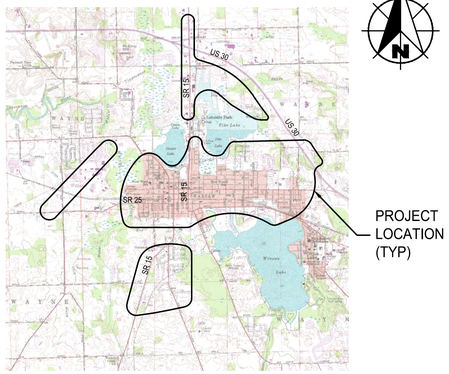
SEWER REHABILITATION - SMALL DIAMETER (≤15")

FOR THE

CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY

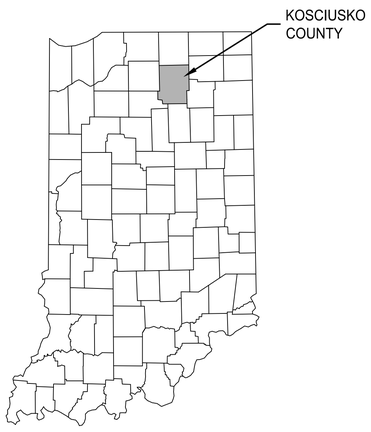
WARSAW, IN



WARSAW

VICINITY MAP

SCALE: NONE



STATE LOCATION MAP

SCALE: NONE

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More than a Project™

FORT WAYNE
6409 Constitution Drive
Fort Wayne, Indiana 46804
Phone: (260) 422-8279 - Fax: (260) 422-8280
www.wesslerengineering.com

PROJECT NO. 196217-04-001

DRAWINGS PREPARED FOR:

HONORABLE JOSEPH M. THALLEMER, MAYOR

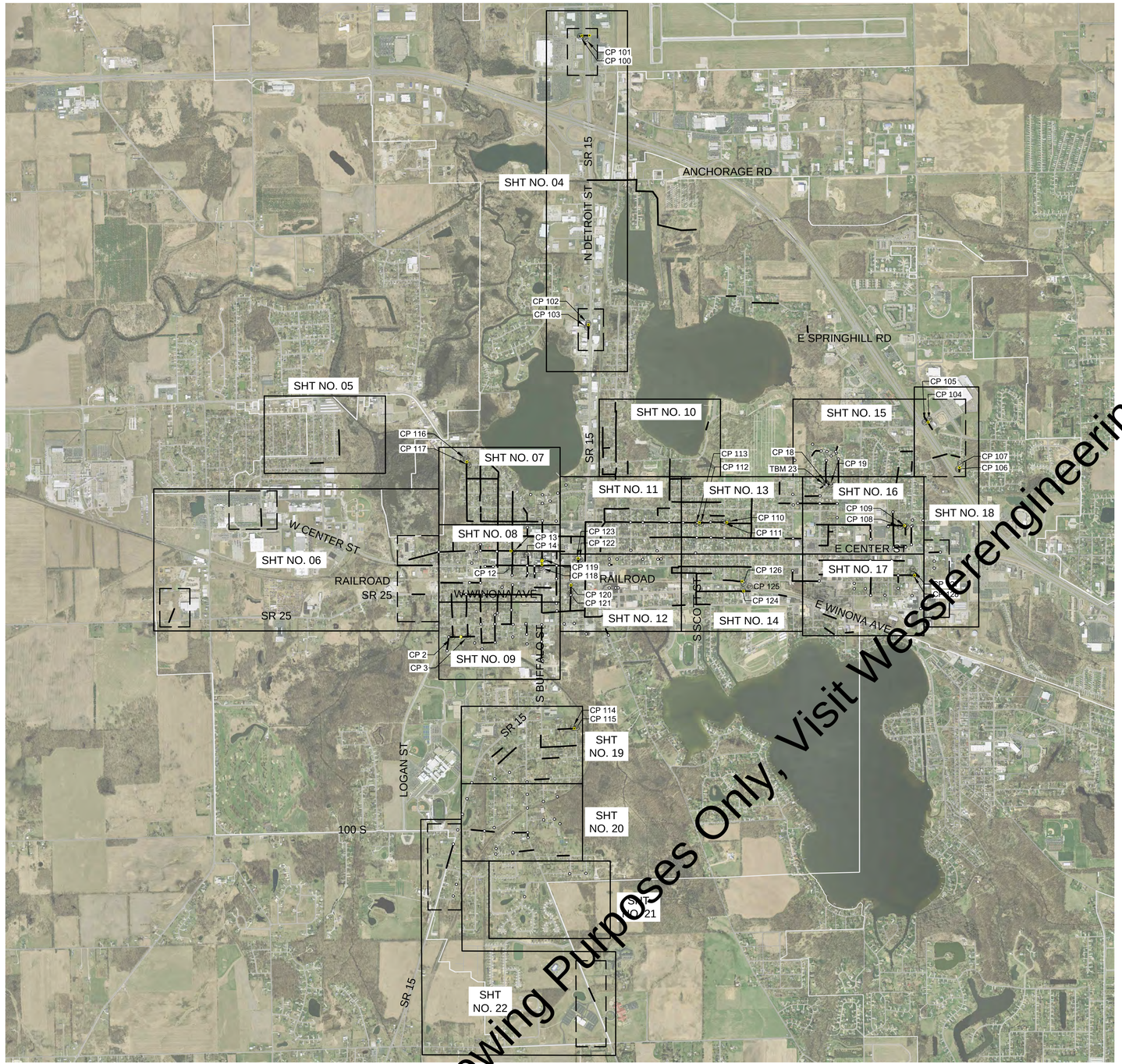
BOARD OF PUBLIC WORKS AND SAFETY

JOSEPH M. THALLEMER, PRESIDENT
JEFF GROSS
GEORGE CLEMENS

JAMES EMANS, P.E., CITY ENGINEER
BRIAN DAVISON, UTILITY MANAGER

SEPTEMBER 2017

MEGAN E. CARR
REGISTERED ENGINEER STATE OF INDIANA NO. 10910636



2012 IMAGERY FROM INDIANA STATE MAP.

HORIZONTAL AND VERTICAL CONTROL INFORMATION

NOTES:
1. A FIELD SURVEY WAS PERFORMED IN AUGUST 2017.
2. COORDINATES (INDIANA STATE PLANE, EAST ZONE, NAD 83) AND ELEVATIONS (NAVD 88) ARE BASED ON INCORS.
3. UNITS ARE U.S. SURVEY FEET.
4. CONTROL POINTS WERE SET USING GPS.

CONTROL POINTS

PNT	NORTHING	EASTING	ELEVATION	DESCRIPTION
3	2179723.72	274025.86	823.4	MAGNAIL
12	2181414.80	275081.34	818.3	MAGNAIL
13	2181791.46	275143.28	819.9	MAGNAIL
14	2181707.78	275451.93	821.9	MAGNAIL
18	2183470.06	282770.69	830.8	MAGNAIL
19	2183426.28	282872.52	830.4	MAGNAIL
100	2194380.73	276759.60	835.5	MAGNAIL
101	2194319.82	276893.60	836.2	MAGNAIL
102	2187367.60	276957.99	825.1	MAGNAIL
103	2187277.80	276931.76	824.7	MAGNAIL
104	2185026.14	285283.27	835.2	5/8" REBAR
105	2184957.89	285173.63	832.7	5/8" REBAR
106	2183810.70	285988.98	836.6	MAGNAIL
107	2183943.55	286041.75	838.1	MAGNAIL
108	2182406.70	284576.16	836.5	MAGNAIL
109	2182409.81	284723.21	836.9	MAGNAIL
110	2182528.75	280370.26	827.6	MAGNAIL
111	2182509.53	280257.52	829.0	MAGNAIL
112	2182481.48	279709.30	829.7	5/8" REBAR
113	2182478.99	279600.64	829.1	5/8" REBAR
114	2177499.40	276584.85	825.1	MAGNAIL
115	2177493.14	276675.70	824.5	MAGNAIL
116	2184061.42	273978.69	822.8	MAGNAIL
117	2183908.10	274041.84	821.3	MAGNAIL
118	2181404.52	275812.42	824.6	MAGNAIL
119	2181614.98	275855.13	823.9	MAGNAIL
120	2180982.22	276512.35	826.3	MAGNAIL
121	2180769.36	276521.40	827.2	MAGNAIL
122	2181607.13	276761.35	825.7	MAGNAIL
123	2181606.79	276680.57	827.0	MAGNAIL
124	2180863.54	280733.69	830.8	MAGNAIL
125	2180947.64	280905.01	831.0	MAGNAIL
126	2181022.94	280748.51	825.9	MAGNAIL
127	2181369.70	284878.08	839.5	5/8" REBAR
128	2181249.11	284880.38	840.0	5/8" REBAR

DRAWING INDEX

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS	
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS					
	APPROVED BY	MEC					
	ISSUE DATE	SEPTEMBER 2017					
	PROJECT NUMBER	196217-04-001					

MEGAN E. CARR — REGISTERED — No. 10910636 — STATE OF INDIANA — PROFESSIONAL ENGINEER — 09/27/2017

Megan E. Carr

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SEWER REHABILITATION - SMALL DIAMETER (≤15")

CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

LOCATION AND SCOPE OF WORK PLAN, AND DRAWING INDEX

SHEET NO. 02

TOTAL SHEETS 32

TABLE OF ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	IPS	IRON PIPE SIZE
ALUM	ALUMINUM	ISPC	INDIANA STATE PLANE COORDINATE
APP	APPARENT	LB	POUND(S)
APPROX	APPROXIMATE(LY)	LF	LINEAR FEET
ASPH	ASPHALT	LN	LANE
ASSOC	ASSOCIATES	LS	LIFT STATION
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	MA EX	MATCH EXISTING
AVE	AVENUE	MJ	MECHANICAL JOINT
AVG	AVERAGE	MATL	MATERIAL
BLDG	BUILDING	MAX	MAXIMUM
BLVD	BOULEVARD	MH	MANHOLE
BM	BENCHMARK	MIN	MINIMUM
CO	CLEANOUT	MISC	MISCELLANEOUS
CI	CAST IRON	N	NORTHING, NORTH
CL	CENTER LINE	NFL	NOT FIELD LOCATED
CMA	COLD MIX ASPHALT	NGS	NATIONAL GEODETIC SURVEY
CMP	CORRUGATED METAL PIPE	NIC	NOT IN CONTRACT
CMU	CONCRETE MASONRY UNIT	NO.	NUMBER
CONC	CONCRETE	OC	ON CENTER
CONT	CONTINUOUS	OD	OUTSIDE DIAMETER
CNR	CORNER	PC	POINT OF CURVE (BEGIN CURVE)
CP	CONTROL POINT	POLY	POLYETHYLENE
CPP	CORRUGATED PLASTIC PIPE	PI	POINT OF INTERSECTION
CR STN	CRUSHED STONE	POT	POINT ON TANGENT
CYD	CUBIC YARD	PT	POINT OF TANGENT (END CURVE)
D	DEPTH	PSI	POUNDS PER SQUARE INCH
DI	DUCTILE IRON	PT	POINT
DI MJ	DUCTILE IRON MECHANICAL JOINT	PVC	POLYVINYL CHLORIDE
DBL	DOUBLE	R	RADIUS
DIA	DIAMETER	ROW	RIGHT-OF-WAY
DIP	DUCTILE IRON PIPE	RCP	REINFORCED CONCRETE PIPE
DIPS	DUCTILE IRON PIPE SIZE	RD	ROAD
DR	DRIVE	S	SOUTH
E	EASTING, EAST	SR	STATE ROUTE
EF	EACH FACE	SST	STAINLESS STEEL
EW	EACH WAY	SVA	SERVICE VALVE ASSEMBLY
EA	EACH	SB	SOIL BORING
EJ	EAST JORDAN IRON WORKS	SCHED	SCHEDULE
EL	ELEVATION	SDR	STANDARD DIMENSION RATIO
EX	EXISTING	SECT	SECTION
EXP	EXPANSION	SF	SQUARE FEET
FFE	FINISH FLOOR ELEVATION	SHT	SHEET
FM	FORCE MAIN	SPECS	SPECIFICATION(S)
FND	FOUND	SQ	SQUARE
FT	FEET	SRF	STATE REVOLVING FUND
FTG	FOOTING	ST	STREET
GALV	GALVANIZED	STA	STATION
GPS	GLOBAL POSITIONING SYSTEM	SYD	SQUARE YARD
HMA	HOT MIX ASPHALT	TBM	TEMPORARY BENCHMARK
HDPE	HIGH DENSITY POLYETHYLENE	TC	TOP OF CASTING
HORIZ	HORIZONTAL	TYP	TYPICAL
ID	INSIDE DIAMETER	USGS	US GEOLOGICAL SURVEY
IE	INVERT ELEVATION	VERT	VERTICAL
INC	INCORPORATED	VLV	VALVE
INDOT	INDIANA DEPARTMENT OF TRANSPORTATION	W	WIDTH, WEST
INSTR	INSTRUMENT	WSE	WATER SURFACE ELEVATION
INV	INVERT	YR	YEAR

*NOTE: THIS TABLE IS A LISTING OF TYPICAL ABBREVIATIONS AND MAY NOT INCLUDE ALL ABBREVIATIONS FOUND WITHIN THIS PLAN SET.
IF A QUESTION ARISES ON THE MEANING OF AN ABBREVIATION NOT LISTED IN THIS TABLE, PLEASE CONTACT THE ENGINEER FOR CLARIFICATION.

GENERAL NOTES:

1. NOTIFY THE ENGINEER IF ANY CONFLICTING INFORMATION BECOMES APPARENT IN THE CONTRACT DOCUMENTS AS SOON AS POSSIBLE AND PRIOR TO THE COMMENCEMENT OF ANY WORK IN THE VICINITY OF OR RELATIVE TO THE APPARENT CONFLICT SO THAT CLARIFICATION MAY OCCUR PRIOR TO CONSTRUCTION.
2. TAKE CARE TO AVOID DAMAGE TO PAVED AREAS WHICH ARE NOT SPECIFICALLY CALLED OUT FOR REPAIR. REPAIR, OR REPLACE ALL SUCH PAVEMENTS WHICH ARE DAMAGED BY CONSTRUCTION ACTIVITIES AND CONSTRUCTION TRAFFIC AT NO ADDITIONAL COST TO THE OWNER.
3. OBTAIN ALL TEMPORARY EASEMENTS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
4. DETERMINE WHICH UTILITIES MAY CONFLICT WITH WORK AND VERIFY THEIR LOCATION, SIZE AND ELEVATION PRIOR TO CONSTRUCTION AND DETERMINE IF THERE ARE ANY DISCREPANCIES OR CONFLICTS. IF ANY DISCREPANCIES OR CONFLICTS ARE DISCOVERED, NOTIFY THE ENGINEER AS SOON AS POSSIBLE.
5. USE CAUTION DURING THE EXECUTION OF WORK TO PREVENT DAMAGE TO EXISTING UTILITIES. REPAIR OR REPLACE ALL PUBLIC AND PRIVATE FACILITIES DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS.
6. BRACE AND PROTECT ALL UTILITY POLES AND EXISTING STRUCTURES ADJACENT TO NEW EXCAVATIONS. UTILITY POLE BRACING SHALL BE AS DIRECTED BY THE GOVERNING UTILITY.
7. MAINTAIN EXISTING STORMWATER DRAINAGE FOR THE ENTIRE DURATION OF THE PROJECT.
8. DO NOT DISTURB EXISTING MANHOLES OR INLETS, UNLESS NOTED OTHERWISE.
9. COORDINATE STAGING AREA LOCATIONS WITH THE OWNER.
10. ALL CONSTRUCTION TRAFFIC SHALL USE MAJOR ROADS. NO CONSTRUCTION TRAFFIC SHALL USE LOCAL STREETS FOR INDIRECT ACCESS.
11. TO CONTROL DUST, REMOVE SOIL FROM STREETS USED BY CONSTRUCTION TRAFFIC DAILY, VACUUM AND WATER AS NECESSARY AND/OR AS DIRECTED BY THE OWNER.
12. NORTHING AND EASTING INFORMATION IS GIVEN AT CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
13. RESET ALL MAILBOXES AND SIGNS DISTURBED BY CONSTRUCTION ACTIVITIES.
14. IF REQUIRED, PLACE TEMPORARY OVERNIGHT AGGREGATE WEDGES AT DRIVEWAYS TO ALLOW PROPERTY OWNER ACCESS.
15. ALL EXISTING AND NEW UTILITY INFORMATION, INCLUDING BUT NOT LIMITED TO LOCATION, SIZE AND INVERT ELEVATION, IS SHOWN BASED UPON AVAILABLE INFORMATION. HOWEVER, THE ENGINEER DOES NOT GUARANTEE OR ASSUME SUCH INFORMATION TO BE TRUE, ACCURATE, ALL INCLUSIVE OR EVEN APPROXIMATE. THE CONTRACTOR SHALL CONTACT THE INDIANA UNDERGROUND PLANT PROTECTION SERVICE (IUPPS) AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR MUST CONTACT NON-MEMBER UTILITIES DIRECTLY. THE CONTRACTOR SHALL DETERMINE WHICH UTILITIES MAY CONFLICT WITH HIS WORK AND VERIFY THEIR LOCATION, SIZE, ELEVATION, ETC; ADJUST HIS WORK ACCORDINGLY; AND NOTIFY THE ENGINEER OF ANY CONFLICTS AND/OR ADJUSTMENTS. THE CONTRACTOR SHALL REFER TO APPLICABLE SECTIONS OF THE SPECIFICATIONS RELATIVE TO THE ABOVE.
16. EXISTING UTILITY SERVICE LINES TO INDIVIDUAL CUSTOMERS ARE NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL ASSUME THAT UNDERGROUND SERVICE LINES FOR ALL UTILITIES EXIST TO EACH PROPERTY ALONG THE ROUTE OF THE PLANNED IMPROVEMENTS.
17. COORDINATE ALL WORK WITH THE RESPECTIVE UTILITIES. THE CONTRACTOR SHALL SCHEDULE WORK ACCORDINGLY AND NOTIFY ALL UTILITIES A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY.
18. COORDINATE ALL CONFLICTS WITH WATER METERS, SERVICES AND MAINS WITH EZAT NAYERI AT INDIANA-AMERICAN WATER COMPANY. NOTIFY INDIANA-AMERICAN WATER COMPANY A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF ANY CONFLICT WITH A WATER FACILITY TO ALLOW FOR RELOCATION COORDINATION. MAINTAIN VERTICAL AND HORIZONTAL SEPARATION FOR ALL SANITARY SEWERS AND WATER MAINS, IN ACCORDANCE WITH 327 IAC 3-6-9.
19. COORDINATE ANY PLANNED UTILITY SERVICE INTERRUPTIONS WITH THE RESPECTIVE UTILITIES AND THE UTILITIES' AFFECTED CUSTOMERS. SERVICE INTERRUPTIONS SHOULD NOT LAST MORE THAN FOUR (4) HOURS. THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO ALL AFFECTED UTILITY CUSTOMERS AND/OR PROPERTY OWNERS AT LEAST TWENTY-FOUR (24) HOURS, BUT NOT MORE THAN SEVENTY-TWO (72) HOURS, PRIOR TO ANY PLANNED INTERRUPTION OF UTILITY SERVICE.
20. USE CAUTION DURING THE EXECUTION OF WORK TO PREVENT DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ALL PUBLIC AND/OR PRIVATE FACILITIES DAMAGED AS A RESULT OF CONTRACTOR'S OPERATIONS.
21. MAINTAIN SANITARY SEWER FLOWS DURING THE ENTIRE DURATION OF THE PROJECT. CONDUCT BYPASS PUMPING OPERATIONS AS NECESSARY, AND PER SPECIFICATION 02734.
22. USE CAUTION SO AS TO NOT DAMAGE STATE, COUNTY, CITY OR PRIVATE PROPERTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES AS A RESULT OF HIS OPERATIONS, INCLUDING DAMAGE TO DRAINAGE STRUCTURES, FIELD TILES, AND LANDSCAPING (INCLUDING FENCING). THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF DAMAGED ITEMS AT HIS EXPENSE AND AT NO ADDITIONAL COST TO THE OWNER. ALL REPAIR AND/OR REPLACEMENT WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE PERMITTING AGENCY, THE OWNER AND THE ENGINEER.
23. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLED WORK AND SHALL COMPLY WITH ALL APPLICABLE PERMITS AND REGULATIONS. APPLICABLE PERMITS ISSUED TO THE OWNER WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTRACTOR SHALL CONTACT ALL APPLICABLE PERMITTING AGENCIES WITHIN THE TIME PERIOD SPECIFIED BY THAT AGENCY PRIOR TO BEGINNING CONSTRUCTION.
24. ALL EQUIPMENT, APPURTENANCES AND PIPING REMOVED AS PART OF THE DEMOLITION SHALL BE FIRST OFFERED TO THE OWNER FOR SALVAGE. THE CONTRACTOR SHALL DELIVER SALVAGED ITEMS SELECTED BY THE OWNER TO A LOCATION DESIGNATED BY THE OWNER OR ENGINEER. IN THE EVENT THE OWNER DOES NOT ELECT TO KEEP THE REMOVED EQUIPMENT/APPURTENANCES, THE CONTRACTOR SHALL REMOVE SUCH ITEMS FROM THE SITE AND DISPOSE OF THE REMOVED EQUIPMENT/APPURTENANCES AT A LOCATION APPROVED FOR SUCH DISPOSAL AT THE CONTRACTOR'S EXPENSE.
25. SANITARY SERVICE LATERAL LOCATIONS SHOWN ARE APPROXIMATE AND BASED UPON CCTV LOGS PROVIDED BY THE CITY OF WARSAW. ALL SERVICE LATERALS MAY NOT BE SHOWN. CONFIRM THAT ALL SERVICE LATERALS ARE LOCATED AND REINSTATED.
26. ALL SANITARY SEWER PIPE, INCLUDING GRAVITY SEWERS, LATERAL WYES AND SERVICE LATERAL PIPE LOCATED WITHIN 50 FEET OF PRIVATE WELLS SHALL BE SDR 21 PVC WATER GRADE PRESSURE PIPE UNLESS SPECIFICALLY INDICATED OTHERWISE. ALL SANITARY SEWER PIPE, INCLUDING GRAVITY SEWERS, LATERAL WYES AND SERVICE LATERAL PIPE NOT LOCATED WITHIN 50 FEET OF PRIVATE WELLS SHALL BE SDR 35 PVC SEWER GRADE PIPE, UNLESS SPECIFICALLY INDICATED OTHERWISE.
27. THE CONTRACTOR SHALL FIELD VERIFY AND DETERMINE EXACT LOCATIONS OF ALL PRIVATE WELLS IN THE PROJECT AREA.
28. CONTACT INDIANA-AMERICAN WATER COMPANY FOR ACCESS TO AND PURCHASE OF WATER.
29. RIGHT-OF-WAY AND PROPERTY LINES ARE BASED UPON GIS DATA PROVIDED BY THE CITY OF WARSAW.
31. FLOW MONITORING DATA IS AVAILABLE IN APPENDIX B OF THE PROJECT MANUAL.
32. THIS PROJECT REQUIRES EXTENSIVE COORDINATION WITH THE CITY, ENGINEER, AND OTHER CONTRACTORS INCLUDING, BUT NOT LIMITED TO: CONSTRUCTION TIMING, WORK LOCATION SCHEDULE, TRAFFIC PLANS AND ROAD CLOSURES, AS THERE ARE THREE SEWER REHABILITATION PROJECTS FOR THE CITY OF WARSAW.
33. ANY ALTERATIONS TO THESE DRAWINGS NOT AUTHORIZED BY WESSLER ENGINEERING AND NOT IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS AND RECORDS ON FILE AT WESSLER ENGINEERING SHALL RELIEVE WESSLER ENGINEERING OF ANY RESPONSIBILITY FOR THE ACCURACY OF THE DRAWINGS.

