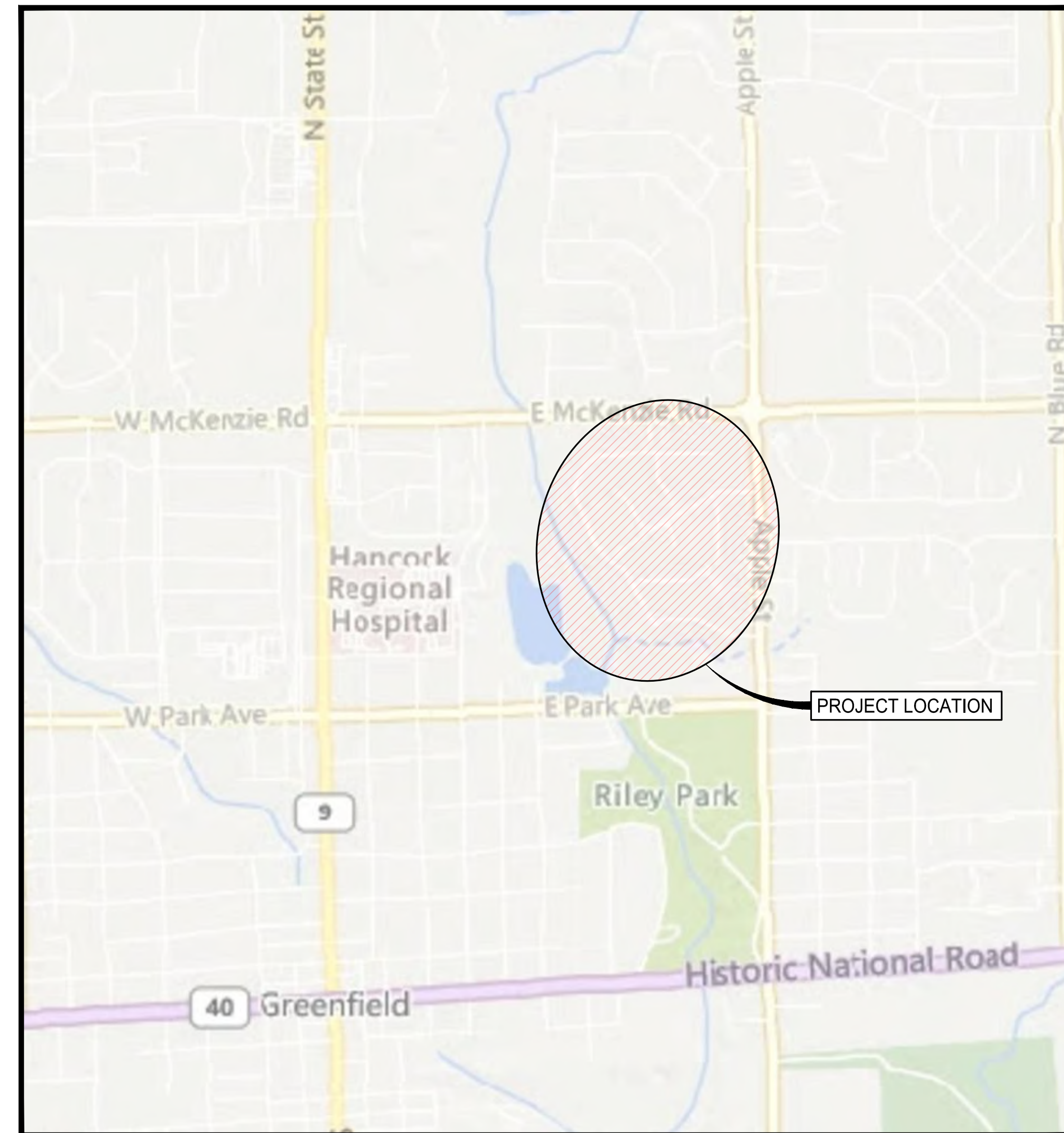
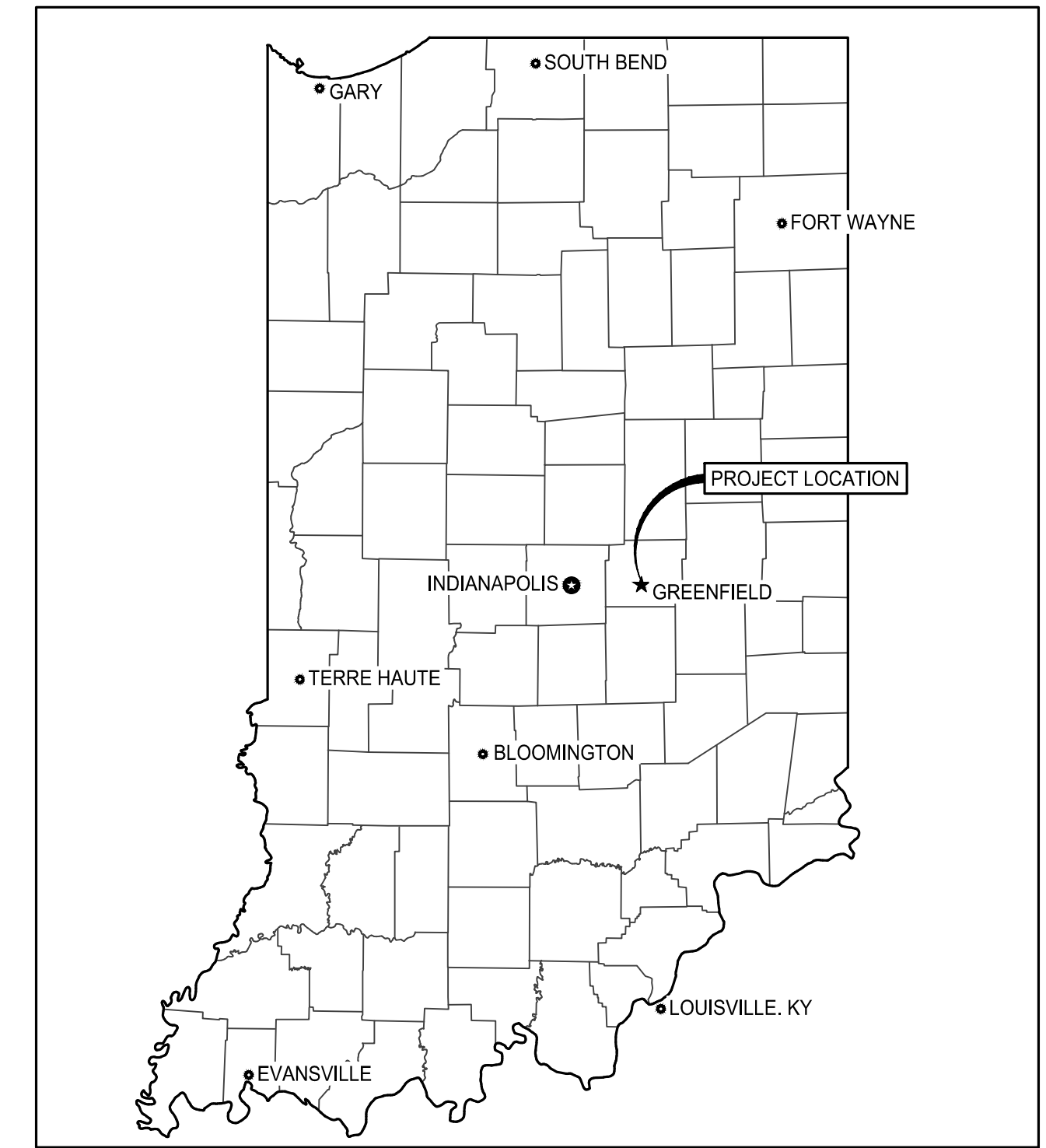


CITY OF GREENFIELD

PLANS FOR WATERVIEW SANITARY SEWER SYSTEM LINING

PROJECT NO. 2021.02592.002



PROJECT LOCATION 
NOT TO SCALE

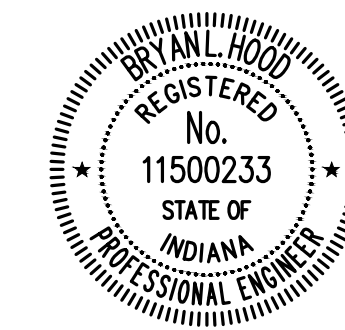
FINAL DESIGN

PLANS PREPARED FOR:
CITY OF GREENFIELD
809 SOUTH STATE STREET
GREENFIELD, IN 46140



AMERICAN
STRUCTUREPOINT
INC.

9025 RIVER ROAD, SUITE 200
INDIANAPOLIS, IN 46240
TEL 317.547.5580 FAX 317.543.0270
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Bryan L. Hood 6/14/2023
BRYAN L. HOOD
PROFESSIONAL ENGINEER No. 11500233
STATE OF INDIANA

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 CONTACT: CALEB OSBORNE
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 EMAIL: cosborne@greenfieldin.org

WASTEWATER
 809 SOUTH STATE ST.
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 CONTACT: NICHOLAS DEZELAN

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 CENTERPOINT ENERGY SOUTH
 1800 W. 26TH ST.
 MUNCIE, IN 47302
 CONTACT: JOHN EASTHAM
 PHONE: (765) 587-2119
 EMAIL: publicproject@centerpointenergy.com



LEGEND:

EXISTING:

	BEEHIVE INLET	tr	TOP OF RIM ELEVATION
	CURB INLET	inv	INVERT ELEVATION
	CLEAN OUT	pvc	PLASTIC PIPE
	DRAINAGE INLET	rcp	REINFORCED CONCRETE PIPE
	DRAINAGE MANHOLE	cmp	CORRUGATED METAL PIPE
	MANHOLE	cpp	CORRUGATED PLASTIC PIPE
	SANITARY MANHOLE	hdpe	PLASTIC PIPE
		vcp	VITRIFIED CLAY PIPE

GENERAL NOTES:

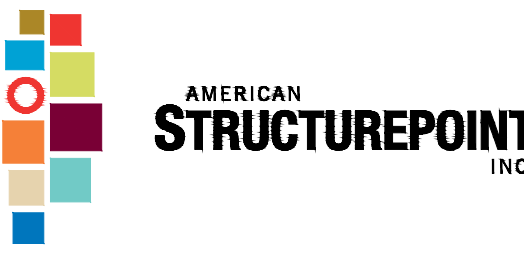
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS FOR THIS PROJECT. ADDITIONS, DELETIONS, AND/OR REVISIONS TO THE SANITARY SEWER FACILITIES SHALL NOT BE MADE WITHOUT PRIOR APPROVAL BY THE ENGINEER. THE CONTRACTOR SHALL KEEP, AND MAINTAIN IN GOOD CONDITION, A COMPLETE SET OF THE PROJECT PLANS AND SPECIFICATIONS ON THE JOB SITE AT ALL TIMES.
- CONTRACTOR SHALL CONTACT CITY OF GREENFIELD AND UTILITY COMPANIES A MINIMUM OF 48 HOURS IN ADVANCE OF WORKING IN ANY AREAS. IT IS CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL UTILITIES IN HIS WORK AREA WHETHER SHOWN OR NOT.
- ALL EXCESS EXCAVATED OR CLEARED MATERIAL SHALL BE DISPOSED OF LAWFULLY BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS OR IN THE SPECIFICATIONS.
- CONTRACTOR SHALL MAKE ALL MEASUREMENTS AND CHECK ALL DIMENSIONS NECESSARY FOR THE PROPER INSTALLATION OF THE WORK CALLED FOR BY THE DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL MAKE ALL NECESSARY MEASUREMENTS TO PREVENT MISFITTING IN SAID WORK AND SHALL BE RESPONSIBLE FOR THE ACCURATE CONSTRUCTION OF THE ENTIRE WORK.
- CONTRACTOR IS RESPONSIBLE FOR ALL BYPASS PUMPING REQUIRED TO COMPLETE THE WORK. BYPASS PUMPING SHALL CAUSE MINIMUM INTERFERENCE WITH TRAFFIC AND MINIMUM DISRUPTION TO LOCAL PROPERTY OWNERS. SEE SPECIFICATION 015100.
- ACTIVE FLOWS SHALL BE DIVERTED WITH FLOW THROUGH PLUGS OR BYPASS PUMPED AS REQUIRED TO ENSURE THAT THE LIQUID FLOW IS MAINTAINED OFF THE SURFACES TO BE LINED.
- IN THE EVENT THAT THE CONTRACTOR DISCOVERS A DISCREPANCY ON THE CONSTRUCTION PLANS OR A POTENTIAL UTILITY CONFLICT, HE SHALL CONTACT THE ENGINEER IMMEDIATELY FOR CLARIFICATION, PRIOR TO PROCEEDING WITH CONSTRUCTION OF THE PORTION IN QUESTION.
- ALL DISTURBED AREAS INCLUDING, BUT NOT LIMITED TO, STREETS, DRIVES, WALKS, LAWNS, ETC. SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION. IF DAMAGED, ALL CULVERTS, STORM PIPES, AND APPURTENANCES SHALL BE REPLACED WITH NEW MATERIALS OF COMPARABLE SIZE. CULVERT SIZE SHALL NOT BE SMALLER THAN 12 INCHES. SWALES, DITCHES, ETC. SHALL BE REGRADED TO PROVIDE POSITIVE DRAINAGE.
- THE CONTRACTOR SHALL PROTECT POWER POLES AND OTHER UTILITIES FROM DAMAGE, IN A MANNER APPROVED BY UTILITY.
- THE USE OF EXPLOSIVES FOR "ROCK REMOVAL" IS PROHIBITED UNLESS OTHERWISE AUTHORIZED IN WRITING.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING PERMITS REQUIRED FOR THE PROJECT NOT IDENTIFIED IN THE CONTRACT DOCUMENTS AS OBTAINED BY OWNER, AND PAYING ALL PERMIT COSTS, TAP FEES, METER DEPOSITS, BONDS AND OTHER FEES REQUIRED FOR THE WORK.
- CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL NECESSARY LOCAL PERMITS HAVE BEEN OBTAINED.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL MUD, DIRT, GRAVEL, AND ANY OTHER MATERIALS TRACKED ONTO ANY PUBLIC OR PRIVATE STREETS, PARKING LOTS, OR WALKS. THIS MATERIAL REMOVAL OR SWEEPING OF THE STREETS SHALL BE DONE AS FREQUENTLY AS NECESSARY TO MAINTAIN REASONABLY CLEAN STREETS. THE CONTRACTOR MUST ALSO KEEP AIRBORNE DIRT AND DUST TO A MINIMUM BY USING WATER OR OTHER METHODS AS NECESSARY.
- ALL GRASS AREAS DISTURBED DURING CONSTRUCTION SHALL HAVE TEMPORARY SEEDING AND MULCHED SEEDING ONCE WORK IN THE AREA IS COMPLETE.
- THE CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES TO ENSURE THE AREA IS NOT ADVERSELY IMPACTED BY DUST CREATED BY CONSTRUCTION. IN THE EVENT WATER IS USED AS A DUST CONTROL METHOD, ONLY A LIGHT MISTING SHALL BE ACCEPTABLE. A HEAVIER FLUSH TO PUSH DUST AND DEBRIS DOWN A STORM DRAIN IS UNACCEPTABLE.
- COMPACTED GRANULAR BACKFILL OR FLOWABLE FILL SHALL BE REQUIRED FOR BACKFILLING UNDER PAVEMENT, GRAVEL DRIVES, AND WITHIN 5 FEET OF THE EDGE OF PAVEMENT AND GRAVEL DRIVES.
- CONTRACTOR SHALL CONDUCT A "WALK THROUGH" MEETING WITH OWNER, AND ENGINEER WHEN THE CONTRACTOR BELIEVES THE FINAL RESTORATION IS COMPLETE TO ENSURE THE RESTORATION MEETS THE REASONABLE EXPECTATIONS OF THE PROPERTY OWNERS.
- THE CONTRACTOR SHALL PROVIDE, AT HIS EXPENSE, ALL AUTOMOBILE AND PEDESTRIAN TRAFFIC CONTROL DEVICES REQUIRED BY FEDERAL, STATE, COUNTY, CITY, OR LOCAL AGENCIES. THE AMOUNT, LOCATION, AND SIZE SHALL BE AS REQUIRED BY THE AGENCY.
- WHERE NEW WORK ABUTS EXISTING CURBS, SIDEWALK, DRIVES, OR OTHER PAVEMENTS WHICH ARE TO REMAIN IN PLACE, THE CONTRACTOR SHALL PROVIDE NEAT SAWCUTS, FULL DEPTH AT THE LIMIT OF CONSTRUCTION. PAYMENT FOR SAWCUTS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM AS SPECIFIED IN SECTION 012000 OF THE SPECIFICATIONS.
- THE DRAWINGS DO NOT SHOW PHASING OR SEQUENCING OF THE PROJECT WORK.
- THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS LISTED THEREIN AND SHALL MAINTAIN VEHICULAR ACCESS AT ALL TIMES TO ALL PROPERTY ADJACENT TO THE CONTRACTOR'S WORK THE CONTRACTOR SHALL COMPLY WITH THE CITY OF LAWRENCE AND STATE OF INDIANA REQUIREMENTS FOR TRAFFIC CONTROL IN ADDITION TO THE SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY POLICE AND FIRE DEPARTMENT OFFICIALS OF ALL CLOSED OR BLOCKED STREETS AND ALLEYS.
- THE CONTRACTOR SHALL PROVIDE A DETAILED MAINTENANCE OF TRAFFIC PLAN TO THE CITY OF GREENFIELD, AND ONLY UPON APPROVAL BY THE CITY OF GREENFIELD, MAY THE CONTRACTOR BEGIN WORK. THE PLAN SHALL DETAIL ALL PHASES OF WORK, COMPLETE DETAILED LAYOUT OF LANE CLOSURES, DETOUR ROUTES, AND ADVANCED WARNING SIGNAGE (SUCH AS 'ROAD WORK AHEAD,' 'ROAD CLOSED AHEAD,' 'LEFT LANE CLOSED AHEAD,' ETC.) FOR ALL PHASES OF CONSTRUCTION. THIS INCLUDES ALL STREETS LEADING INTO THE WORK ZONE.

NOTE: STREET NAME PLACARDS ARE REQUIRED TO BE PLACED WITH ALL CLOSURE AND DETOUR SIGNS IN RESPECT TO THE ROAD NAME(S) OF CLOSURE. SIGNS SHALL BE IN COMPLIANCE WITH THE "INDIANA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (INDIANA-MUTCD)". FOR MORE INFORMATION ON DEVELOPING THIS PLAN SEE INDOT'S MAINTENANCE OF TRAFFIC STANDARD DRAWINGS.
- THE CONTRACTOR SHALL PURSUE THE PROJECT IN SUCH A MANNER AS TO MINIMIZE BOTH THE EXTENT AND THE DURATION OF THE DISRUPTION OF TRAFFIC AND TO MAINTAIN THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE RESIDENTS ALONG THE STREET. ANY STREET CLOSURES WHICH ARE REQUIRED DURING CONSTRUCTION OF THIS PROJECT, WILL BE APPROVED ONLY BY THE CITY OF LAWRENCE. CONTRACTOR SHALL NOTIFY VIA DOOR HANGER ALL AFFECTED HOMEOWNERS A MINIMUM OF 24 HOURS IN ADVANCE OF ANY STREET CLOSURES.
- THE CONTRACTOR SHALL SECURE HIS WORK AREA AT ALL TIMES AND PROHIBIT UNAUTHORIZED ACCESS BY THE GENERAL PUBLIC. THE CONTRACTOR SHALL PROVIDE, AT ALL TIMES, A SAFE PEDESTRIAN WALKWAY AROUND THE WORK AREA FOR ACCESS WHEN WORKING ACROSS SIDEWALKS. FOR PROPERTIES ADJACENT TO THE WORK AREA, THE CONTRACTOR SHALL PROVIDE FACILITIES FOR PEDESTRIAN AND VEHICULAR INGRESS AND EGRESS.
- THE CONTRACTOR SHALL CONFIRM IN THE FIELD LOCATIONS OF PARTIAL REPAIRS BEFORE BEGINNING EXCAVATION ASSOCIATED WITH THE REPAIR.
- FIELD TILE ENCOUNTERED SHALL BE REPAIRED AND/OR REPLACED TO ITS ORIGINAL CONDITION OR BETTER AND FLOW DIRECTION.
- REMOVAL OF EXISTING CONCRETE AND ASPHALT PAVEMENT SHALL INCLUDE ALL AGGREGATE BASE AND SUB-GRADE MATERIALS. SAW-CUT ALL EXISTING PAVED AREAS. ALL CUTS SHALL BE CLEAN, NEAT, AND TRUE TO LINE. ALL CONCRETE AND ASPHALT PAVEMENT MATERIAL TO BE DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER.
- ALL DISTURBED AREAS INCLUDING, BUT NOT LIMITED TO, STREETS, DRIVES, WALKS, LAWNS, ETC. SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION. ALL CULVERTS, STORM PIPES, AND APPURTENANCES SHALL BE REPLACED AS SPECIFIED BY THE CONTRACT DOCUMENTS OR IF DAMAGED DURING CONSTRUCTION WITH SAME MATERIAL AND SIZE AS EXISTING. CULVERT SIZE SHALL NOT BE SMALLER THAN 12 INCHES. SWALES, DITCHES, ETC. SHALL BE REGRADED TO PROVIDE POSITIVE DRAINAGE.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL MUD, DIRT, GRAVEL, AND ANY OTHER MATERIALS TRACKED ONTO ANY PUBLIC OR PRIVATE STREETS, PARKING LOTS, OR WALKS. THIS MATERIAL REMOVAL OR SWEEPING OF THE STREETS SHALL BE DONE AS FREQUENTLY AS NECESSARY TO MAINTAIN CLEAN STREETS. THE CONTRACTOR MUST ALSO KEEP AIRBORNE DIRT AND DUST TO A MINIMUM BY USING WATER OR OTHER METHODS AS NECESSARY.

DRAWING INDEX	
SHEET NO.	DESCRIPTION
GENERAL	
1	TITLE SHEET
2	INDEX AND GENERAL INFORMATION SHEET
3	BENCHMARK AND CONTROL POINT DATA
4	OVERALL PLAN
5	PROJECT MAP KEY
REHABILITATION PLAN	
6-8	REHABILITATION PLAN - WATERVIEW BLVD.
9-11	REHABILITATION PLAN - COMMON AREA
12-14	REHABILITATION PLAN - LAKE VIEW DR.
15-17	REHABILITATION PLAN - CREEK VIEW DR.
18-19	REHABILITATION PLAN - CREEKWOOD DR.
20-21	REHABILITATION PLAN - APPLE ST.
22-24	REHABILITATION SCHEDULES
DETAILS	
25-26	STANDARD DETAILS - SANITARY SEWER
EROSION CONTROL	
27	EROSION CONTROL DETAILS

REVISIONS			
REVISION NO.	SHEET NO.	DESCRIPTION	DATE

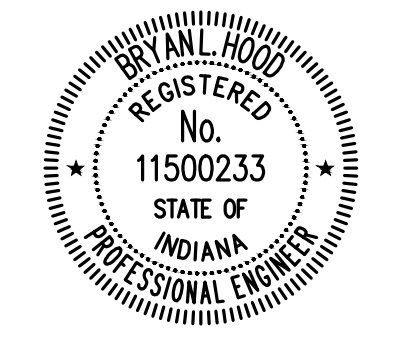
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WATERVIEW SANITARY SEWER SYSTEM LINING

Greenfield, Indiana



Bryan L. Hood 6/14/2023
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ISSUANCE INDEX	
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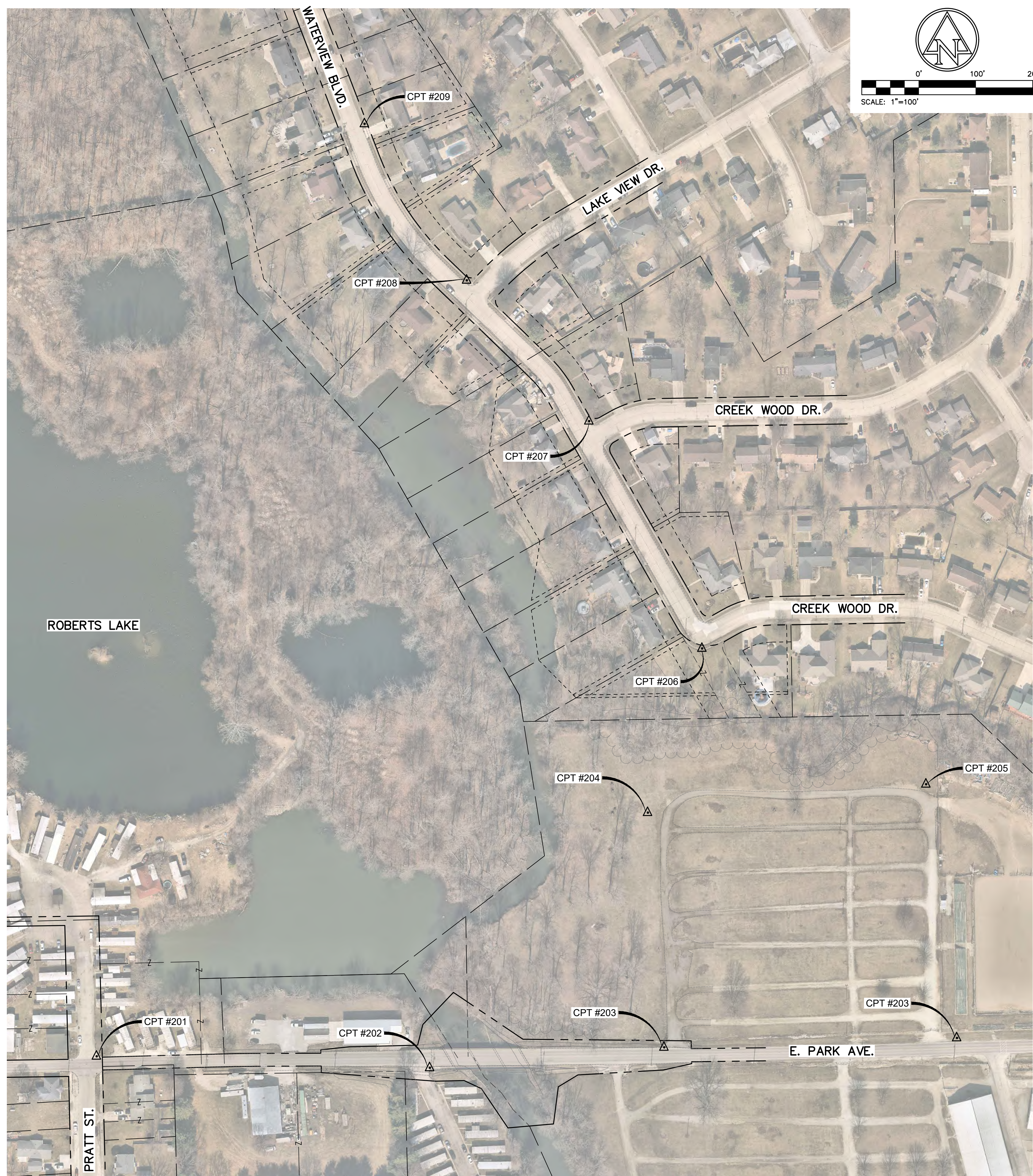
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NO.	DESCRIPTION	DATE

