



Date March 21, 2022

RECEIVE AND FILE COMMUNICATION FROM THE PLAN AND ZONING COMMISSION REGARDING PRELIMINARY PLAT "FILLMAN SUBDIVISION PRELIMINARY PLAT" ON PROPERTY LOCATED IN THE VICINITY OF 1415 EAST 38TH STREET

WHEREAS, on March 3, 2022, the City of Des Moines Plan and Zoning Commission voted 12-1 to APPROVE a request from Capital City Real Estate, Inc. (owner), represented by Bruce Fillman (officer), for Preliminary Plat "Fillman Subdivision Preliminary Plat" on property located in the vicinity of 1415 East 38th Street, to allow subdivision and development of approximately 1.74 acres with 6 one-household residential lots accessible by a cul-de-sac from East 38th Street, subject to (1) compliance with all administrative review comments, and (2) provision of an access easement for road access and the emergency vehicle turnaround to the satisfaction of the City Engineering Department.

WHEREAS, the final subdivision plat will be submitted for City Council approval when completed.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Des Moines, Iowa, that the attached communication from the City Plan and Zoning Commission is hereby received and filed.

MOVED BY \_\_\_\_\_ to receive and file.

FORM APPROVED:

/s/ Glenna K. Frank
Glenna K. Frank
Assistant City Attorney

(PLAT-2022-000008)

Table with 5 columns: COUNCIL ACTION, YEAS, NAYS, PASS, ABSENT. Rows include COWNIE, BOESEN, GATTO, SHEUMAKER, MANDELBAUM, VOSS, WESTERGAARD, and TOTAL.

MOTION CARRIED APPROVED

\_\_\_\_\_  
Mayor

CERTIFICATE

I, P. KAY CMELIK, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

\_\_\_\_\_  
City Clerk

March 15, 2022

Communication from the City Plan and Zoning Commission advising that at their March 3, 2022 meeting, the following action was taken regarding a request from Capital City Real Estate, Inc. (owner) represented by Bruce Fillman (officer) for review and approval of the Preliminary Plat "Fillman Subdivision Preliminary Plat" on 1.74 acres of property in the vicinity of 1415 East 38<sup>th</sup> Street for development of 6 one household residential lots.

**COMMISSION RECOMMENDATION:**

After public hearing, the members voted 12-1 as follows:

Commission Action:	Yes	Nays	Pass	Absent
Francis Boggus		X		
Leah Rudolphi	X			
Dory Briles	X			
Abby Chungath	X			
Kayla Berkson	X			
Chris Draper	X			
Jann Freed	X			
Todd Garner	X			
Johnny Alcivar	X			
Lisa Howard				X
Carolyn Jenison	X			
William Page	X			
Andrew Lorentzen	X			
Emily Webb	X			

**APPROVAL** of the proposed Preliminary Plat, subject to the following conditions:

- 1) Compliance with all administrative review comments.
- 2) Provision of an access easement for road access and the emergency vehicle turnaround to the satisfaction of engineering staff. (PLAT-2022-000008)

**STAFF RECOMMENDATION TO THE P&Z COMMISSION**

Staff recommends approval of the proposed Preliminary Plat, subject to the following conditions:

- 1) Compliance with all administrative review comments.
- 2) Provision of an access easement for road access and the emergency vehicle turnaround to the satisfaction of engineering staff.

## STAFF REPORT TO THE PLANNING COMMISSION

### I. GENERAL INFORMATION

1. **Purpose of Request:** The applicant is proposing to subdivide the subject property to create 6 single-family lots that would be accessed by a cul-de-sac from East 38<sup>th</sup> Street.
2. **Size of Site:** The preliminary plat area is 1.74 acres.
3. **Existing Zoning (site):** “N3a” Neighborhood District.
4. **Existing Land Use (site):** The existing site is vacant land.
5. **Adjacent Land Use and Zoning:**
  - North** – “N3a”, Use is one-household dwellings.
  - South** – “N3a”, Uses are one-household dwellings and vacant land.
  - East** – “N3a”, Uses are one-household dwellings and vacant land.
  - West** – “N3b”, Use is vacant land.
6. **General Neighborhood/Area Land Uses:** The area consists of a mix of one-household dwellings and vacant land. A significant portion is heavily wooded parcels.
7. **Applicable Recognized Neighborhood(s):** The subject property is located within the Grays Woods Neighborhood. The neighborhood association was notified of the Commission meeting by mailing of the Preliminary Agenda on February 11, 2022, and mailing of the Final Agenda on February 25, 2022. Notifications of the hearing for this specific item were mailed on February 21, 2022 (10 days prior to the public hearing) to the neighborhood association and to the primary titleholder on file with the Polk County Assessor for each property within 250 feet of the site.

All agendas and notices are mailed to the primary contact(s) designated by the recognized neighborhood association to the City of Des Moines Neighborhood Development Division. The Grays Woods Neighborhood notices were mailed to Karen Shoopman at 3804 Indianapolis Avenue, Des Moines, IA 50317.
8. **Relevant Zoning History:** On December 2, 2021, the Commission denied a Preliminary Plat “Fillman Preliminary Plat” (13-2021-1.82) that would have allowed development of seven (7) one-household residential lots along a new cul-de-sac from East 38<sup>th</sup> Street. The applicant has since submitted a revised Preliminary Plat that would provide six (6) one-household residential lots along a new cul-de-sac from East 38<sup>th</sup> Street.

**9. PlanDSM Future Land Use Plan Designation: Low Density Residential.**

**10. Applicable Regulations:** Taking into consideration the criteria set forth in Chapter 18B of the Iowa Code, the Commission shall determine if such Preliminary Plat conforms to the standards and requirements outlined in Chapter 354 of the Iowa Code, and the City Subdivision Ordinance and shall approve, conditionally approve or reject such Plat within 45 days after the date of submission to the City Permit and Development Center. Unless the applicant agrees in writing to an extension of time, the Preliminary Plat shall be deemed approved if the Commission does not act within such 45-day period. The Commission's action for approval or conditional approval shall be null and void unless the Final Plat is submitted to the City Permit and Development Center within 270 days after the date of such action; provided, however, that the Permit and Development Administrator may grant, upon written request of the applicant, up to a 90-day extension for submittal of the Final Plat to the City Permit and Development Center.

**II. ADDITIONAL APPLICABLE INFORMATION**

- 1. Natural Features:** Portions of the subject properties are heavily wooded. The previous iteration of the proposed Preliminary Plat needed to add street trees along the private road. On this iteration, additional trees are shown to be provided along the private road at one street tree per 30 linear feet.
- 2. Drainage:** The proposed Preliminary Plat demonstrates a retaining wall on the northeastern corner of the property for drainage. The previous iteration of the proposed Preliminary Plat had a private road that extended to the eastern edge of the lots. This iteration has shortened the private road to reduce impervious surface at the site. Engineering staff have indicated that design detail information needs to be provided for the basin release mechanism and that the applicant might consider using rip-rap at the outlet to ease any erosion concerns. Staff recommends approval subject to compliance with the City's storm water management requirements to the satisfaction of the City Engineer.
- 3. Utilities:** There are sanitary sewer and water mains on Indianapolis Avenue that will be extended down East 38<sup>th</sup> Street to serve the development. Sanitary sewer and water are shown to extend along the proposed private street.
- 4. Traffic/Street System:** The Preliminary Plat proposes an added private street off of East 38<sup>th</sup> Street. The proposed Preliminary Plat configures the frontage of the lots to the proposed private street. In the previous iteration of the proposed Preliminary Plat, an outlot was needed for the private road and sidewalk. In this iteration, an outlot designation is provided for the private road and sidewalk.

**SUMMARY OF DISCUSSION**

Jillian Sommer presented the staff report and recommendation.

Wally Pelds, Pelds Design Services, 2323 Dickson Street stated after hearing the neighbors' concerns about stormwater, he sat down with his client and came up with a new plan. They have shortened the street to provide less impervious are, these are all Type B homes that are required by zoning code and they have answered every question

around stormwater issues. Some of the new property owners will have the detention basin in their yard and that will be established by an easement.

Andrew Lorentzen asked if the retaining wall is part of the detention basin.

Wally Pelds stated yes, it is. That creates available volume that will slow the water down so the site will be able to hold it. This should mitigate the concerns of the neighbors to the east. Any rain above two inches gets held in the pond, slowed down and released at a much lower rate.

### **CHAIRPERSON OPENED THE PUBLIC HEARING**

Sara Mau, 1416 East 40<sup>th</sup> Street stated as much as she appreciates the effort from the applicant, she relies heavily on the tree coverage of the entire block to help control storm water that flows into her property. The design does have a smaller street than the previous plan and can assume there's going to be two cars at each house. These owners will have visitors, who will be parking on these street and in an emergency situation, emergency vehicles will not be able to access the street safely. Additionally, she has begun restoration of native trees, the new trees the applicant is proposing to help assist with water drainage are nonnative species, they're very slow growing and will take some time to make an impact.

Chris Draper asked how density of the proposed development compares to the density nearby at Indianapolis and 38<sup>th</sup> Street.

Sara Mau stated it's going to be a lot tighter being only 1.7 acres.

Chris Draper asked what the cost of negative impact would be.

Sara Mau stated an immediate high volume of water that backs up into the septic system and comes into her house would be an immediate threat. She doesn't know what the financial aspect would be but based on the Iowa nuisance law, an unreasonable circumstance, such as causing negative harm on an already established individual would come at the cost of the person who caused negative harm.

Chris Draper asked what density level she feels is appropriate.

Sara Mau stated 2, 1 house per lot.

Scottie Baer, 1416 East 40<sup>th</sup> Street stated when they purchased their property, they were told they would be able to purchase this land so they could conserve it and bring environmental aspects to the community. When this project got rejected the first time, it was due to drainage issue, high density and cutting of trees, he believes they haven't done anything to solve those issues. They went from 7 single family lots to 6 single household lots, which leaves plenty of room for duplexes and townhomes to be built. With this development, they're losing a lot of soil absorption, which will add to the speed of water coming down towards the lower basin right by the preexisting building on his property. In some areas to the west, the proposed grade is 7%, which will increase storm runoff significantly and dispose of it into his backyard. Scottie ended by reading highlighted sections of the SUDAS code.

Chris Draper asked if they offered fair market value for the property.

Scottie Baer stated yes, they did and then were given a number that was five-times more than what they paid for it.

Dean Hackett, 3910 Dubuque Avenue presented photos showing the impact this development would have on storm water and wildlife in the area.

Ryan Guile, 3419 East 35<sup>th</sup> Street stated he is on a sewer crew and does this every day for a living. This will be a major impact to the community when they completely wipe the land of all trees and soil that helps absorbs storm water.

Paul Berenson, 3040 Indianapolis Avenue stated this project isn't good for the neighborhood due to the impact on the existing environment, wildlife, and stormwater issues.

