GENERAL:

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY ASSOCIATED WITH THE WORK UNDER THIS PROJECT AND FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY LAWS, CODES, REGULATIONS, AND ORDINANCES INCLUDING, BUT NOT LIMITED TO, THOSE CURRENTLY MANDATED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
2. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND MAINTENANCE OF ALL EXCAVATION SUPPORT ON THE PROJECT. ALL EXCAVATION SUPPORT SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF GEORGIA. ALL EXCAVATION SUPPORT DESIGN DOCUMENTS SHALL BE PRESENTED TO THE ENGINEER FOR REVIEW BEFORE IMPLEMENTATION. CONTRACTOR SHALL USE ADEQUATE SHORING METHODS TO ENSURE:
   A. COMPLIANCE WITH OSHA REGULATIONS.
   B. PROTECTION OF EXISTING PAVEMENT AND ROAD SHOULDERS, STRUCTURES AND UTILITIES.
   C. CONSTRUCTION ACTIVITIES ARE CONFINED TO RIGHTS-OF-WAY OR EASEMENTS AS INDICATED
3. LIMITS OF DISTURBANCE (LOD) SHALL BE AS INDICATED ON THE CONTRACT DRAWINGS. ANY CHANGES TO THE LOD BY THE CONTRACTOR SHALL REQUIRE PRIOR APPROVAL FROM THE ENGINEER.
4. CONTRACTOR SHALL REPAIR AT HIS OWN EXPENSE, ANY DAMAGE CAUSED BY CONSTRUCTION RELATED ACTIVITIES TO EXISTING UTILITY SERVICE LINES.
5. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, CONTRACTOR SHALL STOP WORK IMMEDIATELY, TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY OR FURTHER DAMAGE, AND NOTIFY PROPER AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING/REPAIRING ALL EXISTING STRUCTURES, CONDUITS, OR OTHER UTILITIES DAMAGED BY CONTRACTOR'S OPERATIONS AT NO COST TO OWNER.
6. REMOVAL AND REPLACEMENT OR REPAIR OF EXISTING UTILITY SERVICES SHALL BE COORDINATED WITH APPROPRIATE UTILITY COMPANY AT NO ADDITIONAL COST TO THE OWNER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT TO ORIGINAL OR BETTER CONDITION OF ALL EXISTING PAVEMENTS, FENCES, AND MISCELLANEOUS ITEMS WHERE DAMAGED BY CONSTRUCTION ACTIVITIES OR REQUIRED TO COMPLETE THE CONSTRUCTION.
8. ALL HOLES, TRENCHES, AND OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY BARRICADES, LIGHTS OR OTHER PROTECTIVE DEVICES.
9. REMOVAL OF EXCAVATED MATERIALS AND DAILY CLEANUP OPERATIONS SHALL BE PERFORMED IN COMPLIANCE WITH THE SPECIFICATIONS AND TO THE SATISFACTION OF THE OWNER/ENGINEER.
10. EXCESS/UNSUITABLE SPOIL TO BE REMOVED FROM SITE. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL SUBMIT THE OFF-SITE SPOIL LOCATIONS TO BE USED AND PROVIDE DOCUMENTATION OF EROSION CONTROL MEASURES TO BE PROVIDED DURING DISPOSAL OPERATIONS. CONTRACTORS OFF-SITE SEDIMENT CONTROL MEASURES MUST BE IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.
11. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE IMPLEMENTED BEFORE CONSTRUCTION COMMENCES AND SHALL NOT BE REMOVED UNTIL PERMANENT GROUND COVER STABILIZATION HAS BEEN ESTABLISHED.
12. THE CONTRACTOR SHALL RECORD AND SUPPLY TO THE ENGINEER THE FOLLOWING INFORMATION:
   A. THE LOCATION OF ALL UTILITIES CROSSED AND THE NEW LOCATION AND DEPTH OF ALL RELOCATED AND/OR ADJUSTED UTILITIES.
15. THE PROPERTY IS NOT LOCATED IN THE 1% ANNUAL CHANCE FLOOD PLAIN. INFORMATION OBTAINED FROM FLOOD INSURANCE RATE MAP 13021C0143G, DATED JUNE 7, 2017.

    HORIZONTAL CONTROL: NAD 83
    VERTICAL CONTROL: NAVD 88
16. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT EXISTING PIPELINES AND UTILITIES, WHETHER SHOWN OR NOT. IF CONTRACTOR DETERMINES EXISTING PIPE OR UTILITY MUST BE TEMPORARILY REMOVED TO ALLOW FOR CONSTRUCTION OF NEW PIPE OR UTILITY, CONTRACTOR SHALL COORDINATE ANY NECESSARY SHUTDOWN WITH OWNER AND MINIMIZE ANY IMPACTS TO THE EXTENT POSSIBLE, OR PROVIDE FOR ANY BYPASS PUMPING AS MAY BE NECESSARY.
17. THE CONTRACTOR SHALL PRESERVE BENCHMARKS, CONTROL POINTS, AND STAKES. ANY BENCHMARKS OR CONTROL POINTS DISTURBED OR DESTROYED BY CONTRACTORS ACTIONS SHALL BE RE-SET OR REPLACED BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF GEORGIA AT NO ADDITIONAL COST TO OWNER.
18. CONTRACTOR SHALL DEVELOP AND MAINTAIN TRAFFIC CONTORL PLAN FOR WORK WITHIN RIGHT-OF-WAY. SUBMIT PLAN TO OWNER AND ENGINEER PRIOR TO IMPLEMENTATION. SEE SPECIFICATION SECTION 01 55 26.

DEMOLITION:

1. EXISTING CONDITIONS SHOWN BASED ON FIELD SURVEY PERFORMED BY GASKINS ENGINEERING ON 04-30-2020. HORIZONTAL DATUM IS NAD 83, VERTICAL DATUM IS NAVD 88.
2. THIS PARCEL IS NOT WITHIN THE 100-YR FLOODPLAIN LIMITS AND IS IN ZONE X, ACCORDING TO FEMA MAP #13121C0143G DATED JUNE 7TH, 2017.
3. EXISTING UTILITY HORIZONTAL LOCATIONS AND DEPTHS PROVIDED IN THESE DRAWINGS ARE NOT GUARANTEED. THEREFORE, THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
4. CONTRACTOR SHALL REMOVE UNDERGROUND PIPING IDENTIFIED AS TO BE DEMOLISHED IF THE UNDERGROUND PIPING IS IN CONFLICT WITH PROPOSED WORK. OTHERWISE, ABANDON IN PLACE BY FILLING WITH FLOWABLE FILL.
5. DEMOLITION SHALL BE IN ACCORDANCE WITH SPECIFICATIONS 02 41 00.
6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT EXISTING PIPELINES AND UTILITIES, WHETHER SHOWN OR NOT. IF CONTRACTOR DETERMINES EXISTING PIPE OR UTILITY MUST BE TEMPORARILY REMOVED TO ALLOW FOR CONSTRUCTION OF NEW PIPE OR UTILITY, CONTRACTOR SHALL COORDINATE ANY NECESSARY SHUTDOWN WITH OWNER AND MINIMIZE ANY IMPACTS TO THE EXTENT POSSIBLE, OR PROVIDE FOR ANY BYPASS PUMPING AS MAY BE NECESSARY.
7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS BEFORE COMMENCEMENT OF CONSTRUCTION.
8. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA 48 HOURS MINIMUM PRIOR TO START OF CONSTRUCTION, AND SHALL HAVE ALL SERVICE LINES (GEORGIA POWER, NATURAL GAS, WATER, CABLE, AT&T, SANITARY SEWER, IRRIGATION, FORCE MAIN, AND OTHERS) LOCATED AND FLAGGED PRIOR TO ANY LAND DISTURBANCE.
9. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL UTILITY LINES AND SERVICES DAMAGED DURING CONSTRUCTION, INCLUDING IRRIGATION LINES AND SERVICES. THE ENGINEER AND APPROPRIATE UTILITY COMPANY SHALL BE CONTACTED, AND REPAIRS SHALL BE MADE IMMEDIATELY AT NO ADDITIONAL COST TO OWNER.
10. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, LOCATIONS, AND ELEVATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
11. THE CONTRACTOR SHALL REMOVE ALL DEBRIS AND WASTE MATERIALS FROM THE SITE AND DISPOSE OF LAWFULLY AT A PROPERLY PERMITTED FACILITY.
12. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES, AND JOB SAFETY IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS.
13. THE CONTRACTOR SHALL REPAIR ALL DAMAGES TO EXISTING INFRASTRUCTURE TO REMAIN, INCLUDING DAMAGE TO STREETS, DRIVEWAYS, UTILITIES, FENCES, SIGNS, TREES, ETC., AT NO ADDITIONAL COST TO OWNER.
14. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS, INCLUDING OSHA SAFETY REGULATIONS.
15. THE CONTRACTOR SHALL PRESERVE BENCHMARKS, CONTROL POINTS, AND STAKES. ANY BENCHMARKS OR CONTROL POINTS DISTURBED OR DESTROYED BY CONTRACTORS ACTIONS SHALL BE RE-SET OR REPLACED BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF GEORGIA AT NO ADDITIONAL COST TO OWNER.

TRENCHLESS INSTALLATION NOTES:

1. FURNISH AND INSTALL CASING AND CARRIER PIP IN ACCORDANCE WITH THE DRAWINGS AND THE FOLLOWING SPECIFICATIONS.
2. WHERE GROUNDWATER IS ENCOUNTERED, OPERATE WELL POINTS OR DRAINAGE SYSTEMS IN THE VICINITY OF THE CASING TO PREVENT THE ACCUMULATION OF GROUND WATER IN THE CASING.
3. FURNISH ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL STEEL PIPE CASING AT LOCATIONS INDICATED ON THE DRAWINGS AND AS SPECIFIED IN SPECIFICATION SECTION 40 05 24.43.
4. AFTER INSTALLATION OF THE CASING IS COMPLETE, INSTALL THE CARRIER PIPE BY A METHOD WHICH HAS RECEIVED PRIOR APPROVAL OF MACON WATER AUTHORITY. THE CARRIER PIPE SHALL BE SUPPORTED AT EACH JOINT OR AS RECOMMENDED BY THE MANUFACTURER. CASING SPACERS SHALL BE CASCADE STYLE CCS OR APPROVED EQUAL.
5. CASING ENDS SHALL BE SEALED WITH 4-INCH BRICK WALLS, PLASTERED WITH PORTLAND CEMENT MORTAR AND WATERPROOFED WITH ASPHALTIC ROOFING CEMENT. LEAVE A 4-INCH OPENING AT THE BOTTOM OF THE LOWEST CLOSURE FOR DRAINAGE.

811
BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
CALL 881

LEGEND

SYMBOLS

- EX WATER METER
- EX POWER POLE
- BENCHMARK
- CLEANOUT
- EX CATCH BASIN
- EX PROPERTY SET PIN
- EX PROPERTY MONUMENT
- EX WATER VALVE
- EX FIRE HYDRANT
- EX TREE
- PR WATER VALVE

NEW	DEMO	EXISTING	
			BUILDING/STRUCTURE
			BITUMINOUS PAVEMENT
			CONCRETE CURB AND GUTTER
			CONCRETE
			WETLANDS

BY OTHERS	NEW	EXISTING	
	(RESET/NEW)		FENCE
	300	300	CONTOUR
			PROPERTY LINE
OHE		OHE	OVERHEAD ELECTRIC
W	W	W	WATER PIPING
			ELECTRIC DUCTBANK
		GAS	EXISTING GAS LINE
		UGC	EXISTING COMM LINE

NEW	DEMO	EXISTING	
			APPROXIMATE WOODLINE
			YARD PIPING
			MANHOLE
			YARD INLET
			HEADWALL
			STORM DRAIN LINE
			STREAM OR DITCH
			STREAM BUFFER

	STREAM
	STREAM BUFFER
	STABILIZED OUTLET FOR SILT FENCE
	YARD INLET PROTECTION
	GRAVEL CONSTRUCTION ENTRANCE
SF	SILT FENCE
TPF	TREE PROTECTION FENCE
LOD	LIMITS OF DISTURBANCE

ABBREVIATIONS

CONC	CONCRETE	SS	SANITARY SEWER
MON.	MONUMENT	W	WATER
CB	CATCH BASIN	LOC	LIMITS OF CONSTRUCTION
TYP.	TYPICAL	OHE	OVERHEAD ELECTRIC
BLDG	BUILDING	FOC	FIBER OPTIC CABLE
EOP	EDGE OF PAVEMENT	RECM	ROLLED EROSION CONTROL MATTING
STM	STORM		
HW	HEADWALL	UGE	UNDERGROUND ELECTRIC
TBM	TEMPORARY BENCHMARK	PP	POWER POLE
		WM	WATER MAIN
GV	GATE VALVE	MIN.	MINIMUM

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 — 1/2" — 1")

