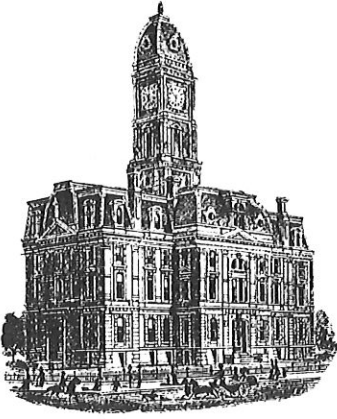


KCW



SURVEYOR'S OFFICE  
**Hamilton County**

*Kenton C. Ward, CFM*  
*Surveyor of Hamilton County*  
*Phone (317) 776-8495*  
*Fax (317) 776-9628*

*Suite 188*  
*One Hamilton County Square*  
*Noblesville, Indiana 46060-2230*

June 6, 2021

To: Hamilton County Drainage Board

**Re: Little Eagle Creek, George Coverdale Drain—Citizens Energy Water Tower**

Attached is a petition and plans for the proposed reconstruction of the George Coverdale Drain located in the Little Eagle Creek Watershed in Westfield, Indiana. The reconstruction is being proposed by Citizens Energy Group. The proposal is to reconstruct the George Coverdale Regulated Drain at the northwest corner of 193<sup>rd</sup> and Six Points Road. The reconstruction is per plans by Northpointe Engineering, having Job No. 20-0140 and dated May 4, 2021.

The existing regulated drain on this property, which runs from Station 34 to Station 36+49 per it's 1914 description, will be replaced. The relocation begins at new Structure 13 (old Station 34) then runs for 124 feet southeast with 18" RCP to new Structure 12 then runs south for 191 feet with 18" RCP to new Structure 11 before running 10 feet with 18" RCP and connecting to the existing George Coverdale Drain at original Station 36+49.

The reconstructed drain shall consist of the following:

18" RCP                      325 Feet

The total length of the reconstructed drain will be 325 feet. The total amount of drain being removed is 249 feet. The beginning station is located at the northern limits of the lot and the end station is located at the eastern limits of the lot.

This project will add 76 feet to the drain's length.

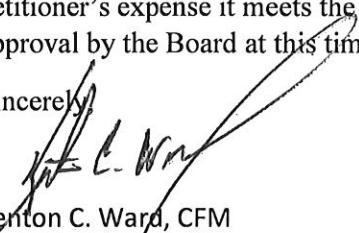
The maintenance of the detention area such as sediment and erosion control along the banks, mowing and aquatic vegetation maintenance and control will be the responsibility of Citizens Energy.

In accordance with IC 36-7-4-709, the petitioner did not submit surety for the proposed drain prior to Drainage Board approval. A bond will be submitted prior to the commencement of construction.

This would not extend the 75-foot easement onto the adjacent properties owned by Steven M. & Linda L. Osborne, Tract Number 08-05-27-00-00-005.000 and Tract Number 08-05-27-00-00-003.001. It would remain instead within the original easement in regard to the Osborne properties. I recommend that the existing easement boundaries of the George Coverdale drain per it's 1914 description on this property remain with the approval of the relocation.

Because the proposed reconstruction will be done upon the petitioner's property at the petitioner's expense it meets the requirements of I.C. 36-9-27-52.5 for a hearing. Therefore, I recommend approval by the Board at this time.

Sincerely,



Kenton C. Ward, CFM  
Hamilton County Surveyor

KCW/pll

HAMILTON COUNTY DRAINAGE BOARD  
NOBLESVILLE, INDIANA

IN RE: Citizens Energy Group 193rd Tank Site )  
Hamilton County, Indiana )

**FILED**

**JUN 03 2021**

OFFICE OF HAMILTON COUNTY SURVEYOR

PETITION FOR RELOCATION AND RECONSTRUCTION

Citizens Water of Westfield, LLC (hereinafter Petitioner”),

hereby petitions the Hamilton County Drainage Board for authority to relocate and improve a section of the George Cloverdale Drain, and in support of said petition advises the Board that:

1. Petitioner owns real estate through which a portion of the George Cloverdale Drain runs.
2. Petitioner plans to develop its real estate with roads, buildings, utilities, storm drains, sanitary sewers and other structures.
3. Petitioner’s proposed development of its real estate will require relocation and reconstruction of a portion of the George Cloverdale Drain, as specifically shown on engineering plans and specifications filed with the Hamilton County Surveyor.
4. The work necessary for the proposed relocation and reconstruction will be undertaken at the sole expense of the Petitioner and such work will result in substantial improvement to the George Cloverdale Drain, without cost to other property owners on the watershed of the George Cloverdale Drain.
5. Proposed relocation and reconstruction will not adversely affect other land owners within the drainage shed.
6. Petitioner requests approval of the proposed relocation and reconstruction under IC 36-9-27-52.5.

WHEREFORE, Petitioner requests that an Order issued from the Hamilton County Drainage Board authorizing relocation and reconstruction of the George Cloverdale Drain, in conformance with applicable law and plans and specifications on file with the Hamilton County Surveyor.

Signed  
Martin K. Spees, PE  
Printed

STATE OF INDIANA )  
 ) ss:  
COUNTY OF HAMILTON )

BEFORE THE HAMILTON COUNTY  
DRAINAGE BOARD  
NOBLESVILLE, INDIANA

IN THE MATTER OF THE  
RECONSTRUCTION OF THE  
**Little Eagle Creek Drain, George Coverdale Arm, Citizens Energy Water  
Tower**

FINDINGS AND ORDER FOR RECONSTRUCTION

The matter of the proposed Reconstruction of the **Little Eagle Creek Drain, George Coverdale Arm, Citizens Energy Water Tower** came before the Hamilton County Drainage Board for hearing **on June 14, 2021**, on the Reconstruction Report consisting of the report and the Schedule of Damages and Assessments. The Board also received and considered the written objection of an owner of certain lands affected by the proposed Reconstruction, said owner being:

Evidence was heard on the Reconstruction Report and on the aforementioned objections.

The Board, having considered the evidence and objections, and, upon motion duly made, seconded and unanimously carried, did find and determine that the costs, damages and expenses of the proposed Reconstruction will be less than the benefits accruing to the owners of all land benefited by the Reconstruction.

The Board having considered the evidence and objections, upon motion duly made, seconded and unanimously carried, did adopt the Schedule of Assessments as proposed, subject to amendment after inspection of the subject drain as it relates to the lands of any owners which may have been erroneously included or omitted from the Schedule of Assessments.

The Board further finds that it has jurisdiction of these proceedings and that all required notices have been duly given or published as required by law.


Wherefore, it is ORDERED, that the proposed Reconstruction of the **Little Eagle Creek Drain, George Coverdale Arm, Citizens Energy Water Tower** be and is hereby declared established.

Thereafter, the Board made inspection for the purpose of determining whether or not the lands of any owners had been erroneously included or excluded from the Schedule of Assessments. The Board finds on the basis of the reports and findings at this hearing as follows:


HAMILTON COUNTY DRAINAGE BOARD

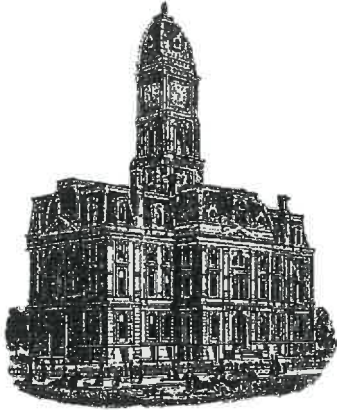
  
PRESIDENT

  
Member

  
Member

ATTEST:

  
Executive Secretary



*Kenton C. Ward, CFM*  
*Surveyor of Hamilton County*  
*Phone (317) 776-8495*  
*Fax (317) 776-9628*

*Suite 188*  
*One Hamilton County Square*  
*Noblesville, Indiana 46060-2230*

**To: Hamilton County Drainage Board**

**April 18, 2023**

**Re: Little Eagle Creek – George Coverdale Drain: Citizens Energy Water Tower**

Attached are as-built, certificate of completion & compliance, and other information for Citizens Water Tower. An inspection of the drainage facilities for this section has been made and the facilities were found to be complete and acceptable.

During construction, changes were made to the drain, which will alter the plans submitted with my report for this drain-dated June 6, 2021. The report was approved by the Board at the hearing held June 14, 2021. (See Drainage Board Minutes Book 20, Pages 58-59) The changes are as follows: the 18" RCP was shortened from 325 feet to 317 feet. The length of the drain due to the changes described above is now **317 feet**. The project removed 249 feet of existing drain.

A nonenforcement was not requested for this project. The following surety was guaranteed by Erie Insurance and released by the Board on its April 10, 2023, meeting.

Bond-LC No: Q907370286  
Amount: \$98,022.00  
For: Storm Sewers  
Issue Date: June 23, 2021

I recommend the Board approve the drain's construction as complete and acceptable.

Sincerely,

Kenton C. Ward, CFM  
Hamilton County Surveyor

CERTIFICATE OF COMPLETION AND COMPLIANCE

To: Hamilton County Surveyor

Re: George Cloverdale Drain Relocation at 193rd Street

I hereby certify that:

1. I am a Registered Land Surveyor or Engineer in the State of Indiana.
2. I am familiar with the plans and specifications for the above referenced subdivision.
3. I have personally observed and supervised the completion of the drainage facilities for the above referenced subdivision.
4. The drainage facilities within the above referenced subdivision to the best of my knowledge, information and belief have been installed and completed in conformity with all plans and specifications.
5. The drainage facilities within the above referenced subdivision to the best of my knowledge, information and belief have been correctly represented on the Record Drawings, Digital Record Drawings and the Structure Data Spreadsheet.