Karen Shopman, 3804 Indianapolis Avenue stated the character of the Grays Woods Neighborhood is large, wooded lots with single-family homes, except for the duplexes build by the city. This section of East 38 Street has a thin layer of asphalt that is falling apart. The proposed development will run downhill from East 38th Street towards an area where there are no sanitary or storm sewers. In 1999 City Council and Polk County Board of Supervisors approved an action plan that calls for low density residential homes on larger lots that are compatible with and sensitive to the surrounding neighborhood.

Skip Moore, 3822 East 28<sup>th</sup> Street stated while he was on City Council, he helped six different neighborhoods with issues they had with the City of Des Moines, this neighborhood and these issues was one of them. After the City Council approved their action plan, it became designated for low density residential. He pushed for resurfaced streets and storm sewer in this area during his time on council and city staff was opposed to it.

Chris Draper asked why rental properties were a problem.

Skip Moore stated their action plan calls for single-family homes. Duplexes built at East 27th and Douglas raised a big concern and now duplexes cannot be built without neighborhood approval.

Chris Draper asked if there were proven hydrology issues.

Skip Moore stated upstream from this development is a big watershed that comes to one location. He has gone by there during hard rain and water is running across East 38 Street.

Johnny Alcivar asked why he is opposed to this development as it will be low density residential.

Skip Moore stated he is opposed because there's no sewer lines, water lines or gas lines in the area. This neighborhood isn't prepared for these developments, the city needs to go in and fulfill their end of the action plan.

Zifa Hackett, 3910 Dubuque Avenue stated this is not the appropriate density for the area.

Jason Van Essen stated the zoning for this area requires single-family housing and that is what is proposed. The proposed density complies with the Low Density Residential designation.

Wally Pelds stated his clients is willing to put in the restrictive covenants that states this be single-family only. The existing grade right now is 15% so water does move down the hill but the neighborhood will see a significant improvement to the existing water runoff. They will also be extending sewer, water, gas and electric to these lots in part of their utility improvements plan.

Johnny Alcivar asked why a neighborhood meeting wasn't held.

Jason Van Essen stated neighborhood meetings are only require for a rezoning.

Leah Rudolphi asked if he would be willing to continue in order to meet with the neighborhood association.

Wally Pelds stated no. They need to keep pushing this project forward but he would be willing to sit down with the neighborhood and try to mitigate their issues.

Chris Draper asked if there are any indications they aren't complying with the neighborhood action plan.

Wally Pelds stated it talks about low density residential, they are complying with that.

Chris Draper asked if the commission doesn't approve this plan, that means a delay in all utilities being brought to the area from this project.

Wally Pelds stated correct, they are putting in 250 lineal feet of sewer and extending the watermain up East 38<sup>th</sup> Street for fire service.

### **CHAIRPERSON CLOSED THE PUBLIC HEARING**

Andrew Lorentzen stated the applicant is conforming with city code and has done their due diligence. As a side note, he's surprised the pro forma for this development supports that level of investment but that's not what the commission is charged with so he would be in support.

Johnny Alcivar stated he would be in support as the developer has shown their willingness to compromise by decreasing to 6 homes, providing a 40-foot buffer and detention pond.

**COMMISSION ACTION:**

Chris Draper made a motion for approval of the proposed Preliminary Plat, subject to the following conditions:

- 1) Compliance with all administrative review comments.
- 2) Provision of an access easement for road access and the emergency vehicle turnaround to the satisfaction of engineering staff.

Motion passed: 12-1

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Jason Van Essen".

Jason Van Essen, AICP  
Planning & Urban Design Administrator

JMV:tjh



Updated on: 2/14/2022

Dubuque Ave

Dubuque Ave

Dubuque Ave

Dubuque Ave

Dubuque Ave

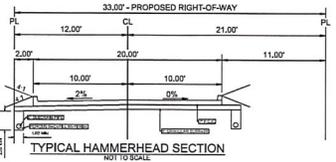
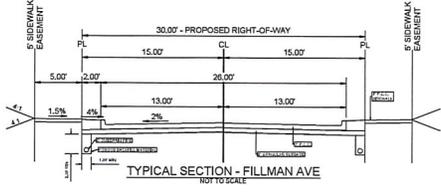
City of Des Moines, Information Technology

1 inch = 108 feet

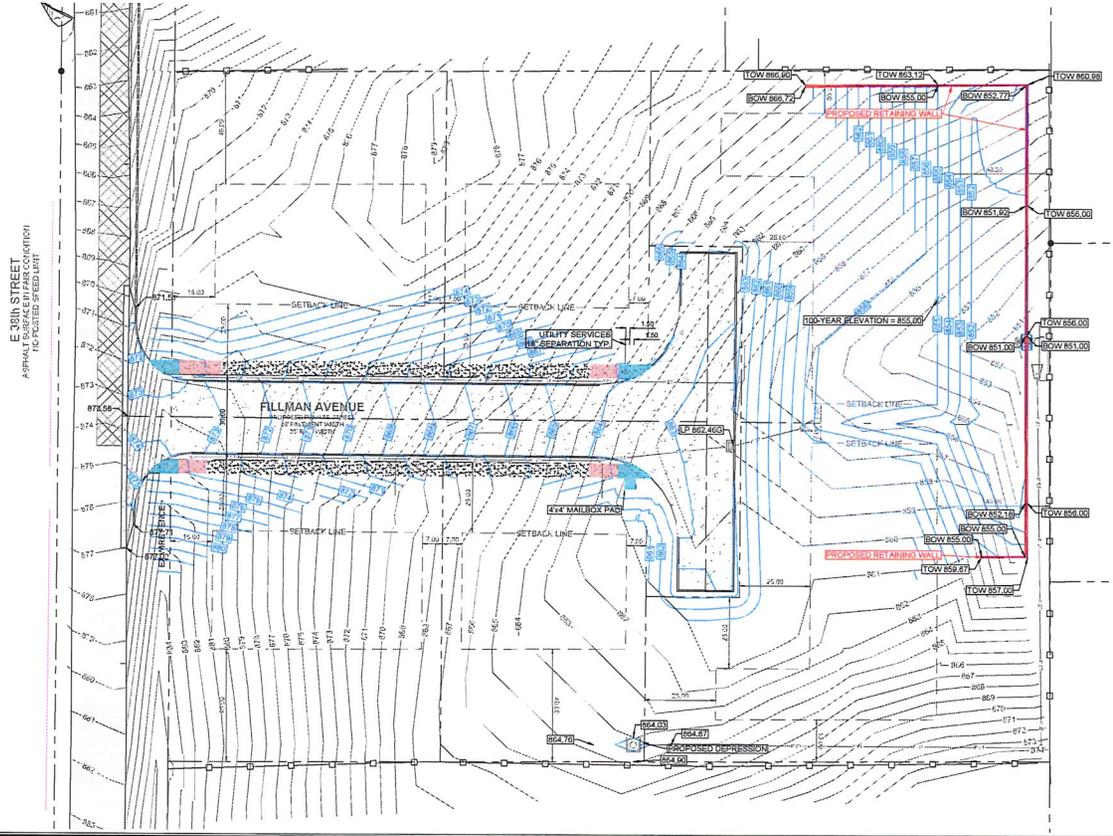
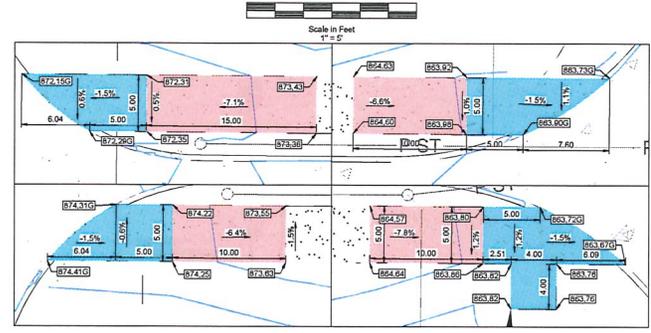




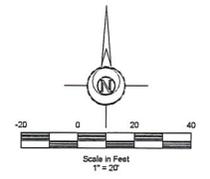




### SIDEWALK RAMP DETAILS



- EXISTING PAVEMENT
- PROPOSED P.C.C. 8,401+/- SF
- PROPOSED SIDEWALK 654+/- SF
- PROPOSED FULL-DEPTH PAVEMENT REPLACEMENT 2,743+/- SF
- SIDEWALK RAMP
- LANDING SPACE



- LEGEND:**
- SF SQUARE FEET
  - +/- MORE OR LESS
  - FL FLOWLINE ELEVATION
  - O CALCULATED CORNER
  - FOUND CORNER
  - T SIGN
  - SL STREET LIGHT
  - PP POWER POLE
  - SANITARY SEWER MANHOLE
  - ⊙ STORM SEWER MANHOLE
  - SINGLE INTAKE
  - ▭ FLARED END SECTION
  - ⊕ FIRE HYDRANT
  - OVERHEAD ELEC.
  - OVERHEAD TEL.
  - SAN — SANITARY SEWER
  - ST — STORM SEWER
  - FENCE LINE

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 2323 Dixon Street, Des Moines, Iowa 50316 | PO Box 4626, Des Moines, Iowa 50306 | Ph: 515.265.8196

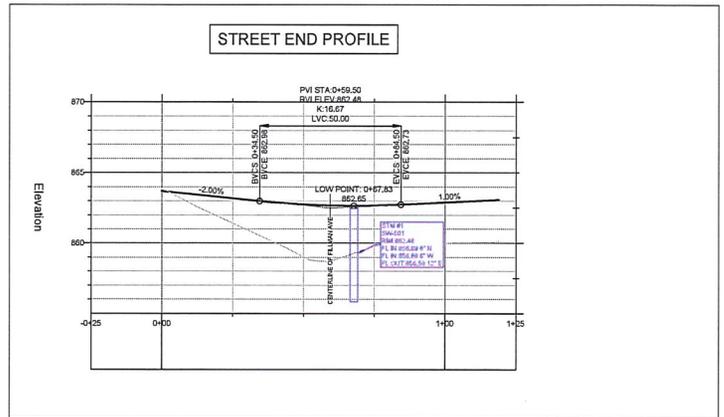
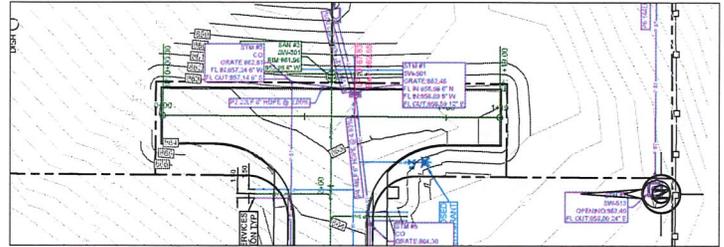
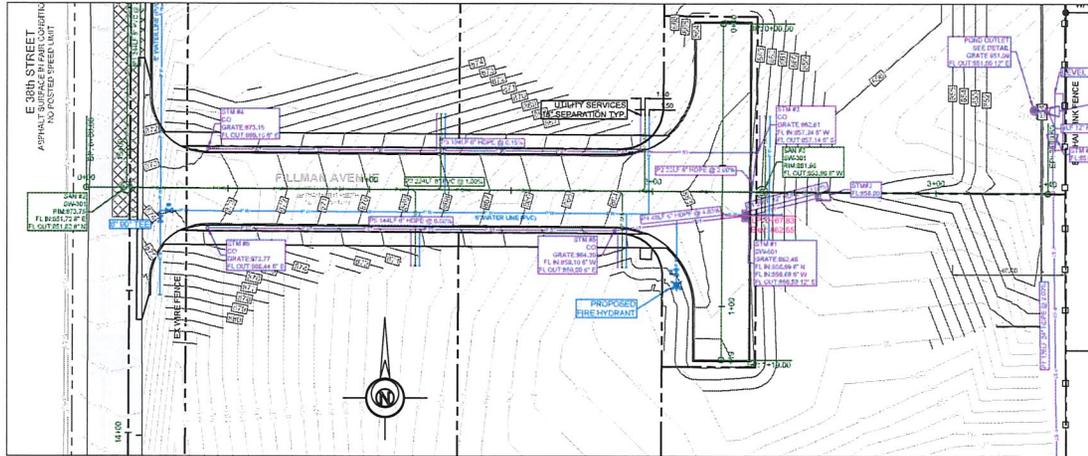
**FILLMAN SUBDIVISION**  
**3809 INDIANAPOLIS AVENUE**  
**DES MOINES, IOWA**

