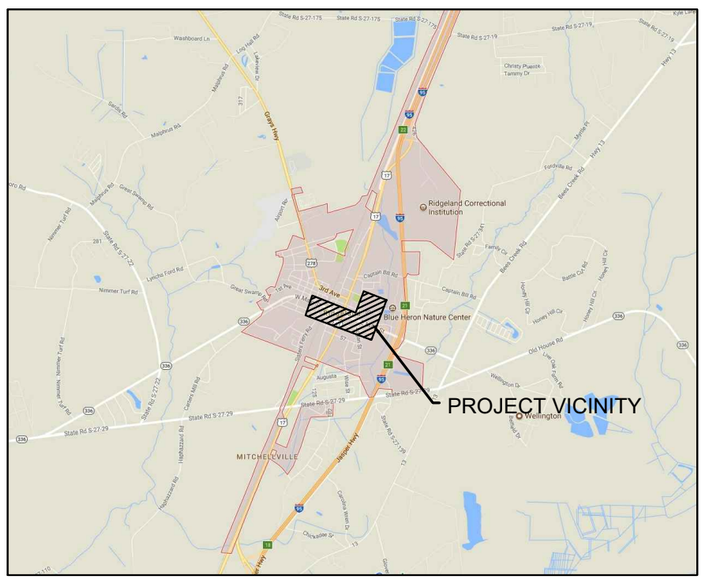
SEWER SYSTEM REHABILITATION
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

MAYOR
JOSEPH N. MALPHRUS, JR

MAYOR PRO TEMPORE
TOMMY RHODES

COUNCIL MEMBERS
JOSEPHINE BOYLES
CHRIS DUBOSE
GRADY WOODS

TOWN ADMINISTRATOR
DENNIS E. AVERKIN



PREPARED BY

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 5166 WWW.4WENG.COM

PROJECT NO. 17-1007.21

GENERAL SHEET INDEX

NUMBER	TITLE
COVER	COVER AND SHEET INDEX
G-1	GENERAL NOTES
G-2	PROJECT VICINITY AND KEY MAP

CIVIL SHEET INDEX

NUMBER	TITLE
C-1	SEWER REHABILITATION PLAN - FIRST AVENUE
C-2	SEWER REHABILITATION PLAN - PERRY STREET AND WEST ADAMS
C-3	SEWER REHABILITATION PLAN - E. ADAMS STREET, S. RAILROAD TO S. JACOBS SMART BLVD
C-4	SEWER REHABILITATION PLAN - EAST ADAMS STREET TO LOGAN STREET
C-5	SEWER REHABILITATION PLAN - EAST ADAMS STREET AND EAST MAIN STREET
C-6	SEWER REHABILITATION PLAN - EAST WILSON STREET
C-7	SEWER REHABILITATION PLAN - NORTH LOGAN STREET
C-8	SEWER REHABILITATION PLAN - FROM EAST MAIN STREET TO EAST WILSON STREET
C-9	SEWER REHABILITATION PLAN - EASEMENT FROM EAST WILSON STREET TO WRF
D-1	CONSTRUCTION DETAILS
D-2	SCDOT CONSTRUCTION DETAILS
D-3	SCDOT CONSTRUCTION DETAILS
D-4	SCDOT CONSTRUCTION DETAILS
D-5	SCDOT CONSTRUCTION DETAILS
D-6	SCDOT CONSTRUCTION DETAILS
D-7	SCDOT MOT DETAILS
D-8	SCDOT MOT DETAILS
D-9	SCDOT MOT DETAILS
D-10	SCDOT MOT DETAILS
D-11	SCDOT MOT DETAILS
D-12	SCDOT MOT DETAILS
D-13	SEDIMENT & EROSION CONTROL DETAILS

DATE: JULY 2019

ISSUE: 100% FOR CONSTRUCTION

SOUTH CAROLINA FOUR WATERS ENGINEERING, INC No. 5166 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORFF BRYAN No. 21839 7-11-19

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

COVER SHEET AND INDEX

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	SLD
JOB NUMBER	17-1007.21		
ISSUE DATE	JULY 2019		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
COVER