Project Number 2021.02592.002

INDEX AND GENERAL INFORMATION

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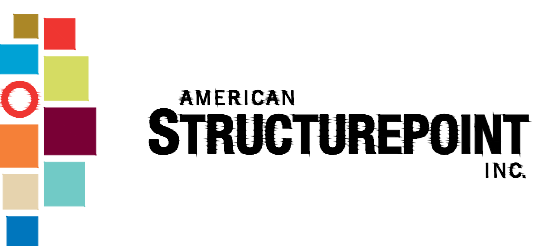
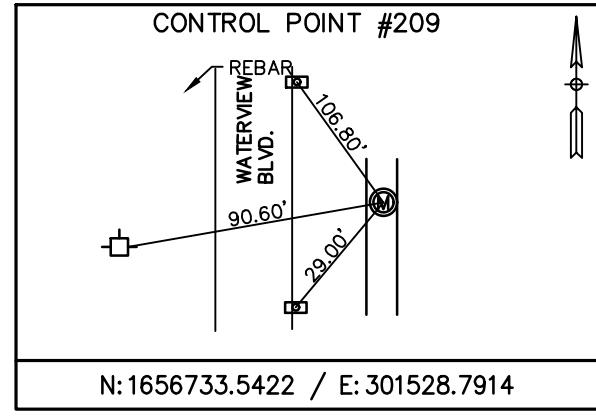
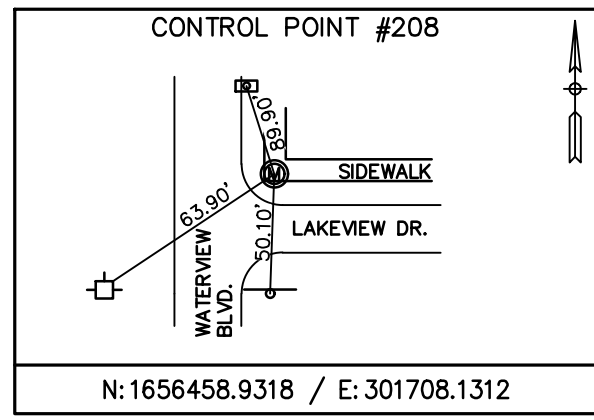
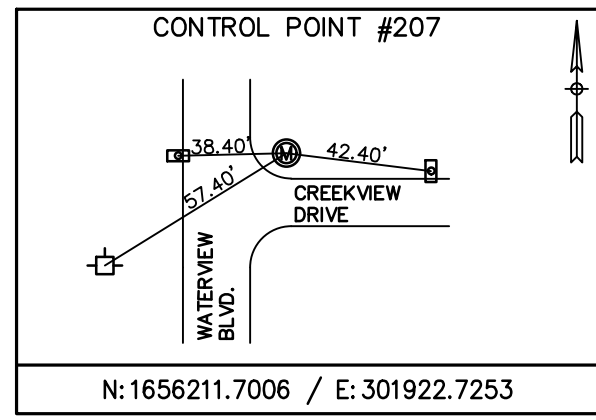
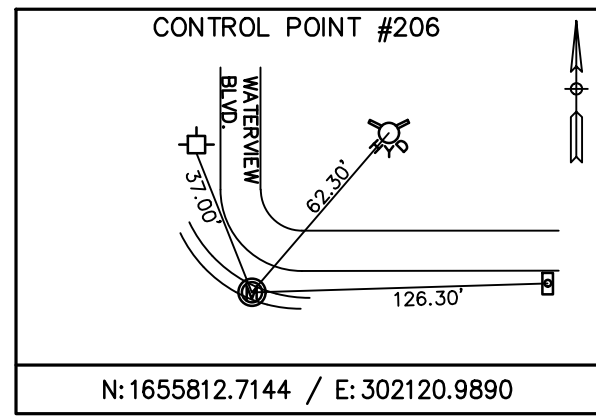
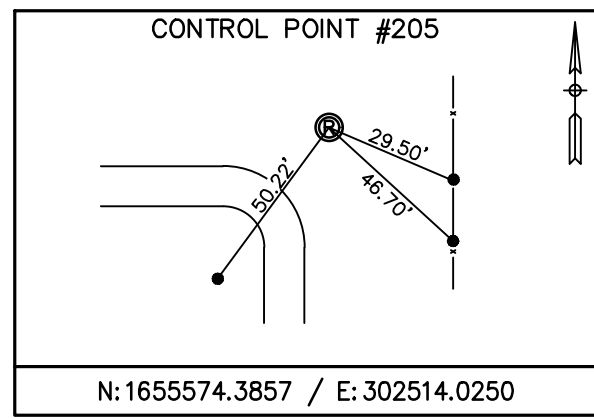
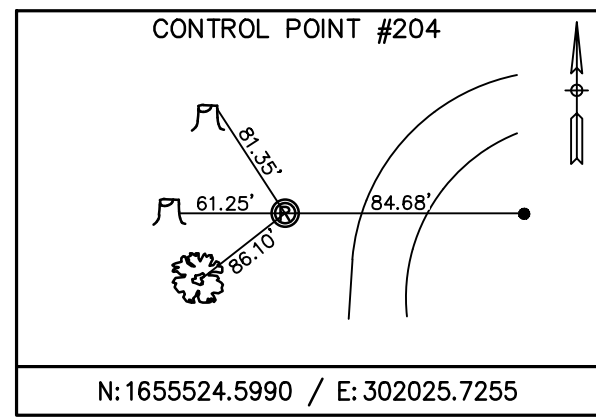
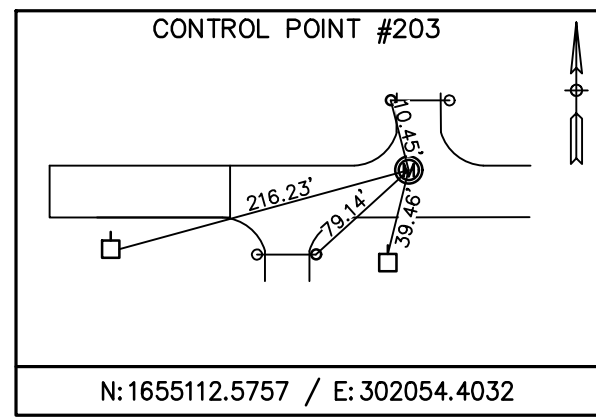
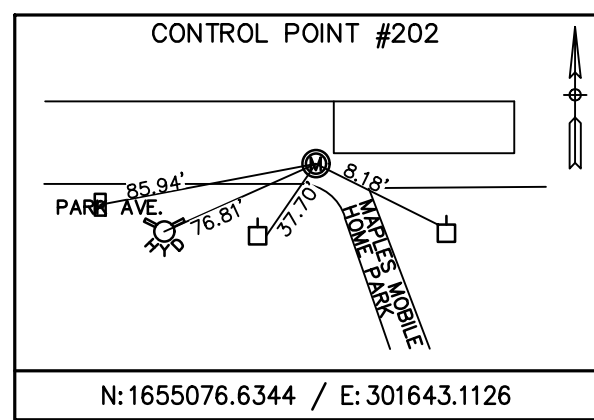
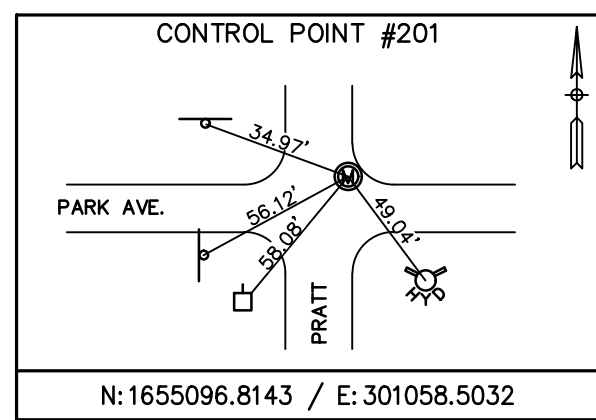
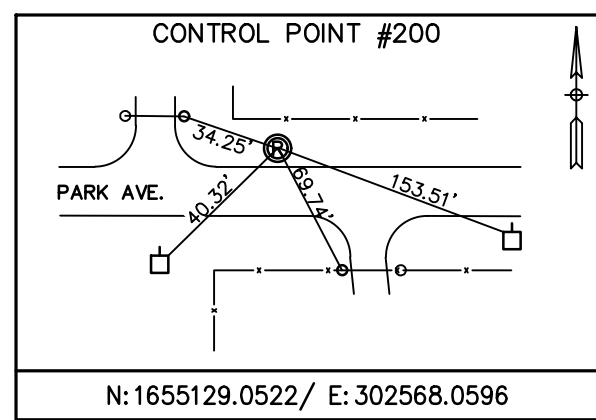
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BENCHMARK INFORMATION (NAVD 88 DATUM)

BENCHMARK ELEVATIONS WERE ESTABLISHED FROM GPS OBSERVATIONS ON THE IDENTIFIED BASE STATION DESCRIBED WITHIN. AN NGS OPUS SOLUTION (FILE #01270840.226 OP1648469132916) WAS OBTAINED AND USED TO CONTROL THE PROJECT'S VERTICAL DATUM. THE ELEVATIONS WERE THEN TRANSFERRED TO THE SITE USING DIFFERENTIAL LEVELING.

BENCHMARK AND CONTROL DATA - 88' DATUM

TBM NO.	ELEV.	DESCRIPTION
20	871.71	CUT "X" SET ON THE NORTHEAST SIDE OF A FIRE HYDRANT; LOCATED AT THE SE QUADRANT OF PRATT ST. AND PARK AVE.
21	866.23	CHISELED TRIANGLE FOUND ON THE NORTHWEST SIDE OF THE BRIDGE ABUTMENT OF PARK AVE. BRIDGE OVER BRANDYWINE CREEK
22	876.87	MAG SPIKE SET ON THE NORTHWEST SIDE OF A LIGHT POLE LOCATED INSIDE THE 4-H LOT; ±400' NORTH OF THE CL OF PARK AVE.; NORTH-MOST LIGHT POLE
23	870.55	CHISELED "X" ON THE WEST BOLT OF A FIRE HYDRANT; LOCATED @ THE NORTHEAST QUADRANT OF CREEKWOOD DR. AND WATERVIEW BLVD.
24	872.68	CHISELED "X" ON THE WEST BOLT OF A FIRE HYDRANT; LOCATED @ THE NORTHEAST QUADRANT OF WATERVIEW BLVD. & CREEKVIEW DR.
25	871.10	CHISELED SQUARE ON THE SOUTH SIDE OF A LIFT STATION; LOCATED ±40' WEST OF THE CL OF WATERVIEW DR. & BETWEEN RES. 588 & RES. 592



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WATERVIEW SANITARY SEWER SYSTEM LINING

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BENCHMARK AND CONTROL POINT DATA

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ROBERTS LAKE

LEGEND

- CIPP MAINLINE
- BEEHIVE INLET
- CURB INLET
- CLEAN OUT
- DRAINAGE INLET
- DRAINAGE MANHOLE
- MANHOLE
- SANITARY MANHOLE
- TOP OF RIM ELEVATION
- INVERT ELEVATION
- PLASTIC PIPE
- REINFORCED CONCRETE PIPE
- CORRUGATED METAL PIPE
- CORRUGATED PLASTIC PIPE
- VITRIFIED CLAY PIPE

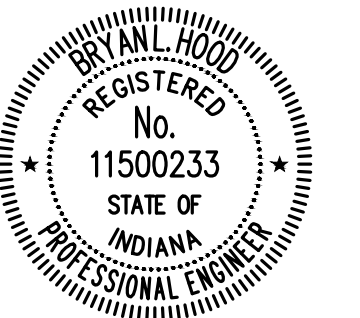
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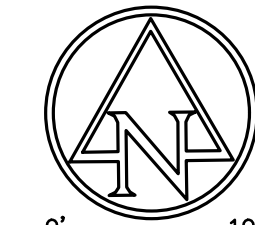
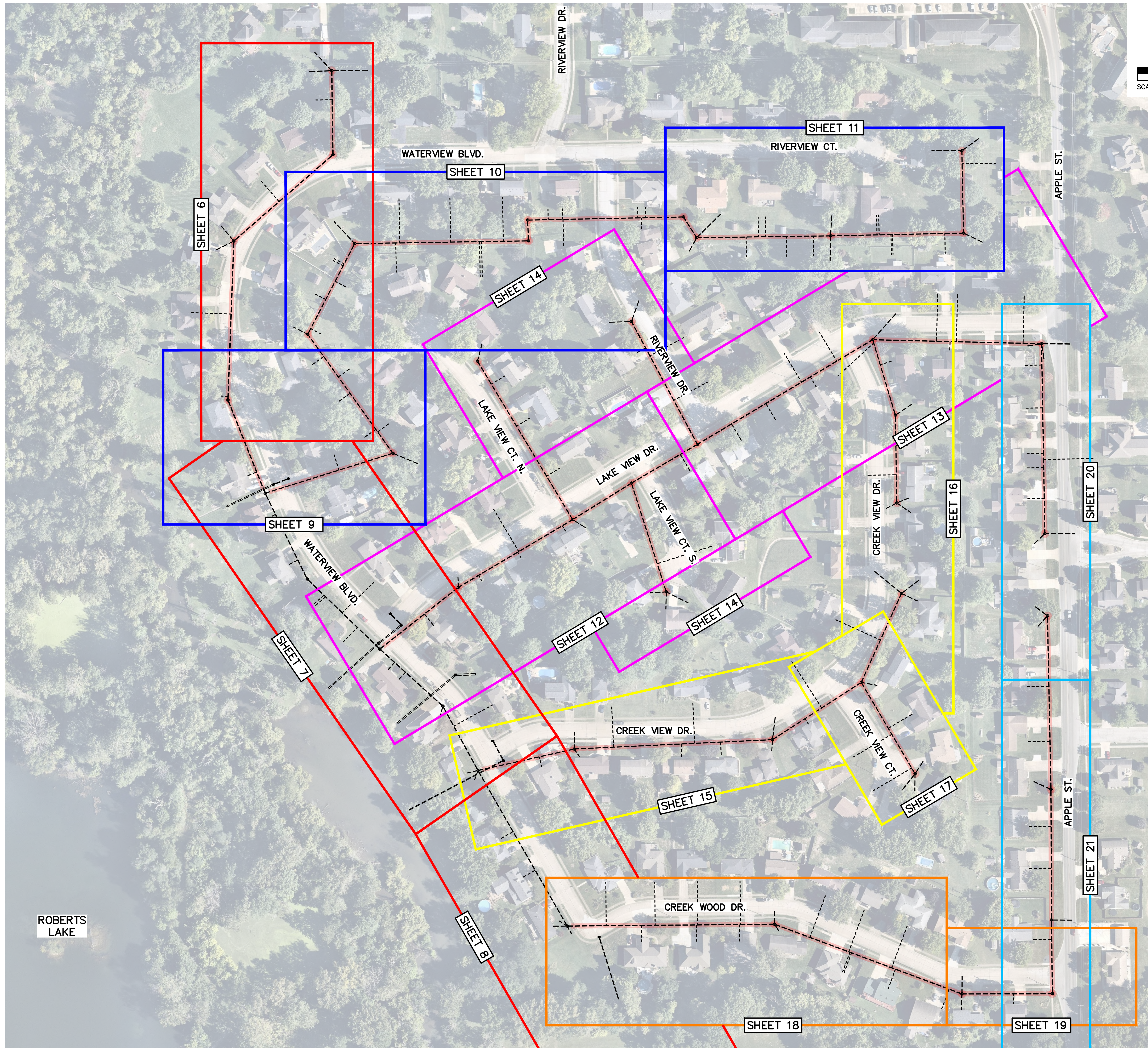
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OVERALL PLAN

PLOT DATE: 6/14/2023 9:56 AM EDITED BY: PTRAMINSKI DRAWING FILE: P:\2021\02592\02.DRAWINGS\UTILITY INFRASTRUCTURE\202102592.002.U.L.M.K.DWG



0' 100' 200'
SCALE: 1"=100'

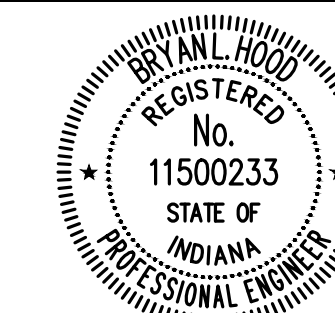
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


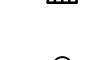










Project Number 2021.02592.002

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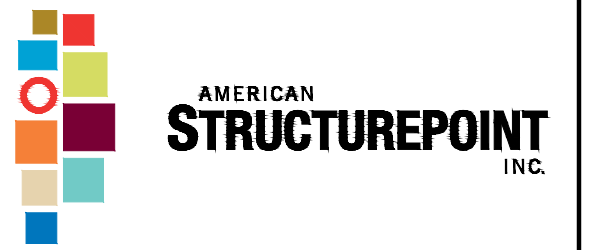
NOTES

1. REINSTATE ALL ACTIVE LATERALS. INCLUDE LINING ALL ACTIVE LATERALS TO 5- FEET BEYOND MAIN LINE SEWER AS PART OF ALTERNATE BID.
2. DO NOT REINSTATE CAPPED LATERALS.
3. LATERALS AS SHOWN ARE APPROXIMATE, BASED ON TELEVISIONING RESULTS.

LEGEND

	CIPP MAINLINE		TOP OF RIM ELEVATION
	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
	DRAINAGE INLET		CORRUGATED METAL PIPE
	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

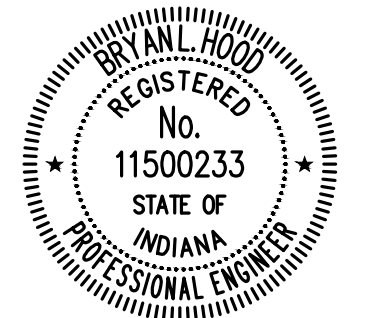
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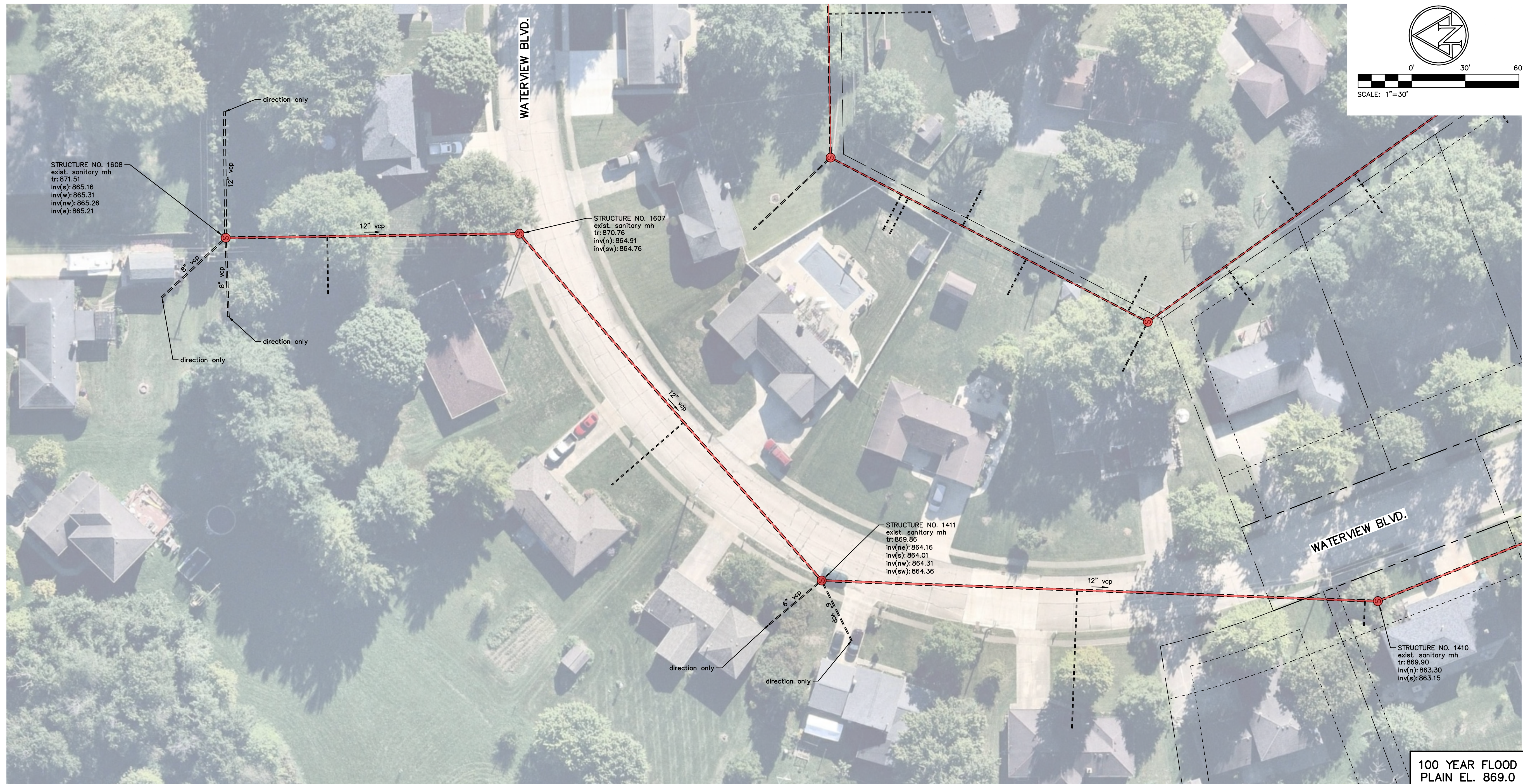
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REHABILITATION PLAN WATERVIEW BLD.

100 YEAR FLOOD
PLAIN EL. 869.0

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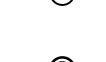



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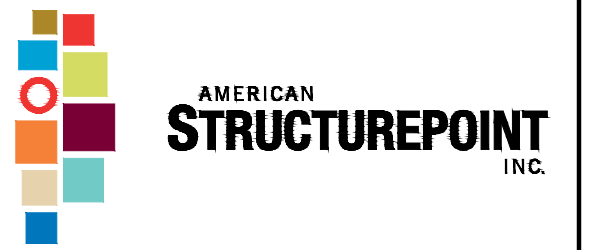
NOTES

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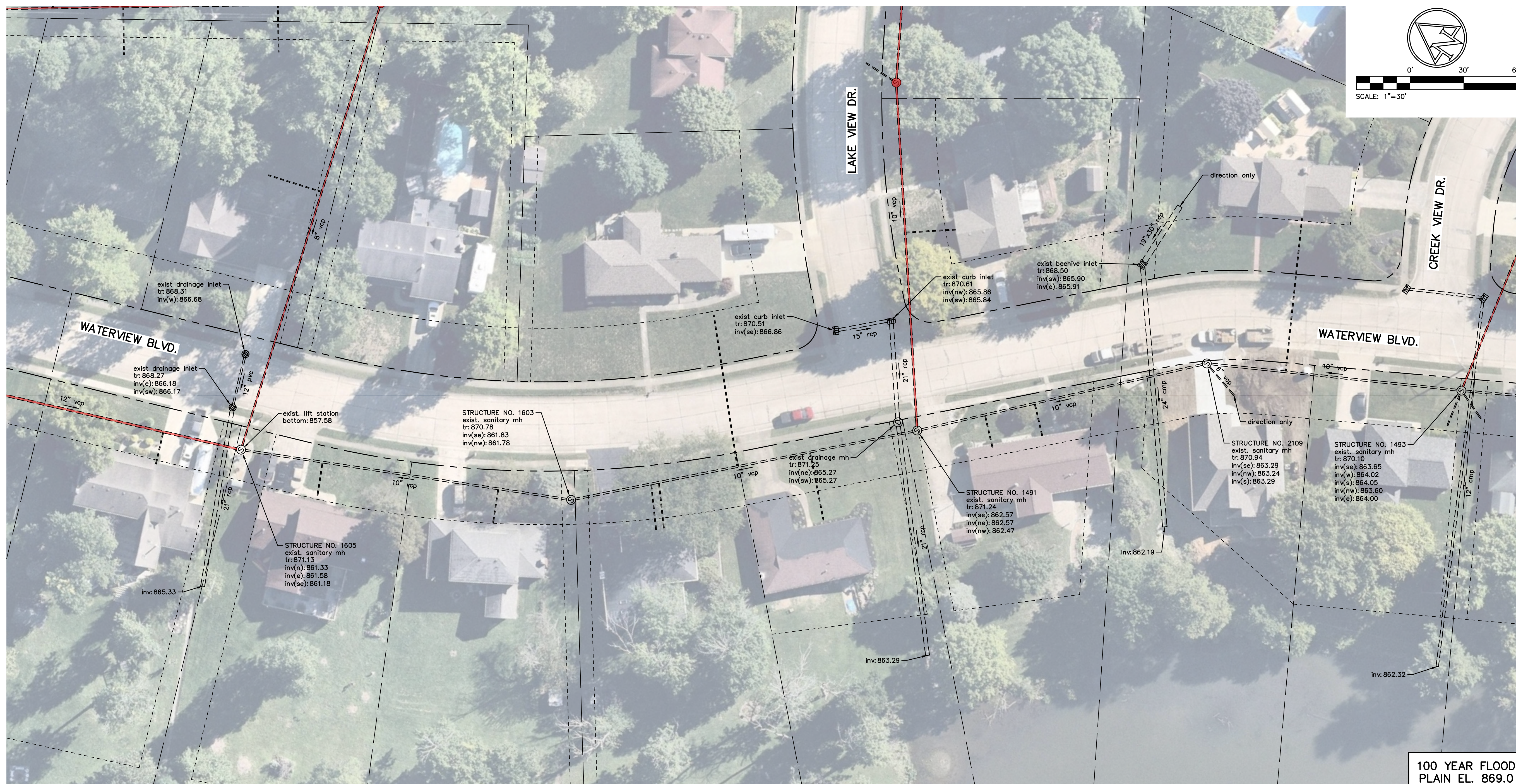
LEGEND

	CIPP MAINLINE	tr	TOP OF RIM ELEVATION
	BEEHIVE INLET	inv	INVERT ELEVATION
	CURB INLET	pvc	PLASTIC PIPE
	CLEAN OUT	rcp	REINFORCED CONCRETE PIPE
	DRAINAGE INLET	cmp	CORRUGATED METAL PIPE
	DRAINAGE MANHOLE	cpp	CORRUGATED PLASTIC PIPE
	MANHOLE	vcp	VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

CITY OF GREENFIELD

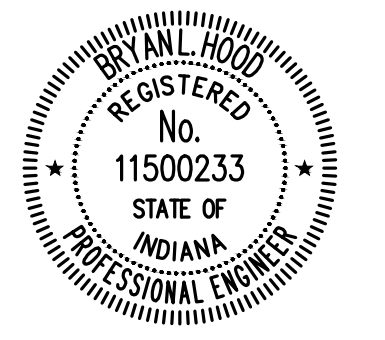


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WATERVIEW SANITARY SEWER SYSTEM LINING

Greenfield, Indiana



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






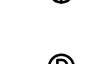






REHABILITATION PLAN WATERVIEW BLD.

