

CITY OF MASSILLON
CITY ENGINEER DEPARTMENT
STARK COUNTY, OHIO
LEEVE INFRASTRUCTURE IMPROVEMENT PROJECT

PROJECT DESCRIPTION

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

CONVENTIONAL SIGNS

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: ┴, STREET: ┴
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 REHABILITATION
DIP . . . DUCTILE IRON PIPE SL . . . HOST PIPE SLIP LINING
DG . . . WALL MOUNT AUTOMATIC DRAINAGE GATE SP . . . SANITARY PIPE
DM . . . DRAINAGE MANHOLE SM . . . SANITARY MANHOLE
DP . . . DRAINAGE PIPE SSS . . . CAST IN PLACE GROUTING SLEEVE
JR . . . JOINT REPAIR DP . . . DRAINAGE MODIFICATION

PERMIT TO INSTALL

SANITARY SEWER PERMIT TO INSTALL (P.T.I.) HAS BEEN RECEIVED FROM THE OHIO ENVIRONMENTAL PROTECTION AGENCY PROTECTION AGENCY THIS _____ DAY OF _____, 20____.
PTI No. _____



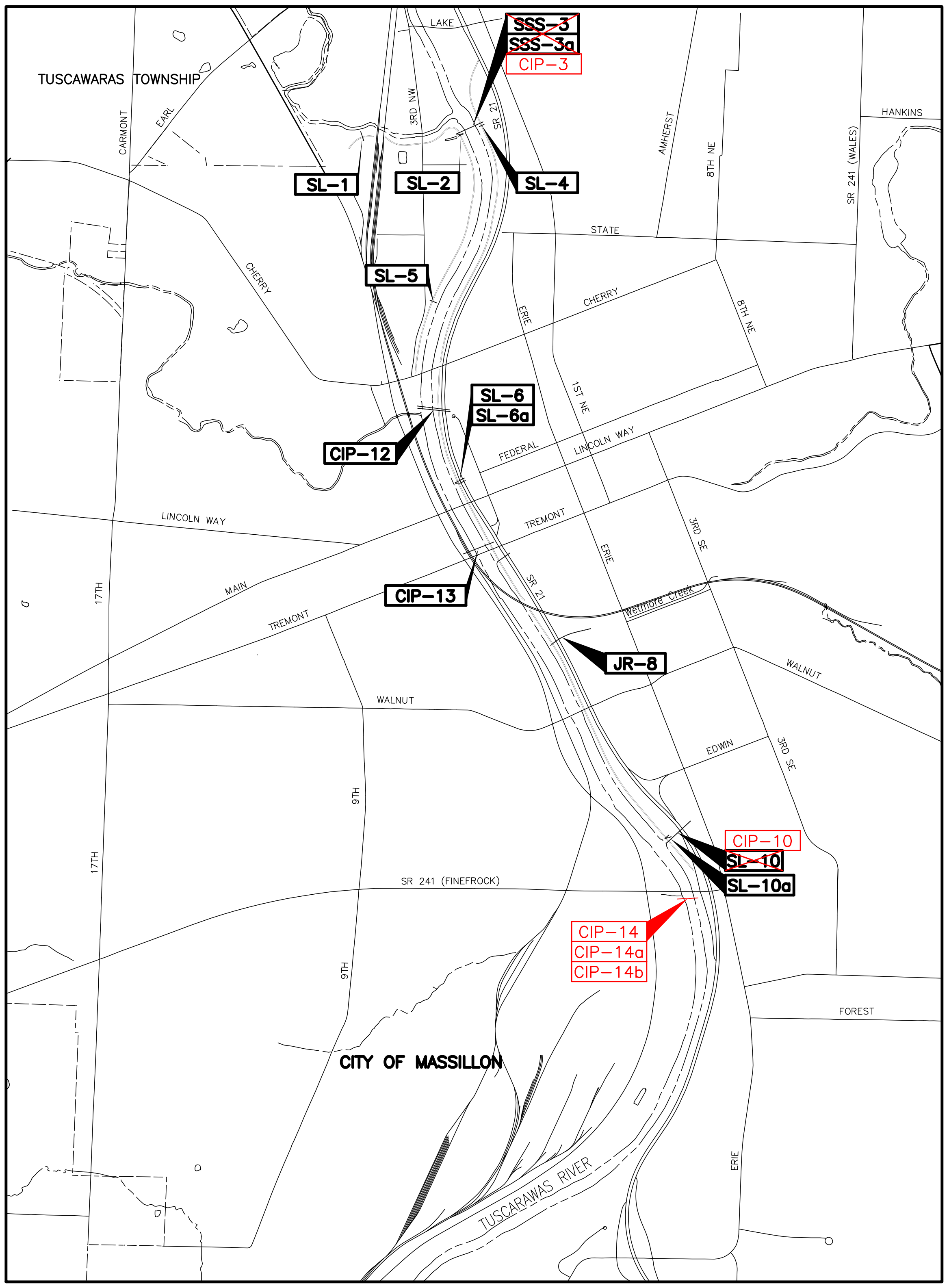
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY



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

PORTION TO BE IMPROVED
STREETS

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CITY ENGINEER KEITH A. DYLEWSKI, P.E., P.S. DATE

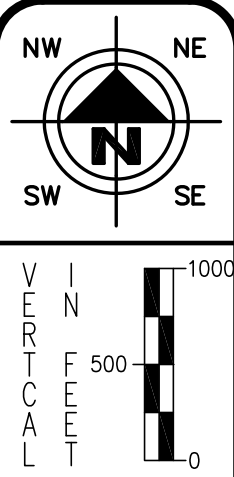
CITY OF MASSILLON ELECTED OFFICIALS

KATHY CATAZARO-PERRY	MAYOR
PERICLES G. STERGIOS	LAW DIRECTOR/PROSECUTOR
JAYNE FERRERO	AUDITOR
MAUDE SLAGLE	TREASURER
COUNCIL	
TONY M. TOWNSEND	PRESIDENT
SARITA CUNNINGHAM-HEDDERLY	1st WARD
NANCY HALTER	2nd WARD
ANDREA SCASSA	3rd WARD
QUENESSA N. HAMPTON	4th WARD
DONNIE PETERS JR.	5th WARD
ED LEWIS	6th WARD
PAUL MANSON	AT LARGE
LARRY SLAGLE	AT LARGE
MILAN CHOVAN	AT LARGE



Kathy Catazaro-Perry, Mayor
Massillon
City of Champions

AS-BUILTS



HORIZONTAL
SCALE IN FEET

CHECKED BY: KAD
DATE: AUG, 2012
DRAWN BY: FPW
DATE: AUG, 2012

REVISIONS:	DATE	DESCRIPTION	AS-BUILTS
	1/2015		

Levee Infrastructure Improvement Project
Title Sheet
City of Massillon
Stark County, Ohio

Kathy Catazaro-Perry, Mayor
Massillon
City of Champions

DRAWING NAME: Leveetitle.dwg
CITY NUMBER: 10LV01
1 / 18

* 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	AQUA WATER P.O. BOX 584 MASSILLON, OH 44648 (330) 833-4156	OHIO EDISON STARK DIVISION 2600 S. ERIE ST. MASSILLON, OH 44545 (330) 830-7085	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	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 WORK.

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE SHOWN AT APPROXIMATE LOCATIONS AND WHERE OBTAINED AS REQUIRED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 OF THE OHIO REVISED CODE

OUPS - 1-800-362-2764
OGUPUPS - 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 LAWRENCE 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 CITY OF MASSILLON ENGINEER 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 ACCORDING TO THE CURRENT CITY OF MASSILLON SPECIFICATIONS AND STANDARDS, AND THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. WHEN A CONFLICT ARISES BETWEEN THE CITY OF MASSILLON AND ODOT'S STANDARDS, THE MORE STRINGENT STANDARD WILL BE USED AT THE DISCRETION OF THE CITY OF MASSILLON ENGINEER. THE CONTRACTOR SHALL 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 PROPOSED 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 SHAL 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. THE TRENCH SHALL BE BACKFILLED AT THE END OF EACH WORK DAY TO PROVIDE ACCESS. THE CONTRACTOR MUST NOTIFY EACH PROPERTY OWNER AT LEAST 24 HOURS IN ADVANCE OF CUTTING THEIR DRIVEWAY.

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 CITY OF MASSILLON ENGINEER AND/OR HIS REPRESENTATIVE. 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 AT THE DESCREATION OF THE CITY OF MASSILLON ENGINEER.

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 FAMILIARIZED 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-CONFORMING OR CONFLICTING INFORMATION.

PRESERVATION OF EXISTING UTILITY SERVICES

ANY EXISTING WATER LINE, SANITARY SEWER, STORM SEWER, GAS LINE OR OTHE UTILITY IN OR OUTSIDE OF THE CONSTRUCTION LIMITS, DAMAGED DURING CONSTRUCTION OF THE PROPOSED PROJECT SHALL BE REPLACED AT THE 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 ENGINEER APPROVAL 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.

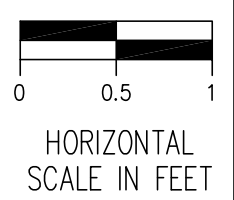
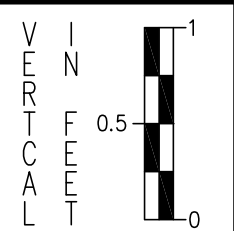
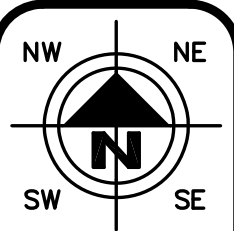
ALL TRENCHES IN ROAD RIGHT OF WAY WILL RECEIVE FULL DEPTH PREMIUM GRANULAR BACKFILL

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.



CHECKED BY:	KAD
DATE:	MAY, 2012
DRAWN BY:	FPW
DATE:	MAY, 2012

REVISIONS:	DESCRIPTION	
	DATE	

Levee Infrastructure Improvement Project

Genral Notes

City of Massillon

Stark County, Ohio

Kathy Catanzo-Perry, Mayor

Massillon

City of Champions

DRAWING NAME:	Leveegnote1.dwg
CITY NUMBER:	10LV01
2 / 18	

SANITARY SEWER SPECIFICATIONS

SANITARY SEWER CONSTRUCTION PROPOSED FOR THIS PROJECT SHALL CONFORM TO THE LATEST CITY OF MASSILLON STANDARDS AND 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 OF MASSILLON 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 CONFORM TO ODOT ITEM 603.10 AND 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 WITH THE APPROVED GRANULAR MATERIAL 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 OR APPROVED EQUAL AS SHOWN IN ODOT TABLE 703-1 SHALL BE USED FOR BACKFILLING ALL SEWER TRENCH AREAS SHOWN ON THE PLANS AND AS DIRECTED BY THE CITY OF MASSILLON ENGINEER. FLOODING, JETTING, OR PUDDLING OF BACKFILL MATERIAL WILL NOT BE PERMITTED UNLESS APPROVED BY THE CITY OF MASSILLON ENGINEER. 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 OF MASSILLON 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 PROPERLY 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.	BASE I.D.	DEFLECTION MANDREL
6"	35	6.275	5.742	5.54
8"	35	8.400	7.665	7.28
10"	35	10.500	9.563	9.08
12"	35	12.500	11.361	10.79

TELEVISION TESTING

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

LEAKAGE TESTS

LEAKAGE TESTS SHALL BE PERFORMED WHICH 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 OF 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 CONSTRUCTED. 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 CITY 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.

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

CONTINUED: AIR TESTING AS PER ASTM F1417

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. 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.

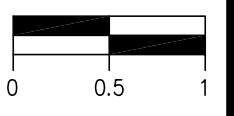
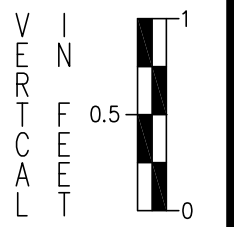
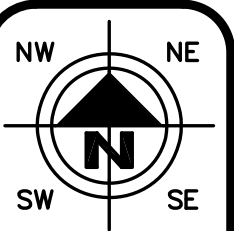
WORKING AREA

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 VIDEO TAPE 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 VIDEO TAPED 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



HORIZONTAL
SCALE IN FEET

CHECKED BY:
KAD

DATE:
Aug, 2012

DRAWN BY:
FPW

DATE:
Aug, 2012

REVISENS:	DESCRIPTION	
	DATE	

Levee Infrastructure Improvement Project
Genral Notes
City of Massillon
Stark County, Ohio

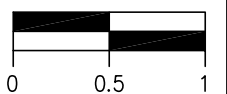
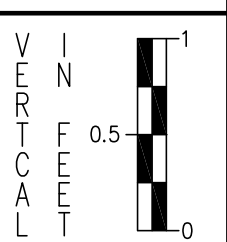
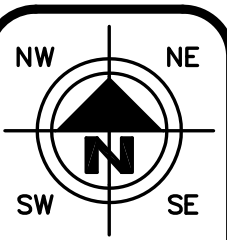
Kathy Catazaro-Perry, Mayor
Massillon
City of Champions

DRAWING NAME:
1SINegnote2.DWG

CITY NUMBER:
10ss03

3 / 18

GENERAL SUMMARY																
SHEET No.																
			2	3	4	5	6	7	8	9	10	11	12	13	14	15
ITEM																
GRAND TOTAL																
UNIT																
DESCRIPTION																
ROADWAY																
202SPEC	3730	LF														
202SPEC	2432	LF														
202	3	EACH														
202	1	LUMP														
202	145	LF														
202	49	LF														
202	1	EACH														
SPEC.	LUMP	LUMP														
SPEC.	LUMP	LUMP														
DRAINAGE																
603	30- 20	LF														
603	3	EACH														
604	1	EACH														
604	1	EACH														
809	1	EACH														
810	110	LF														
810	105	LF														
810	492- 162	LF														
810	270	LF														
810	80	LF														
811SPEC	2	EACH														
813	12	EACH														
811	400	EACH														
811	326	EACH														
SPEC.	LUMP	LUMP														
SPEC.	LUMP	LUMP														
604SPEC	LUMP	LUMP														
603SPEC	LUMP	LUMP														
603SPEC	LUMP	LUMP														
SPEC.	LUMP	LUMP														
SANITARY																
603	10	LF														
603	10	LF														
603	10	LF														
603	14	LF														
603	8- 22	LF														
603	49 101	LF														
603	8	LF														
603	42- 47.5	LF														
604SPEC	1	EACH														
604SPEC	2	EACH														
604SPEC	2	EACH														
604SPEC	1	EACH														
604SPEC	5	EACH														
811	450	LF														
811	890	LF														
811	440	LF														
811	440	LF														
811	460	LF														
811	460	LF														
811	460	LF														
811	310	LF														
811	310	LF														
811	310	LF														
603SPEC	LUMP	LUMP														
INCIDENTALS																
619	LUMP	LUMP														
623	LUMP	LUMP														
624	LUMP	LUMP														



HORIZONTAL
SCALE IN FEET

CHECKED BY:
KAD

DATE:
Aug, 2012

DRAWN BY:
FPW

DATE:
Aug, 2012

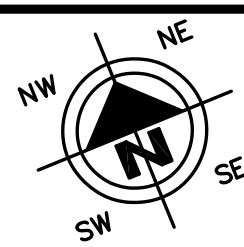
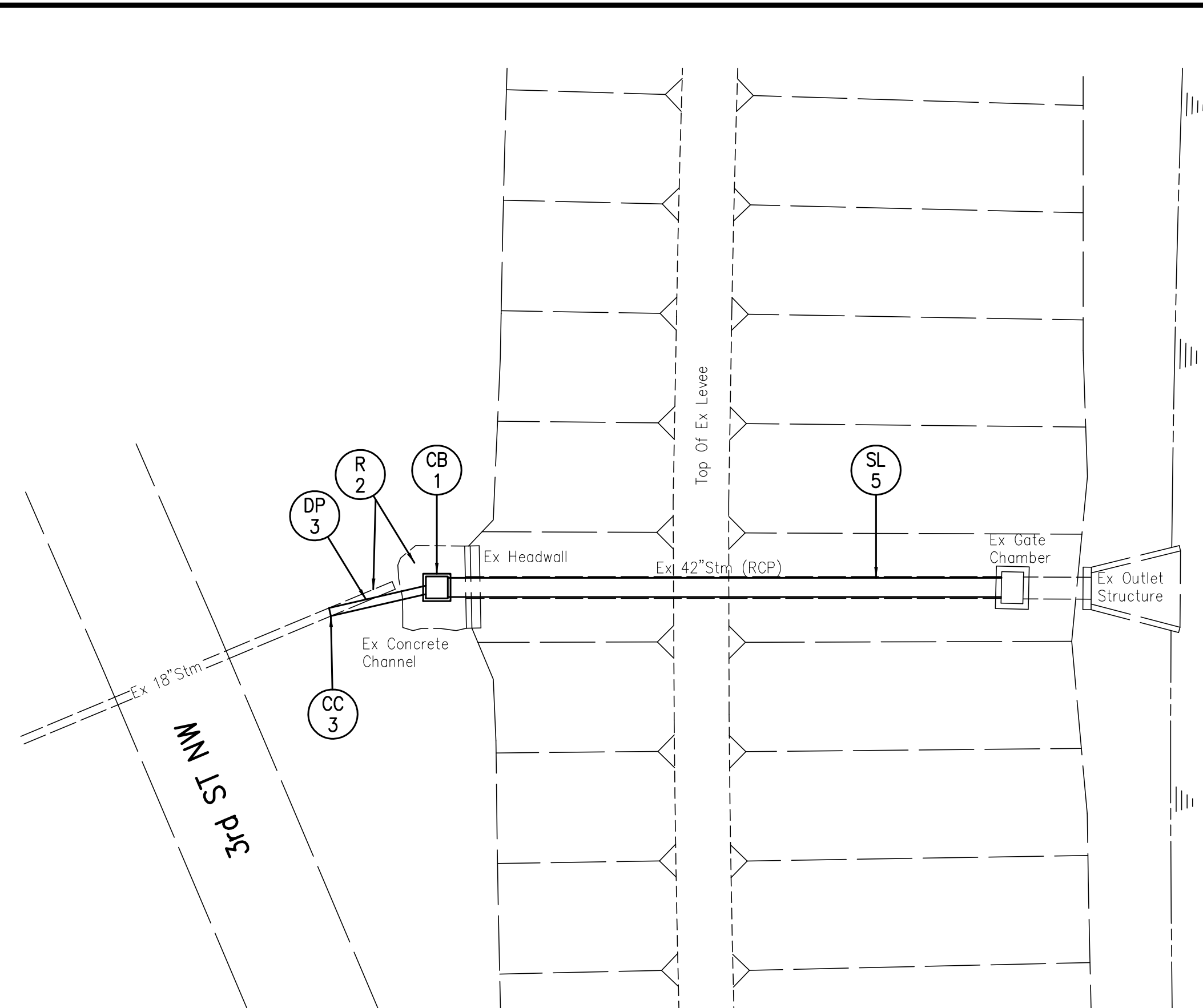
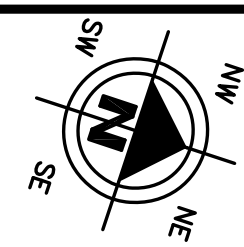
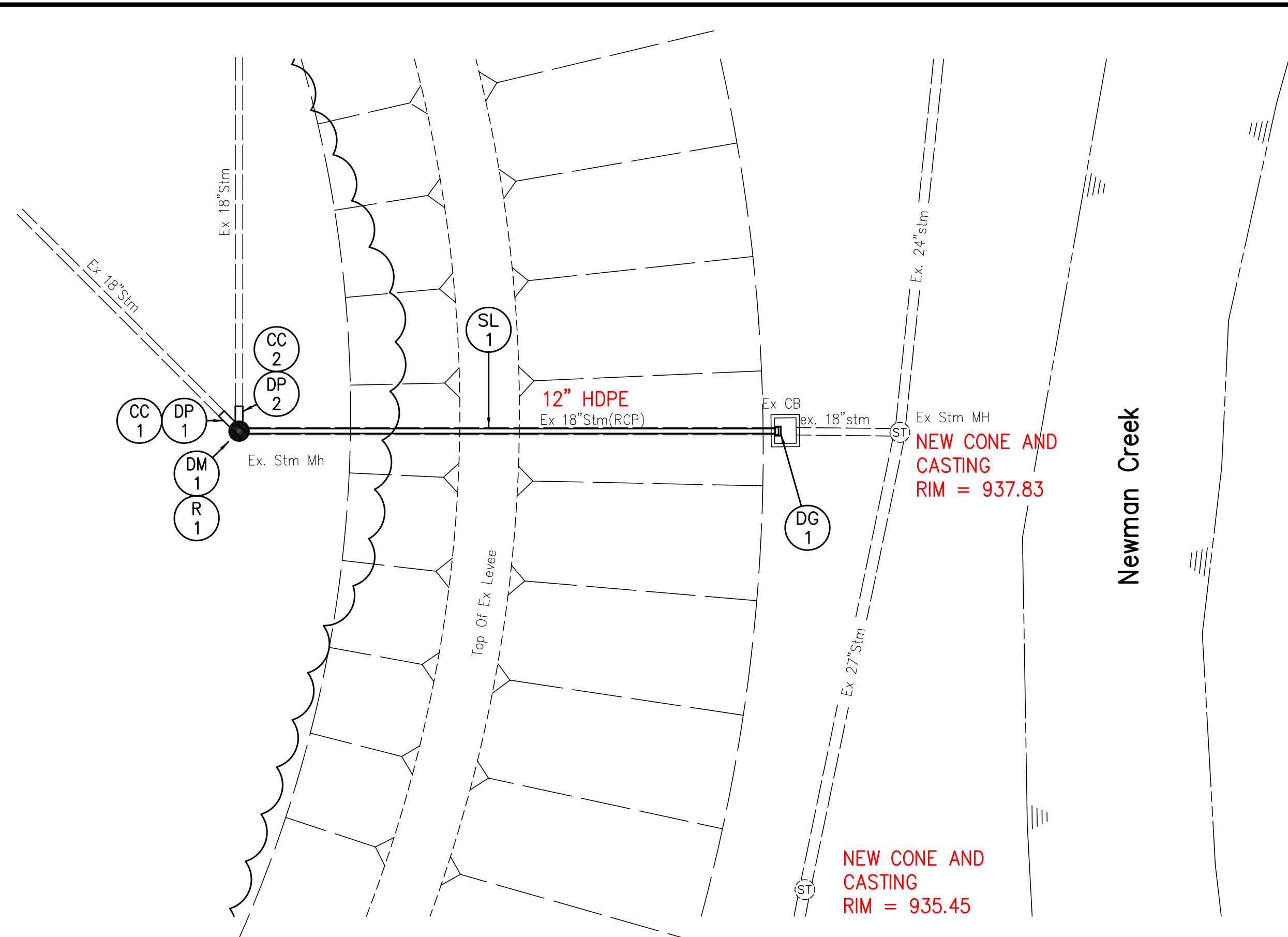
REVISIONS:	DESCRIPTION	DATE
	AS-BUILTS	1/2015

