


SA19-000006

**SUBDIVISION APPLICATION FOR THE CITY OF LEEDS, ALABAMA**  
**OFFICE OF DEVELOPMENT SERVICES**  
1404 9th Street, LEEDS, AL 35094 P. 205. 699. 2585  
DEVELOPMENT@LEEDSALABAMA.GOV \* leedsalabama.gov

<b>Part 1. Application</b>	
Name of Applicant: <b>Bart Carr</b>	
Mailing Address: 153 Cahaba Valley Parkway, Pelham, AL 35124	
Telephone: <b>(205) 664-8498</b>	E-mail: <b>bartcarr@carrengineers.com</b>
Signature: 	
Date Application Filed: <b>05/13/19</b>	Requested Hearing Date: <b>6/13/19</b>

<b>Part 2. Parcel Data</b>		
Owner(s) of Record: <b>Grants Mill, LLC (Price Hightower)</b>		
Owner Mailing Address: 2106 Devereux Circle Birmingham, AL 35243		
Site Address: 9001 Weaver Avenue NE, Leeds, AL		
Tax Parcel ID # <b>26 01 11 0 001 023 000</b>	Existing Zoning: <b>R6</b>	Proposed Zoning:
Telephone: <b>(205) 966-2056</b>	E-Mail: <b>price@tower-homes.com</b>	
Signature Of Designated Plat Representative:		

<b>Part 3. Request</b>	
<input checked="" type="checkbox"/> New Subdivision	<input type="checkbox"/> Preliminary Plat
<input type="checkbox"/> New Subdivision with Rezoning	<input type="checkbox"/> Final Plat
<input type="checkbox"/> Resurvey of Existing Recorded Subdivision	

<b>Part 4 Additional Information</b>	
<input type="checkbox"/> Number of proposed Lots <b>11 (Eleven)</b>	
<input type="checkbox"/> Approximate Acreage <b>2.648 Acres</b>	
<input type="checkbox"/> Concurrent Zoning/Variance Case(s)	
<input type="checkbox"/> Concurrent Construction Case	
<input type="checkbox"/> Review Fee (see Schedule) <b>TBD</b>	



**Release for Postponement of Case**

I, by my signature below, the Designated Plat Representative for the case described on the reverse side of this form. Do hereby grant the City of Leeds Planning and Zoning Commission the Authority to postpone this Case to its next regularly scheduled meeting if the plat does not meet the minimum technical or informational standards set forth in the Subdivision Regulations; if the plat map or Case contains errors or erroneous information; or if the Commission considers it to be in the best interest of the public to require further information for review of this plat/Case.

Signature of Designated Plat Representative:



Date:

5/13/19

Note: In Choosing not to sign the release at the time of application, the Designated Plat Representative acknowledges that the Commission may, in order to comply with the Code of Alabama, be compelled to disapprove the submitted subdivision due to unresolved issues with the plat.

Signature of Designated Plat Representative:

Date:

**FOR OFFICE USE ONLY**

Application Number:

Date Received:

Received by:

Scheduled Public Hearing Date:



# NOTICE OF PUBLIC HEARING

City of Leeds, Alabama  
Planning and Zoning Commission

Application for Subdivision  
“The Cottages on Weaver”

## APPLICATION

An application for a certified subdivision plat approval has been filed with the City of Leeds Planning and Zoning Commission for “The Cottages on Weaver”. This proposed subdivision consists of 11 lots and is zoned R-5, Garden Home District

## PLANNING AND ZONING COMMISSION

The Planning and Zoning Commission is vested with the responsibility and authority of determining conformity with the City of Leeds Subdivision Regulations.

<b>CASE #:</b>	<b>S-2019-006</b>
<b>APPLICANT NAME:</b>	<b>Bart Carr</b>
<b>PROPERTY OWNER:</b>	<b>Grants Mill, LLC</b>
<b>TAX PARCEL ID#s:</b>	<b>2601110001023000</b>
<b>CASE ADDRESS:</b>	<b>9001 WEAVER AVE, LEEDS, AL 35094</b> <b>ST. CLAIR COUNTY</b>
<b>ZONED:</b>	<b>R-5, Garden Home District</b>

**NOTICE IS HEREBY GIVEN** that the Planning and Zoning Commission will hold a public hearing on the proposed CERTIFIED plat. The hearing is scheduled on

**Date:** Thursday, June 13, 2019  
**Time:** 5:00 p.m.  
**Place:** Leeds Civic Center Meeting Room  
1000 Park Drive  
Leeds, AL 35094

**Public Information:** Any interested persons or their representative may appear at the meeting and comment on the application. Written comments may also be mailed to the Commission.

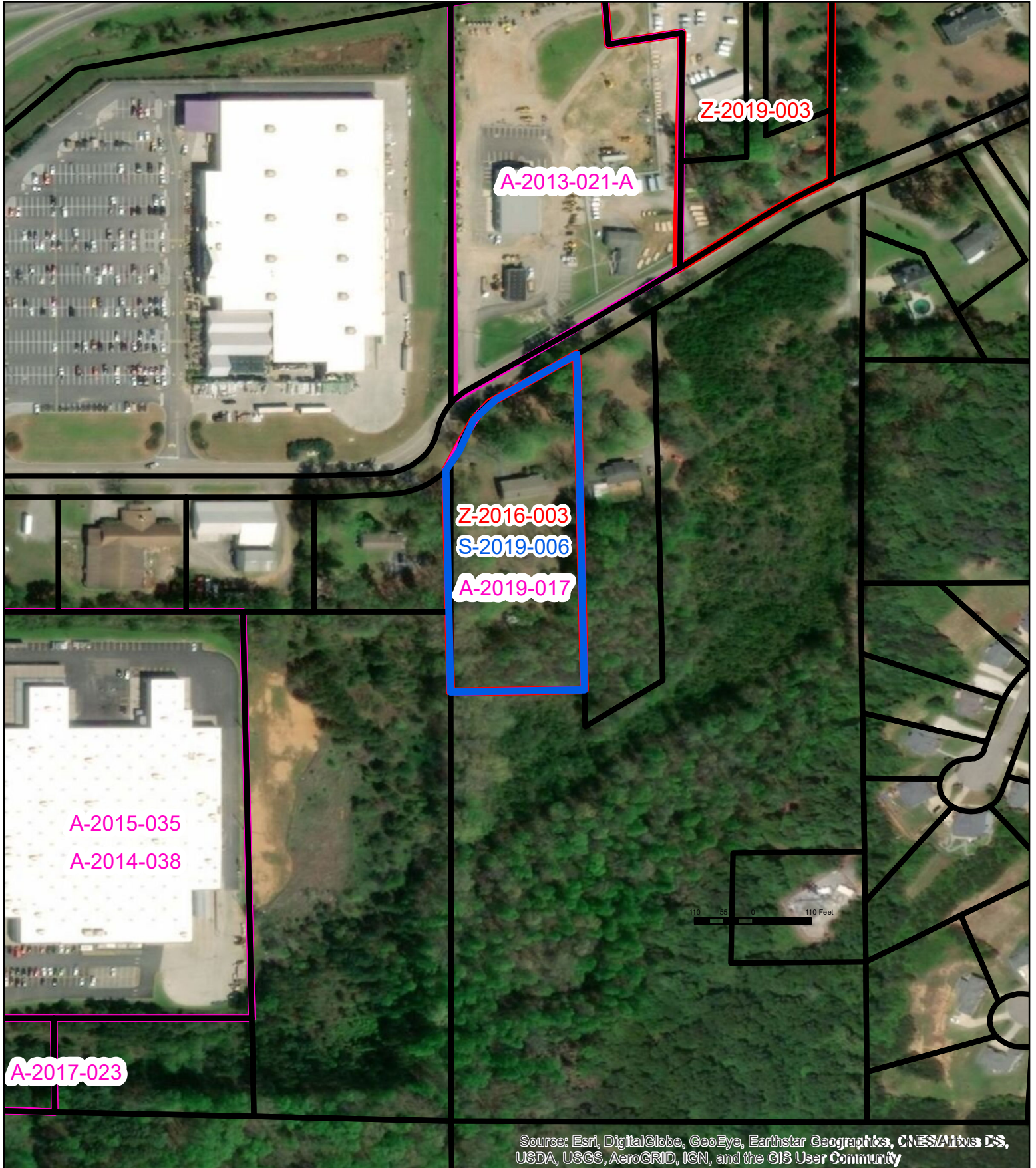
For more information about the application and related issues or to schedule an appointment:

**Phone:** 205-699-0943  
**E-mail:** [development@leedsalabama.gov](mailto:development@leedsalabama.gov)

**Mailing Address:**  
City of Leeds  
Planning and Zoning Commission  
1404 9<sup>th</sup> Street  
Leeds, AL 35094

For more information, visit [www.leedsalabama.org](http://www.leedsalabama.org)

S-2019-006 - AERIAL  
9001 WEAVER AVE  
2601110001023000  
GRANTS MILL, LLC



# The Cottages on Weaver

A RESIDENTIAL SUBDIVISION  
 SITUATED IN THE SOUTHWEST 1/4 OF SECTION 11,  
 TOWNSHIP 17 SOUTH, RANGE 1 EAST  
 THE CITY OF LEEDS  
 ST. CLAIR COUNTY, ALABAMA

11 LOTS  
 ZONED: R-6

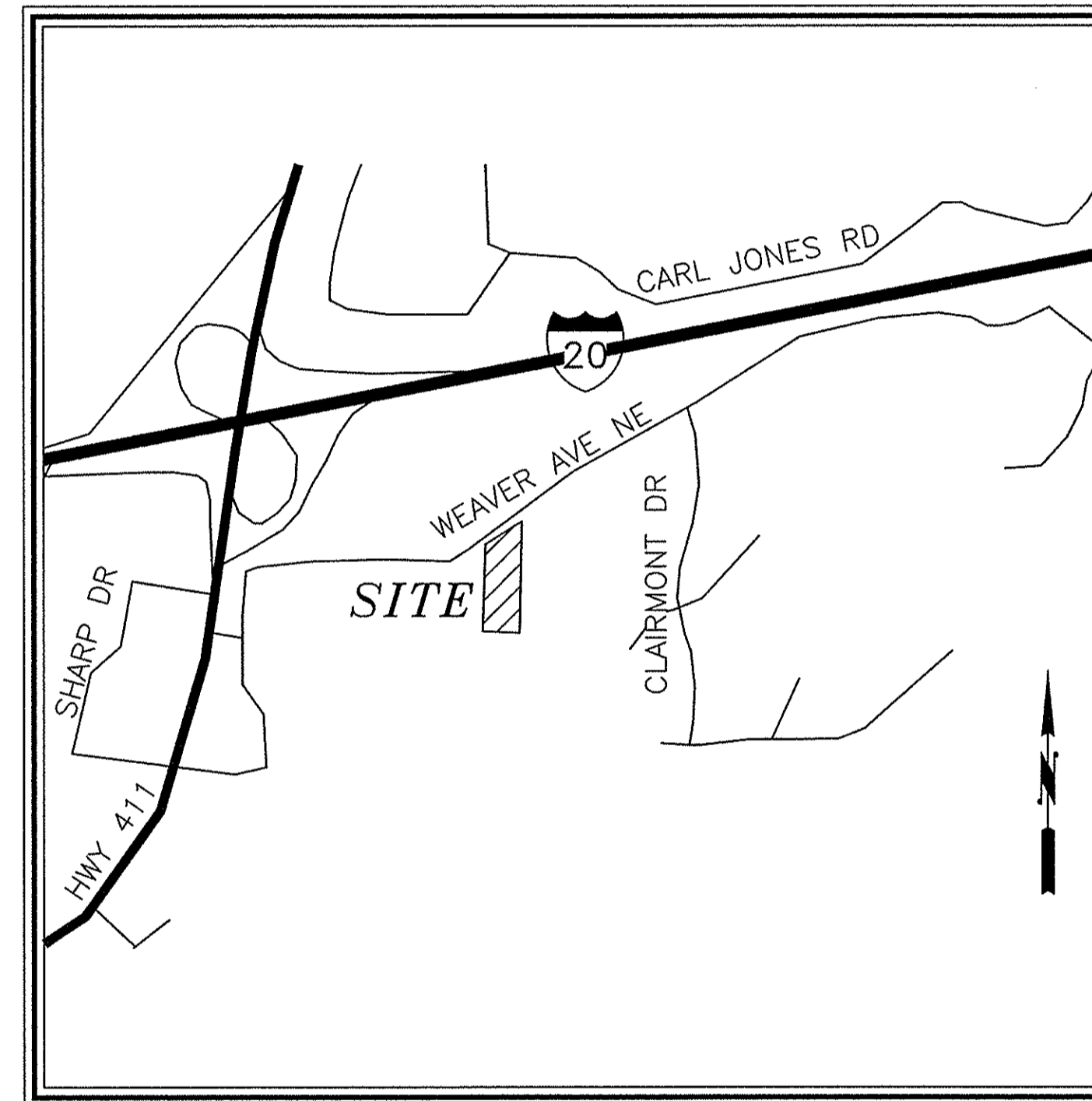
## SHEET INDEX

PREPARED FOR:  
 DEVELOPER:  
 Grants Mill, LLC  
 2106 Devereux Circle  
 Birmingham, Alabama 35243

CONTACT: PRICE HIGHTOWER  
 (205) 970-2363

PROFESSIONAL CIVIL ENGINEER: Joel B. Childers DATE: 5/20/19  
 JOEL B. CHILDERS, AL. REG. NO. 22167

PROFESSIONAL LAND SURVEYOR: Barton F. Carr DATE: 5/20/19  
 BARTON F. CARR, AL. REG. NO. 16685



VICINITY MAP  
 NOT TO SCALE

PID No. 26 01 11 0 001 023.000

### SHEET NUMBER

76.197-01  
 76.197-02  
 76.197-03  
 76.197-04  
 76.197-05  
 76.197-06  
 76.197-07  
 76.197-08  
 76.197-09  
 76.197-10  
 76.197-11  
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 76.197-15  
 76.197-16

### SHEET TITLE

TITLE SHEET  
 BOUNDARY AND TOPOGRAPHIC SURVEY  
 PRELIMINARY PLAT  
 GRADING PLAN  
 UTILITY PLAN  
 CBMPP PHASE I  
 CBMPP PHASE II  
 CBMPP PHASE III  
 CBMPP DETAILS  
 ROAD #1 PLAN/PROFILE  
 STORM PROFILES  
 DETAILS (SHEET 1)  
 DETAILS (SHEET 2)  
 SANITARY SEWER S-1 PLAN/PROFILE  
 SANITARY SEWER DETAILS (SHEET 1)  
 SANITARY SEWER DETAILS (SHEET 2)

RED-ELECTRIC POWER LINES, CABLES, CONDUIT AND LIGHTING CABLES  
 YELLOW-GAS, OIL, STEAM, PETROLEUM OR GASEOUS MATERIALS  
 ORANGE-COMMUNICATION, ALARM OR SIGNAL LINES, CABLES OR CONDUIT  
 BLUE-WATER, IRRIGATION AND SLURRY LINES  
 GREEN-SEWERS AND DRAIN LINES  
 WHITE-PROPOSED EXCAVATION

Alabama Line  
 Location Center, Inc.  
 1-800-292-8525  
 252-4444 (Birmingham Area)  
 Call 2 working days before digging.  
*It's the Law!*

Alabama Line Location  
 Ticket No.:191120771

Prepared By:

**C&A**  
 Carr & Associates Engineers, Inc.  
 153 Cahaba Valley Parkway  
 Pelham, Alabama 35124  
 (205) 664-8498

May, 2019

**POSSIBLE EXCEPTIONS**

Right-of-Way granted to Alabama Power Company as recorded in:  
 -Deed Book 72, Page 153 is blanket over and affecting the subject property.  
 -Deed Book 66, Page 443 is blanket over and affecting the subject property.  
 -Deed Book 63, Page 447 is off of and not affecting the subject property.  
 -Deed Book 64, Page 11 is blanket in nature over the subject property.

Right-of-Way as recorded in Deed Book 52, Page 461 is off of and not affecting the subject property.

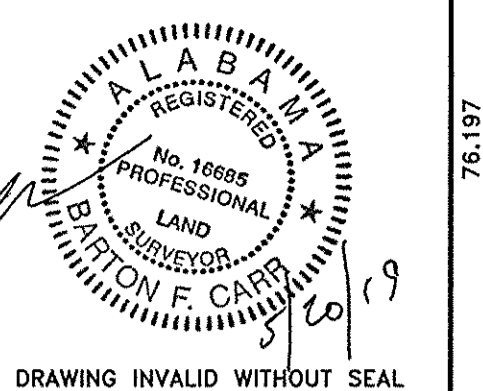
Ingress and Egress easement and water rights as recorded in Deed Book 101, Page 715 grants access and water rights to the deeded property shown without describing where the access and water rights are located.

**LEGAL DESCRIPTION**

A parcel of land situated in the Southwest Quarter of the Section 11, Township 17 South, Range 1 East, Huntsville Meridian, St. Clair County, Alabama, Pell City Division, being more particularly described as follows:

Commence at a one-half inch pipe found at the Southwest Corner of Section 11, Township 17 South, Range 1 East, Huntsville Meridian, St. Clair County, Alabama; thence proceed North 00°00'00" East (Bearing basis is Deed Book 2002, Page 8228, St. Clair County, Alabama) a distance of 781.69 feet to the POINT OF BEGINNING at a one-half inch found pipe; thence continue North 00°00'00" East a distance of 429.22 feet to a one-half inch set rebar (with a plastic cap stamped "CARR 00010 LS"), said point being on the South Right-of-Way line of WEAVER AVENUE with a variable width Right-of-Way; thence with chord bearing of North 32°47'39" East and a chord distance of 27.82 feet, run along the aforesaid Right-of-Way Northeasterly, then Northerly 27.86 feet along the arc of a concave curve to the Northwest, counterclockwise, with a radius of 150.00 feet and a central angle of 10°38'32" to the Point of Reverse curve to the right, concave Southeast with chord bearing of North 41°14'08" East, a chord distance of 95.16 feet and a radius of 200.00 feet; thence run along the aforesaid Right-of-Way Northerly, then Northeasterly 96.08 feet along the arc of said curve; thence continue along the aforesaid Right-of-Way North 54°59'54" East a distance of 169.43 feet to a one-quarter inch found rod; thence run South 00°45'17" West a distance of 628.95 feet to a one-half inch found pipe; thence run North 87°55'33" West a distance of 208.43 feet to the POINT OF BEGINNING.

Said Parcel contains 2.65 Acres.



**CARR & ASSOCIATES ENGINEERS, INC.**  
 153 CAHABA VALLEY PARKWAY  
 PELHAM, ALABAMA 35124  
 Phone: (205) 694-6666 Fax: (205) 694-1868  
**CIVIL, STRUCTURAL & ENVIRONMENTAL ENGINEERS**  
**AND**  
**LAND SURVEYORS**

NO.	DESCRIPTION	BY	REVIEW	DATE

PRODUCTION	REVIEW
FIELD BOOK: 1179	SURVEYOR
CREW CHIEF: CV	DESIGN ENGINEER
CADD OPER: BBY	P. E.
CADD FILE: 76197	PRINCIPAL
DESIGN ENG: N/A	
DESIGN FILE: N/A	
DATE: MAY 20, 2019	
SCALE: 1"=50'	

**NOTES:**

- This survey and the descriptions shown hereon are based on the prior subdivision plat/deed. No deed research or extent of ownership is implied herein.
- The Surveyor was not informed of the existence of any cemeteries on the properties shown hereon.
- The use of this survey is limited to its purpose shown hereon and as understood by the Surveyor at the time of the survey. Any other uses are at the liability of the user.
- This plat may not be recorded without the express written consent of the Surveyor.
- The entire subject property is located in Zone "X" as per FEMA FIRM Map No. 01073C0434H with an effective date of September 3, 2010.

**CERTIFICATE**

I hereby state that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information, and belief.