100 YEAR FLOOD PLAIN EL. 869.0

NOTES

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LEGEND

	CIPP MAINLINE		TOP OF RIM ELEVATION
	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
	DRAINAGE INLET		CORRUGATED METAL PIPE
	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

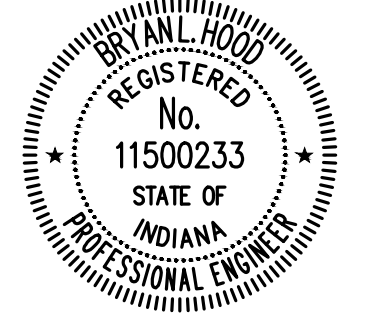
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**WATERVIEW
 SANITARY SEWER
 SYSTEM LINING**

Greenfield, Indiana



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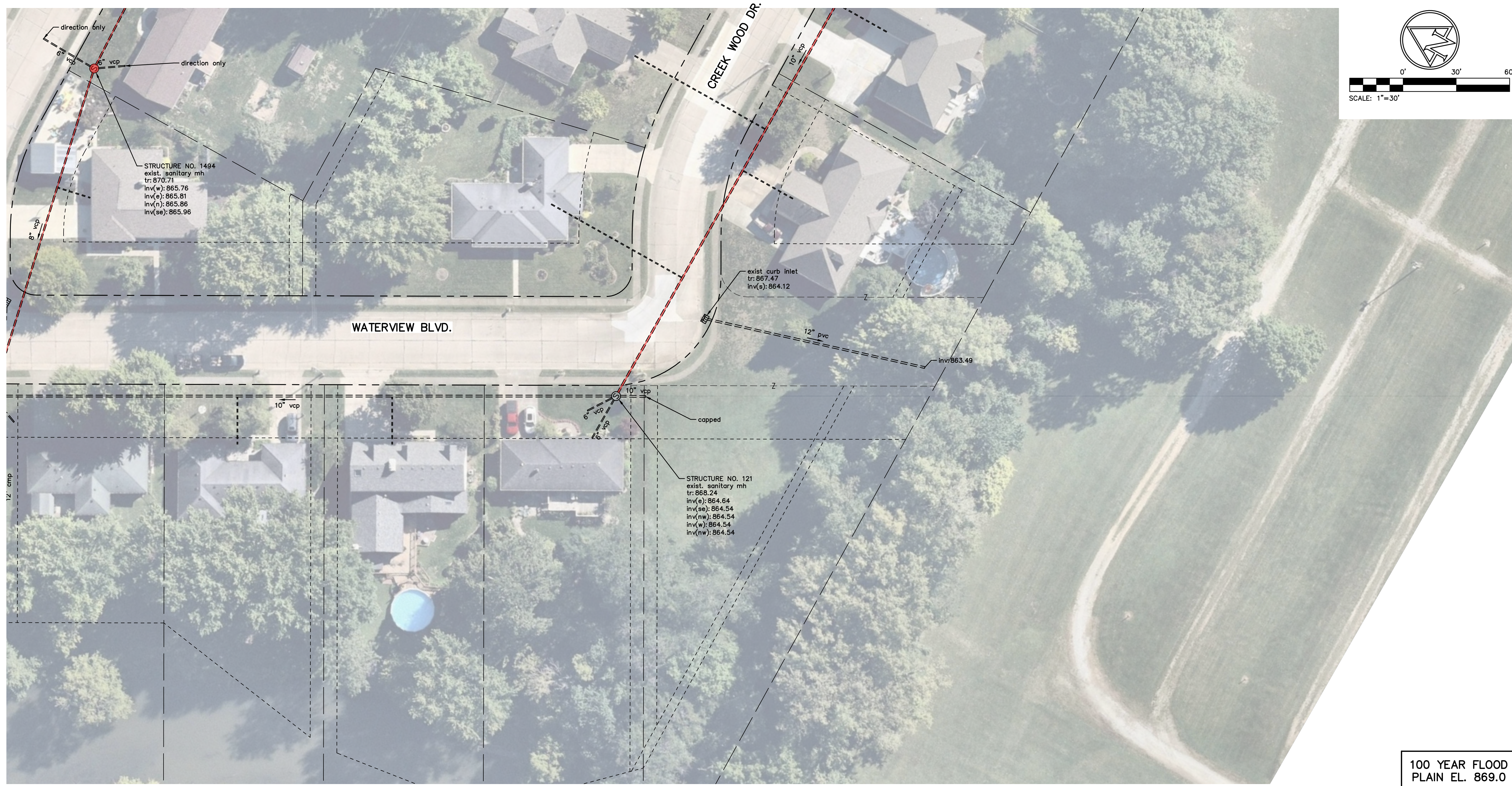
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**REHABILITATION PLAN
 WATERVIEW BLD.**

100 YEAR FLOOD
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






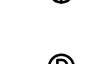






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LEGEND

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	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
	DRAINAGE INLET		CORRUGATED METAL PIPE
	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

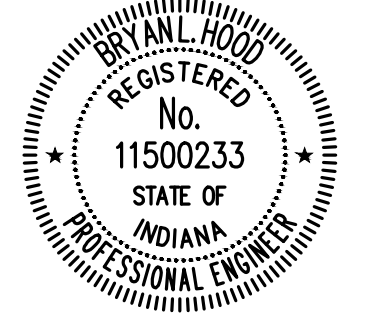
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WATERVIEW SANITARY SEWER SYSTEM LINING

Greenfield, Indiana



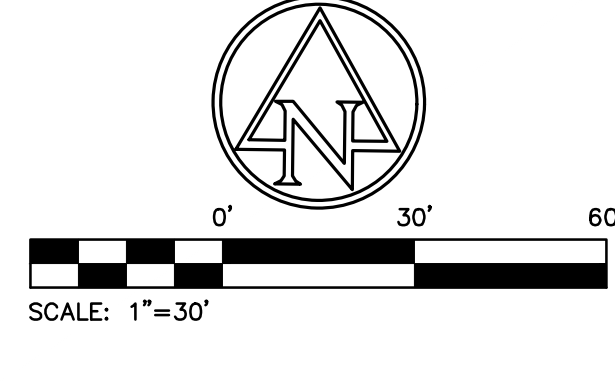
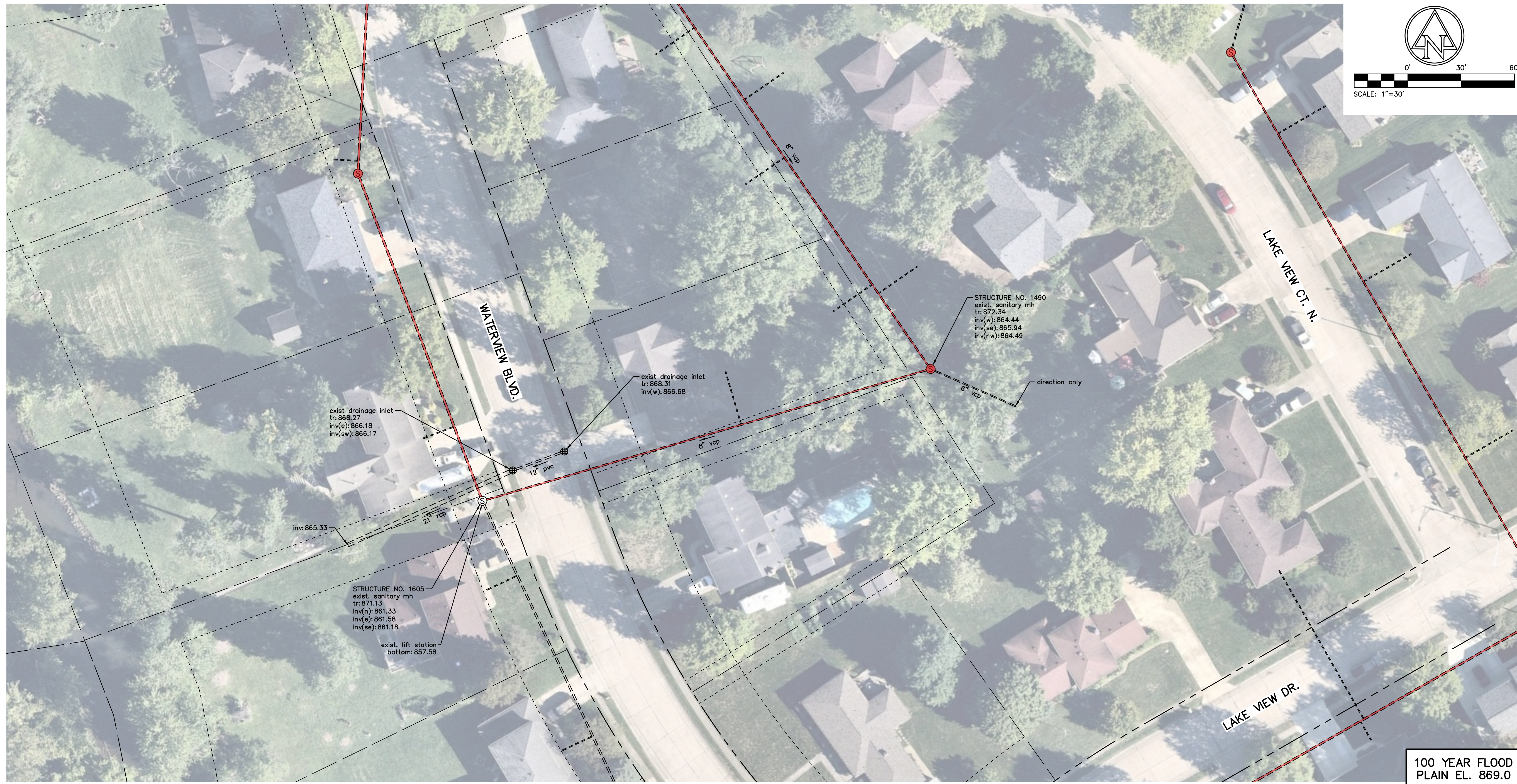
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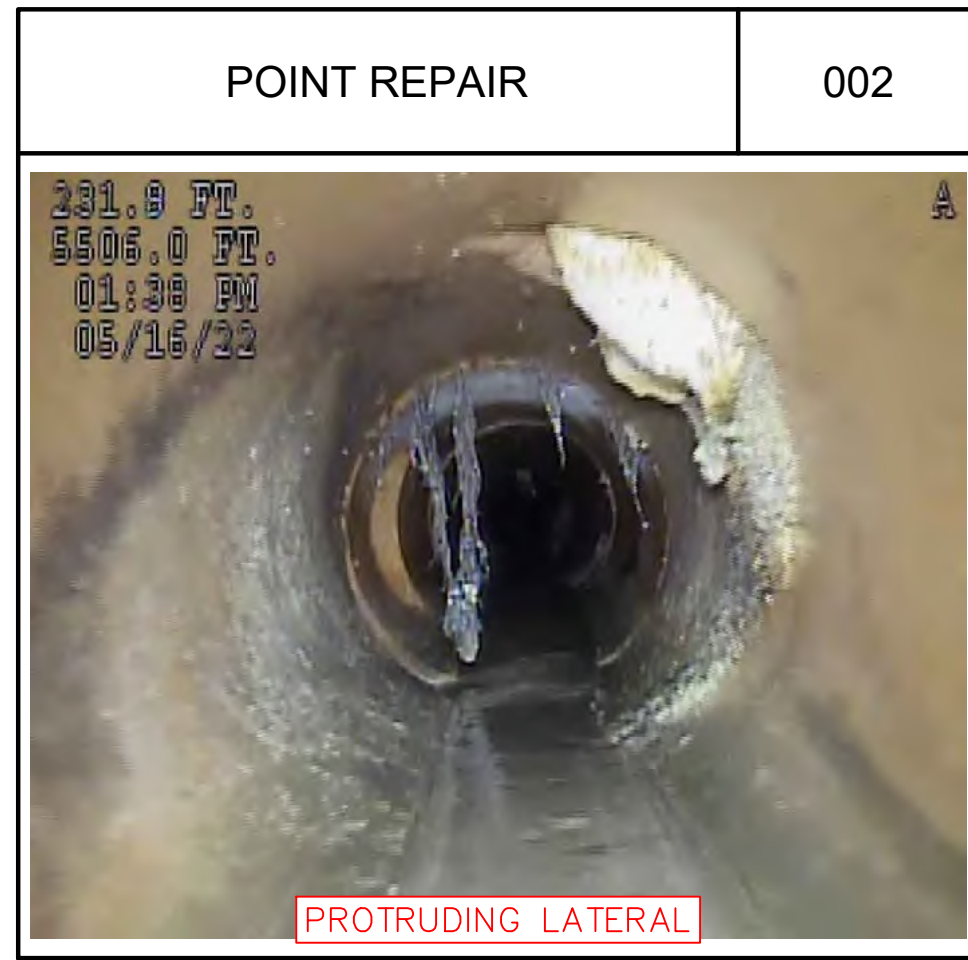
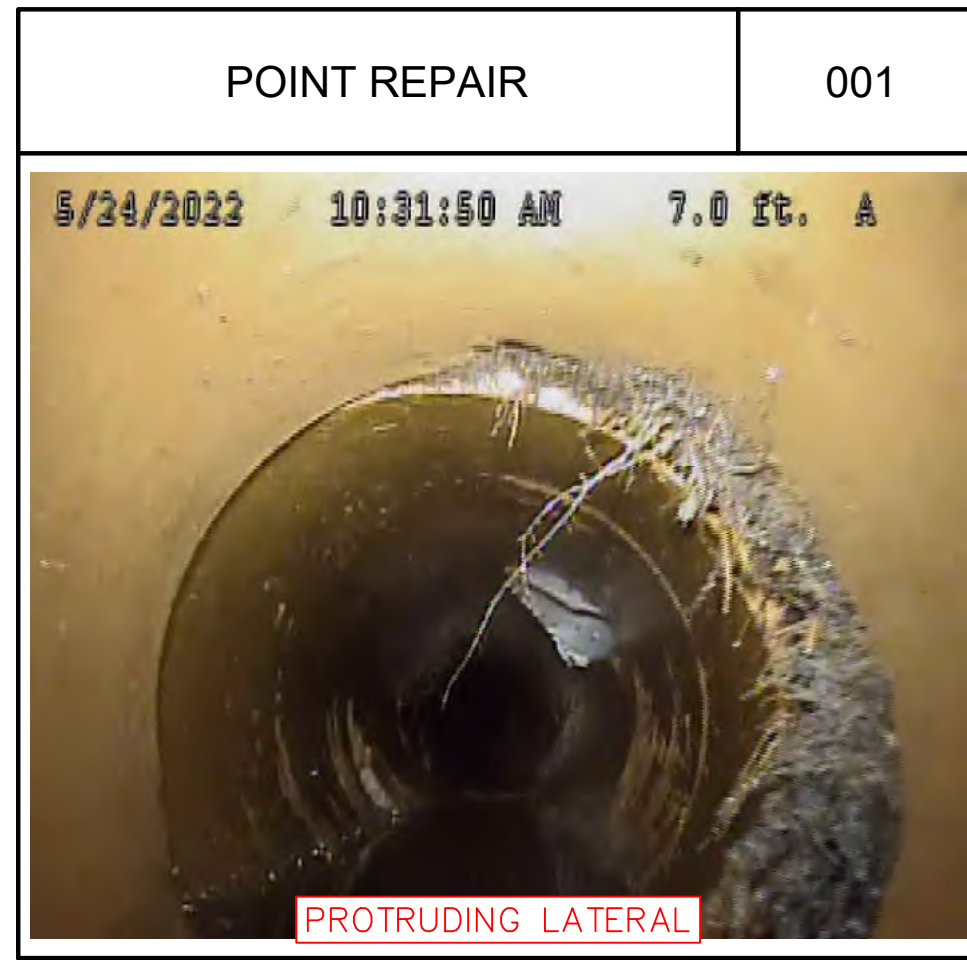
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REHABILITATION PLAN
 COMMON AREA



100 YEAR FLOOD
 PLAIN EL. 869.0

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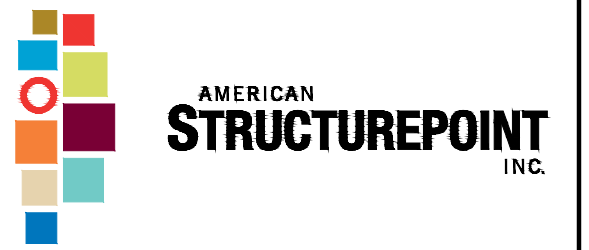
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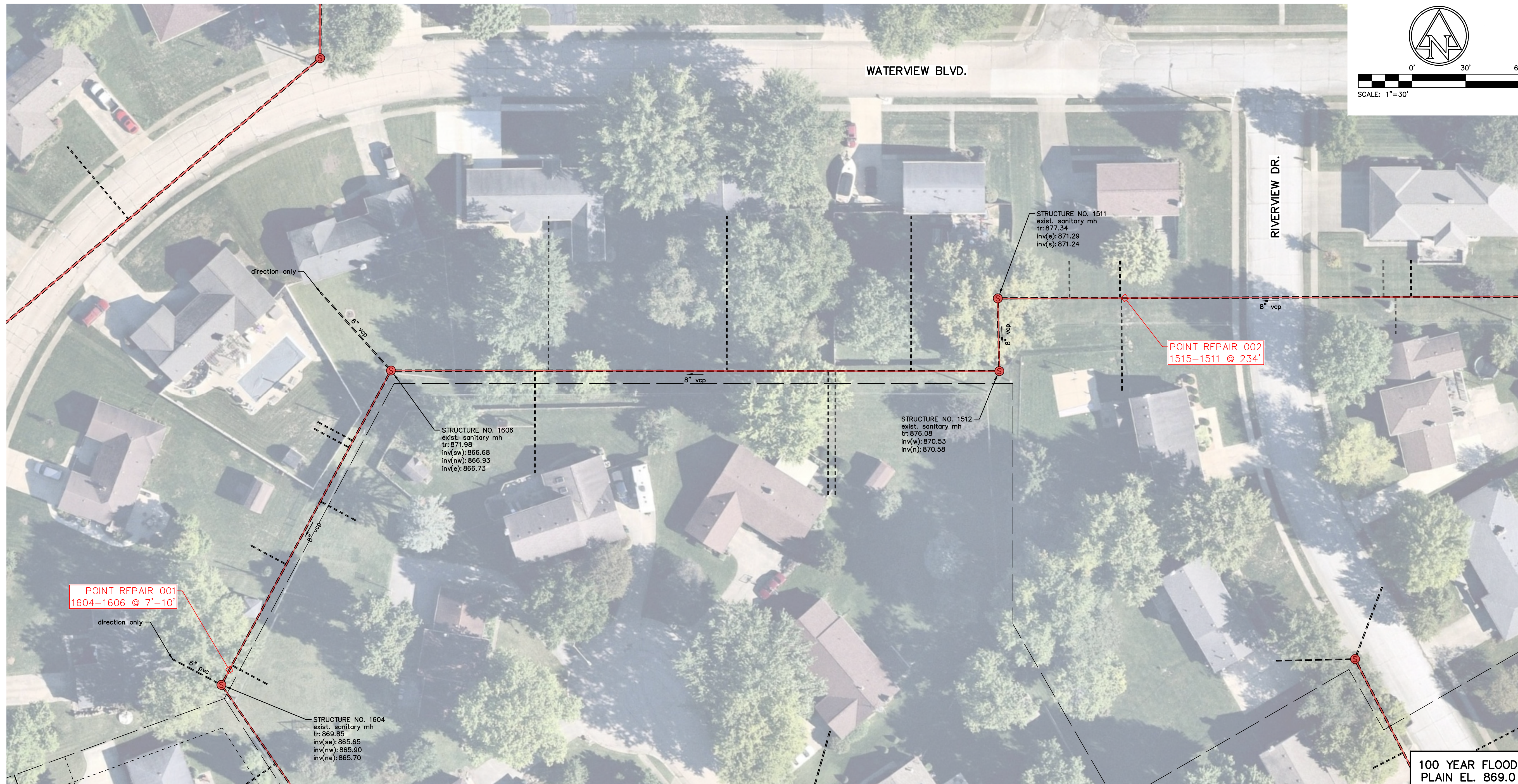
LEGEND

	CIPP MAINLINE		TOP OF RIM ELEVATION
	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
	DRAINAGE INLET		CORRUGATED METAL PIPE
	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

CITY OF GREENFIELD



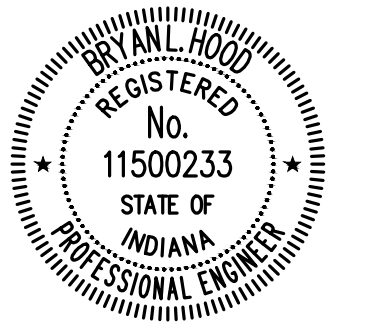
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WATERVIEW
SANITARY SEWER
SYSTEM LINING

Greenfield, Indiana



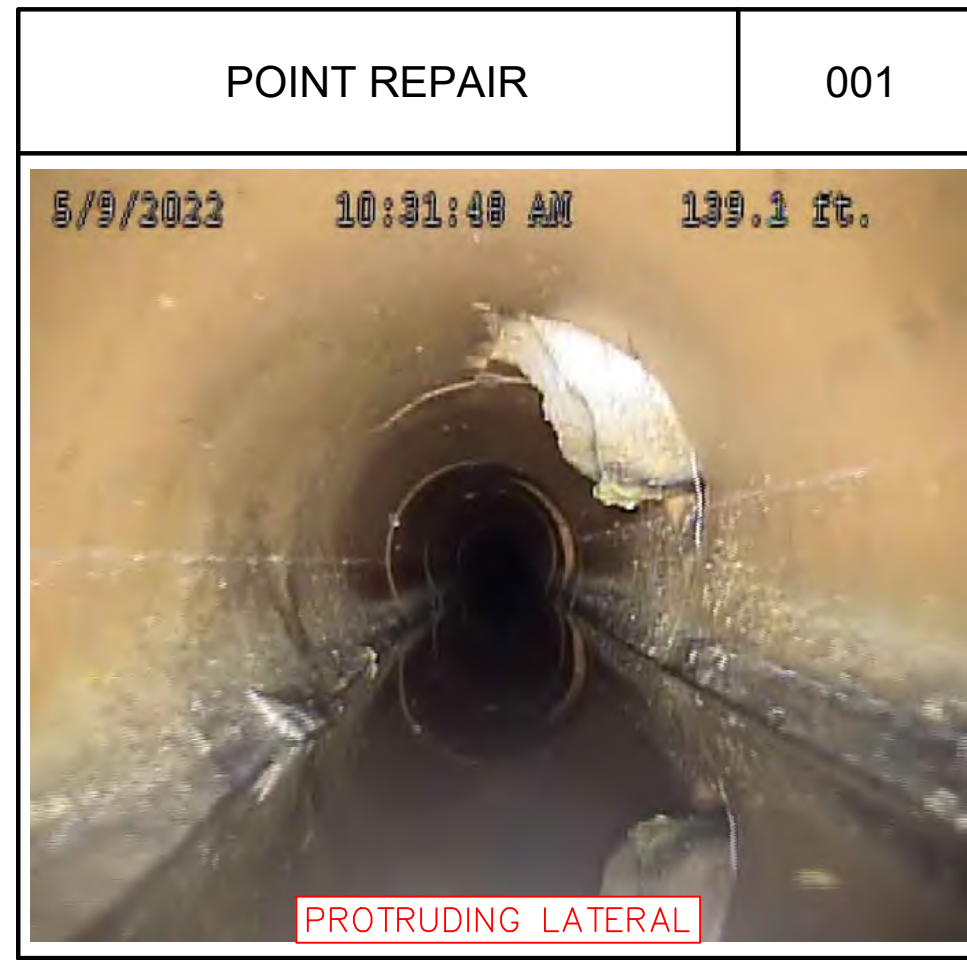
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REHABILITATION PLAN
COMMON AREA

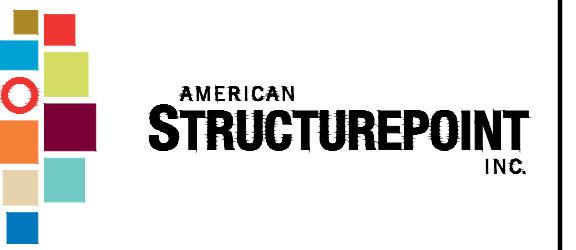
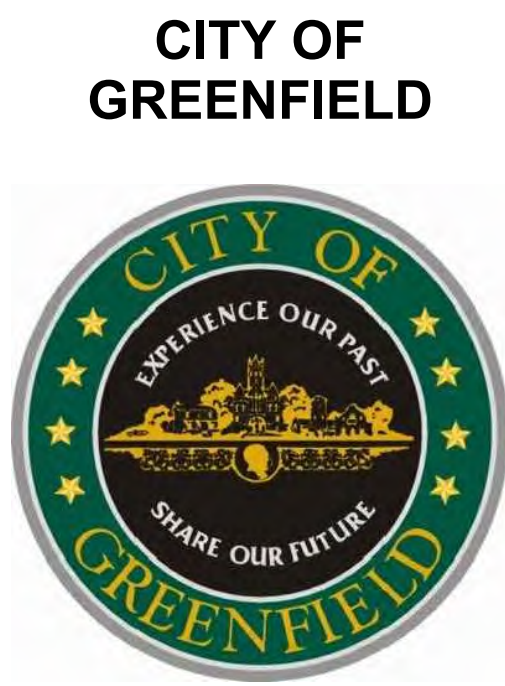


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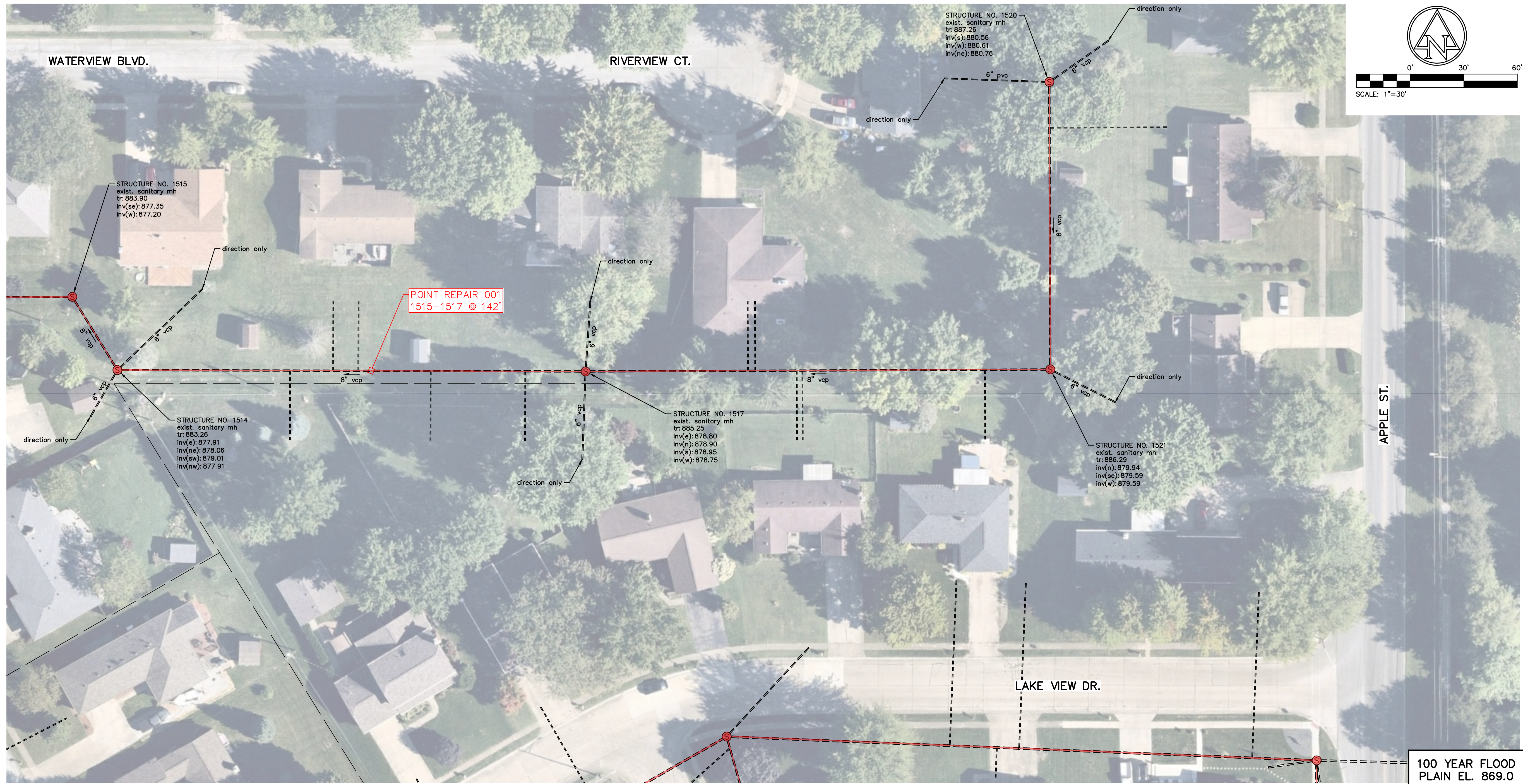
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LEGEND

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	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
	DRAINAGE INLET		CORRUGATED METAL PIPE
	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		



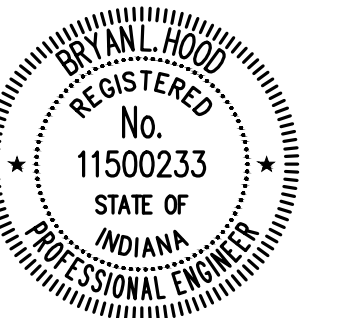
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WATERVIEW SANITARY SEWER SYSTEM LINING

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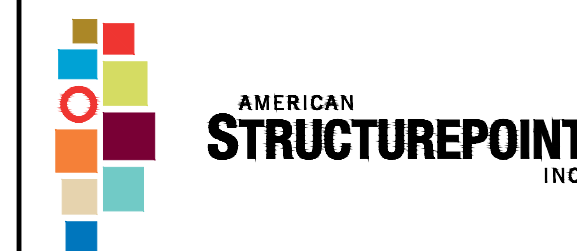
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REHABILITATION PLAN
 COMMON AREA

