

# BLUE JAY ROAD WATER MAIN EXT A

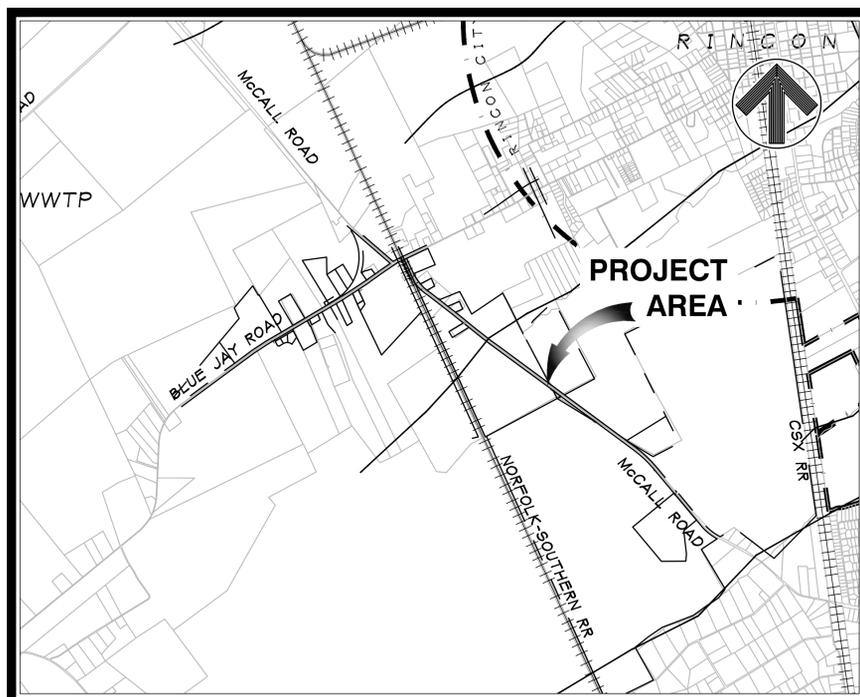
## FOR EFFINGHAM COUNTY, GEORGIA

COUNTY MANAGER  
TIM CALLANAN

DIRECTOR OF DEVELOPMENT SERVICES/COUNTY ENGINEER  
CHARLES L. GEORGE, P.E.

COMMISSION

WESLEY CORBITT – CHAIRMAN AT LARGE  
FORREST FLOYD – DISTRICT 1  
ROGER BURDETTE – DISTRICT 2  
JAMIE DELOACH – DISTRICT 3  
REGGIE LOPER – DISTRICT 4  
PHIL KIEFFER – DISTRICT 5



VICINITY MAP  
SCALE: 1"=2000'



SEPTEMBER 2020

**HUSSEY GAY BELL**  
— Established 1958 —

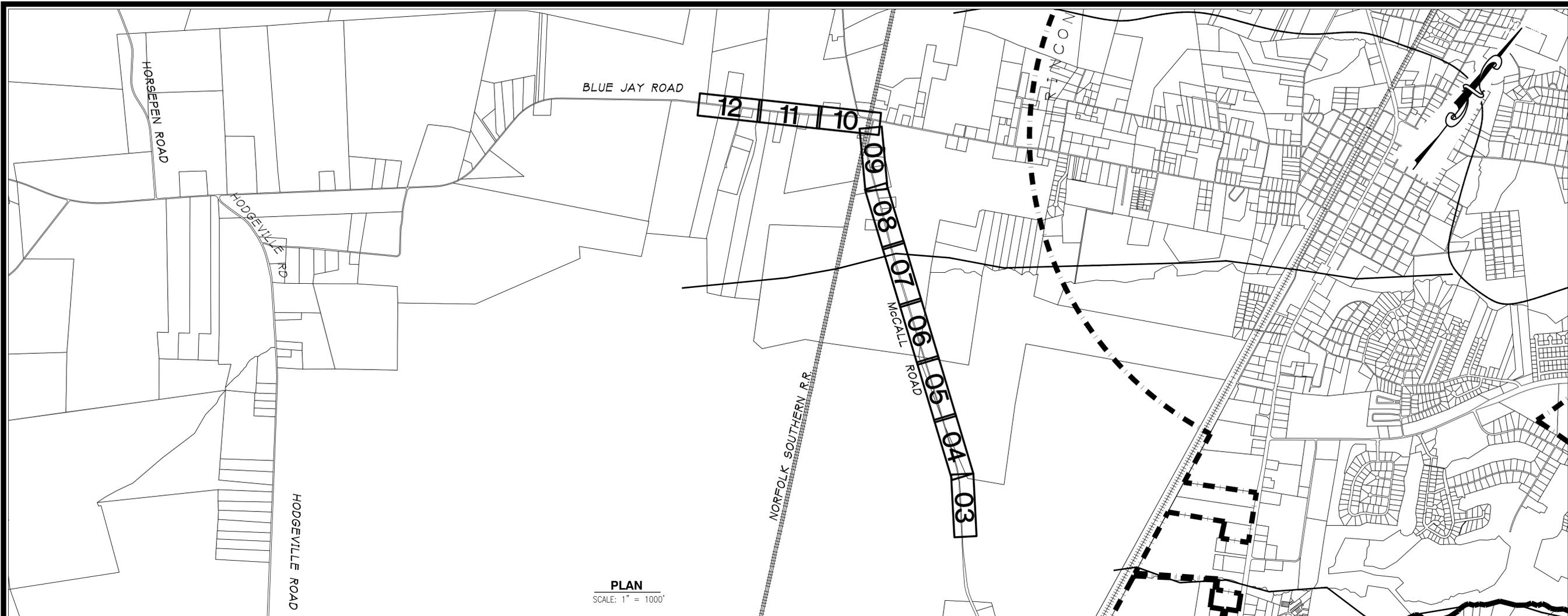
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T:912.354.4626  
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SHEET NO.	DESCRIPTION
01	COVER SHEET, VICINITY MAP & SCHEDULE OF DRAWINGS
02	PROJECT MAP, LEGEND & GENERAL NOTES
03	16" WATER MAIN PLAN & PROFILE
04	16" WATER MAIN PLAN & PROFILE
05	16" WATER MAIN PLAN & PROFILE
06	16" WATER MAIN PLAN & PROFILE
07	16" WATER MAIN PLAN & PROFILE
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13	EROSION & SEDIMENT CONTROL NOTES
14	EROSION & SEDIMENT CONTROL NOTES
15	MISCELLANEOUS DETAILS
16	MISCELLANEOUS DETAILS
17	MISCELLANEOUS DETAILS

SCHEDULE OF DRAWINGS

ISSUED FOR BID - 09/03/2020

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**PLAN**  
SCALE: 1" = 1000'

**LEGEND**

EXISTING	PROPOSED	EXISTING	PROPOSED
□	GAS METER	IE 51.80	DIP DUCTILE IRON PIPE
⊕	TRANSFORMER	53.8	MJ MECHANICAL JOINT
□MB	MAILBOX		RJ RESTRAINED JOINT
□	TELEPHONE PEDESTAL		INVERT ELEVATION
LP ⚡	LIGHT POLE		EXISTING ELEVATION
SL *	SPOT LIGHT		MATCHLINE-SEE DWG C MATCH LINE
YL *	YARD LIGHT		RAILROAD
WMH ⊕	WATER VALVE INSIDE MANHOLE		SOIL BORING
⊕EMH	ELECTRIC MANHOLE		REMOVE AND REPLACE EXISTING PAVEMENT AND BASE COURSE
⊕PP	POWER POLE		ASPHALT PAVEMENT
TP ⚡	TELEPHONE POLE		CONCRETE PAVEMENT
Sign □	TRAFFIC SIGN		DITCH
--- R/W ---	RIGHT OF WAY		CHECK DAM-STONE
--- CMF ---	RIGHT OF WAY MARKER		TEMPORARY SEDIMENT TRAP
▣	DRAINAGE INLET		TEMPORARY SEDIMENT BARRIER
▲	BENCHMARK		TEMPORARY GRASSING
X X X X	FENCE		PERMANENT GRASSING
FH ⊕	FIRE HYDRANT W/VALVE		SILT FENCE Sd1-A 4'
16" W	WATER LINE		Sd1-B 3'
UGE	UNDERGROUND ELECTRIC		Sd1-C 4' Single Row
GAS	UNDERGROUND GAS LINE		Sd1-C 4' Double Row
UGT	UNDERGROUND TELEPHONE LINE		
SAN	SANITARY SEWER LINE		
18" RCP	STORM DRAIN LINE		
MHO	MANHOLE		
FM	FORCE MAIN		
GV	GATE VALVE OR BUTTERFLY VALVE IN BOX		
WM □	WATER METER		
OHP	OVERHEAD POWER LINE		
OHT	OVERHEAD TELEPHONE LINE		
UGFO	FIBER OPTIC CABLE		
	CURB AND GUTTER		
IPF	IRON PIN		
CMP	CORRUGATED METAL PIPE		
RCP	REINFORCED CONCRETE PIPE		

**GENERAL NOTES**

- It is the requirement of the contractor to make his own interpretation of all surface and subsurface data that is presented as to the nature and extent of the materials to be excavated, graded and compacted. The information shown on these plans and within the specifications does not in any way guarantee the amount or the nature of the material which may be encountered.
- The contractor shall notify the engineer of any conflict with existing utilities not shown on these plans prior to laying any pipe.
- All property/right-of-way lines are approximate, unless monument or pin locations are shown.
- All property monuments and R/W monuments that are disturbed or damaged shall be replaced by a licensed surveyor. Concrete monument markers shall be a minimum 4" x 4" x 2'6".
- All signs, mailboxes, fences, posts, sheds, stored items, etc., moved to perform the work shall be replaced or moved back to the original location and any damage caused by removal and replacement shall be repaired so as to place the item in a condition equal to or better than existing at the start of the work.
- The contractor shall provide a legible set of as-built marked prints to the engineer for approval, prior to final payment, showing in detail all changes from the design drawings. The locations of all service lines shall be shown with dimensions to permanent structures or manholes.
- All work shall be performed in a manner as to permit traffic to operate with the least amount of inconvenience possible. For designated roads, at least one travel lane must remain open at all times. All traffic control devices, signs, striping, and flagging shall be furnished by the contractor.
- All existing driveways will be provided ingress/egress, except during prescheduled construction activities. The contractor must notify all property owners in advance of driveway closings.
- The contractor shall not leave drainage ditches blocked, except for a brief time during actual installation of pipe. Provide temporary bypass drainage as required to have properly functioning drainage at all other times. Regrade all ditches disturbed by installation of pipe.
- Remove and replace driveways and driveway culverts as necessary for pipe installation, unless otherwise noted on drawings.
- The contractor shall temporarily support all driveway culverts during installation of pipe or if necessary remove and replace culverts that are damaged during the pipe installation. Any CMP/CP culverts disturbed or damaged shall be replaced with RCP culverts.
- All ditch banks, existing grass shoulders, and other areas that are disturbed shall be reseeded.
- All items which are to be removed and are not shown to be reused shall become the property of the contractor and shall be removed from the site. The contractor shall be responsible for the proper final disposal of such material.
- The contractor is required to contact all utility companies and have utilities located before work begins. It is the contractor's responsibility to protect all utilities. Any damage to utilities shall be repaired at the expense of the contractor. If trench of pipe is within 5ft. of power poles, contractor must notify power company and take all precautions as required by power company Backfilling and compaction required the same day as excavation occurs.
- It is the contractor's responsibility to coordinate with utility company for any guy wire relocation or temporary utility line disconnections. All fees by utility company for conducting these services shall be paid by the contractor.

- The contractor shall pay special attention to any underground telephone fiber optic cables, and the underground gas mains and the overhead power cables. The contractor must comply with the requirements of the High Voltage Act of Georgia. The contractor shall take every precaution necessary for safety purposes. In areas where construction activities require such, the contractor shall have utility company wrap lines, support poles, etc. The contractor shall pay all fees to the utility company for their work.
- Required shutdown of utility lines and valve and hydrant operation shall be coordinated with Effingham County. All requests for disruption shall be made on minimum by 9:00AM the working day prior to the scheduled interruption.
- Information and locations of buildings, sheds, fences, walls, shrubs, etc. are approximate. Any damage to items not shown to be removed shall be repaired at the contractor's expense.
- Any significant field change to the water main location to provide improved clearances are subject to the engineer's approval.
- The engineer shall approve any dewatering plan prior to its implementation.
- The contractor shall schedule and accomplish the work so as to avoid damage to private property and to minimize any inconvenience to property owners, business and their customers.
- Lines shall be deflected to avoid trees where possible.
- Minimum cover over 16-inch ductile iron water main shall be 3-feet, unless otherwise shown on drawings.
- Where work crosses un-paved driveways, subgrades shall be compacted to DOT Standards and these drives shall be restored from the highway pavement to the property line with a minimum of 4-inches of #57 or #67 compacted stone maintained throughout the contract period. The width of the restored drive shall match the width of the drive as it existed prior to its disturbance.
- Where work crossed paved driveways, the concrete or asphalt shall be removed, subgrades and base material shall be compacted to DOT Standards. Driveways shall be replaced, as indicated on drawings, with material like that removed. The width shall match the existing width of driveway pavement that was removed.
- Where work crosses paved roads, base course and pavement material shall be restored to its original condition in accordance with the Georgia DOT requirements for pavement and the details herein.
- Where road side culverts are to be removed and replaced, the following will be required: The existing pipe shall be removed and disposed of by the Contractor. The culverts shall be replaced with pipe of the same diameter as that which was removed; except pipe with diameters smaller than 18-inches shall be replaced with 18-inch diameter pipe, unless otherwise noted. The new pipe shall be gasketed reinforced concrete pipe(RCP) and each joint shall be double wrapped with filter fabric in accordance with the Effingham County road requirements.
- All fittings shall be ductile iron, mechanical joint, compact type, conforming to ANSI/AWWA C153/A21.53, latest revision, except 16-inch plug, conforming to ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11, latest revision.
- Restrained Joints(RJ) shall be mechanical joints with ductile iron retainer glands equivalent to Ford 1390 series, EBBA MEGALUG series 1100, EBBA series 2000 PV for PVC pipe or push-on joints equivalent to "Lock Ring", TR-Flex, Super Lock or "Field Lock."
- Mylar marking tape shall be 2-inches wide, of blue color and have imprinted on the tape "Caution - Water Main Below". The tape shall be a printed warning tape encased in mylar. Mylar tape to be installed 18-inches below grade.

DATUM:  
NAD 1983 HORIZONTAL  
NAVD 1988 VERTICAL

ISSUED FOR BID - 09/07/2020



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REVISIONS:

NO.	DATE	DESCRIPTION
07/13/2020	GSWCC	REVISIONS

DESIGNED	DRAWN	CHECKED
JCB	SKK	JOH

DATE: SEPTEMBER 2020  
JOB NO. 119224449  
SCALE: AS SHOWN

**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
PROJECT MAP, LEGEND & GENERAL NOTES

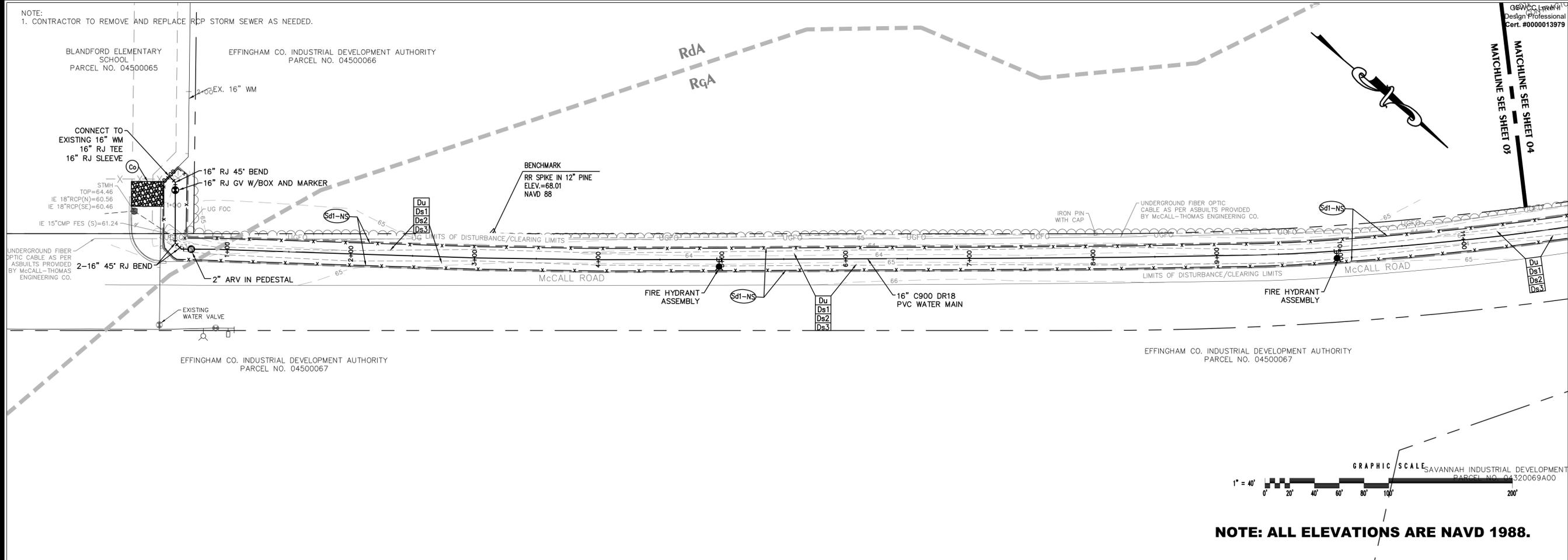
DRAWING NUMBER  
**02**  
OF XX

NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.

BLANDFORD ELEMENTARY SCHOOL  
PARCEL NO. 04500065

EFFINGHAM CO. INDUSTRIAL DEVELOPMENT AUTHORITY  
PARCEL NO. 04500066

DESIGNED BY  
L. BURKE  
Design Professional  
Cert. #0000013979



EFFINGHAM CO. INDUSTRIAL DEVELOPMENT AUTHORITY  
PARCEL NO. 04500067

EFFINGHAM CO. INDUSTRIAL DEVELOPMENT AUTHORITY  
PARCEL NO. 04500067



NOTE: ALL ELEVATIONS ARE NAVD 1988.



