FAYETTE COUNTY GRAVES ROAD
CULVERT REPLACEMENT PROJECT
PROJECT NUMBER 17SAA

1899 POWERS FERRY ROAD SE, SUITE 400
ATLANTA, GEORGIA 30339
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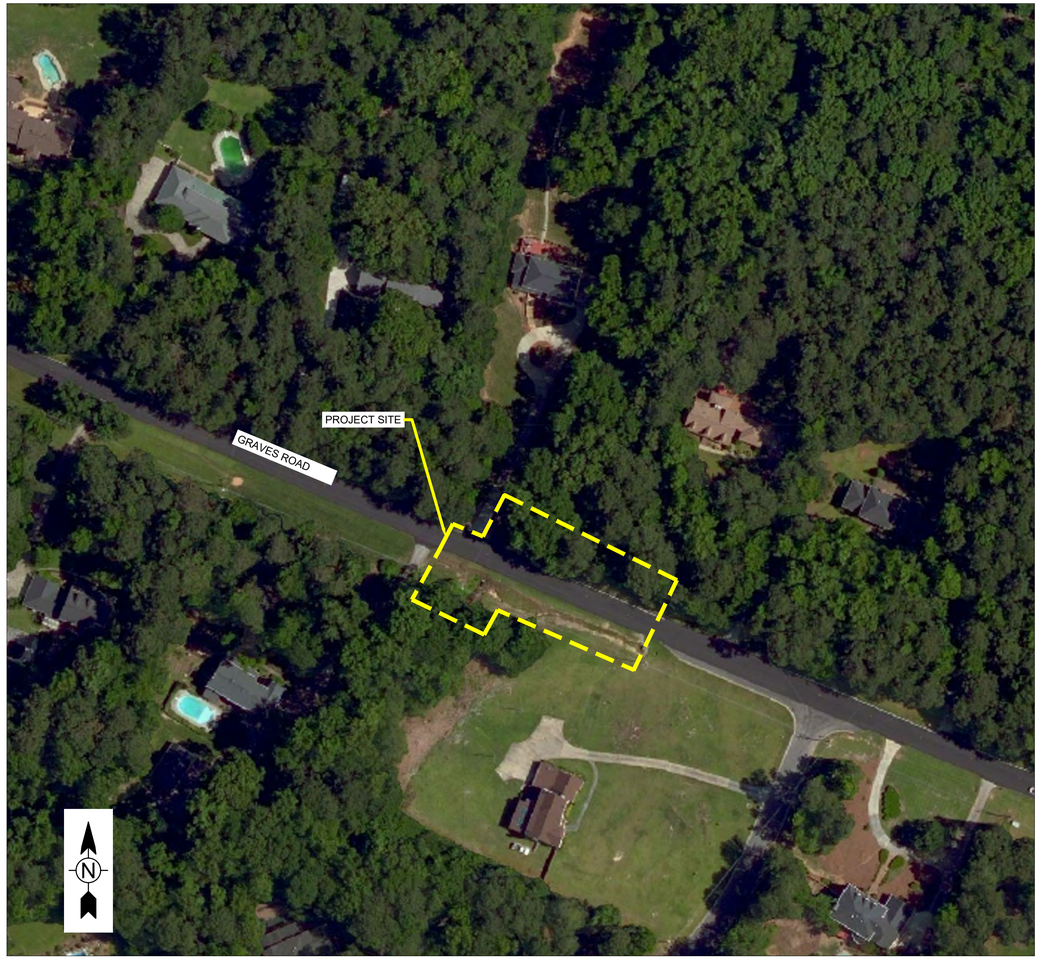
TETRA TECH



NOT TO SCALE

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PROJECT LOCATION:

287 GRAVES ROAD
FAYETTEVILLE, GA 30214

CLIENT INFORMATION:

FAYETTE COUNTY
140 STONEWALL AVE W, SUITE 203
FAYETTEVILLE, GA 30214

Tt PROJECT No.:

200-01297-17045

CLIENT PROJECT No.:

17SAA

PROJECT DESCRIPTION / NOTES:

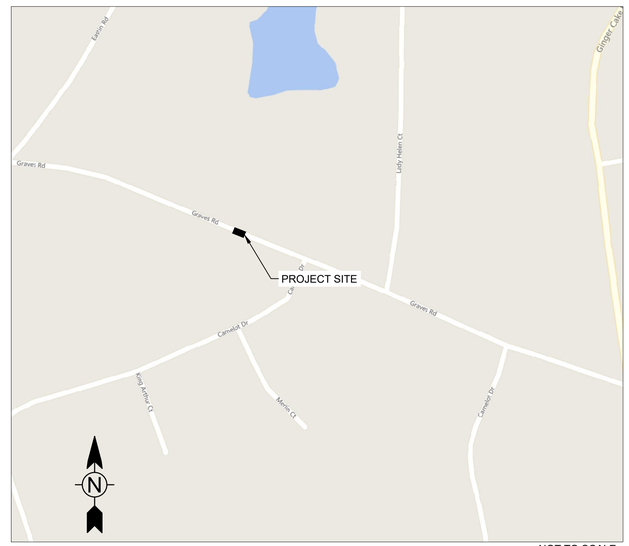
THE PROJECT SHALL CONSIST OF THE DEMOLITION OF THE EXISTING CMP CULVERTS UNDER GRAVES ROAD AND THE INSTALLATION OF AN 8' X 8' CONCRETE BOX CULVERT 66' IN LENGTH ALONG WITH THE RELOCATION OF THE EXISTING UTILITIES IN THE AREA

REFERENCE DATUM: NAD83 GEORGIA STATE PLANE, WEST ZONE, US FOOT

ISSUED:

ISSUED FOR CONSTRUCTION - 12/14/18

VICINITY MAP:



NOT TO SCALE

GEORGIA
DAVID N. LAVERGNE
No. 36240216
PROFESSIONAL ENGINEER
12/14/18

GSWCC LEVEL II
CERT. # 0000073529

CONTRACT NO. 940-P

LIST OF STANDARD ABBREVIATIONS

A	
AAP	ALARM ANNUNCIATOR PANEL
AARV	AUTOMATIC AIR RELEASE VALVE
AAV	AUTOMATIC AIR VENT
AB	ANCHOR BOLT
ABAN	ABANDON(ED)
ABRSV	ABRASIVE
ABS	ACRYLONITRILE BUTADIENE STYRENE
ABV	ABOVE
AC	ALTERNATING CURRENT
ACCMP	ASPHALT-COATED CORRUGATED METAL PIPE
ACP	ASBESTOS CEMENT PIPE
ADDM	ADDENDUM
ADH	ADHESIVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFS	ABOVE FINISHED SLAB
AHD	AHEAD
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
AMT	AMOUNT
APRX	APPROXIMATE(LY)
ARCH	ARCHITECT(URAL)
AS	ALUM SOLUTION
ASPH	ASPHALT
ASSY	ASSEMBLY
AVE	AVENUE
A/C	AIR CONDITIONING
A/VV	AIR/VACUUM AIR VALVE
B	
BAF	BAFFLE
BCV	BALL CHECK VALVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BI	BLACK IRON
BITUM	BITUMINOUS OR BITUMASTIC
B/L	BASELINE
BLDG	BUILDING
BLK	BLOCK
BM	BENCH MARK
BOC	BACK OF CURB
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
BSP	BLACK STEEL PIPE
BV	BALL VALVE
BW	BOTH WAYS
BWW	BACKWASH WATER
C	
CAP	CAPACITY
CA	COMPRESSED AIR
CAV	COMBINATION AIR VALVE
CB	CATCH BASIN
CCC	CHLORINE CONTACT CHAMBER
CE	CHLORINATED EFFLUENT
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CV	CHECK VALVE
CI	CAST IRON
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CKT	CIRCUIT
C/L	CENTER LINE
CL2	CHLORINE GAS
CLF	CHAIN LINK FENCE
CLR	CLEAR OR CLEARANCE
CLVT	CULVERT
CMP	CORRUGATED METAL PIPE
CMPA	CORRUGATED METAL PIPE ARCH
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CNR	CORNER
CO	CLEAN OUT
CO2	CARBON DIOXIDE
COAG	COAGULANT
COL	COLUMN
COM	COMMON
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCT(ION)
CONT	CONTINUOUS
CONTR	CONTRACT(OR)
COORD	COORDINATE
CO	COMPANY
CP	CONCRETE PIPE
CPA	CONCRETE PIPE ARCH
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CONCENTRIC REDUCER
CS	CHLORINE SOLUTION
CSG	CASING
CTV	CABLE TELEVISION
CY	CUBIC YARD
CYL	CYLINDER
C&G	CURB AND GUTTER
C/C	CENTER TO CENTER
D	
DAT	DATUM
DBL	DOUBLE
DC	DIRECT CURRENT
DEMO	DEMOLITION
DEPT	DEPARTMENT
DESC	DESCRIPTION
DET	DETAIL
DF	DIESEL FUEL
DI	DUCTILE IRON
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DIR	DIRECTION
DMH	DROP MANHOLE
DN	DOWN
DR	DRAIN
DV	DIAPHRAGM VALVE
DW	DRIVEWAY
DWG	DRAWING
DWV	DRAIN, WASTE, AND VENT
E	
E	EAST
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE
EFF	EFFLUENT
E/L	EASEMENT LINE
EL	ELEVATION
ELAST	ELASTOMERIC
ELEC	ELECTRICAL
EMER	EMERGENCY
EMC	ENCASE(MENT)
ENGR	ENGINEER
EP	EDGE OF PAVEMENT
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EPRF	EXPLOSION PROOF
EQUIP	EQUIPMENT
ER	ECCENTRIC REDUCER
ESTM	EASEMENT
EST	ESTIMATE(D)
EW	EACH WAY
EXC	EXCAVATE
EXP	EXPANSION
EXST	EXISTING
EXST GR	EXISTING GRADE
EXT	EXTERIOR
EXTN	EXTENSION
F	
FAB	FABRICATE(D)
FCA	FLANGED COUPLING ADAPTER
FB	FLAT BAR
FCV	FLOW-CONTROL VALVE
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FILTER(ED) EFFLUENT
FHY	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH(ED)
FIN FLR	FINISH FLOOR
FIN GR	FINISH GRADE
FL	FLUORIDE
FLG	FLANGE(D)
FLL	FLOW LINE
FLTR	FILTER
FM	FORCE MAIN
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FOOT OR FEET
FUT	FUTURE
FV	FOOT VALVE
FW	FINISHED WATER
FWP	FACTORY WIRED PANEL
F/F	FACE TO FACE
G	
GA	GAUGE
GAL	GALLON(S)
GALV	GALVANIZED
GIP	GALVANIZED IRON PIPE
GJ	GROOVE JOINT
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPS	GALLONS PER SECOND
GR	GRADE
GRTG	GRATING
GS	GALVANIZED STEEL
GSP	GALVANIZED STEEL PIPE
GSR	GROUND STORAGE RESERVOIR
GST	GROUND STORAGE TANK
GT	GROUT
GV	GATE VALVE
H	
HB	HOSE BIBB
HD	HEAVY-DUTY
HDPE	HIGH-DENSITY POLYETHYLENE
HDR	HYDRAULIC
HFA	HYDROFLUOSILICIC ACID
HGR	HANGER
HGT	HEIGHT
HNDRL	HAND RAIL
HOA	HAND-OFF-AUTO
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPA	HIGH PRESSURE AIR
HR	HOUR
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HZ	HERTZ
I	
ID	INSIDE DIAMETER
IN	INCH(ES)
INF	INFLUENT
INT	INTERSECTION
INTR	INTERIOR
INV	INVERT
IP	IRON PIPE
IPS	INTERNATIONAL PIPE STANDARD
IR	INTERNAL RECYCLE
IW	IRRIGATION WATER
J	
JB	JUNCTION BOX
JT	JOINT
K	
K	KIP (1,000 LB)
KPL	KICK PLATE
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT-HOUR
L	
L	LEFT
LAB	LABORATORY
LAM	LAMINATE OR LAMINATION
LATL	LATERAL
LAV	LAVATORY
LEN	LENGTH
LB	POUND(S)
LF	LINEAR FEET
LP	LIGHT POLE
LS	LIME SLURRY
LSS	LIME STABILIZED SLUDGE
LVR	LOUVER
LWL	LOW WATER LEVEL
M	
M	METER
MAINT	MAINTAIN OR MAINTENANCE
MAN	MANUAL(LY)
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
ME	MITERED END
MECH	MECHANICAL
MEG	MATCH EXISTING GRADE
MFR	MANUFACTURE(R)
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MI	MILE(S)
MIN	MINIMUM, MINUTE(S)
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MIXED LIQUOR
MO	MASONRY OPENING
MON	MONUMENT
MPH	MILES PER HOUR
MPT	MALE PIPE THREAD
MS	MOTOR STARTER
MSP	MOTOR STARTER PANEL
MTD	MOUNTED
MV	MOTORIZED VALVE
MW	MANWAY
MWL	MEAN WATER LEVEL
MWP	MAXIMUM WORKING PRESSURE
N	
N	NORTH
NaOCl	SODIUM HYPOCHLORITE
NE	NORTHEAST
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NPF	NATIONAL PIPE THREAD
NPT	NATIONAL PIPE TAPER (THREAD)
NPW	NON-POTABLE WATER
NRS	NON-RISING SYSTEM
NTS	NOT TO SCALE
NW	NORTHWEST
N/A	NOT APPLICABLE
O	
O2	OXYGEN
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODP	OPEN DRIP PROOF
OF	OUTSIDE FACE
OH	OVER HEAD
OHW	OVER HEAD WIRE
OPP	OPPOSITE
OPT	OPTIONAL
OR	OFFICIAL RECORDS
OSY	OUTSIDE SCREW AND YOKE
O&M	OPERATION AND MAINTENANCE
P	
PA	PROCESS AIR
PC	POINT OF CURVE
PCM	PERMANENT CONTROL MONUMENT
PE	PLAIN END
PG	PRESSURE GAGE
PI	POINT OF INTERSECTION
PL	PLATE
P/L	PROPERTY LINE
PNV	PINCH VALVE
POB	POINT OF BEGINNING
POJ	PUSH-ON JOINT
POL	POLYMER
PP	POWER POLE
PPD	POUNDS PER DAY
PPM	PARTS PER MILLION
PREFAB	PREFABRICATED
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PRW	PROCESS WATER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAGE
PT	POINT OF TANGENCY
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PW	POTABLE WATER
PWR	POWER
Q	
Q	FLOW
QTY	QUANTITY
R	
RAD	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RD	ROAD
RDCR	REDUCER
REBAR	REINFORCING STEEL
REF	REFERENCE
REINF	REINFORCE(D)(ING)(MENT)
REM	REMOVE(ABLE)
REQ'D	REQUIRED
RF	RAISED FACE
RJ	RESTRAINED JOINT
RM	ROOM
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RT	RIGHT
RVT	RIVETED
RW	RAW WATER
RWW	RAW WASTEWATER
R/W	RIGHT-OF-WAY
S	
S	SOUTH
SA	SAMPLE LINE
SAN	SANITARY
SCHED	SCHEDULE
SD	STORM DRAIN
SE	SOUTHEAST
SECT	SECTION
SEFF	SECONDARY EFFLUENT
SF	SQUARE FOOT OR FEET
SHT	SHEET(ED)(ING)
SIG	SIGNAL
SIM	SIMILAR
SL	SLUDGE
SLV	SLEEVE
SM	SHEET METAL
SOLN	SOLUTION
SP	SOIL PIPE, SPACE(ING)
SPEC	SPECIFICATION
SPRT	SUPPORT
SQ	SQUARE
SS	SANITARY SEWER
SSE	SUBSTANDARD EFFLUENT
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STK	STAKE
STL	STEEL
STR	STRAIGHT
STRUCT	STRUCTURAL
SURF	SURFACE
SV	SOLENOID VALVE
SVCE	SERVICE
SVW	SERVICE WATER
SW	SOUTHWEST
SWD	SIDEWATER DEPTH
SWSH	SURFACE WASH
SYM	SYMBOL
SYMM	SYMMETRICAL
S/W	SIDEWALK
T	
TAN	TANGENT
TB	TOP OF BEAM
TBM	TEMPORARY BENCH MARK
TB-xx	TEST BORING-xx (e.g. TB-1)
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TE	TOTALLY ENCLOSED
TEFC	TOTALLY ENCLOSED FAN COOLED
TEL	TELEPHONE
TENV	TOTALLY ENCLOSED NON-VENTILATED
THD	THREAD(ED)
THK	THICK(NESS)
TLM	TELEMETRY
TOB	TOP OF BANK
TOC	TOP OF CURB
TOS	TOE OF SLOPE
TOT	TOTAL
TP	TELEPHONE POLE
TS	THICKENED SLUDGE
TV	TELEVISION
TYP	TYPICAL
T&B	TOP AND BOTTOM
U	
UD	UNDERDRAIN
UG	UNDERGROUND
ULT	ULTIMATE
UN	UNION
UON	UNLESS OTHERWISE NOTED
UGE	UNDERGROUND ELECTRIC
UTC	UNDERGROUND TELEPHONE CABLE
UTIL	UTILITY
V	
V	VOLT(S)
VAC	VACUUM
VAR	VARIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
W	
W	WATT, WEST
WAS	WASTE ACTIVATED SLUDGE
WCO	WALL CLEAN OUT
WF	WIDE FLANGE
WH	WALL HYDRANT
WL	WATER LINE
WM	WATER MAIN
WP	WATER PROOF(ING), WORKING POINT
WPR	WORKING PRESSURE
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
WT	WEIGHT
WTP	WATER TREATMENT PLANT
WW	WASH WATER
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
WWTP	WASTEWATER TREATMENT PLANT
W/	WITH
W/O	WITHOUT
X	
XFER	TRANSFER
Y	
YD	YARD(S)
YH	YARD HYDRANT
YR	YEAR(S) YR

PIPING LEGEND

FITTING/ APPURTENANCE	FLANGED				MECHANICAL JOINT				GROOVE JOINT				SOLVENT WELD			
	SINGLE-LINE		DOUBLE-LINE		SINGLE-LINE		DOUBLE-LINE		SINGLE-LINE		DOUBLE-LINE		SINGLE-LINE		DOUBLE-LINE	
	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED
BEND																
TEE																
WYE																
REDUCER																
CAP/ BLIND FLANGE					N/A	N/A	N/A	N/A								
PLUG	N/A	N/A	N/A	N/A					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BUTTERFLY VALVE																
BALL VALVE					N/A	N/A	N/A	N/A								
CHECK VALVE					N/A	N/A	N/A	N/A								
GATE VALVE																
PLUG VALVE																
AUTOMATIC CONTROL VALVE					N/A	N/A	N/A	N/A								
PINCH VALVE					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				

CIVIL LEGEND

PROPERTY LINE

RIGHT OF WAY LINE (R-O-W)

LIMITS OF CONTRUCTION

EASEMENT

130 — PROPOSED CONTOUR MAJOR

129 — PROPOSED CONTOUR MINOR (LABEL OPTIONAL)

W — WATER

STORM SEWER

SANITARY SEWER

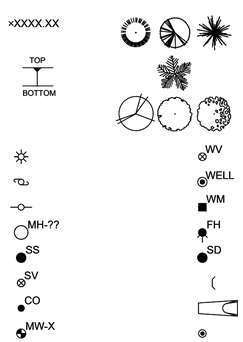
SANITARY SEWER (FORCE MAIN)

GUARD RAIL

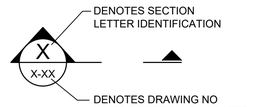
xx xx xx xx — STEEL FENCE

x x x x x — WOOD FENCE

OVERHEAD ELECTRICAL



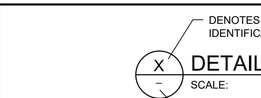
REFERENCE SYMBOLS



SECTION REFERENCE

DETAIL REFERENCE

SECTION TITLE



DETAIL TITLE

HATCHING LEGEND

- ASPHALT OR CONCRETE SURFACE (SIDEWALK OR ROADWAY)
- ROADWAY/SIDEWALK OPEN CUT RESURFACE
- SODDED OR SEEDED AND MULCHED AREA OR EXISTING WETLAND
- EARTH
- EXISTING PIPES, STRUCTURES, EQUIPMENT TO BE REMOVED
- CAST-IN-PLACE CONCRETE
- PRECAST CONCRETE
- GROUT
- CONCRETE UNIT MASONRY (PLAN)
- STEEL
- ALUMINUM
- GRATING

MECHANICAL/DRAFTING LEGEND

	EXISTING	PROPOSED
VISIBLE LINE		
HIDDEN LINE		
CENTER LINE		
PHANTOM LINE		
MATCHLINE		
BREAK LINE		
DIMENSION LINES AND LEADERS	1 3/32"	NOTE

TETRA TECH
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1899 POWERS FERRY ROAD SE, SUITE 400
ATLANTA, GEORGIA 30339
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GEORGIA — 245 — No. PE040616 — PROFESSIONAL ENGINEER — DAVID N. LAVERTIGNE — 12/14/18

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

LEGEND AND ABBREVIATIONS

Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

G-001

Bar Measures 1 inch

GENERAL NOTES

PROJECT INFORMATION:

1. THE PROJECT SHALL CONSIST OF THE DEMOLITION OF THE EXISTING CMP CULVERTS UNDER GRAVES ROAD AND THE INSTALLATION OF AN 8' X 8' CONCRETE BOX CULVERT 66' IN LENGTH ALONG WITH THE RELOCATION OF THE EXISTING UTILITIES IN THE AREA.
2. THE ORDER OF MAJOR LAND DISTURBING ACTIVITIES IS INDICATED IN THE ACTIVITY SCHEDULE LOCATED ON SHEET C-506.
3. THE DISTURBED ACREAGE FOR THE PROJECT IS 0.75 ACRES.
4. THE CULVERT REPLACEMENT PROJECT LOCATION IS:
   33.48834° -84.49575°