Levee Infrastructure Improvement Project
General Summary
City of Massillon,
Stark County, Ohio



DRAWING NAME:
Leveegsum1.dwg

CITY NUMBER:
101v01

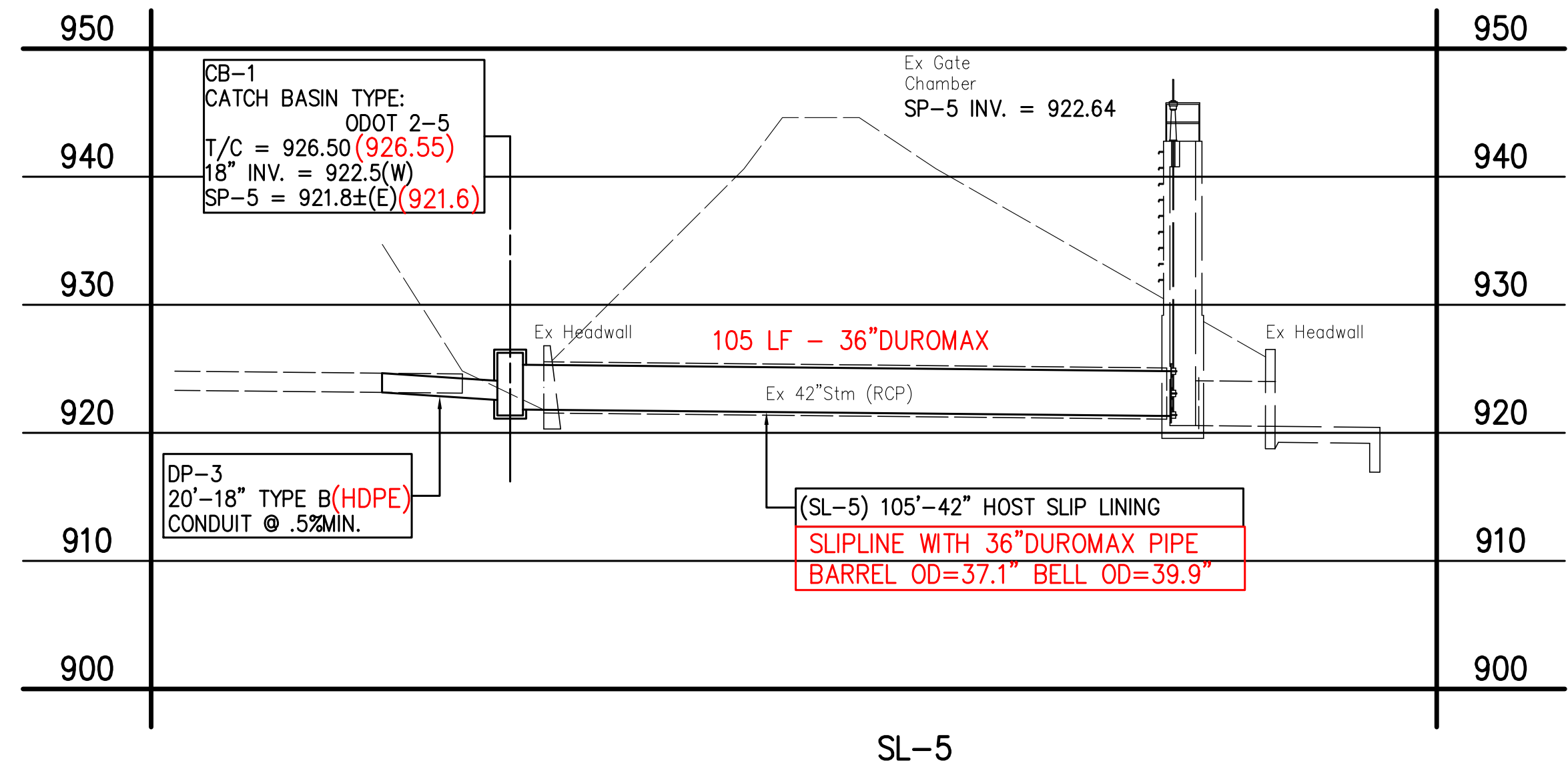
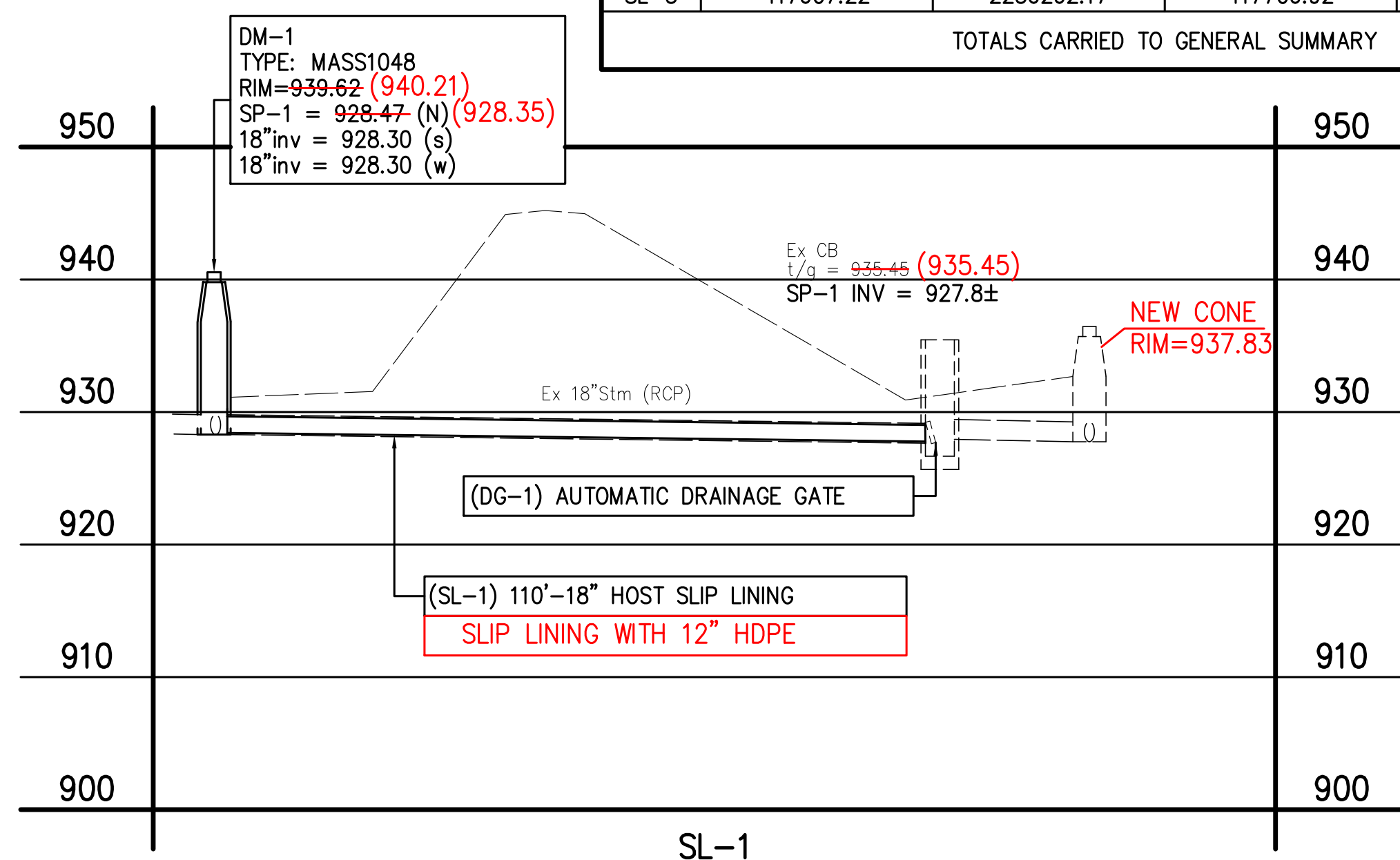


SOUTH SIDE OF NEWMAN CREEK 200' WEST OF DBL R.R. TRACKS, 783' WEST OF 3RD STREET NW

ON 3RD ST 960' NORTH OF CHERRY AT HIGH TENSION CROSSING RIVER.

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 CAST IN PLACE	WALL MOUNTED AUTOMATIC DRAINAGE GATE	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														
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



VERTICAL SCALE IN FEET
0 5 10

HORIZONTAL SCALE IN FEET
0 10 20

CHECKED BY: KAD
DATE: MAY, 2012
DRAWN BY: FPW
DATE: MAY, 2012

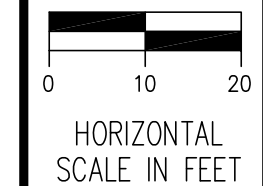
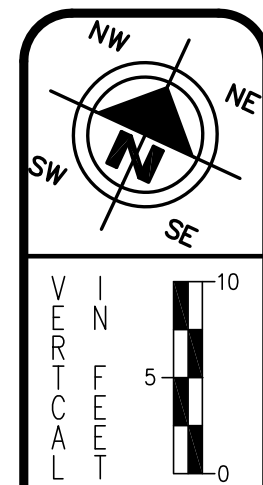
REVISIONS:
DATE DESCRIPTION
1/2015 AS-BUILTS

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

Kathy Catzaro-Perry, Mayor

Massillon
City of Champions

DRAWING NAME: Leveepipe1.DWG
CITY NUMBER: 101v01
5 / 18



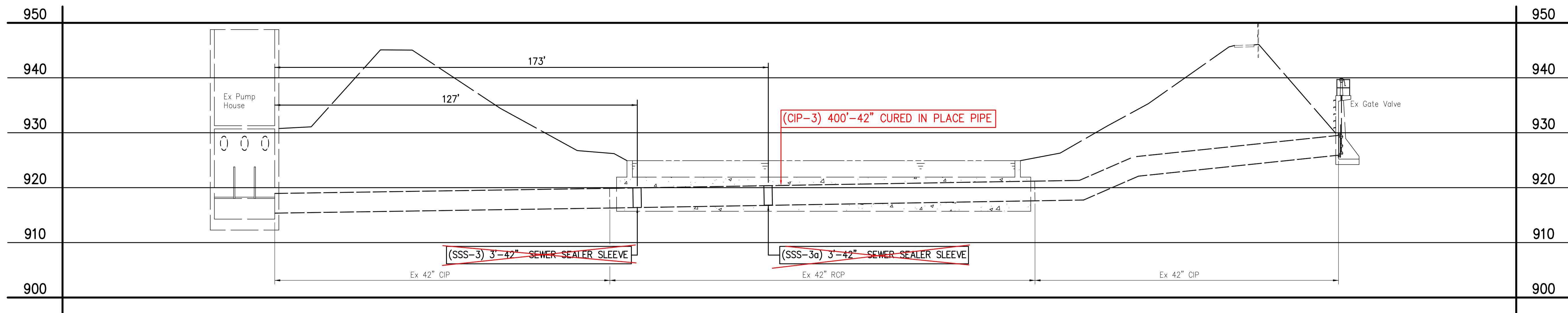
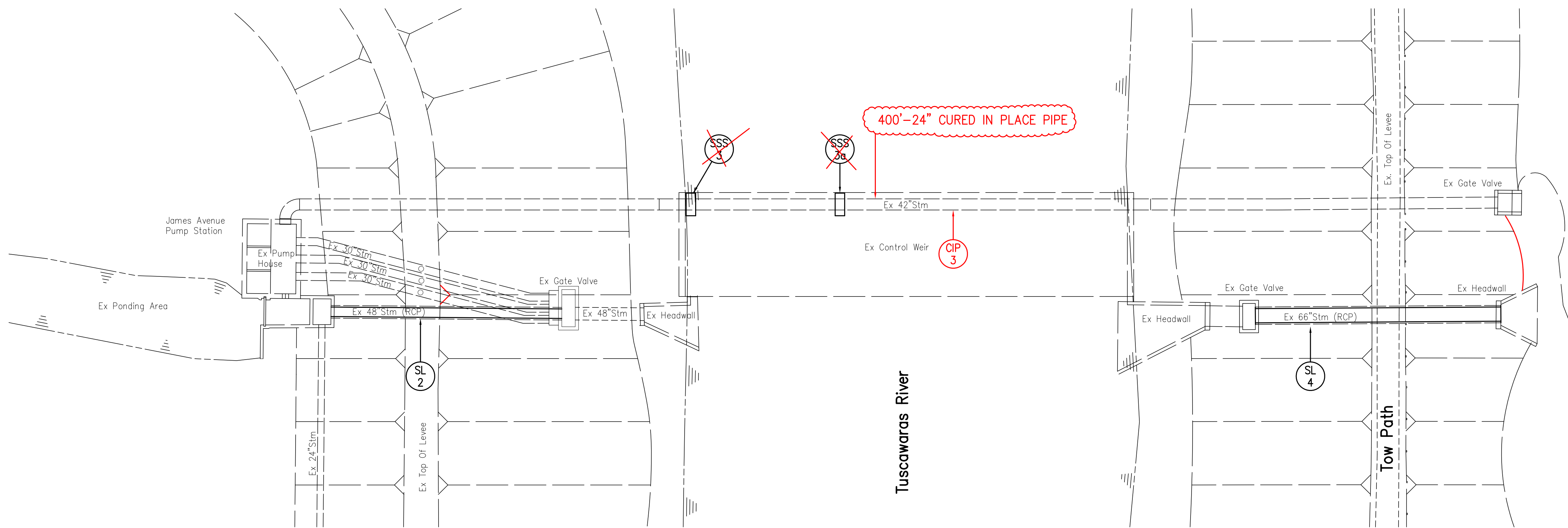
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DATE: Aug, 2012
DRAWN BY: FPW
DATE: Aug, 2012

REVISIONS:	DATE	DESCRIPTION
	1/2015	AS-BUILT

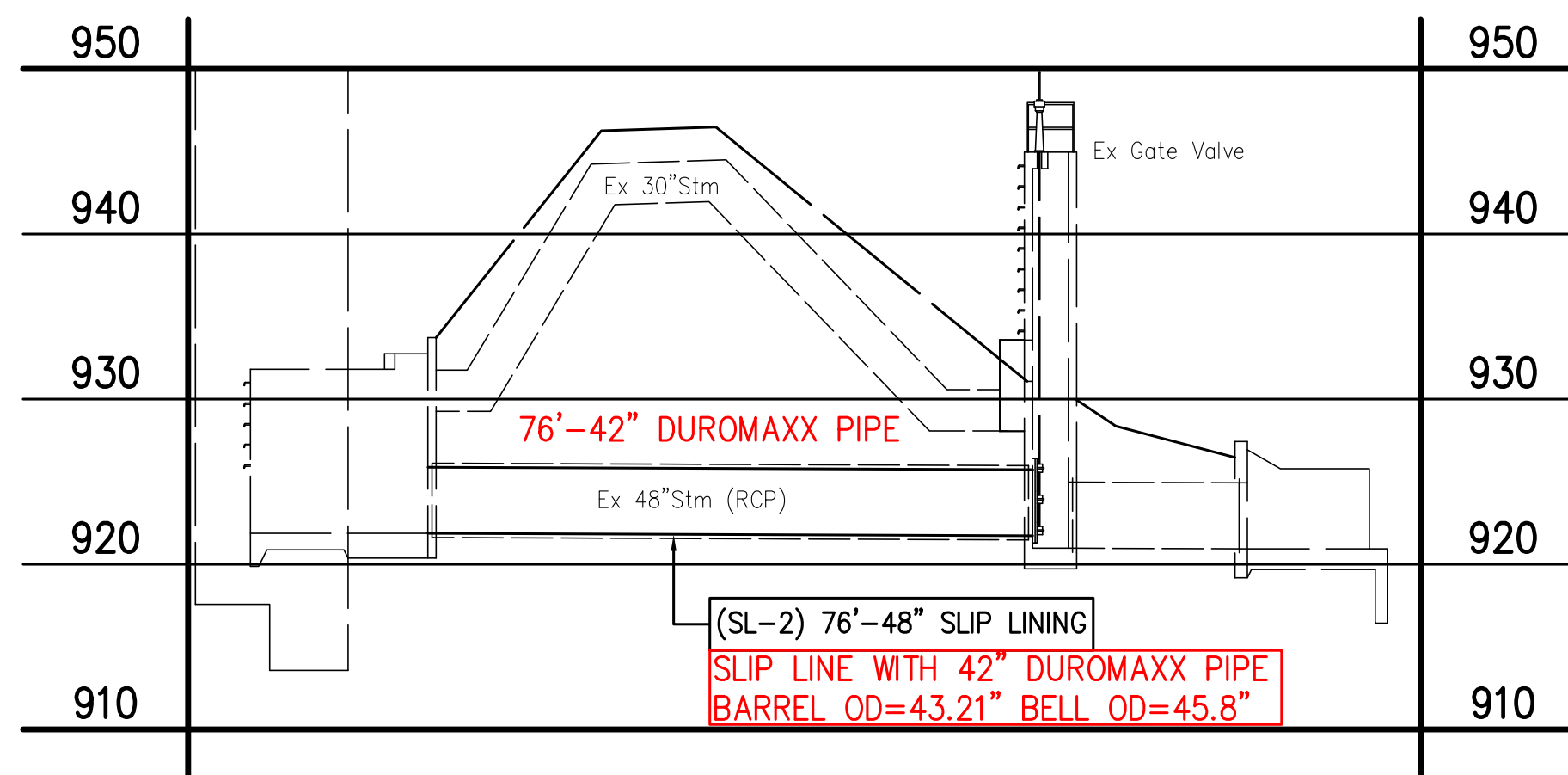
Levee Infrastructure Improvement Project
SL-2, SSS-3, SSS-3a, SL-4 Plan and Profile
City of Massillon
Stark County, Ohio

Kathy Catanzo-Perry, Mayor
Massillon
City of Champions

DRAWING NAME: leveepipe2-4pp.dwg
CITY NUMBER: 101v01
6 / 18

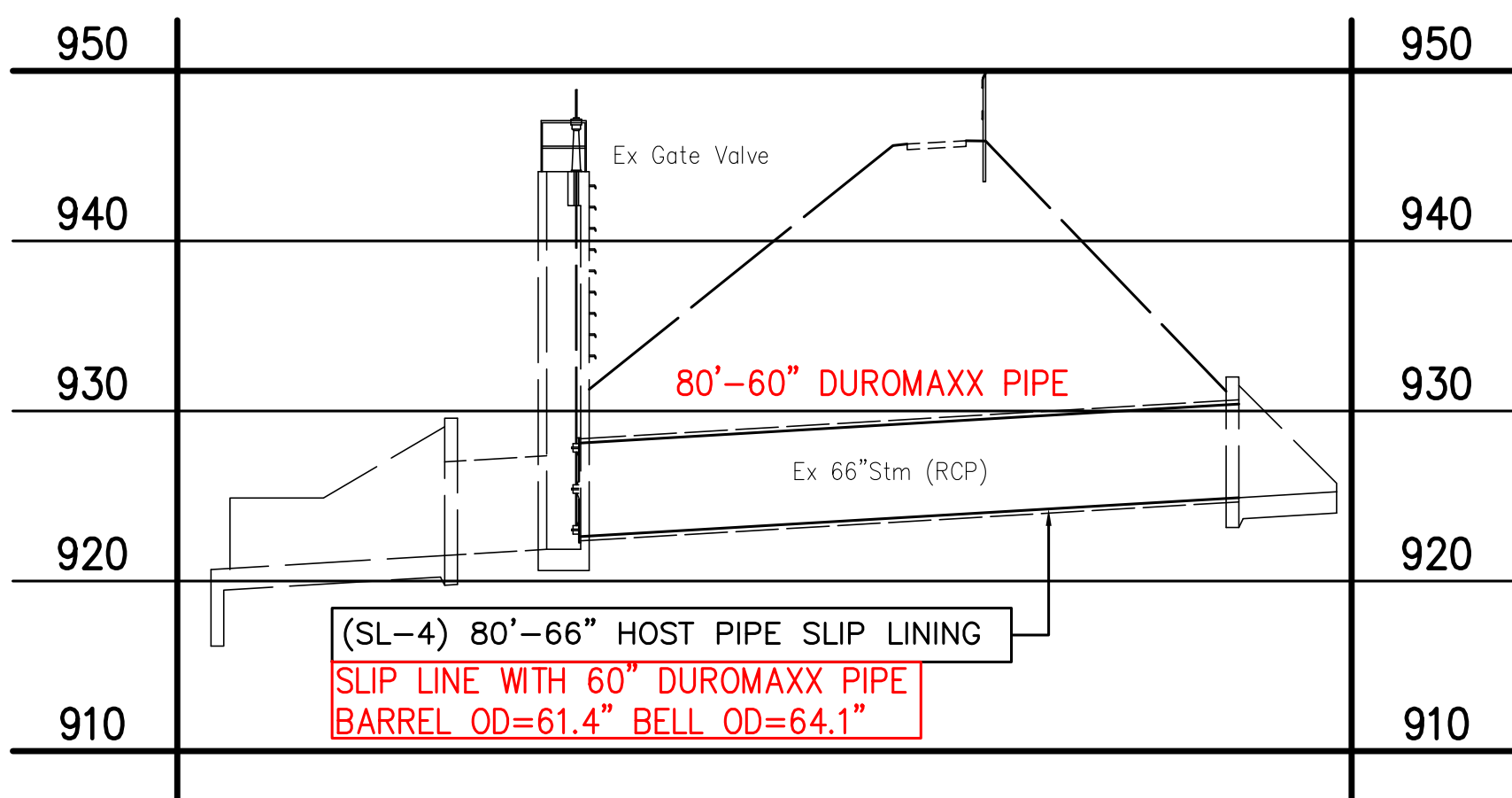


~~SSS-3 and SSS-3a (Sta. 1+38.75)~~
CIP-3 (Sta. 1+38.75)