16" WATER MAIN PROFILE

SCALE: HORIZONTAL 1" = 40'  
VERTICAL 1" = 4'



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REVISIONS:

NO.	DATE	DESCRIPTION
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DESIGNED	DRAWN	CHECKED
JCB	SKK	JGH
DATE: SEPTEMBER 2020		
JOB NO. 119224449		
SCALE: AS SHOWN		

BLUE JAY ROAD WATER MAIN EXT A  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
16" WATER MAIN PLAN & PROFILE

DRAWING NUMBER  
**03**

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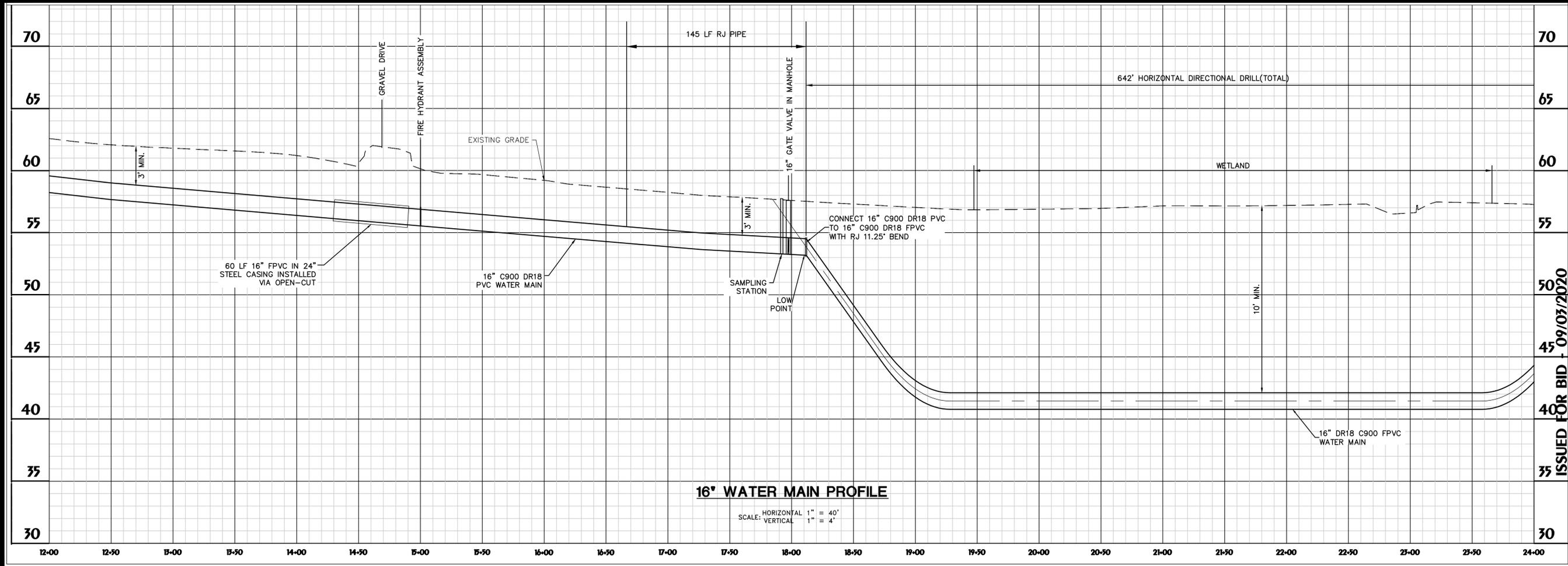
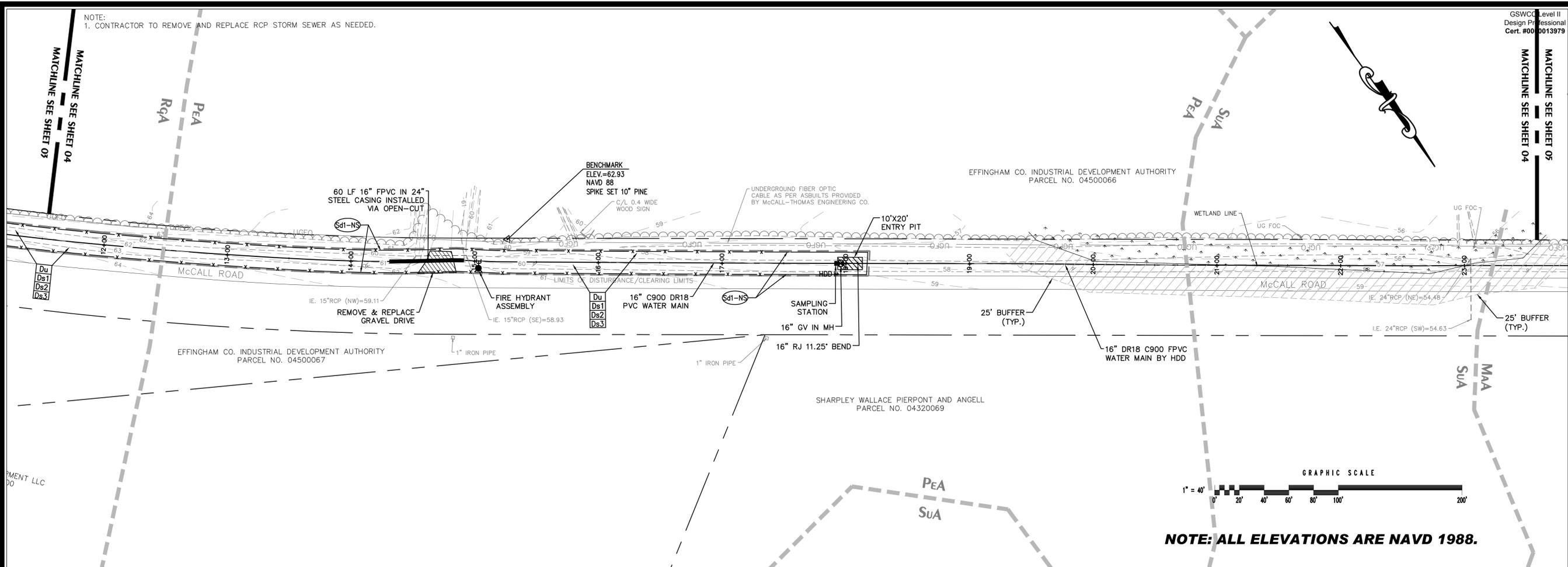
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DESIGNED	DRAWN	CHECKED
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DATE: SEPTEMBER 2020		
JOB NO. 119224449		
SCALE: AS SHOWN		

**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**16" WATER MAIN PLAN & PROFILE**

DRAWING NUMBER  
**04**

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NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.

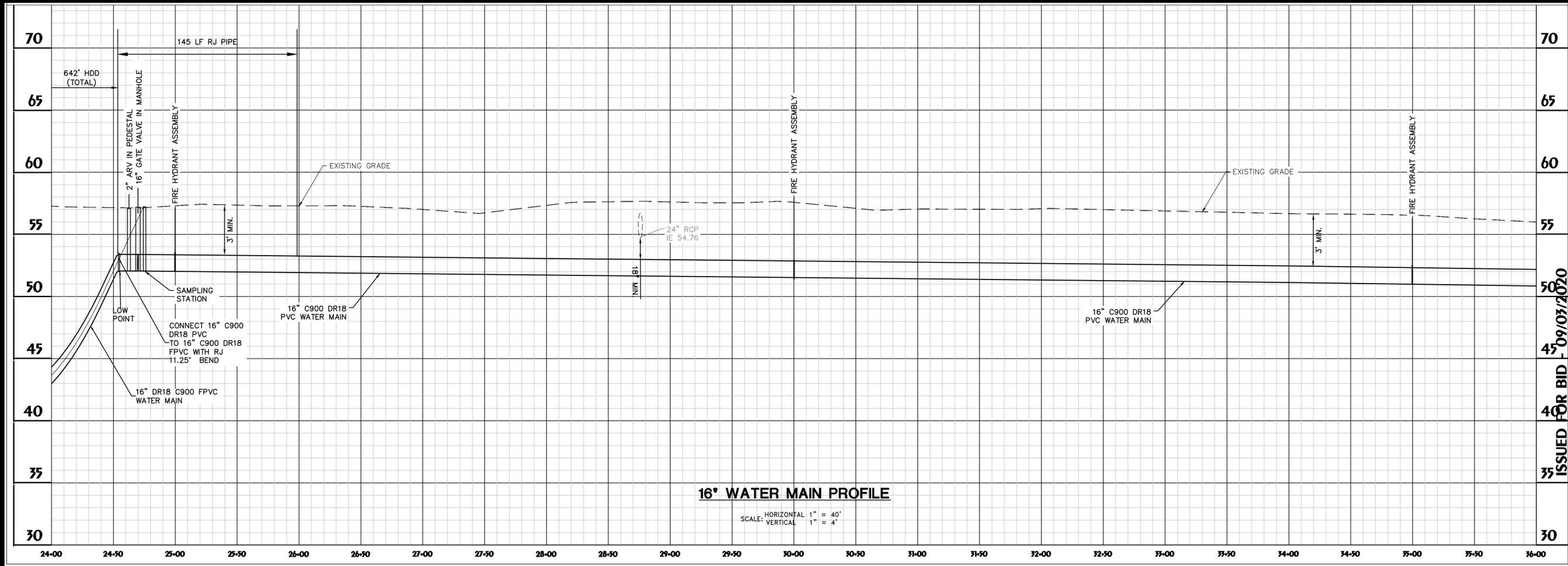
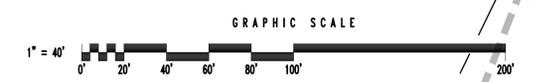
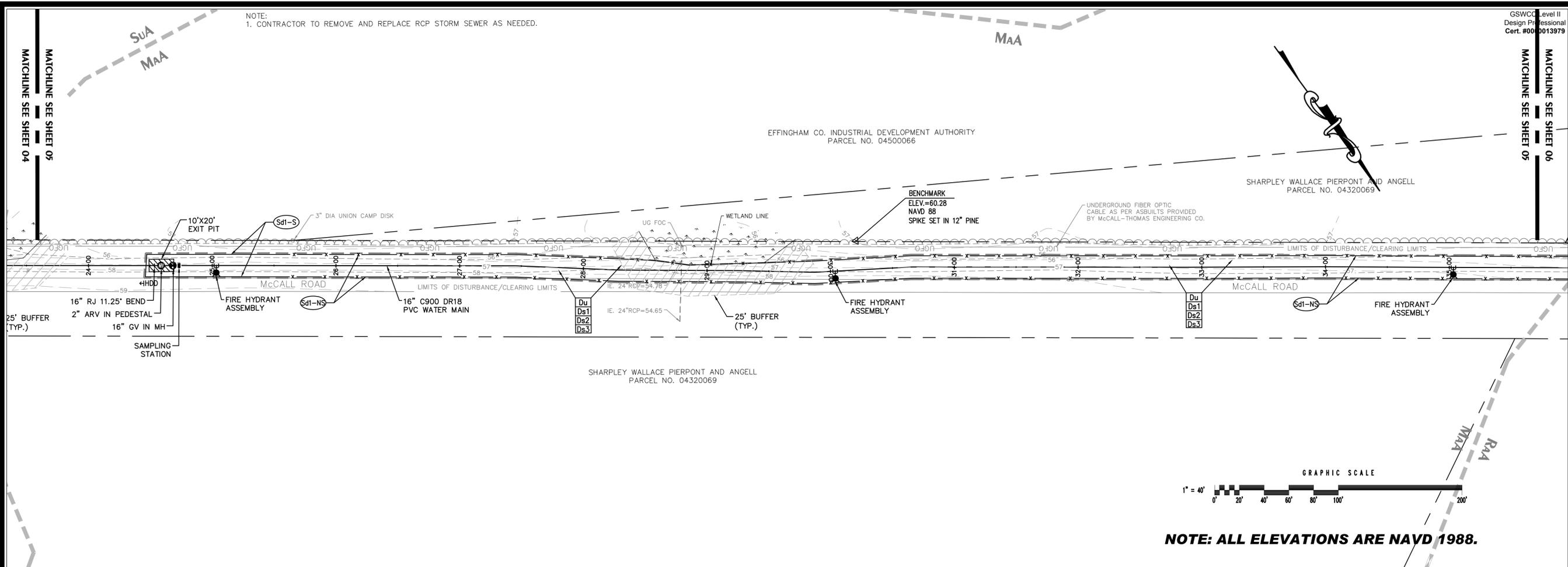
MATCHLINE SEE SHEET 05  
MATCHLINE SEE SHEET 04

McCALL ROAD  
EFFINGHAM CO. INDUSTRIAL DEVELOPMENT AUTHORITY  
PARCEL NO. 04500067  
SHARPLEY WALLACE PIERPONT AND ANGELL  
PARCEL NO. 04320069  
WETLAND LINE  
UG FOC  
10'X20' ENTRY PIT  
UNDERGROUND FIBER OPTIC CABLE AS PER ASBUILTS PROVIDED BY McCALL-THOMAS ENGINEERING CO.  
BENCHMARK  
ELEV.=62.93  
NAVD 88  
SPIKE SET 10" PINE  
C/L 0.4" WIDE WOOD SIGN  
60 LF 16" FPVC IN 24" STEEL CASING INSTALLED VIA OPEN-CUT  
Sd1-NS  
16" C900 DR18 PVC WATER MAIN  
FIRE HYDRANT ASSEMBLY  
IE. 15"RCP (NW)=59.11  
IE. 15"RCP (SE)=58.93  
SAMPLING STATION  
16" GV IN MH  
16" RJ 11.25" BEND  
1" IRON PIPE  
25' BUFFER (TYP.)  
16" DR18 C900 FPVC WATER MAIN BY HDD  
IE. 24"RCP (NE)=54.46  
IE. 24"RCP (SW)=54.63  
25' BUFFER (TYP.)  
RgA  
PeA  
SuA  
MMA  
SuA



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NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.



**16" WATER MAIN PROFILE**

SCALE: HORIZONTAL 1" = 40'  
VERTICAL 1" = 4'

REVISIONS:

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DESIGNED	DRAWN	CHECKED
JCB	SKK	JGH
DATE: SEPTEMBER 2020		
JOB NO. 119224449		
SCALE: AS SHOWN		

**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**16" WATER MAIN PLAN & PROFILE**  
ISSUED FOR BID 09/07/2020

DRAWING NUMBER  
**05**



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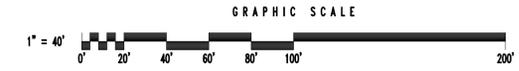
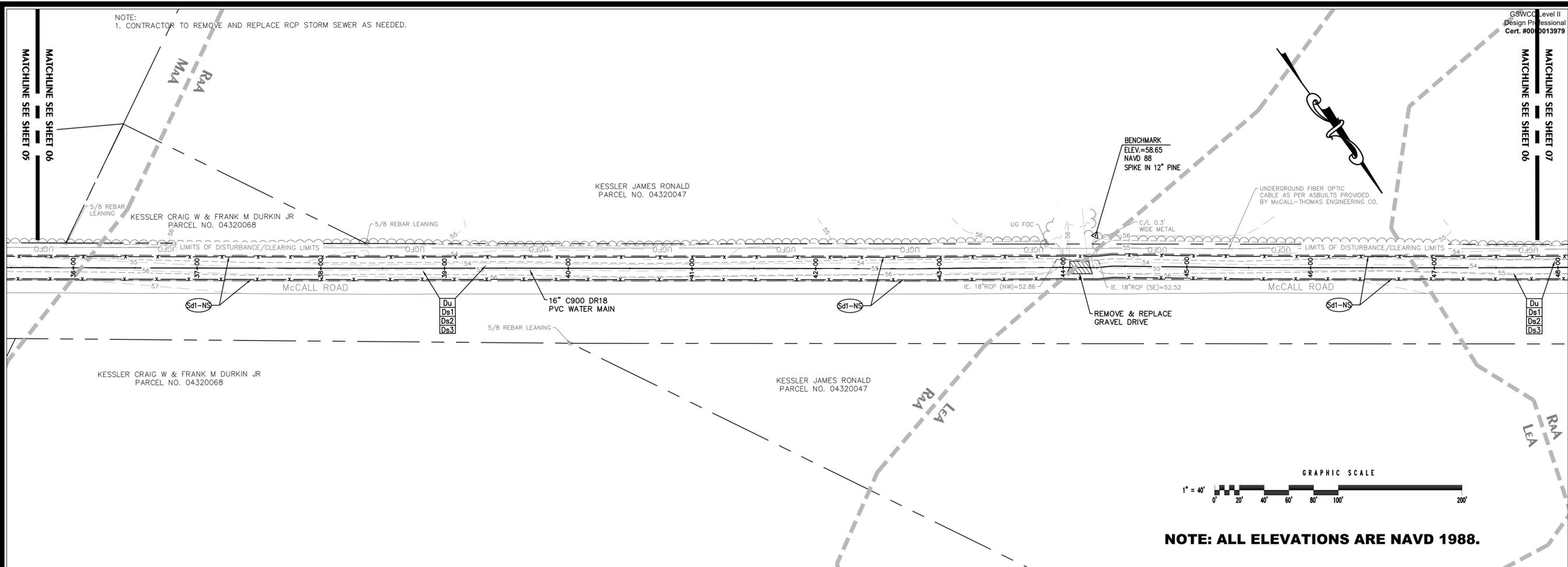
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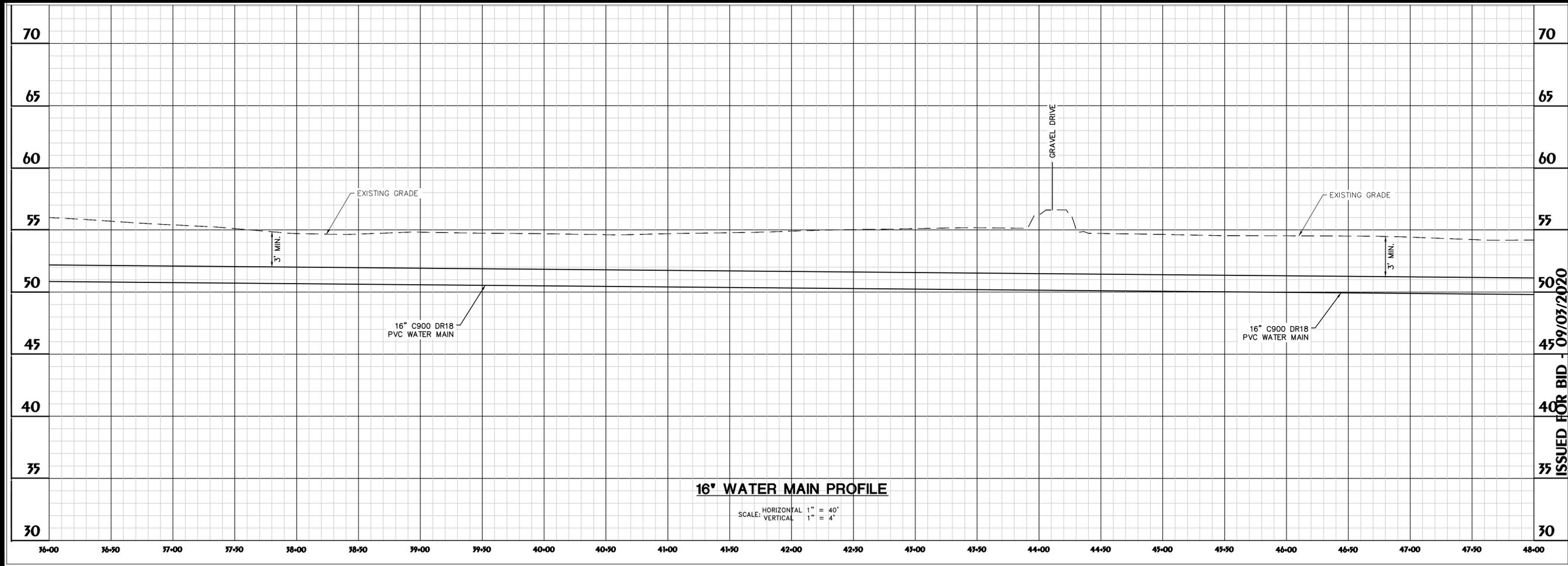
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JOB NO. 119224449		
SCALE: AS SHOWN		

