

# HIGHWAY 400 WATERLINE RELOCATION

PROJ NO: 100182.15



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C1	PROPOSED WATER LINE RELOCATION STA. 5004+50 TO STA. 5008+50
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C3	PROPOSED WATER LINE RELOCATION STA. 5012+00 TO STA. 5015+00
C4	PROPOSED WATER LINE RELOCATION STA. 5015+00 TO STA. 5017+50
C5	PROPOSED WATER LINE RELOCATION STA. 159+50 TO STA. 163+50
C6	PROPOSED WATER LINE RELOCATION STA. 163+50 TO STA. 168+50
C7	PROPOSED WATER LINE RELOCATION STA. 168+50 TO STA. 173+00
C8	PROPOSED WATER LINE RELOCATION STA. 173+00 TO STA. 177+50
C8A	PROPOSED WATER LINE RELOCATION IMPACT SITE #2 STA. 9+65 TO STA. 14+39
C9	PROPOSED WATER LINE RELOCATION STA. 177+50 TO STA. 180+50
C10	PROPOSED WATER LINE RELOCATION STA. 180+00 TO STA. 186+00
C11	PROPOSED WATER LINE RELOCATION STA. 1038+50 TO STA. 1042+50
C12	PROPOSED WATER LINE RELOCATION STA. 1042+50 TO STA. 1048+50
C12A	PROPOSED WATER LINE RELOCATION IMPACT SITE #2 STA. 14+39 TO STA. 20+91
C13	PROPOSED WATER LINE RELOCATION STA. 1048+00 TO STA. 1053+50
C13A	PROPOSED WATER LINE RELOCATION IMPACT SITE #2 STA. 20+91 TO STA. 26+40
C14	PROPOSED WATER LINE RELOCATION STA. 1053+50 TO STA. 1059+00
C15	PROPOSED WATER LINE RELOCATION STA. 1059+00 TO STA. 1065+00
C16	PROPOSED WATER LINE RELOCATION STA. 1065+00 TO STA. 1068+83
C17	PROPOSED WATER LINE RELOCATION IMPACT SITE #2 STA. 41+75 TO STA. 45+70
C18	PROPOSED WATER LINE RELOCATION IMPACT SITE #2 STA. 45+70 TO STA. 50+26
C19	PROPOSED WATER LINE RELOCATION IMPACT SITE #2 STA. 50+26 TO STA. 53+78
C20	PROFILE IMPACT SITE #1 STA. 0+00 TO STA. 3+27
C21	PROFILE IMPACT SITE #1 STA. 3+27 TO STA. 6+46
C22	PROFILE IMPACT SITE #1 STA. 6+46 TO STA. 9+99
C23	PROFILE IMPACT SITE #1 STA. 9+99 TO STA. 13+83
C24	PROFILE IMPACT SITE #1 STA. 13+83 TO STA. 15+24
C25	PROFILE IMPACT SITE #2 STA. 0+00 TO STA. 1+68
C26	PROFILE IMPACT SITE #2 STA. 1+68 TO STA. 6+90
C27	PROFILE IMPACT SITE #2 STA. 6+90 TO STA. 9+65
C28	PROFILE IMPACT SITE #2 STA. 9+65 TO STA. 14+39
C29	PROFILE IMPACT SITE #2 STA. 14+39 TO STA. 20+91
C30	PROFILE IMPACT SITE #2 STA. 20+91 TO STA. 26+40

SHEET INDEX	
SHEET	DESCRIPTION
C33	PROFILE IMPACT SITE #2 STA. 26+40 TO STA. 31+91
C32	PROFILE IMPACT SITE #2 STA. 31+91 TO STA. 37+91
C33	PROFILE IMPACT SITE #2 STA. 37+91 TO STA. 41+75
C34	PROFILE IMPACT SITE #2 STA. 41+75 TO STA. 45+70
C35	PROFILE IMPACT SITE #2 STA. 45+70 TO STA. 50+26
C36	PROFILE IMPACT SITE #3 STA. 50+26 TO STA. 53+78
C37	PROFILE IMPACT SITE #3 STA. 0+00 TO STA. 0+72
	PROFILE IMPACT SITE #4 STA. 0+00 TO STA. 0+24
	PROFILE IMPACT SITE #5 STA. 0+00 TO STA. 0+31
CD1-CD4	CONSTRUCTION DETAILS

## FOR BIDS



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



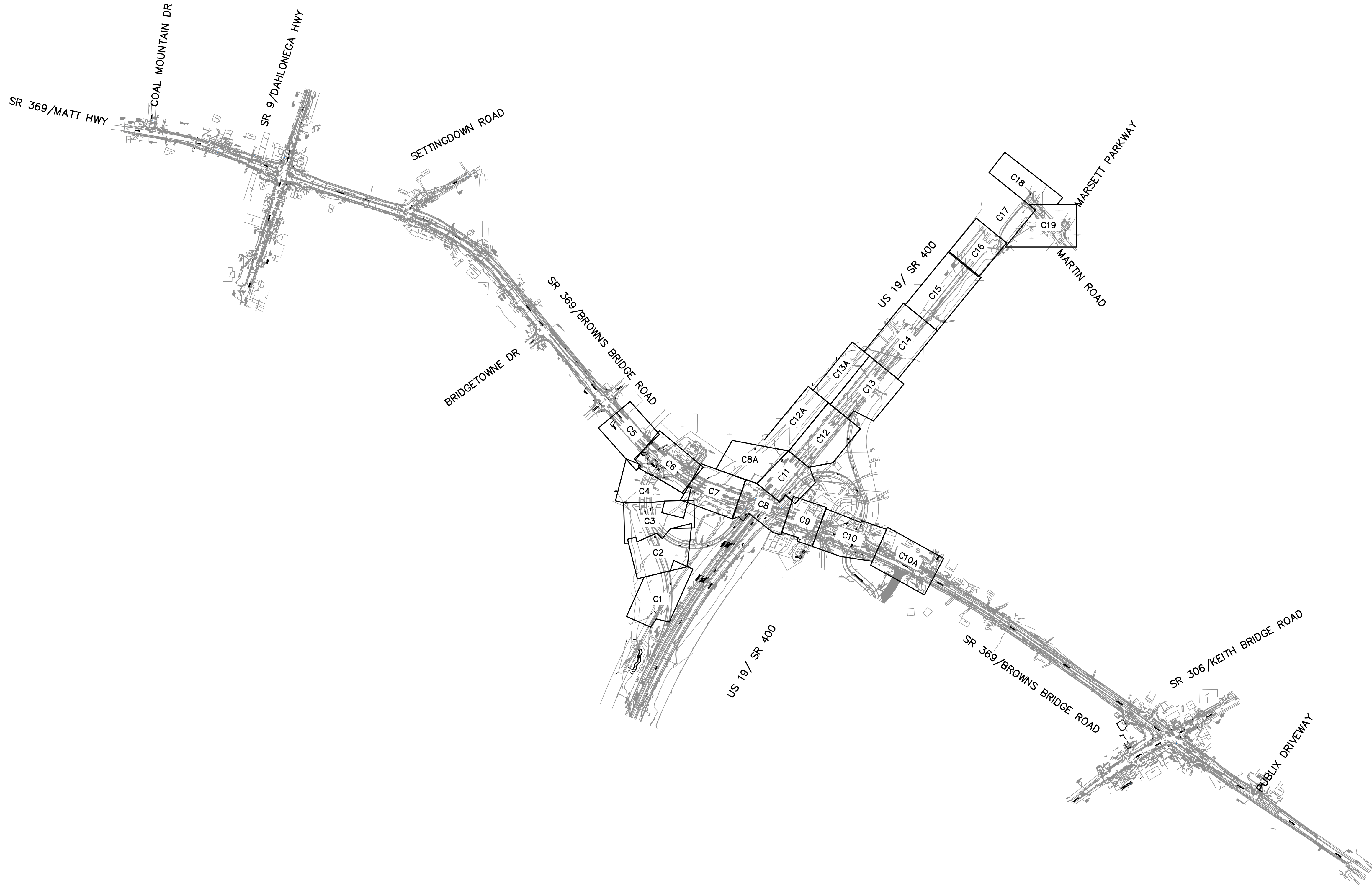

HWY 400  
WATERLINE RELOCATION

## SHEET INDEX

SHEET:	G2
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



\\projects\100182\15 - Forsyth County, GA\100182.15 - Browns Bridge Road Water Main Project\000\100182.15 - Sheet Layout.dwg  
RELEASE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CONSTANTINE ENGINEERING. HOWEVER, THIS SHALL NOT PROHIBIT THE REUSE OF THIS DOCUMENT BY THE CLIENT AS PROVIDED FOR BY THE CONTRACT.



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH: 678-241-4070



3-26-19

APVD	BY	REVISIONS	DATE	NO.	APVD

DSGN  
DRN  
CHK



AEI

VERIFY SCALE

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HWY 400  
WATERLINE RELOCATION

SHEET LAYOUT

FOR BIDS

SHEET: G3  
DWG NO:  
DATE: MARCH, 2019  
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1. ALL WORK AND MATERIALS ARE TO CONFORM TO CURRENT FORSYTH COUNTY STANDARDS.
2. NOTIFY FORSYTH COUNTY WATER AND SEWER DEPT. 24 HOURS PRIOR TO ANY WATER LINE CONSTRUCTION AT (770) 781-2160
3. THE CONTRACTOR SHALL CALL THE UTILITIES PROTECTION CENTER "CALL BEFORE YOU DIG", TELEPHONE NUMBER 1-800-282-7411, BEFORE INITIATING EXCAVATION ACTIVITIES.
4. ALL 20" DIAMETER AND SMALLER WATER LINES SHALL BE DUCTILE IRON PRESSURE CLASS 350 AND POLY-WRAPPED UNLESS SHOWN OTHERWISE ON THE PLANS. PIPE SIZES 24" DIAMETER AND LARGER SHALL BE PRESSURE CLASS 200 AND POLY WRAPPED UNLESS SHOWN OTHERWISE ON THE PLANS.
5. WATER LINES SHALL BE INSTALLED INSIDE RIGHT-OF-WAY, OR IN LOCATION SHOWN ON PLANS.
6. WATER LINES SHALL HAVE AT LEAST 4 FEET OF COVER OR BE 4 FEET BELOW ROAD GRADE, WHICHEVER IS GREATER.
7. ALL ABANDONED WATER LINES OVER 6" IN DIAMETER WILL BE CUT, CAPPED, AND FULLY GROUT FILLED.
8. ALL ABANDONED VALVES AND BOXES SHALL BE REMOVED.
9. SHORT SIDE SERVICES SHALL BE 3/4" COPPER OR AS SHOWN ON THE PLANS.
10. LONG SIDE SERVICES SHALL BE 1" COPPER INCASED IN 2" HDPE CONDUITS WITH 3/4" WYES AT LOT CORNERS. ALL LONG SIDE SERVICES TO BE DRY BORED OR HDD.
11. WATER METERS ARE TO BE LOCATED AT RIGHT-OF-WAY.
12. FIRE HYDRANTS ARE TO BE 3-WAY 5-1/4" TYPE. EXISTING LINES, HYDRANT, AND VALVES TO BE REMOVED AND LINES CAPPED.
13. FIRE HYDRANTS MUST BE FLOW TESTED PRIOR TO FINAL APPROVAL TO ENSURE ADEQUATE FIRE FLOWS.
14. CONCRETE VALVE MARKERS ARE TO BE INSTALLED AT ALL VALVES EXCEPT AT FIRE HYDRANTS.
15. CONCRETE BLOCKING SHALL BE PLACED AT ALL BENDS, TEES, AND FITTINGS FOR PIPES 20" AND SMALLER AND WHERE SHOWN ON THE PLANS FOR PIPES 24" AND LARGER.
16. ALL PIPE SHALL BE RESTRAINED JOINT.
17. ALL FITTINGS, BENDS, TEES AND VALVES SHALL INCLUDE RJ MJ RETAINER GLAND AS SPECIFIED.
18. 300 PSI CURB STOPS, CORPS, AND WYES, REQUIRED PER FORSYTH COUNTY STANDARDS.
19. ALL VALVES SHALL BE GATE VALVES.
20. NO DEVIATIONS FROM APPROVED DRAWINGS ARE ALLOWED WITHOUT APPROVAL FROM FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER.
21. LINES ARE TO BE PRESSURE TESTED AND DISINFECTED PER COUNTY SPECIFICATIONS.
22. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL INFRASTRUCTURE FOR AN 18-MONTH PERIOD FOLLOWING INSTALLATION.
23. THE CONTRACTOR IS TO BE AWARE THAT THERE ARE OTHER EXISTING UTILITIES, BOTH ABOVE AND BELOW GROUND, ON THIS PROJECT. COORDINATE INSTALLATION WITH THE OTHER UTILITIES.
24. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE AND LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BID AND CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGES TO OTHER UTILITIES AT NO ADDITIONAL COST TO THE OWNER.
25. THE CONTRACTOR SHALL VERIFY CONNECTIONS, WHERE INDICATED ON DRAWINGS, WITH OWNER.
26. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING OR REPAIRING ANY DAMAGED PUBLIC OR PRIVATE PROPERTY OR FACILITIES TO THE SAME OR BETTER CONDITION AS EXISTED PRIOR TO THE CONSTRUCTION. THE CONTRACTOR WILL COORDINATE THE REPLACEMENT / REPAIR WITH THE ENGINEER AND THE FINAL INSTALLATION SHALL MEET THE APPROVAL OF THE ENGINEER.
27. THE EXISTING UTILITIES IN THIS CONSTRUCTION AREA ARE NOT NECESSARILY SHOWN ON THE PLANS. DATA CONCERNING UTILITIES SHOWN SHALL BE CONSIDERED AS APPROXIMATE ONLY.
28. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION. SIGNIFICANT DEVIATIONS FROM INFORMATION SHOWN ON DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
29. WATER SHUTS FOR TIE-INS WILL TYPICALLY BE CONDUCTED FROM 10:00AM TO 2:00PM. PERIODICALLY THE SHUTS WILL BE REQUIRED AT NIGHT AFTER 10:00 PM TO MAINTAIN SERVICE TO CUSTOMERS. NO SEPARATE MEASUREMENT AND PAYMENT WILL BE MADE FOR NIGHT SHUTS.
30. ALL VALVES WILL BE SURVEYED WITH GPS COORDINATES BY THE CONTRACTOR WITHIN 2 DAYS OF INSTALLATION. ALL VALVES WILL BE RAISED DURING FINAL PAVING. PROVIDE GPS COORDINATES TO ENGINEER WITH EACH PAY ESTIMATE OR THE FIRST OF EACH MONTH.
31. ALL SERVICE LINES TO BE ABANDONED IN PLACE. CRIMP BOTH ENDS.
32. ALL WATER METERS, BACKFLOWS, AND METER BOXES TO BE RELOCATED.
33. ALL HYDRANTS, GATE VALVES, AND METERS REMOVED SHALL BE SALVAGED AND RETURNED TO FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER AT 4050 COUNTY WAY, CUMMING, GA. PIPE AND FITTINGS SHALL BE DISPOSED OF ACCORDINGLY.
34. NO ADDITIONAL PAYMENT WILL BE MADE FOR NIGHT-TIME WORK.
35. NO CLEARING DURING THE MONTHS OF MAY 15 TO JULY 31 DUE TO LONG-EARED BAT ACTIVITY.
36. PIPE SHALL BE SWEEPED DAILY. INSTALL BLOW-UP PLUG AT THE END OF EACH WORKDAY.

38. CONTRACTOR "AS BUILTS" SHALL HAVE COORDINATE TABLE WITH NORTHINGS AND EASTINGS FOR ALL VALVES, HYDRANTS, MANHOLES, AND FITTINGS.
39. ALL VALVE BOXES, HYDRANTS, MANHOLES, ETC. SHALL BE INSTALLED TO ACCOMMODATE FINAL GRADE OR BE RAISED AS REQUIRED DURING ROADWAY CONSTRUCTION.
40. CONTRACTOR "AS BUILTS" SHALL HAVE COORDINATE TABLE WITH NORTHINGS AND EASTINGS FOR ALL VALVES, HYDRANTS, MANHOLES, AND FITTINGS.
41. COMPLETE TIE-INS ON SHEETS C1 AND C12A CONCURRENTLY WITH TWO CONSTRUCTION CREWS.
42. COORDINATE WITH HWY 369/ 400 ROAD CONTRACTOR. INSTALL IMPACT SITE 1 AND IMPACT SITE 2 STA. 0+00 TO 9+58 FIRST TO REDUCE IMPACTS ON CONSTRUCTION.
43. PULL DRY PIG DURING LINE CONSTRUCTION TO REDUCE SEDIMENT IN LINE.
44. 36-INCH GATE VALVE SUPPLIED BY OWNER. PROVIDE PIPE END TO MATCH AMERICAN RESTRAINED JOINT FLEX-RING BELL.


[illegible]

G4
MARCH, 2019
100182.15



APVD	BY	REVISIONS	DATE	NO.



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HWY 400  
WATERLINE RELOCATION

## GENERAL NOTES AND LEGEND



23 PROJECT FILE# 100182 - Forsyth County Ga 100182.15 - Browns Bridge Road Water Main Project# 365 (see attached Drawings) PART BLEDMENT AND EROSION CONTROL.dwg  
24 REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF THE CLIENT. THE CLIENT SHALL NOT PROHIBIT THE REUSE OF THIS DOCUMENT BY THE CONTRACTOR FOR THE CONTRACT.  
25 HOWEVER, THIS SHALL NOT PROHIBIT THE REUSE OF THIS DOCUMENT BY THE CONTRACTOR FOR THE CONTRACT.

LEGEND

-  SOIL BOUNDARY  
 LIMITS OF DISTURBANCE

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
 FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
 BARRY LUCAS  
 110 E. MAIN STREET, STE. 150  
 CUMMING, GA 30040  
 770-886-2793

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
Ab	Toccoa and Chewacla soils, 0 to 2 percent slopes, occasionally flooded
AcB	Altavista fine sandy loam, very gently sloping phase
AdC2	Appling sandy clay loam, eroded gently sloping phase
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CbE	Cecil fine sandy loam, moderately steep phase
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EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

## PLAN

SCALE:  $1'' = 20'$

0 20 40



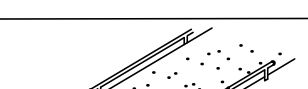
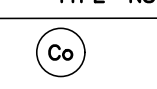
GRAPHIC SCALE

PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES BY ON SITE CONTRACTOR. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN  
14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

CODE	PRACTICE	DETAIL	MAP SYMBOL
Sd1-S	SEDIMENT BARRIER		 TYPE "NS"
Co	CONSTRUCTION EXIT		 (1) (phel)

- LAT: 32.261056°  
LONG: -84.089854°

**FOR BIDS**




					DSGN
					DRN
					CHK
APVD	BY	REVISIONS	DATE	NO.	APVD



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HWY 400  
WATERLINE RELOCATION

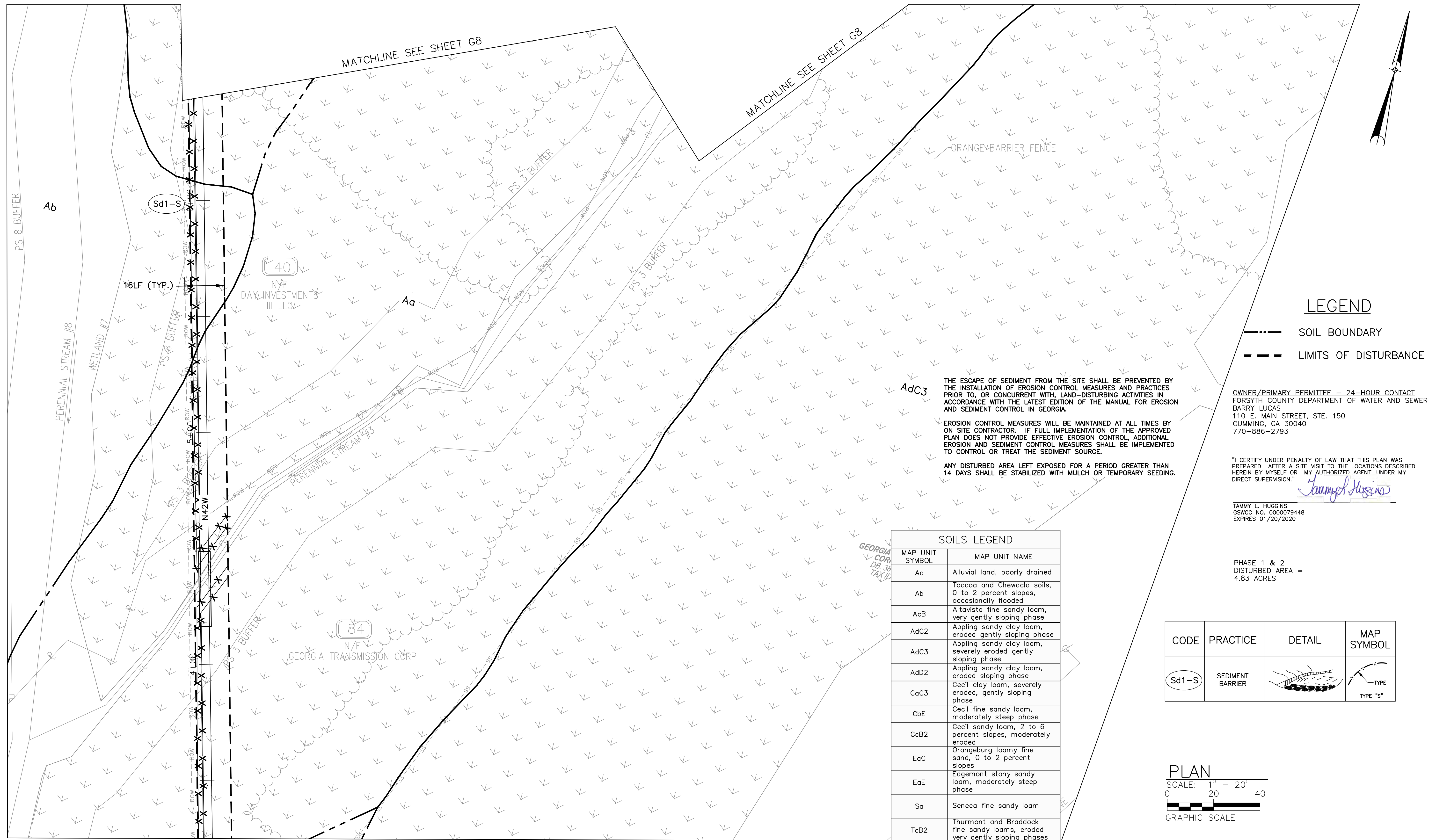
EROSION AND SEDIMENTATION CONTROL  
PHASES 1&2



SHEET:	G5
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15










CODE	PRACTICE	DETAIL	MAP SYMBOL
Sd1-S	SEDIMENT BARRIER		 TYPE "S"

PLAN

SCALE: 1" = 20'

0 20 40

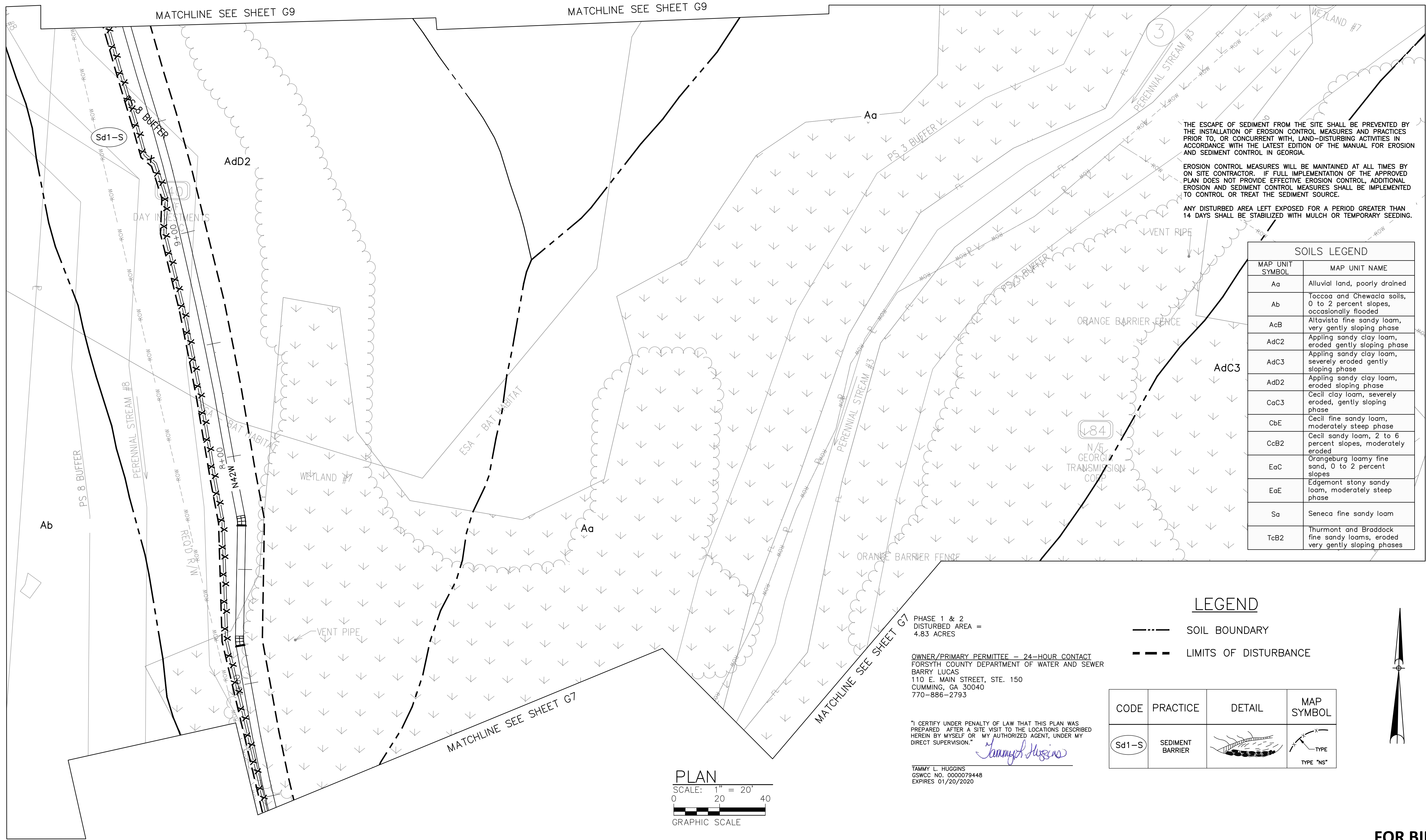


GRAPHIC SCALE

## FOR BIDS

[illegible]







SOILS LEGEND	
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EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
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TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

## LEGEND

- · — · — · SOIL BOUNDARY  
- - - - - LIMITS OF DISTURBANCE

CODE	PRACTICE	DETAIL	MAP SYMBOL
Sd1-S	SEDIMENT BARRIER		 TYPE "NS"



PHASE 1 & 2  
DISTURBED AREA =  
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OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
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BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

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TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## PLAN

SCALE: 1" = 20'

### GRAPHIC SCALE



**Constantine**  
Engineering




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DSGN
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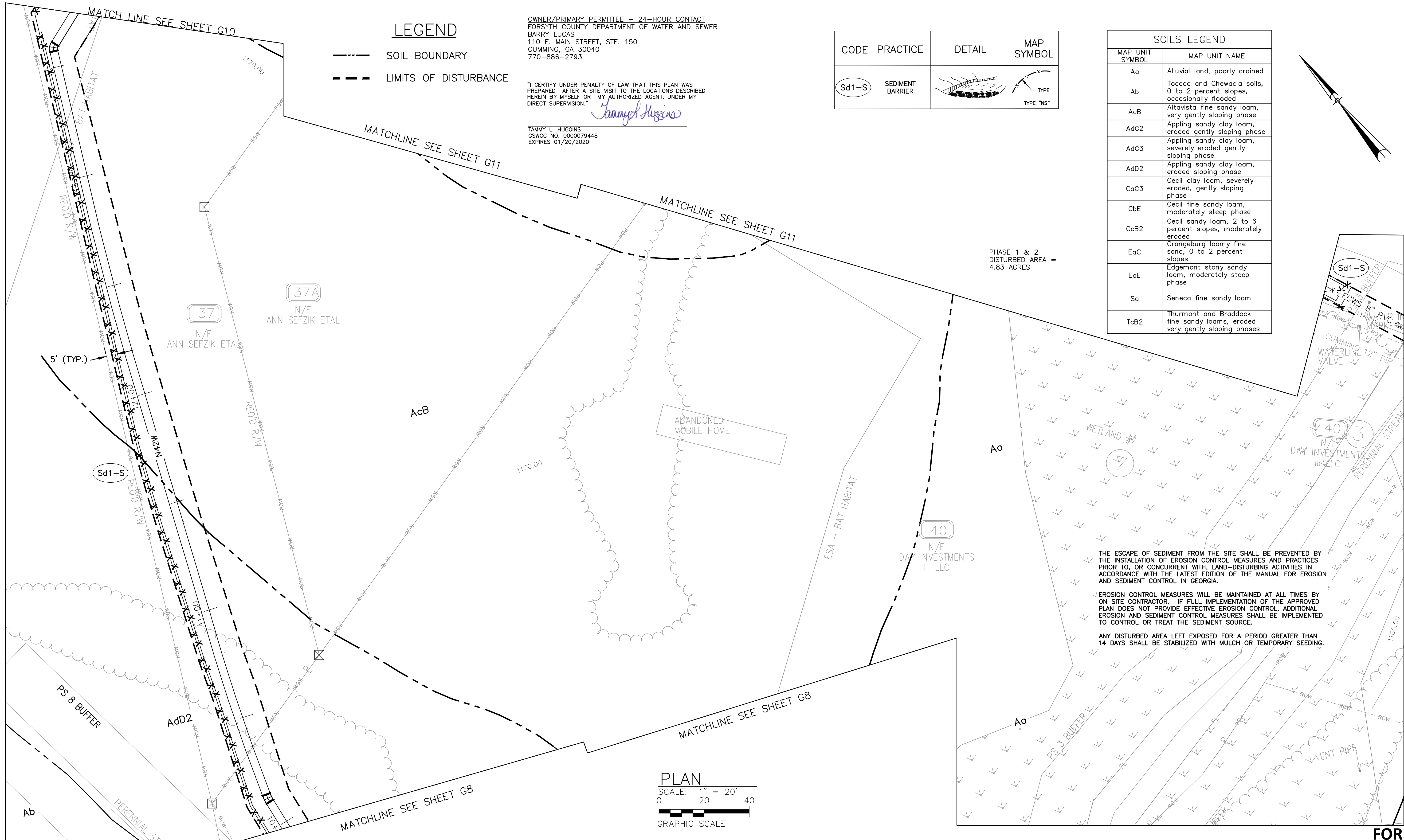
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HWY 400  
WATERLINE RELOCATION

## EROSION AND SEDIMENTATION CONTROL PHASES 1&2

SHEET:	G8
DWG NO:	
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[illegible]



OWNER/PRIMARY PERMITTEE — 24-HOUR CONTACT  
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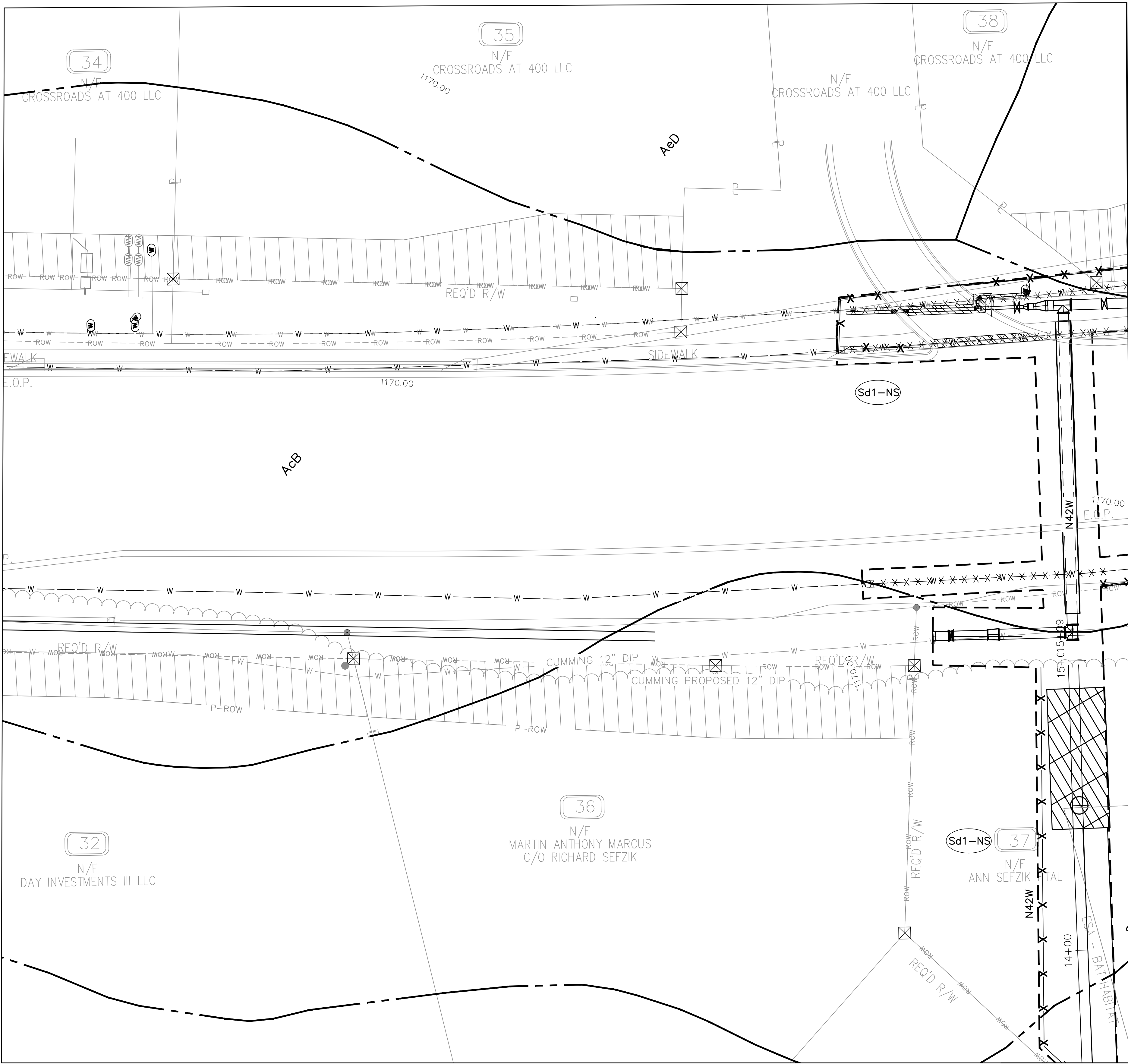
## LEGEND

- SOIL BOUNDARY  
- - - - - LIMITS OF DISTURBANCE

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ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN  
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MATCHLINE SEE SHEET G11

MATCHLINE SEE SHEET G9

## SOILS LEGEND

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Sd1-NS	SEDIMENT BARRIER		

## PLAN

SCALE: 1" = 20'  
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GRAPHIC SCALE

FOR BIDS

Constantine  
Engineering

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EROSION AND SEDIMENTATION CONTROL  
PHASES 1&2

SHEET: G10  
DWG NO:  
DATE: MARCH, 2019  
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CODE	PRACTICE	DETAIL	MAP SYMBOL
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<div style="border: 1px solid black; border-radius: 50%; padding: 10px; display: inline-block;">Sd1-S</div>			

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ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

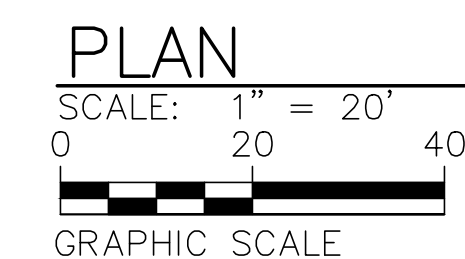
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Jammyal Higgins

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
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### LEGEND

SOIL BOUNDARY

## LIMITS OF DISTURBANCE

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AdC2	Appling sandy clay loam, eroded gently sloping phase
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AdD2	Appling sandy clay loam, eroded sloping phase
CaC3	Cecil clay loam, severely eroded, gently sloping phase
CbE	Cecil fine sandy loam, moderately steep phase
CcB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded
EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

**FOR BIDS**

[illegible]







[illegible]



EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES BY ON SITE CONTRACTOR. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

MATCHLINE SEE SHEET G13



GRAPHIC SCALE



MATCHLINE SEE SHEET G16

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
 FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
 BARRY LUCAS  
 110 E. MAIN STREET, STE. 150  
 CUMMING, GA 30040  
 770-886-2793

Tammie L. Higgins

### LEGEND

PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES

PROJ NO: 100182.15
--------------------



APVD	BY	REVISIONS	DATE	NO.