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

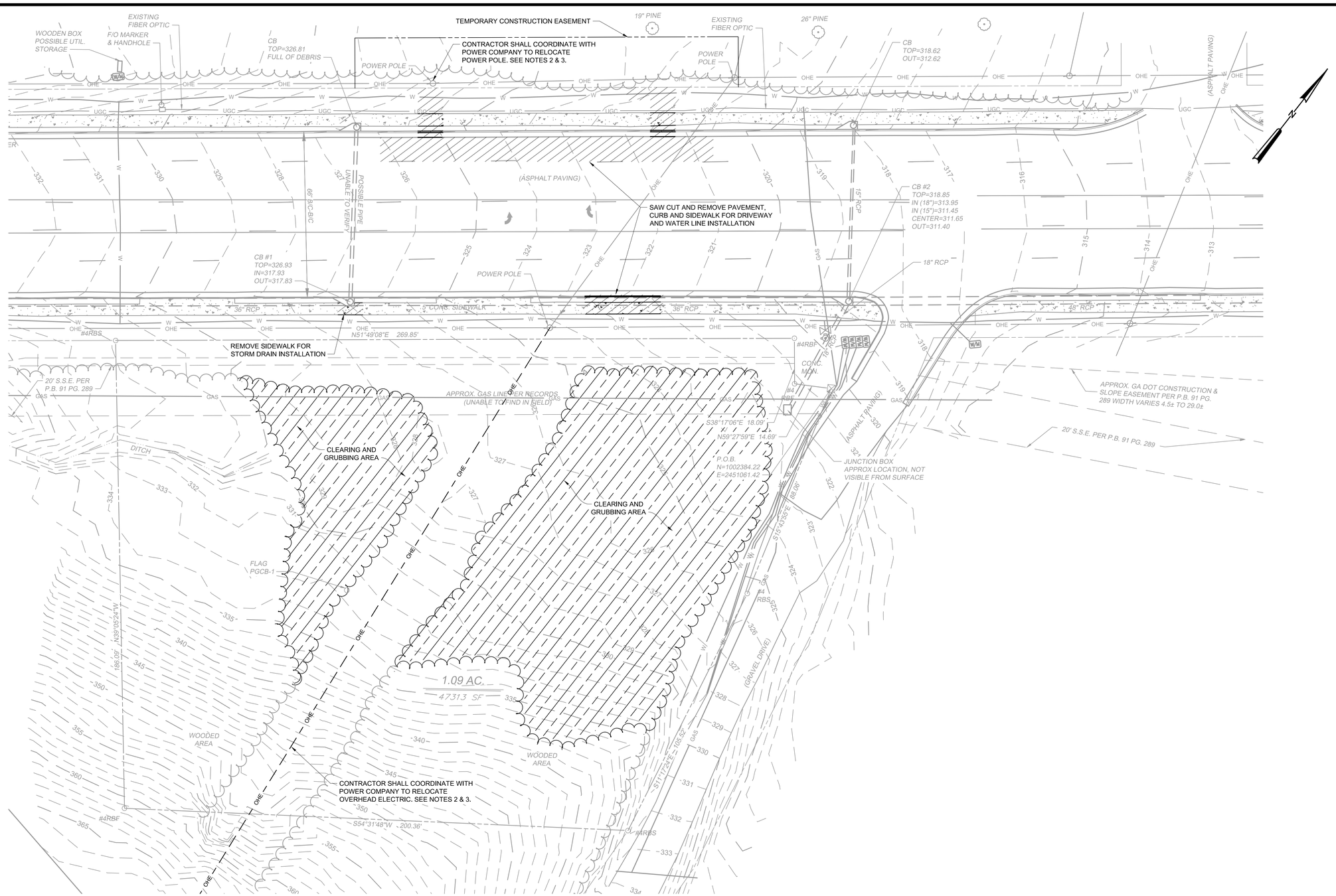
MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER
PUMP STATION

CIVIL
NOTES, LEGEND AND ABBREVIATIONS

DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C000

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C000 Saved by JWALKER Save date: 2/11/2021 4:17 PM
PLOT DATE: 2/11/2021 4:30 PM BY: JWALKER



PLAN

SCALE: 1" = 20'

NOTES:

1. CONTRACTOR SHALL DEMOLISH ALL ITEMS SHOWN IN BOLD OR COVERED WITH DEMO HATCH EXCEPT THOSE ASSETS IDENTIFIED AS PROTECTED DURING CONSTRUCTION.
2. CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY FOR POWER POLE AND OVERHEAD UTILITY RELOCATION.
3. POWER COMPANY CONTACT INFO:

   KRYSTA DAVIS
   GEORGIA POWER COMPANY
   ENGINEER III
   MACON DISTRIBUTION
   478-258-1739 (CELL)

4. MACON WATER AUTHORITY SHALL BE RESPONSIBLE FOR OBTAINING EASEMENTS ASSOCIATED WITH OVERHEAD UTILITY RELOCATION.

811

BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
CALL 881

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

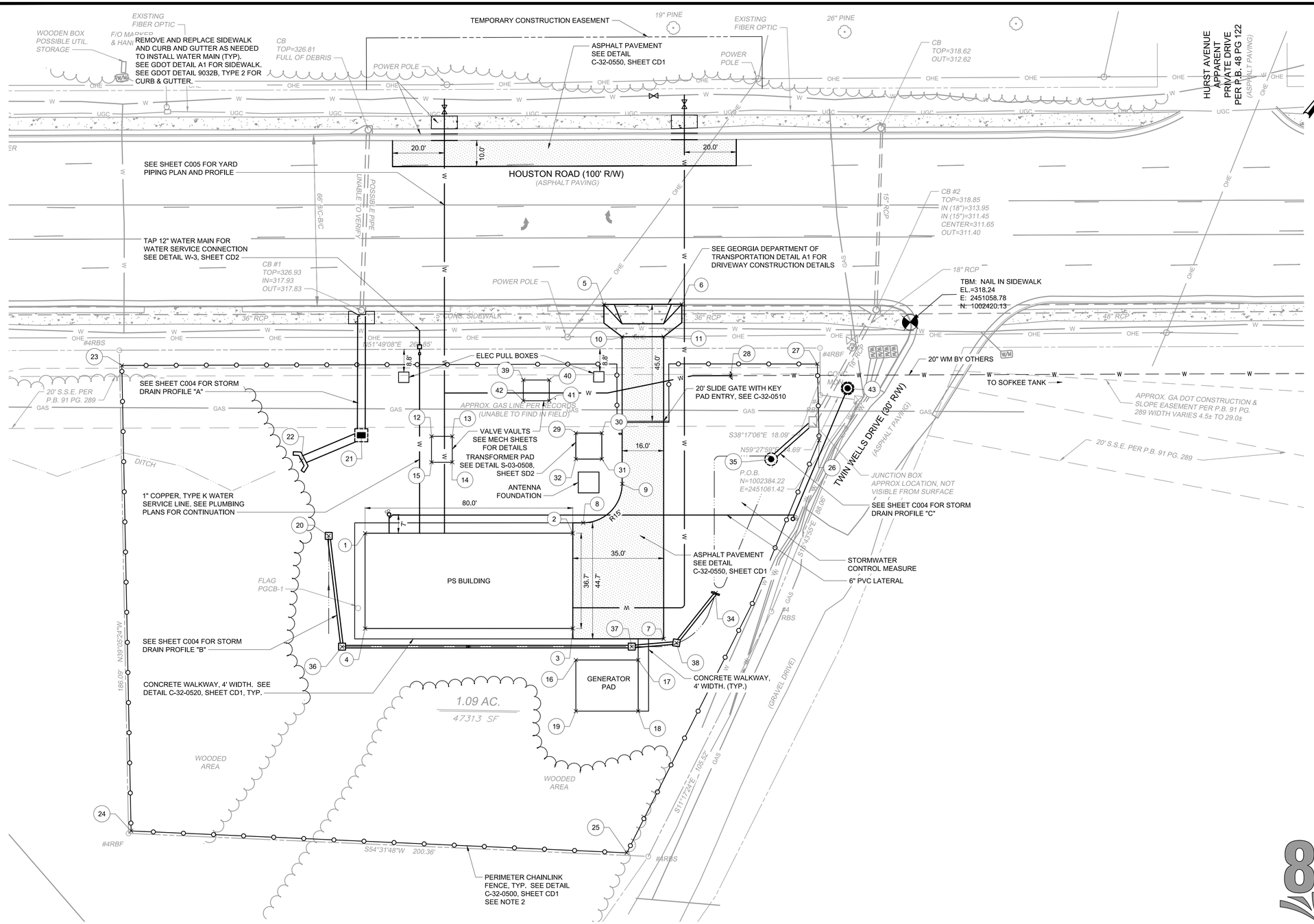
MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER PUMP STATION

CIVIL
EXISTING CONDITIONS AND DEMOLITION PLAN

DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C001

File: O:\32355-0SO\32355-003\CAD_BIM\CIVIL\C001 Saved by JWALKER Save date: 2/11/2021 4:17 PM
PLOT DATE: 2/11/2021 4:30 PM BY: JWALKER



PLAN

SCALE: 1" = 20'

NOTES:

1. STAKING POINTS SHOWN ARE TO OUTSIDE FACE OF STRUCTURE, CENTER OF MANHOLE, DRAINAGE STRUCTURE, AND HEADWALL, AND EDGE OF PAVEMENT OR CONCRETE PAD.
2. CONTRACTOR SHALL MINIMIZE CLEARING PERFORMED FOR PERIMETER FENCE INSTALLATION.
3. SIDEWALK AND CURB & GUTTER WITHIN HOUSTON ROAD ROW SHALL MEET GDOT'S STANDARD SPECIFICATION SECTION 441 - MISCELLANEOUS CONCRETE.

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION	ELEVATION
1	1002226.87	2450943.40	BLDG CORNER	329.00
2	1002276.14	2451006.43	BLDG CORNER	329.00
3	1002247.25	2451029.01	BLDG CORNER	329.00
4	1002197.98	2450965.98	BLDG CORNER	329.00
5	1002352.92	2450961.64	EOP	322.76
6	1002371.45	2450985.23	EOP	321.53
7	1002265.65	2451059.05	EOP	328.22
8	1002281.76	2451007.13	EOP	328.84
9	1002302.82	2451009.70	EOP	327.67
10	1002347.42	2450974.81	EOP	323.45
11	1002357.30	2450987.42	EOP	322.65
12	1002272.04	2450940.56	VAULT #1	328.50
13	1002276.97	2450946.87	VAULT #1	328.50
14	1002269.09	2450953.03	VAULT #1	328.50
15	1002264.17	2450946.72	VAULT #1	328.50
16	1002238.38	2451037.42	GENERATOR PAD	329.50
17	1002253.16	2451056.33	GENERATOR PAD	329.50
18	1002237.66	2451068.44	GENERATOR PAD	329.50
19	1002222.88	2451049.53	GENERATOR PAD	329.50
20	1002217.46	2450932.99	STM CB	328.07
21	1002255.72	2450919.02	STM CB	327.90
22	1002233.84	2450906.86	STM HW	324.72
23	1002220.12	2450829.80	FENCE CORNER	331.95
24	1002081.07	2450942.96	FENCE CORNER	361.01
25	1002191.96	2451098.59	FENCE CORNER	336.99
26	1002362.74	2451059.16	FENCE CORNER	322.11
27	1002385.46	2451040.53	FENCE CORNER	320.78
28	1002361.44	2451017.05	WM RJ PLUG	322.37
29	1002307.24	2450983.62	TRANSFORMER PAD	326.75
30	1002313.39	2450991.50	TRANSFORMER PAD	326.72
31	1002305.53	2450997.68	TRANSFORMER PAD	327.25
32	1002299.36	2450989.77	TRANSFORMER PAD	327.30
34	1002291.90	2451063.94	STM HW	323.50
35	1002345.62	2451049.08	STM OUTLET STRUCTURE	322.50
36	1002187.00	2450963.30	STM CB	328.75
37	1002255.71	2451051.21	STM CB	327.07
38	1002267.45	2451063.85	STM CB	326.74
39	1002310.89	2450955.08	VAULT #2	325.97
40	1002317.05	2450962.96	VAULT #2	325.54
41	1002310.74	2450967.88	VAULT #2	326.13
42	1002304.58	2450960.00	VAULT #2	326.48
43	1002385.26	2451055.47	SSMH	320.67

BEFORE YOU DIG! CONTACT ONE-CALL CENTER CALL 881

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen

HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

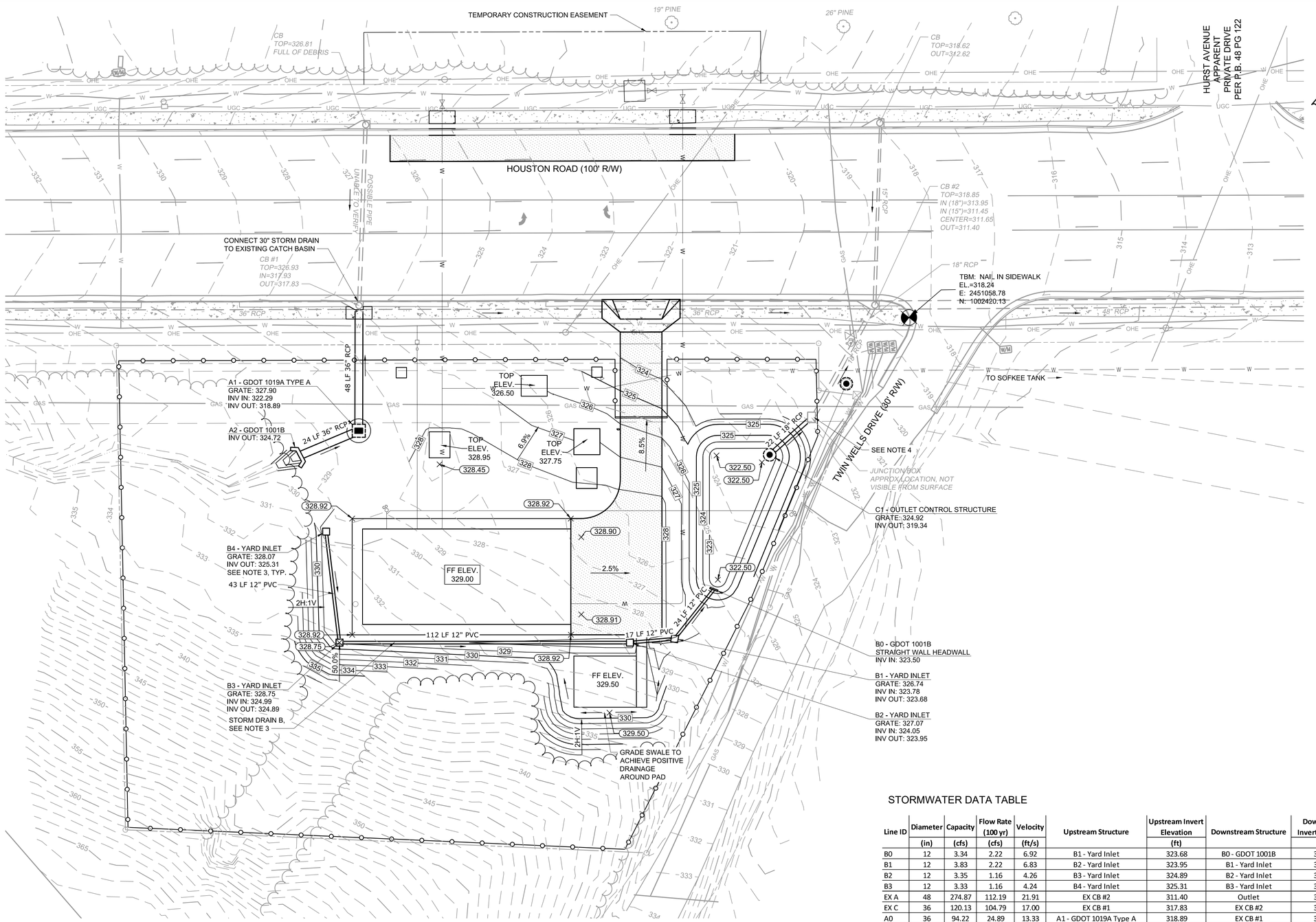
MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER PUMP STATION