UTILITY CONTACTS

ELECTRIC
KOSCIUSKO REMC
370 SOUTH 250 EAST
WARSAW, IN 46582
800-790-7362
ATTN: RYAN MILLER

GAS
NIPSCO
801 E. 86TH AVE.
MERRILVILLE, IN 46410
219-647-4912
ATTN: MICHELLE VOS

WATER
INDIANA-AMERICAN WATER COMPANY, INC
555 E. COUNTY LINE RD., STE 201
GREENWOOD, IN 46143
317-885-2447
ATTN: EZAT NAYERI

WARSAW UTILITIES
2056 N. 150 W
WARSAW, IN 46580
574-372-9562
ATTN: BRIAN DAVISON

ELECTRIC
NIPSCO
801 E. 86TH AVE.
MERRILVILLE, IN 46410
219-647-5036
ATTN: ROCKY YBARRA

FIBER OPTIC/TELEPHONE
CENTURY LINK
213 W. LAPORTE ST
PLYMOUTH, IN 46563
574-935-1247
ATTN: BRUCE EMERICK

NOTE:
IN THE EVENT OF WATER CONFLICT, CONTACT EZAT NAYERI AT INDIANA–AMERICAN WATER COMPANY TO COORDINATE WORK

WARSAW ENGINEERING
102 S. BUFFALO ST.
WARSAW, IN 46580
574-372-9548
ATTN: JAMES EMANS

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS				
	APPROVED BY	MEC				
	ISSUE DATE	SEPTEMBER 2017				
	PROJECT NUMBER	196217-04-001				

MEGAN E. CARR REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/27/2017

WESSLER ENGINEERING *More than a Project™*

SEWER REHABILITATION - SMALL DIAMETER (≤15")
CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

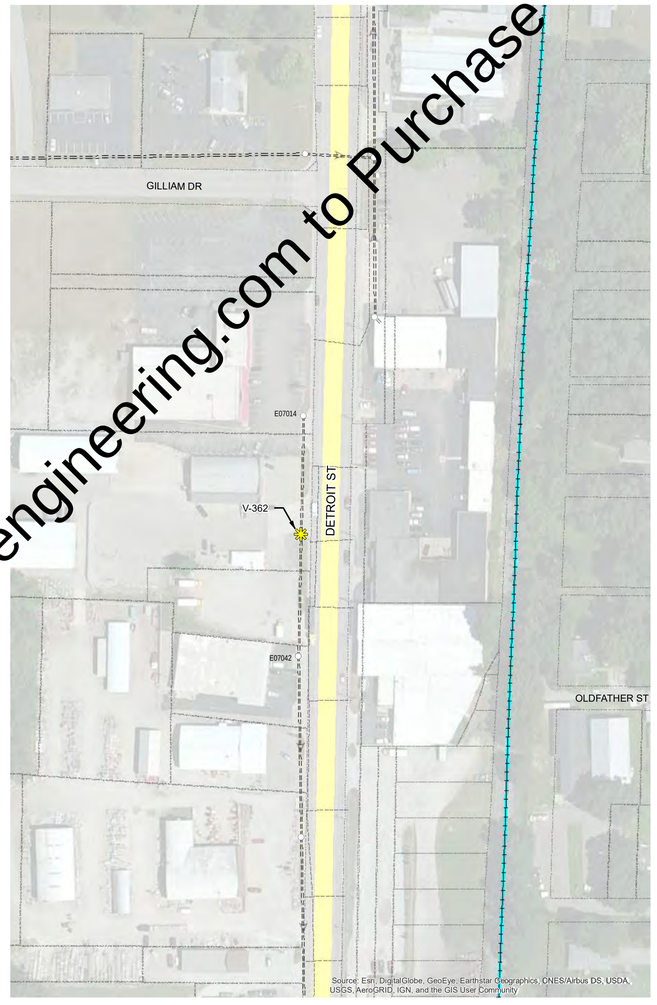
GENERAL NOTES AND ABBREVIATIONS

SHEET NO. 03
TOTAL SHEETS 32

Drawing: J:\WarsawProjects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\DWG\Sheets\2-Small\196217_2-GS.dwg | Layout: GA | Plotted: 09/27/17 @ 09:07:40 | LastSavedBy: MichelleE

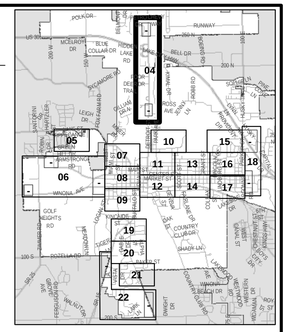
REHAB PLAN - PIPE #04
DETROIT ST

0 50 100 200 FT
1"=100'



REHAB PLAN - PIPE #362
DETROIT ST

0 50 100 200 FT
1"=100'



KEYMAP
SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER
REHAB MANHOLE
REHAB PIPE
SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

MANHOLE WORK (NIC)
REHAB PIPE ≥18" (NIC)
REPLACE PIPE (NIC)

EXISTING (GIS):

MANHOLE
GRAVITY SEWER PIPE ≤15"
GRAVITY SEWER PIPE ≥18"
FORCE MAIN PIPE
DRAINAGE PIPE
PROPERTY LINE
APPARENT RIGHT-OF-WAY
RAILROAD
STATE ROADS

NOTES:

1. SEE SHEET NO. 26-32 FOR PIPE AND MANHOLE REHAB SCHEDULES
2. THE BYPASS ROUTES SHOWN ARE SUGGESTIONS. THE CONTRACTOR SHALL SUBMIT ALL BYPASS ROUTES TO THE ENGINEER AND OWNER FOR APPROVAL.
3. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE SETUP AND WORK IN THE STATE HIGHWAYS WHEN POSSIBLE. CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR TRAFFIC PLANS AND WORK IN THE STATE HIGHWAYS.
4. THE CONTRACTOR SHALL COORDINATE WITH THE RAILROAD TO OBTAIN ANY PERMITS NECESSARY TO RUN BYPASS PIPING ALONG THE RAILROAD ROW.
5. THE CONTRACTOR SHALL UTILIZE EXISTING ROAD RIGHT OF WAYS AND PIPE EASEMENTS FOR BYPASS PIPING. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY TEMPORARY EASEMENTS IF NECESSARY.

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS				
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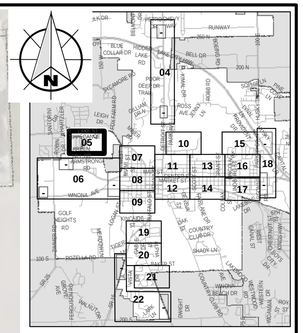
SEWER REHABILITATION - SMALL DIAMETER (≤15")
WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 04
TOTAL SHEETS 32



KEYMAP
SCALE: NONE

LEGEND

- #000 XX" PIPE REHAB ID / PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
- STATE ROADS

NOTES:

1. SEE SHEET NO. 26-32 FOR PIPE AND MANHOLE REHAB SCHEDULES
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REHAB PLAN

0 50 100 200 FT
1"=100'

Drawing (ArcMap) - J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217_2.PM.mxd Date Saved: 9/27/2017 12:31:07 PM

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS	REVISION DESCRIPTIONS
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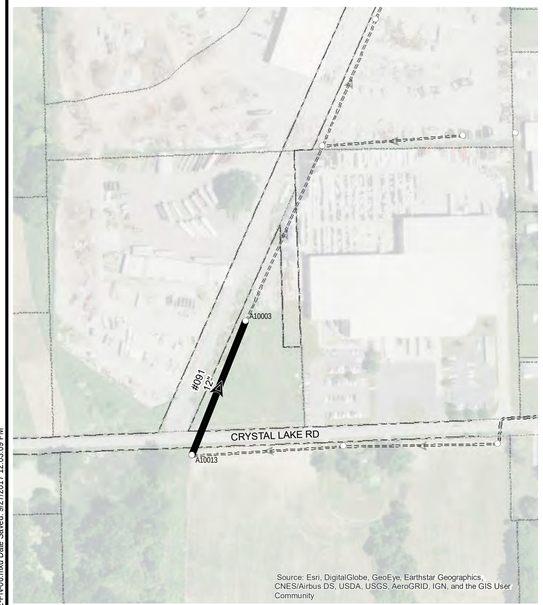
SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 05
TOTAL SHEETS 32

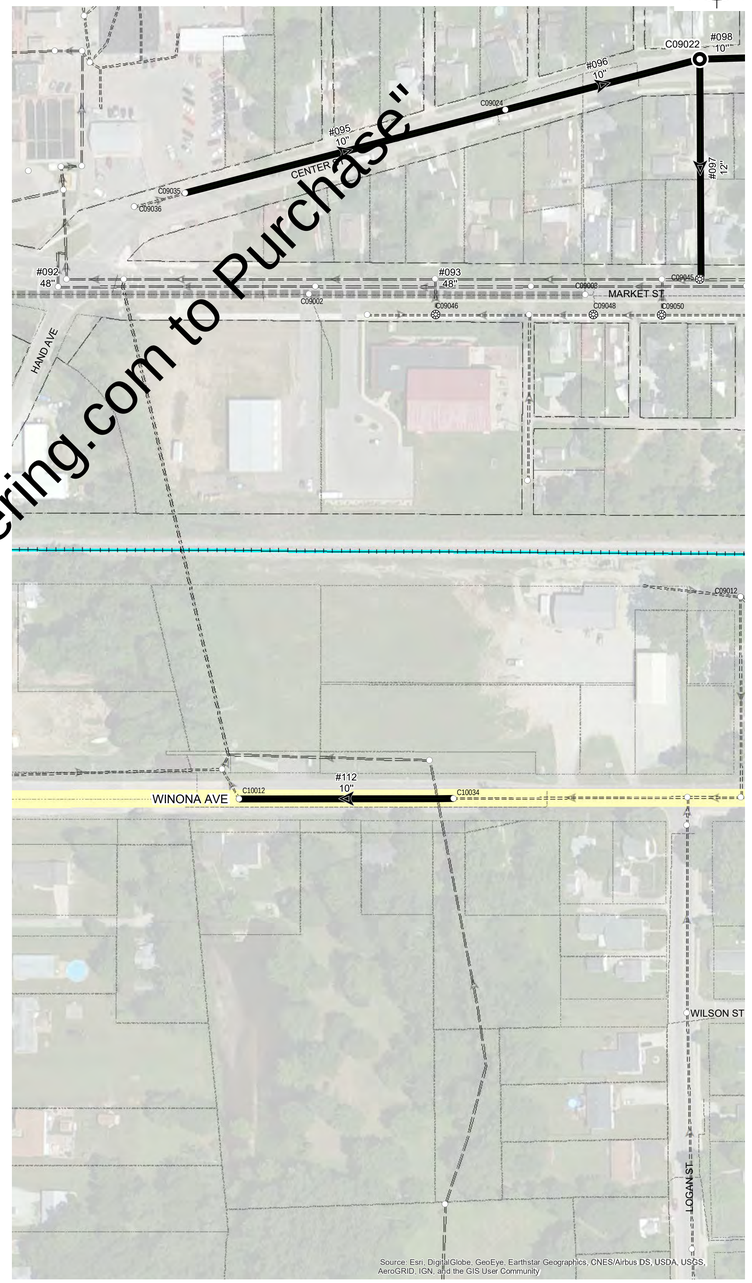


REHAB PLAN - PIPE #091
CRYSTAL LAKE RD

0 87.5 175 350 FT
1"=100'

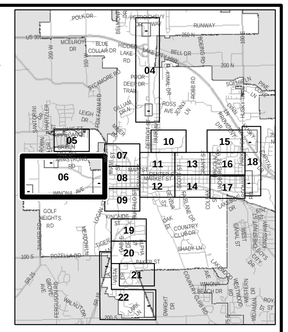
REHAB PLAN - PIPE #090
HEPLER DR AT CENTER ST

0 50 100 200 FT
1"=100'



REHAB PLAN
CENTER ST AND WINONA AVE

0 50 100 200 FT
1"=100'



KEYMAP
SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER
REHAB MANHOLE
REHAB PIPE
SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

MANHOLE WORK (NIC)
REHAB PIPE ≥18" (NIC)
REPLACE PIPE (NIC)

EXISTING (GIS):

MANHOLE
GRAVITY SEWER PIPE ≤15"
GRAVITY SEWER PIPE ≥18"
FORCE MAIN PIPE
DRAINAGE PIPE
PROPERTY LINE
APPARENT RIGHT-OF-WAY
RAILROAD
STATE ROADS

NOTES:

1. SEE SHEET NO. 26-32 FOR PIPE AND MANHOLE REHAB SCHEDULES
2. THE BYPASS ROUTES SHOWN ARE SUGGESTIONS. THE CONTRACTOR SHALL SUBMIT ALL BYPASS ROUTES TO THE ENGINEER AND OWNER FOR APPROVAL.
3. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE SETUP AND WORK IN THE STATE HIGHWAYS WHEN POSSIBLE. CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR TRAFFIC PLANS AND WORK IN THE STATE HIGHWAYS.
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5. THE CONTRACTOR SHALL UTILIZE EXISTING ROAD RIGHT OF WAYS AND PIPE EASEMENTS FOR BYPASS PIPING. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY TEMPORARY EASEMENTS IF NECESSARY.

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS				
	APPROVED BY	MEC				
	ISSUE DATE	SEPTEMBER 2017				
	PROJECT NUMBER	196217-04-001				

MEGAN E. CARR REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/27/2017
Megan E. Carr

WESSLER ENGINEERING
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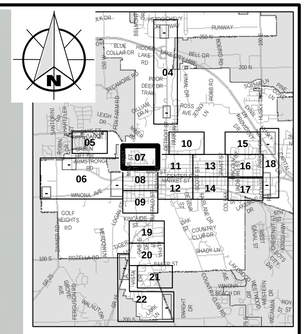
SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 06
TOTAL SHEETS 32



KEYMAP
SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER
REHAB MANHOLE
REHAB PIPE
SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):
MANHOLE WORK (NIC)
REHAB PIPE ≥18" (NIC)
REPLACE PIPE (NIC)
NEW MANHOLE (NIC)
NEW PIPE (NIC)

EXISTING (GIS):
MANHOLE
GRAVITY SEWER PIPE ≤15"
GRAVITY SEWER PIPE ≥18"
FORCE MAIN PIPE
DRAINAGE PIPE
PROPERTY LINE
APPARENT RIGHT-OF-WAY
RAILROAD
STATE ROADS

NOTES:

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REHAB PLAN

0 50 100 200 FT
1"=100'

SCALE VERIFICATION
BAR IS ONE INCH LONG ON ORIGINAL DRAWING

DRAWN BY	MRE
CHECKED BY	BAS
APPROVED BY	MEC
ISSUE DATE	SEPTEMBER 2017
PROJECT NUMBER	196217-04-001

	DATE	INITIALS	REVISION DESCRIPTIONS

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SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 07
TOTAL SHEETS 32

KEYMAP
SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER
REHAB MANHOLE
REHAB PIPE
SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):
MANHOLE WORK (NIC)
REHAB PIPE ≥18" (NIC)
REPLACE PIPE (NIC)
NEW MANHOLE (NIC)
NEW PIPE (NIC)

EXISTING (GIS):
MANHOLE
GRAVITY SEWER PIPE ≤15"
GRAVITY SEWER PIPE ≥18"
FORCE MAIN PIPE
DRAINAGE PIPE
PROPERTY LINE
APPARENT RIGHT-OF-WAY
RAILROAD
STATE ROADS

NOTES:

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REHAB PLAN
0 50 100 200 FT
1"=100'

REHAB PLAN
MARKET AND WASHINGTON
0 10 20 40 FT
1"=20'

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS
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	ISSUE DATE	SEPTEMBER 2017			
	PROJECT NUMBER	196217-04-001			

REVISION DESCRIPTIONS

MEGAN E. CARR REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/22/2017
Megan E. Carr

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SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 08
TOTAL SHEETS 32

Drawing (ArcMap) - J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217 2-PN-08.mxd Date Saved: 9/27/2017 12:08:48 PM

KEYMAP
SCALE: NONE

LEGEND

- #000 PIPE REHAB ID
- XX" PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
- STATE ROADS

NOTES:

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REHAB PLAN
0 50 100 200 FT
1"=100'

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS	REVISION DESCRIPTIONS
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MEGAN E. CARR REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/27/2017

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SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

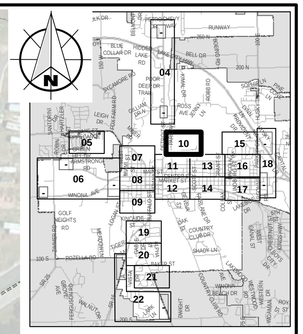
REHABILITATION PLAN

SHEET NO. 09
TOTAL SHEETS 32

REHAB PLAN

0 50 100 200 FT

1"=100'



KEYMAP

SCALE: NONE

LEGEND

- #000 XX" PIPE REHAB ID / PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
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SEWER REHABILITATION - SMALL DIAMETER (≤15")

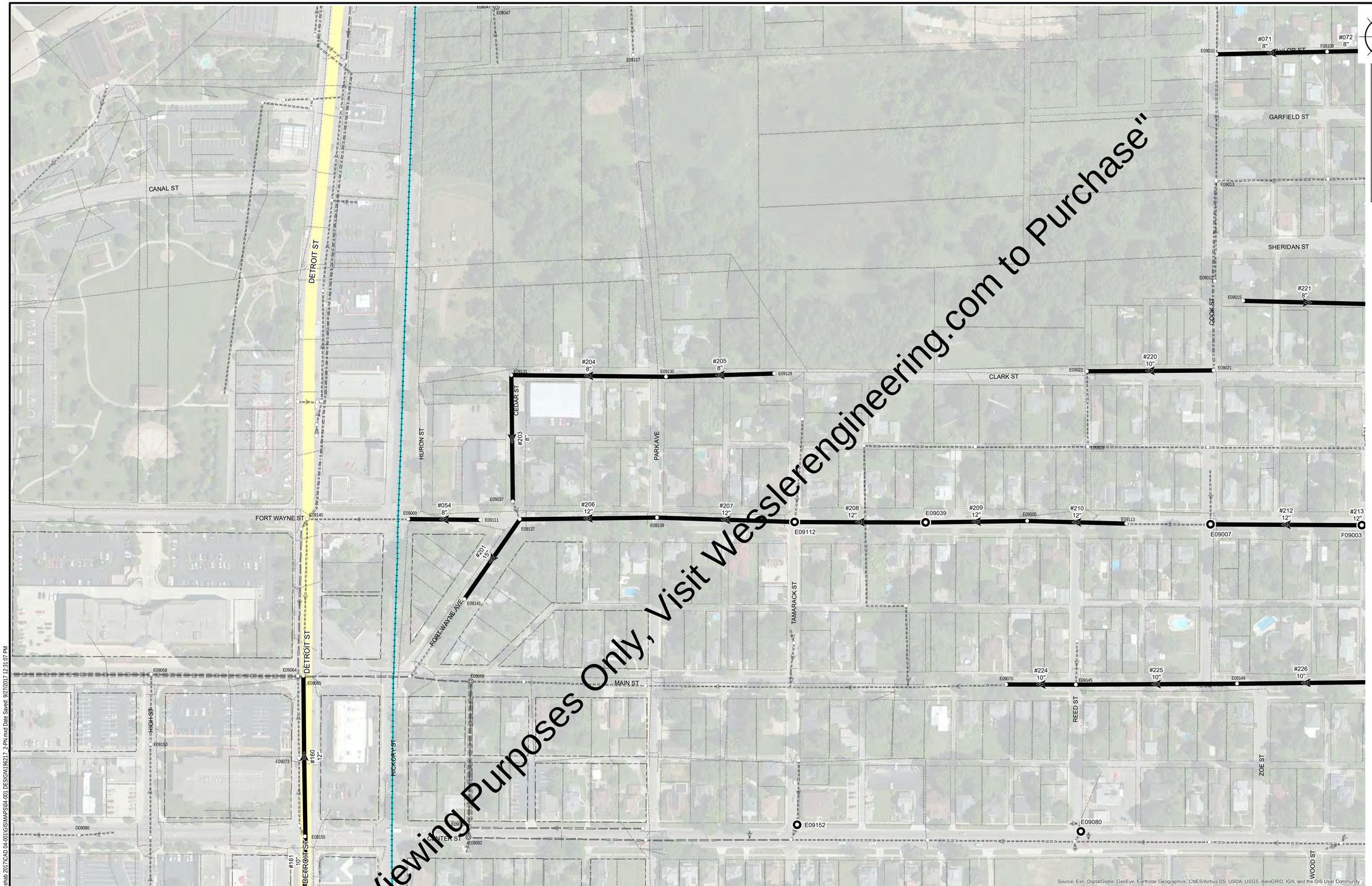
WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 10