	DSGN
	DRN
	CHK
	APVD

APVD
------

HWY 400  
WATERLINE RELOCATION

## EROSION AND SEDIMENTATION CONTROL PHASES 1&2

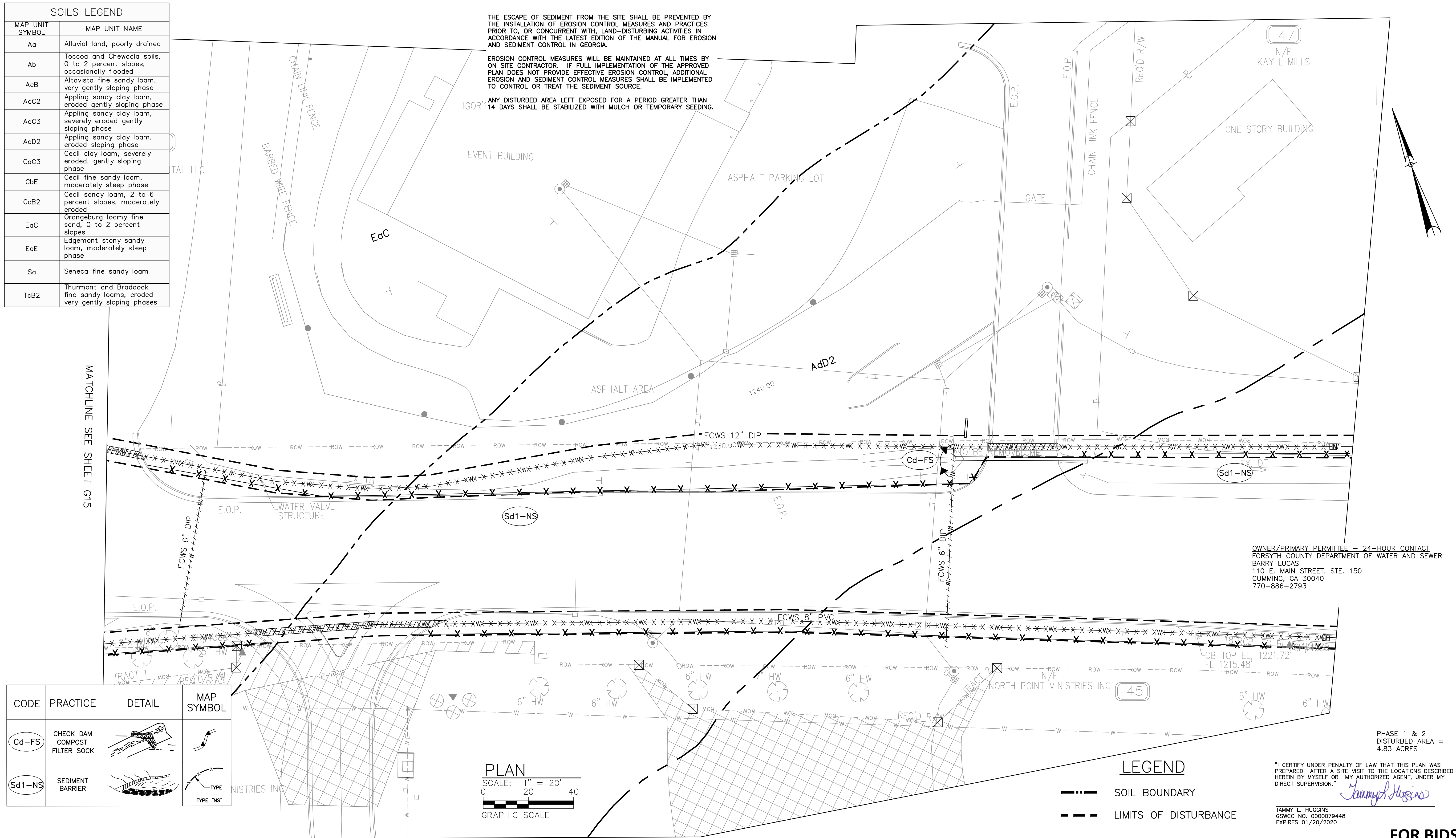


SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
Ab	Toccoa and Chewelaca soils, 0 to 2 percent slopes, occasionally flooded
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AdC2	Appling sandy clay loam, eroded gently sloping phase
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Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

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ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING



OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## FOR BIDS







\\Project Files\0048 - Forsyth County, GA\0048-15 - Brown Bridge Road Water Main Project\00 Design\05c Intersections Drawings\05c Erosion Control\05c Release of Documents\15018215.dwg  
THIS DOCUMENT AND THE DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CONSTANTINE ENGINEERING. HOWEVER, THIS SHALL NOT PROHIBIT THE REUSE OF THIS DOCUMENT BY THE CLIENT AS PROVIDED FOR BY THE CONTRACT.

SOILS LEGEND	
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Sa	Seneca fine sandy loam
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CODE	PRACTICE	DETAIL	MAP SYMBOL
Sd1-NS	SEDIMENT BARRIER		TYPE
Sd1-S			TYPE "NS" TYPE "S"

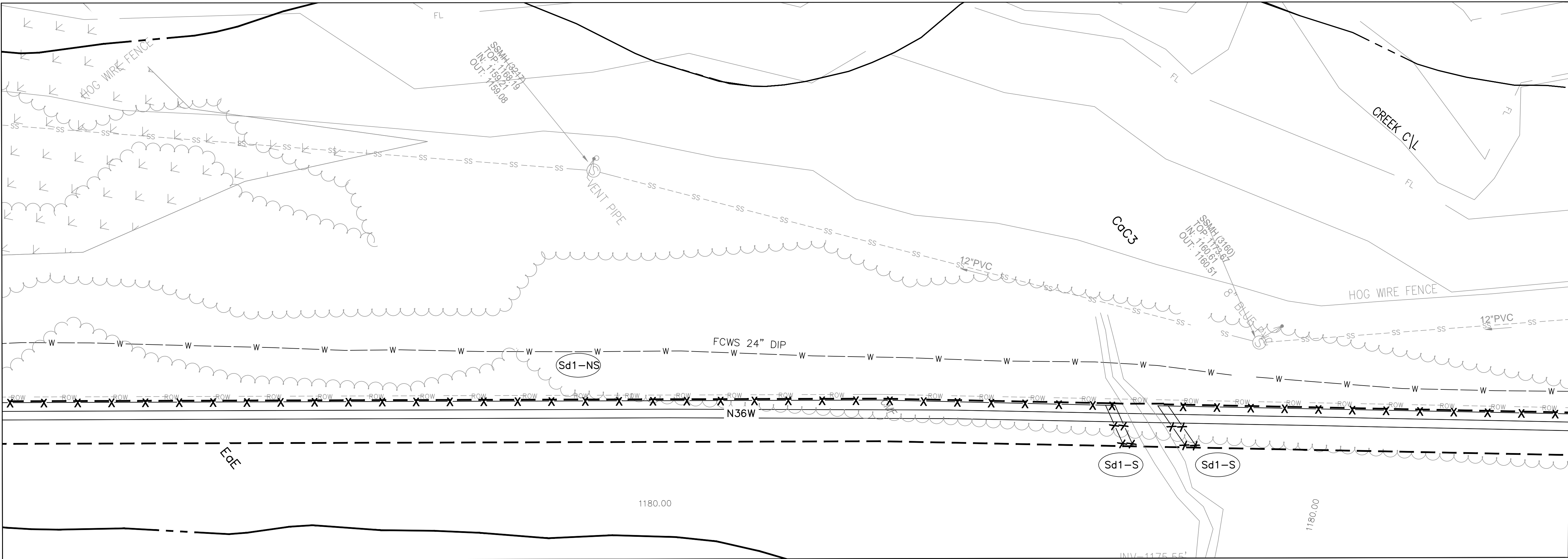
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PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES

MATCHLINE SEE SHEET G17



MATCHLINE SEE SHEET G19

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

*Tammy L. Huggins*

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## LEGEND

- SOIL BOUNDARY
- LIMITS OF DISTURBANCE

## PLAN

SCALE: 1" = 20'  
0 20 40

GRAPHIC SCALE

**Constantine**  
Engineering



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070

APVD	BY	REVISIONS	DATE	NO.

DSGN  
DRN  
CHK

APVD



### VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING  
0 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENTATION CONTROL  
PHASES 1&2

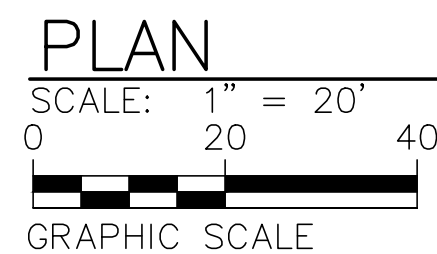
FOR BIDS

SHEET: G18  
DWG NO:  
DATE: MARCH, 2019  
PROJ NO: 100182.15



CODE	PRACTICE	DETAIL	MAP SYMBOL
<div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">Sd1-NS</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">Sd1-S</div>	SEDIMENT BARRIER		 TYPE "NS" TYPE "S"

PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES



OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
 FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
 BARRY LUCAS  
 110 E. MAIN STREET, STE. 150  
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TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

### LEGEND

SOIL BOUNDARY

## LIMITS OF DISTURBANCE




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENTATION CONTROL  
PHASES 1&2

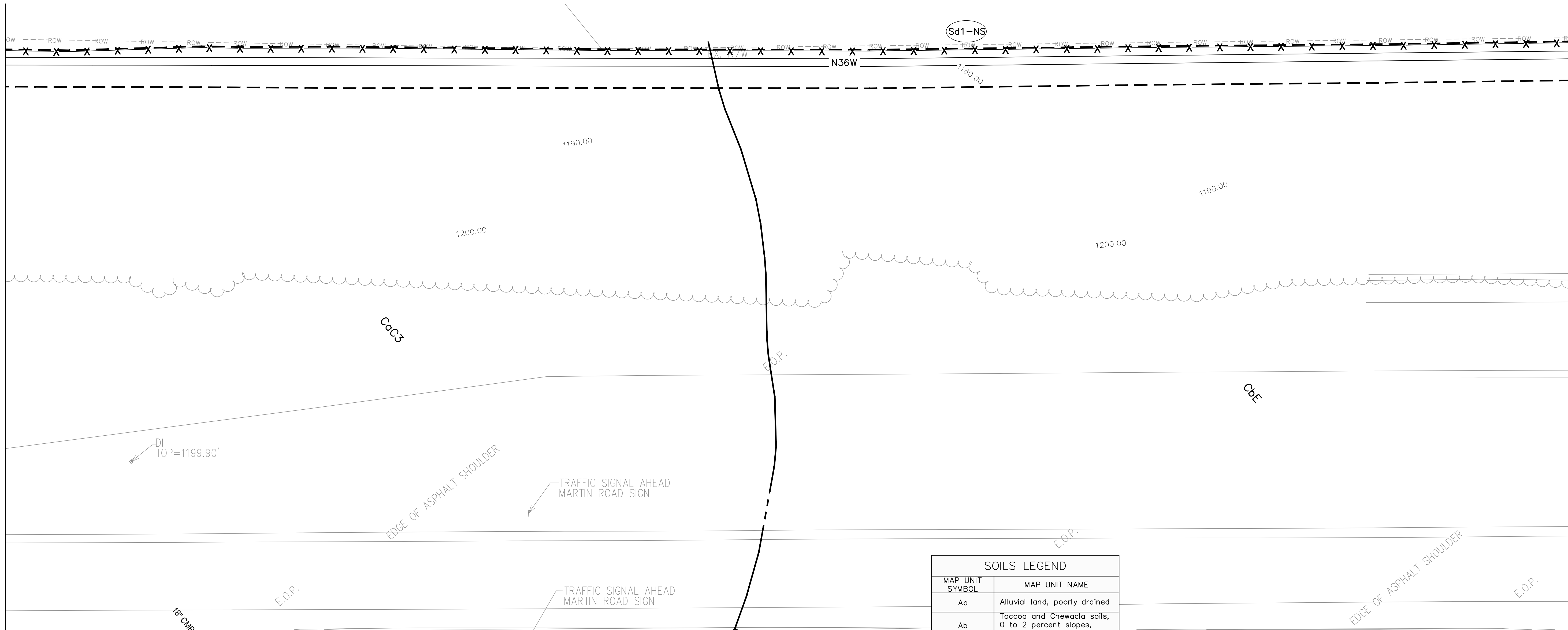
SHEET:	G19
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15

## FOR BIDS





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MATCHLINE SEE SHEET G19



MATCHLINE SEE SHEET G21

SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
Ab	Toccoa and Chewacla soils, 0 to 2 percent slopes, occasionally flooded
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CODE	PRACTICE	DETAIL	MAP SYMBOL
Sd1-NS	SEDIMENT BARRIER		 TYPE "NS"

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

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TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

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PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES

PLAN

SCALE: 1" = 20'

0 20 40



GRAPHIC SCALE

## LEGEND

SOIL BOUNDARY

## LIMITS OF DISTURBANCE




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

## EROSION AND SEDIMENTATION CONTROL PHASES 1&2

SHEET:	G20
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15

## FOR BIDS







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SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
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TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

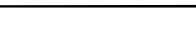
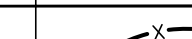
OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

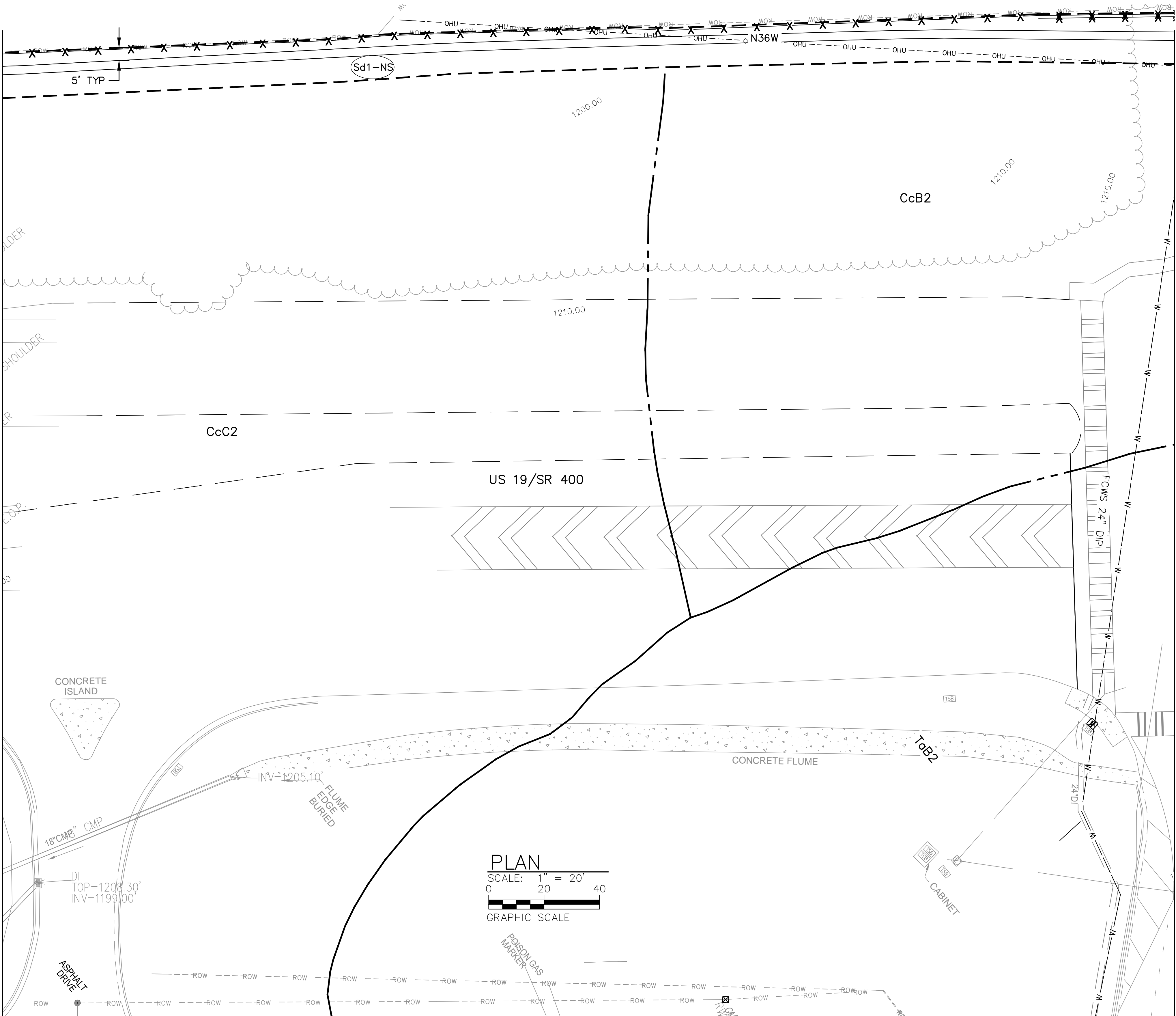
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TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## LEGEND

— · — · — · — SOIL BOUNDARY  
- - - - - LIMITS OF DISTURBANCE

CODE	PRACTICE	DETAIL	MAP SYMBOL
Sd1-NS	SEDIMENT BARRIER		



THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES THAT ARE EFFECTIVE PRIOR TO, AND CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

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PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES

MATCHLINE SEE SHEET G23

MATCHLINE SEE SHEET G24

## FOR BIDS

[illegible]



THIS PLAN IS A PART OF A SET OF PLANS FOR THE RELOCATION OF HIGHWAY 400. THE REVISIONS TO THIS PLAN ARE SHOWN IN THE REVISIONS SECTION. THE REVISIONS TO THIS PLAN ARE SHOWN IN THE REVISIONS SECTION. THE REVISIONS TO THIS PLAN ARE SHOWN IN THE REVISIONS SECTION.

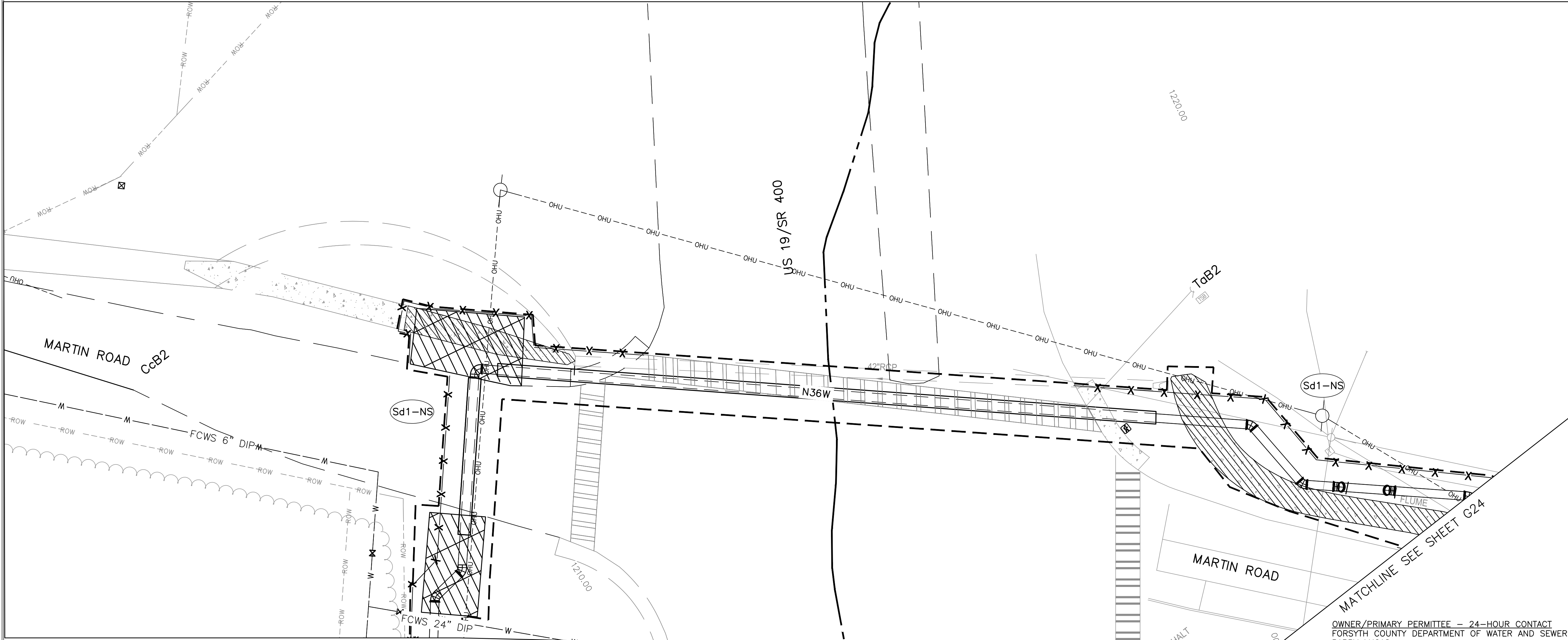
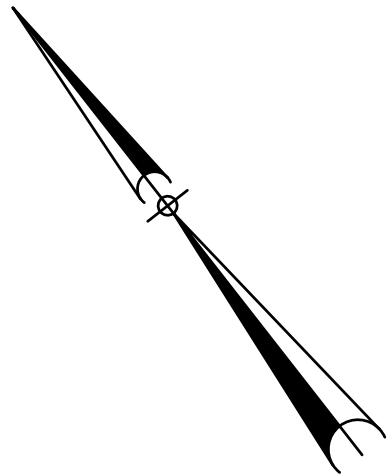
CODE	PRACTICE	DETAIL	MAP SYMBOL
Sd1-NS	SEDIMENT BARRIER		
			TYPE "NS"

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PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES



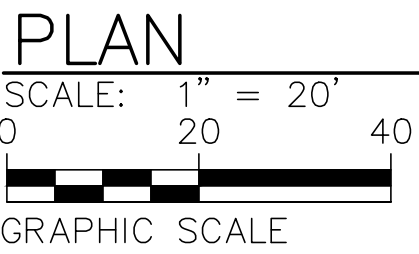
SOILS LEGEND	
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OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

*Tammy L. Huggins*

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020



LEGEND

- SOIL BOUNDARY
- - - LIMITS OF DISTURBANCE

FOR BIDS

368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070

3-26-19

APVD	BY	REVISIONS	DATE	NO.	APVD

DSGN

DRN

CHK

APVD

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENTATION CONTROL  
PHASES 1&2

SHEET: G23

DWG NO:

DATE: MARCH, 2019

PROJ NO: 100182.15



2:\Project Files\100182 - Forsyth County Ga\100182-1 - Browns Bridge Road Water Main Project\300 Intermediate Drawings\PART B\SEDMENT AND EROSION CONTROL.dwg

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
 FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
 BARRY LUCAS  
 110 E. MAIN STREET, STE. 150  
 CUMMING, GA 30040  
 770-886-2793

*Tammy L. Huggins*

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

— · — · — · SOIL BOUNDARY  
 · · · · · · LIMITS OF DISTURBANCE

PHASE 1 & 2  
DISTURBED AREA =  
4.83 ACRES

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14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

SCALE: 1" = 20'

0 20 40

GRAPHIC SCALE



ROBERT E LEE FAMILY PTNRSHP LP  
FRED J LEE

— LAT: 32.270156°  
LONG: -84.077968°

## FOR BIDS




APVD	BY	REVISIONS	DATE	NO.



# AEI

**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENTATION CONTROL  
PHASES 1&2

SHEET:	G24
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



Z:\Project Files\100182 - Forsyth County GA\100182.15 - Browns Bridge Road Water Main Project\300 Design\365 Intermediate Drawings\PART B\SEDIMENT AND EROSION CONTROL PHASE 3 FINAL.dwg

LEGEND

- · — · — · SOIL BOUNDARY  
- - - - - LIMITS OF DISTURBANCE

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
 FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
 BARRY LUCAS  
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TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## SOILS LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME
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CcB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded
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EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

## PLAN

SCALE:  $1'' = 20'$


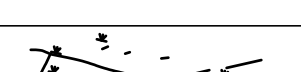
GRAPHIC SCALE

PHASE 3  
DISTURBED AREA =  
4.83 ACRES

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ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN  
14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		Ds2
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		Ds3

- LAT: 34.261056°  
LONG: -84.089854°

MATCHLINE SEE SHEET G26

## FOR BIDS



					DSGN
					DRN
					CHK
APVD	BY	REVISIONS	DATE	NO.	APVD



VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0 [redacted] 1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION



### EROSION AND SEDIMENTATION CONTROL PHASE 3

SHEET:	G25
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



Z:\Project Files\100182 - Forsyth County GA\100182\_15 - Browns Bridge Road Water Main Project\_365 Intermediate Drawings\PART B SEDIMENT AND EROSION CONTROL PHASE 3 FINAL.dwg

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CONSTANTINE ENGINEERING. HOWEVER, THIS SHALL NOT PROHIBIT THE REUSE OF THIS DOCUMENT BY THE CLIENT AS PROVIDED FOR BY THE CONTRACT.

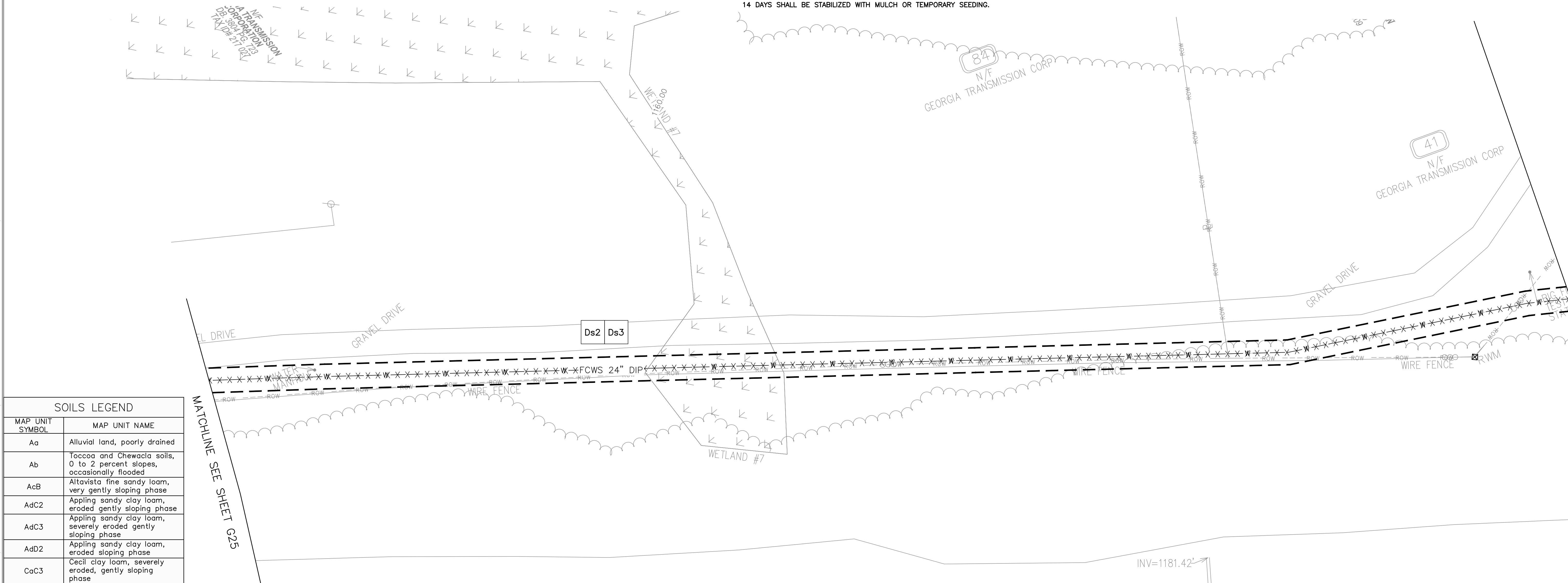
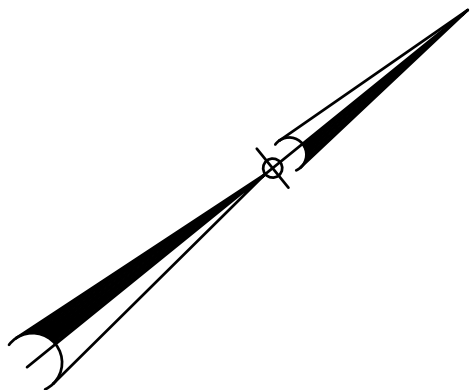
CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		Ds2
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		Ds3

PHASE 3  
DISTURBED AREA =  
4.83 ACRES

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES BY ON SITE CONTRACTOR. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

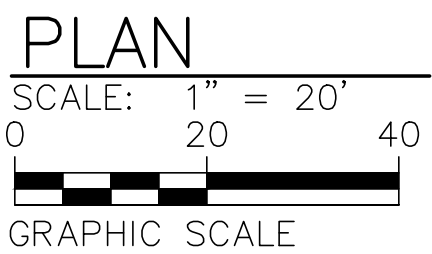
ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.



SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
Ab	Toccoa and Chewacla soils, 0 to 2 percent slopes, occasionally flooded
AcB	Altavista fine sandy loam, very gently sloping phase
AdC2	Appling sandy clay loam, eroded gently sloping phase
AdC3	Appling sandy clay loam, severely eroded gently sloping phase
AdD2	Appling sandy clay loam, eroded sloping phase
CaC3	Cecil clay loam, severely eroded, gently sloping phase
CbE	Cecil fine sandy loam, moderately steep phase
CcB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded
EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

## LEGEND

— · — · — · SOIL BOUNDARY  
- - - - - LIMITS OF DISTURBANCE



OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
 FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
 BARRY LUCAS  
 110 E. MAIN STREET, STE. 150  
 CUMMING, GA 30040  
 770-886-2793

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

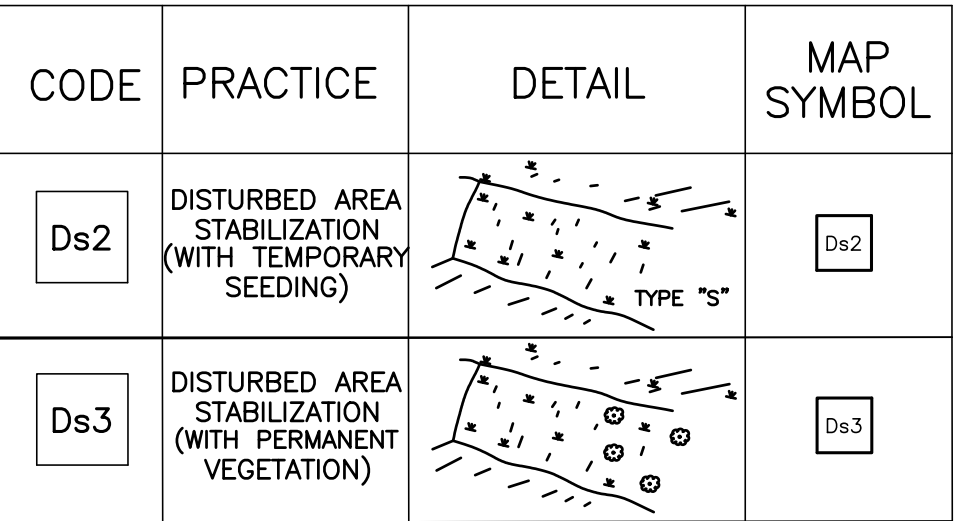
DIRECT SUPERVISION. *Tammy Huggins*

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## FOR BIDS

 <p><b>Constantine</b> Engineering</p> <p>368 WEST PIKE ST. SUITE 104 LAWRENCEVILLE, GA 30046 PH. 678-241-4070</p>																<div style="background-color: black; color: white; padding: 2px; text-align: center;">VERIFY SCALE</div> <p>BAR IS ONE INCH ON ORIGINAL DRAWING</p> <p>0 <span style="background-color: black; color: black;">            </span> 1"</p> <p>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</p>	HWY 400 WATERLINE RELOCATION	EROSION AND SEDIMENTATION CONTROL PHASE 3	SHEET:	G26
		DWG NO:																		
		DATE:	MARCH, 2019																	
		PROJ NO:	100182.15																	










PLAN

SCALE: 1" = 20'

0 20 40



GRAPHIC SCALE

CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		

LEGEND

SOIL BOUNDARY

LIMITS OF DISTURBANCE

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

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TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

PHASE 3  
DISTURBED AREA =  
4.83 ACRES

## LEGEND

## COIL BOUNDARY

## LIMITS OF DISTURBANCE

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

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TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

PHASE 3  
DISTURBED AREA =  
4.83 ACRES

## LEGEND

## COIL BOUNDARY

## LIMITS OF DISTURBANCE

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SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
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CbE	Cecil fine sandy loam, moderately steep phase
CcB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded
EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases


MATCHLINE SEE SHEET G25



APVD	BY	REVISIONS	DATE	NO.



### VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

## EROSION AND SEDIMENTATION CONTROL PHASE 3

SHEET: G27

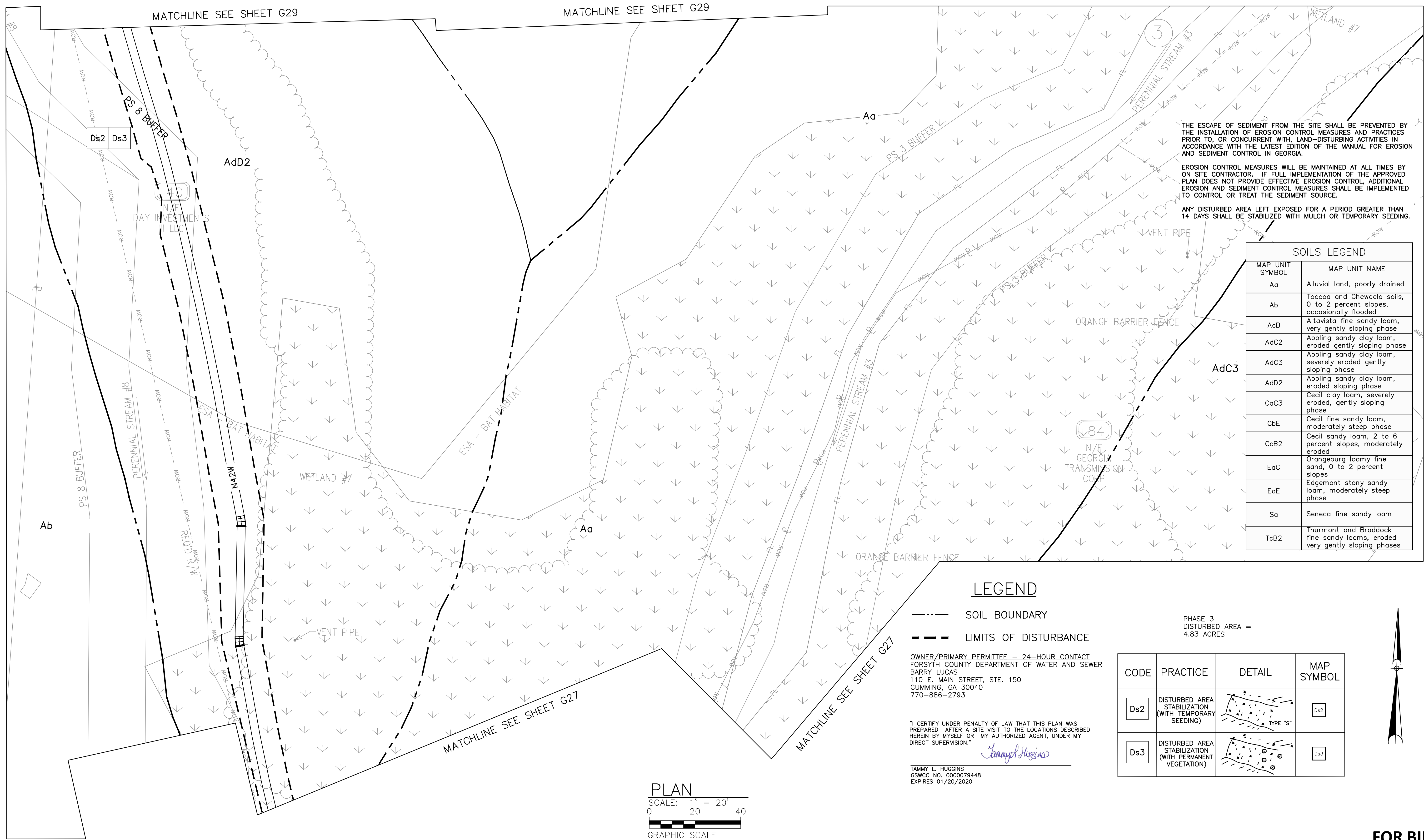
DWG NO:

DATE: MARCH, 2019



PROJ NO: 100182.15

## FOR BIDS





SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
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EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
EaE	Edgemont stony sandy loam, moderately steep phase
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CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		Ds2
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		Ds3

PHASE 3  
DISTURBED AREA =  
4.83 ACRES

— · — · — · SOIL BOUNDARY  
- - - - - LIMITS OF DISTURBANCE

OWNER/PRIMARY PERMITEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793


"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

PLAN

SCALE: 1" = 20'

0 20 40

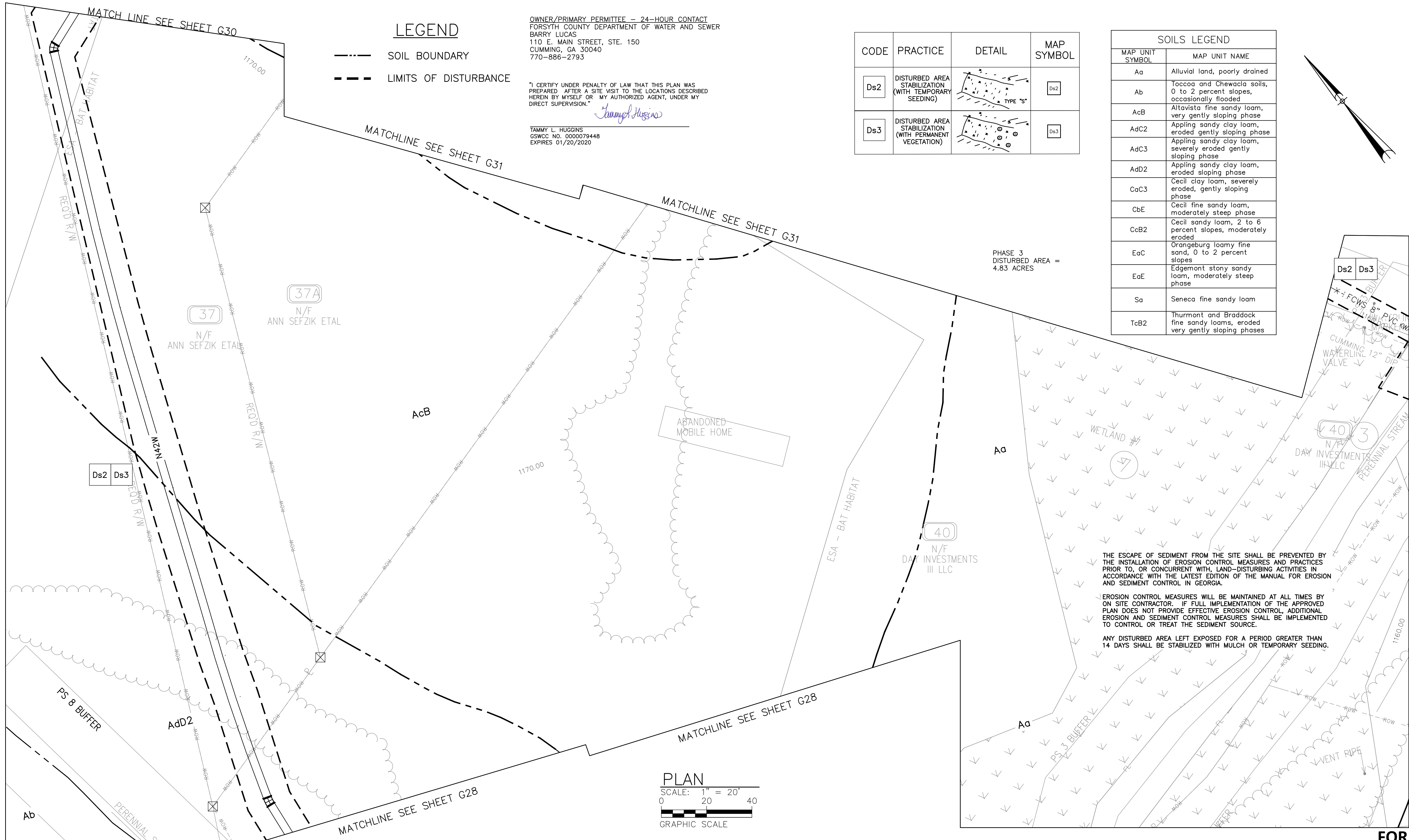


GRAPHIC SCALE

## FOR BIDS

[illegible]





## FOR BIDS

[illegible]



OWNER/PRIMARY PERMITTEE — 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

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TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

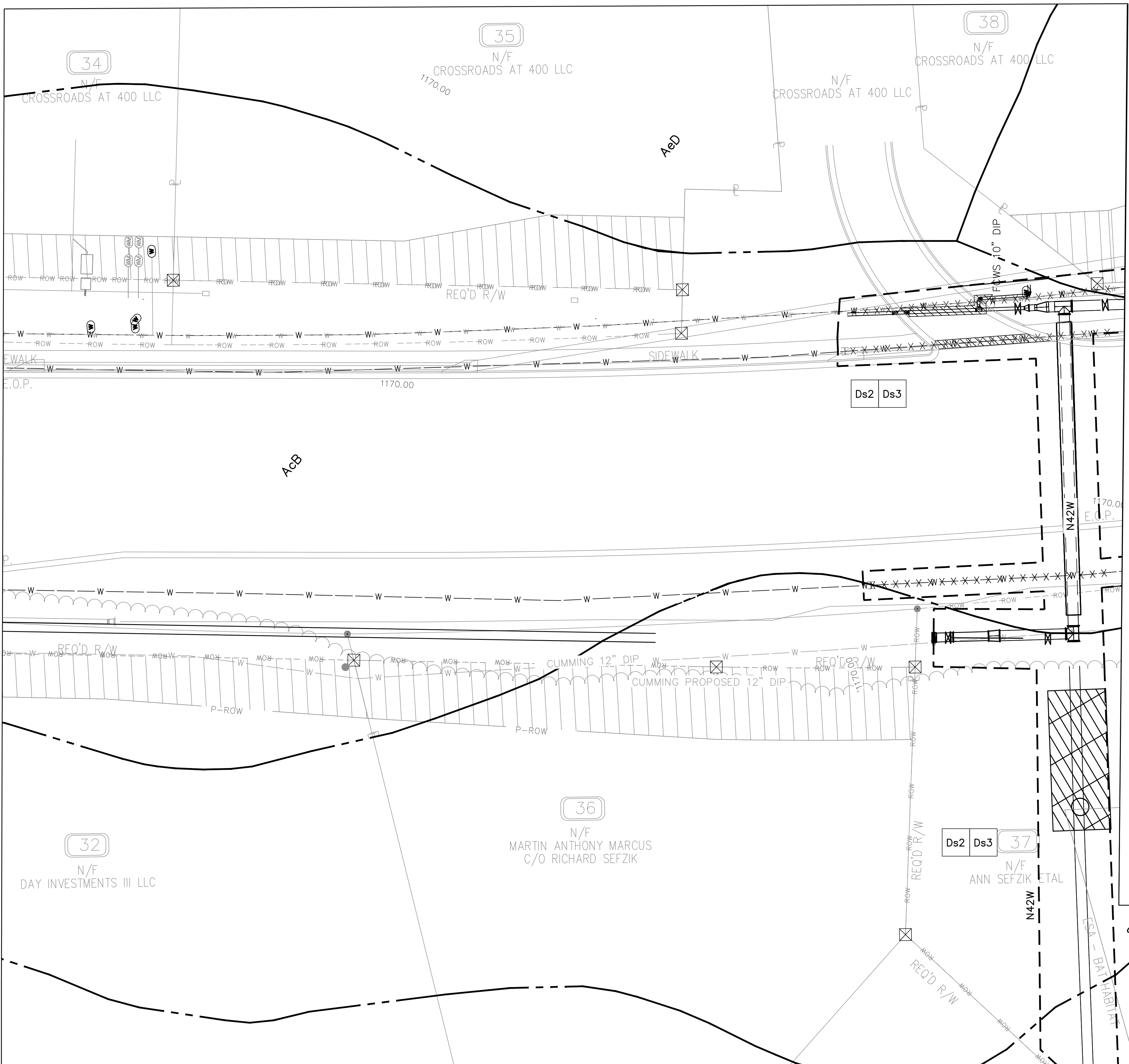
## LEGEND

- SOIL BOUNDARY  
- - - - - LIMITS OF DISTURBANCE

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE  
PREVENTED BY THE INSTALLATION OF EROSION CONTROL  
MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT  
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OF THE APPROVED PLAN DOES NOT PROVIDE EFFECTIVE  
EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT  
CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL  
OR TREAT THE SEDIMENT SOURCE.

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN  
14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.



SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
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CcB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded
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EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

PHASE 3  
DISTURBED AREA =  
4.83 ACRES

CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		

PLAN  
SCALE: 1" = 20'  
0 20 40  
GRAPHIC SCALE

FOR BIDS

Constantine  
Engineering



APVD	BY	REVISIONS	DATE	NO.

DSGN  
DRN  
CHK

APVD



AEI

VERIFY SCALE  
BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0 1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENTATION CONTROL  
PHASE 3

SHEET: G30  
DWG NO:  
DATE: MARCH, 2019  
PROJ NO: 100182.15



SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
Ab	Taccoa and Chewacla soils, 0 to 2 percent slopes, occasionally flooded
AcB	Altavista fine sandy loam, very gently sloping phase
AdC2	Appling sandy clay loam, eroded gently sloping phase
AdC3	Appling sandy clay loam, severely eroded gently sloping phase
AdD2	Appling sandy clay loam, eroded sloping phase
CaC3	Cecil clay loam, severely eroded, gently sloping phase
CbE	Cecil fine sandy loam, moderately steep phase
CcB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded
EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
EoE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

## PLAN

SCALE: 1" = 20'

0 20 40



GRAPHIC SCALE

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

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ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN  
14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING

CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		Ds2
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		Ds3




APVD	BY	REVISIONS	DATE	NO.



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

## EROSION AND SEDIMENTATION CONTROL PHASE 3

SHEET:	G31
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED  
HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY  
DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## FOR BIDS



CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		Ds2
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		Ds3

OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

PHASE 3  
DISTURBED AREA =  
4.83 ACRES




SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
Ab	Toccoa and Chewacla soils, 0 to 2 percent slopes, occasionally flooded
AcB	Altavista fine sandy loam, very gently sloping phase
AdC2	Appling sandy clay loam, eroded gently sloping phase
AdC3	Appling sandy clay loam, severely eroded gently sloping phase
AdD2	Appling sandy clay loam, eroded sloping phase
CoC3	Cecil clay loam, severely eroded, gently sloping phase
CbE	Cecil fine sandy loam, moderately steep phase
CcB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded
EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

## FOR BIDS



APVD	BY	REVISIONS	DATE	NO.



**VERIFY SCALE**  
BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

SHEET:	G32
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15







SHEET:	G34
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



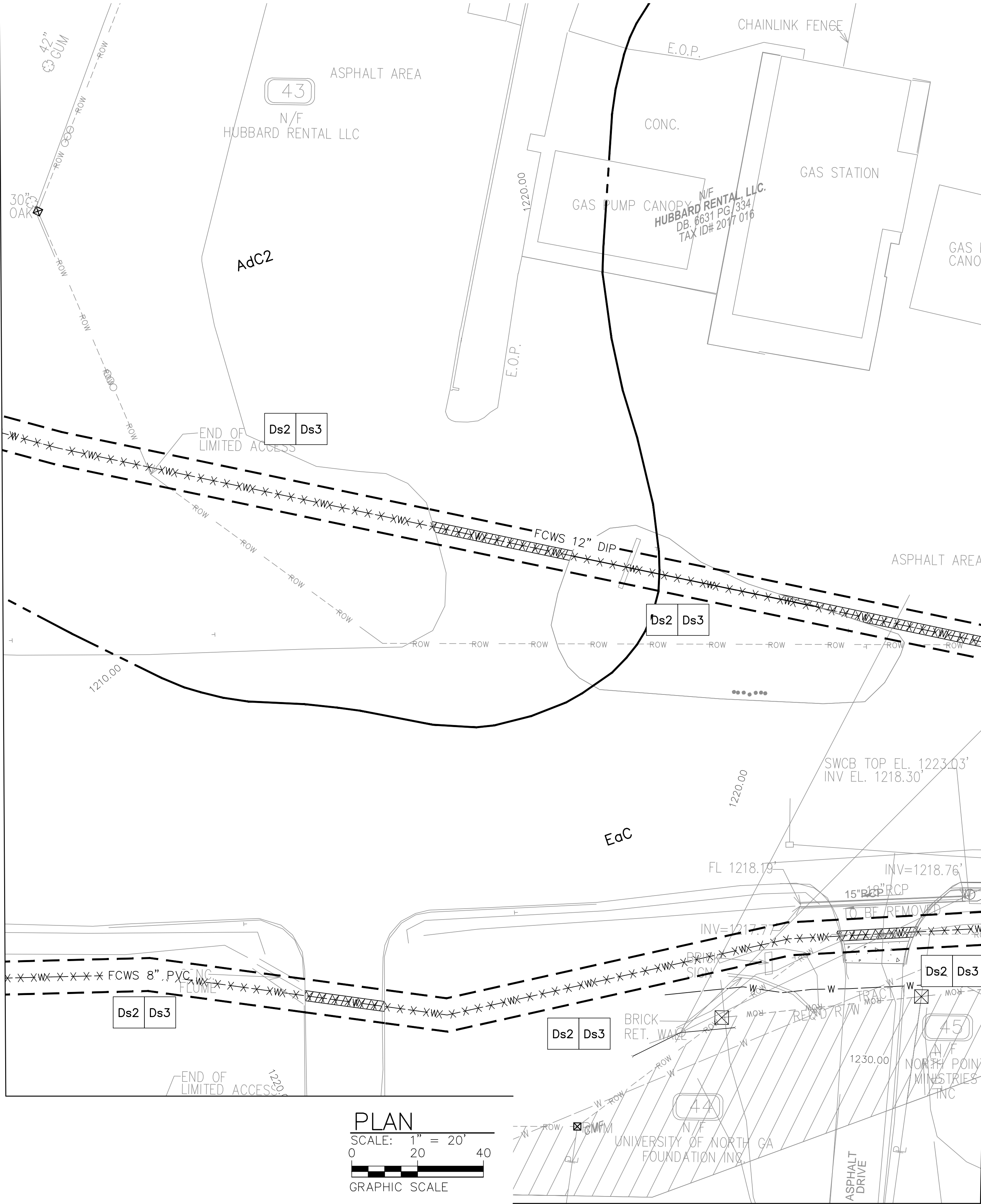
\\fs01\p1\p1\00182 - Forsyth County, GA\00182 - Erosion Bridge Road Water Main Project\001 - Intermediate Framing\001 - Erosion Control Phase 3.dwg  
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MATCHLINE SEE SHEET G33



MATCHLINE SEE SHEET G36

SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
Ab	Toccoa and Chewacla soils, 0 to 2 percent slopes, occasionally flooded
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OWNER/PRIMARY PERMITTEE -- 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

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*Tammy L. Huggins*

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## LEGEND

- SOIL BOUNDARY
- -- LIMITS OF DISTURBANCE

PHASE 3  
DISTURBED AREA =  
4.83 ACRES

CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		Ds2
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		Ds3

FOR BIDS

**Constantine**  
Engineering



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070

APVD	BY	REVISIONS	DATE	NO.

DSGN  
DRN  
CHK  
APVD



**AEI**

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING  
0 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENTATION CONTROL  
PHASE 3

SHEET: G35  
DWG NO:  
DATE: MARCH, 2019  
PROJ NO: 100182.15



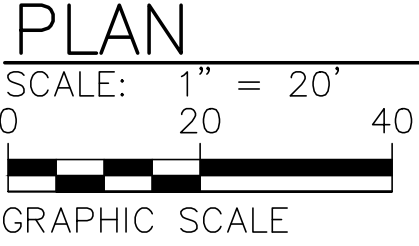
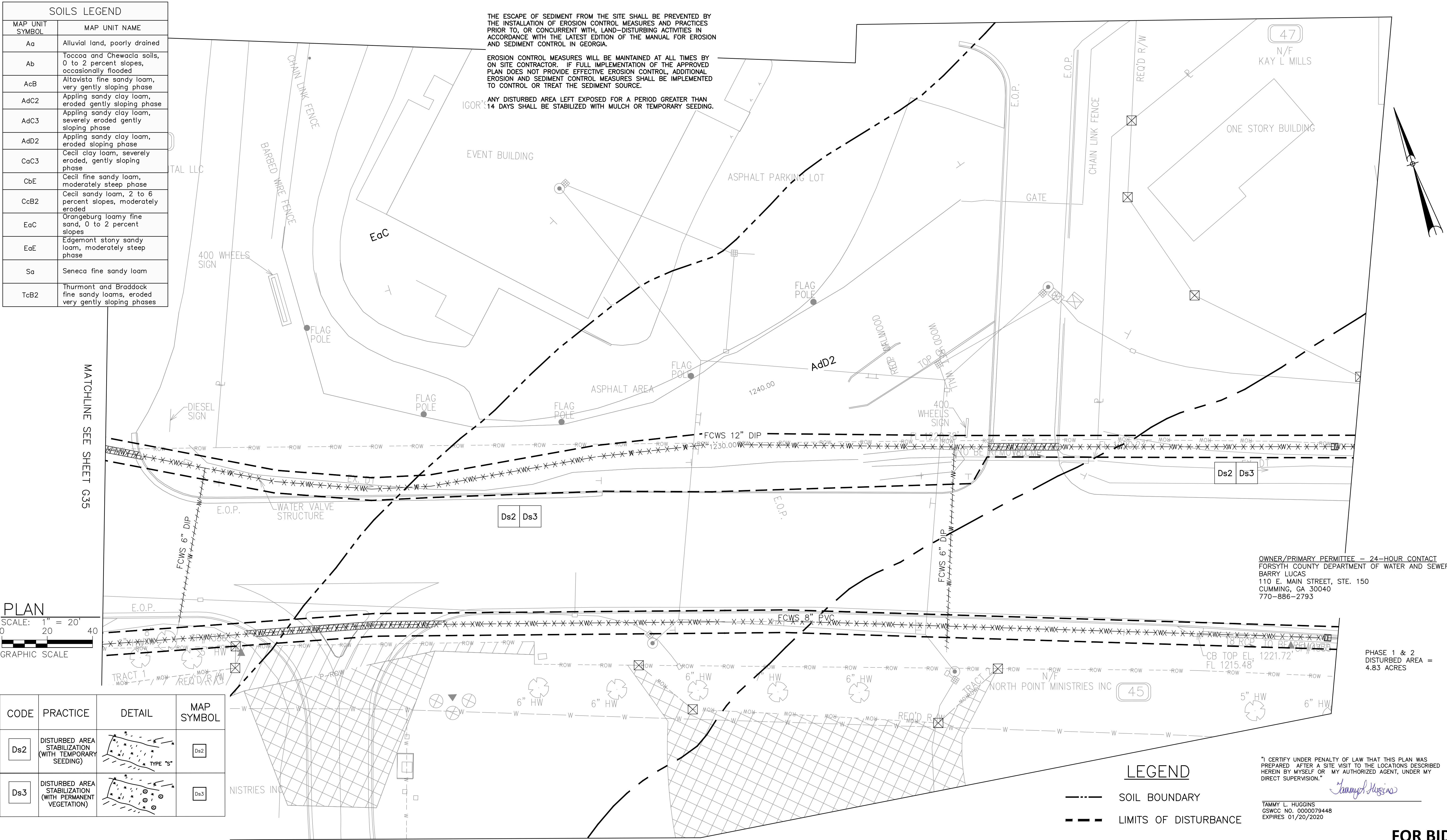
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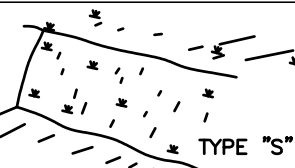

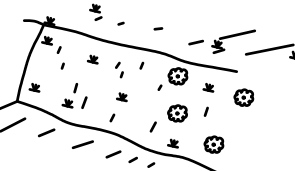

SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
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AdC3	Appling sandy clay loam, severely eroded gently sloping phase
AdD2	Appling sandy clay loam, eroded sloping phase
CaC3	Cecil clay loam, severely eroded, gently sloping phase
CbE	Cecil fine sandy loam, moderately steep phase
CcB2	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded
EaC	Orangeburg loamy fine sand, 0 to 2 percent slopes
EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

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ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.



CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		

LEGEND

--- SOIL BOUNDARY

- - - LIMITS OF DISTURBANCE

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

FOR BIDS



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



3-26-19

APVD	BY	REVISIONS	DATE	NO.

DSGN

DRN

CHK

APVD



VERIFY SCALE

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HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENTATION CONTROL  
PHASE 3

SHEET:	G36
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



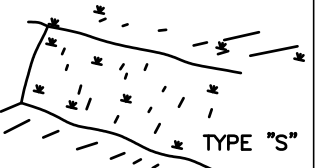

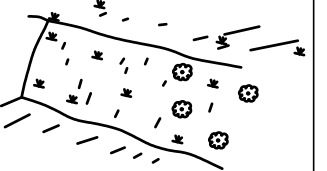





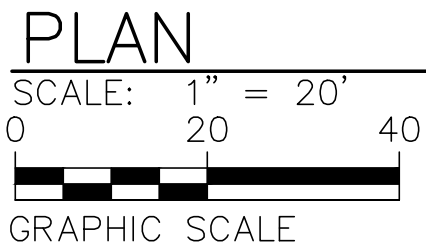




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CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		

PHASE 3  
DISTURBED AREA =  
4.83 ACRES



OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS  
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DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## LEGEND

SOIL BOUNDARY

LIMITS OF DISTURBANCE



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070

APVD	BY	REVISIONS	DATE	NO.

DSGN  
DRN  
CHK  
APVD



AEI

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HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENTATION CONTROL  
PHASE 3

SHEET: G39  
DWG NO:  
DATE: MARCH, 2019  
PROJ NO: 100182.15

MATCHLINE SEE SHEET G38

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY  
THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES  
PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN  
ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION  
AND SEDIMENT CONTROL IN GEORGIA.

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES BY  
ON SITE CONTRACTOR. IF FULL IMPLEMENTATION OF THE APPROVED  
PLAN DOES NOT PROVIDE EFFECTIVE EROSION CONTROL, ADDITIONAL  
EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED  
TO CONTROL OR TREAT THE SEDIMENT SOURCE.

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN  
14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

ESA - BAT HABIT

ESA - BAT

ESA - BAT HABITAT

ESA - BAT HABITAT

EDGE OF ASPHALT SHOULDER

## SOILS LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME
Aa	Alluvial land, poorly drained
Ab	Toccoa and Chewacla soils, 0 to 2 percent slopes, occasionally flooded
AcB	Altavista fine sandy loam, very gently sloping phase
AdC2	Applying sandy clay loam, eroded gently sloping phase
AdC3	Applying sandy clay loam, severely eroded gently sloping phase
AdD2	Applying sandy clay loam, eroded sloping phase
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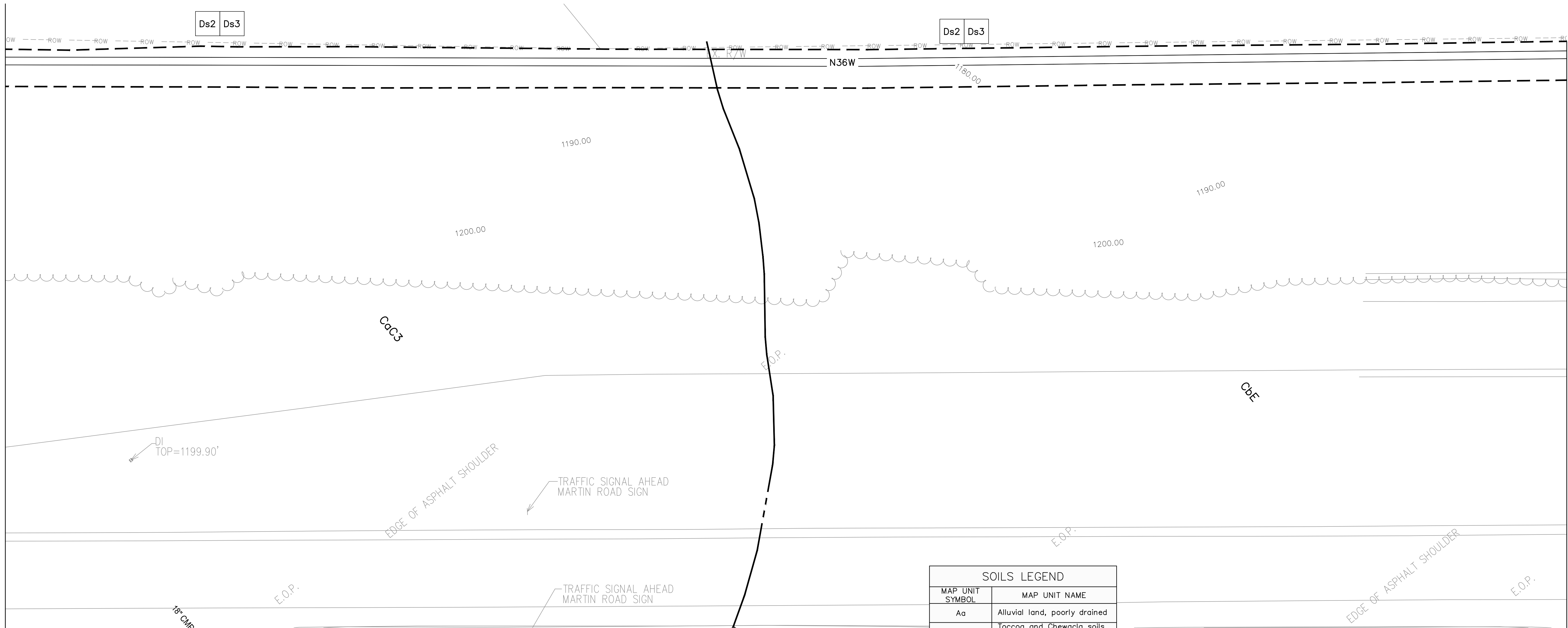
MATCHLINE SEE SHEET G40

FOR BIDS



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MATCHLINE SEE SHEET G39



PHASE 3  
DISTURBED AREA =  
4.83 ACRES

OWNER/PRIMARY PERMITTEE — 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

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GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## LEGEND





— · — · — SOIL BOUNDARY

— — — LIMITS OF DISTURBANCE

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

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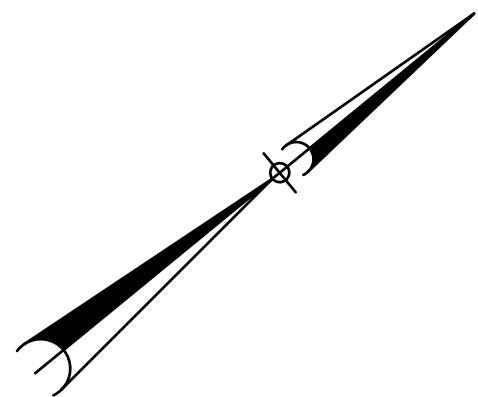
CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		

## PLAN

SCALE: 1" = 20'

GRAPHIC SCALE

SOILS LEGEND	
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EaE	Edgemont stony sandy loam, moderately steep phase
Sa	Seneca fine sandy loam
TcB2	Thurmont and Braddock fine sandy loams, eroded very gently sloping phases



MATCHLINE SEE SHEET G41

## FOR BIDS




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH ON  
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0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

## EROSION AND SEDIMENTATION CONTROL PHASE 3

SHEET:	G40
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15







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SOILS LEGEND	
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


OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
BARRY LUCAS  
110 E. MAIN STREET, STE. 150  
CUMMING, GA 30040  
770-886-2793

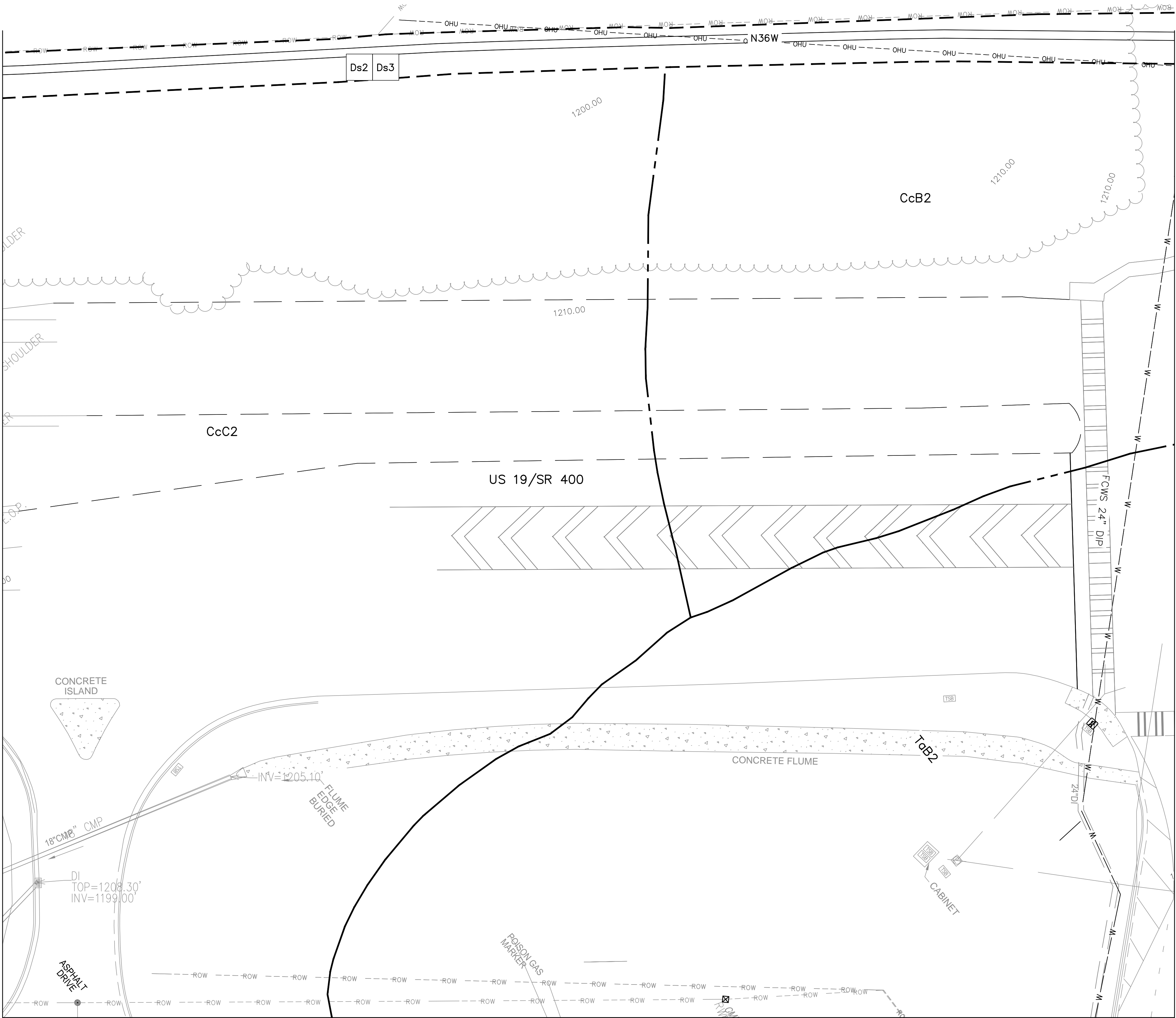
"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## LEGEND

— · — · — · SOIL BOUNDARY  
- - - - - LIMITS OF DISTURBANCE

CODE	PRACTICE	DETAIL	MAP SYMBOL
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		



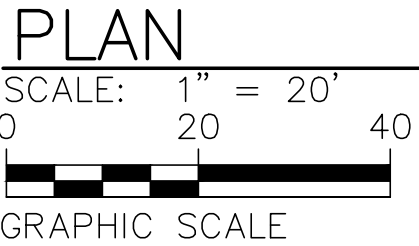
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PHASE 3  
DISTURBED AREA =  
4.83 ACRES

MATCHLINE SEE SHEET G43



## FOR BIDS

[illegible]







OWNER/PRIMARY PERMITTEE - 24-HOUR CONTACT  
 FORSYTH COUNTY DEPARTMENT OF WATER AND SEWER  
 BARRY LUCAS  
 110 E. MAIN STREET, STE. 150  
 CUMMING, GA 30040  
 770-886-2793

Tammy L. Higgins

## LEGEND

— · — · — SOIL BOUNDARY

..... LIMITS OF DISTURBANCE

CcC2

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

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SCALE: 1" = 20'

0 20 40

GRAPHIC SCALE

## FOR BIDS



DSGN
DRN
CHK



HWY 400  
WATERLINE RELOCATION

## EROSION AND SEDIMENTATION CONTROL PHASE 3

SHEET:	G44
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15











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REQUIRED BY THIS PERMIT;

C. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;

D. A COPY OF ALL SAMPLING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;

E. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.C. OF THIS PERMIT;

F. A COPY OF ALL VIOLATIONS SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND

G. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.C.(2). OF THIS PERMIT.

4. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDING FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL OTHER DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE (3) YEARS FROM THE DATE THAT THE NOTICE OF INTENT IS SUBMITTED IN ACCORDANCE WITH PART VI. OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITEE'S PRIMARY PLACE OF BUSINESS ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITEE.

## 26. SAMPLING REQUIREMENTS.

THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY (NTU) IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THIS PERMIT. THIS SECTION IS APPLICABLE TO PRIMARY PERMITTEES WITH A TOTAL PLANNED DISTURBANCE EQUAL TO OR GREATER THAN ONE (1) ACRE AND TERTIARY PERMITTEES WITH A TOTAL PLANNED DISTURBANCE EQUAL TO OR GREATER THAN FIVE (5) ACRES. THIS SECTION IS NOT APPLICABLE TO SECONDARY PERMITTEES. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY:

A. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:

- (1). A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24,000 MAP SHOWING THE LOCATION OF THE SITE OR THE COMMON DEVELOPMENT; (A) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORMWATER IS DISCHARGED AND (B) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION OF THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORMWATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;
- (2). THE ANALYTICAL METHOD USED TO COLLECT AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL / QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;
- (3). WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE MONITORED, A RATIONALE MUST BE INCLUDED FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND
- (4). ANY ADDITIONAL INFORMATION EPD DETERMINED NECESSARY TO BE PART OF THE PLAN, EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

B. SAMPLE TYPE.

ALL SAMPLES SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY EPD.

- (1). SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.
- (2). SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.
- (3). LARGE MOUTH, CLEAN AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
- (4). MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER,

SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THE ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED USING A DIRECT READING, PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.

- (5). SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E.

### C. SAMPLING POINTS.

- (A). FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL RECEIVING WATER(S), OR ALL OUTFALL(S), OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S). SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND THE REPRESENTATION OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORMWATER OUTFALLS USING THE FOLLOWING MINIMUM GUIDELINES:
- (A). THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORMWATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.
- (B). THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORMWATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.
- (C). IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORMWATER OUTFALL CHANNEL(S).
- (D). CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENT IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORMWATER CHANNEL.
- (E). THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.
- (F). THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.
- (G). PERMITTEES DO NOT HAVE TO SAMPLE SHEET FLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES AND AREAS LOCATED OUTSIDE THE WASTE DISPOSAL LIMITS OF A LANDFILL CELL THAT HAS BEEN CERTIFIED BY EPD FOR WASTE DISPOSAL, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR EQUIVALENT PERMANENT STABILIZATION MEASURES (SUCH AS THE USE OF RIP RAP, GABIONS, PERMANENT MULCHES OR GEOTEXTILES) HAVE BEEN USED. PERMANENT VEGETATION SHALL CONSIST OF: PLANTED TREES, SHRUBS, PERENNIAL VINES; A CROP OF PERENNIAL VEGETATION APPROPRIATE FOR THE TIME OF YEAR AND REGION; OR A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION. FINAL STABILIZATION APPLIES TO EACH PHASE OF CONSTRUCTION.
- (H). ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING, AND FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORMWATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

27. THE ALLOWABLE INCREASE IN TURBIDITY BETWEEN THE DOWNSTREAM AND UPSTREAM SAMPLING POINTS IN THE RECEIVING WATERS ARE AS FOLLOWS:  
SITE=1-10 AC, DRAINAGE AREA=0-4.99 SQ MI, ALLOWABLE NTU=75

28. THERE IS NO FLOODPLAIN ON THIS PROPERTY PER FIRM MAP NUMBER 13117C0064F DATED MARCH 4, 2013, THE PROJECT IS LOCATED FLOODWAY ZONE AE BASE FLOOD ELEVATION 1168.

29. EROSION CONTROL AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY AND MAINTAINED UNTIL A PERMANENT GROUND COVER IS ESTABLISHED.

30. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE FIELD INSPECTOR.

BY TAMMY L. HUGGINS  
TAMMY L. HUGGINS REGISTERED GEORGIA ENGINEER NO. PE 041474

LEVEL II CERTIFIED DESIGN PROFESSIONAL – CERTIFICATION NUMBER 0000079448

## PERMIT COVERAGE

THIS PLAN HAS BEEN PREPARED TO MEET THE REQUIREMENTS UNDER THE STATE OF GEORGIA, DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION (EPD), GENERAL PERMIT NO. GAR100002 FOR AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FOR STAND ALONE PROJECTS.

## MANAGEMENT PRACTICES AND PERMIT VIOLATIONS PART (III.D):

1. BEST MANAGEMENT PRACTICES ARE REQUIRED FOR ALL CONSTRUCTION ACTIVITIES AND MUST BE IMPLEMENTED IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS CONTAINED IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" TO PREVENT OR REDUCE THE POLLUTION OF WATERS OF GEORGIA. PROPER DESIGN, INSTALLATION, AND MAINTENANCE OF BMPs SHALL CONSTITUTE A COMPLETE DEFENSE TO ANY ACTION BY THE DIRECTOR OR TO ANY OTHER ALLEGATION OF NONCOMPLIANCE WITH PART III.D.3 AND PART III.D.4.
2. FAILURE TO PROPERLY DESIGN, INSTALL, OR MAINTAIN BMPs SHALL CONSTITUTE A VIOLATION OF THE PERMIT ROUTINE INSPECTIONS SHALL NOT BE CONSIDERED A VIOLATION. IF DURING THE COURSE OF THE PERMITTEE'S ROUTINE INSPECTIONS BMP FAILURES ARE OBSERVED WHICH HAVE RESULTED IN SEDIMENT DEPOSITION INTO WATERS OF THE STATE, THE PERMITTEE SHALL CORRECT THE BMP FAILURES AND SHALL SUBMIT A SUMMARY OF THE VIOLATIONS TO EPD IN ACCORDANCE WITH PART V.A.2 OF THE PERMIT.
3. A DISCHARGE OF STORMWATER RUNOFF FROM DISTURBED AREAS WHERE BMPs HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH DISCHARGE RESULTS IN THE TURBIDITY OF RECEIVING WATER(S) BEING INCREASED BY MORE THAN TEN (10) NEPHELOMETRIC TURBIDITY UNITS (NTU) FOR WATERS CLASSIFIED AS TROUT STREAMS OR MORE THAN TWENTY-FIVE (25) NTUS FOR WATERS SUPPORTING WARM WATER FISHERIES, REGARDLESS OF A PERMITTEE'S CERTIFICATION UNDER PART II.B.1.1.J AND PART II.B.3.J.J.

AUTHORIZED DISCHARGES (PART I.C):

1. ALL DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT WILL RESULT IN LAND DISTURBANCE EQUAL TO OR GREATER THAN ONE ACRE: PART I.C.1.A.
2. ALL DISCHARGES COVERED BY THIS PERMIT SHALL BE COMPOSED ENTIRELY OF STORMWATER EXCEPT AS PROVIDED IN PART I.C.2 AND PART III.A.2 OF THE PERMIT; PART III.A.1.
3. AUTHORIZED MIXED STORMWATER DISCHARGES: PART I.C.2.
- A. THE INDUSTRIAL SOURCE OR ACTIVITY OTHER CONSTRUCTION IS LOCATED ON SAME SITE AS THE CONSTRUCTION ACTIVITY AND IS AN INTEGRAL PART OF THE CONSTRUCTION ACTIVITY;
- B. THE STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES ARE OCCURRING ARE IN COMPLIANCE WITH THE TERMS OF THE PERMIT;
- C. STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE AREAS OF THE SITE WHERE INDUSTRIAL ACTIVITY OTHER THAN CONSTRUCTION ARE OCCURRING ARE COVERED BY A DIFFERENT NPDES GENERAL PERMIT OR INDIVIDUAL PERMIT AUTHORIZING SUCH DISCHARGES AND THE DISCHARGES ARE IN COMPLIANCE WITH A DIFFERENT NPDES PERMIT.
4. THE FOLLOWING NON-STORMWATER DISCHARGES MAY BE AUTHORIZED BY THIS PERMIT PROVIDED THE NON-STORMWATER COMPONENT OF THE DISCHARGE IS EXPLICITLY IN THE PLAN AND IS IN COMPLIANCE WITH PART I.V.D.7: PART III.A.2.

- A. FIREFIGHTING ACTIVITIES;
- B. FIRE HYDRANT FLUSHING;
- C. POTABLE WATER SOURCES INCLUDING WATER LINE FLUSHING;
- D. IRRIGATION DRAINING;
- E. AIR CONDITIONING CONDENSATE;
- F. SPRINGS;
- G. UNCONTAMINATED GROUND WATER;
- H. FOUNDATION OR FOOTING DRAINS WHERE THE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS OR POLLUTANTS.

LIMITATIONS ON COVERAGE PART I.C.3:

THE FOLLOWING STORMWATER DISCHARGES FROM CONSTRUCTION SITES ARE NOT  
AUTHORIZED BY THIS PERMIT:

- A. STORMWATER DISCHARGES ASSOCIATED WITH AN INDUSTRIAL ACTIVITY THAT BEGAN ORIGINATE FROM THE SITE AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED AND THE SITE HAS UNDERGONE FINAL STABILIZATION;
- B. DISCHARGES THAT ARE MIXED WITH SOURCES OF NON-STORMWATER OTHER THAN DISCHARGES WHICH ARE IDENTIFIED IN PART III.A.2 OF THIS PERMIT AND WHICH ARE IN COMPLIANCE WITH PART IV.D.7 (NON-STORMWATER DISCHARGES) OF THIS PERMIT;
- C. STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY THAT ARE SUBJECT TO AN EXISTING NPDES INDIVIDUAL OR GENERAL PERMIT. SUCH

UNDER THIS PERMIT AFTER AN EXISTING  
EXISTING PERMIT DID NOT ESTABLISH NUMERIC  
AND

- D. STORMWATER DISCHARGES FROM CONSTRUCTION SITES THAT THE DIRECTOR (EPD) HAS DETERMINED TO BE OR MAY REASONABLY BE EXPECTED TO BE CONTRIBUTING TO A VIOLATION OF A WATER QUALITY STANDARD.

COMPLIANCE WITH WATER QUALITY PART I.C.4

NO DISCHARGES AUTHORIZED BY THIS PERMIT SHALL CAUSE VIOLATIONS OF GEORGIA'S IN-STREAM WATER QUALITY STANDARDS AS PROVIDED BY THE RULES AND REGULATIONS FOR WATER QUALITY CONTROL, CHAPTER 391-3-6-.03.

368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



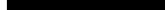
APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

## EROSION AND SEDIMENT CONTROL NOTES

SHEET:	G47
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

## FOR BIDS







Construction Exit (Co)



A stone stabilized pad located at any point where traffic will be leaving a construction site to a public right-of-way, street, alley, sidewalk or parking area or any other area where there is a transition from bare soil to a paved area.

To reduce or eliminate the transport of mud from the construction area onto public rights-of-way by motor vehicles or by runoff.

This practice is applied at appropriate points of construction egress. Geotextile underliners are required to stabilize and support the pad aggregates.

Formal design is not required. The following standards shall be used:

Aggregate Size  
Stone will be in accordance with National Stone Association R-2 (1.5 to 3.5 inch stone).

Pad Thickness  
The gravel pad shall have a minimum thickness of 6 inches.

At a minimum, the width should equal full width of all points of vehicular egress, but not less than 20 feet.

If the action of the vehicle travelling over the gravel pad does not sufficiently remove the mud, the tires should be washed prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with crushed stone and provisions that intercept the sediment-laden runoff and direct it into an approved sediment trap or sediment basin.

Location  
The exit shall be located or protected to prevent sediment from leaving the site.

It is recommended that the entrance area be excavated to a depth of 3 inches and be cleared of all vegetation and roots.

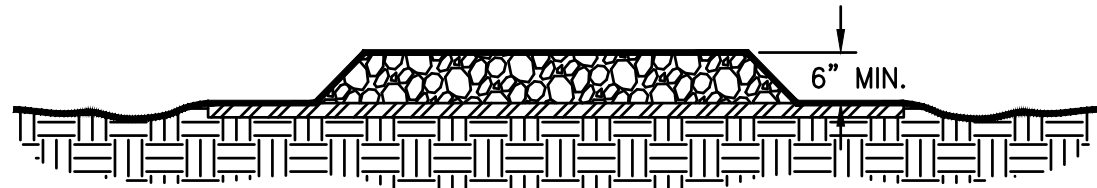
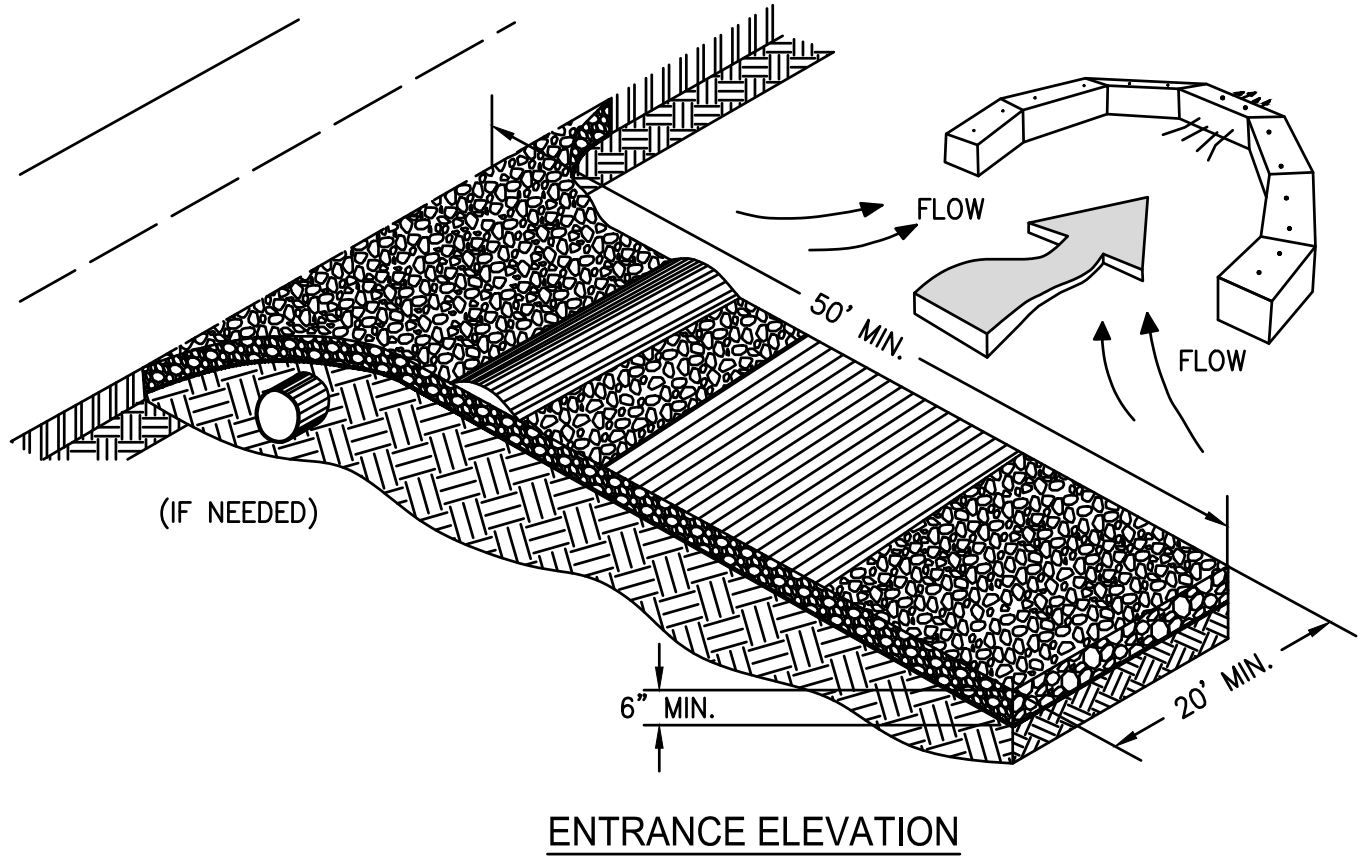
## Diversion Ridge

Geotextile

The geotextile underliner must be placed the full length and width of the entrance. Geotextile selection shall be based on AASHTO M288-98 specification:

1. For subgrades with a CBR greater than or equal to 3 or shear strength greater than 90 kPa, geotextile must meet requirements of section AASHTO M288-96 Section 7.3, Separation Requirements.
2. For subgrades with a CBR between 1 and 3 or shear strength between 30 and 90 kPa, geotextile must meet requirements of section AASHTO M288-96 Section 7.4, Stabilization Requirements.

The exit shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 1.5 - 3.5 inch stone, as conditions demand, and repair and/or cleanness of any structures to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles or site onto roadways or into storm drains must be removed immediately.

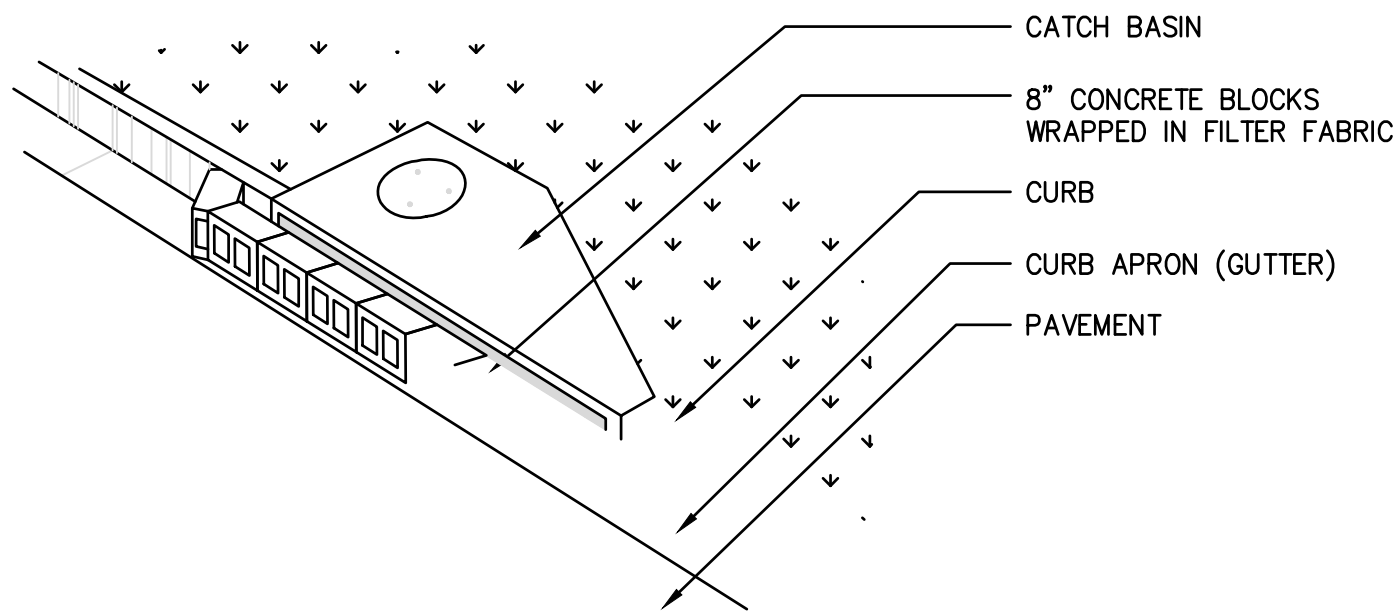
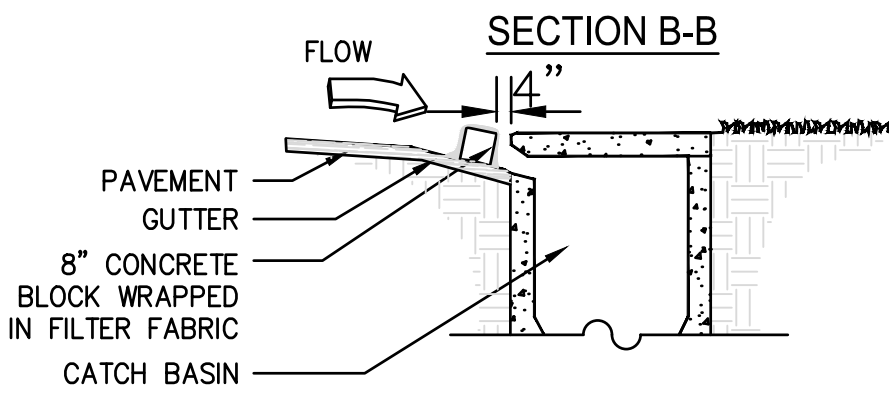


1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

CRUSHED STONE CONSTRUCTION EXIT  
GEORGIA SOIL & WATER COMMISSION DETAIL

Co.

1. INSTALL FILTER AFTER ANY ASPHALT PAVEMENT INSTALLATION.
2. WRAP 8" CONCRETE BLOCKS IN FILTER FABRIC AND SPAN ACROSS CATCH BASIN INLET.
3. FACE OPENINGS IN BLOCKS OUTWARD.
4. LEAVE A GAP OF APPROXIMATELY 4 INCHES BETWEEN THE CURB AND THE FILTERS TO ALLOW FOR OVERFLOW TO PREVENT HAZARDOUS PONDING.
5. INSTALL OUTLET PROTECTION BELOW STORM DRAIN OUTLETS.



CURB INLET PROTECTION

---

GEORGIA SOIL & WATER COMMISSION DETAIL

Sd2-P

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

SSION." *Jammy Huggins*

TAMMY L. HUGGINS


## FOR BIDS



APVD	BY	REVISIONS	DATE	NO.



VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

SHEET:	G49
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15







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3/26/2019 10:41:47 AM  
TAMMY L. HUGGINS  
REGISTERED PROFESSIONAL ENGINEER  
NO. 041474  
FLORIDA  
368 WEST PIKE STE. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



3-26-19

APVD	BY	REVISIONS	DATE	NO.

DSGN  
DRN  
CHK  
APVD



VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING  
0 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENT CONTROL  
NOTES

SHEET: G51  
DWG NO:  
DATE: MARCH, 2019  
PROJ NO: 100182.15

FOR BIDS

Ds3 PLANTS, PLANTING RATES AND PLANTING DATES  
FOR PERMANENT COVER

Species	BROADCAST Rates 1/ - PLS 2/ PER ACRE 1,000 sq. ft.	RESOURCE AREA 3/	Planting Dates by Resource Areas Planting Dates (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.)												Remarks
			J	F	M	A	M	J	J	A	S	O	N	D	
BAHIA, PENSACOLA (Paspalum notatum) alone or with temporary cover with other perennials	60 lbs.	P C													166,000 seed per pound. Slow growing. Sod forming. Plant with companion crop. Inoculate with Sericea lepedeza or lawns. Mix with Sericea lespedeza or weeping lovegrass.
	30 lbs.														
BAHIA, WILMINGTON (Paspalum notatum) alone or with temporary cover with other perennials	60 lbs.	M-L C													166,000 seed per pound. Low growing. Sod forming. Slow to establish. Plant with a companion crop. Inoculate with Sericea lepedeza or lawns. Mix with Sericea lespedeza or weeping lovegrass.
	30 lbs.														
BERMUDA, COMMON (Cynodon Dactylon) (Hulled Seed) alone with other perennials	10 lbs.	P C													1,797,000 seed per pound. Quick cover. Low growing and sod forming. Full sun. Good for athletic fields
	6 lbs.														
BERMUDA, COMMON (Cynodon Dactylon) (Unhulled Seed) with temporary cover with other perennials	10 lbs.	P C													Plant with winter annuals
	6 lbs.														
BERMUDA, SPRIGS (Cynodon Dactylon) (Coastal, Common, Midland or Tift 44 Coastal, Common, Tift 44 Tift 78	40cu ft 0.9 cu ft or sod plugs 3'x3'	M-L  P C													A cubic foot contains approximately 650 sprigs. A bushel contains 1.25 cubic feet or approx. 800 sprigs Same as above.
CROWNVEITCH (Coronilla varia)	Block sod only	C P C													Drought tolerant. Full sun or partial shade. Effective adjacent to concrete and in concentrated flow areas. Irrigation is needed until fully established. Do not plant near pastures. Winterhardy.
CROWNVEITCH (Coronilla varia) with winter annuals or cool season grasses	15 lbs.	M-L  P C													100,000 seed per pound. Dense growth. Drought tolerant and fire resistant. Attractive rose, pink and white blossoms spring to late fall. Mix with 30 pounds of tall fescue or 15 pounds of ryegrass. Inoculate see with M inoculant. Use from North Atlanta and Northward.
	0.3 lb.														
FESCUE, TALL (Festuca arundinacea) alone or with with other perennials	50 lbs.	M-L  P C													227,000 seed per pound. Use alone only on better sites. Mix with perennial lespedeza or Crownvetch. Apply topdressing in spring following fall plantings. Do not use areas of athletic fields.
	1.1 lb.														
KUDZU (Pueraria thumbergiana) Plants or Crowns	30 lbs.	P													Rapid and vigorous growth. Excellent in gully erosion control. Will climb. Good livestock forage.
	3' - 7' apart	ALL													
LESPEDeza, SERICEA (Lespedeza cuneata) scarified unscarified seed-bearing hay	60 lbs.	M-L  P C													350,000 seed per pound. Widely adapted. Low maintenance. Mix with weeping lovegrass, common bermuda, bahia, or tall fescue. Lespedeza takes 2 to 3 years to become fully established. Excellent on roadbanks. Inoculate seed with EL inoculant.
	1.4 lbs.														
unscarified	75 lbs.	M-L  P C													Mix with tall fescue or winter annuals.
	1.7 lb.														
seed-bearing hay	3 tons 138 lb.														
LESPEDeza, SHRUB (Lespedeza bicolor) (Lespedeza thumbergii) plants	3'x3'	M-L  P C													Provide wildlife food and cover
LESPEDeza Ambro virgata (Lespedeza virgata DC) or Appalow (Lespedeza cuneata [Dumort] G. Don) scarified unscarified	60 lbs.	M-L  P C													300,000 seed per pound. Height of growth is 18 to 24 inches. Ambrogeous in urban areas. Spreading-type growth has bronze coloration. Mix with Weeping lovegrass, Crownvetch, bermuda, bahia, tall fescue or winter annuals. Do not mix with Sericea lespedeza. Slow to develop seedlings. Inoculate seed with EL inoculant.
	1.4 lbs.														
unscarified	75 lbs.	M-L P C													
LOVEGRASS, WEEPING (Eragrostis curvula) alone with other perennials	4 lbs. 0.1 lb. 2 lbs.	M-L  P C													1,500,000 seed per pound. Quick cover. Drought tolerant. Grows well with Sericea lespedeza on roadbanks.
MAIDENCANE (Panicum hemitomon) sprigs	2'x3' spacing ALL														For very wet sites. May clog channels. Dig sprigs from local sources. Use along river banks and shorelines
PANICGRASS, ATLANTIC COASTAL (Panicum amarum var amarum)	20 lbs.	P C													Grows well on coastal sand dunes, borrow areas, and gravel pits. Provides winter cover for winter annuals. Mix with Sericea lespedeza except sand dunes.
REED CANARY GRASS (Phalaris arundinacea) alone with other perennials	50 lbs. 1.1 lb. 30 lbs.	M-L  P													Grows similar to Tall fescue
SUNFLOWER, 'AZTEC' MAXIMILLIAN (Helianthus maximiliani)	10 lbs.	M-L  P C													227,000 seed per pound. Mix with bermuda or tall fescue. Use in areas with other low-growing grasses or legumes.

1/ Reduce seeding rates by 50% when drilled.  
2/ PLS is an abbreviation for Pure Live Seed  
3/ M-L represents the Mountain; Blue Ridge; and Valleys MLRAs  
P represents the Southern Piedmont MLRA  
C represents the Coastal Plain; Sand Hills; Black Hills; and Atlantic Coast Flatwoods MLRAs.  
(See Figure 6-4.1, p. 6-40)

MAJOR LAND RESOURCE AREAS (MLRA) OF GEORGIA  
PROJECT SITE IS LOCATED IN: SOUTHERN PIEDMONT

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS  
PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED  
HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY  
DIRECT SUPERVISION."

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020



DS2	PLANTS, PLANTING RATES AND PLANTING DATES FOR TEMPORARY COVER OR COMPANION CROPS 1/
-----	--

Species	BROADCAST Rates 2/- — PLS 3/ PER PER ACRE 1,000 sq. ft.		RESOURCE AREA 4/	Planting Dates by Resource Areas Planting Dates (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.)												Remarks	
				J	F	M	A	M	J	J	A	S	O	N	D		
LESPEDEZA, ANNUAL (Lespedeza striata)			M-L P C		----- ----- -----												200,000 seed per pound. May volunteer for several years. Use inoculant EL.
alone	40 lbs.	0.9 lb.			----- ----- -----												
in mixtures	10 lbs.	0.2 lb.			----- ----- -----												
				J	F	M	A	M	J	J	A	S	O	N	D		
BARLEY (Hordeum vulagre)			M-L P C										----- ----- -----				14,000 seed per pound. Winter hardy. Use on productive soils.
alone	3 bu. (144lbs)	3.3 lb.											----- ----- -----				
in mixtures	1/2 bu. (24lbs)	0.6 lb.											----- ----- -----				
				J	F	M	A	M	J	J	A	S	O	N	D		
LOVEGRASS, WEEPING (Eragrostis curvula)			M-L P C			----- ----- -----											1,500,000 seed per pound. May last for several years. Mix with Sericeo lespedeza
alone	4 lbs.	0.1 lb.				----- ----- -----											
in mixtures	2 lbs.	0.05 lb.				----- ----- -----											
				J	F	M	A	M	J	J	A	S	O	N	D		
MILLET, BROWNTOP (Panicum fasciculatem)			M-L P C			----- ----- -----											137,000 seed per pound. Quick dense cover. Will provide too much competition in mixtures if seeded at high rates.
alone	40 lbs.	0.9 lb.				----- ----- -----											
in mixtures	10 lbs.	0.2 lb.				----- ----- -----											
				J	F	M	A	M	J	J	A	S	O	N	D		
MILLET, PEARL (Pennisetum glaucum)			M-L P C			----- ----- -----											88,000 seed per pound. Quick dense cover. May reach 5 feet in height. Not recommended for mixtures.
alone	50 lbs.	1.1 lb.				----- ----- -----											
				J	F	M	A	M	J	J	A	S	O	N	D		
OATS (Avena sativa)			M-L P C										----- ----- -----				13,000 seed per pound. Use on productive soils. Not as winter hardy as rye or barley.
alone	4 bu. (168lbs)	2.9 lb.											----- ----- -----				
in mixtures	1 bu. (32lbs)	0.7 lb.											----- ----- -----				
				J	F	M	A	M	J	J	A	S	O	N	D		
RYE (Secale cereale)			M-L P C		----- ----- -----								----- ----- -----				13,000 seed per pound. Quick cover. Drought tolirant and winterhardy.
alone	3 bu. (128 lbs.)	3.9 lb.			----- ----- -----								----- ----- -----				
in mixtures	1/2 bu. (28 lbs.)	0.6 lb.			----- ----- -----								----- ----- -----				
				J	F	M	A	M	J	J	A	S	O	N	D		
RYEGRASS, ANNUAL (Lolium temulentum)			M-L P C			----- ----- -----							----- ----- -----				227,000 seed per pound. Dense cover. Very competitive and is not to be used in mixtures.
alone	40 lbs.	0.9 lb.				----- ----- -----							----- ----- -----				
				J	F	M	A	M	J	J	A	S	O	N	D		
SUDANGRASS (Sorghum sudanese)			M-L P C			----- ----- -----											55,000 seed per pound. Good on droughty sites. Not recommended for mixtures.
alone	60 lbs.	1.4 lb.				----- ----- -----											
				J	F	M	A	M	J	J	A	S	O	N	D		
TRITICALE (X-Triticosecale)			C		----- ----- -----												Use on lower part of Southern Coastal Plain and in Atlantic Flatwoods only.
alone	3 bu. (144lbs)	3.3 lb.			----- ----- -----												
in mixtures	1/2 bu. (24lbs)	0.6 lb.			----- ----- -----												
				J	F	M	A	M	J	J	A	S	O	N	D		
SUDANGRASS (Triticum aestivum)			M-L P C										----- ----- -----				15,000 seed per round. Winter hardy.
alone	3 bu. (180lbs)	4.1 lb.											----- ----- -----				
in mixtures	1/2 bu. (30lbs)	0.7 lb.											----- ----- -----				

- 1/ Temporary cover crops are very competitive and will crown out
- 2/ Reduce seeding rates by 50% when drilled
- 3/ PLS is an abbreviation for Pure Live Seed
- 4/ M-L represents the Mountain; Blue Ridge; and Valleys MLRAs  
P represents the Southern Piedmont MLRA  
C represents Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRA  
(See Figure 6-4.1, p. 6-40)

## MAJOR LAND RESOURCE AREAS (MLRA) OF GEORGIA

PROJECT SITE IS LOCATED IN: SOUTHERN PIEDMONT PLAIN

### FERTILIZER REQUIREMENTS

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. Cool Season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/2/ -- 30
2. Cool Season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ -- --
3. Ground covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1300 lbs./ac. 3/ 1300 lbs./ac. 3/ 1100 lbs./ac.	-- -- --
4. Pine seedlings	First	20-10-5	one 21-gram pellet per seedling placed in the closing hole	--
5. Shrub Lespedeza	First Maintenance	0-10-10 0-10-10	700 lbs./ac. 700 lbs./ac. 4/	-- --
6. Temporary cover crops seeded alone	First	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
7. Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/6/ 50-100 lbs./ac. 2/ 30 lbs./ac.
7. Warm season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50 lbs./ac. 6/ -- --

- 1/ Apply in spring following seeding.
- 2/ Apply in split applications when high rates are used.
- 3/ Apply in 3 split applications.
- 4/ Apply when plants are pruned.
- 5/ Apply to grass species only.
- 6/ Apply when plants grow to a height of 2 to 4 inches.