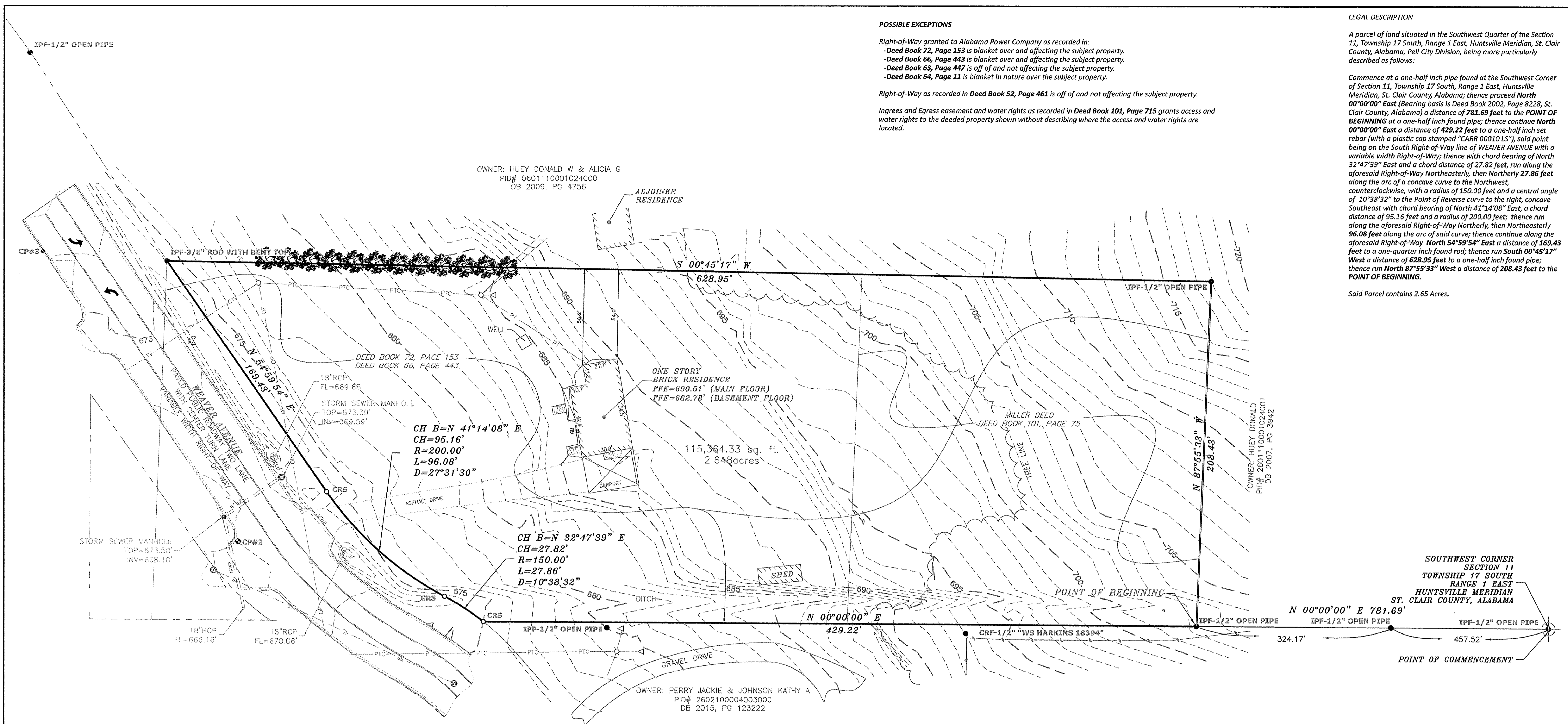
According to fieldwork completed under my supervision on April 29, 2019.

*[Signature]* 5/20/19  
 Barton F. Carr Date of Signature  
 AL PLS No. 16685  
 bartcarr@carrengineers.com

**GRANTS MILL, LLC**  
 PROJECT NAME:  
**THE COTTAGES ON WEAVER**  
**CITY OF LEEDS**  
**ST. CLAIR COUNTY, ALABAMA**

CLIENT: PROJECT NO. 76.197  
 SHEET 1 OF 1  
 DWG. NO.: **76.197-02**

DRAWING TITLE:  
**BOUNDARY AND TOPOGRAPHIC SURVEY**



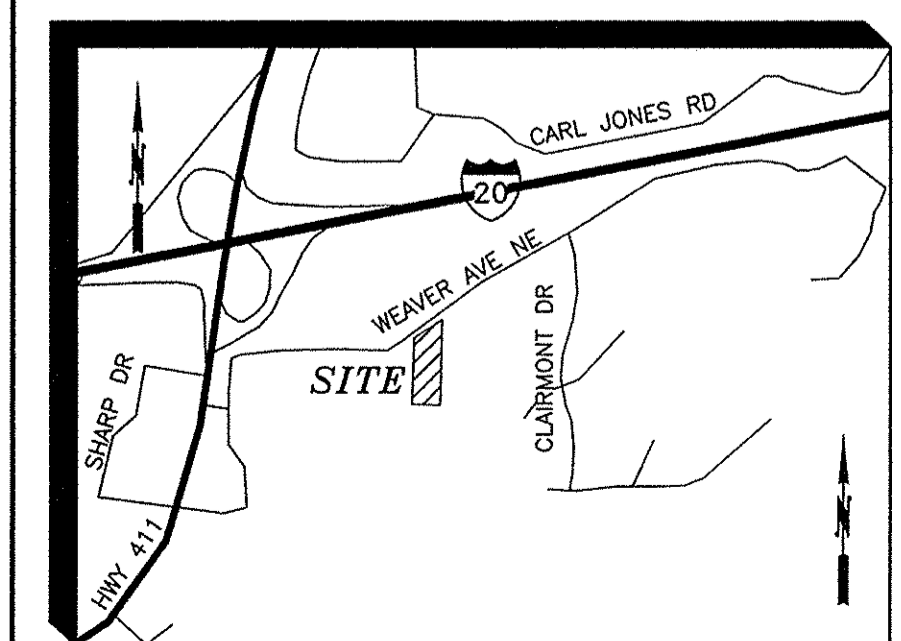
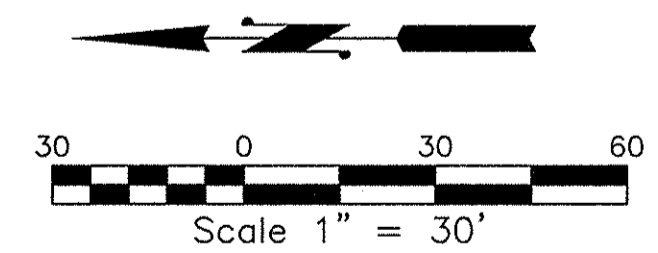
**LEGEND**

- CONCRETE MONUMENT FOUND
- CAPPED REBAR/IRON PIN FOUND
- CAPPED REBAR/IRON PIN SET
- CRS CAPPED REBAR SET STAMPED "CARR 00010LS"
- IPF IRON PIN FOUND
- CRF CAPPED REBAR FOUND
- CONCRETE WALK OR PAD
- TEMPORARY BENCHMARK
- UTILITY POLE
- GUY ANCHOR
- GAS METER
- FIRE HYDRANT
- WATER METER
- WATER VALVE
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- GRATE INLET
- SPOT ELEVATION
- CREPE MYRTLE
- RIGHT-OF-WAY LINE
- SECTION LINE
- PROPERTY LINE
- 1' CONTOUR LINE
- 5' CONTOUR LINE
- OP OVERHEAD POWER LINE
- PT OVERHEAD POWER & PHONE
- PTC OVERHEAD POWER, PHONE & CABLE
- W WATER LINE
- SS SANITARY SEWER LINE
- x-x-x CHAIN LINK FENCE
- o-o-o WOOD FENCE
- o-o-o HOG WIRE FENCE
- o-o-o STORM SEWER PIPE

**SOURCE BENCHMARK**

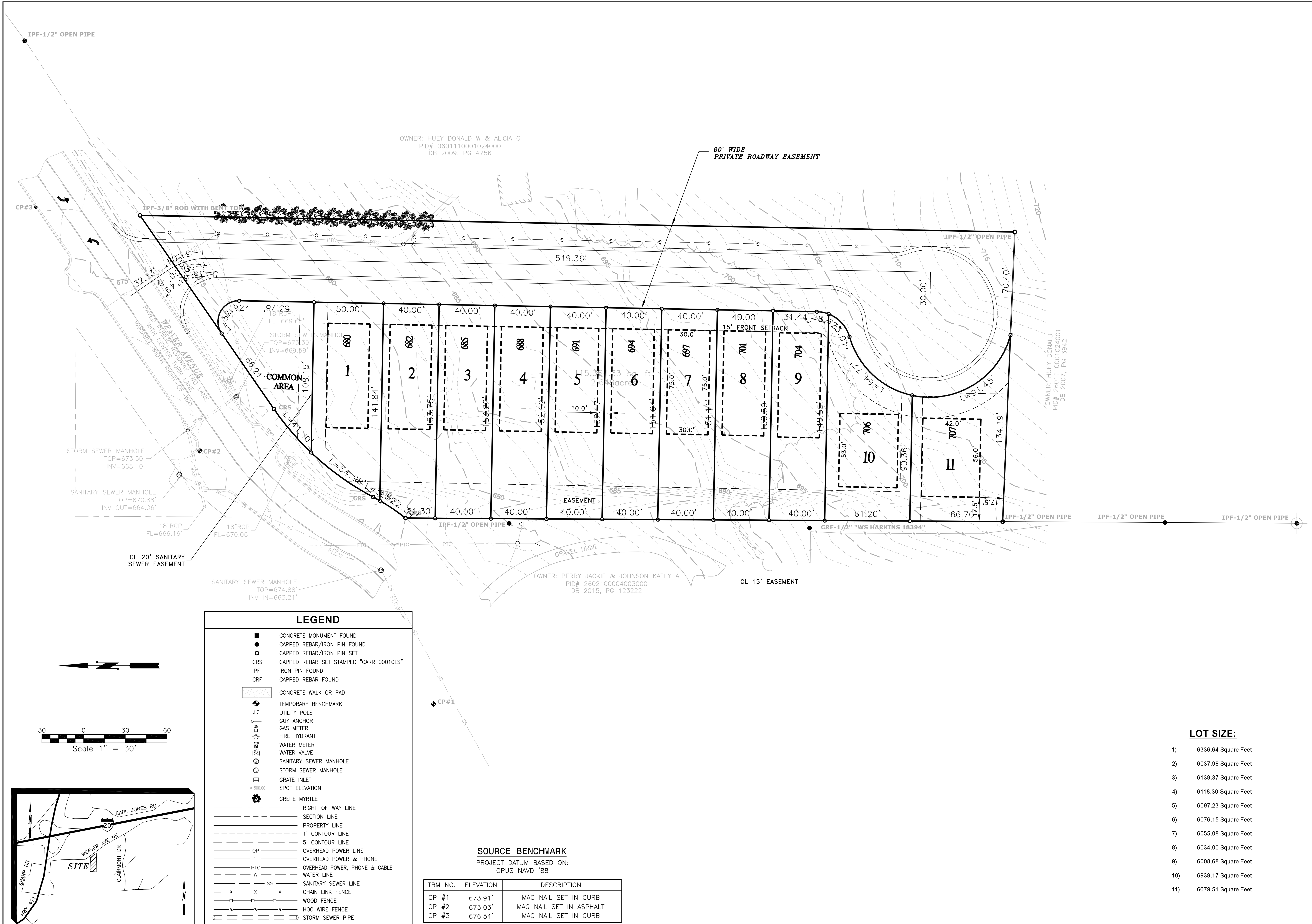
PROJECT DATUM BASED ON:  
 OPUS NAVD '88

TBM NO.	ELEVATION	DESCRIPTION
CP #1	673.91'	MAG NAIL SET IN CURB
CP #2	673.03'	MAG NAIL SET IN ASPHALT
CP #3	676.54'	MAG NAIL SET IN CURB



PROJECT NO. 76.197



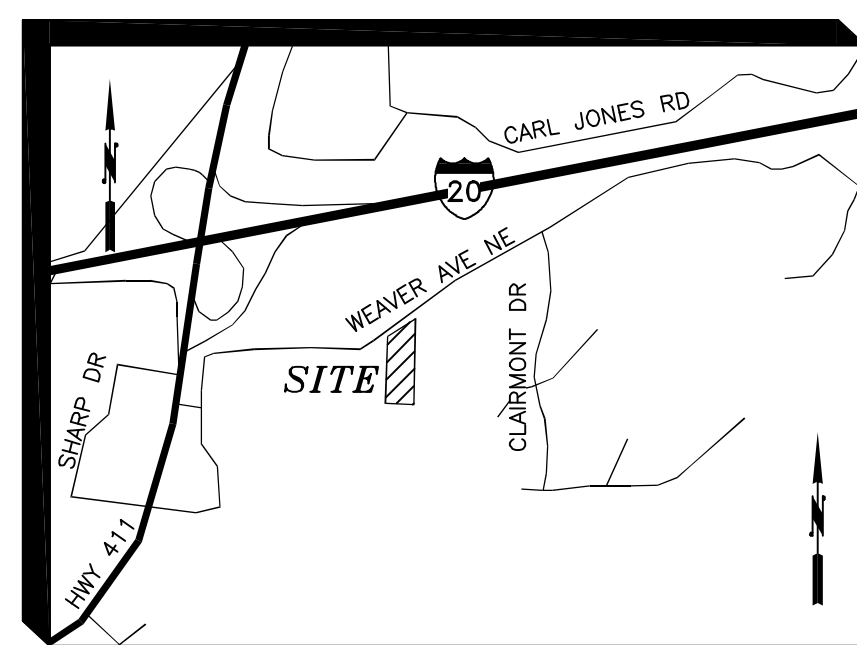
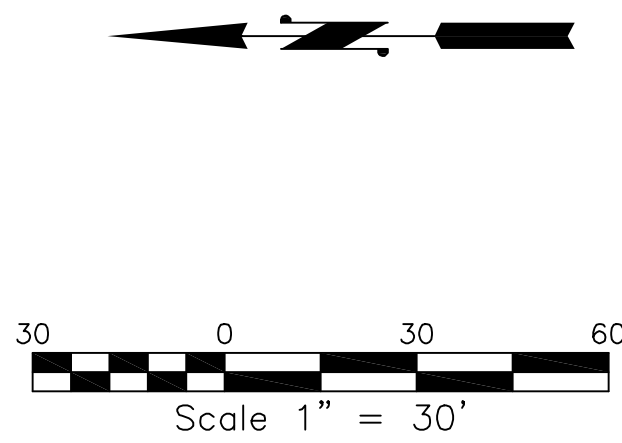


**LEGEND**

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- 5' CONTOUR LINE
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- PT OVERHEAD POWER & PHONE
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- W WATER LINE
- SS SANITARY SEWER LINE
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- WOOD FENCE
- HOG WIRE FENCE
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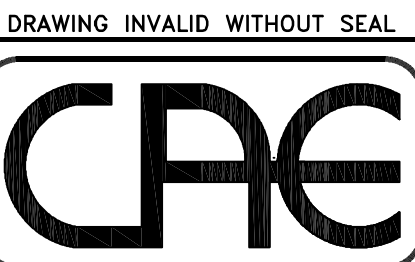
**SOURCE BENCHMARK**  
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TBM NO.	ELEVATION	DESCRIPTION
CP #1	673.91'	MAG NAIL SET IN CURB
CP #2	673.03'	MAG NAIL SET IN ASPHALT
CP #3	676.54'	MAG NAIL SET IN CURB



**LOT SIZE:**

- 1) 6336.64 Square Feet
- 2) 6037.98 Square Feet
- 3) 6139.37 Square Feet
- 4) 6118.30 Square Feet
- 5) 6097.23 Square Feet
- 6) 6076.15 Square Feet
- 7) 6055.08 Square Feet
- 8) 6034.00 Square Feet
- 9) 6008.68 Square Feet
- 10) 6939.17 Square Feet
- 11) 6679.51 Square Feet



**CARR & ASSOCIATES ENGINEERS, INC.**  
 153 CAHABA VALLEY PARKWAY  
 PELHAM, ALABAMA 35124  
 PHONE (205) 984-8808 FAX (205) 984-8865

**CIVIL, STRUCTURAL & ENVIRONMENTAL ENGINEERS AND LAND SURVEYORS**

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REVISIONS		BY	REVIEW	DATE
NO.	DESCRIPTION			

PRODUCTION	REVIEW
FIELD BOOK: 1179	SURVEYOR
CREW CHIEF: CV	DESIGN ENGINEER
CADD OPER: BBY	P. E.
CADD FILE: 16037	PRINCIPAL
DESIGN ENG: N/A	DATE: MAY 20, 2019
DESIGN FILE: N/A	SCALE: 1"=30'

**CLIENT:** GRANTS MILL, LLC

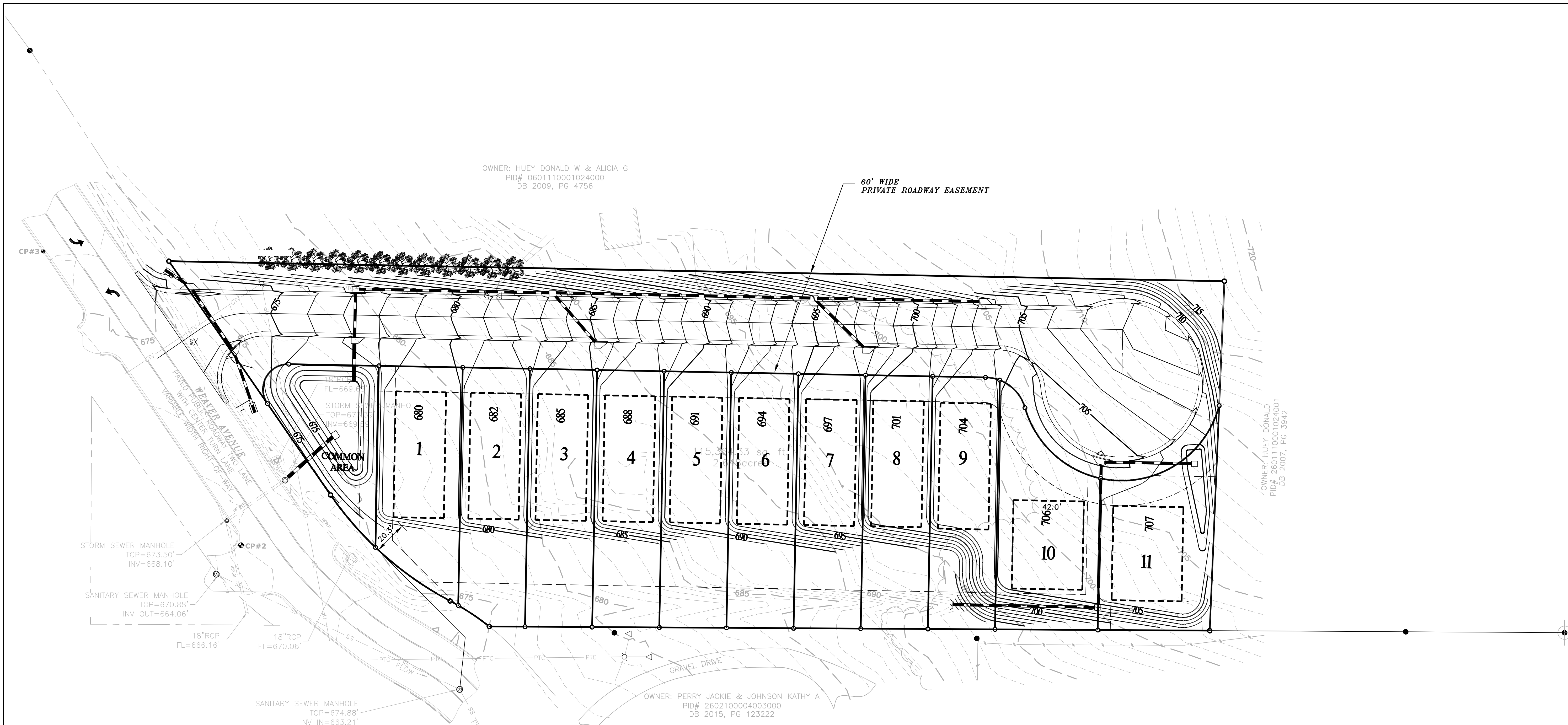
**PROJECT NAME:** THE COTTAGES ON WEAVER CITY OF LEEDS ST. CLAIR COUNTY, ALABAMA

**DRAWING TITLE:** PRELIMINARY PLAT

PROJECT NO. 76.197

SHEET 1 OF 1

DWG. NO.: 76.197-03

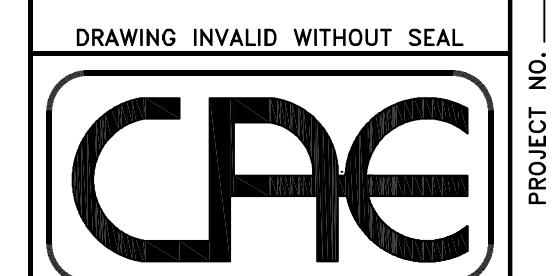
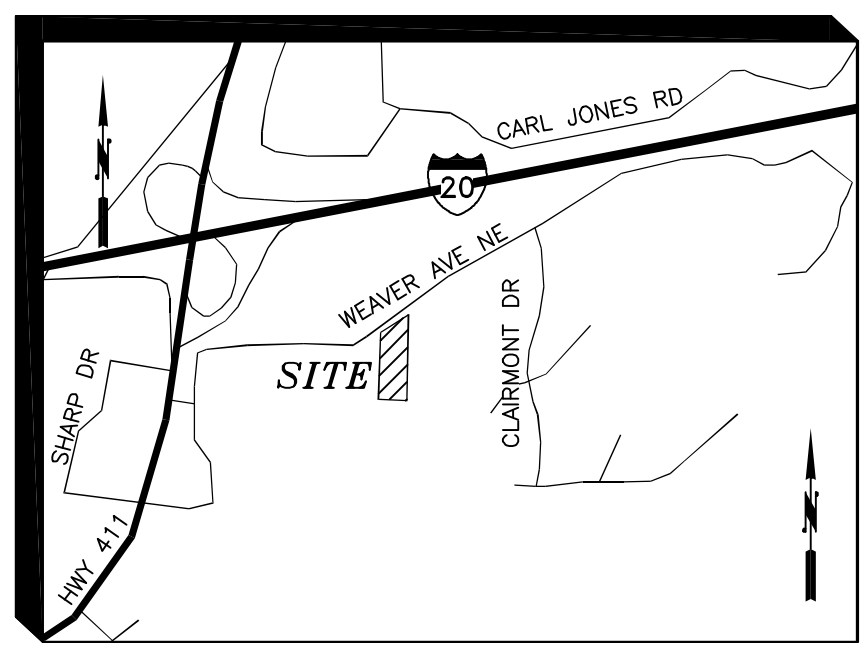
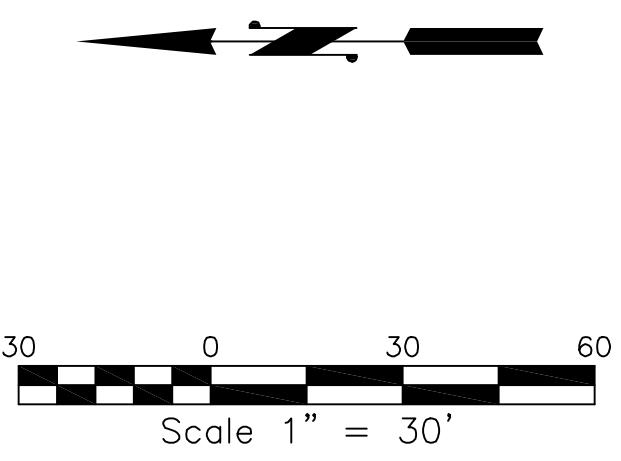