TOTAL SHEETS 32

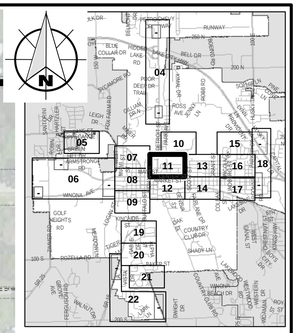
Drawing (ArcMap): J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217_2.PA.mxd Date Saved: 9/27/2017 12:31:07 PM



REHAB PLAN

0 50 100 200 FT

1"=100'



KEYMAP

SCALE: NONE

LEGEND

- #000 PIPE REHAB ID
- XX" PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
- STATE ROADS

NOTES:

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SEWER REHABILITATION - SMALL DIAMETER (≤15")

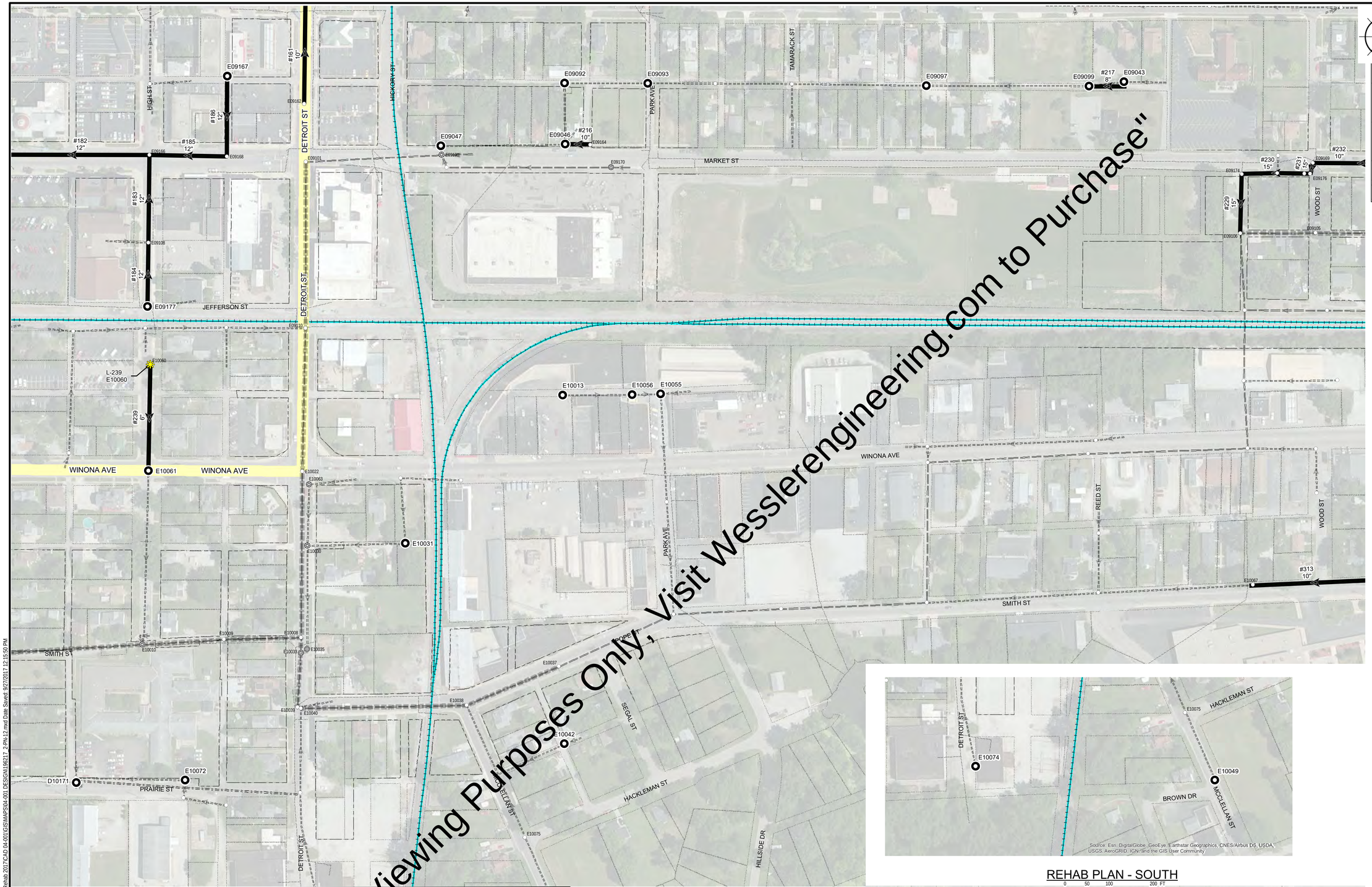
WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 11

TOTAL SHEETS 32

Drawing (ArcMap): J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD\04-001\GIS\MAPS\04-001 DESIGN\196217 2-PM.mxd Date Saved: 9/27/2017 12:31:07 PM



REHAB PLAN

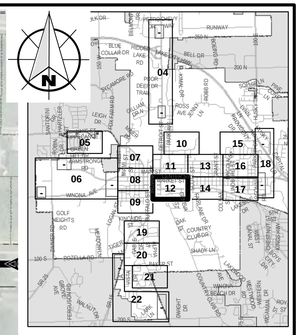
0 50 100 200 FT

1"=100'

REHAB PLAN - SOUTH

0 50 100 200 FT

1"=100'



KEYMAP

SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER
REHAB MANHOLE
REHAB PIPE
SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

MANHOLE WORK (NIC)
REHAB PIPE ≥18" (NIC)
REPLACE PIPE (NIC)

EXISTING (GIS):

MANHOLE
GRAVITY SEWER PIPE ≤15"
GRAVITY SEWER PIPE ≥18"
FORCE MAIN PIPE
DRAINAGE PIPE
PROPERTY LINE
APPARENT RIGHT-OF-WAY
RAILROAD
STATE ROADS

NOTES:

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SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 12

TOTAL SHEETS 32

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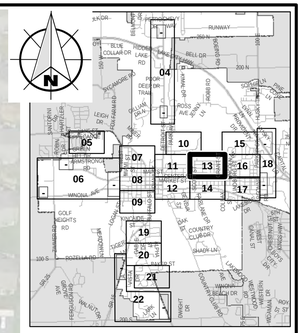

KEYMAP
SCALE: NONE

LEGEND

- #000 PIPE REHAB ID
- XX" PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
- STATE ROADS

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REHAB PLAN
0 50 100 200 FT
1"=100'

Drawing (ArcMap) - J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217_2.PN.mxd Date Saved: 9/27/2017 12:31:07 PM

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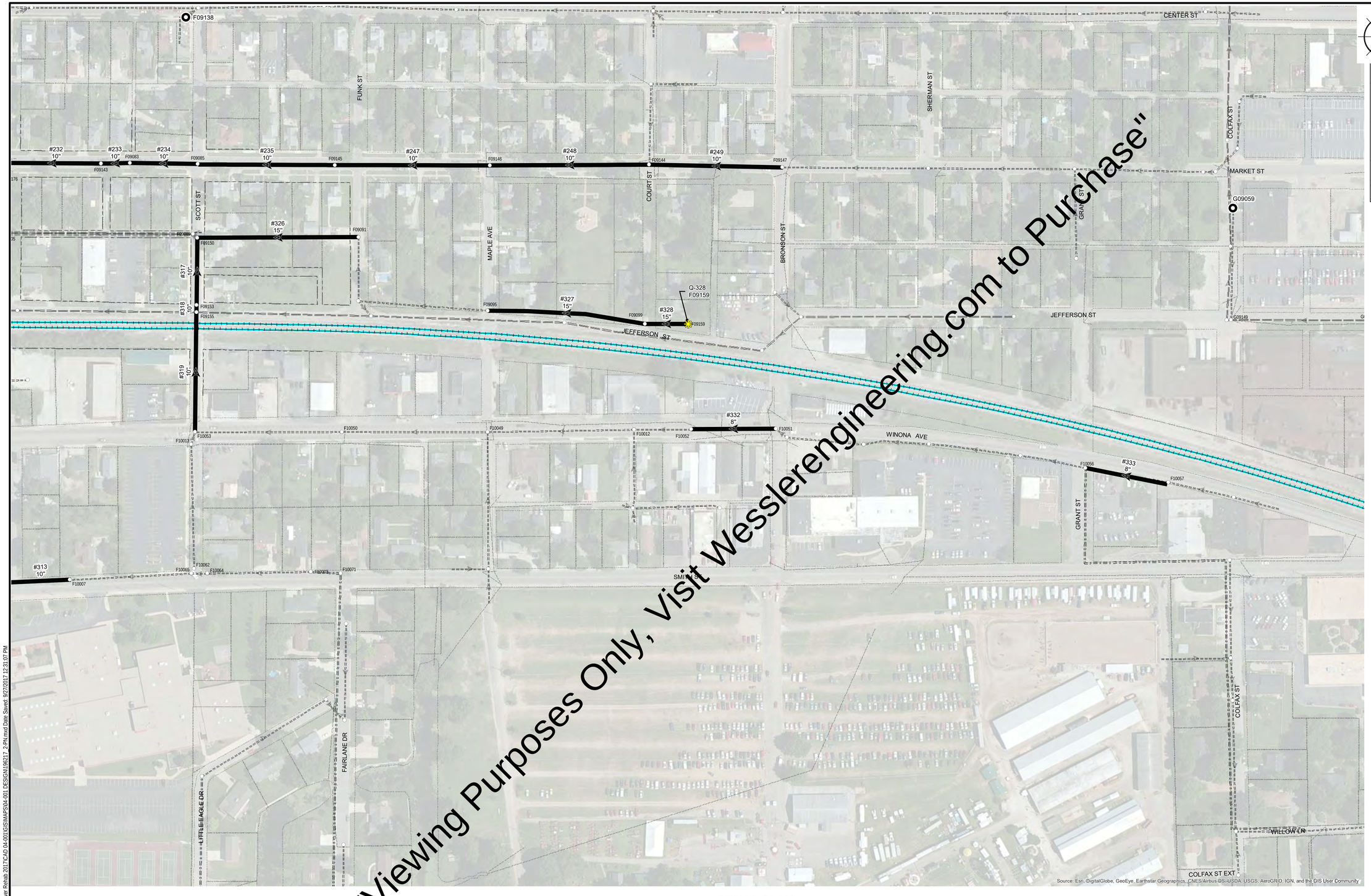
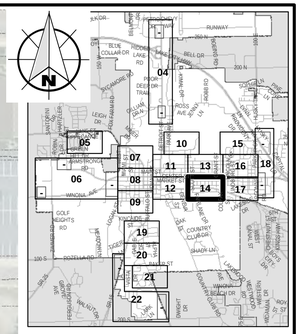
SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 13
TOTAL SHEETS 32





KEYMAP
SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER
REHAB MANHOLE
REHAB PIPE
SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):
MANHOLE WORK (NIC)
REHAB PIPE ≥18" (NIC)
REPLACE PIPE (NIC)
NEW MANHOLE (NIC)
NEW PIPE (NIC)

EXISTING (GIS):
MANHOLE
GRAVITY SEWER PIPE ≤15"
GRAVITY SEWER PIPE ≥18"
FORCE MAIN PIPE
DRAINAGE PIPE
PROPERTY LINE
APPARENT RIGHT-OF-WAY
RAILROAD
STATE ROADS

NOTES:

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REHAB PLAN
0 50 100 200 FT
1"=100'

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS	REVISION DESCRIPTIONS
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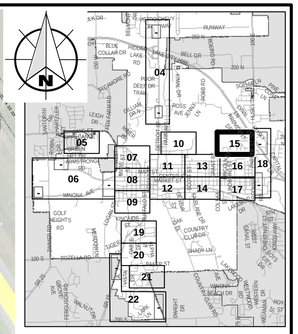
SEWER REHABILITATION - SMALL DIAMETER (≤15")
WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 14
TOTAL SHEETS 32

Drawing (ArcMap): J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217_2-PN.mxd Date Saved: 9/27/2017 12:31:07 PM



KEYMAP
SCALE: NONE

LEGEND

- #000 PIPE REHAB ID
- XX" PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
- STATE ROADS

NOTES:

1. SEE SHEET NO. 26-32 FOR PIPE AND MANHOLE REHAB SCHEDULES
2. THE BYPASS ROUTES SHOWN ARE SUGGESTIONS. THE CONTRACTOR SHALL SUBMIT ALL BYPASS ROUTES TO THE ENGINEER AND OWNER FOR APPROVAL.
3. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE SETUP AND WORK IN THE STATE HIGHWAYS WHEN POSSIBLE. CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR TRAFFIC PLANS AND WORK IN THE STATE HIGHWAYS.
4. THE CONTRACTOR SHALL COORDINATE WITH THE RAILROAD TO OBTAIN ANY PERMITS NECESSARY TO RUN BYPASS PIPING ALONG THE RAILROAD ROW.
5. THE CONTRACTOR SHALL UTILIZE EXISTING ROAD RIGHT OF WAYS AND PIPE EASEMENTS FOR BYPASS PIPING. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY TEMPORARY EASEMENTS IF NECESSARY.

REHAB PLAN

0 50 100 200 FT
1"=100'

Drawing (ArcMap): J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217_2-PN.mxd Date Saved: 9/27/2017 12:31:07 PM

SCALE VERIFICATION	DRAWN BY	MRE	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS			
	APPROVED BY	MEC			
	ISSUE DATE	SEPTEMBER 2017			
	PROJECT NUMBER	196217-04-001			

MEGAN E. CARR REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/27/2017
Megan E. Carr

WESSLER ENGINEERING
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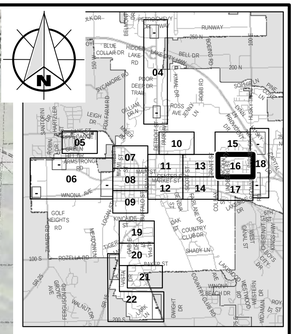
SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 15
TOTAL SHEETS 32



KEYMAP
SCALE: NONE

LEGEND

- #000 XX" PIPE REHAB ID / PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
- STATE ROADS

NOTES:

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REHAB PLAN
0 50 100 200 FT
1"=100'

SCALE VERIFICATION	DRAWN BY	MRE
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	APPROVED BY	MEC
	ISSUE DATE	SEPTEMBER 2017
	PROJECT NUMBER	196217-04-001

	DATE	INITIALS	REVISION DESCRIPTIONS

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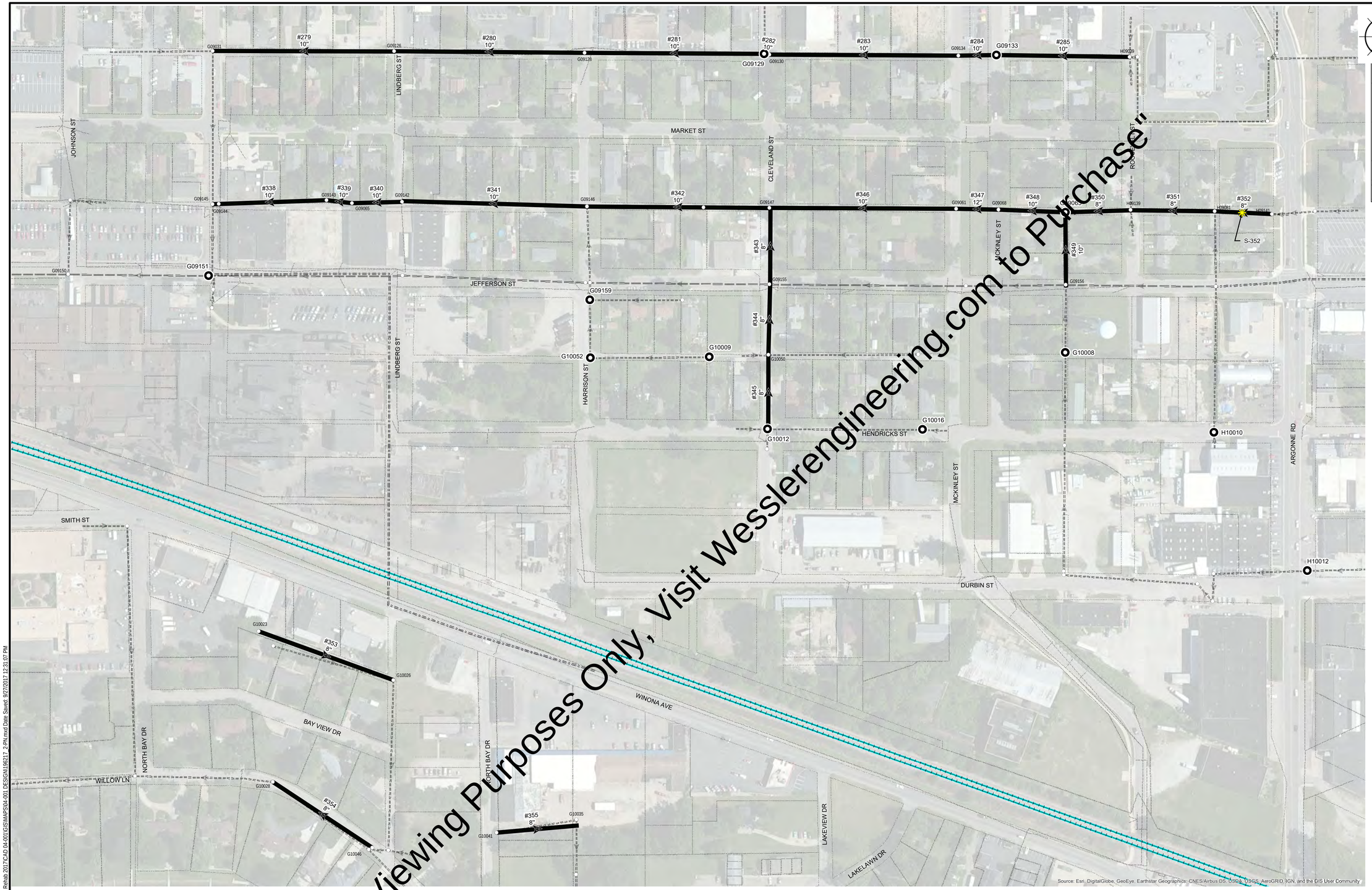
SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 16
TOTAL SHEETS 32

Drawing (ArcMap): J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217_2-PN.mxd Date Saved: 9/27/2017 1:29:26 PM



KEYMAP

SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER
REHAB MANHOLE
REHAB PIPE
SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):
MANHOLE WORK (NIC)
REHAB PIPE ≥18" (NIC)
REPLACE PIPE (NIC)
NEW MANHOLE (NIC)
NEW PIPE (NIC)

EXISTING (GIS):
MANHOLE
GRAVITY SEWER PIPE ≤15"
GRAVITY SEWER PIPE ≥18"
FORCE MAIN PIPE
DRAINAGE PIPE
PROPERTY LINE
APPARENT RIGHT-OF-WAY
RAILROAD
STATE ROADS

NOTES:

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REHAB PLAN

0 50 100 200 FT
1"=100'

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS	REVISION DESCRIPTIONS
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SEWER REHABILITATION - SMALL DIAMETER (≤15")

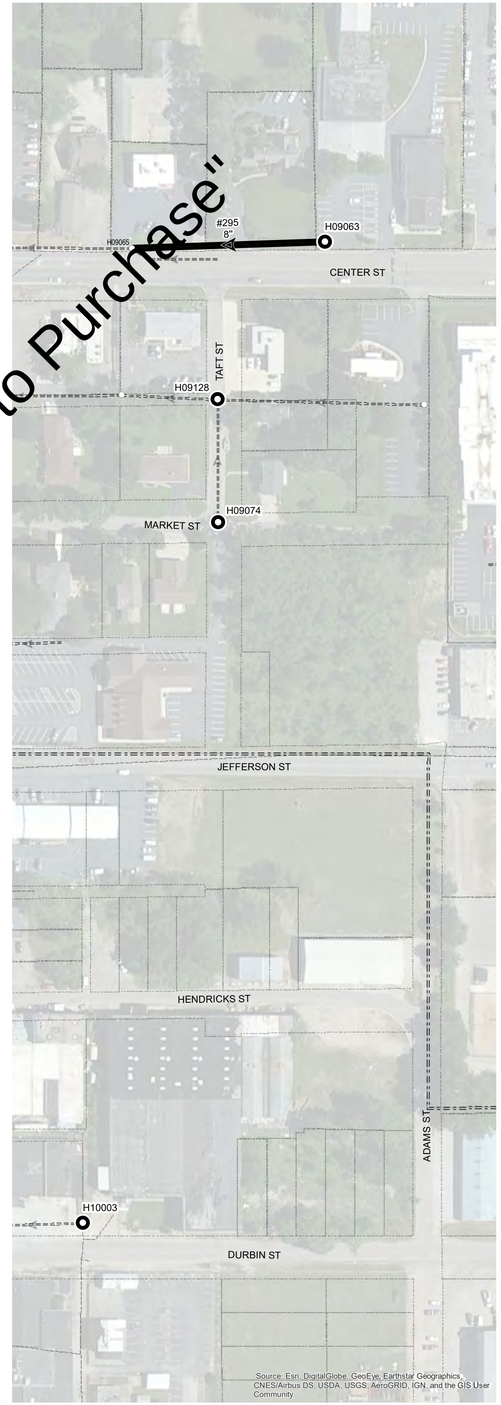
WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 17
TOTAL SHEETS 32

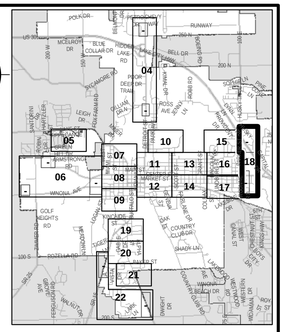
REHAB PLAN
LAKE CITY HWY / US 30

0 50 100 200 FT
1"=100'



REHAB PLAN
TAFT ST

0 50 100 200 FT
1"=100'



KEYMAP
SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER
REHAB MANHOLE
REHAB PIPE
SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):
MANHOLE WORK (NIC)
REHAB PIPE ≥18" (NIC)
REPLACE PIPE (NIC)

EXISTING (GIS):
MANHOLE
GRAVITY SEWER PIPE ≤15"
GRAVITY SEWER PIPE ≥18"
FORCE MAIN PIPE
DRAINAGE PIPE
PROPERTY LINE
APPARENT RIGHT-OF-WAY
RAILROAD
STATE ROADS

NOTES:

1. SEE SHEET NO. 26-32 FOR PIPE AND MANHOLE REHAB SCHEDULES
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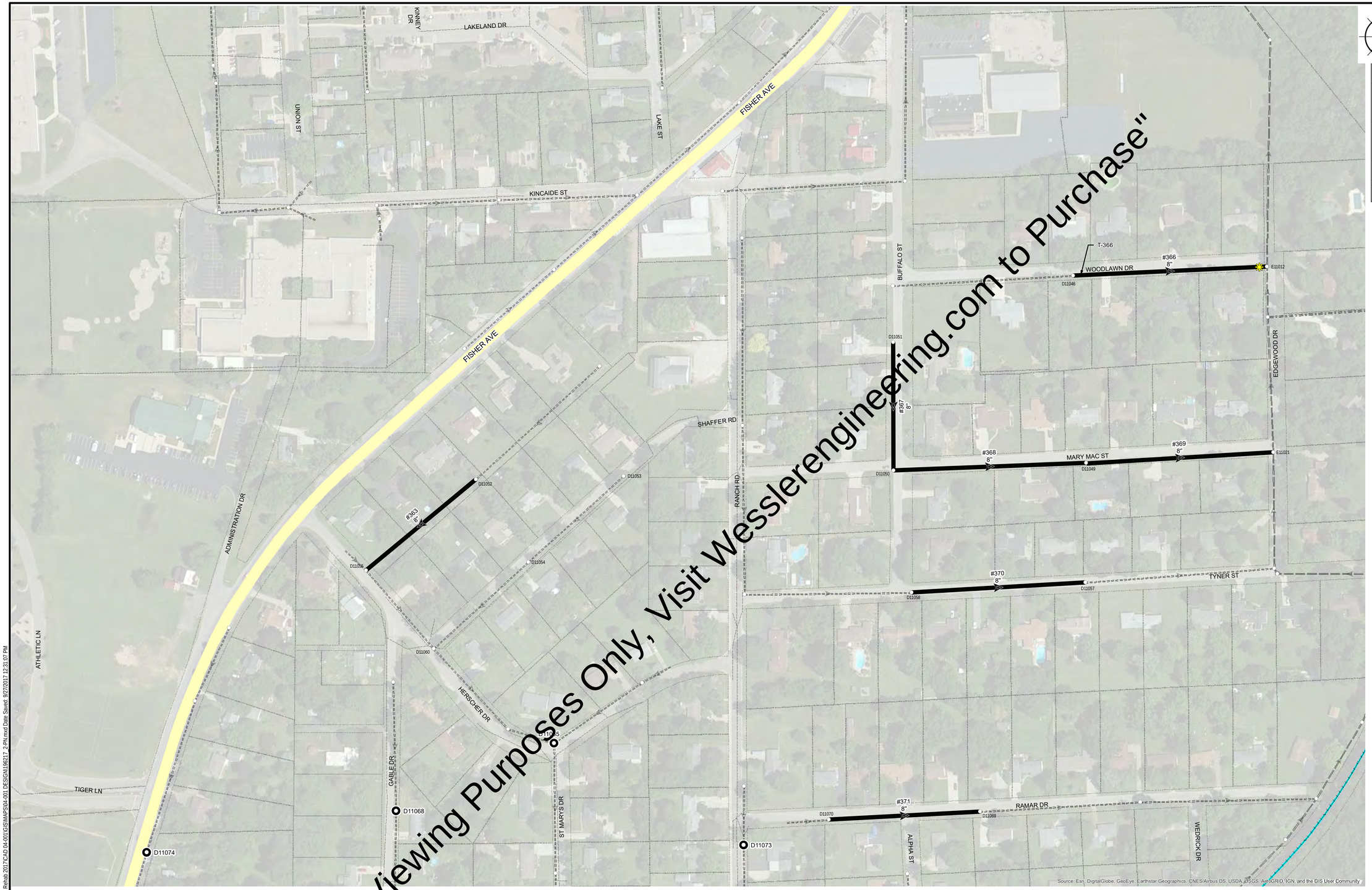
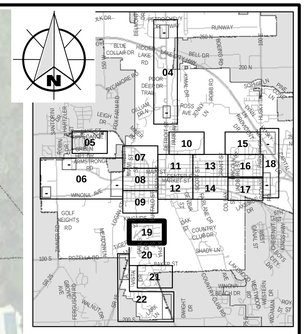
SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 18
TOTAL SHEETS 32





KEYMAP
SCALE: NONE

LEGEND

- #000 PIPE REHAB ID
- XX" PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
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REHAB PLAN
0 50 100 200 FT
1"=100'

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS	REVISION DESCRIPTIONS
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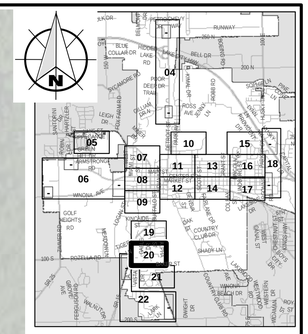
SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 19
TOTAL SHEETS 32

Drawing (ArcMap): J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217_2-PN.mxd Date Saved: 9/27/2017 12:31:07 PM



KEYMAP
SCALE: NONE

LEGEND

- #000 PIPE REHAB ID
- XX" PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
- STATE ROADS

NOTES:

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REHAB PLAN

0 50 100 200 FT

1"=100'

SCALE VERIFICATION	DRAWN BY	MRE		DATE	INITIALS	REVISION DESCRIPTIONS
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SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. **20**

TOTAL SHEETS **32**

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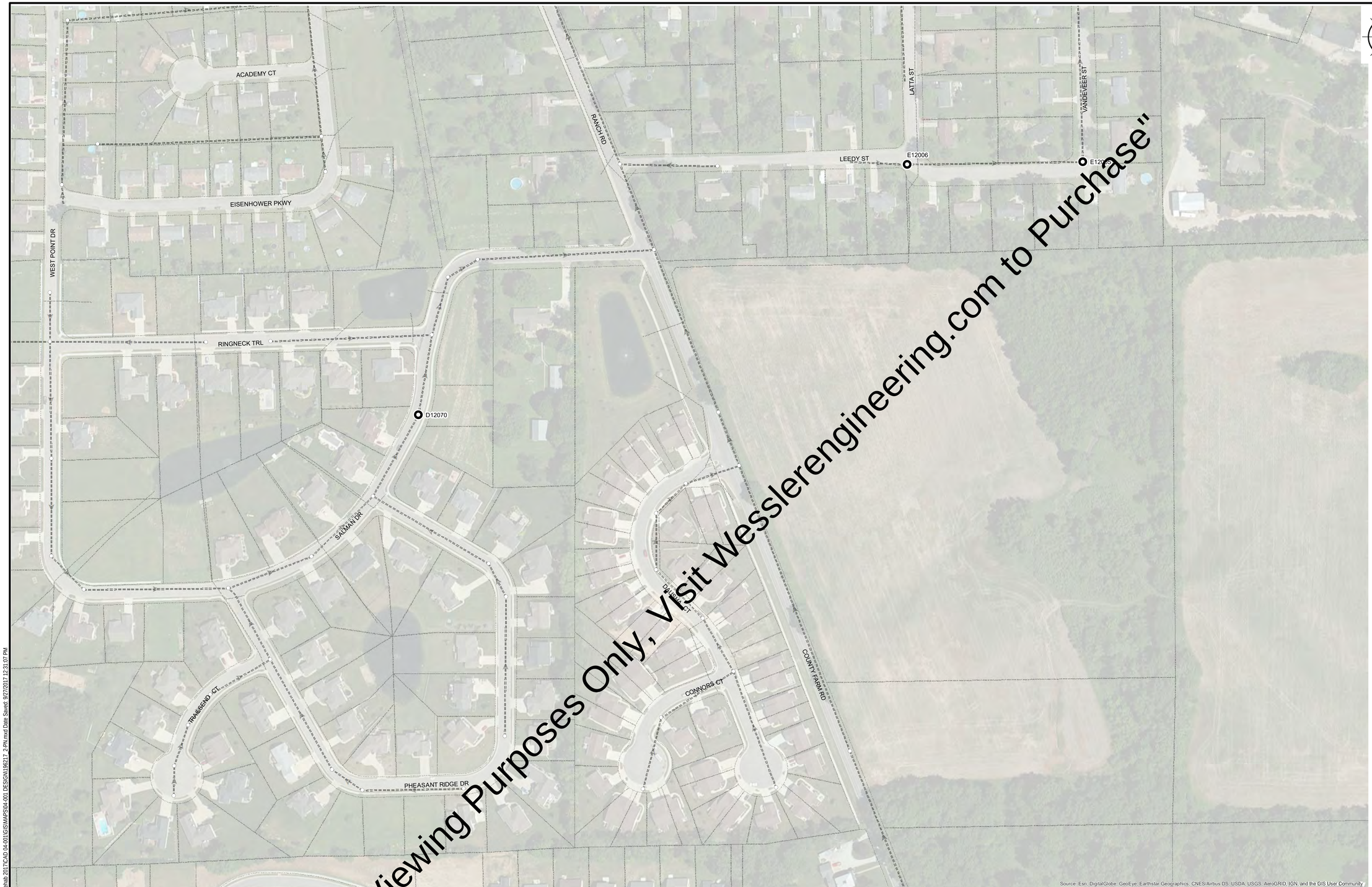

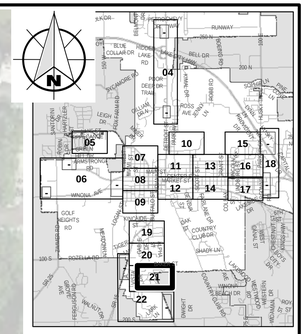

KEYMAP
SCALE: NONE

LEGEND

- #000 PIPE REHAB ID
- XX" PIPE DIAMETER
- REHAB MANHOLE
- REHAB PIPE
- SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

- MANHOLE WORK (NIC)
- REHAB PIPE ≥18" (NIC)
- REPLACE PIPE (NIC)
- NEW MANHOLE (NIC)
- NEW PIPE (NIC)

EXISTING (GIS):

- MANHOLE
- GRAVITY SEWER PIPE ≤15"
- GRAVITY SEWER PIPE ≥18"
- FORCE MAIN PIPE
- DRAINAGE PIPE
- PROPERTY LINE
- APPARENT RIGHT-OF-WAY
- RAILROAD
- STATE ROADS

NOTES:

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REHAB PLAN

0 50 100 200 FT
1"=100'

Drawing (ArcMap): J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\GIS\MAPS\04-001 DESIGN\196217_2-PN.mxd Date Saved: 9/27/2017 12:31:07 PM

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WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

SHEET NO. 21
TOTAL SHEETS 32

REHAB PLAN - FISHER AVE

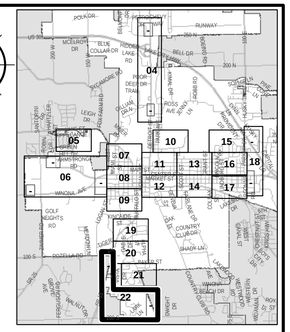
0 50 100 200 FT

1"=100'

REHAB PLAN - PIPE #379
COUNTY FARM RD

0 50 100 200 FT

1"=100'



KEYMAP

SCALE: NONE

LEGEND

#000 PIPE REHAB ID
XX" PIPE DIAMETER

REHAB MANHOLE

REHAB PIPE

SPOT REPAIR, SEE SHEETS 23-24

NOT IN CONTRACT (NIC):

MANHOLE WORK (NIC)

REHAB PIPE ≥18" (NIC)

REPLACE PIPE (NIC)

EXISTING (GIS):

MANHOLE

GRAVITY SEWER PIPE ≤15"

GRAVITY SEWER PIPE ≥18"

FORCE MAIN PIPE

DRAINAGE PIPE

PROPERTY LINE

APPARENT RIGHT-OF-WAY

RAILROAD

STATE ROADS

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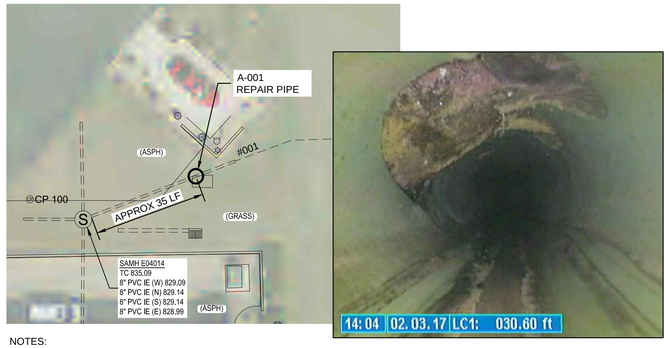
SEWER REHABILITATION - SMALL DIAMETER (≤15")

WARSAW BOARD OF PUBLIC WORKS AND SAFETY
CITY OF WARSAW, INDIANA

REHABILITATION PLAN

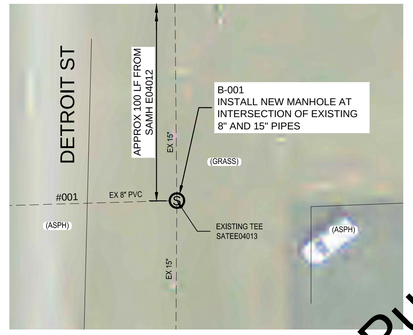
SHEET NO. 22

TOTAL SHEETS 32



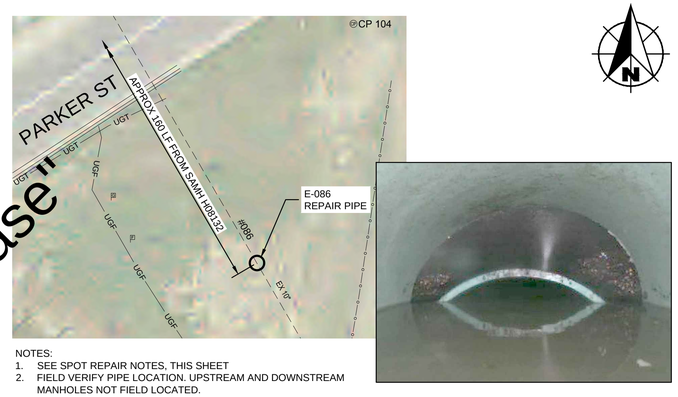
NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. FIELD VERIFY PIPE LOCATION. (PIPE DEFLECTIONS NOT FIELD LOCATED)

PLAN - SPOT REPAIR A-001



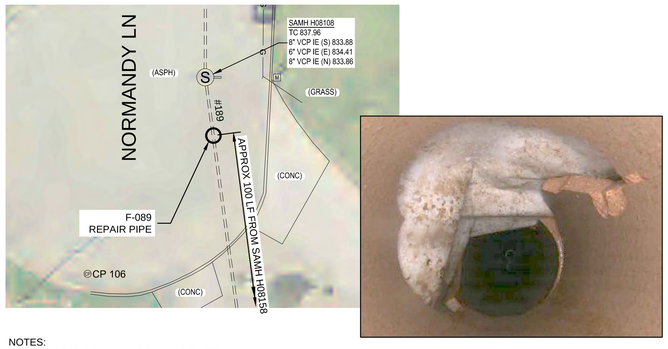
NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. NO FIELD SURVEY IN THIS AREA
2. NO MANHOLE EXISTS. CONTRACTOR TO FIELD VERIFY NEW MANHOLE LOCATION AND NOTIFY ENGINEER OF CONFLICTS.

PLAN - SPOT REPAIR B-001



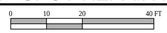
NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. FIELD VERIFY PIPE LOCATION. UPSTREAM AND DOWNSTREAM MANHOLES NOT FIELD LOCATED.

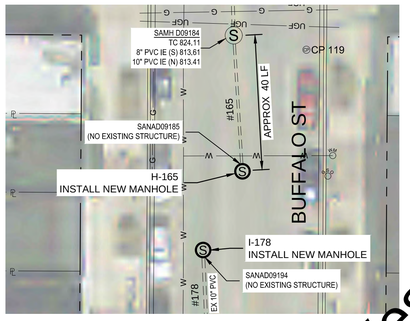
PLAN - SPOT REPAIR E-086



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. FIELD VERIFY PIPE LOCATION. DOWNSTREAM MANHOLE NOT FIELD LOCATED.

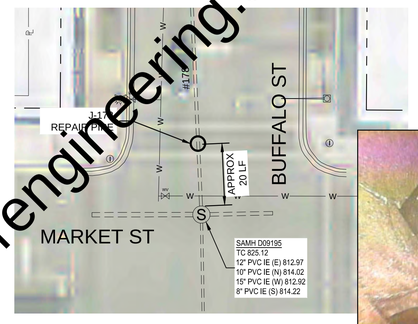
PLAN - SPOT REPAIR F-089





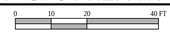
NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. NO MANHOLE EXISTS. CONTRACTOR TO FIELD VERIFY NEW MANHOLE LOCATION AND NOTIFY ENGINEER OF CONFLICTS.

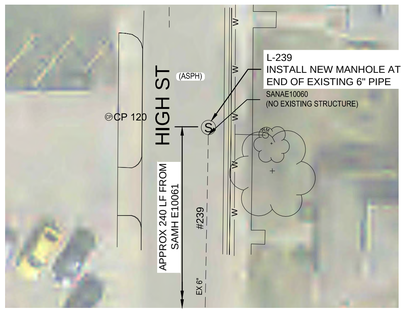
PLAN - SPOT REPAIR H-165 AND I-178



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. FIELD VERIFY PIPE LOCATION. UPSTREAM MANHOLE NOT FIELD LOCATED.

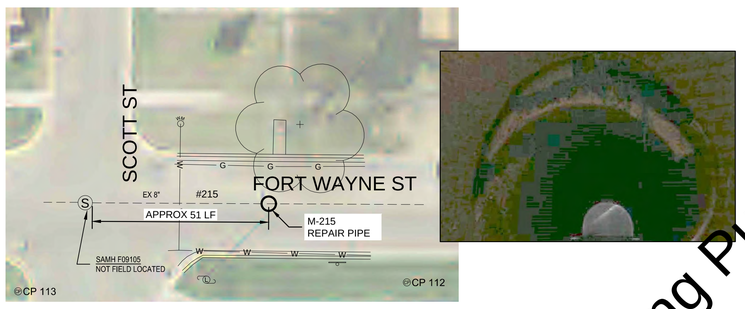
PLAN - SPOT REPAIR J-178





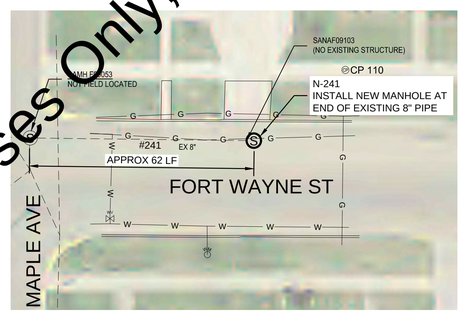
NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. NO MANHOLE EXISTS. CONTRACTOR TO FIELD VERIFY NEW MANHOLE LOCATION AND NOTIFY ENGINEER OF CONFLICTS.

PLAN - SPOT REPAIR L-239



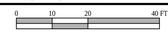
NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. FIELD VERIFY PIPE LOCATION. UPSTREAM AND DOWNSTREAM MANHOLES NOT FIELD LOCATED.

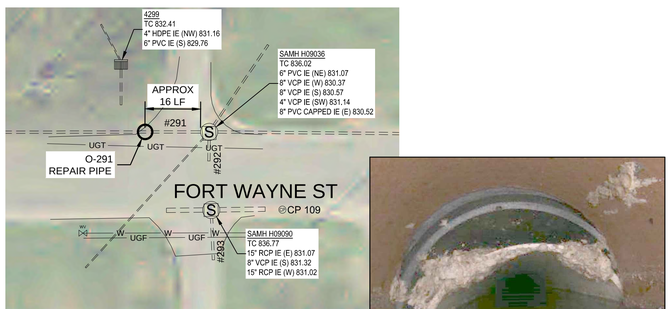
PLAN - SPOT REPAIR M-215



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. NO MANHOLE EXISTS. CONTRACTOR TO FIELD VERIFY NEW MANHOLE LOCATION AND NOTIFY ENGINEER OF CONFLICTS.

PLAN - SPOT REPAIR N-241





NOTES:
1. SEE SPOT REPAIR NOTES, THS SHEET
2. FIELD VERIFY PIPE LOCATION. DOWNSTREAM MANHOLE NOT FIELD LOCATED.

PLAN - SPOT REPAIR O-291

SPOT REPAIR NOTES:
1. SPOT REPAIR DATA TABLE, SEE SHEET NO. 27
2. CONTRACTOR TO TELEVISE AND VERIFY ALL SPOT REPAIR LOCATIONS, AND SUBMIT REPAIR PLAN TO ENGINEER FOR APPROVAL.
3. CONTRACTOR TO VERIFY AND RECONNECT ALL EXISTING LATERALS.
4. OWNER RESERVES THE RIGHT TO SELF PERFORM OR CONTRACT OUT SEPARATELY SPOT REPAIRS.

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS				
	APPROVED BY	MEC				
	ISSUE DATE	SEPTEMBER 2017				
	PROJECT NUMBER	196217-04-001				

MEGAN E. CARR REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/27/2017

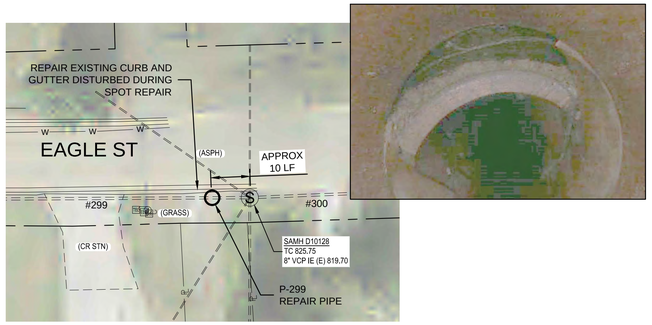
WESSLER ENGINEERING
More than a Project™

SEWER REHABILITATION - SMALL DIAMETER (≤15")

CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

SPOT REPAIR PLANS A-O

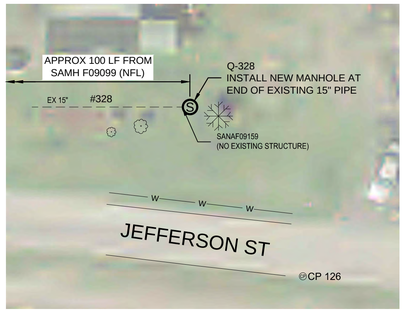
SHEET NO. 23
TOTAL SHEETS 32



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET

PLAN - SPOT REPAIR P-299

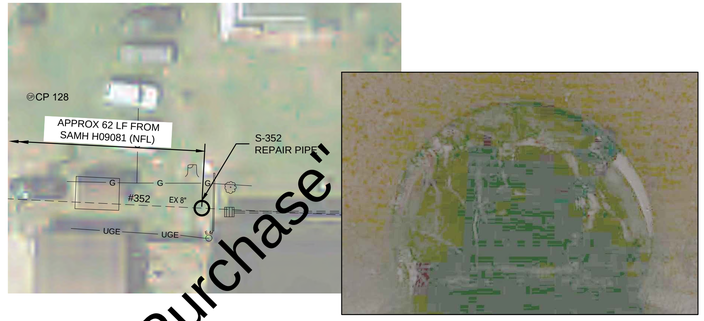
0 10 20 40 FT
1"=20'



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. NO MANHOLE EXISTS. CONTRACTOR TO FIELD VERIFY NEW MANHOLE LOCATION AND NOTIFY ENGINEER OF CONFLICTS.