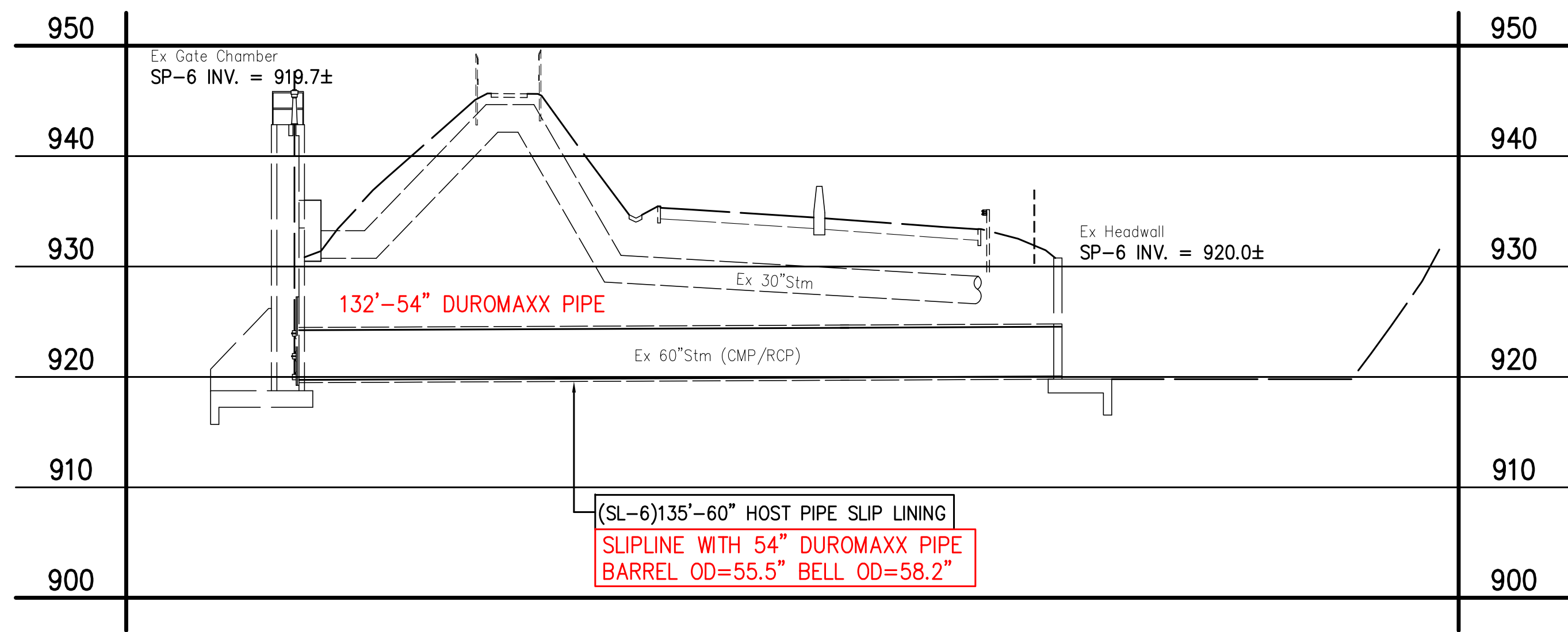
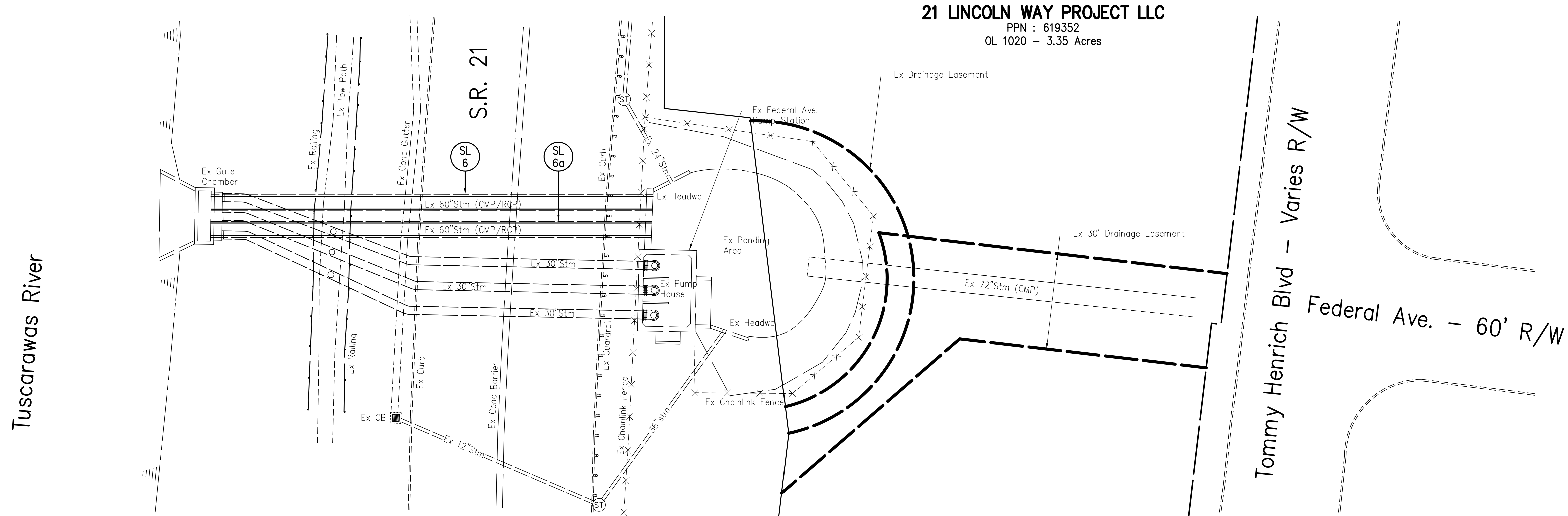


SL-2

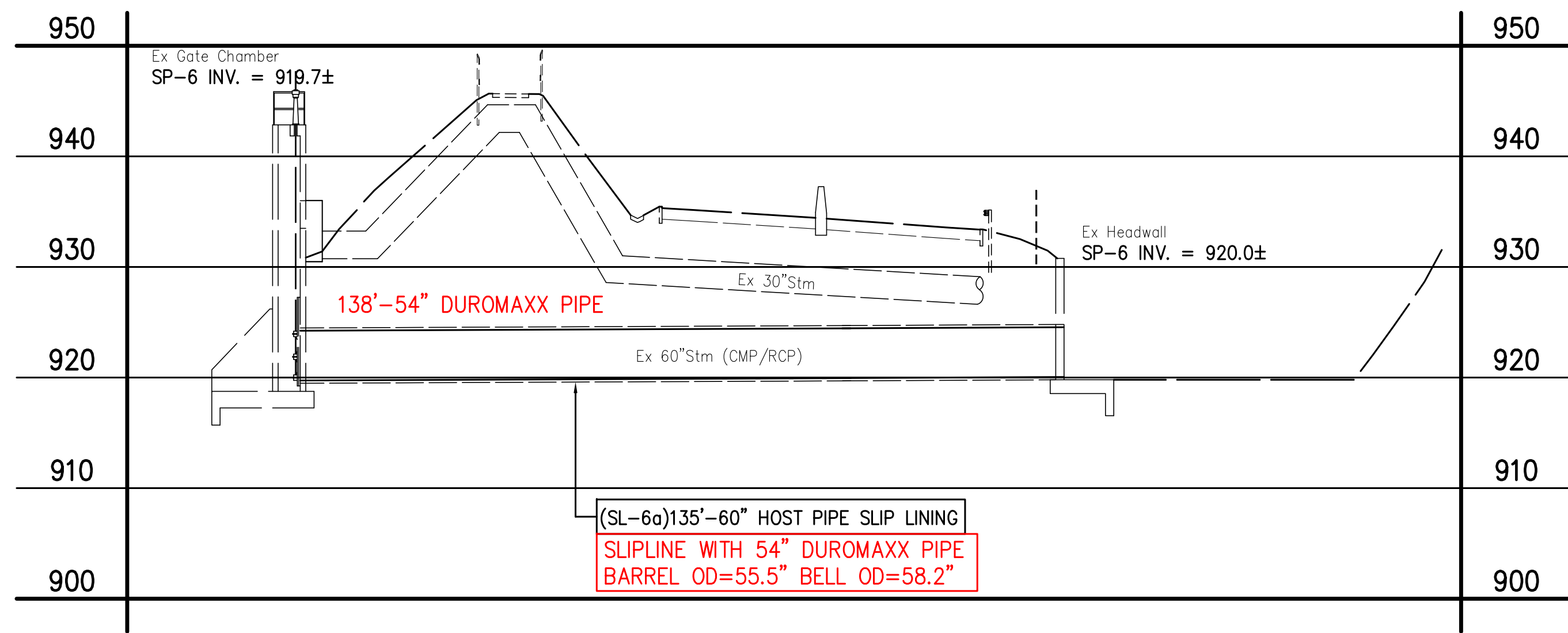
REF. No.	COORDINATE				810	810	811SPEC	811SPEC
	FROM		TO		48" HOST PIPE SLIP LINING	66" HOST PIPE SLIP LINING	42" HOST PIPE CAST IN PLACE GROUTING SLEEVE	42" CURED IN PLACE PIPE
	NORTH	EAST	NORTH	EAST	L.F.	L.F.	EACH	L.F.
SSS-3	417415.56	2237650.06					1	
SSS-3a	417435.59	2237692.78					1	400
SL-2	417337.19	2237561.41	417367.23	2237627.73	76	80		
SL-4	417458.35	2237826.62	417491.36	2237896.68			2	400
TOTALS CARRIED TO GENERAL SUMMARY					76	80	2	400



SL-4

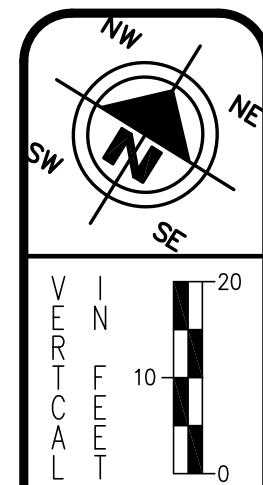


SL-6



SL-6a

REF. No.	COORDINATE				810	
					60" HOST PIPE SLIP LINING	
	FROM		TO			
	NORTH	EAST	NORTH	EAST		
SL-6	412891.24	2237519.22	412956.15	2237640.97	135	132
SL-6a	412883.82	2237523.03	412948.63	2237644.66	135	138
TOTALS CARRIED TO GENERAL SUMMARY					270	



HORIZONTAL
SCALE IN FEET

CHECKED BY:
KAD
DATE:
Aug, 2012
DRAWN BY:
FPW
DATE:
Aug, 2012

REVISIONS:	DATE	DESCRIPTION
	1/2015	AS-BUILT

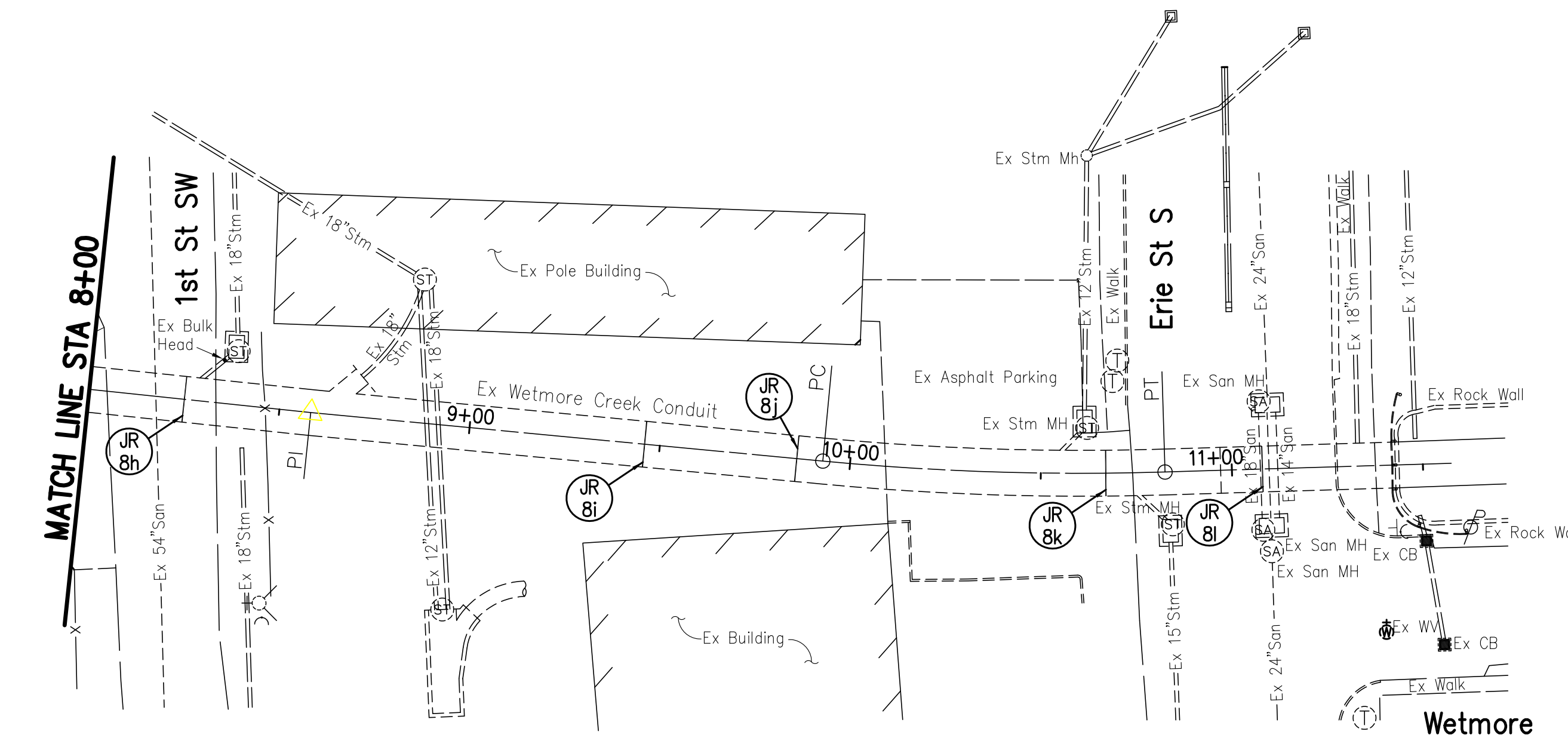
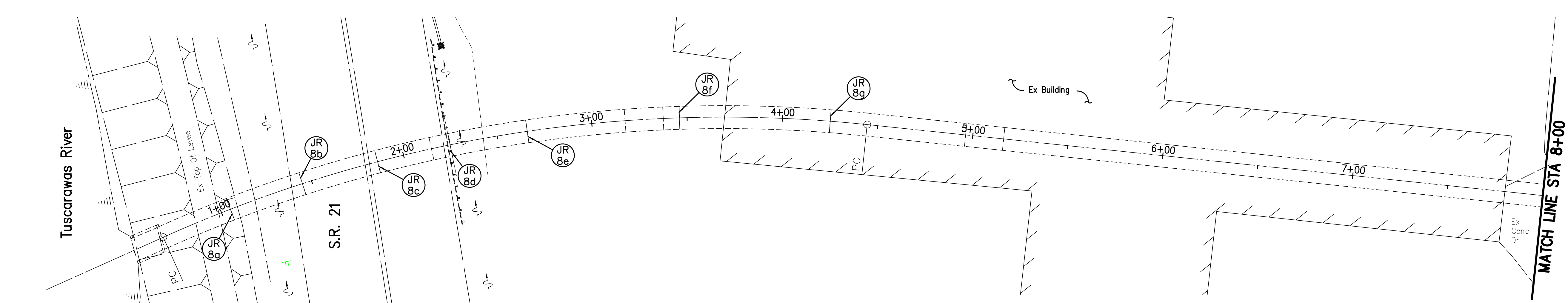
Levee Infrastructure Improvement Project
SL-6, SL-6a Plan and Profile
City of Massillon
Stark County, Ohio

Kathy Catzaro-Perry, Mayor
Massillon
City of Champions

DRAWING NAME:
Leveeip32-36pp.dwg

CITY NUMBER:
101v01

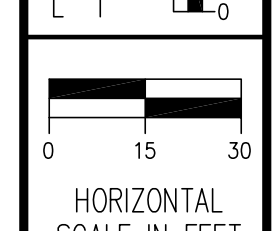
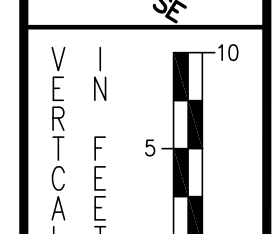
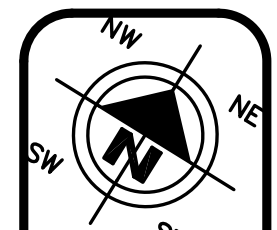
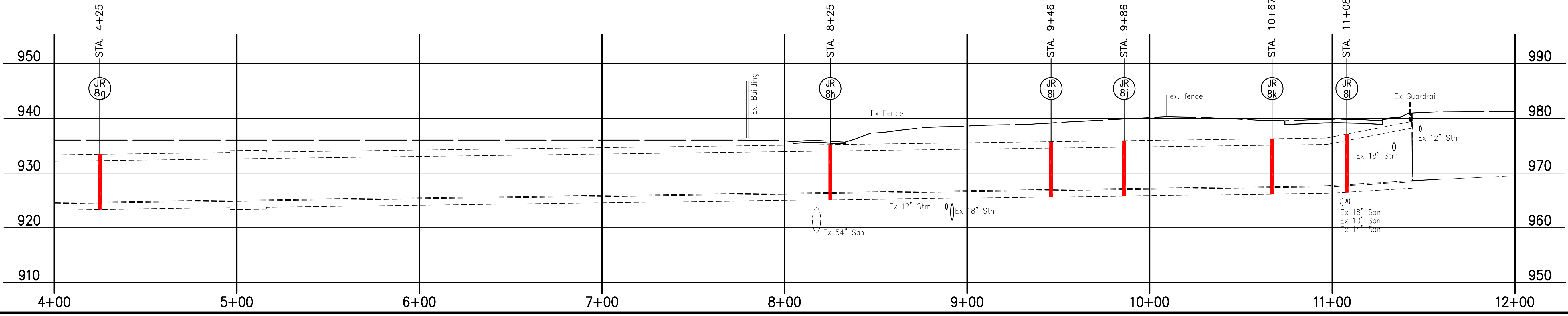
7 / 18



JOINT REPAIR WITH (SikaFix HH Hydrophilic.)

REF. No.	STATION		813	
	TO	FROM	12"x7'9" CULVERT JOINT REPAIR	
JR-8a	1+05		EACH	
JR-8b	1+45		1	
JR-8c	1+86		1	
JR-8d	2+25		1	
JR-8e	2+66		1	
JR-8f	3+46		1	
TOTALS CARRIED TO GENERAL SUMMARY			6	

REF. No.	STATION		813	
	TO	FROM	12"x7'9" CULVERT JOINT REPAIR	
JR-8g	4+25		1	
JR-8h	8+25		1	
JR-8i	9+46		1	
JR-8j	9+86		1	
JR-8k	10+67		1	
JR-8l	11+08		1	
TOTALS CARRIED TO GENERAL SUMMARY			6	



CHECKED BY: KAD
DATE: Aug, 2012
DRAWN BY: FPW
DATE: Aug, 2012

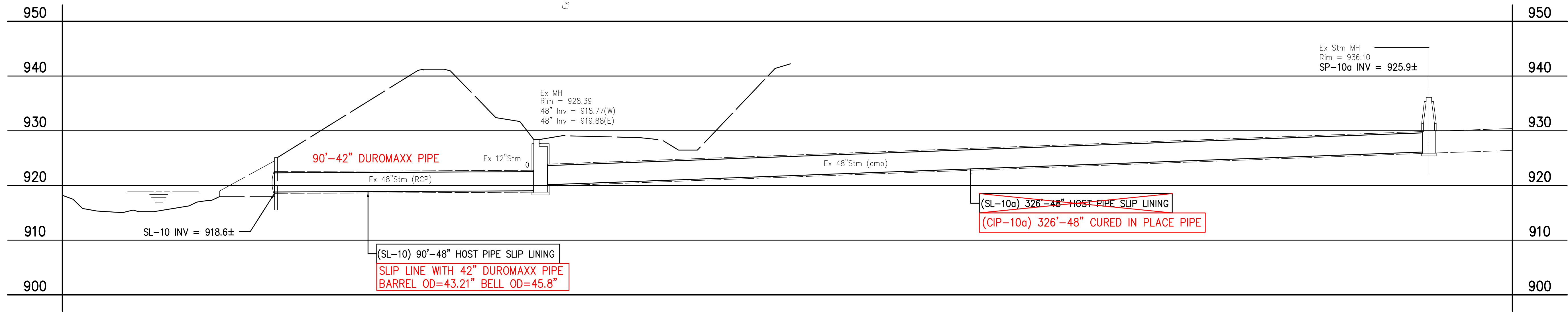
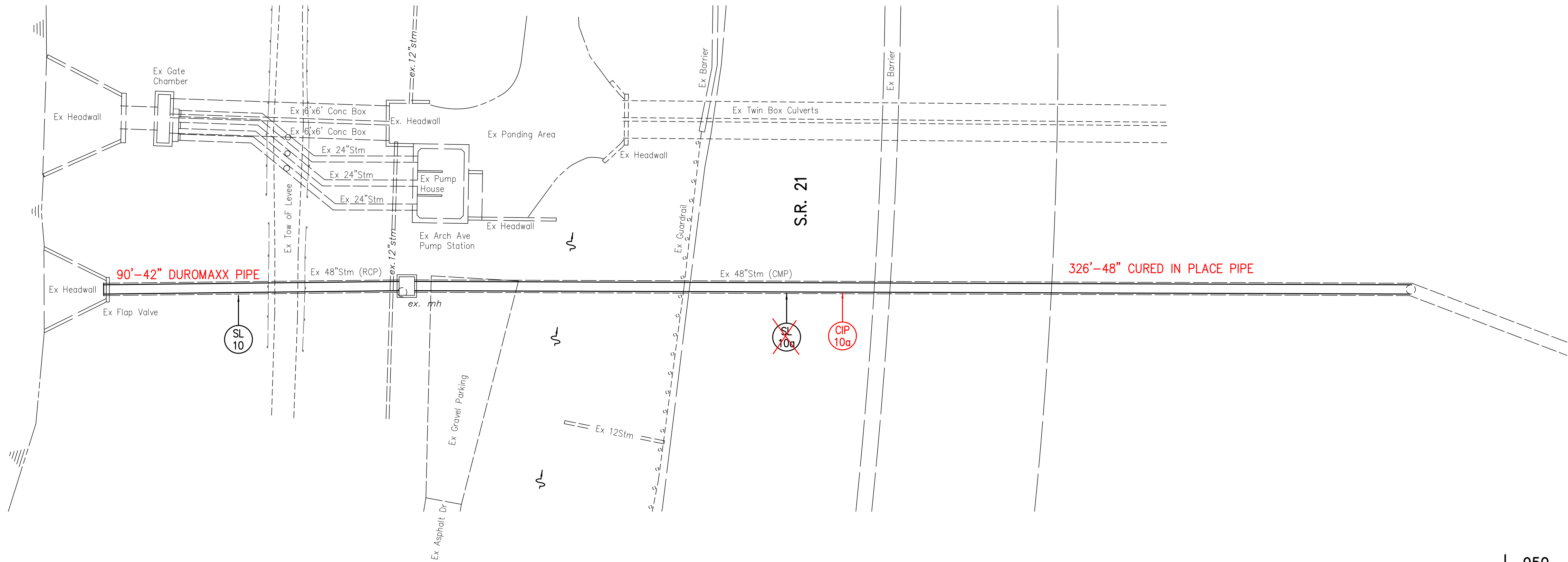
REVISIONS:	DESCRIPTION
1/2015	AS-BUILT