FAYETTE COUNTY WATER SYSTEM NOTES:

1. FAYETTE COUNTY WATER SYSTEM SPECIFICATIONS AND DETAILS SHALL GOVERN ALL WATER MAIN CONSTRUCTION.
2. ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH FAYETTE COUNTY WATER SYSTEM AND AWWA STANDARDS AND SPECIFICATIONS.
3. DUCTILE IRON PIPE (D.I.P.) SHALL BE MINIMUM PRESSURE CLASS 300 CEMENT MORTAR LINED, PER ANSI C151/A21.51. ALL FITTINGS SHALL BE MECHANICAL JOINT DUCTILE IRON PER ANSI A21.10 OR A21.53. ALL SERVICE PIPING SHALL BE COPPER.
4. PROVIDE THRUST RESTRAINT (THRUST BLOCKS OR RESTRAINED JOINTS) AT ALL BENDS, TEES, CROSSES AND END OF LINES. (EOL) SIDE FORMS SHALL BE USED TO PREVENT ENCASEMENT OF BOLTS. SERVICE TAPS SHALL NOT BE LOCATED BENEATH PAVEMENT.
5. MAINTAIN 24" MINIMUM CLEARANCE BETWEEN WATERLINE AND OTHER STRUCTURES, EXCEPT WHERE INDICATED IN PLANS.
6. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4' OVER ALL WATER LINES.
7. CONTRACTOR SHALL FLAG WATER LINE AND SERVICE LOCATIONS TO PREVENT DAMAGE BY OTHER UTILITY CONTRACTORS.
8. PROPER COMPACTION IS REQUIRED THROUGHOUT THE PROJECT. (95% PERVIOUS, 98% IMPERVIOUS)
9. UNSUITABLE SOIL MATERIALS SHALL BE REPLACED WITH SUITABLE MATERIALS.
10. NEW WATER LINE SHALL BE PRESSURE TESTED FOR 2 HOURS AT 200 P.S.I. UNACCEPTABLE LEAKAGE SHALL BE REPAIRED AND WATER LINE SHALL BE RETESTED PRIOR TO ACCEPTANCE BY FAYETTE COUNTY WATER SYSTEM. MAIN MUST BE DISINFECTED PRIOR TO BEING PLACED IN SERVICE.
11. TOP OF CURBS SHALL BE PERMANENTLY MARKED AND PAINTED BLUE AT MAIN AND SERVICE CROSSINGS, AS WELL AS, VALVE AND METER LOCATIONS.
12. WATERLINE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL, INCLUDING SIGNAGE AND FLAGMEN, WHILE WORKING WITHIN THE RIGHT OF WAY OF ANY EXISTING ROAD.
13. WATERLINE CONTRACTOR PERFORMING ANY WORK WITHIN AN EXISTING RIGHT OF WAY MUST COMPLY WITH THE MUTCD 2003 EDITION WITH REVISIONS NUMBER 1 AND 2 INCORPORATED, DATED DECEMBER 2007. FLAGGERS MUST POSSESS A CURRENT CERTIFICATION CARD. DOCUMENTATION SHALL BE AVAILABLE UPON REQUEST BY ANY COUNTY EMPLOYEE.
14. WATER TO BE PROVIDED BY FAYETTE COUNTY WATER SYSTEM.
15. ALL TIE-INS SHALL BE COORDINATED WITH FAYETTE COUNTY WATER SYSTEM. EXISTING VALVES SHALL BE OPERATED BY COUNTY PERSONNEL ONLY.
16. CONTRACTOR MUST NOTIFY FAYETTE COUNTY WATER SYSTEM 24 HOURS PRIOR TO BEGINNING CONSTRUCTION OR REQUESTING INSPECTIONS. ALL WORK MUST BE INSPECTED PRIOR TO BACKFILL AND COMPACTION. ANY WORK COVERED PRIOR TO INSPECTION IS SUBJECT TO REJECTION UNTIL IT HAS BEEN EXPOSED AND INSPECTED BY FAYETTE COUNTY WATER PERSONNEL.
17. NO TRENCHES OR PITS ARE TO BE LEFT OPEN OVERNIGHT OR THROUGH A WEEKEND. IF CREW VACATES JOB SITE DURING DAYTIME HOURS, A PROPERLY CONSTRUCTED, HIGHLY VISIBLE BARRICADE MUST BE ERECTED.
18. WHILE THE EXCAVATION IS OPEN, UNDERGROUND INSTALLATIONS SHALL BE PROTECTED, SUPPORTED OR REMOVED AS NECESSARY TO SAFEGUARD EMPLOYEES.
19. MEANS OF EGRESS FROM TRENCH EXCAVATIONS. A STAIRWAY, LADDER, RAMP OR OTHER SAFE MEANS OF EGRESS SHALL BE LOCATED IN TRENCH EXCAVATIONS THAT ARE 4 FEET OR MORE IN DEPTH SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL FOR EMPLOYEES.
20. CONTACT MATT BERGEN AT THE FAYETTE COUNTY WATER SYSTEM TO SCHEDULE A PRECONSTRUCTION MEETING PRIOR TO BEGINNING ANY WORK. PHONE: 770-320-6020 FAX: 770-719-5576
21. ALL CONTRACTORS MUST HAVE A CERTIFIED COMPETENT PERSON ON SITE WHILE WORK IS BEING PERFORMED. DOCUMENTATION SHALL BE AVAILABLE UPON REQUEST BY ANY COUNTY EMPLOYEE.
22. ALL CONTRACTORS PERFORMING ANY LAND DISTURBING ACTIVITY SHALL HAVE ATTENDED THE GSWCC SUB CONTRACTOR AWARENESS COURSE WHEN WORKING IN A COMMON DEVELOPMENT WHERE THE PRIMARY PERMITTEE HAS OBTAINED A LEVEL 1A CERTIFICATION. THE PRIMARY PERMITTEE IS REQUIRED TO HAVE A LEVEL 1A CERTIFIED REPRESENTATIVE ON SITE AT ALL TIMES. DOCUMENTATION SHALL BE AVAILABLE UPON REQUEST BY ANY COUNTY EMPLOYEE.
23. ANY CONTRACTOR PERFORMING ANY LAND DISTURBING ACTIVITY UNDER CONTRACT FOR FAYETTE COUNTY WATER SYSTEM SHALL BE CONSIDERED THE SECONDARY PERMITTEE FOR EACH PROJECT. THE CONTRACTOR SHALL BE REQUIRED TO HAVE A GSWCC LEVEL 1A CERTIFIED REPRESENTATIVE ON SITE AT ALL TIMES. DOCUMENTATION SHALL BE AVAILABLE UPON REQUEST BY ANY COUNTY EMPLOYEE.
24. BEFORE RELEASE OF THE WATER LINES, 2 CERTIFIED AS - BUILTS (24 X 36) MUST BE SUBMITTED ALONG WITH 2 SIGNED FINAL PLATS OR FINAL SITE PLANS. ONE ELECTRONIC COPY OF EACH DOCUMENT SHOULD BE SENT TO THE INSPECTOR UPON ACCEPTANCE.

GENERAL:

1. BENCHMARK FOR CONSTRUCTION HAS BEEN PROVIDED ON SHEET C-101.
2. ALL LABOR, MATERIALS, AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS ADOPTED BY FAYETTE COUNTY. WHERE CONFLICTS OR OMISSIONS EXIST, FAYETTE COUNTY STANDARDS SHALL DICTATE. SUBSTITUTIONS AND DEVIATION FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.
3. SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. ALL MATERIALS AND CONSTRUCTION TO BE IN ACCORDANCE WITH THE FAYETTE COUNTY DEVELOPMENT REGULATIONS, LATEST EDITION, UNLESS OTHERWISE WAIVED.
5. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS ARE OBTAINED AND IN HAND BEFORE BEGINNING ANY CONSTRUCTION. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES. ANY PENALTIES, STOP WORK ORDERS OR ADDITIONAL WORK RESULTING FROM THE CONTRACTOR BEING IN VIOLATION OF THE REQUIREMENTS ABOVE, SHALL BE FULLY BORNE BY THE CONTRACTOR.

GENERAL (CONTINUED):

6. THE LOCATION OF ALL EXISTING UTILITIES AND STORM DRAINAGE SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR INACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION OF THESE UTILITIES WITH THE OWNER OF THE UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING UNDERGROUND UTILITIES, WHETHER SHOWN ON THE PLAN OR LOCATED BY THE UTILITY COMPANY. ALL UTILITIES WHICH INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FIRST. ANY FEES ASSOCIATED WITH UTILITY RELOCATIONS SHALL BE BORNE IN ACCORDANCE WITH RESPECTIVE UTILITY COMPANY STANDARDS. IT IS REQUESTED UTILITY COMPANIES MOVE THEIR PARTICULAR UTILITIES. ANY DELAY OR INCONVENIENCE CAUSED TO THE CONTRACTOR BY THE RELOCATION OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED.
7. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING TO BE HELD BETWEEN FAYETTE COUNTY, UTILITIES, ENGINEER OF RECORD, AND CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
8. THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND INSTALLATIONS OF EVERY KIND, INCLUDING LANDSCAPE SPRINKLERS, SHALL BE PLACED BENEATH THE PAVEMENT AND ITS EDGES PRIOR TO THE CONSTRUCTION OF THE PAVEMENT. THE PAVEMENT SHALL NOT BE CUT WITHOUT PRIOR APPROVAL OF THE ENGINEER.
9. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AND AT LEAST 48 HOURS HOURS BEFORE REQUIRED INSPECTION ON EACH AND EVERY PHASE OF WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS NOTICE PRIOR TO ANY SCHEDULED TESTING. NO PRESSURE TESTING, OR FINAL TESTING WILL BE ACCEPTED UNLESS WITNESSED BY THE ENGINEER'S REPRESENTATIVE.
10. ALL CONTRACTORS, CITY REPRESENTATIVES, COUNTY REPRESENTATIVES, AND UTILITY COMPANIES ARE RESPONSIBLE FOR THEIR RESPECTIVE SURVEYING AND LAYOUT FROM BENCHMARK PROVIDED ON CONSTRUCTION PLANS. ANY SURVEY MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED UPON COMPLETION OF THE WORK BY A REGISTERED LAND SURVEYOR.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING ANY CONSTRUCTION ACTIVITIES FROM TAKING PLACE OUTSIDE OF THE LIMITS OF CONSTRUCTION SHOWN ON THE PLANS. ANY ON-SITE OR OFFSITE AREAS DISTURBED SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER.
12. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS AND ALL PERMITS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE TWO (2) SETS OF RECORD DRAWINGS TO THE ENGINEER OF RECORD WITHIN TWO (2) WEEKS AFTER CONSTRUCTION HAS BEEN COMPLETED ON EACH PHASE.
13. TOPOGRAPHIC INFORMATION SHOWN ON THESE PLANS WERE TAKEN FROM SURVEY PROVIDED BY: ROCHESTER AND ASSOCIATES, INC., DATED: AUGUST 4, 2017.
14. ANY CONSTRUCTION BEYOND THE RIGHT-OF-WAY AND/OR ESTABLISHED EASEMENT LINES, ONTO ADJACENT PROPERTY, REQUIRES ADJACENT PROPERTY OWNER PERMISSION AND NECESSARY EASEMENTS PRIOR TO PERFORMING ANY WORK. THE CONTRACTOR IS TO VERIFY SUCH EASEMENTS AND PERMISSIONS PRIOR TO DISTURBING ANY OFF-SITE PROPERTY.
15. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXISTING SITE CONDITIONS OF SOIL PRIOR TO N.T.P. CONSTRUCTION TO DETERMINE IF ANY OFF SITE MATERIALS WILL NEED TO BE IMPORTED TO ACHIEVE THE GRADES SPECIFIED ON THE PLANS.
16. CLEAR AREAS INDICATED SHALL BE COMPLETELY CLEAR OF ALL TIMBER, BRUSH, STUMPS, ROOTS, GRASS, WEEDS, RUBBISH, AND ALL OTHER DEBRIS AND OBSTRUCTIONS RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE GROUND.
17. PRIOR TO BID PREPARATION, THE CONTRACTOR MUST BECOME FAMILIAR WITH THE OVERALL SITE CONDITIONS AND PERFORM ADDITIONAL INVESTIGATIONS AS DETERMINED NECESSARY TO UNDERSTAND THE LIMIT AND DEPTH OF EXPECTED ORGANIC SILT PEAT AREAS, ADEQUACY OF EXISTING MATERIALS AS FILL, DEWATERING REQUIREMENTS, CLEAN FILL REQUIRED FROM OFFSITE, AND MATERIALS TO BE DISPOSED OF OFFSITE, ALL OF WHICH WILL AFFECT THE PRICING. ANY DELAY, INCONVENIENCE, OR EXPENSE CAUSED TO THE CONTRACTOR DUE TO INADEQUATE INVESTIGATION OF EXISTING CONDITIONS SHALL BE INCIDENTAL TO THE CONTRACT, AND NO EXTRA COMPENSATION WILL BE ALLOWED. THE MATERIALS ANTICIPATED TO BE ENCOUNTERED DURING CONSTRUCTION MAY REQUIRE DRYING PRIOR TO USE AS BACKFILL, AND THE CONTRACTOR MAY HAVE TO IMPORT MATERIALS, AT NO EXTRA COST, FROM OFFSITE TO MEET THE REQUIREMENTS FOR COMPACTION AND PROPER FILL.

DEMOLITION:

1. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND LICENSES FOR PERFORMING THE DEMOLITION WORK AND SHALL FURNISH A COPY OF THESE ITEMS TO THE ENGINEER PRIOR TO COMMENCING THE WORK. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE PERMITS.
2. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES OR LOCAL AUTHORITIES FURNISHING GAS, WATER, ELECTRICAL, TELEPHONE, OR SEWER SERVICE SO THEY CAN REMOVE, RELOCATE, DISCONNECT, CAP OR PLUG THEIR EQUIPMENT IN ORDER TO FACILITATE DEMOLITION.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL TREES, STRUCTURES, AND UTILITIES NOT MARKED FOR REMOVAL OR DEMOLITION AND SHALL PROMPTLY REPAIR ANY DAMAGE AS DIRECTED BY THE ENGINEER AT NO COST TO THE OWNER.
4. THE CONTRACTOR SHALL REMOVE PAVING MARKED FOR DEMOLITION WHICH INCLUDES ALL ASPHALT, CONCRETE, BASE, AND RETAINING WALLS (INCLUDING THE FOOTERS).
5. THE CONTRACTOR SHALL REMOVE TREES MARKED FOR REMOVAL WHICH INCLUDES THE ROOTS ASSOCIATED WITH THE TREE. TREES NOT MARKED FOR REMOVAL SHALL BE PROTECTED IN ACCORDANCE WITH THE FAYETTE COUNTY REGULATIONS.
6. THE CONTRACTOR SHALL REMOVE UNSALVAGEABLE MATERIALS AND YARD WASTE FROM THE SITE IMMEDIATELY AND DISPOSE OF IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
7. THE CONTRACTOR SHALL SAW-CUT A SMOOTH STRAIGHT EDGE ON ANY PAVEMENT PROPOSED FOR DEMOLITION PRIOR TO ITS REMOVAL. PRIOR TO CONNECTING PROPOSED PAVEMENT TO EXISTING PAVEMENT, THE CONTRACTOR SHALL ENSURE THAT THE EDGE OF THE EXISTING PAVEMENT IS STRAIGHT AND UNIFORM.
8. THE DEMOLITION SHALL BE PHASED TO PROVIDE 1 LANE OF TRAFFIC AT ALL TIMES.

EARTHWORK, GRADING, STABILIZATION, PAVING AND DRAINAGE:

1. COMPACT ALL UTILITY TRENCHES WITHIN ROADWAYS TO 98% OF THE MODIFIED PROCTOR MAXIMUM DENSITY (AASHTO T - 180) AND TO 95% WITHIN OTHER AREAS.
2. ALL ORGANIC SOILS BELOW UTILITY TRENCHES SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL AND COMPACTED TO NO LESS THAN 98% OF THE MODIFIED PROCTOR MAXIMUM DENSITY (AASHTO T - 180).
3. STABILIZED SUBGRADE TO MEET SPECIFIED REQUIREMENTS.
4. ASPHALTIC CONCRETE TO GDOT STANDARD SPECIFICATION (LATEST EDITION) SECTION 916.1 AND FAYETTE COUNTY, WHICHEVER IS GREATER.
5. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
6. ALL CONCRETE FLUMES, WALKS, AND CURBS SHALL BE CONSTRUCTED WITH 3000 PSI CONCRETE.
7. ALL ON-SITE AREAS DISTURBED BY THE CONSTRUCTION SHALL BE STABILIZED USING MEASURES THAT MATCH THE EXISTING VEGETATIVE CONDITIONS OF THE SITE. CONTRACTOR IS RESPONSIBLE FOR IRRIGATION OF PERMANENT GRASSING.
8. THE REINFORCED CONCRETE PIPE SHALL BE CLASS III WITH WALL THICKNESS "B" CONFORMING TO ASTM C - 76 OR AWWA 302 - 74 AND GASKETS SHALL BE IN ACCORDANCE WITH ASTM C - 443 OR ASTM D - 412.

EARTHWORK, GRADING, STABILIZATION, PAVING AND DRAINAGE (CONTINUED):

9. ALL PIPE CALL OUTS ARE MEASURED CENTER LINE TO CENTER LINE FOR MANHOLES AND INLETS AND FROM THE END OF THE PIPE FOR MITERED END SECTIONS.
10. ALL DEWATERING COSTS ASSOCIATED WITH THE INSTALLATION AND CONSTRUCTION OF THE UNDERGROUND UTILITIES; STORM WATER PIPES AND MANHOLES; SANITARY SEWER MAINS, FORCE MAINS, MANHOLES, AND LIFT STATIONS; AND STORM WATER MANAGEMENT SYSTEMS SHALL BE INCLUDED AS PART OF THE CONSTRUCTION BID COSTS. THE CONTRACTOR SHALL SUBMIT FOR WATER USE PERMITS IF REQUIRED FOR DEWATERING ACTIVITIES.
11. ALL PIPES SHALL HAVE 3 FEET MINIMUM COVER UNLESS OTHERWISE SPECIFIED IN PLANS, CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE ELEVATIONS AND ALIGNMENTS.
12. THE CONTRACTOR MUST INSTALL AND MAINTAIN GRASS OR SOD ON EXPOSED SLOPES WITHIN 48 HOURS OF COMPLETED FINAL GRADES, AS NOTED ON PLANS, AND AT ANY OTHER TIME AS NECESSARY TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES TO ANY DOWNSTREAM WATER BODY, WETLAND, OR OFF-SITE PROPERTY. SODDING ON SLOPES 3:1 AND STEEPER SHALL BE STAKED.
13. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO CONTROL TURBIDITY AND SEDIMENT INCLUDING, BUT NOT LIMITED TO, THE INSTALLATION OF TURBIDITY BARRIERS AND SILT FENCES AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY EXISTS DUE TO THE PROPOSED WORK. TURBIDITY AND SEDIMENT BARRIERS MUST BE MAINTAINED AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVING THE BARRIERS.
14. EXISTING RUNOFF COEFFICIENT FOR THE PROJECT: 70.
    PROPOSED RUNOFF COEFFICIENT FOR THE PROJECT: 70.

OTHER UTILITY INFORMATION:

1. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES WHICH MAY HAVE THEIR UTILITIES WITHIN THE CONSTRUCTION AREAS TO LOCATE THEIR FACILITIES IN THE FIELD FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING CONSTRUCTION.
2. DUCTILE IRON PIPE SHALL BE ENCASED IN POLYETHYLENE TWENTY-FIVE (25) FEET ON EACH SIDE OF ANY PERPENDICULAR CROSSING OF METALLIC GAS MAINS OR ANY OTHER CATHODICALLY PROTECTED PIPELINE AND FOR LOCATIONS PARALLEL TO AND WITHIN TEN FEET OF METALLIC GAS MAINS OR OTHER CATHODICALLY PROTECTED PIPE AND THROUGH THE AREA OF INFLUENCE OF CATHODIC PROTECTION ANODE BED.

SPILL CONTROL NOTES:

1. IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS NOTES OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   a. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
   b. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
   c. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
   d. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
   e. THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
2. PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS WILL 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 WILL BE LOCATED AWAY FROM STATE WATERS, NATURAL DRAINS AND STORM WATER 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 IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

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GEORGIA
DAVID LAVERGNE
No. PE024016
PROFESSIONAL
12/14/18
ENGINEER
DAVID N. LAVERGNE

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

GENERAL NOTES

Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

G-002

Bar Measures 1 inch

SURVEY NOTES:

1. SURVEY SOURCE: ROCHESTER AND ASSOCIATES, INC.
   SURVEY DATE: 08/04/17

LOT 8
N/F
MARCUS YOUNG
297 GRAVES ROAD
FAYETTEVILLE, GA. 30214
D.B. 4679, PG. 0602
P.B. 15, PG. 164
PARCEL ID: 05 42 02008

LOT 9
N/F
ERNEST ODEN NMN, JR.
287 GRAVES ROAD
FAYETTEVILLE, GA. 30214
D.B. 3463, PG. 582
P.B. 15, PG. 164
PARCEL ID: 05 42 02009

LOT 10
N/F
ANDREW LYNCH
279 GRAVES ROAD
FAYETTEVILLE, GA. 30214
D.B. 2902, PG. 453
P.B. 15, PG. 164
PARCEL ID: 05 42 02010

LOT 11
N/F
EUGENE T. PRESTON
271 GRAVES ROAD
FAYETTEVILLE, GA. 30214
P.B. 15, PG. 164
PARCEL ID: 05 42 0201

LOT 21
N/F
TERRY LEE CHRISTIANSEN ESTATE
JEANETTE KAY CHRISTIANSEN
288 GRAVES ROAD
FAYETTEVILLE, GA. 30214
D.B. 826, PG. 340
P.B. 15, PG. 164
PARCEL ID: 05 42 02021

LOT 22
N/F
PEARLIE M. WILLIAMS
480 CAMELOT DRIVE
FAYETTEVILLE, GA. 30214
P.B. 15, PG. 164
PARCEL ID: 05 42 02022

BEVERLY MANOR ESTATES
SECTION 9
P.B. 15, PG. 164

B.M.
TRAV NAIL
N=1269052.11
E=2196203.30
ELEV=859.25

B.M.
TRAV NAIL
N=1268961.84
E=2196413.02
ELEV=866.82

N 1269124.517
E 2196075.148

25' STREAM BUFFER

APPROX. LOCATION OF UNDERGROUND POWER. UTILITY LOCATER UNABLE TO LOCATE REST OF LINE.