100 YEAR FLOOD
 PLAIN EL. 869.0



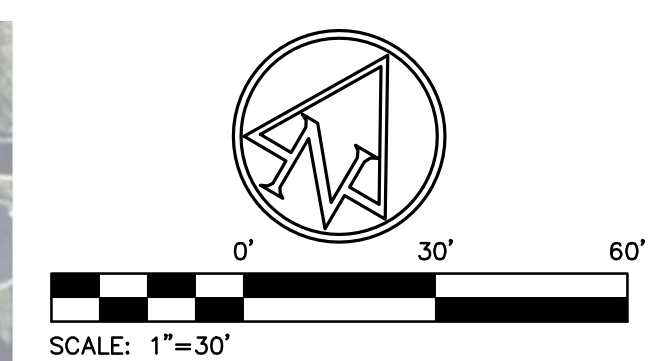
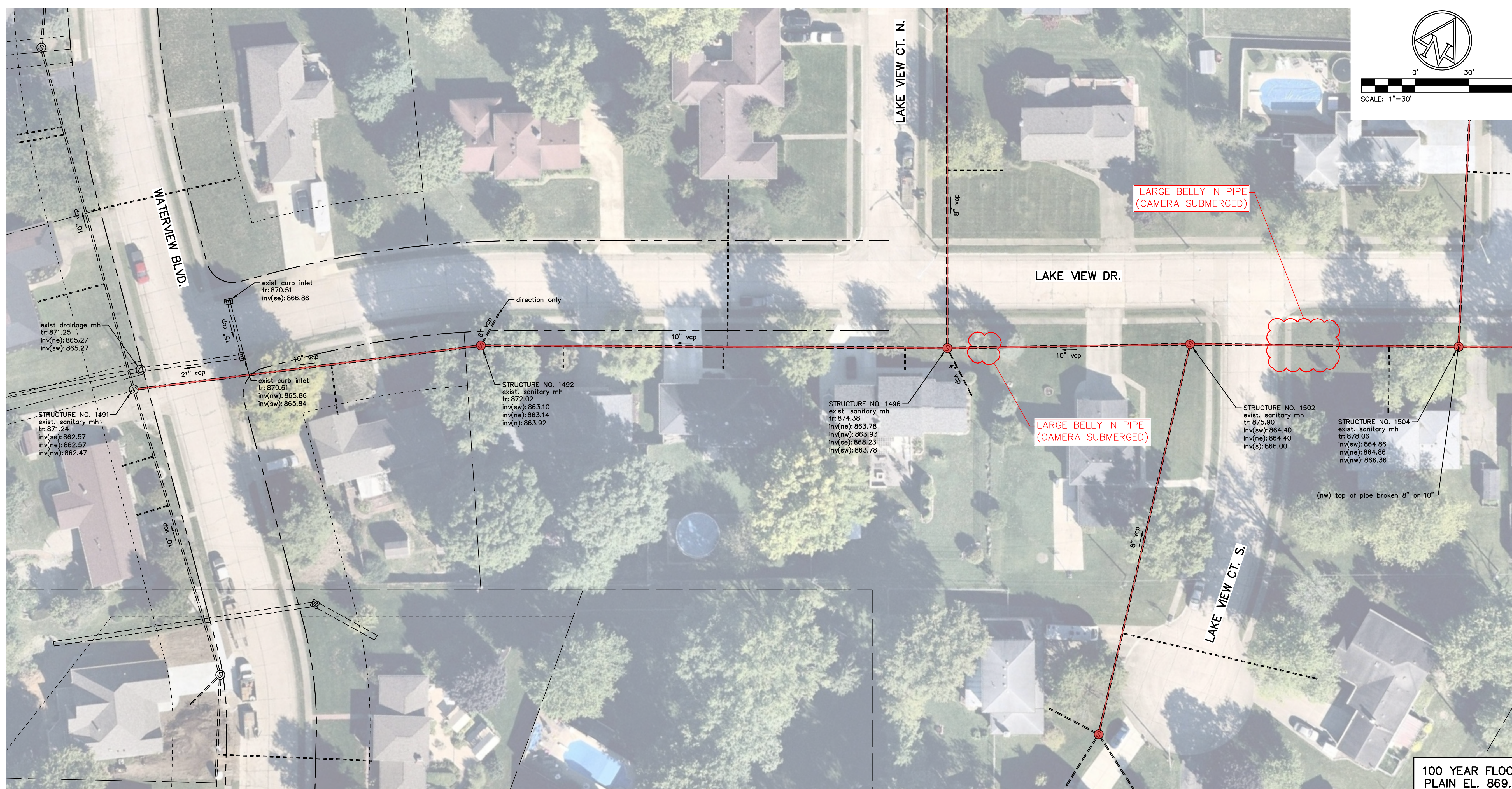
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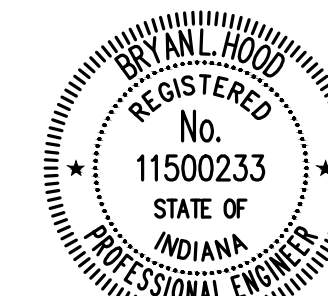
LEGEND

- CIPP MAINLINE
- BEEHIVE INLET
- CURB INLET
- CLEAN OUT
- DRAINAGE INLET
- DRAINAGE MANHOLE
- MANHOLE
- SANITARY MANHOLE
- tr TOP OF RIM ELEVATION
- inv INVERT ELEVATION
- pvc PLASTIC PIPE
- rcp REINFORCED CONCRETE PIPE
- cmp CORRUGATED METAL PIPE
- cpc CORRUGATED PLASTIC PIPE
- vcp VITRIFIED CLAY PIPE



WATERVIEW
 SANITARY SEWER
 SYSTEM LINING

Greenfield, Indiana



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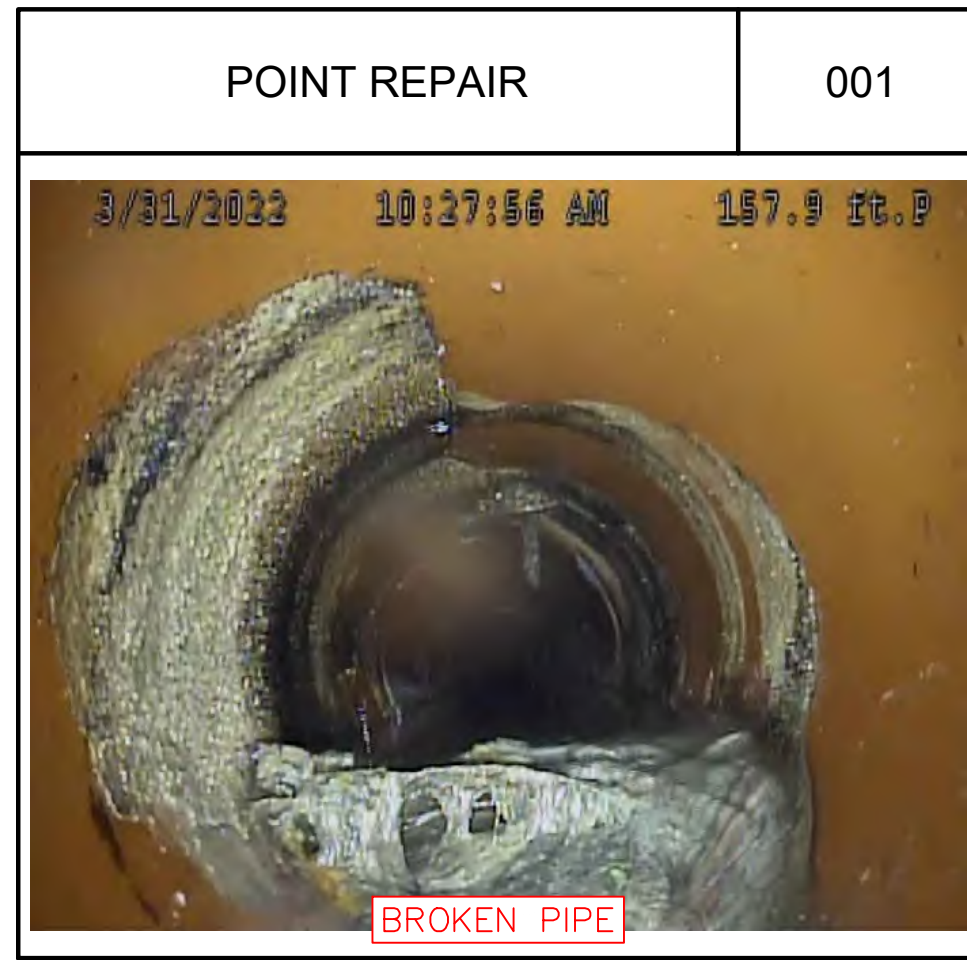
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REHABILITATION PLAN
 LAKE VIEW DR.

100 YEAR FLOOD
 PLAIN EL. 869.0

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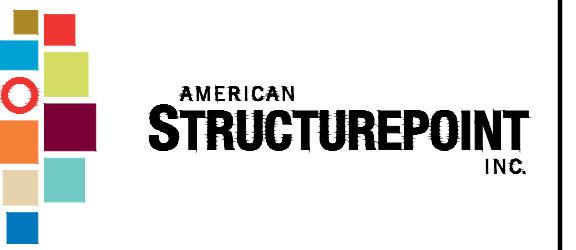
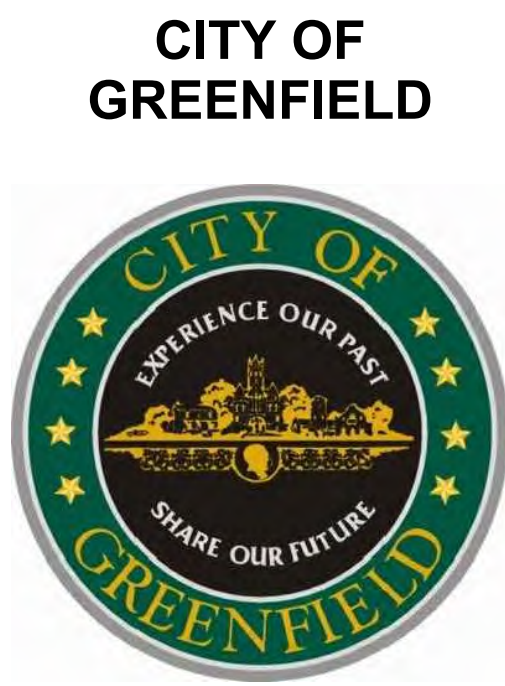


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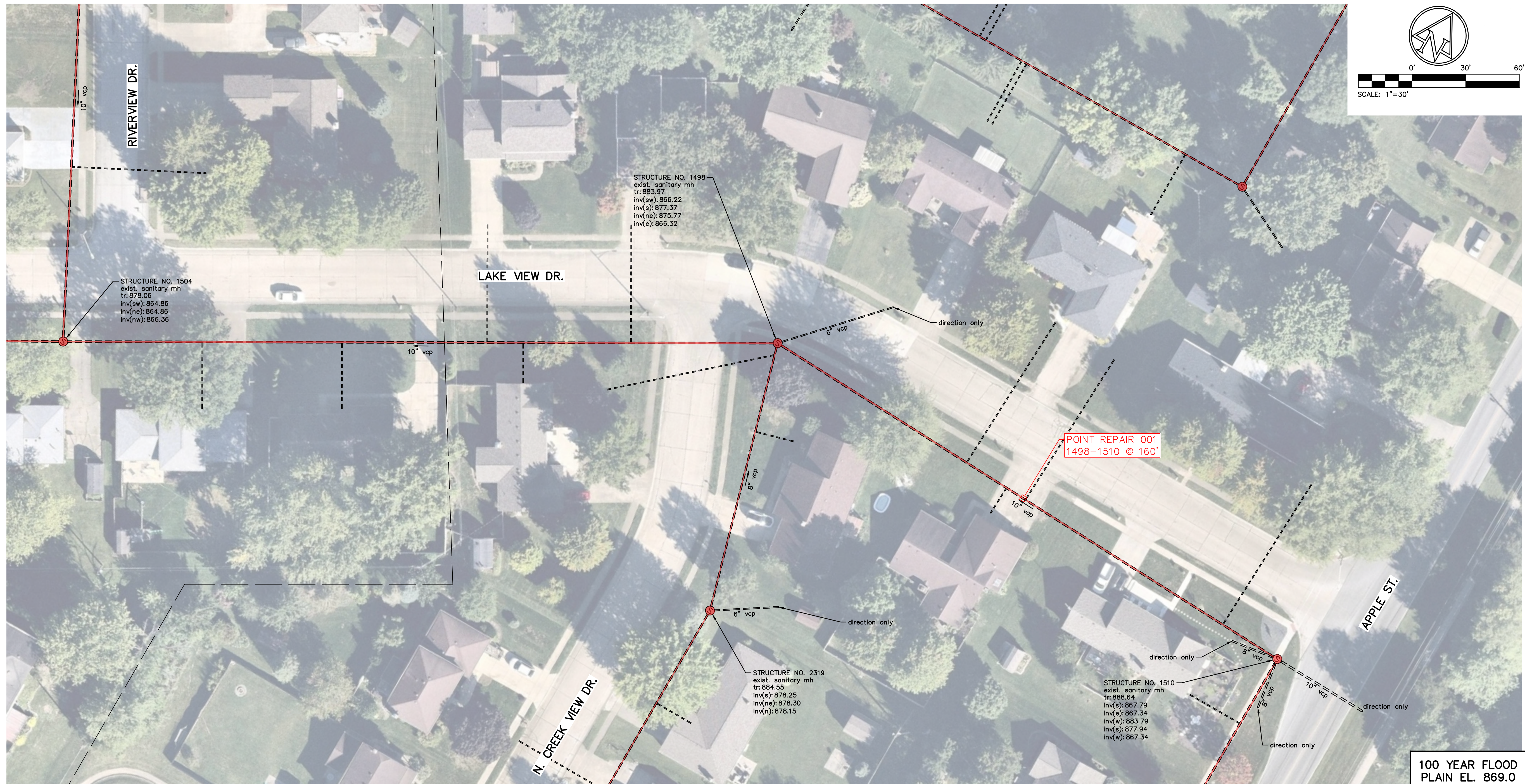
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LEGEND

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	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
	DRAINAGE INLET		CORRUGATED METAL PIPE
	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		



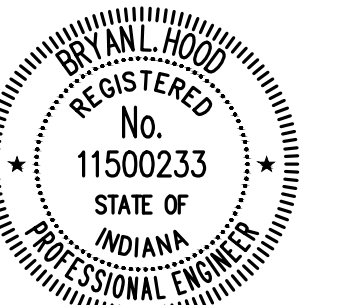
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**WATERVIEW
SANITARY SEWER
SYSTEM LINING**

Greenfield, Indiana



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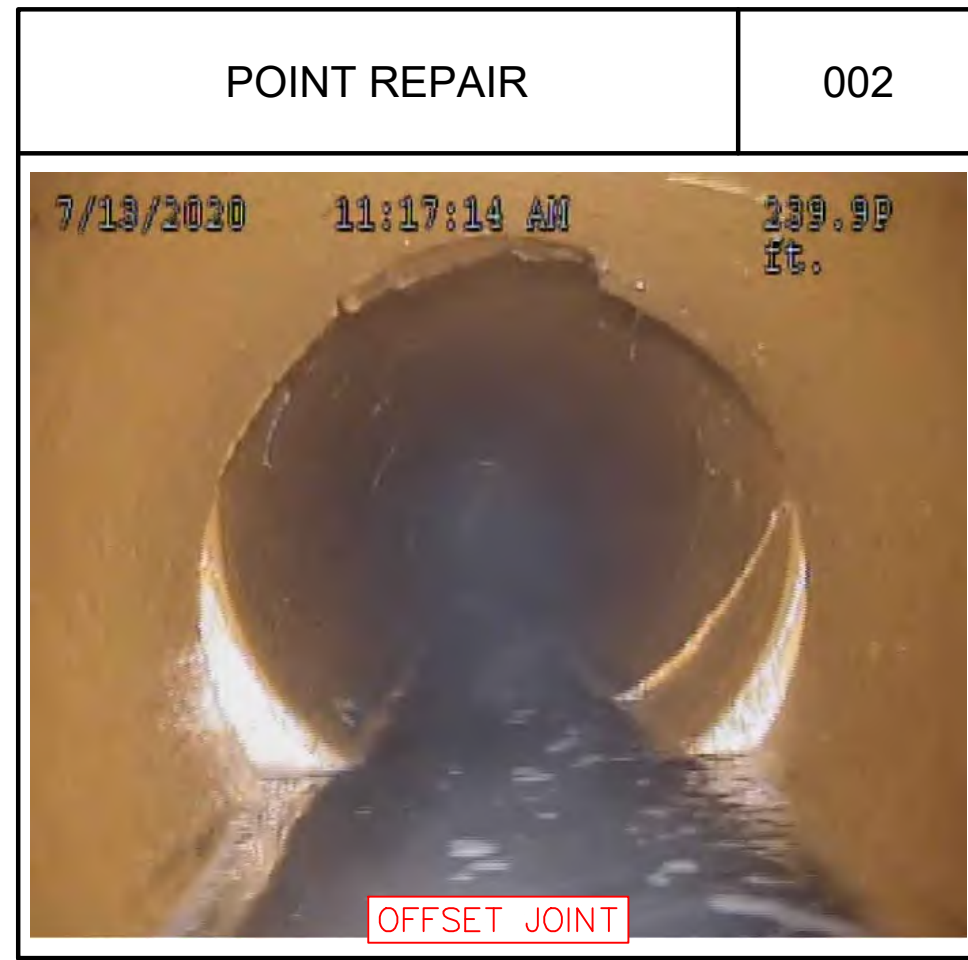
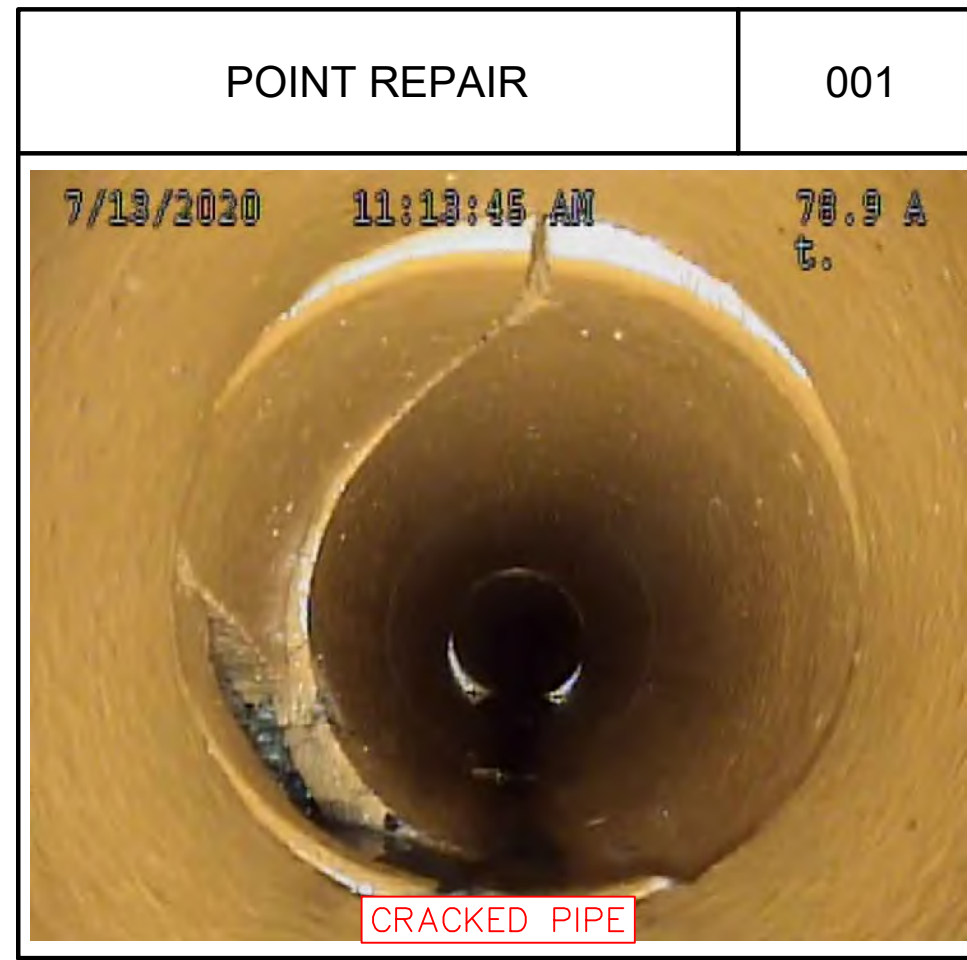
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**REHABILITATION PLAN
LAKE VIEW DR.**

100 YEAR FLOOD
PLAIN EL. 869.0

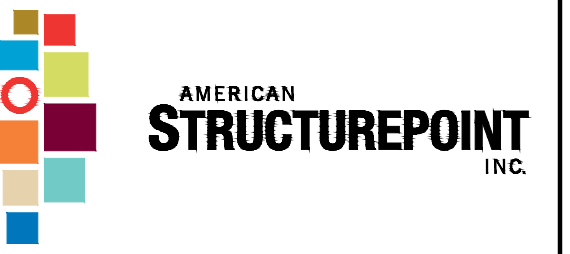
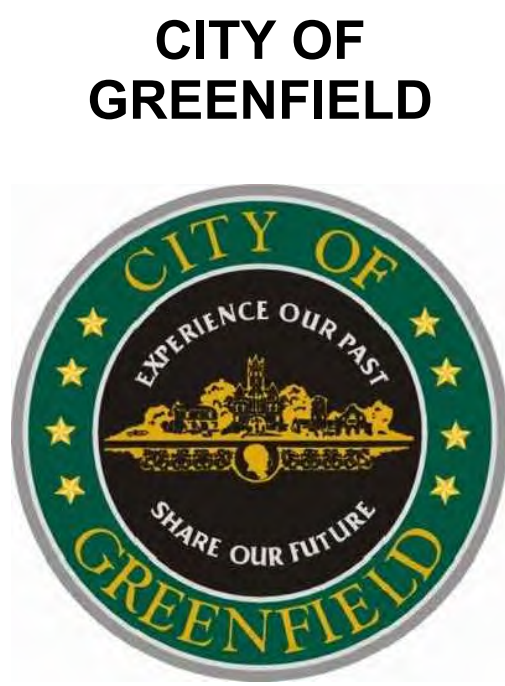


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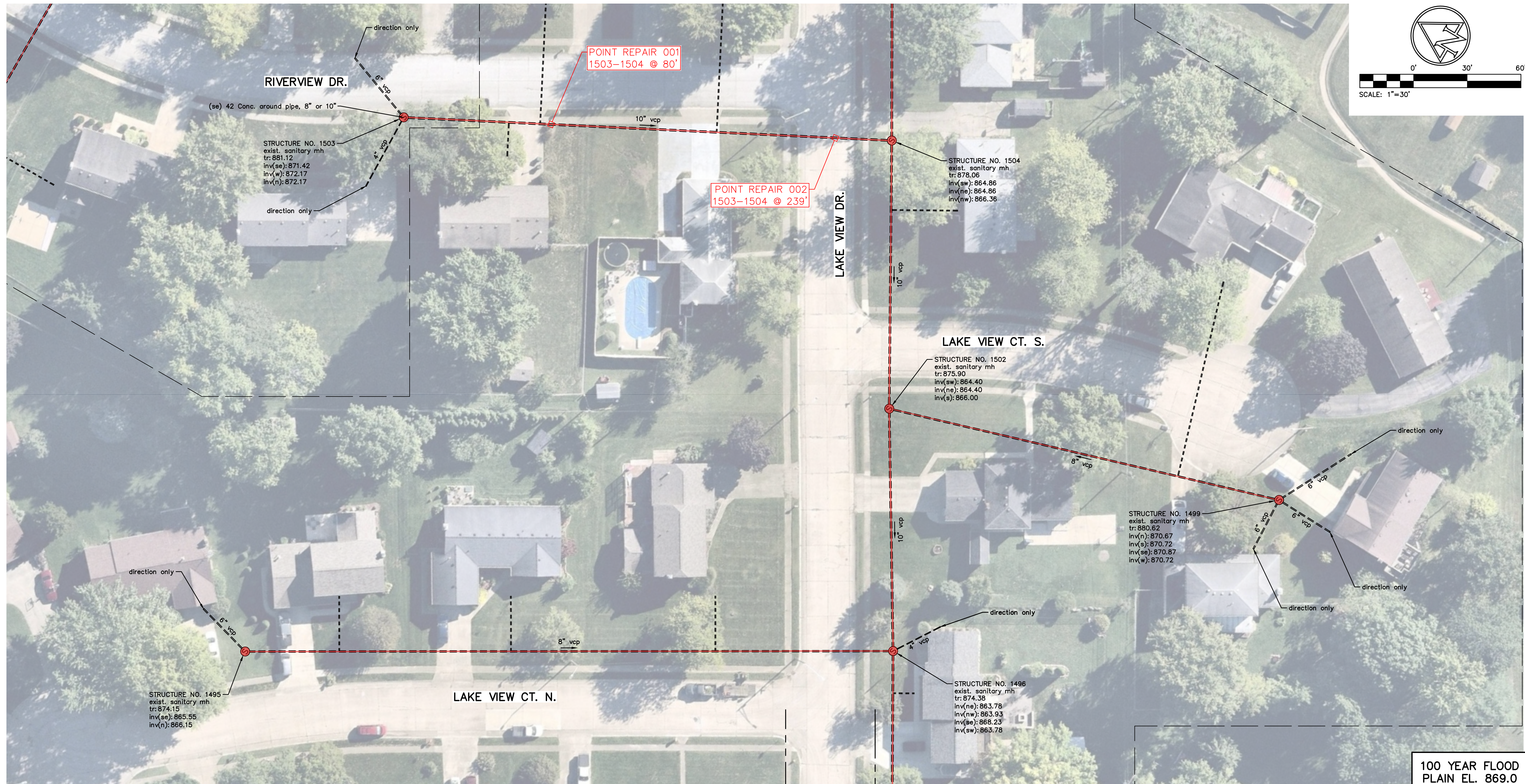
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LEGEND

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	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
	DRAINAGE INLET		CORRUGATED METAL PIPE
	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		



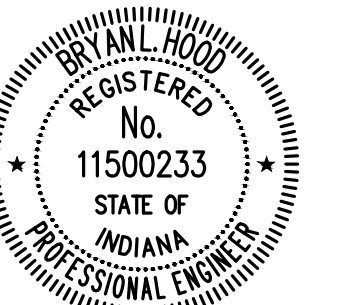
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**WATERVIEW
SANITARY SEWER
SYSTEM LINING**

Greenfield, Indiana



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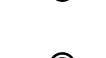

**REHABILITATION PLAN
LAKE VIEW DR.**

100 YEAR FLOOD
PLAIN EL. 869.0

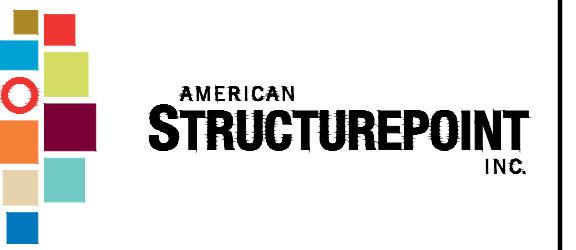
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LEGEND

	CIPP MAINLINE	tr	TOP OF RIM ELEVATION
	BEEHIVE INLET	inv	INVERT ELEVATION
	CURB INLET	pvc	PLASTIC PIPE
	CLEAN OUT	rcp	REINFORCED CONCRETE PIPE
	DRAINAGE INLET	cmp	CORRUGATED METAL PIPE
	DRAINAGE MANHOLE	cpp	CORRUGATED PLASTIC PIPE
	MANHOLE	vcp	VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

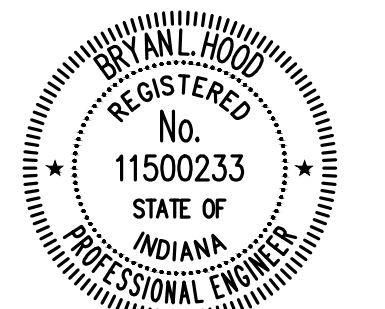
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WATERVIEW SANITARY SEWER SYSTEM LINING

Greenfield, Indiana



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ISSUANCE INDEX

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REVISION SCHEDULE

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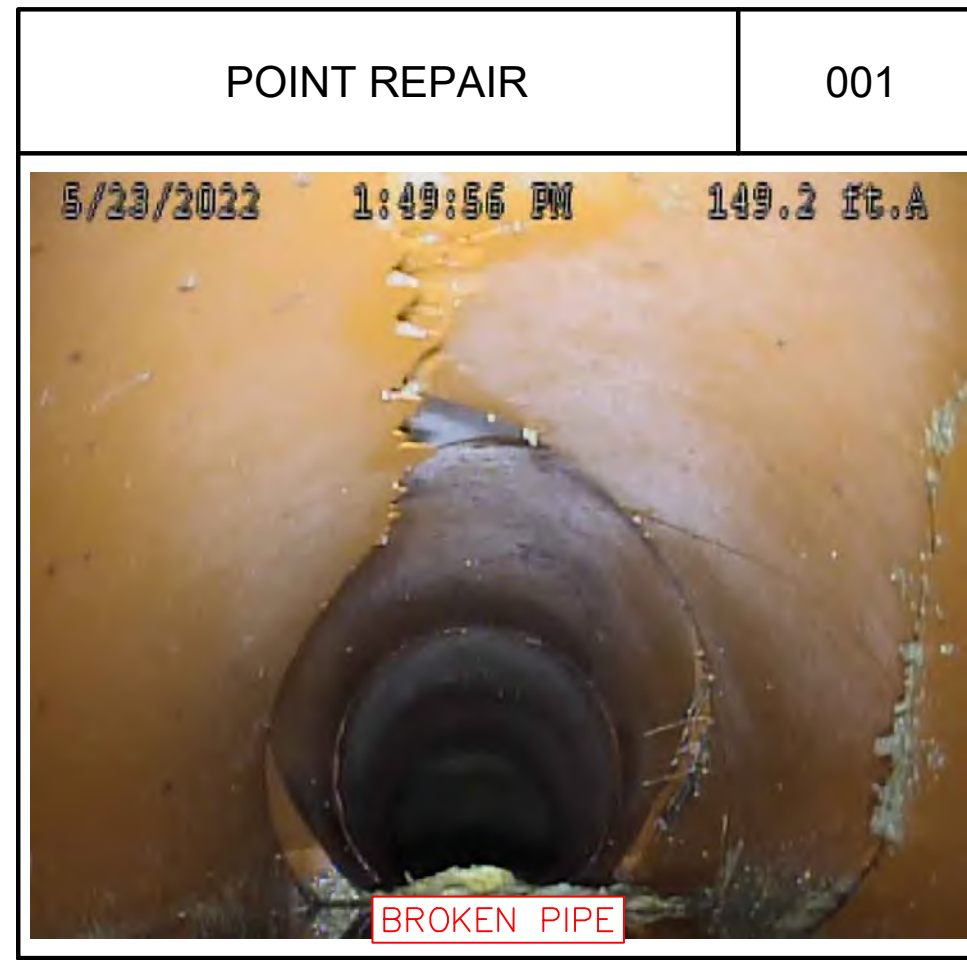
Project Number 2021.02592.002

REHABILITATION PLAN
CREEK VIEW DR.