Signature: *Martins Spees* Date: 10-27-21

Type or Print Name: Martins Spees

Business Address: Northpointe Engineering & Surveying, Inc.  
6125 S. East Street, Suite B  
Indianapolis, IN 46227

Telephone Number: 317-721-0035

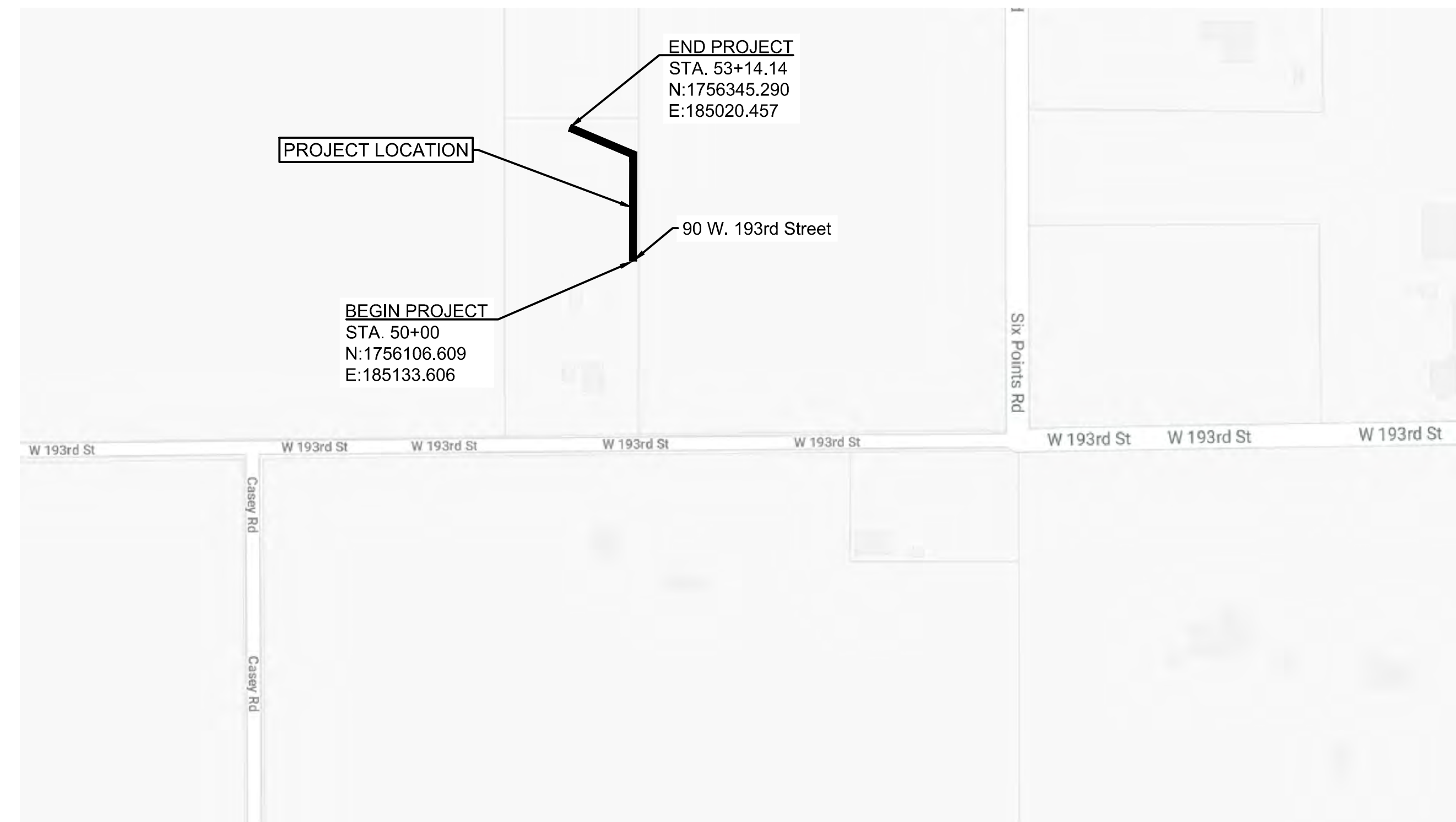
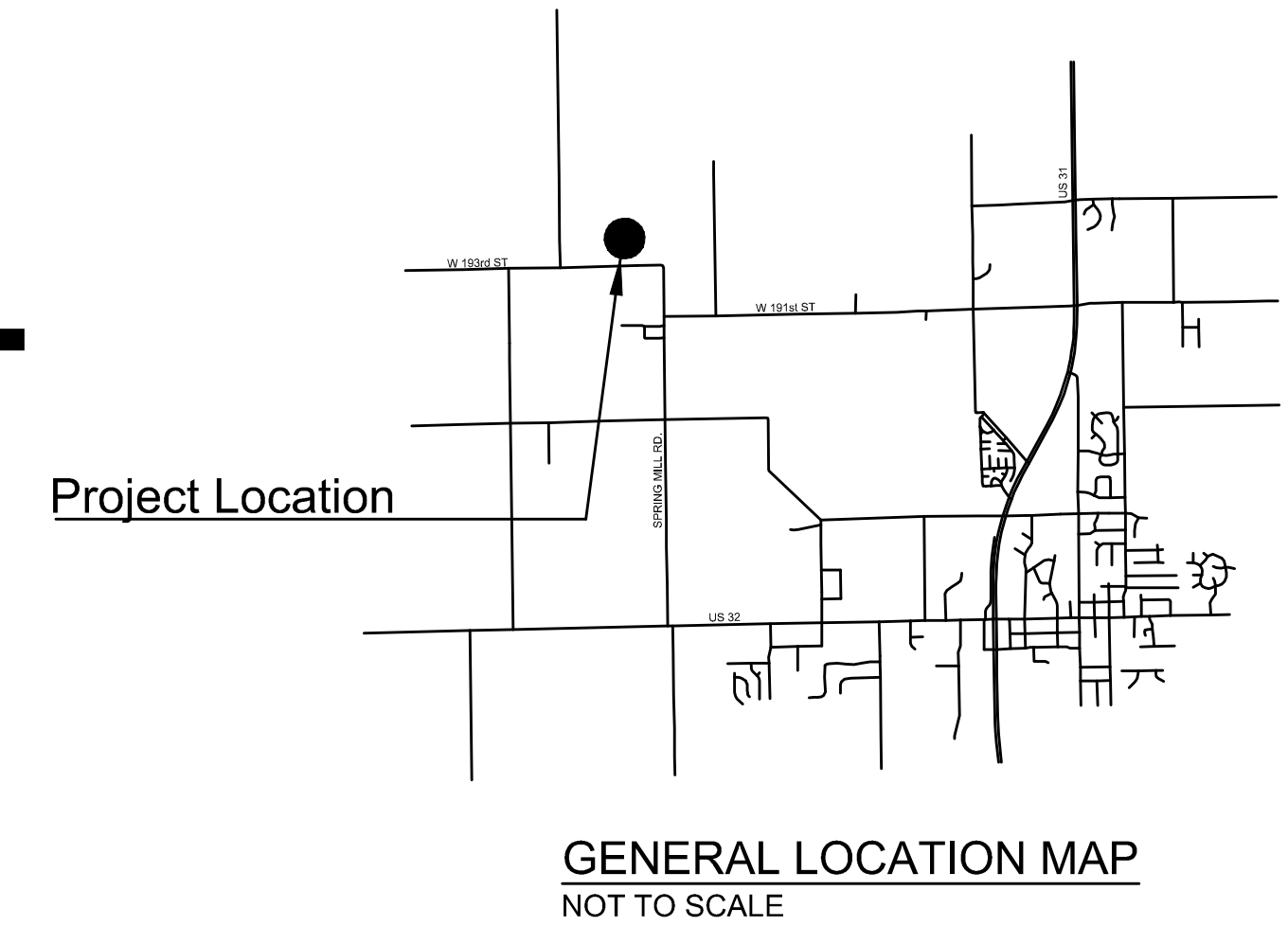
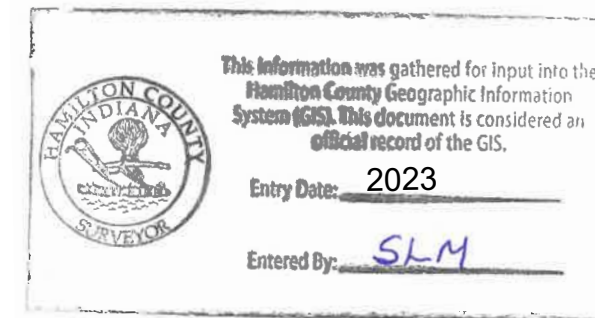
SEAL

INDIANA REGISTRATION NUMBER

PE11100182



# 193rd STREET LEGAL DRAIN RELOCATION AS-BUILTS



**PROJECT LOCATION MAP**  
NOT TO SCALE

**citizens westfield**  
2150 DR. MARTIN LUTHER KING JR STREET  
INDIANAPOLIS, IN 46202  
WWW.CITIZENSENERGYGROUP.COM  
(317) 639-1501

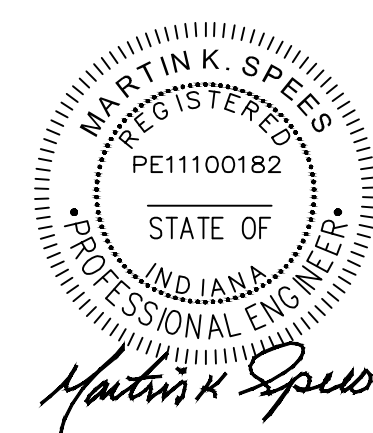
**CITIZENS PROJECT CONTACT INFORMATION**

Bruce L. Cooley, P.E., Engineering Project Manager, 317-927-4793  
BCooley@CitizensEnergyGroup.com  
Ed Bukovac, P.E., Director, Citizens Westfield Utilities, 317-927-4588  
EBukovac@CitizensEnergyGroup.com

**AS-BUILT RECORD**  
ALL AS-BUILT INFORMATION DEPICTED HEREIN WAS PERFORMED, MEASUREMENTS AND FIELD VERIFIED BY NORTHPOINTE ENGINEERING AND SURVEYING, INC.  
DATE: OCTOBER 15, 2021

**GENERAL NOTES:**

1. FOLLOW CITIZENS ENERGY GROUP WATER STANDARDS MANUAL AT CITIZENSWATER.COM
2. CONTRACTOR IS RESPONSIBLE FOR LOCATES 2 DAYS PRIOR TO DIGGING.
3. CONTRACTOR IS RESPONSIBLE FOR FOLLOWING LOCAL AGENCY TRAFFIC CONTROL REQUIREMENTS.