PRELIMINARY

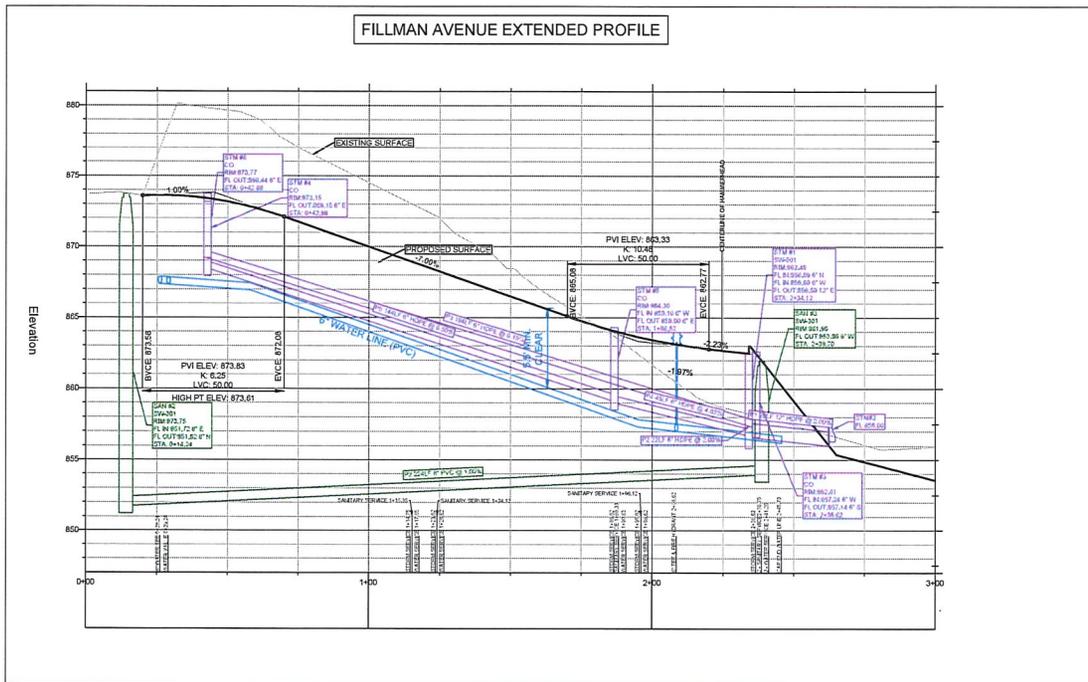
DATE	DESCRIPTION	BY	APP'D
02-02-2022	21-047	BCS	

© 2021 Project 21047, Subdivision P&I for Lot 41 & 44 Division # 6666 Engineering Co. Rev 1/21/21 C-103 - GRADING SHEET





FILLMAN AVENUE EXTENDED PROFILE



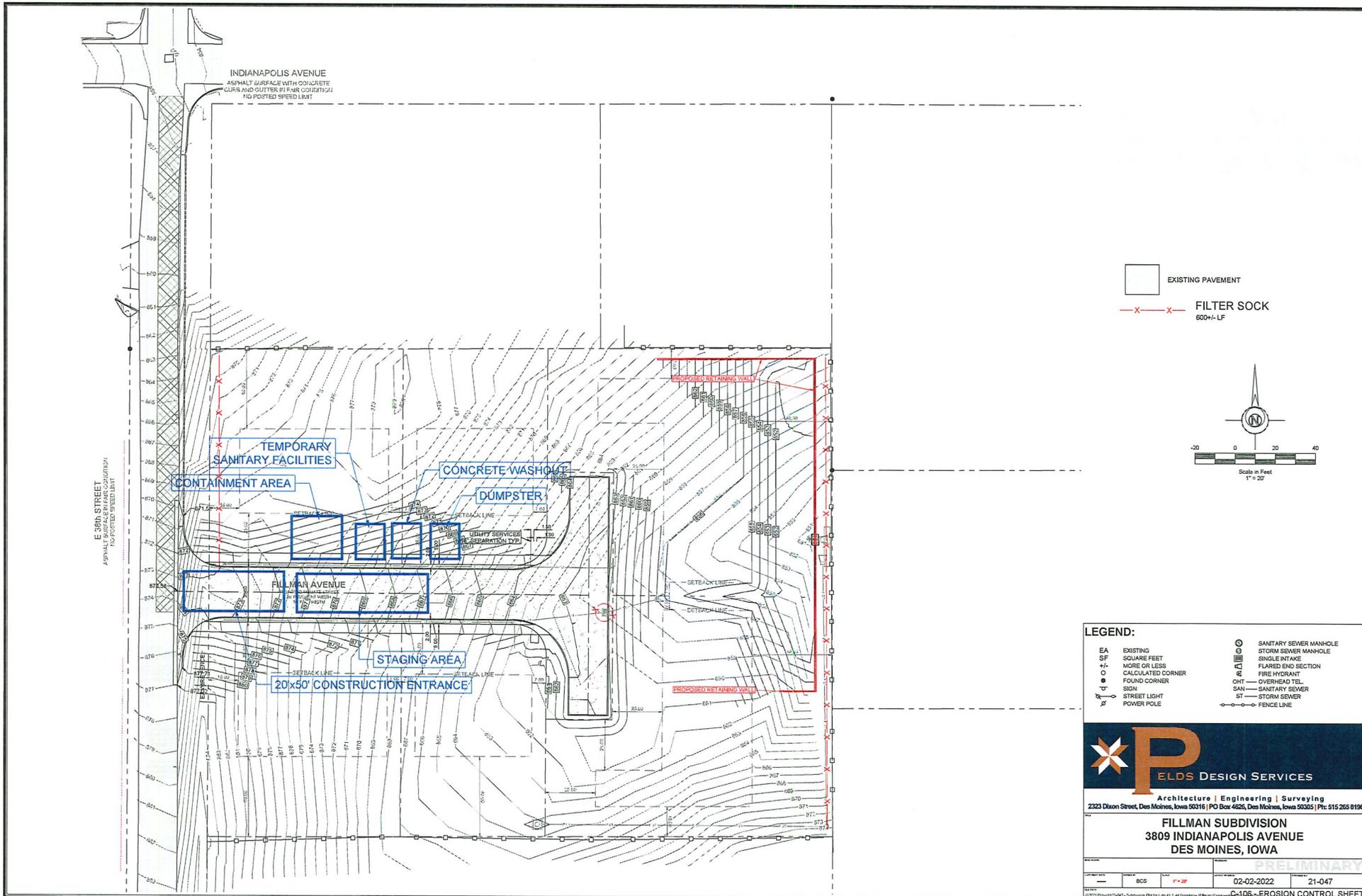
LEGEND:

- |         |                   |   |                             |
|---------|-------------------|---|-----------------------------|
| STA     | STATION           | ○ | SANITARY SEWER MANHOLE      |
| FL      | FLOW LINE         | ○ | STORM SEWER MANHOLE         |
| SF      | SQUARE FEET       | □ | CLEANOUT                    |
| E or EX | EXISTING          | ▬ | SINGLE INTAKE               |
| P       | PROPOSED          | ▬ | FLARED END SECTION          |
| +/-     | MORE OR LESS      | ⊗ | FIRE HYDRANT                |
| ○       | CALCULATED CORNER | ⊗ | FIRE HYDRANT - PROFILE VIEW |
| ●       | FOUND CORNER      | ⊗ | WATER VALVE                 |
| ⊗       | SIGN              | — | OVERHEAD ELEC.              |
| ⊗       | STREET LIGHT      | — | CHIT — OVERHEAD TEL.        |
| ⊗       | POWER POLE        | — | SAN — SANITARY SEWER        |
|         |                   | — | ST — STORM SEWER            |
|         |                   | — | W — WATER                   |
|         |                   | — | FENCE LINE                  |

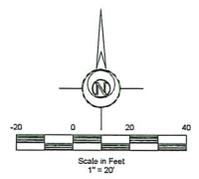
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**FILLMAN SUBDIVISION**  
 3809 INDIANAPOLIS AVENUE  
 DES MOINES, IOWA

Project	BCS	Scale	1" = 20'	Date	02-02-2022	Sheet	21-047
PRELIMINARY							



EXISTING PAVEMENT  
 FILTER SOCK  
 600H-LF



**LEGEND:**

EA	EXISTING	⊙	SANITARY SEWER MANHOLE
SF	SQUARE FEET	⊕	STORM SEWER MANHOLE
+/-	MORE OR LESS	⊕	SINGLE INLET
○	CALCULATED CORNER	⊕	FLARED END SECTION
●	FOUND CORNER	⊕	FIRE HYDRANT
⊕	SIGN	—	OVERHEAD TEL.
⊕	STREET LIGHT	—	SAN — SANITARY SEWER
⊕	POWER POLE	—	ST — STORM SEWER
		—	FENCE LINE

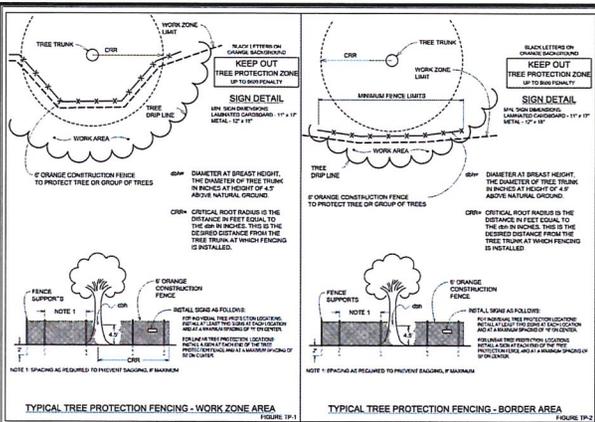
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**FILLMAN SUBDIVISION**  
 3809 INDIANAPOLIS AVENUE  
 DES MOINES, IOWA

**PRELIMINARY**

DATE	DESCRIPTION	BY
02-02-2022		
21-047		

C-106-EROSION CONTROL SHEET



- NOTES:**
- EXACT STREET TREE LOCATION MAY VARY BASED ON DRIVEWAY PLACEMENT, LOTS 1 & 6 MUST PROVIDE THREE STREET TREES EACH, LOTS 2 & 5 MUST PROVIDE TWO STREET TREES EACH.
  - THE EXISTING TREE CANOPY ALONG E 38TH STREET SHALL BE MAINTAINED.