100 YEAR FLOOD
PLAIN EL. 869.0

PLOT DATE: 6/14/2023 9:57 AM EDITED BY: PRAMINSKI DRAWING FILE: P:\2021\02592\0. DRAWINGS\UTILITY INFRASTRUCTURE\202102592.002.ULUP.DWG





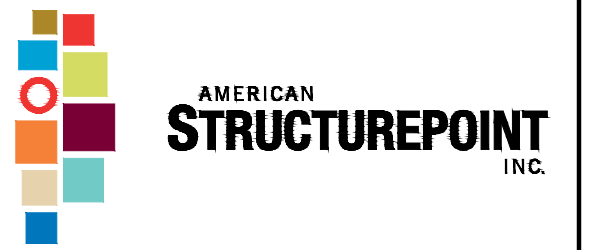
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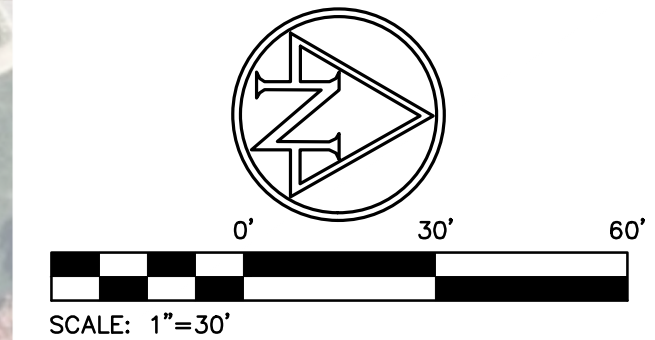
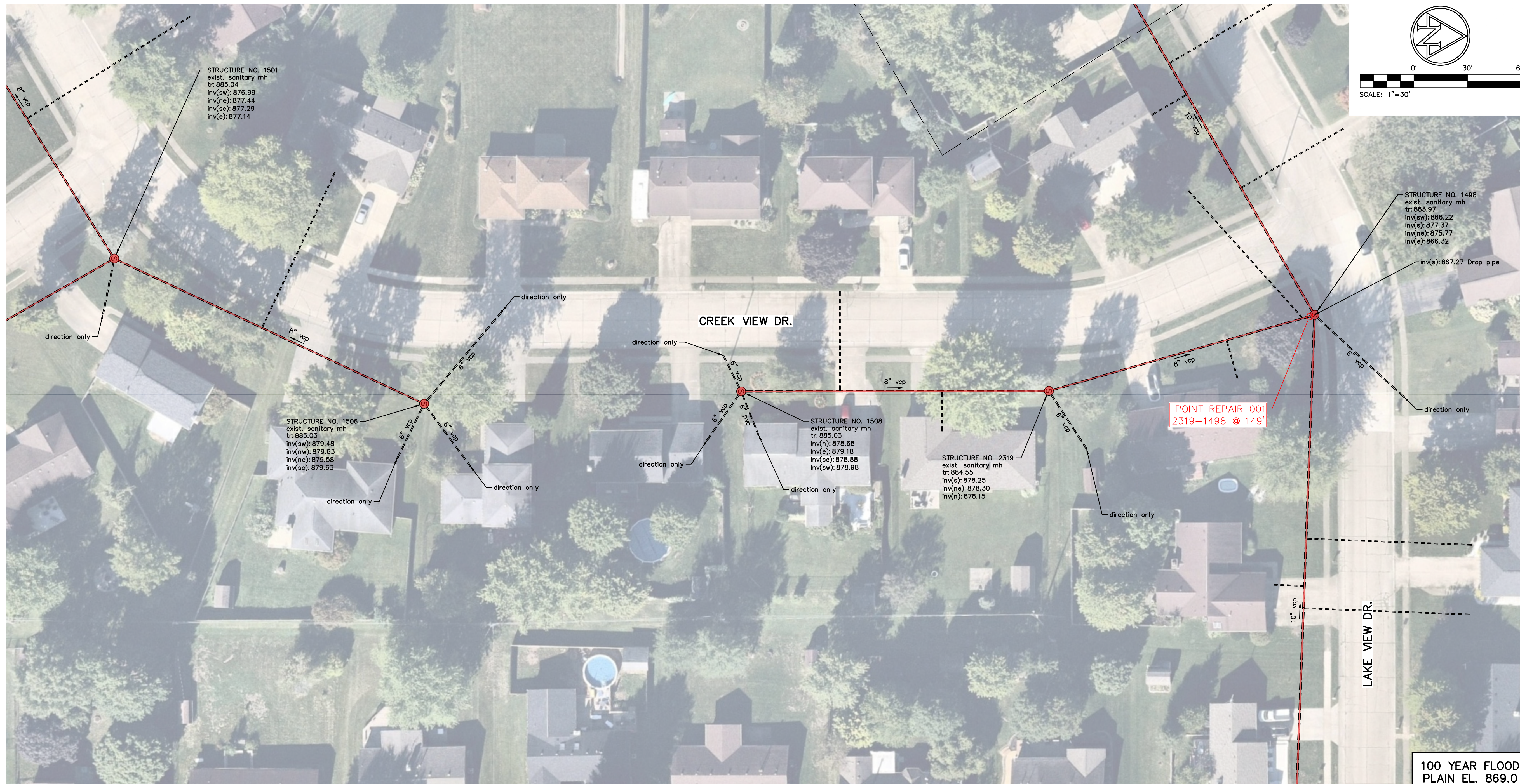
LEGEND

	CIPP MAINLINE		TOP OF RIM ELEVATION
	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
	DRAINAGE INLET		CORRUGATED METAL PIPE
	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

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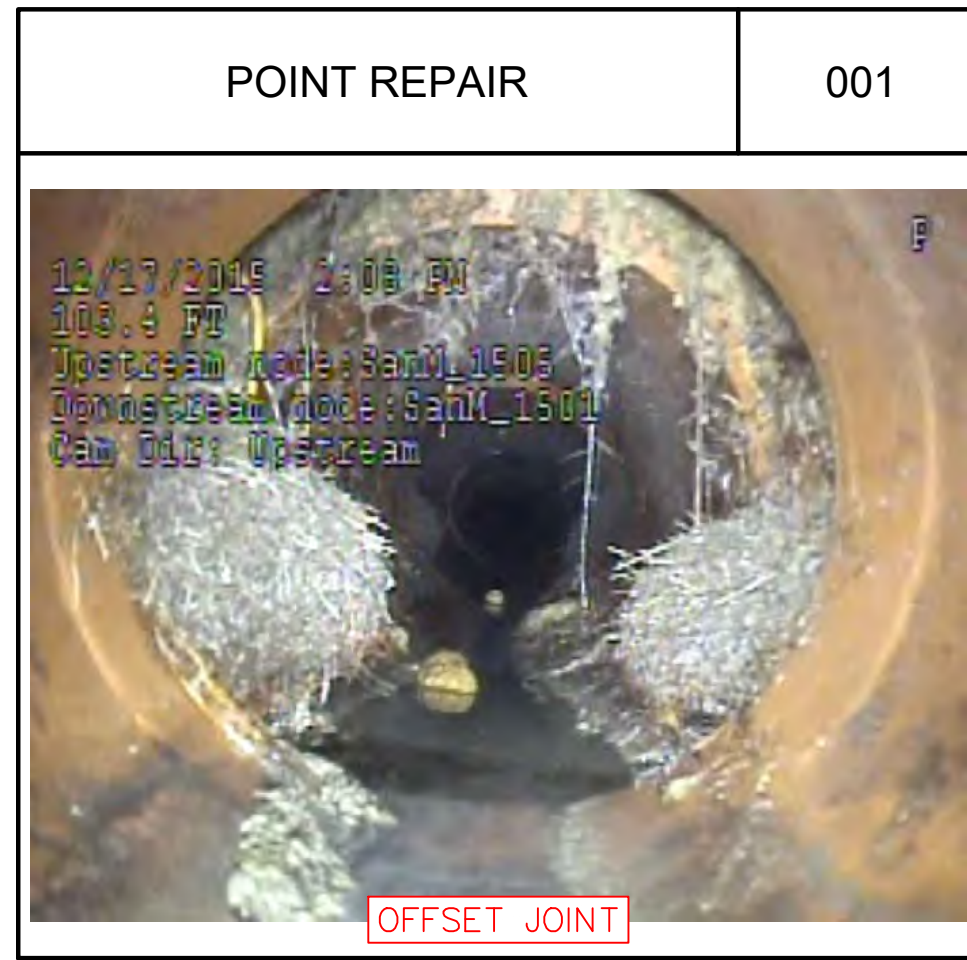
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REHABILITATION PLAN
 CREEK VIEW DR.

100 YEAR FLOOD
 PLAIN EL. 869.0

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LEGEND

- | | | | |
|--|------------------|--|--------------------------|
| | CIPP MAINLINE | | TOP OF RIM ELEVATION |
| | BEEHIVE INLET | | INVERT ELEVATION |
| | CURB INLET | | PLASTIC PIPE |
| | CLEAN OUT | | REINFORCED CONCRETE PIPE |
| | DRAINAGE INLET | | CORRUGATED METAL PIPE |
| | DRAINAGE MANHOLE | | CORRUGATED PLASTIC PIPE |
| | MANHOLE | | VITRIFIED CLAY PIPE |
| | SANITARY MANHOLE | | |

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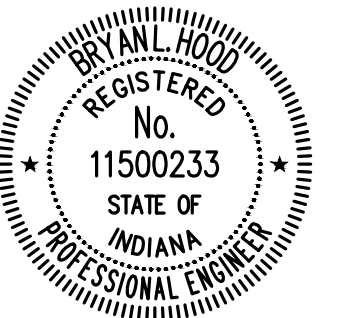
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WATERVIEW SANITARY SEWER SYSTEM LINING

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













REHABILITATION PLAN
 CREEK VIEW DR.

100 YEAR FLOOD
 PLAIN EL. 869.0

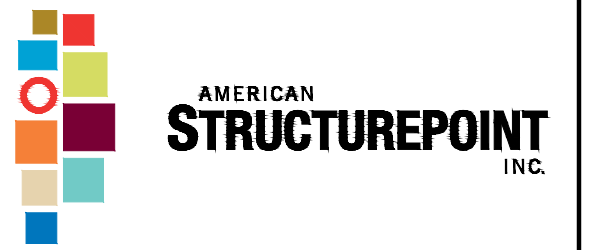
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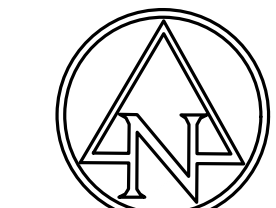
LEGEND

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	BEEHIVE INLET		INVERT ELEVATION
	CURB INLET		PLASTIC PIPE
	CLEAN OUT		REINFORCED CONCRETE PIPE
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	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

CITY OF GREENFIELD



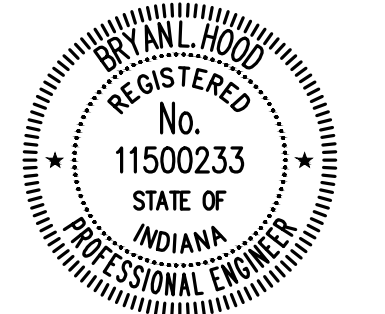
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0' 30' 60'
SCALE: 1"=30'

WATERVIEW SANITARY SEWER SYSTEM LINING

Greenfield, Indiana



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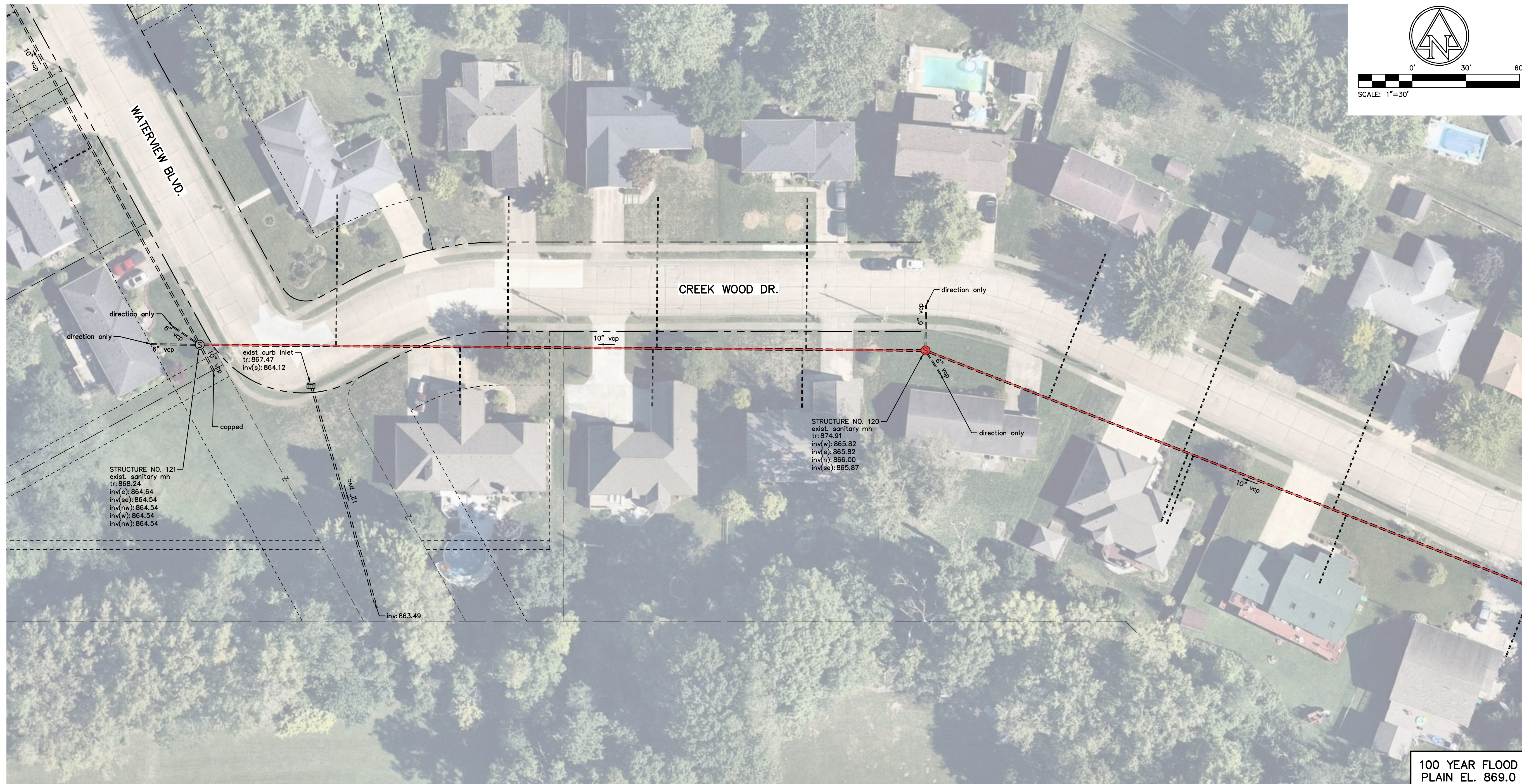
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REHABILITATION PLAN
CREEK WOOD DR.

100 YEAR FLOOD
PLAIN EL. 869.0











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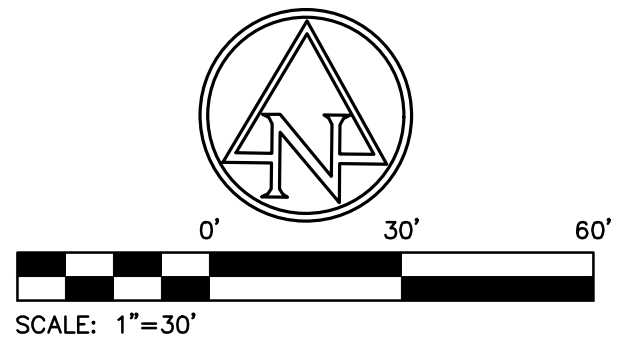
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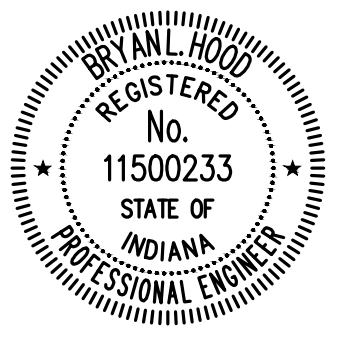
AMERICAN STRUCTUREPOINT INC.

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REHABILITATION PLAN CREEK WOOD DR.

100 YEAR FLOOD PLAIN EL. 869.0

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POINT REPAIR

001



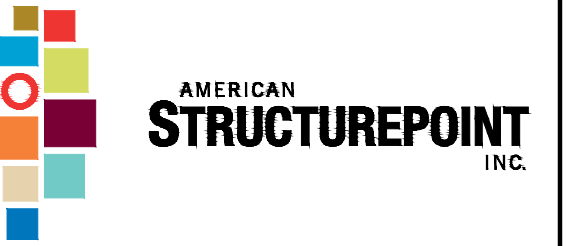
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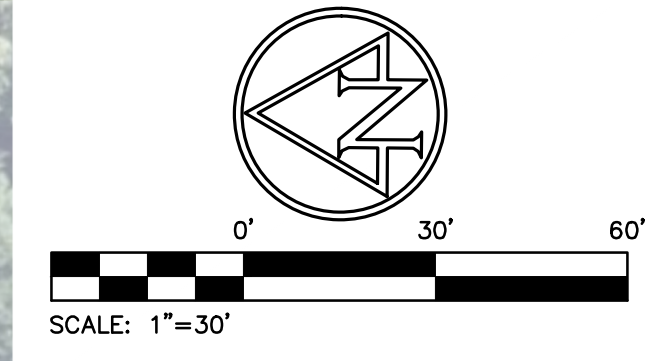
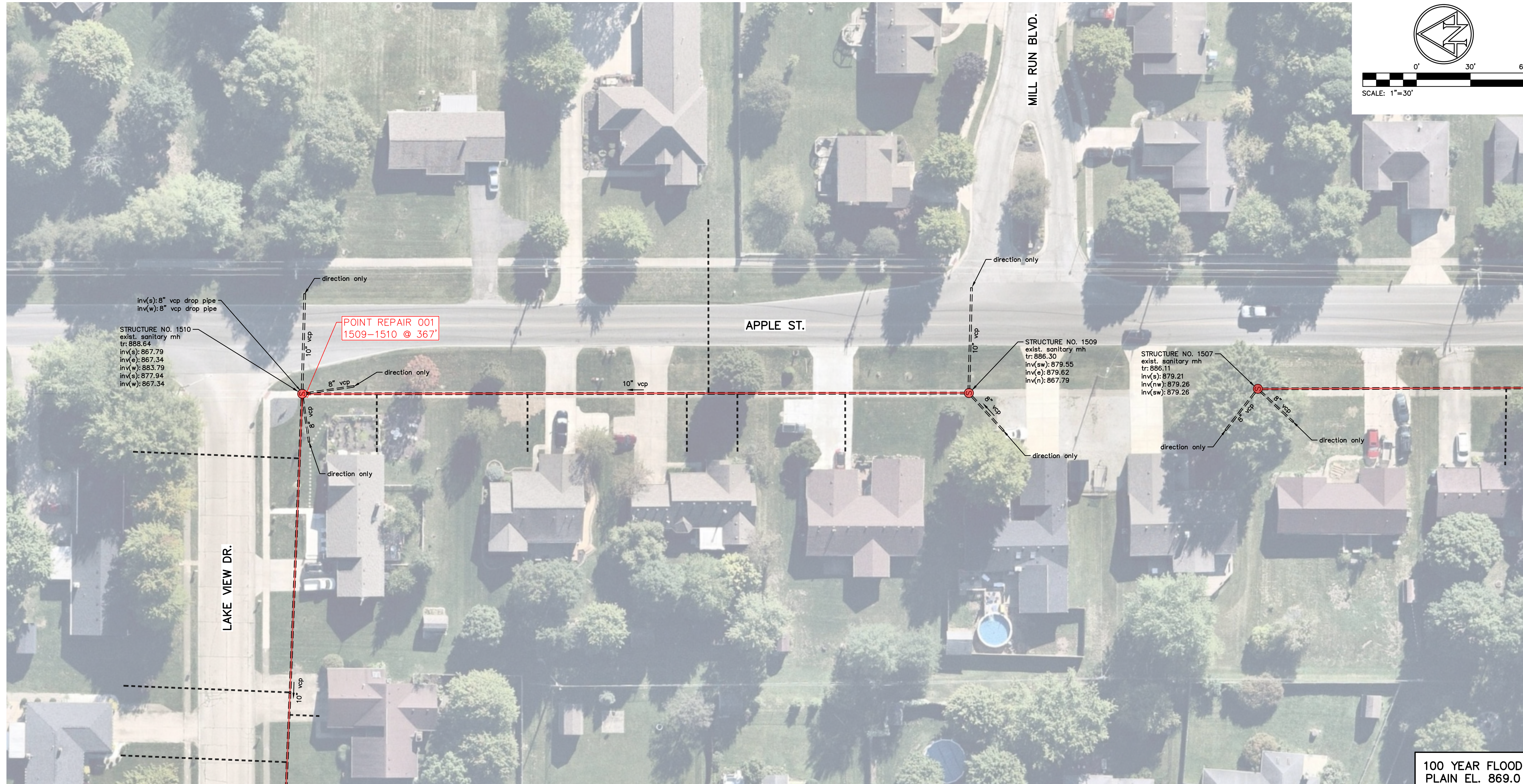
LEGEND

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CITY OF GREENFIELD

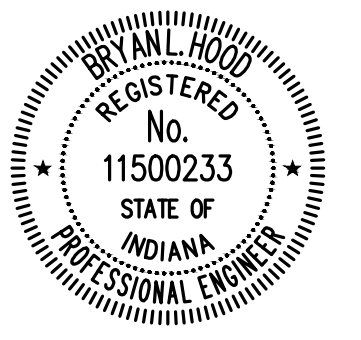


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REHABILITATION PLAN APPLE ST.









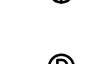






100 YEAR FLOOD PLAIN EL. 869.0

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	DRAINAGE MANHOLE		CORRUGATED PLASTIC PIPE
	MANHOLE		VITRIFIED CLAY PIPE
	SANITARY MANHOLE		

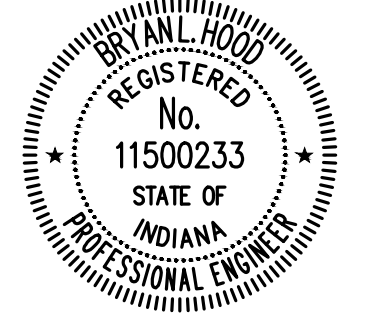
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WATERVIEW SANITARY SEWER SYSTEM LINING

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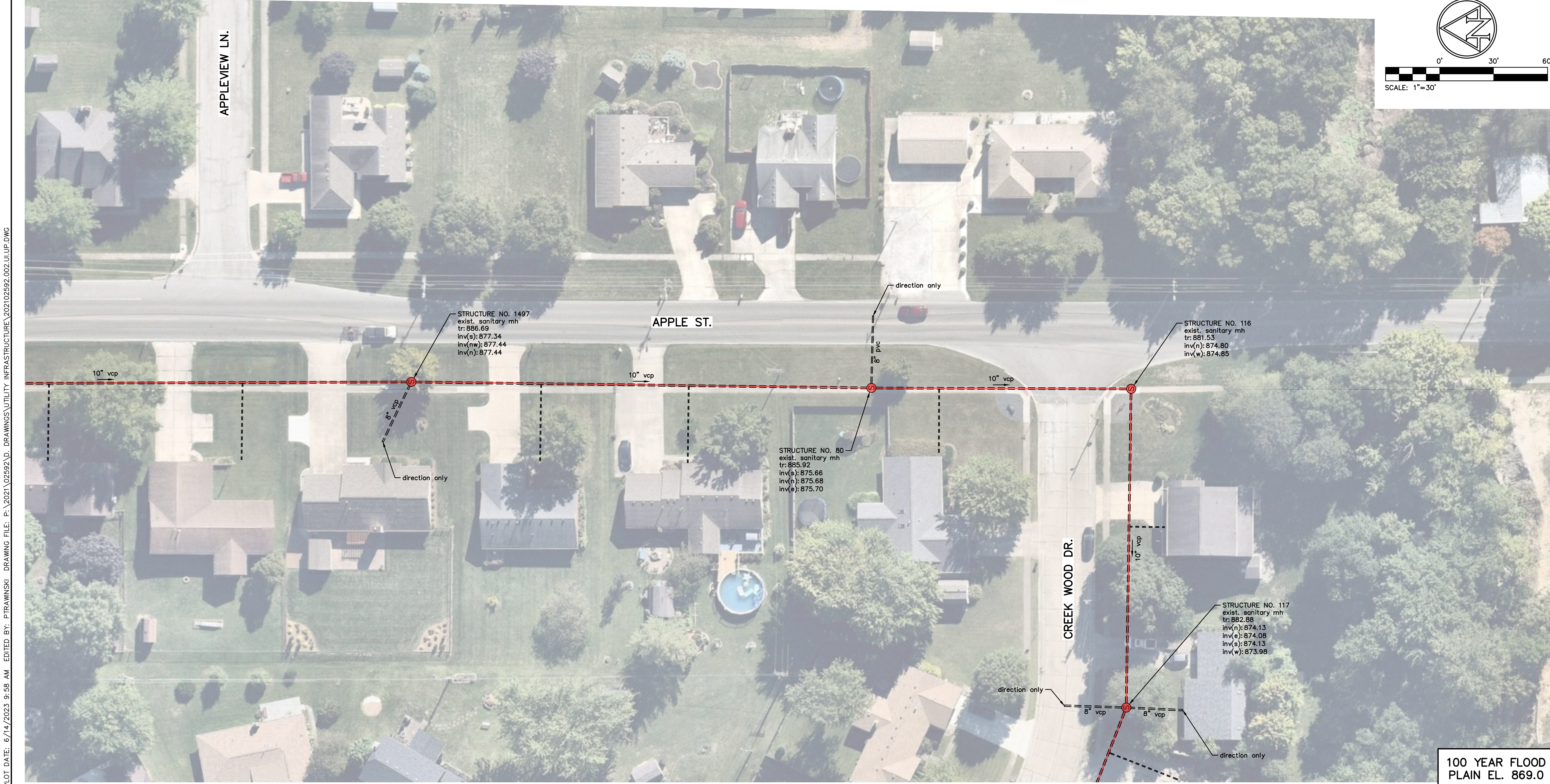
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REHABILITATION PLAN APPLE ST.