DATE:10/15/2021

**193rd STREET LEGAL DRAIN RELOCATION AS-BUILTS**

NO.	DATE	REVISIONS	BY

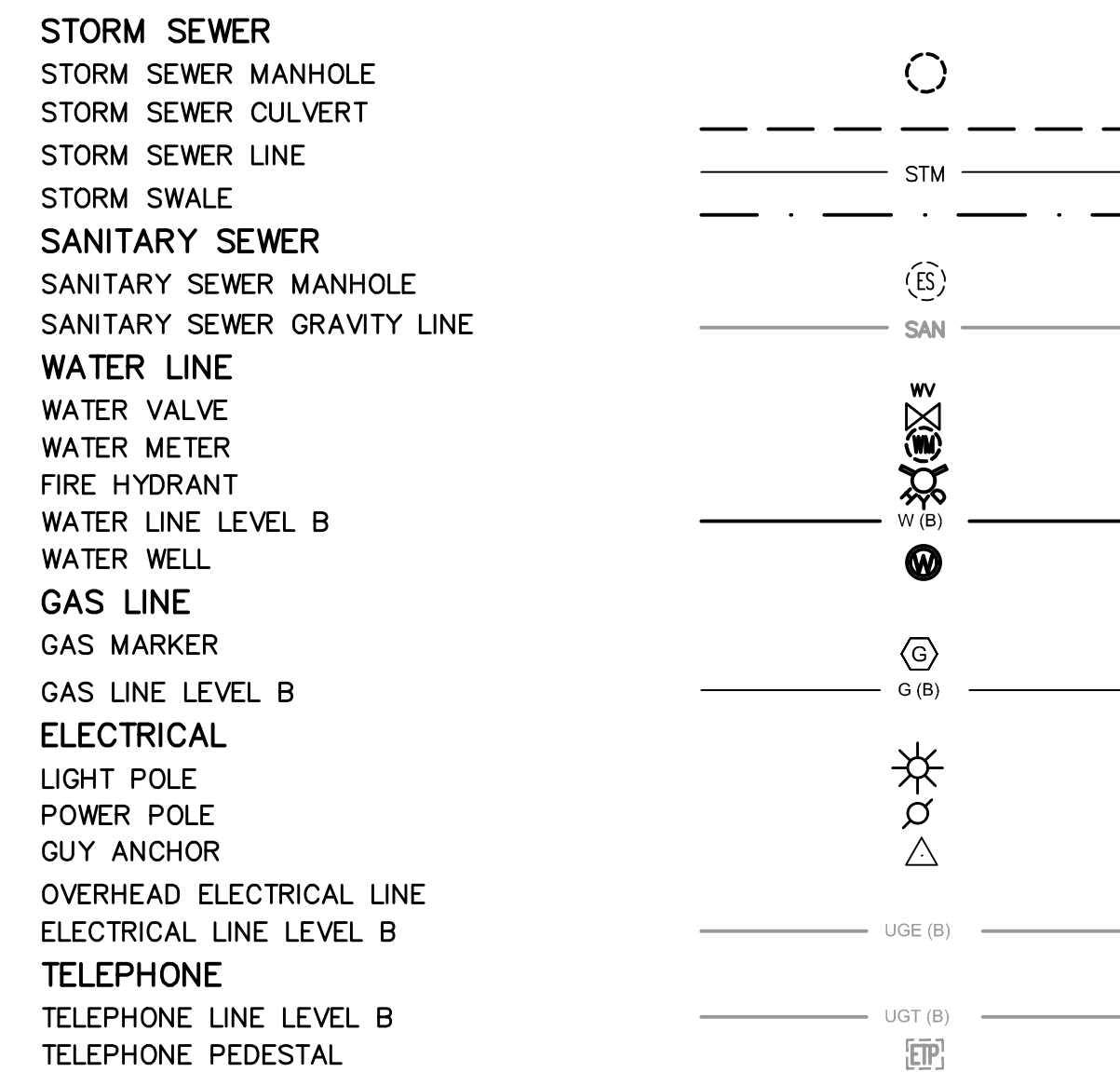
SHEET NUMBER  
**1**  
1 of 5

**GENERAL NOTES:**

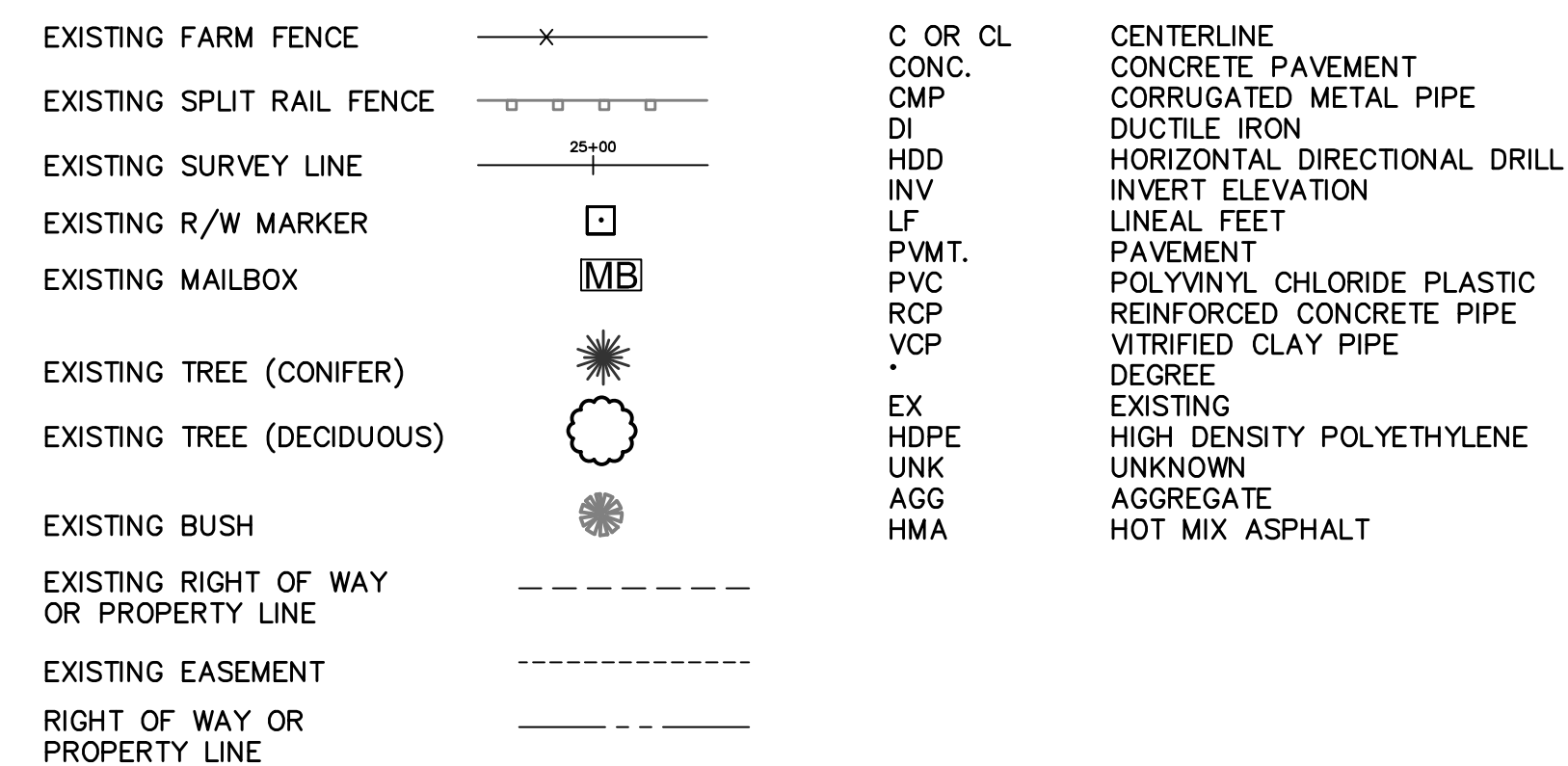
1. THESE PLANS AND CONTRACT DOCUMENTS HAVE BEEN PREPARED PER THE SCOPE OF WORK PROVIDED BY CITIZENS WATER OF WESTFIELD, LLC.
  2. ALL LOCATIONS OF EXISTING UTILITIES ARE SHOWN BASED ON AVAILABLE INFORMATION. HOWEVER, THE ENGINEER DOES NOT GUARANTEE OR ASSURE THAT SUCH INFORMATION IS TRUE OR EVEN APPROXIMATE. THE CONTRACTOR SHALL DETERMINE WHICH UTILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS AND VERIFY THEIR LOCATIONS, SIZES, AND INVERTS PRIOR TO ORDERING CONSTRUCTION MATERIALS. THE CONTRACTOR SHALL ADJUST WORK ACCORDINGLY AND NOTIFY THE ENGINEER OF ANY SUCH CONFLICTS. NO ADDITIONAL COMPENSATION WILL BE DUE FOR ADJUSTED UTILITIES. FOR UTILITY COMPANY CONTACT INFORMATION SEE THIS SHEET.
  3. THE SUPPORT PROTECTION AND RESTORATION OF ALL UTILITIES AND APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. IN ADDITION TO UTILITIES SHOWN ON THE PLANS, THE CONTRACTOR SHOULD ANTICIPATE WORKING AROUND EXISTING UTILITY SERVICE LINES. THE CONTRACTOR, WITH THE DESIGN ENGINEER'S APPROVAL, MAY ADJUST THE LOCATION OF THE NEW STORM SEWER TO AVOID UNDERGROUND UTILITIES. THE INTENT OF THESE PLANS IS TO AVOID ALL MAINLINE UNDERGROUND UTILITIES.
  4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STATE, CITY, OR PRIVATE PROPERTY, DRIVES, SIDEWALKS, BRIDGES, GRAVEL, PARKING AREAS, DRAINAGE PIPE SYSTEMS, FENCES, & SHEDS AS A RESULT OF THE CONTRACTORS WORK AND SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE PERMITTING AGENCY, THE OWNER, AND THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE RESTORATION. SITE RESTORATION SHALL BE EQUAL TO OR BETTER THAN CONDITIONS PRIOR TO CONSTRUCTION.
  5. ALL DISTURBED GRASSED AREAS AND DITCH AREAS WITHIN THE PROJECT EASEMENTS AND PUBLIC RIGHT-OF-WAY SHALL BE SEEDED AND MULCHED UNLESS OTHERWISE INDICATED ON THE PLANS. PAYMENT FOR RESTORATION SHALL BE INCLUDED IN SLOPE RESTORATION, SYS ITEM.
  6. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING RIGHT-OF-WAY AND PROPERTY LINE MONUMENTS. AS NECESSARY, DISTURBED PROPERTY CORNERS AND MONUMENTS SHALL BE REPLACED BY LICENSED SURVEYOR AT CONTRACTOR'S EXPENSE.
  7. TREE & BRUSH REMOVAL: CONTRACTOR, ENGINEER, AND OWNER SHALL IDENTIFY TREES AND BRUSH WITHIN RIGHT-OF-WAY TO BE REMOVED PRIOR TO CONSTRUCTION. SEE SPECIFICATION FOR ADDITIONAL INFORMATION ON TREE REMOVAL.
  8. LENGTH OF PIPE INDICATED ARE FROM CENTER TO CENTER OF STRUCTURES AND ARE NOT ACTUAL PIPE LENGTH.
  9. THE CONTRACTOR IS RESPONSIBLE FOR SETTING TOP OF STORM DRAINAGE CASTING ELEVATIONS TO CONFORM TO THE FINISHED GROUND ELEVATION. MINOR ADJUSTMENTS TO THE PROPOSED TOP OF CASTINGS MAY BE NEEDED TO OPTIMIZE THE DRAINAGE EFFECTIVENESS.
  10. FOR ANY BID ITEM WHICH A QUANTITY IS BID (SEE QUANTITY SUMMARY SHEET). PRIOR WRITTEN APPROVAL FROM THE ENGINEER TO EXCEED THE BID QUANTITY IS REQUIRED OR NO PAYMENT WILL BE MADE FOR THE OVERAGE. THE ENGINEER WILL HAVE AUTHORITY TO INCREASE OR DECREASE SCOPE OF WORK AND PAY ITEM QUANTITIES AT CONTRACT BID UNIT PRICE(S).
  11. THE STATIONING AND OFFSETS SHOWN HEREON ARE FOR REFERENCE PURPOSES AND APPROXIMATE LOCATIONS OF EXISTING FEATURES ONLY, AND DO NOT REPRESENT THE RESULTS OF A ROUTE SURVEY AS DESCRIBED IN 865-IAC 1-12-20 THRU 1-2-25 (MINIMUM STANDARDS.)
  12. ANY PLACE ON THE PLANS OR IN SPECIFICATIONS WHERE IT IS SPECIFIED FOR CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL, SAID SHOP DRAWINGS MUST BE APPROVED BY THE ENGINEER PRIOR TO ORDERING OR PLACEMENT OF ANY MATERIALS FOR SAID IMPROVEMENT.
  13. REMOVAL OF ANY EXISTING STRUCTURES, PIPE, CULVERT, ETC. THAT ARE WITHIN EXCAVATION LIMITS OF PROPOSED WORK SHALL NOT BE PAID FOR SEPARATELY AND SHALL BE INCLUDED IN PAY ITEM OF PROPOSED WORK.
  14. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND DETERMINING EXISTING ELEVATIONS OF EXISTING UTILITY SERVICE SUCH AS WATER, SANITARY, GAS, ETC. AND NOTIFY UTILITY OWNER AND PROJECT OWNER OF ANY CONFLICTS WITH PROPOSED WORK PRIOR TO CONSTRUCTION. CONTRACTOR WILL NOT BE WARRANTED ANY EXTENSION OF TIME FOR UTILITY SERVICE CONFLICT RESOLUTION.
- STORM WATER QUALITY NOTES:
15. CONCRETE WASHOUTS SHALL BE COMPLETELY CONTAINED WITHIN A SYSTEM WITH NO LEAKS OR TEARS, OR RECYCLED WITHIN THE CONCRETE TRUCK SYSTEM. CONCRETE WASHOUT LIQUID SHALL NOT BE ALLOWED ON THE GROUND, IN SEWERS, NOR IN WATERWAYS. THE CONCRETE WASHOUT CONTAINER SHALL BE LARGE ENOUGH TO CONTAIN WASHOUT LIQUID. WASHOUT LIQUID SHALL BE ALLOWED TO HARDEN PRIOR TO DISPOSAL OR BE DISPOSED OF IN A PROPER MANNER SUCH AS WITH A TOXIC MATERIAL VACUUM TRUCK.
  16. ALL STORMWATER INLETS AND CATCH BASINS SHALL HAVE THE WORDS "NO DUMPING, DRAINS TO STREAM", OR SIMILARLY APPROVE MESSAGE, CAST IN RAISED OR RECESSED LETTERS AT MINIMUM OF 1 INCH HEIGHT. IN ADDITION, A SYMBOL OF A FISH SHALL ALSO BE CAST WITH THE LETTERS. ALL CASTING AND COVERS SHALL BE INCLUDED IN THE MANHOLE / CATCH BASIN PAY ITEM.
  17. CONTRACTOR SHALL INSPECT AND PROVIDE CLEAN STRUCTURES AND STORM SEWER PRIOR TO PROJECT ACCEPTANCE AND PROCESSING FINAL ESTIMATE. NO ADDITIONAL COMPENSATION DUE FOR CLEANING STRUCTURES AND STORM SEWER AS DIRECTED BY ENGINEER.
  18. FINAL RESTORATION SHALL INCLUDE 6" TOPSOIL, FERTILIZER, AND MULCHED SEEDING PER DETAIL AND SHALL BE INCLUDED IN SLOPE RESTORATION PAY ITEM AND MEASURED BY SQUARE YARDS. FOR ALL DISTURBED AREAS, HYDRO METHOD OF APPLICATION IS REQUIRED.
  19. A RULE 5 NOI PERMIT WILL NOT BE REQUIRED BECAUSE THE TOTAL UNDISTURBED AREA IS LESS THAN ONE ACRE.
  20. A HAMILTON COUNTY DRAIN OFFICE PERMIT SHALL BE OBTAINED BY OWNER PRIOR TO CONSTRUCTION.