CIVIL SITE LAYOUT

DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C002

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C002 Saved by JWALKER Save date: 2/11/2021 4:18 PM
PLOT DATE: 2/11/2021 4:31 PM BY: JWALKER



PLAN

SCALE: 1" = 20'

NOTES:

1. CONTRACTOR SHALL ACHIEVE POSITIVE DRAINAGE AWAY FROM ALL BUILDING PADS AND VALVE VAULT AT A MINIMUM OF 2% SLOPE.
2. MINIMUM COVER OVER CONCRETE STORM DRAIN SHALL BE 18".
3. STORM DRAIN B CATCH BASINS AND INLETS SHALL BE NDS 24" CATCH BASIN SERIES OR EQUAL.GRATES SHALL BE NDS 24" X 24" SQUARE GALVANIZED STEEL GRATE OR EQUAL.
4. CONTRACTOR SHALL UNCOVER STORM STRUCTURE AND VERIFY ITS CONDITION IS SUITABLE FOR ITS PROPOSED USE. REMOVE ALL SEDIMENT OR OTHER SOLIDS THAT HAVE ACCUMULATED IN THE STRUCTURE AND CONNECTING PIPE. NOTIFY OWNER AND ENGINEER IMMEDIATELY IF STRUCTURE'S CONDITION PROHIBITS CONNECTION TO PROPOSED 18-INCH STORM PIPE.

STORMWATER DATA TABLE

Line ID	Diameter (in)	Capacity (cfs)	Flow Rate (100 yr) (cfs)	Velocity (ft/s)	Upstream Structure	Upstream Invert Elevation (ft)	Downstream Structure	Downstream Invert Elevation (ft)	Slope (%)
B0	12	3.34	2.22	6.92	B1 - Yard Inlet	323.68	B0 - GDOT 1001B	323.50	0.75
B1	12	3.83	2.22	6.83	B2 - Yard Inlet	323.95	B1 - Yard Inlet	323.78	0.99
B2	12	3.35	1.16	4.26	B3 - Yard Inlet	324.89	B2 - Yard Inlet	324.05	0.75
B3	12	3.33	1.16	4.24	B4 - Yard Inlet	325.31	B3 - Yard Inlet	324.99	0.74
EX A	48	274.87	112.19	21.91	EX CB #2	311.40	Outlet	302.93	3.67
EX C	36	120.13	104.79	17.00	EX CB #1	317.83	EX CB #2	311.40	3.24
A0	36	94.22	24.89	13.33	A1 - GDOT 1019A Type A	318.89	EX CB #1	317.93	2.00
A1	36	148.65	24.55	21.03	A2 - GDOT 1001B	324.72	A1 - GDOT 1019A Type A	323.51	4.97
EX B	18	14.85	7.50	8.64	EX Yard Inlet	314.94	EX CB #2	313.95	2.00
C0	18	23.52	7.50	14.26	C1 - Outlet Control Structure	319.34	EX Yard Inlet	318.26	5.02

SCALE: 1" = 20'

20 10 0 20'

811

BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
CALL 881

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

MACON WATER AUTHORITY
MACON, GEORGIA

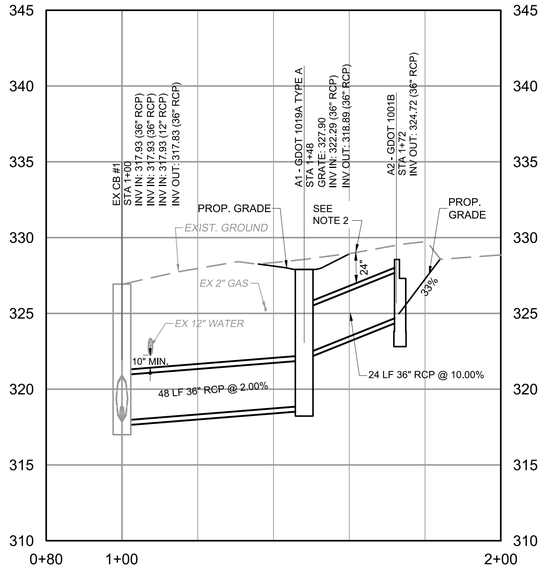
GEMINI BOOSTER
PUMP STATION

MWA

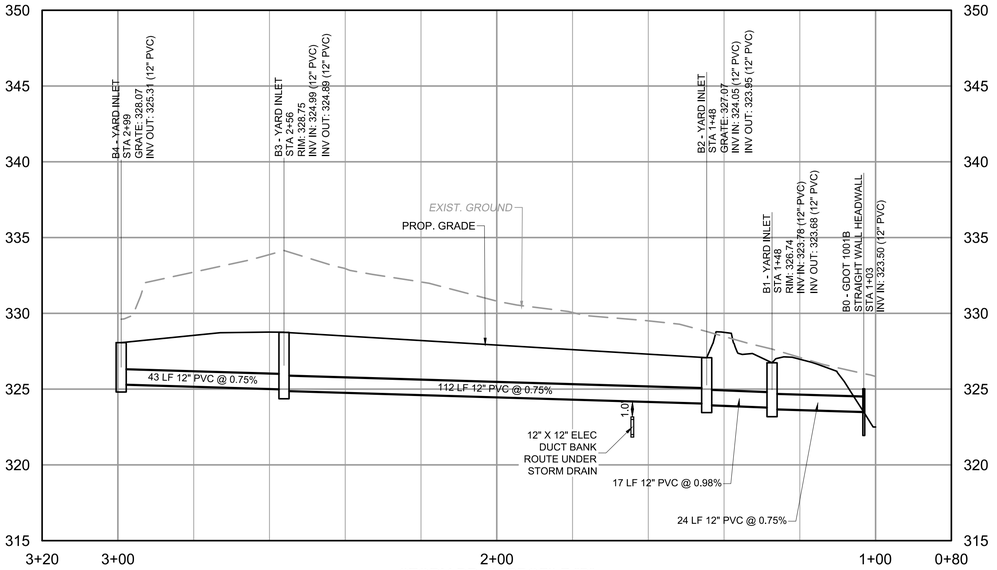
CIVIL
GRADING AND DRAINAGE PLAN

DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C003

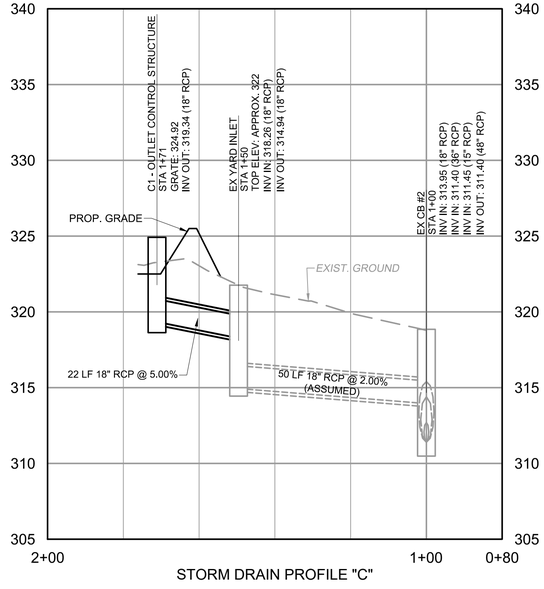
File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C003 Saved by JWALKER Save date: 2/11/2021 4:19 PM
PLOT DATE: 2/11/2021 4:31 PM BY: JWALKER



STORM DRAIN PROFILE "A"



STORM DRAIN PROFILE "B"



STORM DRAIN PROFILE "C"

PROFILES

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1"=5'

NOTES:

1. NOT USED.
2. MINIMUM COVER OVER CONCRETE STORM DRAIN SHALL BE 18".
3. STORM DRAIN B CATCH BASINS AND INLETS SHALL BE NDS 24" CATCH BASIN SERIES OR EQUAL GRATES SHALL BE NDS 24" X 24" SQUARE GALVANIZED STEEL GRATE OR EQUAL.

BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
CALL 811

SCALE: 1" = 20'
20 10 0 20'

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

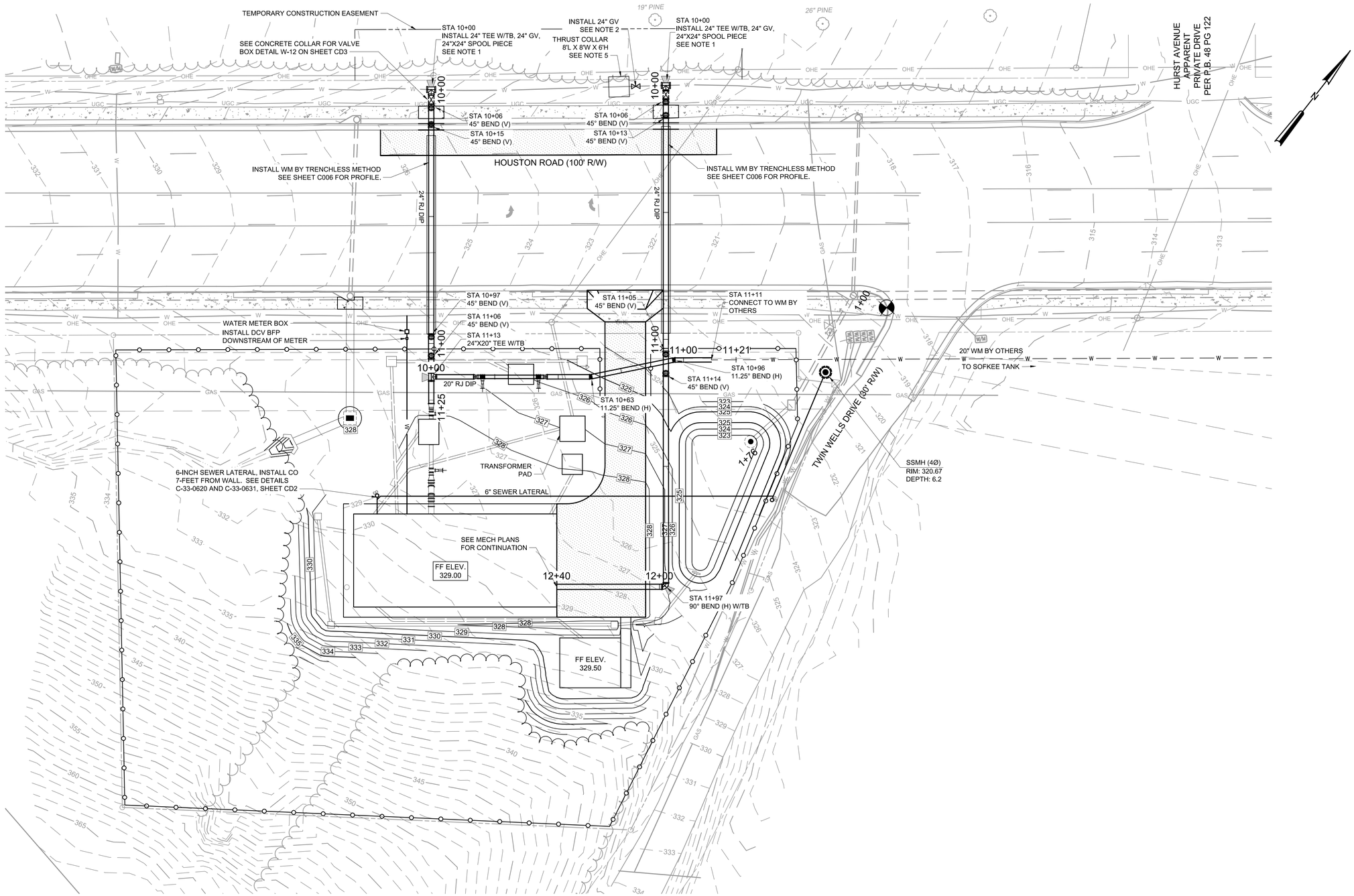
MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER
PUMP STATION

CIVIL
STORM PROFILES

DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C004

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C004 Saved by JWALKER Save date: 2/11/2021 4:19 PM
PLOT DATE: 2/11/2021 4:31 PM BY: JWALKER



NOTES:

1. CONTRACTOR SHALL CUT-IN 24"X24" TEE WITH 24" SOLID SLEEVE COUPLING AND PLAIN END SPOOL PIECE. ALL JOINTS SHALL BE RESTRAINED WITH RETAINER GLANDS. TEES SHALL BE RESTRAINED WITH CONCRETE THRUST BLOCKING (TB). SEE DETAIL C-01-0110 AND C-01-0112 FOR TB DIMENSIONS.
2. CONTRACTOR SHALL CUT-IN 24" GATE VALVE WITH 24" SOLID SLEEVE COUPLING AND PLAIN END SPOOL PIECE. ALL JOINTS SHALL BE RESTRAINED WITH RETAINER GLANDS.
3. ALL INSTALLED VALVES LOCATED WITHIN THE R/W SHALL HAVE CONCRETE VALVE MARKERS INSTALLED. SEE DETAIL W-10, SHEET CD2.
4. ALL 24" AND 20" DIP YARD PIPING SHALL BE PRESSURE CLASS 350 WITH RESTRAINED JOINTS.
5. 24" GV SHALL BE RESTRAINED TO THRUST COLLAR BY TIE RODS. SEE DETAIL C-01-0111R, SHEET CD2.
6. ALL DUCTILE IRON YARD PIPING SHALL BE BEDDED ACCORDING TO DETAIL OT-2 ON SHEET CD3.
7. SEE SECTION 01 14 00 FOR CONSTRUCTION SEQUENCING REQUIREMENTS. CONTRACTOR SHALL CLOSE VALVE AFTER INSTALLATION AND TESTING TO ALLOW 20-INCH MAIN BY OTHERS TO BE PUT INTO SERVICE PRIOR TO COMPLETION OF PUMP STATION.
8. SEE TRENCHLESS INSTALLATION METHOD NOTES ON SHEET C000.

BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
CALL 881

PLAN

SCALE: 1" = 20'

SCALE: 1" = 20' (20 10 0 20')

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 1/2" 1")

PROJECT ENGINEER:	A. BOWLING
DESIGNED BY:	B. JONES
DRAWN BY:	J. WALKER
CHECKED BY:	A. BOWLING

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

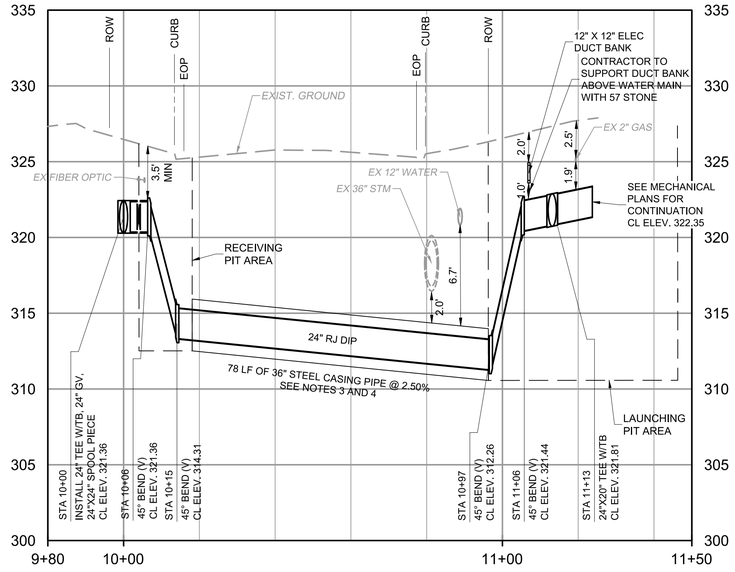
MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER
PUMP STATION

CIVIL
YARD PIPING PLAN

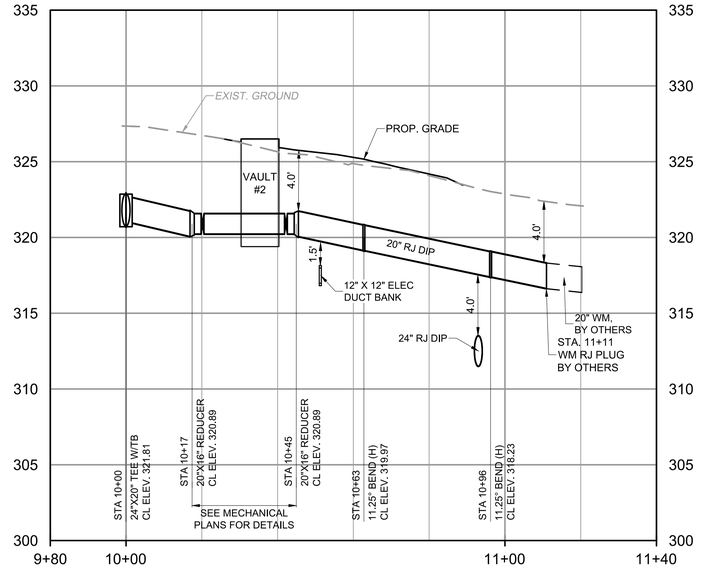
DATE:	NOVEMBER 2020
HAZEN NO.:	32355-003
CONTRACT NO.:	01
DRAWING NUMBER:	C005

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C005 Saved by JWALKER Save date: 2/11/2021 4:20 PM
PLOT DATE: 2/11/2021 4:31 PM BY: JWALKER



DISCHARGE LINE PROFILE

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1"=5'

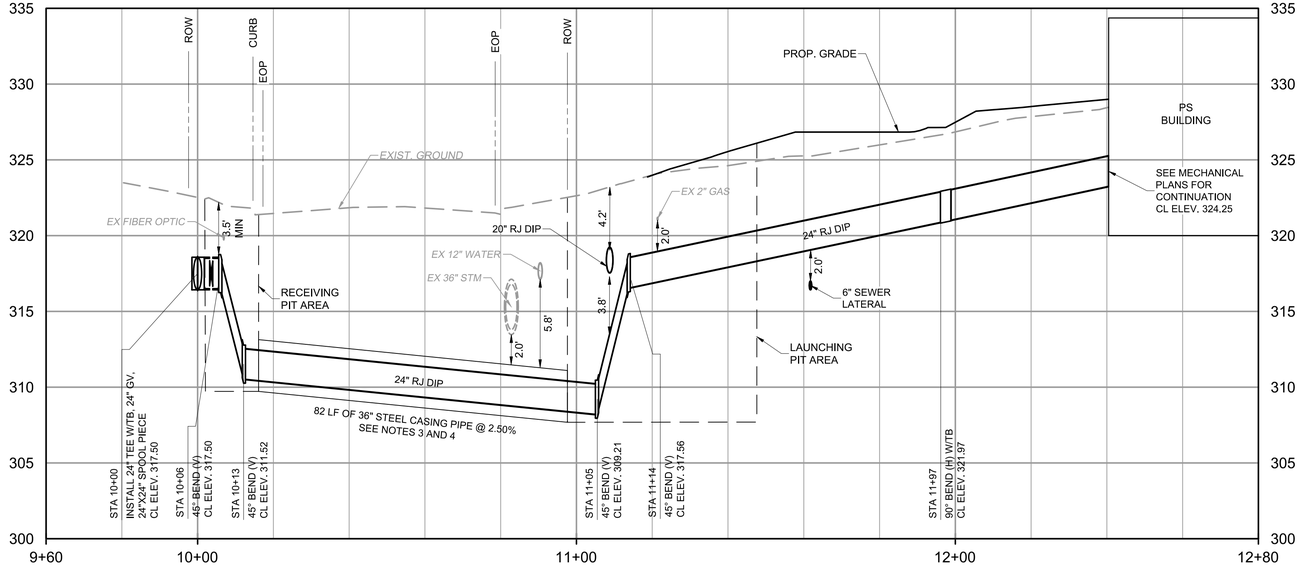


20" TO SOFKEE TANK

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1"=5'

NOTES:

1. CONTRACTOR SHALL MAINTAIN MINIMUM OF 18" OF SEPARATION BETWEEN ALL EXISTING UTILITIES AND PROPOSED WATER MAINS.
2. CONTRACTOR SHALL VERIFY DEPTH OF EXISTNG 24-INCH WATER MAIN.
3. CASING DIAMETER SHALL BE MINIMUM OF 36-INCHES (NOMINAL).
4. CASING PIPE SHALL BE INSTALLED BETWEEN A MINIMUM OF 0.5% SLOPE AND A MAXIMUM OF 5% SLOPE.
5. CASING PIPE SHALL HAVE A MINIMUM OF 2-FOOT SEPARATION BETWEEN ALL EXISTING UTILITIES AND TOP OF PIPE.
6. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DESIGNING AND PROVIDING SHORING OF RECEIVING PITS TO PROTECT HOUSTON ROAD.
7. SEE TRENCHLESS INSTALLATION METHOD NOTES ON SHEET C000.



SUCTION LINE PROFILE

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1"=5'

BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
CALL 881

SCALE: 1" = 20'
20 10 0 20'

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

PROJECT ENGINEER:	A. BOWLING
DESIGNED BY:	B. JONES
DRAWN BY:	J. WALKER
CHECKED BY:	A. BOWLING

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

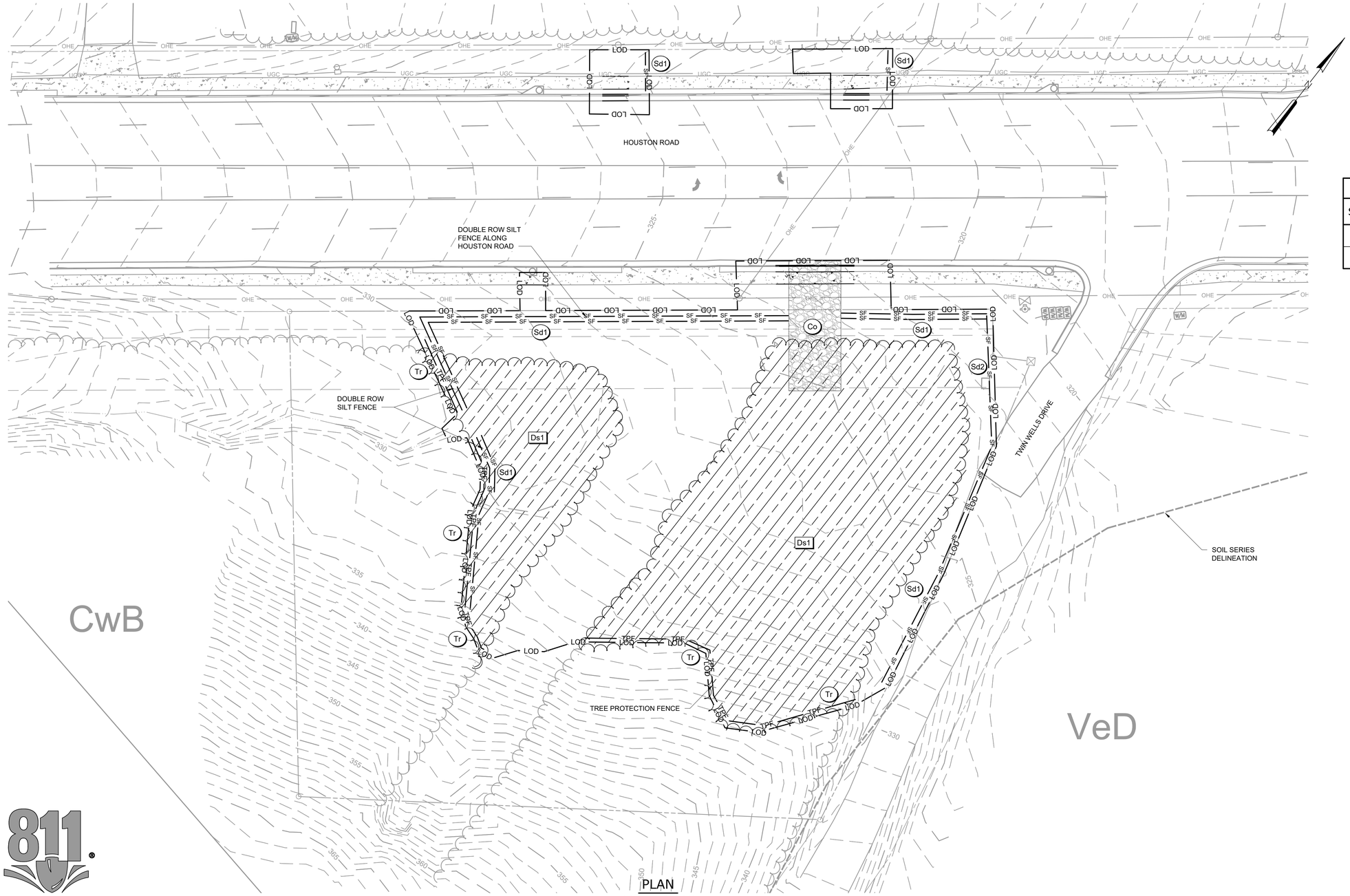
MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER PUMP STATION

CIVIL
WATER LINE PROFILES

DATE:	NOVEMBER 2020
HAZEN NO.:	32355-003
CONTRACT NO.:	01
DRAWING NUMBER:	C006

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C006 Saved by JWALKER Save date: 2/11/2021 4:20 PM
PLOT DATE: 2/11/2021 4:31 PM BY: JWALKER



PLAN
SCALE: 1" = 20'

1" = 20'

20 10 0 20'

NOTES:

1. REFER TO NOTES ON DWGS C010.
2. CONTOURS VERTICALLY SPACED AT ONE (1) FOOT INTERVALS, WITH FIVE (5) FOOT MAJOR AND ONE (1) FOOT MINOR CONTOURS, UNLESS NOTED OTHERWISE.
3. REFER TO GEORGIA UNIFORM CODING SYSTEM ON DWG C010 FOR SYMBOLS LEGEND.
4. REFER TO DWGS C012 FOR EROSION CONTROL BMP DETAILS AND MULCHING, SEEDING AND FERTILIZATION REQUIREMENTS.

