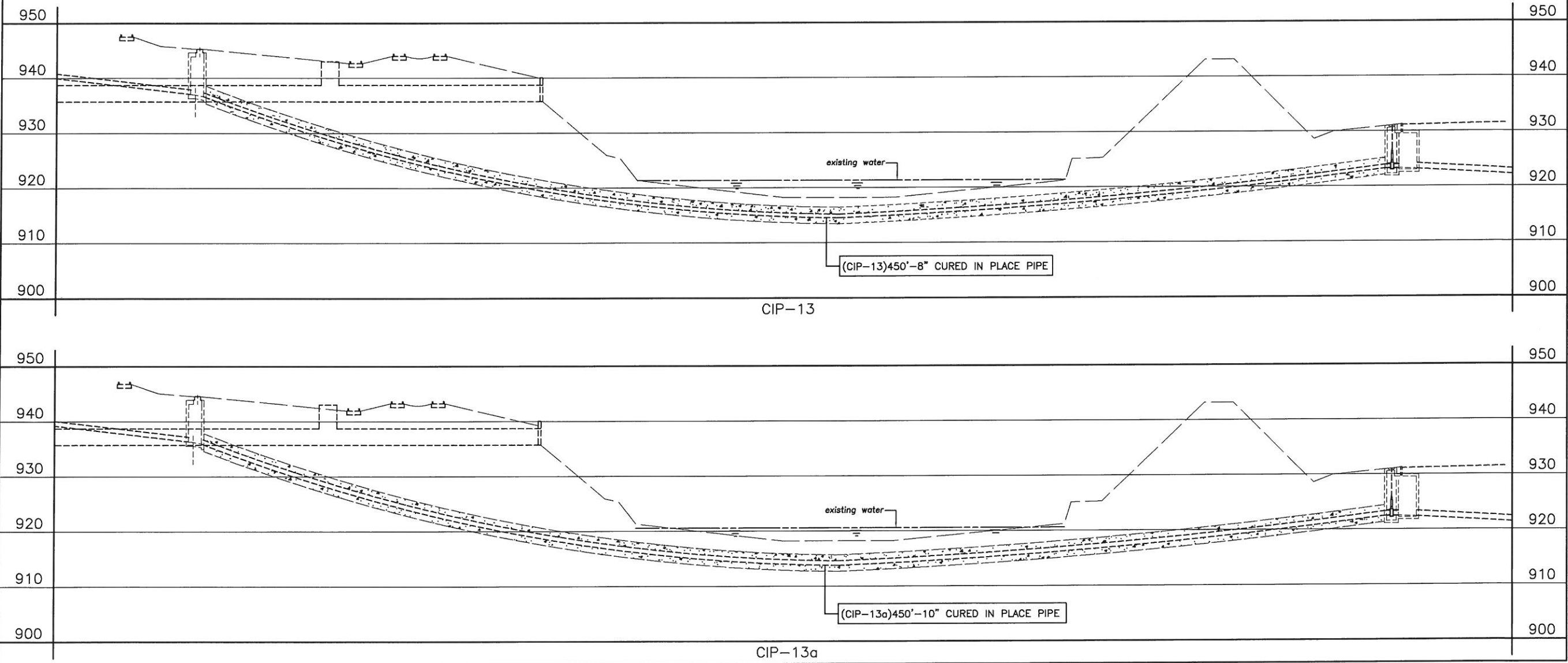
DATE:
July, 2011

Levee Infrastructure Improvement Project

CIP-13 and CIP-13a Plan and Profile

City of Massillon

Stark County, Ohio



Francis H. Cicchinelli, Jr.
MASSILLON

MASSILLON
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REVISIONS:

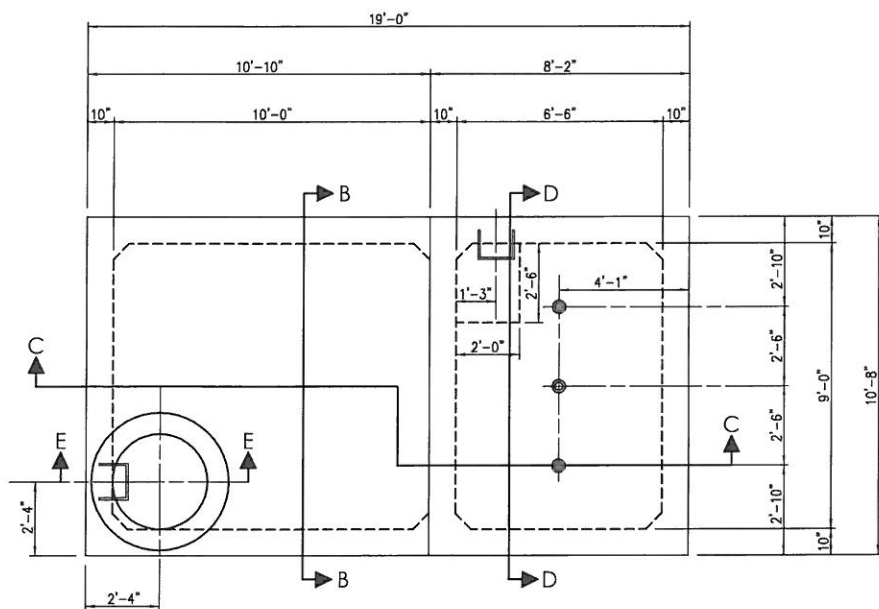
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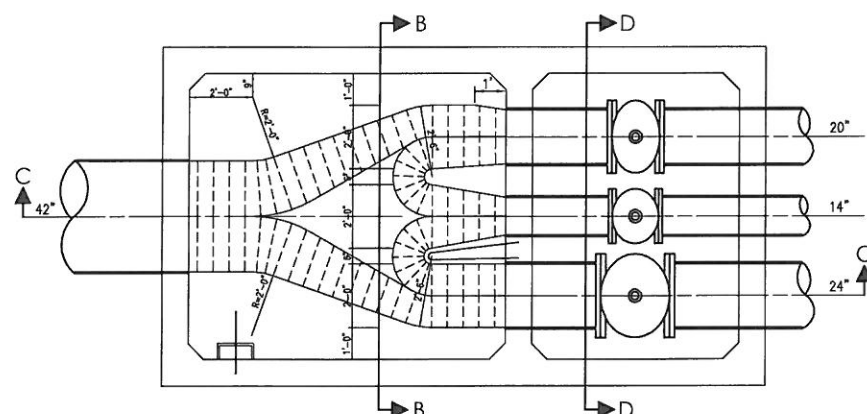
LeveePipe13-13app.DWG