Sheet List Table	
Sheet Number	Sheet Title
1	Title Sheet
2	Index and General Notes
3	Plan and Profile
4	Erosion Control
5	Details

**EXISTING UTILITY LEGEND:**



**SYMBOLS & ABBREVIATIONS**



**CONTACT INFORMATION**

Citizens Energy Group Water  
2150 Dr. Martin Luther King, Jr. Street  
Indianapolis, IN 46202  
(317)327-4434  
Attn: Scott Ritter  
sritter@citizensenergygroup.com

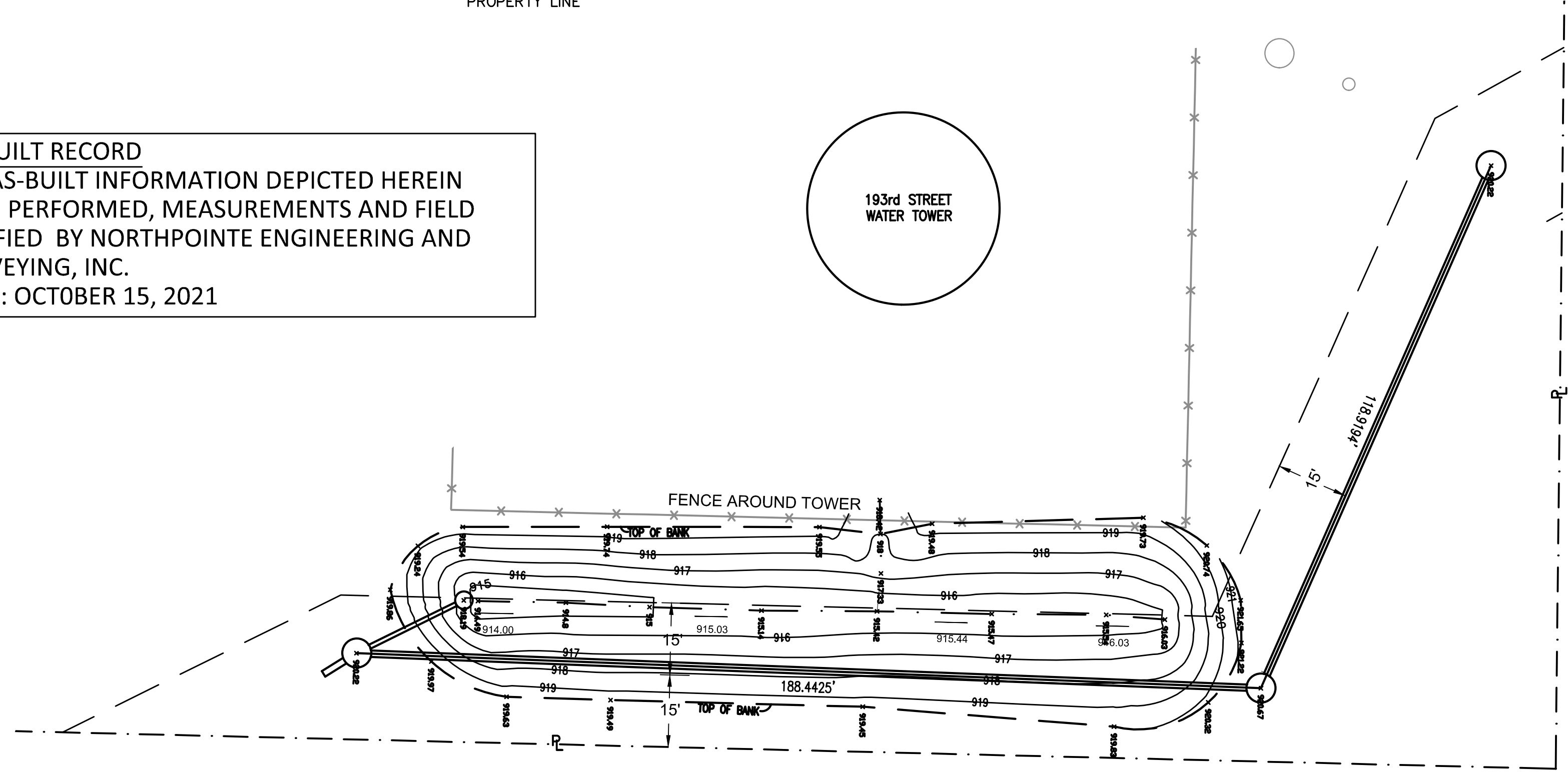
Citizens Energy Group Gas  
2150 Dr. Martin Luther King, Jr. Street  
Indianapolis, IN 46202  
(317)327-4684  
Attn: Rich Miller  
rmiller@citizensenergygroup.com

Citizens Energy Group Sanitary  
2150 Dr. Martin Luther King, Jr. Street  
Indianapolis, IN 46202  
(317)429-3993  
Attn: Dave Clark  
dclark@citizensenergygroup.com

Duke Energy  
2515 N. Morton Street  
Franklin, IN 46131  
(317)736-2047  
Attn: Gabe Gibson  
gabe.gibson@duke-energy.com



**AS-BUILT RECORD**  
ALL AS-BUILT INFORMATION DEPICTED HEREIN  
WAS PERFORMED, MEASUREMENTS AND FIELD  
VERIFIED BY NORTHPOINTE ENGINEERING AND  
SURVEYING, INC.  
DATE: OCTOBER 15, 2021



**DRAINAGE EASEMENT EXHIBIT**

NO.	DATE	REVISIONS	BY



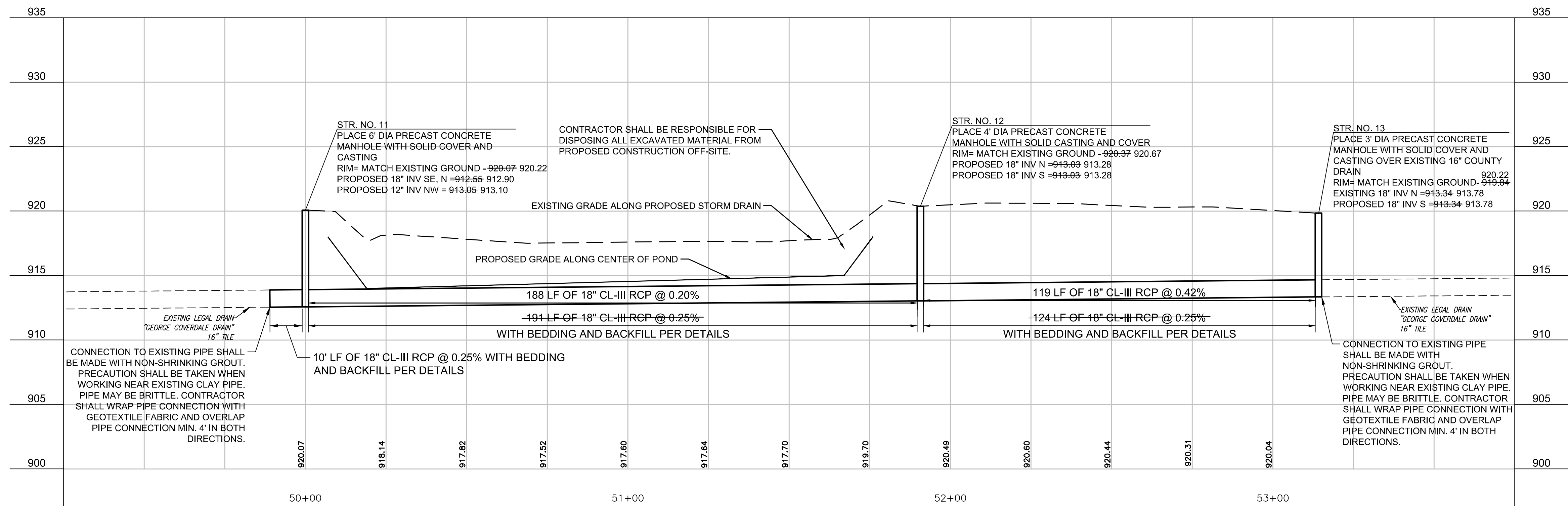
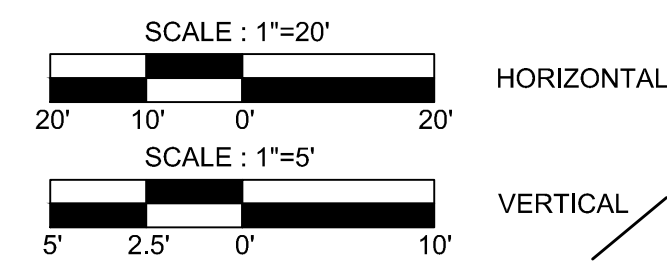
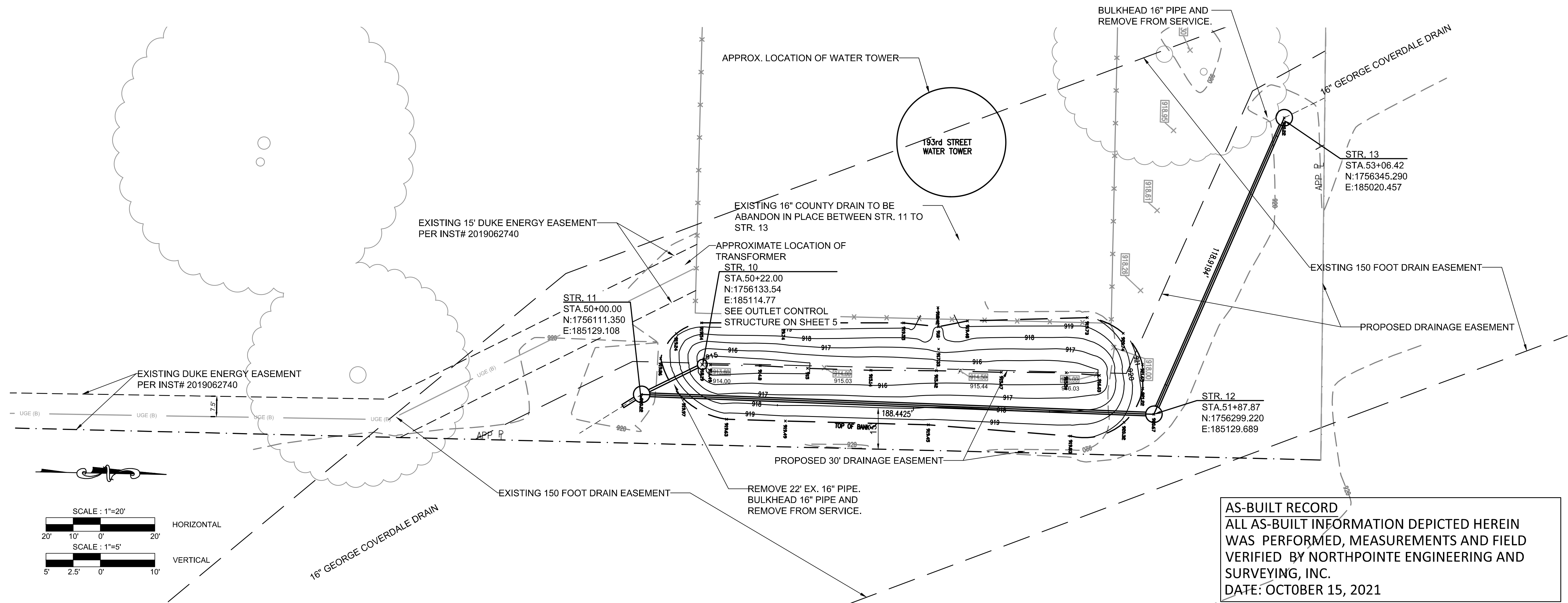
**citizens westfield**  
CITIZENS WATER  
2150 DR. MARTIN LUTHER KING, JR. STREET  
INDIANAPOLIS, IN 46202  
(317) 635-1501