SOIL SERIES LEGEND

SYMBOL	NAME	HYDROLOGIC GROUP	SLOPE
CwB	COWARTS (SANDY LOAM)	C	2%-5%
VeD	VAUCLUSE (LOAMY SAND)	C	8%-17%

SILT FENCE STORAGE CALCULATIONS:

TOTAL SILT FENCE TO BE INSTALLED = 370 LF
- 6.9 CY OF STORAGE PER 100 LF OF SILT FENCE

TOTAL STORAGE PROVIDED = (370 LF/100 LF) * 6.9 CY = 25.5 CY

BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
CALL 881

GSWCC Georgia Soil and Water Conservation Commission

Brian C. Jones
Level II Certified Design Professional

Certification Number: 0000021468 Expires: 01/10/2023
Issued: 01/10/2020

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER
PUMP STATION

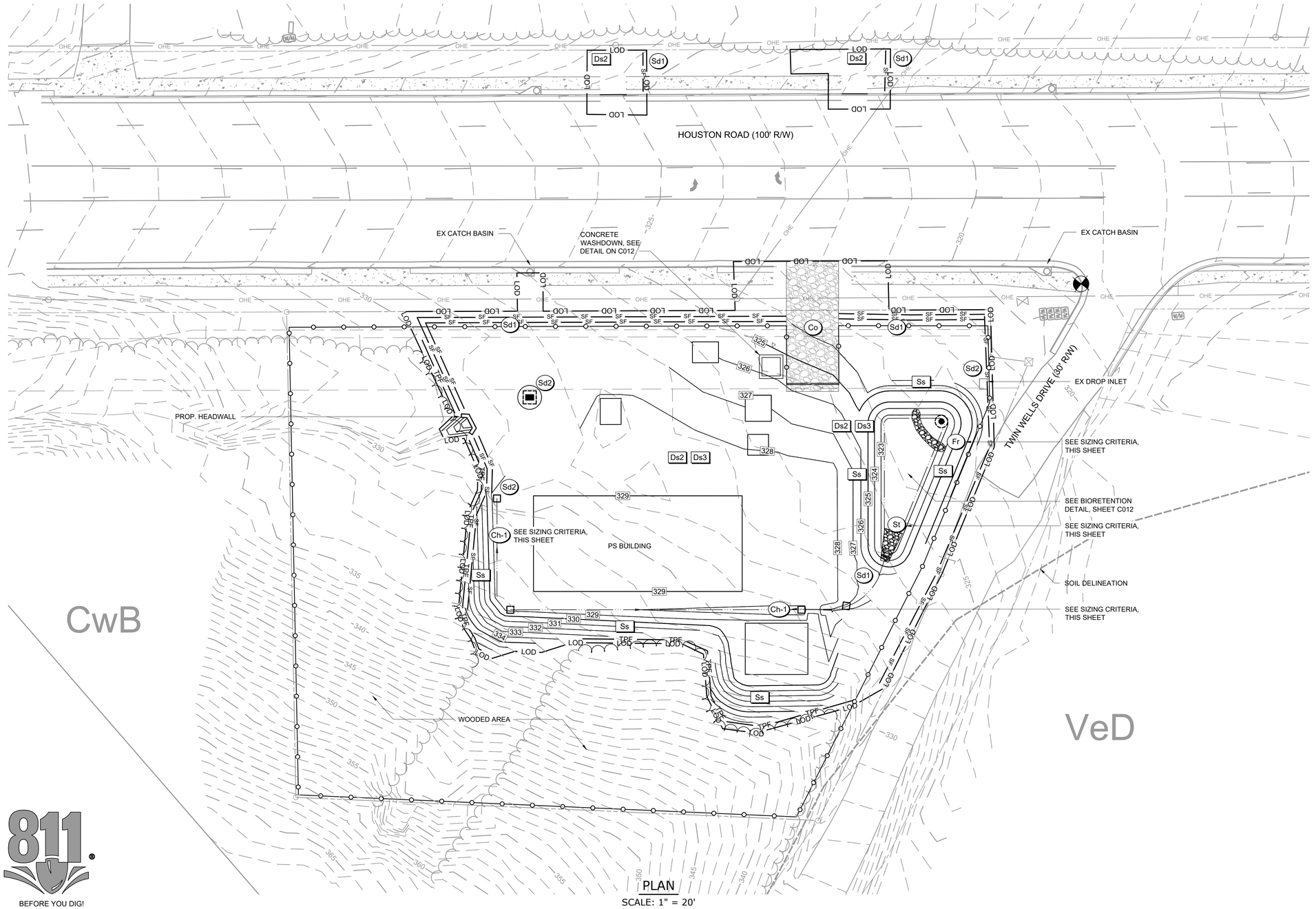
CIVIL
EROSION AND SEDIMENT CONTROL
PHASE 1

DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C007

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C007 Saved by JWALKER Save date: 2/11/2021 4:21 PM
PLOT DATE: 2/11/2021 4:31 PM BY: JWALKER

NOTES:

1. REFER TO NOTES ON DWGS C007.



PLAN
SCALE: 1" = 20'

SOIL SERIES LEGEND			
SYMBOL	NAME	HYDROLOGIC GROUP	SLOPE
CwB	COWARTS (SANDY LOAM)	C	2%-5%
VeD	VAUCLUSE (LOAMY SAND)	C	8%-17%

Sd1 - SILT FENCE STORAGE CALCULATIONS:

TOTAL SILT FENCE TO BE INSTALLED = 370 LF
- 6.9 CY OF STORAGE PER 100 LF OF SILT FENCE

TOTAL STORAGE PROVIDED = (370 LF/100 LF) * 6.9 CY = 25.5 CY

Fr - FILTER RING STORAGE CALCULATIONS:

HEIGHT = 2 FT

AREA UPSTREAM = 800 SQFT

TOTAL VOLUME PROVIDED = (1 FT x 800 SQFT) / 27 CY/CF = 30 CY

TOTAL STORAGE PROVIDED

Sd1 STORAGE = 25.5 CY
Fr STORAGE = 30 CY
STORAGE PROVIDED = 55.5 CY

STORAGE REQUIRED = 0.7 AC x 67 CY = 47 CY

PROVIDED STORAGE > REQUIRED STORAGE

St - OUTLET PROTECTION

PIPE DIAMETER: 12 in
CAPACITY: 5.4 cfs
VELOCITY: 5.7 fps
TAILWATER CONDITION: >0.5D

FROM FIGURE 6-34.2
d50 = 0.75 ft
La = 12 ft
D(depth) = 18 in

Ch1 - CHANNEL STABILIZATION

VELOCITY FOR SWALE FLOWING FULL: 3.5 fps

USE SHORT-TERM, BIODEGRADABLE RECP FOR STABILIZATION.

GSWCC Georgia Soil and Water Conservation Commission

Brian C. Jones
Level II Certified Design Professional

Certification Number: 0000021468 Expires: 01/10/2023
Issued: 01/10/2020

1" = 20' 20 10 0 20'

811 BEFORE YOU DIG! CONTACT ONE-CALL CENTER CALL 881

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER PUMP STATION

CIVIL
EROSION AND SEDIMENT CONTROL
PHASE 2

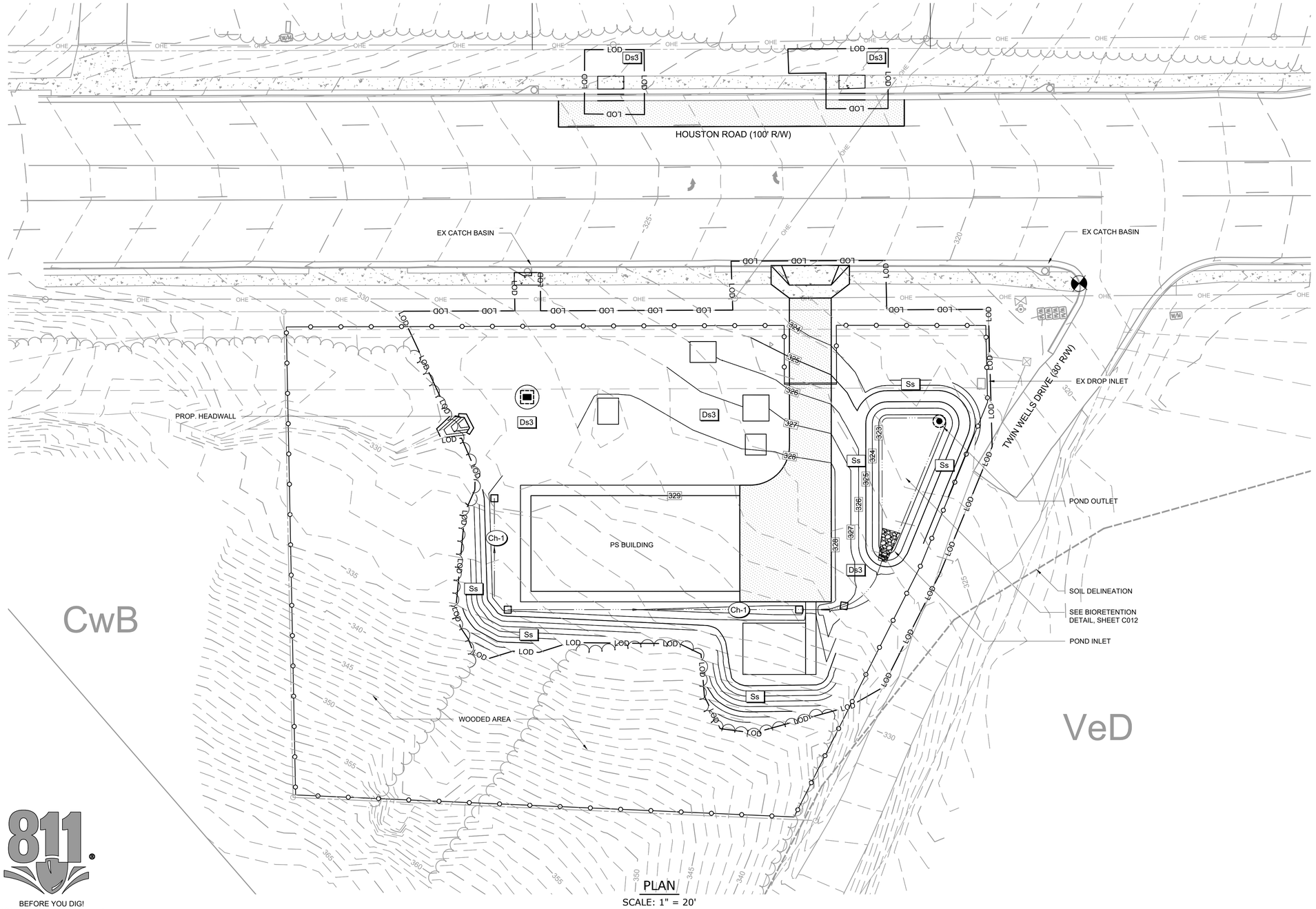
DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C008

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C008 Saved by: JWALKER Save date: 2/11/2021 4:22 PM
PLOT DATE: 2/11/2021 4:31 PM BY: JWALKER

NOTES:

1. REFER TO NOTES ON DWGS C007.
2. SEE C008 FOR CALCULATIONS AND SIZING OF Ch-1 AND St.

SOIL SERIES LEGEND			
SYMBOL	NAME	HYDROLOGIC GROUP	SLOPE
CwB	COWARTS (SANDY LOAM)	C	2%-5%
VeD	VAUCLUSE (LOAMY SAND)	C	8%-17%



PLAN
SCALE: 1" = 20'

1" = 20'

20 10 0 20'

BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
CALL 811

GSWCC Georgia Soil and Water Conservation Commission

Brian C. Jones
Level II Certified Design Professional
Certification Number: 0000021468 Expires: 01/10/2023
Issued: 01/10/2020

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 1/2" 1")

PROJECT ENGINEER:	A. BOWLING
DESIGNED BY:	B. JONES
DRAWN BY:	J. WALKER
CHECKED BY:	A. BOWLING

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER
PUMP STATION

CIVIL
EROSION AND SEDIMENT CONTROL
PHASE 3

DATE:	NOVEMBER 2020
HAZEN NO.:	32355-003
CONTRACT NO.:	01
DRAWING NUMBER:	C009

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C009 Saved by JWALKER Save date: 2/11/2021 4:22 PM
PLOT DATE: 2/11/2021 4:31 PM BY: JWALKER

GEORGIA UNIFORM CODING SYSTEM
FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES
GEORGIA SOIL AND WATER CONSERVATION COMMISSION

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT			A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION			A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below, or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE			A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE			A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE			Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	ROCK FILTER DAM			A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	RETAINING WALL			A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING			A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN			A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER			A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEEP BERM			Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sr	TEMPORARY STREAM CROSSING			A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION			A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING			A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN			A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING			The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION			To protect desirable trees from injury during construction activity.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE			Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)			Planting vegetation on dunes that are denuded, artificially constructed, or re-nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)			Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING)			Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)			Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (SODDING)			A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS			Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Co	FLOCCULANTS AND COAGULANTS			Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM VEGETATION)			The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION			A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	TACKIFIERS AND BINDERS			Substance used to anchor straw or hay mulch by causing the organic material to bind together.