APPROX. LOCATION OF 10" PVC LINE PER RECORDS PROVIDED BY FAYETTE COUNTY WATER.

ASPHALT WIDTH = 24'

INV=855.70 18" RCP

INV=852.01

INV=849.82

48" CMP 60.20 LF

INV=847.46

INV=862.16

18" CMP

4" METAL PIPE

TOP OF BANK

TWO-STORY BRICK BLDG.

FFE=852.31 (GARAGE)

DI
TOP=874.41
OUT=870.71

GRAVES ROAD (80' R/W)

CAMELOT DRIVE

SCALE: 1" = 20'

Bar Measures 1 inch

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GEORGIA
No. PE024616
PROFESSIONAL ENGINEER
DAVID N. LAVERTGNE
12/14/18

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

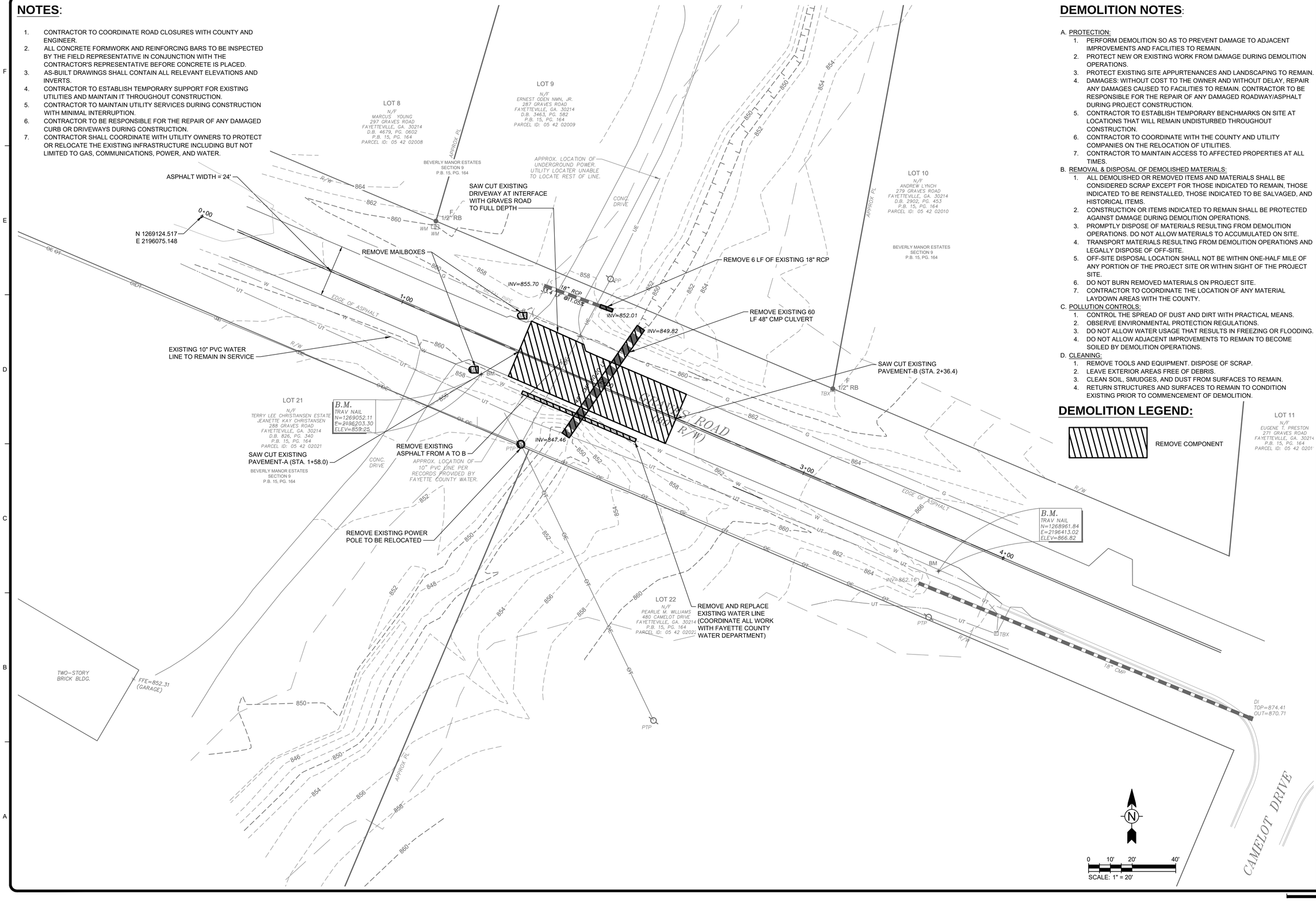
EXISTING CONDITIONS

Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

C-101

NOTES:

1. CONTRACTOR TO COORDINATE ROAD CLOSURES WITH COUNTY AND ENGINEER.
2. ALL CONCRETE FORMWORK AND REINFORCING BARS TO BE INSPECTED BY THE FIELD REPRESENTATIVE IN CONJUNCTION WITH THE CONTRACTOR'S REPRESENTATIVE BEFORE CONCRETE IS PLACED.
3. AS-BUILT DRAWINGS SHALL CONTAIN ALL RELEVANT ELEVATIONS AND INVERTS.
4. CONTRACTOR TO ESTABLISH TEMPORARY SUPPORT FOR EXISTING UTILITIES AND MAINTAIN IT THROUGHOUT CONSTRUCTION.
5. CONTRACTOR TO MAINTAIN UTILITY SERVICES DURING CONSTRUCTION WITH MINIMAL INTERRUPTION.
6. CONTRACTOR TO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED CURB OR DRIVEWAYS DURING CONSTRUCTION.
7. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNERS TO PROTECT OR RELOCATE THE EXISTING INFRASTRUCTURE INCLUDING BUT NOT LIMITED TO GAS, COMMUNICATIONS, POWER, AND WATER.



DEMOLITION NOTES:

A. PROTECTION:
1. PERFORM DEMOLITION SO AS TO PREVENT DAMAGE TO ADJACENT IMPROVEMENTS AND FACILITIES TO REMAIN.
2. PROTECT NEW OR EXISTING WORK FROM DAMAGE DURING DEMOLITION OPERATIONS.
3. PROTECT EXISTING SITE APPURTENANCES AND LANDSCAPING TO REMAIN.
4. DAMAGES: WITHOUT COST TO THE OWNER AND WITHOUT DELAY, REPAIR ANY DAMAGES CAUSED TO FACILITIES TO REMAIN. CONTRACTOR TO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED ROADWAY/ASPHALT DURING PROJECT CONSTRUCTION.
5. CONTRACTOR TO ESTABLISH TEMPORARY BENCHMARKS ON SITE AT LOCATIONS THAT WILL REMAIN UNDISTURBED THROUGHOUT CONSTRUCTION.
6. CONTRACTOR TO COORDINATE WITH THE COUNTY AND UTILITY COMPANIES ON THE RELOCATION OF UTILITIES.
7. CONTRACTOR TO MAINTAIN ACCESS TO AFFECTED PROPERTIES AT ALL TIMES.

B. REMOVAL & DISPOSAL OF DEMOLISHED MATERIALS:
1. ALL DEMOLISHED OR REMOVED ITEMS AND MATERIALS SHALL BE CONSIDERED SCRAP EXCEPT FOR THOSE INDICATED TO REMAIN, THOSE INDICATED TO BE REINSTALLED, THOSE INDICATED TO BE SALVAGED, AND HISTORICAL ITEMS.
2. CONSTRUCTION OR ITEMS INDICATED TO REMAIN SHALL BE PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS.
3. PROMPTLY DISPOSE OF MATERIALS RESULTING FROM DEMOLITION OPERATIONS. DO NOT ALLOW MATERIALS TO ACCUMULATED ON SITE.
4. TRANSPORT MATERIALS RESULTING FROM DEMOLITION OPERATIONS AND LEGALLY DISPOSE OF OFF-SITE.
5. OFF-SITE DISPOSAL LOCATION SHALL NOT BE WITHIN ONE-HALF MILE OF ANY PORTION OF THE PROJECT SITE OR WITHIN SIGHT OF THE PROJECT SITE.
6. DO NOT BURN REMOVED MATERIALS ON PROJECT SITE.
7. CONTRACTOR TO COORDINATE THE LOCATION OF ANY MATERIAL LAYDOWN AREAS WITH THE COUNTY.

C. POLLUTION CONTROLS:
1. CONTROL THE SPREAD OF DUST AND DIRT WITH PRACTICAL MEANS.
2. OBSERVE ENVIRONMENTAL PROTECTION REGULATIONS.
3. DO NOT ALLOW WATER USAGE THAT RESULTS IN FREEZING OR FLOODING.
4. DO NOT ALLOW ADJACENT IMPROVEMENTS TO REMAIN TO BECOME SOILED BY DEMOLITION OPERATIONS.

D. CLEANING:
1. REMOVE TOOLS AND EQUIPMENT. DISPOSE OF SCRAP.
2. LEAVE EXTERIOR AREAS FREE OF DEBRIS.
3. CLEAN SOIL, SMUDGES, AND DUST FROM SURFACES TO REMAIN.
4. RETURN STRUCTURES AND SURFACES TO REMAIN TO CONDITION EXISTING PRIOR TO COMMENCEMENT OF DEMOLITION.

DEMOLITION LEGEND:

REMOVE COMPONENT

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PROFESSIONAL ENGINEER
12/14/18
DAVID N. LAVERTIGNE

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

DEMOLITION PLAN

Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

C-102

Bar Measures 1 inch

NOTES:

1. CONTRACTOR TO COORDINATE ROAD CLOSURES WITH THE COUNTY AND ENGINEER.
2. ALL CONCRETE FORMWORK AND REINFORCING BARS TO BE INSPECTED BY THE FIELD REPRESENTATIVE IN CONJUNCTION WITH THE CONTRACTOR'S REPRESENTATIVE BEFORE CONCRETE IS PLACED.
3. AS-BUILT DRAWINGS SHALL CONTAIN ALL RELEVANT ELEVATIONS AND INVERTS.
4. CONTRACTOR TO ESTABLISH TEMPORARY SUPPORT FOR EXISTING UTILITIES AND MAINTAIN IT THROUGHOUT CONSTRUCTION.
5. CONTRACTOR TO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED CURB OR DRIVEWAYS DURING CONSTRUCTION.
6. CONTRACTOR TO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED ROADWAY/ASPHALT DURING PROJECT CONSTRUCTION, AS WELL AS REPLACEMENT AND RELOCATION OF MAILBOXES.
7. OFFSET STATIONING ON SHEET IS MEASURED FROM ROAD CENTERLINE TO THE FACE OF THE GUARDRAIL. FACE OF GUARDRAIL TO BE PLACED A MINIMUM OF 2' FROM EDGE OF PAVEMENT.
8. EXISTING DRIVEWAY AT 287 GRAVES RD TO REMAIN. CONTRACTOR TO PROTECT DRIVEWAY DURING ALL PHASES OF CONSTRUCTION.
9. GUARDRAIL POSTS TO BE STEEL.

SITE PAVING LEGEND:

NEW STANDARD DUTY ASPHALT PAVEMENT:
-1.5" 12.5mm SUPERPAVE ASPHALT TOPPING
-2.5" 19mm SUPERPAVE ASPHALT BINDER
-APPLY TACK COAT AT A RESIDUAL RATE OF 0.05 GALLONS PER SQUARE YARD
-8" GRADED AGGREGATE BASE COMPACTED TO 100% MAX DRY DENSITY
-UPPER 12" OF SUBGRADE TO BE COMPACTED TO 98% OF MAX DRY DENSITY
-ROAD CROSS SECTION TO COMPLY WITH FAYETTE COUNTY STANDARDS (SEE SHEET C-503, DETAIL 6) BETWEEN ROAD STATIONS 1+68.0 AND 2+26.4

END GUARDRAIL ROAD STA. = 1+94.3 OFFSET = 16.1' TYPE 1 ANCHOR 2' OFF OF DRIVEWAY (3 C-501 2 C-504 5 C-504)

PERMANENT EASEMENT

13 LF 24" CMP @3.08% TEMPORARY PIPE INV. = 856.10'

10-FT WIDE TEMPORARY DRIVEWAY WITH 18" CMP DRAINAGE PIPE. BOTH TO BE REMOVED AFTER ROADWAY REPAVING AND PRIOR TO GUARDRAIL INSTALLATION. AREA TO BE RESTORED WITH SOD AFTER ROADWAY REPAVING.

LOT 8 — N/F MARCUS YOUNG, 297 GRAVES ROAD, FAYETTEVILLE, GA. 30214, D.B. 4679, PG. 0602, P.B. 15, PG. 164, PARCEL ID: 05 42 02008

LOT 9 — N/F ERNEST ODEN NMN, JR., 287 GRAVES ROAD, FAYETTEVILLE, GA. 30214, D.B. 3463, PG. 582, P.B. 15, PG. 164, PARCEL ID: 05 42 02009

BEVERLY MANOR ESTATES SECTION 9, P.B. 15, PG. 164

PROPOSED 48" Ø JUNCTION BOX (TOP ELEV. = 855.50') TO CONNECT TO EXISTING 18" RCP (INV. = 852.67')

CONTRACTOR TO COORDINATE WITH POWER COMPANY TO PROTECT POWER POLE DURING CONSTRUCTION

PROPOSED 18" RCP TO CONNECT JUNCTION BOX TO HEADWALL (13.7 LF @ 0.50%)

LOT 10 — N/F ANDREW LYNCH, 279 GRAVES ROAD, FAYETTEVILLE, GA. 30214, D.B. 2902, PG. 453, P.B. 15, PG. 164, PARCEL ID: 05 42 02010

BEGIN GUARDRAIL ROAD STA. = 0+40.8 OFFSET = 15.9' TYPE 12B ANCHOR (4 C-501 2 C-504 5 C-504)

TEMPORARY MAILBOX LOCATION

PERMANENT MAILBOX LOCATION

GDOT STANDARD HEADWALL HW-A INV. = 847.60' (1 C-502 2 C-502 3 C-502)

TREE PROTECTION FENCE (4 C-504)

POINT OF DEFLECTION @ 7.5% ROAD STA. = 0+55.3 OFFSET = 14.1' (2 C-504 5 C-504)

66 LF 8' X 8' CONCRETE BOX CULVERT @ 0.56% (1 C-501)

INV. = 855.90'

INV. = 852.60'

INV. = 855.70'

END GUARDRAIL ROAD STA. = 1+02.1 OFFSET = 15.8' TYPE 1 ANCHOR 2' OFF OF DRIVEWAY (3 C-501 2 C-504 5 C-504)

LOT 21 — N/F TERRY LEE CHRISTIANSEN ESTATE, JEANETTE KAY CHRISTIANSEN, 288 GRAVES ROAD, FAYETTEVILLE, GA. 30214, D.B. 826, PG. 141, P.B. 15, PARCEL ID: 05 42 02007

B.M. TRAV NAIL N=1269052.11 E=2196203.30 ELEV=859.25

RELOCATED POWER POLE (CONTRACTOR TO COORDINATE WITH POWER COMPANY TO DETERMINE EXACT LOCATION)

BEGIN GUARDRAIL ROAD STA. = 1+48.4 OFFSET = 18.4' TYPE 12B ANCHOR 2' OFF OF DRIVEWAY (4 C-501 2 C-504 5 C-504)

APPROX. LOCATION OF 10" PVC LINE PER RECORDS PROVIDED BY FAYETTE COUNTY WATER.

TEMPORARY CONSTRUCTION EASEMENT (TYP. OF 2)

GDOT STANDARD HEADWALL HW-B INV. = 847.23' (1 C-502 2 C-502 3 C-502)

NEW STANDARD DUTY ASPHALT PAVEMENT SEE SITE PAVING LEGEND (6 C-503)

BEGIN GUARDRAIL ROAD STA. = 3+57.4 OFFSET = 16.2' TYPE 12B ANCHOR (4 C-501 2 C-504 5 C-504)

LOT 11 — N/F EUGENE T. PRESTON, 271 GRAVES ROAD, FAYETTEVILLE, GA. 30214, P.B. 15, PG. 164, PARCEL ID: 05 42 02013

B.M. TRAV NAIL N=1268961.84 E=2196413.02 ELEV=866.82

PERMANENT EASEMENT

LOT 22 — N/F PEARLIE M. WILLIAMS, 480 CAMELOT DRIVE, FAYETTEVILLE, GA. 30214, P.B. 15, PG. 164, PARCEL ID: 05 42 02022

TREE PROTECTION FENCE (4 C-504)

STONE CHECK DAMS (3 C-504)

END GUARDRAIL ROAD STA. = 2+60.0 OFFSET = 18.5' TYPE 1 ANCHOR (3 C-501 2 C-504 5 C-504)

INV.=862.16 ROAD STATION 3+68.4 OFFSET= 26.0'

10" GATE VALVE WITH DEADMAN BLOCKING (TYP. 2 LOCATIONS) AND PVC WATER LINE WITH 18" STEEL CASING UNDER CULVERT (1 C-503 2 C-503 3 C-503 4 C-503 5 C-503 7 C-503)

TWO-STORY BRICK BLDG. FFE=852.31 (GARAGE)

DI TOP=874.41 OUT=870.71

18" CMP

BARNES ROAD (F.C.R.D. R/W)

CAMELOT DRIVE

SCALE: 1" = 20'

Bar Measures 1 inch

TETRA TECH
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1899 POWERS FERRY ROAD SE, SUITE 400
ATLANTA, GEORGIA 30339
TEL: (770) 850-0949 FAX: (770) 850-0950

GEORGIA No. PE024616 PROFESSIONAL ENGINEER DAVID N. LAVERTIGNE 12/14/18

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

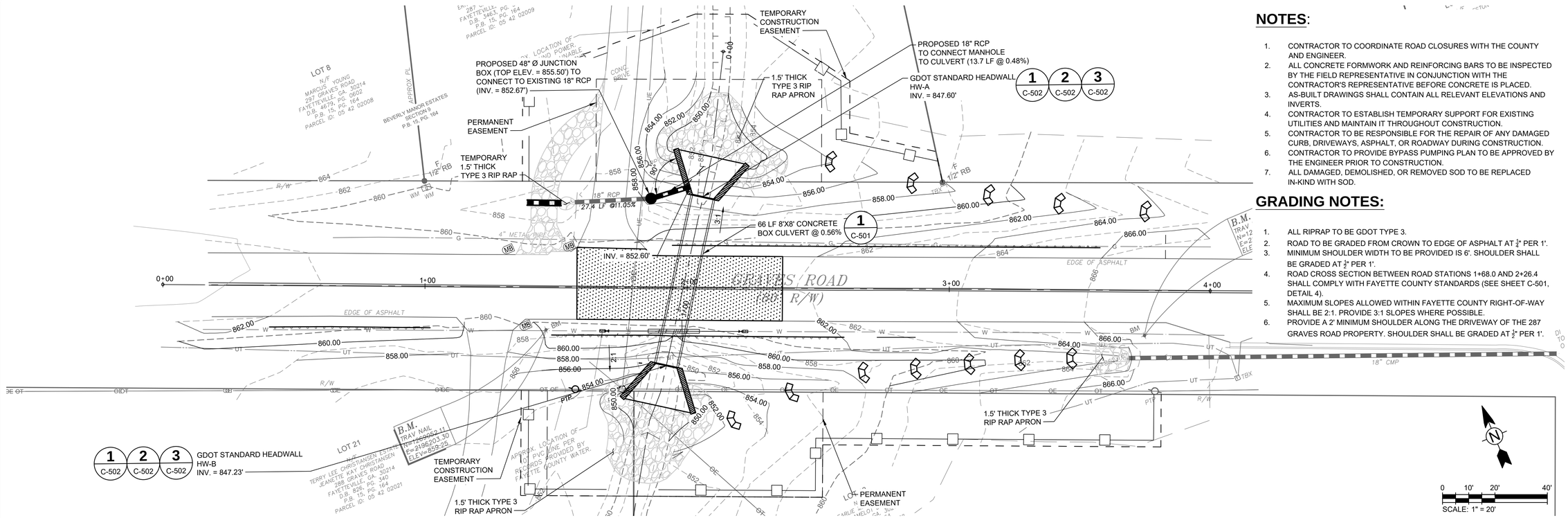
FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

SITE PLAN

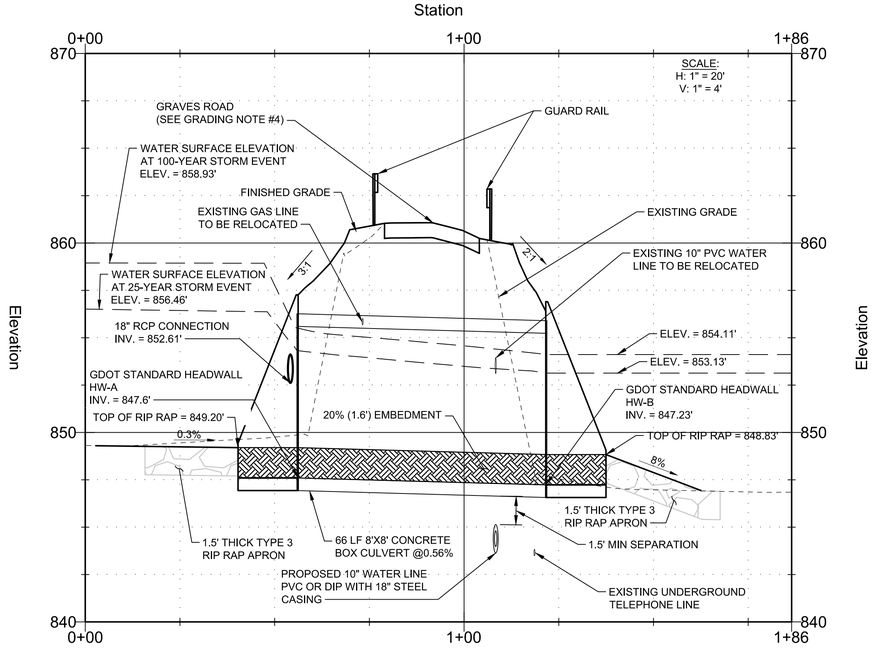
Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

C-103

12/14/2018 5:06:43 PM - O:\PROJECTS\ATLANTA\ER\01297\200-01297-17045\CAD\SHEETFILES\C-103 SITE PLAN.DWG - GULMIRE, CALEB



GRAVES RD CULVERT TYPICAL PROFILE



NOTES:

1. CONTRACTOR TO COORDINATE ROAD CLOSURES WITH THE COUNTY AND ENGINEER.
2. ALL CONCRETE FORMWORK AND REINFORCING BARS TO BE INSPECTED BY THE FIELD REPRESENTATIVE IN CONJUNCTION WITH THE CONTRACTOR'S REPRESENTATIVE BEFORE CONCRETE IS PLACED.
3. AS-BUILT DRAWINGS SHALL CONTAIN ALL RELEVANT ELEVATIONS AND INVERTS.
4. CONTRACTOR TO ESTABLISH TEMPORARY SUPPORT FOR EXISTING UTILITIES AND MAINTAIN IT THROUGHOUT CONSTRUCTION.
5. CONTRACTOR TO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGED CURB, DRIVEWAYS, ASPHALT, OR ROADWAY DURING CONSTRUCTION.
6. CONTRACTOR TO PROVIDE BYPASS PUMPING PLAN TO BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
7. ALL DAMAGED, DEMOLISHED, OR REMOVED SOD TO BE REPLACED IN-KIND WITH SOD.