**LEGEND**

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- WOOD FENCE
- HOG WIRE FENCE
- STORM SEWER PIPE

**SOURCE BENCHMARK**  
PROJECT DATUM BASED ON:  
OPUS NAVD '88

TBM NO.	ELEVATION	DESCRIPTION
CP #1	673.91'	MAG NAIL SET IN CURB
CP #2	673.03'	MAG NAIL SET IN ASPHALT
CP #3	676.54'	MAG NAIL SET IN CURB



**CARR & ASSOCIATES ENGINEERS, INC.**  
153 CAHABA VALLEY PARKWAY  
PELHAM, ALABAMA 35124  
PHONE (205) 984-8400 FAX (205) 984-8405  
LAND SURVEYORS  
CIVIL, STRUCTURAL & ENVIRONMENTAL ENGINEERS  
AND  
LAND SURVEYORS

REVISIONS

NO.	DESCRIPTION	BY	REVIEW	DATE

PRODUCTION

FIELD BOOK:	CREW CHIEF:	CADD OPER:	CADD FILE:	DESIGN ENG:	DESIGN FILE:	DATE:	SCALE:
1179	CV	BBY	15037	N/A	N/A	MAY 20, 2019	1"=30'

REVIEW

SURVEYOR	DESIGN ENGINEER	P. E.	PRINCIPAL

CLIENT: **GRANTS MILL, LLC**

PROJECT NAME: **THE COTTAGES ON WEAVER CITY OF LEEDS ST. CLAIR COUNTY, ALABAMA**

DRAWING TITLE: **GRADING PLAN**

PROJECT NO. 76.197

SHEET 1 OF 1

DWG. NO.: **76.197-04**



DRAWING INVALID WITHOUT SEAL



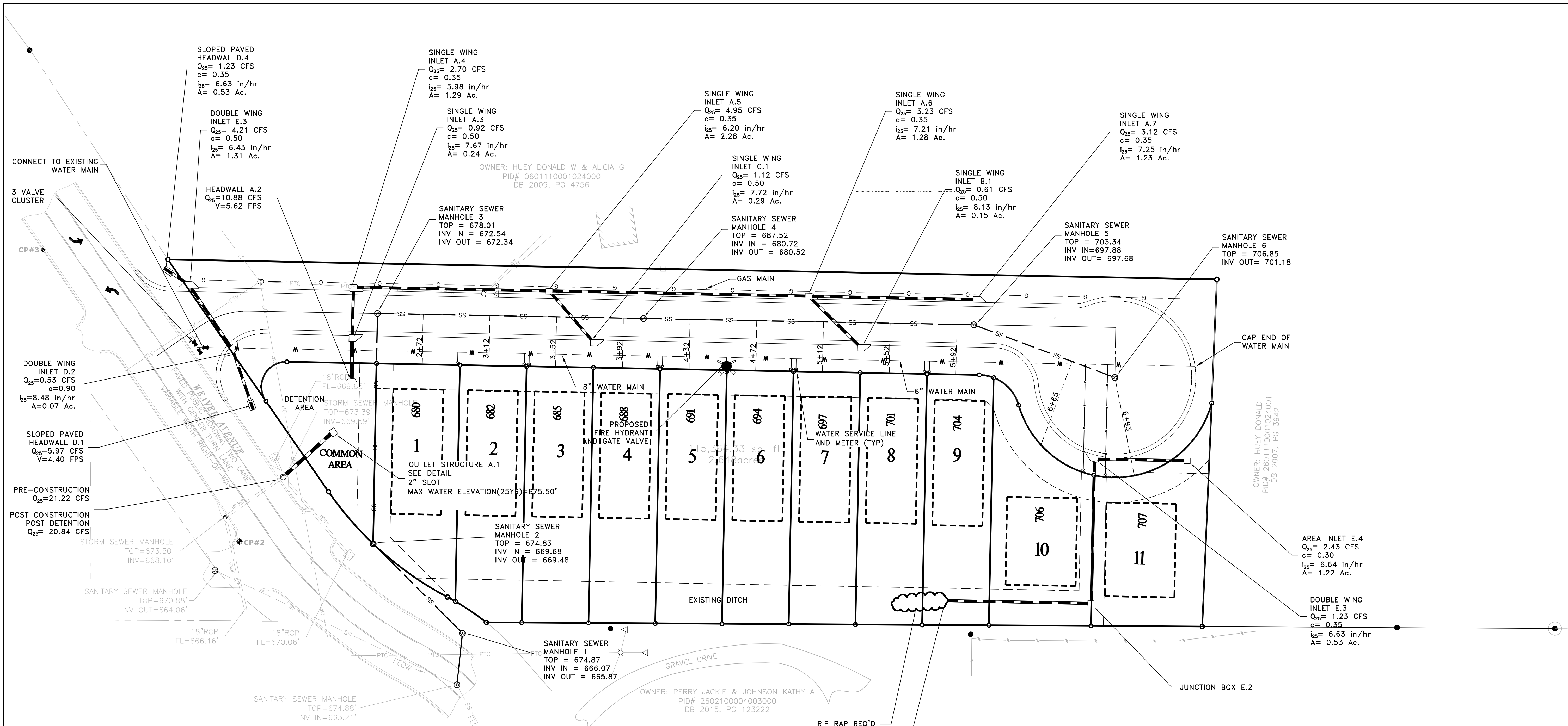
**CARR & ASSOCIATES ENGINEERS, INC.**  
 153 CAHABA VALLEY PARKWAY  
 PELHAM, ALABAMA 35124  
 PHONE (205) 984-8400 FAX (205) 984-8405  
 CIVIL, STRUCTURAL & ENVIRONMENTAL ENGINEERS  
 AND  
 LAND SURVEYORS

NO.	DESCRIPTION	BY	REVIEW	DATE

PRODUCTION	REVIEW	DATE
FIELD BOOK: 1179	SURVEYOR	
CREW CHIEF: CV	DESIGN ENGINEER	
CADD OPER: BBY	P. E.	
CADD FILE: 1607	PRINCIPAL	
DESIGN ENG: N/A		
DATE: MAY 1, 2019		
SCALE: 1"=30'		

CLIENT: **GRANTS MILL, LLC**  
 PROJECT NAME: **THE COTTAGES ON WEAVER CITY OF LEEDS ST. CLAIR COUNTY, ALABAMA**  
 DRAWING TITLE: **UTILITY PLAN**

PROJECT NO. 76.197  
 SHEET 1 OF 1  
 DWG. NO.: **76.197-05**



**LEGEND**

■	CONCRETE MONUMENT FOUND
●	CAPPED REBAR/IRON PIN FOUND
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CRS	CAPPED REBAR SET STAMPED "CARR 00010LS"
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□	HOG WIRE FENCE
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 OPUS NAVD '88

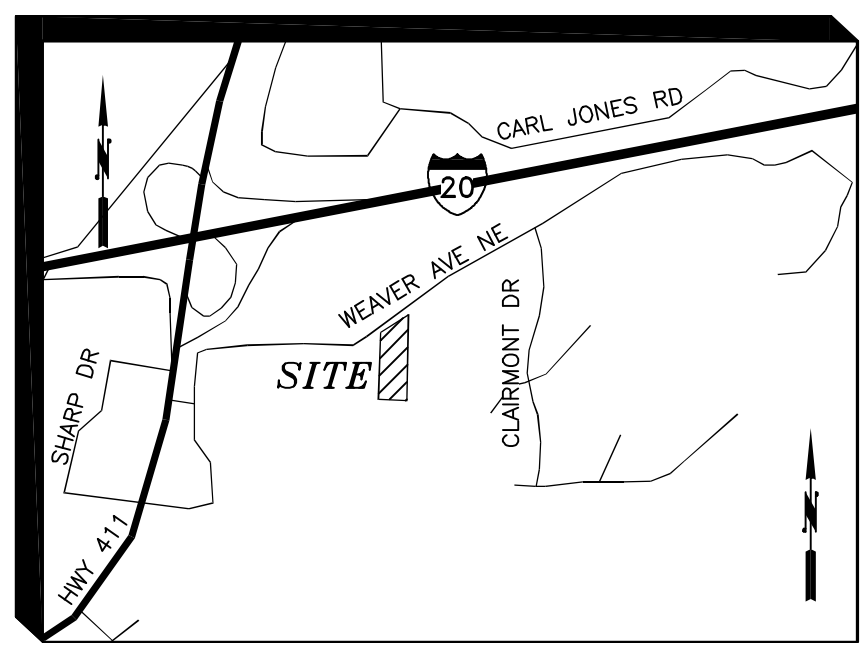
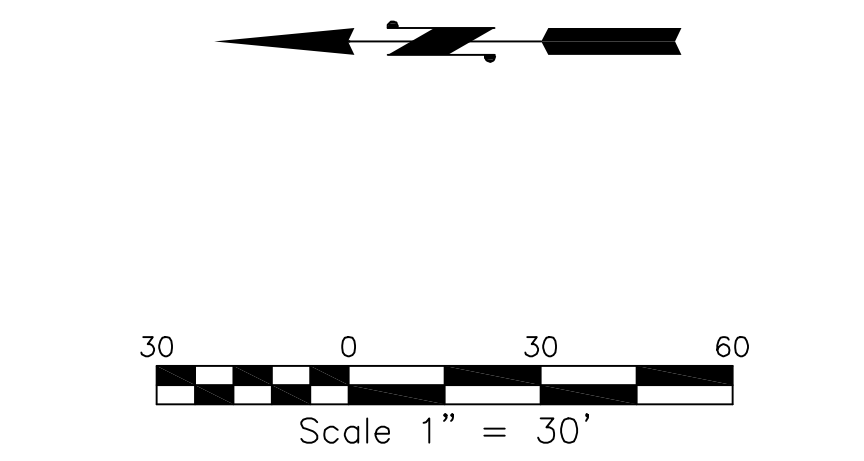
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CP #1	673.91'	MAG NAIL SET IN CURB
CP #2	673.03'	MAG NAIL SET IN ASPHALT
CP #3	676.54'	MAG NAIL SET IN CURB

**POND DATA**

Inflow Peak Flow:	10.88	cfs
Inflow Peak Time:	0.17	hr
Routed Peak Flow:	2.62	cfs
Routed Peak Time:	0.27	hr
Maximum Pond Storage:	0.0987	acre-feet
Maximum Pond Elevation:	675.60	ft

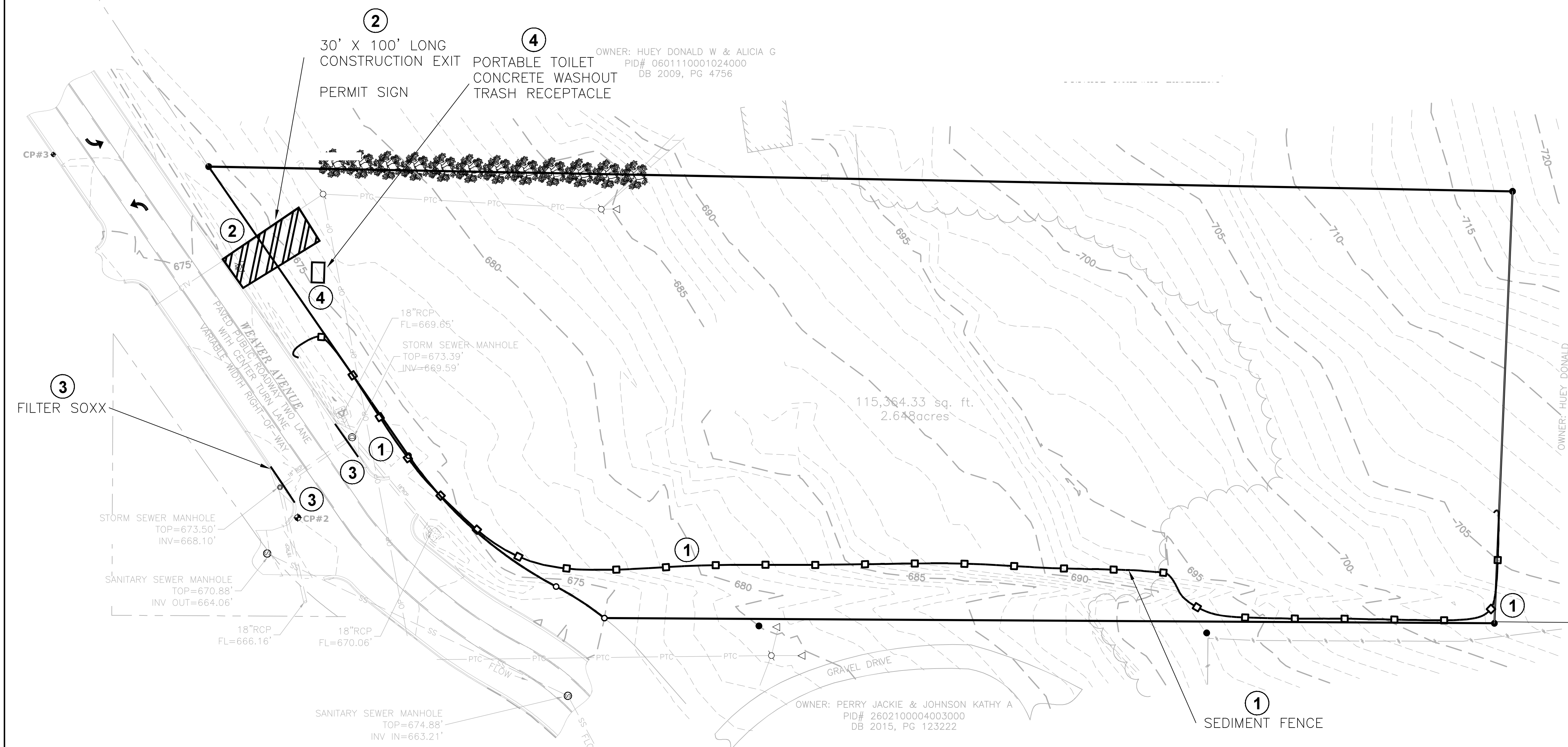
PRE-CONSTRUCTION  
 $Q_{25} = 21.22$  CFS

POST CONSTRUCTION  
 POST DETENTION  
 $Q_{25} = 20.84$  CFS



PROJECT NO. 76.197

Final stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavation or other earth disturbing activities have permanently ceased on any portion of the site, Temporary stabilization of disturbed areas must be initiated immediately whenever work toward project completion and final stabilization of any portion of the site has temporarily ceased on any portion of the site and will not resume for a period exceeding thirteen (13) calendar days.



**LEGEND**

- CONCRETE MONUMENT FOUND
- CAPPED REBAR/IRON PIN FOUND
- CAPPED REBAR/IRON PIN SET
- CRS CAPPED REBAR SET STAMPED "CARR 00010LS"
- IPF IRON PIN FOUND
- CRF CAPPED REBAR FOUND
- ▨ CONCRETE WALK OR PAD
- ⊕ TEMPORARY BENCHMARK
- UTILITY POLE
- ⊕ GUY ANCHOR
- GAS METER
- FIRE HYDRANT
- WATER METER
- WATER VALVE
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- GRATE INLET
- SPOT ELEVATION
- CREPE MYRTLE
- RIGHT-OF-WAY LINE
- SECTION LINE
- PROPERTY LINE
- 1' CONTOUR LINE
- 5' CONTOUR LINE
- OP OVERHEAD POWER LINE
- PT OVERHEAD POWER & PHONE
- PTC OVERHEAD POWER, PHONE & CABLE
- W WATER LINE
- SS SANITARY SEWER LINE
- CHAIN LINK FENCE
- WOOD FENCE
- HOG WIRE FENCE
- STORM SEWER PIPE

**SOURCE BENCHMARK**  
 PROJECT DATUM BASED ON:  
 OPUS NAVD '88

TBM NO.	ELEVATION	DESCRIPTION
CP #1	673.91'	MAG NAIL SET IN CURB
CP #2	673.03'	MAG NAIL SET IN ASPHALT
CP #3	676.54'	MAG NAIL SET IN CURB

**PHASE I**

**SCHEDULE OF EVENTS**

- ① PLACE SEDIMENT FENCE AS SHOWN.
- ② INSTALL 30' X 100' LONG CONSTRUCTION EXIT AND WEATHER PROTECTED SIGN PERMIT.
- ③ PLACE 9" FILTERSOXX INLET PROTECTION ON EXISTING INLETS.
- ④ PLACE PORTABLE TOILET, CONCRETE WASHOUT AND TRASH RECEPTACLE TO REMAIN UNTIL STREETS ARE PAVED.
- ⑤ BEGIN CLEARING SITE.



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 153 CAHABA VALLEY PARKWAY  
 PELHAM, ALABAMA 35124  
 PHONE (205) 984-8400 FAX (205) 984-8405  
 CIVIL, STRUCTURAL & ENVIRONMENTAL ENGINEERS  
 AND  
 LAND SURVEYORS

NO.	REVISIONS DESCRIPTION	BY	REVIEW	DATE

PRODUCTION	REVIEW
FIELD BOOK: 1179	SURVEYOR
CREW CHIEF: CV	DESIGN ENGINEER
CADD OPER: BBY	P. E.
CADD FILE: 1503	PRINCIPAL
DESIGN ENG: N/A	DATE: MAY 20, 2019
DESIGN FILE: N/A	SCALE: 1"=30'

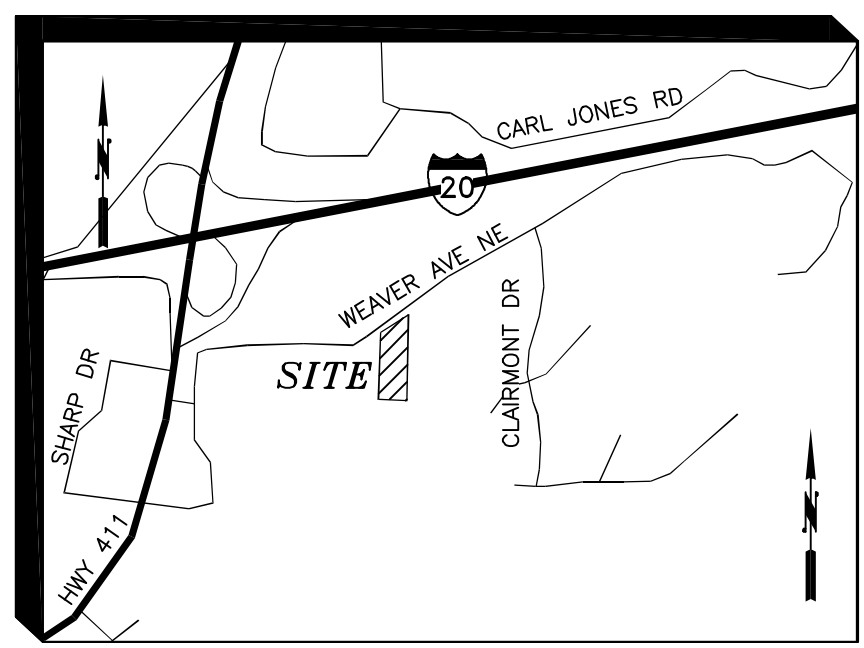
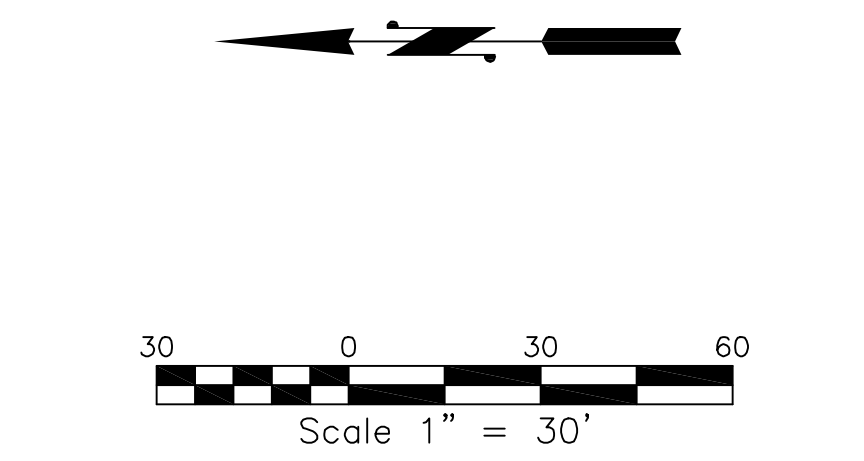
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 PROJECT NAME: **THE COTTAGES ON WEAVER CITY OF LEEDS ST. CLAIR COUNTY, ALABAMA**  
 DRAWING TITLE: **CBMPP PHASE I**