**LANDSCAPING REQUIREMENTS:**

**STREET TREES:**  
ONE TREE PER 30 FT OF PROPOSED STREET = 1510' ÷ 5 TREES EACH SIDE, 10 TOTAL

**TREE MITIGATION:**  
15 TREES FOR SITE INTERIOR (SEE TABLE)  
2 TREES FOR ENTRANCE (3600 SQ. FT.)  
15 TREES TOTAL

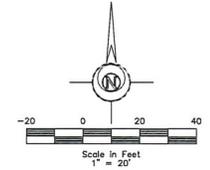
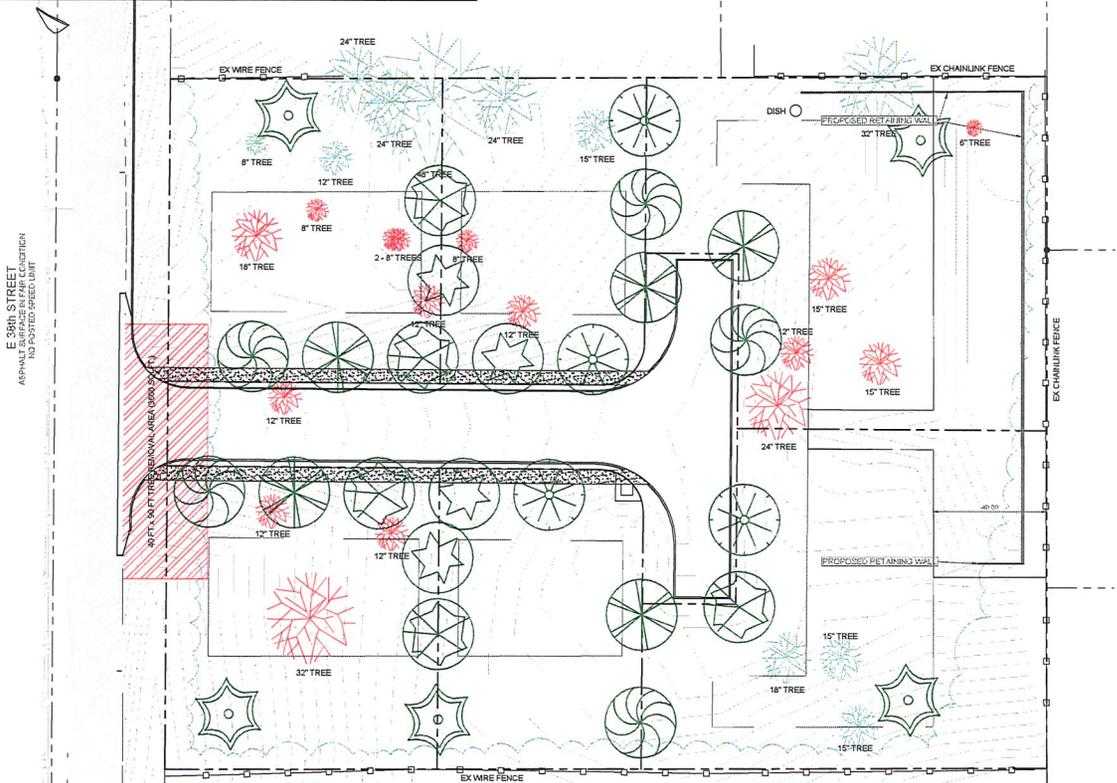
**TREES REMOVED**

**SPECIES**

Size of Trees	Quantity of Trees to be Removed	Replacement Ratio	Quantity of Replacement Trees
0" - <12"	5	NA	0
12" - <18"	7	1:1	7
18" - <24"	1	2:1	2
24" - <30"	1	3:1	3
30" - <36"	1	4:1	4
36" - <42"	1	5:1	5
42" - <48"	1	6:1	6
<b>Total Replacement Trees Required</b>			<b>16</b>

**PROPOSED TREES:**

SYMBOL	#	COMMON NAME (BOTANICAL NAME)	PLANTING SIZE	MATURE SIZE (HEIGHT & SPREAD)
	5	KENTUCKY COFFEE TREE (DYNOCLADUS DIOICUS)	2" CALIPER B&B	60'-75' & 40'-50'
	5	RED OAK (QUERCUS RUBRA)	2" CALIPER B&B	50'-75' & 40'-70'
	4	TULIP TREE (LIRIODENDRON TULIPIFERA)	2" CALIPER B&B	60'-90' & 30'-50'
	4	LITTLE LEAF LINDEN (TILIA CORDATA)	2" CALIPER B&B	50'-70' & 35'-50'
	5	THORNLESS HONEYLOCUST (GLETTIA TRICANTHOS VAR. INERMIS)	2" CALIPER B&B	60'-80' & 20'-40'
	5	PERSIAN IRONWOOD (PARROTIA PERSICA)	2" CALIPER B&B	20'-40' & 20'-30'
	28	TOTAL PROPOSED TREES		
		EXISTING DECIDUOUS TREES		
	14	TREES TO BE REMOVED		



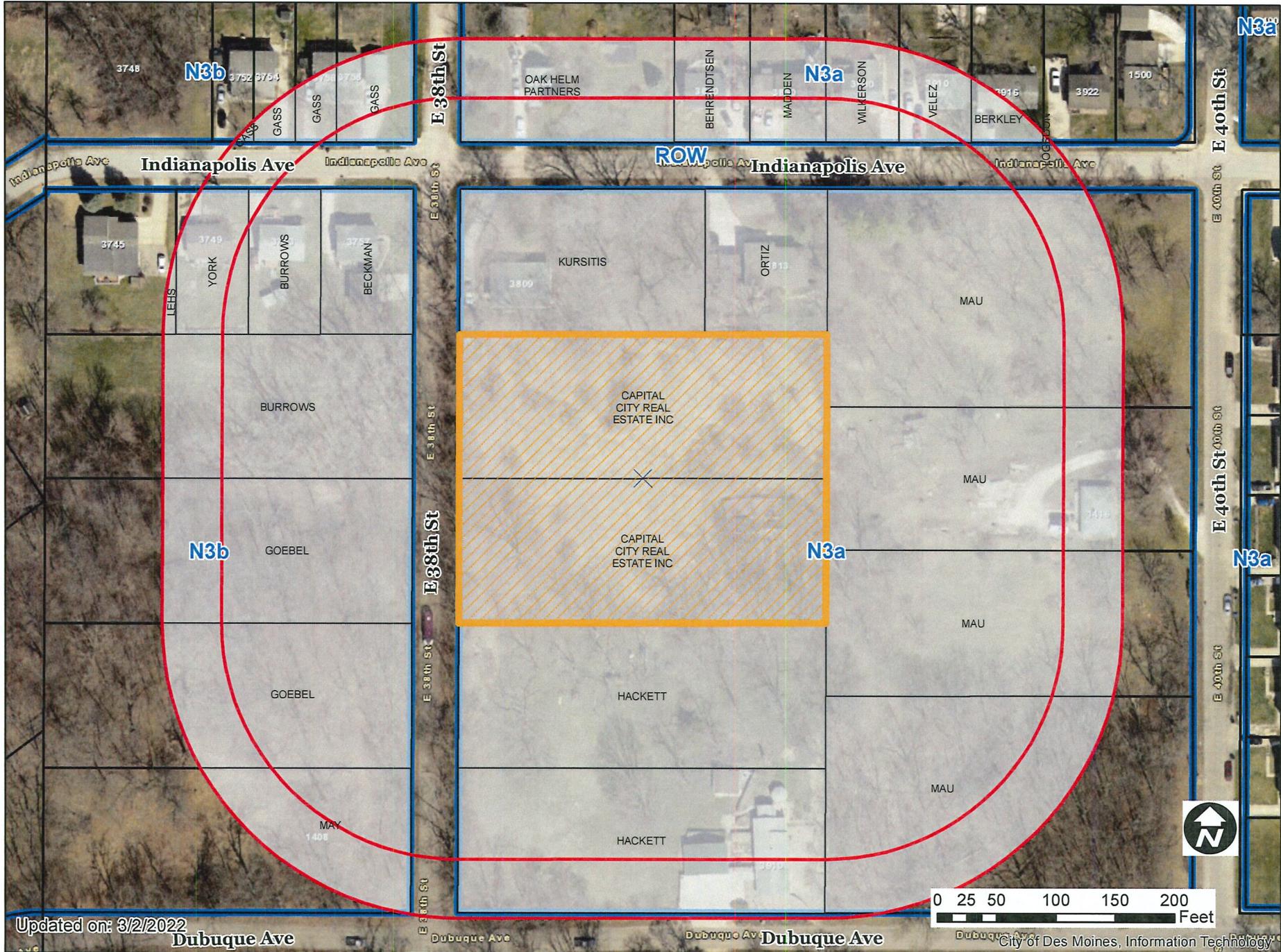
**LEGEND:**

- OHE — OVERHEAD ELEC.
- OHT — OVERHEAD TEL
- FENCE LINE

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**FILLMAN SUBDIVISION**  
3809 INDIANAPOLIS AVENUE  
DES MOINES, IOWA