**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**16" WATER MAIN PLAN & PROFILE**

DRAWING NUMBER  
**06**



**NOTE: ALL ELEVATIONS ARE NAVD 1988.**



**16" WATER MAIN PROFILE**

SCALE: HORIZONTAL 1" = 40'  
VERTICAL 1" = 4'

ISSUED FOR BID - 09/07/2020

MATCHLINE SEE SHEET 05

MATCHLINE SEE SHEET 07

NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.

NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.

GSWCC Level II  
Design Professional  
Cert. #00113979



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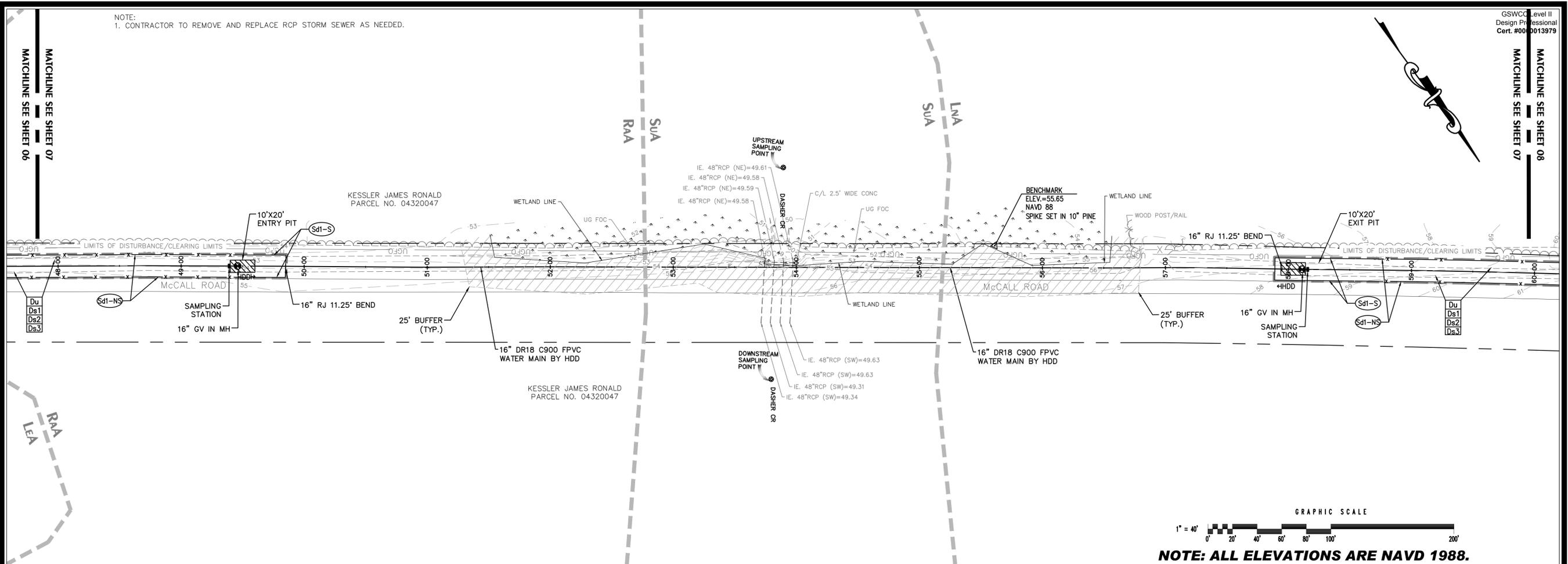
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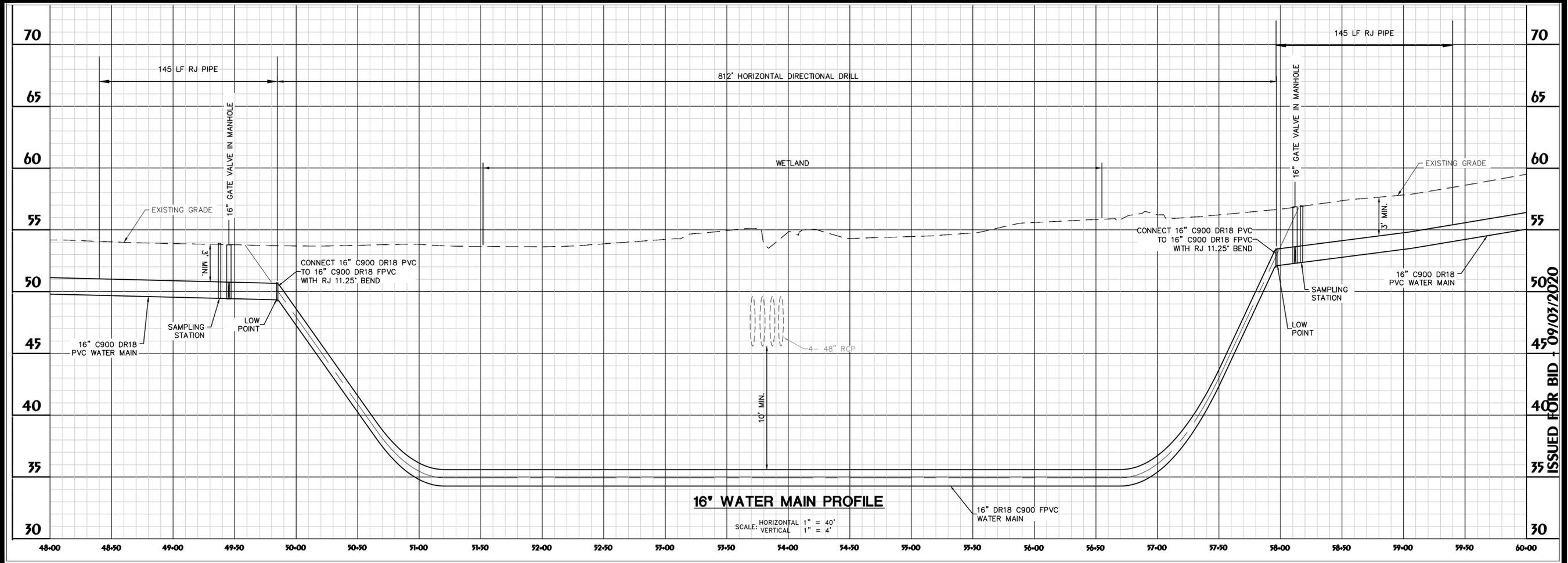
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JOB NO. 119224449		
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**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**16" WATER MAIN PLAN & PROFILE**

DRAWING NUMBER  
**07**



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**16" WATER MAIN PROFILE**

SCALE: HORIZONTAL 1" = 40'  
VERTICAL 1" = 4'

ISSUED FOR BID + 09/07/2020

MATCHLINE SEE SHEET 07  
MATCHLINE SEE SHEET 06

MATCHLINE SEE SHEET 08  
MATCHLINE SEE SHEET 07

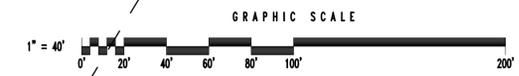
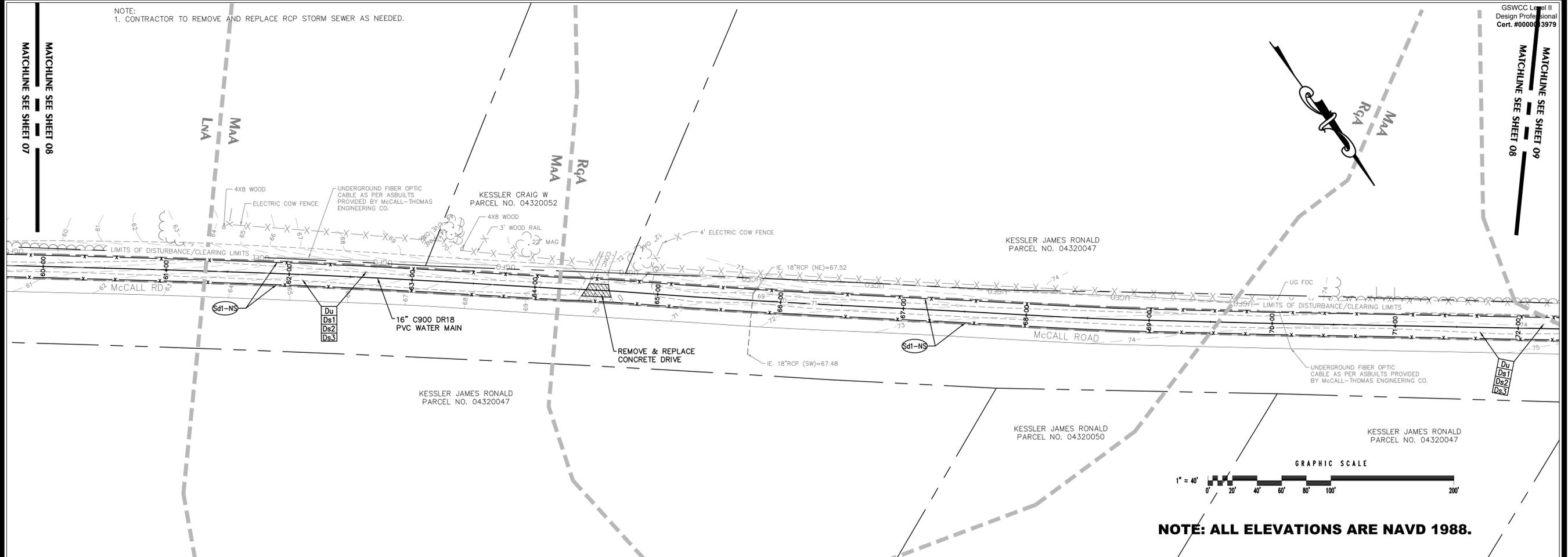
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NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.

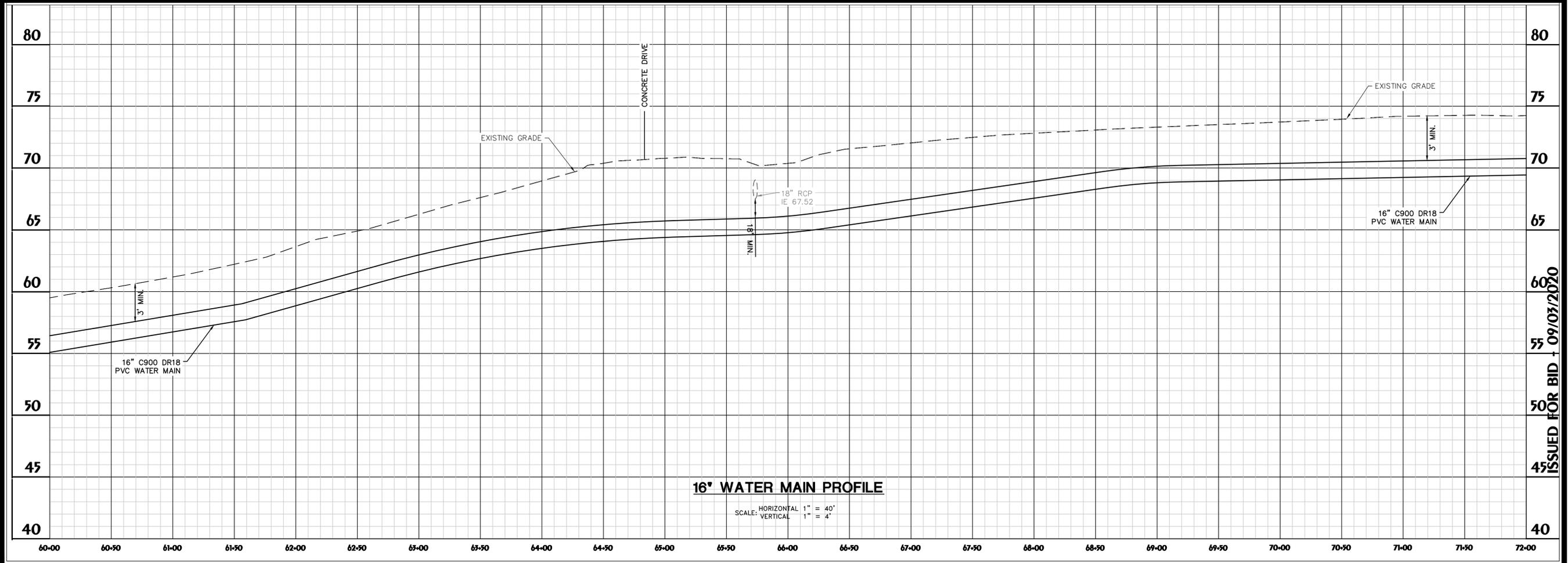
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Design Professional  
Cert. #000003979

MATCHLINE SEE SHEET 07  
MATCHLINE SEE SHEET 08

MATCHLINE SEE SHEET 08  
MATCHLINE SEE SHEET 09



NOTE: ALL ELEVATIONS ARE NAVD 1988.



16" WATER MAIN PROFILE

HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'