PROJECT NO. 76.197

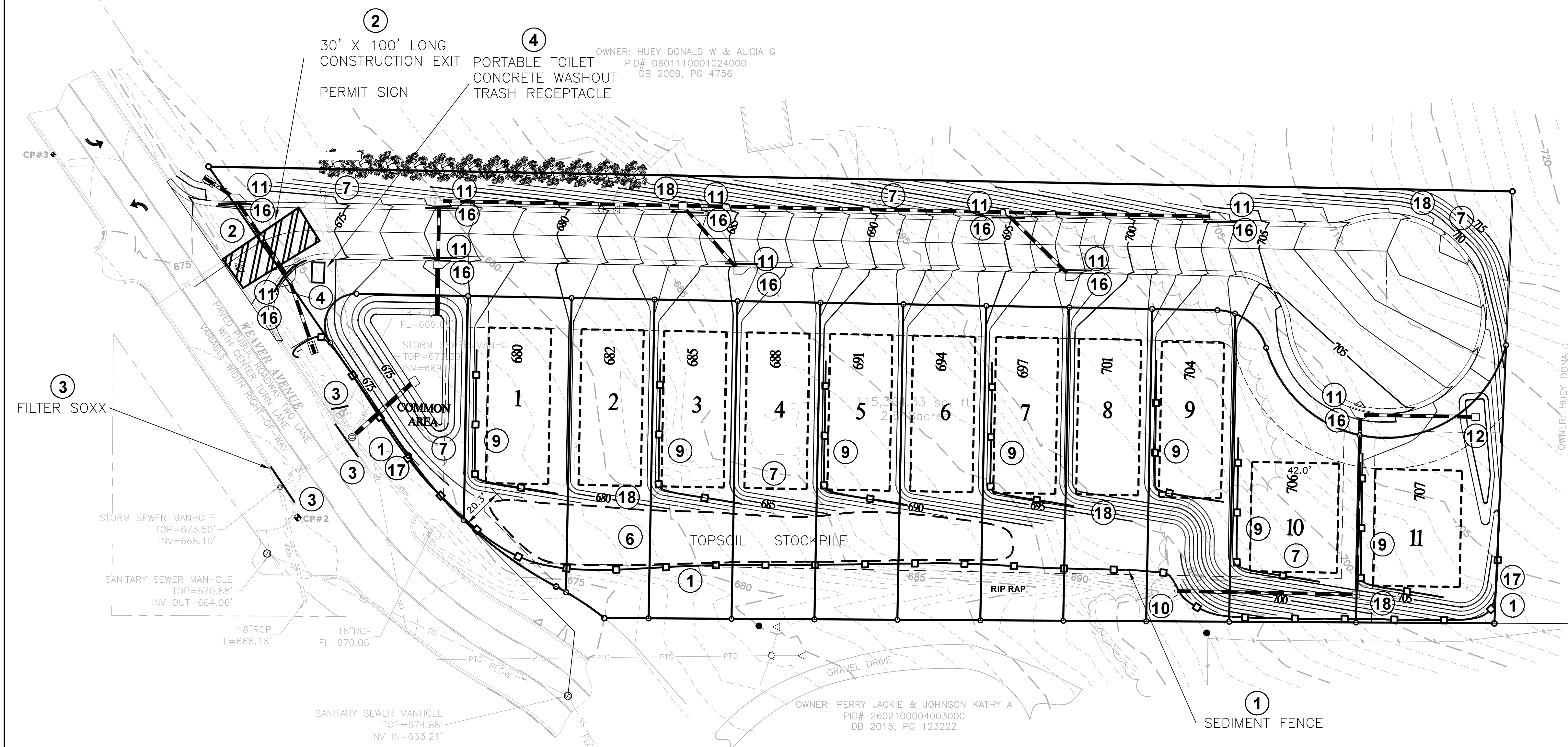
SHEET 1 OF 1

DWG. NO.: **76.197-06**

PROJECT NO. 76.197



Final stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavation or other earth disturbing activities have permanently ceased on any portion of the site, Temporary stabilization of disturbed areas must be initiated immediately whenever work toward project completion and final stabilization of any portion of the site has temporarily ceased on any portion of the site and will not resume for a period exceeding thirteen (13) calendar days.



### LEGEND

- CONCRETE MONUMENT FOUND
- CAPPED REBAR/IRON PIN FOUND
- CAPPED REBAR/IRON PIN SET
- CRS CAPPED REBAR SET STAMPED "CARR 00010LS"
- IPF IRON PIN FOUND
- CRF CAPPED REBAR FOUND
- ▭ CONCRETE WALK OR PAD
- ⊕ TEMPORARY BENCHMARK
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- SS SANITARY SEWER LINE
- CHAIN LINK FENCE
- WOOD FENCE
- HOG WIRE FENCE
- STORM SEWER PIPE

### PHASE II A SCHEDULE OF EVENTS

- 6 COMMENCE TOPSOIL STRIPPING/STOCKPILING AND MASS GRADING. TOPSOIL STOCKPILES ARE TO BE LOCATED AS SHOWN. COMPLETED IMMEDIATELY AND TEMPORARILY SEEDED. TYPE "A" SEDIMENT FENCE SHALL BE PLACED AROUND THE TOE OF EACH STOCKPILE. COMMENCE MASS GRADING.
- 7 STABILIZE AND TEMPORARILY GRASS ALL BARREN AREAS AND COMPLETED SLOPES, INCLUDING HOUSE PADS/SITES.
- 8 SPREAD REMOVED TOPSOIL AS NEEDED AND IMMEDIATELY TEMPORARILY GRASS.
- 9 PLACE TYPE "A" SEDIMENT FENCE ON GRADED LOTS AS SHOWN.

### PHASE II B SCHEDULE OF EVENTS

- 10 INSTALL STORM PIPING INSTALL OUTLET PROTECTION RIP RAP UPON THE INSTALLATION OF STORM PIPING.
- 11 INSTALL DOMED INLET PROTECTION IMMEDIATELY UPON COMPLETION OF EACH CURB INLET BOX.
- 12 INSTALL 9" FILTERSOXX AROUND ALL COMPLETED AND TOPPED YARD INLETS.

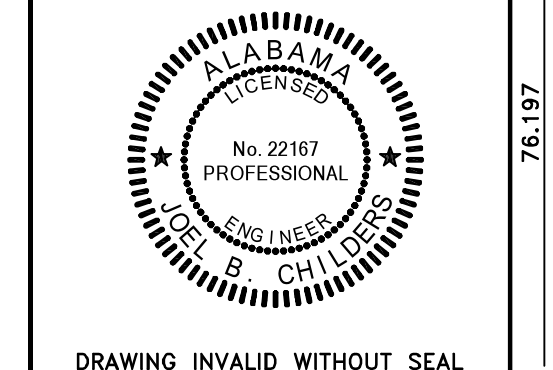
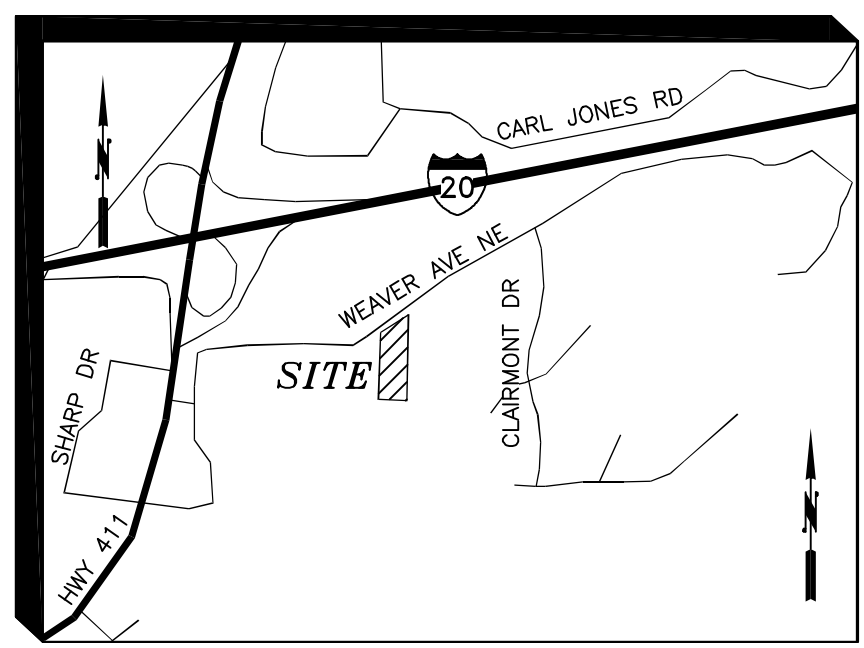
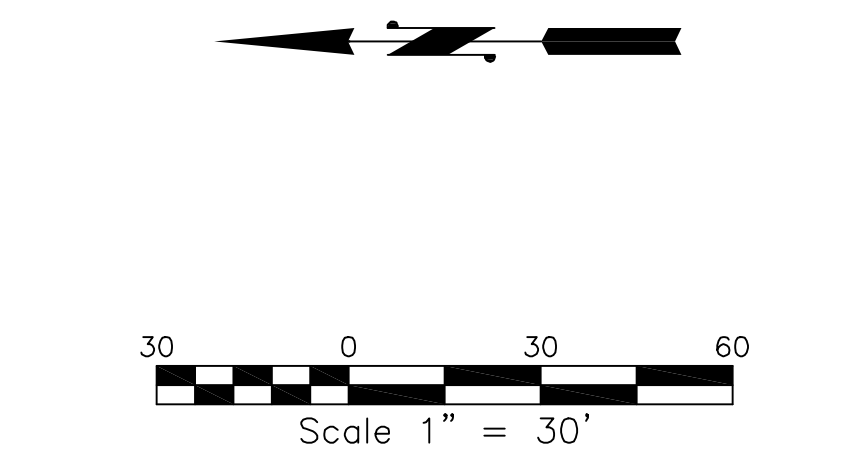
### PHASE II C SCHEDULE OF EVENTS

- 13 INSTALL WATER/SEWER UTILITIES AND IMMEDIATELY INSTALL DENSE GRADE BASE.
- 14 FINAL GRADE SLOPES AND INSTALL EROSION CONTROL BLANKETS WITH SEED ON SLOPES SHOWN AS GREATER THAN OR EQUAL TO 3:1.
- 15 REMOVE DOMED INLET PROTECTION ALONG ROAD ONLY. CONSTRUCT CURB & GUTTER.
- 16 IMMEDIATELY INSTALL 9" FILTERSOXX AT CURB INLETS UPON COMPLETION OF THE CURB. PAVE THE ROAD.
- 17 UPON INSPECTION OF THE TEMPORARY SEEDING BY THE QCP TO CONFIRM THE SLOPES AND OTHER BARREN AREAS ARE STABILIZED, REMOVE ALL PERIMETER SEDIMENT FENCE.
- 18 PERMANENTLY GRASS ALL TEMPORARILY GRASSED AND ALL BARREN AREAS.

### SOURCE BENCHMARK

PROJECT DATUM BASED ON:  
OPUS NAVD '88

TBM NO.	ELEVATION	DESCRIPTION
CP #1	673.91'	MAG NAIL SET IN CURB
CP #2	673.03'	MAG NAIL SET IN ASPHALT
CP #3	676.54'	MAG NAIL SET IN CURB



**CARR & ASSOCIATES ENGINEERS, INC.**  
 153 CAHABA VALLEY PARKWAY  
 PELHAM, ALABAMA 35124  
 PHONE (205) 984-8400 FAX (205) 984-8405  
 CIVIL, STRUCTURAL & ENVIRONMENTAL ENGINEERS  
 AND  
 LAND SURVEYORS

NO.	REVISIONS	DESCRIPTION	BY	REVIEW	DATE

PRODUCTION	REVIEW
FIELD BOOK: 1179	SURVEYOR
CREW CHIEF: CV	DESIGN ENGINEER
CADD OPER: BBY	P. E.
CADD FILE: TEBB	PRINCIPAL
DESIGN ENG: N/A	DATE: MAY 20, 2019
DESIGN FILE: N/A	SCALE: 1"=30'

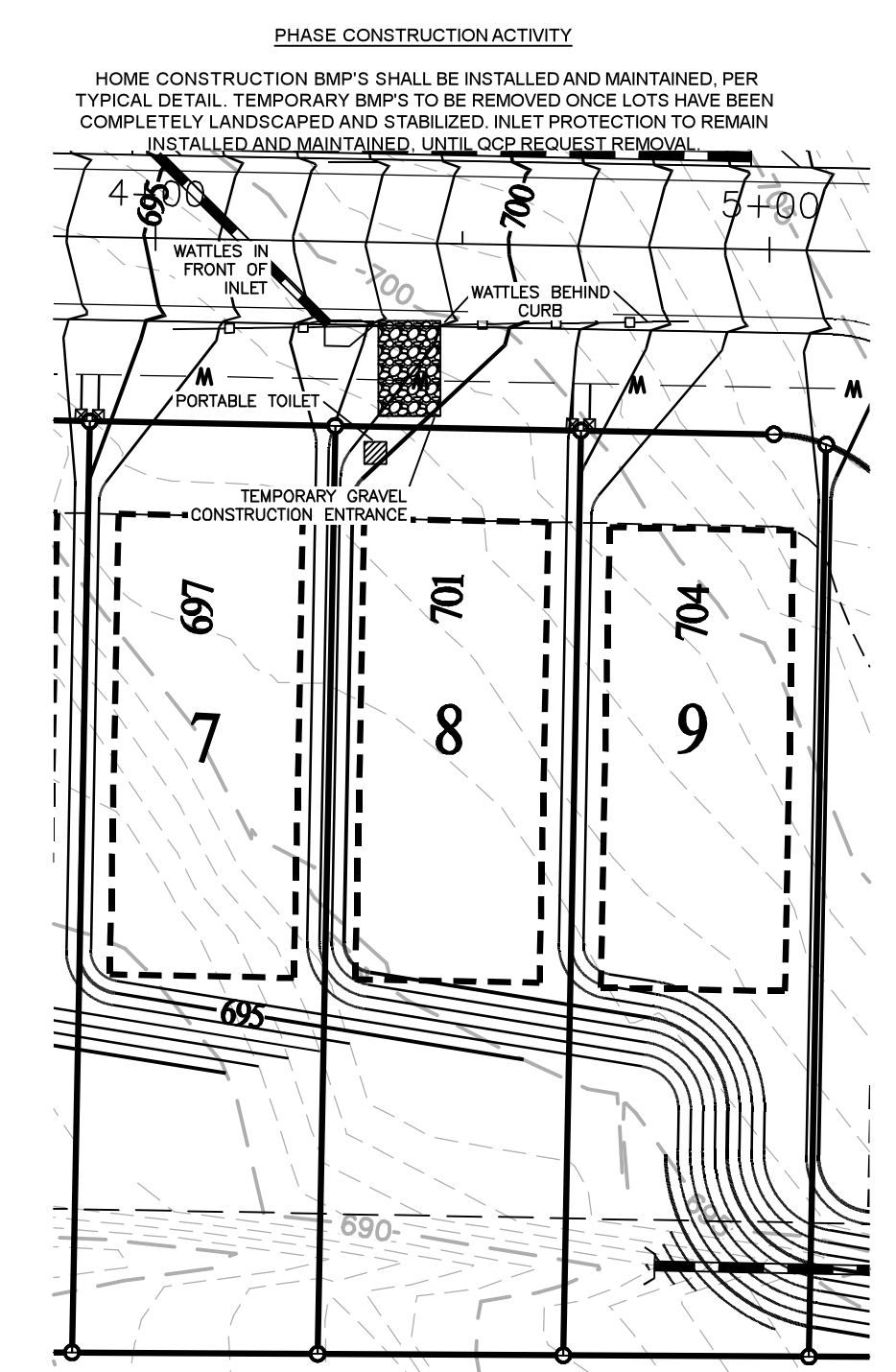
CLIENT: **GRANTS MILL, LLC**  
 PROJECT NAME: **THE COTTAGES ON WEAVER CITY OF LEEDS ST. CLAIR COUNTY, ALABAMA**  
 DRAWING TITLE: **CBMPP PHASE II**

PROJECT NO. 76.197  
 SHEET 1 OF 1  
 DWG. NO.: **76.197-07**

PROJECT NO. 76.197

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HOME CONSTRUCTION  
TYPICAL 3 LOT BMP DETAIL  
N.T.S.



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**CARR & ASSOCIATES ENGINEERS, INC.**  
153 CAHABA VALLEY PARKWAY  
PELHAM, ALABAMA 35124  
PHONE (205) 964-6400 FAX (205) 964-6405  
LAND SURVEYORS  
CIVIL, STRUCTURAL & ENVIRONMENTAL ENGINEERS

NO.	REVISIONS	DESCRIPTION	BY	REVIEW	DATE

PRODUCTION	REVIEW
FIELD BOOK: 1179	SURVEYOR
CREW CHIEF: CV	DESIGN ENGINEER
CADD OPER: BBY	P. E.
CADD FILE: 1603	PRINCIPAL
DESIGN ENG: N/A	DATE: MAY 20, 2019
DESIGN FILE: N/A	SCALE: 1"=30'

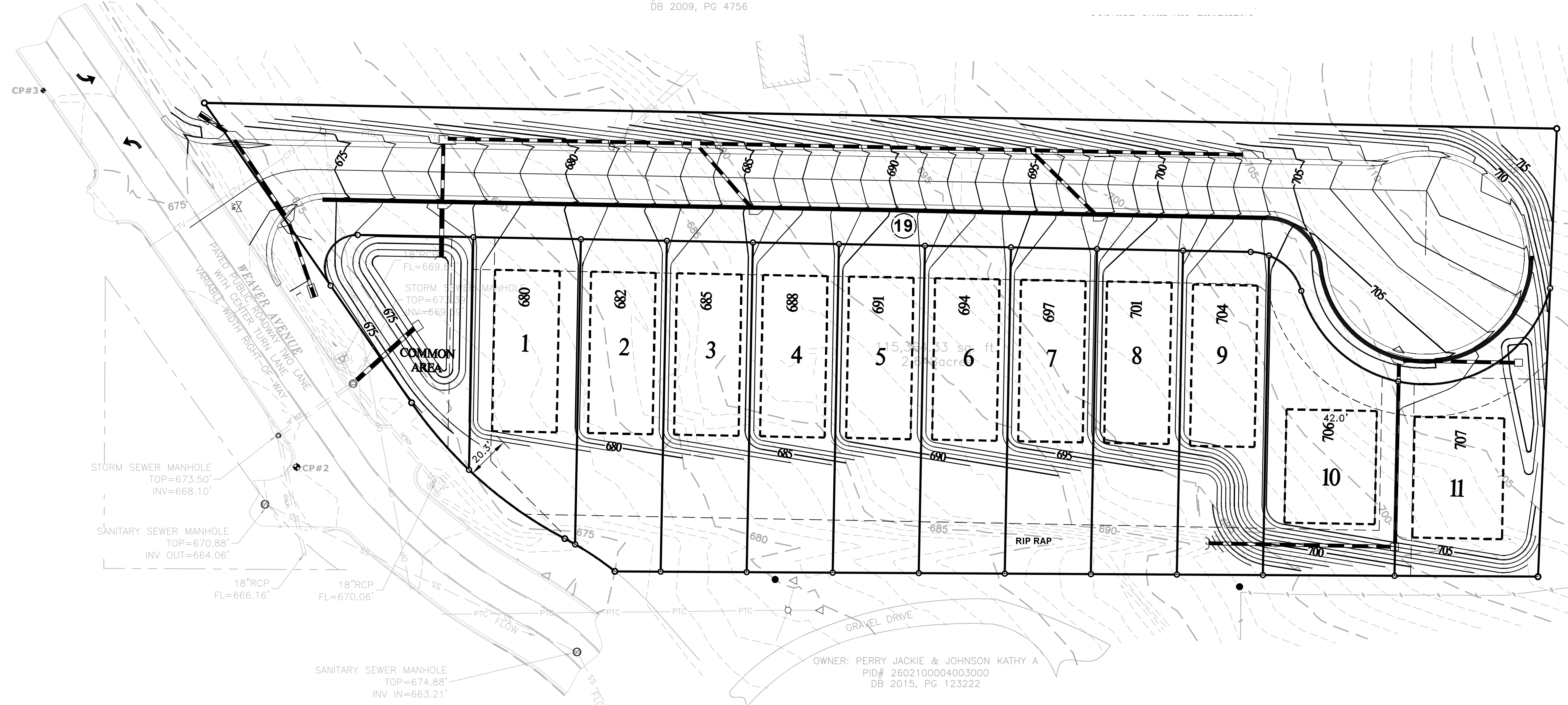
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PROJECT NAME: **THE COTTAGES ON WEAVER CITY OF LEEDS ST. CLAIR COUNTY, ALABAMA**  
DRAWING TITLE: **CBMPP PHASE III**