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070




3-26-19

APVD	BY	REVISIONS	DATE	NO.

DSGN  
DRN  
CHK



VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENT CONTROL  
NOTES

SHEET:	G52
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

VISION. *Jammy Huggins*

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

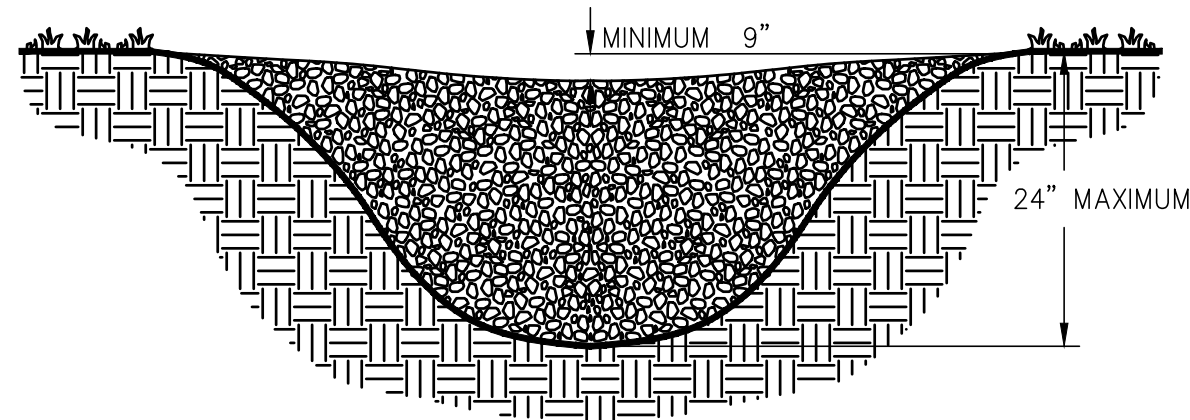
## FOR BIDS



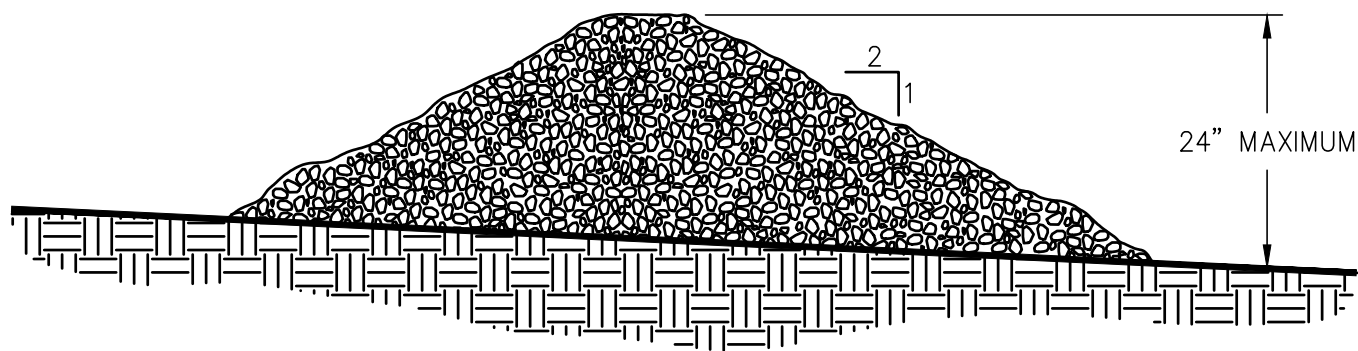
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DATE: 03/15/2019  
TIME: 10:45:15  
USER: JHUGGINS  
PLOT: 03/15/2019 10:45:15  
PLOTTER: HP DesignJet T1200  
PLOT DEVICE: HP DesignJet T1200  
PLOT SCALE: 1.00  
PLOT SHEET: 1 OF 1  
PLOT STATUS: PLOTTED  
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## STONE CHECK DAM

### CROSS SECTION



### PROFILE VIEW

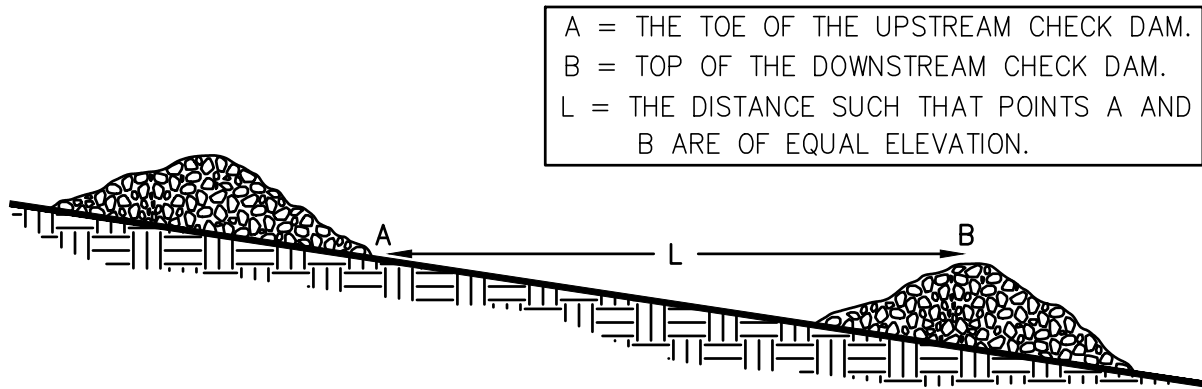


#### NOTES:

- CHECK DAMS ARE TO BE USED ONLY IN SMALL OPEN CHANNELS (THEY ARE NOT TO BE USED IN LIVE STREAMS).
- THE DRAINAGE AREA FOR STONE CHECK DAMS SHALL NOT EXCEED TWO ACRES.
- THE CENTER OF THE CHECK DAM MUST BE AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES.
- THE DAM HEIGHT SHOULD BE A MAXIMUM OF 2 FEET FROM CENTER TO RIM EDGE.
- THE SIDE SLOPES OF THE CHECK DAM SHALL NOT EXCEED A 2:1 SLOPE.
- GEOTEXTILE SHALL BE USED TO PREVENT THE MITIGATION OF SUBGRADE SOIL PARTICLES INTO THE STONES (REFER TO AASHTO M288-96, SECTION 7.3, TABLE 3).

## STONE CHECK DAM

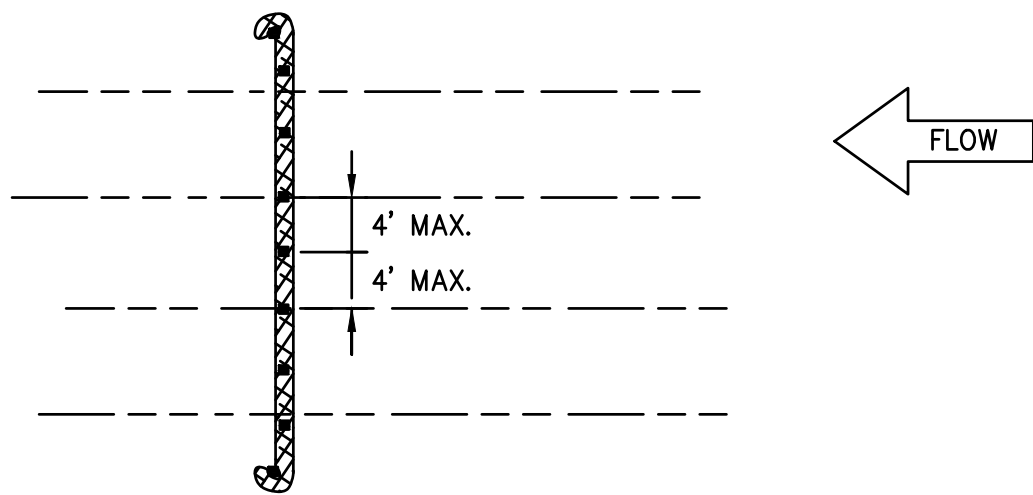
### SPACING BETWEEN CHECK DAMS



A = THE TOE OF THE UPSTREAM CHECK DAM.  
B = TOP OF THE DOWNSTREAM CHECK DAM.  
L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION.

## COMPOST SOCKS FOR CHECK DAMS

### TYPICAL PLAN



#### NOTES:

- ALL MATERIAL TO MEET SPECIFICATIONS.
- PLACE ONE STAKE AT THE CENTER OF THE DITCH/CHANNEL. ALSO PLACE STAKES AT THE BED/BANK JUNCTION AND AT END OF THE DEVICE NOT SPACED MORE THAN 4 FEET APART.
- SEDIMENT SHOULD BE REMOVED FROM BEHIND THE CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS REACHED  $\frac{1}{2}$  THE HEIGHT OF THE CHECK DAM.
- CHECK DAMS CAN BE DIRECT SEEDED AT THE TIME OF INSTALLATION.
- MINIMUM STAKING DEPTH FOR SAND, SILT, AND CLAY SHALL BE 18".

### STONE CHECK DAM

GEORGIA SOIL & WATER COMMISSION DETAIL

CD-S

### COMPOST FILTER SOCK

GEORGIA SOIL & WATER COMMISSION DETAIL

CD-Fs

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

*Tammy L. Huggins*

TAMMY L. HUGGINS  
GSWCC NO. 0000079448  
EXPIRES 01/20/2020

FOR BIDS



368 WEST PIKE ST., SUITE 104  
LAWRENCEVILLE, GA 30046  
PH: 678-241-4070



APVD	BY	REVISIONS	DATE	NO.

DSGN  
DRN  
CHK

APVD



AEI

#### VERIFY SCALE

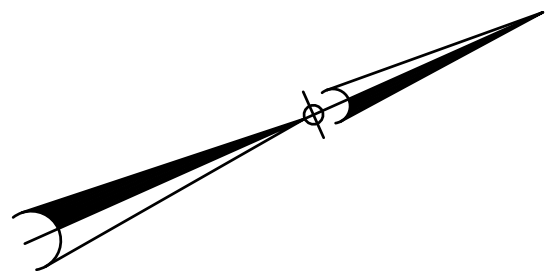
BAR IS ONE INCH ON ORIGINAL DRAWING  
0 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

EROSION AND SEDIMENT CONTROL  
NOTES

SHEET: G53  
DWG NO:  
DATE: MARCH, 2019  
PROJ NO: 100182.15






# FOR BIDS

PLAN

SCALE: 1" = 20'

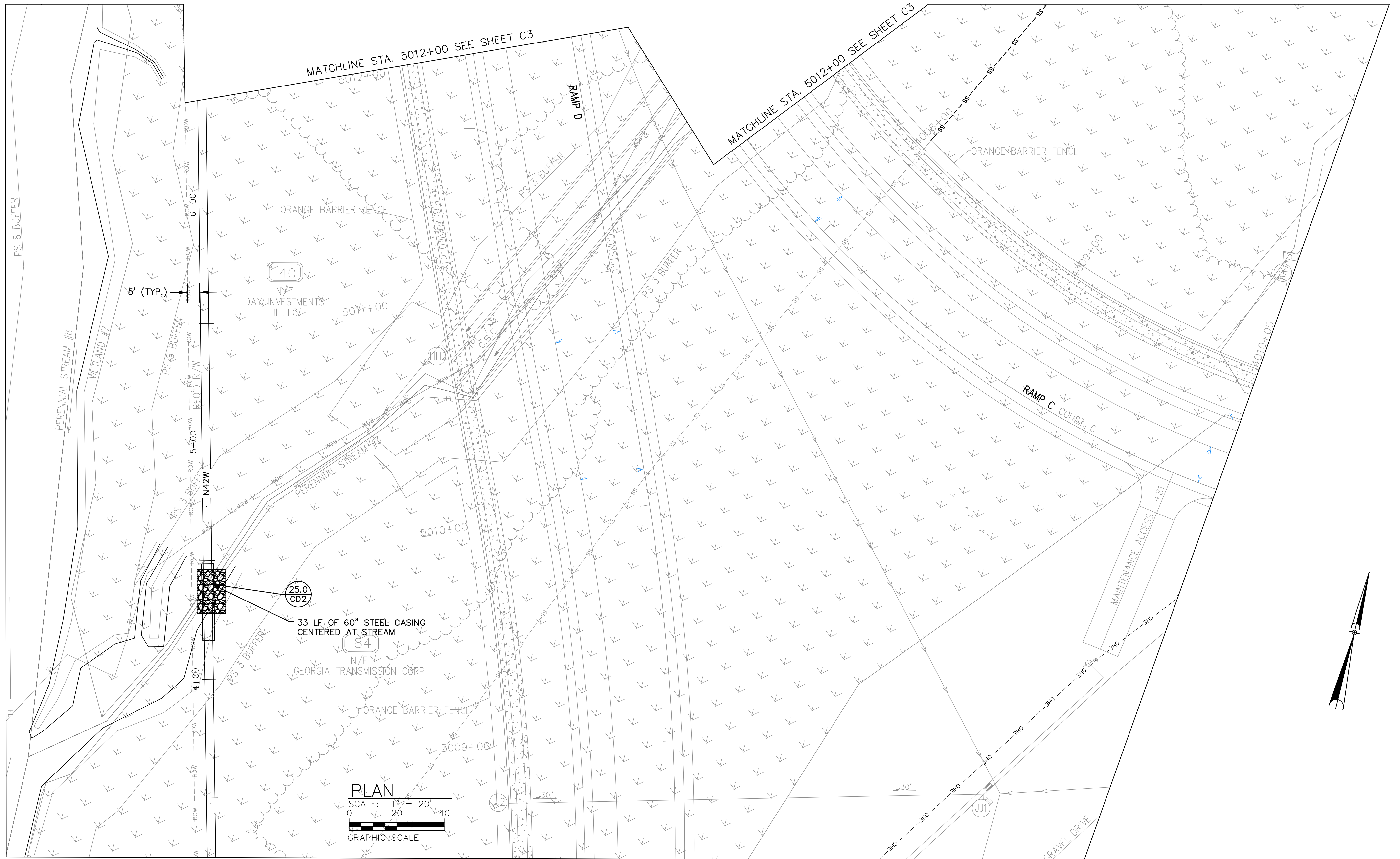
0 20 40



GRAPHIC SCALE

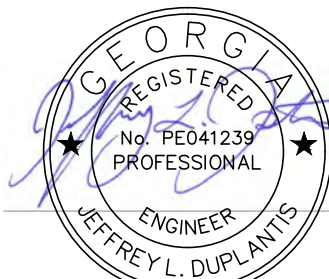
[illegible]





MATCHLINE STA. 5008+50 SEE SHEET C1

## FOR BIDS




APVD	BY	REVISIONS	DATE	NO.

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DRN
CHK
APVD



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

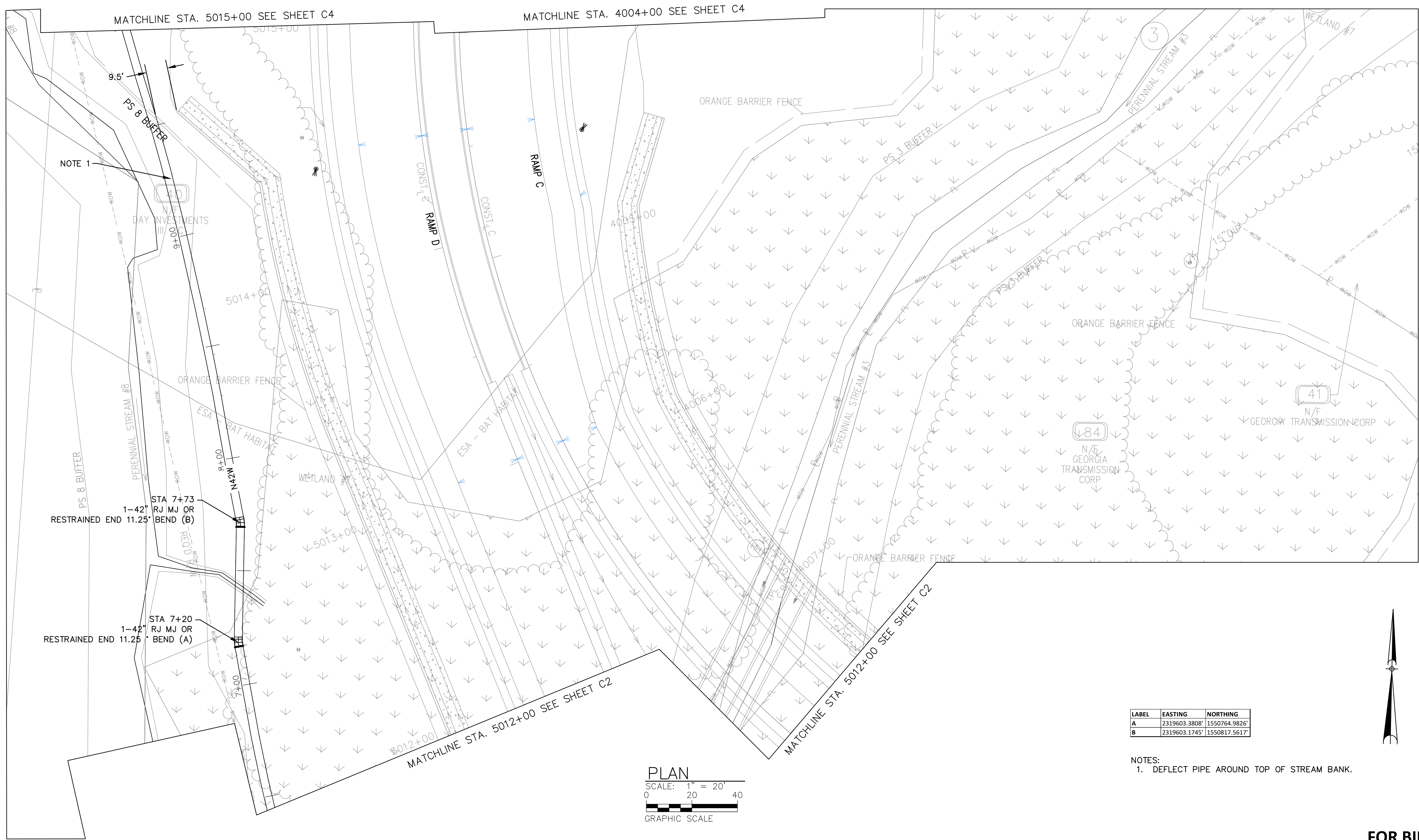
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

ROAD: STA. 5008+50 TO STA. 5012+00  
MAIN: IMPACT SITE #1- STA. 3+27 TO STA. 6+46

PROFILE: SEE C21	
SHEET:	C2
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15





LABEL	EASTING	NORTHING
A	2319603.3808'	1550764.9826'
B	2319603.1745'	1550817.5617'

NOTES:  
1. DEFLECT PIPE AROUND TOP OF STREAM BANK.



## FOR BIDS

[illegible]



This engineering plan view illustrates a road project with stationing from 4001+50 to 5017+50. The plan includes matchlines at both ends, indicating connections to sheets C3, C5, and C6. Key features include:
 

- Stationing and Matchlines:** Matchline STA. 5017+50 SEE SHEET C5 at the top left; Matchline STA. 4001+50 SEE SHEET C6 at the top right; Matchline STA. 4004+00 SEE SHEET C3 at the bottom right; Matchline STA. 5015+00 SEE SHEET C3 at the bottom left.
- Proposed Roadway:** A 12-foot wide road (N 12' W) is shown with 8.5-foot typical shoulders. It includes a 45-degree bend at STA 13+60 and a 11.25-degree bend at STA 10+17.
- Environmental Features:** Wetland areas are marked with wavy lines and labeled 'WETLAND #1' and 'WETLAND #2'. Bat habitat areas are labeled 'ESA - BAT HABITAT'. A 'PS 8 BUFFER' is shown near the bottom left.
- Structures and Utilities:** An 'ABANDONED MOBILE HOME' is located near station 4003+00. A 'PERENNIAL STREAM #3' runs along the bottom right. A 'PS 3 BUFFER' is also indicated.
- Survey Data:** A table in the top right corner provides Northing and Easting coordinates for points A and B.
- Scale and Orientation:** A graphic scale bar at the bottom center shows 0, 20, and 40 feet. A north arrow is located in the top right corner.

Label	Easting	Northing
A	2319542.3899	1551050.9864
B	2319532.7645	1551397.1310

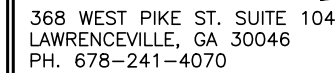
**PLAN**  
 SCALE: 1" = 20'  
 0 20 40  
 GRAPHIC SCALE



NOTES:


1. 2" SERVICE TO GAS STATION.
2. CONNECT TO E12W.
3. VERIFY CUMMING WATER LINE ABANDONMENT.
4. INSTALL RJ CAPS ON SHEET C10 TO ALLOW ABANDONMENT.
5. INSTALL TIMBER KICKER FOR RESTRAINT UNTIL CONCRETE HARDENS.
6. OWNER TO PROVIDE 36" AND 42" VALVES. PROVIDE PIPE END TO MATCH AMERICAN RESTRAINED JOINT FLEX-RING BELL.

PROJ NO: 100182.15



APVD



BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

ROAD: STA. 159+50 TO STA. 163+50  
MAIN: IMPACT SITE #1- STA. 13+63 TO STA. 15+07  
IMPACT SITE #2- STA. 0+00 TO STA. 1+77  
IMPACT SITE #3- STA. 0+00 TO 0+72  
IMPACT SITE #4-STA. 0+00 TO STA. 0+24



LABEL	EASTING	NORTHING
A	2320054.8223'	1551315.1517'
B	2320094.9651'	1551308.7173'

## FOR BIDS


PROJ NO: 100182.15

ROAD: STA. 163+50 TO STA. 168+50  
MAIN: IMPACT SITE #2- STA. 1+77 TO STA. 6+90

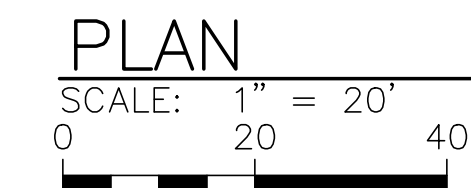
HWY 400  
WATERLINE RELOCATION

**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.



						DSGN
						DRN
						CHK
APVD	BY		REVISIONS	DATE	NO.	APVD



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MATCHLINE STA. 168+50 SEE SHEET C6

40  
N/F INVESTM  
III/LC

APVD	B

APVD	BY	REVISIONS	DATE	NO.
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	DSGN
	DRN
	CHK
	APVD


APVC



# A E I

**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

ROAD: STA. 168+50 TO STA. 173+00  
MAIN: IMPACT SITE #2- STA. 6+90 TO STA. 9+65

PROFILE: SEE C27

SHEET:	C7
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15

## FOR BIDS



SHEET:	C8
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



3-26-19


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DSGN
DRN
CHK
APVD



**VERIFY SCALE**

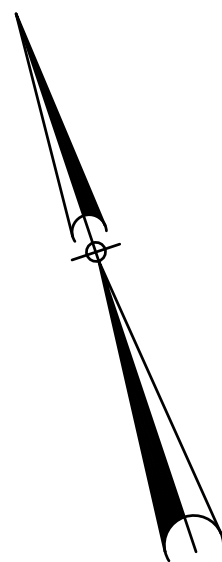
BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

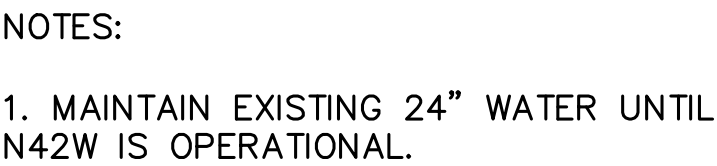
HWY 400  
WATERLINE RELOCATION

ROAD: STA. 173+00 TO STA. 177+50





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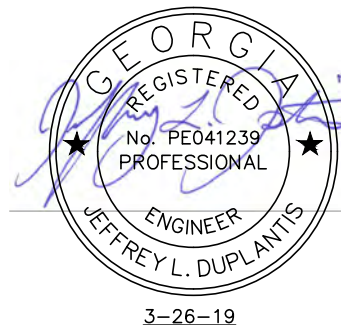


PROFILE: SEE C28

SHEET: C8A

DWG NO: \_\_\_\_\_  
DATE: **MARCH, 2019**

PROJ NO: 100182.15




368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070

DSGN
DRN
CHK



ATCHLINE SEE SHEET C8

VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

NOT IN DOT SHEETS  
IMPACT SITE: #2- STA. 9+65 TO STA. 14+39



\\nas01\p\c\100182-15 - Browns Bridge Road Water Main Relocation.dwg  
DATE: 03/08/19  
DRAWN BY: JLD  
CHECKED BY: JLD  
DESIGNED BY: JLD  
IN CHARGE: JLD  
PROJECT: Browns Bridge Road Water Main Relocation  
SHEET: 100182.15  
SCALE: 1" = 20'  
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3-28-19

APVD	BY	REVISIONS	DATE	NO.

DSGN  
DRN  
CHK  
APVD

PLAN

SCALE: 1" = 20'

0 20 40

GRAPHIC SCALE



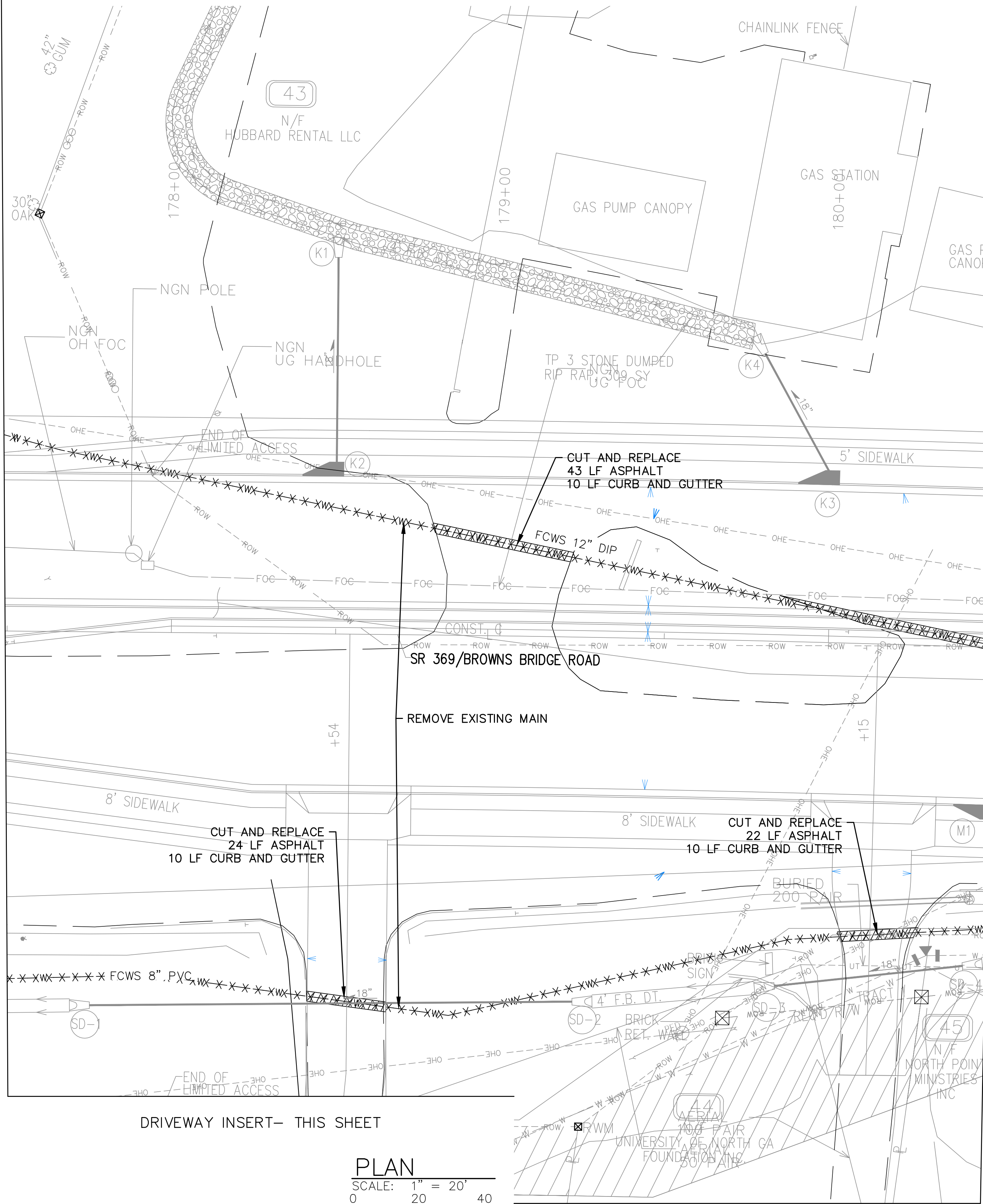
VERIFY SCALE  
BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0 1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

ROAD: STA. 177+50 TO STA. 180+50

SHEET: C9  
DWG NO:  
DATE: MARCH, 2019  
PROJ NO: 100182.15

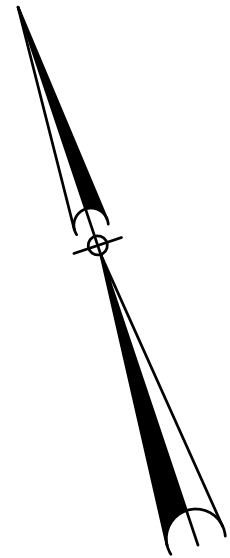
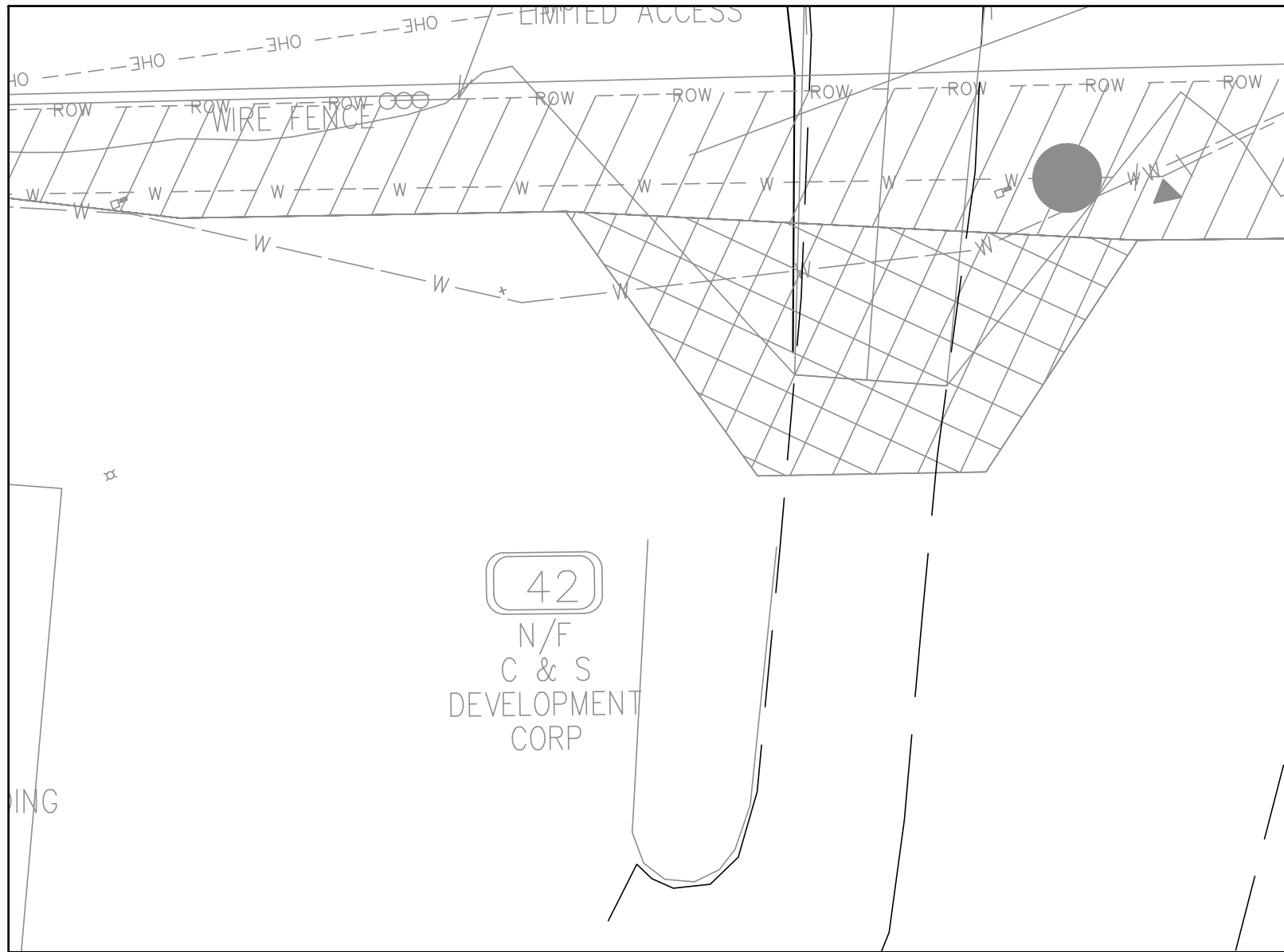
MATCHLINE STA. 177+50 SEE SHEET C8