<b>193rd STREET LEGAL DRAIN RELOCATION INDEX AND GENERAL NOTES AS-BUILTS</b>	Tax Code	---
	Meter MAP	---
	Pressure District	---
	Distribution Map	---
Project Manager	Martin Spees	
Drawn By	JAC	

Scale: AS SHOWN  
Project No.: 20-0140  
Date: 10/15/2021

SHEET NUMBER  
**2**  
2 of 5





TBM #1  
RAILROAD SPIKE IN NORTH SIDE OF POWER POLE #838-8349  
LOCATED 1.5'± ABOVE GRADE ON THE SOUTH SIDE OF 193RD STREET  
AND 400'± EAST OF CASEY ROAD  
ELEV=922.940



NO.	DATE	REVISIONS	BY

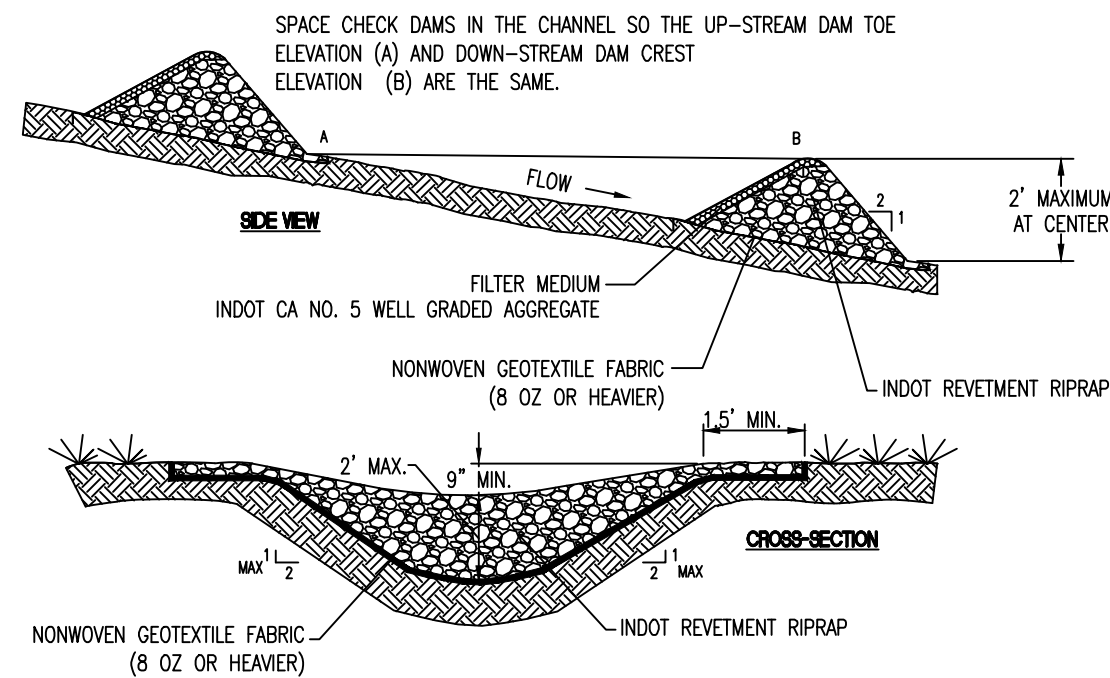


**citizens westfield**  
CITIZENS WATER  
2150 DR. MARTIN LUTHER KING, JR. STREET  
INDIANAPOLIS, IN 46202  
(317) 638-1501

**193rd STREET LEGAL DRAIN RELOCATION PLAN & PROFILE**

Pressure District	Meter MAP	Tax Code
Distribution Map	Project Manager	Martin Spees
Drawn By	JAC	

Scale: AS SHOWN  
Project No.: 20-0140  
Date: 10/15/2021  
SHEET NUMBER  
**3**  
3 of 5

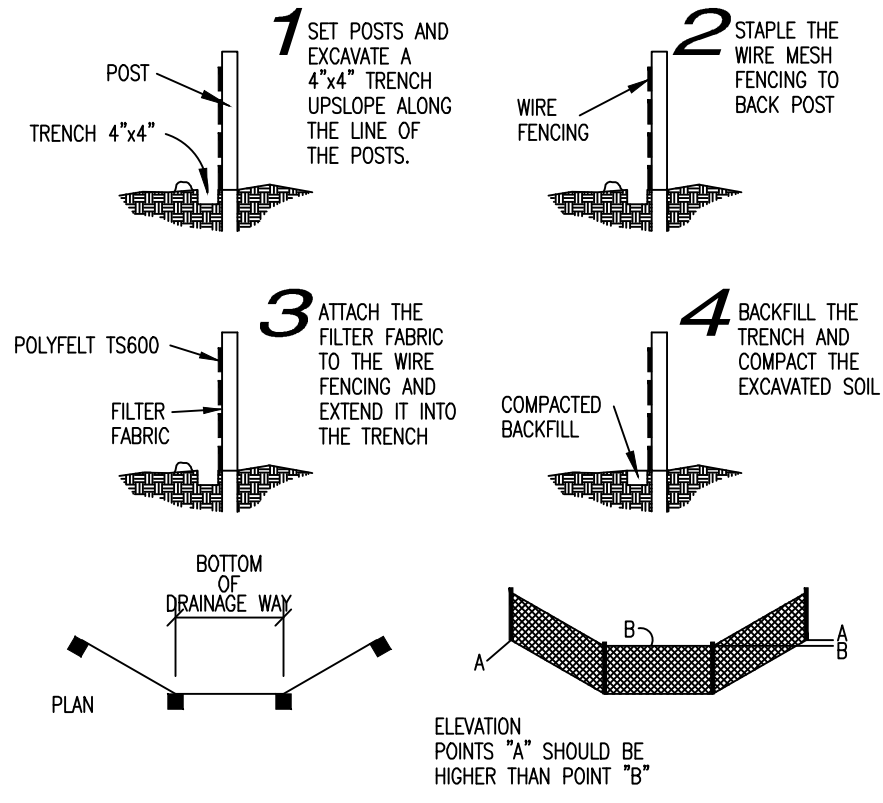


Note: INDOT CA No. 8 aggregate is acceptable if No. 5 aggregate is not available. The use of No. 8 aggregate may result in more frequent overtopping of the structure and will increase the frequency of structure maintenance.

- Installation:**
- Lay out the location of the check dam.
  - Excavate a cutoff trench into the channel bottom and ditch banks, extending it a minimum of 18 inches beyond the top of the ditch bank.
  - Install and anchor filter fabric in the channel and cutoff trench.
  - Place riprap in the cutoff trench and channel to the lines and dimensions shown in the construction plans. The center of each dam must be at least nine inches lower than the uppermost points of contact between the riprap dam and channel banks.
  - Extend the riprap at least 18 inches beyond the top of the channel banks to keep overflow water from eroding areas adjacent to the channel banks before it re-enters the channel.
  - Place filter medium (INDOT CA No. 5 aggregate) on the up-slope side of the dam. Place filter medium over the entire face of the dam up to the base of the overflow weir notch.
  - Stabilize the channel above the uppermost dam.
  - Install an erosion-resistant lining in the channel below the lowermost dam. The lining should extend a minimum distance of six feet below the dam.
  - Additional sediment storage can be provided by excavating a small sediment trap on the upstream side of the check dam.
- Maintenance:**
- Inspect within 24 hours of each rain event and at least once every seven calendar days.
  - If significant erosion occurs between dams, install an erosion-resistant liner in that portion of the channel.
  - Remove accumulated sediment when it reaches one-half the height of the dam to maintain channel capacity, allow drainage through the dam, and pre-vent large flow from displacing sediment.
  - Add riprap and aggregate as needed to maintain design height and cross section of the dams.
  - When dams are no longer needed, remove the riprap and aggregate and stabilize the channel, using an erosion-resistant lining if necessary. (Riprap and aggregate from the dam may be removed or utilized to stabilize the channel.)