STEVE DUCHARME LOCATION R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\CDS\RIDGELAND CDBG CONSTRUCTION.DWG

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THE TOWN OF RIDGELAND STANDARD SPECIFICATIONS FOR WATER AND SEWER SYSTEMS, LATEST EDITION.
2. THE CONTRACTOR SHALL PROTECT ALL BENCH MARKS AND MONUMENTS FROM DAMAGE AND SHALL ESTABLISH OFFSET POINTS AS REQUIRED FOR THIS WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT OF ALL SCHEDULED IMPROVEMENTS AS SHOWN ON THE CONTRACT DRAWINGS.
3. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION ACTIVITIES AND NOTIFYING THE TOWN ENGINEER OF POTENTIAL CONFLICTS. THE CONTRACTOR SHALL CONTACT THE LOCAL UTILITY MARK-OUT SERVICE PROVIDER PRIOR TO COMMENCING WORK.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY EXISTING ABOVEGROUND AND UNDERGROUND UTILITIES, CONDUITS, STRUCTURES, EQUIPMENT, FOUNDATIONS, PIPE, ETC. AS NECESSARY TO COMPLETE THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE OWNER'S OF THE UTILITY 72 HOURS PRIOR TO STARTING WORK AND SHALL BEAR ALL COSTS ASSOCIATED WITH SAME. VARIOUS UTILITIES MAY NEED TO BE RESET BY THE AFFECTED UTILITY COMPANY. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF THE UTILITY COMPANY TO AVOID DELAYS. NO EXTENSION OF TIME WILL BE PROVIDE DUE TO THE LACK OF COORDINATION BY THE CONTRACTOR. THE CONTRACTOR SHALL PERFORM TEST PITS WHERE EXISTING UTILITIES ARE TO BE CROSSED. TEST PIT INFORMATION SHALL BE GIVEN TO THE TOWN ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS MAY BE REQUIRED TO AVOID CONFLICTS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS WITHIN SCDOT AND TOWN R.O.W.'S AND EASEMENTS. ALL SURVEY LAYOUT VERIFYING THE EXACT LOCATION OF THE R.O.W.'S SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL COSTS FOR SAME SHALL BE INCLUDED WITHIN THE VARIOUS BID ITEMS.
6. THE CONTRACTOR SHALL TAKE CARE IN MAINTAINING ALL LANDSCAPING AND YARD STRUCTURES WITHIN THE CONSTRUCTION LIMITS. WHEN RELOCATION IS NECESSARY OR WHERE ANY DAMAGE IS DONE TO SAID ITEMS THEY SHALL BE RESTORED BY THE CONTRACTOR, AT HIS EXPENSE, TO THE SATISFACTION OF THE TOWN ENGINEER.
7. ANY CONCRETE DRIVEWAY, WALKWAY, OR CURB WHICH IS NOT SHOWN, DIRECTED, OR MARKED OUT BY THE ENGINEER TO BE REPLACED, BUT IS REMOVED, MISALIGNED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR PER SCDOT STANDARDS AT NO ADDITIONAL COSTS TO THE TOWN.
8. THE CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE AWAY FROM RESIDENCES AND ALONG ROAD GUTTERS IS MAINTAINED AT ALL LOCATIONS DISTURBED WITH IN THE PROJECT LIMITS.
9. IF IT SHALL BECOME ABSOLUTELY NECESSARY TO PERFORM WORK AT NIGHT, THE TOWN ENGINEER SHALL BE INFORMED IN ADVANCE. GOOD LIGHTING AND ALL OTHER NECESSARY FACILITIES FOR PROPERLY CARRYING OUT AND INSPECTING THE WORK SHALL BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL STATE AND LOCAL REGULATIONS GOVERNING HOURS DURING WHICH CONSTRUCTION EQUIPMENT MAY BE OPERATED.
10. OPEN TRENCHES SHALL BE KEPT TO A MINIMUM. NO EXCAVATION AREAS ARE TO REMAIN OPEN OVERNIGHT. BITUMINOUS STABILIZED BASE COURSE SHALL BE PLACED IN ALL TRENCH AREAS WITHIN THE ROADWAY AT THE END OF EACH DAYS WORK.
11. IN THE EVENT A SITUATION ARISES IN WHICH MATERIALS NOT SPECIFIED ON THE PLANS ARE TO BE USED FOR EXTRA WORK, THEN THE MATERIALS SHALL CONFORM TO THE TOWN OF RIDGELAND STANDARD SPECIFICATIONS FOR WATER AND SEWER SYSTEMS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL MATERIALS EXCAVATED OF WHATEVER NATURE AT HIS OWN EXPENSE. THE TOWN IS NOT OBLIGATED TO SUPPLY A DISPOSAL SITE. THE CONTRACTOR CAN NOT DEPOSIT ANY OF THE EXCESS MATERIALS WITHIN TOWN LIMITS WITHOUT THE EXPRESS PERMISSION OF THE TOWN ENGINEER. MATERIALS MUST BE DISPOSED OF IN ACCORDANCE WITH ALL STATE REGULATIONS REGARDING SAME.
13. ALL STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND DETAILS.
14. PROTECTION OF EXISTING TREES WITHIN THE LIMITS OF DISTURBANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE TOWN ENGINEER SHALL DETERMINE IN THE FIELD WHICH TREES REQUIRE TREE PROTECTION. NO CONSTRUCTION EQUIPMENT OR SUPPLIES SHALL BE STOCKPILED OR STORED WITHIN THE DRIP LINE OF ANY EXISTING TREE TO REMAIN.
15. ALL PROPERTY CORNERS OR MONUMENTS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY A SOUTH CAROLINA LICENSED LAND SURVEYOR, AT NO ADDITIONAL COST TO THE TOWN.
16. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN DUST CONTROL AS REQUIRED OR DIRECTED BY THE TOWN ENGINEER. ALL VEHICLES SHALL BE CLEAN AND ALL ROADWAYS SHALL BE MAINTAINED AS DIRECTED BY THE TOWN ENGINEER.
17. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE SCDOT STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING PAVEMENT MARKINGS. CONTRACTOR SHALL NOTIFY TOWN ENGINEER AND SCDOT WHEN TRAFFIC STRIPES AND PAVEMENT MARKINGS HAVE BEEN LAID OUT PRIOR TO PAINTING. SCDOT WILL INSPECT AND APPROVE LAYOUT PRIOR TO CONTRACTOR PAINTING TRAFFIC STRIPES AND PAVEMENT MARKINGS.
18. THE CONTRACTOR SHALL PERFORM ONLY THE AMOUNT OF WORK WHICH CAN BE COMPLETED THE SAME DAY. THE ENTIRE ROADWAY SHALL BE OPENED TO TRAFFIC AFTER WORK HOURS UNLESS APPROVED BY TOWN AND SCDOT. SCDOT TEMPORARY PAVEMENT OR APPROVED SURFACE SHALL BE PLACED IN CONSTRUCTION AREAS TO PROVIDE A SMOOTH, SAFE SURFACE FOR VEHICULAR TRAFFIC. THE COST FOR TEMPORARY PAVEMENT SHALL BE INCLUDED IN UNIT PRICE BID FOR VARIOUS CONSTRUCTION ITEMS.
19. THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION STAKEOUT. OFFSET LINES WITH STAKES SHALL BE SET AT APPROPRIATE INTERVALS TO FACILITATE CONSTRUCTION. CUT SHEETS SHALL BE SUBMITTED FOR APPROVAL TO THE TOWN ENGINEER AND TO THE WORK CREWS AT LEAST 5 DAYS PRIOR TO CONSTRUCTION.
20. ALL EXISTING STRUCTURES AND ALL UNDERGROUND STRUCTURES ARE TO BE REMOVED IN ACCORDANCE WITH STATE REGULATIONS.
21. THE CONTRACTOR SHALL NOTIFY THE TOWN ENGINEER IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER FROM THOSE SHOWN HEREIN.
22. WORK WITHIN SCDOT ROW SHALL BE CONDUCTED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE NPDES PERMIT(S) ISSUED TO SCDOT TO GOVERN THE DISCHARGE OF STORM WATER AND NON-STORM WATER FROM ITS PROPERTIES
23. THESE GENERAL NOTES SHALL APPLY FOR THE ENTIRE PROJECT.