Levee Infrastructure Improvement Project
JR-8a - JR-8l Plan and Profile
City of Massillon
Stark County, Ohio

Kathy Catzaro-Perry, Mayor
Massillon
City of Champions

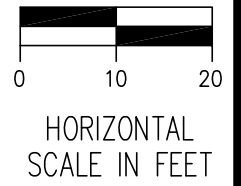
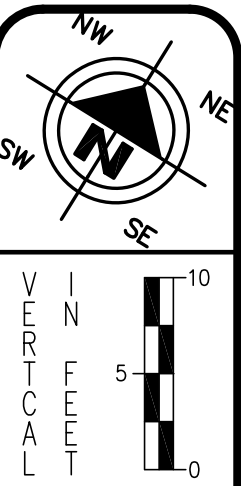
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CITY NUMBER: 101v01
8 / 18

Tuscarawas River



SP-10 and SP-10a CIP-10a

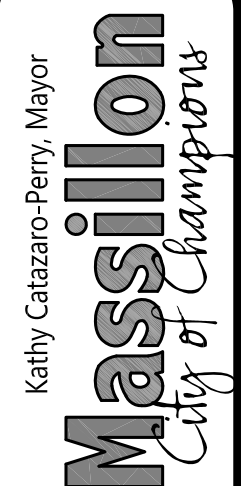
REF. No.	COORDINATE				810	811
	FROM		TO		48" HOST PIPE SLIP LINING	48" CURED IN PLACE PIPE
	NORTH	EAST	NORTH	EAST	L.F.	
SL-10	408278.51	2240233.53	408342.00	2240306.27	90	
SL-10a	408342.00	2240306.27	408559.54	2240549.32	326	326
TOTALS CARRIED TO GENERAL SUMMARY					90 416	416



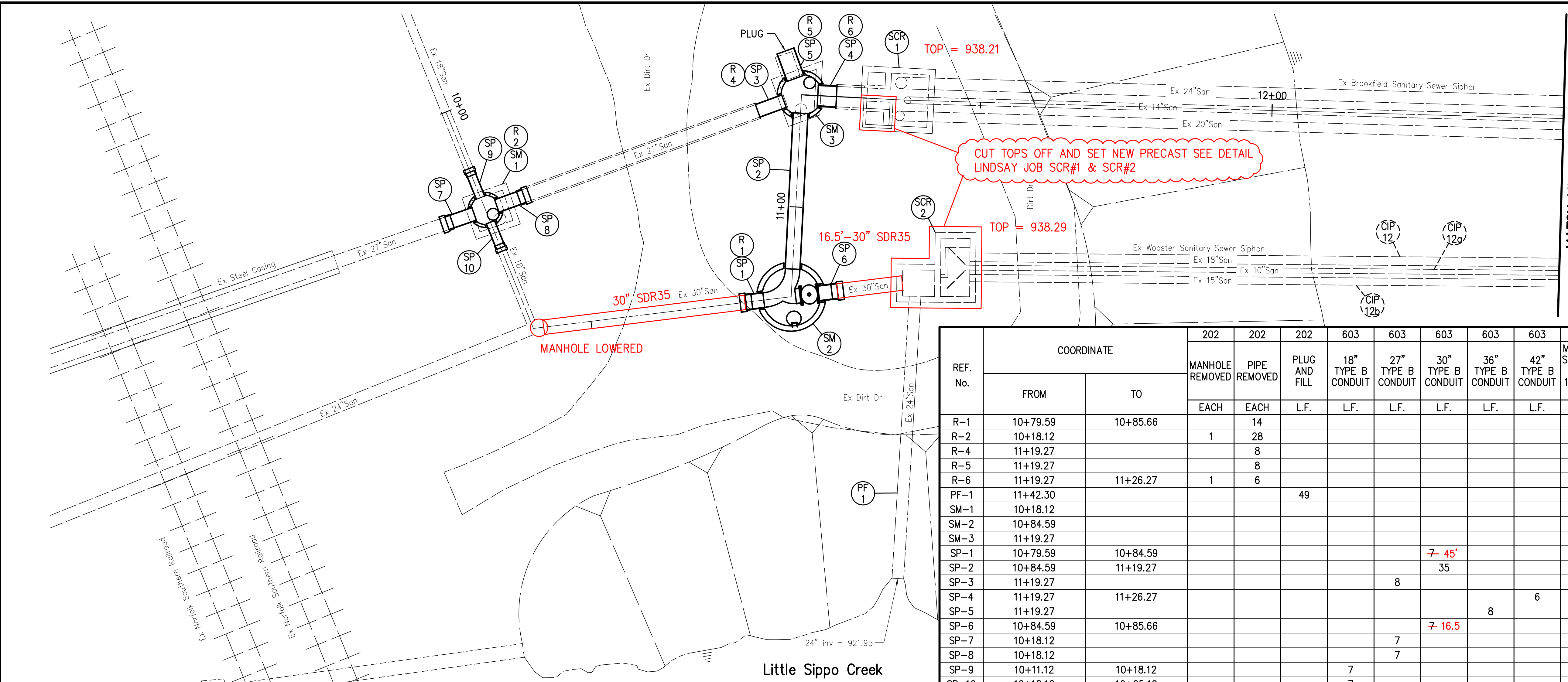
CHECKED BY:
KAD
DATE:
Aug, 2012
DRAWN BY:
FPW
DATE:
Aug, 2012

REVISIONS:	DATE	DESCRIPTION
	1/2015	AS-BUILT

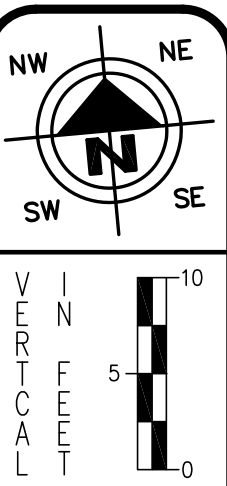
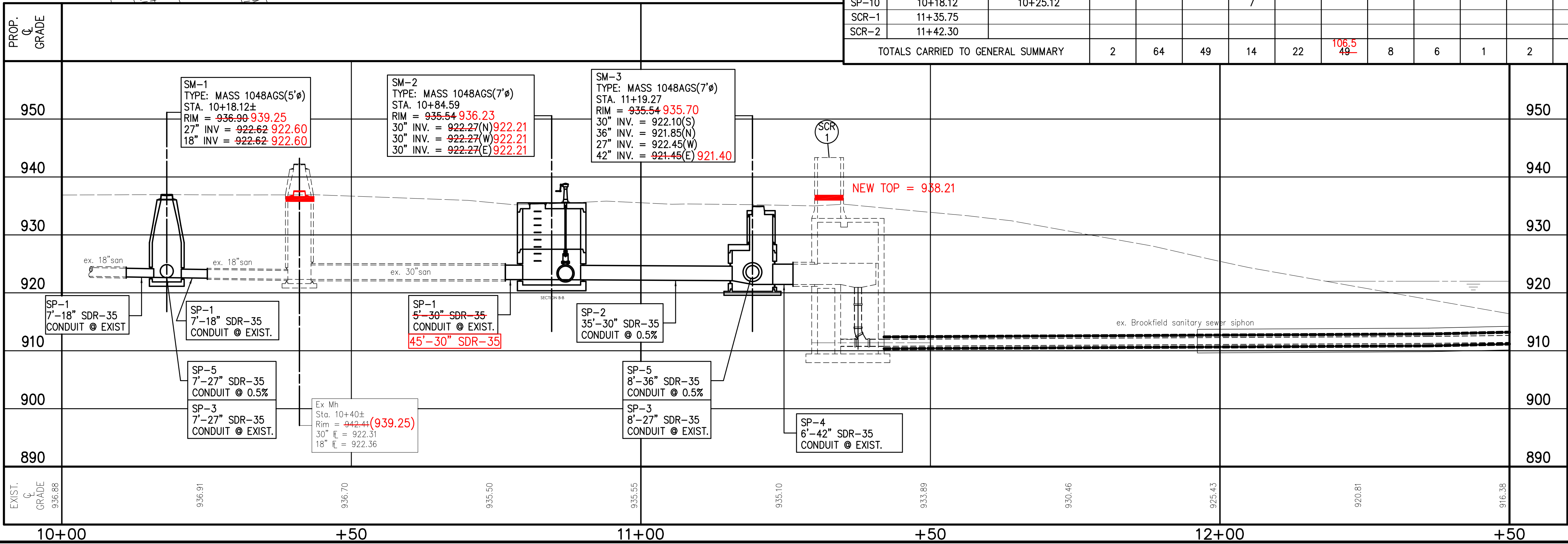
Levee Infrastructure Improvement Project
SP-10, SP-10a Pump Station Plan and Profile
City of Massillon
Stark County, Ohio



DRAWING NAME:
Leveespipe10-10app-SH19
CITY NUMBER:
10Iv01
9 / 18



REF. No.	COORDINATE		202	202	202	603	603	603	603	603	604	604	604SPEC
			MANHOLE REMOVED	PIPE REMOVED	PLUG AND FILL	18" TYPE B CONDUIT	27" TYPE B CONDUIT	30" TYPE B CONDUIT	36" TYPE B CONDUIT	42" TYPE B CONDUIT	MANHOLE SANITARY MASS 1048AGS (5'Ø)	MANHOLE SANITARY MASS 2810 (10'Ø)	SANITARY SIPHON CHAMBER REHAB
	FROM	TO	EACH	EACH	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EACH	EACH	EACH
R-1	10+79.59	10+85.66		14									
R-2	10+18.12		1	28									
R-4	11+19.27			8									
R-5	11+19.27			8									
R-6	11+19.27	11+26.27	1	6									
PF-1	11+42.30				49						1		
SM-1	10+18.12											1	
SM-2	10+84.59												1
SM-3	11+19.27											1	
SP-1	10+79.59	10+84.59						-7' 45'					
SP-2	10+84.59	11+19.27											
SP-3	11+19.27						8						
SP-4	11+19.27	11+26.27								6			
SP-5	11+19.27								8				
SP-6	10+84.59	10+85.66						-7' 16.5					
SP-7	10+18.12						7						
SP-8	10+18.12						7						
SP-9	10+11.12	10+18.12				7							
SP-10	10+18.12	10+25.12				7							
SCR-1	11+35.75												1
SCR-2	11+42.30												1
TOTALS CARRIED TO GENERAL SUMMARY			2	64	49	14	22	108.5	8	6	1	2	2



HORIZONTAL SCALE IN FEET

CHECKED BY: KAD
DATE: MAY, 2012
DRAWN BY: FPW
DATE: MAY, 2012

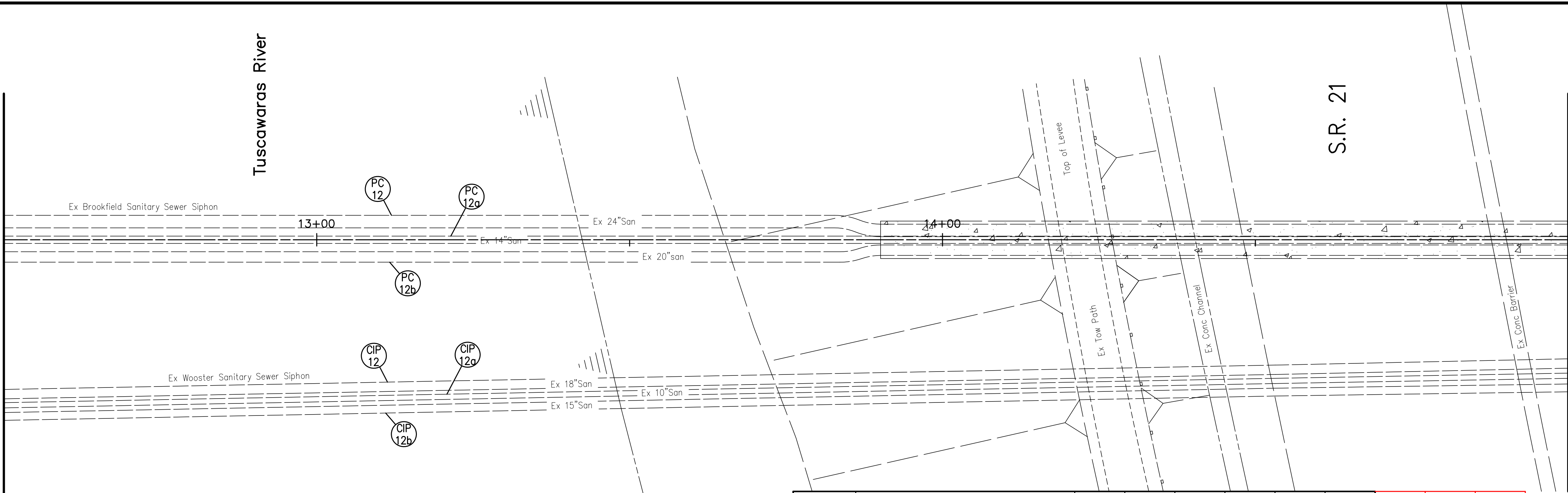
REVISIONS:	DESCRIPTION
DATE	1/2015
AS-BUILT	

Levee Infrastructure Improvement Project
Plan and Profile Sta. 10+00 to Sta. 12+50
City of Massillon
Stark County, Ohio

Kathy Catzaro-Perry, Mayor
Massillon
City of Champions

DRAWING NAME:
BrookfieldSiphonPP1-SM10
CITY NUMBER:
101v01
10/18

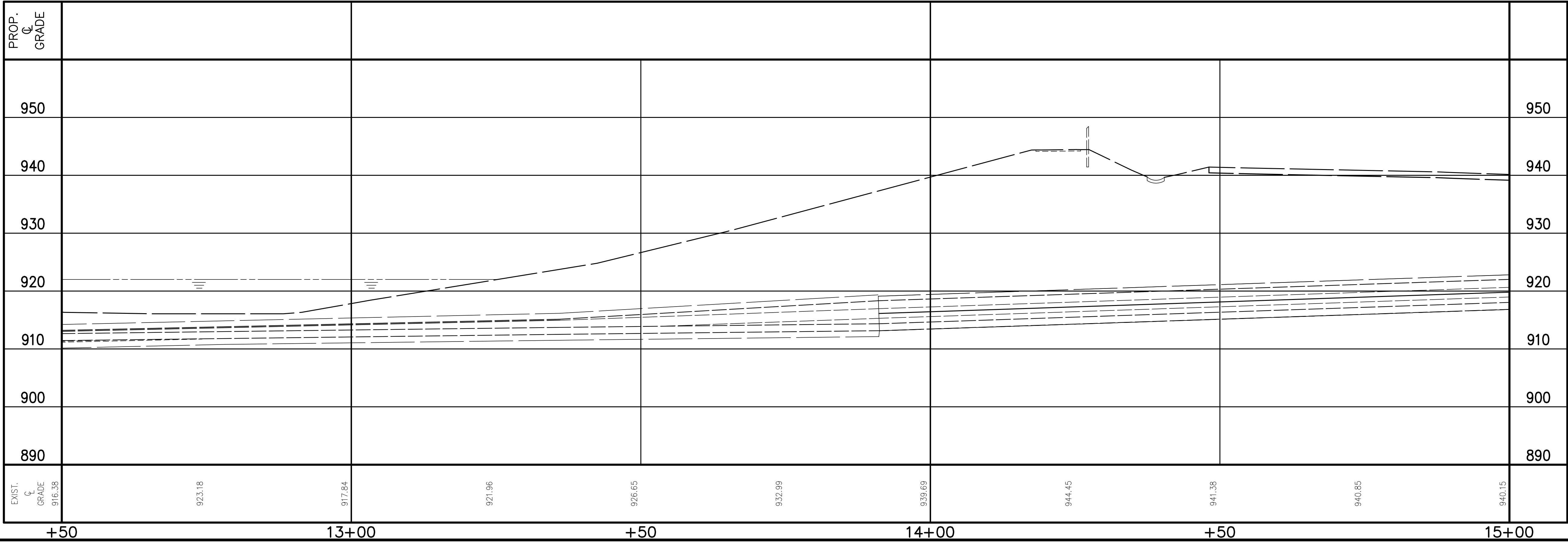
MATCH LINE STA 12+50



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 SIKA 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	811	811	811	811	811	811
	FROM	TO	10" CURED IN PLACE PIPE	15" CURED IN PLACE PIPE	18" CURED IN PLACE PIPE	14" REPLACE PROTECTIVE COATING (EPOXY)	20" REPLACE PROTECTIVE COATING (EPOXY)	24" REPLACE PROTECTIVE COATING (EPOXY)	14" CURED IN PLACE PIPE	20" CURED IN PLACE PIPE	24" CURED IN PLACE PIPE
			L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	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							
PC-11	11+35.75	15+75.53						-460-			460
PC-11a	11+35.75	15+75.53				-460-			460		
PC-11b	11+35.75	15+75.53					-460-			460	
TOTALS CARRIED TO GENERAL SUMMARY			440	440	440	460	460	460	440	440	440



NWNE
SWSE

VERTICAL SCALE
1"=20'

01020

01020

CHECKED BY:
KAD

DATE:
Aug, 2012

DRAWN BY:
FPW

DATE:
Aug, 2012

REVISIONS:

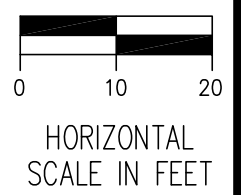
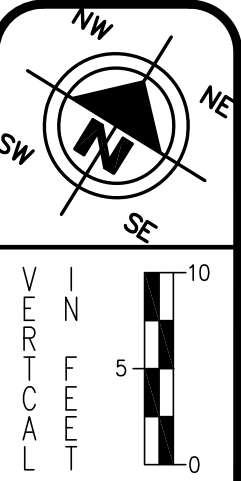
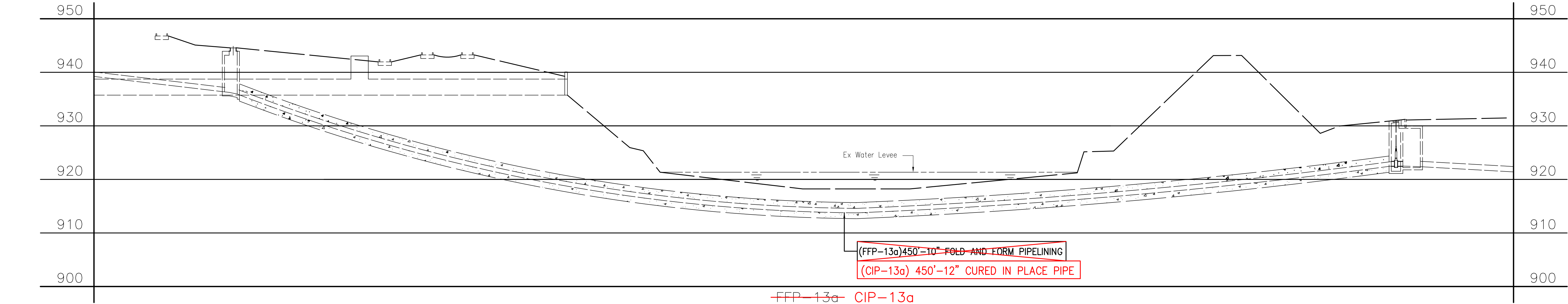
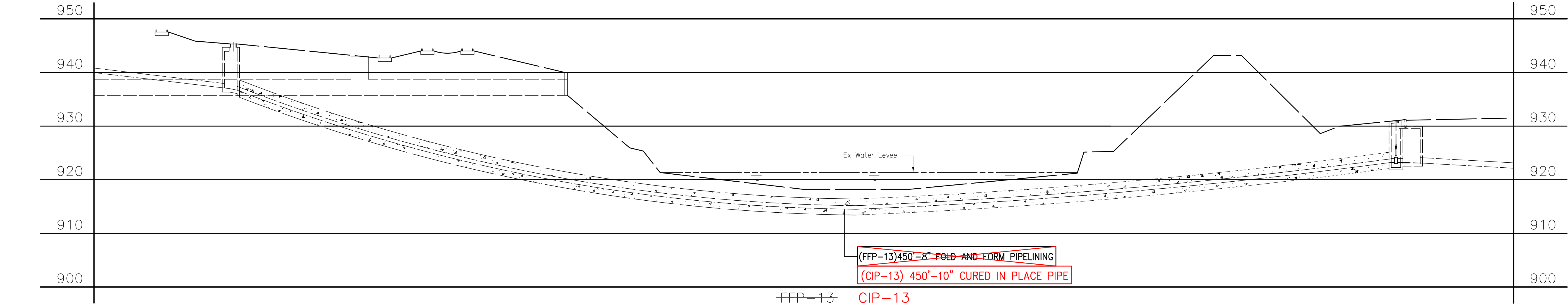
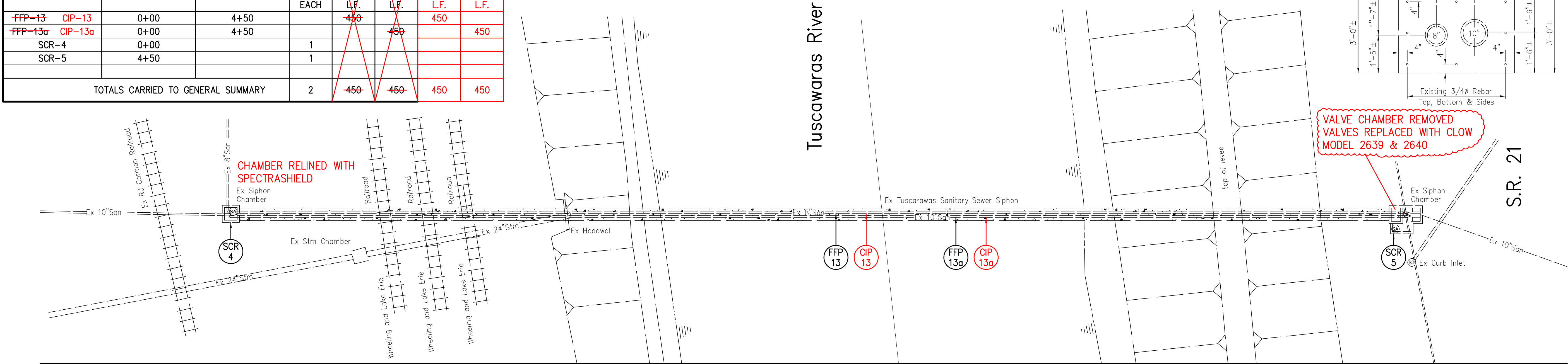
DATE	DESCRIPTION
1/2015	AS-BUILT