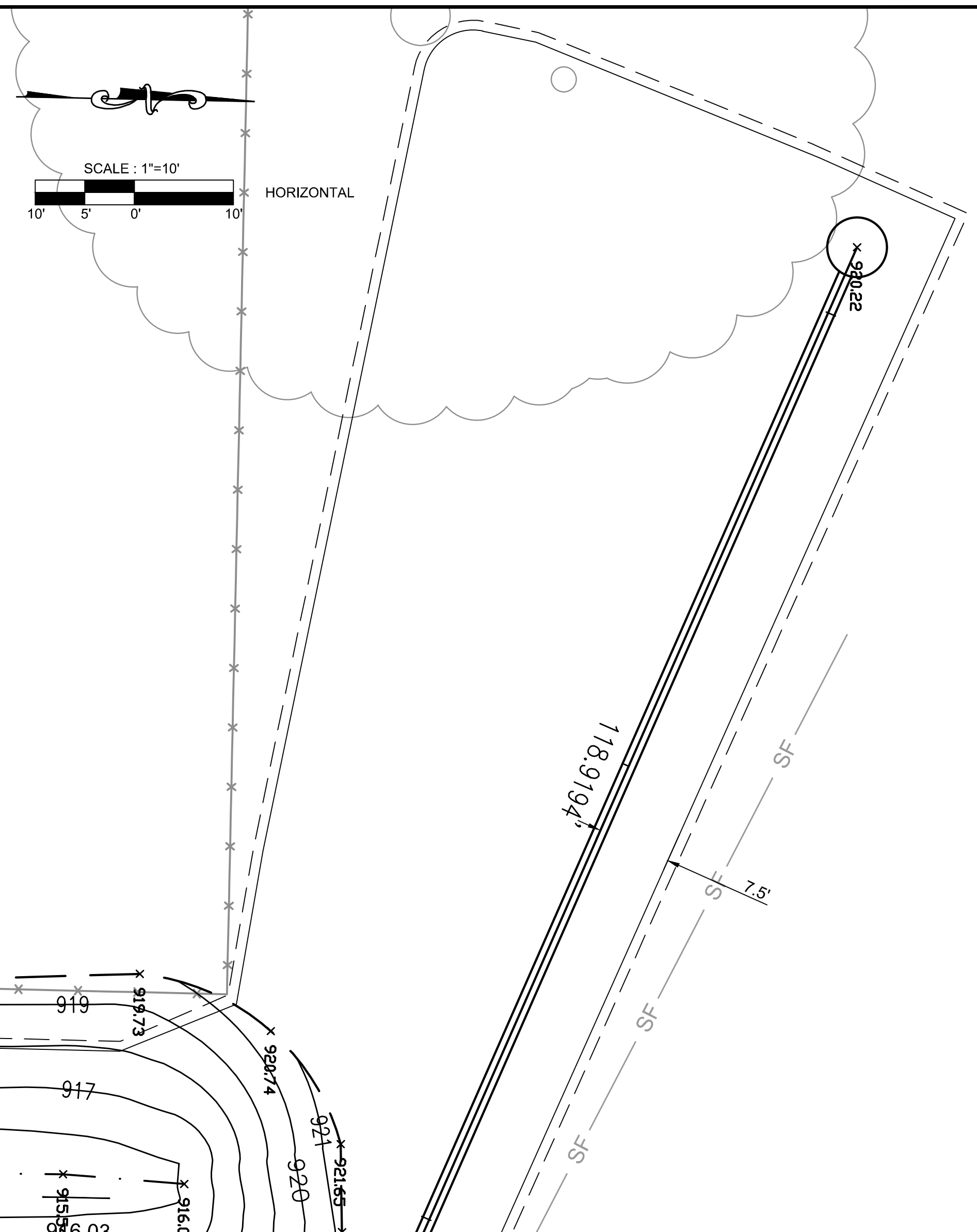
**SILT FENCE FABRIC SPECIFICATIONS**  
POLYFELT TS600 OR EQUIVALENT

PROPERTY	TEST PROCEDURE	UNIT	VALUE
GRAB TENSILE	ASTM D4632	POUNDS	165
GRAB ELONGATION	ASTM D4632	PERCENT	>50
PUNCTURE	ASTM D4833	POUNDS	90
TRAPEZOIDAL TEAR	ASTM D4533	POUNDS	75
MULLEN BURST	ASTM D3786	PSI	255
WATER FLOW RATE	ASTM D4491	gpm/ft <sup>2</sup>	170
PERMITTIVITY	ASTM D4491	SEC <sup>-1</sup>	2.0
PERMEABILITY, K	ASTM D4491	CM/SEC	0.4
A.O.S.	ASTM D4751	Sieve Size	100-60
FABRIC WEIGHT	ASTM D4751	MM	0.15-0.25
THICKNESS	ASTM D3776	oz/yd <sup>2</sup>	6.0
U.V. RESISTANCE (500 HOURS)	ASTM D1777	M	80
	ASTM D4355	PERCENT STRENGTH RETAINED	>80

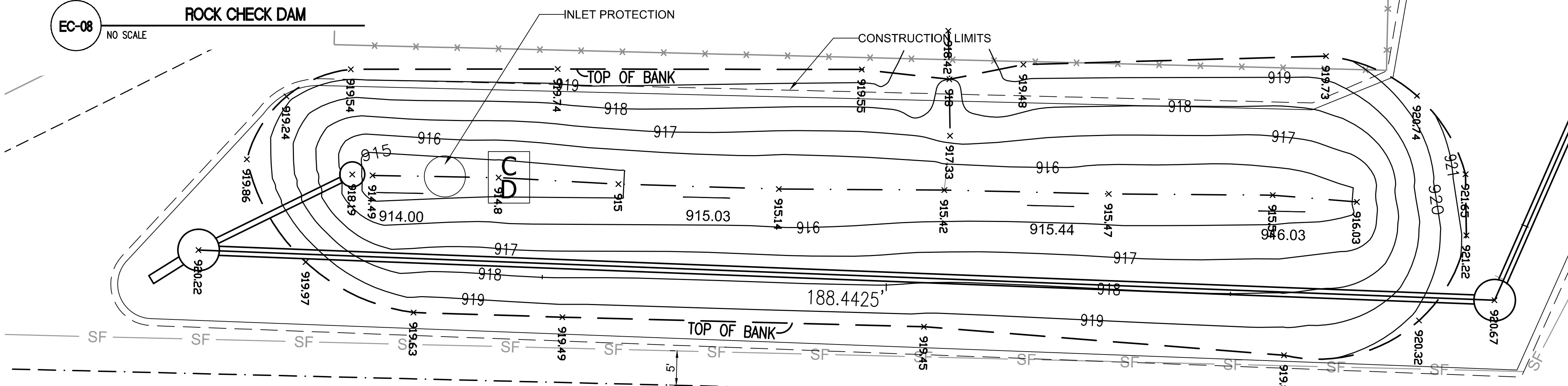


**SILT FENCE DETAIL**  
NO SCALE

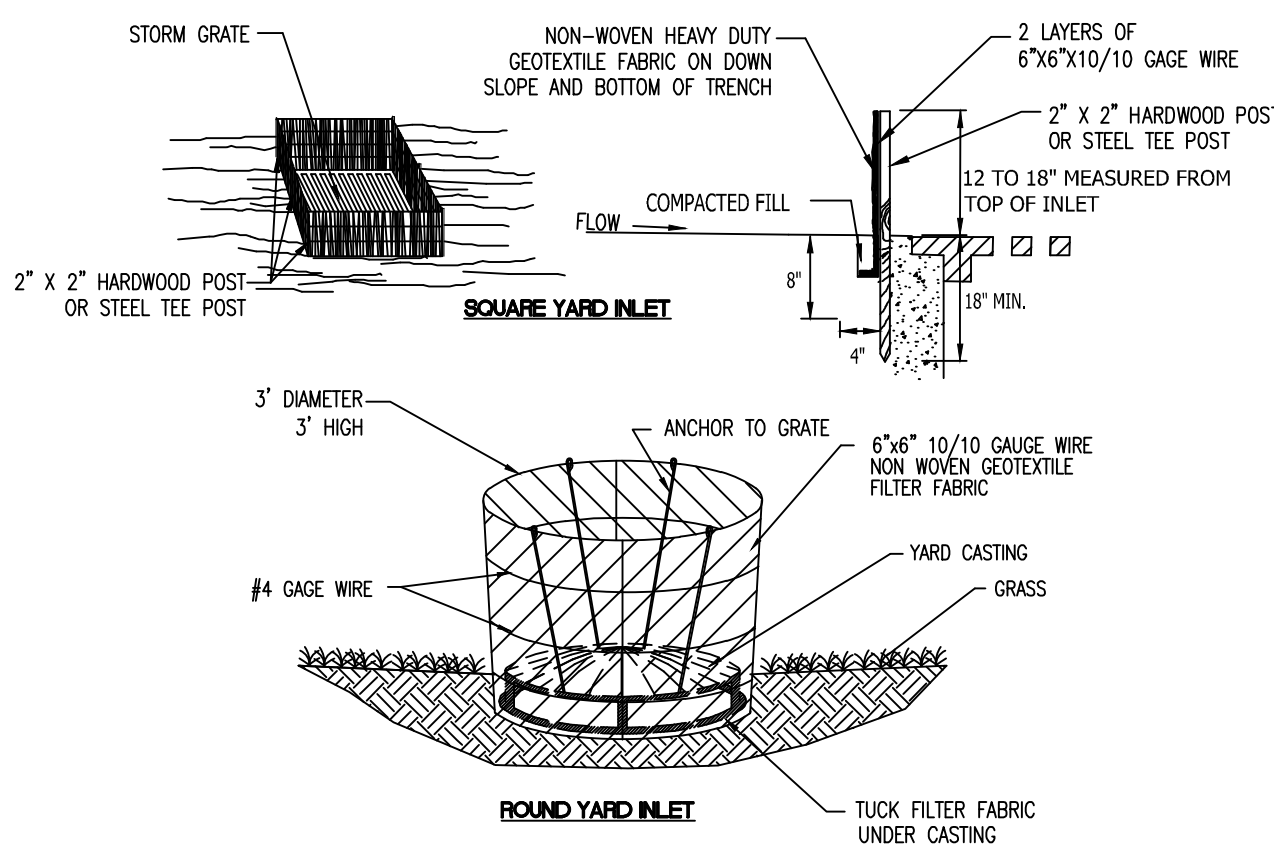
**NOTE:**  
CONTRACTOR SHALL LIMIT DISTURBED AREA. EXISTING DRIVE SHALL BE UTILIZED AND OVERLAND PATH CREATED NEAR SOUTH SIDE OF FENCE AROUND TOWER. ALL DISTURBED AREAS SHALL BE RESTORED WITH MEASURES SPECIFIED HEREIN. ANY ASPHALT SURFACE THAT IS DAMAGED BY CONTRACTOR ACTIVITY SHALL BE REPLACED AT CONTRACTORS EXPENSE.