GaSWCC (Amended - 2013)

✔12

CERTIFICATIONS

DESIGN PROFESSIONAL

1. 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.

BRIAN JONES, PE
LEVEL II CERTIFIED DESIGN PROFESSIONAL #0000021468

GSWCC Georgia Soil and Water Conservation Commission
Brian C. Jones
Level II Certified Design Professional
Certification Number: 0000021468 Expires: 01/10/2023
Issued: 01/10/2020

✔4 OWNER, PERMITTEE, AND 24-HOUR CONTACT INFORMATION

✔5 MACON WATER AUTHORITY
MONTE TOLLESON
PROJECT MANAGER
537 HEMLOCK STREET
MACON, GA 31202
PHONE: 478-464-5661
EMAIL: MTOLLESON@MACONWATER.ORG

✔29 CONSTRUCTION SCHEDULE

ACTIVITY	MONTH 1	2	3	4	5	6	7	8
NOTICE TO PROCEED	•							
INSTALLATION OF EROSION CONTROL	▬							
MAINTENANCE OF EROSION CONTROL	▬	▬	▬	▬	▬	▬	▬	▬
INSTALLATION OF TREE PROTECTION DEVICES	▬							
MAINTENANCE OF TREE PROTECTION DEVICES	▬	▬	▬	▬	▬			
EARTHMOVING OPERATIONS		▬	▬	▬	▬	▬		
TEMPORARY AND PERMANENT GRASSING		▬	▬	▬	▬	▬	▬	▬
CLEAN-UP								▬

CONSTRUCTION ACTIVITIES ARE EXPECTED TO BEGIN IN NOVEMBER, 2020.

EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES

GENERAL

1. THIS PROJECT DOES NOT LIE WITHIN THE 1% ANNUAL CHANCE FLOOD HAZARD, PER FEMA FIRM PANEL 13121C0143G, DATED JUNE 7, 2017.
2. EXISTING SITE INFORMATION SOURCED FROM SURVEY BY GASKINS ENGINEERING AND SURVEYING COMPANY DATED MAY 2020.
3. ACCEPTANCE AND/OR SUBSEQUENT ACCEPTANCE OF THESE PLANS DOES NOT CONSTITUTE APPROVAL BY BIBB COUNTY OF ANY LAND DISTURBING ACTIVITIES WITHIN WETLAND AREAS, JURISDICTIONAL WATERS OF THE STATE, AREAS OF THREATENED/ENDANGERED SPECIES, OR AREAS OF HISTORICAL SIGNIFICANCE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE APPROPRIATE REGULATORY AGENCY FOR ANY REQUIRED APPROVALS.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM WITH THE GUIDELINES OF THE "MANUAL FOR EROSION AND SEDIMENT CONTROL", LATEST EDITION.
5. MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE CONTRACTOR.
6. PRIMARY PERMITTEE MUST SUBMIT NPDES NOTICE OF INTENT (NOII) AT LEAST 14 DAYS PRIOR TO BEGINNING OF LAND DISTURBANCE ACTIVITIES.
7. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT UNDER NO CIRCUMSTANCES ANY SEDIMENT, TRASH, OR DEBRIS BE ALLOWED ONTO ADJACENT PROPERTIES, PUBLIC LANDS, OR OUTSIDE OF THE CONSTRUCTION LIMITS.
9. THE PRIMARY PERMITTEE AND TERTIARY PERMITTEE(S) MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN (ES&PC), EXCEPT WHEN THE PERMITTEE HAS REQUESTED IN WRITING AND EPD HAS AGREED TO AN ALTERNATE DESIGN PROFESSIONAL, TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WHICH THE DESIGN PROFESSIONAL DESIGNED WITHIN SEVEN (7) DAYS AFTER INSTALLATION. THE DESIGN PROFESSIONAL SHALL DETERMINE IF THESE BMPS HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PERMITTEE WITHIN SEVEN (7) DAYS AND THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED.
10. EROSION AND SEDIMENT CONTROL WILL BE PERFORMED IN ACCORDANCE WITH THE BMPS SHOWN IN THESE PLANS.
11. EROSION AND SEDIMENT CONTROL DEVICES SHOWN ARE THE MINIMUM REQUIRED. ADDITIONAL DEVICES MAY BE REQUIRED AS NECESSARY.
12. FAILURE TO PROPERLY INSTALL AND MAINTAIN EROSION CONTROL PRACTICES SHALL RESULT IN CONSTRUCTION BEING HALTED.
13. LAND DISTURBING WILL BE SCHEDULED TO LIMIT EXPOSURE OF BARE SOIL TO EROSIVE ELEMENTS.
14. CONSTRUCTION ROAD SHALL BE TOP DRESSED WITH ADDITIONAL GRAVEL PERIODICALLY TO MAINTAIN GRAVEL DEPTH OF 6 INCHES.
15. A BIBB COUNTY LAND DISTURBANCE PERMIT MUST BE DISPLAYED ON-SITE AT ALL TIMES DURING CONSTRUCTION AND IN PLAIN VIEW FROM A COUNTY ROAD OR STREET.
16. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT UNDER NO CIRCUMSTANCES ANY SEDIMENT, TRASH, OR DEBRIS BE ALLOWED ONTO ADJACENT PROPERTIES, PUBLIC LANDS, OR OUTSIDE OF THE CONSTRUCTION LIMITS.
17. THE APPLICABLE PORTION OF THE ES&PC PLAN SHALL BE PROVIDED TO EACH SECONDARY PERMITTEE PRIOR TO THE SECONDARY CONDUCTING ANY CONSTRUCTION ACTIVITY. EACH SECONDARY PERMITTEE SHALL SIGN THE PLAN OR ANY PORTION OF THE PLAN APPLICABLE TO THEIR SITE. A LIST OF NAMES AND ADDRESSES OF ANY SECONDARY PERMITTEES SHALL BE PROVIDED TO BIBB COUNTY PRIOR TO THE SECONDARY PERMITTEE CONDUCTING ANY CONSTRUCTION ACTIVITY.

POLLUTION CONTROL

1. OFF-SITE VEHICLE TRACKING DIRT, SOILS, AND SEDIMENTS, AND THE GENERATION OF DUST SHALL BE MINIMIZED OR ELIMINATED TO THE MAXIMUM EXTENT PRACTICAL. THE FOLLOWING BMPS SHALL BE IMPLEMENTED AS APPROPRIATE: CONSTRUCTION EXIT (Co), MULCH (Ds1), VEGETATIVE COVER (Ds2 / Ds3), TREE PROTECTION FENCE (Tr), SILT FENCE (Sd1), INLET PROTECTION (Sd2), CONSTRUCTION ROAD STABILIZATION (Cr).
2. CONTRACTOR SHALL SELECT A DESIGNATED WASTE COLLECTION AREA AND PROVIDE LIDS FOR WASTE CONTAINMENT. SOLID WASTE SHALL BE REMOVED AND DISPOSED OFFSITE AT A REGULAR SCHEDULE.
3. ALL WASTEWATER AND FROM CONSTRUCTION ACTIVITIES AND OR CLEANING OPERATIONS SHALL NOT BE DISCHARGED ON THE GROUND OR STORMWATER SYSTEM.
4. OFF-SITE VEHICLE TRACKING OF SEDIMENT:
   - 4.A. A STABILIZED STONE PAD WILL BE LOCATED AT THE CONSTRUCTION ENTRANCE TO REDUCE TRANSPORT OF MUD FROM THE CONSTRUCTION SITE.
   - 4.B. THE STONE PAD WILL BE PERIODICALLY DRESSED. MUD AND DEBRIS TRACKED OR SPILLED ONTO ROADWAYS WILL BE REMOVED IMMEDIATELY.
   - 4.C. CONTRACTOR WILL CONTROL SURFACE AND AIR MOVEMENT OF DUST BY SPRAYING WATER ONTO DISTURBED SOIL.
5. MATERIALS HANDLING/STORAGE:
   - ✔27 5.A. ALL BUILDING MATERIALS AND PRODUCTS STORED ON-SITE SHALL BE TIED DOWN AND/OR COVERED TO PROVIDE PROTECTION FROM UV DAMAGE, WIND, AND RAIN.
6. SANITARY WASTES
   - 6.A. ONE PORTABLE SANITARY UNIT WILL BE PROVIDED TO EVERY TEN (10) WORKERS ON THE SITE (MINIMUM). ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS ONE TIME PER WEEK (MINIMUM) BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.
   - 6.B. ALL SANITARY WASTE UNITS WILL BE LOCATED WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORMWATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, TO PREVENT WASTES FROM CONTRIBUTING TO STORM WATER DISCHARGES.

PHASE I – INITIAL PHASE: SITE PREPARATION AND PRE-CONSTRUCTION OPERATIONS ✔36

INSTALL / CONSTRUCT ALL BMPS AS PROVIDED ON SHEETS C007.

1. THE FOLLOWING INITIAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY:
   - 1.1. THE CONSTRUCTION EXIT SHALL BE PLACED AS SHOWN ON THE PLANS.
   - 1.2. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION EXIT, ALL PERIMETER EROSION CONTROL AND STORMWATER MANAGEMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS.
   - 1.3. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITY.
   - 1.4. SEDIMENT INLET PROTECTIONS SHALL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBANCE ACTIVITY
2. WITHIN SEVEN (7) DAYS AFTER INSTALLATION OF INITIAL EROSION CONTROL MEASURES, THE SITE CONTRACTOR SHALL SCHEDULE AN INSPECTION BY THE PROJECT DESIGN PROFESSIONAL. NO OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE PROJECT PROFESSIONAL APPROVES THE INSTALLATION OF SAID EROSION CONTROL MEASURES. IF UNFORESEEN CONDITIONS EXIST IN THE FIELD THAT WARRANT ADDITIONAL EROSION CONTROL MEASURES, THE CONTRACTOR MUST CONSTRUCT ANY ADDITIONAL EROSION CONTROL DEVICES DEEMED NECESSARY BY THE PROJECT PROFESSIONAL DURING THE SITE INSPECTION.
3. AFTER APPROVAL OF INITIAL EROSION CONTROL INSTALLATION, THE CONTRACTOR MAY PROCEED WITH CLEARING AND GRUBBING ACTIVITIES.
4. ALL SILT FENCES MUST MEET THE REQUIREMENTS OF SECTION 171-TEMPORARY SILT FENCE FOR THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, STANDARD SPECIFICATIONS, 1983 EDITION.
5. MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 7 DAYS OF LAND DISTURBANCE. ALL DISTURBED AREAS LEFT MULCHED MORE THAN 30 DAYS SHALL BE STABILIZED WITH TEMPORARY VEGETATION.
6. SEDIMENT AND EROSION CONTROL MEASURES MUST BE CHECKED AFTER EACH RAIN EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED HALF THE CAPACITY OF THE DEVICE. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.
7. THE CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACK OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 1"-3" OF STONE, AS CONDITIONS DEMAND. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM A VEHICLE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED IMMEDIATELY.
8. CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE PROPER FUNCTIONING.

PHASE II - INTERMEDIATE PHASE: CONSTRUCTION ACTIVITIES

INSTALL / CONSTRUCT ALL BMPS AS PROVIDED ON SHEETS C008

1. THE CONTRACTOR SHALL MAINTAIN CAREFUL SCHEDULING AND PERFORMANCE TO ENSURE THAT LAND STRIPPED OF IT'S NATURAL GROUND COVER IS EXPOSED ONLY IN SMALL QUANTITIES AND LIMITED DURATIONS BEFORE PERMANENT EROSION PROTECTION IS ESTABLISHED.
2. EARTHWORK NEAR STREAM BUFFERS SHALL BE CAREFULLY CONTROLLED TO AVOID DUMPING OR SLOUGHING INTO THE BUFFER AREAS.
3. EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION, AND ALTER THE LOCATION OF EROSION CONTROL DEVICES ACCORDINGLY.
4. THE CONTRACTOR SHALL ESTABLISH BARRIERS AT THE TOP OF ALL SLOPES UNDER CONSTRUCTION. CUT AND FILL SLOPES SHALL NOT EXCEED 2:1.
5. ALL DRAINAGE SWALES AND GRADED AREAS SHALL BE APPLIED WITH VEGETATIVE COVER AS SOON AS FINAL GRADE IS ACHIEVED. MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 7 DAYS OF LAND DISTURBANCE. ALL DISTURBED AREAS LEFT MULCHED FOR MORE THAN 30 DAYS SHALL BE STABILIZED WITH TEMPORARY GRASSING.
6. MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 7 DAYS OF LAND DISTURBANCE. ALL DISTURBED AREAS LEFT MULCHED FOR MORE THAN 30 DAYS SHALL BE STABILIZED WITH TEMPORARY GRASSING.
7. SEDIMENT AND EROSION CONTROL MEASURES MUST BE CHECKED AFTER EACH RAIN EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED HALF THE CAPACITY OF THE DEVICE. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.
8. THE CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACK OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 1"-3" OF STONE, AS CONDITIONS DEMAND. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM A VEHICLE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED IMMEDIATELY.
9. CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE PROPER FUNCTIONING

PHASE III - FINAL PHASE: CONSTRUCTION COMPLETION AND FINAL STABILIZATION

INSTALL / CONSTRUCT ALL BMPS AS PROVIDED ON SHEETS C009.
SUBMIT NOTICE OF TERMINATION.