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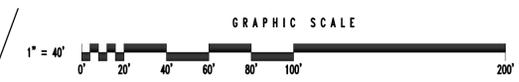
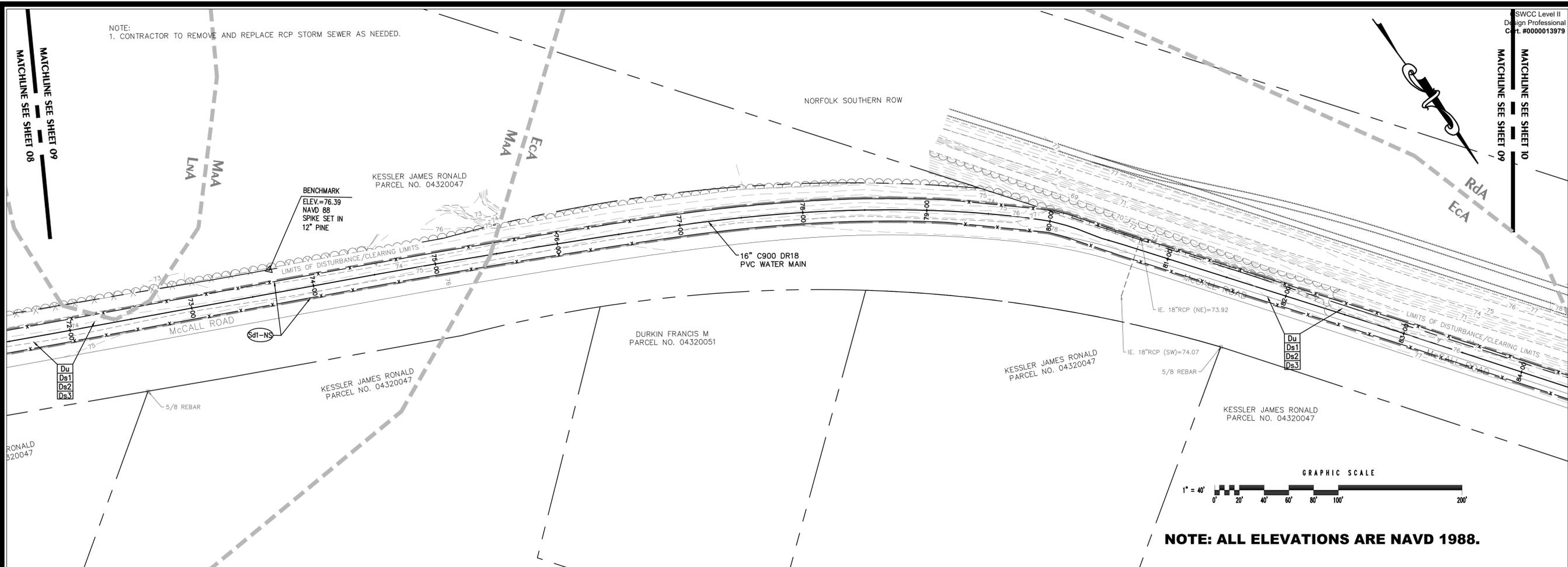
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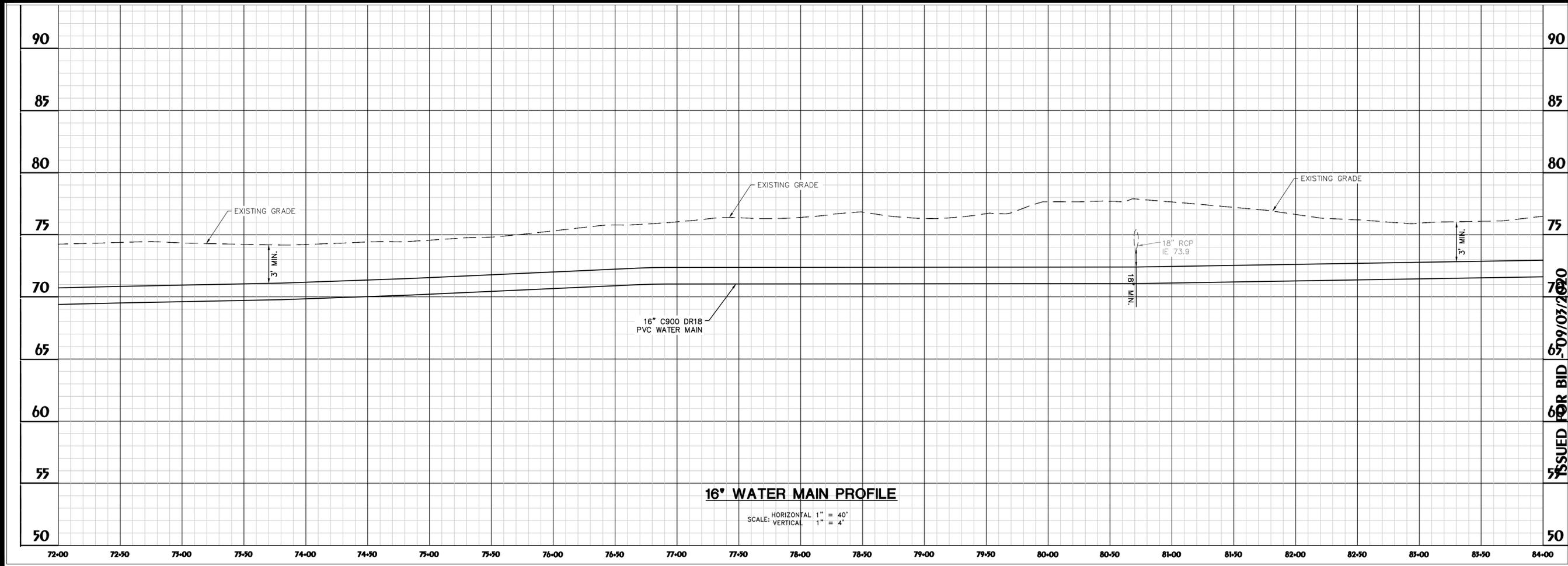
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**08**

NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.

SWCC Level II  
Design Professional  
Ct. #0000013979



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DATE: SEPTEMBER 2020  
 JOB NO. 119224449  
 SCALE: AS SHOWN

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 EFFINGHAM COUNTY, GEORGIA  
 FOR  
 EFFINGHAM COUNTY, GEORGIA  
**16" WATER MAIN PLAN & PROFILE**

DRAWING NUMBER  
**09**

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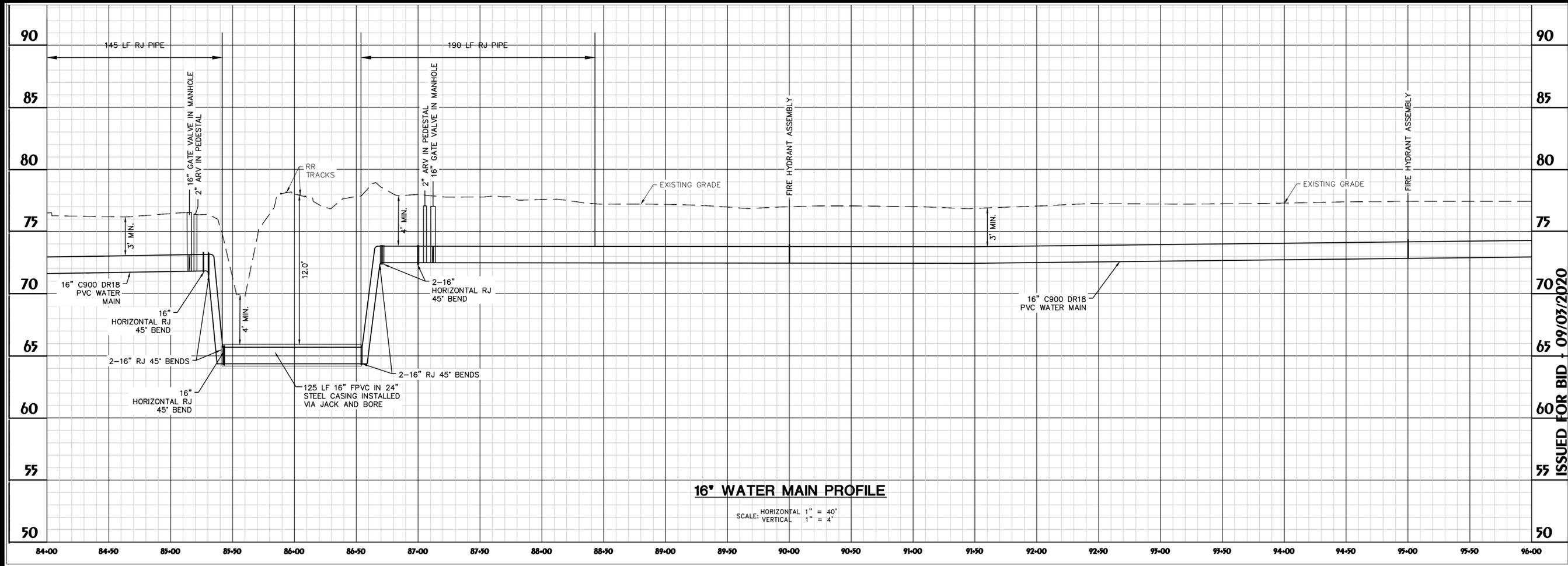
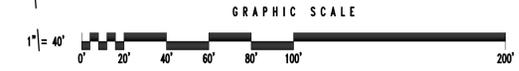
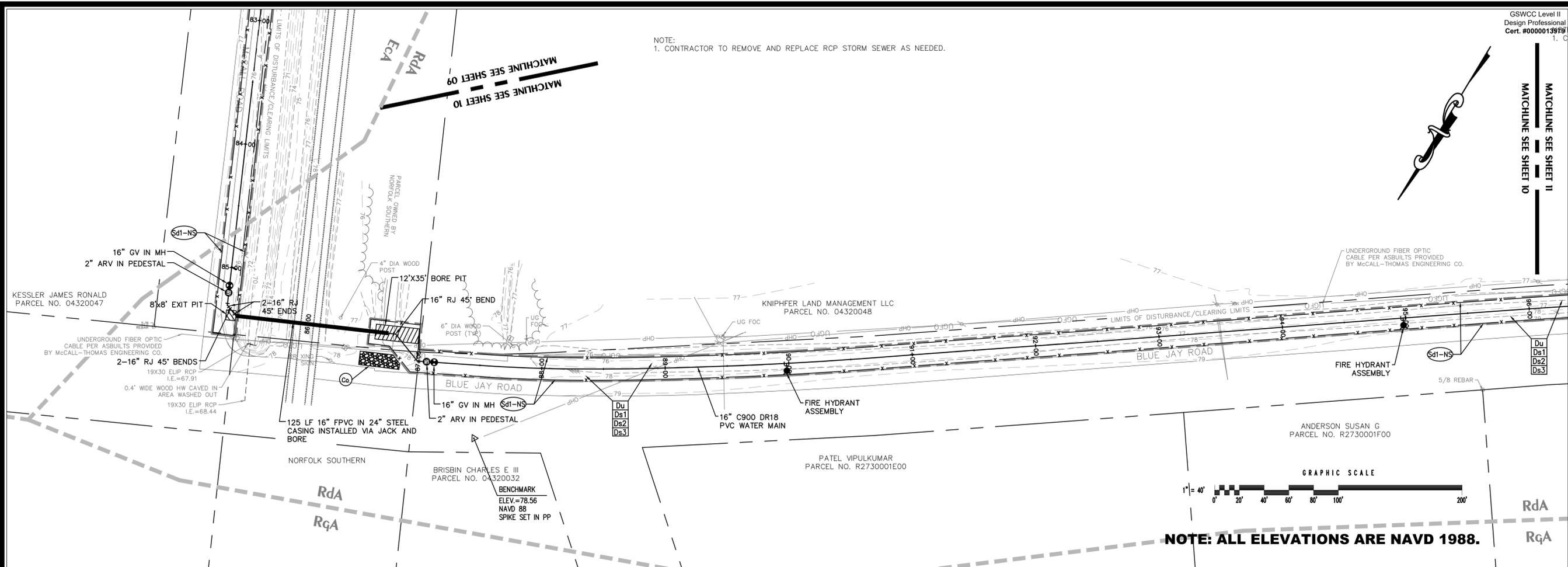
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EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**16" WATER MAIN PLAN & PROFILE**

DRAWING NUMBER  
**10**

NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.



**16" WATER MAIN PROFILE**

HORIZONTAL 1" = 40'  
SCALE: VERTICAL 1" = 4'



**HUSSEY GAY BELL**  
Established 1958  
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626  
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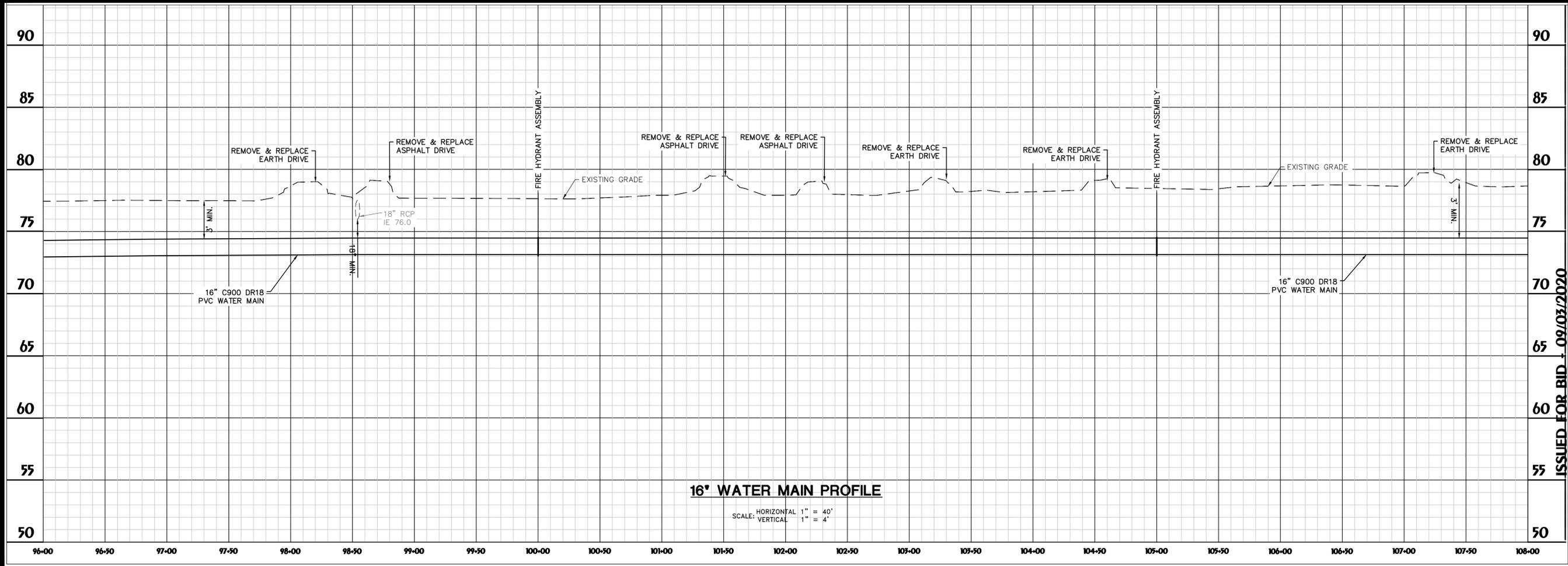
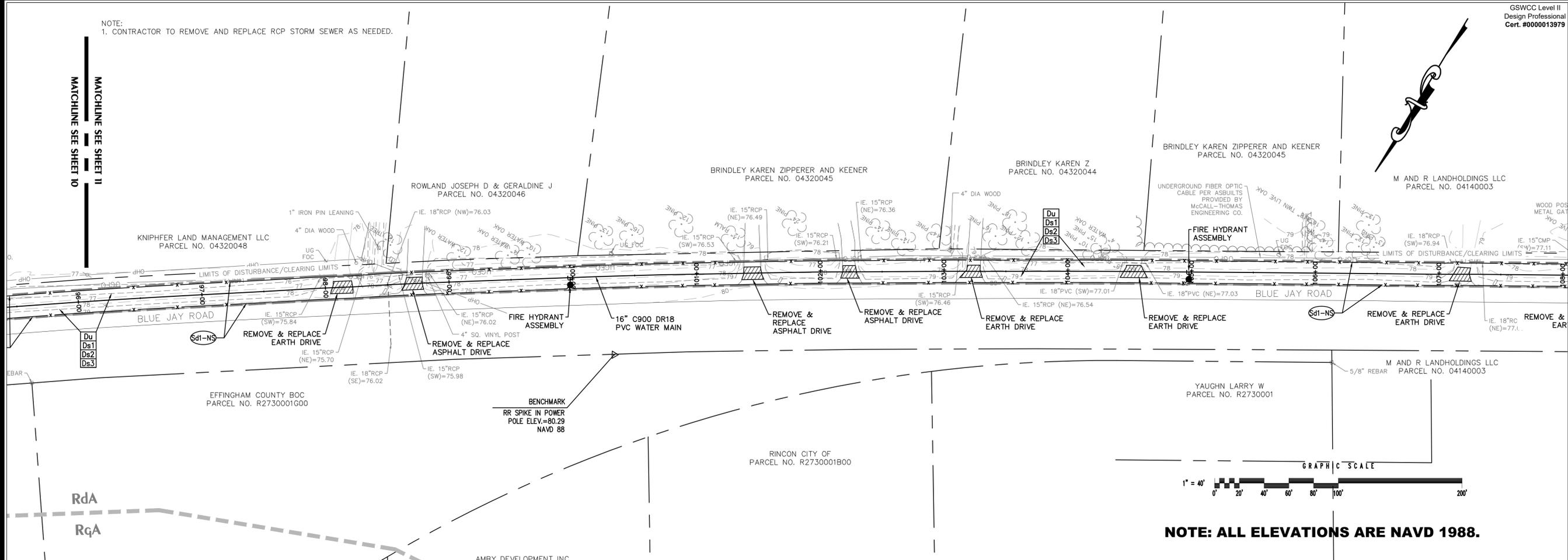
07/13/2020	GSWCC	REVISIONS
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DESIGNED	DRAWN	CHECKED
JCB	SKK	JGH
DATE: SEPTEMBER 2020		
JOB NO. 119224449		
SCALE: AS SHOWN		

**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**16" WATER MAIN PLAN & PROFILE**

DRAWING NUMBER  
**11**

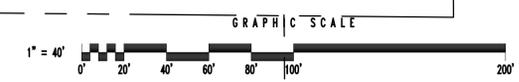
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NOTE:  
1. CONTRACTOR TO REMOVE AND REPLACE RCP STORM SEWER AS NEEDED.

MATCHLINE SEE SHEET II  
MATCHLINE SEE SHEET 10

NOTE: ALL ELEVATIONS ARE NAVD 1988.