DRIVEWAY INSERT- THIS SHEET

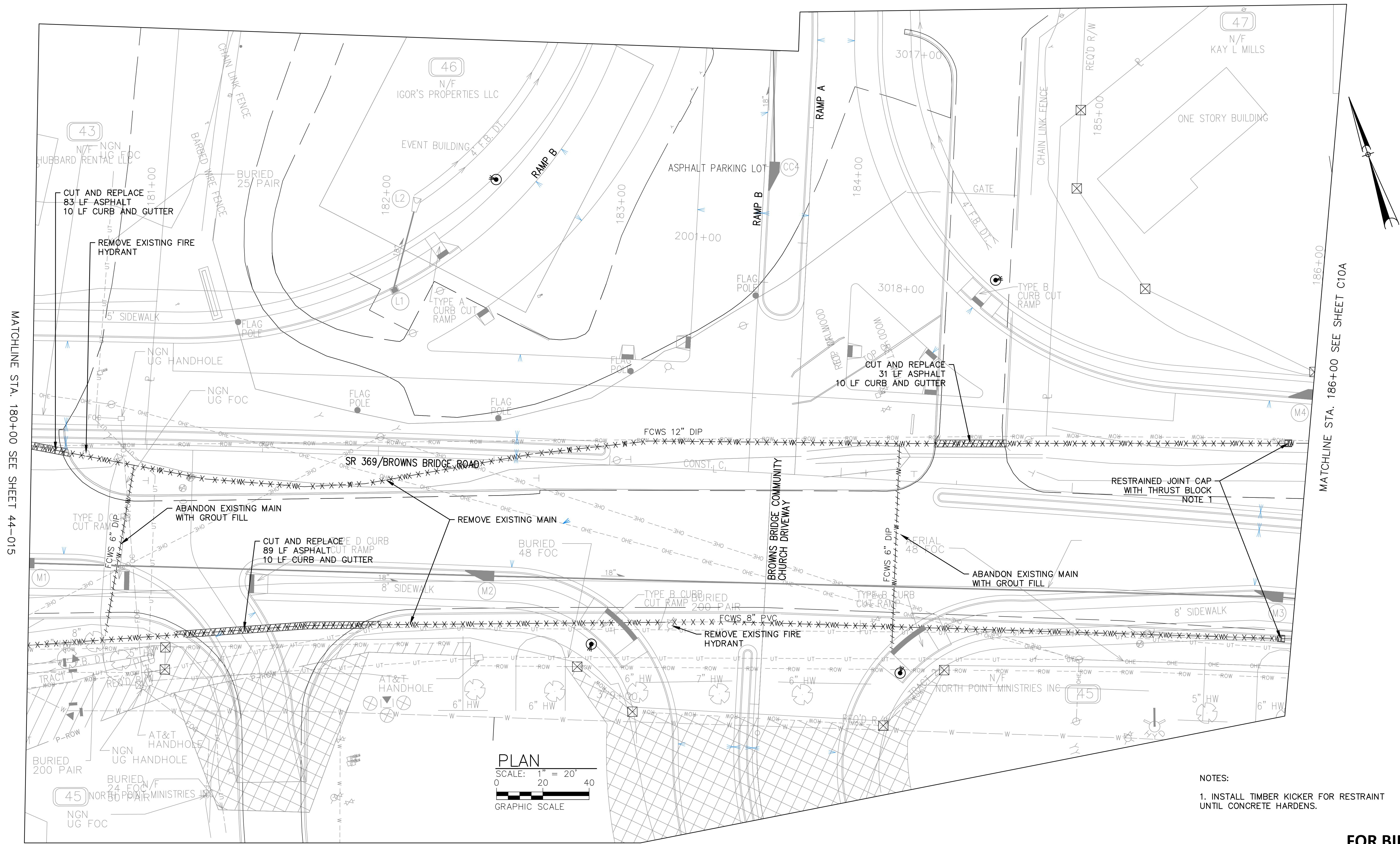
MATCHLINE STA. 180+50 SEE SHEET C10

MATCHLINE- THIS SHEET



FOR BIDS





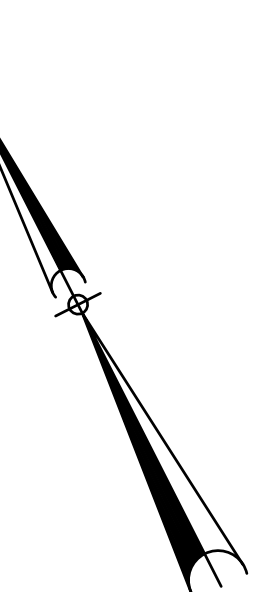
NOTES:

1. INSTALL TIMBER KICKER FOR RESTRAINT UNTIL CONCRETE HARDENS.

## FOR BIDS

[illegible]





## FOR BIDS



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



3-26-19


APVD	BY	REVISIONS	DATE	NO.

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# AEI

VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
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ADJUST SCALES ACCORDINGLY.

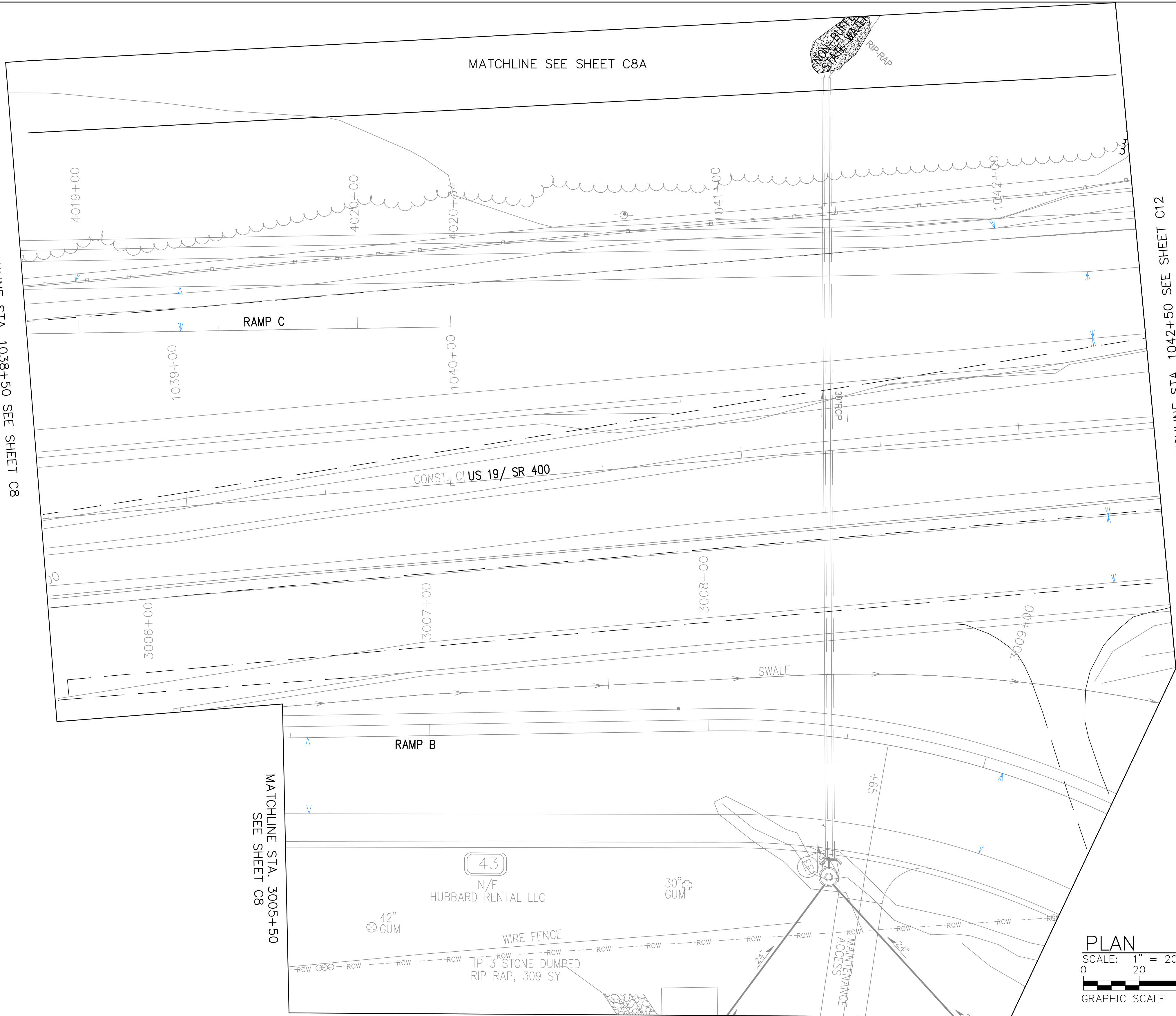
HWY 400  
WATERLINE RELOCATION

ROAD: STA. 186+00 TO STA. 191+50

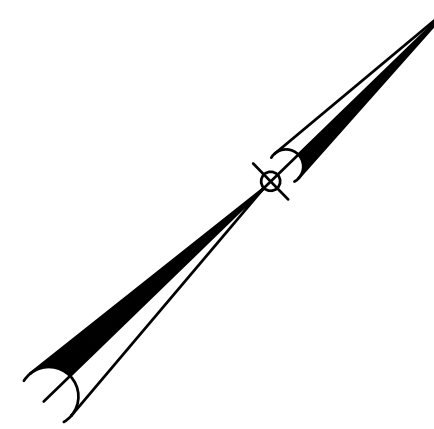
SHEET:	C10A
SWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



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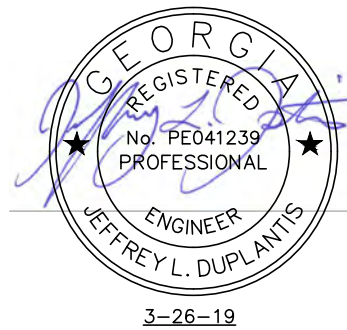


MATCHLINE STA. 1042+50 SEE SHEET C12



NO WORK THIS SHEET

## FOR BIDS




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

ROAD: STA. 1038+50 TO STA. 1042+50

SHEET:	C11
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15



MATCHLINE STA. 1048+00 SEE SHEET C13



SCALE: 1" = 20'

0 20 40



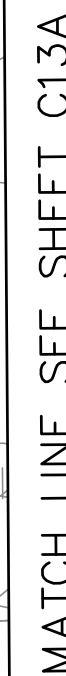

DSGN
DRN
CHK
APVD



SHEET:	C12
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15

## FOR BIDS






Label	Easting	Northing
A	2320948.4078'	1551524.3663'
B	2321092.6684'	1551702.7609'
C	2321071.5278'	1551719.5751'
D	2321061.4970'	1551706.9611'
E	2321074.0354'	1551722.7202'

PLAN

SCALE: 1" = 20'

0 20 40



GRAPHIC SCALE

- NOTES:
- |   |
|---|
| 1. VERIFY LOCATION. NO JOINTS ARE ALLOWED BETWEEN DEADMAN AND SLEEVE. |
|---|
2. ABANDON 24" WATERLINE AT 12" VALVE WITH 12 INCH RJ PLUG AND CONCRETE THRUST BLOCK. REMOVE VALVE BOX. INSTALL TIMBER KICKER BETWEEN 12" PLUG AND 24" CAP.
3. INSTALL 24" RJ MJ CAP TO ABANDON EXISTING LINE.
4. OWNER TO PROVIDE 36" GATE VALVE. PROVIDE BELL END TO MATCH AMERICAN RESTRAINED JOINT FLEX-RING BELL.

## FOR BIDS

 <p>368 WEST PIKE ST. SUITE 104 LAWRENCEVILLE, GA 30046 PH. 678-241-4070</p>												<p><b>VERIFY SCALE</b> BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</p>	<p>HWY 400 WATERLINE RELOCATION</p>	<p>ROAD: STA. 1042+50 TO STA. 1048+50 MAIN: IMPACT SITE #2- STA. 14+39 TO STA. 20+91 IMPACT SITE #3- STA. 0+00 TO 0+45</p>	<p>PROFILE: SEE C29</p>
		APVD	BY	REVISIONS	DATE	NO.	APVD	DSGN	DRN						CHK



MATCH LINE SHEET C13A

MATCHLINE STA. 1048+00 SEE SHEET C12

MATCHLINE STA. 1053+00 SEE SHEET C14

## FOR BIDS

SHEET: C13

DWG NO:

DATE: MARCH, 2011

NO WORK THIS SHEET

# PLAN

SCALE: 1" = 20'

VERIFY SCAL

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATIO

ROAD: STA. 1048+00 TO STA. 1053+50

# ART

DSGI
DRN
CHK

APVE

APVD	BY	REVISIONS	DATE	NO.
------	----	-----------	------	-----

3-26-1

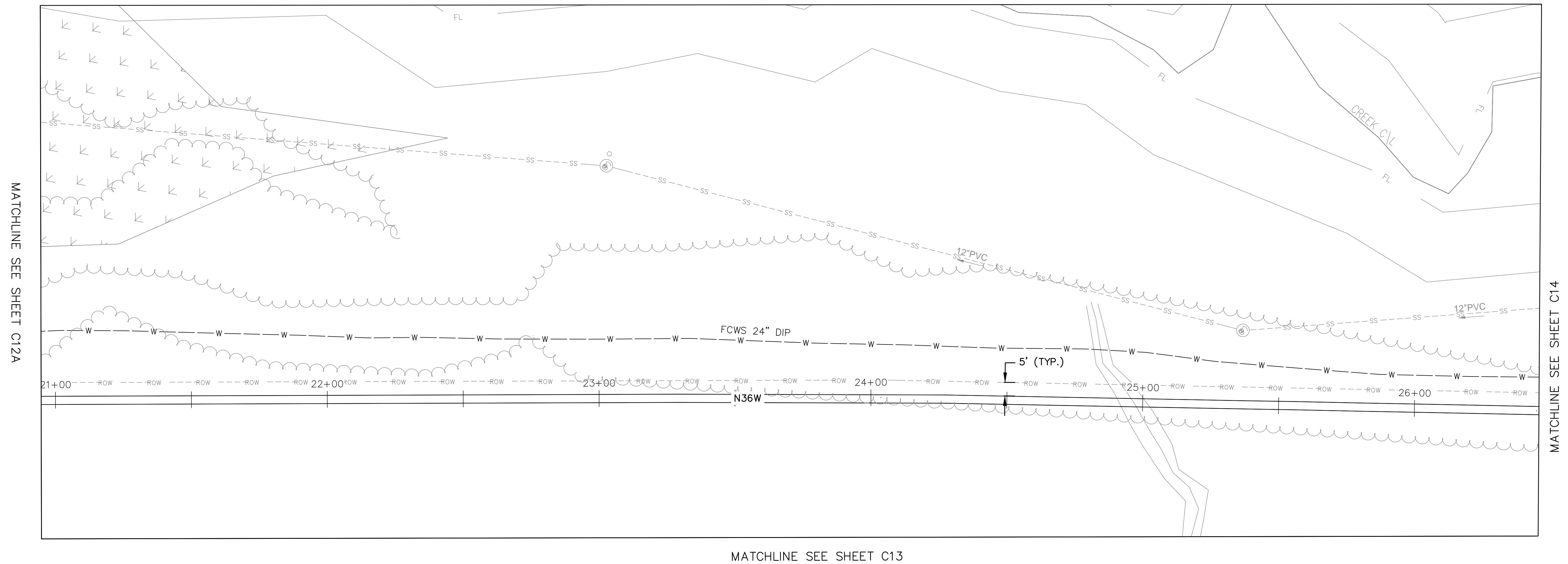
**Constantine**  
Engineering

368 WEST PIKE ST. SUITE 10  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070

A circular professional engineer seal for the State of Georgia. The outer ring contains the text "GEORGIA" at the top and "JEFFREY L. DUPLANTIS" at the bottom. Inside the ring, the word "REGISTERED" is at the top and "ENGINEER" is at the bottom. In the center, the text "No. PE041239" and "PROFESSIONAL" are displayed. Two five-pointed stars are positioned on the left and right sides of the central text. A blue ink signature is written across the seal.

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PLAN

SCALE: 1" = 20'

0 20 40




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

NOT IN DOT SHEETS  
MAIN: IMPACT SITE #2- STA. 20+91 TO 26+40

PROFILE: SEE C30

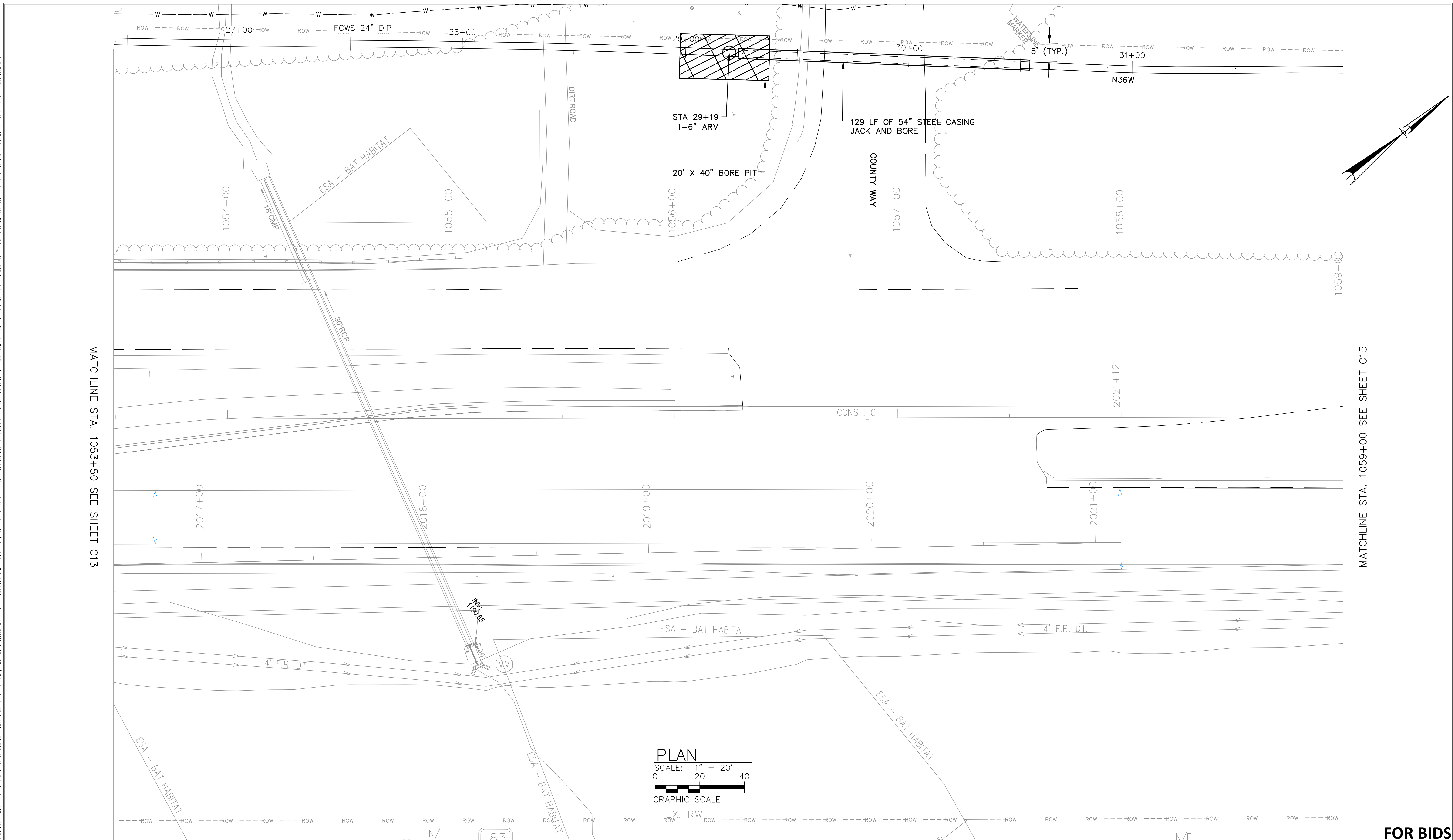
SHEET: C13A

DWG NO:

DATE: MARCH, 2019

## FOR BIDS





MATCHLINE STA. 1059+00 SEE SHEET C15

## FOR BIDS

PROFILE: SEE C31

SHEET: C14

DATE: MARCH, 2019

PROJ NO: 100182.15

HWY 400  
WATERLINE RELOCATION

ROAD: STA. 1053+50 TO STA. 1059+00  
MAIN: IMPACT SITE #2- STA. 26+40 TO STA. 31+91

**Constantine**  
Engineering

368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

PROFILE: SEE C31

SHEET: C14

DATE: MARCH, 2019

PROJ NO: 100182.15



MATCHLINE STA. 1059+00 SEE SHEET C14



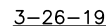
PROFILE: SEE C32

SHEET: C15

DWG NO:

DATE: MARCH, 2019


PROJ NO: 100182.15



APVD	BY	REVISIONS	DATE	NO.
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DSGN
DRN
CHK



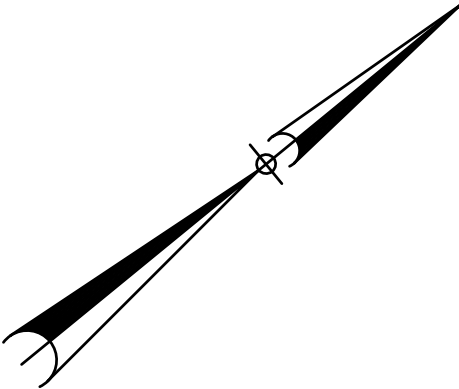
BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

ROAD: STA. 1059+00 TO STA. 1065+00  
MAIN: IMPACT SITE #2- STA. 31+91 TO STA. 37+91

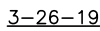
## FOR BIDS





MATCHLINE STA. 1068+83 SEE SHEET C17


368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



DSGN
DRN
CHK

DSGN
DRN
CHK



BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

NOT SHOWN ON DOT PLANS  
ROAD: STA. 1065+00 TO STA. 1068+83  
MAIN: IMPACT SITE #2- STA. 37+91 TO STA. 41+75

PROFILE: SEE C33

SHEET: C16

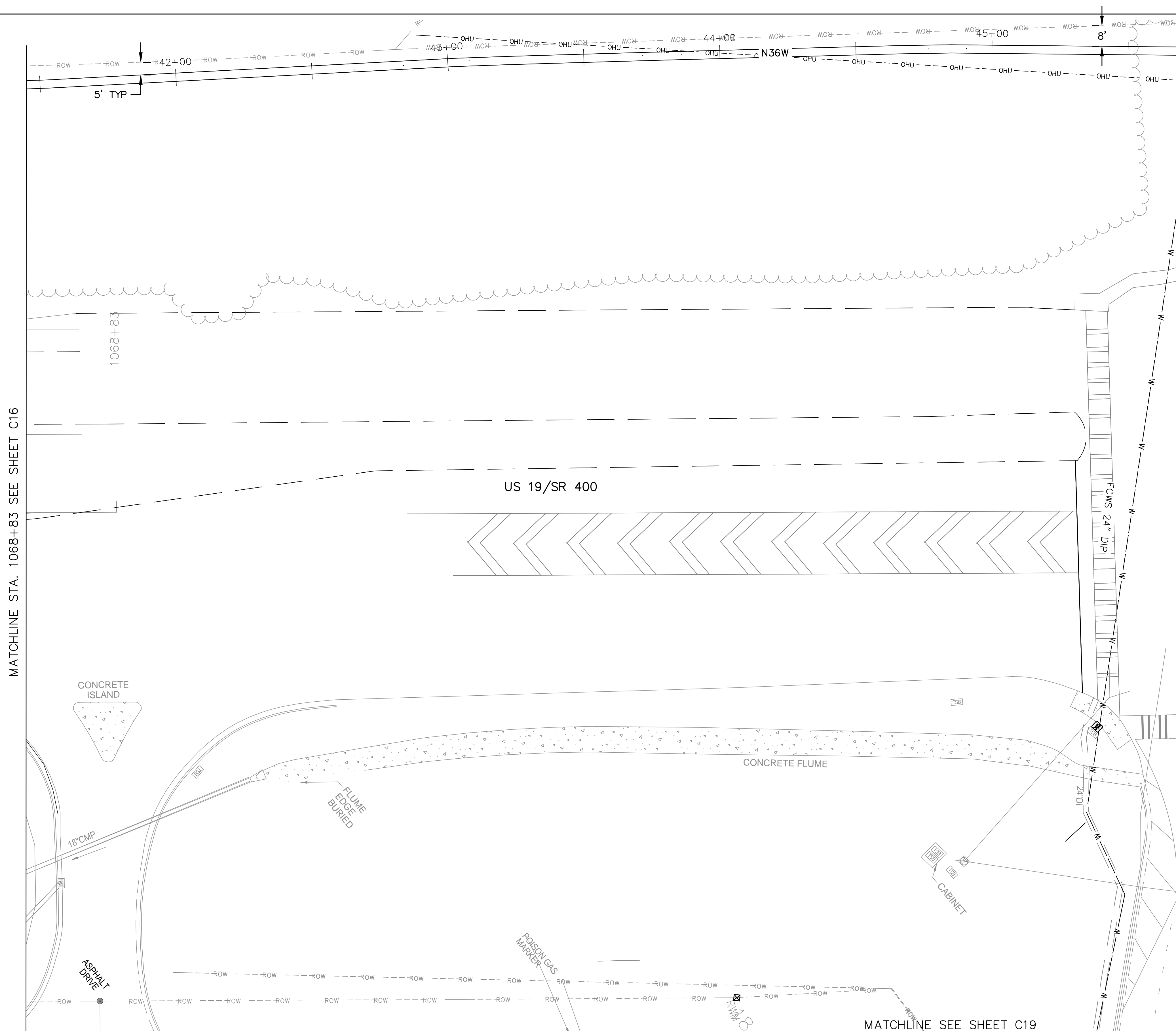
DWG NO:

DATE: MARCH, 2019

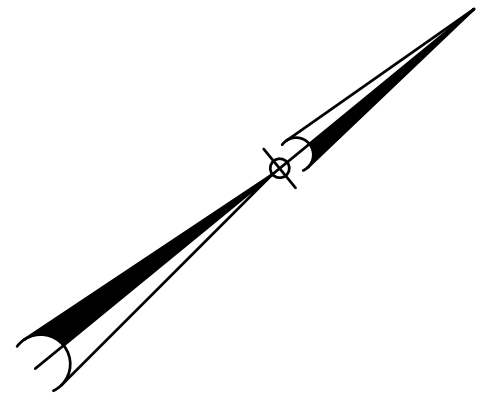
PROJ NO: 100182.15



368 LAWYER PH.




MATCHLINE SEE SHEET C18



PLAN

SCALE: 1" = 20'

0 20 40



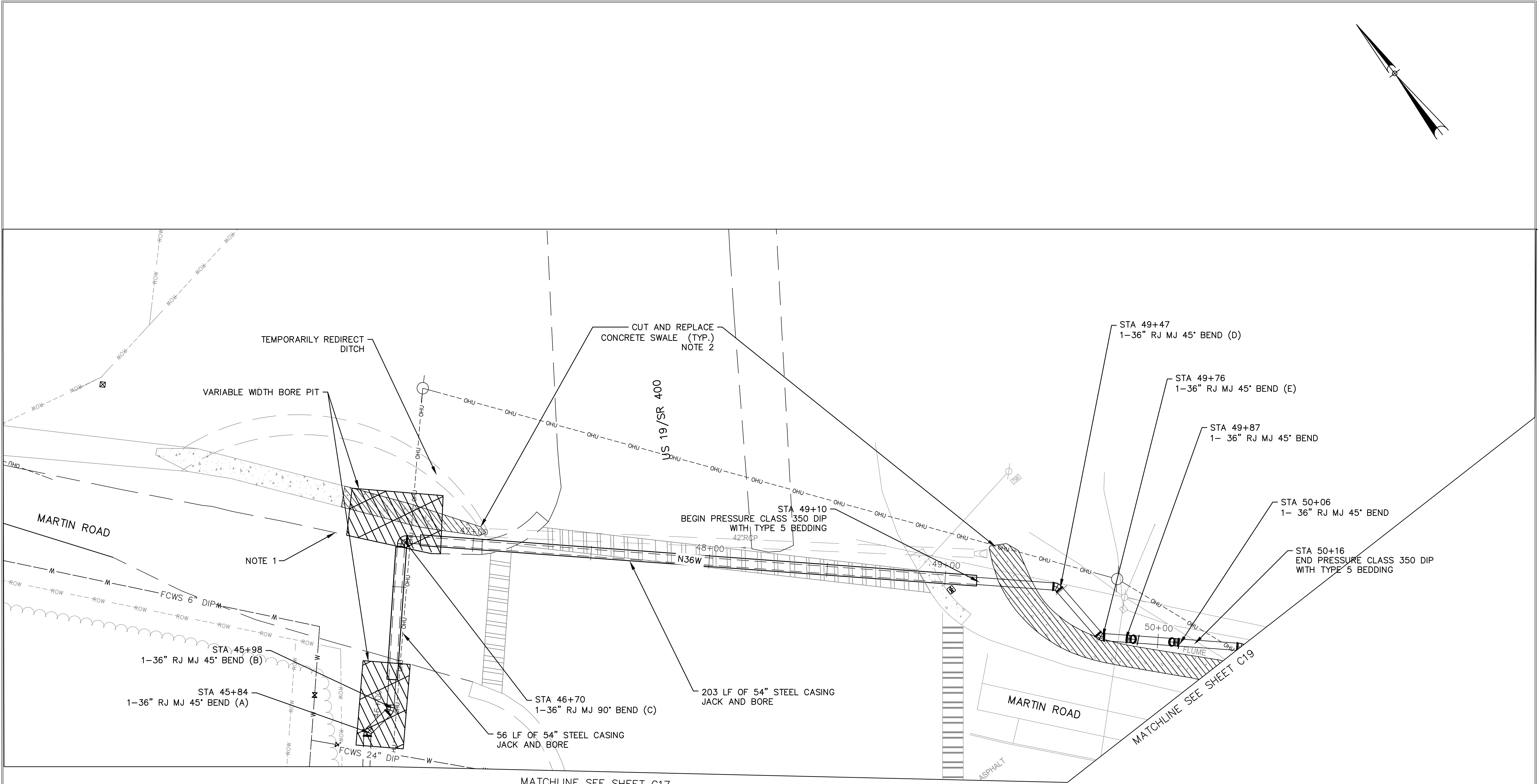
GRAPHIC SCALE

## FOR BIDS

[illegible]



NOTES: 1. PROVIDE TEMPORARY ROAD CLOSURE OR LANE DIVERSION AS REQUIRED. OBTAIN GDOT APPROVAL. 2. REPLACE CONCRETE SWALE TO MATCH EXISTING.



Label	Easting	Northing
A	2322851.5208'	1553860.7834'
B	2322864.9238'	1553862.1088'
C	2322913.1034'	1553916.1800'
D	2323119.3297'	1553729.1717'
E	2323120.4223'	1553701.4061'

PLAN  
SCALE: 1" = 20'  
0 20 40

FOR BIDS

Constantine

Engineering

368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH: 678-241-4070

REGISTERED PROFESSIONAL ENGINEER  
No. PE041239  
JEFFREY L. DUPLANS

3-26-19

APVD	BY	REVISIONS	DATE	NO.	APVD

DSGN

DRN

CHK

APVD

FORSYTH

COUNTY, GEORGIA

AI

BI

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HWY 400

WATERLINE RELOCATION

NOT SHOWN ON DOT PLANS  
MARTIN ROAD  
MAIN: IMPACT SITE #2- STA. 45+70 TO STA. 50+26

PROFILE:	SEE C35
SHEET:	C18
DWG NO:	
DATE:	MARCH, 2019
PROJ NO:	100182.15







ROAD STA. 5004+31  
IMPACT SITE #1 STA. 0+00  
1-24" RJ MJ SOLID SLEEVE  
TIE-IN TO E24W  
BEGIN RJ PIPE  
STA. 0+04  
1-24"x24" RJ MJ TEE  
2LF 24" RJ PIPE (EAST)  
1-24"x12" REDUCER (EAST)  
2LF 12" RJ PIPE (EAST)  
1-12" RJ MJ GATE VALVE (EAST)  
2LF 12" RJ PIPE (EAST)  
1-24"x12" REDUCER (EAST)  
2LF 24" RJ PIPE (EAST)  
1-24" RJ MJ SOLID SLEEVE (EAST)  
TIE-IN TO E24W (EAST)  
STA. 0+09  
1-24" RJ MJ GATE VALVE  
STA. 0+13  
1-24" RJ MJ 45° BEND  
STA. 0+18  
1-24" RJ MJ 45° BEND  
STA. 0+29  
1-24" RJ MJ 45° BEND  
STA. 0+33  
1-42"x24" RJ MJ REDUCER  
STA. 0+41  
1-42"x36" RJ MJ TEE  
4LF 36" RJ PIPE (WEST)  
1-36" RESTRAINED END GATE VALVE (WEST)  
4LF 36" PE BY RESTRAINED END (WEST)  
1-36 RJ MJ CAP (WEST)  
STA. 0+68  
1-42" RJ MJ 45° BEND  
STA. 1+08  
1-42" RJ MJ 45° BEND

16" SANITARY SEWER

APPROXIMATE ELEVATION OF EXISTING GRADE

NOTE 2

1- 6" ARV  
ON EXISTING LINE

CONCRETE DEADMAN

24" DIP

NOTE 3

NOTE 4

2' MIN (TYP.)