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

Kathy Catanzaro-Perry, Mayor
Massillon
City of Champions

DRAWING NAME:
BrookfieldSiphonPP2-SH11
CITY NUMBER:
101w01
11 / 18

REF. No.	STATION		604SPEC	811	811	811	811
	FROM	TO	SANITARY SIPHON CHAMBER REHAB.	8" FOLD AND FORM PIPE LINING	10" FOLD AND FORM PIPE LINING	10" CURED IN PLACE PIPE	12" CURED IN PLACE PIPE
FFP-13	CIP-13	0+00	4+50				
FFP-13a	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	450	450



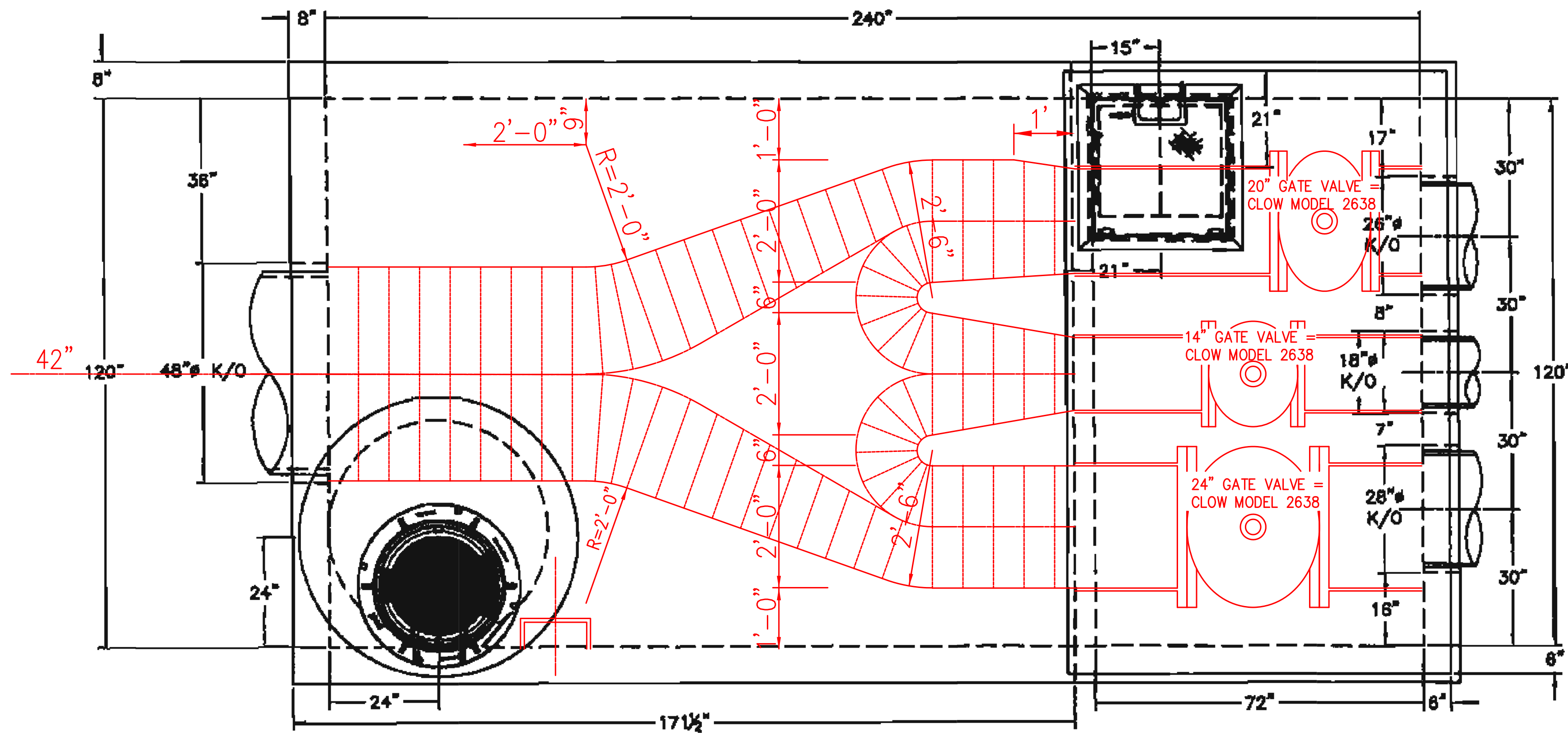
CHECKED BY:
KAD
DATE:
Aug, 2012
DRAWN BY:
FPW
DATE:
Aug, 2012

REVISIONS:	DATE	DESCRIPTION
	1/2015	AS-BUILT

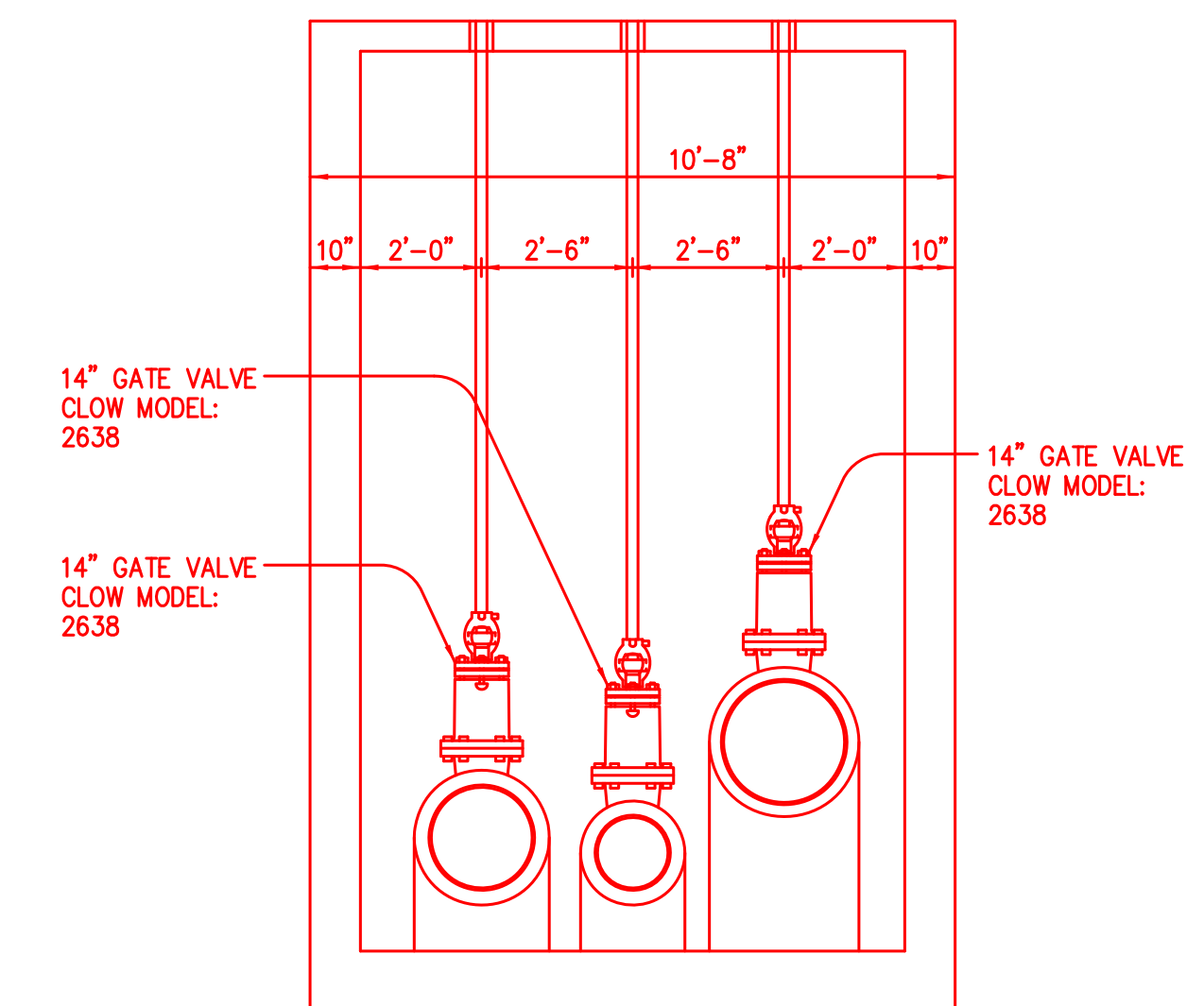
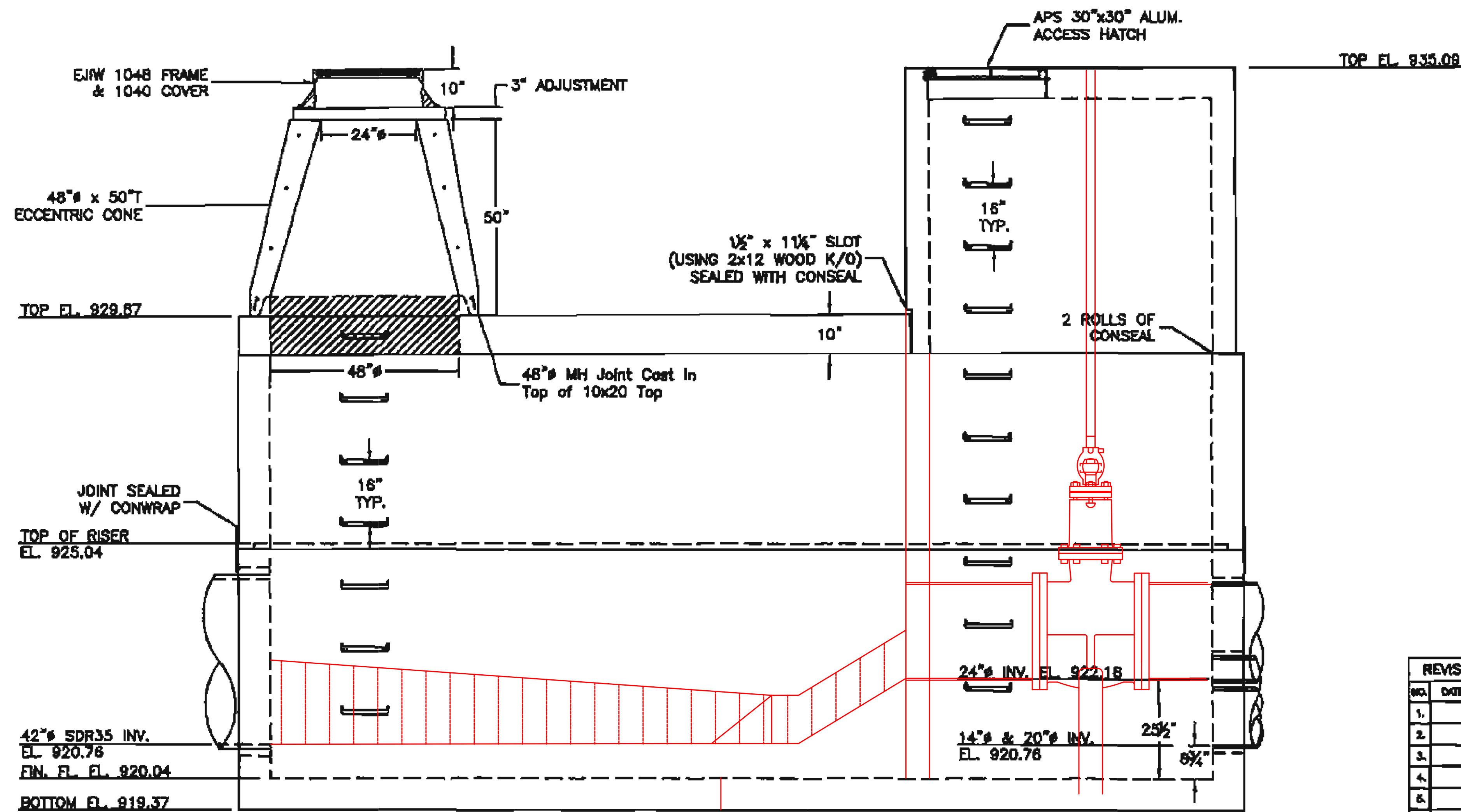
Levee Infrastructure Improvement Project
FFP-13 and CIP-13a
CIP-13 and CIP-13a
City of Massillon
Stark County, Ohio

Kathy Catzaro-Perry, Mayor
Massillon
City of Champions

DRAWING NAME:
LeveePipe12-12app-Sht13
CITY NUMBER:
101w01



- NOTES:**
1. CONCRETE TO BE A MIN. OF 5,000 PSI AT 28 DAYS.
 2. VAULT WALLS TO BE DESIGNED FOR HS-20 LOADING.
 3. REINFORCING STEEL TO BE ASTM A615-A617 60,000 PSI YIELD STRENGTH.
 4. ALL JOINTS TO BE SEALED WITH CS-102 JOINT SEALANT, PRIMER, & CONWRAP.
 5. WEIGHTS:
 BASE=27.89 TONS
 RISER=12.60 TONS
 LID=10.12 TONS
 6x10=10.78 TONS



REVISIONS		
NO.	DATE	BY
1.		
2.		
3.		
4.		
5.		
6.		

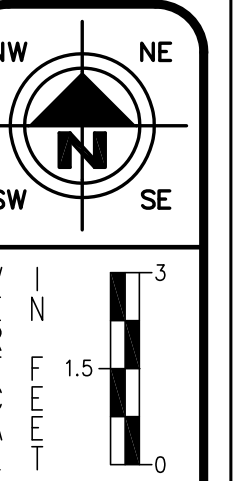
Lindsay
PRECAST

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CUSTOMER:
WENGER EXCAVATING

JOB:
MASSILLON LEVEE OUTLET CHAMBER

DRAWN BY: [signature] CHECKED BY: [signature] DATE: 10/10/14



HORIZONTAL SCALE IN FEET

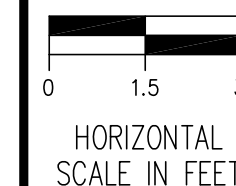
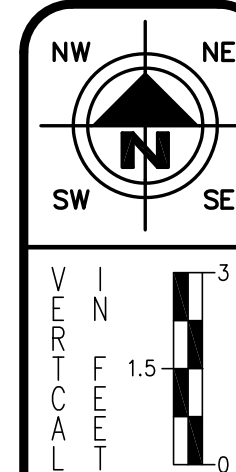
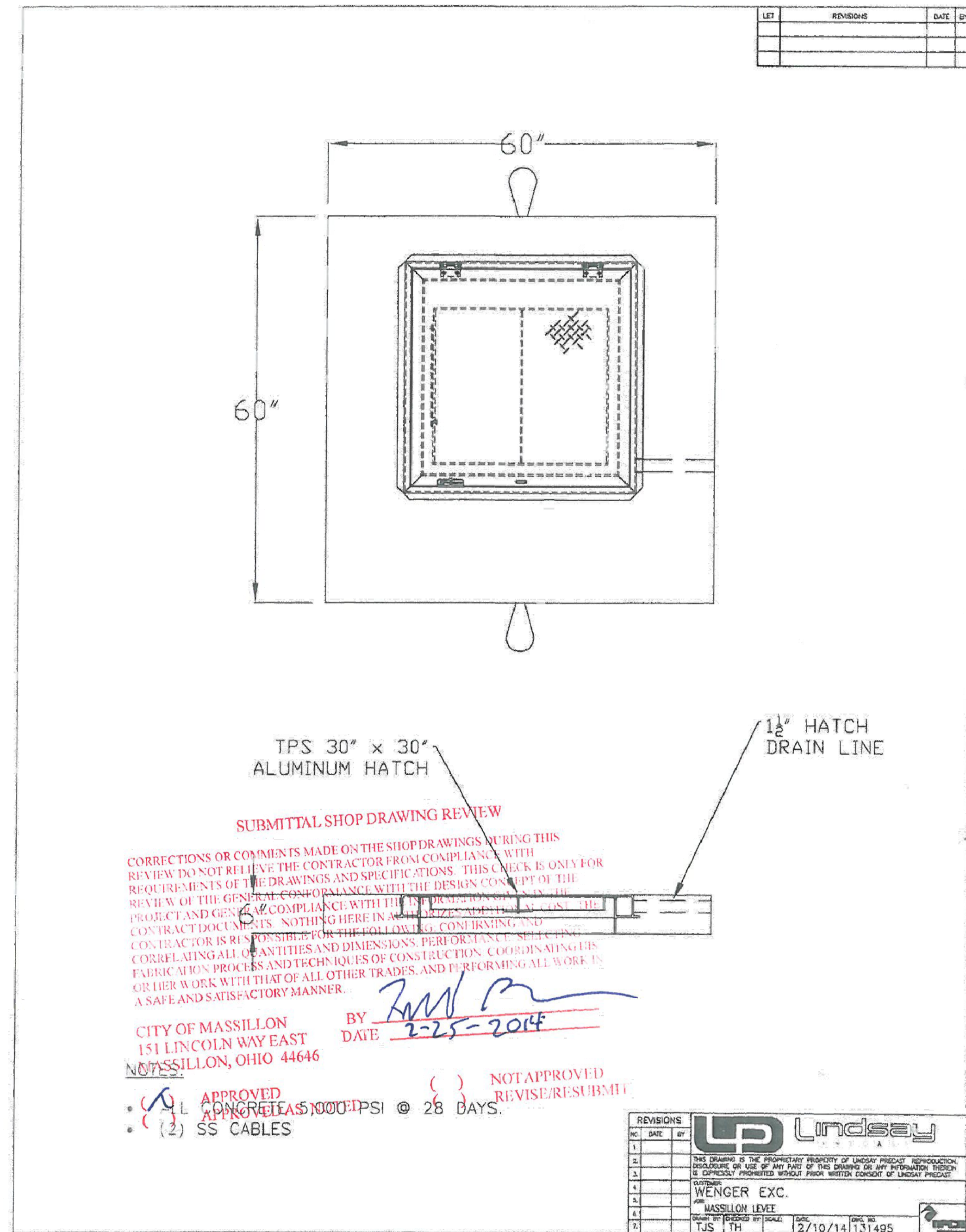
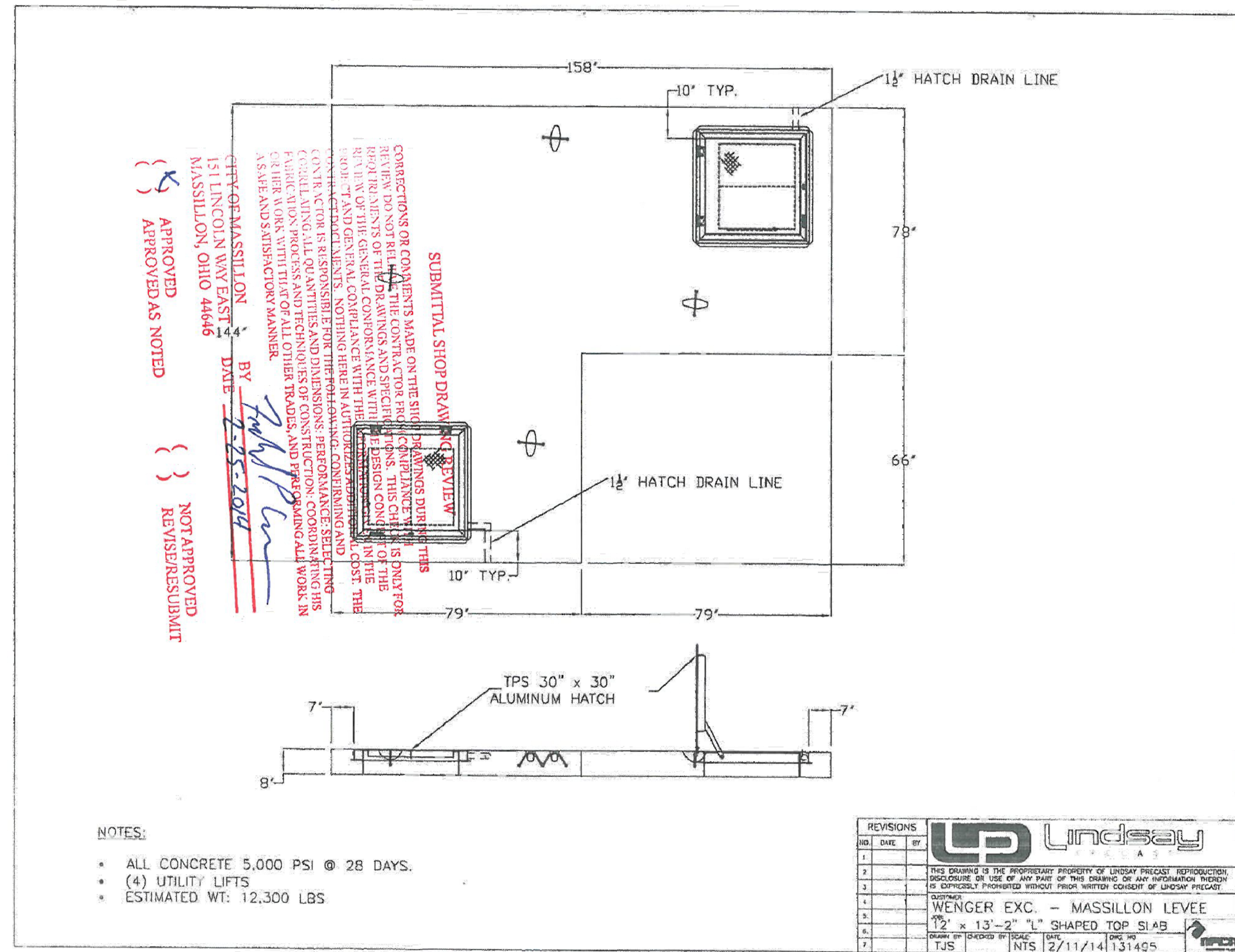
CHECKED BY: KAD
 DATE: Aug. 2012
 DRAWN BY: FPW
 DATE: Aug. 2012