**HUSSEY GAY BELL**  
Established 1958  
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626  
CONTRACT # 2020

REVISIONS:

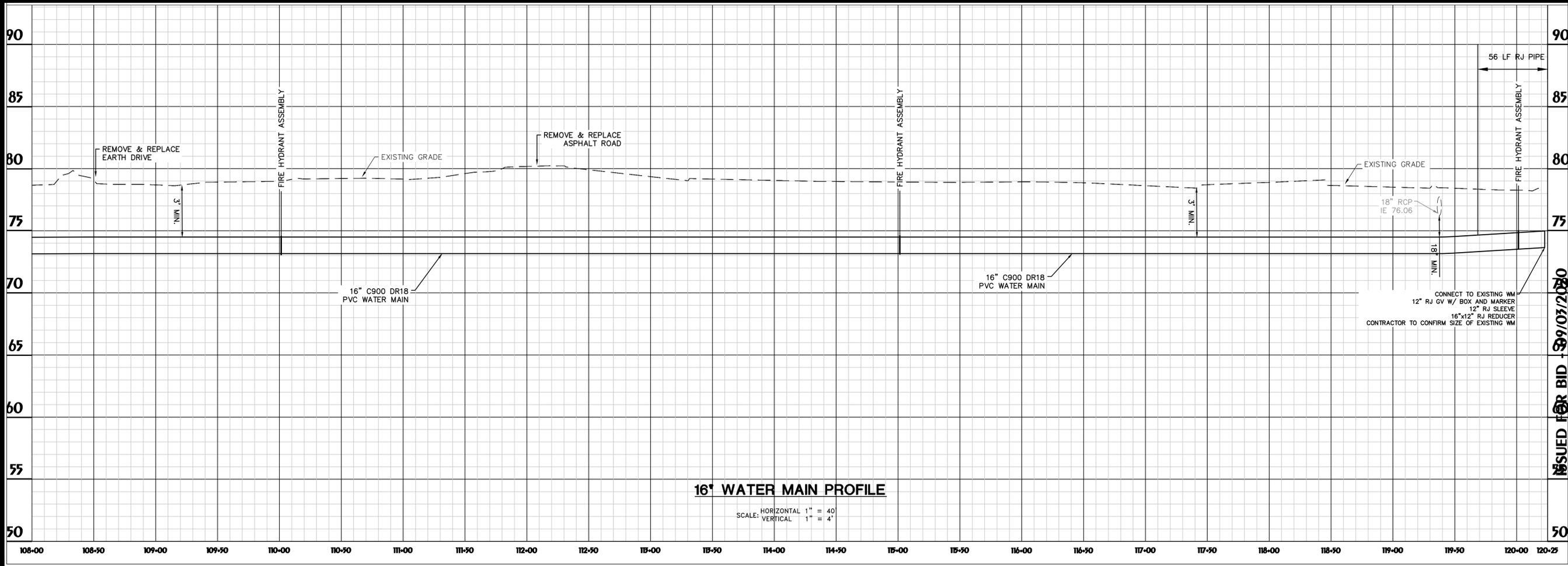
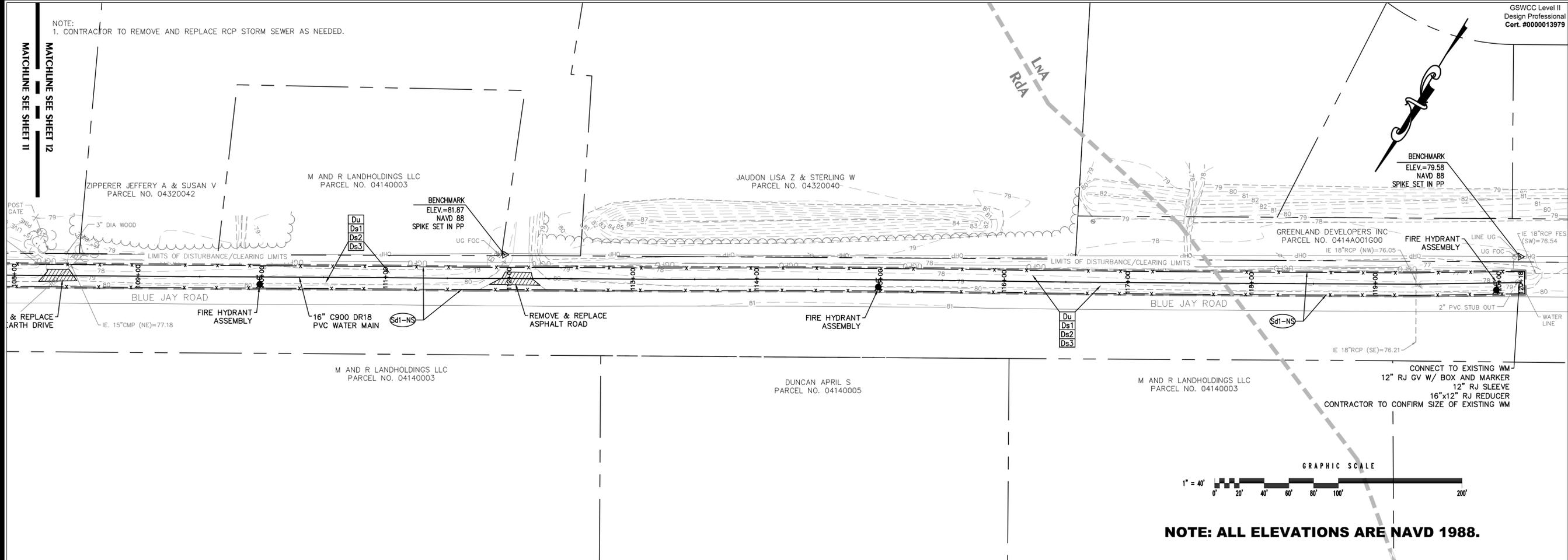
07/13/2020	GSWCC	REVISIONS
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**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**16" WATER MAIN PLAN & PROFILE**

DRAWING NUMBER  
**12**

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ISSUED FOR BID 09/07/2020

# EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES:

GV50371002.dwg 11  
Des: Jrgn / Professional  
Crt: C96/0000037/8979

Plan Page #	Included Y/N	TO BE SHOWN ON ES&PC PLAN
13	Y	1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed.)
13	Y	2 Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC plan or the Plan will not be reviewed.)
13	Y	3 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution.
13	Y	4 Provide the name, address, email address and phone number of primary permittee.
13	Y	5 Note total and disturbed acreage of the project or phase under construction.
13	Y	6 Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
13	Y	7 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
13	Y	8 Description of the nature of construction activity.
13	Y	9 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
13	Y	10 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
13	Y	11 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on Part IV page 21 of the permit.
13	Y	12 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on Part IV page 20 of the permit.
13	Y	13 Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on Part IV D.6.c(3) page 37 of the permit as applicable.
13	Y	14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation." in accordance with Part IV A.5, page 26 of the permit.
13	Y	15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of greatest disturbance or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
13	N/A	16 Provide a description of any buffer encroachments and indicate a buffer variance is required.
13	Y	17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional."
13	Y	18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a section 404 permit."
13	Y	19 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbance activities."
13	Y	20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
13	Y	21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
13	N	22 Any construction activity which discharges storm water into an Impaired Stream Segment or within 1 linear mile upstream of and within the same watershed as, any portion of a Biota Impaired Stream Segment must comply with Part III C. of the Permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment."
13	N/A	23 Fa TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI. The ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan."
13	Y	24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited."
13	Y	25 Provide BMPs for the remediation of all petroleum spills and leaks.
13	Y	26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed."
13	Y	27 Description of practices to provide cover for building materials and building products on site."
13	Y	28 Description of the practices that will be used to reduce the pollutants in storm water discharges."
13	Y	29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
13	Y	30 Provide complete requirements of inspections and record keeping by the primary permittee."
14	Y	31 Provide complete requirements of sampling frequency and reporting of sampling results."
14	Y	32 Provide complete details for retention of records as per Part IV.F. of the permit."
14	Y	33 Description of analytical methods to be used to collect and analyze the samples from each location."
14	Y	34 Appendix B rationale for NTU values at all outlet sampling points where applicable."
14	Y	35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged also provide a summary chart of the justification and analysis for the representative sampling as applicable."
03-12	Y	36 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the plan may combine all of the BMPs into a single phase."
02-12	Y	37 Graphic scale and North arrow.
03-12	Y	38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following: Existing Contours USGS 1": 2000' Topographic Sheets Proposed Contours 1": 400' Centerline Profile
-	N/A	39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPA or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org.
-	N/A	40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A.2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition."
14	Y	41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
03-12	Y	42 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
14	Y	43 Delineation and acreage of contributing drainage basins on the project site.
14	Y	44 Delineate on-site drainage and off-site watersheds using USGS 1": 2000' topographical sheets.
14	Y	45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
-	N/A	46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/delineate all storm water discharge points.
14	Y	47 Soil series for the project site and their delineation.
03-12	Y	48 The limits of disturbance for each phase of construction.
14	Y	49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not obtainable must be included in the plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not obtainable must also be given. Worksheets from the Manual included for structural BMPs and all calculations used by the storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the plan.
14	Y	50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
14	Y	51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
14	Y	52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan by site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia. *Using this checklist for a project that is less than 1 acre and not part of a common development but within 200' of a perennial stream the "checklist items would be N/A.

Effective January 1, 2020

**LEVEL II CERTIFICATION:**  
LEVEL II CERTIFICATION NUMBER ISSUED BY THE COMMISSION, SIGNATURE AND SEAL OF THE CERTIFIED DESIGN PROFESSIONAL. (SEE PROFESSIONAL SEAL)

**24-HOUR LOCAL EROSION AND SEDIMENTATION CONTROL CONTACT:**  
CHARLES GEORGE (912) 754-8000

**PRIMARY PERMITTEE INFORMATION:**  
CHARLES GEORGE, P.E.  
DIRECTOR OF DEVELOPMENT SERVICES/COUNTY ENGINEER  
601 N LAUREL ST, SPRINGFIELD, GA 31329  
(912)754-8000  
cgeorge@effinghamcounty.org

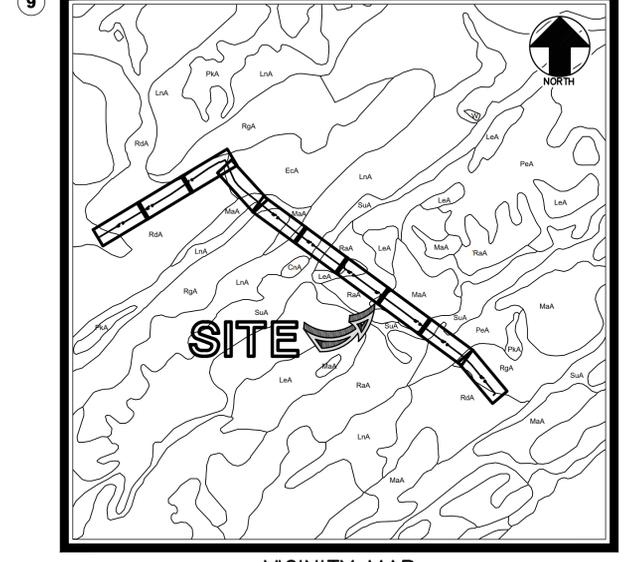
**TOTAL ACREAGE / DISTURBED ACREAGE**  
ESTIMATED TOTAL SITE ACREAGE: 5.51 ACRES  
TOTAL DISTURBED AREA DEVELOPMENT: 4.84 ACRES

**PROJECT START LOCATION**  
LATITUDE: 32.2633103°  
LONGITUDE: -081.2430122°

**PROJECT END LOCATION**  
LATITUDE: 32.2737507°  
LONGITUDE: -081.2729767°

**DESCRIPTION OF THE NATURE OF CONSTRUCTION ACTIVITY:**  
THE PROJECT INCLUDES INSTALLATION OF A 16-INCH WATER MAIN TO CONNECT TWO (2) EXISTING WATER MAINS. THE CONNECTION OF THE EXISTING WATER MAINS WILL IMPROVE WATER QUALITY AND THE AMOUNT OF FIRE FLOW AVAILABLE. THE PROJECT CONSISTS OF APPROXIMATELY 10,520 LF 16" PVC WATER MAIN INSTALLED BY OPEN-CUT, 966 LF OF 16" FPVC WATER MAIN INSTALLED BY HORIZONTAL DIRECTIONAL DRILL AND 50 LF OF 16" FPVC WATER MAIN INSTALLED IN STEEL CASING VIA JACK AND BORE. THERE WILL BE NO LATERAL CONNECTIONS TO THE PROPOSED WATER MAIN AT THIS TIME.

THE PROJECT SITE IS CURRENTLY DEVELOPED. SOIL EROSION AND SEDIMENT CONTROL WILL BE ACCOMPLISHED BY THE USE OF BEST MANAGEMENT PRACTICES FROM GEORGIA'S MANUAL FOR EROSION AND SEDIMENT CONTROL. THE TRACKING OF SOIL ONTO ADJACENT ROADWAYS WILL BE ADDRESSED BY THE USE OF A TEMPORARY CONSTRUCTION EXIT. RUNOFF FROM THE DISTURBED AREAS OF THE SITE WILL BE FILTERED BY THE USE OF TEMPORARY SEDIMENT BARRIERS (SILT FENCINGS). FINAL STABILIZATION WILL BE ACCOMPLISHED BY PERMANENT GRASSING.



**10** THE PROJECTS RECEIVING WATERS INCLUDE DASHER CREEK. STATE WATERS, ARE LOCATED ON OR WITHIN 200' OF THE PROJECT SITE.

**DESCRIPTION OF SENSITIVE AREAS:**  
THERE ARE TWO WETLAND SECTIONS (STATIONS 18+00 THRU 24+50 AND 49+80 THRU 58+00) AND THE NEW WATER MAIN WILL BE HORIZONTALLY BORED UNDERNEATH THE WETLANDS TO PREVENT ANY IMPACTS TO THE WETLANDS.

**11** "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 SUPERVISION."  
ENGINEER'S SIGNATURE [Signature] GSWCC CERTIFICATION NO. 0000013979 JULY 14, 2020

**12** "I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA (MANUAL)" PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100002."  
ENGINEER'S SIGNATURE [Signature] GSWCC CERTIFICATION NO. 0000013979 JULY 14, 2020

**13** "I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF: (A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGEMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO. GAR 100002, THAT THE INCREASE IN THE TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER."  
ENGINEER'S SIGNATURE [Signature] GSWCC CERTIFICATION NO. 0000013979 JULY 14, 2020

**14** THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION.

**15** NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN ANY 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

**16** DESCRIPTION OF BUFFER ENCROACHMENT:  
NO BUFFER ENCROACHMENTS ARE PROPOSED FOR THIS PROJECT.

**17** AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

**18** WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

**19** THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.

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

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

**22** THIS PROJECT DOES NOT DISCHARGE INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT. ANY PROJECT DISCHARGING INTO A BIOTA IMPAIRED STREAM SEGMENT, OR WITHIN 1 MILE UPSTREAM AND WITHIN SAME WATERSHED MUST COMPLY WITH PART III, C. OF THE PERMIT.

**23** IF A TMDL IMPLEMENTATION PLAN FOR SEDIMENT HAS BEEN FINALIZED FOR THE IMPAIRED STREAM SEGMENT (IDENTIFIED IN ITEM 22 ABOVE) AT LEAST SIX MONTHS PRIOR TO SUBMITTAL OF NOI, THE ES&PC PLAN MUST ADDRESS ANY SITE-SPECIFIC CONDITIONS OR REQUIREMENTS INCLUDED IN THE TMDL IMPLEMENTATION PLAN.

**24** BMPs FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REAR OF THE VEHICLES. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED.

**25** SPILL CLEANUP AND CONTROL PRACTICES  
1. LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND PROCEDURES SHALL BE MADE AVAILABLE TO SITE PERSONNEL.  
2. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAMOUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.  
3. SPILL PREVENTION PRACTICES AND PROCEDURES SHALL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.  
4. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS SHALL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.  
5. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), AND FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) SHALL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802.  
6. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACT, THE GEORGIA EPD SHALL BE CONTACTED WITHIN 24 HOURS.  
7. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL SHALL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN MORE THAN 1200 GALLONS OF PETROLEUM IS STORED ON-SITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS, THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

**26** DESCRIPTIONS OF THE MEASURES THAT WILL BE INSTALLED DURING CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETE.  
THE SITE WILL BE RETURNED TO ITS PRE-CONSTRUCTION CONDITION AFTER CONSTRUCTION IS COMPLETE. PERMANENT GRASSING WITH MULCH WILL BE THE ONLY STORM WATER POLLUTANT CONTROL REMAINING AFTER CONSTRUCTION.

**27** DESCRIPTION OF PRACTICES TO PROVIDE COVER FOR BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE:  
BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE WILL BE PROVIDED TEMPORARY COVER IN THE FORM OF PLASTIC SHEETING.

**28** DESCRIPTION OF PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORMWATER DISCHARGES:  
THE FOLLOWING POTENTIAL POLLUTANTS ARE EXPECTED ON-SITE DURING INFRASTRUCTURE CONSTRUCTION: SILT, SEDIMENT, CONCRETE PRODUCTS, ASPHALT, PETROLEUM BASED FUEL AND LUBRICANTS FOR EQUIPMENT, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, PLASTIC AND METAL. THE CONTROL OF THESE POLLUTANTS WILL BE ACCOMPLISHED WITH BEST MANAGEMENT PRACTICES AS SET FORTH IN THE GEORGIA'S MANUAL FOR EROSION AND SEDIMENT CONTROL.

**PRODUCT SPECIFIC PRACTICES**  
• **PETROLEUM BASED PRODUCTS** - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS SHALL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS SHALL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. METHODS SHALL INCLUDE COLLECTION IN A SUITABLE CONTAINER FOR DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.  
• **CONCRETE TRUCK WASHING** - NO CONCRETE TRUCKS SHALL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON-SITE.  
• **FERTILIZER/HERBICIDES** - THESE PRODUCTS SHALL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS SHALL BE UNDER ROOF IN SEALED CONTAINERS.  
• **BUILDING MATERIALS** - NO BUILDING OR CONSTRUCTION MATERIALS SHALL BE BURIED OR DISPOSED OF ON-SITE. ALL SUCH MATERIAL SHALL BE DISPOSED OF OFFSITE USING APPROPRIATE AND LAWFUL WASTE DISPOSAL PROCEDURES.

## TENTATIVE ACTIVITY SCHEDULE

	MONTH No. 1	MONTH No. 2	MONTH No. 3	MONTH No. 4	MONTH No. 5
INSTALLATION OF SEDIMENT CONTROLS AND TREE PROTECTION BARRICADES	█				
DEMOLITION, CLEARING, GRUBBING & STRIPPING TOPSOIL					
UTILITY INSTALLATION					
GRASSING / LANDSCAPING					
MAINTENANCE OF SEDIMENT CONTROLS & TEMPORARY GRASSING (AS REQUIRED)					
REMOVAL OF SEDIMENT CONTROLS					

**30** PRIMARY PERMITTEE IS RESPONSIBLE FOR REGULAR INSPECTIONS AND RECORD KEEPING AS REQUIRED BY THE GEORGIA EPD NPDES PERMIT. INSPECTIONS (TO BE COMPLETED BY PRIMARY PERMITTEE)

**PERMITTEE REQUIREMENTS**

- EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
- MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
- CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S CONSTRUCTION SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY, WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.A.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
- CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION HAS BEEN SUBMITTED) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY, WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
- BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
- A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.A.(5) OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION SITE THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

**HUSSEY GAY BELL**  
Professional Engineer  
No. 25429  
State of Georgia

*Established 1958*

329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626

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ISSUED FOR BID - 09/07/2020

BLUE JAY ROAD WATER MAIN EXT A  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
EROSION & SEDIMENT CONTROL NOTES

DRAWING NUMBER  
**13**

# EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES:

GSWCC Level II  
Design Professional  
Cert. #0000013979  
2 GSWCC Level II  
Design Professional  
Cert. #0000013979

- 31 STORMWATER SAMPLING SHALL BE CONDUCTED AT THE POINTS AS INDICATED WITHIN THIS ESPCC.**
- SAMPLING FREQUENCY**
- THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN IN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.
  - HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.
  - SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:
    - FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION;
    - IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION, WHICHEVER COMES FIRST;
    - AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPs IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPs ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;
    - WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.A.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE; AND
    - EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (C) ABOVE.