PLAN - SPOT REPAIR Q-328

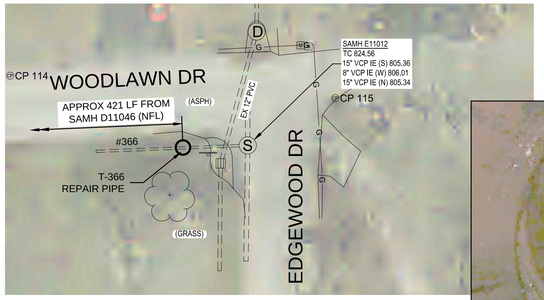
0 10 20 40 FT
1"=20'



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. FIELD VERIFY PIPE LOCATION. UPSTREAM AND DOWNSTREAM MANHOLES NOT FIELD LOCATED.

PLAN - SPOT REPAIR S-352

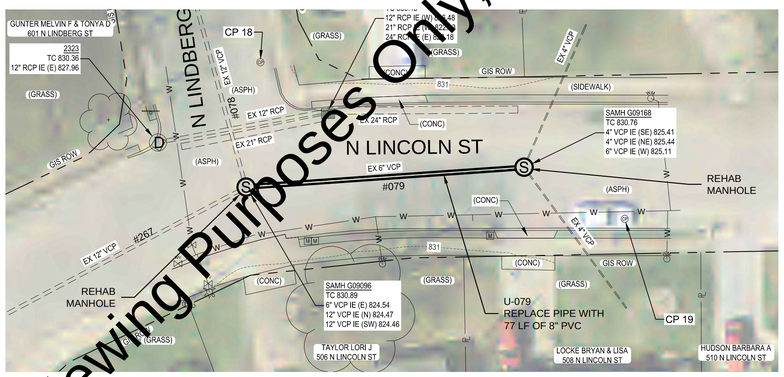
0 10 20 40 FT
1"=20'



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. FIELD VERIFY PIPE LOCATION. UPSTREAM MANHOLE NOT FIELD LOCATED.

PLAN - SPOT REPAIR T-366

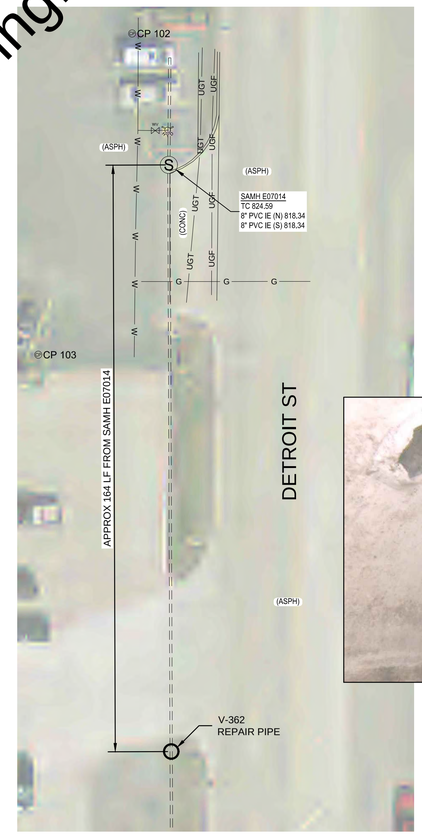
0 10 20 40 FT
1"=20'



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET

PLAN - SPOT REPAIR U-079

0 10 20 40 FT
1"=20'



NOTES:
1. SEE SPOT REPAIR NOTES, THIS SHEET
2. FIELD VERIFY PIPE LOCATION. DOWNSTREAM MANHOLE NOT FIELD LOCATED.

PLAN - SPOT REPAIR V-362

0 10 20 40 FT
1"=20'

SPOT REPAIR NOTES:
1. SPOT REPAIR DATA TABLE, SEE SHEET NO. 27
2. CONTRACTOR TO TELEVISE AND VERIFY ALL SPOT REPAIR LOCATIONS, AND SUBMIT REPAIR PLAN TO ENGINEER FOR APPROVAL.
3. CONTRACTOR TO VERIFY AND RECONNECT ALL EXISTING LATERALS.
4. OWNER RESERVES THE RIGHT TO SELF PERFORM OR CONTRACT OUT SEPARATELY SPOT REPAIRS.

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS	
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS					
	APPROVED BY	MEC					
	ISSUE DATE	SEPTEMBER 2017					
	PROJECT NUMBER	196217-04-001					

MEGAN E. CARR REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/27/2017

WESSLER ENGINEERING More than a Project™

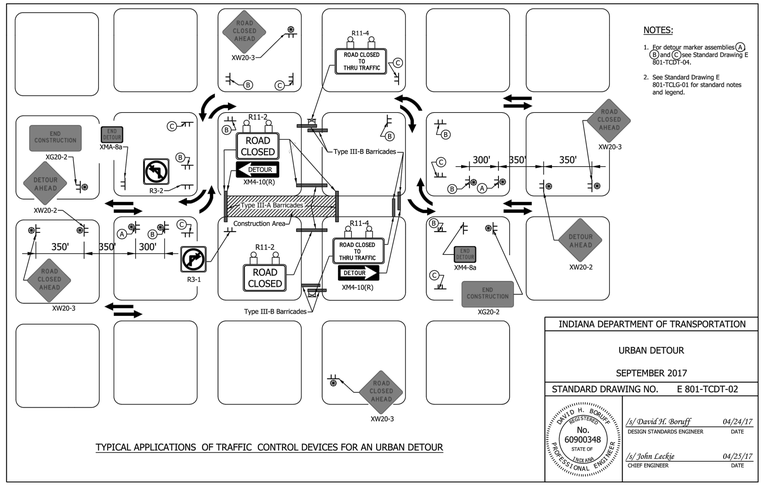
SEWER REHABILITATION - SMALL DIAMETER (≤15")

CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

SPOT REPAIR PLANS P-U

SHEET NO. 24

TOTAL SHEETS 32



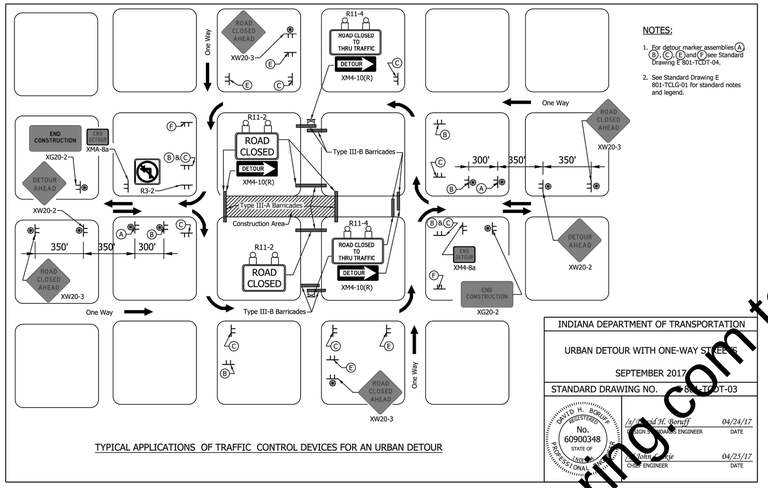
TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR AN URBAN DETOUR

NOTES:

1. For detour marker assemblies (A) and (C) see Standard Drawing E 801-TCDT-04.
2. See Standard Drawing E 801-TCLG-01 for standard notes and legend.

INDIANA DEPARTMENT OF TRANSPORTATION	
URBAN DETOUR	
SEPTEMBER 2017	
STANDARD DRAWING NO.	E 801-TCDT-02

/s/ David H. Boruff 04/24/17 — DESIGN STANDARDS ENGINEER — DATE
/s/ John Leckie 04/25/17 — CHIEF ENGINEER — DATE



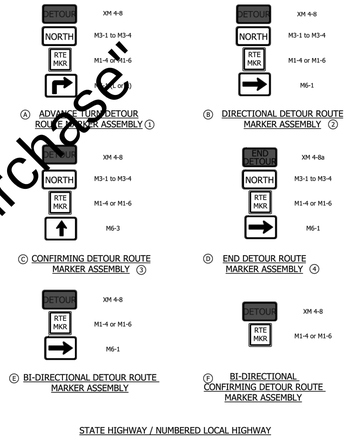
TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR AN URBAN DETOUR

NOTES:

1. For detour marker assemblies (A), (C), (E) and (F) see Standard Drawing E 801-TCDT-04.
2. See Standard Drawing E 801-TCLG-01 for standard notes and legend.

INDIANA DEPARTMENT OF TRANSPORTATION	
URBAN DETOUR WITH ONE-WAY STREET	
SEPTEMBER 2017	
STANDARD DRAWING NO.	E 801-TCDT-03

/s/ David H. Boruff 04/24/17 — DESIGN STANDARDS ENGINEER — DATE
/s/ John Leckie 04/25/17 — CHIEF ENGINEER — DATE



(A) ADVANCE URBAN DETOUR ROUTE MARKER ASSEMBLY (1)

(B) DIRECTIONAL DETOUR ROUTE MARKER ASSEMBLY (2)

(C) CONFIRMING DETOUR ROUTE MARKER ASSEMBLY (3)

(D) END DETOUR ROUTE MARKER ASSEMBLY (4)

(E) BI-DIRECTIONAL DETOUR ROUTE MARKER ASSEMBLY

(F) BI-DIRECTIONAL CONFIRMING DETOUR ROUTE MARKER ASSEMBLY

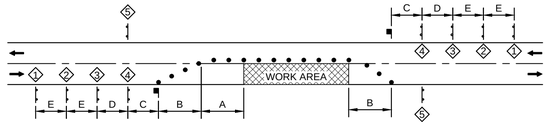
STATE HIGHWAY / NUMBERED LOCAL HIGHWAY

NOTES:

1. Advance turn detour route marker assemblies shall be located as shown, or after the last cross street prior to the beginning of the detour, as directed.
2. Directional detour route marker assemblies shall be located 100 ft. to 200 ft. in advance of all required turns within the detour limits.
3. Confirming detour route marker assemblies shall be located 200 ft. past all major intersections, as required, and shall be spaced a maximum of 3 mi. on a rural detour or 0.5 mi. on an urban detour on each leg of such detours. Confirming detour route marker assemblies shall be placed after a required turn when directed.
4. End detour route marker assemblies shall be located 100 ft. to 200 ft. in advance of the final turn of the detour.

INDIANA DEPARTMENT OF TRANSPORTATION	
DETOUR ROUTE MARKER ASSEMBLIES	
SEPTEMBER 2017	
STANDARD DRAWING NO.	E 801-TCDT-04

/s/ David H. Boruff 04/24/17 — DESIGN STANDARDS ENGINEER — DATE
/s/ John Leckie 04/25/17 — CHIEF ENGINEER — DATE



TEMPORARY FLAGGER OPERATION
SCALE: NONE

- WORK AREA(S)
- TYPE A CONSTRUCTION WARNING LIGHT
- WORKSITE ADDED PENALTY (G20-7) ONLY FOR INDOT WORKS
- "ROAD WORK AHEAD" (W20-1) OR "UTILITY WORK AHEAD" (W21-7)
- "ONE LANE ROAD AHEAD" (W20-4)
- FLAGGER SIGN (W20-7)
- "END ROAD WORK" (G20-2)
- BARRICADE TYPE IIIB
- TRAFFIC CONTROL DRUM
- TRAFFIC FLOW DIRECTION
- FLAGGER
- SIGN, FACING LEFT
- SIGN, FACING RIGHT

TRAFFIC CONTROL LEGEND
SCALE: NONE

SPEED (MPH)	DISTANCE (FEET)				
	A	B	C	D	E
20 OR LESS	120	100	100	100	100
25	160	100	100	100	100
30	200	100	100	100	100
35	280	100	350	350	350
40	320	100	350	350	350
45	360	100	500	500	500
50	440	100	500	500	500
55	520	100	500	500	500
60	600	100	1,000	1,600	2,640
65	680	100	1,000	1,600	2,640
70	760	100	1,000	1,600	2,640

NOTES:

1. DISTANCES SHOWN ARE APPROXIMATE. ADJUST SIGN FOR CURVES, HILLS, INTERSECTIONS, DRIVEWAYS, ETC TO IMPROVE SIGN VISIBILITY.
2. THE SPACING OF CHANNELIZING DEVICES SHOULD BE A DISTANCE IN FEET EQUAL TO THE SPEED LIMIT IN MPH WHEN USED FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET EQUAL TO 2.0 TIMES THE SPEED LIMIT IN MPH USED FOR TANGENT CHANNELIZATION.

ADVANCE WARNING SIGN AND FLAGGER OPERATION SPACING
SCALE: NONE

TRAFFIC CONTROL NOTES:

1. PROVIDE SIGNS AND PLACEMENT OF SIGNS IN COMPLIANCE WITH THE IMUTCD (LATEST EDITION) AND THE CURRENT INDOT STANDARDS.
2. WHEN ADDITIONAL WORKING SPACE IS NEEDED, UTILIZE THE FLAGGER OPERATION TO MAINTAIN ONE TRAVEL LANE.
3. COVER SIGNS 3 AND 4 WHEN WORK IS NOT IN PROGRESS.
4. DURING CONSTRUCTION MINIMIZE DAMAGE TO THE EXISTING PAVEMENT, DRIVES, CURBS AND SIDEWALKS.
5. BACKFILL EXCAVATIONS IN THE PAVEMENT AREAS DAILY AND TEMPORARILY COVER WITH STEEL PLATES UNTIL PAVEMENT IS REPLACED.
6. IF THE CLOSURE OF A STREET IS NEEDED, UTILIZE INDOT STANDARD DRAWINGS E 801-TCDT-02 THRU E 801-TCDT-04.
7. SUBMIT A DETAILED DETOUR ROUTE PLAN AND TIMELINE FOR APPROVAL 2 WEEKS PRIOR TO ANY STREET CLOSURES.
8. DO NOT CLOSE ADJACENT STREETS AT THE SAME TIME.
9. NOTIFY PROPERTY OWNERS AND BUSINESSES AT LEAST 72 HOURS PRIOR TO STREET CLOSURE.
10. PROTECTION OF AND ACCESS FOR PEDESTRIANS AND EMERGENCY VEHICLES MUST BE MAINTAINED DURING CONSTRUCTION.
11. WHEN WORK IMPACTS SIDEWALK OR CROSSWALK ACCESS, PROVIDE "SIDEWALK CLOSED" SIGNS AND "SIDEWALK CLOSED AHEAD" SIGNS AT THE NEAREST CROSSWALK.
12. BACKFILL EXCAVATIONS IN THE SIDEWALK AREAS DAILY AND TEMPORARILY TOP WITH COARSE AGGREGATE NO. 12 UNTIL THE CONCRETE SIDEWALK IS REPLACED.
13. COORDINATE CLOSURES WITH ALL EMERGENCY AGENCIES, SCHOOL DISTRICTS, AND OTHER CITY PROJECTS.

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS				
	APPROVED BY	MEC				
	ISSUE DATE	SEPTEMBER 2017				
	PROJECT NUMBER	196217-04-001				

MEGAN E. CARR — REGISTERED — No. 10910636 — STATE OF INDIANA — PROFESSIONAL ENGINEER — 09/27/2017
Megan E. Carr

WESSLER ENGINEERING
More than a Project™

SEWER REHABILITATION - SMALL DIAMETER (≤15")
CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

TRAFFIC CONTROL PLAN

SHEET NO. 25
TOTAL SHEETS 32

PIPE REHAB DATA TABLE

PLAN SHEET	REHAB ID	PIPE DIAMETER	CIPP LENGTH	MATERIAL	TYPE	UP STREAM STRUCTURE	UP STREAM STRUCTURE DEPTH	DOWN STREAM STRUCTURE	DOWN STREAM STRUCTURE DEPTH	APPROX# ACTIVE LATERALS	APPROX# PROTRUDING LATERALS
		IN	FT				FT		FT		
05	017	8	306	VCP	SANITARY	SAMHB08044	3.2	SAMHB08043	4.7	4	2
05	018	8	292	VCP	SANITARY	SAMHB08037	4.0	SAMHB08033	3.9	3	2
05	019	8	292	VCP	SANITARY	SAMHB08038	4.1	SAMHB08037	4.0	6	2
07	021	10	282	VCP	SANITARY	SAMHD08030	4.8	SAMHD09003	4.5	6	0
07	022	8	345	VCP	SANITARY	SAMHD09131	6.3	SAMHD09003	4.5	4	0
07	023	8	347	VCP	SANITARY	SAMHD09142	6.3	SAMHD09131	6.3	7	0
07	024	8	308	VCP	SANITARY	SAMHD09152	6.6	SAMHD09142	6.3	4	0
07	025	8	36	VCP	SANITARY	SAMHD09014	6.3	SAMHD09152	6.6	1	UNKN
07	026	8	141	VCP	SANITARY	SAMHD09155	5.5	SAMHD09014	6.3	4	1
07	027	10	337	VCP	SANITARY	SAMHD09003	4.5	SAMHD09125	12.1	7	UNKN
07	036	10	161	VCP	SANITARY	SAMHD08032	16.0	SAMHD09126	5.3	3	0
07	037	10	433	VCP	SANITARY	SAMHD09125	12.1	SAMHD09126	5.3	10	0
07	038	12	348	VCP	SANITARY	SAMHD09126	5.3	SAMHD09134	16.0	5	0
07	039	12	349	VCP	SANITARY	SAMHD09134	16.0	SAMHD09146	14.3	1	0
07	040	12	348	VCP	SANITARY	SAMHD09146	14.3	SAMHD09157	12.8	5	0
07	043	12	385	VCP	SANITARY	SAMHD09129	8.3	SAMHD09148	9.7	0	0
07	044	12	346	VCP	SANITARY	SAMHD09148	9.7	SAMHD09006	8.1	6	0
07	046	15	367	VCP	SANITARY	SAMHD09004	9.7	SAMHD09006	8.1	3	0
11	054	8	161	VCP	SANITARY	SAMHE09111	5.6	SAMHE09003	10.0	3	0
10	060	8	218	VCP	SANITARY	SAMHE08003	7.1	SAMHE08063	4.3	3	2
10	061	8	28	VCP	--	SAMHE08063	4.3	SAMHE08011	4.8	0	UNKN
10	062	10	402	VCP	SANITARY	SAMHE08011	4.8	SAMHE08027	6.3	4	0
10	063	10	416	VCP	--	SAMHE08027	6.3	SAMHE08031	7.0	7	0
10	064	10	70	VCP	SANITARY	SAMHE08031	7.0	SAMHE08071	7.4	2	0
10	065	10	347	VCP	SANITARY	SAMHE08071	7.4	SAMHE08088	7.3	1	0
11	071	8	250	VCP	SANITARY	SAMHF09108	4.0	SAMHE09010	9.4	4	1
13	072	8	256	VCP	SANITARY	SAMHF09005	3.7	SAMHF09108	4.0	6	1
10	073	8	192	VCP	SANITARY	SAMHF08023	3.0	SAMHF08024	3.8	0	0
15	074	8	115	VCP	SANITARY	SAMHG08020	6.6	SAMHG08015	6.3	3	0
15	075	8	43	VCP	--	SAMHG08013	6.5	SAMHG08015	6.3	0	0
15	076	8	138	VCP	SANITARY	SAMHG08012	6.1	SAMHG08013	6.5	2	0
15	077	12	241	VCP	SANITARY	SAMHG08077	5.5	SAMHG08082	5.7	7	0
15-16	078	12	344	VCP	SANITARY	SAMHG08082	5.7	SAMHG09096	6.5	8	1
15	080	8	132	VCP	SANITARY	SAMHG08073	6.4	SAMHG08010	5.6	3	0
15	081	8	310	VCP	SANITARY	SAMHG08034	8.1	SAMHG08026	8.5	4	0
15-16	082	8	280	VCP	SANITARY	SAMHG09003	5.3	SAMHG08034	8.1	7	0
15	083	10	278	VCP	SANITARY	SAMHH08149	4.0	SAMHH08150	4.3	5	0
15-16	084	10	437	VCP	SANITARY	SAMHG08081	5.3	SAMHG09097	6.8	6	0
15	085	10	224	VCP	SANITARY	SAMHH08109	5.9	SAMHH08106	5.2	5	0
18	088	8	209	VCP	SANITARY	SAMHH08097	8.7	SAMHH08095	6.9	2	3
18	089	8	116	VCP	SANITARY	SAMHH08158	6.3	SAMHH08108	5.1	2	0
06	090	12	418	VCP	SANITARY	SAMHB09015	7.3	SAMHB09025	10.8	0	0
06	091	12	328	VCP	SANITARY	SAMHA10013	10.3	SAMHA10003	10.3	0	UNKN
06	095	10	462	VCP	SANITARY	SAMHC09035	6.3	SAMHC09024	5.2	1	0
06	096	10	280	VCP	SANITARY	SAMHC09024	5.2	SAMHC09022	8.0	6	2
06	097	12	304	VCP	COMBINED	SAMHC09022	8.0	SAMHC09021	12.7	3	0
08	098	10	225	VCP	COMBINED	SAMHC09021	7.3	SAMHC09022	8.0	6	0
08	099	10	130	VCP	COMBINED	SAMHC09008	4.3	SAMHC09021	7.3	4	2
08	104	12	190	VCP	SANITARY	SAMHD09059	9.0	SAMHD09223	--	4	0
08	106	12	421	VCP	SANITARY	SAMHD09072	4.8	SAMHD09074	7.0	0	0
08	107	10	194	VCP	SANITARY	SAMHD09200	7.4	SAMHD09199	9.0	5	0
08	111	15	399	VCP	COMBINED	SAMHD09118	9.5	SAMHD09117	11.4	5	0
06	112	10	300	VCP	COMBINED	SAMHC10034	9.0	SAMHC10012	9.5	1	0
08	116	8	51	UNKN	SANITARY	SAMHD10161	13.0	SAMHD10160	9.6	1	UNKN
08	119	8	350	VCP	SANITARY	SAMHD10161	9.6	SAMHD10029	11.1	7	UNKN
08	129	15	314	VCP	SANITARY	SANAE09160	10.1	SAMHD09074	7.0	2	0
08	131	15	321	RCP	SANITARY	SAMHD09169	11.6	SAMHD09062	8.6	7	3
08	132	15	37	RCP	--	SAMHD09171	7.0	SAMHD09169	11.6	0	0
08	136	15	7	UNKN	--	SAMHD09193	6.7	SAMHD09095	7.4	0	UNKN
08	137	8	242	VCP	SANITARY	SAMHD09112	7.4	SAMHD09095	7.4	0	0
08-09	139	8	442	VCP	SANITARY	SAMHD10075	5.4	SAMHD10039	10.2	11	0
09	140	8	76	VCP	SANITARY	SAMHD10077	9.3	SAMHD10075	5.4	0	0
08	142	8	240	VCP	SANITARY	SAMHD10154	4.0	SAMHD10034	9.7	7	UNKN
08-09	143	10	368	--	SANITARY	SAMHD10164	6.0	SAMHD10040	9.4	8	UNKN
09	144	10	344	VCP	SANITARY	SAMHD10099	7.0	SAMHD10164	6.0	2	0
11	160	12	391	UNKN	SANITARY	SAMHE09155	12.3	SAMHE09065	14.0	0	UNKN
12	161	10	39	UNKN	SANITARY	SAMHE09162	6.3	SAMHE09155	12.3	2	UNKN
08	162	12	369	VCP & PVC	SANITARY	SAMHD09172	11.5	SAMHD09171	7.0	10	3
08	165	8	39	VCP	SANITARY	SANAD09185	10.7	SAMHD09184	11.3	2	0
08	169	8	353	VCP	SANITARY	SAMHD09097	10.8	SAMHD09193	6.7	7	1

PIPE REHAB DATA TABLE (CONT.)