ACCOUNT NUMBER

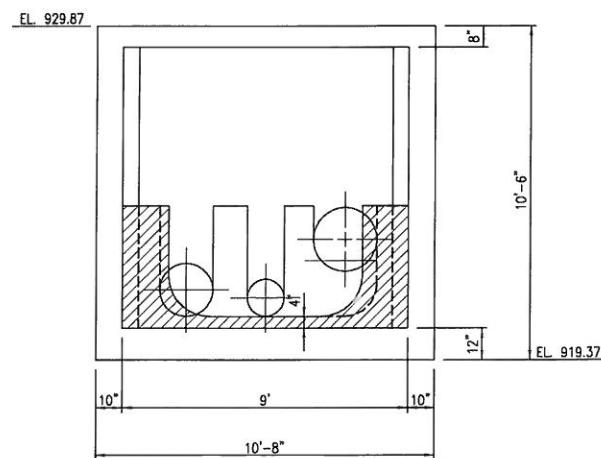
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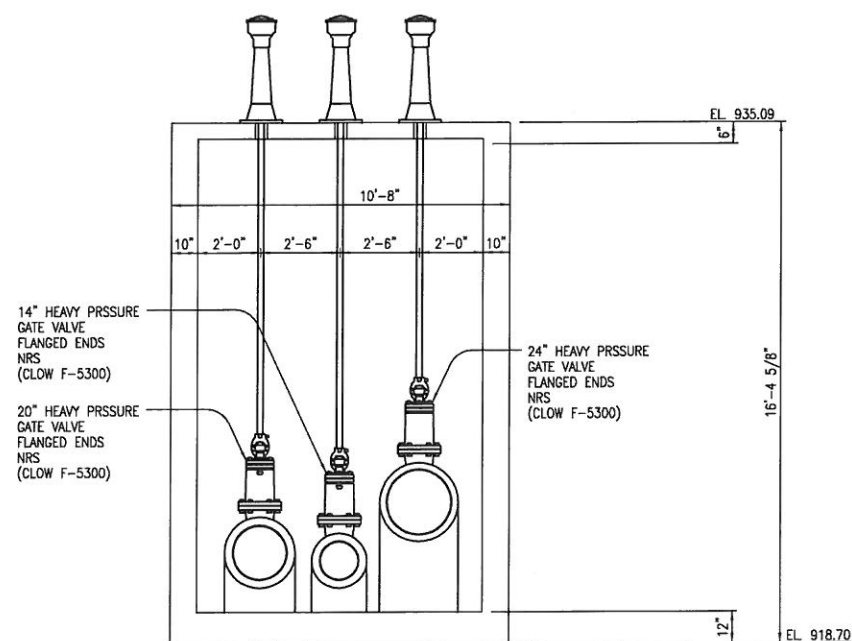
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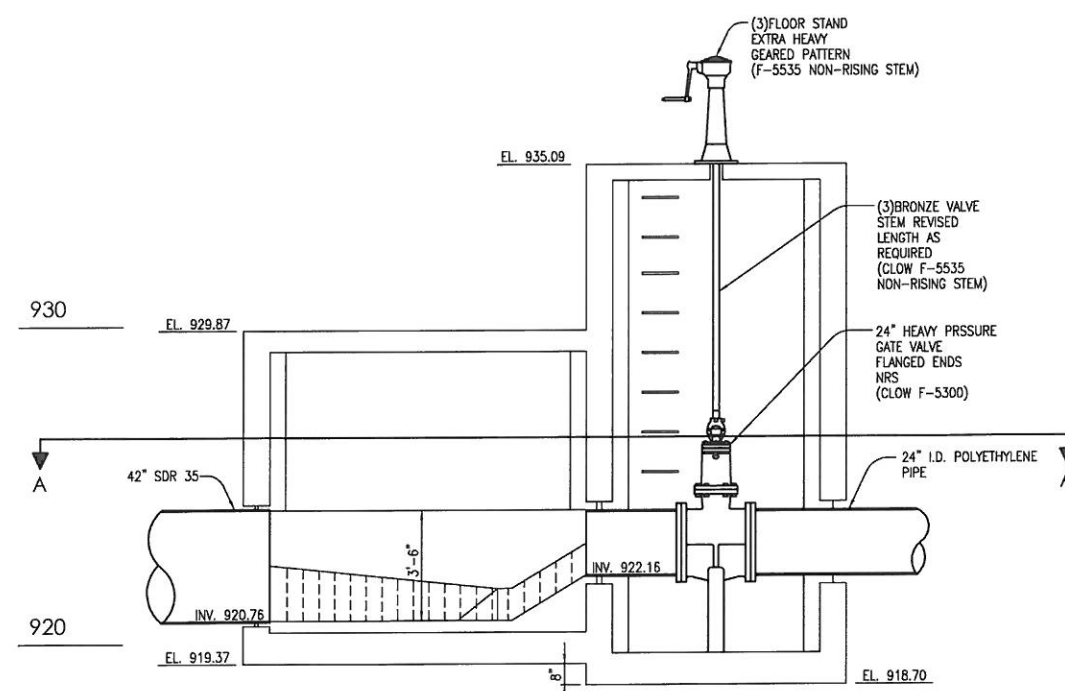
SECTION A-A