SOUTH CAROLINA — FOUR WATERS ENGINEERING, INC No. 5166 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — LICENSED PROFESSIONAL ENGINEER — No. 21839 — 7-11-19 — ANGELA BURGDORFF BRYAN

NOTES FOR MAINTENANCE AND PROTECTION OF TRAFFIC:

1. ALL DEVICES AND PROCEDURES FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE SCDOT. THE CONTRACTOR SHALL PLAN AND CARRY OUT HIS WORK TO PROVIDE FOR THE CONVENIENT AND SAFE PASSAGE OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC ON ADJACENT STREETS.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING MAINTENANCE AND PROTECTION OF TRAFFIC THROUGH THE DURATION OF CONSTRUCTION. NO SEPARATE PAYMENTS WILL BE MADE FOR RELOCATING THE DEVICES AS REQUIRED, OR AS DIRECTED BY THE TOWN ENGINEER, DURING THE COURSE OF CONSTRUCTION.
3. DURING CONSTRUCTION, ALL ROADS SHALL BE PROPERLY MAINTAINED TO ACCOMMODATE EMERGENCY VEHICLES AT ALL TIMES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE LOCAL AND STATE POLICE DEPARTMENTS FOR TRAFFIC OPERATIONS AND PARKING PROHIBITIONS DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY DETOURS NECESSARY WITH THE POLICE, TOWN ENGINEER AND/OR FIRE DEPARTMENTS PRIOR TO CONSTRUCTION. ALL EMERGENCY VEHICLES MUST HAVE ACCESS TO STREETS AT ALL TIMES AND ALL RESIDENTS MUST HAVE ACCESS TO THEIR HOMES AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE ROADWAY TO A SAFE CONDITION AT THE END OF EACH DAY'S WORK PER SCDOT STANDARDS.
6. ALL TRAFFIC CONTROL SIGNS AND STRIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE SCDOT. EXACT LOCATION OF STREET SIGNS SHALL BE DETERMINED BY SCDOT SPECIFICATIONS.

South Carolina 811 — Call 811 Before you Dig

NOTE:
WATER MAIN DATA PROVIDED BY
TOWN OF RIDGELAND GEODATABASE

THIS PLAT PREPARED AT THE REQUEST OF
TOWN OF RIDGELAND

A WETLAND, TREE & TOPOGRAPHIC SURVEY
OF TAX MAP # 063-26-35-042
& A PORTION OF TAX MAP # 063-26-37-006,
RIDGELAND, JASPER COUNTY, SOUTH CAROLINA

DATE: JANUARY 17, 2019

TGS LAND SURVEYING
162 SECOND AVENUE
P.O. BOX 2023
RIDGELAND, S.C. 29936
Phone 843-726-9117

JOB # R8053T-18

I HEREBY STATE TO THE BEST
OF MY KNOWLEDGE, INFORMATION & BELIEF,
THE SURVEY SHOWN HEREON WAS MADE
IN ACCORDANCE WITH THE REQUIREMENTS
OF THE MINIMUM STANDARDS MANUAL
FOR THE PRACTICE OF LAND SURVEYING
IN SOUTH CAROLINA, AND MEETS OR EXCEEDS
THE REQUIREMENTS FOR A CLASS C SURVEY
AS SPECIFIED THEREIN.
ALSO THERE ARE NO VISIBLE ENCROACHMENTS
OR PROJECTIONS OTHER THAN SHOWN.