PROJECT NO. 76.197  
SHEET 1 OF 1  
DWG. NO.: **76.197-08**

OWNER: HUEY DONALD W & ALICIA G  
PID# 0601110001024000  
DB 2009, PG 4756

OWNER: HUEY DONALD  
PID# 2601110001024001  
DB 2007, PG 3942

OWNER: PERRY JACKIE & JOHNSON KATHY A  
PID# 2602100004003000  
DB 2015, PG 123222

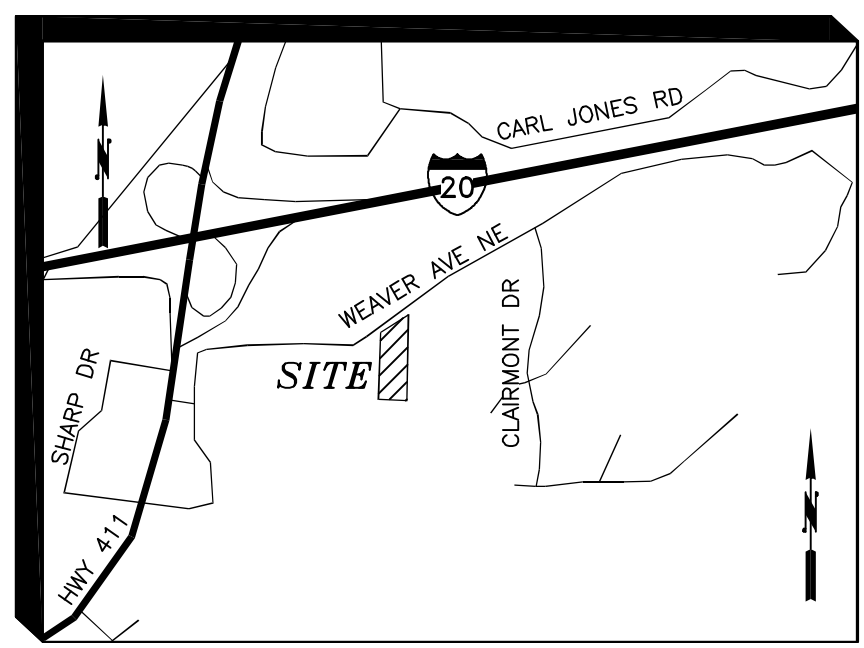
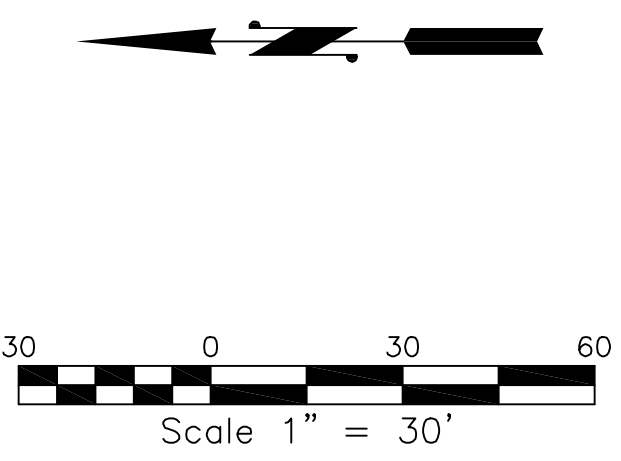


LEGEND

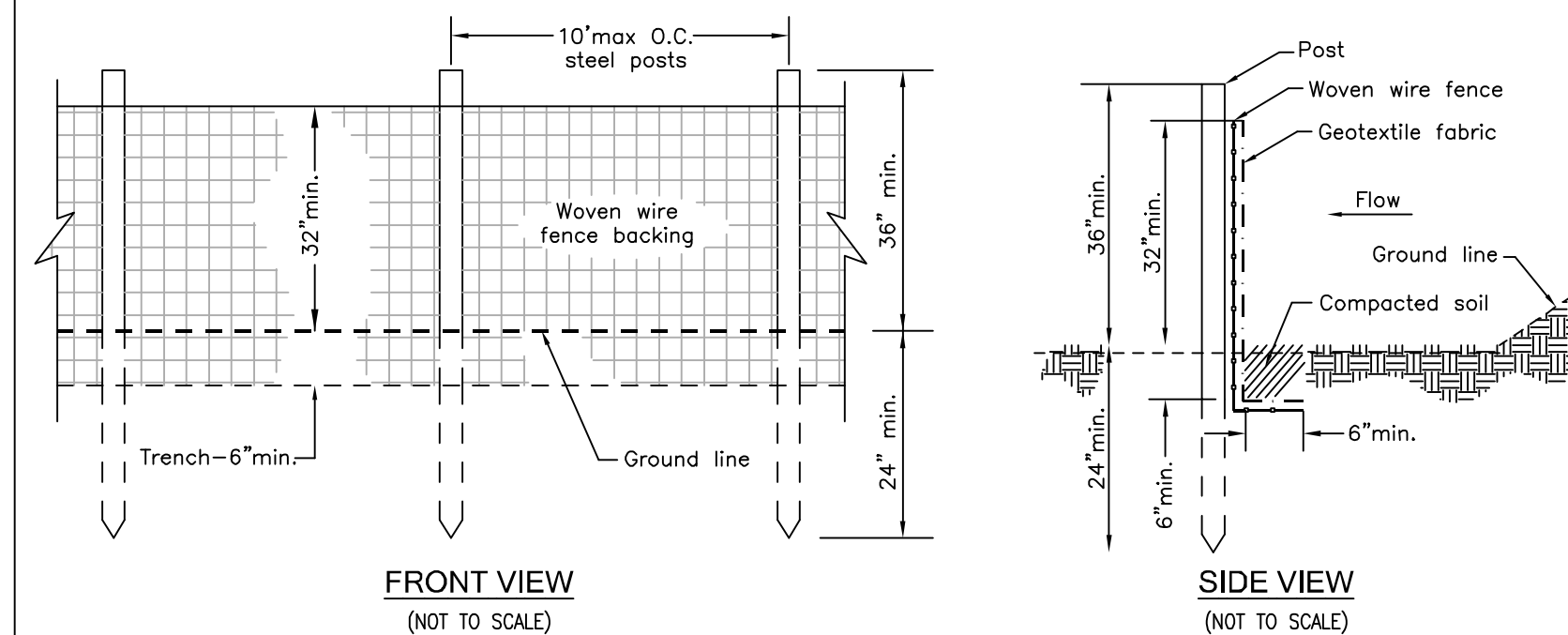
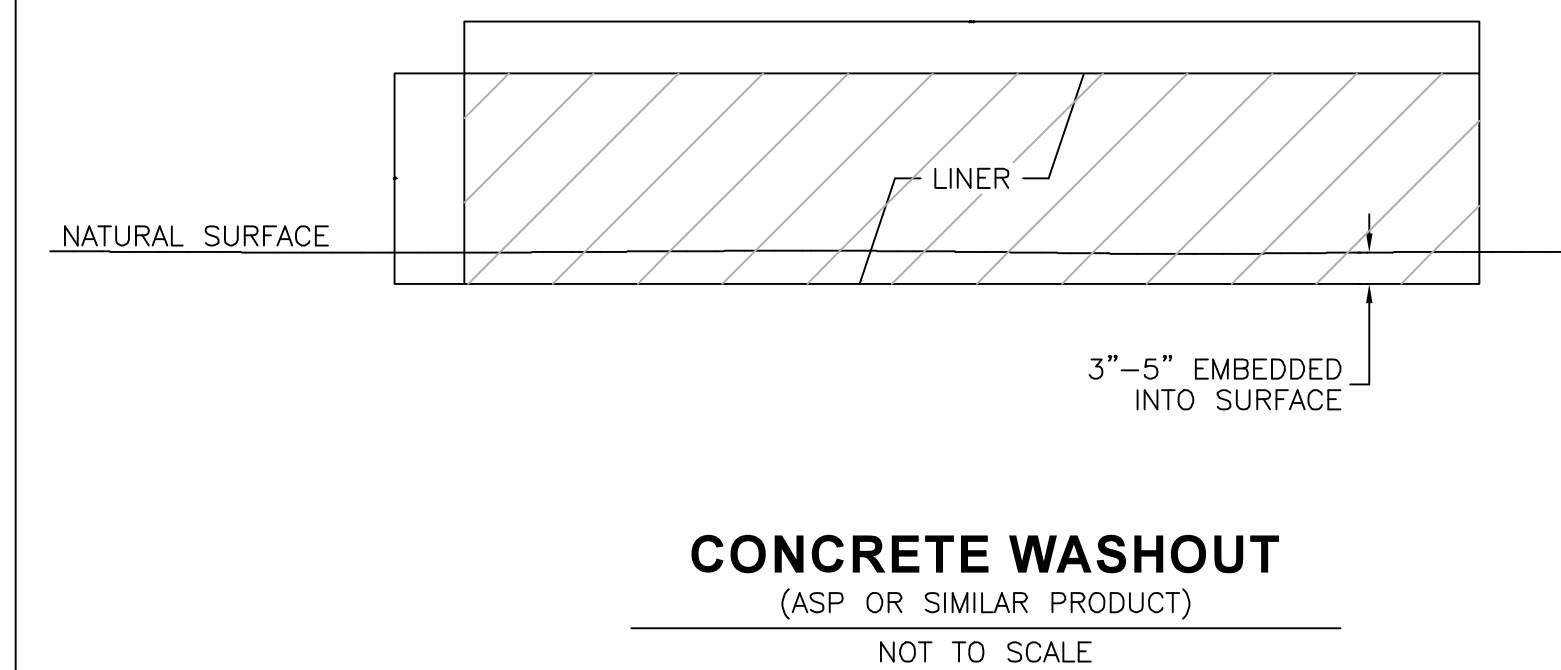
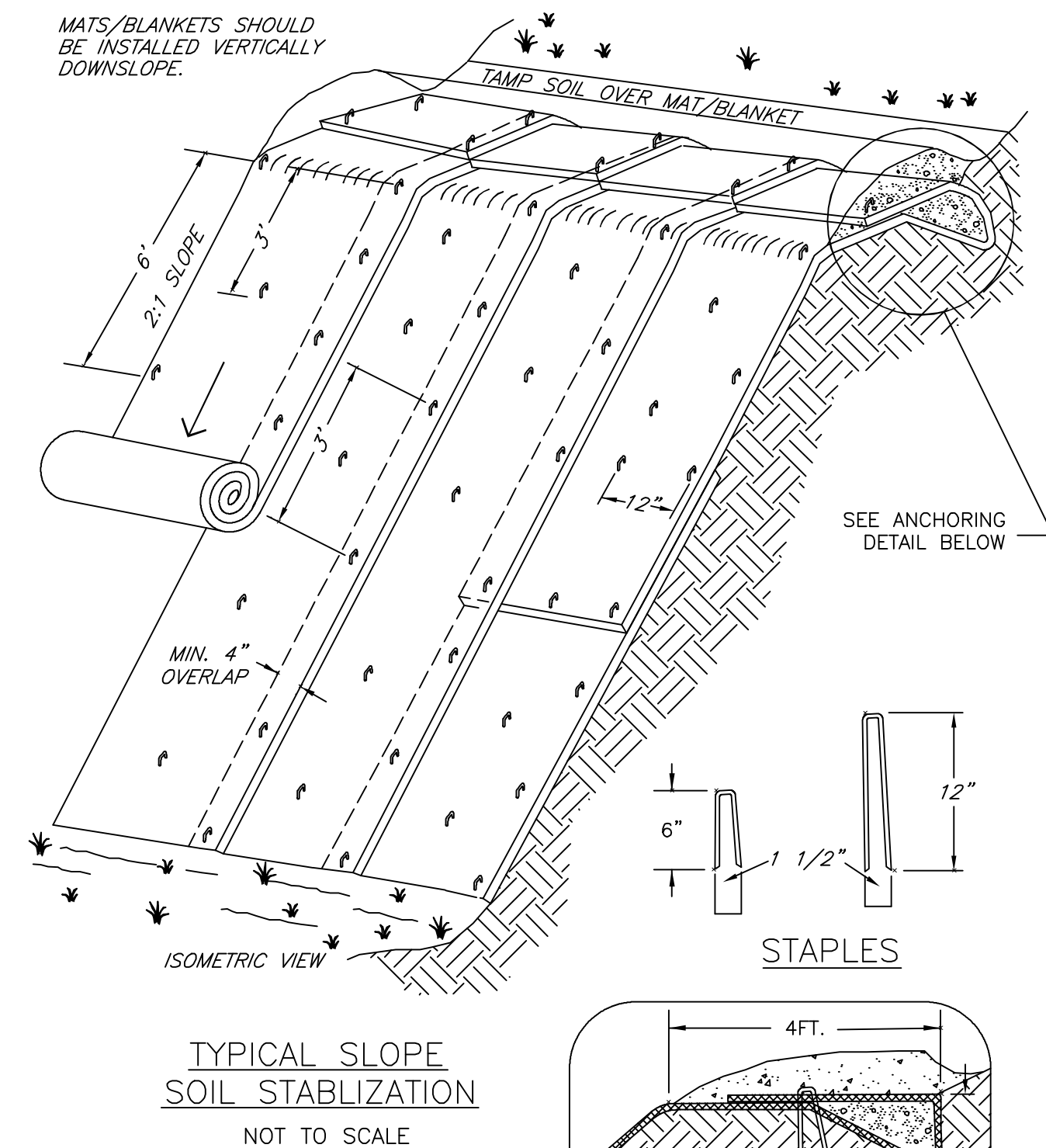
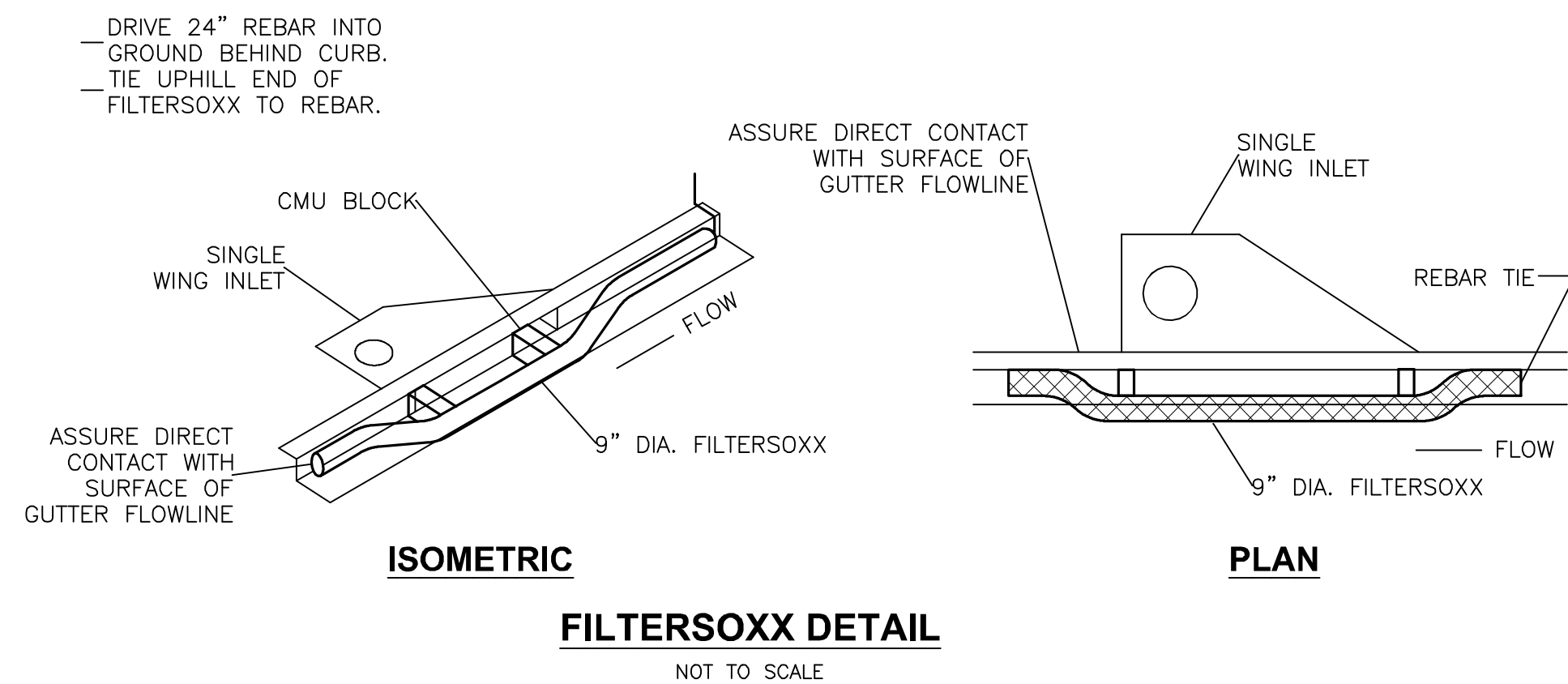
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SOURCE BENCHMARK  
PROJECT DATUM BASED ON:  
OPUS NAVD '88

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CP #1	673.91'	MAG NAIL SET IN CURB
CP #2	673.03'	MAG NAIL SET IN ASPHALT
CP #3	676.54'	MAG NAIL SET IN CURB



PROJECT NO. 76.197



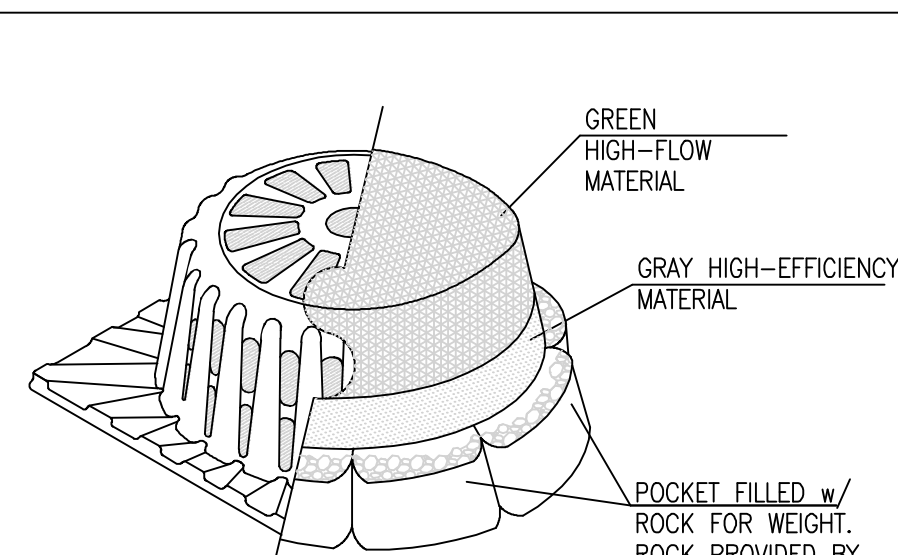
POST SIZE FOR SILT FENCE

MINIMUM LENGTH	TYPE OF POST	SIZE OF POST
4'	Steel	1.3lb./ft. min.

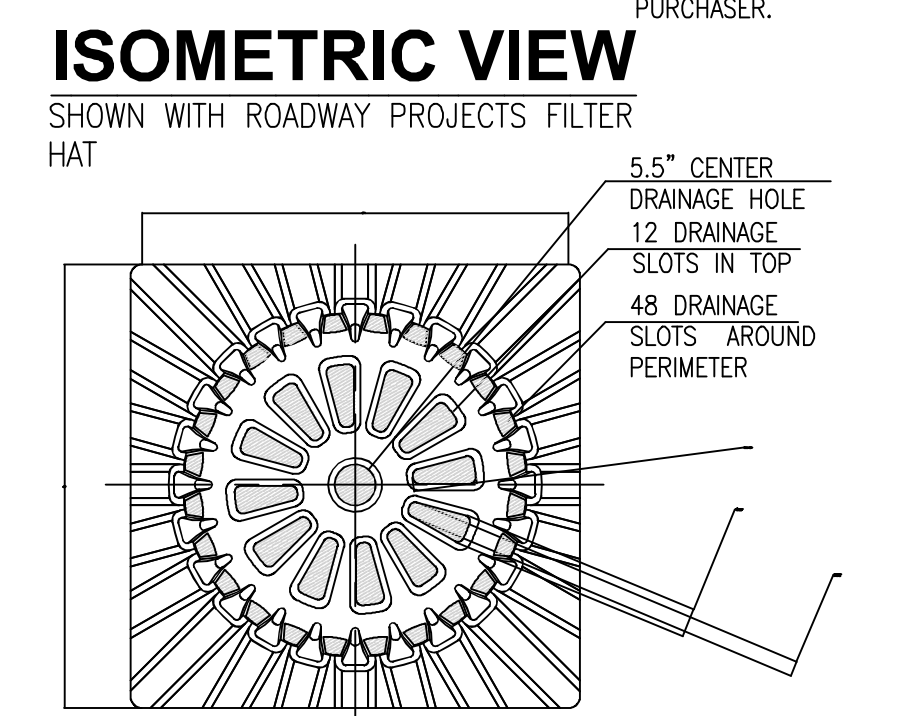
WOOD POST FASTENERS FOR SILT FENCE

GAUGE	CROWN	LEGS	STAPLES/POST
Wire Staples	17min.	3/4"wide	1/2"long
Nails	14min.	1"	3/4"long

- Notes:
- The woven wire fencing shall be fastened to the upstream side of posts by staples or wire ties.
  - Geotextile fabric shall be securely fastened to the woven wire fencing.
  - Machine trenched geotextile shall be trenched vertical at least 8" deep.