N42W

IMPACT SITE #1

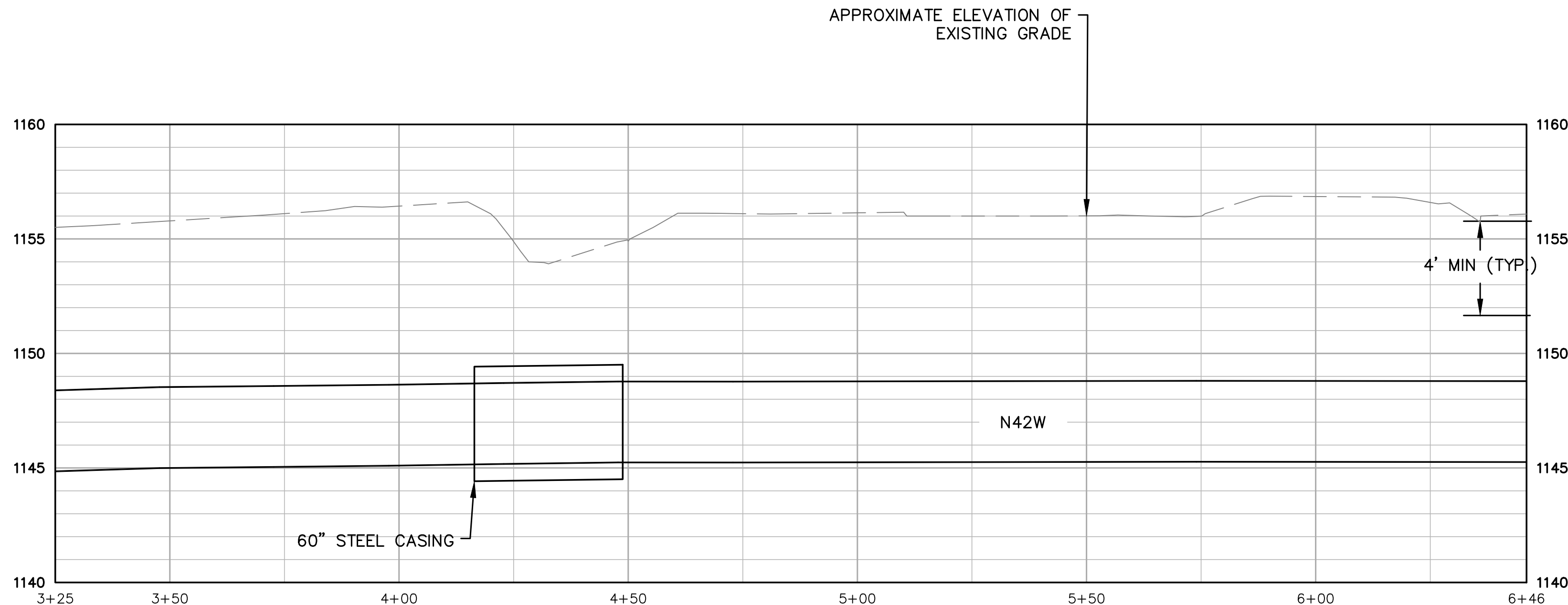
PROFILE  
SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

PROFILE  
SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

638



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IMPACT SITE #1

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

NOTE

1. ALL PIPE SHALL BE RESTRAINED JOINT



368 WEST PIKE ST. SUITE 10  
LAWRENCEVILLE, GA 30046  
PH 678-241-4070




APVD	RY	REVISIONS	DATE	NO

DSGN
DRN
CHK
APVD



VERIFY SCAL

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #1  
STA. 3+25 TO STA. 6+46

## FOR BIDS

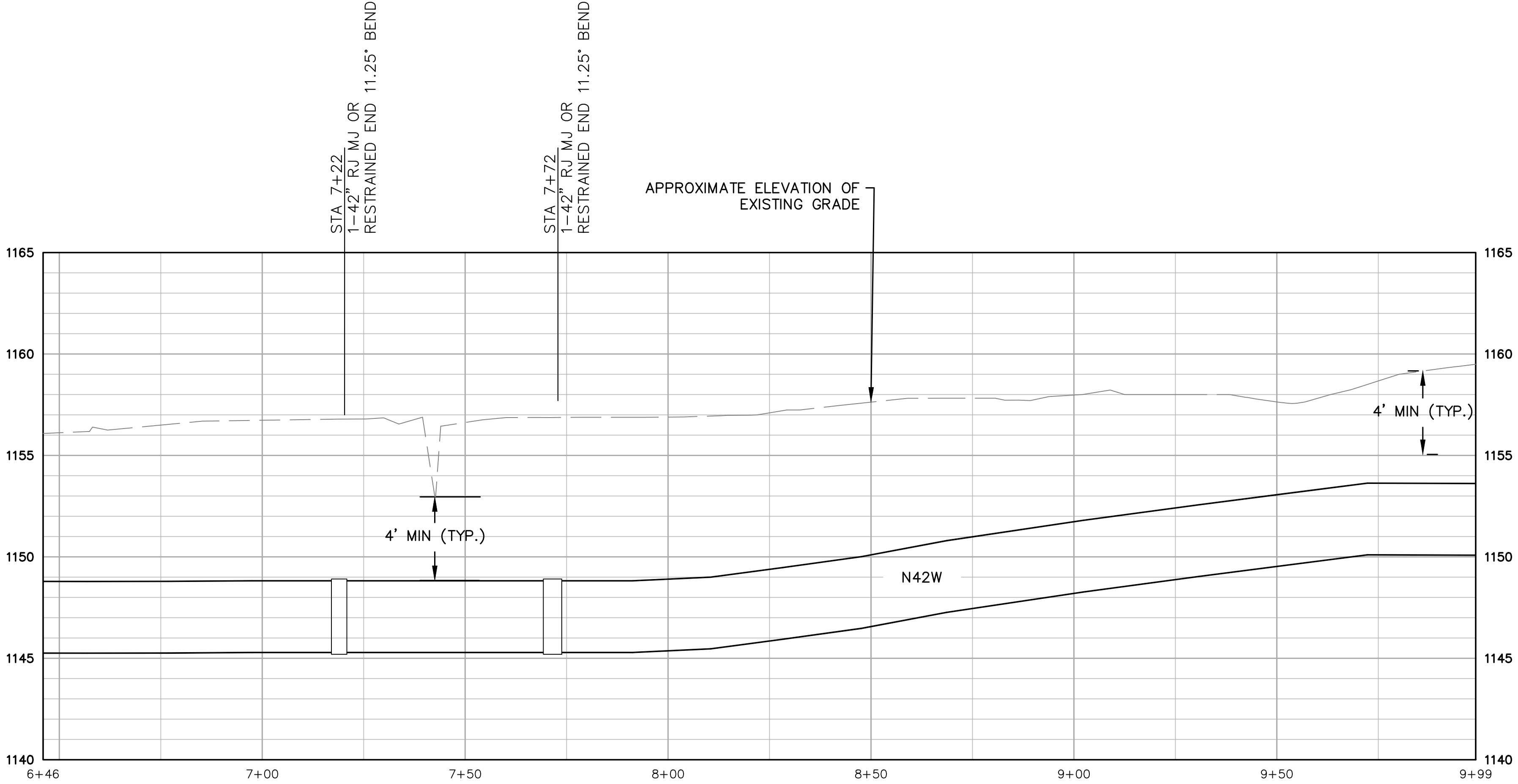
LAN: SEE C2

SHEET: C21

WG NO:	
DATE:	MARCH 2019



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## IMPACT SITE #

## PROFILE

SCALE: HOR.: 1"=2'  
VERT.: 1"=4'

## NOTI

1. ALL PIPE SHALL BE RESTRAINED JOINT.



368 WEST PIKE ST. SUITE 10  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



APVD	BY	REVISIONS	DATE	NO

DSGN
DRN
CHK
APVD



## VERIFY SCALE

BAR IS ONE INCH C  
ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY

HWY 400  
WATERLINE RELOCATIO

IMPACT SITE #1  
STA. 6+46 TO STA. 9+99

## FOR BIDS

PLAN: SEE C3

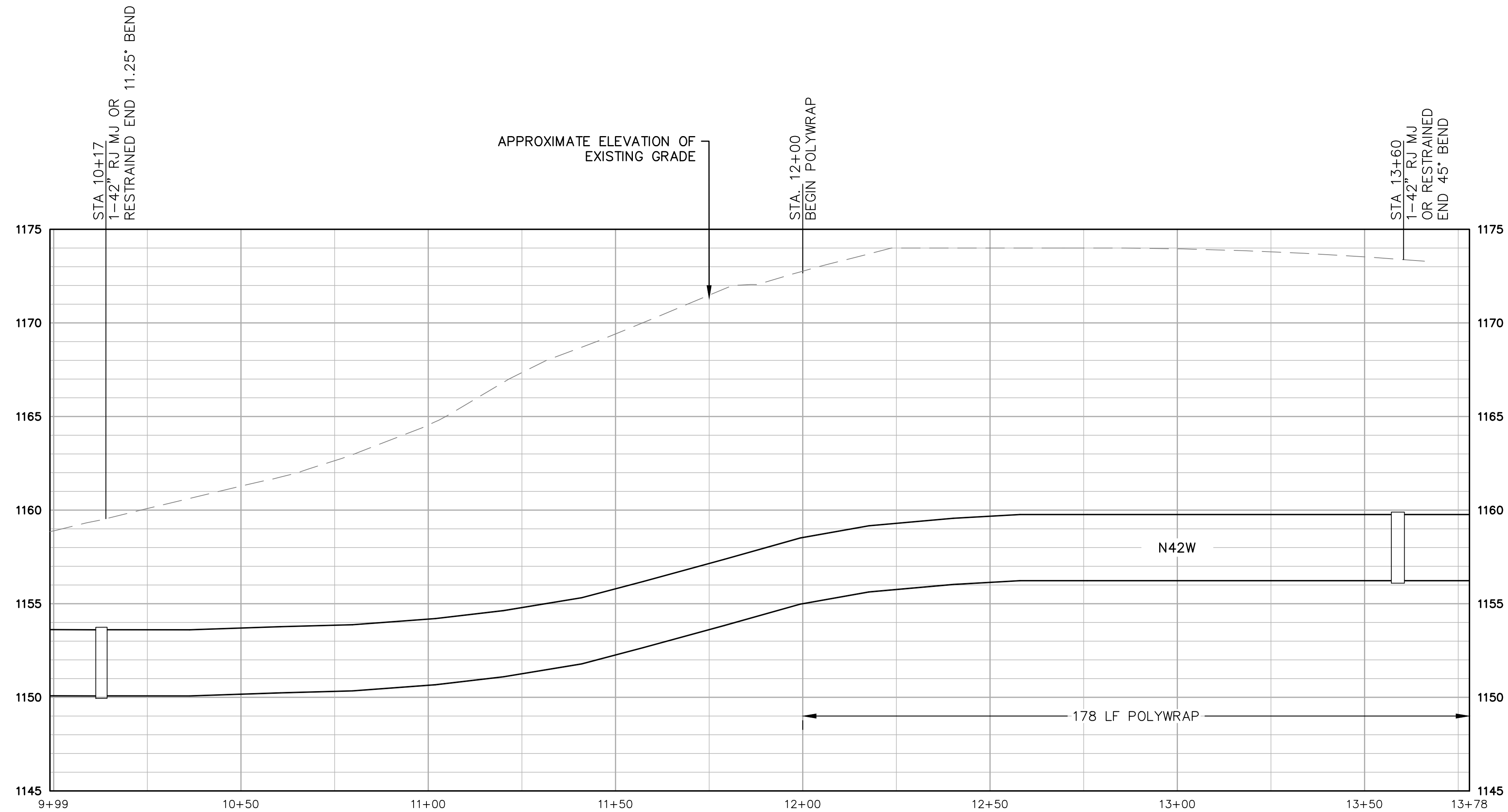
SHEET: C22

DATE: MARCH 2019

PROJ NO: 100182.15



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IMPACT SITE #1

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #1  
STA. 9+99 TO STA. 13+66

**FOR BIDS**

PLAN: SEE C4

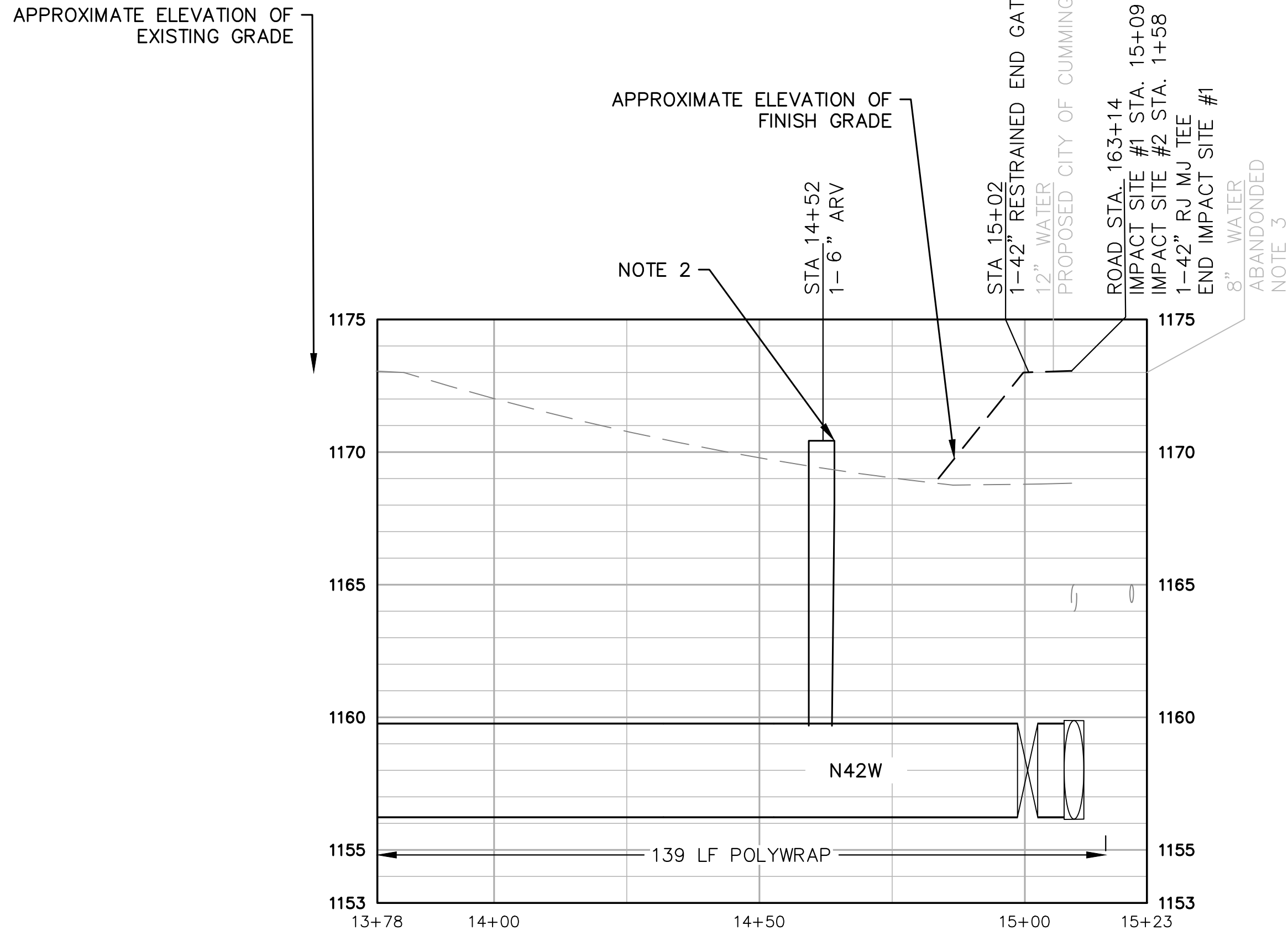
SHEET: C23

DATE: MARCH, 2019

PROJ NO: 100182.15



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## IMPACT SITE #1

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

NOTE

1. ALL PIPE SHALL BE RESTRAINED JOINT.
2. VERIFY HIGH POINT FOR ARV.
3. VERIFY CUMMING WATER LINE ABANDONMENT.
4. OWNER TO PROVIDE 42" AND 36" VALVES. PROVIDE PIPE END TO MATCH AMERICAN RESTRAINED JOINT FLEX-RING BELL.



368 WEST PIKE ST. SUITE 10  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070




APVD	BY	REVISIONS	DATE	NO

DSGN
DRN
CHK
APVD



VERIFY SCAL

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATING

IMPACT SITE #1  
STA. 13+66 TO STA. 15+23

## FOR BIDS

PLAN: SEE C5

SHEET: C24

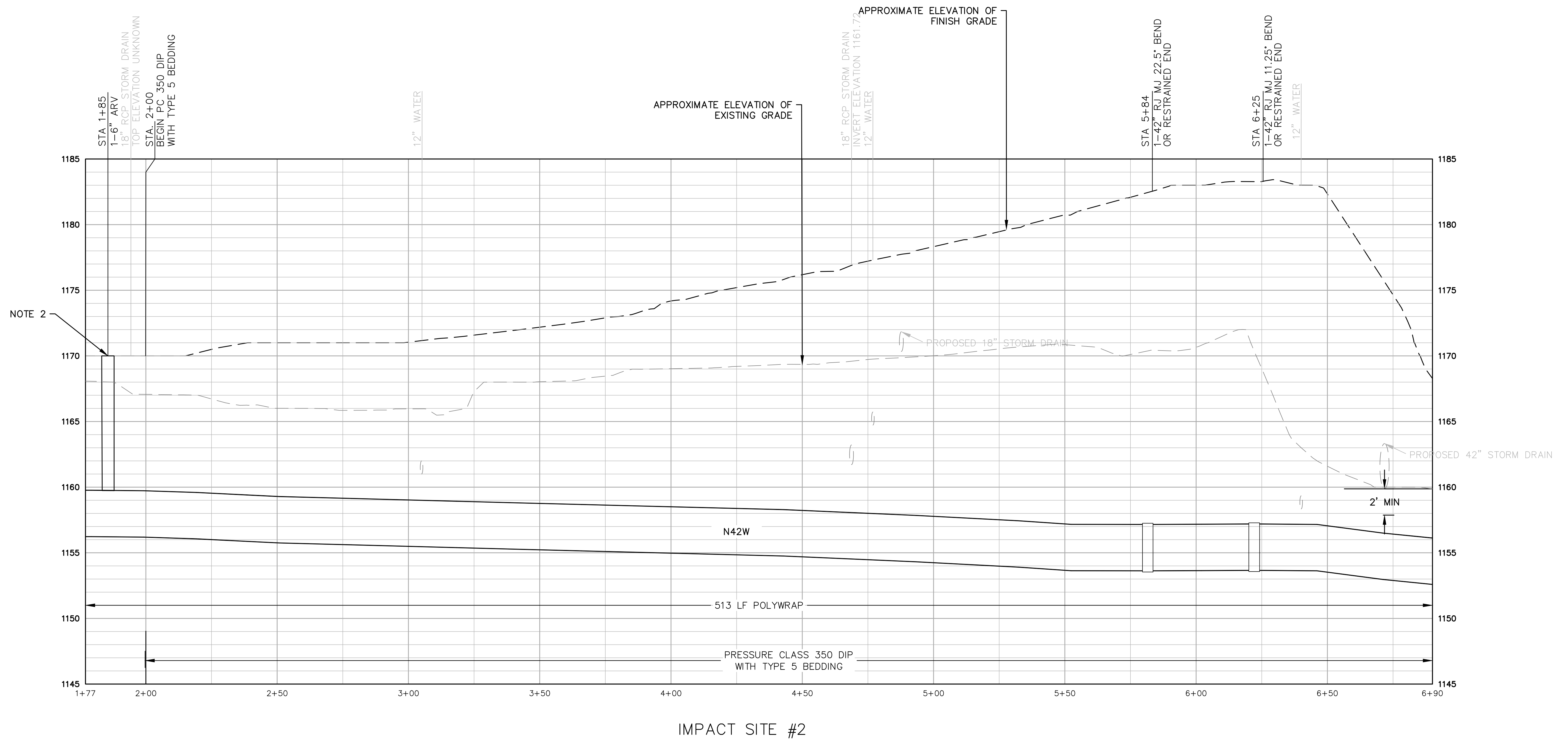
DATE: MARCH,

PROJ NO: 100182.1









NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.
2. VERIFY HIGH POINT FOR ARV (TYP. ENTIRE ROUTE).

IMPACT SITE #2

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

## FOR BIDS

PLAN: SEE C6

SHEET: C26

DATE: MARCH, 2019

PROJ NO: 100182.15



APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1

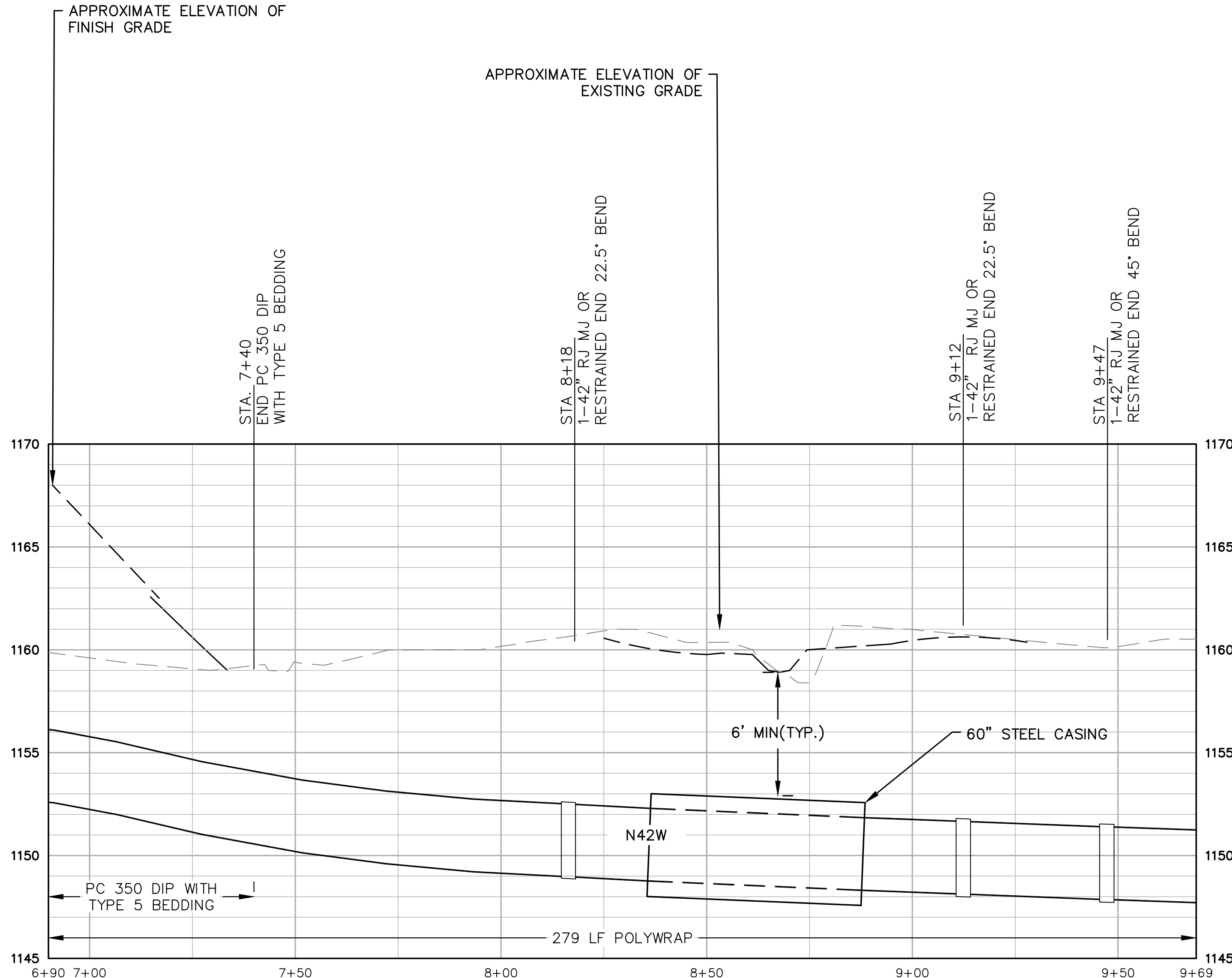
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 1+77 TO STA. 6+90



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## IMPACT SITE #2

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

## NOTE

1. ALL PIPE SHALL BE RESTRAINED JOINT.



368 WEST PIKE ST. SUITE 10  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



APVD	RY	REVISIONS	DATE	NO

DSGN
DRN
CHK
APVD



## VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 6+90 TO STA. 9+65

## FOR BIDS

PLAN: SEE C.7

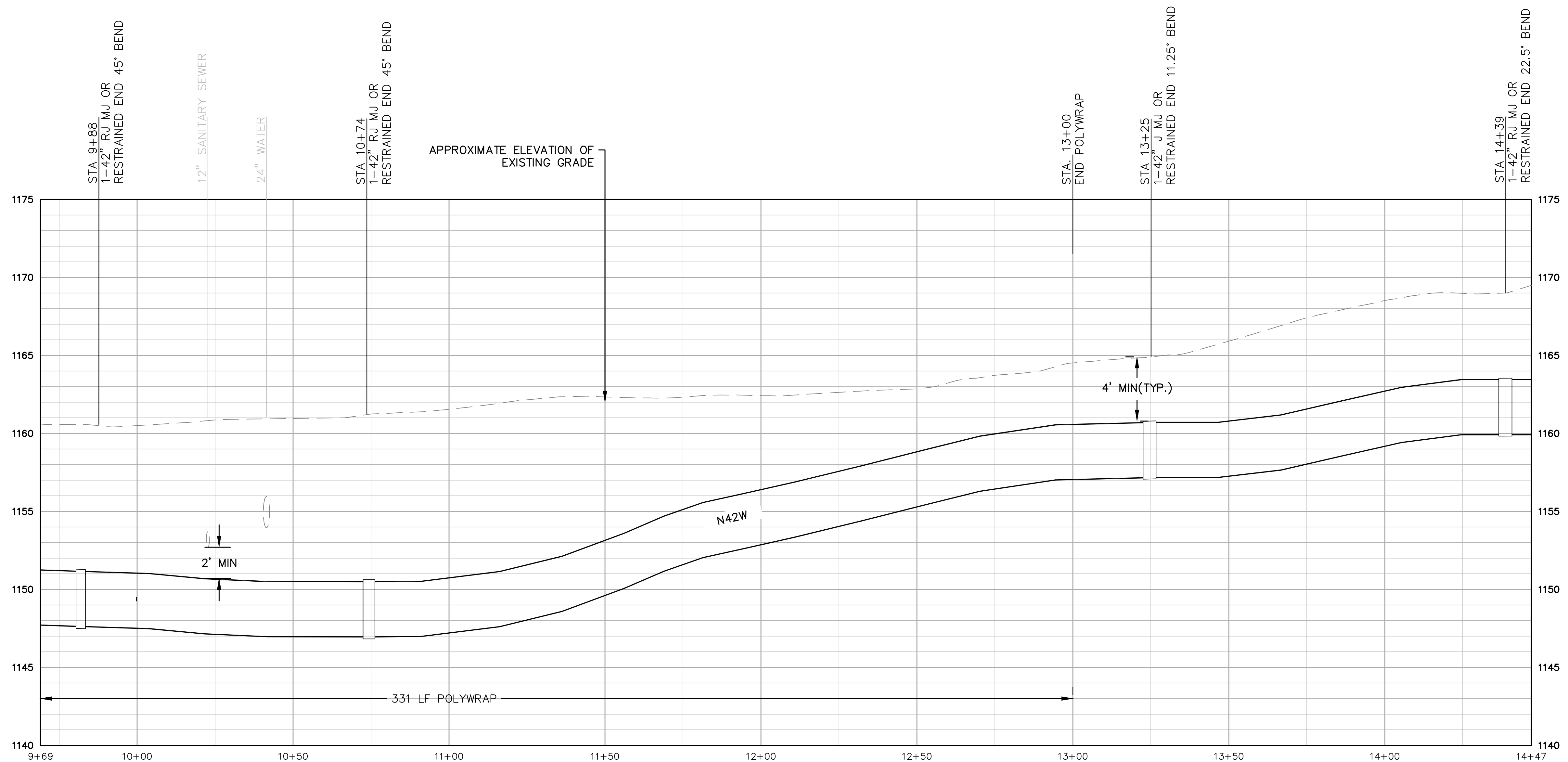
SHEET: C37

DATE: MARCH 2019

PROJ NO: 100182.15



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## IMPACT SITE #2

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.



368 WEST PIKE ST. SUITE 104  
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PH. 678-241-4070



APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 9+65 TO STA. 14+39

## FOR BIDS

PLAN: SEE C11A

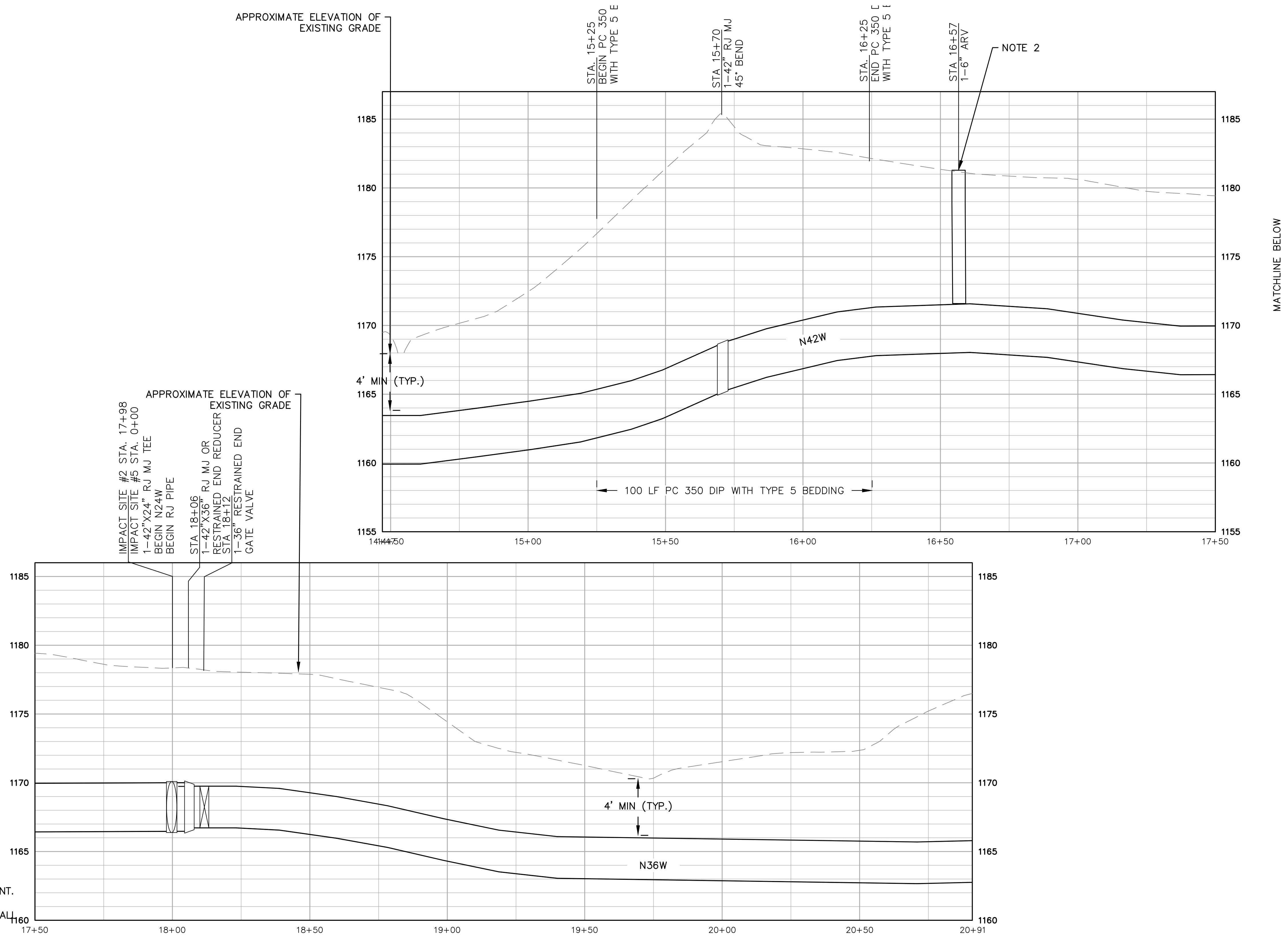
SHEET: C28

DATE: MARCH, 2019

PROJ NO: 100182.15



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NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.
2. VERIFY HIGH POINT FOR ARV (TYP. ALL SHEETS).