REVISIONS:	DESCRIPTION
1/2014	AS-BUILT

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

Kathy Catanzaro-Perry, Mayor
Massillon
 City of Champions

DRAWING NAME:
Siphon Chamber Detail-SC14
 CITY NUMBER:
101001



CHECKED BY: KAD
DATE: Aug. 2012
DRAWN BY: FPW
DATE: Aug. 2012

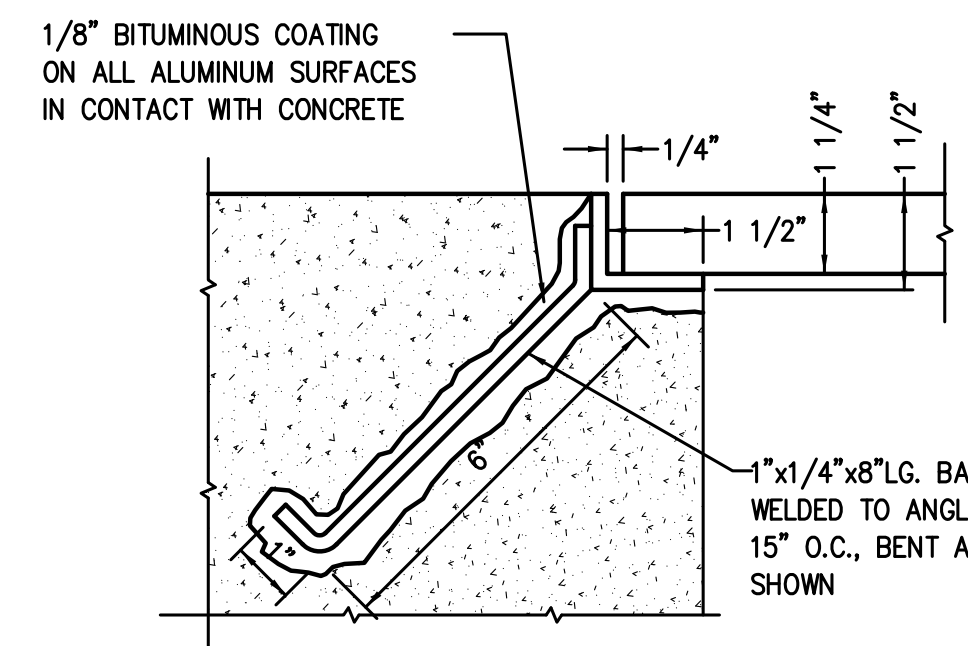
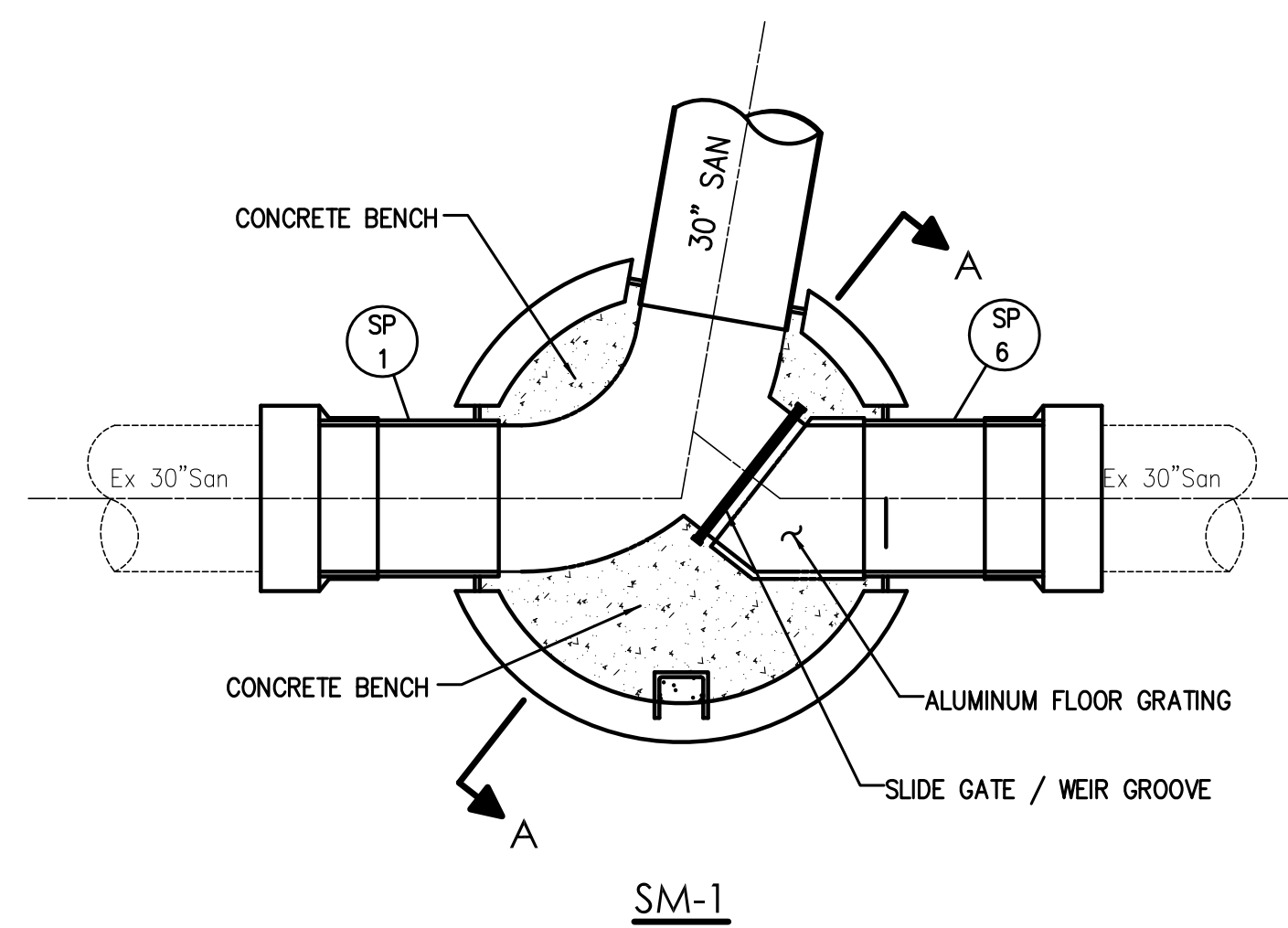
REVISIONS:	DATE	DESCRIPTION
	1/2015	AS-BUILT

Levee Infrastructure Improvement Project
Siphon Chamber Sta. 594+66
City of Massillon
Stark County, Ohio

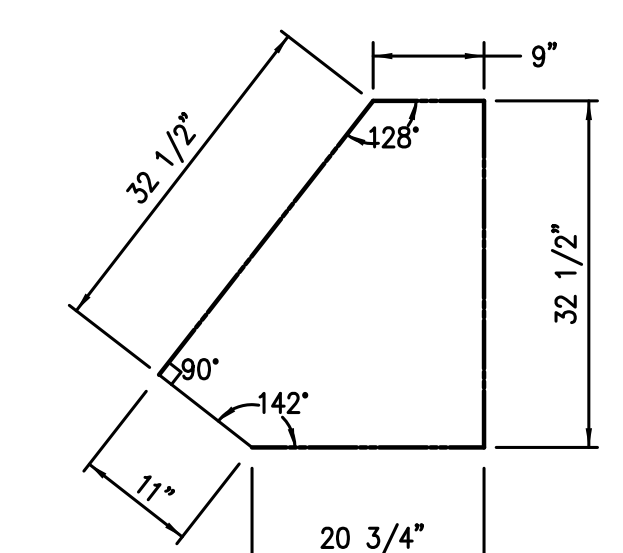
SCR#1 & SCR#2

Kathy Catanzaro-Perry, Mayor
Massillon
City of Champions

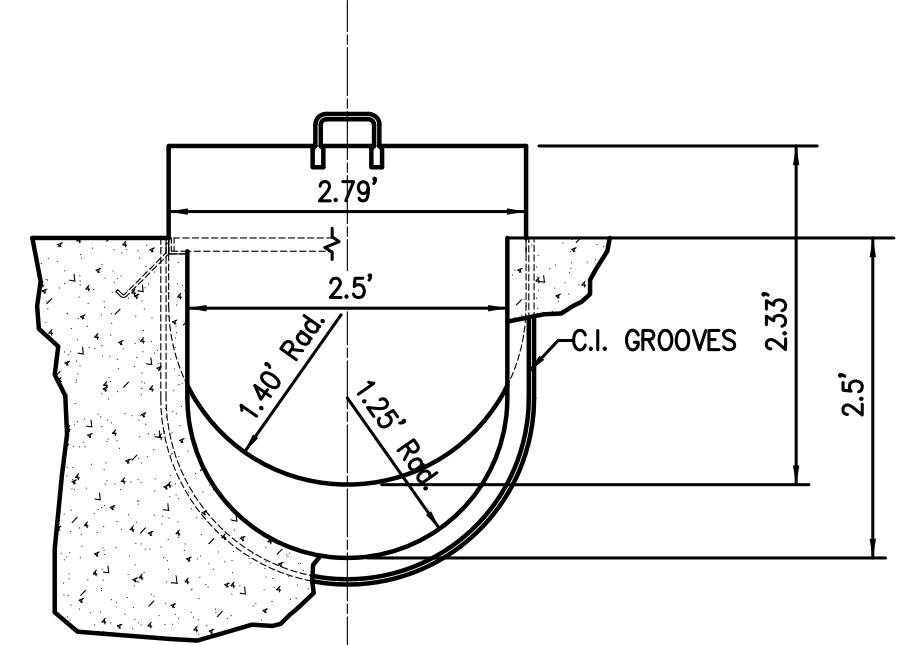
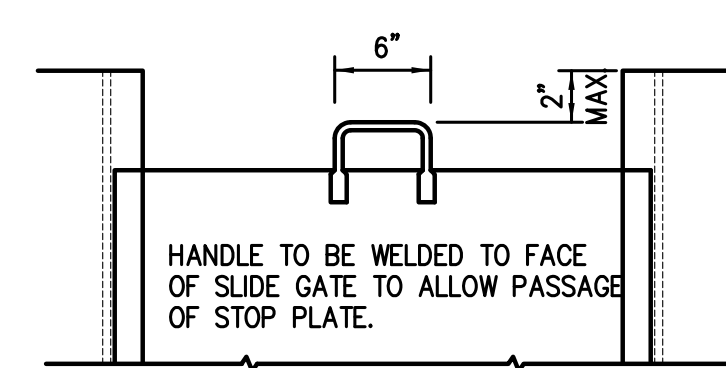
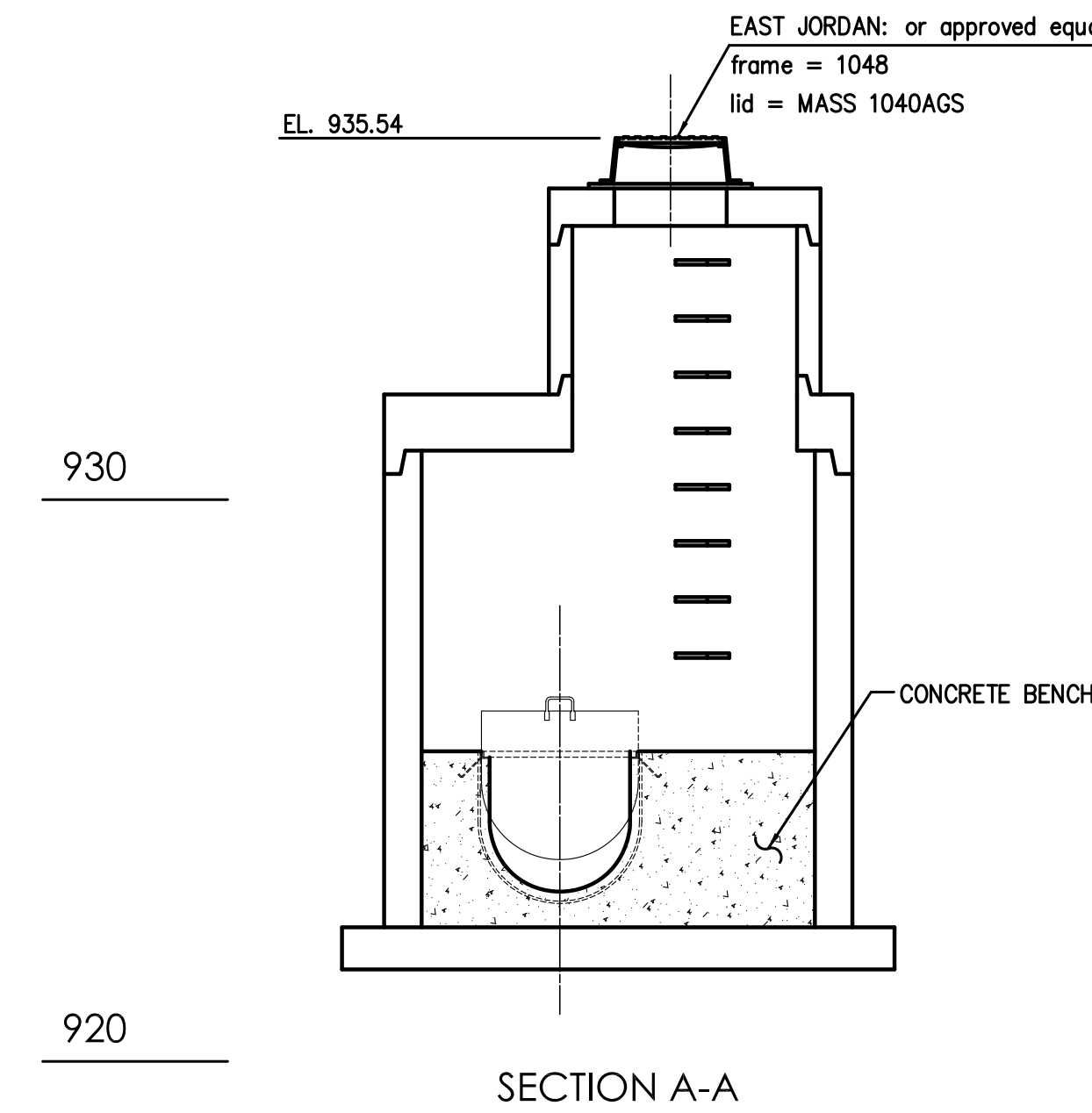
DRAWING NAME: Siphon Chamber Rebar-SH15
CITY NUMBER: 101001
15/18



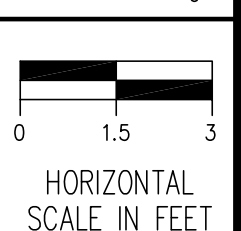
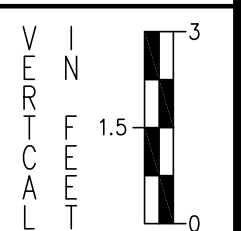
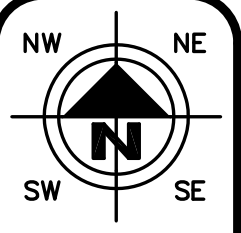
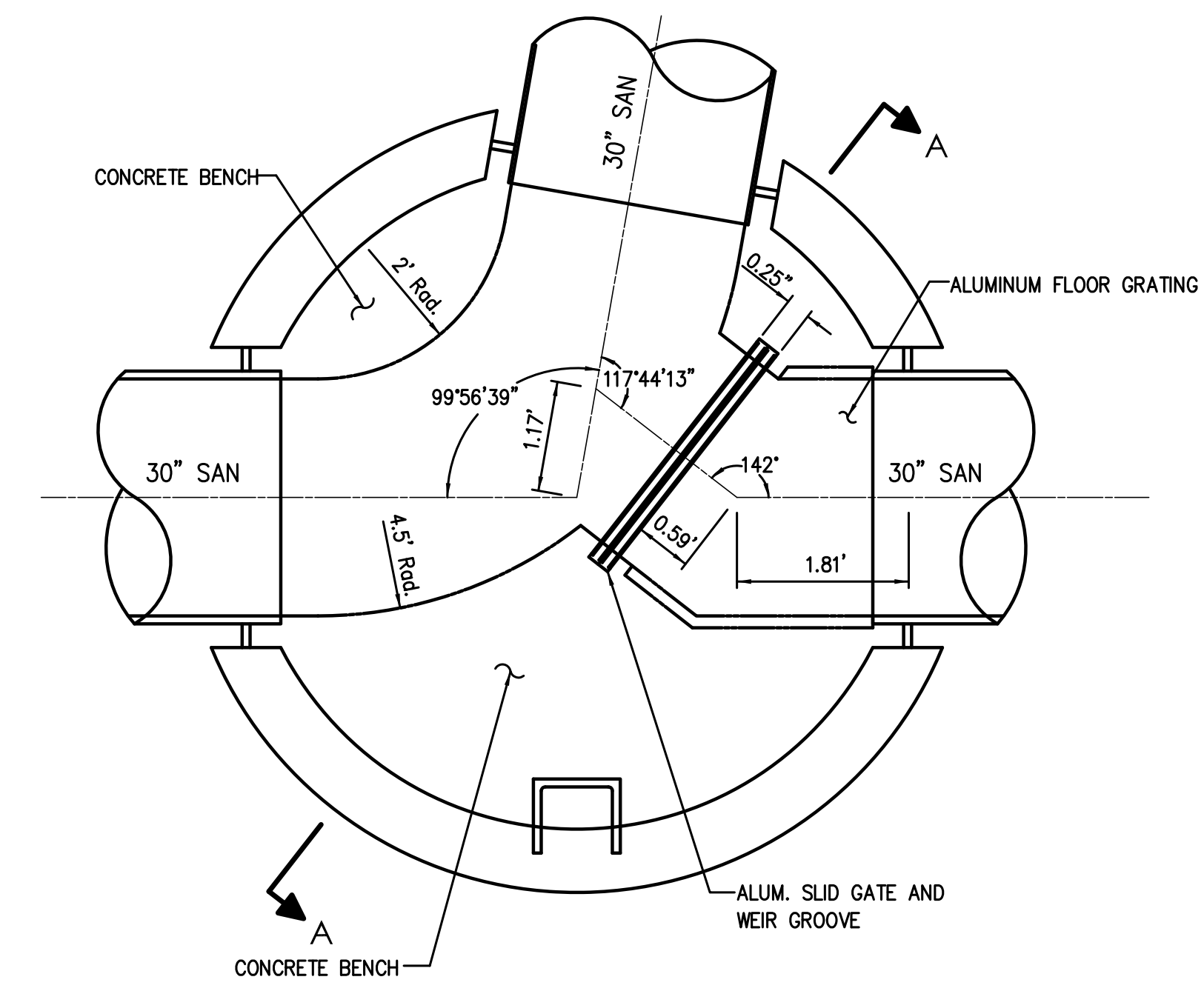
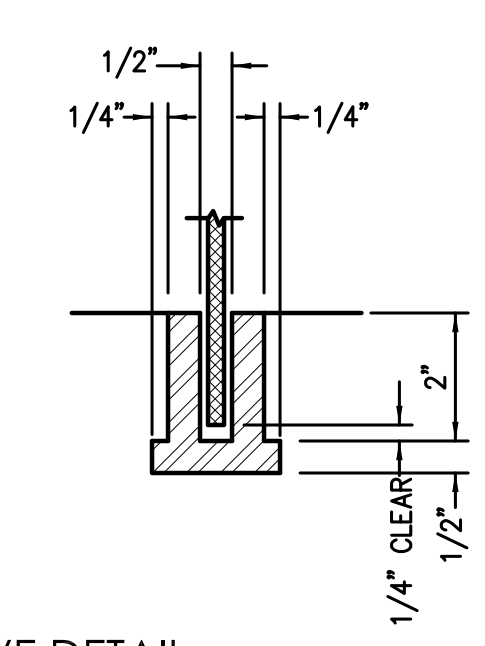
FLOOR GRATING DETAIL



ALUMINUM FLOOR GRATING



SLIDE GATE / WEIR GROOVE DETAIL



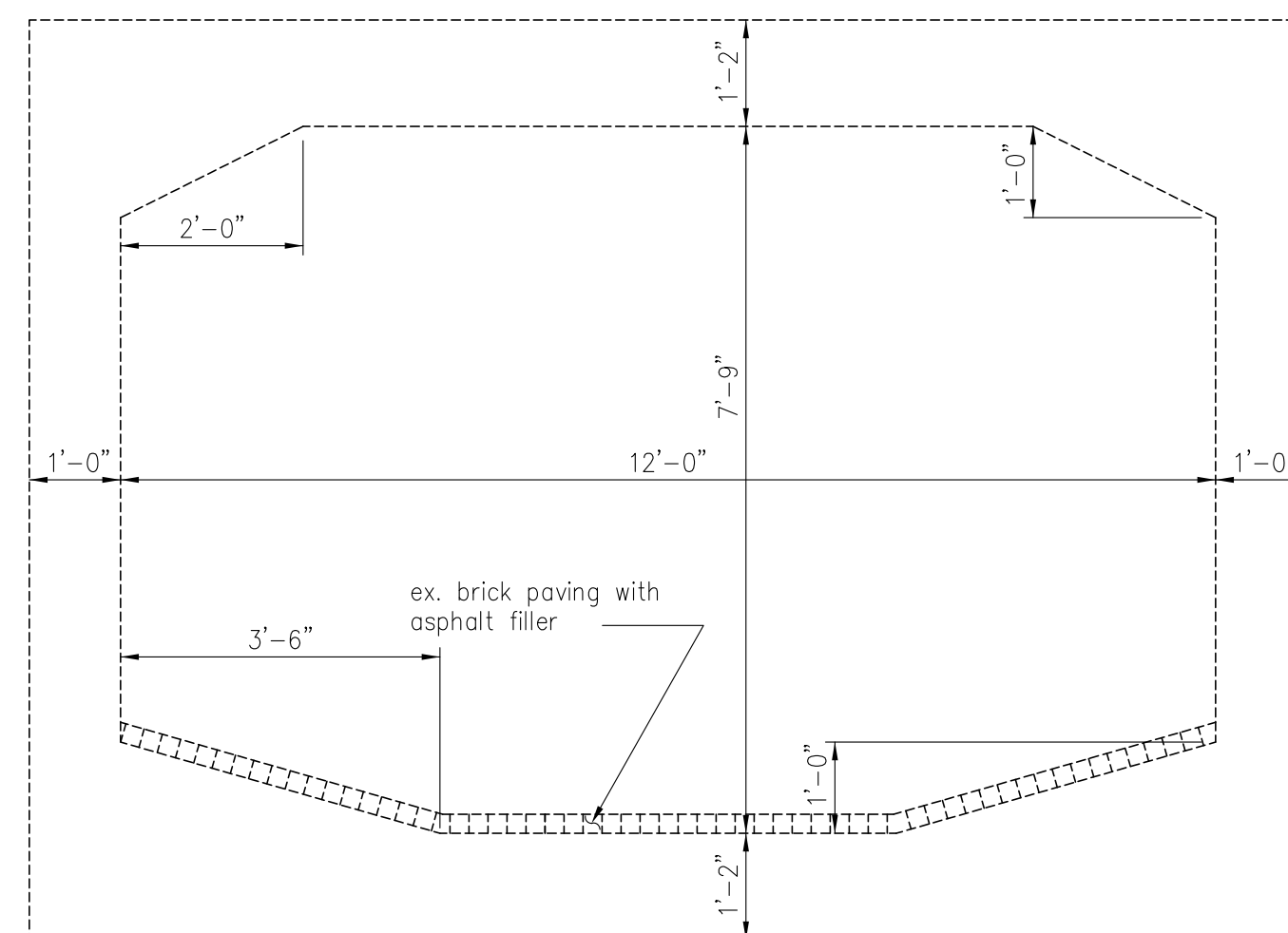
CHECKED BY:	KAD
DATE:	Aug, 2012
DRAWN BY:	FPW
DATE:	Aug, 2012