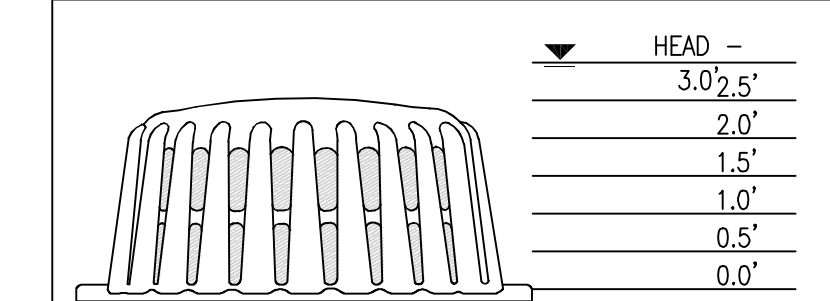
**FILTER OPTIONS**  
 FILTER HAT IS AVAILABLE IN THREE OPTIONS:  
 1) ALL HIGH-FLOW MATERIAL  
 2) ALL HIGH-EFFICIENCY MATERIAL  
 3) HIGH-FLOW MATERIAL ON TOP HALF OF HAT, HIGH-EFFICIENCY MATERIAL ON BOTTOM HALF (THIS FILTER COVER IS RECOMMENDED FOR ALL ROADWAY PROJECTS.)  
 IT IS THE PURCHASERS RESPONSIBILITY TO PURCHASE APPROPRIATE FILTER HAT. PURCHASER SHALL PROVIDE ROCK FOR FILTER POCKETS.



**FILTER HAT INSTALLATION**  
 FILTER HAT SLIDES DIRECTLY OVER FILTER FRAME. TO KEEP FILTER FRAME IN PLACE OVER STORM STRUCTURE, ROCK POCKETS ARE SEWN DIRECTLY INTO FILTER HAT MATERIAL. EVERY FILTER HAT COMES IN ONE PIECE FOR EASY INSTALLATION.

**MAINTENANCE**  
 ALL TEMPORARY EROSION, SEDIMENTATION, & POLLUTION CONTROL PRACTICES SHOULD BE INSPECTED DAILY. CONTRACTOR SHALL REMOVE SEDIMENT AND DISPOSE OF IN A PROPER MANNER. INSPECT S-200A DAILY FOR CUTS, ABRASIONS, AND PROPER INSTALLATION. REPLACE OR REPOSITION AS NECESSARY.

**SPECIFICATIONS**  
 FILTER FABRIC SILT-SAVER HAT SHALL BE BASED ON DESIGN PROFESSIONAL'S SPECIFICATIONS.

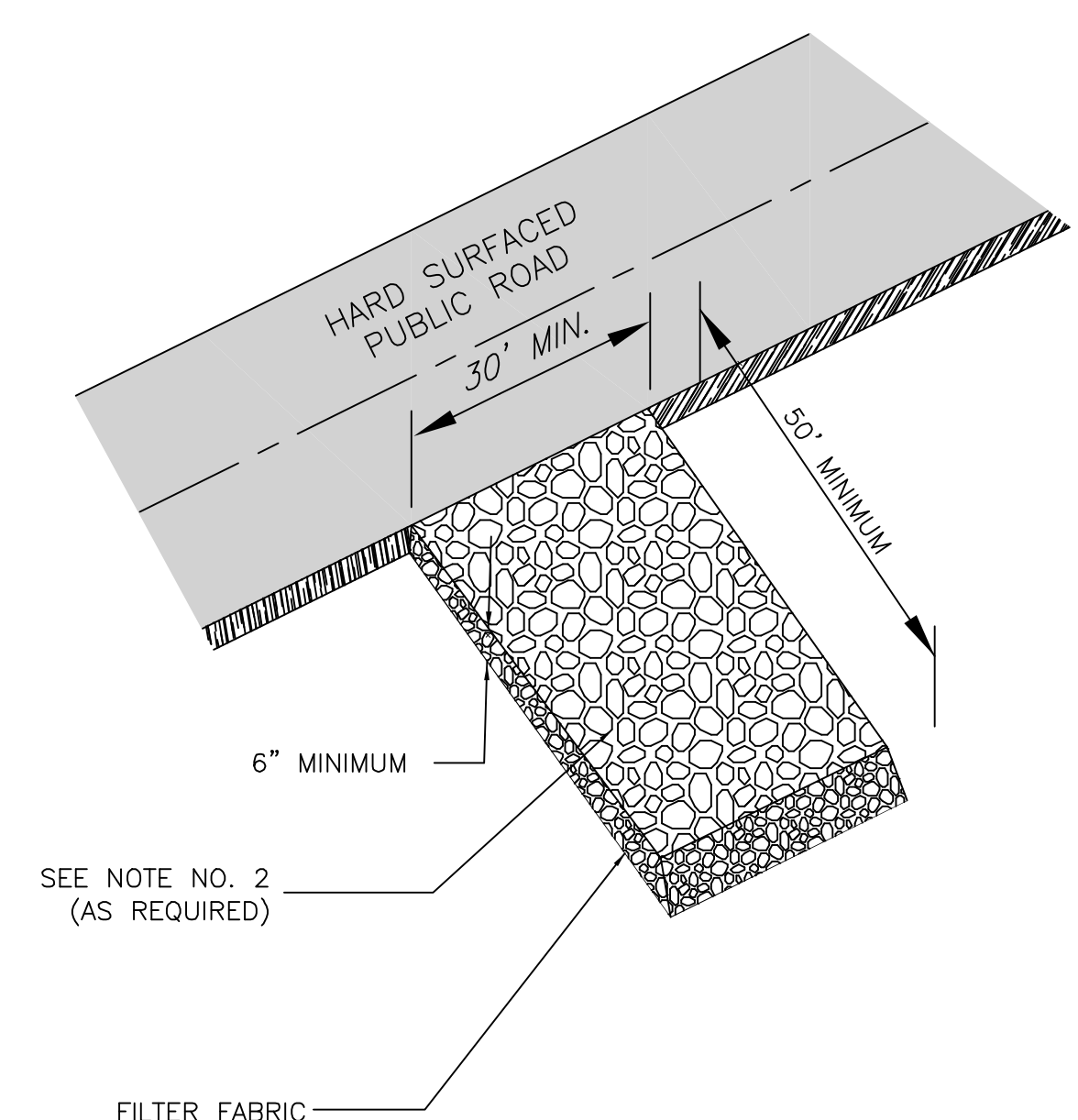


**FRAME & FILTER DISCHARGE ANALYSIS**

HEAD (FT)	EQUATION USED	OPENING AREA (SF)	FRAME FLOW (CFS)	FILTER AREA (SF)	FILTERED FLOW (CFS)
0.5	0	2.1	19	6	13
1.0	0	3.9	19	12	7
1.5	0	7.0	41	18	23
2.0	0	8.0	54	24	30
2.5	0	9.2	70	30	40
3.0	0	9.2	77	—	77

DUE TO NARROW SLOT, A TRANSITION WILL OCCUR BETWEEN WEIR AND ORIFICE CONDITIONS. ORIFICE FLOW WILL PROVIDE A MORE CONSERVATIVE ESTIMATE OF FLOW, THEREFORE THE LESSER OF THE ORIFICE AND WEIR FLOWS WILL BE USED FOR EACH STAGE CALCULATION.

FILTER MATERIAL ALLOWS 129 gpm/SF OR 0.29cfs/SF  
 ORIFICE EQUATION (Q) = 0.6A(2gh)<sup>0.5</sup>  
 P = FEET PERIMETER  
 h = HEAD IN FEET  
 Q = CAPACITY IN cfs  
 A = FREE OPEN AREA OF FRAME  
 g = 32.2 FEET-PER-SECOND/SECOND



- NOTES**
- A STABILIZED PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC STREET.
  - STONE TO BE NO. 57 (PER A.D.O.T. SPEC'S.)
  - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  - ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY.
  - WHEN NECESSARY WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.
  - FILTER FABRIC SHALL BE MIRAFI 500X OR CONTECH C200 OR APPROVED EQUAL.

**CRUSHED STONE CONSTRUCTION EXIT**  
 NOT TO SCALE

REPLACEMENT FILTERS: MODEL # S-240

**SILT-SAVER**  
 Sediment Control Products

SILT-SAVER, INC. 1094 CULPEPPER DRIVE, CONYERS, GA 30094 PHONE: (770) 388-7818 FAX: (770) 388-7640 TOLL FREE: 1-888-382-SILT (7458) www.silt-saver.com

**SQUARE FRAME & FILTER ASSEMBLY**  
 Model # S-200A

FRAME MATERIAL: BLACK 0.25" HMWPE  
 FILTER FABRIC MATERIAL: REFER TO SPEC  
 SCALE: NOT TO SCALE  
 LAST UPDATED: APRIL 2010

ALABAMA LICENSED PROFESSIONAL ENGINEER No. 22167

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**CARR & ASSOCIATES ENGINEERS, INC.**  
 153 CAHABA VALLEY PARKWAY  
 PELHAM, ALABAMA 35124  
 PHONE (205) 964-6400 FAX (205) 964-6405

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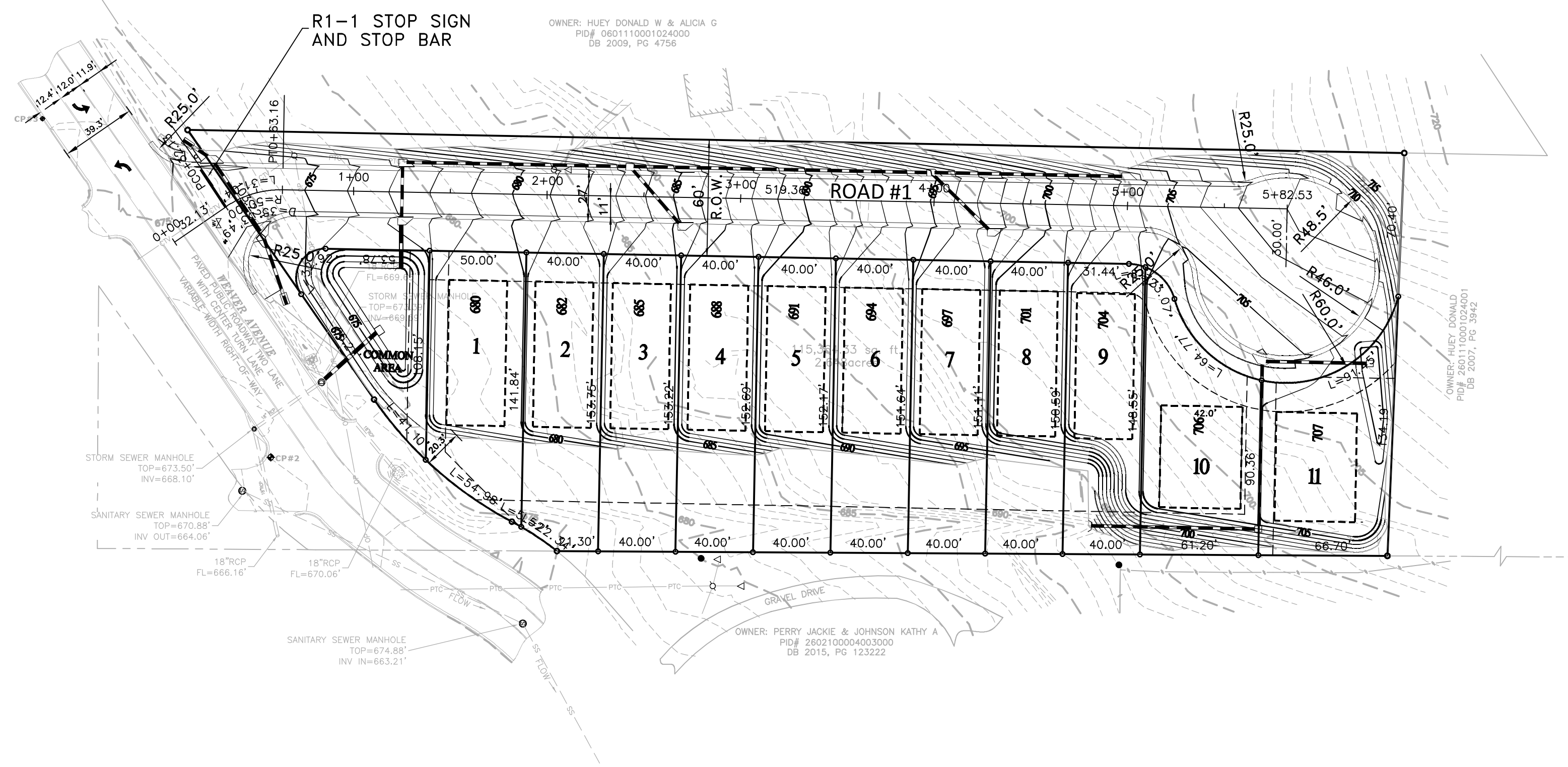
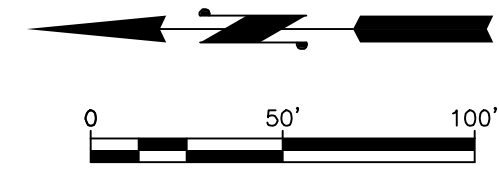
NO.	DESCRIPTION	BY	REVIEW	DATE

**GRANTS MILL, LLC**  
 THE COTTAGES ON WEAVER  
 CITY OF LEEDS  
 ST. CLAIR COUNTY, ALABAMA

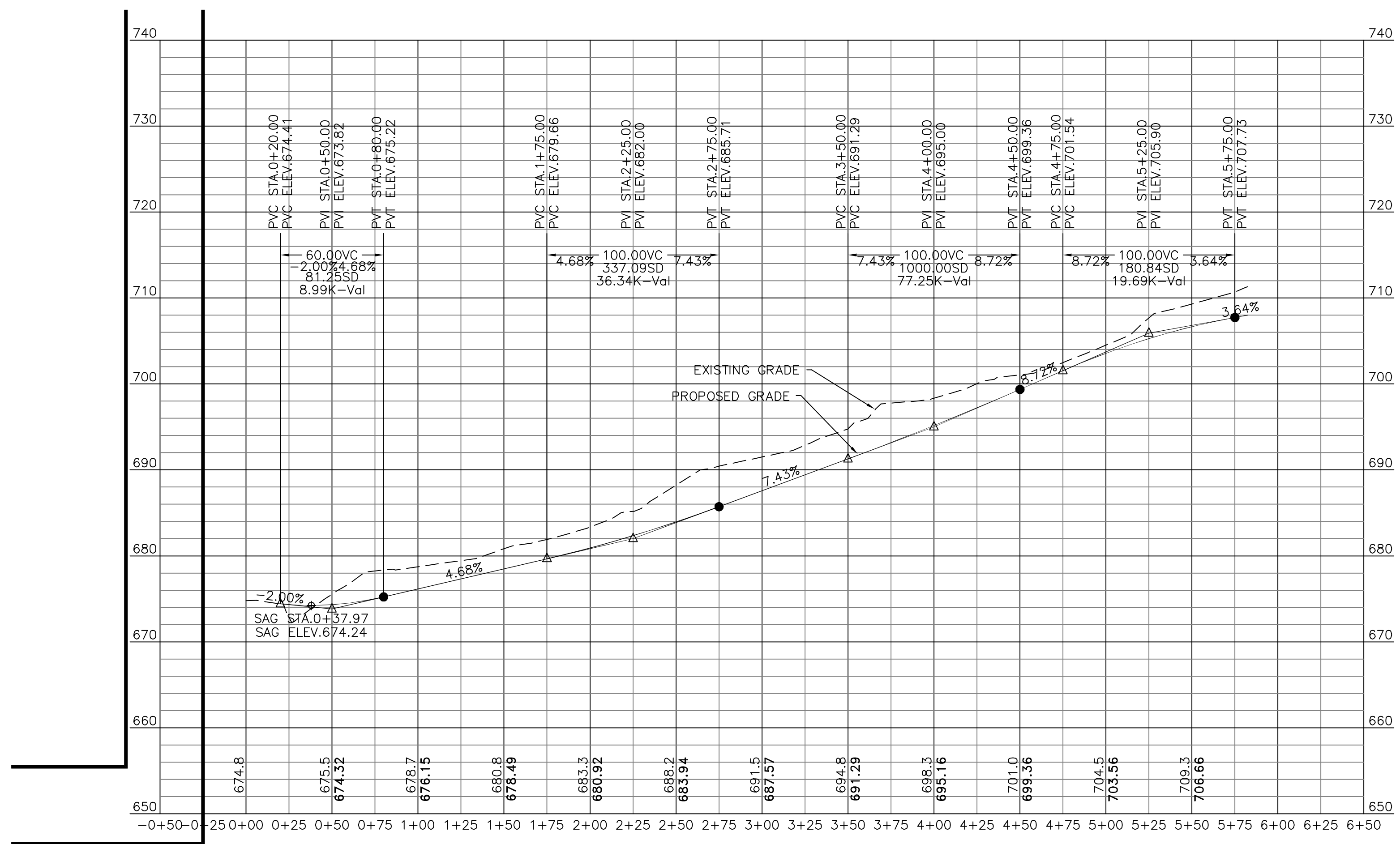
CLIENT: GRANTS MILL, LLC  
 PROJECT NAME: THE COTTAGES ON WEAVER CITY OF LEEDS ST. CLAIR COUNTY, ALABAMA  
 DRAWING TITLE: CBMPP DETAILS

PRODUCTION: SURVEYOR: DESIGN ENGINEER: P. E. PRINCIPAL:  
 FIELD BOOK: 1179  
 CREW CHIEF: CV  
 CADD OPER: BBY  
 CADD FILE: LEEDS  
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 DESIGN FILE: N/A  
 DATE: MAY 20, 2019  
 SCALE: 1"=30'

PROJECT NO. 76.197  
 SHEET 1 OF 1  
 DWG. NO.: 76.197-09



ROAD #1 PLAN/PROFILE



DRAWING INVALID WITHOUT SEAL



**CARR & ASSOCIATES ENGINEERS, INC.**  
 153 CAHABA VALLEY PARKWAY  
 PELHAM, ALABAMA 35124  
 PHONE (205) 864-8498 FAX (205) 864-8885  
**CIVIL, STRUCTURAL & ENVIRONMENTAL ENGINEERS**  
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NO.	DESCRIPTION	BY	REVIEW	DATE

REVIEW		REVISIONS	
NO.	DESCRIPTION	BY	DATE

CLIENT:	<b>GRANTS MILL, LLC</b>		
PROJECT NO.:	76.197		
DRAWING TITLE:	<b>ROAD #1 PLAN/PROFILE</b>		
PROJECT NAME:	<b>THE COTTAGES ON WEAVER CITY OF LEEDS ST. CLAIR COUNTY, ALABAMA</b>		
CREW CHIEF:	CV	DESIGN ENGINEER	
CADD OPER:	BB	DESIGN ENGINEER	
CADD FILE:	76.197	LEEDS	
DESIGN ENG:	N/A	P. E.	
DESIGN FILE:	N/A	PRINCIPAL	
DATE:	MAY 20, 2019		
SCALE:	1"=50'		
SHEET:	1 OF 1		
DWG. NO.:	<b>76.197-10</b>		

PROJECT NO. 76.197











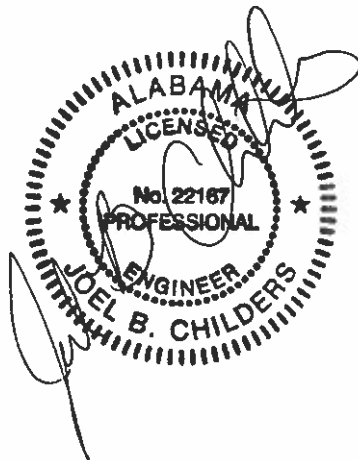




# Hydrology Report

FOR

**Grants Mill, LLC.  
The Cottages on Weaver  
Leeds, Alabama**



Prepared by:

**Carr & Associates Engineers, Inc.  
153 Cahaba Valley Parkway  
Pelham, Alabama 35124  
05/20/2019**

## **INTRODUCTION**

### **Project Description**

This hydrology report is written for the Cottages on Weaver project for Grants Mill, LLC, located in Leeds, Alabama. The project site is located south of Interstate 20 and east of Ashville Road in the city of Leeds. Specifically, this report describes the drainage area located just south of Weaver Avenue NE.

This report will present hydrology for existing conditions and proposed conditions. The proposed condition will be the addition of the proposed single family homes and associated residential access road. The storms to be evaluated are the 25 year and 100 year storm events. This report will evaluate the following:

1. Determination of the existing conditions and existing flowrate from the basin.
2. Determination of the proposed condition flowrate change.