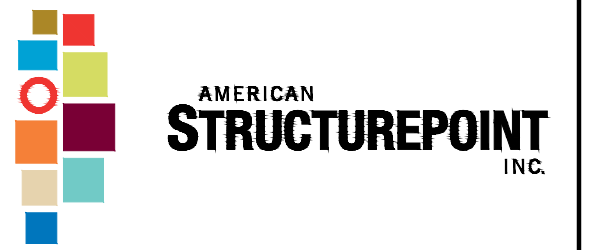
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STRUCTURE REHAB SCHEDULE					STRUCTURE REHAB SCHEDULE				
STR. NO.	SHEET NO.	GROUND ELEVATION (FT)	APPROX. DEPTH TO INV. (FT)	RECOMMENDED REHAB WORK	STR. NO.	SHEET NO.	GROUND ELEVATION (FT)	APPROX. DEPTH TO INV. (FT)	RECOMMENDED REHAB WORK
WATERVIEW BOULEVARD					CREEK VIEW DRIVE				
1608	6	871.51	6.35	SPRAY APPLIED LINING	1493	15	871.10	7.50	TO BE ABANDONED (PART OF SEPARATE PROJECT)
1607	6	870.76	6.00	SPRAY APPLIED LINING	1494	15	870.71	4.95	SPRAY APPLIED LINING
1411	6	869.86	5.85	SPRAY APPLIED LINING	1500	15	882.05	10.35	SPRAY APPLIED LINING
1410	6	869.90	6.75	SPRAY APPLIED LINING	1501	15	885.04	8.05	SPRAY APPLIED LINING
1605	7	871.13	9.95	SPRAY APPLIED LINING	1505	17	886.30	6.80	SPRAY APPLIED LINING
1603	7	870.78	9.00	TO BE ABANDONED (PART OF SEPARATE PROJECT)	1506	16	885.03	5.55	SPRAY APPLIED LINING
1491	7	871.24	8.77	TO BE ABANDONED (PART OF SEPARATE PROJECT)	1508	16	885.03	6.35	SPRAY APPLIED LINING
2109	7	870.94	7.70	TO BE ABANDONED (PART OF SEPARATE PROJECT)	2319	16	884.55	6.40	SPRAY APPLIED LINING
1493	7	871.10	7.50	TO BE ABANDONED (PART OF SEPARATE PROJECT)	1498	16	883.97	17.75	SPRAY APPLIED LINING
121	8	868.24	3.70	TO BE ABANDONED (PART OF SEPARATE PROJECT)					
COMMON AREA					CREEK WOOD DRIVE				
					121	18	868.24	3.70	TO BE ABANDONED (PART OF SEPARATE PROJECT)
1605	9	871.13	9.95	SPRAY APPLIED LINING	120	18	874.91	9.09	SPRAY APPLIED LINING
1490	9	872.34	7.90	SPRAY APPLIED LINING	117	19	882.88	8.80	SPRAY APPLIED LINING
1604	10	869.85	4.20	SPRAY APPLIED LINING	116	19	881.53	6.73	SPRAY APPLIED LINING
1606	10	871.98	5.30	SPRAY APPLIED LINING					
1512	10	876.08	5.55	SPRAY APPLIED LINING	APPLE STREET				
1511	10	877.34	6.10	SPRAY APPLIED LINING	1510	20	888.64	21.30	SPRAY APPLIED LINING
1515	11	883.90	6.70	SPRAY APPLIED LINING	1509	20	886.30	18.51	SPRAY APPLIED LINING
1514	11	883.26	5.35	SPRAY APPLIED LINING	1507	20	886.11	6.90	SPRAY APPLIED LINING
1517	11	885.25	6.50	SPRAY APPLIED LINING	1497	21	886.69	9.35	SPRAY APPLIED LINING
1521	11	886.29	6.70	SPRAY APPLIED LINING	80	21	885.92	10.26	SPRAY APPLIED LINING
1520	11	887.26	6.70	SPRAY APPLIED LINING	116	21	881.53	6.73	SPRAY APPLIED LINING
LAKE VIEW DRIVE					RIVERVIEW DRIVE				
1491	12	871.24	8.77	TO BE ABANDONED (PART OF SEPARATE PROJECT)	1503	14	881.12	9.70	SPRAY APPLIED LINING
1492	12	872.02	8.92	SPRAY APPLIED LINING					
1495	14	874.15	8.60	SPRAY APPLIED LINING					
1496	12	874.38	10.60	SPRAY APPLIED LINING					
1499	14	880.62	9.95	SPRAY APPLIED LINING					
1502	12	875.90	11.50	SPRAY APPLIED LINING					
1504	12	878.06	13.20	SPRAY APPLIED LINING					
1498	13	883.97	17.75	SPRAY APPLIED LINING					
1510	13	888.64	21.30	SPRAY APPLIED LINING					



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WATERVIEW SANITARY SEWER SYSTEM LINING

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REHABILITATION SCHEDULE

SEWER REHAB SCHEDULE

STRUCTURE UPSTREAM	STRUCTURE LINING REQ'D	STRUCTURE DOWNSTREAM	STRUCTURE LINING REQ'D	PIPE DIAMETER (IN)	APPROX. PIPE LENGTH (FT)	PIPE MATERIAL	NO. OF LATERALS	CLEANING REQUIRED	NOTES
WATERVIEW BOULEVARD									
1608	YES	1607	YES	12	165	VCP	4	ROUTINE CLEANING	MAJORITY OF PIPE 50% FULL OF WATER, MEDIUM ROOTS
1607	YES	1411	YES	12	258	VCP	1	ROUTINE CLEANING	---
1411	YES	1410	YES	12	312	VCP	4	ROUTINE CLEANING	MEDIUM ROOTS
1410	YES	1605 (LS)	YES	12	197	VCP	1	ROUTINE CLEANING	STRUCTURE 1605 = EXISTING SANITARY LIFT STATION
1603	NO	1605 (LS)	NO	10	187	VCP	2	---	PIPE TO BE ABANDONED (PART OF SEPARATE PROJECT)
1491	NO	1603	NO	10'	18	VCP	3	---	PIPE TO BE ABANDONED (PART OF SEPARATE PROJECT)
2109	NO	1491	NO	10	167	VCP	3	---	PIPE TO BE ABANDONED (PART OF SEPARATE PROJECT)
1493	NO	2109	NO	10	144	VCP	3	---	PIPE TO BE ABANDONED (PART OF SEPARATE PROJECT)
121	NO	1493	NO	10	351	VCP	4	---	PIPE TO BE ABANDONED (PART OF SEPARATE PROJECT)
COMMON AREA									
1490	YES	1605 (LS)	YES	8	262	VCP	2	ROUTINE CLEANING	MEDIUM ROOTS
1604	YES	1490	YES	8	287	VCP	6	ROUTINE CLEANING	MEDIUM ROOTS
1606	YES	1604	YES	8	200	VCP	6	ROUTINE CLEANING	POINT REPAIR AT 7-FT TO 10-FT FROM MH 1604 TO MH 1606, MEDIUM ROOTS
1512	YES	1606	YES	8	341	VCP	6	ROUTINE CLEANING	MEDIUM ROOTS
1511	YES	1512	YES	8	41	VCP	---	ROUTINE CLEANING	---
1515	YES	1511	YES	8	306	VCP	6	ROUTINE CLEANING	POINT REPAIR AT 234-FT FROM MH 1515 TO MH 1511, HEAVY ROOTS
1514	YES	1515	YES	8	49	VCP	2	ROUTINE CLEANING	---
1517	YES	1514	YES	8	263	VCP	7	ROUTINE CLEANING	POINT REPAIR AT 180-FT FROM MH 1514 TO MH 1517
1521	YES	1517	YES	8	261	VCP	6	ROUTINE CLEANING	---
1520	YES	1521	YES	8	161	VCP	3	ROUTINE CLEANING	HEAVY ROOTS
LAKE VIEW DRIVE									
1492	YES	1491	YES	10	196	VCP	2	ROUTINE CLEANING	---
1496	YES	1492	YES	10	261	VCP	5	ROUTINE CLEANING	---
1495	YES	1496	YES	8	362	VCP	4	ROUTINE CLEANING	LAKE VIEW CT. NORTH, HEAVY ROOTS
1502	YES	1496	YES	10	136	VCP	---	ROUTINE CLEANING	BELLY IN PIPE FROM 123-FT TO 130-FT
1499	YES	1502	YES	8	224	VCP	4	ROUTINE CLEANING	LAKE VIEW CT. SOUTH, HEAVY ROOTS
1504	YES	1502	YES	8	150	VCP	---	ROUTINE CLEANING	LARGE BELLY FROM 30-FT TO 85-FT
1503	YES	1504	YES	10	273	VCP	5	---	POINT REPAIR AT 80-FT FROM MH 1503 TO MH 1504, AND AT 239-FT FROM MH 1503 TO MH 1504, HEAVY ROOTS
1498	YES	1504	YES	10	400	VCP	6	ROUTINE CLEANING	---
1510	YES	1498	YES	10	331	VCP	6	ROUTINE CLEANING	POINT REPAIR AT 160-FT FROM MH 1498 TO MH 1510, 10" VCP TO EAST
CREEK VIEW DRIVE									
1494	YES	1493	YES	8	193	VCP	3	ROUTINE CLEANING	---
1500	YES	1494	YES	8	389	VCP	6	ROUTINE CLEANING	MEDIUM ROOTS
1501	YES	1500	YES	8	207	VCP	3	ROUTINE CLEANING	---
1505	YES	1501	YES	8	208	VCP	6	ROUTINE CLEANING	CREEK VIEW CT., POINT REPAIR AT 104-FT TO 106-FT FROM MH 1501 TO MH 1505, MEDIUM ROOTS
1506	YES	1501	YES	8	192	VCP	4	ROUTINE CLEANING	---
1508	YES	2319	YES	8	172	VCP	5	ROUTINE CLEANING	---
2319	YES	1498	YES	8	155	VCP	3	ROUTINE CLEANING	POINT REPAIR AT 149-FT FROM MH 2319 TO MH 1498

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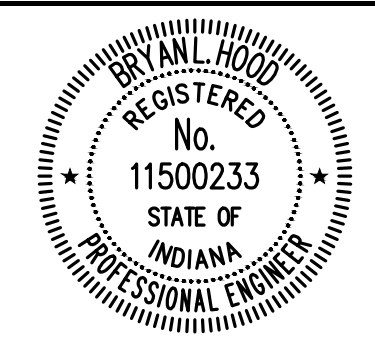
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WATERVIEW SANITARY SEWER SYSTEM LINING

Greenfield, Indiana



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REHABILITATION SCHEDULE

SEWER REHAB SCHEDULE

STRUCTURE UPSTREAM	STRUCTURE LINING REQ'D	STRUCTURE DOWNSTREAM	STRUCTURE LINING REQ'D	PIPE DIAMETER (IN)	APPROX. PIPE LENGTH (FT)	PIPE MATERIAL	NO. OF LATERALS	CLEANING REQUIRED	NOTES
CREEK WOOD DRIVE									
120	YES	121	YES	10	406	VCP	9	ROUTINE CLEANING	---
117	YES	120	YES	10	392	VCP	9	ROUTINE CLEANING	---
116	YES	117	YES	10	178	VCP	1	ROUTINE CLEANING	---
APPLE STREET									
1509	YES	1510	YES	10	372	VCP	7	ROUTINE CLEANING	POINT REPAIR AT 367-FT FROM MH 1509 TO MH 1510, 10" VCP TO EAST
1507	YES	1497	YES	10	340	VCP	4	ROUTINE CLEANING	---
1497	YES	80	YES	10	256	VCP	3	ROUTINE CLEANING	---
80	YES	116	YES	10	145	VCP	2	ROUTINE CLEANING	---

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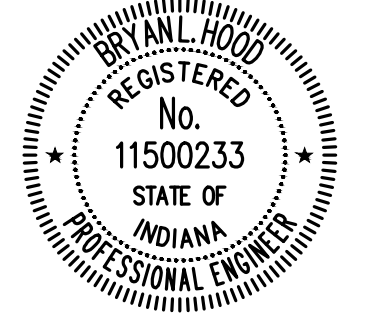
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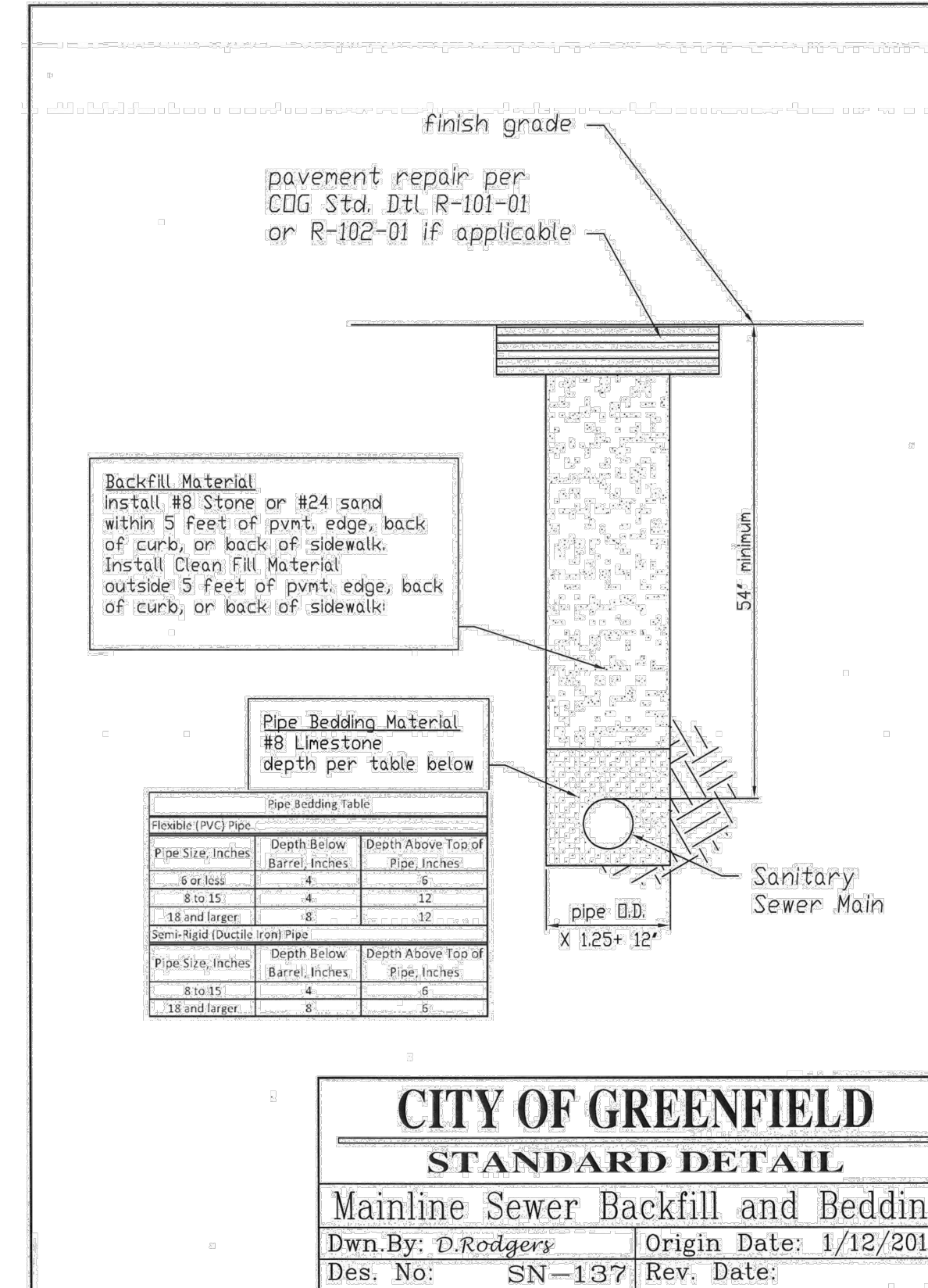
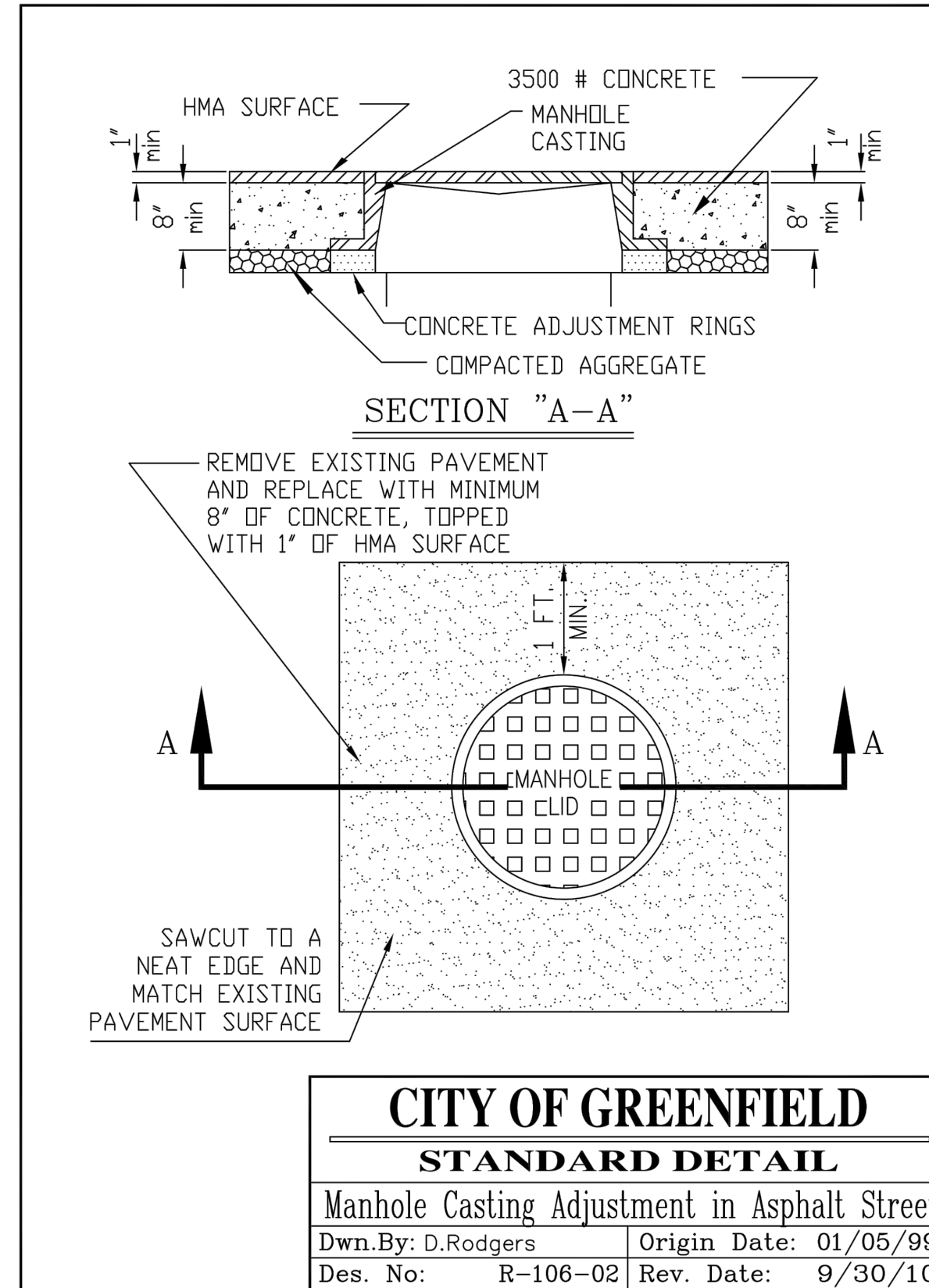
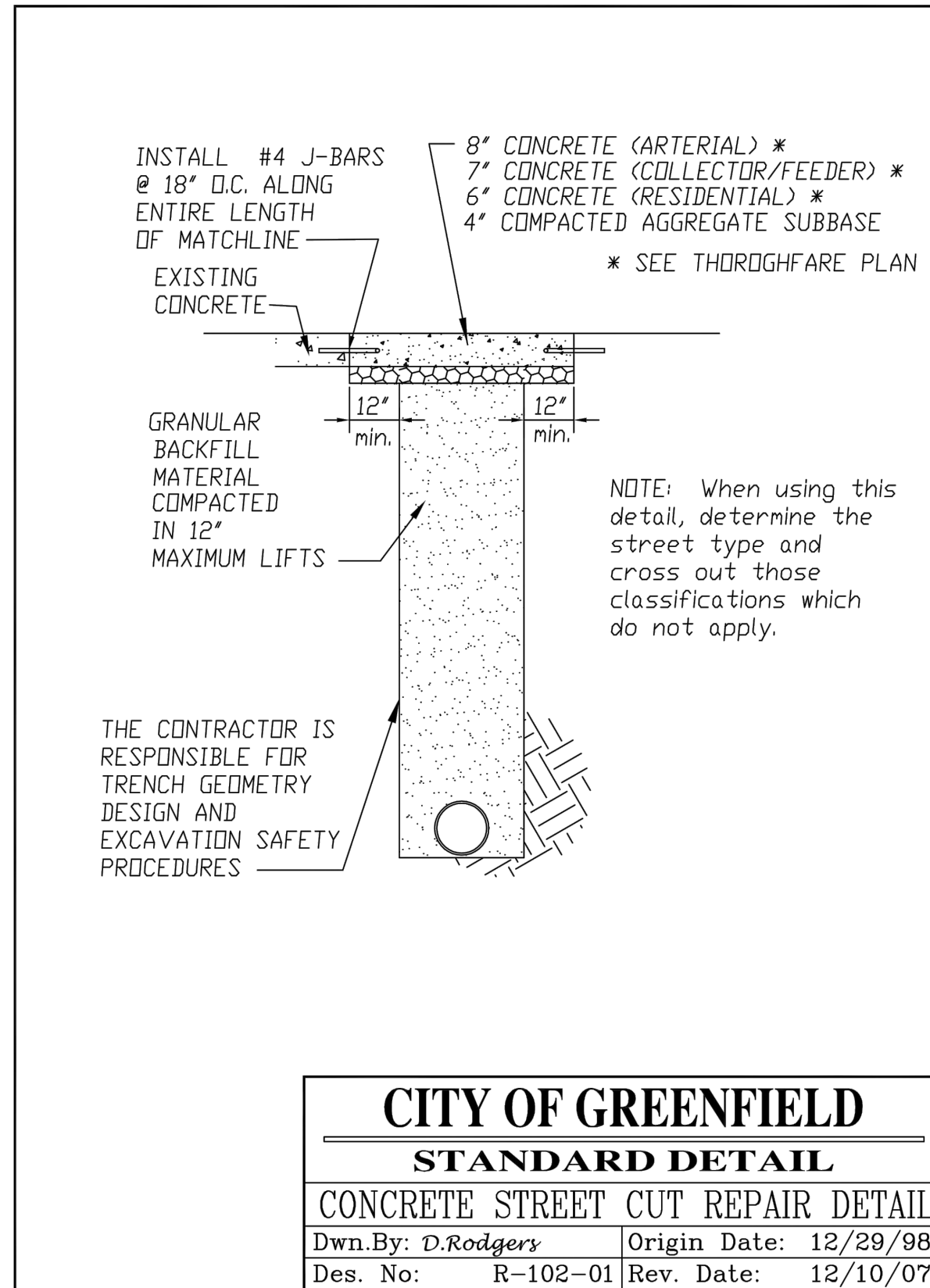
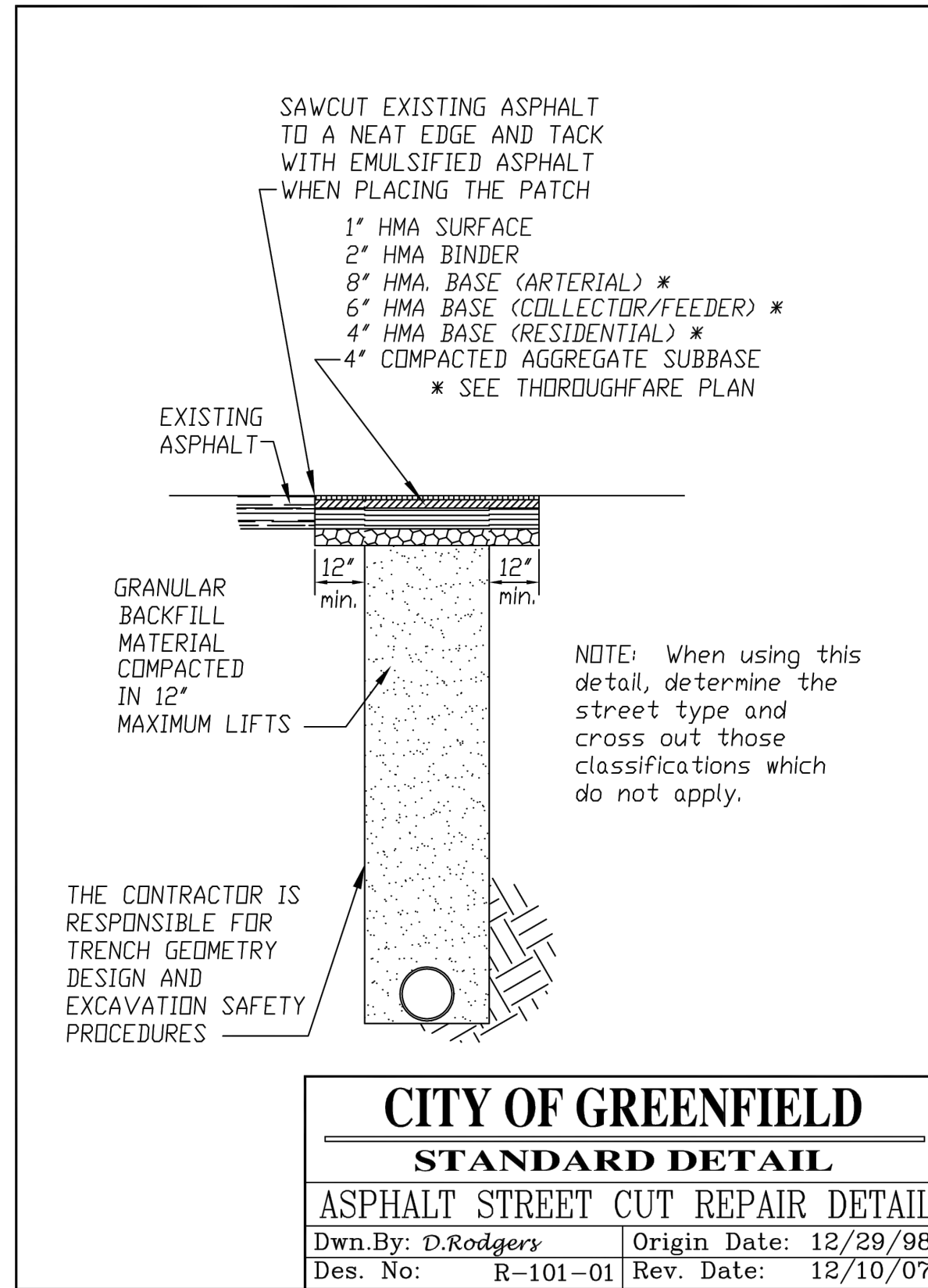
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ASPHALT PAVEMENT REPAIR SPECIFICATIONS

I. MATERIALS

A. ASPHALT

- Asphalt Material shall meet the requirements of Section 403 of the INDDT Standard Specifications.
- The required thickness of the pavement patch is based on the Thoroughfare Designation as established by the Greenfield Comprehensive Plan.