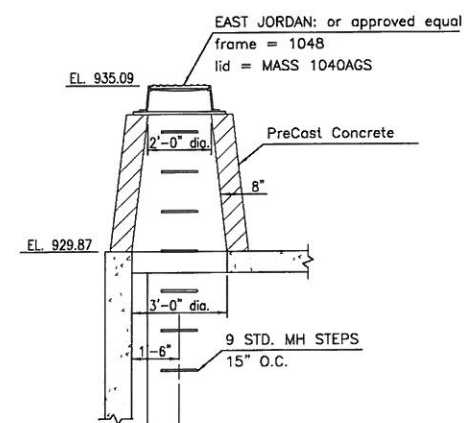
SECTION B-B



SECTION D-D



SECTION C-C



SECTION E-E



DRAWN BY: FPW	CHECKED BY: KAD
DATE: July, 2011	DATE: July, 2011

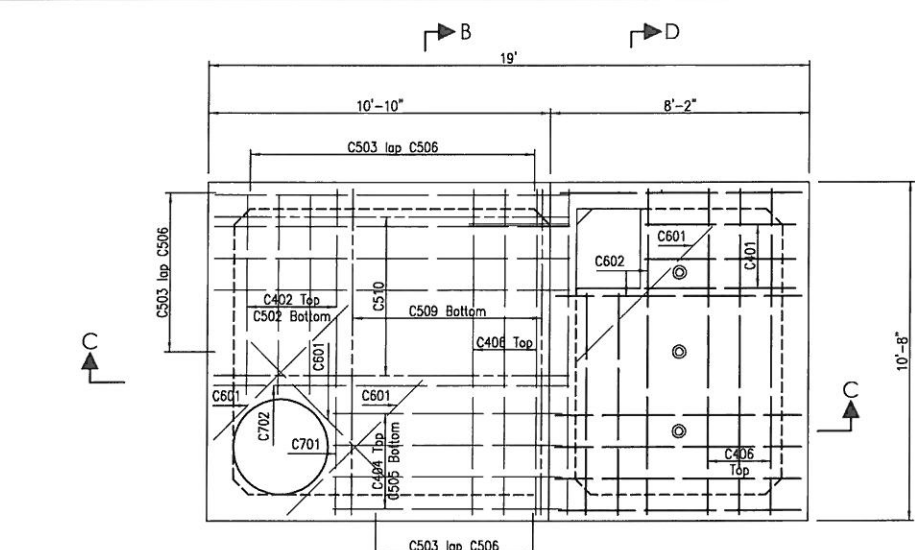
Levee Infrastructure Improvement Project
Siphon Outlet Chamber Detail (SC-1)
City of Massillon
Stark County, Ohio