### **Existing Conditions**

Under existing conditions, the entire Cottages on Weaver Subdivision is contained within an approximately 13.5 acre project basin consisting of existing homes, and wooded areas to the southeast side of the project site. The Subdivision itself consists of approximately 2.65 acres. The existing project site is relatively steep and consists of strictly wooded areas. A map delineating the existing drainage basins is attached to this report.

### **Proposed Conditions**

Under proposed conditions, the single family homes (garden style) are currently being proposed. The addition will add approximately 1.0 acres of impervious area consisting of roads, sidewalks and an assumed 40' x 40' garden home building footprint. A map delineating the proposed drainage basins is attached to this report.



## **METHOD OF ANALYSIS**

### **Summary**

The Drainage Basin area was evaluated for the 2, 10, 25 and 100 year storm over the Overall drainage basin that the addition lies within.

### **Drainage Design Criteria**

The tributary area of the watershed is less than 100 acres and the drainage basins for each inlet are relatively small. Therefore, the runoff is calculated by use of the Rational Method, given as:

$Q = ciA$ , where:

$Q$  = The peak runoff rate in cubic feet per second (cfs) at the point of analysis.

$C$  = Dimensionless runoff coefficient.

$i$  = Rainfall intensity in inches per hour (in/hr) corresponding to the time of concentration in minutes (min.)

$A$  = The drainage basin area in acres (ac).

### **Runoff Coefficient:**

The runoff coefficient is determined based on the percentage of impervious area on-site, consideration of underlying soil type, and rainfall intensity.

The following  $c$  values were used in this analysis:

Roofs - 0.90

Streets, Asphaltic - 0.90

Drives and Walks - 0.90

Lawns, Heavy Soil, Average 2-7% - 0.20

Lawns, Heavy Soil, Average >7% - 0.35

Unimproved Areas – 0.30

Weighted  $c$  values were calculated for each area.

### **Time of Concentration:**

Time of concentration was calculated for overland flow using the FAA equation.

$$T_c = \frac{1.8(1.1 - c\sqrt{a})}{\sqrt[3]{S}}$$

Since most of the pipe segments are less than 100 feet in length, travel time within the pipe was ignored. For RCP storm piping, a Mannings "n" value of 0.013 was used.

### **Rainfall Intensity:**

Rainfall intensity was determined for the 2 year, 10 year, 25 year, and 100 year storm events using IDF curves for Leeds, Alabama generated by Carlson Hydrology Software and Hydro35.

### **CONCLUSION**

The drainage system for this project site discharges in to one location, an existing double wing inlet in Weaver Avenue, NE. The inlet has pipes that tie into it from the east and from the west. The storm water is then conveyed into an unnamed tributary of the Little Cahaba River.

### **Existing Inlet in Weaver Avenue NE**

Currently, in the existing condition, the total flow for drainage Area 1 is as follows:

$Q_2 = 13.89$ cfs	$Q_{10} = 18.40$ cfs
$Q_{25} = 21.22$ cfs	$Q_{100} = 25.63$ cfs

In the proposed condition, the total flow for drainage areas Area 1 is as follows:

$Q_2 = 19.21$ cfs	$Q_{10} = 25.28$ cfs
$Q_{25} = 29.10$ cfs	$Q_{100} = 35.08$ cfs

Therefore, detention is required. The data for the proposed detention pond is attached.

The proposed flow to the existing inlet after detention is:

$$Q_2 = 13.95 \text{ cfs}$$

$$Q_{10} = 18.18 \text{ cfs}$$

$$Q_{25} = 20.84 \text{ cfs}$$

$$Q_{100} = 25.00 \text{ cfs}$$

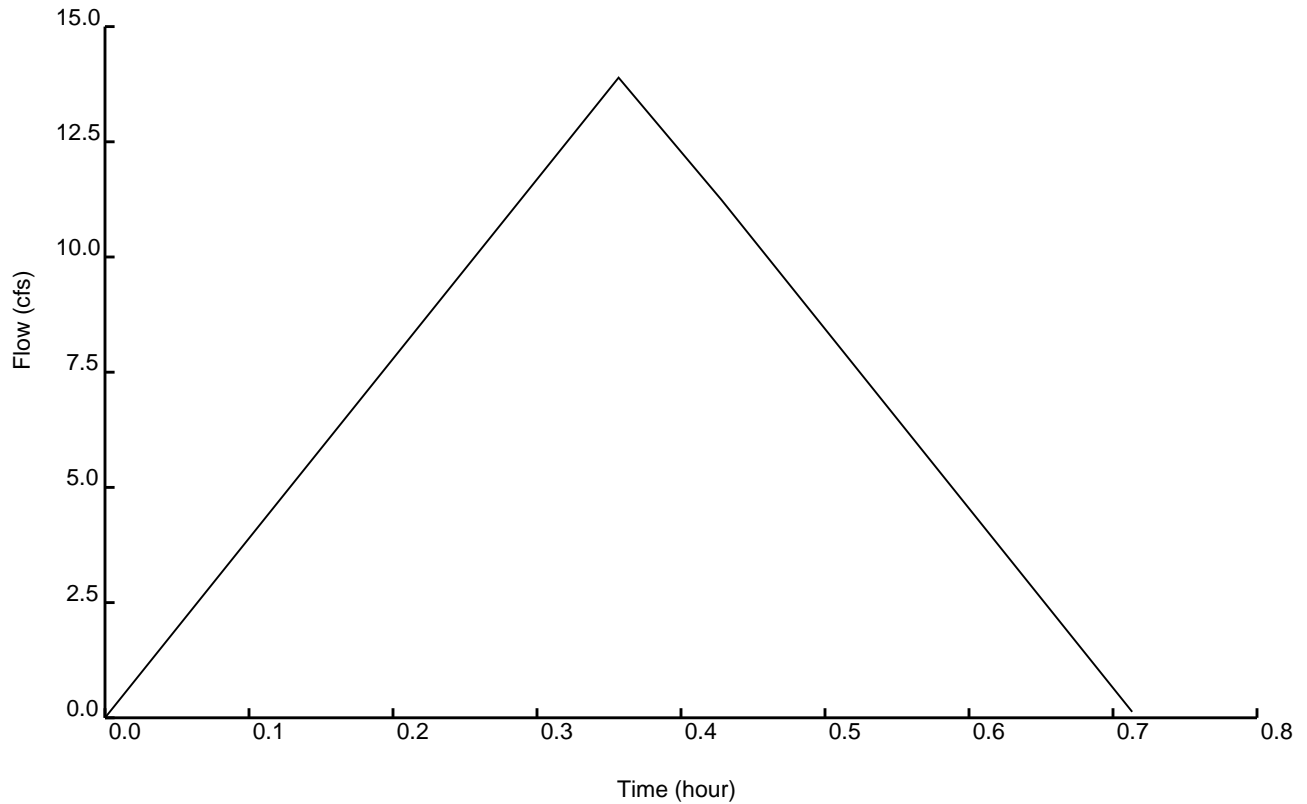
Since there is no increase in the runoff from the site, there will be no adverse effects either upstream or downstream of the project site.

## Runoff Hydrograph (Pre)

Runoff Hydrograph	Modified Rational Method	Rainfall Distribution Type	Rational Method
Drainage Area	13.350 acre	Peak Discharge (Qp)	13.8925 cfs
Runoff Coefficient	0.30	Time to Peak	0.36 hrs
Time of Concentration:	21.4 min	Runoff Volume	0.41 acre-ft
Base Flow:	0.0000 cfs		
Rainfall ID:	Leeds AL		
Rainfall Intensity:	3.47 in/hr	Rainfall Depth:	1.25 in
Return Period:	2 YEAR	Rainfall Duration:	0.36 hrs

### Hydrograph Shape

Time Steps Before Peak	5
Receding Limb Factor	1.00
Flow Multiplier	1.00



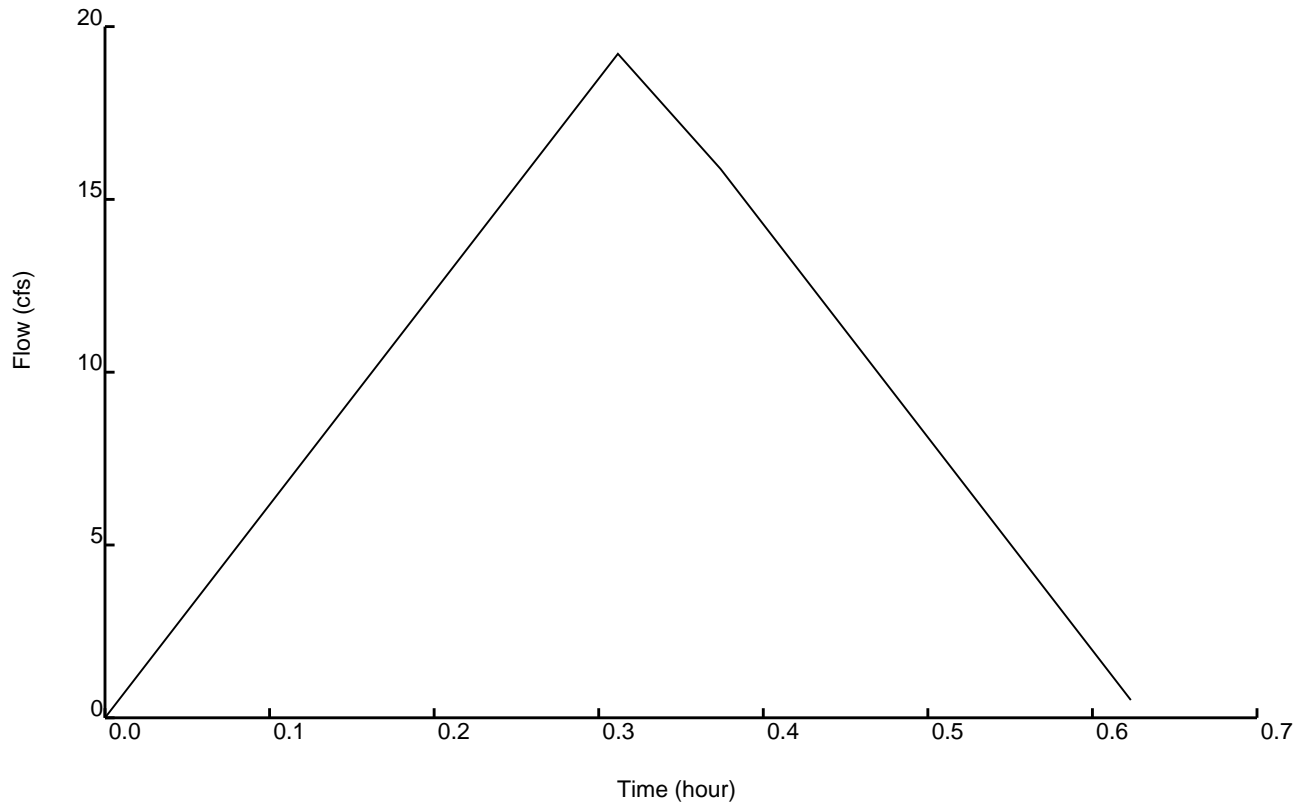
Runoff Hydrograph- Modified Rational Method

## Runoff Hydrograph (Post)

Runoff Hydrograph	Modified Rational Method	Rainfall Distribution Type	Rational Method
Drainage Area	13.350 acre	Peak Discharge (Qp)	19.2129 cfs
Runoff Coefficient	0.39	Time to Peak	0.31 hrs
Time of Concentration:	18.7 min	Runoff Volume	0.51 acre-ft
Base Flow:	0.0000 cfs		
Rainfall ID:	Leeds AL		
Rainfall Intensity:	3.69 in/hr	Rainfall Depth:	1.18 in
Return Period:	2 YEAR	Rainfall Duration:	0.32 hrs

### Hydrograph Shape

Time Steps Before Peak	5
Receding Limb Factor	1.00
Flow Multiplier	1.00



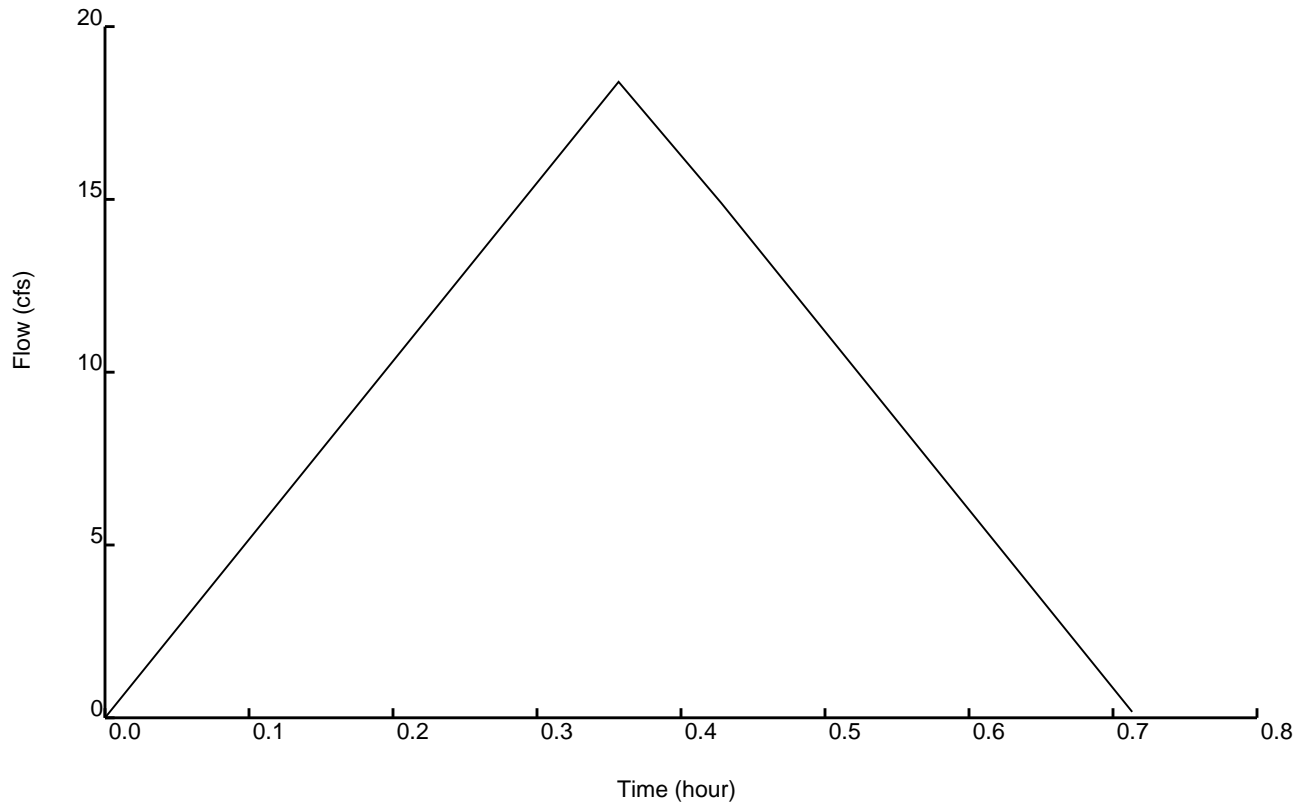
Runoff Hydrograph- Modified Rational Method

## Runoff Hydrograph (Pre)

Runoff Hydrograph	Modified Rational Method	Rainfall Distribution Type	Rational Method
Drainage Area	13.350 acre	Peak Discharge (Qp)	18.4021 cfs
Runoff Coefficient	0.30	Time to Peak	0.36 hrs
Time of Concentration:	21.4 min	Runoff Volume	0.55 acre-ft
Base Flow:	0.0000 cfs		
Rainfall ID:	Leeds AL		
Rainfall Intensity:	4.59 in/hr	Rainfall Depth:	1.65 in
Return Period:	10 YEAR	Rainfall Duration:	0.36 hrs

### Hydrograph Shape

Time Steps Before Peak	5
Receding Limb Factor	1.00
Flow Multiplier	1.00



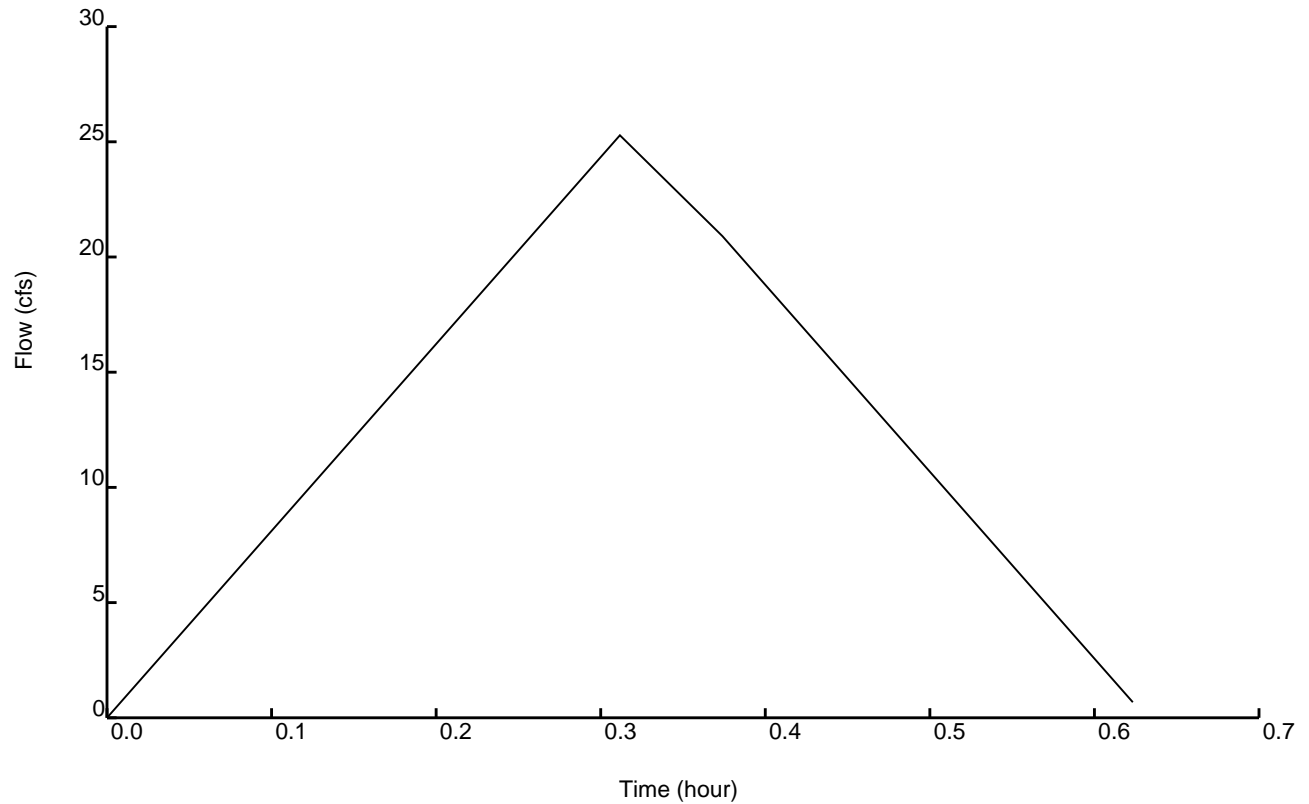
Runoff Hydrograph- Modified Rational Method

## Runoff Hydrograph (Post)

Runoff Hydrograph	Modified Rational Method	Rainfall Distribution Type	Rational Method
Drainage Area	13.350 acre	Peak Discharge (Qp)	25.2826 cfs
Runoff Coefficient	0.39	Time to Peak	0.31 hrs
Time of Concentration:	18.7 min	Runoff Volume	0.67 acre-ft
Base Flow:	0.0000 cfs		
Rainfall ID:	Leeds AL		
Rainfall Intensity:	4.86 in/hr	Rainfall Depth:	1.55 in
Return Period:	10 YEAR	Rainfall Duration:	0.32 hrs