B. BEDDING AND BACKFILL

- Granular material must be used to backfill the excavation. The material must be mechanically compacted in lifts not to exceed 12".

II. EXECUTION

A. TRAFFIC SAFETY

- Road Closures are not allowed except when specifically approved by the City of Greenfield Police Department Traffic Safety Officer.
- The Worksite Traffic Control Manual as published by INDDT shall be used as a guideline for establishing traffic control and safety measures for all road cuts and pavement repairs.
- The worksite must be completely protected from vehicular and pedestrian traffic at all times. The use of Type II Barricades with flashing lights or drums with flashing lights is required.
- All Traffic Control and Safety Equipment and sufficient personnel to erect and operate the equipment must be onsite before any construction in the Right-of-Way begins.

B. PERMIT REQUIRED

- A Right Of Way Cut Permit is required before any work is performed in the City Right-of-Way.
- The Right Of Way Cut Permit is issued by the City Engineers Office.

CONCRETE PAVEMENT REPAIR SPECIFICATIONS

I. MATERIALS

A. CONCRETE

- Concrete shall be a High-Early-Strength mix capable of supporting vehicular traffic within 12 hours.
- Concrete Material shall meet the requirements of Section 702 of the INDDT Standard Specifications.
- INDDT Standard Specifications Section 501.10 Limitations of Mixing shall govern the placement of concrete in cold weather.
- The required thickness of the concrete patch is based on the Thoroughfare Designation as established by the Greenfield Comprehensive Plan.
- J-Bars are required as shown in the drawing. Other types of load transfer joints may be approved prior to construction.

B. BEDDING AND BACKFILL

- Granular material must be used to backfill the excavation. The material must be mechanically compacted in lifts not to exceed 12".

II. EXECUTION

A. TRAFFIC SAFETY

- Road Closures are not allowed except when specifically approved by the City of Greenfield Police Department Traffic Safety Officer.
- The Worksite Traffic Control Manual as published by I.D.D.T. shall be used as a guideline for establishing traffic control and safety measures for all road cuts and pavement repairs.
- The worksite must be completely protected from vehicular and pedestrian traffic at all times. The use of Type II Barricades with flashing lights or drums with flashing lights is required.
- All Traffic Control and Safety Equipment and sufficient personnel to erect and operate the equipment must be onsite before any construction in the Right-of-Way begins.

B. PERMIT REQUIRED

- A Right Of Way Cut Permit is required before any work is performed in the City Right-of-Way.
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MANHOLE ADJUSTMENT IN ASPHALT STREET SPECIFICATIONS

I. MATERIALS

A. CONCRETE

- Concrete shall be a High-Early-Strength mix capable of supporting vehicular traffic within 12 hours.
- Concrete Material shall meet the requirements of Section 702 of the INDDT Standard Specifications.
- INDDT Standard Specifications Section 501.10 Limitations of Mixing shall govern the placement of concrete in cold weather.
- The required thickness of the concrete patch is based on the Thoroughfare Designation as established by the Greenfield Comprehensive Plan.
- J-Bars are required as shown in the drawing. Other types of load transfer joints may be approved prior to construction.

B. ASPHALT

- Asphalt Material shall meet the requirements of Section 403 of the I.D.D.T. Standard Specifications.

C. CASTING

- Casting shall be East Jordan Iron Works casting #1020 & 1022 or approved equal.
- Lid shall be stamped with the words "CITY OF GREENFIELD - SANITARY" or "CITY OF GREENFIELD - STORM".
- Joint sealant under the casting shall be two rings of non-hardening butyl rubber rope, Conseal or equal. (Kent Seal is not acceptable)

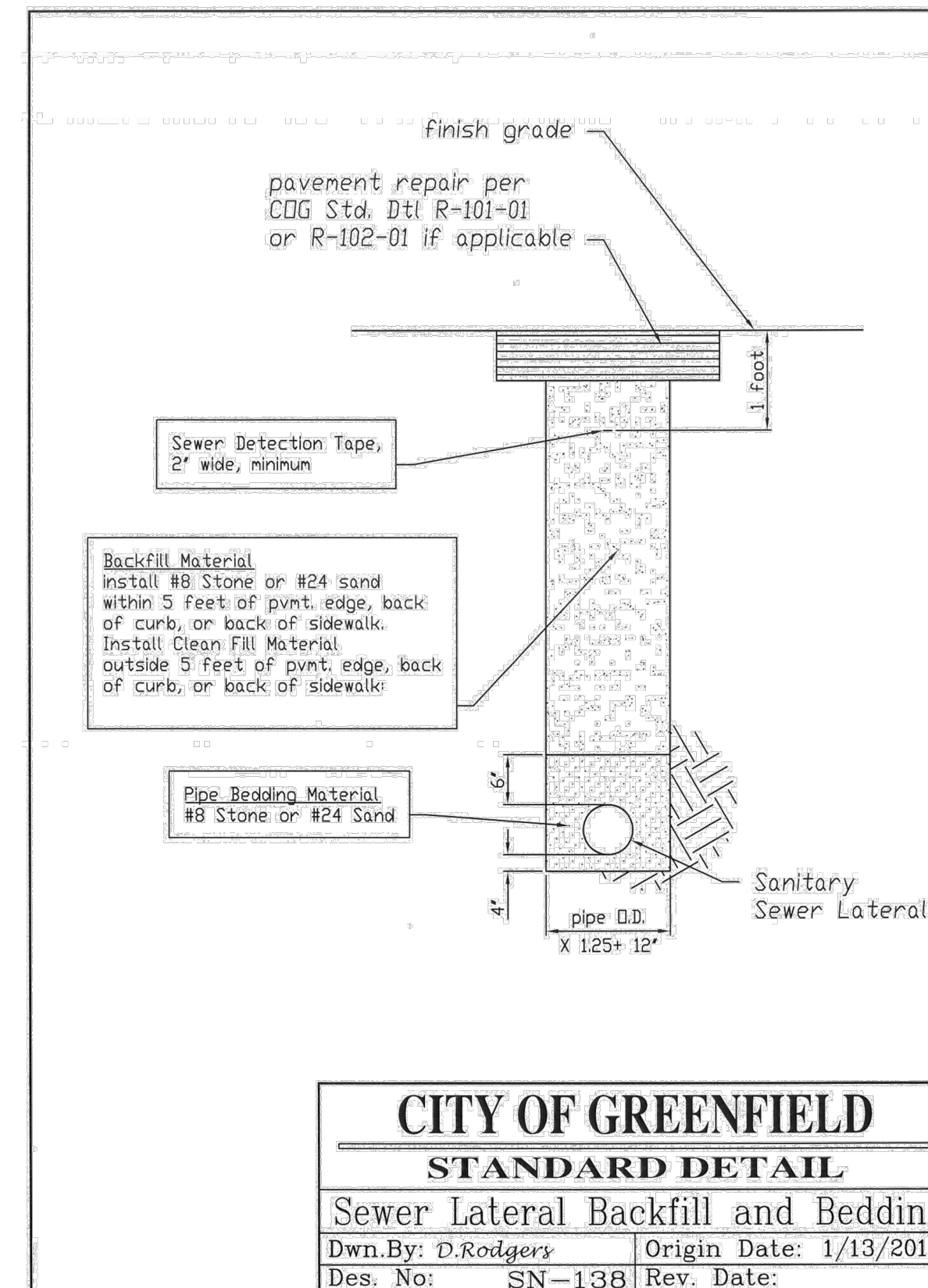
II. EXECUTION

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B. PERMIT REQUIRED

- A Right Of Way Cut Permit is required before any work is performed in the City Right-of-Way.
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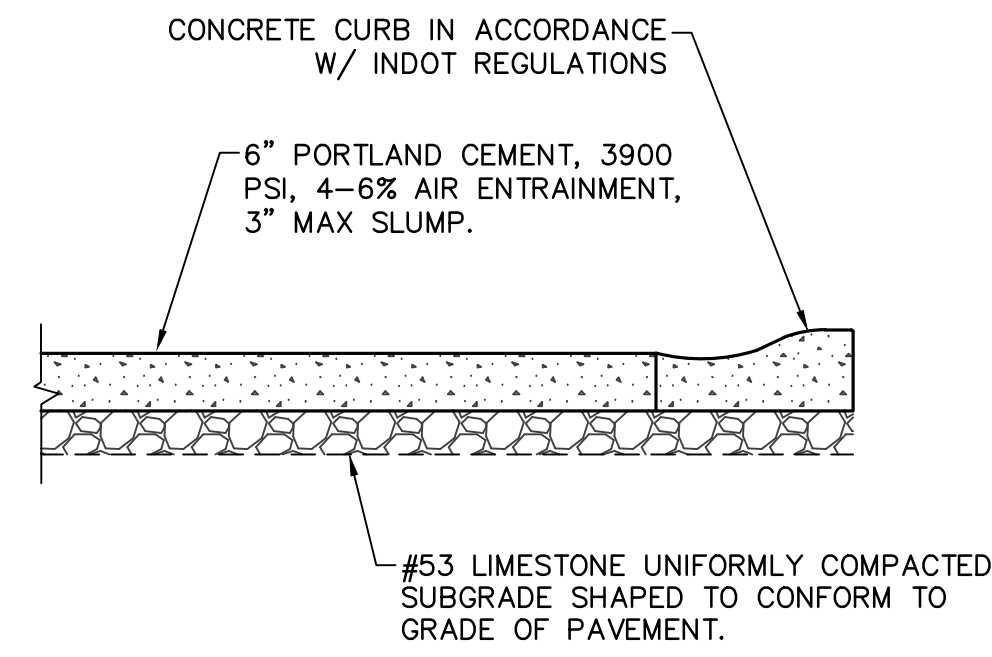
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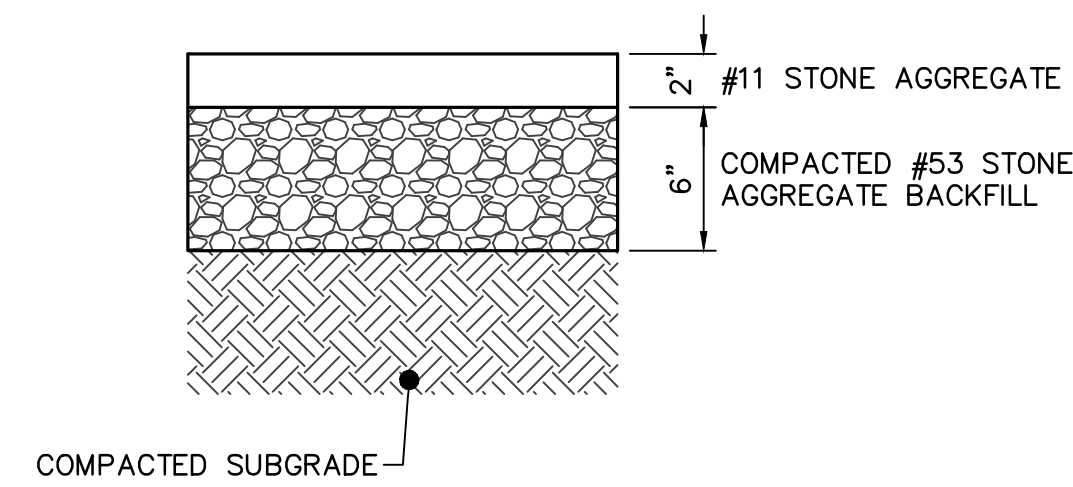
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STANDARD DETAILS SANITARY SEWER

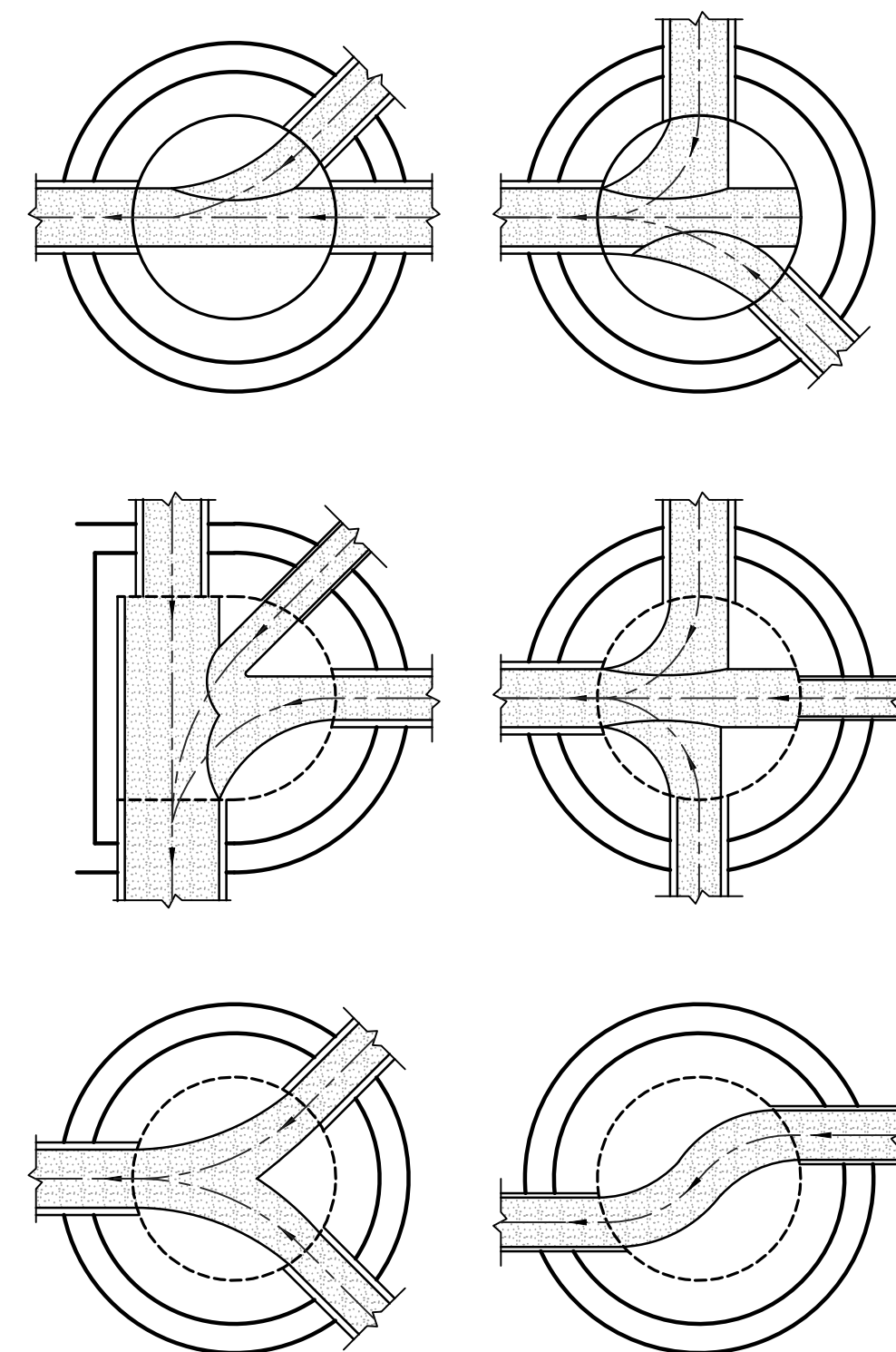
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CONCRETE DRIVE RESTORATION DETAIL
NOT TO SCALE

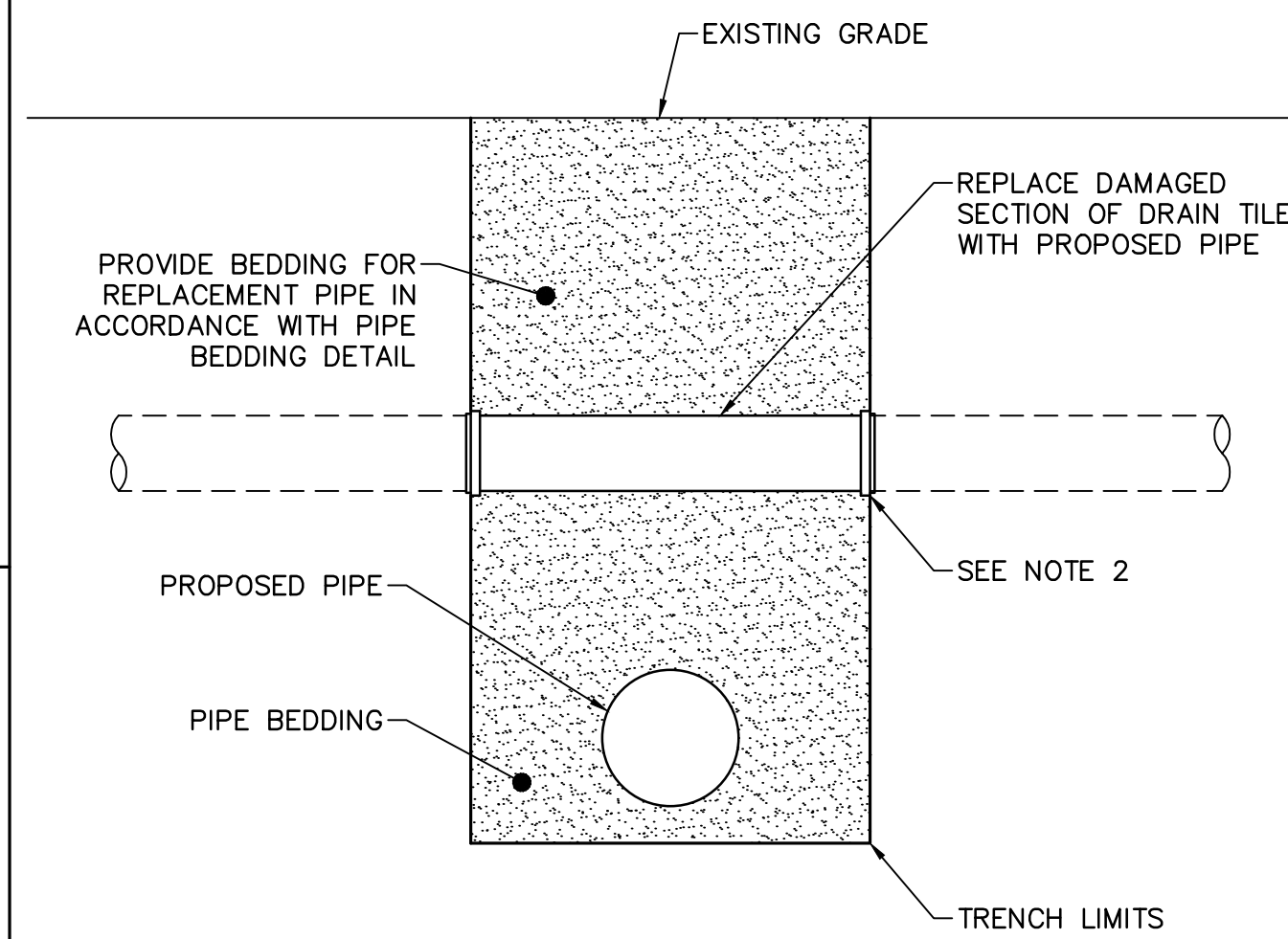


STONE DRIVE SECTION
NOT TO SCALE



SANITARY SEWER
BENCH SLOPE = 1/2" PER FOOT
TROUGH WIDTH = PIPE DIAMETER

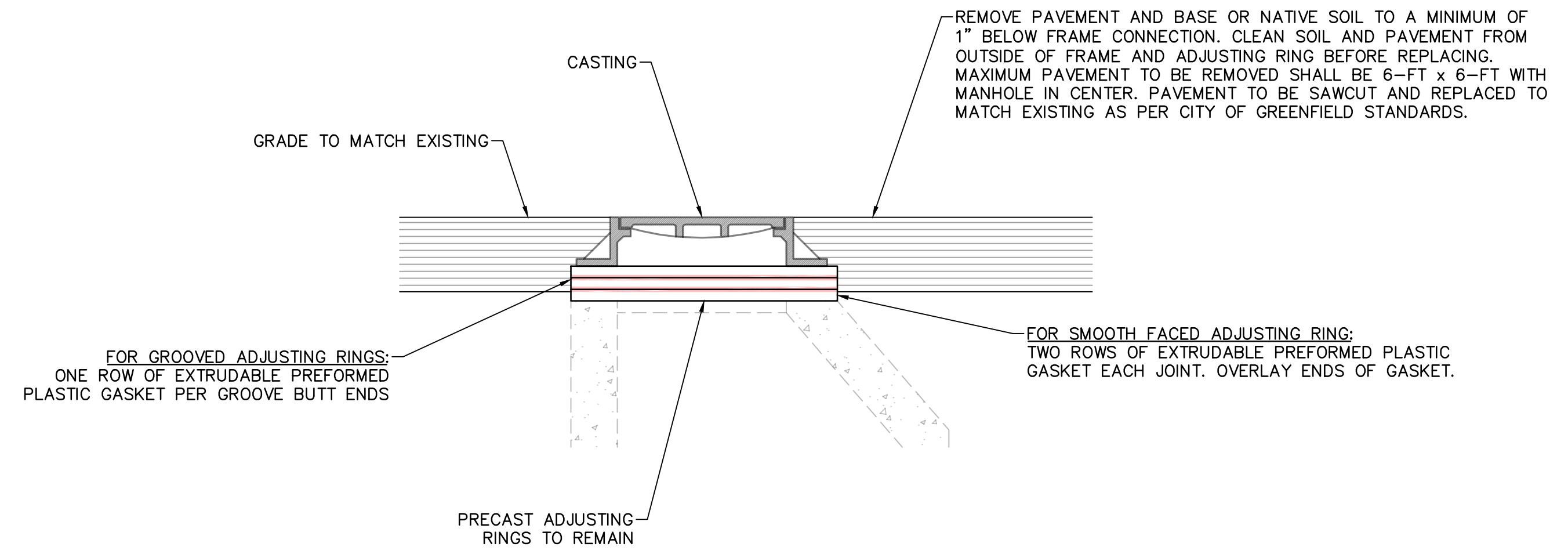
STANDARD MANHOLE BENCHES
NOT TO SCALE



NOTES:

1. RECORD LOCATION OF ALL DRAIN TILES ENCOUNTERED.
2. PROVIDE NON-SHEAR FERNCO (OR EQUAL) FLEXIBLE RUBBER COUPLINGS TO CONNECT REPLACEMENT PIPE TO EXISTING DRAIN TILE.

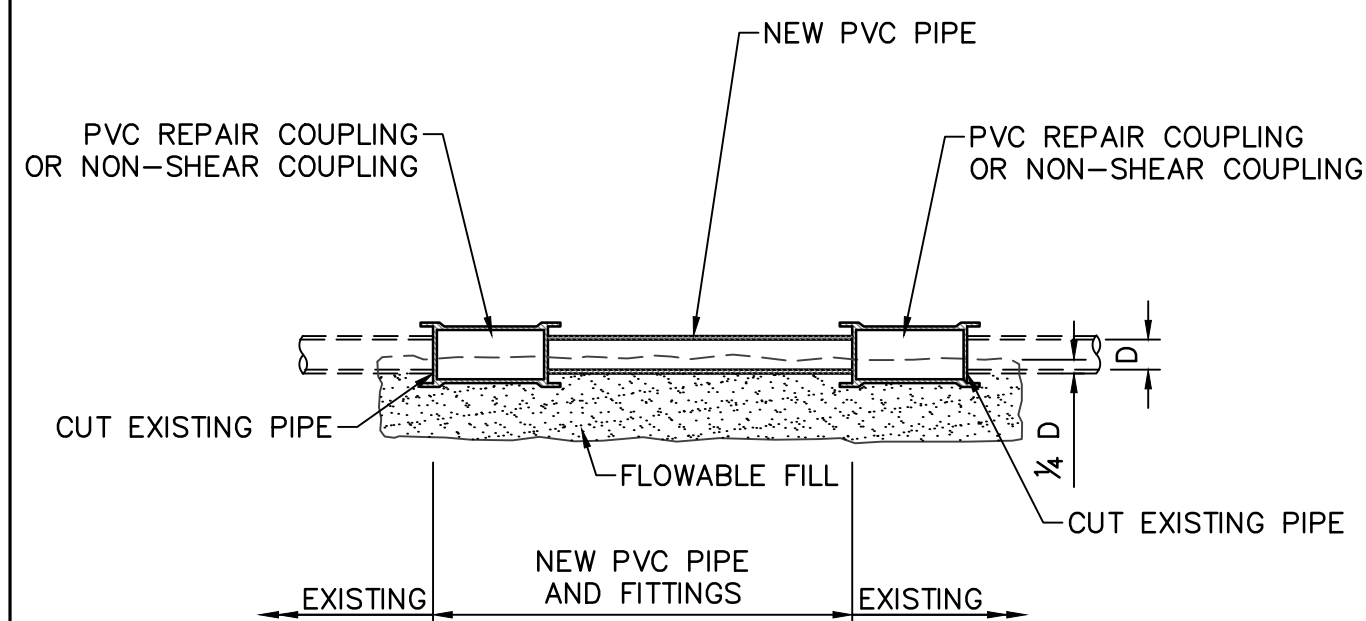
DRAIN TILE REPAIR DETAIL
NOT TO SCALE



NOTE:

EXISTING CASTING AND COVER TO BE USED FOR RESETING EXCEPT WHERE FOUND TO BE DAMAGED. IF NEW CASTING AND COVER IS REQUIRED FOR REPLACEMENT, CONTACT THE CITY OF GREENFIELD UTILITIES.