Francis H. Cicchinelli, Jr.
Professional Engineer

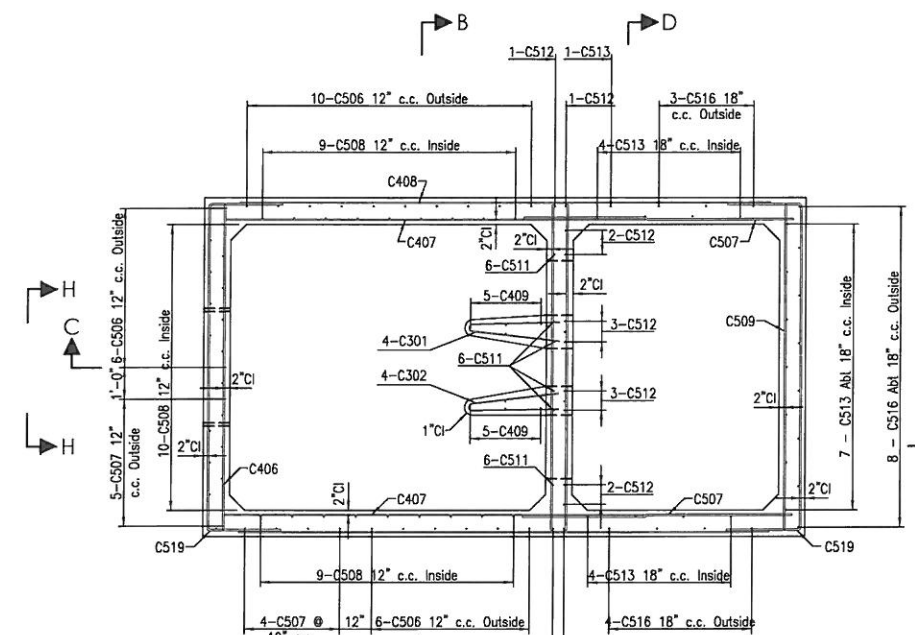


REVISIONS:	
DATE	DESCRIPTION

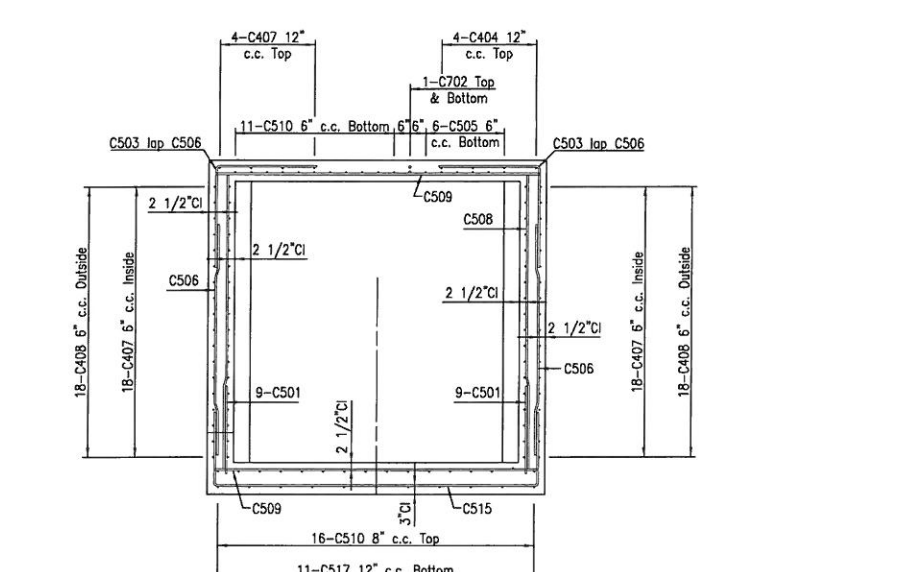
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ACCOUNT NUMBER
10LV01