PLAN SHEET	REHAB ID	PIPE DIAMETER	CIPP LENGTH	MATERIAL	TYPE	UP STREAM STRUCTURE	UP STREAM STRUCTURE DEPTH	DOWN STREAM STRUCTURE	DOWN STREAM STRUCTURE DEPTH	APPROX# ACTIVE LATERALS	APPROX# PROTRUDING LATERALS
		IN	FT				FT		FT		
08	170	10	187	VCP	SANITARY	SAMHD09109	7.9	SAMHD09097	10.8	2	2
08	171	6	93	VCP	SANITARY	SAMHD09114	6.4	SAMHD09109	7.9	1	0
08	172	15	176	VCP	SANITARY	SAMHD09198	10.5	SAMHD09097	10.8	5	3
08	175	6	183	VCP	SANITARY	SAMHD09205	7.3	SAMHD09198	10.5	6	1
08	176	6	94	VCP	SANITARY	SAMHD10189	--	SAMHD09205	7.3	6	0
08	177	15	175	VCP	SANITARY	SAMHD09195	11.8	SAMHD09198	10.5	4	2
08	178	8	102	VCP	SANITARY	SANAD09194	11.8	SAMHD09195	11.8	6	UNKN
08	179	12	349	VCP	SANITARY	SAMHD09103	11.8	SAMHD09195	11.8	10	2
08	180	12	6	VCP	--	SAMHD09101	12.0	SAMHD09103	11.8	0	UNKN
08	181	10	335	VCP	SANITARY	SAMHD09110	7.5	SAMHD09101	12.0	7	1
08-12	182	12	343	VCP	SANITARY	SAMHE09159	11.6	SAMHD09101	12.0	4	1
12	183	12	192	VCP	SANITARY	SAMHE09108	15.2	SAMHE09166	11.6	5	4
12	184	12	138	VCP	SANITARY	SAMHE09177	7.7	SAMHE09108	15.2	2	0
12	185	12	168	VCP	SANITARY	SAMHE09168	11.2	SAMHE09166	11.6	1	0
12	186	12	181	VCP	SANITARY	SANAE09167	10.2	SAMHE09168	11.2	3	0
11	201	15	218	VCP	SANITARY	SAMHE09137	16.5	SAMHE09141	10.6	7	0
11	203	8	285	VCP	SANITARY	SAMHE09131	8.3	SAMHE09037	12.5	5	0
11	204	8	350	VCP	SANITARY	SAMHE09130	9.5	SAMHE09131	8.3	4	1
11	205	8	265	VCP	SANITARY	SAMHE09129	10.7	SAMHE09130	9.5	8	1
11	206	12	302	VCP	SANITARY	SAMHE09139	16.2	SAMHE09137	16.5	10	2
11	207	12	31[illegible]	VCP	SANITARY	SAMHE09112	13.4	SAMHE09139	16.2	14	0
11	208	12	2[illegible]	VCP	SANITARY	SAMHE09039	10.5	SAMHE09112	13.4	13	1
11	209	12	2[illegible]	VCP	SANITARY	SAMHE09005	8.5	SAMHE09039	10.5	10	1
11	210	8	226	VCP	SANITARY	SAMHE09113	9.5	SAMHE09005	8.5	8	2
11	212	8	342	VCP	SANITARY	SAMHF09003	10.2	SAMHE09007	7.2	6	2
13	213	8	170	VCP	SANITARY	SAMHF09104	12.0	SAMHF09003	10.2	7	0
13	2[illegible]	8	327	VCP	SANITARY	SAMHF09102	11.6	SAMHF09105	11.5	12	5
12	2[illegible]	10	60	VCP	SANITARY	SAMHE09164	2.9	SAMHE09046	3.0	1	0
12[illegible]	217	8	83	VCP	SANITARY	SAMHE09043	3.7	SAMHE09099	5.4	0	0
13	220	10	286	VCP	SANITARY	SAMHE09021	5.0	SAMHE09022	7.7	7	1
13	221	8	288	VCP	SANITARY	SAMHE09015	6.8	SAMHF09118	4.5	11	2
13	222	8	340	VCP	--	SAMHF09118	4.5	SAMHF09117	10.7	8	UNKN
13	223	8	309	VCP	SANITARY	SAMHF09027	9.1	SAMHF09117	10.7	12	4
11	224	10	164	VCP	SANITARY	SAMHE09145	14.0	SAMHE09070	--	6	0
11	225	10	359	VCP	SANITARY	SAMHE09144	8.2	SAMHE09145	14.0	11	3
11	226	10	309	VCP	SANITARY	SAMHE09126	10.5	SAMHE09144	8.2	8	3
13	227	10	302	VCP	SANITARY	SAMHF09061	13.0	SAMHF09126	10.5	10	3
13	228	10	335	VCP	SANITARY	SAMHF09127	13.0	SAMHF09061	13.0	9	1
12	229	15	132	VCP	SANITARY	SAMHE09174	4.6	SAMHE09106	21.3	1	1
12	230	15	155	VCP	SANITARY	SAMHE09176	8.8	SAMHE09174	4.6	3	0
12	231	15	27	VCP	SANITARY	SAMHE09169	8.7	SAMHE09176	8.8	0	0
12-14	232	10	216	VCP	SANITARY	SAMHF09143	12.7	SAMHE09169	8.7	5	1
14	233	10	67	VCP	SANITARY	SAMHF09083	14.2	SAMHF09143	12.7	2	0
14	234	10	153	VCP	SANITARY	SAMHF09085	16.1	SAMHF09083	14.2	3	0
14	235	10	311	VCP	SANITARY	SAMHF09145	16.1	SAMHF09085	16.1	9	2
13	237	8	247	VCP	SANITARY	SAMHF09020	6.0	SAMHF09027	9.1	9	0
13	238	15	328	VCP	COMBINED	SAMHF09161	--	SAMHF09042	16.1	4	0
12	239	6	241	VCP	SANITARY	SANAE10060	13.0	SAMHE10061	13.7	5	UNKN
13	240	8	320	VCP	SANITARY	SAMHF09053	9.2	SAMHF09102	11.6	15	2
13	241	8	62	VCP	--	SANAF09103	9.0	SAMHF09053	9.2	1	1
13	244	10	313	VCP	SANITARY	SAMHF09131	13.0	SAMHF09127	13.0	8	2
13	245	10	355	VCP	SANITARY	SAMHF09060	9.3	SAMHF09131	13.0	8	2
13	246	10	296	VCP	SANITARY	SAMHF09065	10.0	SAMHF09060	9.3	6	0
14	247	10	348	VCP	SANITARY	SAMHF09146	14.4	SAMHF09145	16.1	7	0
14	248	10	362	VCP	SANITARY	SAMHF09144	8.3	SAMHF09146	14.4	2	0
14	249	10	301	VCP	SANITARY	SAMHF09147	9.5	SAMHF09144	8.3	5	0
13	252	8	153	VCP	SANITARY	SAMHF09106	10.0	SAMHF09047	8.1	1	0
13	253	15	29	VCP	COMBINED	SAMHF09047	8.1	SAMHF09044	8.3	0	0
13	254	8	310	VCP	SANITARY	SAMHF09119	6.3	SAMHF09044	8.3	0	0
13	255	8	178	VCP	SANITARY	SAMHF09112	7.2	SAMHF09119	6.3	1	0
13	256	8	229	VCP	SANITARY	SAMHF09113	8.3	SAMHF09112	7.2	2	0
13	257	8	230	VCP	SANITARY	SAMHF09114	9.3	SAMHF09113	8.3	3	0
13	258	10	333	VCP	SANITARY	SAMHF09129	8.2	SAMHF09065	10.0	8	2
13	259	10	337	VCP	SANITARY	SAMHF09133	6.7	SAMHF09129	8.2	9	4
13	260	10	337	VCP	SANITARY	SAMHG09120	13.3	SAMHF09160	10.0	10	2
13	261	8	184	VCP	SANITARY	SAMHG09042	7.4	SAMHG09120	13.3	0	0
13	262	8	286	VCP	COMBINED	SAMHF09009	5.5	SAMHF09015	6.0	10	0
13	263	8	259	VCP	SANITARY	SAMHF09120	6.0	SAMHF09025	6.6	8	0
16	264	8	360	VCP	SANITARY	SAMHG09108	6.5	SAMHG09107	7.1	1	1
13-16	265	8	527	VCP	SANITARY	SAMHG09021	3.4	SAMHG09110	4.8	11	1

NOTES
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3. THE CONTRACTOR SHALL VERIFY AND REINSTATE ALL ACTIVE LATERALS ON THE REHAB SEGMENT. THE CONTRACTOR SHALL LOCATE ALL CAPPED/ABANDONED LATERALS AND VERIFY WITH THE CITY THAT THEY ARE NO LONGER IN USE OR NEEDED.

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS			
	APPROVED BY	MEC			
	ISSUE DATE	SEPTEMBER 2017			
	PROJECT NUMBER	196217-04-001			

REVISION DESCRIPTIONS

MEGAN E. CARR — REGISTERED — No. 10910636 — STATE OF INDIANA — PROFESSIONAL ENGINEER — 09/27/2017

Megan E. Carr

WESSLER ENGINEERING
More than a Project™

SEWER REHABILITATION - SMALL DIAMETER (≤15")

CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

PIPE REHAB DATA TABLE

SHEET NO. 26
TOTAL SHEETS 32

PIPE REHAB DATA TABLE (CONT.)

PLAN SHEET	REHAB ID	PIPE DIAMETER	CIPP LENGTH	MATERIAL	TYPE	UP STREAM STRUCTURE	UP STREAM STRUCTURE DEPTH	DOWN STREAM STRUCTURE	DOWN STREAM STRUCTURE DEPTH	APPROX# ACTIVE LATERALS	APPROX# PROTRUDING LATERALS
		IN	FT				FT		FT		
16	266	8	428	VCP	SANITARY	SAMHG09110	4.8	SAMHG09023	6.5	13	2
16	267	12	155	VCP	SANITARY	SAMHG09096	6.5	SAMHG09098	6.4	2	0
16	268	12	286	RCP	SANITARY	SAMHG09078	8.1	SAMHG09077	9.5	3	0
16	273	12	191	VCP	SANITARY	SAMHG09079	7.8	SAMHG09078	8.1	5	0
16	274	12	152	VCP	SANITARY	SAMHG09080	7.8	SAMHG09079	7.8	0	0
16	275	12	165	VCP	SANITARY	SAMHG09082	9.0	SAMHG09169	8.4	2	0
16	275a	12	189	VCP	--	SAMHG09169	8.4	SAMHG09080	7.8	0	0
16	276	12	309	VCP	SANITARY	SAMHG09081	8.6	SAMHG09082	9.0	2	0
16	277	8	140	VCP	SANITARY	SAMHG09033	6.9	SAMHG09081	8.6	0	0
16	278	8	189	VCP	SANITARY	SAMHG09044	6.0	SAMHG09033	6.9	0	0
17	279	10	413	VCP	SANITARY	SAMHG09126	9.6	SAMHG09031	8.2	12	0
17	280	10	415	VCP	SANITARY	SAMHG09128	7.2	SAMHG09126	9.6	13	7
17	281	10	418	VCP	SANITARY	SAMHG09129	7.5	SAMHG09128	7.2	11	2
17	282	10	12	VCP	--	SAMHG09130	7.8	SAMHG09129	7.5	0	0
17	283	10	427	VCP	--	SAMHG09134	10.4	SAMHG09130	7.8	23	0
17	284	10	84	VCP	SANITARY	SAMHG09133	9.4	SAMHG09134	10.4	1	1
17	285	10	296	VCP	SANITARY	SAMHH09039	8.5	SAMHG09133	9.4	14	2
16	286	8	142	VCP	SANITARY	SAMHG09083	6.0	SAMHG09084	5.3	1	0
16	287	8	323	VCP	SANITARY	SAMHG09026	4.3	SAMHG09083	6.0	4	0
16	288	8	25	VCP	--	SAMHG09085	7.0	SAMHG09083	6.0	0	0
16	289	8	527	VCP	SANITARY	SAMHG09053	6.1	SAMHG09085	7.0	13	0
16	290	8	288	VCP	SANITARY	SAMHH09053	5.4	SAMHG09053	6.1	2	0
16	291	8	280	VCP	SANITARY	SAMHH09036	5.3	SAMHG09085	7.0	0	0
16	292	8	22	VCP	--	SAMHH09090	5.3	SAMHH09036	5.3	0	UNKN
16	293	8	190	VCP	SANITARY	SAMHH09112	3.2	SAMHH09090	5.3	8	1
16	294	12	443	CP	SANITARY	SAMHH09116	6.1	SAMHH09037	11.7	3	0
18	295	8	270	VCP	SANITARY	SAMHH09063	12.5	SAMHH09065	8.3	1	1
09	296	8	318	VCP	SANITARY	SAMHC10022	3.0	SAMHC10048	2.8	0	0
09	297	8	102	VCP	SANITARY	SAMHC10048	2.8	SAMHC10046	4.5	0	0
09	299	8	201	VCP	SANITARY	SAMHC10046	4.5	SAMHD10128	6.5	0	0
09	300	8	145	VCP	SANITARY	SAMHD10128	6.5	SAMHD10126	4.3	2	0
09	302	8	171	VCP	SANITARY	SAMHD10126	4.3	SAMHD10178	7.0	3	1
09	304	8	351	VCP	SANITARY	SAMHD10104	6.5	SAMHD10181	8.2	12	0
09	305	8	327	VCP	SANITARY	SAMHD10181	8.2	SAMHD10136	8.3	7	1
09	306	8	447	VCP	SANITARY	SAMHD10136	8.3	SAMHD10172	5.8	10	0
09	307	8	224	VCP	SANITARY	SAMHD10172	5.8	SAMHD10077	9.3	0	0
09	308	8	230	RCP	SANITARY	SAMHD10090	--	SAMHD10099	7.0	4	2
09	309	8	237	RCP	SANITARY	SAMHD10123	6.0	SAMHD10095	8.0	5	1
09	310	8	412	UNKN	SANITARY	SAMHD10180	4.8	SAMHD10096	6.0	8	UNKN
09	311	8	442	VCP	SANITARY	SAMHD10106	2.6	SAMHD10180	4.8	11	0
12-14	313	10	297	VCP	SANITARY	SAMHF10007	12.3	SAMHE10067	10.0	2	0
14	317	10	153	VCP	SANITARY	SAMHF09153	8.6	SAMHF09150	16.0	1	0
14	318	10	16	VCP	SANITARY	SAMHF09155	16.7	SAMHF09153	8.6	0	0
14	319	10	269	VCP	SANITARY	SAMHF10053	8.4	SAMHF09155	16.7	10	4
14	326	15	364	VCP	SANITARY	SAMHF09091	18.5	SAMHF09150	16.0	2	0
14	327	15	358	VCP	SANITARY	SAMHF09099	13.1	SAMHF09095	17.4	4	0
14	328	15	98	VCP	SANITARY	SANAF09159	13.0	SAMHF09099	13.1	2	UNKN
14	332	8	191	VCP	SANITARY	SAMHF10051	6.8	SAMHF10052	6.9	4	UNKN
14	333	8	189	VCP	SANITARY	SAMHF10057	5.8	SAMHF10056	6.1	0	0
17	338	10	244	VCP	SANITARY	SAMHG09143	7.0	SAMHG09145	8.0	7	1
17	339	10	65	VCP	SANITARY	SAMHG09065	7.0	SAMHG09143	7.0	3	1
17	340	10	109	VCP	SANITARY	SAMHG09142	8.2	SAMHG09065	7.0	2	0
17	341	10	410	VCP	SANITARY	SAMHG09146	7.0	SAMHG09142	8.2	10	1
17	342	10	414	VCP	SANITARY	SAMHG09147	8.0	SAMHG09146	7.0	23	0
17	343	8	173	VCP	SANITARY	SAMHG09155	12.3	SAMHG09147	8.0	0	0
17	344	8	159	VCP	SANITARY	SAMHG10050	6.6	SAMHG09155	12.3	1	0
17	345	8	170	VCP	SANITARY	SAMHG10012	6.0	SAMHG10050	6.6	1	1
17	346	10	416	VCP	SANITARY	SAMHG09061	9.5	SAMHG09147	8.0	20	0
17	347	12	96	VCP	--	SAMHG09068	6.6	SAMHG09061	9.5	0	0
17	348	10	146	VCP	SANITARY	SAMHG09063	10.4	SAMHG09068	6.6	2	0
17	349	10	176	VCP	SANITARY	SAMHG09156	11.5	SAMHG09063	10.4	0	0
17	350	8	141	VCP	SANITARY	SAMHH09139	8.8	SAMHG09063	11.5	8	0
17	351	8	186	VCP	SANITARY	SAMHH09081	9.2	SAMHH09139	8.8	2	0
17	352	8	132	VCP	SANITARY	SAMHH09141	15.5	SAMHH09081	9.2	5	0
17	353	8	325	VCP	SANITARY	SAMHG10023	4.3	SAMHG10035	4.7	4	1
17	354	8	269	VCP	SANITARY	SAMHG10046	6.8	SAMHG10028	9.3	6	0
17	355	8	187	VCP	SANITARY	SAMHG10041	2.9	SAMHG10035	5.7	1	0
08	358	8	318	VCP	COMBINED	SAMHD09214	8.0	SAMHD10047	10.7	6	UNKN
19	363	8	306	VCP	SANITARY	SAMHD11052	--	SAMHD11055	6.3	2	1
19	366	8	425	VCP	SANITARY	SAMHD11046	6.3	SAMHE11012	19.1	6	0

PIPE REHAB DATA TABLE (CONT.)