GRADING NOTES:

1. ALL RIPRAP TO BE GDOT TYPE 3.
2. ROAD TO BE GRADED FROM CROWN TO EDGE OF ASPHALT AT ¼" PER 1'.
3. MINIMUM SHOULDER WIDTH TO BE PROVIDED IS 6'. SHOULDER SHALL BE GRADED AT ¼" PER 1'.
4. ROAD CROSS SECTION BETWEEN ROAD STATIONS 1+68.0 AND 2+26.4 SHALL COMPLY WITH FAYETTE COUNTY STANDARDS (SEE SHEET C-501, DETAIL 4).
5. MAXIMUM SLOPES ALLOWED WITHIN FAYETTE COUNTY RIGHT-OF-WAY SHALL BE 2:1. PROVIDE 3:1 SLOPES WHERE POSSIBLE.
6. PROVIDE A 2' MINIMUM SHOULDER ALONG THE DRIVEWAY OF THE 287 GRAVES ROAD PROPERTY. SHOULDER SHALL BE GRADED AT ¼" PER 1'.

FLOW SUMMARY TABLE			
STORM FREQUENCY	FLOW (CFS)	OUTLET VELOCITY (FPS)	DOWNSTREAM VELOCITY (FPS)
25-YEAR	348	10.1	6.7
50-YEAR	440	11.5	7.1
100-YEAR	541	12.8	7.5

DRAINAGE AREA = 175 ACRES
STREAM SLOPE = 0.44%

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GEORGIA LICENSED No. PE024216 PROFESSIONAL ENGINEER DAVID N. LAVERGNE 12/14/18

GSWCC LEVEL II CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

GRADING AND DRAINAGE PLAN

Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

C-104

Bar Measures 1 inch

TABLE NO. 1
GRADED RIP RAP STONE

Type	Screen Size inches (Sq. opening) Max.	Avg.	Min.	Common Uses	Filter Stone ASTM D-448
3	12	9	5	Creek Banks Pipe Outlets	6 or 57
1	24	12	7	Lakes & Shorelines, Rivers	3, 4 or 5

EROSION CONTROL LEGEND

- Co — CONSTRUCTION EXIT
- SF / Sd1-S — SEDIMENT BARRIER
- Cd — STONE CHECK DAM
- Ds1 — Ds1 SOIL STABILIZATION (MULCHING)
- Ds2 — Ds2 SOIL STABILIZATION (TEMP. SEEDING)
- Ds3 — Ds3 SOIL STABILIZATION (PERM. VEGETATION)
- Su — SURFACE ROUGHENING
- Ss — SOIL STABILIZATION
- Bf — BUFFER ZONE

LIMITS OF DISTURBANCE
0.75 ACRES

LOT 8
N/F
MARCUS YOUNG
297 GRAVES ROAD
FAYETTEVILLE, GA. 30214
D.B. 4679, PG. 0602
P.B. 15, PG. 164
PARCEL ID: 05 42 02008

LOT 9
N/F
ERNEST ODEN MMN, JR.
287 GRAVES ROAD
FAYETTEVILLE, GA. 30214
D.B. 3463, PG. 582
P.B. 15, PG. 164
PARCEL ID: 05 42 02009

LOT 10
N/F
ANDREW LYNCH
279 GRAVES ROAD
FAYETTEVILLE, GA. 30214
D.B. 2902, PG. 453
P.B. 15, PG. 164
PARCEL ID: 05 42 02010

LOT 11
N/F
EUGENE T. PRESTON
271 GRAVES ROAD
FAYETTEVILLE, GA. 30214
P.B. 15, PG. 164
PARCEL ID: 05 42 02011

LOT 21
N/F
TERRY LEE CHRISTIANSEN ESTATE
JEANETTE KAY CHRISTANSEN
288 GRAVES ROAD
FAYETTEVILLE, GA. 30214
P.B. 15, PG. 164
PARCEL ID: 05 42 02021

LOT 22
N/F
PEARLIE M. WILLIAMS
480 CAMELOT DRIVE
FAYETTEVILLE, GA. 30214
P.B. 15, PG. 164
PARCEL ID: 05 42 02022

B.M.
TRAV NAIL
N=1269052.11
E=2196203.30
ELEV=859.25

B.M.
TRAV NAIL
N=1268961.84
E=2196413.02
ELEV=866.82

BEVERLY MANOR ESTATES
SECTION 9
P.B. 15, PG. 164

GRAVES ROAD (PUBLIC R/W)

CAMELOT DRIVE

APPROX. LOCATION OF UNDERGROUND POWER. UTILITY LOCATER UNABLE TO LOCATE REST OF LINE

APPROX. LOCATION OF 10" PVC LINE PER RECORDS PROVIDED BY FAYETTE COUNTY WATER.

CONC. DRIVE

CONC. SIDEWALK

APPROX. PL

TEMPORARY CONSTRUCTION EASEMENT

PERMANENT EASEMENT

Su OR Ss — ON ALL CONSTRUCTED SLOPES

Sd1-S — DOUBLE ROW

Ds1 / Ds2 / Ds3

TREE PROTECTION FENCE — 4 / C-504

3 / C-504 — Cd

Bf

Co — 33.48815° -84.49518°

18" RCP 27.4 LF @11.05%

4" MB

1/2" RB

PTP

TBX

DI TOP=874.41 OUT=870.71

18" CMP

TWO-STORY BRICK BLDG. FFE=852.31 (GARAGE)

SCALE: 1" = 20'

Bar Measures 1 inch

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GEORGIA — No. PE024616 — PROFESSIONAL ENGINEER — DAVID N. LAVERTGNE — 12/14/18

GSWCC LEVEL II
CERT. # 0000073529

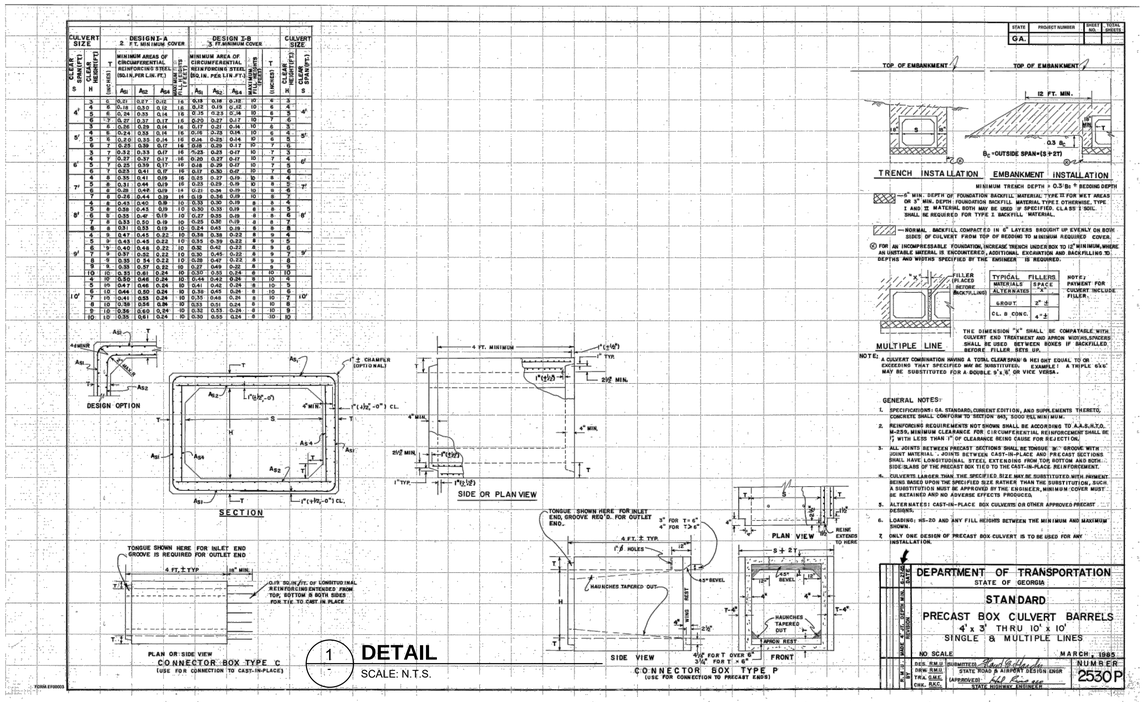
MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

EROSION CONTROL PLAN

Project No.: 200-01297-17045
Designed By: CG
Drawn By: HA
Checked By: DL

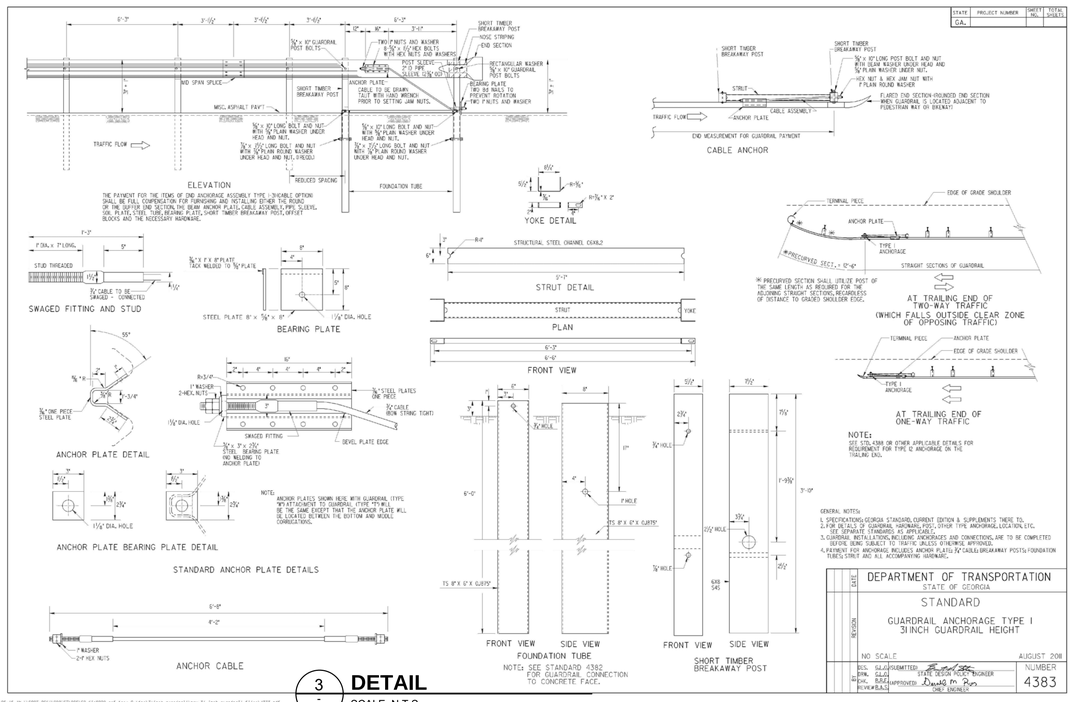
C-105



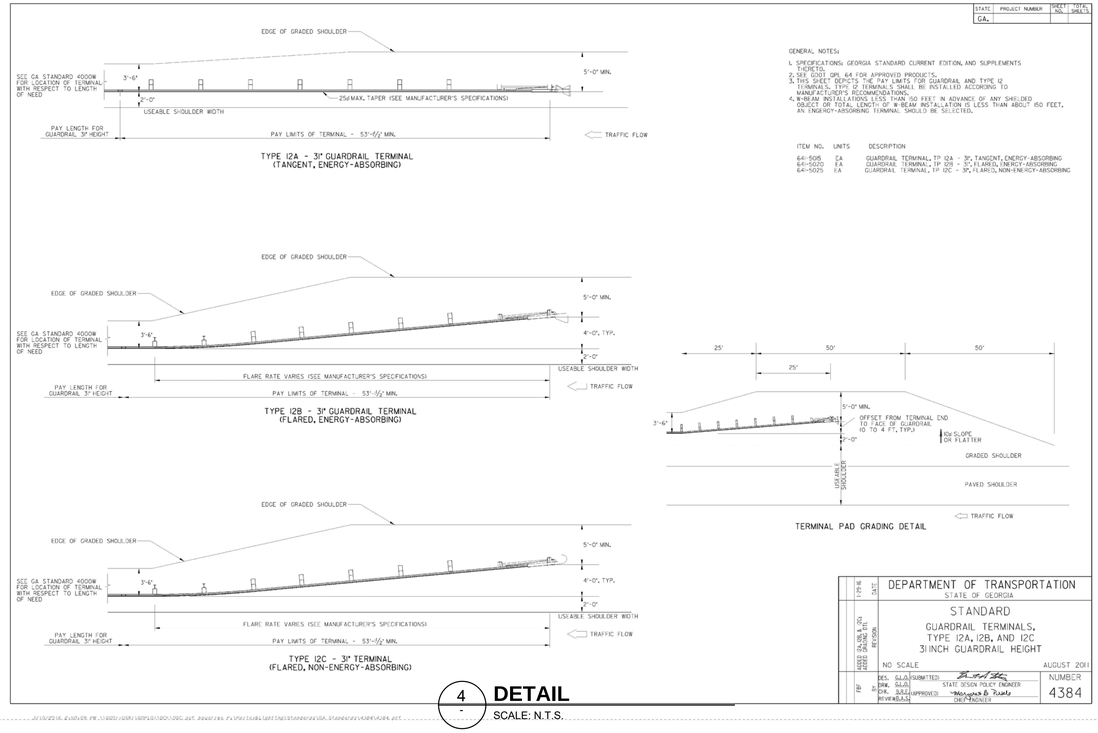
1 **DETAIL**
SCALE: N.T.S.

NOT USED

2 **DETAIL**
SCALE: N.T.S.



3 **DETAIL**
SCALE: N.T.S.



4 **DETAIL**
SCALE: N.T.S.

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GEORGIA REGISTERED No. PE024216 PROFESSIONAL 12/14/18 ENGINEER DAVID N. LAVERGNE

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

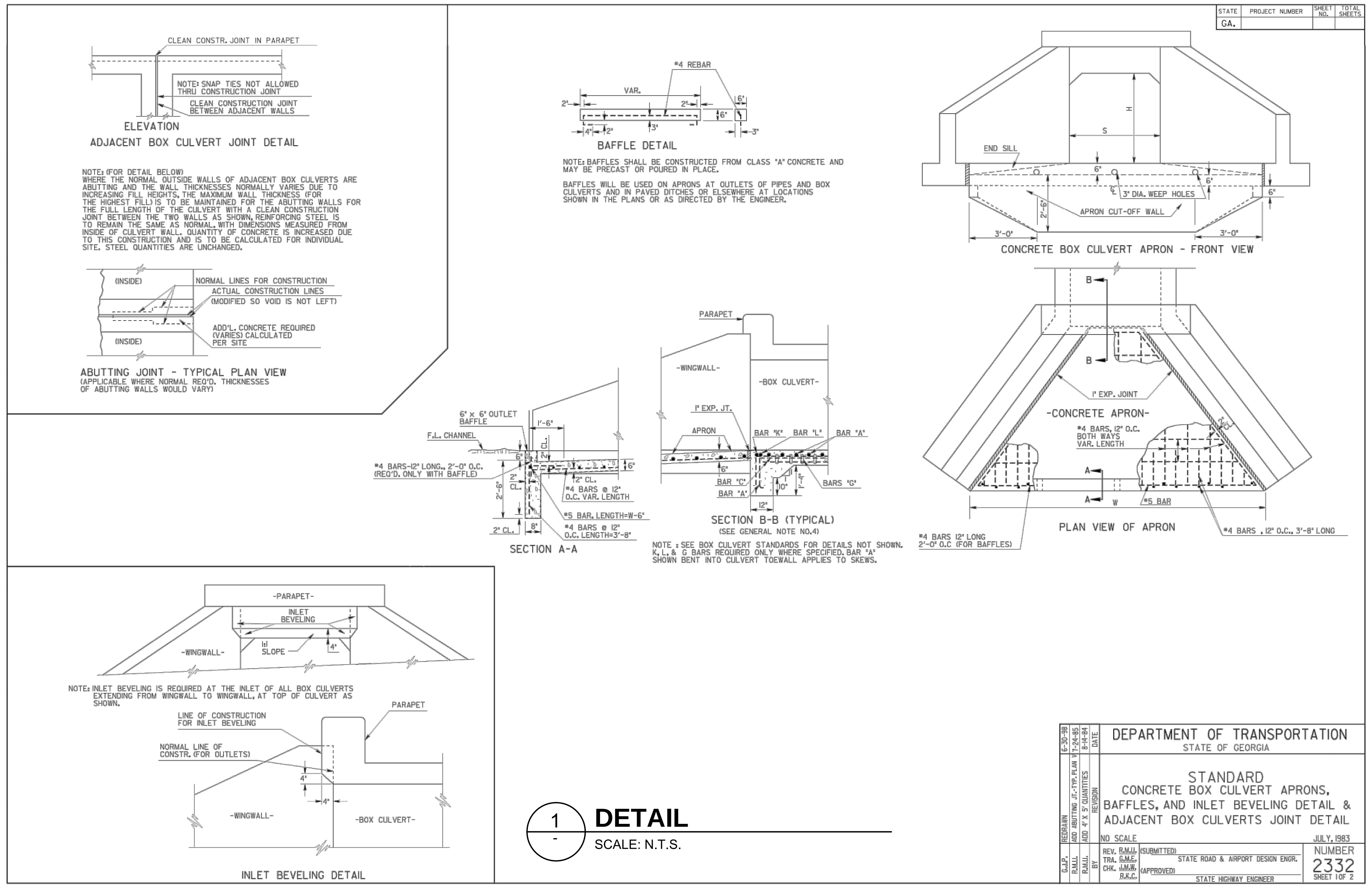
FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT
CONSTRUCTION DETAILS

Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

C-501

Bar Measures 1 inch

12/14/2018 5:06:56 PM - O:\PROJECTS\ATLANTA\ER\01297\200-01297-17045\CAD\SHEETFILES\C-501 CONSTRUCTION DETAILS.DWG - GUILMIRE, CALEB


CLEAN CONSTR. JOINT IN PARAPET
NOTE: SNAP TIES NOT ALLOWED THRU CONSTRUCTION JOINT
CLEAN CONSTRUCTION JOINT BETWEEN ADJACENT WALLS
ELEVATION
ADJACENT BOX CULVERT JOINT DETAIL
ABUTTING JOINT - TYPICAL PLAN VIEW
(APPLICABLE WHERE NORMAL REQ'D. THICKNESSES OF ABUTTING WALLS WOULD VARY)
BAFFLE DETAIL
NOTE: BAFFLES SHALL BE CONSTRUCTED FROM CLASS "A" CONCRETE AND MAY BE PRECAST OR POURED IN PLACE.
CONCRETE BOX CULVERT APRON - FRONT VIEW
PLAN VIEW OF APRON
SECTION A-A
SECTION B-B (TYPICAL)
INLET BEVELING DETAIL
NOTE: INLET BEVELING IS REQUIRED AT THE INLET OF ALL BOX CULVERTS EXTENDING FROM WINGWALL TO WINGWALL, AT TOP OF CULVERT AS SHOWN.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
CONCRETE BOX CULVERT APRONS, BAFFLES, AND INLET BEVELING DETAIL & ADJACENT BOX CULVERTS JOINT DETAIL