THOMAS G. STANLEY, JR., PLS # 18269

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

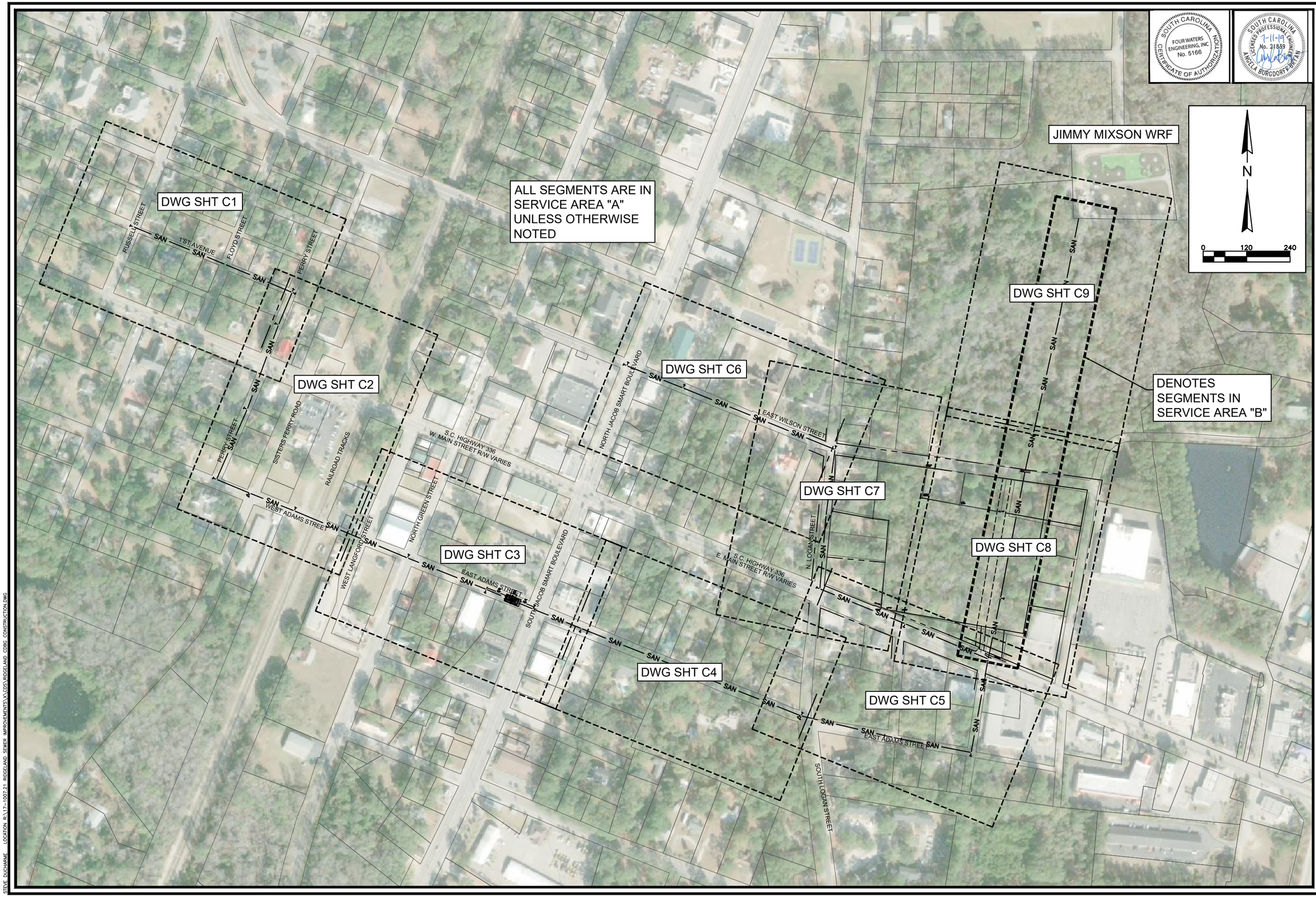
GENERAL NOTES

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB
DRAWN	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
G-1



SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC
No. 5166
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
7-11-19
No. 21839
ANGELA B. BURGDORFF BRYAN

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

PROJECT VICINITY AND DRAWING KEYMAP

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
G-2

STEVE DUCHARME LOCATION R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X-CDS\RIDGELAND CDBG CONSTRUCTION.DWG

NOTES:

1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

Ⓢ DENOTES TYPICAL 5'X5' PATCH/ROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)

N

0 30 60

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION FOUR WATERS ENGINEERING, INC No. 5166

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORF BRYAN 7-11-19 No. 21839

MH-147
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

REHAB BY CIPP 343 LF EXISTING 8" GRAVITY SEWER FROM MH-147 TO MH-261

REHAB BY CIPP 250 LF EXISTING 8" GRAVITY SEWER FROM MH-261 TO MH-247

1st AVENUE

RUSSELL STREET

FLOYD STREET

PERRY STREET

EXIST MH-147
4'ø BRICK IN ROADWAY
DEPTH: 8.25'
E. OUT: 8" CLAY
W. IN: 8" CLAY

EXIST MH-261
4'ø BRICK IN ROADWAY
DEPTH: 9.00'
E. OUT: 8" CLAY
W. IN: 8" CLAY

MH-261
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT.

MH-247

MH-246

SEE SHEET C-2

S.C. HIGHWAY 336
W. MAIN STREET R/W VARIES

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SEWER REHABILITATION PLAN
1st AVENUE

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	SLD
JOB NUMBER		17-1007.21	
ISSUE DATE		JULY 2019	
ISSUE		100%	

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-1

REHAB BY CIPP 264 LF EXIST 10" GRAVITY SEWER FROM MH-245 TO MH-244

EXIST MH–245
4'ø BRICK IN ROADWAY
DEPTH: 8.67'
S OUT: 10" CLAY
N. IN: 10" CLAY
W. IN: 8" CLAY

REHAB BY CIPP 310 LF EXIST 10" GRAVITY SEWER FROM MH-246 TO MH-245

SEE SHEET C-1 FOR SEWER REHAB FROM MH-261 TO MH-247

SEE SHEET C-1

EXIST MH–244
4'ø BRICK IN ROADWAY
DEPTH: 5.67'
E. OUT: 10" CLAY
N. IN: 10" CLAY
W. IN: 10" CLAY

PERRY STREET

REHAB BY CIPP 125 LF EXIST 10" GRAVITY SEWER FROM MH-244 TO MH-242

MH-244
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

EXIST MH–246
4'ø BRICK IN ROADWAY
DEPTH: 8.33'
S OUT: 10" CLAY
N. IN: 10" CLAY
W. IN: 8" CLAY

MH-246
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

EXIST MH–247
4'ø BRICK IN ROADWAY
DEPTH: 8.17'
S. OUT: 10" CLAY
N. IN: 8" CLAY
E. IN: 8" CLAY
W. IN: 8" CLAY

MH-245
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT.