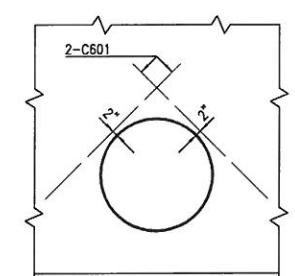
SECTION C-C



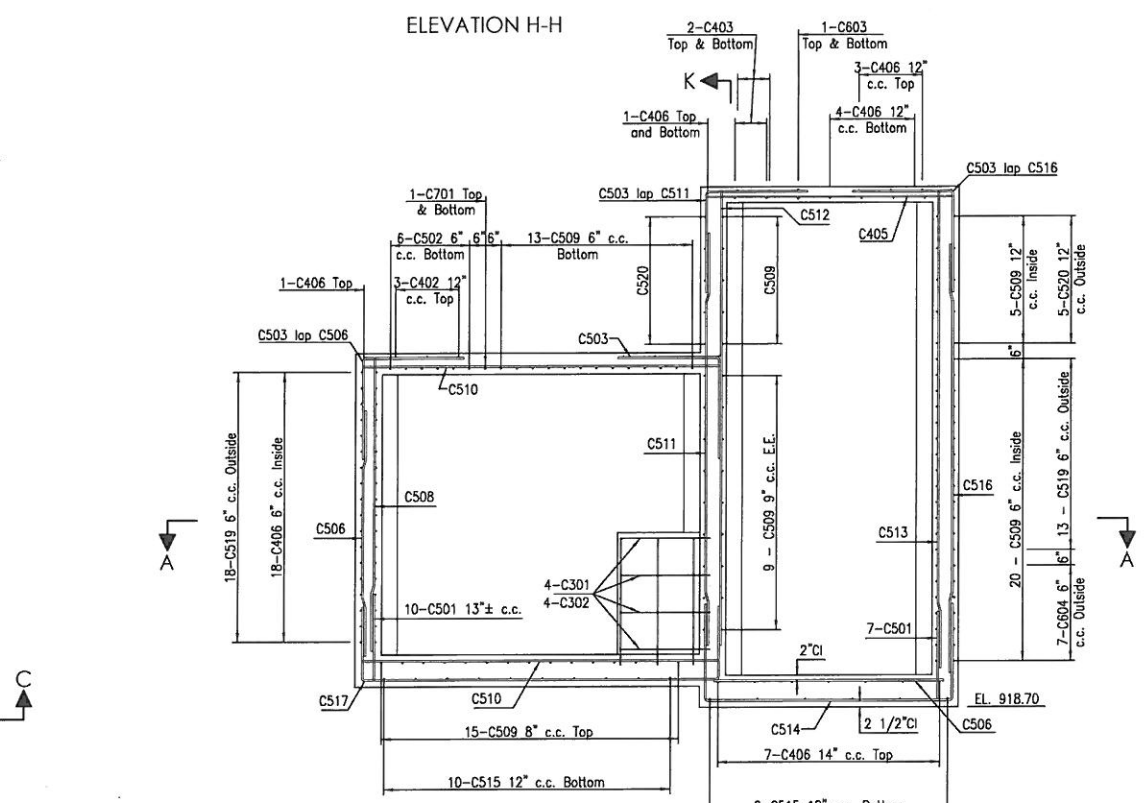
SECTION A-A

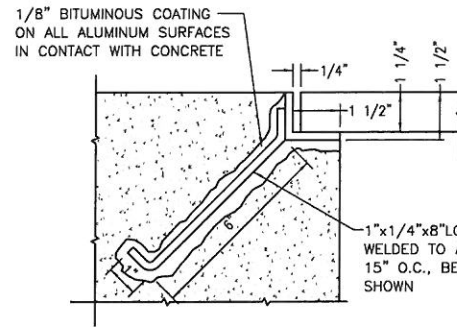
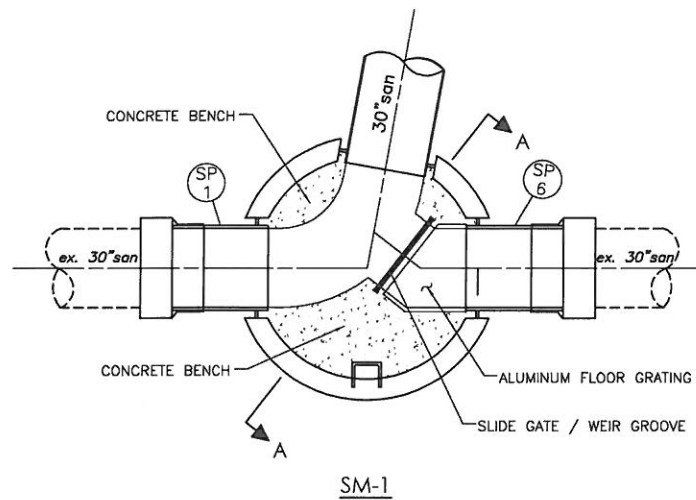


SECTION B-B

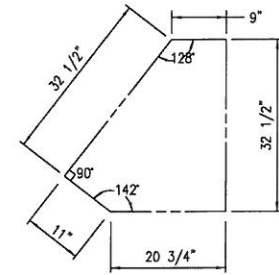


ELEVATION H-H

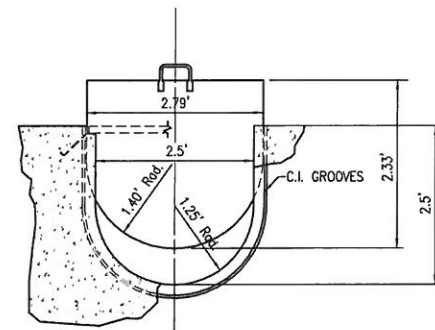
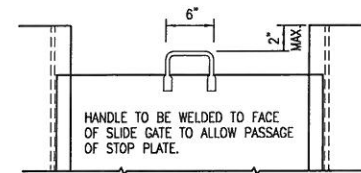
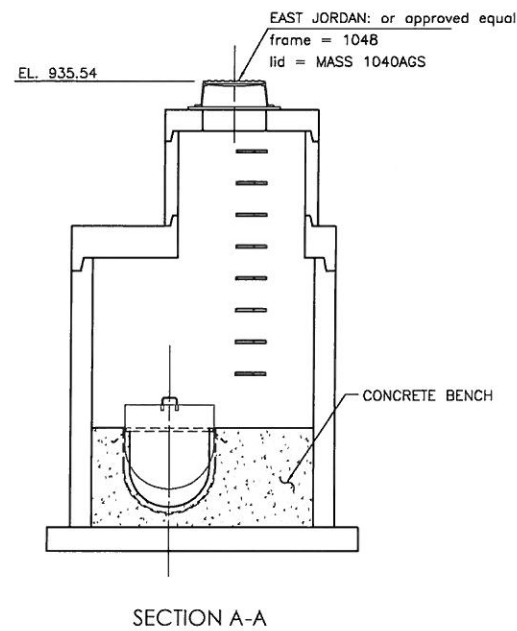




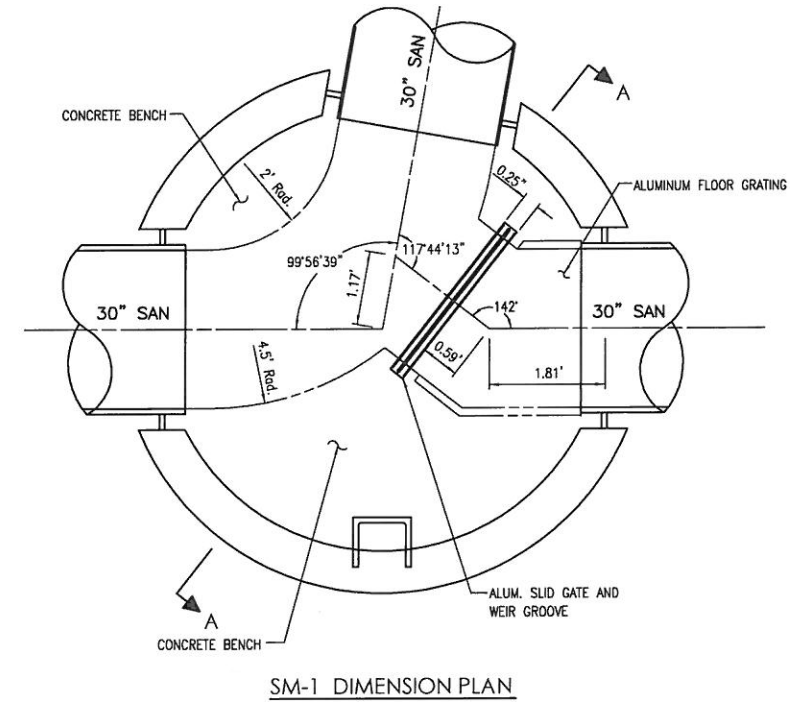
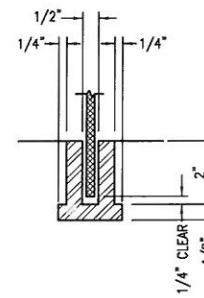
FLOOR GRATING DETAIL