NO SCALE — JULY, 1983 — NUMBER 2332 — SHEET 1 OF 2

1 DETAIL
SCALE: N.T.S.

APRON QUANTITIES FOR CONCRETE BOX CULVERTS

S	H	SINGLE - 90°			SINGLE - 75°			SINGLE - 60°			SINGLE - 45°			DOUBLE - 90°			DOUBLE 75°			DOUBLE 60°			DOUBLE 45°			TRIPLE 90°			TRIPLE 75°			TRIPLE 60°			TRIPLE 45°			H	S
		W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL		
4'	4	13.183	1.70	138	14.468	1.91	155	16.469	2.28	183	23.238	3.17	249	17.800	2.59	202	19.297	2.87	223	21.828	3.42	264	29.850	4.67	351	22.466	3.48	266	24.125	3.83	292	27.198	4.56	346	36.415	5.92	447	4	4'
	5	15.000	2.23	173	16.458	2.49	193	19.025	2.96	228	25.958	3.97	300	19.600	3.16	243	21.280	3.51	270	24.380	4.26	327	33.250	5.45	408	-	-	-	-	-	-	-	-	-	-	-	-	5	
	6	16.733	2.57	202	18.318	2.86	226	21.091	3.47	271	29.387	4.72	364	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
5'	4	14.183	1.89	152	15.502	2.11	169	17.616	2.52	200	24.648	3.46	271	19.800	2.97	230	21.366	3.28	253	24.129	3.91	299	32.649	5.13	390	25.466	4.06	308	27.230	4.44	337	30.654	5.29	399	40.654	6.80	510	4	5'
	5	15.983	2.34	185	17.487	2.62	207	20.171	3.19	249	28.002	4.31	333	21.600	3.54	271	23.352	3.92	300	26.678	4.75	362	36.003	6.19	468	27.266	4.75	358	29.216	5.22	394	33.198	6.32	475	44.007	8.06	603	5	
	6	17.783	2.80	219	19.353	3.12	244	22.236	3.77	293	30.798	5.08	390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
6'	4	15.183	2.09	166	16.537	2.32	184	18.763	2.77	218	26.060	3.76	292	21.800	3.35	257	23.436	3.69	282	26.431	4.40	335	35.474	5.72	433	28.466	4.63	349	30.336	5.06	381	34.111	6.02	451	44.893	7.69	574	4	6'
	5	16.983	2.55	200	18.521	2.84	223	21.318	3.46	269	29.414	4.64	357	23.683	3.98	303	25.508	4.40	334	29.074	5.33	404	38.945	6.88	518	30.433	5.43	407	32.495	5.95	446	36.846	7.20	538	48.483	9.11	679	5	
	6	18.783	3.05	238	20.388	3.37	262	23.382	4.08	315	32.209	5.44	416	25.483	4.63	351	27.373	5.07	384	31.134	6.13	462	41.740	7.88	592	32.233	6.23	466	34.360	6.77	506	38.903	8.17	609	51.277	10.33	767	6	
7'	4	17.933	2.75	215	18.173	2.69	211	21.285	3.36	261	29.037	4.44	341	25.766	4.43	335	26.280	4.36	331	30.281	5.39	407	40.097	6.86	516	33.600	6.11	456	34.388	6.03	451	39.301	7.43	554	51.165	9.29	690	4	7'
	5	19.733	3.28	253	20.158	3.25	253	23.447	4.03	310	31.943	5.30	405	27.566	5.13	387	28.266	5.11	386	32.447	6.29	473	43.006	7.99	598	35.400	6.98	520	36.374	6.97	520	41.468	8.55	636	54.076	10.68	792	5	
	6	21.533	3.84	295	21.845	3.75	289	25.414	4.63	355	34.627	6.07	463	29.366	5.87	441	29.950	5.76	434	34.403	7.08	531	45.686	8.98	672	37.200	7.89	586	38.058	7.77	579	43.416	9.54	708	56.754	11.89	881	6	
	7	23.333	4.44	339	24.551	4.64	355	28.559	5.73	436	39.099	7.55	572	31.166	6.64	498	32.658	6.91	518	37.547	8.51	636	50.158	10.84	808	39.000	8.84	656	40.765	9.18	682	46.558	11.29	836	61.225	14.13	1045	7	
8'	4	18.933	2.97	230	19.450	2.96	231	22.431	3.62	280	31.463	4.96	379	27.766	4.86	366	28.590	4.86	367	32.583	5.91	445	43.366	7.60	569	36.600	6.75	502	37.733	6.76	504	42.758	8.21	610	55.847	10.37	768	4	8'
	5	20.733	3.51	270	21.374	3.54	273	24.987	4.41	338	33.802	5.74	437	29.566	5.60	420	30.516	5.65	425	35.131	7.00	524	46.275	8.80	657	38.400	7.69	571	39.659	7.76	577	45.301	9.58	717	58.758	11.86	877	5	
	6	22.533	4.10	314	23.299	4.16	319	27.149	5.17	394	36.709	6.71	509	31.366	6.38	478	32.442	6.48	486	37.297	8.01	598	49.185	10.07	750	40.200	8.67	642	41.586	8.80	653	47.468	10.85	803	61.669	13.43	991	6	
	7	24.333	4.72	360	25.830	5.00	381	30.101	6.19	470	40.959	8.08	610	33.166	7.21	538	34.970	7.58	567	40.232	9.36	698	53.428	11.82	879	42.000	9.69	716	41.111	9.98	740	50.392	12.52	925	65.907	15.56	1148	7	
	8	26.133	5.39	409	27.752	5.72	434	32.262	7.07	535	43.865	9.21	693	35.133	8.12	605	37.067	8.56	639	42.589	10.56	785	56.573	13.32	989	44.133	10.85	801	46.382	11.41	843	52.942	14.04	1036	69.288	17.44	1284	8	
9'	4	20.533	3.36	259	20.904	3.31	256	24.170	4.08	314	32.978	5.39	411	30.366	5.54	416	31.082	5.49	412	35.481	6.72	503	46.865	8.56	638	40.200	7.72	572	41.261	7.66	569	46.814	9.36	693	60.762	11.73	866	4	9'
	5	22.333	3.95	302	22.409	3.78	290	26.133	4.70	359	35.214	6.08	462	32.166	6.34	474	32.586	6.13	459	37.432	7.58	566	49.101	9.49	707	42.000	8.74	647	42.765	8.48	628	48.757	10.46	773	62.998	12.90	952	5	
	6	24.133	4.57	348	24.514	4.47	342	28.296	5.49	417	38.568	7.20	544	33.966	7.18	536	34.692	7.07	529	39.598	8.65	645	52.455	10.97	815	43.800	9.80	724	44.870	9.67	715	50.925	11.82	872	66.351	14.74	1086	6	
	7	25.933	5.23	396	27.048	5.34	406	31.246	6.55	496	42.819	8.62	649	35.766	8.06	600	37.221	8.23	614	42.531	10.07	749	56.698	12.81	950	45.600	10.90	804	47.397	11.12	822	53.846	13.60	1003	70.589	17.01	1252	7	
	8	27.733	5.93	448	28.970	6.09	461	33.407	7.46	562	45.724	9.79	735	37.733	9.04	671	39.318	9.27	690	44.888	11.33	841	59.843	14.39	1066	47.733	12.14	895	49.668	12.45	918	56.396	15.21	1120	73.970	18.99	1397	8	
	9	28.933	6.42	484	31.516	7.06	532	36.737	8.73	656	48.818	11.01	824	38.933	9.68	718	41.856	10.52	781	48.182	12.99	963	62.934	15.94	1179	48.933	12.93	952	52.201	13.98	1030	59.666	17.25	1269	77.060	20.86	1533	9	
	10	31.033	7.32	550	33.435	7.91	595	39.297	9.89	742	51.724	12.32	921	41.033	10.84	803	43.777	11.60	861	50.737	14.48	1072	65.843	17.58	1299	51.033	14.35	1055	54.124	15.30	1127	62.217	19.07	1402	79.970	22.84	1678	10	
10'	4	22.133	3.78	290	22.542	3.73	287	25.976	4.59	350	34.468	5.83	442	32.966	6.26	468	33.756	6.21	465	38.445	7.59	566	49.778	9.38	697	43.800	8.75	646	44.970	8.69	643	50.935	10.60	782	65.094	12.92	951	4	10'
	5	23.933	4.40	335	24.349	4.35	332	28.141	5.37	408	37.868	6.97	526	34.766	7.12	531	35.564	7.07	529	40.612	8.69	647	53.178	10.92	810	45.600	9.84	726	46.779	9.79	723	53.102	12.02	885	68.494	14.88	1094	5	
	6	25.733	5.06	383	26.272	4.99	380	30.101	6.08	460	40.502	7.83	590	36.566	8.02	596	37.485	7.95	592	42.560	9.66	718	55.804	12.18	866	47.400	10.98	809	48.698	10.91	805	55.043	13.25	975	71.121	16.31	1199	6	
	7	26.933	5.52	417	28.805	5.92	448	33.047	7.20	543	44.750	9.32	700	37.766	8.64	642	40.013	9.19	683	45.489	11.18	829	60.047	14.03	1038	48.600	11.76	866	51.225	12.47	919	57.961	15.16	1115	75.356	18.73	1377	7	
	8	28.733	6.24	470	30.606	6.67	503	35.603	8.27	622	47.657	10.54	789	39.733	9.66	716	41.990	10.24	760	48.231	12.68	938	63.193	15.69	1159	50.733	13.07	961	53.376	13.82	1017	60.889	17.08	1255	78.738	20.84	1530	8	
	9	30.533	7.01	526	32.172	7.15	538	37.176	8.99	674	50.340	11.61	868	41.533	10.67	789	43.555	11.09	822	49.803	13.61	1007	65.873	17.06	1260	52.533	14.33	1053	54.940	14.87	1094	62.460	18.24	1340	81.415	22.52	1652	9	
	10	32.333	7.81	585	34.108	8.11	609	39.145	9.86	738	53.024	12.73	950	43.333	11.72	866	45.485	12.13	898	51.761	14.75	1090	68.554	18.49	1364	54.333	15.62	1147	56.867	16.15	1188	64.411	19.65	1443	84.094	24.24	1778	10	
	11	34.133	8.65	647	35.906	8.98	673	41.703	11.10	829	55.930	14.14	1053	45.133	12.80	945	47.287	13.25	980	54.314	16.35	1207	71.463	20.26	1494	56.133	16.95	1244	58.671	17.52	1287	66.959	21.61	1585	87.004	26.38	1934	11	
	12	35.933	9.54	712	37.707	9.88	739	43.863	12.25	914	58.837	15.61	1161	46.933	13.93	1028	49.090	14.40	1064	56.478	17.83	1315	74.372	22.11	1628	57.933	18.33	1344	60.476	18.92	1389	69.125	23.40	1716	89.915	28.60	2095	12	

GENERAL NOTES:
1. SPECIFICATIONS : GEORGIA STANDARD; CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. CONCRETE APRONS AND BAFFLES ARE REQUIRED AT ALL OUTLETS OF ALL BOX CULVERT DRAINS. APRON IS NOT TO BE OMITTED AT OULETS UNLESS THE ENGINEER DETERMINES THAT BED ROCK WILL PREVENT EROSION AND MAKE THE APRON DIFFICULT TO CONSTRUCT. APRONS (WITHOUT BAFFLES) ARE USED AT INLETS ONLY IF PLANS SPECIFY.
3. DETAILS HERESHOWN APPLY TO BOTH STANDARD AND SPECIAL DESIGN BOX CULVERTS, UNLESS OTHERWISE NOTED.
4. WHERE CONCRETE APRONS ARE REQUIRED, THE TOEWALL OF THE BOX CULVERT MAY BE REDUCED AS SHOWN IN SECTION B-B OR MAY BE AS SHOWN ON APPLICABLE STANDARDS FOR THE BOX CULVERTS. WHERE APRON IS NOT REQUIRED, DO NOT USE TOEWALL AS SHOWN IN SECTION B-B, BUT SEE BOX CULVERT STANDARD TOEWALL.
5. ALL CONCRETE SHALL BE CLASS A CONCRETE.

NOTE: SEE SEPARATE STANDARD DETAILS AND/OR SPECIAL DESIGNS, AS APPLICABLE FOR DETAILS OF BOX CULVERTS, WINGWALLS, PARAPETS, ETC.

NOTE: THE QUANTITIES SHOWN ABOVE ARE FOR OUTLET END APRONS WITH BAFFLES. IF APRONS ARE NEEDED AT INLETS (NOT USUAL), REDUCE THE ABOVE QUANTITIES FOR NO. BAFFLES AS FOLLOWS:
CONCRETE: REDUCE QUANTITY BY W x 0.0092 CU.YDS/FT.
STEEL: REDUCE QUANTITY BY W x 0.334 LBS/LIN.FT.

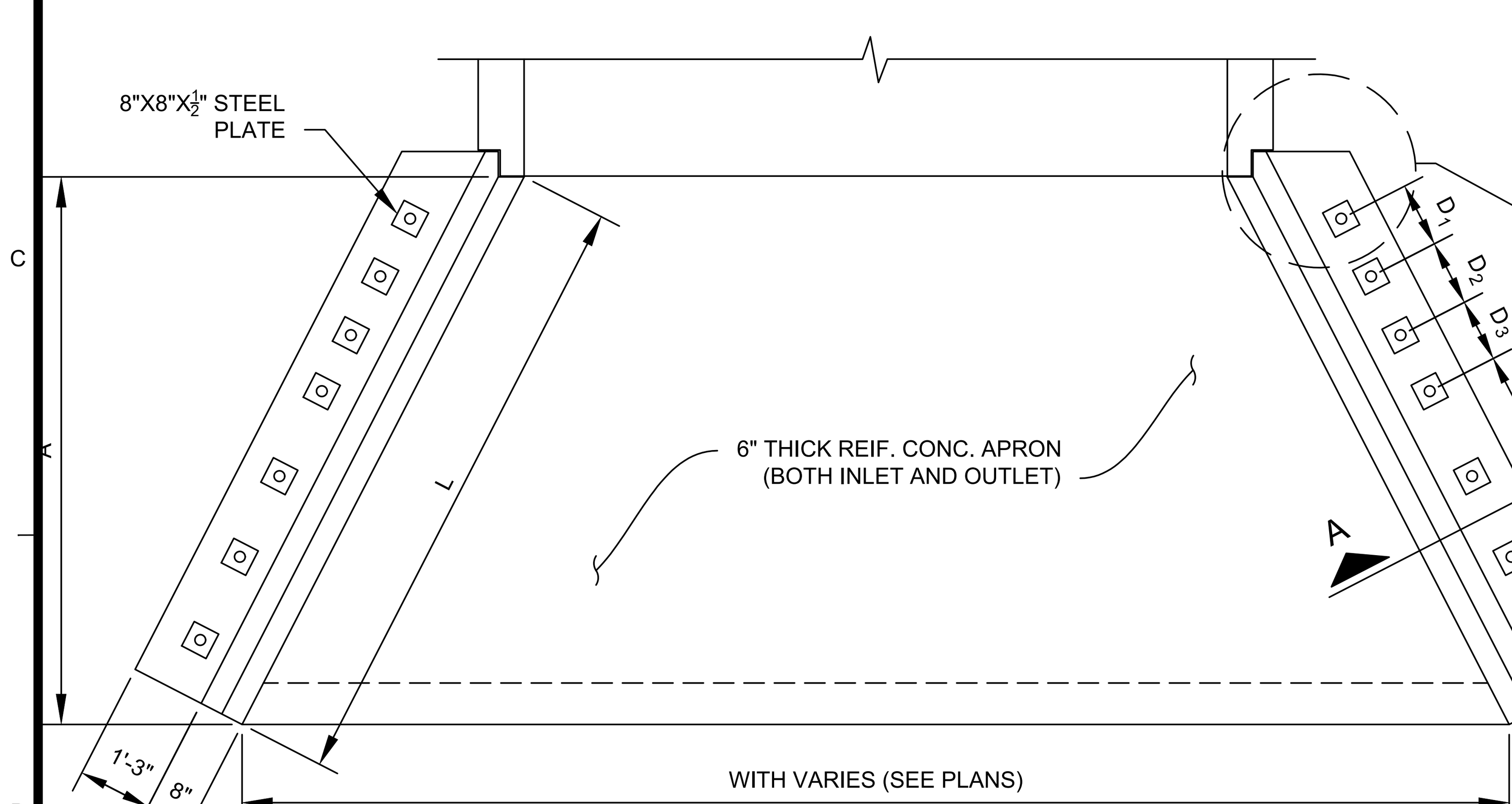
S = CLEAR SPAN OF BOX CULVERT (IN FT.)
H = CLEAR HEIGHT (RISE) OF BOX CULVERT (IN FT.)

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

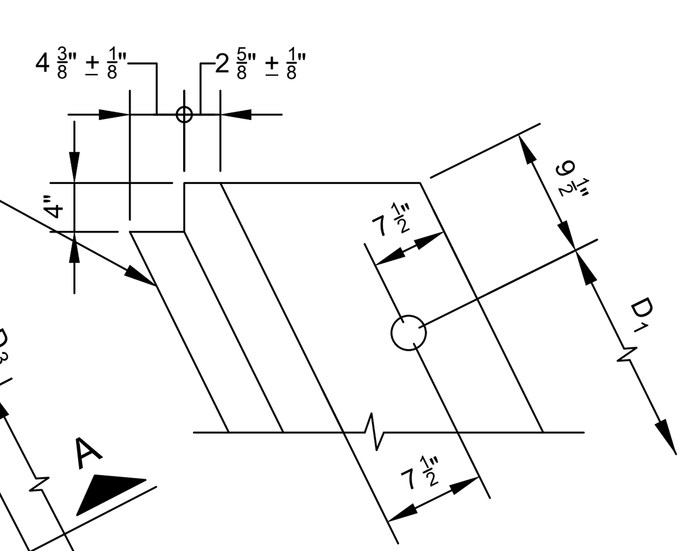
STANDARD
CONCRETE BOX CULVERT APRONS, BAFFLES, AND INLET BEVELING DETAIL & ADJACENT BOX CULVERTS JOINT DETAIL

NO SCALE — JULY, 1983 — NUMBER 2332 — SHEET 2 OF 2

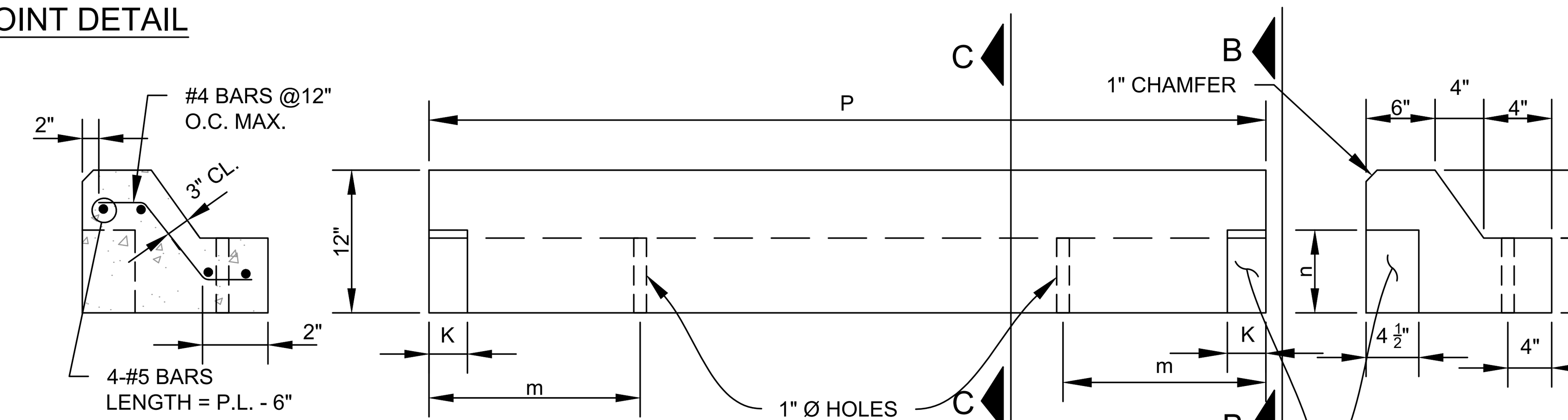
2 DETAIL
SCALE: N.T.S.



PRECAST WING WALL DETAILS
N.T.S.