REHAB BY CIPP 122 LF EXIST 10" GRAVITY SEWER FROM MH-247 TO MH-246

SISTERS FERRY ROAD

MH-242
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

MH-247
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT.

EXIST MH–242
4'ø BRICK IN ROADWAY
DEPTH: 5.33'
E. OUT: 10" CLAY
W. IN: 10" CLAY
S. IN: 6" CLAY
SE, IN: 4"FM

WEST ADAMS STREET

REHAB BY CIPP 165 LF EXISTING 10" GRAVITY SEWER FROM MH-242 TO MH-240

S.C. HIGHWAY 336
W. MAIN STREET R/W VARIES

EXIST MH–240
4'ø BRICK IN ROADWAY
DEPTH: 6.0'
E. OUT: 10" CLAY
N. IN: 8" CLAY
W. IN: 10" CLAY

MH-240
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

REHAB BY CIPP 424 LF EXISTING 10" GRAVITY SEWER FROM MH-240 TO MH-40

RAILROAD TRACKS

SEE SHEET C-3

DENOTES TYPICAL 5'X5' PATCH/ROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)

NOTES:
1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

N

0 30 60

SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC
No. 5166
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
7-11-19
No. 21839
ANGELA BURGDORFF BRYAN

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SEWER REHABILITATION PLAN
PERRY STREET AND WEST ADAMS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	SLD
JOB NUMBER	17-1007.21		
ISSUE DATE	JULY 2019	ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-2

NOTES:
1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

SOUTH RAILROAD AVENUE

NORTH GREEN STREET

SOUTH JACOB SMART BOULEVARD

EAST ADAMS STREET

WEST LANGFORD STREET

SEE SHEET C-2

SEE SHEET C-4

SEE SHEET C-2 FOR SEWER REHAB FROM MH-240 TO MH-40

REHAB BY CIPP 239 LF EXIST 10" GRAVITY SEWER FROM MH-40 TO MH-239

EXIST MH-40
4'ø BRICK IN ROADWAY
DEPTH: 5.5'
E OUT: 10" CLAY
N. IN: 8" CLAY
W. IN: 10" CLAY

MILL AND RESURFACE ASPHALT ROADWAY FROM CURB TO CURB WITH 1-1/2" SCDOT TYPE "C" ASPHALT (107 SY). TAPER OVERLAY ASPHALT TO TIE INTO EXISTING ASPHALT. EXISTING CURB & GUTTER TO REMAIN. RE-STRIPE ROADWAY WITH PAINT AS NECESSARY PER SCDOT SPECIFICATIONS

REMOVE AND REPLACE ASPHALT ROADWAY (~24 SY) FOR CAST IRON PIPE REPLACEMENT AND CONFLICT MANHOLE CONSTRUCTION. SEE DETAIL SHEET D-1

REHAB BY CIPP 178 LF EXIST AND NEW 10" GRAVITY SEWER FROM MH-239 TO MH-238

EXIST BRICK CONFLICT MANHOLE IN ROADWAY
DEPTH: 5.50'
N. RCP
S. RCP
E-W. 10" CIP SEWER PIPE PASSES THROUGH MANHOLE

20' CIP

83' VCP

75' VCP

MH-238
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

REHAB BY CIPP 180 LF EXIST 10" GRAVITY SEWER FROM MH-238 TO MH-237

EXIST MH-237

EXIST MH-238
4'ø BRICK IN ROADWAY
DEPTH: 8.00'
E OUT: 10" CLAY
N. IN: 8" CLAY WITH DROP PIPE
W. IN: 10" CLAY WITH DROP PIPE

EXISTING CONFLICT MANHOLE. SANITARY SEWER PASSES THROUGH

INSTALL SILT FENCE AND SEDIMENT TUBES FOR SEDIMENT & EROSION CONTROL (TYP)

MH-40
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

MH-239
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

EXIST MH-239
4'ø BRICK IN ROADWAY
DEPTH: 5.33'
E OUT: 10" CLAY
W. IN: 10" CLAY
S. IN: 8" CLAY

CONTRACTOR SHALL COORDINATE WITH SOUTH STATE BANK AND ENSURE SAFE INGRESS AND EGRESS TO BUSINESS PARKING IS CLEARLY SIGNED AND ACCESSIBLE DURING CONSTUCTION

REMOVE AND REPLACE STORM DRAIN CONFLICT MANHOLE WITH PRECAST MANHOLE (SEE DETAIL SHEETS D-1 AND D-2). REMOVE APPROXIMATELY 20LF 10" CAST IRON GRAVITY SEWER AND REPLACE WITH 10" PVC (SDR26) PIPE AND CONNECT TO EXISTING 10" VCP. NO SEWER PIPE JOINTS TO OCCUR WITHIN MANHOLE. RESTORE STORM PIPE CONNECTIONS TO CONFLICT MANHOLE