- 32 RETENTION OF RECORDS**
- THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI:
    - A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
    - A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
    - THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
    - A COPY OF ALL SAMPLING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
    - A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.A. OF THIS PERMIT;
    - A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND
    - DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.A.(2). OF THIS PERMIT.
  - COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL 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 PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI. OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

- 33 STORMWATER SAMPLING**
- ALL SAMPLING 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 THE EPD.
- STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) AT THE OUTFALL LOCATION. A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH CONDITION RESULTS IN THE TURBIDITY OF THE DISCHARGE EXCEEDING 75, THE VALUE THAT WAS SELECTED FROM APPENDIX B IN PERMIT NO. GAR 100002. THIS NTU IS BASED UPON THE TOTAL PROJECT ACRES (5.91) VS. DISTURBED ACREAGE (4.84) FOR THE PROJECT SITE AND THE SURFACE WATER DRAINAGE AREA OF 0.014 SQUARE MILES, AND RECEIVING WATER WHICH SUPPORTS WARM WATER FISHERIES.

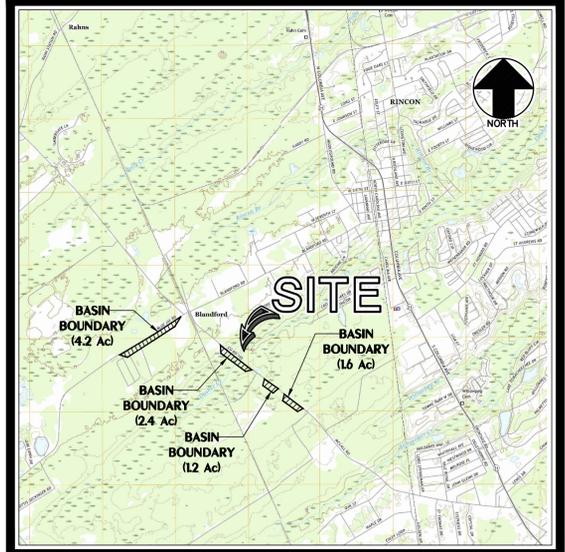
**APPENDIX B**  
Nephelometric Turbidity Unit (NTU) Tables

Warm Water (Supporting Warm Water Fisheries)  
Surface Water Drainage Area, Square Miles

Site Size Acres	0-4.99	5-9.99	10-24.99	24-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	75	150	200	400	750	750	750	750
10.01-25	50	100	100	200	300	500	750	750
24.01-50	50	50	100	100	200	300	750	750
50.01-100	50	50	50	100	100	150	300	600
100.01+	50	50	50	50	50	100	200	100

To use these table, select the size (acres) of the facility or common development. Then, select the surface water drainage area (square miles). The NTU matrix value arrived at from the above tables is one to use in Part

- 35** SEE PAGE 07 FOR SAMPLING POINT LOCATIONS, PERENNIAL AND INTERMITTENT STREAM AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED.
- 36** SEE PLAN SHEETS AND SOIL EROSION CONTROL DETAIL SHEET FOR A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE.
- INITIAL PHASE: IMPLEMENTING SEDIMENT BARRIERS IN THE FORM OF SENSITIVE (WHERE APPLICABLE) AND NON-SENSITIVE SILT FENCE.
- INTERMEDIATE PHASE: MAINTENANCE OF SILT FENCES AND GRASSING, FERTILIZING, AND MULCHING AS LINEAR PROJECT PROGRESSES.
- FINAL PHASE: REMOVAL OF SILT FENCES AND MAINTENANCE OF PERMANENT GRASS.
- 39** N/A
- 40** SEE PAGES 3 - 12 FOR A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE.
- 41** APPLICABLE 25-FOOT OR 50-FOOT UNDISTURBED BUFFERS ADJACENT TO STATE WATERS AND ANY ADDITIONAL BUFFERS AS REQUIRED BY THE LOCAL ISSUING AUTHORITY ARE SHOWN IF APPLICABLE. AREAS OF IMPACT ARE SHOWN AND LABELED ON THE PLAN IF REQUIRED.
- 42** ON SITE WETLANDS AND WATERS OF THE STATE ARE LOCATED ON OR WITHIN 200 FEET OF THE PROJECT SITE.
- 43** NOT APPLICABLE FOR THIS PROJECT. DRAINAGE BASINS WILL NOT BE ALTERED DUE TO THE LINEAR NATURE OF THE PROJECT.
- 44**



**DRAINAGE BASIN MAP**  
SCALE: 1" = 2,000'

- 45** THE SOIL HYDROLOGIC SOIL GROUP FOR THE SITE IS GROUP D. THE MAJORITY OF SOILS WITHIN THE PROJECT SITE ARE SANDY LOAM. THE ESTIMATED RUNOFF COEFFICIENT (C) BEFORE AND AFTER CONSTRUCTION ARE AS FOLLOWS BASED ON TOPOGRAPHY AND VEGETATION:
- "PRE" (C) = 0.10  
"POST" (C) = 0.10
- 46** DUE TO THE LINEAR NATURE OF THE PROJECT THERE WILL NOT BE ANY CONCENTRATED DISCHARGE AT ANY POINT ALONG THE PROJECT. THERE WILL BE NO STORM DRAIN OUTLETS INSTALLED ON THIS PROJECT.
- 47** SOIL TYPE:
- Ea - ECHAW-CENTENARY COMPLEX (HSG A)  
La - LEEFIELD LOAMY SAND (HSG C/D)  
Ls - LEON SAND (HSG A/D)  
Ma - MASCOITE SAND (HSG C/D)  
Pa - PELHAM LOAMY (HSG B/D)  
Ra - RAINS LOAMY SAND (HSG B/D)  
Rd - RIDGELAND-BOULOGNE COMPLEX (HSG A/D)  
Rg - RIGDON SAND (HSG B/D)  
Su - SURRENCTY MUCKY SAND (HSG C/D)
- SEE PAGE 13 FOR DELINEATION.
- 48** REFER TO EROSION AND SEDIMENT CONTROL PLAN SHEETS FOR THE LIMITS OF DISTURBANCE FOR EACH PHASE OF CONSTRUCTION.
- 49 TEMPORARY SEDIMENT STORAGE.**

THE TOTAL ACRES DRAINED TO THE PROJECT IS 9.4 ACRES, THEREFORE, THE REQUIRED SEDIMENT STORAGE VOLUME IS 9.4 ACRES X 67 CY PER ACRE = 629.8 CY OF STORAGE REQUIRED.

THE PROJECT IS LINEAR IN NATURE, THEREFORE SEDIMENT STORAGE IS BETTER ACHIEVED BY THE USE OF SILT FENCE RATHER THAN A TEMPORARY SEDIMENT BASIN. A TEMPORARY SEDIMENT BASIN WOULD CAUSE ADDITIONAL LAND DISTURBANCE AND WOULD NOT ACHIEVE A COMPREHENSIVE METHOD OF CONTROLLING SEDIMENT FOR LINEAR PROJECTS

**SEDIMENT STORAGE COMPUTATION (INITIAL PHASE)**

STORAGE METHOD	RATE	QUANTITY	VOLUME
TEMPORARY SEDIMENT BARRIER	0.78 C.Y./FT.	21,273 LF.	= 16,593 C.Y.
	PROVIDED (EXCEEDS REQUIRED)		16,593 C.Y.

THE PROVIDED STORAGE METHOD BEING UTILIZED FOR THIS PROJECT WILL BE 20,823 LF (NON-SENSITIVE/SINGLE) + 650 LF (SENSITIVE/DOUBLE) = A TOTAL OF 21,273 LF SILT FENCE/SEDIMENT BARRIER, THEREFORE THE VOLUME WILL BE 21,273 LF X 0.78 CY/LF = 16,593 CY OF STORAGE PROVIDED.

- 50** REFER TO EROSION AND SEDIMENT CONTROL PLAN SHEETS FOR SPECIFIED LOCATIONS OF BMPs.

**LEGEND:**

- CONSTRUCTION EXIT
- DUST CONTROL ON DISTURBED AREAS
- DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
- DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
- DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
- TEMPORARY SEDIMENT SINGLE BARRIER - SILT FENCE, TYPE "NON-SENSITIVE"
- TEMPORARY SEDIMENT DOUBLE BARRIER - SILT FENCE, TYPE "SENSITIVE"
- INLET SEDIMENT TRAP
- SLOTTED BOARD DAM WITH STONE FILTER
- STORM DRAINAGE OUTLET PROTECTION
- DIVERSIONS
- STONE CHECK DAM
- TEMPORARY SEDIMENT TRAP
- STORM WATER DISCHARGE SAMPLING POINT
- TREE PROTECTION BARRICADE
- SOILS
- LIMITS OF DISTURBANCE & STORMWATER MANAGEMENT AREA
- SILT FENCE PROTECTION (SINGLE)
- SILT FENCE PROTECTION (DOUBLE)

- 51** REFER TO EROSION AND SEDIMENT CONTROL DETAIL SHEETS FOR DETAILED DRAWINGS FOR ALL STRUCTURAL PRACTICES.
- 52** **VEGETATIVE METHODS.**

- A. A VEGETATIVE COVER SHALL BE ESTABLISHED AND MAINTAINED OVER ALL FINAL GRADING AND OTHER DISTURBED AREAS OF THE SITE. SEE COASTAL PLAIN VEGETATIVE COVERS FOR AN OUTLINE OF THE ESTABLISHMENT OF VEGETATIVE COVERS.
- B. WEEKLY INSPECTION OF THE GRASS COVER SHALL BE PERFORMED TO IDENTIFY AREAS REQUIRING RE-ESTABLISHMENT OF GRASS.
- C. LIME RATE: 1 TO 2 TONS/ACRE.  
FERTILIZER: 1500 LBS. OF 6-12-12 PER ACRE.

**COASTAL PLAIN VEGETATIVE COVERS**

MONTH OF PLANTING	TEMPORARY GRASS	RATE	MONTH OF PLANTING	PERMANENT GRASS	RATE
MARCH - JUNE	SUDANGRASS	60 Lbs./Ac	MARCH - JUNE	COMMON BERMUDA (HULLED)	10 Lbs./Ac
APRIL - AUGUST	BROWN TOP MILLET	40 Lbs./Ac	JULY - AUGUST	COMMON BERMUDA (HULLED) & BROWN TOP MILLET	6 Lbs./Ac 10 Lbs./Ac
SEPTEMBER - FEBRUARY	RYE GRASS	40 Lbs./Ac	SEPTEMBER - FEBRUARY	COMMON BERMUDA (UNHULLED) & TALL FESCUE	6 Lbs./Ac 30 Lbs./Ac

**MULCH:**

MULCH, IF REQUIRED, SHALL BE UNCHOPPED, UNROTTED, DRY STRAW, HAY, OR WOOD WASTE SHALL BE APPLIED TO A DEPTH OF 2-3 INCHES PROVIDING COMPLETE SOIL COVERAGE IN AREAS TO BE EVENTUALLY COVERED BY PERENNIAL VEGETATION THE CONTRACTOR SHALL APPLY 20-30 POUNDS OF NITROGEN/AC. IN ADDITION TO THE NORMAL AMOUNT.

MULCHING RATE FOR STRAW SHALL BE 2 TONS/AC. AND FOR HAY 2 1/2 TONS/AC. MULCH MATERIAL SHALL BE RELATIVELY FREE FROM ALL KINDS OF WEEDS AND SHALL BE FREE OF PROHIBITED NOXIOUS WEEDS WHICH ARE: CANADA THISTLE, JOHNSONGRASS AND QUACKGRASS. SPREAD MULCH MECHANICALLY OR UNIFORMLY BY HAND; MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER MULCH PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY PEG AND TWINE METHOD, MULCH ANCHORING TOOL, NETTING OR LIQUID MULCH BINDERS.



**HUSSEY GAY BELL**  
Established 1958  
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626

REVISIONS:

NO.	DATE	DESCRIPTION
07/13/2020	GSWCC REVISIONS	

DESIGNED DRAWN CHECKED

JCB	SKK	JQH

DATE: SEPTEMBER 2020  
JOB NO. 119224449  
SCALE: AS SHOWN

**ISSUED FOR BID - 09/07/2020**

**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**EROSION & SEDIMENT CONTROL NOTES**

DRAWING NUMBER  
**14**



**HUSSEY GAY BELL**  
Established 1958  
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626  
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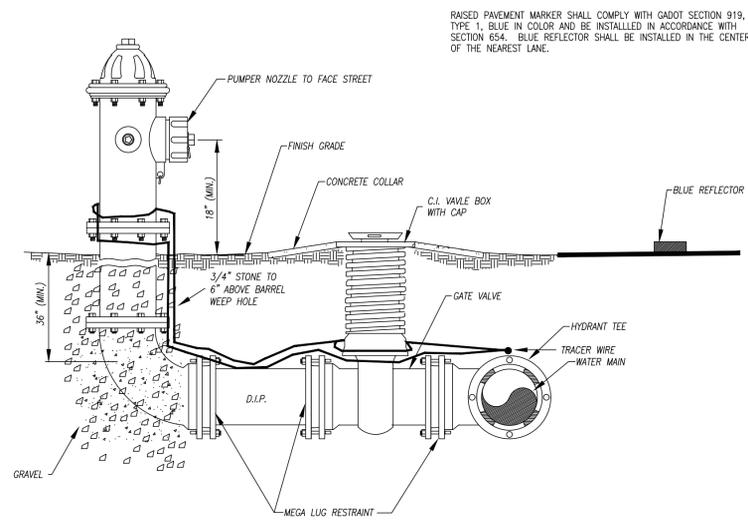
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JCB	SKK	JGH
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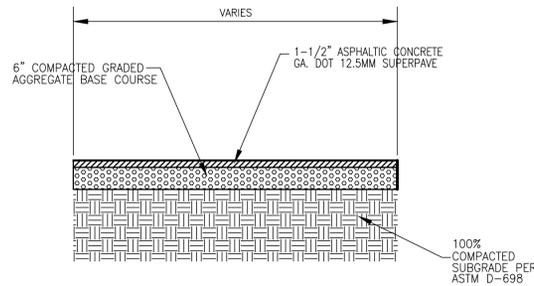
**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**MISCELLANEOUS DETAILS**

DRAWING NUMBER  
**15**  
OF XX

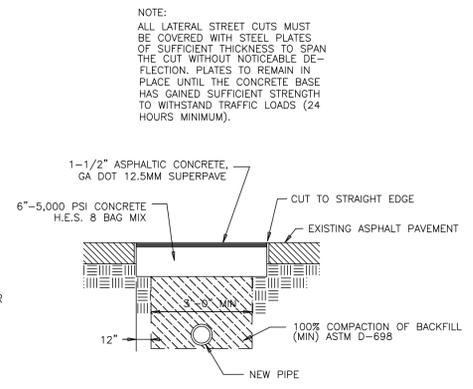
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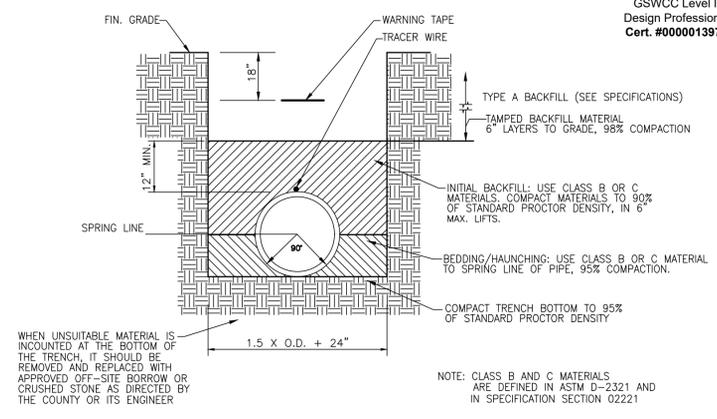
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NOT TO SCALE



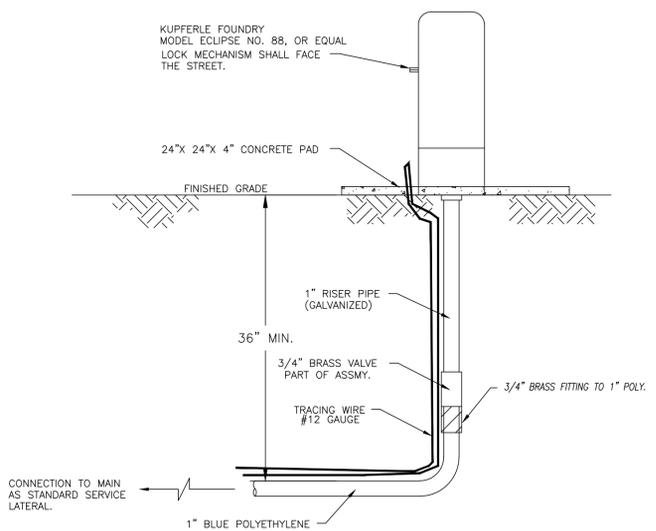
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NOT TO SCALE