REVISIONS:	DESCRIPTION
DATE	

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

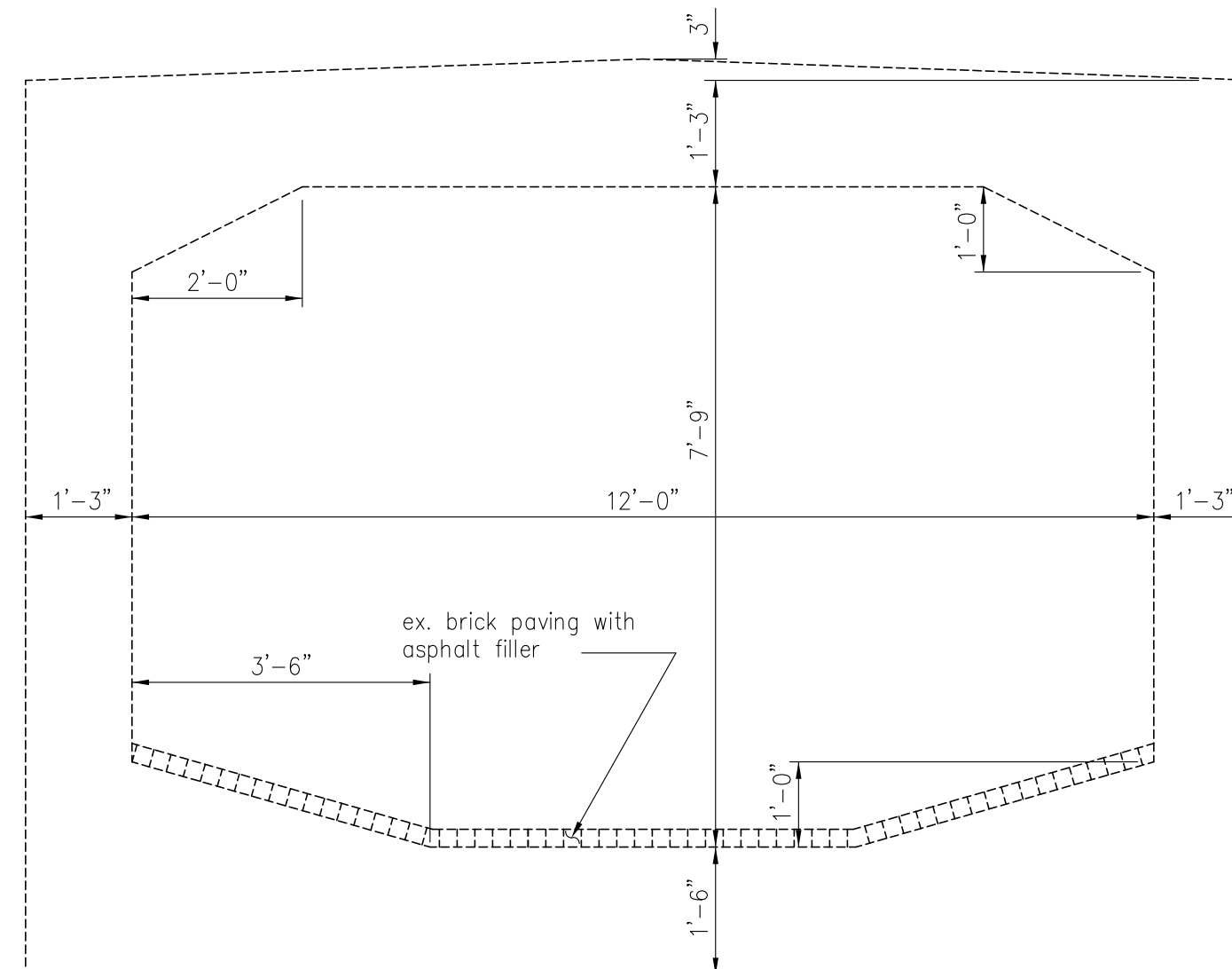
Kathy Catzaro-Perry, Mayor
Massillon
City of Champions

DRAWING NAME:	SiphonChamberDetail-Sh11R
CITY NUMBER:	101v01



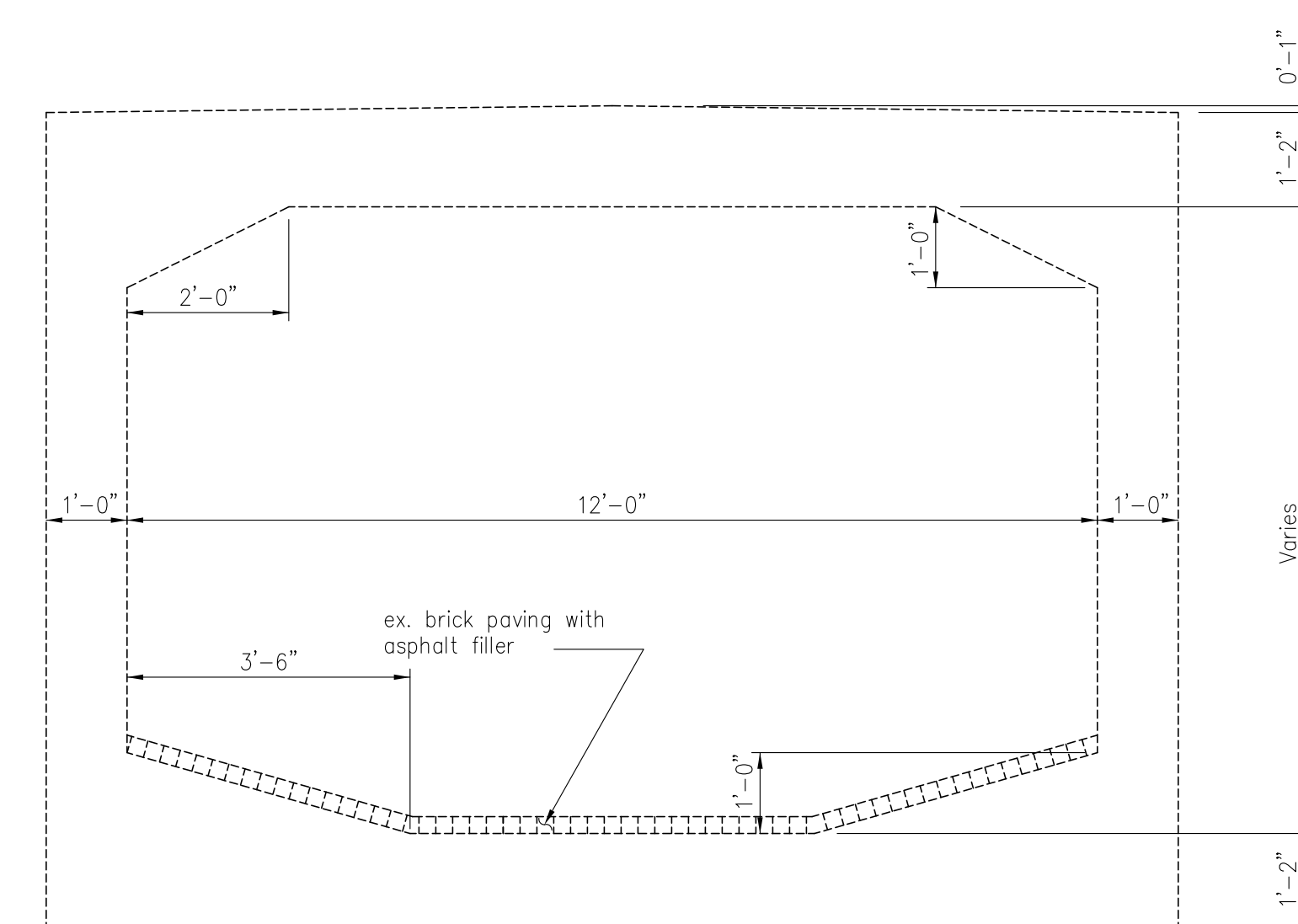
Typical Section No. 1

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



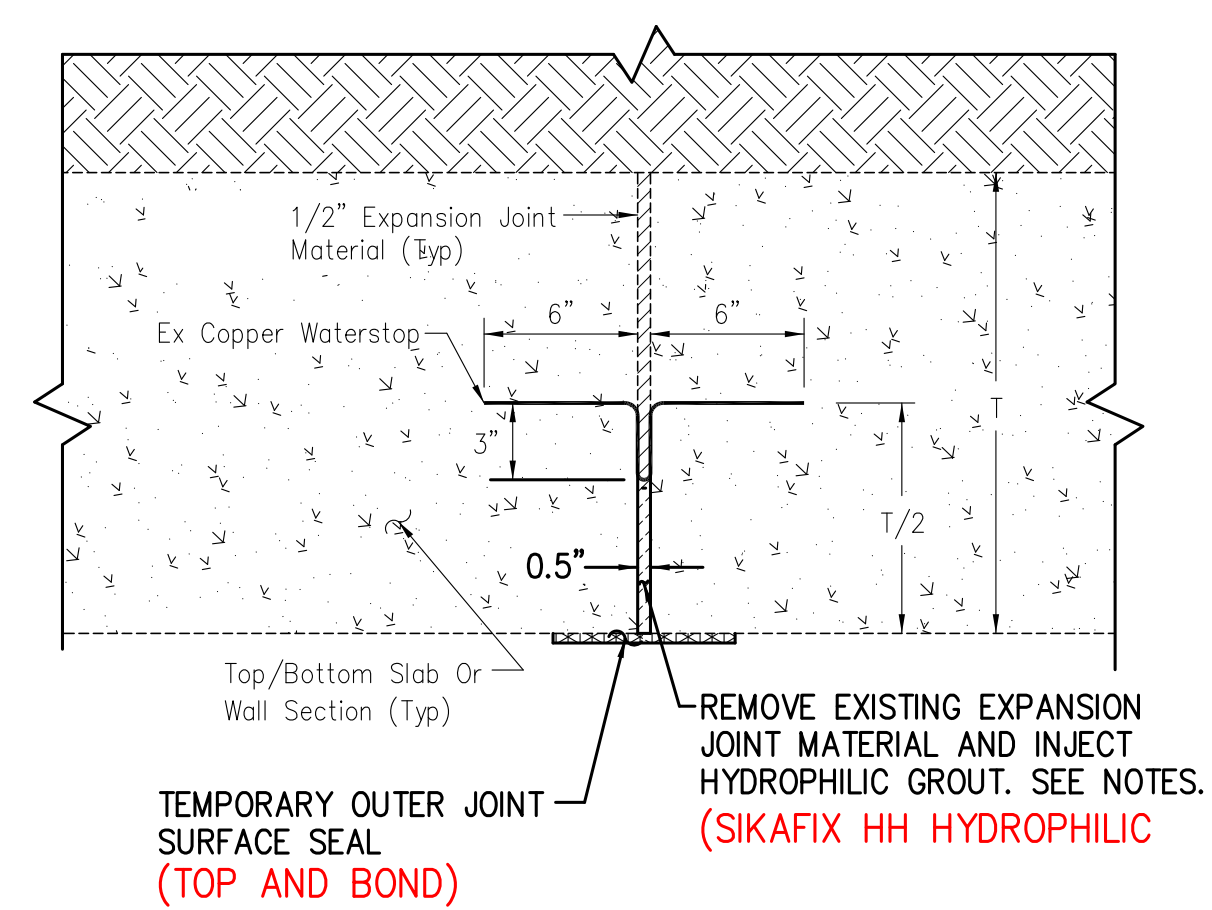
Typical Section No. 2

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



Typical Section No. 3

STA. 10+97.06 TO 11+57.06

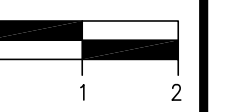
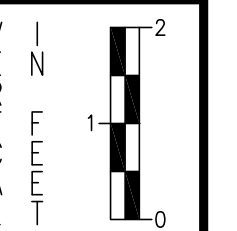
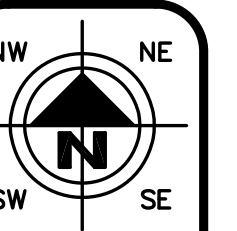


GENERAL INSTRUCTIONS FOR JOINT REPAIR

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.



HORIZONTAL
SCALE IN FEET

HECKED BY:
KAD

TE:
Aug, 2012

AWN BY:
FPW

TE:
Aug, 2012

DATE	DESCRIPTION
1/2015	AS-BUILT

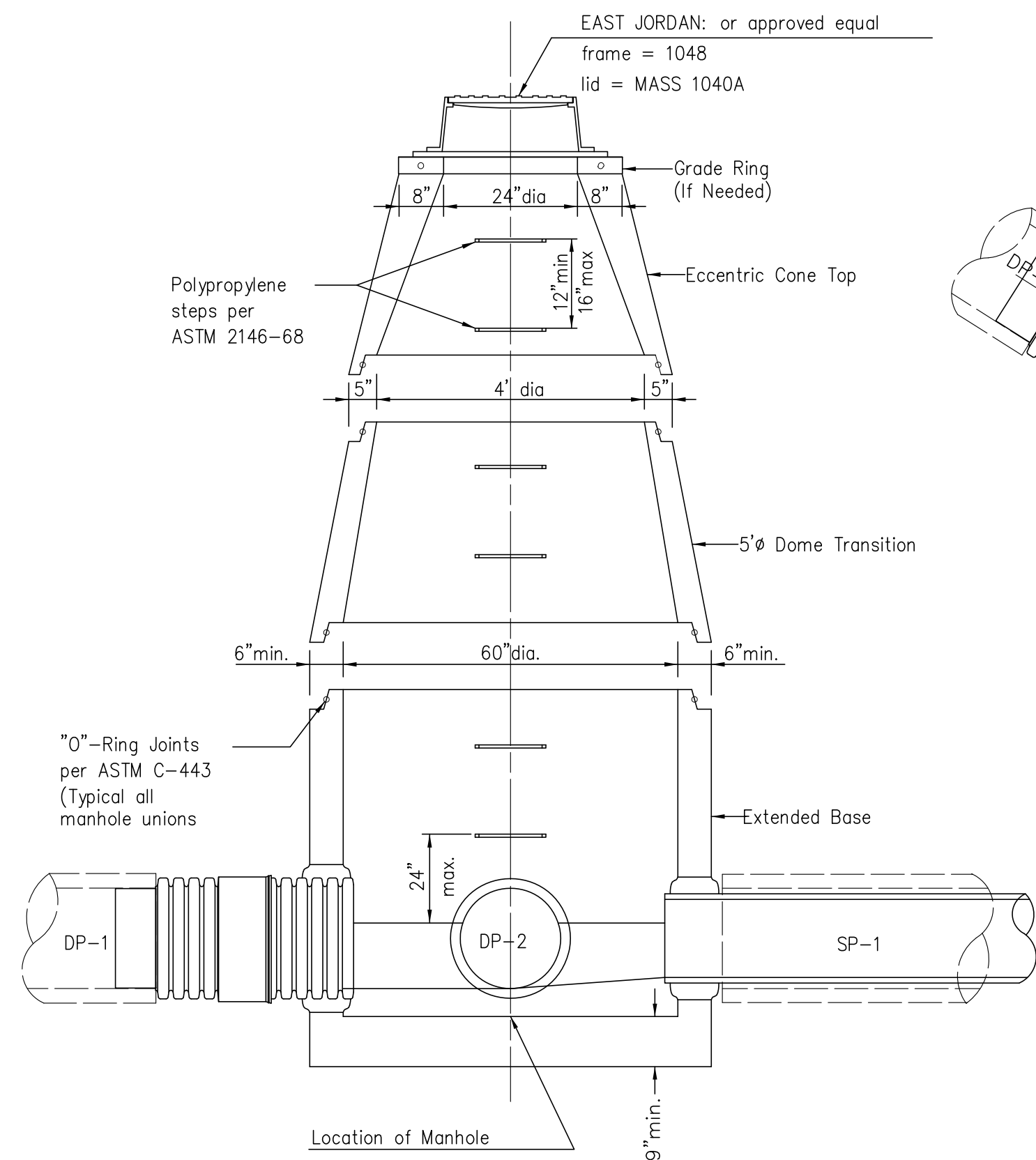
Wetmore Creek Conduit Typical Section and Notes
City of Massillon
Stark County, Ohio

Masillon
City of Champions

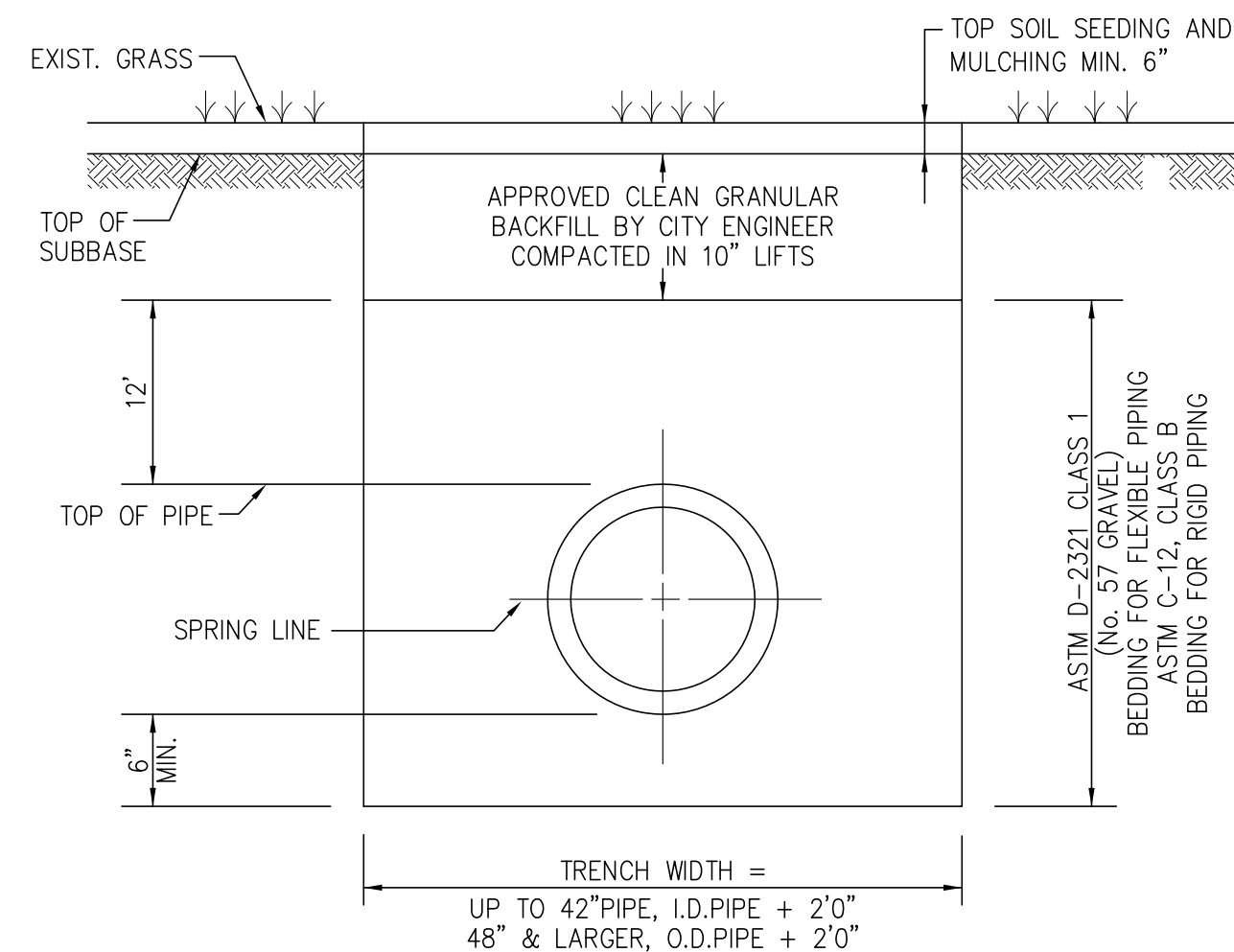
DRAWING NAME:
seepipe8details-Sht17

CITY NUMBER:	10lv01
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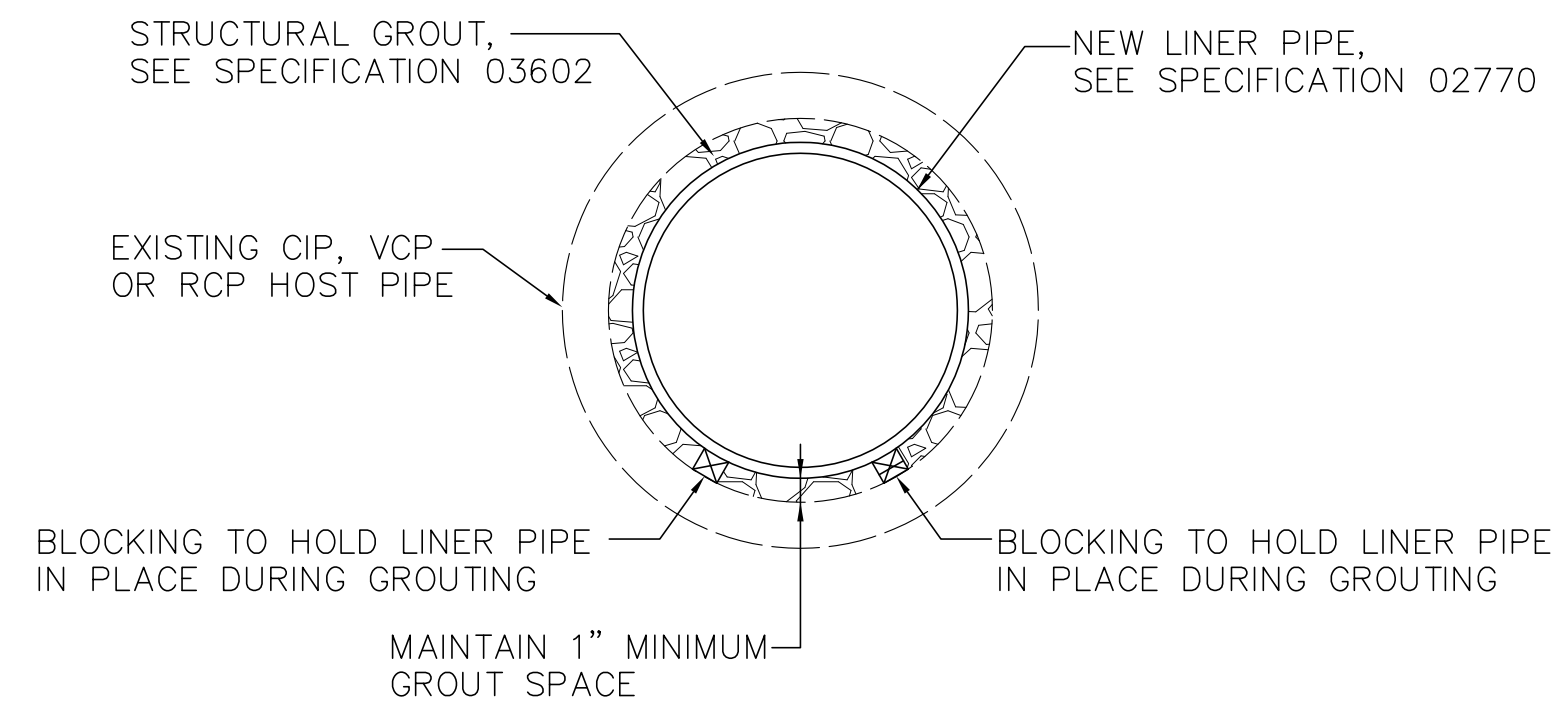
17 / 18