ROADWAY OPEN CUT SELECT BACKFILL MATERIAL SHALL BE COMPACTED IN 6" LAYERS COMPACTED TO 95% DENSITY OR GREATER AS DETERMINED BY AASHTO METHOD T-99. SEE SCDOT PAVEMENT REPAIR DETAIL SHEET D-1. DENSITY TESTING SHALL BE CONDUCTED ON EACH SIDE (2 TOTAL) OF THE MANHOLE ABOVE PIPE INSTALLATION AND AS NECESSARY FOR THE STRUCTURE PER SCDOT REQUIREMENTS. TESTS TO BE CONDUCTED BY A GEOTECHNICAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA AND SUBMITTED TO THE TOWN AND SCDOT FOR REVIEW AND APPROVAL PRIOR TO PAVING (TYP)

DENOTES TYPICAL 5'X5' PATCH/ROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)

DENOTES SILT FENCE

DENOTES AREA FOR MILL AND RESURFACE

N

0 30 60

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION FOUR WATERS ENGINEERING, INC No. 5166

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORF BRYAN 7-11-19 No. 21839

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER REHABILITATION
SEWER REHABILITATION PLAN
E. ADAMS STREET - S. RAILROAD AVE TO SOUTH JACOB SMART BLVD
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	SLD
JOB NUMBER			17-1007.21
ISSUE DATE			JULY 2019
ISSUE			100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-3

STEVE DUCHARME LOCATION R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\COS\RIDGELAND CDBG CONSTRUCTION.DWG

NOTES:

1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

SEE SHEET C-3 FOR SEWER REHAB FROM MH-238 TO MH-237

EXIST MH-237
4'ø BRICK IN ROADWAY
DEPTH: 8.00'
E OUT: 10" CLAY
W. IN: 10" CLAY
S. IN: 8" CLAY

REHAB BY CIPP 816 LF
EXIST 10" GRAVITY SEWER
FROM MH-237 TO MH-99

SEE SHEET C-5 FOR SEWER REHAB FROM MH-99 TO MH-235

EXIST MH-99
4'ø BRICK IN ROADWAY
DEPTH: 7.83'
E OUT: 10" CLAY
N. IN: 8" CLAY
W. IN: 10" CLAY
SW. IN: 8" CLAY
S. IN: 6" CLAY

SEE SHEET C-3

SEE SHEET C-5

EAST ADAMS STREET

LOGAN STREET

MH-237
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

MH-99
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

DENOTES TYPICAL 5'X5' PATCH/ROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)

N

0 30 60

SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC
No. 5166
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
7-11-19
No. 21839
ANGELA BURGDORFF BRYAN

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SEWER REHABILITATION PLAN
EAST ADAMS STREET TO LOGAN STREET

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	SLD
JOB NUMBER	17-1007.21		
ISSUE DATE	JULY 2019		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-4

STEVE DUCHARME LOCATION R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\CDS\RIDGELAND CDBG CONSTRUCTION.DWG

SEE SHEET C-7

SEE SHEET C-8

SEE SHEET C-4

EXIST MH–200

EXIST MH–201
4'ø BRICK IN ROADWAY
DEPTH: 7.40'
E OUT: 10" CLAY
W. IN: 10" CLAY
S. IN: UNK CLAY

EXIST MH–231
4'ø BRICK IN ROADWAY
DEPTH: 6.85'
N. OUT: 12" CLAY
W. IN: 10" CLAY
S. IN: 10" CLAY

EXIST MH–99

EXIST MH–234
4'ø BRICK IN ROADWAY
DEPTH: 5.75'
N. OUT: 10" CLAY
W. IN: 10" CLAY
S. IN: 8" PVC

EXIST MH–235
4'ø PRECAST WITH CEMENTITIOUS LINING IN ROADWAY
DEPTH: 7.75'
E. OUT: 10" PVC/ CLAY
W. IN: 10" PVC/CLAY

SSMH #8
45.36'
RIM: 45.36'
IE 10 (IN) – 38.68
IE 8 (IN) – 38.51
IE 10 (OUT) – 38.75

S.C. HIGHWAY 336
E. MAIN STREET R/W VARIES

S.C. HIGHWAY 336
E. MAIN STREET R/W VARIES

EAST ADAMS STREET

SOUTH LOGAN STREET

BUCKNER ROAD

SIDEWALK

N/F DONA
TM#

REHAB BY CIPP 311 LF
EXIST 10" GRAVITY SEWER
FROM MH-201 TO MH-231

SEE SHEET C-8 FOR
SEWER REHAB FROM
MH-231 TO MH-232

REHAB BY CIPP 318 LF EXIST 10"
GRAVITY SEWER FROM MH-200
TO MH-201

MH-201
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

MH-231
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

REHAB BY CIPP 328 LF
EXIST 10" GRAVITY SEWER
FROM MH-234 TO MH-231

MH-234
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT.

REHAB BY CIPP 274 LF
EXIST 10" GRAVITY SEWER
FROM MH-235 TO MH-234

~25' 10" PVC REPAIR
EITHER SIDE MH–235

REHAB BY CIPP 326 LF
EXIST 10" GRAVITY SEWER
FROM MH-99 TO MH-235

MH-235
INSTALL URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT.