DATE: 02-02-2022  
SCALE: 1"=20'  
SHEET: 21-047  
PROJECT: C-107 - LANDSCAPING SHEET



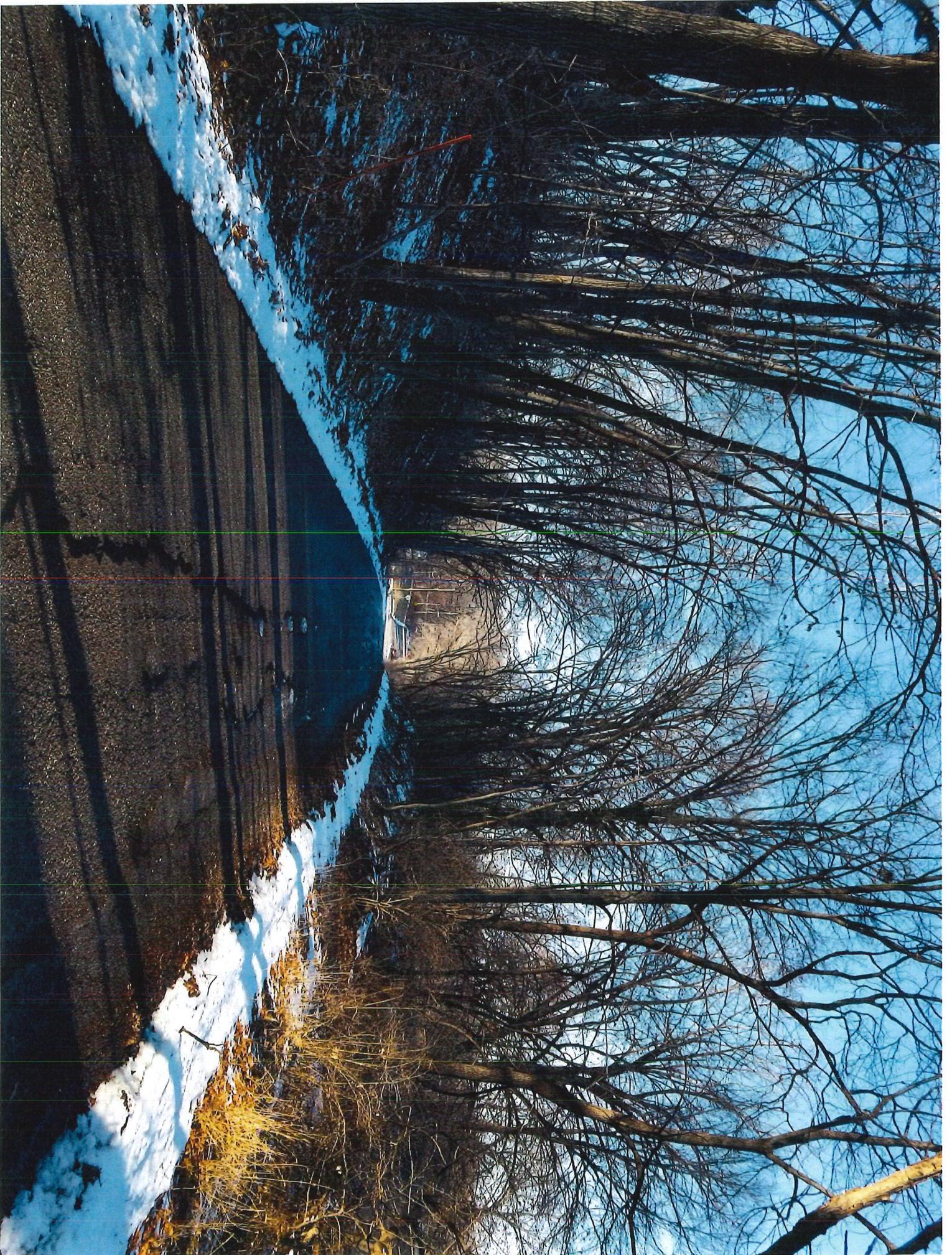
Updated on: 3/2/2022

1 inch = 108 feet











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## General Information

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### A. Concept

This section sets forth concepts for stormwater management objectives. Development can significantly alter the hydrology within the urbanized portion of a watershed as residential and commercial construction leads to an increase in impervious surfaces in the drainage area. As a result, the response of an urbanized watershed to precipitation is significantly different from the response of a natural watershed. Post-developed peak runoff is expected to exceed pre-developed runoff from a similar storm event. The most common effects are reduced infiltration and decreased travel time, which significantly increases peak discharge rates and runoff volumes. Factors influencing the amount (volume) of runoff include precipitation depth, the infiltrative capacity of soils, soil moisture, antecedent rainfall, cover type, the amount of impervious surfaces, and surface retention. Travel time is determined primarily by slope, length of flow path, depth of flow, and roughness of flow surfaces. To accommodate the higher rates and volumes of stormwater runoff in suburban and higher-density urban development, storm sewer conveyance systems are installed to provide efficient drainage of the landscape. Additional protection is provided through detention and storage structures to control release rates to downstream systems. Traditional design considerations have been the prevention of damage to the development site, streams, drainageways, streets, public and private property from flooding, and to the reduction of soil erosion. With the implementation of the stormwater NPDES Phase I and II regulations, stormwater runoff quality is now an additional management goal for some communities.

### B. Informing the Public

Engineers typically use the storm recurrence interval (i.e. 100 year storm) in their discussions and presentations on stormwater projects. The recurrence interval concept is somewhat difficult for the general public to understand. As a result, many questions have resulted from the significant rainfall and flooding events that have occurred over the past few years. These questions often focus on the 100 year storm event. A common perception is that once this level of storm has been received, it will not occur for another 100 years.

The recurrence interval concept is somewhat difficult to understand for those not trained in hydrology. To provide a greater level of understanding, public presentations should include rainfall information in terms of percentage or probability. Thus, a 100 year recurrence interval storm should be expressed as a storm that has a 1% chance of occurring in any one year or a 10% chance of occurring in a 10 year period (see [Table 2B-2.01](#)). Describing the storms in terms of percentages may help break down the perception that once a 100 year storm has occurred, it will not occur for another 100 years.

The public should also be informed that the storm frequency used for design is based on past storm occurrences. Inaccuracies result from the extrapolation of that data, especially if the number of data points is limited. In addition, storm events very rarely replicate themselves in terms of rainfall intensity, duration, and location within a drainage basin. As a result, calculating runoff is not an exact science. To further complicate matters, indications from researchers show that rainfall events are becoming more intense and runoff faster in rural areas as well as in urban environments. This compounds the inaccuracies associated with predicting rainfall events and their related runoff.

The public should also be made aware of the difference between a rainfall event and a flood event. This may help them to understand how a small interval rainfall event can actually trigger a large flood event. If streams and rivers are already full and the soil is saturated, the rain cannot be absorbed. The runoff increases and even though the rainfall event may have been a 25 year event, the runoff can exceed a 100 year flood. This can also occur if the storm moves down the drainage basin at the same speed that the runoff is occurring. Conversely, during a dry period a 50 year rainfall event may result in only a 10 year flood event as a result of soil absorbing more moisture and rivers and streams flowing at low levels.

Despite the shortcomings noted above, the information presented here is the best information available and is appropriate for use to design stormwater facilities.

This chapter includes the traditional hydrologic analysis and design of stormwater runoff conveyance for larger storm events to prevent flooding. The traditional management goal for detention and storage has been to manage runoff from larger rainfall events, typically greater than the 5 year recurrence interval (RI). While traditional detention practices can reduce the peak runoff flows from urban development, the increase in runoff volume and frequency of peak flows is not reduced and little improvement in stormwater quality is accomplished.

NPDES Phase I and II communities and those desiring to implement post construction water quality practices are encouraged to reference the Iowa Stormwater Management Manual (<http://www.iowadnr.gov/Environmental-Protection/Water-Quality/NPDES-Storm-Water/Storm-Water-Manual>), which expands on stormwater management best management practices (BMP's).

The Engineer is encouraged to use cost-effective designs that are hydrologically and hydraulically appropriate through the use of good engineering judgment.

### C. Conditions

1. Design data provided by the Project Engineer should demonstrate that investigations include:
  - a. The function of the streets as part of the stormwater system, including level of anticipated flooding of street surfaces and encroachment into driving lanes.
  - b. Gutters and intakes are adequate to prevent excessive flooding of streets and right-of-ways.
  - c. Culverts and storm pipes are designed to sufficient size.
  - d. Adequate overland relief with proper easements for storms larger than the design storm.
  - e. Street grades are coordinated with lot drainage; lot drainage slopes will not be less than 1 1/2% to minimize ponding, and not excessive to cause uncontrollable erosion.
  - f. Spot elevations should be listed at each rear lot corner, at the mid-point of the side yard line, and along the proposed drainage ways and easements.
2. The Project Engineer should evaluate drainage alternatives to handle the runoff and select the optimum design that will strike a balance between initial capital costs, maintenance costs, and public protection. Consideration should also be given to safety, environmental protection, and maintenance of the drainage system. Care should be exercised in developing drainage systems that depend solely on a specified protection level. Designers need to keep in mind that rainfall and runoff events seldom, if ever, occur at a specified frequency or duration. Therefore, at critical locations, additional protection should be considered, depending upon the drainage basin

characteristics and the degree of protection necessary downstream.

The following are examples of locations where damage can occur at the specified design frequency and duration when emergency spillways or outlets are not made available.

- Drainage ways between buildings such as housing and in backyards.
  - Enclosed storm sewers adjacent to private property, where a single inlet could be plugged, resulting in significant damage to adjacent property.
  - Single-lot or multiple-lot stormwater detention.
3. In addition to the potential damage in these particular areas, maintenance of the stormwater conveyance needs to be considered. Private-owner or homeowner association maintenance has the advantage of simplified responsibilities, without direct cost to the general taxpayer. The disadvantage is when the homeowner or association is not capable of maintaining a stormwater system on a continuous basis. Other options to be considered are delayed transfer of ownership from builder to homeowner's association, to ensure proper stormwater conveyance system operation; or the issuance of a performance or maintenance bond by the builder, valid for a specified period of time. When the stormwater conveyance system is significant enough that the normal individual or group of individuals does not have the means for continuous maintenance, other maintenance alternatives need to be developed that involve Jurisdiction-owned facilities. This would involve construction and maintenance by the Jurisdiction, funded through:
    - A one-time charge to the developer that is placed into a stormwater escrow account for immediate or future stormwater improvements.
    - A stormwater utility assessment (either a one time lump sum or monthly charge).
    - Construction of the stormwater facility by the developer that would be owned and maintained by the Jurisdiction.
  4. Runoff analysis should be based upon proposed land use, and should take into consideration all contributing runoff from areas outside of the study areas.
  5. All undeveloped land lying outside of the study area should be considered as fully developed based upon the Jurisdiction's comprehensive plan. The project designer should check with the Jurisdiction regarding upstream conditions.
  6. If future land use of a specific undeveloped area is unknown, the runoff coefficient should be established on a conservative basis. The probable future flow pattern in undeveloped areas should be based on existing natural topographic features (existing slopes, drainage ways, etc.). Average land slopes in both developed and undeveloped areas may be used in computing runoff. However, for areas in which drainage patterns and slopes are established, these should be utilized.
  7. Flows and velocities that may occur at a design point when the upstream area is fully developed should be considered. Drainage facilities should be designed such that increased flows and velocities will not cause erosion damage.
  8. The primary use of streets should be for the conveyance of traffic. The computed amount of runoff in streets should not exceed the requirements set forth herein.
  9. The use of detention and natural drainage ways is recommended and encouraged whenever possible. The changing of natural drainage way locations may not be approved unless such change is shown to be without unreasonable hazard and liability, substantiated by thorough analysis and investigation.
  10. Restrictive covenants, surface flowage easements, and impoundment easements may be required to be executed and recorded to provide for the protection and maintenance of grassed drainage

swales and grassed drainage detention areas within build-up areas.

If the Jurisdictional Engineer's approval is given to the use of natural ditches, the Project Engineer should show that the project will have minimum disruption of the existing environment and covenants may be required to be executed and recorded to provide protection. The Jurisdictional Engineer may allow changes in the ditch, provided state and federal guidelines and regulations will be followed.