**EC-08 ROCK CHECK DAM**  
NO SCALE



Slope Stabilization and Native Wildflower Seed Mixture		
Botanical Name	Common Name	Ounces/Acres
<b>Permanent Grasses:</b>		
<i>Andropogon gerardii</i>	Big Bluestem	48.00
<i>Calamagrostis canadensis</i>	Bluejoint Grass	1.00
<i>Carex lurida</i>	Bottlebrush Sedge	3.00
<i>Carex stricta</i>	Common Tussock Sedge	1.00
<i>Carex vulpinoidea</i>	Brown Fox Sedge	1.00
<i>Elymus canadensis</i>	Canada Wild Rye	32.00
<i>Elymus virginicus</i>	Virginia Wild Rye	24.00
<i>Panicum virgatum</i>	Switch Grass	12.00
<i>Schizachyrium scoparium</i>	Little Bluestem	32.00
<i>Sorghastrum nutans</i>	Indian Grass	32.00
	<b>Sub Total</b>	<b>186.00</b>
<b>Temporary Cover:</b>		
<i>Avena sativa</i>	Common Oat	512.00
<i>Loium multiflorum</i>	Annual Rye	240.00
	<b>Sub Total</b>	<b>752.00</b>
<b>Forbs:</b>		
<i>Asclepias syriaca</i>	Common Milkweed	2.00
<i>Baptisia alba</i>	White Wild Indigo	1.00
<i>Chamaecrista fasciculata</i>	Partridge Pea	10.00
<i>Coreopsis tripteris</i>	Tall Coreopsis	2.00
<i>Desmodium illinoense</i>	Illinois Ticktrefoil	0.50
<i>Doellingeria umbellata</i>	Flat Top Aster	0.50
<i>Echinacea purpurea</i>	Broad Leaved Purple Coneflower	4.00
<i>Eryngium yuccifolium</i>	Rattlesnake Master	2.00
<i>Helenium autumnale</i>	Sneezeweed	2.00
<i>Helianthus grosseserratus</i>	Sawtooth Sunflower	0.50
<i>Lespedeza capitata</i>	Round-Headed Bush Clover	1.50
<i>Monarda fistulosa</i>	Wild Bergamot	1.00
<i>Oligoneuron rigidum</i>	Stiff Goldenrod	1.00
<i>Physostegia virginiana</i>	Obedient Plant	0.25
<i>Pycnanthemum virginianum</i>	Common Mountain Mint	0.50
<i>Ratibida pinnata</i>	Yellow Coneflower	4.00
<i>Rudbeckia hirta</i>	Black-eyed Susan	4.00
<i>Rudbeckia laciniata</i>	Wild Golden Glow	1.00
<i>Senna hebecarpa</i>	Wild Senna	2.25
<i>Siphium integrifolium</i>	Rosin Weed	1.00
<i>Siphium laciniatum</i>	Compass Plant	2.00
<i>Siphium perfoliatum</i>	Cup Plant	2.00
<i>Siphium teresbinthaceum</i>	Prairie Dock	3.00
<i>Solidago juncea</i>	Early Goldenrod	0.25
<i>Solidago rugosa</i>	Rough Goldenrod	0.25
<i>Symphoricarpon novae-angliae</i>	New England aster	0.50
<i>Tradescantia virginiana</i>	Common Spiderwort	1.25
<i>Veronica fasciculata</i>	Common Ironweed	3.00
<i>Veronicastrum virginicum</i>	Culver's Root	0.25
<i>Zizia aurea</i>	Golden Alexanders	1.00
	<b>Sub Total</b>	<b>54.50</b>
	<b>Grand Total</b>	<b>62 lbs/ac</b>



- Installation:**
- Dig an eight-inch deep, four-inch wide trench around the perimeter of the inlet.
  - If using pre-assembled geotextile fabric and posts, drive the posts into the soil, tightly stretching the geotextile fabric between posts as each is driven. (Posts must be placed on the inlet side of the anchor trench with the geotextile fabric on the side of the trench farthest from the inlet.)
- Note: If assembling the geotextile fabric and posts on-site, drive the posts into the soil and then secure the geotextile fabric to the posts by placing a piece of lathe over the fabric and fastening it to the post (stretching the fabric between posts as it is fastened).
- Use the wrap joint method when joining posts.
  - Place the bottom 12 inches of geotextile fabric into the eight-inch deep trench, laying the remaining four inches in the bottom of the trench and extending away from the inlet.
  - Backfill the trench with soil material and compact it in place.
  - Brace the posts by nailing braces into each corner post or utilize rigid panels to support fabric.
- Maintenance:**
- Inspect daily.
  - Inspect geotextile fabric and make needed repairs immediately.
  - Remove sediment from pool area to provide storage for the next storm event. Avoid damaging or undercutting fabric during sediment removal.
  - When contributing drainage area has been stabilized, remove sediment, properly dispose of all construction material, grade area to the elevation of the storm drain inlet top, then stabilize immediately.

**EC-04 GEOTEXTILE FABRIC YARD DROP INLET PROTECTION**  
NO SCALE

- LEGEND**
- MULCH BLANKET WITH 6" TOPSOIL, SEED, FERTILIZER = 10,153 SFT APPLIED WITH HYDRO METHOD
  - SF SILT FENCE = 315 LFT
  - CD ROCK CHECK DAM = 1EA
  - INLET PROTECTION = 1EA

**193rd STREET LEGAL DRAIN RELOCATION EROSION CONTROL**

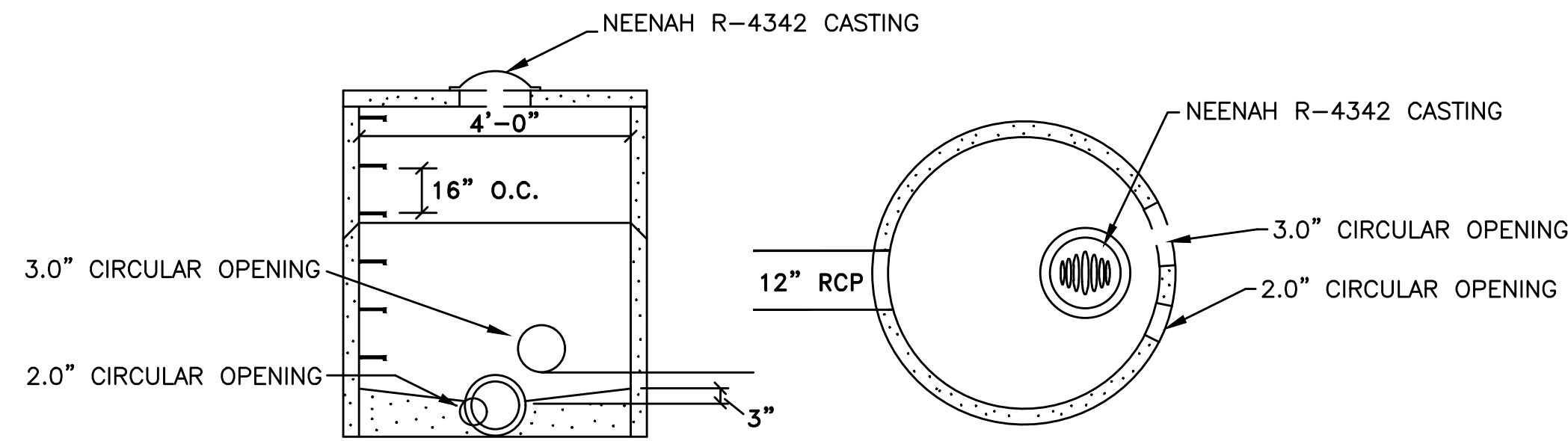
**Scale:** AS SHOWN  
**Project No.:** 20-0140  
**Date:** 10/15/2021  
**SHEET NUMBER:** 4 of 5

**BY:** [Blank]  
**DATE:** [Blank]  
**REVISIONS:** [Blank]

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

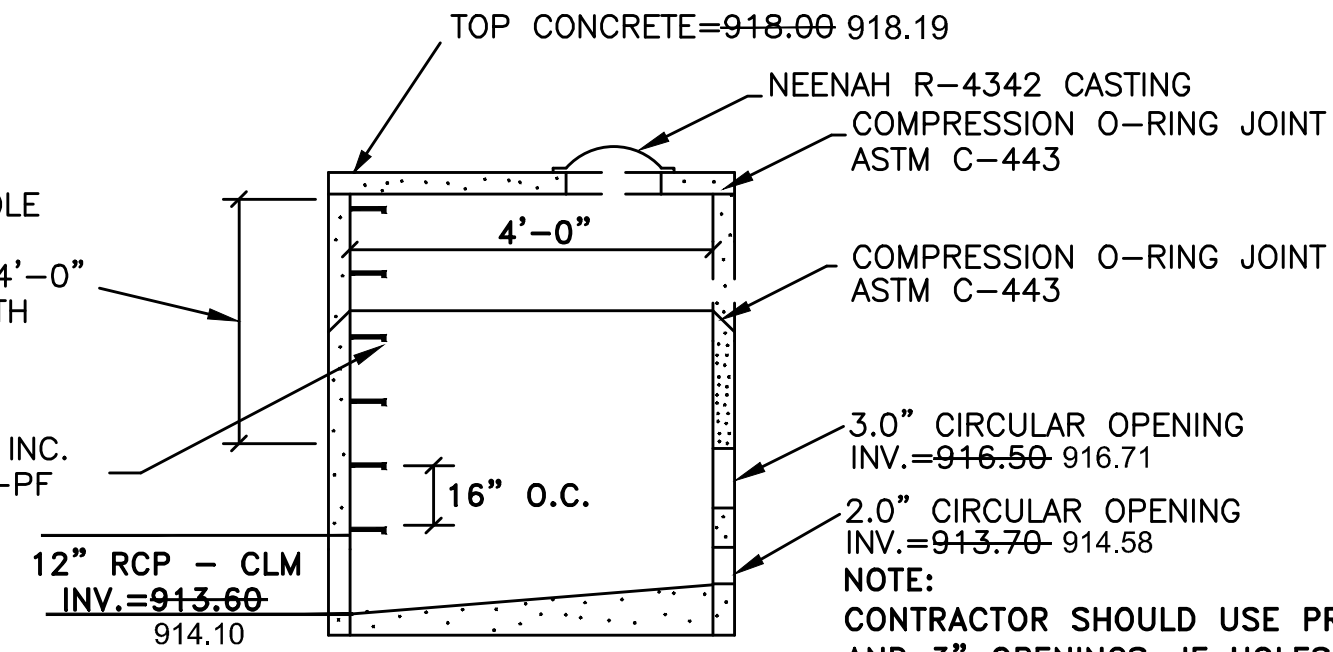
**citizens westfield**  
CITIZENS WATER  
2150 DR. MARTIN LUTHER KING JR. STREET  
INDIANAPOLIS, IN 46202  
(317) 635-1501

**Martin Speers**  
Project Manager  
**JAC**  
Drawn By



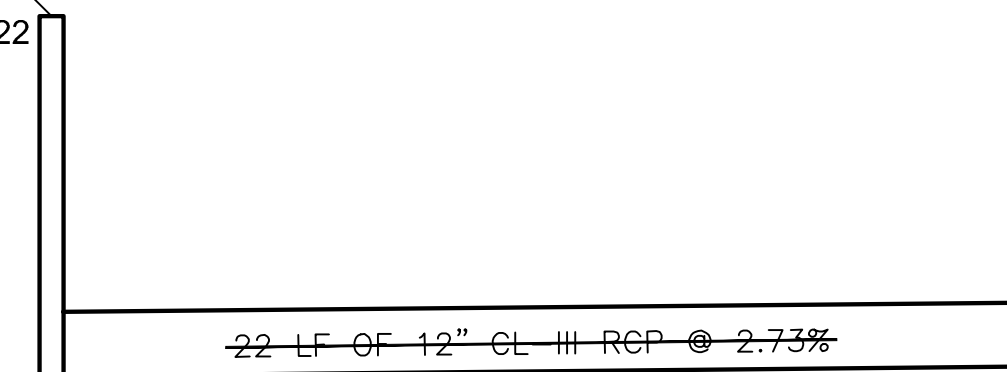
REINFORCED PRE-CAST MANHOLE SECTIONS AVAILABLE IN 1'-0", 1'-4", 2'-0", 2'-8", 3'-0" AND 4'-0" LENGTHS TO MEET REQ'D DEPTH ASTM C-478