NOTES:

1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

DENOTES TYPICAL 5'X5' PATCH/ROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)

N

0 30 60

SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC
No. 5166
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
7-11-19
No. 21839
ANGELA BURGDORF BRYAN

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SEWER REHABILITATION PLAN
EAST ADAMS STREET AND EAST MAIN STREET

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N., JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-5

NOTES:

1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

DENOTES TYPICAL 5'X5' PATCH/ROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)

N

0 30 60

SOUTH CAROLINA FOUR WATERS ENGINEERING, INC No. 5166 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORF BRYAN 7-11-19 No. 21839

MH-198
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

EXIST MH-191
4'ø BRICK IN ROADWAY
DEPTH: 8.75'
E OUT: 10" CLAY
N. IN: 8" CLAY
W. IN: 8" CLAY

EXIST MH-198
4'ø BRICK IN ROADWAY
DEPTH: 8.67'
E OUT: 10" CLAY
N. IN: 8" CLAY
W. IN: 10" CLAY

EXIST MH-177

EXIST MH-48

N. LOGAN STREET

EAST WILSON STREET

HWY 17 – NORTH JACOB SMART BOULEVARD

REHAB BY CIPP 208 LF
EXIST 10" GRAVITY SEWER
FROM MH-191 TO MH-198

REHAB BY CIPP 566 LF
EXIST 10" GRAVITY SEWER
FROM MH-198 TO MH-177

MH-191
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

SEE SHEET C-7

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SEWER REHABILITATION PLAN
EAST WILSON STREET

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-6

STEVE DUCHARME LOCATION R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\CDS\RIDGELAND CDBG CONSTRUCTION.DWG

NOTES:

1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC
No. 5166
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
7-11-19
No. 21839
ANGELA B. BURGDORFF BRYAN

N

0 30 60

DENOTES TYPICAL 5'X5' PATCH/ROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)

SEE SHEET C-6 FOR SEWER REHAB FROM MH-198 TO MH-177

MH-200
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT.

SEE SHEET C-5 FOR SEWER REHAB FROM MH-200 TO MH-201

EXIST MH-200
4'ø BRICK IN ROADWAY
DEPTH: UNK
E OUT: 10" CLAY
N. IN: 10" CLAY
W. IN: 6"

EXIST MH-48
4'ø BRICK IN ROADWAY
DEPTH: 8.00'
S OUT: 10" CLAY
N. IN: 10" CLAY

SEE SHEET C-6

N. LOGAN STREET

SEE SHEET C-5

SOUTH LOGAN STREET

S.C. HIGHWAY 336
E. MAIN STREET R/W VARIES

NAIL FOUND
3/4" RBF
3/4" RBF

REHAB BY CIPP 254 LF
EXIST 10" GRAVITY
SEWER FROM MH-48
TO MH-200

REHAB BY CIPP 229 LF
EXIST 10" GRAVITY
GRAVITY SEWER FROM
MH-177 TO MH-48

MH-48
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

EXIST MH-177
4'ø BRICK IN ROADWAY
DEPTH: 6.75'
S OUT: 10" CLAY
N. IN: 8" CLAY
W. IN: 10" CLAY

MH-177
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

E. WILSON STREET

×53.2 ×52.9 ×50.8 ×51.3

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SEWER REHABILITATION PLAN NORTH LOGAN STREET

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-7

MH-229
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE RIM ELEVATION 40.3' (APPROXIMATELY 1' ABOVE EXISTING GRADE). INSTALL EXTERNAL RUBBER SEAL SYSTEM ON MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

MH-230
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE RIM ELEVATION 41.0' (APPROXIMATELY 1' ABOVE EXISTING GRADE). INSTALL EXTERNAL RUBBER SEAL SYSTEM ON MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

MH-228
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME. REPLACE MANHOLE COVER AND INSTALL HDPE MANHOLE INSERT.

REHAB BY CIPP 144 LF EXIST 12" GRAVITY SEWER FROM MH-232 TO MH-230

REHAB BY CIPP 215 LF EXIST 12" GRAVITY SEWER FROM MH-231 TO MH-232

REHAB BY CIPP 254 LF EXIST 12" GRAVITY SEWER FROM MH-229 TO MH-228

REHAB BY CIPP 211 LF EXIST 12" GRAVITY SEWER FROM MH-228 TO MH-227

REHAB BY CIPP 46 LF EXIST 12" GRAVITY SEWER FROM MH-230 TO MH-229

MH-232
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE RIM ELEVATION 43.0' (APPROXIMATELY 1' ABOVE EXISTING GRADE). INSTALL EXTERNAL RUBBER SEAL SYSTEM ON MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

E. MAIN STREET R/W VARIES
S.C. HIGHWAY 336
E. WILSON STREET 40' R/W

N/F PECOLIA S. MUNGIN JR. & JIMMY MUNGIN JR. TM# 063-26-38-001
N/F LISA D. LOWTHER TM# 063-26-38-012
N/F LUCY P. HALL & WILLIAM C. HALL TM# 063-27-37-006
JOHN P. KUSTER & CAROL A. KUSTER 063-26-38-011
N/F DONALD H. GARBADE JR. TM# 063-26-39-013
N/F DGC PROPERTIES LLC TM# 063-26-39-008
N/F CLIFTON P. SMITH & JUDY ANN SMITH TM# 063-26-39-009
N/F CAMILO ANDRES RODRIGUES TM# 063-26-39-010
N/F TRUST BUILDERS LLC TM# 063-26-39-011
N/F WILLIAM JOSEPH ROWELL JR. TM# 063-26-39-001
N/F LUCY P. HALL & WILLIAM C. HALL TM# 063-27-37-00