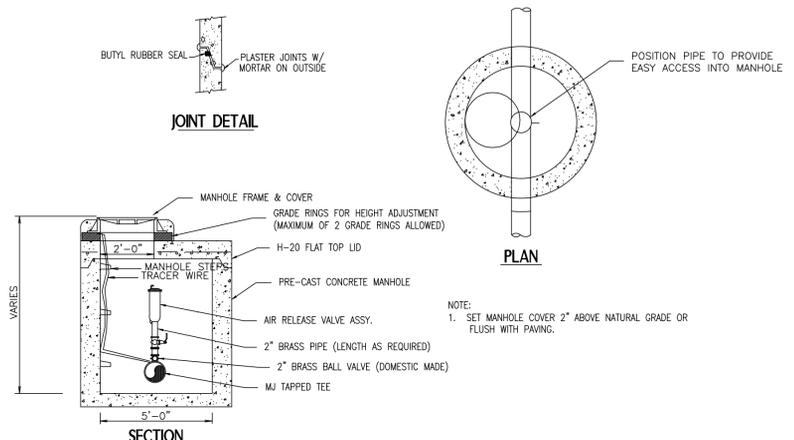
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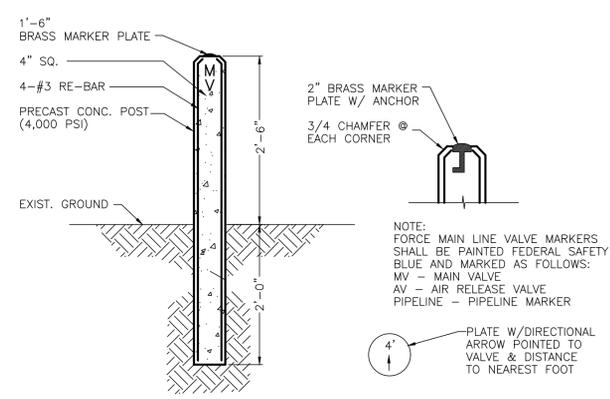
**STANDARD PIPE BEDDING & BACKFILL FOR DIP**  
NOT TO SCALE



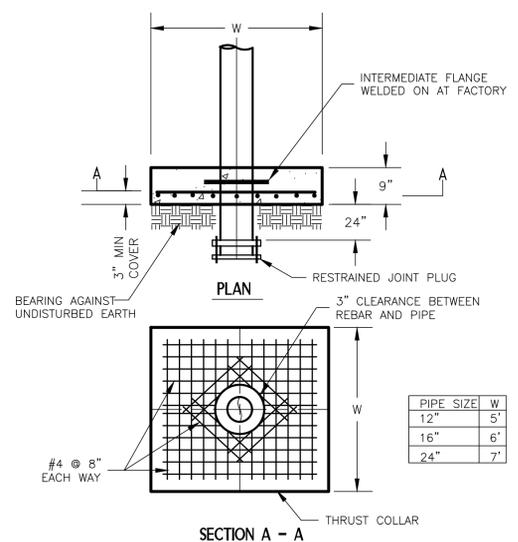
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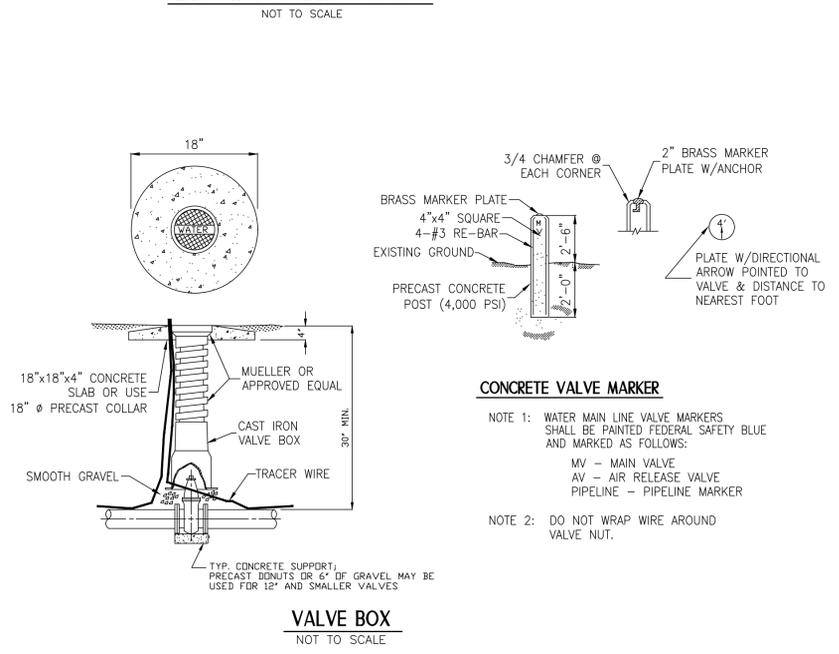
**AIR RELEASE VALVE IN MANHOLE**  
NOT TO SCALE



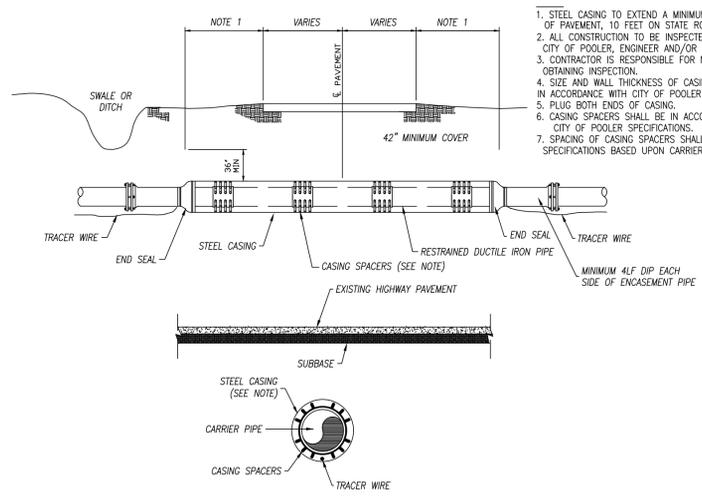
**CONCRETE VALVE MARKER**  
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**THRUST COLLAR DETAIL**  
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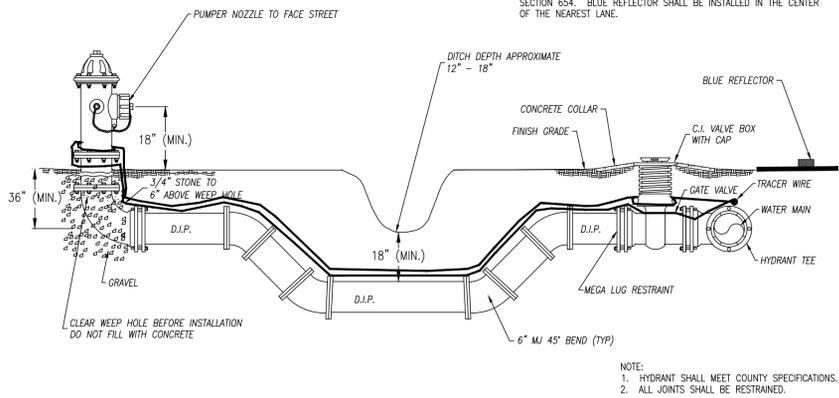


**VALVE BOX**  
NOT TO SCALE



**TYPICAL ROADWAY JACK AND BORE DETAIL (WATER SYSTEM ONLY)**  
NOT TO SCALE

1. STEEL CASING TO EXTEND A MINIMUM OF 5' BEYOND EDGE OF PAVEMENT, 10 FEET ON STATE ROUTES.
2. ALL CONSTRUCTION TO BE INSPECTED AND APPROVED BY CITY OF POOLER, ENGINEER AND/OR CHATHAM COUNTY ENGINEER.
3. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION AND OBTAINING INSPECTION.
4. SIZE AND WALL THICKNESS OF CASING TO BE APPROVED IN ACCORDANCE WITH CITY OF POOLER SPECIFICATIONS.
5. PLUG BOTH ENDS OF CASING.
6. CASING SPACERS SHALL BE IN ACCORDANCE WITH CITY OF POOLER SPECIFICATIONS.
7. SPACING OF CASING SPACERS SHALL BE PER MANUFACTURERS SPECIFICATIONS BASED UPON CARRIER PIPE MATERIAL.



**FIRE HYDRANT DETAIL UNDER DITCH**  
NOT TO SCALE



**HUSSEY GAY BELL**  
Established 1958  
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626  
DRAWINGS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF HUSSEY GAY BELL.

REVISIONS:

NO.	DATE	DESCRIPTION
07/13/2020	GSWCC REVISIONS	

DESIGNED	DRAWN	CHECKED
JCB	SKK	JOH
DATE: SEPTEMBER 2020		
JOB NO. 11922449		
SCALE: AS SHOWN		

**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**MISCELLANEOUS DETAILS**

DRAWING NUMBER  
**16**  
OF XX

E:\effingham\11922449 Blue Jay road wm ext.dwg (s:\cadd\files\construction)\SHT\_16\_DETAILS.dwg January 14, 2020 - 1:41 PM Printed By: lgrdy

**DEFINITION**  
Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

**CONDITIONS**  
Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored, and have a continuous 90% cover or greater of the soil surface. Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months. If an area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed.

**SPECIFICATIONS**

**MULCHING WITHOUT SEEDING**  
This standard applies to grades or cleared areas where seedlings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

**Site Preparation**  
1. Grade to permit the use of equipment for applying and anchoring mulch.  
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.  
3. Loosen compact soil to a minimum depth of 3 inches.

**Mulching Materials**  
Select one of the following materials and apply at the depth indicated:  
1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.

**Ds1 DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)**

2. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.  
3. Cutback asphalt (slow curing) shall be applied at 1200 gallons per acre (or 1/4 gallon per sq.yd.)  
4. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and reused.

**Applying Mulch**  
When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.  
1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.  
2. If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.  
3. Cutback asphalt shall be applied uniformly. Care should be taken in areas of pedestrian traffic due to problems of "tracking in" or damage to shoes, clothing, etc.  
4. Apply polyethylene film on exposed areas.

**Anchoring Mulch**  
1. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application. Straw or hay mulch spread with special blower-type equipment may be anchored with emulsified asphalt (Grade AE-5 or SS-1). The asphalt emulsion shall be sprayed onto the mulch as it is ejected from the machine. Use 100 gallons of emulsified asphalt and 100 gallons of water per ton of mulch. Tackifiers and binders can be substituted for emulsified asphalt. Please refer to specification Tt-Tackifiers and Binders. Plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.  
2. Netting of the appropriate size shall be used to anchor wood waste. Openings of the netting shall not be larger than the average size of the wood waste chips.  
3. Polyethylene film shall be anchor trenched at the top as well as incrementally as necessary.

**DEFINITION**  
The establishment of temporary vegetative cover with fast growing seedlings for seasonal protection on disturbed or denuded areas.

**CONDITIONS**  
Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established.

**SEEDING RATES FOR TEMPORARY SEEDING**

SPECIES	RATE Per 1,000 sq.ft.	RATE Per Acre *	PLANTING DATES **
Rye	3.9 pounds	3 bu.	9/1-3/1
Ryegrass	0.9 pound	40 lbs.	8/15-4/1
Annual Lespedeza	0.9 pound	40 lbs.	1/15-3/15
Weeping Lovegrass	0.1 pound	4 lbs.	2/15-6/15
Sudangrass	1.4 pounds	60 lbs.	3/1-8/1
Browntop Millet	0.9 pound	40 lbs.	4/1-9/15
Wheat	4.1 pounds	3 bu.	9/15-2/1

\* Unusual site conditions may require heavier seeding rates  
\*\* Seeding dates may need to be altered to fit temperature variations and conditions.

**Ds2 DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)**

**SPECIFICATIONS**

**Grading and Shaping**  
Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others.  
No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

**Seedbed Preparation**  
When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or handseeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall.  
When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

**Lime and Fertilizer**  
Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate of one ton per acre. Graded areas require lime application. Soils can be tested to determine if fertilizer is needed. On reasonably fertile soils or soil material, fertilizer is not required. For soils with very low fertility, 500 to 700 pounds of 10-10-10 fertilizer or the equivalent per acre (12-16 lbs./1,000 sq. ft.) shall be applied. Fertilizer should be applied before land preparation and incorporated with a disk, ripper or chisel.

**Seeding**  
Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, cultipacker seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand.

**Mulching**  
Temporary vegetation can, in most cases, be established without the use of mulch. Mulch without seeding should be considered for short term protection. Refer to Ds1 - Disturbed Area Stabilization (With Mulching Only).

**Irrigation**  
During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

**SILT FENCE - TYPE SENSITIVE**  
N.T.S.  
**Sd1-S**

**SILT FENCE - TYPE NON-SENSITIVE**  
N.T.S.  
**Sd1-NS**

**Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)**

**DEFINITION**  
THE PLANTING OF PERENNIAL VEGETATION SUCH AS TREES, SHRUBS, VINES, GRASSES, OR LEGUMES ON EXPOSED AREAS FOR FINAL PERMANENT STABILIZATION.

**CONDITIONS**  
PERMANENT PERENNIAL VEGETATION IS USED TO PROVIDE A PROTECTIVE COVER FOR EXPOSED AREAS INCLUDING CUTS, FILLS, DAMS, AND OTHER DENURED AREAS.

**SPECIFICATIONS**

**GRADING AND SHAPING**  
GRADING AND SHAPING MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED. VERTICAL BANKS SHALL BE SLOPED TO ENABLE PLANT ESTABLISHMENT.  
WHEN CONVENTIONAL SEEDING AND FERTILIZING ARE TO BE DONE, GRADE AND SHAPE WHERE FEASIBLE AND PRACTICAL, SO THAT EQUIPMENT CAN BE USED SAFELY AND EFFICIENTLY DURING SEEDING PREPARATION, SEEDING, MULCHING AND MAINTENANCE OF THE VEGETATION.

**SEEDBED PREPARATION**  
SEEDBED PREPARATION MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED. WHEN CONVENTIONAL SEEDING IS TO BE USED, SEEDBED PREPARATIONS WILL BE DONE AS FOLLOWS:  
BROADCAST PLANTING  
1. TILLAGE AT A MINIMUM, SHALL ADEQUATELY LOOSEN THE SOIL TO A DEPTH OF 4 TO 6 INCHES; ALLEVIATE COMPACTION; INCORPORATE LIME AND FERTILIZER; SMOOTH AND FIRM THE SOIL; ALLOW FOR THE PROPER PLACEMENT OF SEE, SPRIGS, OR PLANTS; AND ALLOW FOR THE ANCHORING OF STRAW OF HAY MULCH IF A DISK IS TO BE USED.  
2. TILLAGE MAY BE DONE WITH ANY SUITABLE EQUIPMENT.  
3. TILLAGE SHOULD BE DONE ON THE CONTOUR WHERE FEASIBLE.  
4. ON SLOPES TOO STEEP FOR THE SAFE OPERATION OF TILLAGE EQUIPMENT, THE SOIL SURFACE SHALL BE PITTED OR TRENCHED ACROSS THE SLOPE WITH APPROPRIATE HAND TOOLS TO PROVIDE TWO PLACES 6 TO 8 INCHES APART IN WHICH SEED MAY LODGE AND GERMINATE. HYDRAULIC SEEDING MAY ALSO BE USED.

**PLANTING**  
FERTILIZER  
AGRICULTURAL LIME IS REQUIRED AT THE RATE OF ONE TO TWO TONS PER ACRE UNLESS SOIL TESTS INDICATE OTHERWISE. GRADED AREAS REQUIRE LIME APPLICATION. IF LIME IS APPLIED WITHIN SIX MONTHS OF PLANTING

PERMANENT PERENNIAL VEGETATION, ADDITIONAL LIME IS NOT REQUIRED. LIME SPREAD BY CONVENTIONAL EQUIPMENT SHALL BE "GROUND LIMESTONE." AGRICULTURAL LIME SPREAD BY HYDRAULIC SEEDING EQUIP. SHALL BE "FINELY GROUND LIMESTONE."

**HYDRAULIC SEEDING**  
MIX THE SEED (ANNULCATED IF NEEDED), FERTILIZER, AND WOOD CELLULOSE OR WOOD PULP FIBER MULCH WITH WATER AND APPLY IN A SLURRY UNIFORMLY OVER THE AREA TO BE TREATED. APPLY WITHIN ONE HOUR AFTER THE MIXTURE IS MADE.

**CONVENTIONAL SEEDING**  
SEEDING WILL BE DONE ON A FRESHLY PREPARED AND FIRMED SEEDBED. FOR BROADCAST PLANTING, USE A CULTIPACKER SEEDER, DRILL, ROTARY SEEDER, OTHER MECHANICAL SEEDER, OR HAND SEEDING TO DISTRIBUTE THE SEED UNIFORMLY OVER THE AREA TO BE TREATED. COVER THE SEED LIGHTLY WITH 1/8 TO 1/4 INCH OF SOIL FOR SMALL SEED AND 1/2 TO 1 INCH FOR LARGE SEED WHEN USING A CULTIPACKER OR OTHER SUITABLE EQUIPMENT.

**NO-TILL SEEDING**  
NO-TILL SEEDING IS PERMISSIBLE INTO ANNUAL COVER CROPS WHEN PLANTING IS DONE FOLLOWING MATURITY OF THE COVER CROP OR IF THE TEMPORARY COVER STAND IS SPARSE ENOUGH TO ALLOW ADEQUATE GROWTH OF THE PERMANENT (PERENNIAL) SPECIES. NO-TILL SEEDING SHALL BE DONE WITH APPROPRIATE NO-TILL SEEDING EQUIPMENT. THE SEED MAY BE UNIFORMLY DISTRIBUTED AND PLANTED AT THE PROPER DEPTH.

**INDIVIDUAL PLANTS**  
SHRUBS, VINES AND SPRIGS MAY BE PLANTED WITH APPROPRIATE PLANTERS OR HAND TOOLS. PINE TREES SHALL BE PLANTED MANUALLY IN THE SUBSOIL FURROW. EACH PLANT SHALL BE SET IN A MANNER THAT WILL AVOID CROWDING THE ROOTS. NURSERY STOCK PLANTS SHALL BE PLANTED AT THE SAME DEPTH OR SLIGHTLY DEEPER THAN THEY GREW AT THE NURSERY. THE TIPS OF VINES AND SPRIGS MUST BE AT OR SLIGHTLY ABOVE THE GROUND SURFACE. WHERE INDIVIDUAL HOLES ARE DUG, FERTILIZER SHALL BE PLACED IN THE BOTTOM OF THE HOLE, TWO INCHES OF SOIL SHALL BE ADDED AND THE PLANT SHALL BE SET IN THE HOLE.