WING JOINT DETAIL

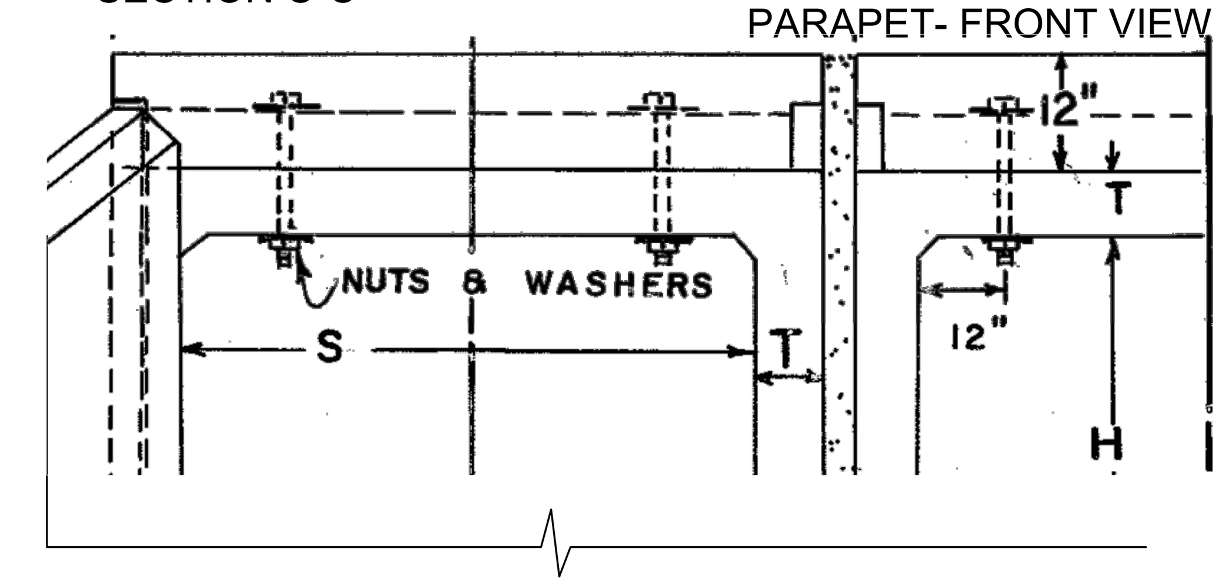


SECTION C-C

PARAPET- FRONT VIEW

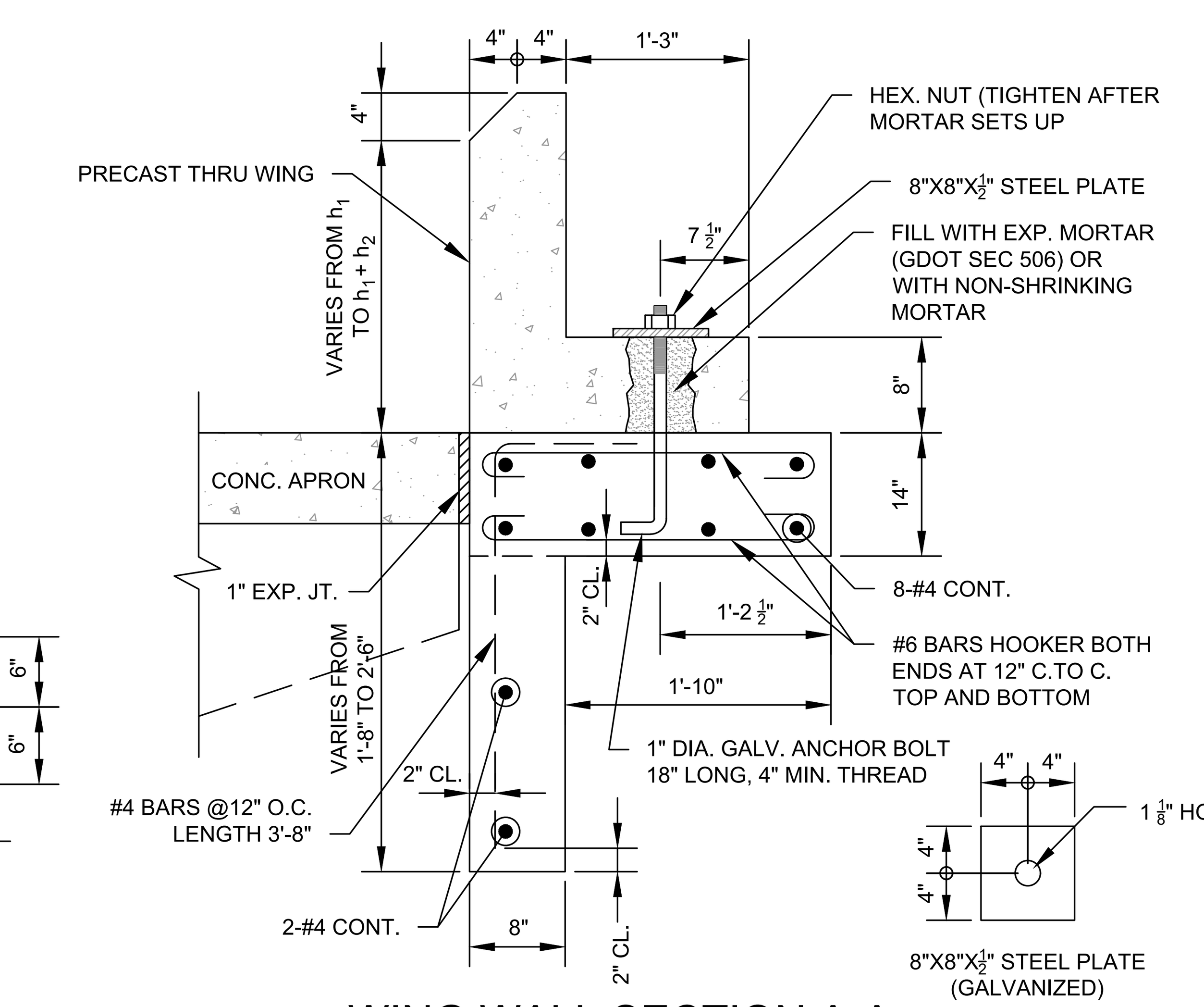
SECTION B-B

S	K	m	n	P
4'	2"	1'-6"	9"	5'-0"
5'	2"	1'-6"	8"	6'-0"
6'	3"	1'-7"	7"	7'-2"
7'	4"	1'-8"	7"	8'-4"
8'	4"	1'-8"	7"	9'-4"
9'	5"	1'-9"	6"	10'-6"
10'	6"	1'-10"	5"	11'-8"



FRONT VIEW
NOTES: EACH PARAPET SHALL BE BOLTED TO BOX WITH TWO - ⅞" Ø GALV. BOLTS WITH 2 GALV. WASHERS WITH EACH BOLTS (FURNISHED BY MANUFACTURER).

3 DETAIL
SCALE: N.T.S.


PRECAST THRU WING
HEX. NUT (TIGHTEN AFTER MORTAR SETS UP
8"X8"X½" STEEL PLATE
FILL WITH EXP. MORTAR (GDOT SEC 506) OR WITH NON-SHRINKING MORTAR
VARIES FROM h1 TO h1 + h2
CONC. APRON
1" EXP. JT.
8-#4 CONT.
#6 BARS HOOKER BOTH ENDS AT 12" C.TO C. TOP AND BOTTOM
1" DIA. GALV. ANCHOR BOLT 18" LONG, 4" MIN. THREAD
VARIES FROM 1'-8" TO 2'-6"
#4 BARS @12" O.C. LENGTH 3'-8"
2-#4 CONT.
1 ⅛" HOLE
8"X8"X½" STEEL PLATE (GALVANIZED)

WING WALL SECTION A-A
N.T.S.

TABLE 2 - WINGWALL DIMENSIONS, ANCHOR SPACINGS, WINGWALL & APRON REINFORCING															
CULVERT HEIGHT (RISE)	APRON	WINGWALL (±1") DIMENSIONS			MAX. SPACINGS (INCHES) FOR WINGWALL TO APRON ANCHOR CONNECTIONS EACH WING. SEE NOTE #3 (±1/2")										▼STEEL AREAS SQ. IN./LIN.FT.	
H	A	L	h_1	h_2	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	R_1	R_2
3'	6'	6'-8"	2'-6"	1'-6"	48"	66"									0.19	0.19
4'	8'	9'-2"	3'-8"	1'-6"	48"	66"									0.19	0.19
5'	8'	9'-2"	3'-8"	2'-6"	48"	66"									0.19	0.19
6'	12'	13'-4"	5'-4"	1'-10"	31"	48"	66"								0.20	0.19
7'	12'	13'-4"	5'-4"	2'-10"	20"	31"	31"	48"	66"						0.32	0.19
8'	16'	18'-4"	7'-4"	1'-10"	15"	20"	20"	31"	48"	66"					0.48	0.19
9'	16'	18'-4"	7'-4"	2'-10"	12"	12"	15"	15"	20"	20"	31"	48"	66"		0.68	0.19
10'	16'	18'-4"	7'-4"	3'-10"	12"	12"	12"	12"	15"	15"	20"	20"	31"	48"	0.93	0.19

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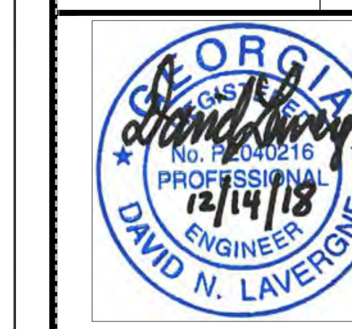


GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

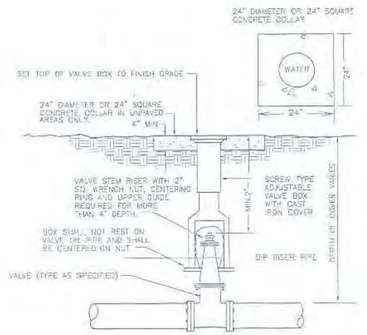
FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT
CONSTRUCTION DETAILS

Project No.: 200-01297-17045
Designed By: CG
Drawn By: HA
Checked By: DL

C-502

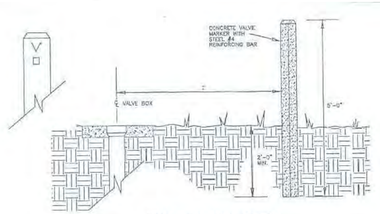
Bar Measures 1 inch

12/14/2018 5:07:06 PM - O:\PROJECTS\ATLANTA\IER\01297\200-01297-17045\CAD\SHEETFILES\C-502 CONSTRUCTION DETAILS.DWG - GULMIRE, CALEB



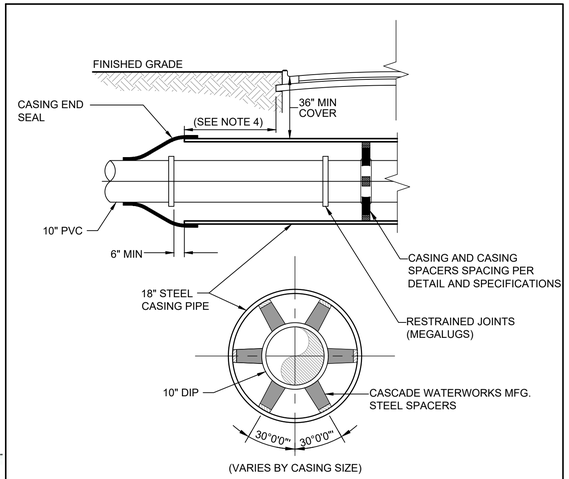
VALVE & VALVE BOX DETAIL

1 - **DETAIL**
SCALE: N.T.S.



VALVE MARKER DETAIL

2 - **DETAIL**
SCALE: N.T.S.



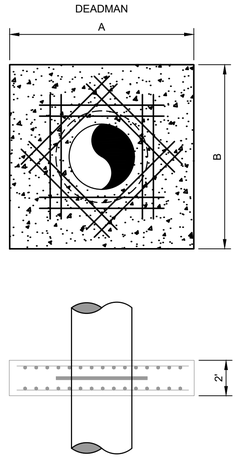
(VARIES BY CASING SIZE)

NOTES:

1. DISTANCE BETWEEN SPACERS TO BE PER PROJECT SPECIFICATIONS.
2. NO FLOWABLE FILL BETWEEN THE ANNULAR SPACE OF THE CASING OR CARRIER PIPE.
3. SHALL BE A MINIMUM OF 8' OR MEET FAYETTE COUNTY SPECIFICATIONS REQUIREMENTS, WHICHEVER IS GREATER.

STEEL CASING

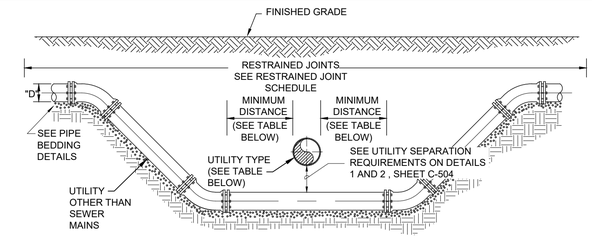
3 - **DETAIL**
SCALE: N.T.S.



LINE PRESSURE = 150 PSI SOIL PRESSURE = 2000 PSF		
PIPE SIZE X	A	B
6"	2'-0"	2'-0"
8"	2'-6"	2'-6"
10"	3'-6"	3'-6"
12"	4'-0"	4'-0"
14"	4'-6"	4'-6"
16"	5'-0"	5'-0"
18"	6'-0"	6'-0"
20"	6'-6"	6'-6"
24"	7'-6"	7'-6"

NOTES:
1. DEADMAN SHALL BE CLASS "C" CONCRETE; "SACKCRETE" WILL NOT BE ALLOWED.
2. THE UTILITY LINE MUST BE LOWERED IN ORDER TO HAVE FOUR FEET (4') OF COVER AT THE BEND, TEE, REDUCER, OR PLUG AT ALL LOCATIONS WHERE THESE FITTINGS MAY BE UTILIZED.
3. FOR SOIL CONDITIONS LESS THAN 2000 P.S.F. BEARING PRESSURE OR PIPE PRESSURE OVER 150 P.S.I. SPECIAL THURST BLOCKS/RESTAINT MUST BE COMPUTED AND APPROVED.
4. CONCRETE SHALL BE POURED AGAINST UNDISTURBED SOIL. DISTURBED SOIL TO BE COMPACTED TO 95% OPTIMUM MOISTURE CONTENT.
5. MAINTAIN 2" CLEARANCE BETWEEN PIPE WALL AND REBAR.

4 - **DETAIL**
SCALE: N.T.S.



UTILITY TYPE	MINIMUM DISTANCE
SANITARY SEWER OR FORCE MAIN	10'-0" MIN.
OTHER THAN SEWER	1'-0" MIN.

NOTE: 18" MIN SEPARATION FOR STORM DRAIN CROSSINGS

RESTRAINED JOINT UTILITY CROSSING FOR UTILITIES OTHER THAN SEWER MAINS

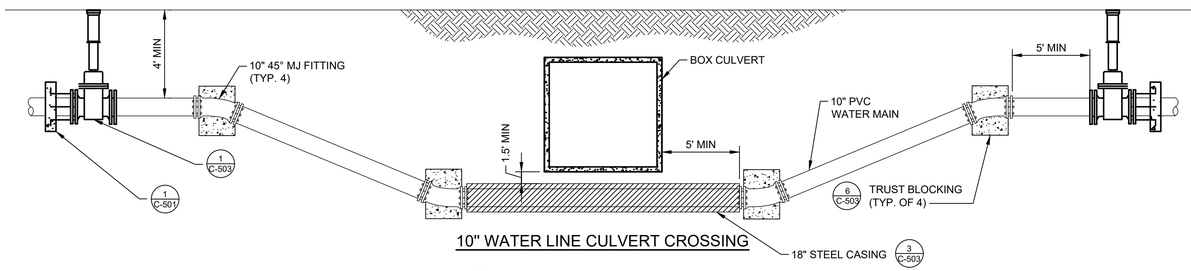
PIPE DIA (Inches)	RESTRAINED LENGTH EACH SIDE OF RESTRAINED FITTING (FEET) DIP 90°	DIP 45°	DIP 22-1/2°	DIP 11-1/4°	PVC 90°	PVC 45°	PVC 22-1/2°	PVC 11-1/4°	RESTRAINED LENGTH FOR REDUCERS 3	4	6	8	10	12	16	20	24	30	36	
4	35	15	10	5	55	25	15	10	40	-	-	-		-	-	-	-	-	-	PVC
6	55	25	10	5	80	35	20	10	50	45	-	-		-	-	-	-	-	-	PVC
8	65	30	15	10	90	40	20	10	75	70	40	-	-	-	-	-	-	-	-	PVC
10	80	35	20	10	110	50	25	15	95	90	70	40	-	-	-	-	-	-	-	PVC
12	95	40	20	10	130	55	30	15	120	115	100	75	40	-	-	-	-	-	-	PVC
16	120	50	25	15	165	70	35	20	160	155	140	125	100	70	-	-	-	-	-	PVC
20	150	65	30	15	200	85	40	20	200	195	185	170	150	130	75	-	-	-	-	PVC
24	160	70	35	20	210	90	45	25	160	155	150	140	135	120	90	50	-	-	-	DIP
30	190	80	40	20	250	105	50	25	195	190	185	180	170	160	120	105	70	-	-	DIP
36	220	95	45	25	-	-	-	-	225	220	215	210	205	195	180	150	125	70	-	DIP
42	245	105	50	25	-	-	-	-	245	240	235	230	225	220	205	180	155	105	50	DIP
48	260	120	60	30	-	-	-	-	255	250	245	240	235	230	215	195	175	125	70	DIP

RESTRAINED LENGTHS FOR DEAD ENDS, BRANCHES AND HDPE TO PVC TRANSITIONS SHALL BE THE SAME AS FOR 90° BENDS. IN-LINE VALVES SHALL BE RESTRAINED 20' EACH SIDE OF THE VALVE. (IF A JOINT FALLS AT THE MAXIMUM DISTANCE, IT SHALL BE RESTRAINED). TABLE BASED ON IRON FITTINGS. TEST PRESSURE 150 PSI.

LENGTH OF RESTRAINED JOINT FOR LARGER DIAMETER PIPE

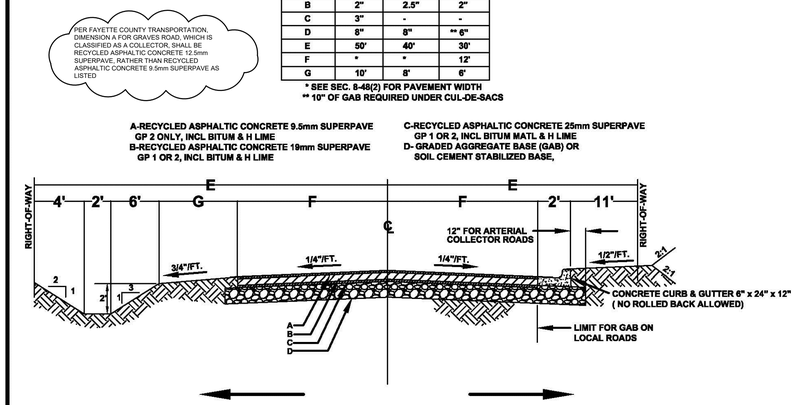
RESTRAINED JOINT SCHEDULE

5 - **DETAIL**
SCALE: N.T.S.



10" WATER LINE CULVERT CROSSING

5 - **DETAIL**
SCALE: N.T.S.



DIMENSION	ARTERIAL	COLLECTOR	LOCAL
A	1.5"	1.5"	1.5"
B	2"	2.5"	2"
C	3"	-	-
D	8"	8"	** 6"
E	50'	40'	30'
F	*	*	12'
G	10'	8'	6'

* SEE SEC. 8-48(2) FOR PAVEMENT WIDTH
** 10" OF GAB REQUIRED UNDER CUL-DE-SACS

TYPICAL HALF ROADWAY SECTION W/ DITCHES | TYPICAL HALF ROADWAY SECTION W/ CURB AND GUTTER

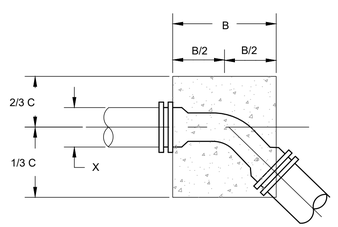
6 - **DETAIL**
SCALE: N.T.S.

FAYETTE COUNTY, GEORGIA
ENGINEERING DEPARTMENT
TELEPHONE: 770.460.5730 EXT. 5410
WEBSITE: www.fayettecountyga.gov

FAYETTE COUNTY TYPICAL ROAD CROSS SECTION
FIGURE 8-49(4)

NO.	DATE	BY	REVISIONS
01	02/2017	JLR	ASPHALT

DRAWN BY: JJG | SCALE: NTS | DATE: SEPTEMBER 27, 2006



VERTICAL BEND - ELEVATION

THRUST BLOCKING
N.T.S.

Line Pressure = 200 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
45 DEGREE BEND				
24"	2'-4"	5'-6"	5'-0"	3'-9"
20"	1'-11"	4'-6"	4'-0"	3'-0"
18"	1'-9"	4'-0"	4'-0"	2'-9"
16"	1'-7"	3'-6"	3'-6"	2'-3"
14"	1'-3"	3'-0"	3'-0"	2'-0"
12"	1'-3"	3'-0"	2'-6"	2'-0"
10"	1'-3"	2'-6"	2'-0"	1'-9"
8"	1'-0"	1'-9"	1'-9"	1'-3"
6"	0'-11"	1'-6"	1'-6"	1'-0"
4"	0'-9"	1'-0"	1'-0"	1'-0"

NOTE: THESE THRUST BLOCKING DETAILS SHALL BE USED IN CONJUNCTION WITH RESTRAINT JOINT PIPE.

7 - **DETAIL**
SCALE: N.T.S.