ALUMINUM FLOOR GRATING



SLIDE GATE / WEIR GROOVE DETAIL



Levee Infrastructure Improvement Project
Siphon Outlet Chamber Detail (SC-1)
City of Massillon
Stark County, Ohio



REVISIONS:	
DATE	DESCRIPTION

ELECTRONIC FILE NAME:
SiphonChamberDetail.DWG

ACCOUNT NUMBER
10LV01



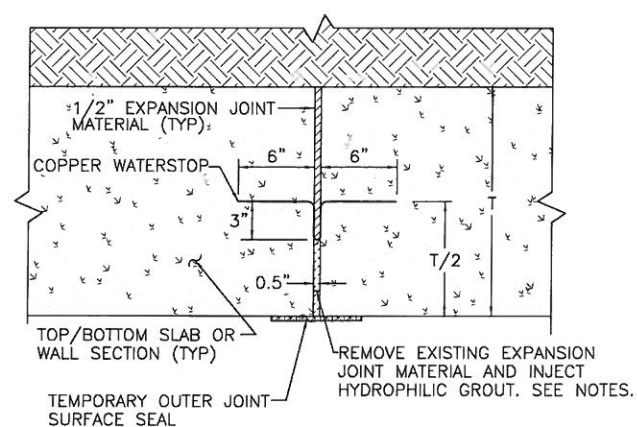
STA. 2+15 TO STA. 3+17.51
STA. 3+37.51 TO STA. 4+96.25
STA. 5+16.25 TO STA. 10+97.06



STA. 0+79.33 TO STA. 2+15
STA. 3+17.51 TO STA. 3+37.51
STA. 4+96.25 TO STA. 5+16.25



STA. 10+97.06 TO 11+57.06

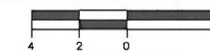
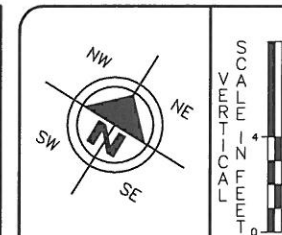


GENERAL INSTRUCTIONS FOR JOINT REPAIR

1. REMOVE EXPANSION JOINT MATERIAL NEAREST THE INTERIOR BACK TO THE WATERSTOP. BE CAREFUL NOT TO DAMAGE THE COPPER WATERSTOP. IT MAY BE NECESSARY TO LEAVE A PORTION OF THE JOINT MATERIAL IN PLACE TO ENSURE THAT EFFORTS TO REMOVE THE JOINT MATERIAL DO NOT DAMAGE THE WATERSTOP.
2. THE PAVER BRICKS LYING OVER THE BASE SLAB EXPANSION JOINT SHOULD BE TEMPORARILY REMOVED TO PERMIT ACCESS TO THE JOINT. THE WORK ON THE BASER SLAB SHOULD BE PERFORMED IN DRY.
3. REMOVE LOOSE CONCRETE TO A SOUND SURFACE AND FLUSH JOINTS TO REMOVE LOOSE DEBRIS.
4. BACKING IS LIKELY NOT REQUIRED. HOWEVER, THIS WILL BE LEFT TO THE CONTRACTOR AND MAY DEPEND ON THE SPECIFIC TECHNIQUES THAT ARE EMPLOYED AS WELL AS THE QUANTITY OF SEEPAGE PASSING THROUGH THE JOINT AT THE TIME OF REPAIR.
5. APPLY TEMPORARY OUTER JOINT SURFACE SEAL.
6. INJECT HYDROPHILIC GROUT.
7. FINISHING COSMETICS. THE FINISHED SURFACE SHOULD BE SMOOTH AND TOOLED IN SUCH A WAY THAT THE JOINT MATERIAL IS FLUSH WITH THE ADJACENT CONCRETE WALL/SLAB SECTION.

NOTES:

1. DO NOT PENETRATE THE COPPER WATERSTOP UNLESS DIRECTED TO BY THE CITY OR AN ON-SITE ENGINEER. IF THE WATERSTOP IS BROKEN THIS OCCURRENCE SHOULD BE NOTED AND REPORTED TO THE CITY FOR THEIR RECORDS.
2. GROUT MATERIAL SHOULD BE FLEXIBLE TO ALLOW THE EXPANSION JOINT TO MOVE AS DESIGNED.
3. CREWS CONDUCTING WORK MUST BE CONFINED SPACE TRAINED AND UTILIZE ALL APPLICABLE EQUIPMENT.
4. MANY GROUTS CONTAIN CHEMICALS THAT COULD BE HARMFUL WHEN USED IN AREAS WITH POOR VENTILATION. THIS SHOULD BE CONSIDERED WHEN PLANNING WORK IN A CONFINED SPACE. SPECIAL PPE, INCLUDING RESPIRATORS, MAY BE REQUIRED.