PLAN SHEET	REHAB ID	PIPE DIAMETER	CIPP LENGTH	MATERIAL	TYPE	UP STREAM STRUCTURE	UP STREAM STRUCTURE DEPTH	DOWN STREAM STRUCTURE	DOWN STREAM STRUCTURE DEPTH	APPROX# ACTIVE LATERALS	APPROX# PROTRUDING LATERALS
		IN	FT				FT		FT		
19	367	8	290	VCP	SANITARY	SAMHD11051	7.4	SAMHD11050	8.2	5	1
19	368	8	436	VCP	--	SAMHD11050	8.2	SAMHD11049	6.8	4	0
19	369	8	423	VCP	SANITARY	SAMHD11049	6.8	SAMHE11021	21.6	5	0
19	370	8	393	VCP	SANITARY	SAMHD11058	7.5	SAMHD11057	7.0	9	1
19	371	8	342	VCP	SANITARY	SAMHD11070	6.7	SAMHD11069	7.0	0	0
22	372	10	307	VCP	SANITARY	SAMHC12021	8.2	SAMHC12020	11.8	2	0
22	373	10	298	VCP	SANITARY	SAMHC12020	11.8	SAMHC12002	12.8	3	0
20	374	12	317	VCP	SANITARY	SAMHD12035	8.8	SAMHD12077	9.7	4	0
20	374a	12	238	VCP	--	SAMHD12077	9.7	SAMHD12037	10.6	3	0
20	375	8	352	VCP	SANITARY	SAMHD12039	6.0	SAMHD12038	4.3	3	1
20	376	10	125	VCP	SANITARY	SAMHD12040	7.7	SAMHD12038	4.3	1	0
20	377	12	344	VCP	SANITARY	SAMHD12074	8.8	SAMHD12043	7.7	3	0
20	378	12	284	VCP	SANITARY	SAMHE12003	8.0	SAMHD12049	12.6	4	0

NOTES
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SPOT REPAIR DATA TABLE

SPOT ID	REHAB ID	SHEET NO	PIPE DIAMETER	PIPE MATERIAL	APPROX. REPAIR DEPTH	APPROX. REPAIR LENGTH	STR ID	REPAIR WORK	REPAIR NOTES
			IN		FT	FT			
A	001	04	8	PVC	5.9	10.0		REPAIR PIPE	VOID / HOLE IN PIPE
B	001	04	8	PVC	19.0	-	E04013	INSTALL MANHOLE	INSTALL 48" DOGHOUSE MANHOLE OVER EXISTING 15" AT CONNECTION WITH THE 8"
E	086	18	10	PVC	5.0	10		REPAIR PIPE	PIPE OFFSET / FAILED PREVIOUS REPAIR
F	089	18	8	VCP	4.1	10		REPAIR PIPE	VOID / HOLE IN PIPE
H	165	08	10	VCP	10.7	-	D09185	INSTALL MANHOLE	INSTALL 48" MANHOLE AT END OF LINE
I	178	08	8	VCP	12.2	-	D09194	INSTALL MANHOLE	INSTALL 48" MANHOLE AT END OF LINE
J	178	08	8	VCP	12.2	10		REPAIR PIPE	PIPE BORED THROUGH SEWER LINE
L	239	12	6	VCP	13.0	-	E10060	INSTALL MANHOLE	INSTALL 48" MANHOLE AT END OF LINE
M	215	13	8	VCP	11.5	10		REPAIR PIPE	CROWN CAVE IN / COLLAPSE
N	241	13	8	VCP	9.0	-	F09103	INSTALL MANHOLE	INSTALL 48" MANHOLE AT END OF LINE
O	291	16	8	VCP	6.5	10		REPAIR PIPE	PIPE OFFSET / MATERIAL CHANGE
P	299	09	8	VCP	6.0	10		REPAIR PIPE	CROWN CAVE IN / COLLAPSE
Q	328	14	15	VCP	13.0	-	F09159	INSTALL MANHOLE	INSTALL 48" MANHOLE AT END OF LINE
S	352	17	8	VCP	13.0	10		REPAIR PIPE	CROWN CAVE IN / VOID/ DISJOINT
T	366	19	8	VCP	19.2	10		REPAIR PIPE	DEFORMED / FRACTURED PIPE
U	079	16	6	VCP	6.4	77		REPLACE PIPE	REPLACE 6" PIPE with 8" PVC MH to MH
V	362	04	8	PVC	5.0	10		REPAIR PIPE	SMALL HOLE IN PIPE

SCALE VERIFICATION			NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	MRE				
	CHECKED BY	BAS				
	APPROVED BY	MEC				
	ISSUE DATE	SEPTEMBER 2017				
	PROJECT NUMBER	196217-04-001				

MEGAN E. CARR REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/27/2017
Megan E. Carr

WESSLER ENGINEERING
More than a Project™

SEWER REHABILITATION - SMALL DIAMETER (≤15")

CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

PIPE REHAB DATA TABLE (CONT.)
AND SPOT REPAIR DATA TABLE

SHEET NO. 27
TOTAL SHEETS 32

MANHOLE REHAB DATA TABLE

PLAN SHEET	MANHOLE ID	MANHOLE ID	MANHOLE DEPTH	EXISTING MANHOLE MATERIAL	SURFACE	MANHOLE LINER	MANHOLE LINER	FRAME & COVER WORK	CASTING, MANUFACTURER AND MODEL (OR EQUAL)	CHIMNEY WORK	CEMENT CHIMNEY SEAL	RECONSTRUCT / ADD CHIMNEY	GROUT CHIMNEY VOIDS	EXISTING CHIMNEY MATERIAL	WALL WORK	WALL SECTION TO ADD	WALL GROUT VOIDS	WALL GROUT JOINTS	BENCH WORK	REMOVE AND GROUT STEPS
			FT				SF				VF	VF	EACH			VF	EACH	EACH		EACH
06,08	SAMHC09022	C09022	8	BRICK	ASPHALT	FULL LINER	101	NONE		NONE				BRICK	NONE				NONE	3
07	SAMHD09154	D09154	4.5	BRICK	CONCRETE	FULL LINER	57	NONE		NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
08	SAMHD09054	D09054	5.67	BRICK	ASPHALT	FULL LINER	71	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
08	SAMHD09070	D09070	4	BRICK	ASPHALT	FULL LINER	50	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
08	SAMHD09072	D09072	4.8	Block	CONCRETE	FULL LINER	60	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
08	SAMHD09082	D09082	4.4	BRICK	ASPHALT	FULL LINER	55	NONE		NONE				BRICK	NONE				NONE	3
08	SAMHD09101	D09101	12	BRICK	ASPHALT	FULL LINER	151	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	4
08	SAMHD09103	D09103	11.8	BRICK	ASPHALT	FULL LINER	148	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	4
08	SAMHD09109	D09109	7.9	BRICK	ASPHALT	FULL LINER	99	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
08	SAMHD09112	D09112	7.4	BRICK	ASPHALT	FULL LINER	93	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	2
08	SAMHD09118	D09118	9.5	PRECAST	ASPHALT	NONE		REPLACE F/C	NEENAH-R-1772	RECONSTRUCT CHIMNEY		1		CAST-IN-PLACE	GROUT		2	1	INSTALL BENCHWALL	N/A
08	SAMHD09122	D09122	7	BRICK	ASPHALT	FULL LINER	88	REPLACE F/C	NEENAH-R-1772	NONE				CAST-IN-PLACE	NONE				NONE	2
08	SAMHD09167	D09167	8	BRICK	ASPHALT	FULL LINER	101	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
08	SAMHD09177	D09177	7	BRICK	ASPHALT	FULL LINER	88	NONE		NONE				BRICK	NONE				INSTALL BENCHWALL	1
08	SAMHD09187	D09187	4.1	BRICK	ASPHALT	FULL LINER	52	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
08	SAMHD09193	D09193	6.7	BRICK	ASPHALT	FULL LINER	84	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	2
08	SAMHD09198	D09198	10.5	N/A	ASPHALT	NONE		N/A		NONE				N/A	N/A				N/A	NONE
08	SAMHD09199	D09199	9	BRICK	LAWN	NONE		REPLACE F/C	NEENAH-R-1772	RECONSTRUCT CHIMNEY		1		PRECAST	GROUT			3	INSTALL BENCHWALL	NONE
08	SAMHD09200	D09200	7.4	Block	CONCRETE	FULL LINER	93	REPLACE F/C	NEENAH-R-1772	NONE				CAST-IN-PLACE	NONE				NONE	3
08	SAMHD09205	D09205	7.3	BRICK	ASPHALT	FULL LINER	92	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	1
08	SAMHD09210	D09210	7.5	BRICK	ASPHALT	FULL LINER	94	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	ADD WALL SECTION	1			NONE	2
08	SAMHD10027	D10027	5.8	Block	ASPHALT	FULL LINER	73	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	2
08	SAMHD10154	D10154	4	BRICK	ASPHALT	FULL LINER	50	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
08	SAMHD10160	D10160	9.6	BRICK	ASPHALT	FULL LINER	121	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
08	SAMHD10161	D10161	2.1	BRICK	ASPHALT	FULL LINER	26	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
08	SANAD09170	D09170	10.1	0	0	FULL LINER	127	NONE		NONE				N/A	N/A				INSTALL BENCHWALL	NONE
09	SAMHC10022	C10022	3	BRICK	ASPHALT	FULL LINER	38	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
09	SAMHC10048	C10048	2.8	BRICK	ASPHALT	FULL LINER	35	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
09	SAMHD10056	D10056	12.1	BRICK	ASPHALT	FULL LINER	152	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	2
09	SAMHD10064	D10064	6.3	BRICK	LAWN	FULL LINER	79	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
09	SAMHD10075	D10075	5.4	BRICK	ASPHALT	FULL LINER	68	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	NONE
09	SAMHD10077	D10077	9.3	BRICK	ASPHALT	FULL LINER	117	NONE		NONE				BRICK	NONE				REWORK CHANNEL	NONE
09	SAMHD10088	D10088	6.7	BRICK	ASPHALT	FULL LINER	84	NONE		NONE				BRICK	NONE				REWORK CHANNEL	NONE
09	SAMHD10093	D10093	8.2	PRECAST	CONCRETE	NONE		REPLACE F/C	NEENAH-R-1772	CEMENT CHIM SEAL	0.3			BRICK	NONE				REWORK CHANNEL	NONE
09	SAMHD10094	D10094	7.8	PRECAST	CONCRETE	NONE		REPLACE F/C	NEENAH-R-1772	CEMENT CHIM SEAL	0.5			BRICK	NONE				NONE	4
09	SAMHD10096	D10096	6	PRECAST	ASPHALT	NONE		REPLACE F/C	NEENAH-R-1772	CEMENT CHIM SEAL	0.3			PRECAST	GROUT			2	REWORK CHANNEL	NONE
09	SAMHD10106	D10106	2.6	BRICK	ASPHALT	FULL LINER	33	NONE		NONE				BRICK	NONE				NONE	NONE
09	SAMHD10107	D10107	4	BRICK	ASPHALT	FULL LINER	50	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				N/A	NONE
09	SAMHD10123	D10123	6	BRICK	ASPHALT	FULL LINER	75	NONE		NONE				BRICK	NONE				INSTALL BENCHWALL	2
09	SAMHD10128	D10128	6.5	BRICK	LAWN	FULL LINER	82	REPLACE F/C	NEENAH-R-1772	NONE				PRECAST	NONE				INSTALL BENCHWALL	1
09	SAMHD10132	D10132	6	BRICK	CONCRETE	FULL LINER	75	NONE		NONE				BRICK	NONE				INSTALL BENCHWALL	3
09	SAMHD10136	D10136	8.3	BRICK	ASPHALT	FULL LINER	104	NONE		NONE				BRICK	NONE				REWORK CHANNEL	3
09	SAMHD10139	D10139	4	BRICK	ASPHALT	FULL LINER	50	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
09	SAMHD10142	D10142	4.5	BRICK	0	FULL LINER	57	NONE		NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
09	SAMHD10164	D10164	6	BRICK	LAWN	FULL LINER	75	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
09	SAMHD10172	D10172	5.8	BRICK	CONCRETE	FULL LINER	73	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	1
09	SAMHD10173	D10173	7.8	BRICK	ASPHALT	FULL LINER	98	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
09	SAMHD10180	D10180	4.8	BRICK	ASPHALT	FULL LINER	60	NONE		NONE				BRICK	NONE				NONE	NONE
09	SAMHD10182	D10182	7	BRICK	LAWN	FULL LINER	88	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	NONE
11	SAMHE09007	E09007	7.17	BRICK	ASPHALT	FULL LINER	90	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	3
11	SAMHE09039	E09039	10.5	BRICK	ASPHALT	FULL LINER	132	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	4
11	SAMHE09080	E09080	5.1	BRICK	ASPHALT	FULL LINER	64	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				N/A	NONE
11	SAMHE09112	E09112	13.4	BRICK	ASPHALT	FULL LINER	168	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	5
11	SAMHE09152	E09152	6.3	BRICK	LAWN	FULL LINER	79	RESET F/C		NONE				PRECAST	NONE				NONE	2
12	SAMHD10171	D10171	7.2	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		2		BRICK	GROUT			2	NONE	NONE
12	SAMHE09043	E09043	3.7	BRICK	ASPHALT	FULL LINER		REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				N/A	NONE
12	SAMHE09046	E09046	3	BRICK	LAWN	NONE		REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
12	SAMHE09047	E09047	8.7	BRICK	LAWN	NONE		REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
12	SAMHE09092	E09092	6.5	BRICK	ASPHALT	FULL LINER	82	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	2
12	SAMHE09093	E09093	4.2	Block	ASPHALT	FULL LINER	53	NONE		NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
12	SAMHE09097	E09097	7.5	BRICK	ASPHALT	FULL LINER	94	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	NONE
12	SAMHE09099	E09099	5.42	BRICK	ASPHALT	FULL LINER	68	REPLACE F/C	NEENAH-R-1772	NONE				PRECAST	NONE				N/A	NONE
12	SAMHE09177	E09177	7.7	BRICK	ASPHALT	FULL LINER	97	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	GROUT		2		INSTALL BENCHWALL	1
12	SAMHE10013	E10013	7.6	BRICK	LAWN	FULL LINER	96	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				N/A	2
12	SAMHE10031	E10031	5.7	BRICK	ASPHALT	FULL LINER	72	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	1
12	SAMHE10042	E10042	2.8	BRICK	LAWN	FULL LINER	35	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	NONE
12	SAMHE10049	E10049	6	BRICK	ASPHALT	FULL LINER	75	NONE		NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
12	SAMHE10055	E10055	5.5	BRICK	ASPHALT	FULL LINER	69	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	1
12	SAMHE10056	E10056	6.5	BRICK	ASPHALT	FULL LINER	82	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	2
12	SAMHE10061	E10061	10	BRICK	ASPHALT	FULL LINER	172	NONE		NONE				BRICK	NONE				NONE	2

NOTES:
1. THE CONTRACTOR SHALL VERIFY ALL MANHOLE DETAILS INCLUDING SIZE, DEPTH, MATERIAL AND EXISTING CONDITIONS TO VERIFY THE MANHOLE REHABILITATION PLAN.

SCALE VERIFICATION

BAR IS ONE INCH LONG ON ORIGINAL DRAWING

DRAWN BY	MRE
CHECKED BY	BAS
APPROVED BY	MEC
ISSUE DATE	SEPTEMBER 2017
PROJECT NUMBER	196217-04-001

NO.	DATE	INITIALS	REVISION DESCRIPTIONS

MEGAN E. CARR — REGISTERED — No. 10910636 — STATE OF INDIANA — PROFESSIONAL ENGINEER — 09/27/2017

Megan E. Carr

WESSLER ENGINEERING
More than a Project™

SEWER REHABILITATION - SMALL DIAMETER (≤15")

CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

MANHOLE REHAB DATA TABLE

SHEET NO. 28

TOTAL SHEETS 32

MANHOLE REHAB DATA TABLE (CONT.)

PLAN SHEET	MANHOLE ID	MANHOLE ID	MANHOLE DEPTH	EXISTING MANHOLE MATERIAL	SURFACE	MANHOLE LINER	MANHOLE LINER	FRAME & COVER WORK	CASTING, MANUFACTURER AND MODEL (OR EQUAL)	CHIMNEY WORK	CEMENT CHIMNEY SEAL	RECONSTRUCT / ADD CHIMNEY	GROUT CHIMNEY VOIDS	EXISTING CHIMNEY MATERIAL	WALL WORK	WALL SECTION TO ADD	WALL GROUT VOIDS	WALL GROUT JOINTS	BENCH WORK	REMOVE AND GROUT STEPS
			FT				SF				VF	VF	EACH			VF	EACH	EACH		EACH
12	SAMHE10072	E10072	5	PRECAST	ASPHALT	NONE		REPLACE F/C	NEENAH-R-1772	NONE				PRECAST	NONE				INSTALL BENCHWALL	NONE
12	SAMHE10074	E10074	5	BRICK	ASPHALT	FULL LINER	63	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
12	SANAE09167	E09167	10.2	0	0	FULL LINER	128	NONE		NONE				N/A	N/A				NONE	NONE
13	SAMHF09003	F09003	10.2	BRICK	ASPHALT	NONE		REPLACE F/C	NEENAH-R-1772	NONE				BRICK	GROUT		1		NONE	3
13	SAMHF09053	F09053	9.2	BRICK	ASPHALT	FULL LINER	116	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
13	SAMHF09061	F09061	13	BRICK	ASPHALT	FULL LINER	163	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	4
13	SAMHF09102	F09102	11.6	BRICK	ASPHALT	FULL LINER	146	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	4
13	SAMHF09105	F09105	11.5	PRECAST	CONCRETE	NONE		REPLACE F/C	NEENAH-R-1772	CEMENT CHIM SEAL	1.1			BRICK	GROUT		1		INSTALL BENCHWALL	NONE
13	SAMHF09127	F09127	13	BRICK	ASPHALT	FULL LINER	163	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	4
13	SAMHF09131	F09131	13	BRICK	ASPHALT	FULL LINER	163	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
13	SAMHF09138	F09138	7.5	PRECAST	LAWN	NONE		RESET F/C		NONE				BRICK	NONE				REWORK CHANNEL	NONE
13	SAMHG09021	G09021	3.4	BRICK	ASPHALT	FULL LINER	43	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
13	SAMHG09102	G09102	17.4	PRECAST	ASPHALT	NONE		NONE		NONE				PRECAST	NONE			2	REWORK CHANNEL	3
13	SAMHG09111	G09111	16.3	PRECAST	ASPHALT	FULL LINER	205	NONE		NONE				PRECAST	NONE				INSTALL BENCHWALL	7
13	SAMHG09120	G09120	13.3	PRECAST	ASPHALT	NONE		NONE		CEMENT CHIM SEAL	1			PRECAST	GROUT			1	NONE	NONE
14	SAMHG09059	G09059	5.5	BRICK	ASPHALT	FULL LINER	69	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
15	SAMHG08012	G08012	6.1	BRICK	ASPHALT	FULL LINER	77	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
15	SAMHG08016	G08016	5	BRICK	ASPHALT	FULL LINER	63	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	2
15	SAMHG08023	G08023	6.3	BRICK	ASPHALT	FULL LINER	79	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	2
15	SAMHG08026	G08026	8.5	BRICK	ASPHALT	FULL LINER	107	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
15	SAMHG08067	G08067	9	PRECAST	LAWN	FULL LINER	113	NONE		NONE				PRECAST	NONE				NONE	4
15	SAMHG08073	G08073	6.4	BRICK	ASPHALT	FULL LINER	80	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	2
15	SAMHG08075	G08075	6.7	BRICK	ASPHALT	FULL LINER	84	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	2
15	SAMHG08076	G08076	11.3	PRECAST	LAWN	FULL LINER	142	RESET F/C		NONE				PRECAST	ADD WALL SECTION	3			NONE	4
15	SAMHG08077	G08077	5.5	BRICK	ASPHALT	FULL LINER	69	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	2
16	SAMHG09008	G09008	6.7	BRICK	ASPHALT	FULL LINER	84	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
16	SAMHG09017	G09017	6.2	BRICK	ASPHALT	FULL LINER	78	NONE		NONE				BRICK	NONE				INSTALL BENCHWALL	1
16	SAMHG09019	G09019	5.6	BRICK	GRAVEL/STONE	FULL LINER	70	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	NONE
16	SAMHG09023	G09023	6.5	BRICK	ASPHALT	FULL LINER	82	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
16	SAMHG09026	G09026	4.3	BRICK	ASPHALT	FULL LINER	54	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	1
16	SAMHG09033	G09033	6.9	BRICK	ASPHALT	FULL LINER	87	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	3
16	SAMHG09044	G09044	6	BRICK	ASPHALT	FULL LINER	75	REPLACE F/C	NEENAH-R-1772	NONE				PRECAST	NONE				NONE	2
16	SAMHG09051	G09051	7	BRICK	ASPHALT	FULL LINER	88	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
16	SAMHG09053	G09053	6.1	BRICK	ASPHALT	FULL LINER	77	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
16	SAMHG09086	G09086	4.7	PRECAST	LAWN	NONE		REPLACE F/C	NEENAH-R-1772	RECONSTRUCT CHIMNEY		1		PRECAST	NONE				NONE	1
16	SAMHG09107	G09107	7.1	BRICK	ASPHALT	FULL LINER	89	NONE		NONE				PRECAST	NONE				INSTALL BENCHWALL	NONE
16	SAMHG09110	G09110	4.8	BRICK	ASPHALT	FULL LINER	60	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
16	SAMHG09114	G09114	6.9	BRICK	ASPHALT	FULL LINER	87	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
16	SAMHG09096	G09096	6.5	BRICK	ASPHALT	FULL LINER	82	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	N/A
16	SAMHG09168	G09168	5.9	BRICK	ASPHALT	FULL LINER	74	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	N/A
16	SAMHH09032	H09032	4	BRICK	ASPHALT	FULL LINER	50	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	1
16	SAMHH09036	H09036	5.3	BRICK	ASPHALT	FULL LINER	67	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
16	SAMHH09037	H09037	11.7	PRECAST	ASPHALT	NONE		NONE		NONE				PRECAST	NONE				INSTALL BENCHWALL	NONE
16	SAMHH09053	H09053	5.4	BRICK	ASPHALT	FULL LINER	68	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	1
16	SAMHH09088	H09088	10.2	PRECAST	CONCRETE	NONE		NONE		NONE				PRECAST	NONE				INSTALL BENCHWALL	NONE
16	SAMHH09090	H09090	5.3	BRICK	ASPHALT	FULL LINER	67	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
16	SAMHH09109	H09109	5.6	PRECAST	CONCRETE	NONE		NONE		NONE				PRECAST	GROUT		2		INSTALL BENCHWALL	NONE
16	SAMHH09116	H09116	6.1	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		PRECAST	NONE				NONE	NONE
17	SAMHG09063	G09063	10.4	BRICK	ASPHALT	FULL LINER	131	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				REWORK CHANNEL	NONE
17	SAMHG09129	G09129	7.5	BRICK	ASPHALT	FULL LINER	94	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
17	SAMHG09133	G09133	9.4	PRECAST	ASPHALT	FULL LINER	118	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	4
17	SAMHG09151	G09151	9.75	PRECAST	ASPHALT	FULL LINER	123	NONE		NONE				PRECAST	NONE				NONE	NONE
17	SAMHG09159	G09159	8.5	BRICK	CONCRETE CUR	FULL LINER	10[illegible]	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
17	SAMHG10008	G10008	8.4	BRICK	LAWN	FULL LINER	[illegible]6	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	3
17	SAMHG10009	G10009	6.5	BRICK	ASPHALT	FULL LINER	[illegible]2	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
17	SAMHG10012	G10012	6	BRICK	ASPHALT	FULL LINER	75	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
17	SAMHG10016	G10016	8.4	BRICK	LAWN	FULL LINER	106	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
17	SAMHG10052	G10052	5.5	BRICK	ASPHALT	FULL LINER	69	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
17	SAMHH10010	H10010	6.1	BRICK	ASPHALT	FULL LINER	77	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
17	SAMHH10012	H10012	8	BRICK	ASPHALT	FULL LINER	101	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
18	SAMHH09063	H09063	12.5	BRICK	LAWN	FULL LINER	157	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	NONE
18	SAMHH09074	H09074	4	BRICK	ASPHALT	FULL LINER	50	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				INSTALL BENCHWALL	NONE
18	SAMHH09128	H09128	9.4	BRICK	ASPHALT	FULL LINER	118	NONE		NONE				BRICK	NONE				NONE	2
18	SAMHH10003	H10003	6.6	BRICK	GRAVEL/STONE	FULL LINER	83	REPLACE F/C	NEENAH-R-1772	NONE				BRICK	NONE				NONE	2
19	SAMHD11065	D11065	9	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		PRECAST	GROUT			2	NONE	NONE
19	SAMHD11068	D11068	5.8	PRECAST	LAWN	NONE		NONE		NONE				NONE	GROUT		3		NONE	NONE
19,20	SAMHD11073	D11073	8.4	PRECAST	LAWN	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		BRICK	GROUT		2		INSTALL BENCHWALL	NONE
19,20	SAMHD11074	D11074	9	PRECAST	ASPHALT	FULL LINER	84	NONE		NONE				PRECAST	NONE				NONE	4
20	SAMHD11078	D11078	8	PRECAST	LAWN	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		BRICK	NONE				REWORK CHANNEL	NONE
20	SAMHD12020	D12020	[illegible]	PRECAST	LAWN	NONE		NONE		NONE				NONE	GROUT		1	1	NONE	NONE

NOTES:
1. THE CONTRACTOR SHALL VERIFY ALL MANHOLE DETAILS INCLUDING SIZE, DEPTH, MATERIAL AND EXISTING CONDITIONS TO VERIFY THE MANHOLE REHABILITATION PLAN.