1. ALL DISTURBED AREAS TO RECEIVE PERMANENT GRASS SHOULD BE GRASSED AS SOON AS FINAL GRADE IS ACHIEVED.
2. A TEMPORARY COVER OF HEAVY MULCH, MULCH WITH TEMPORARY SEEDING, OR TEMPORARY SEEDING, SHALL BE PLACED ON ALL AREAS WHERE PERMANENT COVER CAN NOT IMMEDIATELY BE ESTABLISHED DUE TO SEASONAL LIMITATIONS.
3. WHEN HAND PLANTING, MULCH (HAY OR STRAW) SHOULD BE UNIFORMLY SPREAD OVER SEEDED AREAS WITHIN 24 HOURS OF SEEDING.
4. UPON COMPLETION OF THE PROJECT AND RECEIPT OF THE CERTIFICATE OF COMPLETION, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND DISPOSE OF THEM UNLESS NOTED OTHERWISE ON PLANS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF A STRONG STAND OF GRASS BEFORE BEING RELEASED FROM CONTRACTUAL OBLIGATIONS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR A PERIOD OF TWELVE MONTHS AFTER ACCEPTANCE OF THE PROJECT TO REPAIR ANY WASHOUT AREAS OR AREAS OF VEGETATIVE COVER NOT CONSIDERED TO BE GOOD (<75% COVERAGE).

STORMWATER DISCHARGE POLLUTANT REDUCTION

1. ALL POLLUTANTS FROM WASTE DISPOSAL PRACTICES, SOIL ADDITIVES, REMEDIATION OF SPILLS AND LEAKS OF PETROLEUM PRODUCTS, CONCRETE TRUCK WASHOUT, ETC., SHOULD ANY OF THESE OCCUR, WILL BE CONTROLLED BY THE IMPLEMENTATION OF APPROPRIATE BEST MANAGEMENT PRACTICES.
2. THE SITE WILL BE IN COMPLIANCE WITH ALL APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER OR SEPTIC SYSTEM REGULATIONS.
3. PRODUCT SPECIFIC PRACTICES:
   - 3.A. PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ONSITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORMWATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.
   - 3.B. PAINTS/FINISHES/SOLVENTS - ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCTS WILL NOT BE DISCHARGED TO THE STORMWATER COLLECTION SYSTEM. EXCESS PRODUCT MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
   - 3.C. CONCRETE TRUCK WASHING - NO CONCRETE TRUCKS WILL BE ALLOWED TO WASH OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONSITE.
   - 3.D. FERTILIZER/HERBICIDES - THESE PRODUCTS WILL 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 WILL BE UNDER ROOF IN SEALED CONTAINERS.
   - 3.E. BUILDING MATERIALS - NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ONSITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

SPILL CLEANUP AND CONTROL PRACTICES ✔25

1. LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
2. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL 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, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
3. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY.
4. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.
   - 4.A. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802.
   - 4.B. FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802.
   - 4.C. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.
   - 4.D. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.
5. THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1,320 GALLONS OF PETROLEUM IS STORED ONSITE (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.

✔9 PROJECT NARRATIVE

THE PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW BOOSTER PUMP STATION, YARD PIPING AND VALVE VAULT, STANDBY GENERATOR, ASPHALT DRIVEWAY, AND STORM DRAINAGE IMPROVEMENTS. THE PROJECT IS LOCATED IN BIBB COUNTY, GEORGIA IN THE CITY OF MACON. THE PROJECT IS IN THE VICINITY OF TOBESOFKEE CREEK. AFTER DISTURBANCE IS COMPLETE, SITE WILL BE RESTORED USING PERMANENT VEGETATIVE PRACTICES.

THE PROJECT WILL INCLUDE DEMOLITION, CLEARING, AND GRADING OF THE SITE BEFORE PROPOSED STRUCTURES ARE CONSTRUCTED. FLOWS WILL TRAVEL VIA OVERLAND FLOW TO THE HOUSTON ROAD STORM SEWER SYSTEM OR ACROSS TWIN WELLS DRIVE TO A REGIONAL STORMWATER MANAGEMENT POND.

EROSION CONTROL NOTES

✔6 1. TOTAL PROJECT AREA: 1.1 ACRES
DISTURBED AREA, ALL PHASES: 0.7 ACRES

✔7 2. CONSTRUCTION EXIT COORDINATES:
LATITUDE: 32.755087° LONGITUDE: -83.664161°

✔11 3. PROJECT RECEIVING WATERS: PROJECT WILL DISCHARGE STORMWATER TO THE STORM SEWER SYSTEM ALONG HOUSTON ROAD. THE STORM SEWER SYSTEM DISCHARGES TO AN UNNAMED TRIBUTARY TO TOBESOFKEE CREEK, WHICH IS AN IMPAIRED STREAM SEGMENT. CONTRIBUTING DRAINAGE AREA TO THE STORMWATER SYSTEM DISCHARGE TO THE UNNAMED TRIBUTARY IS 1.6 SQUARE MILES.

✔16 4. BUFFER ENCROACHMENTS: NO BUFFERS ARE ON THIS PROPERTY OR WITHIN THE PROJECT'S LIMITS OF DISTURBANCE.

✔41 5. NO BUFFERS ARE ON THIS PROPERTY OR WITHIN THE PROJECT'S LIMITS OF DISTURBANCE.

✔42 6. THERE ARE NO ON-SITE WETLANDS.

7. ALL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE HAVE BEEN IDENTIFIED AND WILL BE PROTECTED BY APPROPRIATE EROSION CONTROL MEASURES. SEE DWGS C007 - C009 FOR DELINEATION.

✔44 8. A HYDROLOGY STUDY WAS PERFORMED FOR THE SITE. NO SIGNIFICANT TOPOGRAPHIC CHANGES ARE EXPECTED FOR THE PROPOSED PROJECT; PROPOSED GRADING AND DRAINAGE WILL MAINTAIN THE EXISTING GENERAL DRAINAGE PATTERN TO THE EXTENT PRACTICAL. THE STORMWATER FACILITIES SHALL BE PROTECTED FROM SEDIMENT AND EROSION DURING CONSTRUCTION ACTIVITIES.

✔45 9. PRE-DEVELOPMENT CN = 72
POST-DEVELOPMENT CN =77

✔47 10. SOILS TYPE: AS PER NRCS WEB SOIL SURVEY, SOIL TYPES ARE DELINEATED AND DESCRIPTIONS ARE PROVIDED ON SHEETS C007 - C009.

REQUIRED NOTES

✔15 1. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 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.

✔17 2. AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

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

✔19 4. 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 5. 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 6. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
STAND ALONE CONSTRUCTION PROJECTS

SWCD: BIBB COUNTY

Project Name: GEMINI PUMP STATION **Address:** 5312 HOUSTON ROAD

City/County: MACON, GEORGIA **Date on Plans:** AUGUST 2020

Name & email of person filling out checklist: BRIAN JONES (BJONES@HAZENANDSAWYER.COM

Plan Page #	Included Y/N		**TO BE SHOWN ON ES&PC PLAN**
C011	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)
C007	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)
N/A		3	Limits of disturbance shall be no greater than 50 acres at any one time without prior written authorization from the EPD District Office. If EPD approves the request to disturb 50 acres or more at any one time, the Plan must include at least 4 of the BMPs listed in Appendix 1 of this checklist. * (A copy of the written approval by EPD must be attached to the plan for the Plan to be reviewed.)
C010	Y	4	The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
C010	Y	5	Provide the name, address, email address, and phone number of primary permittee.
C010	Y	6	Note total and disturbed acreage of the project or phase under construction.
C010	Y	7	Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees.
C011	Y	8	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
C010	Y	9	Description of the nature of construction activity.
Cover	Y	10	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
C010	Y	11	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
C010	Y	12	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 19 of the permit.
N/A		13	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 19 of the permit. *
N/A		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 25 of the permit. *
C010	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 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."
N/A	N/A	16	Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
N/A		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." *
N/A		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." *
C010	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 disturbing activities."
C010	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."
C010	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."
N/A		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 an 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. *
N/A		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. *
N/A		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. *
C010	Y	25	Provide BMPs for the remediation of all petroleum spills and leaks.
N/A		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. *
N/A		27	Description of practices to provide cover for building materials and building products on site. *
N/A		28	Description of the practices that will be used to reduce the pollutants in storm water discharges. *
C010	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).
N/A		30	Provide complete requirements of inspections and record keeping by the primary permittee. *
N/A		31	Provide complete requirements of sampling frequency and reporting of sampling results. *
N/A		32	Provide complete details for retention of records as per Part IV.F. of the permit. *
N/A		33	Description of analytical methods to be used to collect and analyze the samples from each location. *
N/A		34	Appendix B rationale for NTU values at all outfall sampling points where applicable. *
N/A		35	Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged. *
N/A		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 where 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. *
C007	Y	37	Graphic scale and North arrow.
C007	Y	38	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Map Scale	Ground Slope	Contour Intervals, ft.
1 inch = 100ft or larger scale	Flat 0 - 2%	0.5 or 1
	Rolling 2 - 8%	1 or 2
	Steep 8% +	2,5 or 10

-	N	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 EPD 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. *
N/A	N/A	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.
C007	Y	42	Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
SMP	Y	43	Delineation and acreage of contributing drainage basins on the project site. SEE STORMWATER MANAGEMENT PLAN
SMP	Y	44	Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions. *
C010	Y	45	An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
C008	Y	46	Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
C007	Y	47	Soil series for the project site and their delineation.
C007	Y	48	The limits of disturbance for each phase of construction.
C008	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 attainable 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 attainable 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.
C010	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.
C012	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.
C012	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 shall be site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia.

* If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the * checklist items would be N/A.

Effective January 1, 2020

GSWCC Georgia Soil and Water Conservation Commission

Brian C. Jones
Level II Certified Design Professional

Certification Number: 0000021468 Expires: 01/10/2023
Issued: 01/10/2020

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen
HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER
PUMP STATION

CIVIL
EROSION AND SEDIMENT CONTROL
CHECKLIST

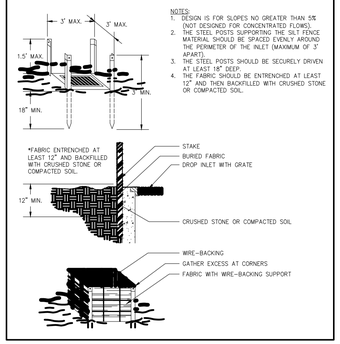
DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C011

File: O:\32355-GSO\32355-003\CAD_BIM\CIVIL\C011 Saved by JWALKER Save date: 2/11/2021 4:27 PM
PLOT DATE: 2/11/2021 4:32 PM BY: JWALKER

Sd2 FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

Figure 6-28.1

STEEL FRAME AND SILT FENCE INSTALLATION

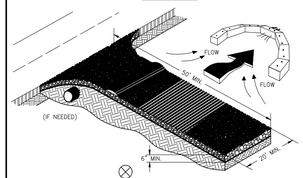


NOTES:
1. DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.

Co CRUSHED STONE CONSTRUCTION EXIT

Figure 6-14.1

EXIT DIAGRAM



ENTRANCE ELEVATION

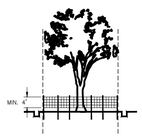
NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION #–2 (1.5"–3.5" STONE).
4. GRAVEL PAD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

TREE PROTECTION

"SNOW" FENCE

PLAN

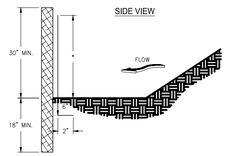
CROSS–SECTION



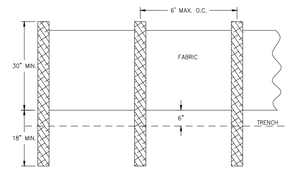
NOTES:
1. USE TRENCHER (I.E. DITCH WHICH) TO CUT A 4"–6" W X 18" D TRENCH ALONG DRIP LINE (LIMIT OF CLEARING) AND BACKFILL WITH SAND AND LIGHTLY COMPACT.
2. SPACE STAKES AT INTERVALS SUFFICIENT TO MAINTAIN ALL FENCING OUT OF DRIP LINE OR AS SHOWN BY ENGINEER (SET STAKES NO GREATER THAN 6 FEET ON CENTER–REBAR IS NOT TO BE USED FOR STAKES).
3. MAINTAIN FENCE BY REPAIRING AND/OR REPLACING DAMAGED FENCE. DO NOT REMOVE FENCING PRIOR TO LANDSCAPING OPERATIONS.
4. DO NOT STORE OR STACK MATERIALS, EQUIPMENT, OR VEHICLES WITHIN FENCED AREA.
5. FENCE SHALL BE ORANGE VINYL "SNOW FENCE" 4' HIGH MINIMUM.

SILT FENCE - TYPE NON-SENSITIVE

SIDE VIEW



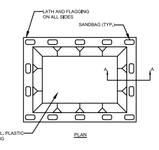
FRONT VIEW



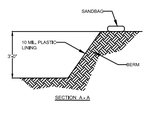
NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

CONCRETE WASH DOWN

SCALE: N.T.S.



PLAN

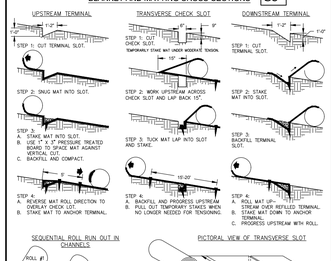


SECTION A–A

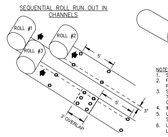
NOTES:
1. THE CONTRACTOR SHALL PROVIDE A DESIGNATED AREA FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS, AND THE REAR OF THE VEHICLES. THIS AREA MUST HAVE A CONCRETE WASHOUT FACILITY AND SHALL BE CONSTRUCTED ACCORDING TO THE DETAIL SHOWN BELOW.
2. THE CONCRETE WASHOUT FACILITY SHALL BE LOCATED A MINIMUM OF 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES.
3. WASHOUT DISCHARGE FROM THE CLEANING OF CONCRETE TRUCKS, TOOLS, AND OTHER EQUIPMENT SHALL NOT BE DISCHARGED INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
4. EXCESS CONCRETE SHALL NOT BE DISPOSED OF ONSITE. ALL EXCESS CONCRETE SHALL BE TRANSPORTED OFFSITE AND PROPERLY DISPOSED OF.
5. IT IS PROHIBITED TO WASH OUT THE MIXING DRUM OF CONCRETE TRUCKS ONSITE.

TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

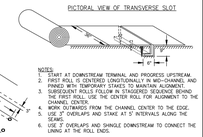
BLANKET AND MATTING CROSS-SECTIONS Ss



SEQUENTIAL ROLL RUN OUT IN CHANNELS



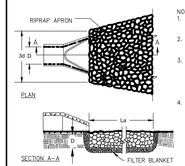
PICTORAL VIEW OF TRANSVERSE SLOT



NOTES:
1. START AT DOWNSTREAM TERMINAL AND PROGRESS UPSTREAM.
2. FIRST ROLL IS CENTERED LONGITUDINALLY IN MID–CHANNEL AND PINNED WITH TEMPORARY STAKES TO MAINTAIN ALIGNMENT.
3. SUBSEQUENT ROLLS ARE PLACED SIDE–BY–SIDE BEYOND THE FIRST ROLL. USE THE CENTER ROLL FOR ALIGNMENT TO THE CHANNEL CENTER.
4. WORK OUTWARDS FROM THE CHANNEL CENTER TO THE EDGE.
5. USE 3' OVERLAPS AND STAKE AT 5' INTERVALS ALONG THE OVERLAP.
6. USE 3' OVERLAPS AND SHINGLE DOWNSTREAM TO CONNECT THE LINING AT THE ROLL ENDS.

RIPRAP OUTLET PROTECTION

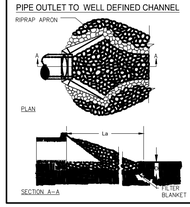
PIPE OUTLET TO FLAT AREA – NO WELL DEFINED CHANNEL



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL–DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

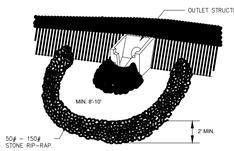
D(diameter): 12 IN
3d = 36 IN
La = 12 FT
Stone = GDOT TYPE 3
D(depth) = 18 IN

PIPE OUTLET TO WELL DEFINED CHANNEL

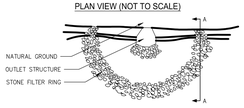


STONE FILTER RING

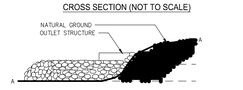
PERSPECTIVE VIEW



PLAN VIEW (NOT TO SCALE)



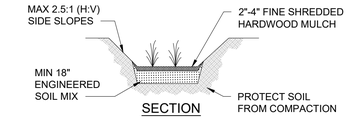
CROSS SECTION (NOT TO SCALE)



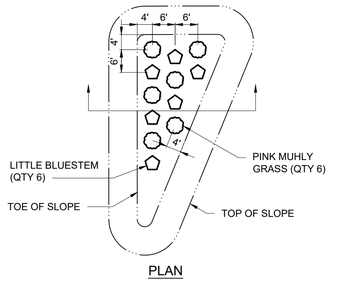
GSWCC Georgia Soil and Water Conservation Commission

Brian C. Jones
Level II Certified Design Professional

Certification Number: 0000021468 Expires: 01/10/2023
Issued: 01/10/2020



SECTION



PLAN

NOTES:

1. APPROPRIATE PLANTS AND PLANTING SCHEDULE SHALL BE PROVIDED. WOODY VEGETATION SHOULD NOT BE PLANTED WITHIN TWO FEET OF INFLOW OR OUTFLOW STRUCTURES.
2. APPROPRIATE MULCHLAYER SHALL BE PROVIDED (2"-4" OF FINE SHREDDED HARDWOOD)
3. ENGINEERED SOIL MIX AT LEAST 18" DEEP. ALTERNATE ENGINEERED SOIL MIXES WILL BE CONSIDERED WITH APPROPRIATE TEST AND DOCUMENTATION. GREATHER DEPTH OF ENGINEERED SOIL MAY BE NEEDED DEPENDING ON PLANT TYPE AND SPECIFICATIONS.
4. INSTALLATION SHOULD OCCUR AFTER THE CONTRIBUTING DRAINAGE AREAS TO THE BIORETENTION AREA HAVE BEEN STABILIZED. IF THIS IS NOT FEASIBLE, ADDITIONAL TEMPOARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT ACCUMULATION OF SEDIMENT IN THE BIORETENTION POND. ANY SEDIMENT THAT ACCUMULATES MUST BE REMOVED.
5. INSTALLATION OF ENGINEERED SOILS MUST BE COMPLETED IN A MANNER THAT WILL ENSURE PRESERVATION OF THE INFILTRATIVE COAPCY OF THE UNDERLYING SOILS. THE MOISTURE CONTENT OF THE SOIL SHALL BE LOW ENOUGH TO PREVENT CLUMPING AND COMPATION DURING PLACEMENT.
6. TO PREVENT COMPACTION WITHIN THE LIMITS OF THE BASINS, ONLY HAND LABORERS, SMALL EXCAVATION HOES WITH WIDE TRACKS, LIGHT EQUIPMENT WITH TURF TIRES, MARCH EQUIPMENT OR WIDE-TRACK LOADERS MAY BE USED. NO HEAVY EQUIPMENT SHALL BE USED WIHTIN THE PERMITETER OF THE BIORETENTION FACILITY BEFORE, DURING OR AFTER THE PLACEMENT OF THE ENGINEERED SOIL MIX. GROUNDPRESSURE SHOULD NOT EXCCED 7 PSI.
7. SOIL SURFACES SHALL BE SCARIFIED TO AERATE AND REDUCE SOIL COMPACTION. SOOIL SHALL BE PLACED IN 6-INCH LOOSE DEPTH LIFTS AND LIGHTY HAND-TAMPED OR COMPACTED WITH A WATER FILLED LANDSCAPE ROLLER, TO REDUCE POTENTIAL FOR EXCESSIVE SETTLING. NO OTHER MECHANICAL EQUIPMENT SHALL BE USED TO COMPACT THE ENGINEERED SOIL OR UNDERLAYING SOILS.
8. LOOSEN SUBGRADE SOILS THAT HAVE BEEN COMPACTED OR SMEARED BY RAKING, DISKING OR TILLING TO A MINIMUM DEPTH OF 6-INCHES.
9. UNIFORMLY GRADE BIORETENTION SOIL MIX TO ACHIEVE A SMOOTH SURFACE. DO NOT OVER-WORK OR EXCESSIVELY COMPACY BIORETENTION SOIL MIX. GRADE TO CROSS SECTIONS, THICKNESS AND ELEVATIONS INDICATED ON PLANS. SETTLING OF SOIL BY WALKING ON SURFACE, WORKING WITH HAND OR LOW GROUND PRESSURE (<7 PSI) IS ACCEPTABLE.
10. DURING EXCAVATION, HEAVY MACHINERY SHOULD NOT DRIVE OVER EXPOSED UNDERLYING SOILS. EXCAVATE IN DRY CONDITIONS AS OFTEN AS PRACTICAL.

BIORETENTION POND DETAIL

Ds2 Ds3 FERTILIZER RATES

Georgia Soil & Water Conservation Commission				
Manual for Erosion and Sediment Control in Georgia (amended 2000)				
Table 6-5.1 - Fertilizer Requirements				
Species	Year	N-P-K	Rate (lbs./acre)	N Top-Dressing Rate (lbs./acre)
Cool season grasses	First	6-12-12	1500	50-100
	Second	6-12-12	1000	
	Maintenance	10-10-10	400	30
Cool season grasses & legumes	First	6-12-12	1500	0-50
	Second	0-10-10	1000	
	Maintenance	0-10-10	400	
Ground covers	First	10-10-10	1300	
	Second	10-10-10	1300	
	Maintenance	10-10-10	1100	
Pine Seedlings	First	20-10-5	*	
Shrub Lespedeza	First	0-10-10	700	
	Maintenance	0-10-10	700	
Temporary cover crops seeded alone	First	10-10-10	500	30
Warm season grasses	First	6-12-12	1500	50-100
	Second	6-12-12	800	50-100
	Maintenance	10-10-10	400	30
Warm season grasses and legumes	First	6-12-12	1500	50
	Second	0-10-10	1000	
	Maintenance	0-10-10	400	
* one 21-gram pellet per seedling placed in the closing hole				
Page 6-35 Lime Application for TEMPORARY COVER or COMPANION CROPS - **DS2**				
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.				
Page 6-42 Lime Application for PERMANENT COVER - **DS3**				
Agricultural lime is required at the rate of one to two tons per acre unless soil tests indicate otherwise. Graded areas require lime application.				

Ds1 MULCHING

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGULAR CONTROL DEVICE FOR UP TO SIX MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, DEPENDING ON THE MATERIAL USED, ANCHORED, AND HAVE 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 VEGETATION TECHNIQUES SHALL BE EMPLOYED.

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, DIVERSION 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.
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. POLYETHYLENE FILM SHALL BE SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL FOR TEMPORARY PROTECTION. THIS MATERIAL CAN BE SALVAGED AND RE-USED.

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. 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.
2. STRAW OR HAY 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. PLASTIC MESH OR NETTING WITH A MESH NO LARGER THAN ONE INCH BY ONE INCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
3. 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.
4. POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY.

MULCHING RATE

Material	Rate	Depth
Straw or Hay	2-1/2 ton/ac	6"-10"
Wood waste, chips, sawdust, bark	6 to 9 ton/ac	2"-3"
Cutback asphalt	1200 gal./ac or 1/4 gal./sq. yd.	-
Polyethylene film	Secure w/ soil, anchors, weight	-
Cutback asphalt	See manufacture's recommendations	-
Geotextiles, jute matting, netting, etc.	See manufacture's recommendations	-

Ds2 TEMPORARY SEEDING

Georgia Soil & Water Conservation Commission														
Manual for Erosion and Sediment Control in Georgia (amended 2016)														
Table 6-4.1 - Plants, planting rates and planting dates for **TEMPORARY COVER** or **COMPANION CROPS**														
Major Land Resource Area (MLRA): *Southern Piedmont* (P), per Figure 6-4.1														
Species	Broadcast Rates		Planting Dates*											Remarks
	per acre (lbs.)	per 1000 sq.ft. (lbs.)	J	F	M	A	M	J	J	A	S	O	N	D	
Lovegrass, weeping (Eragrostis curvula)															
alone	4	0.1			-	X	X	-							1,500,000 seed per pound. May last for several years. Mix with Sericea lespedeza.
in mixtures	2	0.05													
Millet, browntop (Panicum fasciculatum)															
alone	40	0.9				-	X	X	-						137,000 seed per pound. Quick dense cover. Will provide too much competition in mixtures if seeded at high rates.
in mixtures	10	0.2													
Ryegrass, annual (Lolium temulentum)			-	-	-	-				-	X	X	X	X	227,000 seed per pound. Dense cover. Very competitive and is not used in mixtures.
alone	40	0.9													
* 'X' are optimum dates; '-' are permissible but marginal dates															

Ds3 PERMANENT SEEDING

Georgia Soil & Water Conservation Commission														
Manual for Erosion and Sediment Control in Georgia (amended 2000)														
Table 6-5.2 - Plants, planting rates and planting dates for **PERMANENT COVER**														
Major Land Resource Area (MLRA): *Southern Piedmont* (P), per Figure 6-4.1														
Species	Broadcast Rates		Planting Dates*											Remarks
	per acre (lbs.)	per 1000 sq.ft. (lbs.)	J	F	M	A	M	J	J	A	S	O	N	D	
Bermuda, common (Cynodon dactylon) -															
alone	10	0.2	X	X								X	X	X	Plant with winter annuals. Plant with Tall fescue.
with other perennials	6	0.1													
Fescue, tall (festuca arundinacea)															
alone	50	1.1									-	X	X		227,000 seed per pound. Use alone only on better sites. Not for droughty soils. Mix with perennial lespedezas or Crownvetch. Apply topdressing in spring following fall plantings. Not for heavy use areas or athletic
with other perennials	30	0.7													
Lovegrass, weeping (Eragrosits curvula)															
alone	4	0.1			-	X	X	-							1,500,000 seed per pound. May last for several years. Grows well with Sericea lespedeza on road banks.
in mixtures	2	0.05													
* 'X' are optimum dates; '-' are permissible but marginal dates															

REV	ISSUED FOR	DATE	BY
3	PERMIT SET	2/21	AB
2	CONFORMED DOCUMENT	2/20	AB
1	CONSTRUCTION	11/20	AB

PROJECT ENGINEER: A. BOWLING
DESIGNED BY: B. JONES
DRAWN BY: J. WALKER
CHECKED BY: A. BOWLING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

CONFORMED DOCUMENT

GBPE LIC #: PEF003685 EXP: 6/30/2022

Hazen

HAZEN AND SAWYER
5775 PEACHTREE DUNWOODY ROAD
SUITE D-520
ATLANTA, GEORGIA 30342

MACON WATER AUTHORITY
MACON, GEORGIA

GEMINI BOOSTER PUMP STATION

MWA

CIVIL
EROSION AND SEDIMENT CONTROL DETAILS

DATE: NOVEMBER 2020
HAZEN NO.: 32355-003
CONTRACT NO.: 01
DRAWING NUMBER: C012

File: O:\32355-0SO\32355-003\CAD_BIM\CIVIL\C012 Saved by JWALKER Save date: 2/11/2021 4:28 PM
PLOT DATE: 2/11/2021 4:32 PM BY: JWALKER