4 2 0
HORIZONTAL
SCALE IN FEET

DRAWN BY: FPW	CHECKED BY: KAD
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DATE: July, 2011	DATE: July, 2011
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Levee Infrastructure Improvement Project
Wetmore Creek Conduit Typical Section and Notes
City of Massillon
Stark County, Ohio

Francis H. Cicchinelli, Jr.

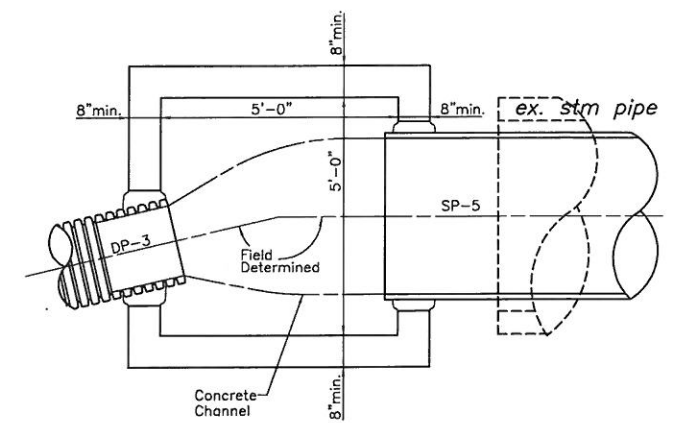
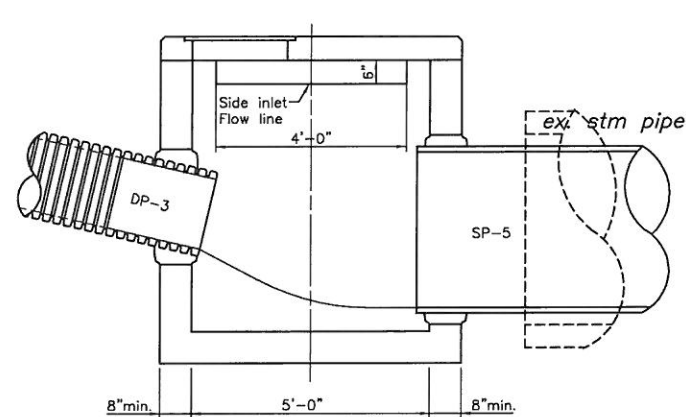
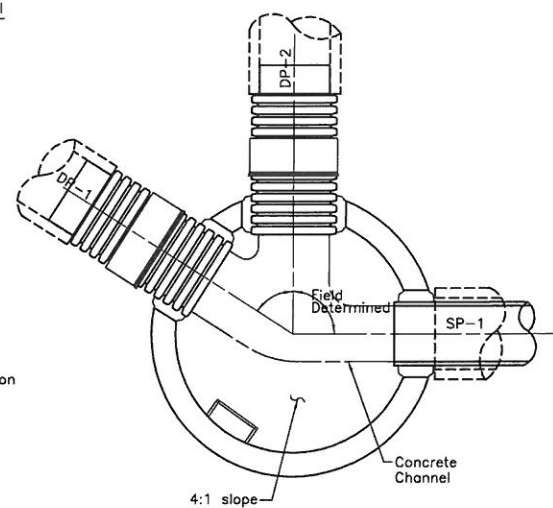


REVISIONS:

DATE	DESCRIPTION

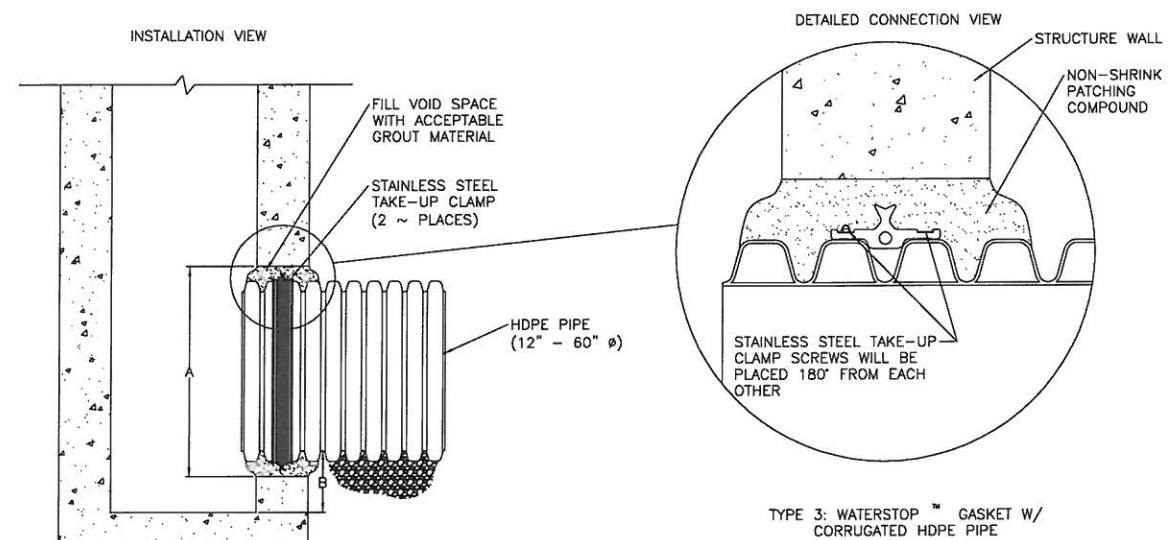
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Leveepipe8details.dwg