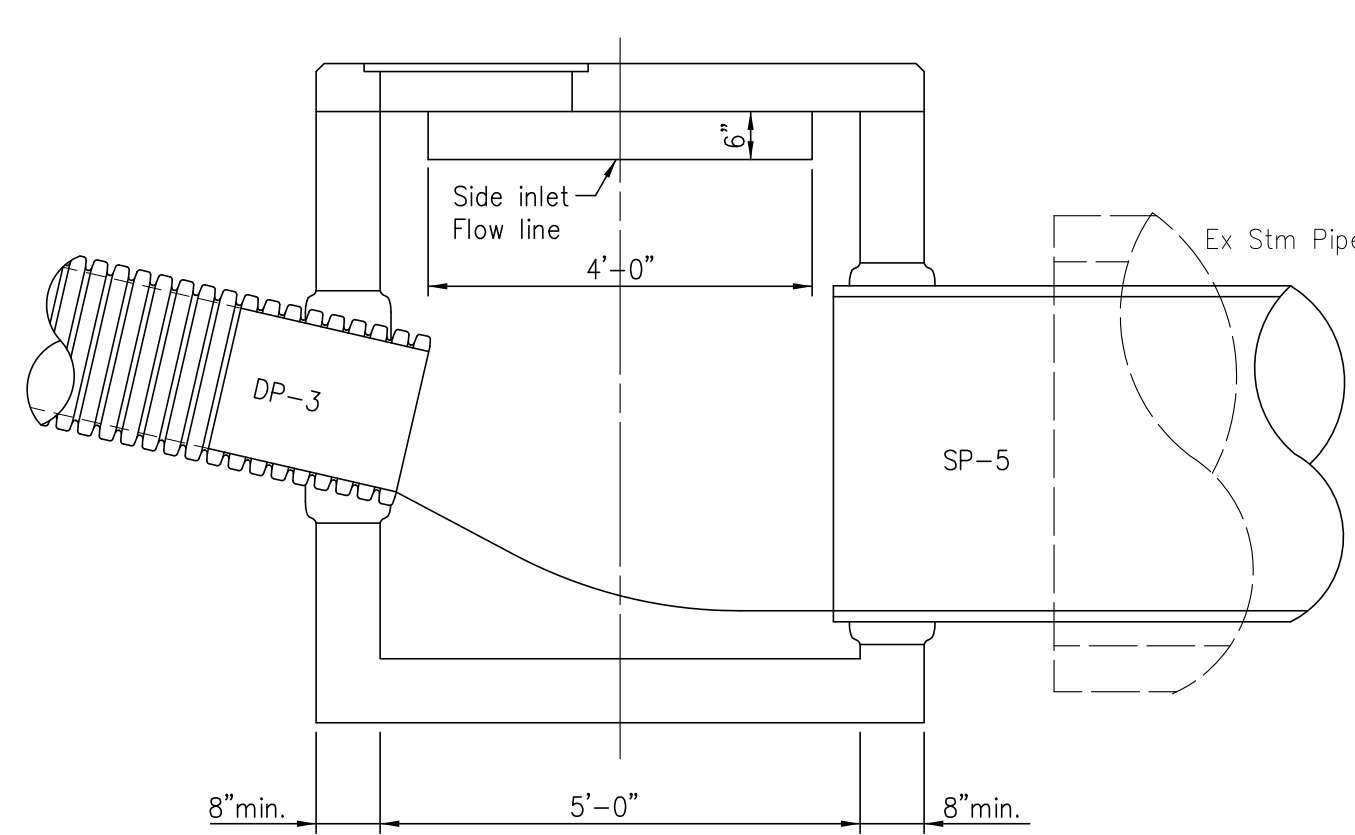
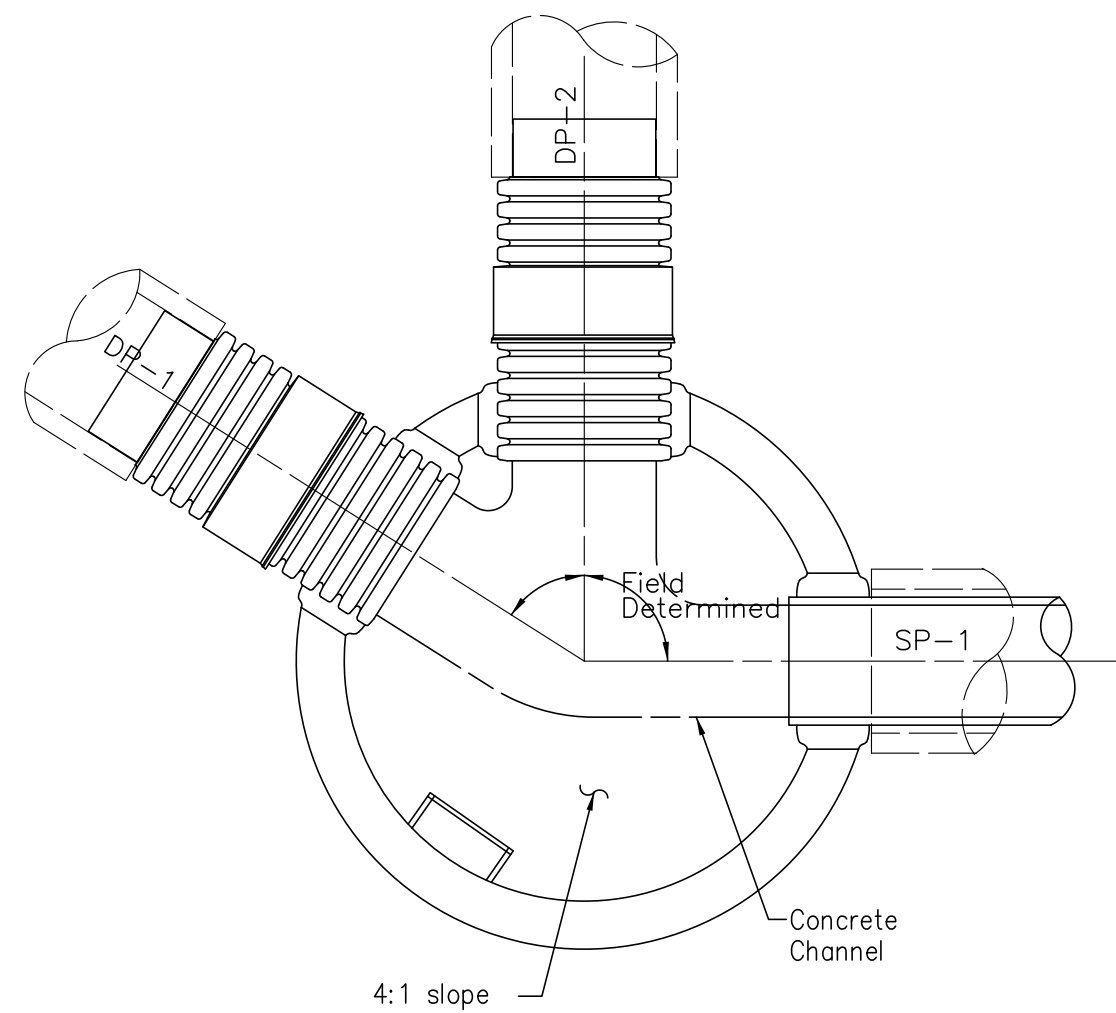
DM-1
DRAINAGE MANHOLE MASS 1048A
PRECAST CONCRETE MANHOLE 5'Ø



TRENCH DETAIL DETAIL NON PAVEMENT AREA

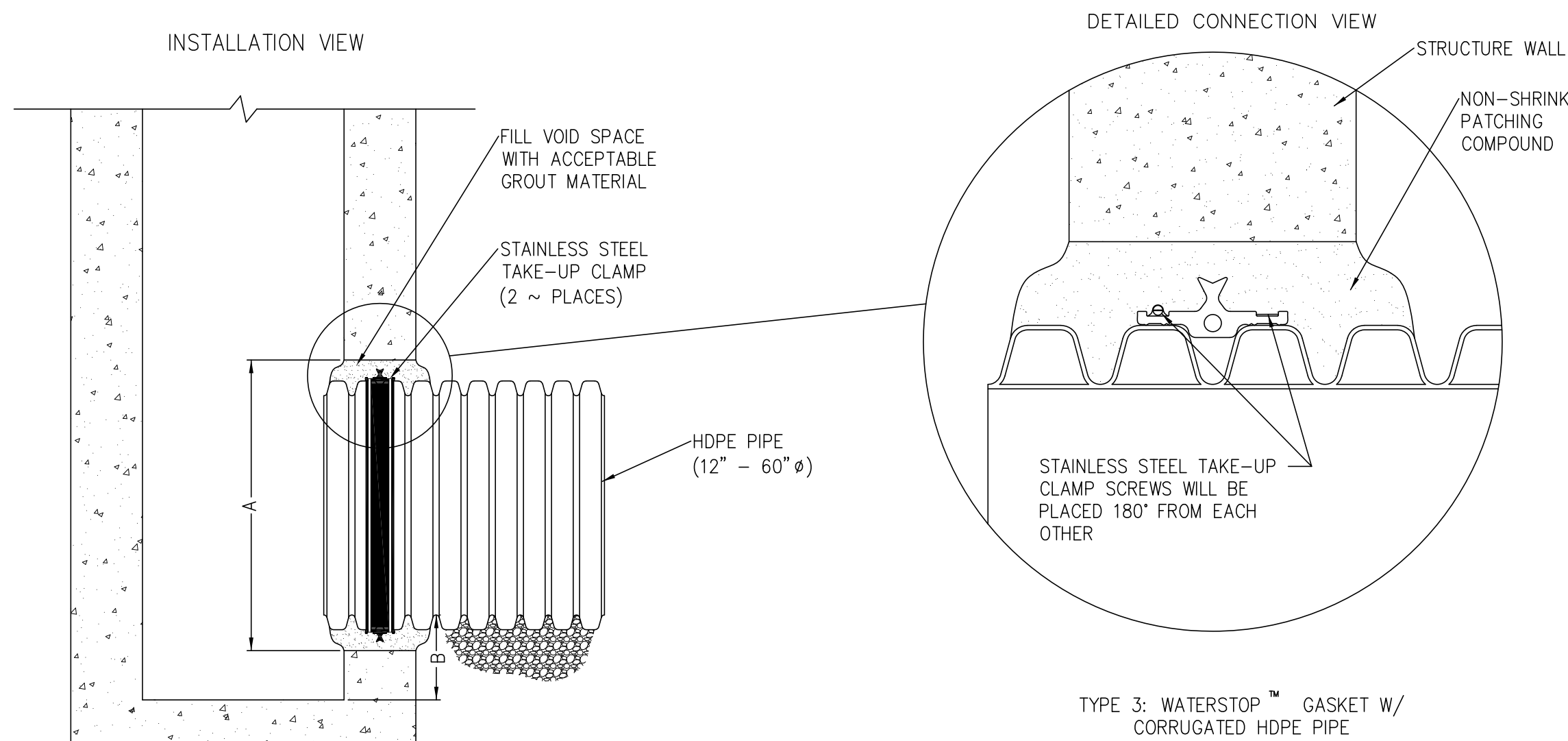


TYPICAL LINER SECTION

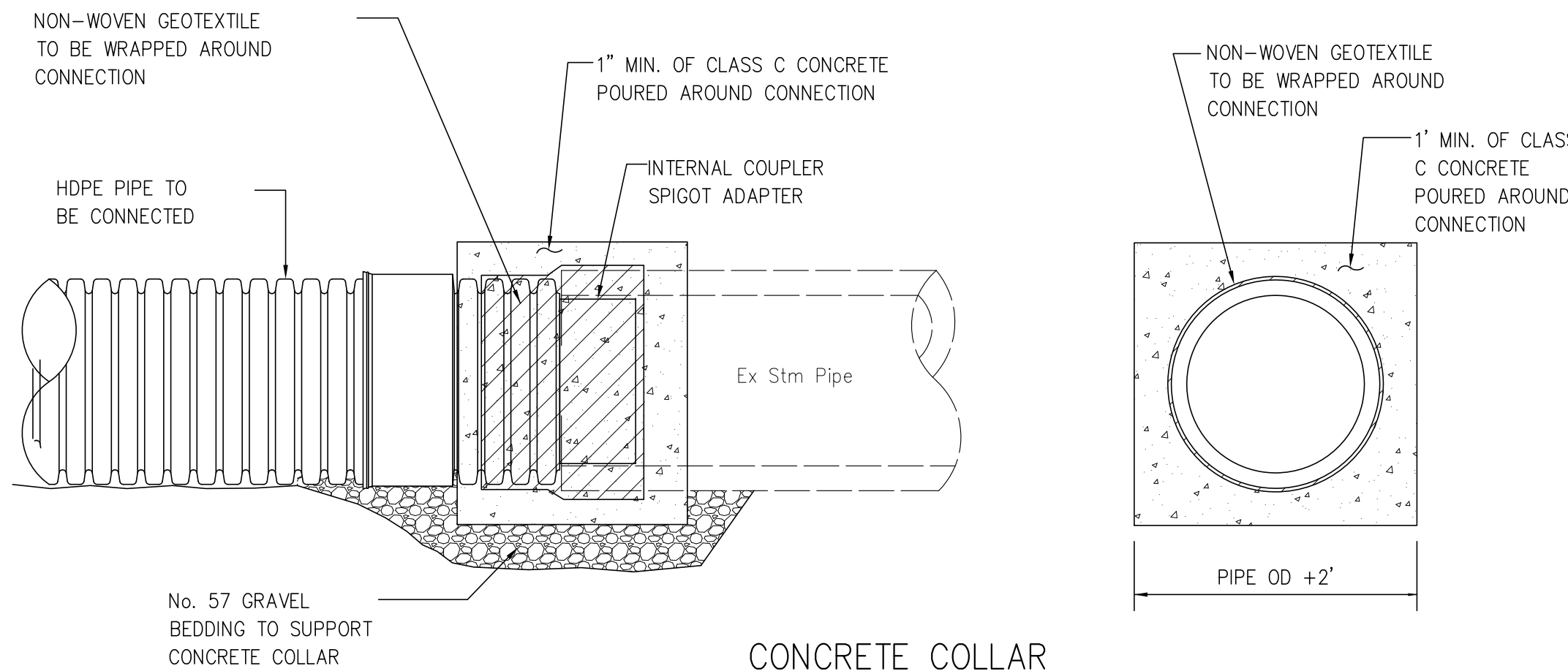


CB-1

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 STRUCUTRE 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



NOTES:

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.

NW NE
SW SE

VERTICAL SCALE

0 1 2

HORIZONTAL SCALE IN FEET

0 1 2

REVISIONS:

DATE	DESCRIPTION
1/2015	AS-BUILT

CHECKED BY:

KAD

DATE:

Aug, 2012

DRAWN BY:

FPW

DATE:

Aug, 2012

Levee Infrastructure Improvement Project

Miscellaneous Details
 City of Massillon
 Stark County, Ohio

Kathy Catzaro-Perry, Mayor

Massillon

City of Champions

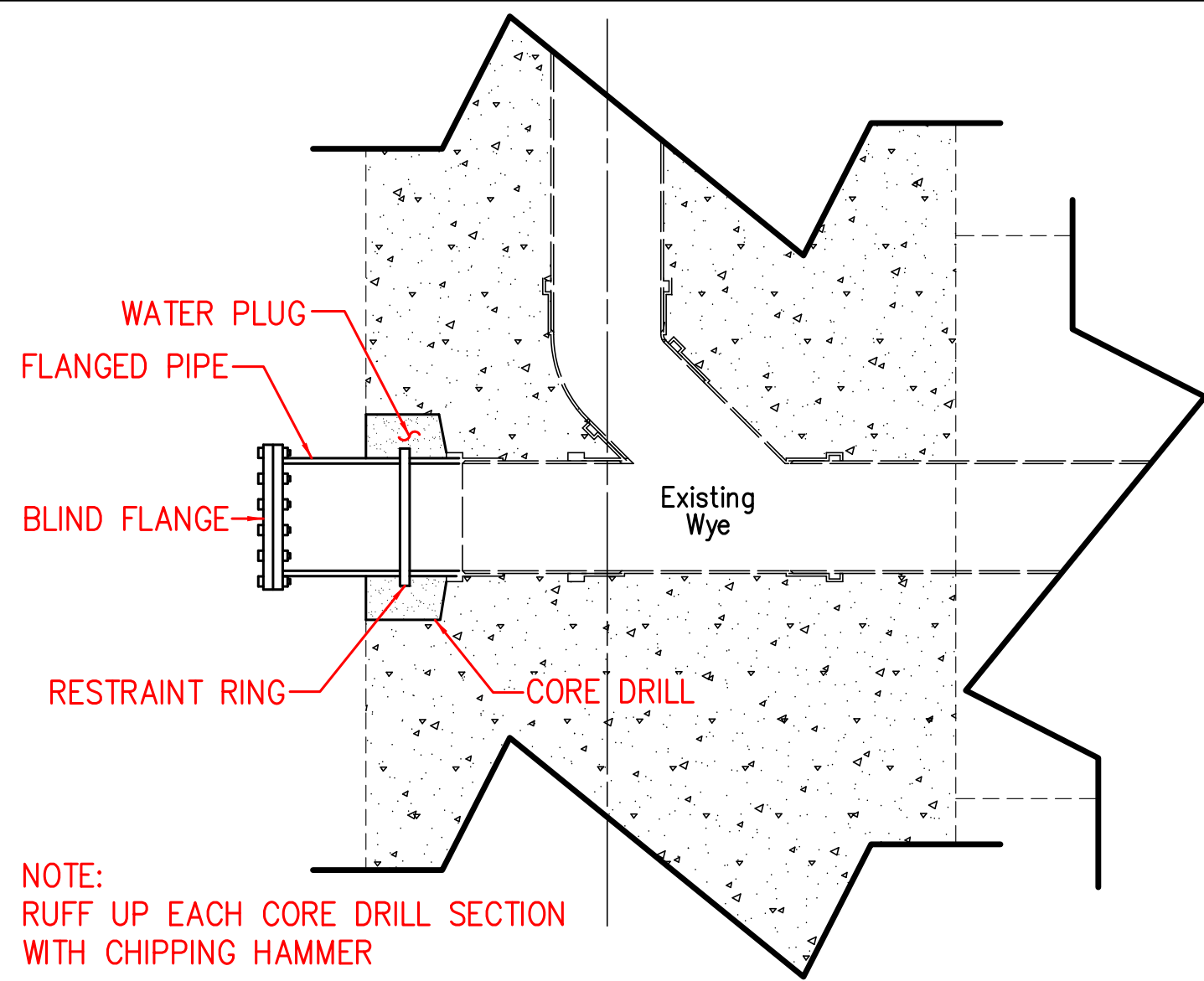
DRAWING NAME:

Leveedetail1-Sht18

CITY NUMBER:

101v01

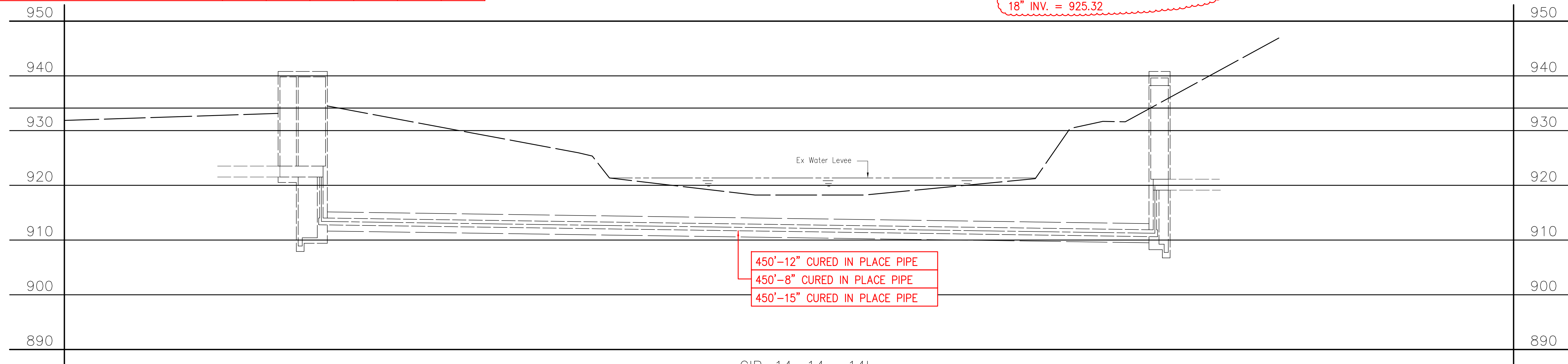
18 / 18



NOTE:
RUFF UP EACH CORE DRILL SECTION
WITH CHIPPING HAMMER

BLIND FLANGE INSTALLATION DETAIL

REF. No.	STATION		SPEC. REMOVE REPLACE 4" CAPS W/ BLIND FLANGES LUMP	604SPEC REPLACE CONC. TOP COLUMBIANA HEIGHTS CHAMBER LUMP	603SPEC 8" CURED IN PLACE PIPE L.F.	603SPEC 12" CURED IN PLACE PIPE L.F.	603SPEC 15" CURED IN PLACE PIPE L.F.	603SPEC ODOT2-3 CB, 18" HDPE, RIP RAP LUMP
	FROM	TO						
CIP-14	0+00	3+10			310			
CIP-14a	0+00	3+10				310		
CIP-14b	0+00	3+10					310	
SCR-14A	0+00		LUMP					
SCR-14B	3+10		LUMP					
DP-1	2+92	3+06						LUMP
TOTALS CARRIED TO GENERAL SUMMARY			LUMP	LUMP	310	310	310	LUMP



Finefrock (S.R. 241)

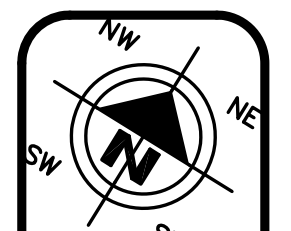
Tuscarawas River

Ramp

S.R. 21

Tow Path

Ramp



VERTICAL SCALE IN FEET

HORIZONTAL SCALE IN FEET

CHECKED BY: KAD
DATE: March, 2014
DRAWN BY: FPW
DATE: March, 2014

REVISIONS:	DATE	DESCRIPTION

Levee Infrastructure Improvement Project
CIP-14, CIP-14a and CIP-14b Plan and Profile
City of Massillon
Stark County, Ohio

Kathy Cazazaro-Perry, Mayor
Massillon
City of Champions

DRAWING NAME:
LeveePipe14-14bgs-Sh118a
CITY NUMBER:
101v01
18a/18