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DAVID N. LAVERTIGNE
No. PE024616
PROFESSIONAL ENGINEER
12/14/18
GSWCC LEVEL II
CERT. # 0000073529

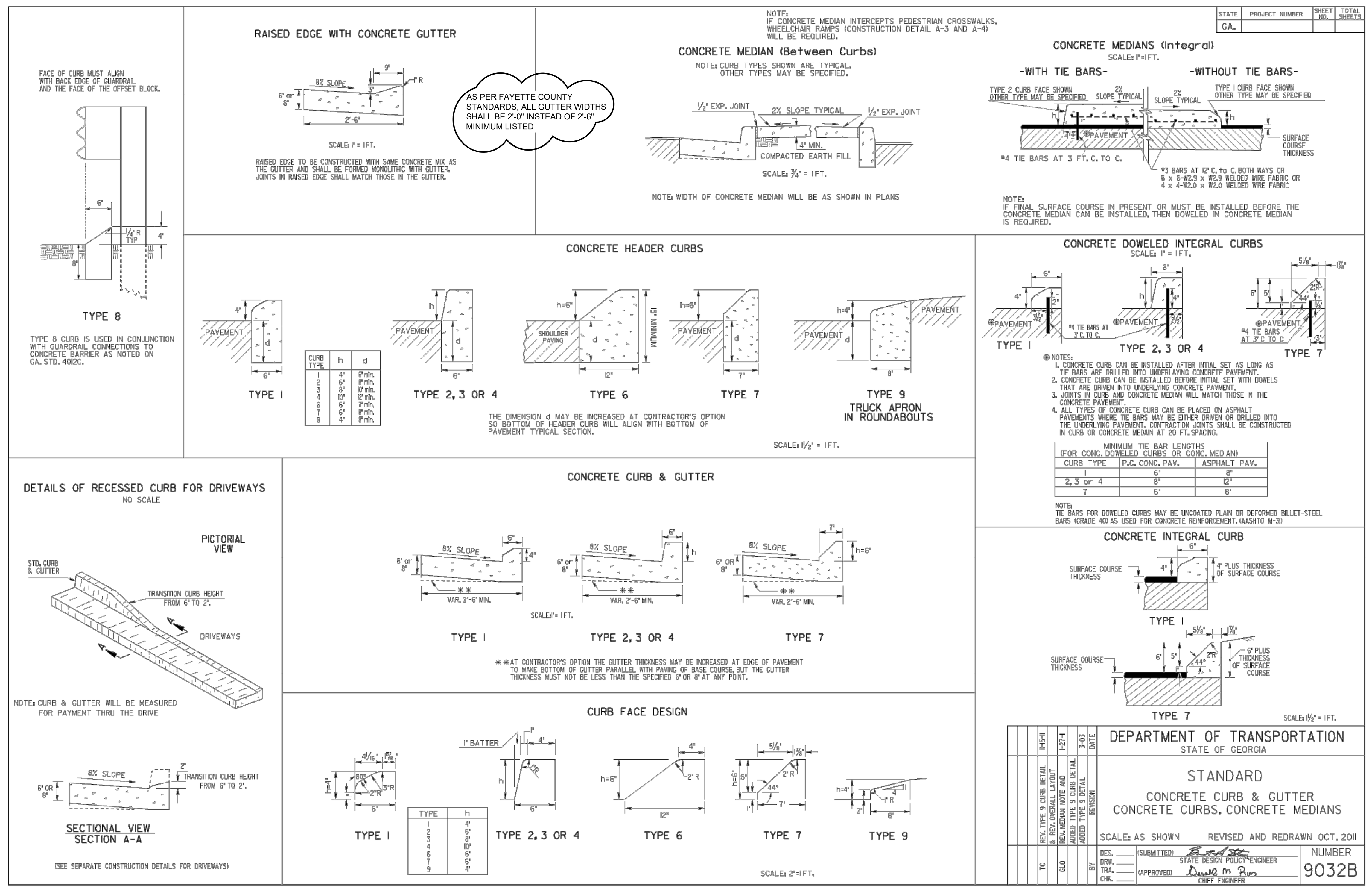
MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT
CONSTRUCTION DETAILS

Project No.: 200-01297-17045
Designed By: CG
Drawn By: HA
Checked By: DL

C-503

Bar Measures 1 inch



1 DETAIL
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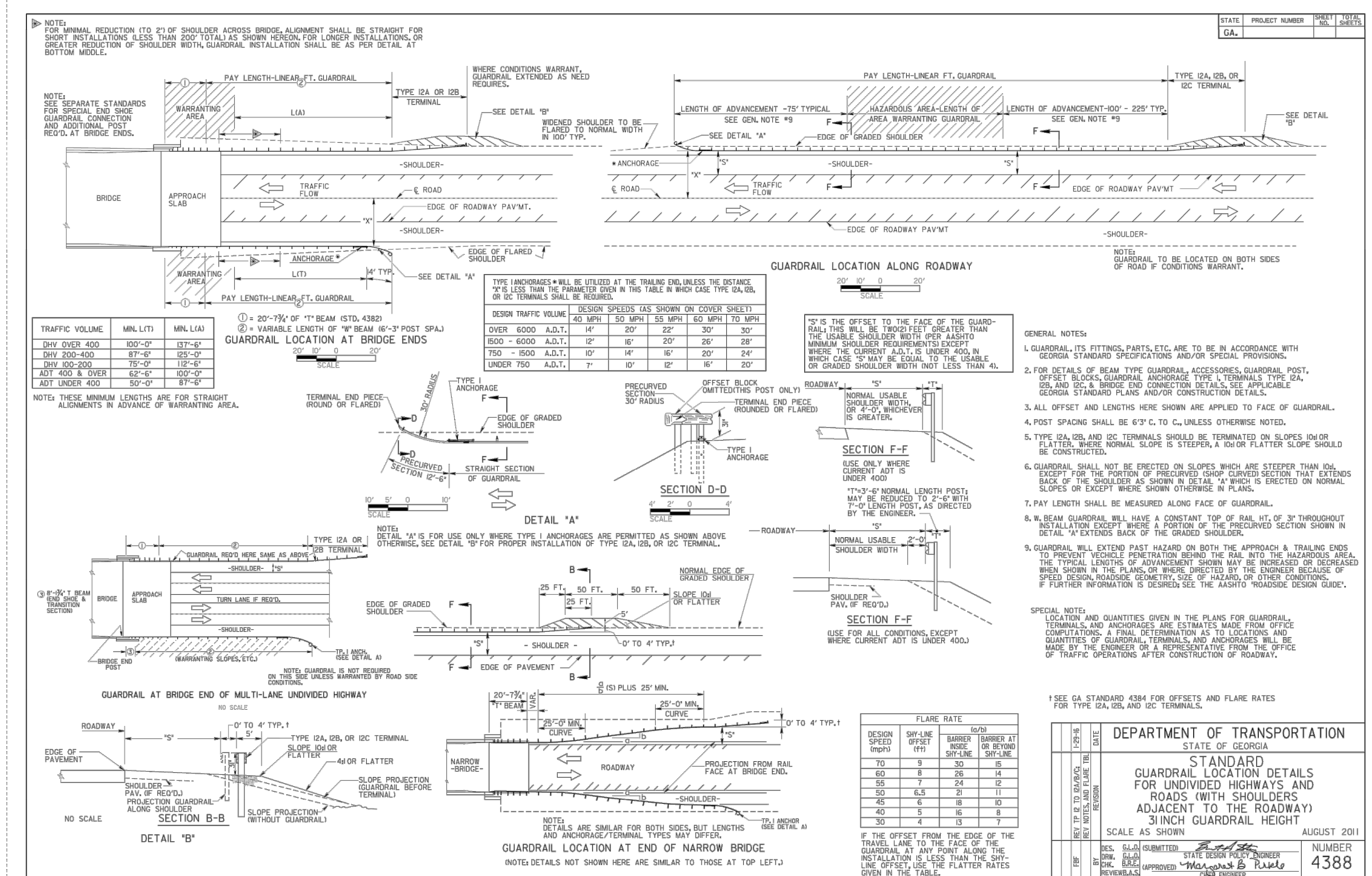

2 DETAIL
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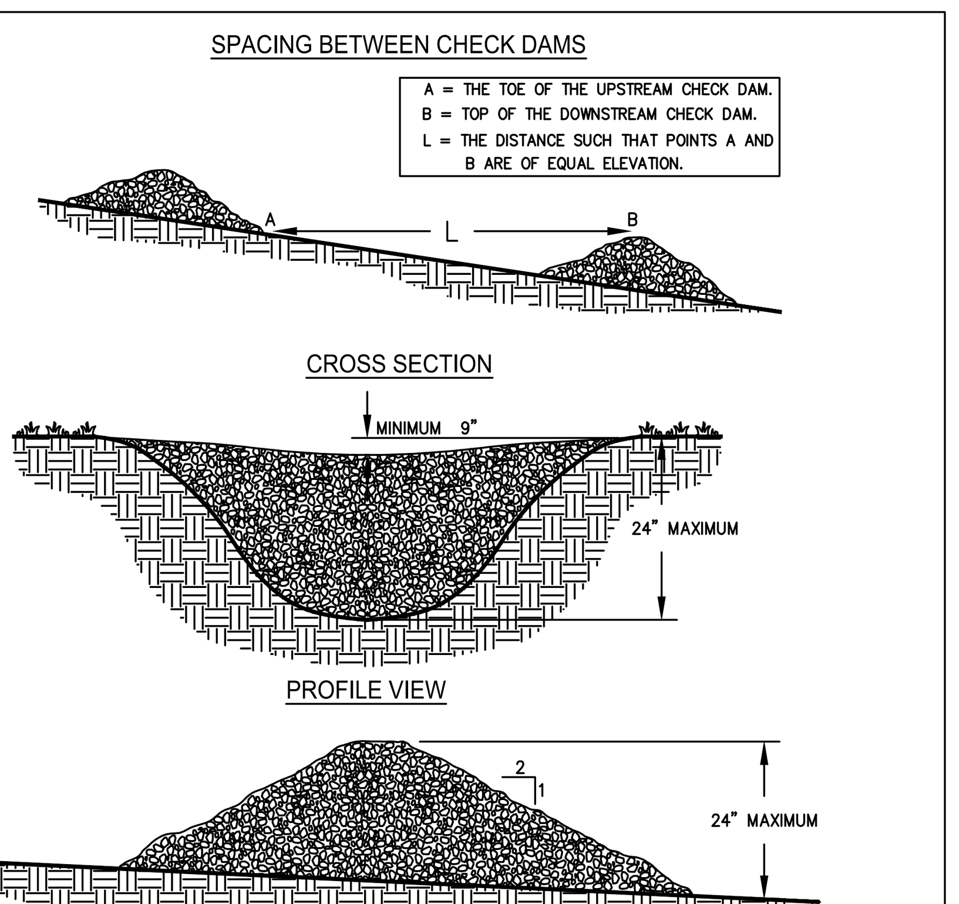


NOTES:
1. CHECK DAMS ARE TO BE USED ONLY IN SMALL OPEN CHANNELS (THEY ARE NOT TO BE USED IN LIVE STREAMS).
2. THE DRAINAGE AREA FOR STONE CHECK DAMS SHALL NOT EXCEED TWO ACRES.
3. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES.
4. THE DAM HEIGHT SHOULD BE A MAXIMUM OF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

Cd

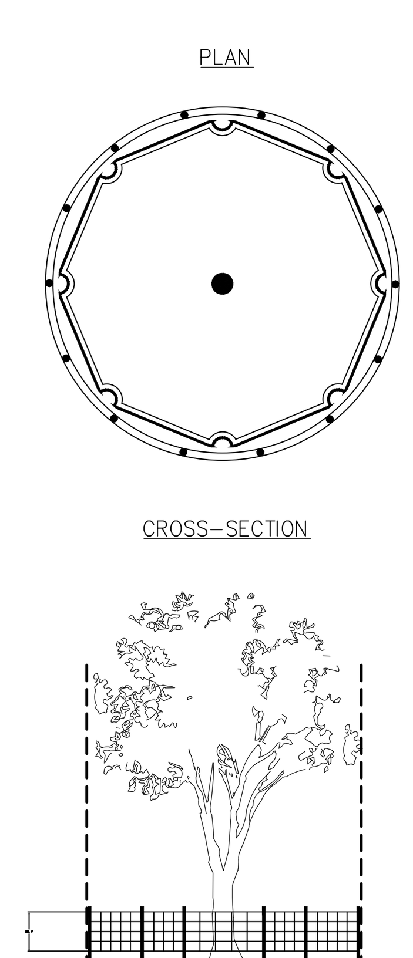
STONE CHECK DAM

2016 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-12.2

3 DETAIL
-
SCALE: N.T.S.

TREE PROTECTION

"SNOW" FENCE



NOTES:
1. USE TRENCHER (I.E. DITCH WITCH) TO CUT A 4"-5" 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.

4 DETAIL
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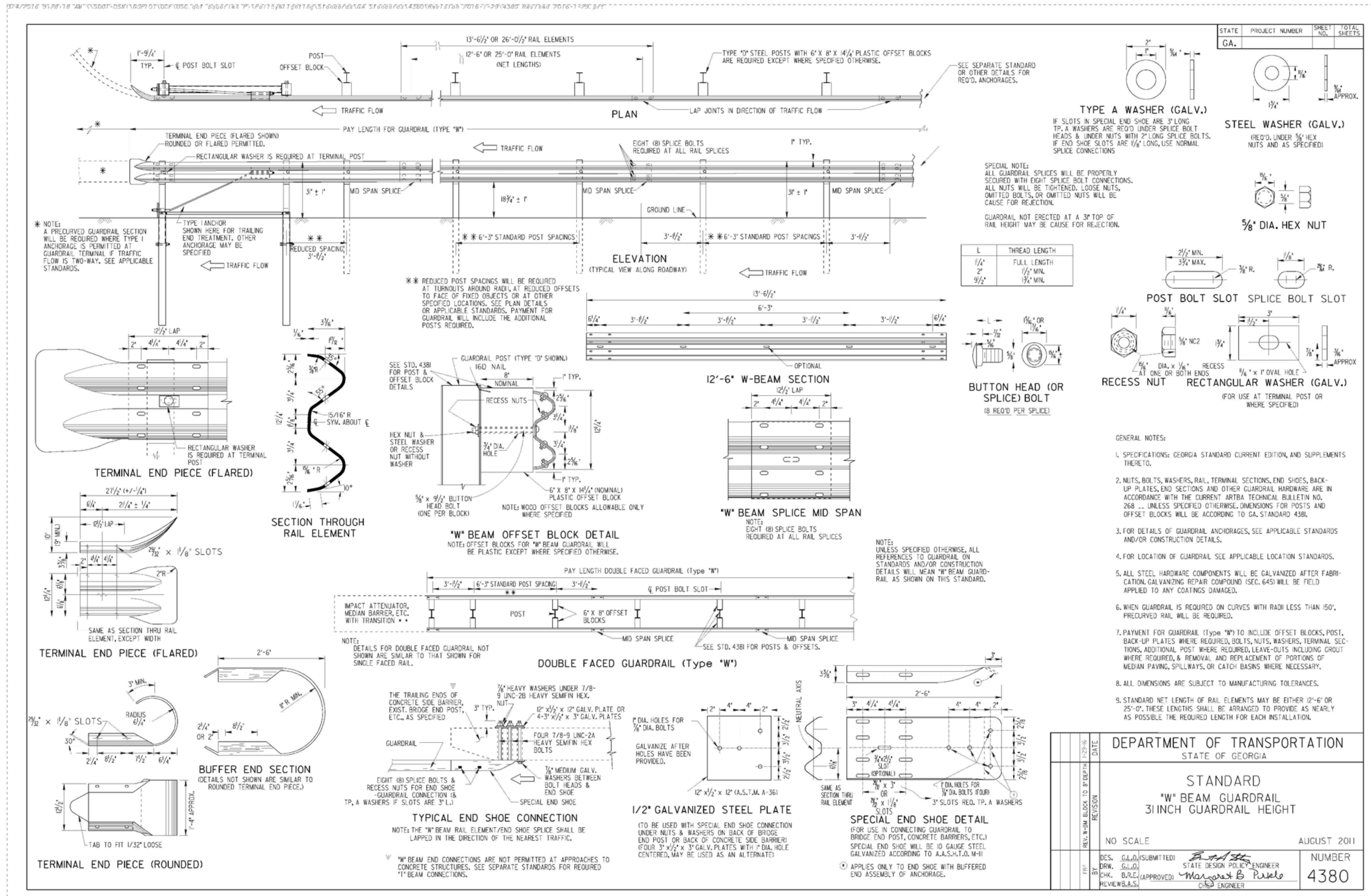
SCALE: N.T.S.



5 DETAIL
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SCALE: N.T.S.

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GSWCC LEVEL II
CERT. # 0000073529

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0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

CONSTRUCTION DETAILS

Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

C-504

Bar Measures 1 inch

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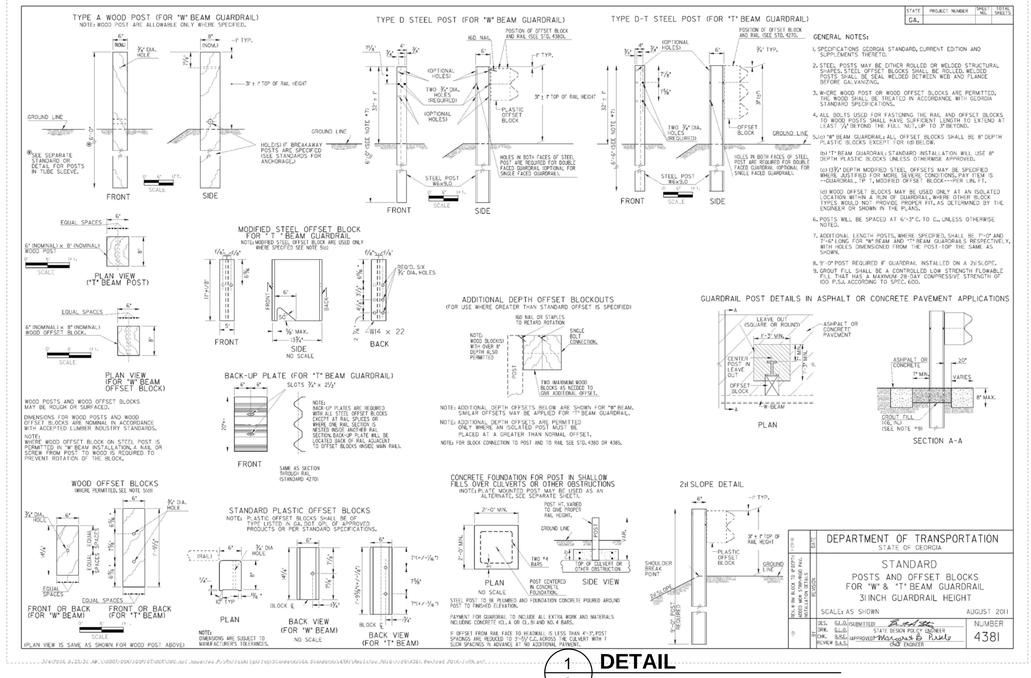

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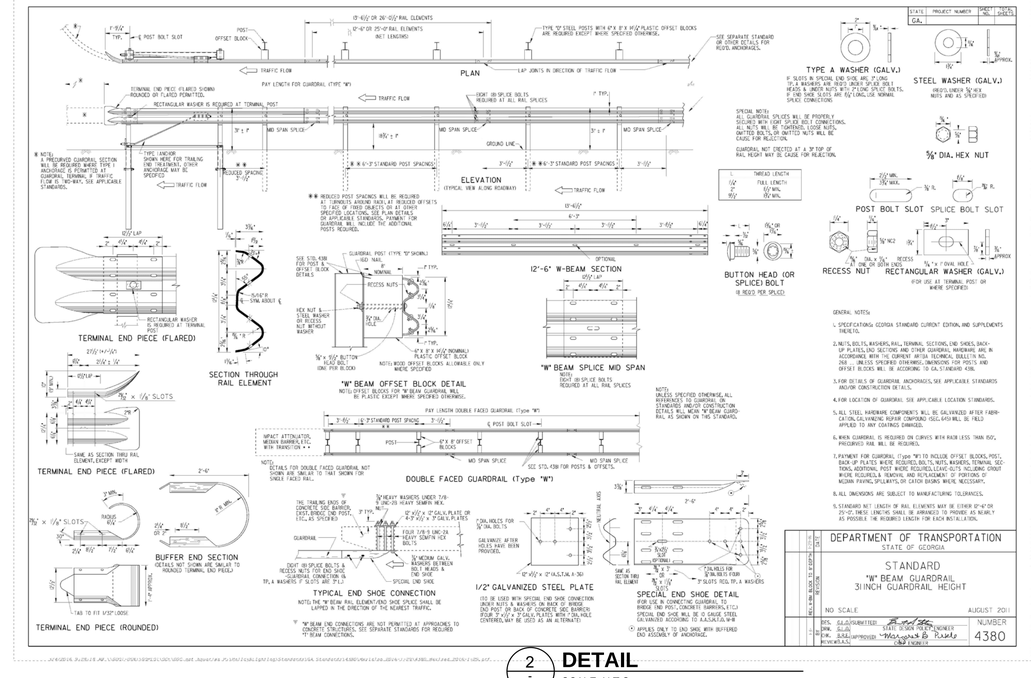

2 DETAIL
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GEORGIA REGISTERED No. 33016 PROFESSIONAL ENGINEER 12/14/18 DAVID N. LAVERGNE

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT
CONSTRUCTION DETAILS

Project No.:	200-01297-17045
Designed By:	CG
Drawn By:	HA
Checked By:	DL

C-505

Bar Measures 1 inch

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EROSION CONTROL ACTIVITIES

Co	CONSTRUCTION EXIT		Ds3	DISTURBED AREA STABILIZATION (WITH SEEDING)	Ds3	Mb	MATTING AND BLANKETS		Mb
Sd1	SEDIMENT BARRIER		Du	DUST CONTROL ON DISTURBED AREAS	Du				
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds1	Cd	CHECK DAM					
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds2	Cd	STONE DRAIN OUTLET PROTECTION					

FOR TEMPORARY PROTECTION OF CRITICAL AREAS WITHOUT SEEDING. THIS STANDARD APPLIES TO GRADES OR CLEARED AREAS WHICH MAY BE SUBJECTED TO EROSION FOR 6 MONTHS OR LESS, WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDANT COVER, BUT WHICH CAN BE STABILIZED WITH A MULCH COVER.