ACCOUNT NUMBER 101401

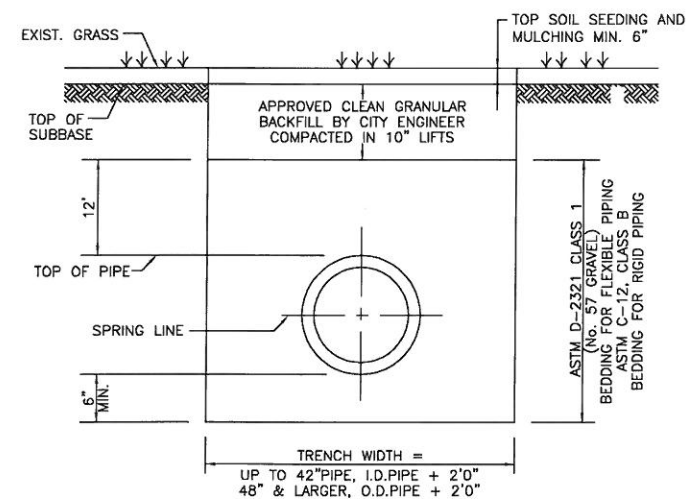


CB-1

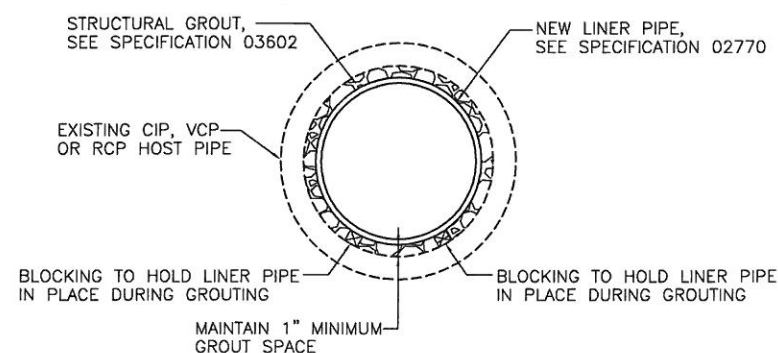
CAST IN PLACE REINFORCED CONCRETE CATCH BASIN NO. 2-5
SEE ODOT STANDARD HYDRAULIC CONSTRUCTION DRAWINGS CATCH BASIN NO'S 2-5 & 2-6



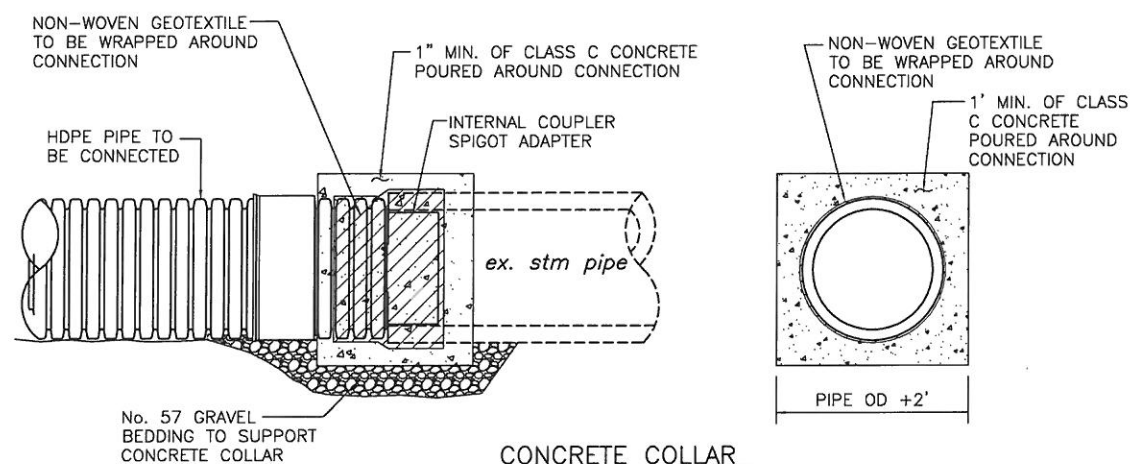
PIPE SIZE (IN)	PIPE OD (IN)		"A" MIN. HOLE Ø (IN)	"B" MIN. DISTANCE PIPE INVERT TO STRUCTURE INVERT (IN)
	A-PROFILE	H-PROFILE		
12	14.5	14.2	19.50	3.7
15	17.6	17.8	23.00	4.0
18	21.2	21.5	26.50	4.2
24	27.8	28.4	33.25	4.5
30	35.1	35.5	40.50	5.2
36	41.1	41.4	47.00	5.5
42	47.7	48.0	53.00	5.7
48	53.6	54.0	59.00	5.7
60	66.3	67.3	72.00	6.4



TRENCH DETAIL DETAIL NON PAVEMENT AREA



TYPICAL LINER SECTION



CONCRETE COLLAR

1. In lieu of an internal cylinder, an HDPE watertight repair coupler can be used to connect HDPE pipe to CMP.
2. Internal cylinder adapter is not recommended for downstream connections.

DRAWN BY: FPW	CHECKED BY: KAD
DATE: Jan, 2011	DATE: Jan, 2011

Levee Infrastructure Improvement Project
Miscellaneous Details

Miscellaneous Details
City of Massillon
Stark County, Ohio

Francis H. Cicchinelli, Jr.
Mayor



REVISIONS:

[illegible]

FILE NAME:
Leveedetail1.dwg

PROJECT NUMBER	10LV01
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