### Hydrograph Shape

Time Steps Before Peak	5
Receding Limb Factor	1.00
Flow Multiplier	1.00



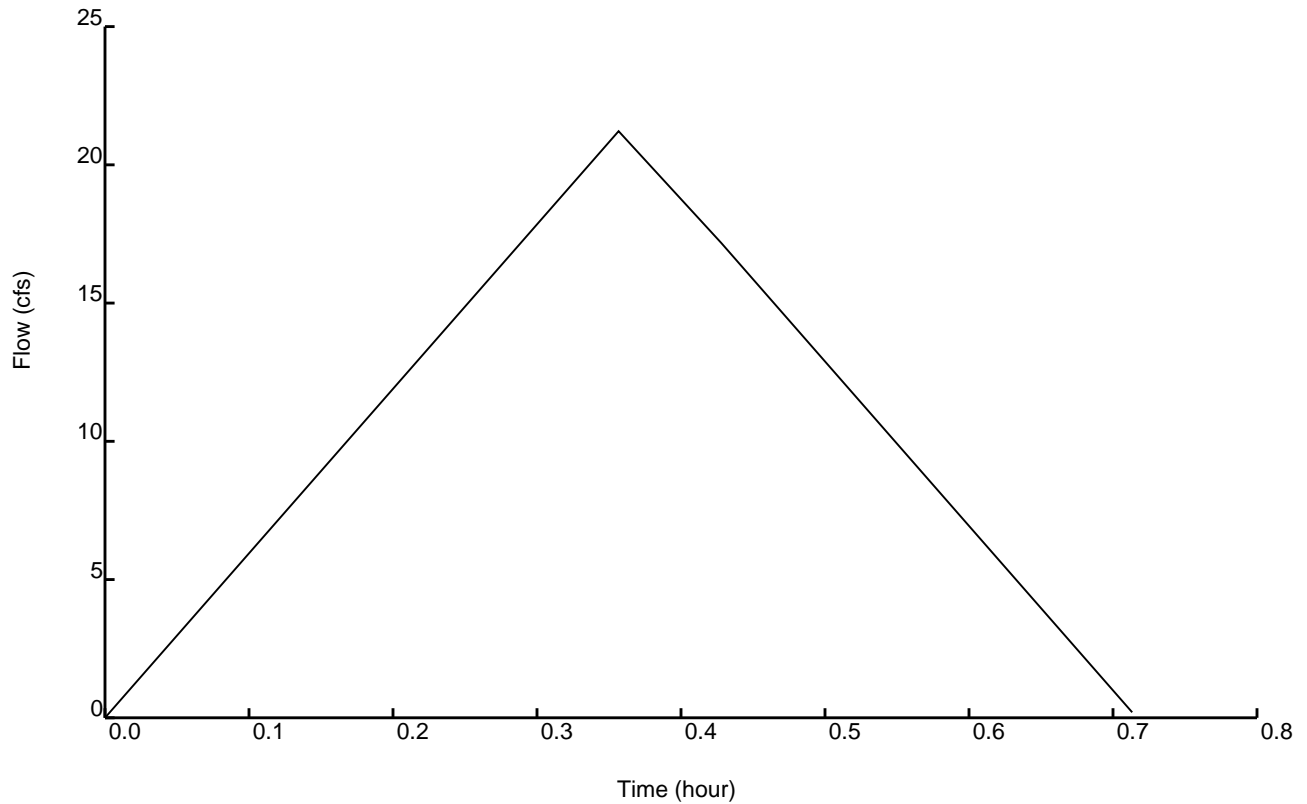
Runoff Hydrograph- Modified Rational Method

## Runoff Hydrograph (Pre)

Runoff Hydrograph	Modified Rational Method	Rainfall Distribution Type	Rational Method
Drainage Area	13.350 acre	Peak Discharge (Qp)	21.2175 cfs
Runoff Coefficient	0.30	Time to Peak	0.36 hrs
Time of Concentration:	21.4 min	Runoff Volume	0.63 acre-ft
Base Flow:	0.0000 cfs		
Rainfall ID:	Leeds AL		
Rainfall Intensity:	5.30 in/hr	Rainfall Depth:	1.91 in
Return Period:	25 YEAR	Rainfall Duration:	0.36 hrs

### Hydrograph Shape

Time Steps Before Peak	5
Receding Limb Factor	1.00
Flow Multiplier	1.00



Runoff Hydrograph- Modified Rational Method

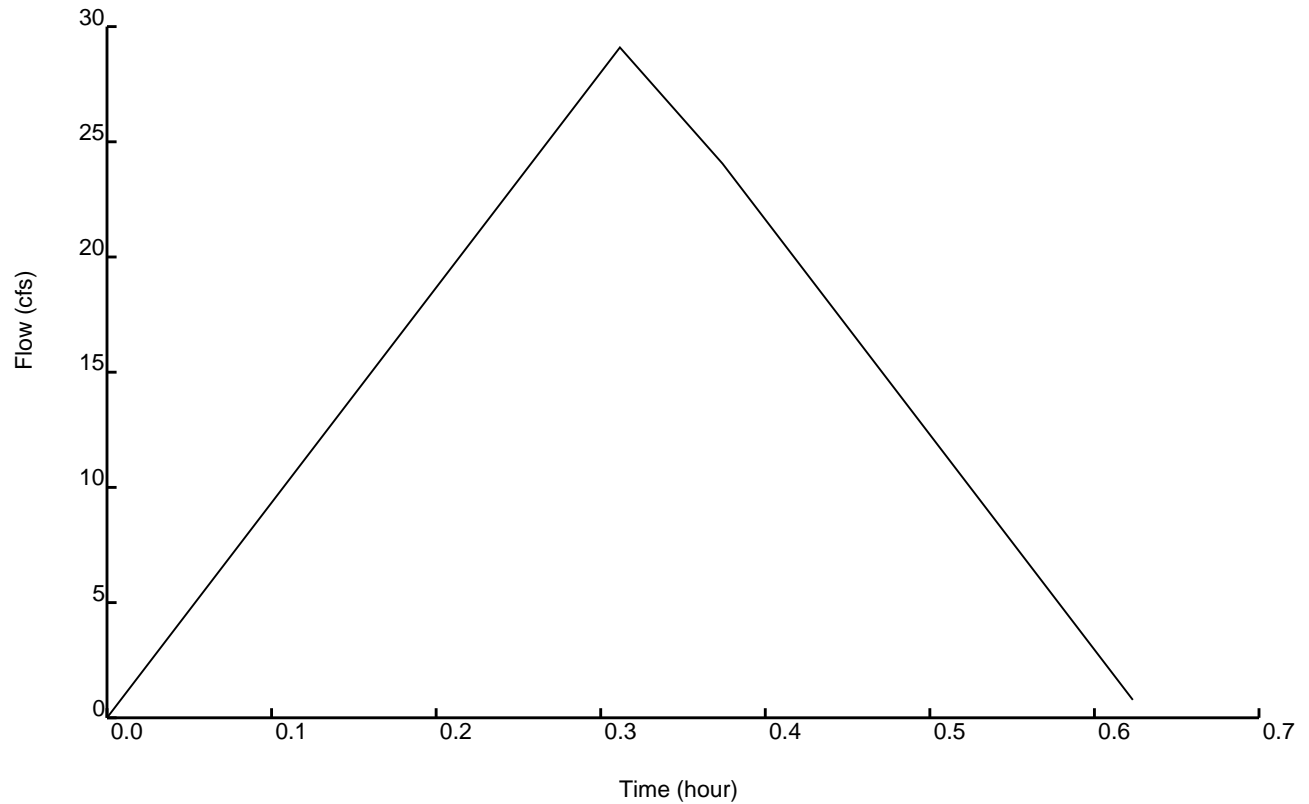


## Runoff Hydrograph (Post)

Runoff Hydrograph	Modified Rational Method	Rainfall Distribution Type	Rational Method
Drainage Area	13.350 acre	Peak Discharge (Qp)	29.0953 cfs
Runoff Coefficient	0.39	Time to Peak	0.31 hrs
Time of Concentration:	18.7 min	Runoff Volume	0.77 acre-ft
Base Flow:	0.0000 cfs		
Rainfall ID:	Leeds AL		
Rainfall Intensity:	5.59 in/hr	Rainfall Depth:	1.79 in
Return Period:	25 YEAR	Rainfall Duration:	0.32 hrs

### Hydrograph Shape

Time Steps Before Peak	5
Receding Limb Factor	1.00
Flow Multiplier	1.00



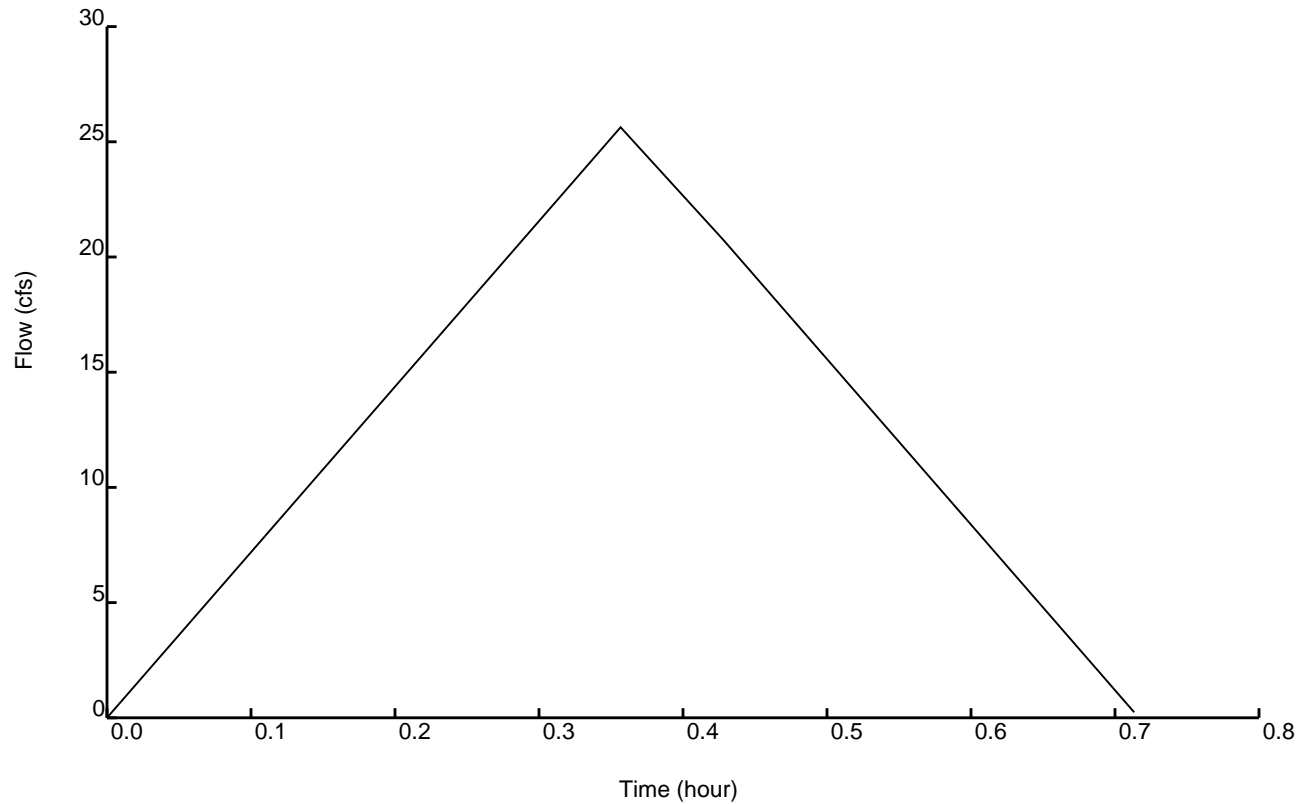
Runoff Hydrograph- Modified Rational Method

## Runoff Hydrograph (Pre)

Runoff Hydrograph	Modified Rational Method	Rainfall Distribution Type	Rational Method
Drainage Area	13.350 acre	Peak Discharge (Qp)	25.6306 cfs
Runoff Coefficient	0.30	Time to Peak	0.36 hrs
Time of Concentration:	21.4 min	Runoff Volume	0.76 acre-ft
Base Flow:	0.0000 cfs		
Rainfall ID:	Leeds AL		
Rainfall Intensity:	6.40 in/hr	Rainfall Depth:	2.30 in
Return Period:	100 YEAR	Rainfall Duration:	0.36 hrs

### Hydrograph Shape

Time Steps Before Peak	5
Receding Limb Factor	1.00
Flow Multiplier	1.00



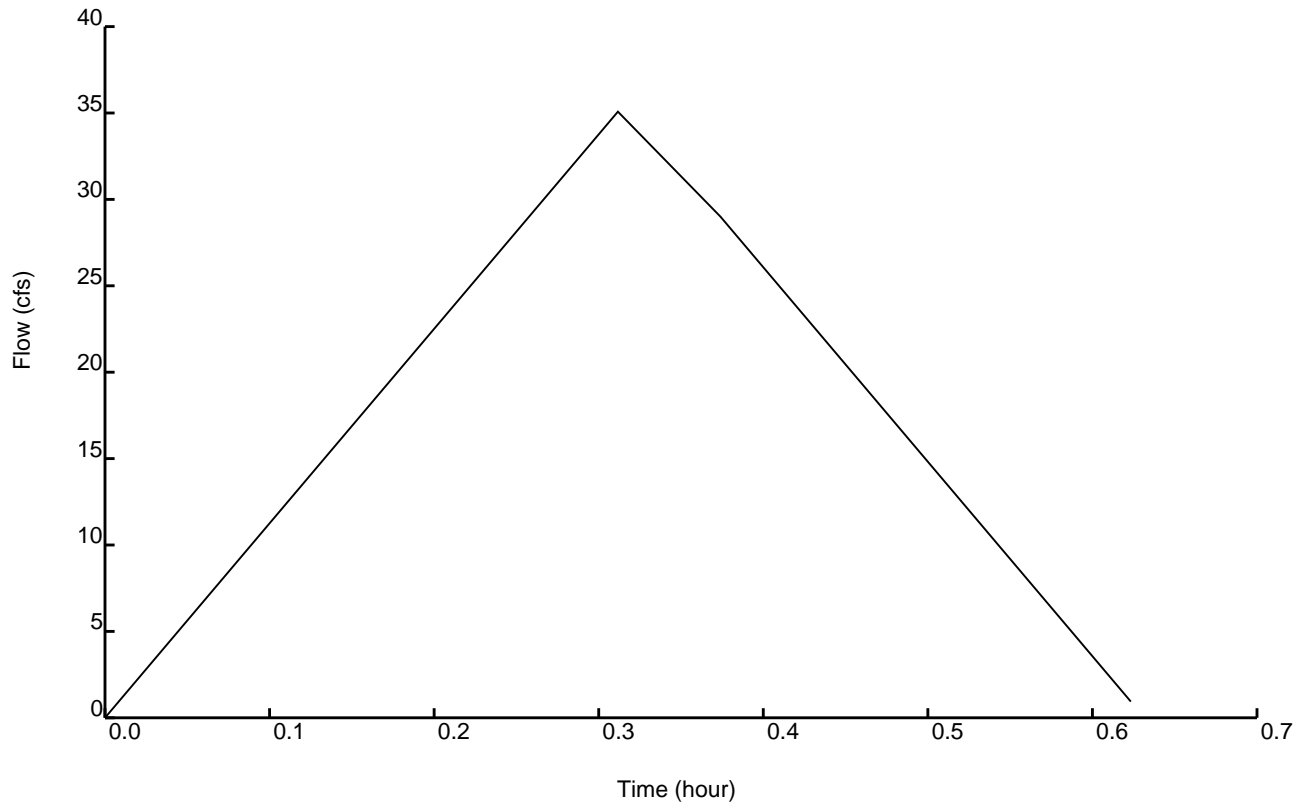
Runoff Hydrograph- Modified Rational Method

## Runoff Hydrograph (Post)

Runoff Hydrograph	Modified Rational Method	Rainfall Distribution Type	Rational Method
Drainage Area	13.350 acre	Peak Discharge (Qp)	35.0767 cfs
Runoff Coefficient	0.39	Time to Peak	0.31 hrs
Time of Concentration:	18.7 min	Runoff Volume	0.93 acre-ft
Base Flow:	0.0000 cfs		
Rainfall ID:	Leeds AL		
Rainfall Intensity:	6.74 in/hr	Rainfall Depth:	2.16 in
Return Period:	100 YEAR	Rainfall Duration:	0.32 hrs

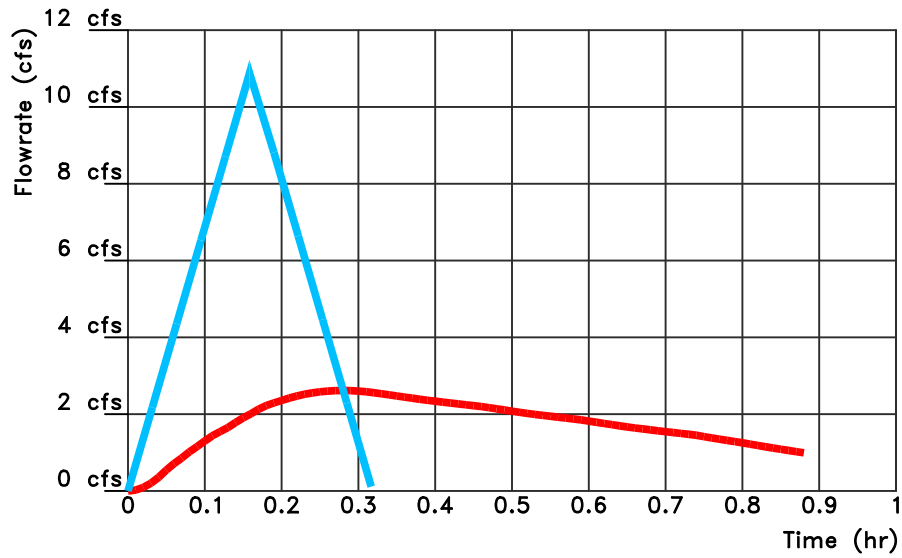
### Hydrograph Shape

Time Steps Before Peak	5
Receding Limb Factor	1.00
Flow Multiplier	1.00



Runoff Hydrograph- Modified Rational Method

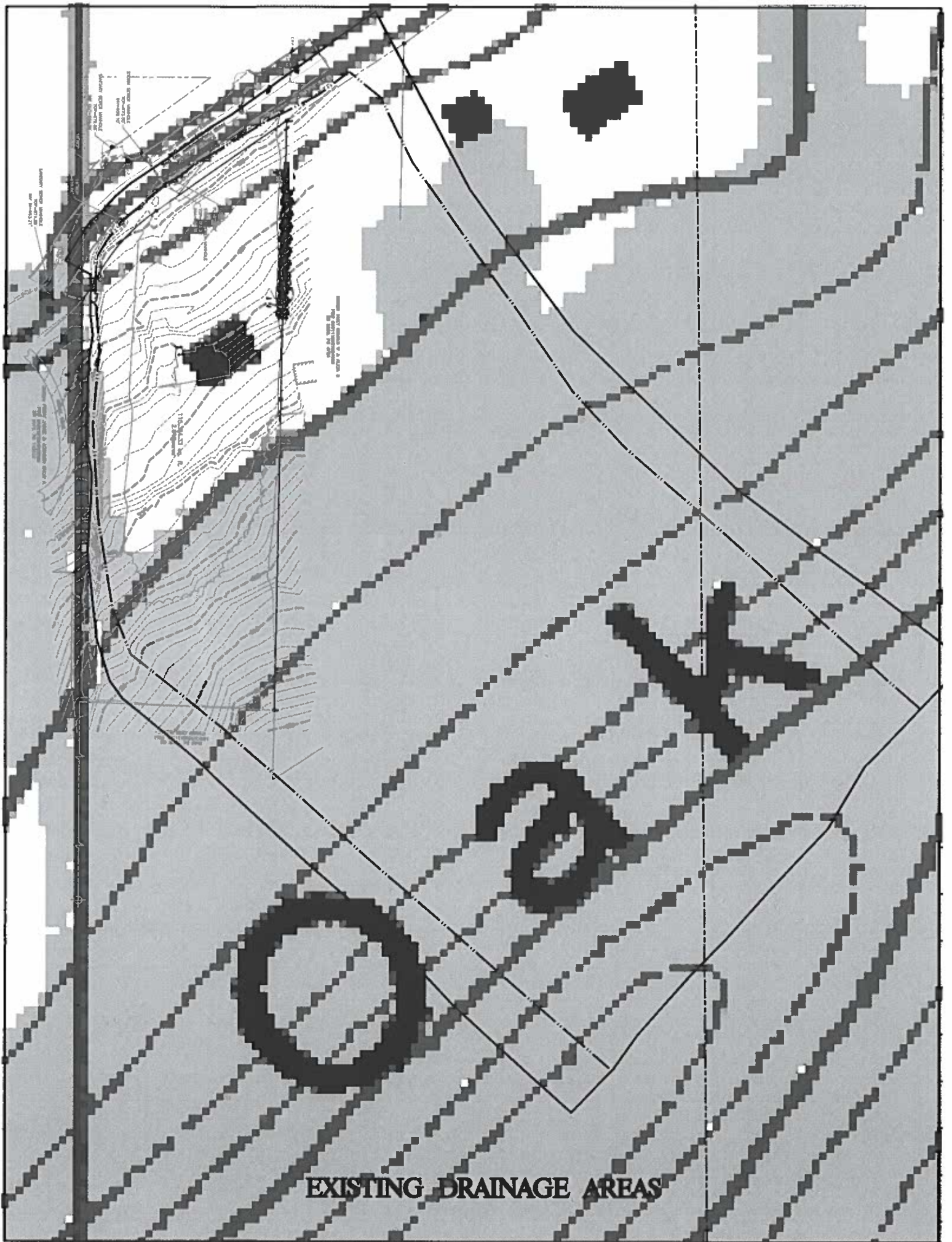
# 25 Year, 24 Hour



## Reservoir Routing: Storage Indication Method

### Results:

Inflow Peak Flow:	10.88	cfs
Inflow Peak Time:	0.16	hr
Routed Peak Flow:	2.62	cfs
Routed Peak Time:	0.28	hr
Maximum Pond Storage:	0.1025	acre-feet
Maximum Pond Elevation:	675.60	ft



EXISTING DRAINAGE AREAS