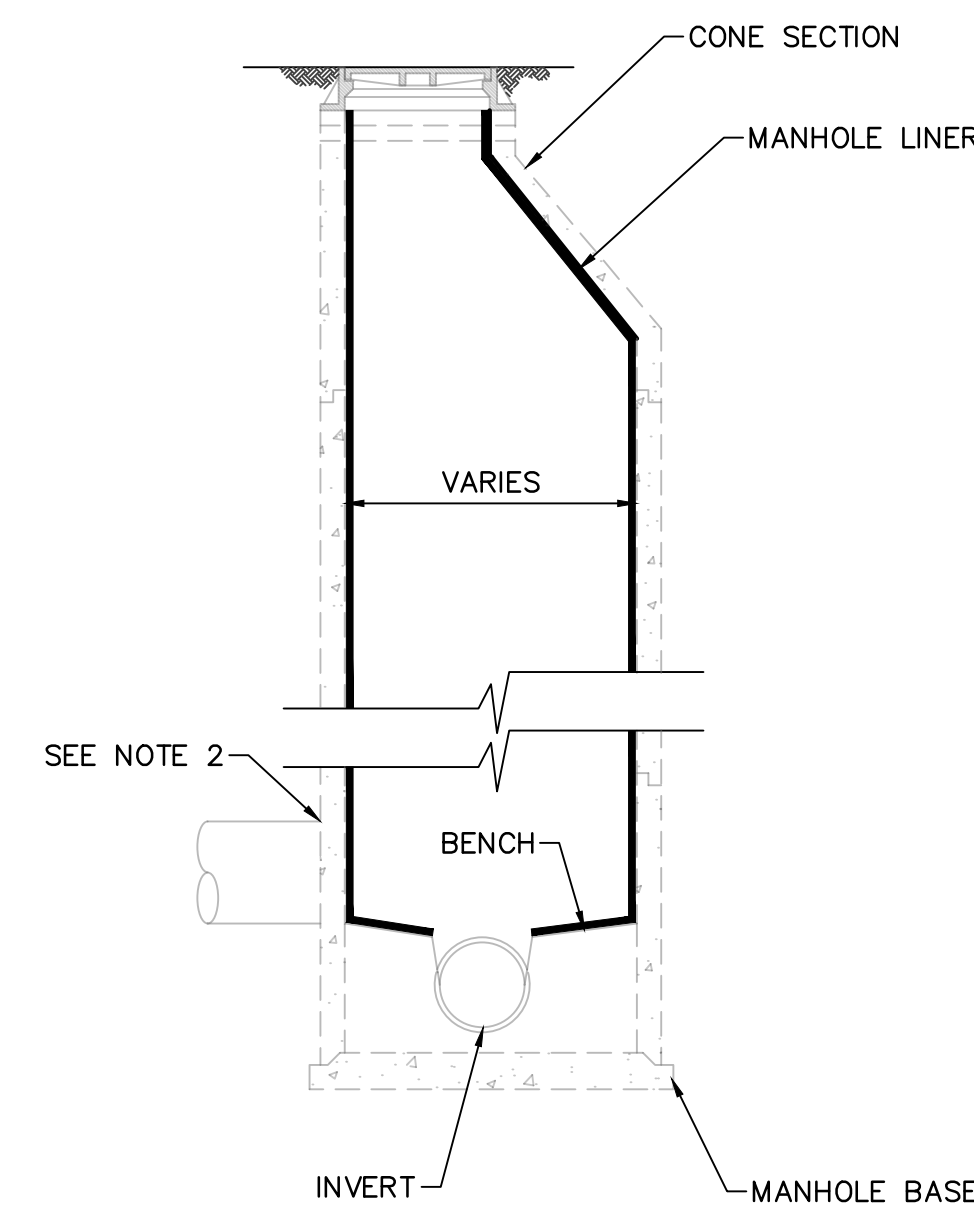
REPLACE MANHOLE FRAME AND LID DETAIL
NOT TO SCALE



NOTE:

BACKFILL PER BEDDING BACKFILL STANDARD DETAIL.

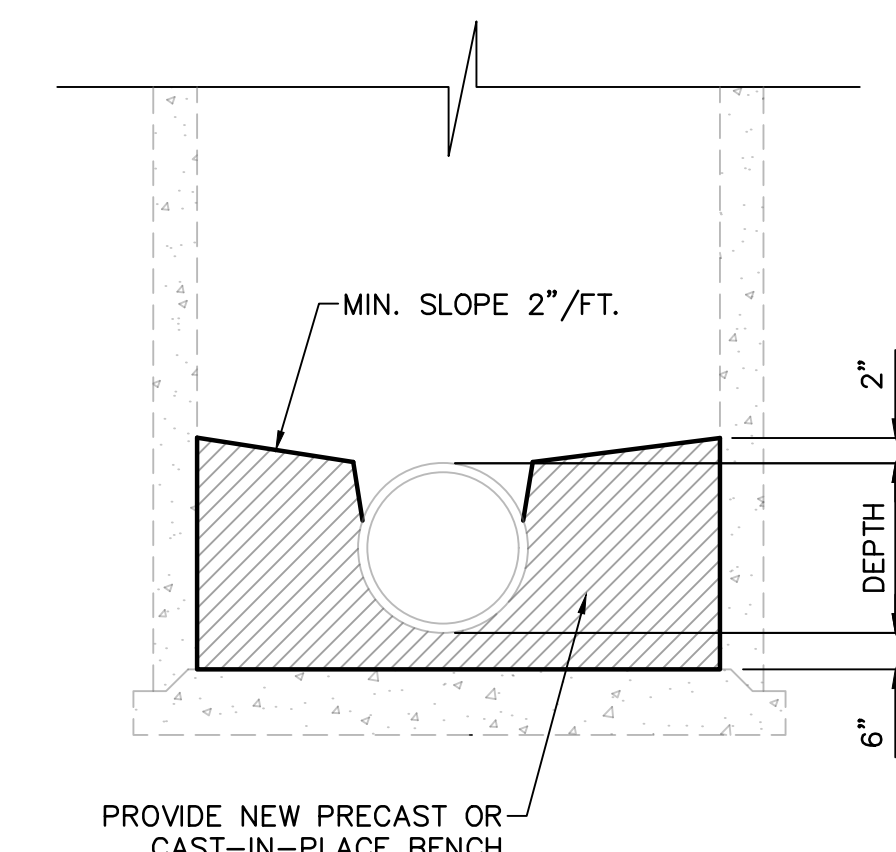
POINT REPAIR DETAIL
NOT TO SCALE



NOTES:

1. PREPARE MANHOLE FOR REHABILITATION PER THE SURFACE PREPARATION DETAILS IN SPECIFICATION 33 01 30.76
2. USE CHEMICAL GROUT FOR ALL DEFECTS AND ACTIVE INFILTRATION
3. MANHOLE LINING SHALL BE THE ENTIRE DEPTH OF THE MANHOLE, FROM THE BENCH UP TO THE MANHOLE LID.
4. APPLY CEMENTITIOUS LINER AND EPOXY LINER PROTECTIVE COATING PER MANUFACTURERS INSTRUCTIONS. FOLLOW THICKNESS REQUIREMENTS IN SPECIFICATIONS 33 01 30.76.

LINE MANHOLE DETAIL
NOT TO SCALE



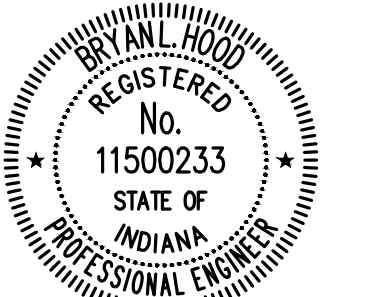
MANHOLE BENCH REPLACEMENT DETAIL
NOT TO SCALE



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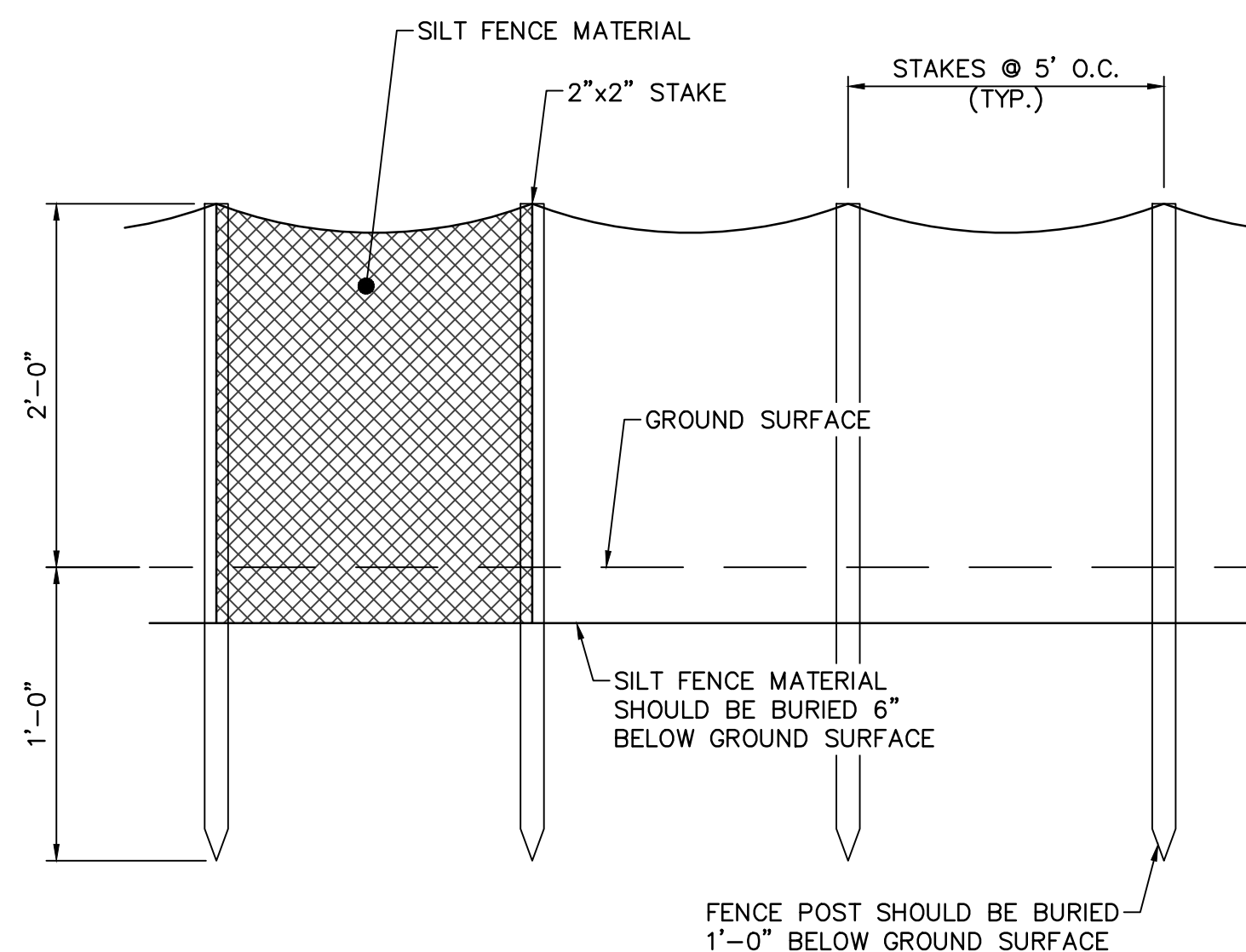
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**STANDARD DETAILS
SANITARY SEWER**

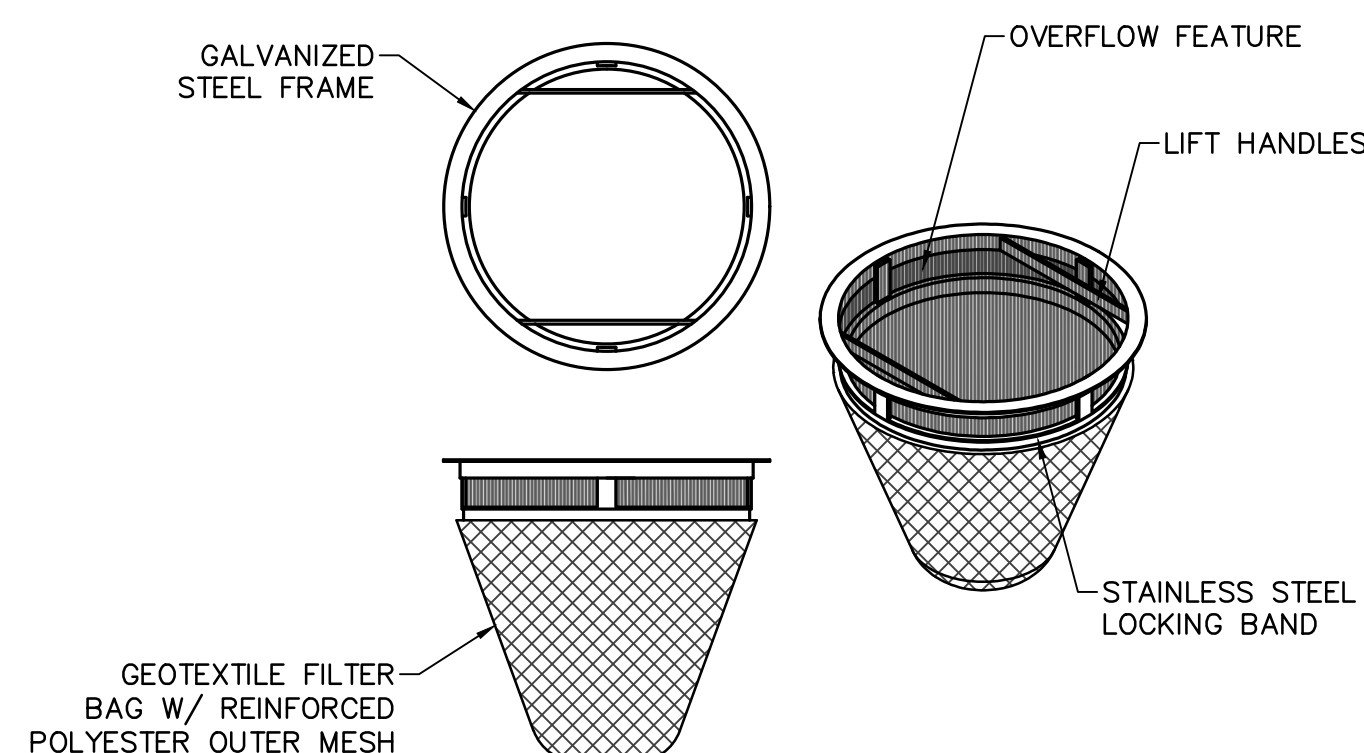


SILT FENCE

1. SILT FENCE SHALL BE A MACHINE PRODUCED, NON-WOVEN GEOTEXTILE OF 100% POLYPROPYLENE MEETING THE PHYSICAL PROPERTIES BELOW.
2. ALL STAKES SHALL BE 2"x2" HARDWOOD 36" TALL WITH 24" TALL LATH STAPLED TO STAKES OVER FABRIC AS REINFORCEMENT.
3. ALL SILT FENCE SHALL BE PREFABRICATED BY THE SUPPLIER. NO FIELD ASSEMBLY WILL BE ACCEPTED.

FABRIC WEIGHT	4 OZ./SYD.
GRAB STRENGTH	WARP 125 LBS.
ELONGATION	WARP 50%
TRAPEZOIDAL TEAR STRENGTH	50 LBS.
BURST STRENGTH	200 PSI
UV RESISTANCE	> 70%
A.O.S.	50-80
SLURRY FLOW RATE	225 GPM/SQ. FT.
SEDIMENT RETENTION	75%

SILT FENCE DETAIL
NOT TO SCALE



SILT FENCE INLET FILTER
(FOR CIRCULAR INLETS)
NOT TO SCALE

PERMANENT SEEDING

PERMANENT SEEDING RECOMMENDATIONS OPEN LOW-MAINTENANCE AREAS (REMAINING IDLE MORE THAN SIX MONTHS)		
SEED MIXTURES	RATE PER ACRE PURE LIVE SEED	OPTIMUM SOIL pH
PERMANENT RYEGRASS (WHITE CLOVER)	70 LBS 2 LBS	5.6 - 7.0
PERENNIAL RYEGRASS (TALL FESCUE)	70 LBS 50 LBS	5.6 - 7.0
TALL FESCUE (WHITE CLOVER)	70 LBS 2 LBS	5.5 - 7.5

PERMANENT SEEDING RECOMMENDATIONS STEEP BANKS AND CUTS, LOW-MAINTENANCE AREAS (NOT MOWED)		
SEED MIXTURES	RATE PER ACRE PURE LIVE SEED	OPTIMUM SOIL pH
SMOOTH BROME GRASS (RED CLOVER)	35 LBS 20 LBS	5.5 - 7.0
TALL FESCUE (WHITE CLOVER)	50 LBS 2 LBS	5.5 - 7.5
TALL FESCUE (RED CLOVER)	50 LBS 20 LBS	5.5 - 7.5
ORCHARD GRASS (WHITE CLOVER) (RED CLOVER)	30 LBS 20 LBS 2 LBS	5.6 - 7.0

PERMANENT SEEDING RECOMMENDATIONS LAWNS AND HIGH-MAINTENANCE AREAS		
SEED MIXTURES	RATE PER ACRE PURE LIVE SEED	OPTIMUM SOIL pH
BLUEGRASS	35 LBS 20 LBS	5.5 - 7.0
PERENNIAL RYEGRASS (TURF TYPE)	50 LBS 2 LBS	5.5 - 7.5
TALL FESCUE (BLUEGRASS-TURF TYPE)	50 LBS 20 LBS	5.5 - 7.5

PERMANENT SEEDING RECOMMENDATIONS CHANNELS AND AREAS OF CONCENTRATED FLOW		
SEED MIXTURES	RATE PER ACRE PURE LIVE SEED	OPTIMUM SOIL pH
PERENNIAL RYEGRASS (WHITE CLOVER)	35 LBS 20 LBS	5.5 - 7.0
KENTUCKY BLUEGRASS (SMOOTH BROMEGRASS) (SWITCHGRASS) (TIMOTHY) (PERENNIAL RYEGRASS) (WHITE CLOVER)	20 LBS 10 LBS 3 LBS 4 LBS 10 LBS 2 LBS	5.5 - 7.5
TALL FESCUE (WHITE CLOVER)	150 LBS 2 LBS	5.5 - 7.5
TALL FESCUE (PERENNIAL RYEGRASS) (KENTUCKY BLUEGRASS)	150 LBS 20 LBS 20 LBS	5.5 - 7.5

SEEDING NOTES

1. APPLY SEED UNIFORMLY WITH A DRILL OR CULTIPACKER SEEDER OR BY BROADCASTING. PLANT OR COVER SEED TO A DEPTH OF ONE-FOURTH TO ONE-HALF INCH. IF DRILLING OR BROADCASTING THE SEED, ENSURE GOOD SEED-TO-SOIL CONTACT BY FIRING THE SEEDBED WITH A ROLLER OR CULTIPACKER AFTER COMPLETING SEEDING OPERATIONS. (IF SEEDING IS DONE WITH A HYDROSEEDER, FERTILIZER AND MULCH CAN BE APPLIED WITH THE SEED IN A SLURRY MIXTURE.)
2. MULCH ALL SEEDED AREAS, AND USE APPROPRIATE METHODS TO ANCHOR THE MULCH IN PLACE.
3. FOR BEST RESULTS: (a) LEGUME SEED SHOULD BE INOCULATED; (b) SEEDING MIXTURES CONTAINING LEGUMES SHOULD PREFERABLY BE SPRING-SEEDED, ALTHOUGH THE GRASS MAY BE FALL-SEEDED AND THE LEGUME FROST-SEEDED.
4. AN OAT OR WHEAT COMPANION OR NURSE CROP MAY BE USED WITH ANY OF THE ABOVE PERMANENT SEEDING MIXTURES, AT THE FOLLOWING RATES:
 - a. SPRING OATS-10 TO 24 LBS PURE LIVE SEED PER ACRE.
 - b. WHEAT-NO MORE THAN 30 LBS PURE LIVE SEED PER ACRE.

MAINTENANCE

1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS UNTIL THE VEGETATION IS SUCCESSFULLY ESTABLISHED.
2. CHARACTERISTICS OF A SUCCESSFUL STAND INCLUDE VIGOROUS DARK GREEN OR BLuish-GREEN SEEDLINGS WITH A UNIFORM VEGETATIVE COVER DENSITY OF 90 PERCENT OR MORE.
3. CHECK FOR EROSION OR MOVEMENT OF MULCH.
4. REPAIR DAMAGED, BARE, GULLIED, OR SPARSELY VEGETATED AREAS AND THEN FERTILIZE, RESEED, AND APPLY AND ANCHOR MULCH.
5. IF PLANT COVER IS SPARSE OR PATCHY, EVALUATE THE PLANT MATERIALS CHOSEN, SOIL FERTILITY, MOISTURE CONDITION, AND MULCH APPLICATION; REPAIR AFFECTED AREAS EITHER BY OVERSEEDING OR PREPARING A NEW SEEDBED AND RESEEDING. APPLY AND ANCHOR MULCH ON THE NEWLY SEEDED AREAS.
6. IF VEGETATION FAILS TO GROW, CONSIDER SOIL TESTING TO DETERMINE SOIL PH OR NUTRIENT DEFICIENCY PROBLEMS. (CONTACT YOUR SOIL AND WATER CONSERVATION DISTRICT OR COOPERATIVE EXTENSION OFFICE FOR ASSISTANCE.)
7. IF ADDITIONAL FERTILIZATION IS NEEDED TO GET A SATISFACTORY STAND, DO SO ACCORDING TO SOIL TEST RECOMMENDATIONS.
8. ADD FERTILIZER THE FOLLOWING GROWING SEASON. FERTILIZE ACCORDING TO SOIL TEST RECOMMENDATIONS.
9. FERTILIZE TURF AREAS ANNUALLY. APPLY FERTILIZER IN A SPLIT APPLICATION. FOR COOL-SEASON GRASSES, APPLY ONE-HALF OF THE FERTILIZER IN LATE SPRING AND ONE-HALF IN EARLY FALL. FOR WARM-SEASON GRASSES, APPLY ONE-THIRD IN EARLY SPRING, ONE-THIRD IN LATE SPRING, AND THE REMAINING ONE-THIRD IN MIDDLE SUMMER.

MULCHING

MULCH SPECIFICATIONS		
MATERIAL	RATE PER ACRE	COMMENTS
STRAW OR HAY	2 TONS	SHOULD BE DRY, FREE OF UNDESIREABLE SEED. SPREAD BY HAND OR MACHINE. MUST BE CRIMPED OR ANCHORED (SEE TABLE 2)
WOOD FIBER OR CELLULOSE	1 TON	APPLY WITH A HYDRAULIC MULCH MACHINE AND USE TACKING AGENT.

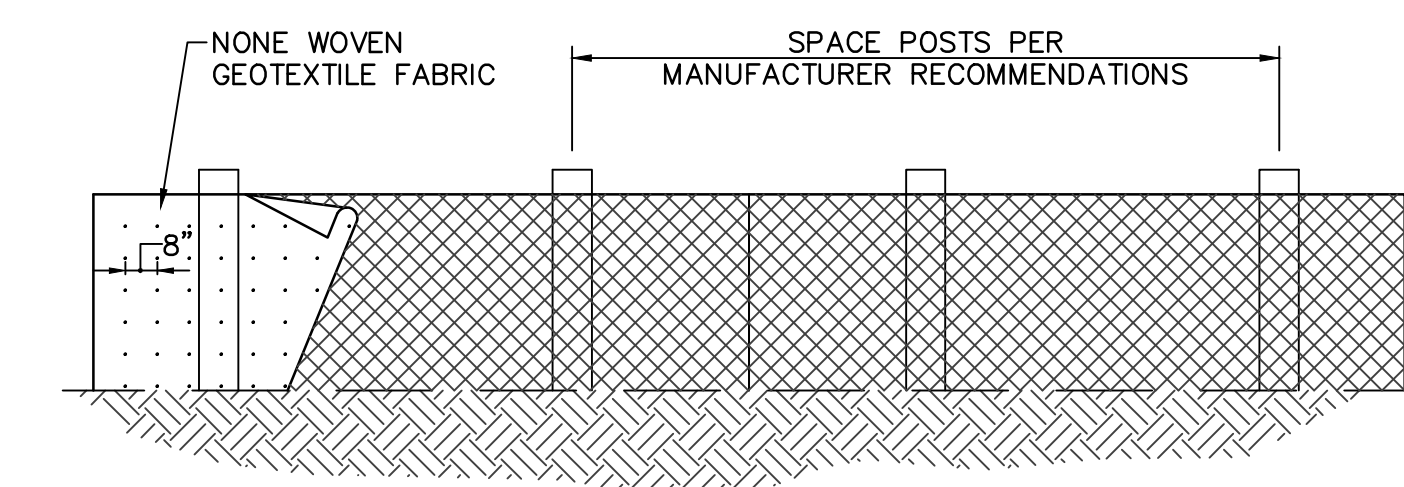
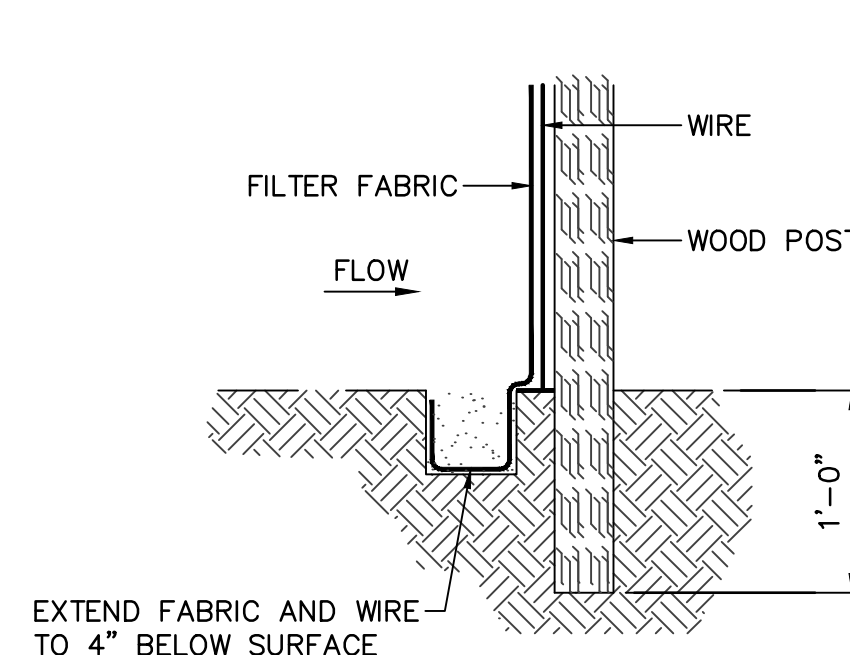
MULCH ANCHORING METHODS	
ANCHORING METHOD	HOW TO APPLY
MULCH ANCHORING TOOL OR FARM DISK (DULL, SERRATED, AND BLADES SET STRAIGHT)	CRIM OR PUNCH THE STRAW OR HAY TWO TO FOUR INCHES INTO THE SOIL. OPERATE MACHINERY ON THE CONTOUR OF THE SLOPE.
CLEATING WITH DOZER TRACKS	OPERATE THE DOZER UP AND DOWN SLOPE TO PREVENT FORMATION OF RILLS BY DOZER CLEATS.
WOOD HYDROMULCH FIBERS	APPLY ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
SYNTHETIC TACKIFIERS, BINDERS, OR SOIL STABILIZERS	APPLY ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
NETTING (SYNTHETIC OR BIODEGRADABLE MATERIAL)	INSTALL NETTING IMMEDIATELY AFTER APPLYING MULCH. ANCHOR NETTING WITH STAPLES. EDGES OF NETTING STRIP SHOULD OVERLAP WITH EACH UP-SLOPE STRIP OVERLAPPING FOUR TO SIX INCHES OVER THE ADJACENT DOWN-SLOPE STRIP. BEST SUITED TO SLOPE APPLICATIONS. IN MOST INSTANCES, INSTALLATION DETAILS ARE SITE SPECIFIC, SO SITE MANUFACTURER'S RECOMMENDATIONS SHOULD BE FOLLOWED.

MULCHING NOTES

1. SPREAD THE MULCH MATERIAL UNIFORMLY BY HAND, HAYFORK, MULCH BLOWER, OR HYDRAULIC MULCH MACHINE. AFTER SPREADING, NO MORE THAN 25 PERCENT OF THE GROUND SHOULD BE VISIBLE.
2. ANCHOR STRAW OR HAY MULCH IMMEDIATELY AFTER APPLICATION.

MAINTENANCE

1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. CHECK FOR EROSION OR MOVEMENT OF MULCH; REPAIR DAMAGED AREAS, RESEED, APPLY NEW MULCH AND ANCHOR THE MULCH IN PLACE.
3. CONTINUE INSPECTIONS UNTIL VEGETATION IS FIRMLY ESTABLISHED.
4. IF EROSION IS SEVERE OR RECURRING, USE EROSION CONTROL BLANKETS OR OTHER MORE SUBSTANTIAL STABILIZATION METHODS TO PROTECT THE AREA.

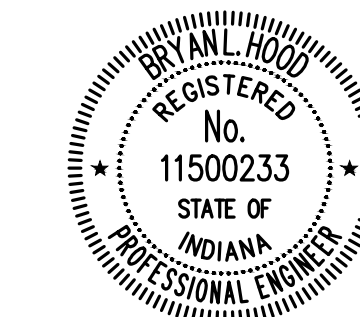


SILT FENCE CONSTRUCTION
NOT TO SCALE



WATERVIEW SANITARY SEWER SYSTEM LINING

Greenfield, Indiana



Bryan L. Hood 6/14/2023
CERTIFIED BY

ISSUANCE INDEX	
DATE:	6/14/2023
PROJECT PHASE:	CONSTRUCTION DOCUMENTS

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

Project Number 2021.02592.002

EROSION CONTROL DETAILS