11. In the design of storm drainage systems, consideration should be given to both surface and subsurface sources. Subsurface drainage systems should be designed where required. The discharge from such underdrain systems should not flow over sidewalks or onto streets after completion of the project.
12. Land grading of the project site should be performed to take advantage of existing contours and minimize soil disturbance. Steep slopes should be avoided. If steep slopes are necessary, an attempt should be made to save natural grasses, shrubs, and trees on these slopes and re-establish ground cover and permanent erosion control measures as soon as possible.
13. The planning and design of drainage systems should be such that problems are not transferred from one location to another. Outfall points and velocities should be designed in such a manner that will not create flooding hazards downstream.
14. Where a master drainage plan for a Jurisdiction is available, the flow routing for both the minor storm and major storm runoff should conform to said plan. Drainage easements conforming to the master plan will be required and should be designated on all drainage drawings and subdivision plats.
15. Any proposed building or construction of any type of structure including retaining walls, fences, etc., or the placement of any type of fill material that will encroach on any utility or drainage easement, requires written approval of the Jurisdiction. Such structure will not impair surface or subsurface drainage from surrounding areas.
16. The design for stormwater management facilities should comply with the following:
  - a. Local Jurisdiction's design standards
  - b. Requirements and standards of the Iowa DNR (for large detention or retention structures)
  - c. Plumbing code
  - d. Iowa Code regarding drainage law
  - e. In case of a conflict between the above design standards, the most restrictive requirement should apply
17. Construction should comply with the most recent edition of the SUDAS Specifications. All details, materials, and storm sewer appurtenances should comply with these specifications.
18. The Environmental Protection Agency (EPA) approved the Final Stormwater Rule under the National Pollutant Discharge Elimination System (NPDES). Under this rule, qualified projects are required to have stormwater discharge permits. An erosion and sediment control plan should be developed according to the guidelines presented in Chapter 7 - Erosion and Sediment Control.

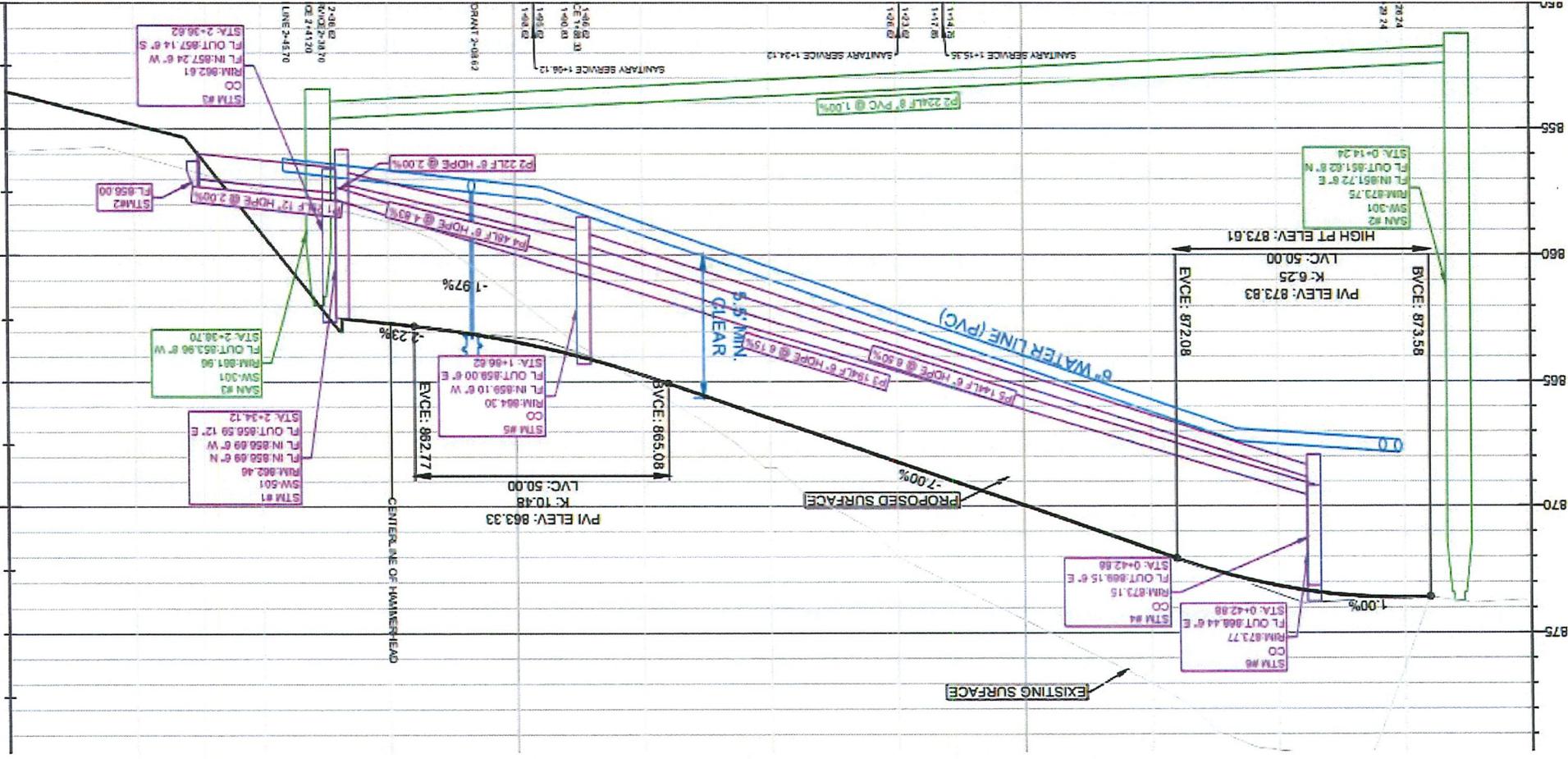
## Outline

- Purchase beautiful land for recreation and environmental conservation
- Improper Topography from the plan detail
- Went from 7 single family lots to 6 single household lots for duplexes or townhomes
- Loss of soil absorption from the steep road and houses will erode landscape, add water from Dean and 38<sup>th</sup>, along with natural runoff from my own property
- New construction will cause soil erosion and loss of established vegetation
- Effects my septic system and buildings

### Run off issues

- Starts with grade of street, normal street road standards from the DOT are 3% incline, road standard for mountain passes where chains on truck tires are required is between 5%-6%. Purposed road grade is 7%
- 7% will increase rainfall significantly, collect it and dispose of it according to the plan in my backyard
- Plan refers to it as a pond outlet.
- 7% grade will ensure the use of salt, brine, ice melt, and sand in the winter, which will collect in storm drain and be directed specifically to my yard.
- Sprinkler systems are required for sod application and run 24hr will no erosion control established, insecticide, herbicide, dog waste, all downstream
- \*\*\*\*Need more information about rainfall rates and size of pipe used. Must have water intakes compared to SUDAS Spec.
- Use of the fire hydrant will send chlorinated water down into my lawn and garden.
- Inaccurate wall heights and overview of topography
- General notes on the plan refer to contractor being liable for private property damages, a stormwater discharge permit, and must meet SUDAS specs.

Elevation



4. Runoff analysis should be based upon proposed land use, and should take into consideration all contributing runoff from areas outside of the study areas.
5. All undeveloped land lying outside of the study area should be considered as fully developed based upon the Jurisdiction's comprehensive plan. The project designer should check with the Jurisdiction regarding upstream conditions.
6. If future land use of a specific undeveloped area is unknown, the runoff coefficient should be established on a conservative basis. The probable future flow pattern in undeveloped areas should be based on existing natural topographic features (existing slopes, drainage ways, etc.). Average land slopes in both developed and undeveloped areas may be used in computing runoff. However, for areas in which drainage patterns and slopes are established, these should be utilized.
7. Flows and velocities that may occur at a design point when the upstream area is fully developed should be considered. Drainage facilities should be designed such that increased flows and velocities will not cause erosion damage.
8. The primary use of streets should be for the conveyance of traffic. The computed amount of runoff in streets should not exceed the requirements set forth herein.
9. The use of detention and natural drainage ways is recommended and encouraged whenever possible. The changing of natural drainage way locations may not be approved unless such change is shown to be without unreasonable hazard and liability, substantiated by thorough analysis and investigation.

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- a. Local Jurisdiction's design standards
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- c. Plumbing code
- d. Iowa Code regarding drainage law
- e. In case of a conflict between the above design standards, the most restrictive requirement should apply

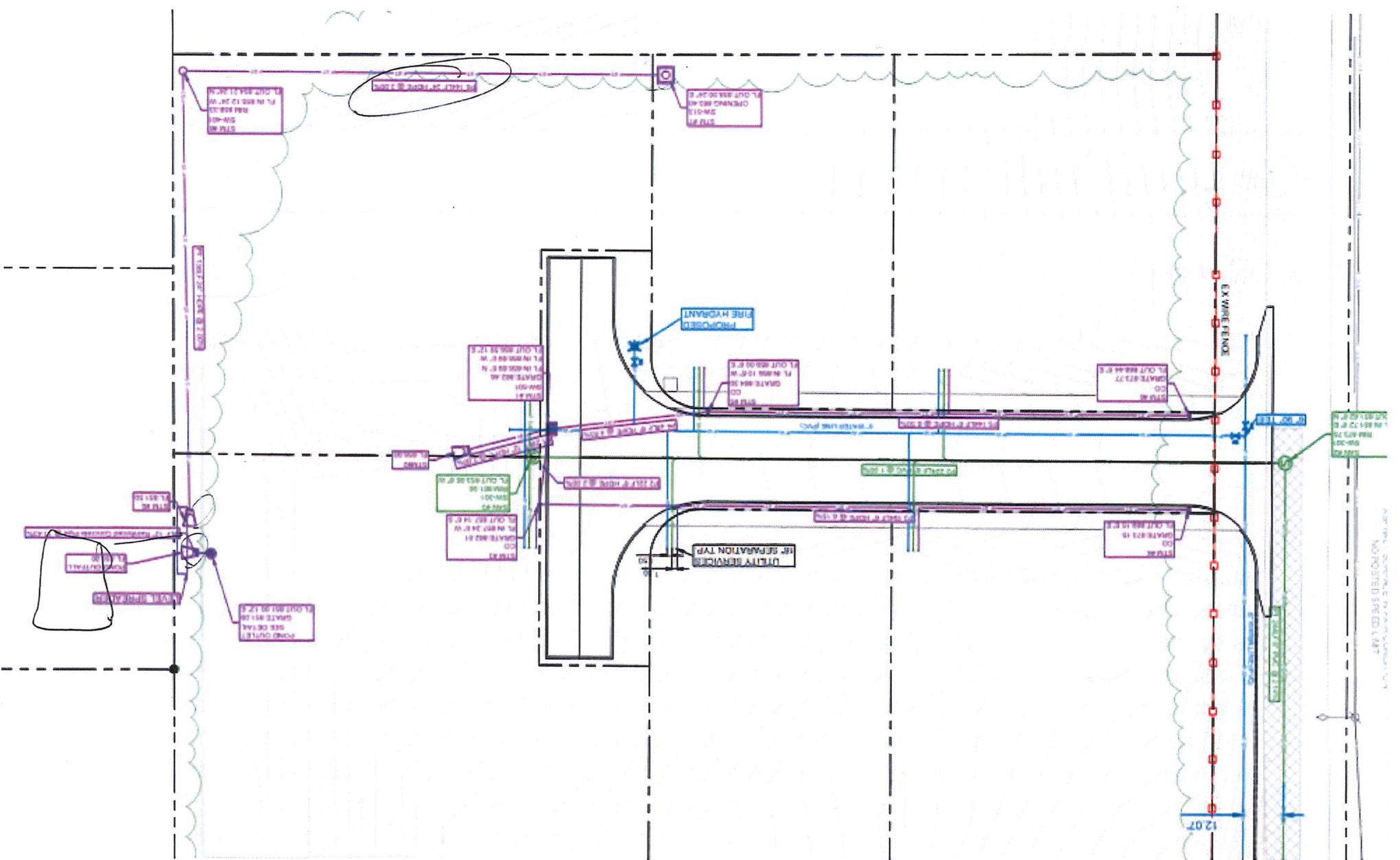
17. Construction should comply with the most recent edition of the SUDAS Specifications. All details, materials, and storm sewer appurtenances should comply with these specifications.