M.A. INDUSTRIES INC. MODEL NO. PS1-PF OR EQUAL



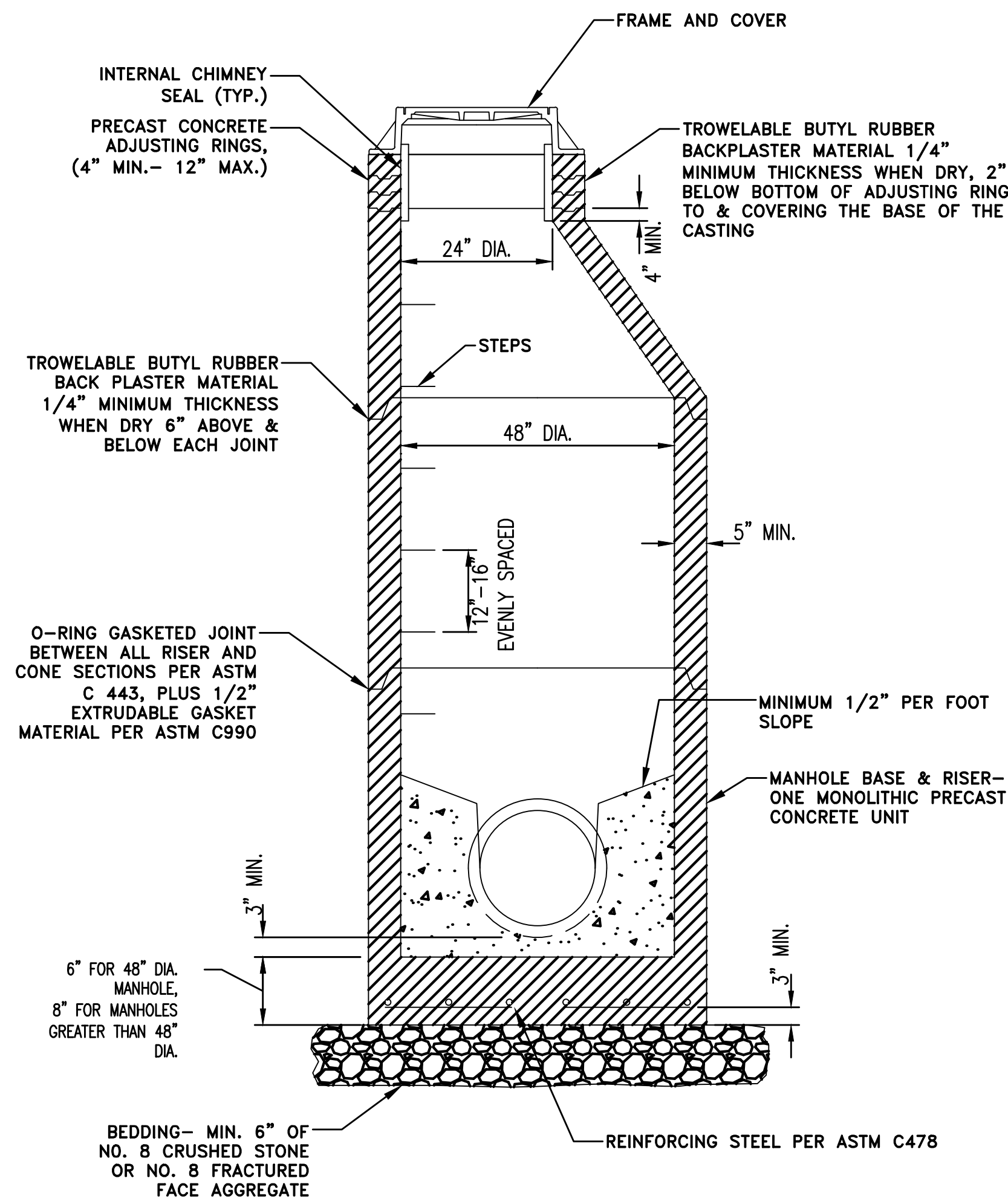
OUTLET CONTROL STRUCTURE

STR. NO. 11  
PLACE 6' DIA PRECAST CONCRETE MANHOLE WITH SOLID COVER AND CASTING  
RIM= MATCH EXISTING GROUND - 920.07 920.22  
PROPOSED 18" INV SE, N = 912.55 915.44  
PROPOSED 12" INV NW = 913.65 913.10

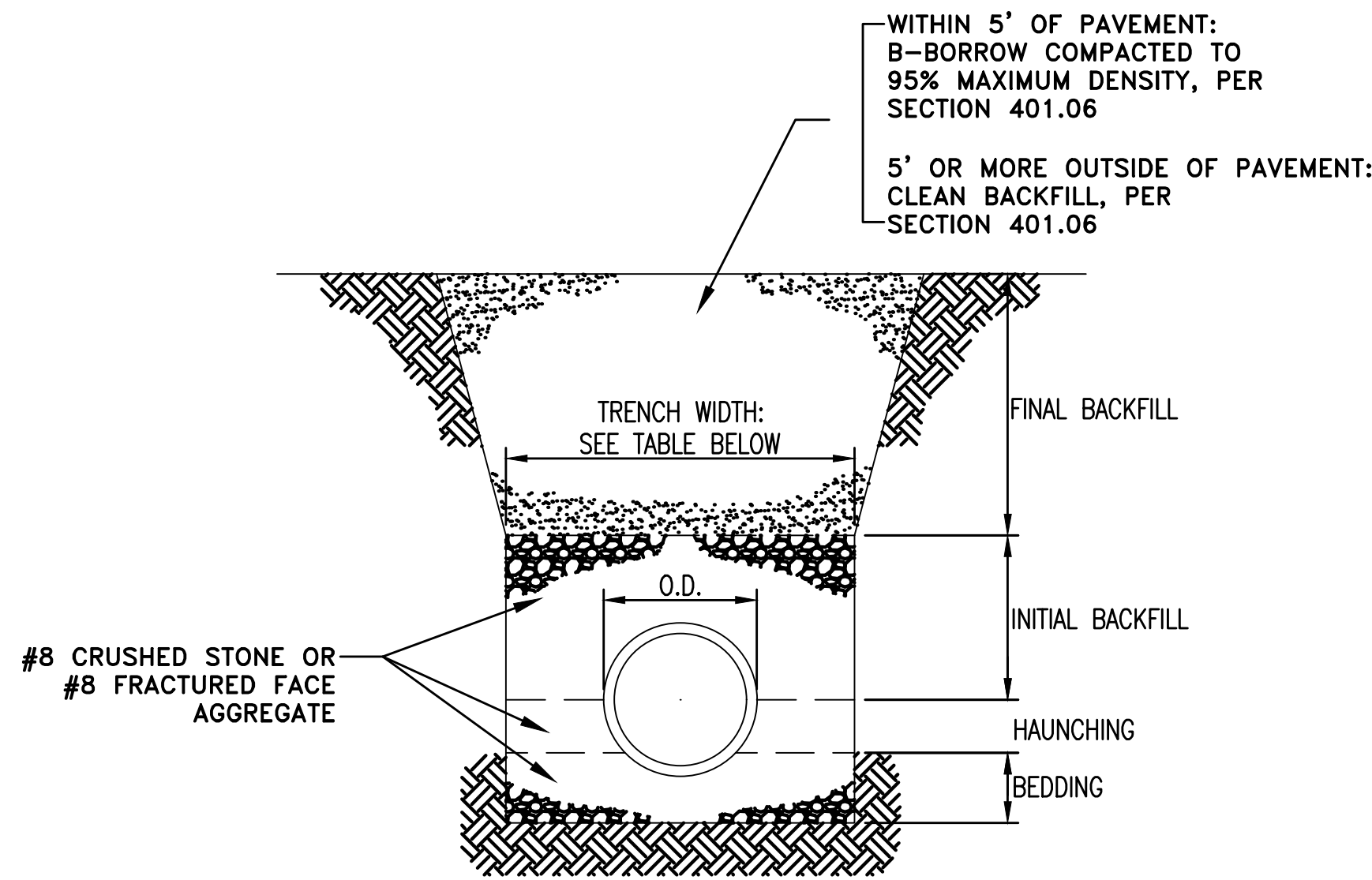


PROFILE STR. NO. 11 - STR. NO. 10

STR. NO. 10  
SEE OUTLET CONTROL STRUCTURE DETAIL  
PLACE 4' DIA PRECAST CONCRETE MANHOLE WITH GRATE COVER AND CASTING  
RIM = 918.00 918.19  
PROPOSED 12" INV NW = 913.65 914.10  
PROPOSED 3" INV = 916.50 916.71  
PROPOSED 2" INV = 913.70 914.58



STANDARD MANHOLE FOR PIPE SIZES 8"-24" (STRAIGHT THROUGH)

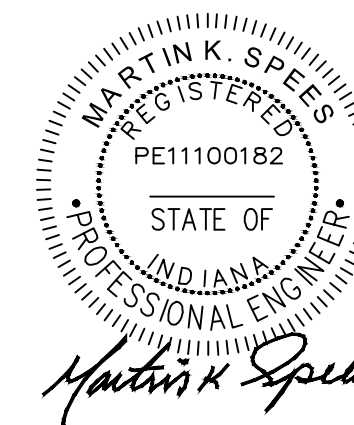


MINIMUM BEDDING, HAUNCHING, AND INITIAL BACKFILL DEPTHS		
PIPE SIZE	BEDDING (BELOW PIPE BARREL)	HAUNCHING AND INITIAL BACKFILL (ABOVE TOP OF PIPE)
UNDER 8"	4" MIN.	4" MIN.
8" TO 15"	4" MIN.	12" MIN.
18" & OVER	8" MIN.	12" MIN.

MINIMUM TRENCH WIDTHS	
PIPE SIZE	MINIMUM WIDTH
UP TO 18"	O.D. + 16"
18" & OVER	(O.D. x 1.25) + 12"

FLEXIBLE PIPE BEDDING & BACKFILL REQUIREMENTS

AS-BUILT RECORD  
ALL AS-BUILT INFORMATION DEPICTED HEREIN WAS PERFORMED, MEASUREMENTS AND FIELD VERIFIED BY NORTHPOINTE ENGINEERING AND SURVEYING, INC.  
DATE: OCTOBER 15, 2021



NO.	DATE	REVISIONS	BY



**citizens westfield**  
CITIZENS WATER  
2150 DR. MARTIN LUTHER KING, JR. STREET  
INDIANAPOLIS, IN 46202  
(317) 635-1501

193rd STREET LEGAL DRAIN RELOCATION DETAILS		Tax Code	
Pressure District	Meter MAP	Project Manager	
Distribution Map			Martin Spees
Drawn By	JAC		

Scale: AS SHOWN  
Project No.: 20-0140  
Date: 10/15/2021  
SHEET NUMBER  
**5**  
5 of 5