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BAS				
	APPROVED BY	MEC				
	ISSUE DATE	SEPTEMBER 2017				
	PROJECT NUMBER	196217-04-001				

MEGAN E. CARR — REGISTERED — No. 10910636 — STATE OF INDIANA — PROFESSIONAL ENGINEER — 09/27/2017
Megan E. Carr

WESSLER ENGINEERING
More than a Project™

SEWER REHABILITATION - SMALL DIAMETER (≤15")

CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

MANHOLE REHAB DATA TABLE
(CONT.)

SHEET NO. 29
TOTAL SHEETS 32

MANHOLE REHAB DATA TABLE (CONT.)

PLAN SHEET	MANHOLE ID	MANHOLE ID	MANHOLE DEPTH	EXISTING MANHOLE MATERIAL	SURFACE	MANHOLE LINER	MANHOLE LINER	FRAME & COVER WORK	CASTING, MANUFACTURER AND MODEL (OR EQUAL)	CHIMNEY WORK	CEMENT CHIMNEY SEAL	RECONSTRUCT / ADD CHIMNEY	GROUT CHIMNEY VOIDS	EXISTING CHIMNEY MATERIAL	WALL WORK	WALL SECTION TO ADD	WALL GROUT VOIDS	WALL GROUT JOINTS	BENCH WORK	REMOVE AND GROUT STEPS
			FT				SF				VF	VF	EACH			VF	EACH	EACH		EACH
20	SAMHD12021	D12021	7.7	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		PRECAST	GROUT			1	NONE	NONE
20	SAMHD12022	D12022	10	PRECAST	LAWN	FULL LINER	126	NONE		NONE				NONE	NONE				NONE	NONE
20	SAMHD12024	D12024	11.3	PRECAST	ASPHALT	NONE		NONE		CEMENT CHIM SEAL	1.5			PRECAST	GROUT			1	NONE	NONE
20	SAMHD12026	D12026	7.2	PRECAST	LAWN	FULL LINER	90	REPLACE F/C	NEENAH-R-1772	NONE				PRECAST	NONE				NONE	3
20	SAMHD12029	D12029	8	BRICK	LAWN	FULL LINER	101	NONE		NONE				PRECAST	NONE				INSTALL BENCHWALL	NONE
20	SAMHD12030	D12030	6.3	PRECAST	LAWN	NONE		NONE		GROUT CHIMNEY			1	PRECAST	GROUT		2		NONE	NONE
20	SAMHD12033	D12033	5	PRECAST	LAWN	NONE		RESET F/C		NONE				NONE	GROUT			2	INSTALL BENCHWALL	NONE
20	SAMHD12034	D12034	0	PRECAST	GRAVEL/STONE	NONE		NONE		NONE				NONE	GROUT			2	REWORK CHANNEL	NONE
20	SAMHD12038	D12038	4.3	PRECAST	ASPHALT	NONE		NONE		CEMENT CHIM SEAL	0.7			BRICK	GROUT		3		INSTALL BENCHWALL	NONE
20	SAMHD12039	D12039	6	PRECAST	LAWN	NONE		NONE		NONE				PRECAST	GROUT		1		REWORK CHANNEL	NONE
20	SAMHD12040	D12040	7.7	PRECAST	ASPHALT	NONE		NONE		CEMENT CHIM SEAL	0.7			BRICK	GROUT		2		NONE	NONE
20	SAMHD12042	D12042	6.4	PRECAST	ASPHALT	FULL LINER	80	NONE		NONE				PRECAST	NONE				REWORK CHANNEL	NONE
20	SAMHD12044	D12044	8.5	PRECAST	LAWN	NONE		RESET F/C		NONE				PRECAST	NONE				NONE	NONE
20	SAMHD12045	D12045	8.7	PRECAST	LAWN	NONE		NONE		NONE				PRECAST	GROUT		1		NONE	NONE
20	SAMHD12048	D12048	7.7	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		PRECAST	GROUT		2		REWORK CHANNEL	NONE
21	SAMHD12070	D12070	9.9	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		2		PRECAST	NONE				REWORK CHANNEL	NONE
21	SAMHE12005	E12005	6.2	PRECAST	ASPHALT	FULL LINER	78	NONE		NONE				BRICK	NONE				REWORK CHANNEL	NONE
21	SAMHE12006	E12006	4.5	PRECAST	ASPHALT	NONE		NONE		CEMENT CHIM SEAL	0.7			BRICK	GROUT			1	INSTALL BENCHWALL	NONE
22	SAMHC12002	C12002	12.8	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		PRECAST	GROUT			1	REWORK CHANNEL	NONE
22	SAMHC12004	C12004	6.9	PRECAST	ASPHALT	FULL LINER	87	REPLACE F/C	NEENAH-R-1772	NONE				NONE	NONE				NONE	3
22	SAMHC12007	C12007	6.7	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		BRICK	GROUT		1		REWORK CHANNEL	NONE
22	SAMHC12013	C12013	11.2	PRECAST	ASPHALT	NONE		RESET F/C		RECONSTRUCT CHIMNEY		1		PRECAST	GROUT			1	NONE	NONE
TOTALS	160	160				121	10695		102		7	16	1			4	26	23		171

NOTES:
1. THE CONTRACTOR SHALL VERIFY ALL MANHOLE DETAILS INCLUDING SIZE, DEPTH, MATERIAL AND EXISTING CONDITIONS TO VERIFY THE MANHOLE REHABILITATION PLAN.

Drawing: J:\Warsaw\Projects\196217 Warsaw Sewer Rehab 2017\CAD 04-001\DWG\Sheets\2-Small\196217_2-SD.dwg | Layout: SD5 | Plotted: 09/27/17 @ 01:55:15 | LastSavedBy: MichelleE

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
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	ISSUE DATE	SEPTEMBER 2017				
	PROJECT NUMBER	196217-04-001				

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Megan E. Carr

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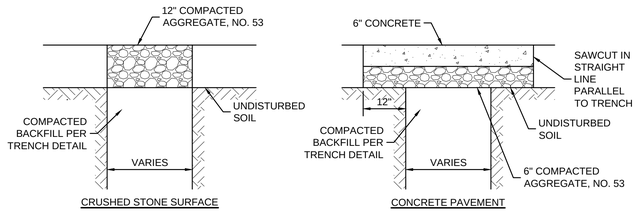
SEWER REHABILITATION - SMALL DIAMETER (≤15")

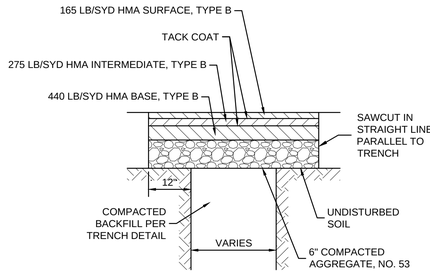
CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

MANHOLE REHAB DATA TABLE
(CONT.)

SHEET NO. 30

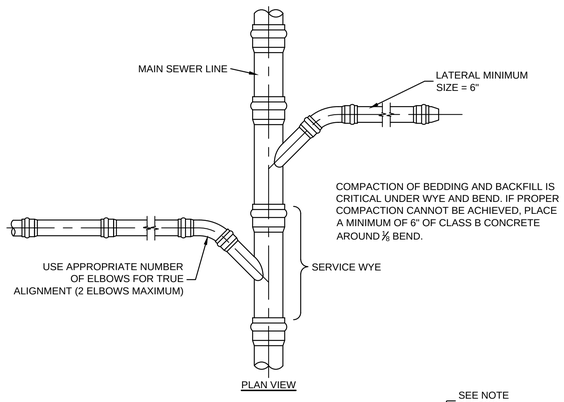
TOTAL SHEETS 32





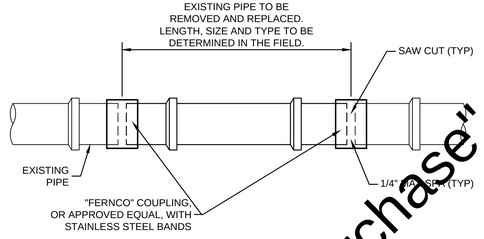
NOTES:
1. FOR NEW MANHOLE INSTALLATION, THE PAVEMENT REPAIR LIMITS SHALL BE A MINIMUM 8 FOOT SQUARE AROUND THE NEW MANHOLE.
2. FOR MANHOLE REHABILITATION FRAME AND CASTING WORK ONLY, SEE PAVEMENT REPAIR SPECIFICATION 02740.
3. FOR ALL OTHER MANHOLE REHABILITATION WORK REQUIRING EXCAVATION, THE PAVEMENT REPAIR LIMITS SHALL BE A MINIMUM 8 FOOT SQUARE AROUND THE MANHOLE TO A MINIMUM DEPTH OF 6" BELOW EXISTING SUBGRADE OR TO THE DEPTH OF THE REHABILITATION WORK AS SPECIFIED.

PAVEMENT REPAIR
SCALE: NONE

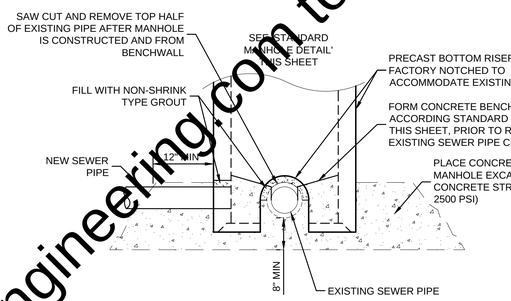


NOTES:
1. INSTALL WYE BRANCHES AT LOCATIONS OF EXISTING CONNECTIONS UNLESS DIRECTED OTHERWISE.
2. SEWER SERVICE LATERALS SHALL BE A MINIMUM OF 6" PIPE.
3. CONNECT NEW SERVICE FROM NEW MAIN TO EXISTING SERVICE LATERAL AS SHOWN ON DRAWINGS. PROVIDE ANY FITTINGS NECESSARY FOR CONNECTION OF NEW 6" PVC TO EXISTING SERVICES (MATERIALS AND SIZE UNKNOWN).

SANITARY LATERAL FOR SHALLOW SEWERS (LESS THAN 15' DEEP)
SCALE: NONE

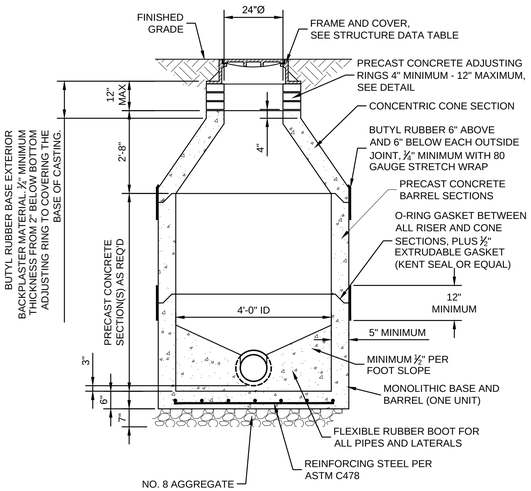


SANITARY SEWER REPAIR AND LATERAL REPAIR
SCALE: NONE

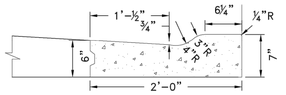


NOTE:
1. MANHOLE CONSTRUCTION AND ACCESSORIES SAME AS SHOWN FOR STANDARD MANHOLE.
2. PROVIDE ADEQUATE PIPE SUPPORT DURING CONSTRUCTION TO PREVENT PIPE DAMAGE

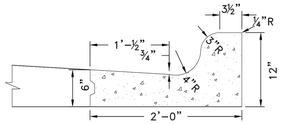
DOGHOUSE MANHOLE
SCALE: NONE



STANDARD SANITARY SEWER MANHOLE
SCALE: NONE



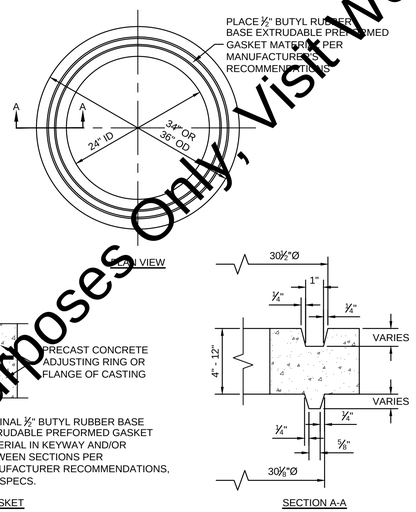
STANDARD DRIVEWAY CURB
COMB. CONC. CURB
& GUTTER TYPE "B"



STANDARD CURB
COMB. CONC. CURB
& GUTTER TYPE "B"

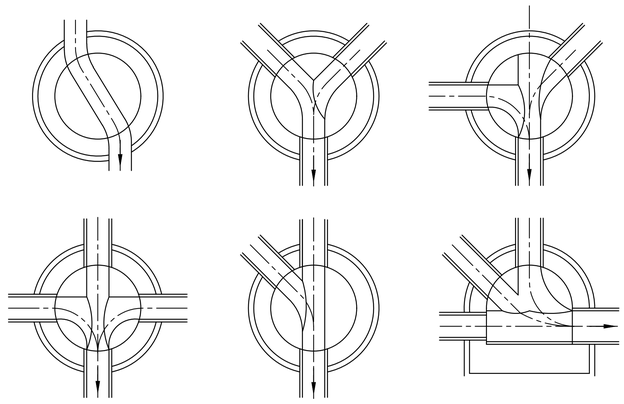
GENERAL NOTES:
1. CLASS "A" CONCRETE SHALL BE USED IN ALL WALKS AND APPROACHES.
2. LONGITUDINAL CONTRACTION JOINT IS REQUIRED ON APPROACHES WHERE DRIVEWAY WIDTH (W) EXCEEDS 14 FEET. PLACE JOINT AT CENTER OF APPROACH.
3. "CURING CONCRETE" PER INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS. EITHER USE A CURING COMPOUND IMMEDIATELY AFTER FINISHING OR COVER AND KEEP MOIST FOR 72 HOURS.

COMBINED CONCRETE CURB AND GUTTER
SCALE: NONE



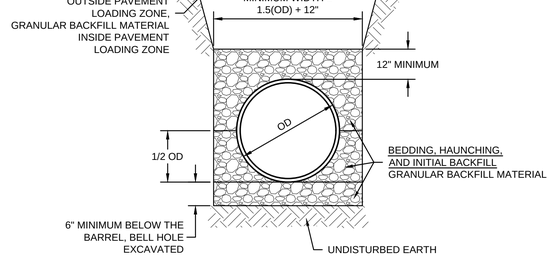
NOTES:
1. PRECAST CONCRETE ADJUSTING RINGS SHALL HAVE KEYWAY/CHANNEL CONSTRUCTION. "SMOOTH" ADJUSTING RINGS SHALL NOT BE PERMITTED.

PRECAST CONCRETE ADJUSTING RING
SCALE: NONE



NOTES:
1. SANITARY SEWER BENCH SLOPE = ½" PER FOOT

STANDARD MANHOLE BENCHES
SCALE: NONE



FLEXIBLE (HDPE, PP, PVC) PIPE TRENCH
SCALE: NONE

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MEGAN E. CARR, REGISTERED No. 10910636 STATE OF INDIANA PROFESSIONAL ENGINEER 09/27/2017
Megan E. Carr

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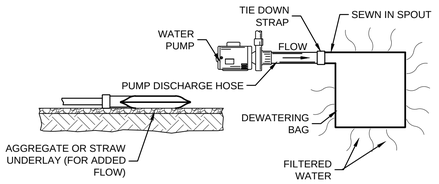
SEWER REHABILITATION - SMALL DIAMETER (≤15")
CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

MISCELLANEOUS DETAILS

SHEET NO. 31
TOTAL SHEETS 32



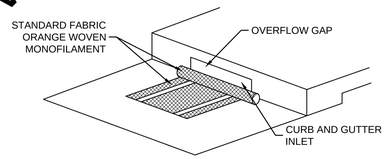
SIDE VIEW PLAN

MECHANICAL PROPERTIES	TEST METHOD	UNITS	INDUSTRY STANDARD
GRAB TENSILE STRENGTH	ASTM D4632	kN (LB)	0.9 (205) X 0.9 (205)
GRAB TENSILE ELONGATION	ASTM D4632	%	50 X 50
PUNCTURE STRENGTH	ASTM D4833	kN (LB)	0.58 (130)
MULLEN BURST STRENGTH	ASTM D3786	kPa (PSI)	2618 (380)
TRAPEZOID TEAR STRENGTH	ASTM D4533	kN (LB)	0.36 (80) X 0.36 (80)
UV RESISTANCE	ASTM D4355	%	70
APPARENT OPENING SIZE	ASTM D4751	Mm (US STD SIEVE)	0.60 (30)
FLOW RATE	ASTM D4491	l/MIN/M² (GAL/MIN/FT²)	3886 (95)
PERMITTIVITY	ASTM D4491	S^{-1}	1.2

MAINTENANCE:
1. DURING THE ACTIVE DEWATERING PROCESS, INSPECTION OF THE PUMPING BAG SHOULD BE REVIEWED FREQUENTLY. SPECIAL ATTENTION SHOULD BE PAID TO THE BUFFER AREA FOR ANY SIGN OF EROSION AND CONCENTRATION OF FLOW. OBSERVE WHERE POSSIBLE THE VISUAL QUALITY OF THE EFFLUENT AND DETERMINE IF ADDITIONAL TREATMENT CAN BE PROVIDED.
2. DISPOSE OF ACCUMULATED SEDIMENT REMOVED DURING PUMPING OPERATIONS IN CONFORMANCE WITH THE SPECIFICATIONS.
3. REPLACE THE BAG OR DISPOSE OF SILT WHEN HALF FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE TO AN IMPRACTICAL RATE.

SOURCE:
KRISTAR
DANDY DEWATERING BAG
SEDCATCH

PUMPING BAG
SCALE: NONE



DESIGN CONFORMS TO ALL SHAPES OF CONCRETE CURBS

PRODUCT:
1. DANDY CURB SACK, OR APPROVED EQUAL.

INSTALLATION:
1. REMOVE THE GRATE FROM THE CATCH BASIN AND STAND ON END.
2. CRADLE THE GRATE BETWEEN THE UPPER AND LOWER STRAPS.
3. INSERT THE GRATE INTO THE INLET WITH THE LIFTING DEVICES. LOWER BACK EDGE WITH TUBE INTO PLACE. TUBE SHOULD PARTIALLY BLOCK THE CURB HOOD OPENING.

MAINTENANCE:
1. REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT.
2. REMOVE THE SEDIMENT THAT HAS ACCUMULATED WITHIN THE FABRIC AS NEEDED.
3. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.

CURB AND GUTTER INLET PROTECTION
SCALE: NONE

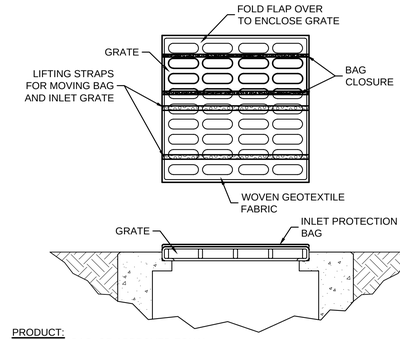
SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDING			A			A						
DORMANT SEEDING	B										B	
TEMPORARY SEEDING			C, E						E	D		
SODDING			F			F						
MULCHING	G					G						

A. = KENTUCKY BLUEGRASS 40 LB/ACRE
B. = KENTUCKY BLUEGRASS 210 LB/ACRE
C. = SPRING OATS 100 LB/ACRE (1" PLANTING DEPTH)
D. = WHEAT OR RYE 150 LB/ACRE (1" - 1.5" PLANTING DEPTH)
E. = ANNUAL RYEGRASS 40 LB/ACRE (1/4" PLANTING DEPTH)
F. = SOD
G. = ANCHORED STRAW/HAY (2 TONS/ACRE) OR WOOD FIBER/CELLULOSE (1 TON/ACRE)

NOTES:
1. IRRIGATION NEEDED DURING MAY THROUGH SEPTEMBER.
2. IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.
3. ANCHORED MULCH IS REQUIRED FOR PERMANENT, DORMANT AND TEMPORARY SEEDING.
4. OPTIMUM SEEDING DATES PROVIDED. DATES MAY BE EXTENDED OR SHORTENED BASED ON PROJECT LOCATION.
5. SEED MIXTURES PROVIDED FOR LAWNS AND HIGH MAINTENANCE AREAS.

MAINTENANCE:
1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.
2. CHECK FOR EROSION AND MOVEMENT OF MULCH AND REPAIR IMMEDIATELY.
3. MONITOR FOR EROSION DAMAGE AND ADEQUATE COVER (70% DENSITY).
4. RESEED, FERTILIZE OR APPLY MULCH WHERE NECESSARY.



PRODUCT:
1. DANDY BAG, OR APPROVED EQUAL.

INSTALLATION:
1. THE EMPTY INLET PROTECTION BAG SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END.
2. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE.
3. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME.

MAINTENANCE:
1. REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT.
2. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE INLET PROTECTION BAG AS NEEDED.
3. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND ONCE EVERY 7 CALENDAR DAYS.

INLET PROTECTION BAG
SCALE: NONE

SCALE VERIFICATION	DRAWN BY	MRE
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	APPROVED BY	MEC
	ISSUE DATE	SEPTEMBER 2017
	PROJECT NUMBER	196217-04-001

NO.	DATE	INITIALS	REVISION DESCRIPTIONS

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Megan E. Carr

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SEWER REHABILITATION - SMALL DIAMETER (≤15")
CITY OF WARSAW BOARD OF PUBLIC WORKS & SAFETY
WARSAW, IN

EROSION CONTROL DETAILS

SHEET NO. 32
TOTAL SHEETS 32