## General Information

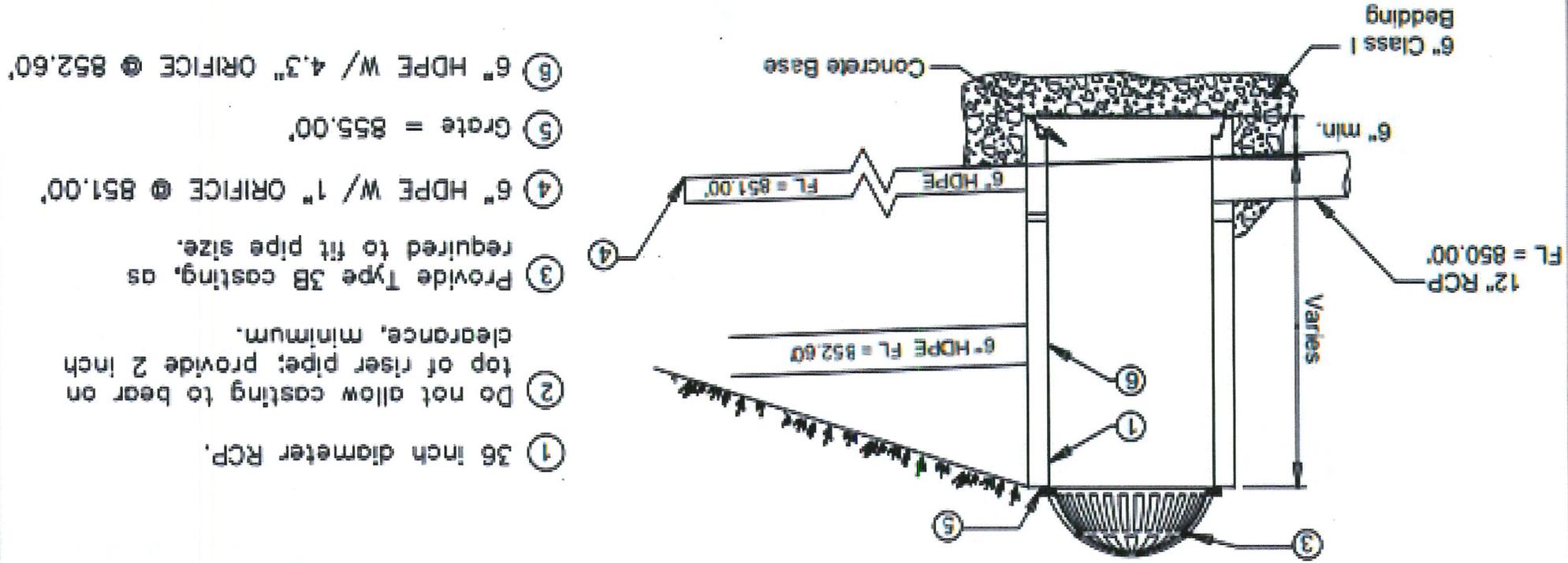
### A. Concept

This section sets forth concepts for stormwater management objectives. Development can significantly alter the hydrology within the urbanized portion of a watershed as residential and commercial construction leads to an increase in impervious surfaces in the drainage area. As a result, the response of an urbanized watershed to precipitation is significantly different from the response of a natural watershed. Post-developed peak runoff is expected to exceed pre-developed runoff from a similar storm event. The most common effects are reduced infiltration and decreased travel time, which significantly increases peak discharge rates and runoff volumes. Factors influencing the amount (volume) of runoff include precipitation depth, the infiltrative capacity of soils, soil moisture, antecedent rainfall, cover type, the amount of impervious surfaces, and surface retention. Travel time is determined primarily by slope, length of flow path, depth of flow, and roughness of flow surfaces. To accommodate the higher rates and volumes of stormwater runoff in suburban and higher-density urban development, storm sewer conveyance systems are installed to provide efficient drainage of the landscape. Additional protection is provided through detention and storage structures to control release rates to downstream systems. Traditional design considerations have been the prevention of damage to the development site, streams, drainageways, streets, public and private property from flooding, and to the reduction of soil erosion. With the implementation of the stormwater NPDES Phase I and II regulations, stormwater runoff quality is now an additional management goal for some communities.



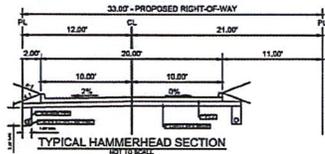
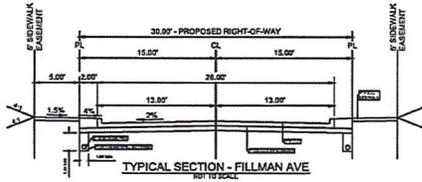
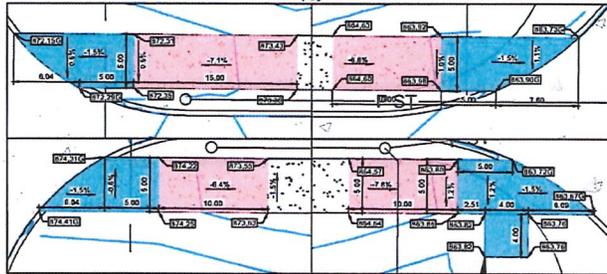
AS PER: SUPPLEMENT TO 2018 IBC  
 MAXIMUM SPEED 1.6MPS

## POND OUTLET STRUCTURE

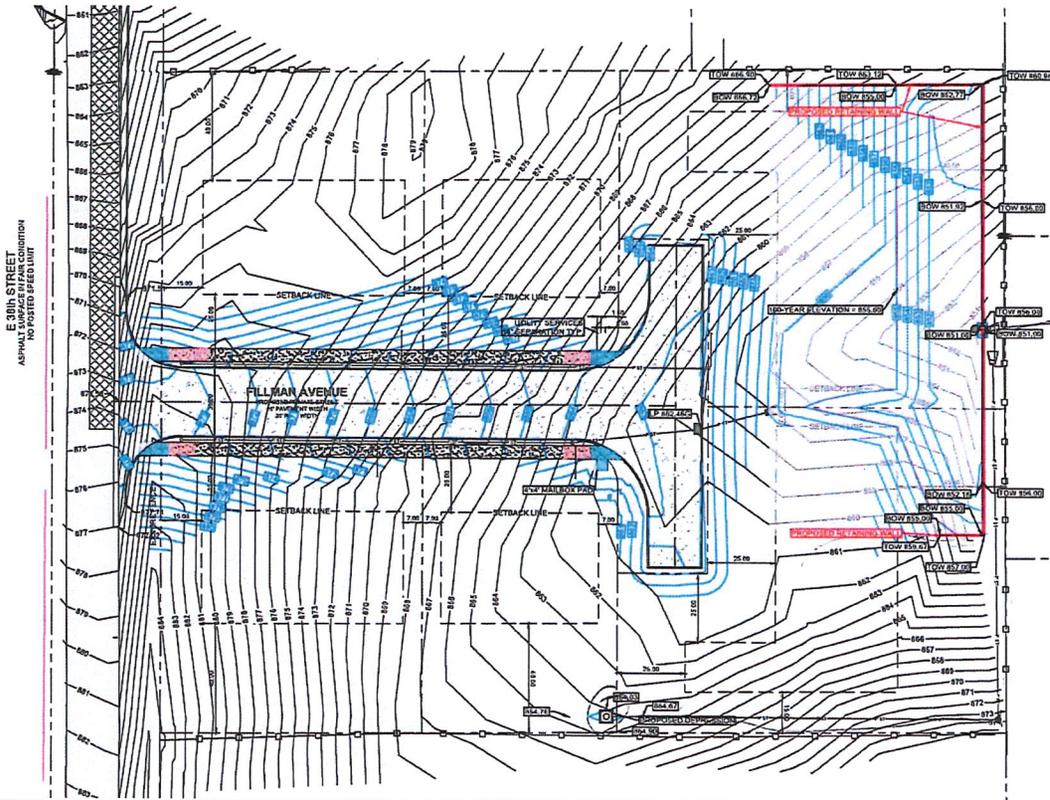
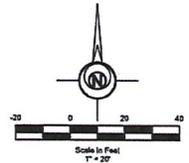


- ① 36 inch diameter RCP.
- ② Do not allow casting to bear on top of riser pipe; provide 2 inch clearance, minimum.
- ③ Provide Type 3B casting, as required to fit pipe size.
- ④ 6" HDPE w/ 1" ORIFICE @ 851.00'
- ⑤ Grate = 855.00'
- ⑥ 6" HDPE w/ 4.3" ORIFICE @ 852.60'

### SIDEWALK RAMP DETAILS



- EXISTING PAVEMENT
- PROPOSED P.C.C. 8,431+/- SF
- PROPOSED SIDEWALK 854+/- SF
- PROPOSED FULL-DEPTH PAVEMENT REPLACEMENT 2,743+/- SF
- SIDEWALK RAMP
- LANDING SPACE