**MULCHING**  
MULCH IS REQUIRED FOR ALL PERMANENT VEGETATION APPLICATIONS. MULCH APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% SOIL COVER. SELECT THE MULCHING MATERIAL FROM THE FOLLOWING AND APPLY AS INDICATED:  
1. DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. DRY HAY SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE.  
2. WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE. DRY STRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED ABOVE) AFTER HYDRAULIC SEEDING.  
3. ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES 3/4-1 OR STEEPER.  
4. SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE.  
5. PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.  
WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLOCK SOD, MULCH IS NOT REQUIRED.  
7. BITUMINOUS TREATED ROVING MAY BE APPLIED ON PLANTED AREAS ON SLOPES, IN DITCHES OR DRY WATERWAYS TO PREVENT EROSION. BITUMINOUS TREATED ROVING SHALL BE APPLIED WITHIN 24 HOURS AFTER AN AREA HAS BEEN PLANTED. APPLICATION RATES AND MATERIALS MUST MEET GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

WOOD CELLULOSE AND WOOD PULP FIBERS SHALL NOT CONTAIN GERMINATION OR GROWTH INHIBITING FACTORS. THEY SHALL BE EVENLY DISPERSED WHEN

AGITATED IN WATER. THE FIBERS SHALL CONTAIN A DYE TO ALLOW VISUAL METERING AND AID IN UNIFORM APPLICATION DURING SEEDING.

**APPLYING MULCH**  
STRAW OR HAY MULCH WILL BE SPREAD UNIFORMLY WITHIN 24 HOURS AFTER SEEDING AND/OR PLANTING. THE MULCH MAY BE SPREAD BY BLOWER-TYPE SPREADING EQUIPMENT, OTHER SPREADING EQUIPMENT OR BY HAND. MULCH SHALL BE APPLIED TO COVER 75% OF THE SOIL SURFACE.  
WOOD CELLULOSE OR WOOD FIBER MULCH SHALL BE APPLIED UNIFORMLY WITH HYDRAULIC SEEDING EQUIPMENT.

**ANCHORING MULCH**  
ANCHOR STRAW OR HAY MULCH IMMEDIATELY AFTER APPLICATION BY ONE OF THE FOLLOWING METHODS:  
1. EMULSIFIED ASPHALT CAN BE (A) SPRAYED UNIFORMLY ONTO THE MULCH AS IT IS EJECTED FROM THE BLOWER MACHINE OR (B) SPRAYED ON THE MULCH IMMEDIATELY FOLLOWING MULCH APPLICATION WHEN STRAW OR HAY IS SPREAD BY METHODS OTHER THAN SPECIAL BLOWER EQUIPMENT.  
THE COMBINATION OF ASPHALT EMULSION AND WATER SHALL CONSIST OF A HOMOGENEOUS MIXTURE SATISFACTORY FOR SPRAYING. THE MIXTURE SHALL CONSIST OF 100 GALLONS OF SS-1h OR CS-1h EMULSIFIED ASPHALT AND 100 GALLONS OF WATER PER TON OF MULCH.  
CARE SHALL BE TAKEN AT ALL TIMES TO PROTECT STATE WATERS, THE PUBLIC, ADJACENT PROPERTY, PAVEMENTS, CURBS, SIDEWALKS, AND ALL OTHER STRUCTURES FROM ASPHALT DISCOLORATION.  
2. HAY AND STRAW MULCH SHALL BE PRESSED INTO THE SOIL IMMEDIATELY AFTER THE MULCH IS SPREAD. A SPECIAL "PACKER DISK" OR DISK HROUGH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISKS SHALL BE DULL ENOUGH TO PRESS THE MULCH INTO THE GROUND WITHOUT CUTTING IT, LEAVING MULCH OF IT IN AN ERECT POSITION. MULCH SHALL NOT BE FLOWED INTO THE SOIL.  
3. SYNTHETIC TACKIFIERS OR BINDERS APPROVED BY GDOT SHALL BE APPLIED IN CONJUNCTION WITH OR IMMEDIATELY AFTER THE MULCH IS SPREAD. SYNTHETIC TACKIFIERS SHALL BE MIXED AND APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. REFER TO Tt-TACKIFIERS AND BINDERS.  
4. RYE OR WHEAT CAN BE INCLUDED WITH FALL AND WINTER PLANTINGS TO STABILIZE THE MULCH. THEY SHALL BE APPLIED AT A RATE OF ONE-QUARTER TO ONE HALF BUSHEL PER ACRE.  
5. PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH MAY BE NEEDED TO ANCHOR STRAW OR HAY MULCH ON UNSTABLE SOILS AND CONCENTRATED FLOW AREAS. THESE MATERIALS SHALL BE INSTALLED AND ANCHORED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

**IRRIGATION**  
IRRIGATION SHALL BE APPLIED AT A RATE THAT WILL NOT CAUSE RUNOFF.

**SEEDING RATES FOR PERMANENT SEEDING**

SPECIES	RATE PER 1,000 SQ.FT.	RATE PER ACRE *	PLANTING DATES **
BAHIA	1.4 pounds	60 lbs.	1/1-12/31
BERMUDA	0.2 pounds	10 lbs.	2/15-7/1
CENTPEDE	BLOCK SOD ONLY	BLOCK SOD ONLY	4/1-7/1
LESPEDEZA	1.7 pounds	75 lbs.	1/1-12/31
WEEPING LOVE GRASS	0.1 pounds	4 lbs.	2/1-6/15
SWITCH GRASS	0.9 pounds	40 lbs.	3/15-6/1

\* UNUSUAL SITE CONDITIONS MAY REQUIRE HEAVIER SEEDING RATES  
\*\* SEEDING DATES MAY NEED TO BE ALTERED TO FIT TEMPERATURE VARIATIONS AND CONDITIONS

**TEMPORARY CRUSHED STONE CONSTRUCTION EXIT**  
N.T.S.  
**Co**

12" VALVE W/ VALVE BOX

PROPOSED 16" PVC WM

16"x12" RJ REDUCER

2 LF 12" PVC WM

CONNECTION TO EXISTING 12" WM - BLUE JAY RD  
NOT TO SCALE

50' MIN.

6" MIN.

AS REQUIRED

N.S.A. R-2 (1.5"-3.5") COARSE AGGREGATE

GEOTEXTILE UNDERLINER

20' MIN.

HARD SURFACE PUBLIC ROAD

**SPRAY ON ADHESIVE REQUIREMENTS**

ADHESIVE	WATER DILUTION	NOZZLE TYPE	APPLICATION (GAL./AC)
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN-IN-WATER EMULSION	4:1	FINE SPRAY	300

**NOTES:**  
1. TEMPORARY METHODS  
A. MULCHES (DS1)-DISTURBED AREA STABILIZATION (WITH MULCHING ONLY). SYNTHETIC RESINS MAY BE USED INSTEAD OF ASPHALT TO BIND MULCH MATERIAL REFER TO STANDARD Tt-TACKIFIERS AND BINDERS. RESINS SUCH AS CURASOL DR TERRATAK SHOULD BE USED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.  
B. VEGETATIVE COVER-DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING.  
C. C. SPRAY ON ADHESIVES-THOSE ARE USED ON MINERAL SOILS (NON EFFECTIVE ON DN MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS. REFER TO TACKIFIERS AND BINDERS.  
D. TILLAGE-THIS PRACTICE IS DESIGNED TO ROUGHEN AND BRING CLOUDS TO THE SURFACE. IT IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE WIND EROSION STARTS BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING TIGHTED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.  
E. IRRIGATION-THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED. F. BARRIERS-SOLID BOARD FENCES, SNOWFENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 15 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING WIND EROSION. G. CALCIUM CHLORIDE-APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.  
2. PERMANENT METHODS  
A. PERMANENT VEGETATION-DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION). EXISTING TREES AND LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.  
B. TOPSOILING-THIS ENTAILS COVERING THE SURFACE WITH LESS ERODIVE SOIL MATERIAL.  
C. C. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

**DUST CONTROL ON DISTURBED AREAS**  
N.T.S.  
**Du**

18"

END OF FABRIC FENCE

6" O.C. MAX.

TOP VIEW - NOT TO SCALE

FABRIC POST

BEGINNING OF FABRIC FENCE

WOOD POST WITH STAPLE PLACEMENT

WOOD POST WITH NAIL PLACEMENT

FRONT VIEWS - NOT TO SCALE

NOTES:  
1. THE FABRIC AND WIRE SHOULD BE SECURELY FASTENED TO POSTS AND FABRIC ENDS MUST BE OVERLAPPED A MINIMUM OF 18" OR WRAPPED TOGETHER AROUND A POST TO PROVIDE A CONTINUOUS FABRIC BARRIER AROUND THE INLET.

**OVERLAP AT FABRIC ENDS**

**FASTENERS FOR SILT FENCES**  
N.T.S.

ISSUED FOR BID - 09/07/2020



**HUSSEY GAY BELL**  
Established 1958  
329 COMMERCIAL DRIVE, SAVANNAH, GA 31406 / T: 912.354.4626  
DRAWINGS NOT TO BE REPRODUCED OR COPIED WITHOUT WRITTEN PERMISSION  
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REVISIONS:

07/13/2020	GSWCC	REVISIONS
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DESIGNED	DRAWN	CHECKED
JCB	SKK	JGH
DATE: SEPTEMBER 2020		
JOB NO. 119224449		
SCALE: AS SHOWN		

**ISSUED FOR BID - 09/07/2020**

**BLUE JAY ROAD WATER MAIN EXT A**  
EFFINGHAM COUNTY, GEORGIA  
FOR  
EFFINGHAM COUNTY, GEORGIA  
**MISCELLANEOUS DETAILS**

DRAWING NUMBER  
**17**

E:\effingham\119224449 Blue Jay road wm ext a\cadd files\construction\SH17\_DETAILS.dwg January 14, 2020 - 1:41 PM Printed By: jgray

**PVC LINE**

PIPE DIA.	BEND ANGLE			
	11 1/4"	22 1/2"	45"	90"
4	2	4	8	18
6	3	5	11	25
8	4	7	14	33
10	4	8	16	39
12	5	9	19	45
16	5	9	19	45
20	6	11	23	54
24	8	16	26	62

PVC DESIGN:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3' <12" DIA.  
4' >12" DIA.  
TEST PRESSURE: 150 PSI

**POLYETHYLENE WRAPPED DUCTILE IRON LINE**

PIPE DIA.	BEND ANGLE			
	11 1/4"	22 1/2"	45"	90"
4	3	5	9	20
6	3	6	12	28
8	4	8	16	36
10	5	9	19	43
12	6	11	22	51
16	7	14	28	65
20	8	16	33	79
24	9	19	38	92

PE WRAPPED DIP:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3'  
TEST PRESSURE: 150 PSI

MINIMUM RESTRAINED LENGTH (L)

NOTES:  
1. LENGTH OF RESTRAINT SHOWN IS IN FEET. PIPE DIAMETERS ARE IN INCHES.  
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.  
3. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

**HORIZONTAL BEND RESTRAINT**

**PVC LINE**

PIPE DIA.	BEND ANGLE					
	11 1/4"	22 1/2"	45"	90"		
4	4	1	8	2	17	3
6	6	1	11	2	23	4
8	8	2	15	3	30	6
10	9	2	18	4	36	7
12	11	2	21	4	43	8
16	10	3	21	5	42	10
20	13	3	25	6	51	12
24	15	4	29	7	60	15

PVC DESIGN:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3' <12" DIA.  
4' >12" DIA.  
TEST PRESSURE: 150 PSI

**POLYETHYLENE WRAPPED DUCTILE IRON LINE**

PIPE DIA.	BEND ANGLE					
	11 1/4"	22 1/2"	45"	90"		
4	6	1	12	2	24	4
6	9	2	17	3	34	5
8	11	2	22	3	45	7
10	13	2	26	4	53	8
12	15	3	30	5	63	9
16	19	3	39	6	80	12
20	23	4	47	7	97	15
24	27	4	55	8	113	17

PE WRAPPED DIP:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3'  
TEST PRESSURE: 150 PSI

NOTES:  
1. LENGTH OF RESTRAINT SHOWN IS IN FEET. PIPE DIA. IS IN INCHES  
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.  
3. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

**VERTICAL BEND RESTRAINT**

**PVC**

TEE	U <sub>r</sub>	10'		20'		
		U <sub>1</sub>	U <sub>2</sub>	U <sub>1</sub>	U <sub>2</sub>	
4X4	3	*	*	16X10	4	*
6X4	*	*	*	16X12	25	*
8X6	5	*	*	16X16	61	24
8X4	*	*	*	20X6	*	*
8X6	*	*	*	20X8	*	*
8X8	18	*	*	20X10	*	*
10X4	*	*	*	20X12	10	*
10X6	*	*	*	20X16	48	2
10X8	8	*	*	20X20	81	44
10X10	28	11	*	24X6	*	*
12X4	*	*	*	24X8	*	*
12X6	*	*	*	24X10	*	*
12X8	*	*	*	24X12	*	*
12X10	20	*	*	24X16	35	*
12X12	39	3	*	24X20	69	25
16X6	*	*	*	24X24	101	63
16X8	*	*	*			

PVC DESIGN:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3' <12" DIA.  
4' >12" DIA.  
TEST PRESSURE: 150 PSI

MINIMUM RESTRAINED LENGTH (L)

NOTES:  
1. LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.  
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.  
3. U<sub>1</sub> AND U<sub>2</sub> = UNINTERRUPTED STRAIGHT RUNS OF PIPE IN EACH DIRECTION.  
4. U<sub>r</sub> = THE SMALLER OF U<sub>1</sub> OR U<sub>2</sub>.  
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH.  
6. WHERE U<sub>r</sub> IS LESS THAN 5', RESTRAIN TEE AS A 90° HORIZONTAL BEND.  
7. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

**TEE RESTRAINT (PVC PIPE)**

**POLYETHYLENE WRAPPED DUCTILE IRON PIPE**

TEE	U <sub>r</sub>	10'		20'		
		U <sub>1</sub>	U <sub>2</sub>	U <sub>1</sub>	U <sub>2</sub>	
4X4	4	*	*	16X10	30	*
6X4	*	*	*	16X12	68	*
8X6	27	*	*	16X16	135	78
8X4	*	*	*	20X6	*	*
8X6	9	*	*	20X8	*	*
8X8	52	*	*	20X10	5	*
10X4	*	*	*	20X12	42	*
10X6	*	*	*	20X16	111	40
10X8	35	*	*	20X20	175	116
10X10	72	16	*	24X6	*	*
12X4	*	*	*	24X8	*	*
12X6	*	*	*	24X10	*	*
12X8	20	*	*	24X12	19	*
12X10	58	*	*	24X16	87	5
12X12	94	38	*	24X20	151	82
16X6	*	*	*	24X24	212	152
16X8	*	*	*			

PE WRAPPED DIP:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3'  
TEST PRESSURE=150 PSI

MINIMUM RESTRAINED LENGTH (L)

NOTES:  
1. LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.  
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.  
3. U<sub>1</sub> AND U<sub>2</sub> = UNINTERRUPTED STRAIGHT RUNS OF RESTRAINED JOINT PIPE IN EACH DIRECTION.  
4. U<sub>r</sub> = THE SMALLER OF U<sub>1</sub> OR U<sub>2</sub> (E.G., U<sub>1</sub> IN THE ABOVE DIAGRAM).  
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH.  
6. WHERE U<sub>r</sub> IS LESS THAN 5', RESTRAIN TEE AS A 90° HORIZONTAL BEND.  
7. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

**TEE RESTRAINT (DUCTILE IRON PIPE)**

**POLYETHYLENE WRAPPED DUCTILE IRON LINE**

PIPE DIA.	L
4	58
6	82
8	107
10	128
12	151
16	193
20	234
24	273

PE WRAPPED DIP:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3'  
TEST PRESSURE: 150 PSI

**PVC LINE**

PIPE DIA.	L
4	39
6	55
8	72
10	87
12	102
16	131
20	159
24	185

PVC DESIGN:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3' <12" DIA.  
4' >12" DIA.  
TEST PRESSURE: 150 PSI

MINIMUM RESTRAINED LENGTH (L)

NOTES:  
1. LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.  
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.  
3. FOR LINE STUBS (SEE DETAIL W34), THE LENGTH OF RESTRAINT (L) SHALL BE FROM THE VALVE AND NOT THE CAP.  
4. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

**DEAD END RESTRAINT**

**PVC LINE**

REDUCER	L
6X4	29
8X4	52
8X6	31
10X4	71
10X6	53
10X8	29
12X4	89
12X6	74
12X8	54
12X10	30
16X6	111
16X8	96
16X10	78
16X12	56
20X10	117
20X12	100
20X16	56
24X12	137
24X16	101
24X20	56

PVC DESIGN:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3' <12" DIA.  
4' >12" DIA.  
TEST PRESSURE: 150 PSI

**POLYETHYLENE WRAPPED DUCTILE IRON LINE**

REDUCER	L
6X4	43
8X4	77
8X6	45
10X4	104
10X6	79
10X8	43
12X4	131
12X6	110
12X8	80
12X10	45
16X6	163
16X8	141
16X10	115
16X12	82
20X10	172
20X12	147
20X16	82
24X12	201
24X16	149
24X20	82

PE WRAPPED DIP:  
SOIL TYPE: SM  
TRENCH TYPE: 3  
COVER: 3'  
TEST PRESSURE: 150 PSI

U = MINIMUM UNINTERRUPTED STRAIGHT RUN OF PIPE ON SMALL SIDE OF REDUCER.  
L = MINIMUM RESTRAINED LENGTH.  
\* WHERE MINIMUM "U" IS NOT MET, PIPE ON LARGE SIDE OF REDUCER SHALL BE RESTRAINED FOR A MINIMUM OF "L" FEET.

NOTES:  
1. LENGTH OF RESTRAINT SHOWN IS IN FEET. FITTING DIAMETERS ARE IN INCHES.  
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.  
3. INFORMATION IN THE TABLES ABOVE ARE BASED ON THE DESIGN INFORMATION SHOWN. THE ENGINEER SHALL PROVIDE AMENDED RESTRAINT LENGTHS IF SITE CONDITIONS DIFFER.

**REDUCER RESTRAINT**