MATERIALS	INSTALLATION
DRY STRAW OR HAY	DEPTH OF 2 TO 4 INCHES PROVIDING COMPLETE SOIL COVERAGE
WOOD WASTE (CHIPS SAWDUST OR BARK)	DEPTH OF 2 TO 3 INCHES
EROSION CONTROL MATTING OR NETTING	APPLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS
CUTBACK ASPHALT (SLOW CURING)	1200 GALLONS PER ACRE, OR ¼ GALLON PER SQUARE YARD
POLYETHYLENE FILM	SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL FOR TEMPORARY PROTECTION

DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)

Ds1

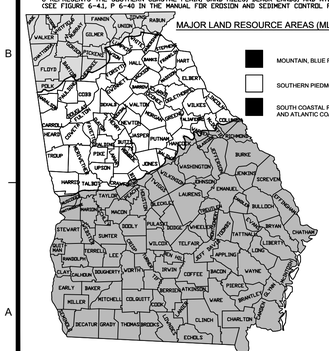
2014 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)

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

SPECIES	BROADCAST RATES 2/ PER ACRE	BROADCAST RATES 2/ PLS 3/ PER 1000 S.F.	RESOURCE AREA	PLANTING DATES J F M A M J J A S O N D	REMARKS
BARLEY (Hordeum vulgare) ALONE	3 bu. (144 LBS.)	3.3 LBS.	M-L P C		14,000 SEED PER POUND WINTERHARDY. USE ON PRODUCTIVE SOILS.
IN MIXTURES	1/2 bu. (24 LBS.)	0.6 LBS.			
LESPEDEZA, ANNUAL (Lespedeza striata) ALONE	40 LBS.	0.9 LBS.	M-L P C		200,000 SEED PER POUND. MAY VOLUNTEER FOR SEVERAL YEARS. USE INOCULANT CL.
IN MIXTURES	10 LBS.	0.2 LBS.			
LOVEGRASS, WEEPING (Eragrostis curvula) ALONE	4 LBS.	0.1 LBS.	M-L P C		5,500,000 SEED PER POUND. MAY LAST FOR SEVERAL YEARS. MIX WITH SERICEA LESPEDEZA.
IN MIXTURES	2 LBS.	0.05 LBS.			
MILLET, BROWNTOP (Panicum fasciculatum) ALONE	40 LBS.	0.9 LBS.	M-L P C		137,000 SEED PER POUND. QUICK DENSE COVER. WILL PROVIDE TOD MUCH COMPETITION IN MIXTURES IF SEEDED AT HIGH RATES.
IN MIXTURES	10 LBS.	0.2 LBS.			
MILLET, PEARL (Panicum glaucum) ALONE	50 LBS.	1.1 LBS.	M-L P C		88,000 SEED PER POUND. QUICK, DENSE, COVER. MAY REACH 5 FEET IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.
OATS (Avena sativa) ALONE	4bu. (128 LBS.)	2.9 LBS.	M-L P C		13,000 SEED PER POUND. USE ON PRODUCTIVE SOILS. NOT AS WINTERHARDY AS RYE OR BARLEY.
IN MIXTURES	1 bu. (32 LBS.)	0.7 LBS.			
RYE (Secale cereale) ALONE	3 bu. (168 LBS.)	3.9 LBS.	M-L P C		18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WINTERHARDY.
IN MIXTURES	1/2 bu. (28 LBS.)	0.6 LBS.			
RYEGRASS, ANNUAL (Lolium temulentum) ALONE	40 LBS.	0.9 LBS.	M-L P C		227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES.
SUDAN GRASS (Sorghum sudanese) ALONE	60 LBS.	1.4 LBS.	M-L P C		55,000 SEED PER POUND. GOOD ON DROUGHT SITES. NOT RECOMMENDED FOR MIXTURES.
TRITICALE (X-Triticosecale) ALONE	3 bu. (144 LBS.)	3.3 LBS.	C		USE ON LOWER PART OF SOUTHERN COASTAL PLAIN AND IN ATLANTIC COASTAL FLATWOODS ONLY.
IN MIXTURES	1/2 bu. (24 LBS.)	0.6 LBS.			
WHEAT (Triticum aestivum) ALONE	3 bu. (180 LBS.)	4.1 LBS.	M-L P C		15,000 SEED PER POUND.
IN MIXTURES	1/2 bu. (30 LBS.)	0.7 LBS.			

1/ TEMPORARY COVER CROPS ARE VERY COMPETITIVE AND WILL CROWN OUT PERENNIALS IF SEEDED TOO HEAVILY.
2/ REDUCE SEEDING RATES BY 50% WHEN DRILLED.
3/ PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
4/ M-L REPRESENTS TO MOUNTAIN, BLUE RIDGE, AND RIDGES AND VALLEYS MLRA'S
P REPRESENTS THE SOUTHERN PIEDMONT MLRA
C REPRESENTS THE SOUTHERN COASTAL PLAIN; SAND HILLS; BLACK LANDS; AND ATLANTIC COAST FLATWOODS MLRAs
(SEE FIGURE 6-41, P 6-40 IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL FOR GEORGIA)

MAJOR LAND RESOURCE AREAS (MLRA) OF GEORGIA



DISTURBED AREA STABILIZATION (TMP. SEEDING)

Ds2

2014 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-27.2

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

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

MULCHING RATES:
1. DRY STRAW: 2 TONS PER ACRE.
2. DRY HAY: 2-1/2 TONS PER ACRE.
3. FOR HYDRAULIC SEEDING USE WOOD CELLULOSE MULCH OR WOOD PULP FIBER AT THE RATE OF 500 POUNDS PER ACRE.

FERTILIZER AND MULCHING REQUIREMENTS

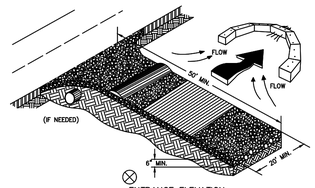
SPECIES	BROADCAST RATES 1/ - 2/ PLS 3/ PER ACRE	BROADCAST RATES 1/ - 2/ PLS 3/ PER 1000 S.F.	RESOURCE AREA	PLANTING DATES J F M A M J J A S O N D	REMARKS
BAHIA, PENSACOLA (Paspalum notatum) ALONE OR W/ TEMPORARY COVER	60 LBS.	1.4 LBS.	P C		
WITH OTHER PERENNIALS	30 LBS.	0.7 LBS.			
BAHIA, WILMINGTON (Paspalum notatum)					
ALONE OR W/ TEMPORARY COVER WITH OTHER PERENNIALS	60 LBS.	1.4 LBS.	M-L P		
	30 LBS.	0.7 LBS.			
BERMUDA, COMMON (Cynodon dactilon)					
HULLED SEED ALONE OR W/ OTHER PERENNIALS	10 LBS.	0.2 LBS.	P C		
	6 LBS.	0.1 LBS.			
BERMUDA, COMMON (Cynodon dactylon) UNHULLED SEED W/ TEMP COVER WITH OTHER PERENNIALS	10 LBS.	0.2 LBS.	P C		PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
	6 LBS.	0.1 LBS.			
BERMUDA SPRIGS (Cynodon dactylon)					A CUBIC FOOT CONTAINS APPROXIMATELY 650 SPRIGS. A BUSHEL CONTAINS 1,25 CUBIC FEET OR APPROXIMATELY 800 SPRIGS.
COASTAL, COMMON, MIDLAND, OR TIFT 44	40 CF. OR SOD PLUGS 3' x 3'	0.9 CF.	M-L P C		PLANT WITH WINTER ANNUALS
COASTAL, COMMON, OR TIFT 44					PLANT WITH TALL RESCUE SOUTHERN CENTRAL PLAIN ONLY
TIFT 78					
CENTIPEDE (Eremochloa ophiuroides)	BLOCK SOD ONLY		P C		DROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE ADJACENT TO CURB AND IN CONCENTRATED FLOW AREAS. IRRIGATION IS NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT NEAR PASTURES. WINTERKILLED AT FAR NORTHERN EDGE OF ZONE.
CROWNVETCH (Coronilla varia)					100,000 SEED PER POUND. MORE GROWTH, ATTRACTIVE ROSEL PINK AND WHITE BLOSSOMS SPRING TO LATE FALL. MIX W/ 25 LBS. OF TALL FESCUE OR 15 LBS. OF RYE. INOCULATE SEED WITH ® INOCULANT. USE FROM NORTH ATLANTA AND NORTHWARD.
WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS.	0.3 LBS.	M-L P		
FESCUE, TALL (Festuca arundinacea) ALONE	50 LBS.	1.1 LBS.	M-L P		227,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. NOT FOR DROUGHTY SOILS. MIX WITH PERENNIAL LESPEDEZAS OR CROWNVETCH. NOT FOR HEAVY USE AREAS OR ATHLETIC FIELDS.
W/ OTHER PERENNIALS	30 LBS.	0.7 LBS.			
KUDZU (Pueraria thunbergiana) PLANTS OR CROWNS	3' - 7' APART		ALL		RAPID AND VIGOROUS GROWTH. EXCELLENT IN GULLY EROSION CONTROL. WILL CLIMB. GOOD LIVESTOCK FORAGE.
LESPEDEZA, SERICEA (Lespedeza cuneata) SCARIFIED	60 LBS.	1.4 LBS.	M-L P C		350,000 SEED PER POUND. WIDELY ADAPTED. LOW MAINTENANCE. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, OR TALL FESCUE. TAKES 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON DROUGHTY SITES. INOCULATE SEED W/ CL INOCULANT.
UNSCARIFIED	75 LBS.	1.7 LBS.	M-L P C		
SEED-BEARING HAY	3 TONS	130 LBS.	M-L P C		CUT WHEN SEED IS MATURE, BUT BEFORE IT SHATTERS. ADD TALL FESCUE OR WINTER ANNUALS.
LESPEDEZA Anbro virgata, Lespedeza virgata or Appalow (Lespedeza cuneata (Dumont) G. Don) SCARIFIED	60 LBS.	1.4 LBS.	M-L P C		300,000 SEED PER POUND. HEIGHT OF GROWTH IS 18 TO 24 INCHES. ADVANTAGES IN URBAN AREAS. SPREADING TYPE GROWTH. NEW GROWTH HAS BRONZE COLORATION. MIX W/ WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, TALL FESCUE, OR WINTER ANNUALS. DO NOT MIX W/ SERICEA LESPEDEZA. HOW TO DEVELOP SOLID STANDS: INOCULATE SEED W/ CL INOCULANT.
UNSCARIFIED	75 LBS.	1.7 LBS.	M-L P C		
LESPEDEZA, SHRUBY(Lespedeza bicolor)) Lespedeza thunbergii PLANTS	3' x 3'		M-L P C		
LOVEGRASS, WEEPING (Eragrostis curvula) ALONE	4 LBS.	0.1 LBS.	M-L P C		
W/ OTHER PERENNIALS	2 LBS.	0.05 LBS.			
MAIDENCANE (Panicum hemitomon) SPRIGS WITH OTHER PERENNIALS	2' x 3' SPACING		ALL		FOR VERY WET SITES. MAY CLOG CHANNELS. SOD SPRIGS FROM LOCAL SOURCES. USE ALONG RIVER BANKS AND SHORELINES.
PANICGRASS, ATLANTIC COASTAL (Panicum amarum var. amarulum)	20 LBS.	0.5 LBS.	P C		GROWS WELL ON COASTAL SAND DUNES, BORROW AREAS, AND GRAVEL PITS. PROVIDES WINTER COVER FOR WILDLIFE. MIX WITH SERICEA LESPEDEZA EXCEPT ON SAND DUNES.
REED CANARY GRASS (Phalaris arundinacea) ALONE	50 LBS.	1.1 LBS.	M-L P		GROWS SIMILAR TO TALL FESCUE.
WITH OTHER PERENNIALS	30 LBS.	0.7 LBS.			
SUNFLOWER, 'AZTEC' MAXIMILLIAN (Helianthus maximilliani)	10 LBS.	0.2 LBS.	M-L P C		

DISTURBED AREA STABILIZATION (PERMANENT VEGETATION)

Ds3

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



ENTRANCE ELEVATION

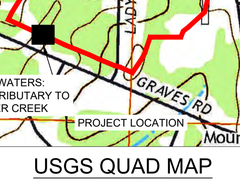
NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD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

CONSTRUCTION EXIT

Co

2014 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-14.1

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.

SILT FENCE-TYPE SENSITIVE

Sd1-S

2014 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK)
Figure 6-27.2

USGS QUAD MAP

NOT TO SCALE

EROSION CONTROL NOTES:

1. EROSION CONTROL PRACTICES MUST COMPLY WITH THE MINIMUM BEST MANAGEMENT PRACTICES FOR EROSION CONTROL AND SHALL COMPLY WITH THE STANDARDS AND SPECIFICATIONS IN THE "MANUAL FOR EROSION CONTROL AND SEDIMENT CONTROL IN GEORGIA".
2. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE.
3. DISTURBED AREAS LEFT IDLE FOR FIVE DAYS, AND NOT TO FINAL GRADE, WILL BE ESTABLISHED WITH TEMPORARY MULCH (DS1) OR VEGETATION (DS2). DISTURBED AREAS LEFT IDLE FOR TWO WEEKS OR MORE WILL BE ESTABLISHED WITH PERMANENT VEGETATION (DS3). ALL AREAS AT FINAL GRADE WILL BE ESTABLISHED WITH PERMANENT VEGETATION IMMEDIATELY UPON COMPLETION. WHEN HAND PLANTING, MULCH (HAY OR STRAW) SHOULD BE UNIFORMLY SPREAD OVER SEEDED AREA WITHIN 24 HOURS OF SEEDING. DURING UNSUITABLE GROWING SEASONS, MULCH WILL BE USED AS A TEMPORARY COVER (DS3). ON SLOPES THAT ARE 2:1 OR STEEPER, MULCH WILL BE ANCHORED.
4. IN CONCENTRATED FLOW AREAS: ALL SLOPES STEEPER THAN 2.5:1, HEIGHT TEN FEET OR GREATER, AND CUTS AND FILLS WITHIN STREAM BUFFER, STABILIZE WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKET.
5. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES. 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.
6. SEDIMENT/EROSION CONTROL DEVICES MUST BE CHECKED AFTER EACH STORM EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE THIRD THE CAPACITY OF THE DEVICE. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.
7. THE USE OF POLYMERS (PAMS) IS ACCEPTED AS A BMP AS RECOMMENDED BY THE STATE SOIL & WATER CONSERVATION COMMISSION BMP "GREEN BOOK". POLYMERS USED TO STABILIZE CONSTRUCTION SITES MUST BE USED IN CONJUNCTION WITH MULCHING AND OR HYDROSEEDING.
8. MULCH, TEMPORARY VEGETATION, AND PERMANENT (PERENNIAL) VEGETATION SHALL BE COMPLETED ON ALL EXPOSED AREAS WITHIN 14 DAYS AFTER DISTURBANCE.
9. ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED BY ENGINEER DURING CONSTRUCTION.
10. DUE TO THE NATURE AND LOCATION OF THE CONSTRUCTION ACTIVITY, PROVIDING SEDIMENT STORAGE FOR 67 CUBIC YARDS OF SEDIMENT PER ACRE DISTURBED IS NOT FEASIBLE. APPROPRIATE BMPS THAT LIMIT THE TRANSPORT OF SEDIMENT FROM THE SITE WILL BE UTILIZED. THERE BMPS INCLUDE BUT ARE NOT LIMITED TO SILT FENCE AND TEMPORARY MULCHING, GRASSING OR PERMANENT GRASSING FOR THE DISTURBED AREAS OF THE PROJECT.

EROSION CONTROL CHECKLIST CERTIFICATIONS:

1. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFER AS MEASURED FROM THE POINT OF WRESTED VEGETATION ON WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
2. 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.
3. 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.
4. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
5. ALL STREAM BUFFER DISTURBANCES ARE ASSOCIATED WITH THE CULVERT REPLACEMENT. THE PROJECT DISTURBS LESS THAN 100 LINEAR FEET OF STREAM AND IS CLASSIFIED AS A UTILITY CROSSING. AS SUCH NO USACE PERMIT OR BUFFER VARIANCE IS ANTICIPATED.
6. THE CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS, AND THE REAR OF VEHICLES SHALL BE CONDUCTED ACCORDING TO THE GUIDELINES SET FORTH IN THE LATEST EDITION OF MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

"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."

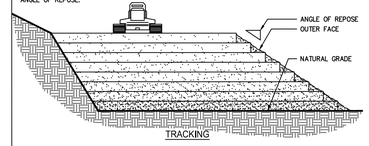
STRUCTURAL PRACTICES

Co	CONSTRUCTION EXIT
Sd1-S	SEDIMENT BARRIER
Su	SURFACE ROUGHENING
Ss	SLOPE STABILIZATION
Cd	STONE CHECK DAM

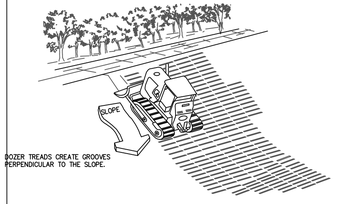
VEGETATIVE PRACTICES

Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY) Ds1
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING) Ds2
Ds3	PERMANENT VEGETATION Ds3
Bf	BUFFER ZONE (LABEL)

FILL SLOPE TREATMENT



TRACKING



SURFACE ROUGHENING

Su

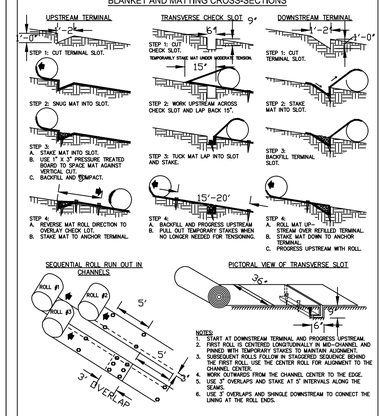
2014 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK) Figure 6-35.2

CONSTRUCTION SCHEDULE

MONTHS	1	2	3
INSTALLATION OF SEDIMENT CONTROL MEASURES			
DEMOLITION			
CLEARING, GRUBBING			
PIPE INSTALLATION			
PAVING			
GRASSING			
MAINTAINING OF EROSION AND SOIL CONTROL MEASURES			
FINAL LANDSCAPING, GRASSING			

TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

BLANKET AND MATTING CROSS-SECTIONS



SLOPE STABILIZATION

Ss

2014 MANUAL FOR EROSION AND SEDIMENT CONTROL (GREEN BOOK) Figure 6-10.1

TETRA TECH
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ATLANTA, GEORGIA 30339
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GEORGIA
No. PE024616
PROFESSIONAL ENGINEER
12/14/18
DAVID N. LAVERGNE

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

EROSION CONTROL DETAILS

Project No.: 200-01297-17045
Designed By: CG
Drawn By: HA
Checked By: DL

C-506

Bar Measures 1 inch

12/14/2018 5:08:06 PM - O:\PROJECTS\ATLANTA\ER01297200-01297-17045\CAD\SHEETFILES\C-506 EROSION CONTROL DETAILS.DWG - GULMIRE, CALEB

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD: Towaliga

Project Name: Graves Road Culvert Replacement **Address:** 287 Graves Rd, Fayetteville, GA 30215

City/County: Fayetteville/Fayette **Date on Plans:** 12/14/2018

Name &email of person filling out checklist: David N. Lavergne, P.E. david.lavergne@tetratech.com

Plan Page #	Included Y/N		TO BE SHOWN ON ES&PC PLAN
C-507	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)
ALL	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)
C-507	Y	3	The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
C-507	Y	4	Provide the name, address and phone number of primary permittee.
G-002	Y	5	Note total and disturbed acreage of the project or phase under construction.
G-002	Y	6	Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
ALL	Y	7	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
G-002	Y	8	Description of the nature of construction activity.
G-000	Y	9	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
C-506	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.
C-506	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 page 15 of the permit.
N/A	N/A	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 page 15 of the permit.*
N/A	N/A	13	Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on page 26 of permit as applicable.*
N/A	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, perimeter control BMPs, and sediment basins in accordance with part IV.A.5. within 7 days after installation."*
C-506	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."
C-506	Y	16	Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
N/A	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	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."*
C-506	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."
C-506	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."
C-506	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	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	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.*
C-506	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.*
G-002	Y	25	Provide BMPs for the remediation of all petroleum spills and leaks.
N/A	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	N/A	27	Description of the practices that will be used to reduce the pollutants in storm water discharges.*
C-506	Y	28	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	N/A	29	Provide complete requirements of inspections and record keeping by the primary permittee.*
N/A	N/A	30	Provide complete requirements of sampling frequency and reporting of sampling results.*
N/A	N/A	31	Provide complete details for retention of records as per Part IV.F. of the permit.*
N/A	N/A	32	Description of analytical methods to be used to collect and analyze the samples from each location.*
N/A	N/A	33	Appendix B rationale for NTU values at all outfall sampling points where applicable.*
N/A	N/A	34	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.*
N/A	N/A	35	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.*
ALL	Y	36	Graphic scale and North arrow.
C-104	Y	37	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following: Existing Contours: USGS 1": 2000' Topographical Sheets; Proposed Contours: 1" : 400' Centerline Profile
N/A	N/A	38	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	N/A	39	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.*
C-105	Y	40	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.
C-101	Y	41	Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site.
C-506	Y	42	Delineation and acreage of contributing drainage basins on the project site.
C-506	Y	43	Delineate on-site drainage and off-site watersheds using USGS 1" :2000' topographical sheets.
G-002	Y	44	An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
C-104	Y	45	Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
C-507	Y	46	Soil series for the project site and their delineation.
C-105	Y	47	The limits of disturbance for each phase of construction.
C-506	Y	48	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 must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage 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 feasable, a written justification explaining this decision must be included in the plan.
C-506	Y	49	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.
C-506	Y	50	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.
C-506	Y	51	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 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, 2018**

PRIMARY PERMITTEE TO BE PROVIDED AFTER CONTRACT IS AWARDED.
24-HOUR EROSION CONTROL CONTACT: PHIL MALLON (770) 313-9855

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AkA	Altavista sandy loam, 0 to 3 percent slopes	7.5	6.1%
AmB	Appling sandy loam, 2 to 6 percent slopes	9.2	7.4%
AmC	Appling sandy loam, 6 to 10 percent slopes	2.8	2.2%
CA	Cartecay loam, 0 to 2 percent slopes, frequently flooded	11.0	8.9%
CeB	Cecil sandy loam, 2 to 6 percent slopes	21.1	17.0%
CeC	Cecil sandy loam, 6 to 10 percent slopes	55.6	44.8%
CfC2	Cecil sandy clay loam, 6 to 10 percent slopes, eroded	11.4	9.2%
W	Water	5.3	4.3%
Totals for Area of Interest		**124.0**	**100.0%**

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GEORGIA LICENSED No. PE024016 PROFESSIONAL ENGINEER DAVID N. LAVERGNE 12/14/18

GSWCC LEVEL II
CERT. # 0000073529

MARK	DATE	DESCRIPTION	BY
0	12/14/18	ISSUED FOR CONSTRUCTION	HA

FAYETTE COUNTY
GRAVES RD CULVERT REPLACEMENT

ESPC PLAN

Project No.: 200-01297-17045
Designed By: CG
Drawn By: HA
Checked By: DL

C-507

Bar Measures 1 inch