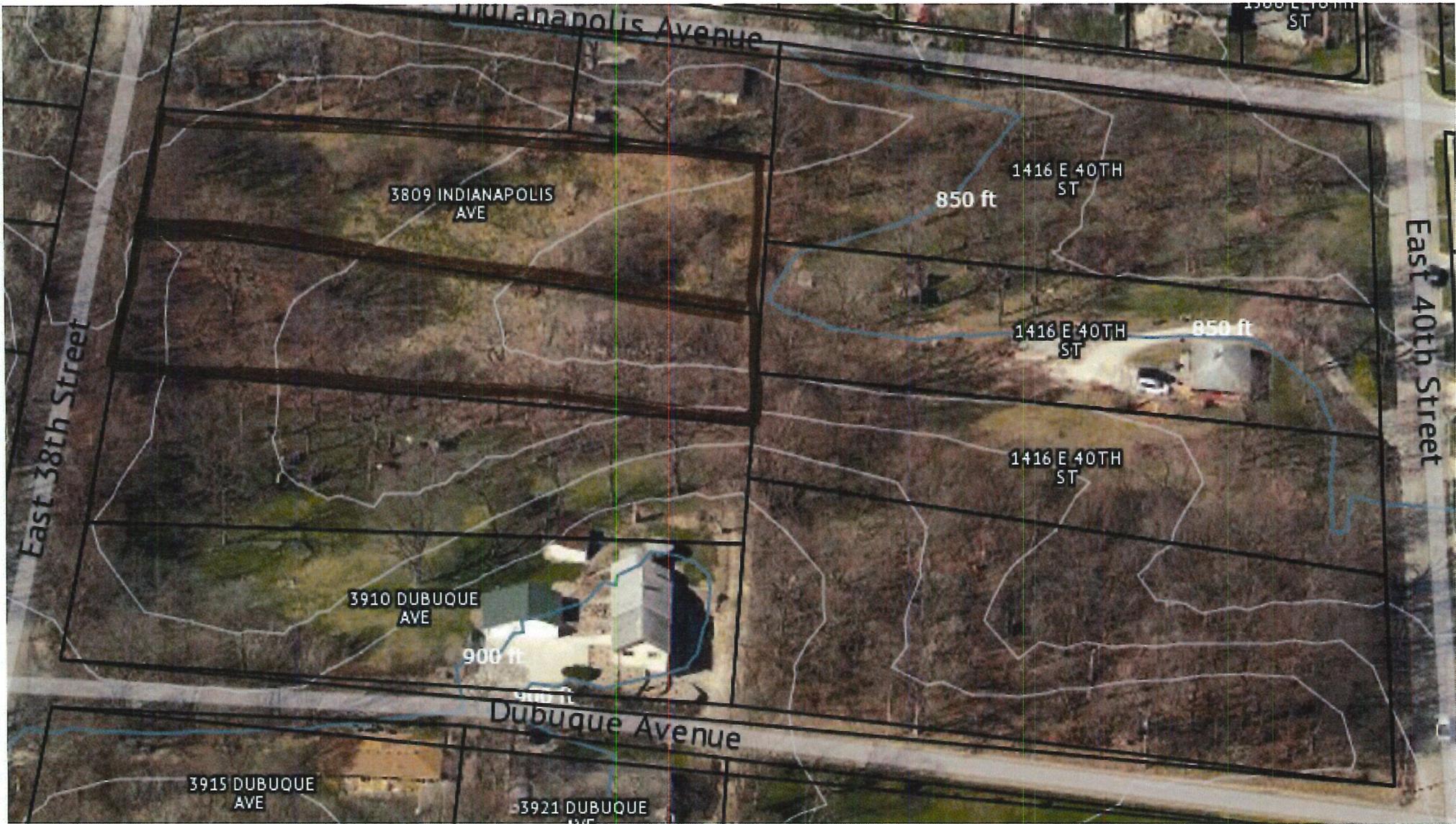
**LEGEND:**

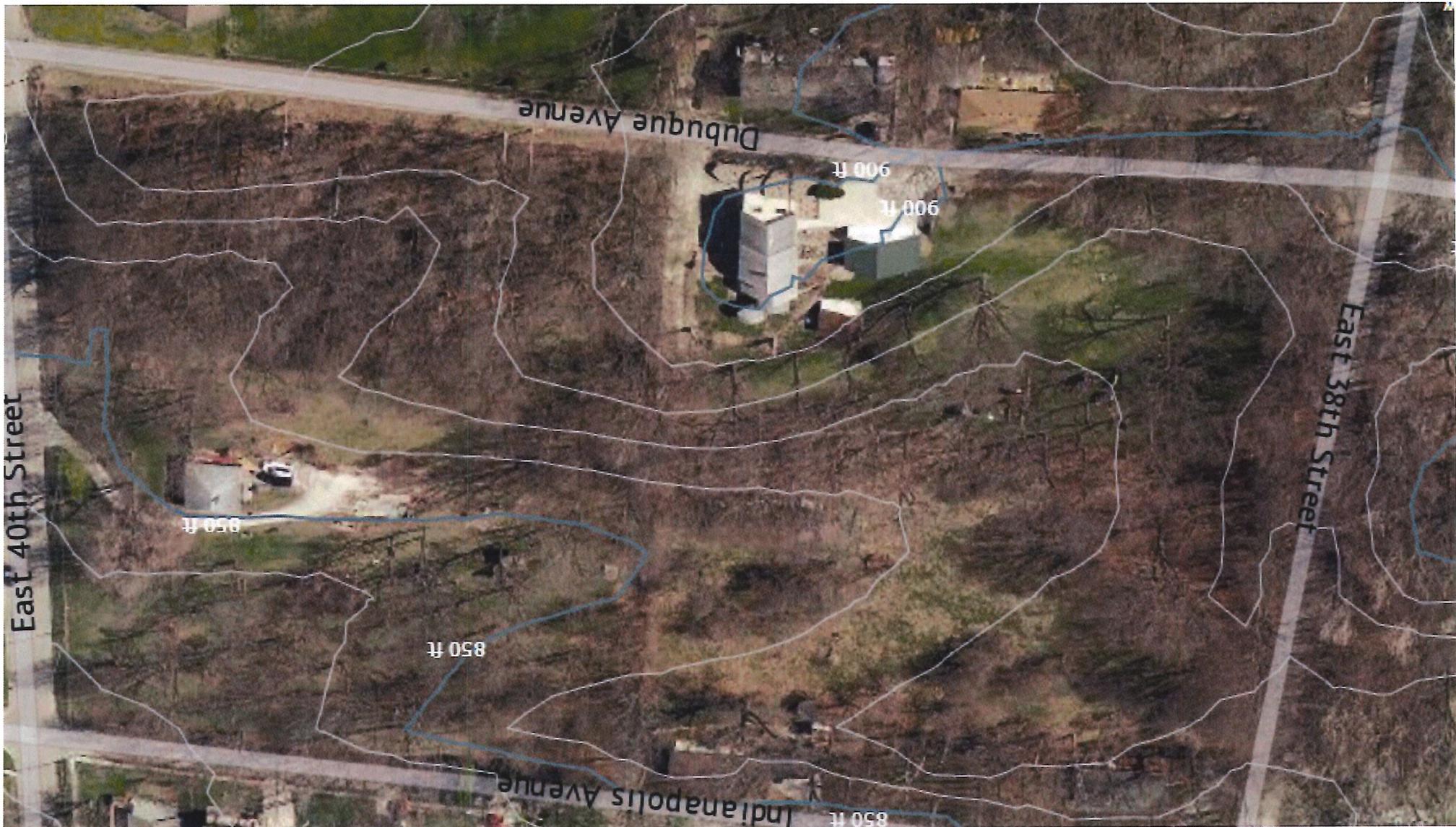
SF	SQUARE FEET	⊙	SANITARY SEWER MANHOLE
+/-	MORE OR LESS	⊕	STORM SEWER MANHOLE
12/460	GUTTER ELEVATION	⊖	SINGLE INTAKE
FL	FLOWLINE ELEVATION	⊕	FLARED END SECTION
⊕	CALCULATED CORNER	⊕	FIRE HYDRANT
⊕	FOUND CORNER	⊕	OVERHEAD ELEC.
⊕	STREET LIGHT	⊕	OVERHEAD TEL.
⊕	POWER POLE	⊕	SAN - SANITARY SEWER
		⊕	ST - STORM SEWER
		⊕	FENCE LINE

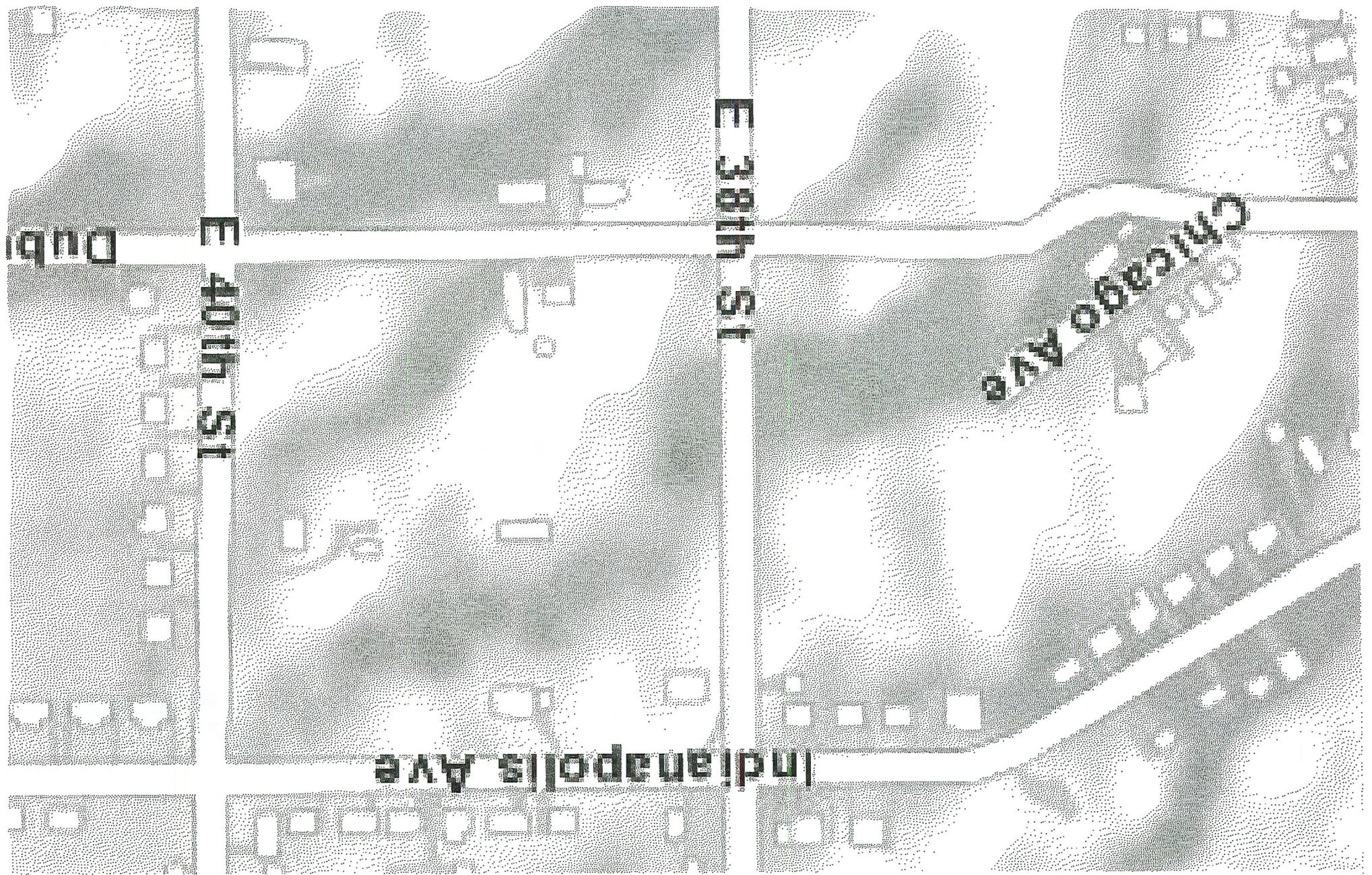
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