IMPACT SITE #2

**FOR BIDS**

PLAN: SEE C12A

SHEET: C29

DATE: MARCH, 2019

PROJ NO: 100182.15




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

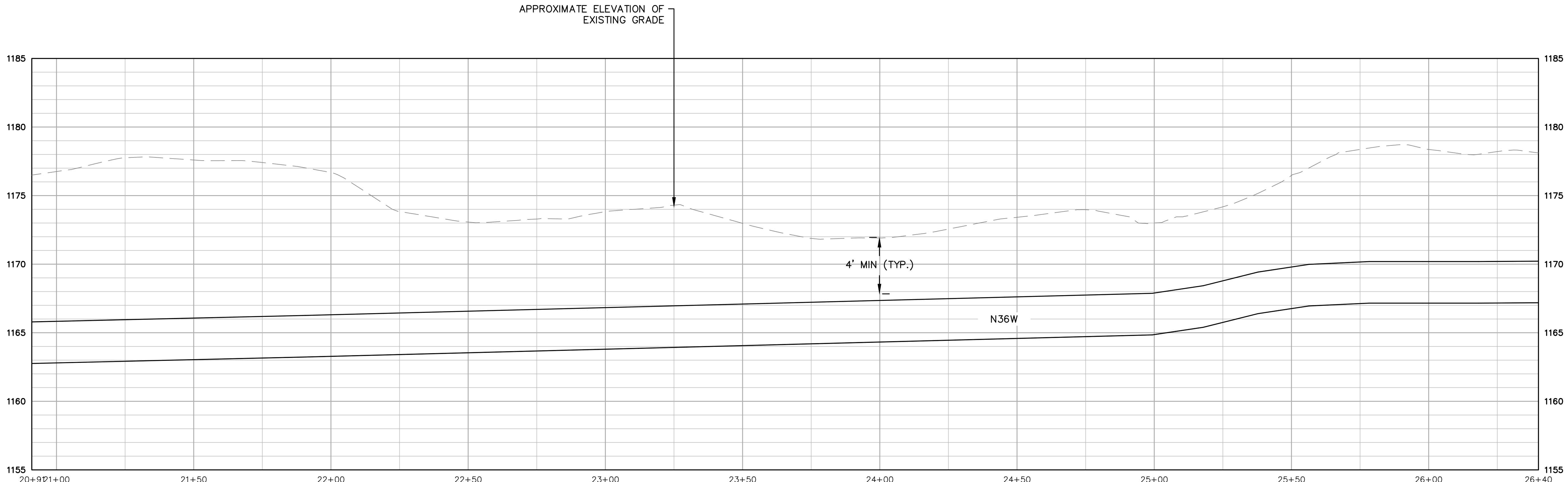
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 14+39 TO STA. 20+91



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## IMPACT SITE #2

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

## NOTE

1. ALL PIPE SHALL BE RESTRAINED JOINT



368 WEST PIKE ST. SUITE 10  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



APVD	RY	REVISIONS	DATE	NO

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH  
ORIGINAL DRAWING

IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 20+91 TO STA. 26+40

## FOR BIDS

PLAN: SEE C13

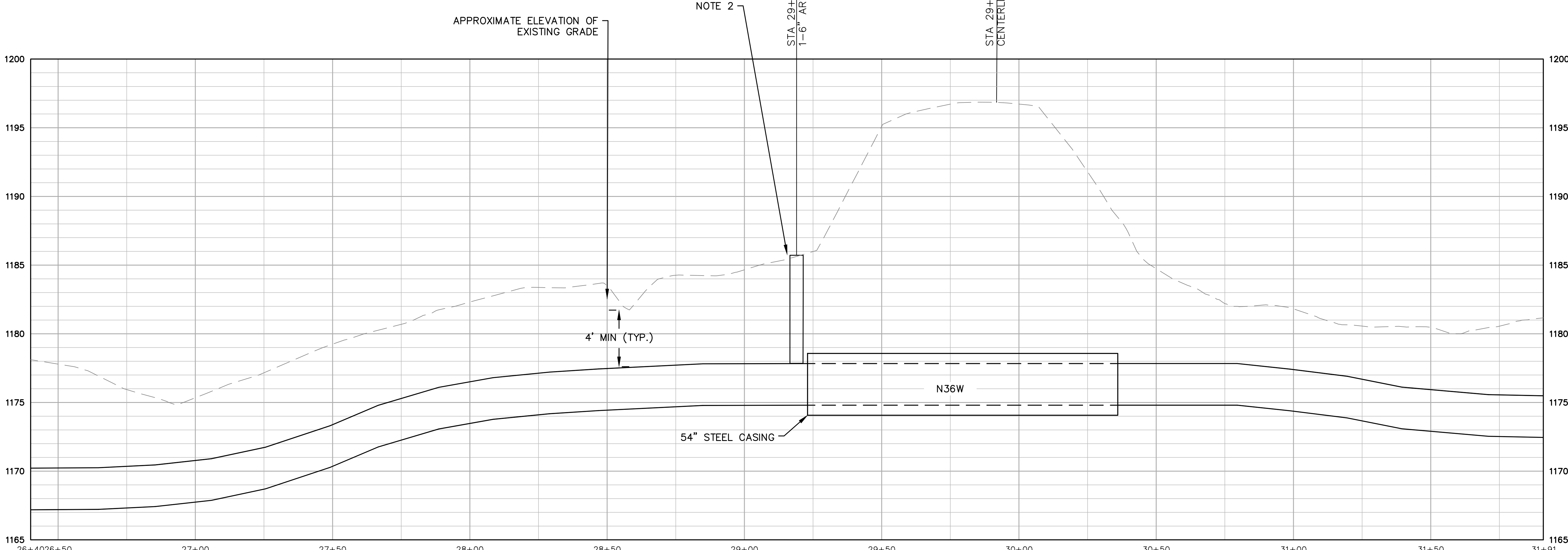
SHEET: C30

DATE: MARCH 2019

PROJ NO: 100182.15



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## IMPACT SITE #2

PROFILE

SCALE: HOR.: 1"=2'  
VERT.: 1"=4'

## NOTE

1. ALL PIPE SHALL BE RESTRAINED JOINT.
2. VERIFY HIGH POINT FOR ARV (TYP. ALL SHEETS).

# FOR BIDS

PLAN: SEE C1

SHEET: C3

DATE: MARCH, 20

PROJ NO: 100182



APVD	RY	REVISIONS	DATE	NO

DSGN
DRN
CHK
APVD



VERIFY SCA

BAR IS ONE INCH  
ORIGINAL DRAWING

IF NOT ONE INCH ON THIS SHEET

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 20+40 TO STA. 21+00



5. IN ANY 400' PROFILE, THE PROPOSED GRADE, WHEN COMBINED WITH THE EXISTING GRADE, SHALL NOT PROHIBIT THE REQUIRED VERTICAL CLEARANCE.

APPROXIMATE ELEVATION OF EXISTING GRADE

4' MIN (TYP.)

N36W

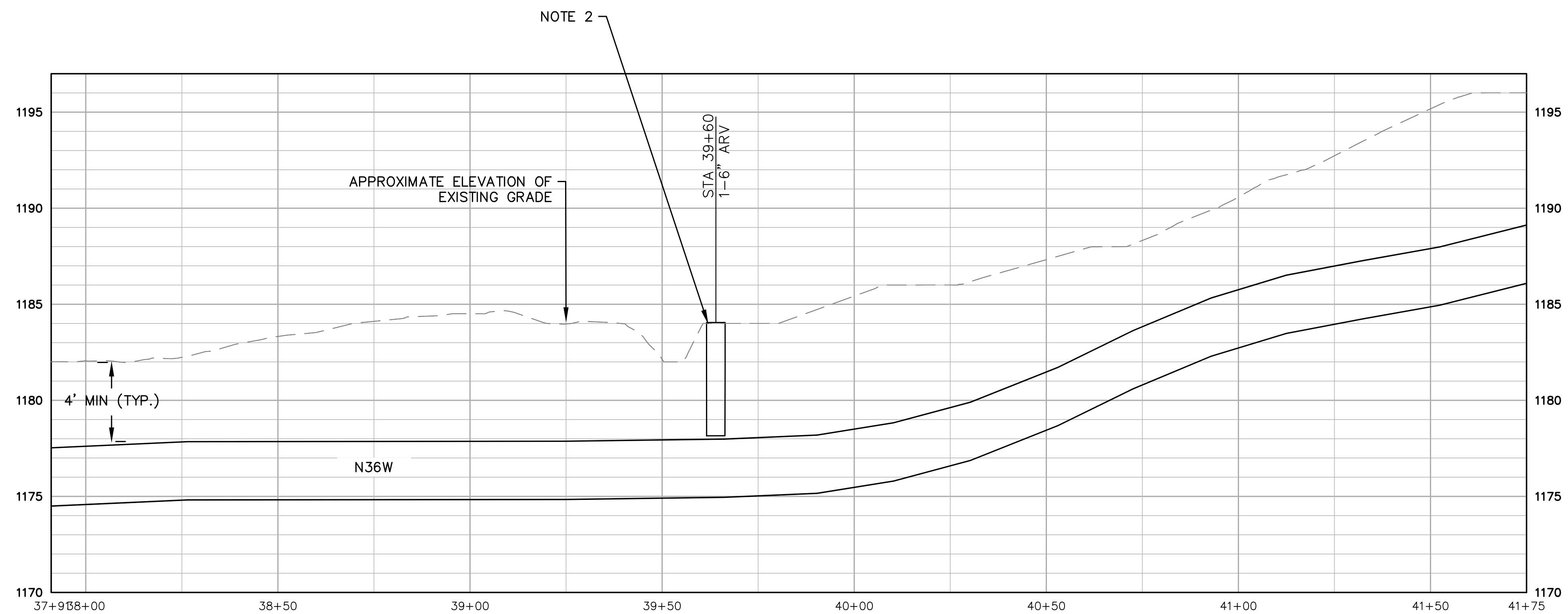
Station	Existing Grade (ft)	Proposed Grade (ft)
31+91.32	1181.5	1172.5
32+00	1183.5	1172.5
33+00	1184.0	1172.0
34+00	1184.5	1171.5
35+00	1178.5	1171.0
36+00	1179.0	1171.0
37+00	1181.5	1173.0
37+91.00	1182.0	1174.0

## PROFILE

IMPACT SITE #2  
STA. 31+91 TO STA. 37+91



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## IMPACT SITE #2

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.
2. INTERMEDIATE ARV BETWEEN HIGH POINTS.

## FOR BIDS



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH ON  
ORIGINAL DRAWING  
0  1"  
IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 37+91 TO STA. 41+75

PLAN: SEE C16

SHEET: C33

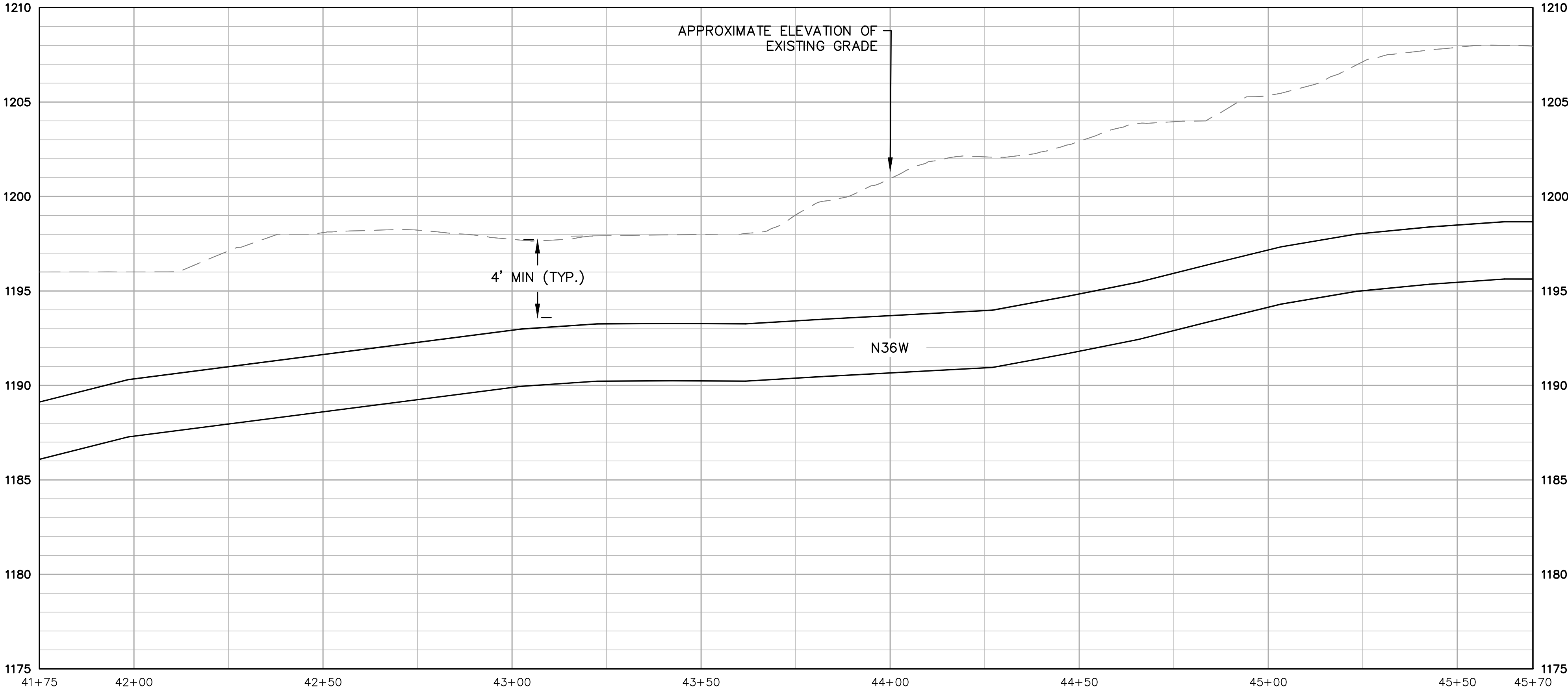
WG NO:

DATE: MARCH, 2019

PROJ NO: 100182.15



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## IMPACT SITE #2

## PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.



368 WEST PIKE ST. SUITE 10  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH ON

0  1<sup>st</sup>

IF NOT ONE INCH ON THIS SHEET  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 41+75 TO STA. 45+70

## FOR BIDS

PLAN: SEE C17

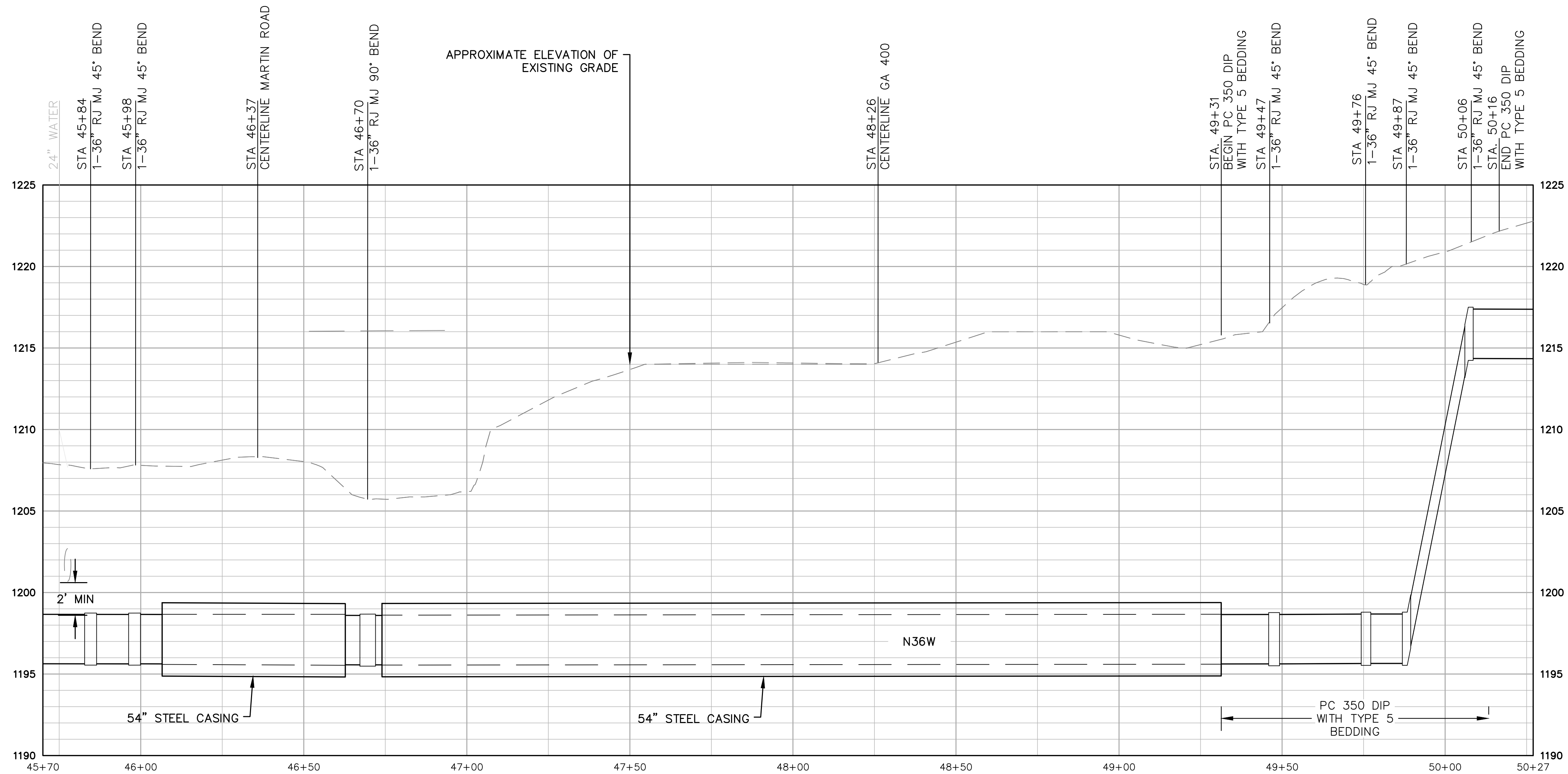
SHEET: C34

DATE: MARCH, 2019

PROJ NO: 100182.15



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## IMPACT SITE #2

PROFILE  
SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070




APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



**VERIFY SCALE**

BAR IS ONE INCH ON  
ORIGINAL DRAWING

0  1"

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 45+70 TO STA. 50+27

**FOR BIDS**

PLAN: SEE C18

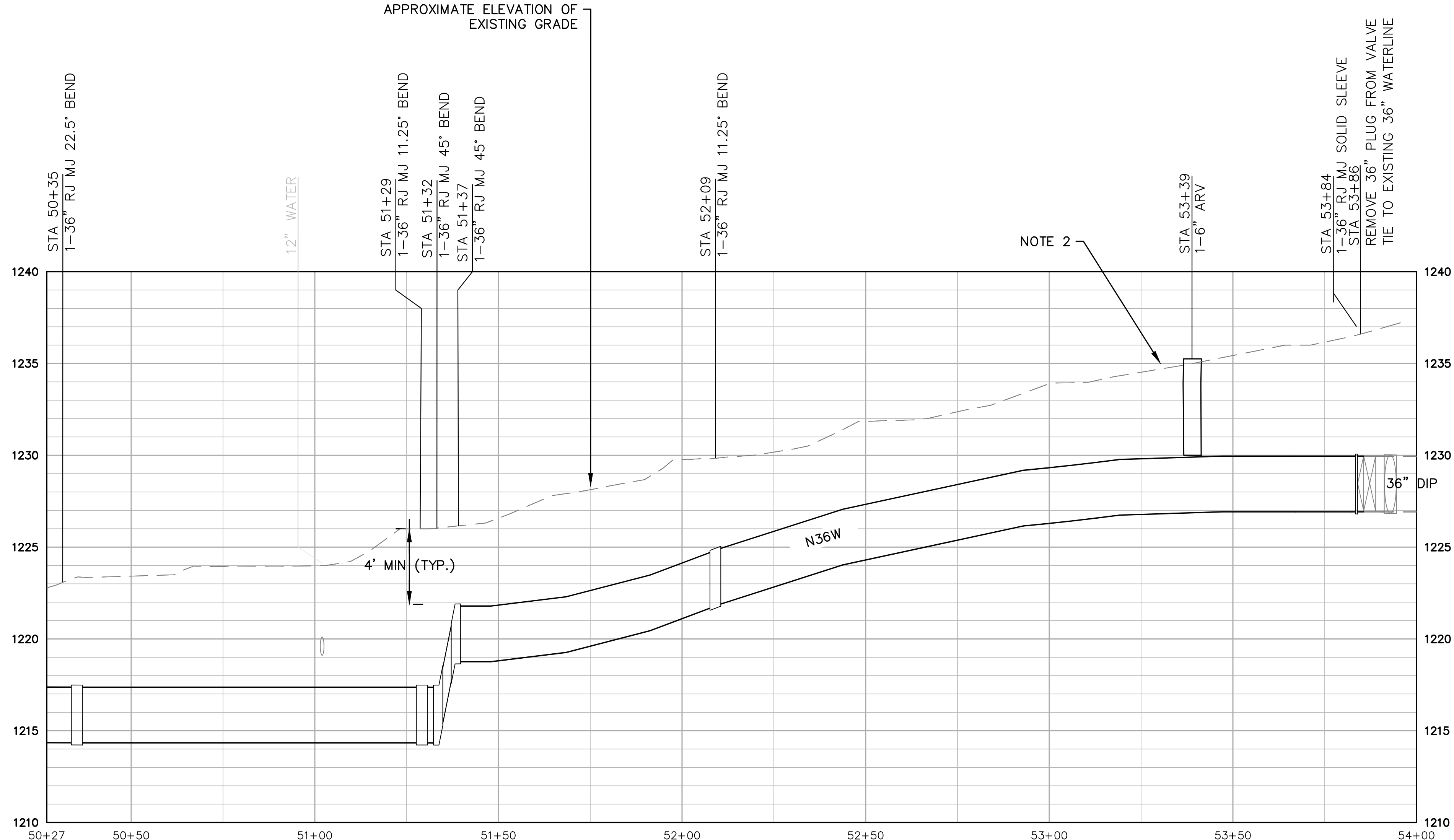
SHEET:	C35
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DATE: MARCH, 2019

PROJ NO: 100182.15
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## IMPACT SITE #2

PROFILE

SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.
2. VERIFY HIGH POINT FOR ARV (TYP. ALL SHEETS).  
LOCATE ARV OUT OF ROADWAY.

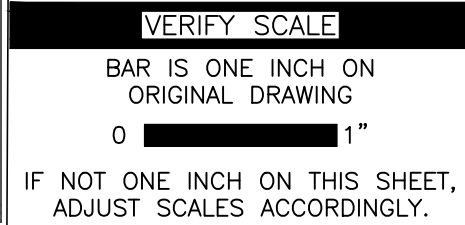


368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD

HWY 400  
WATERLINE RELOCATION

IMPACT SITE #2  
STA. 50+35 TO STA. 53+86

## FOR BIDS

PLAN: SEE C19

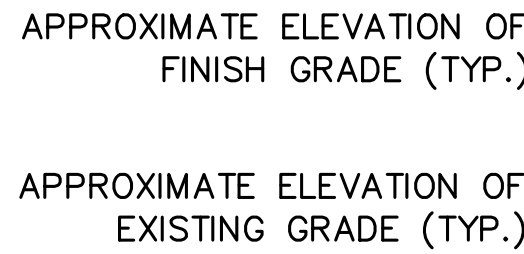
SHEET: C36

DATE: MARCH, 2019

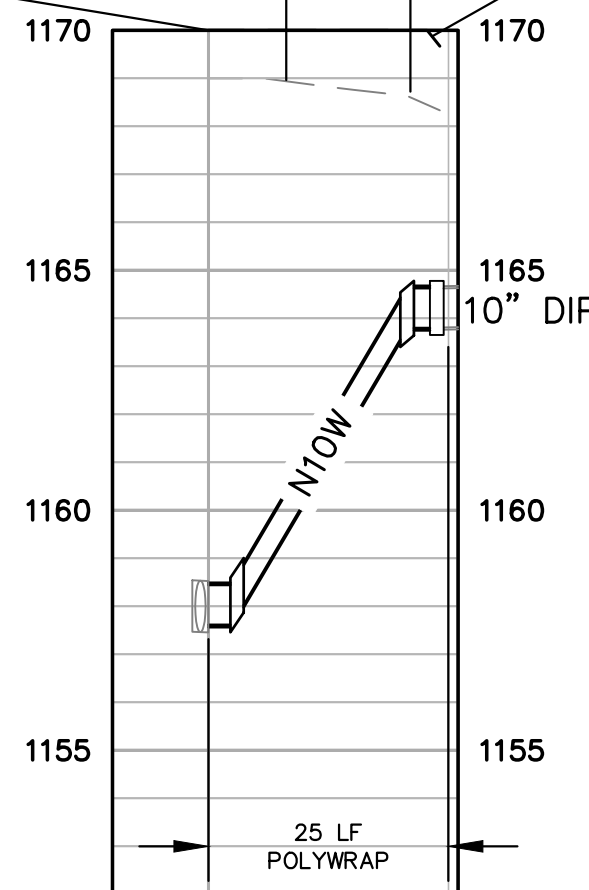
PROJ NO: 100182.15



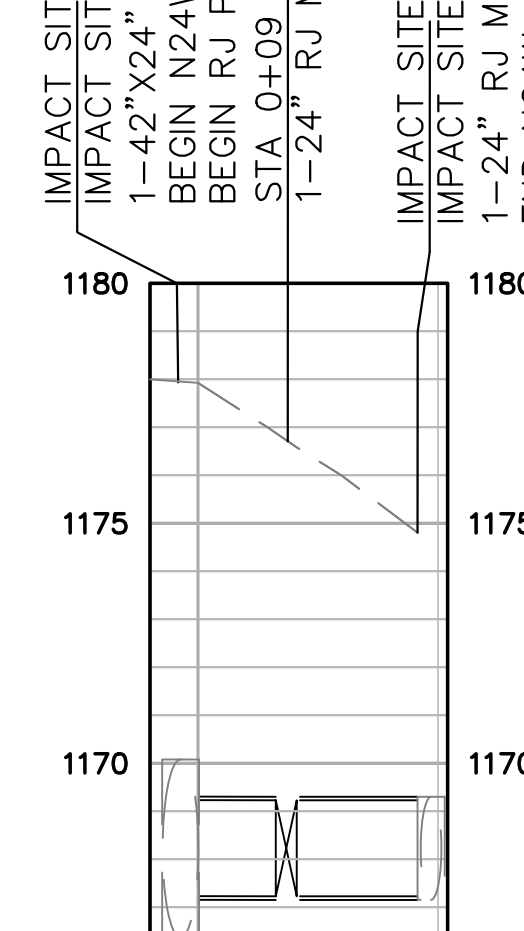
Z:\Project Files\100182 - Forsyth County GA\100182.15 - Browns Bridge Road Water Main Project\300 Design\365 Intermediate Drawings\100182.15 HWY 400 PROFILES PS.dwg



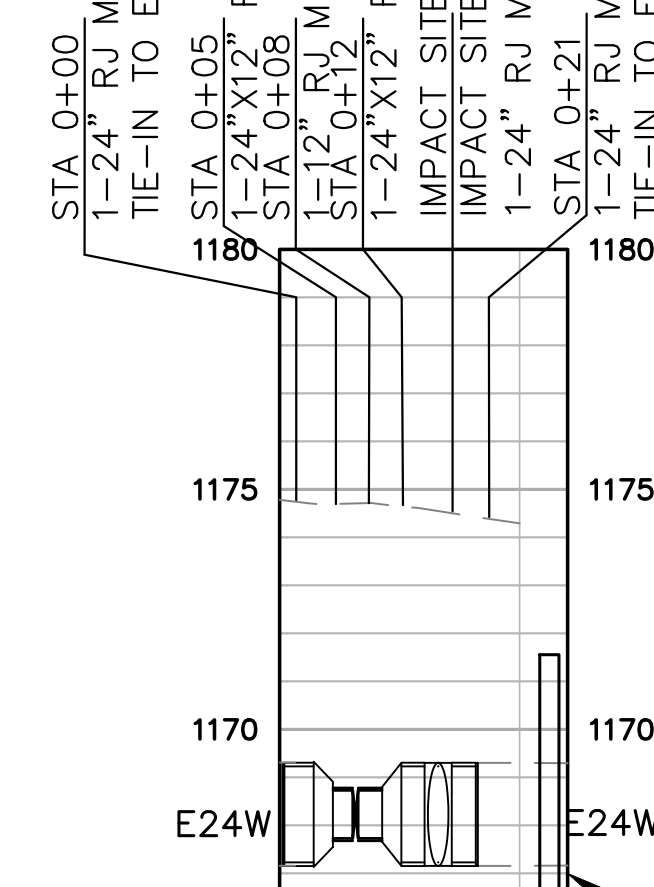
SCALE: HOR.: 1"=20'  
VERT.: 1"=4'



SCALE: HOR.: 1"=20'  
VERT.: 1"=4'



SCALE: HOR.: 1"=20'  
VERT.: 1"=4'



SCALE: HOR.: 1"=20'  
VERT.: 1"=4'

~ CONCRETE DEADMAN

NOTE:

1. ALL PIPE SHALL BE RESTRAINED JOINT.
2. 10" AND 12" PIPE SHALL BE RESTRAINED JOINT WITH CONCRETE THRUST BLOCK AT FITTINGS.



368 WEST PIKE ST. SUITE 10  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



APVD	BY	REVISIONS	DATE	NO.

DSGN
DRN
CHK
APVD



VERIFY SCALE

BAR IS ONE INCH ON

ORIGINAL DRAWING

IF NOT ONE INCH ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

### IMPACT SITES #3, 4, & 5

## FOR BIDS

PLAN: SEE  
C5, C12A

SHEET: C37

DATE: MARCH 2010

PROJ NO: 100182.15







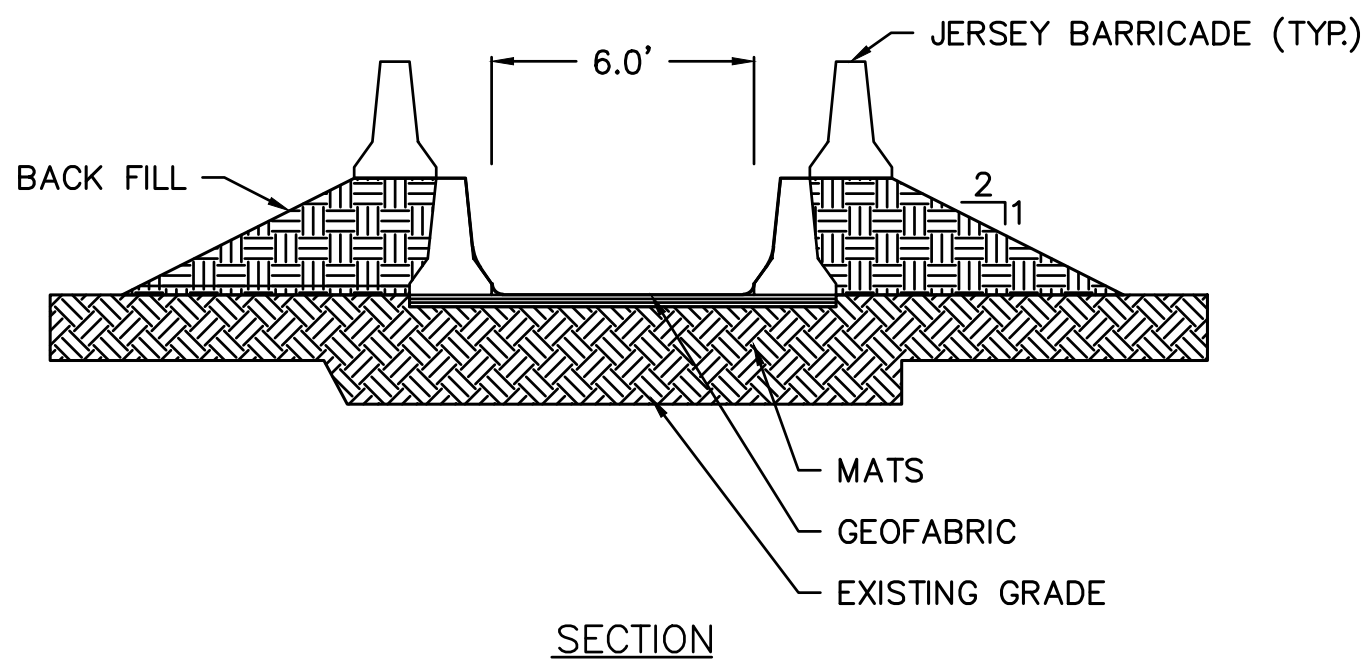
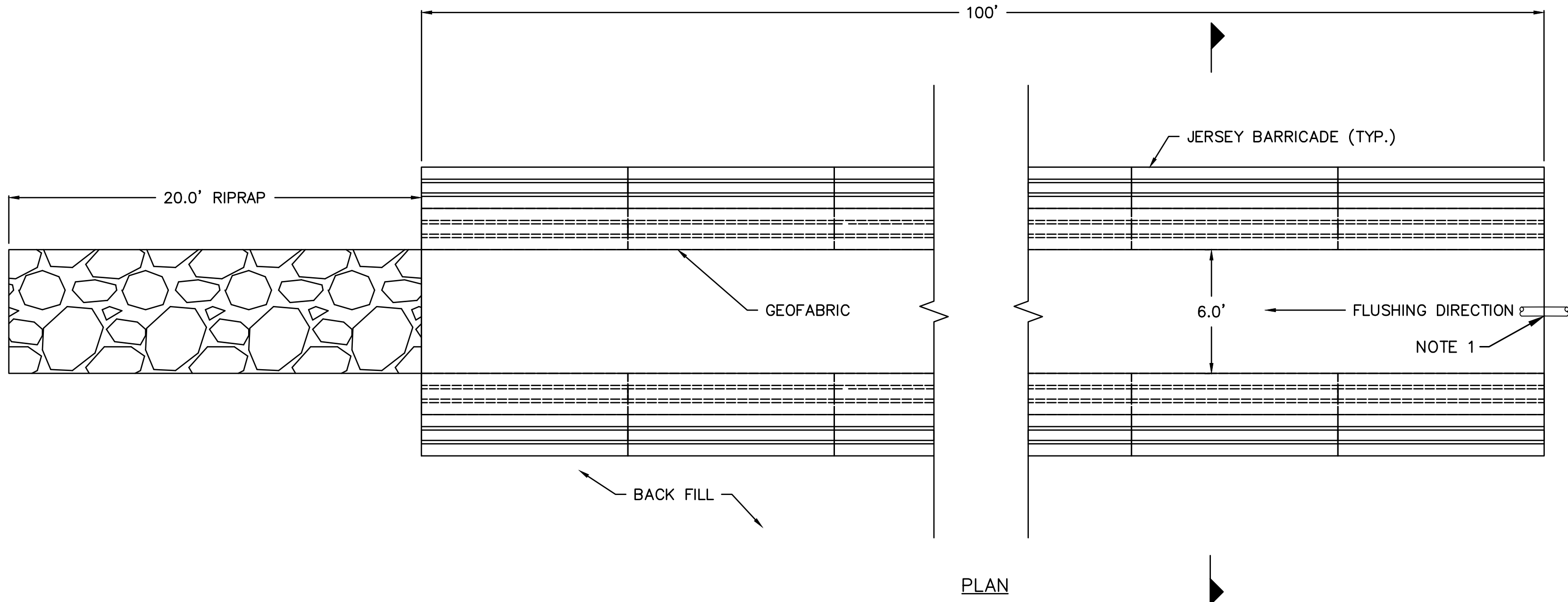








X:\Projects\100182.15 - Forsyth County, GA\100182.15 - Browns Bridge Road Water Main Project\03 Design\05c Intersections Drawings\Legend and Detail For Bidding  
REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CONSTANTINE ENGINEERING. HOWEVER, THIS SHALL NOT PROHIBIT THE REUSE OF THIS DOCUMENT BY THE CLIENT AS PROVIDED FOR BY THE CONTRACT.



FLUSHING PAD

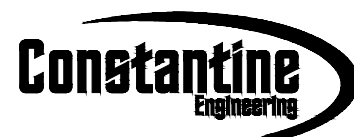
DETAIL

SCALE: NONE

1  
C19

- NOTES:
1. ROUTE TEMPORARY PIPING FROM NEW MAIN TO FLUSHING PAD. SUPPORT PIPING AS REQUIRED. PROVIDE MINIMUM 24-INCH FLUSHING PIPE FOR 36 AND 42-INCH MAINS.
  2. PROVIDE A MINIMUM OF 1 WEEK NOTICE FOR FLUSHING
  3. PROVIDE DOWNSTREAM EROSION PROTECTION AS REQUIRED.

FOR BIDS



368 WEST PIKE ST. SUITE 104  
LAWRENCEVILLE, GA 30046  
PH. 678-241-4070



3-26-19

APVD	BY	REVISIONS	DATE	NO.	APVD

DSGN  
DRN  
CHK

APVD



VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING  
0 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HWY 400  
WATERLINE RELOCATION

CONSTRUCTION DETAILS

SHEET: CD4  
DWG NO:  
DATE: MARCH, 2019  
PROJ NO: 100182.15