SSMH #8
RIM – 45.36'
IE 10 (IN) – 38.68
IE 8 (IN) – 38.51
IE 10 (OUT) – 38.75

EXIST MH-231

EXIST MH-232
4'ø PRECAST IN UNPAVED AREA
DEPTH: 6.28'
N OUT: 12" CLAY
S. IN: 12" CLAY
E. IN: (2) 6" CLAY & PVC

SSMH #7
RIM – 42.45'
IE (IN) – 36.48
IE (OUT) – 36.17
IE (IN) 6"– 38.17
IE (IN) 6"– 36.83

APPARENT 10" SEWER LINE

SSMH #6
RIM – 40.62'
IE (IN) – 34.72
IE (OUT) – 34.58

EXIST MH-230
4'ø BRICK IN UNPAVED AREA
DEPTH: 6.04'
N OUT: 12" CLAY
S. IN: 12" CLAY

SSMH #5
RIM – 39.77'
IE (IN) – 34.55
IE (OUT) – 34.47
IE (IN) 6"– 35.87

EXIST MH-229
4'ø BRICK IN UNPAVED AREA
DEPTH: 5.30'
N OUT: 12" CLAY
S. IN: 12" CLAY
E. IN: 6" CLAY

SSMH #4
RIM – 39.54'
IE (IN) – 32.86'
IE (OUT) – 32.80'

SDMH
RIM – 39.34'
IE 18 (IN) – 35.54
IE 18 (OUT) – 35.34

EXIST MH-228
4'ø BRICK IN SIDEWALK
DEPTH: 6.74'
N OUT: 12" CLAY
S. IN: 12" CLAY
W. IN: 6" CLAY

RESIDENCE
WETLAND
WETLAND LINE
SIDEWALK
SEE SHEET C-5
SEE SHEET C-9

0 30 60

TREE LEGEND:
LOK – LIVE OAK
LAOK – LAUREL OAK
WOK – WATER OAK
P – PINE
MAPLE – MAPLE
G – GUM
BG – BLACK GUM
PALM – PALMETTO TREE

DENOTES TYPICAL 5'X5' PATCH/ROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)

NOTES:
1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

SOUTH CAROLINA FOUR WATERS ENGINEERING, INC No. 5166 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORFF BRYAN 7-11-19 No. 21839

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SEWER REHABILITATION PLAN FROM EAST MAIN ST TO EAST WILSON ST

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	SLD
JOB NUMBER	17-1007.21		
ISSUE DATE	JULY 2019		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSON/VILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
C-8

TREE LEGEND:
LOK – LIVE OAK
LAOK – LAUREL OAK
WOK – WATER OAK
P – PINE
MAPLE – MAPLE
G – GUM
BG – BLACK GUM
PALM – PALMETTO TREE

N

0 30 60

SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC
No. 5166
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
7-11-19
No. 21839
ANGELA BURGDORFF BRYAN

MH-227
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE RIM ELEVATION 36.0' (APPROXIMATELY 1' ABOVE EXISTING GRADE). INSTALL EXTERNAL RUBBER SEAL SYSTEM ON MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

MH-226
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO MAINTAIN EXISTING RIM ELEVATION 32.8' (APPROXIMATELY 2' ABOVE EXISTING GRADE). INSTALL EXTERNAL RUBBER SEAL SYSTEM ON MANHOLE CHIMNEY AND FRAME. INSTALL HDPE MANHOLE INSERT. INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE AND URETHANE RUBBER SEALING SYSTEM FOR MANHOLE CHIMNEY AND FRAME.

MH-225
INSTALL CEMENTITIOUS MORTAR LINING IN MANHOLE. COORDINATE WORK WITH ANY CONTRACTOR ON-SITE AT JIMMY MIXSON WRF.

VERIFY PIPE MATERIAL FROM MH-226 TO MH-225. IF NOT CONTINUOUS PVC, REHAB BY CIPP 346 LF EXIST 12" GRAVITY SEWER FROM MH-226 TO MH-225

EXIST MH–227
4'ø PRECAST IN UNPAVED AREA
DEPTH: 6.38'
N OUT: 12" PVC
S. IN: 12" PVC

EXIST MH–225
4'ø PRECAST WITH TRASH BASKET AND HATCH IN UNPAVED AREA AT JIMMY MIXSON WRF
DEPTH: 5.68'
N OUT: UNK
S. IN: 12" PVC

SSMH #3
RIM – 34.85'
IE (IN) – 28.63'
IE (OUT) – 28.47'

SSMH #2
RIM – 32.80'
IE (IN) – 25.56'
IE (OUT) – 25.48'

SSMH #1
RIM (IN) – 32.05'
– 26.37'

EXIST MH–226
4'ø PRECAST IN UNPAVED AREA
DEPTH: 7.32'
N OUT: 12" PVC
S. IN: 12" PVC

SEE SHEET C-8

SEE SHEET C-8 FOR SEWER REHAB FROM MH-228 TO MH-227

VERIFY PIPE MATERIAL FROM MH-227 TO MH-226. IF NOT CONTINUOUS PVC, REHAB BY CIPP 335 LF EXIST 12" GRAVITY SEWER FROM MH-227 TO MH-226

N/F TOWN OF RIDGELAND
TM# 063–26–35–042

N/F MATTHEW E. LOGEE & JOHN DEAN
TM # 063–26–35–014

WETLAND
WETLAND LINE
WAT

JIMMY MIXSON WASTE WATER TREATMENT FACILITY
N/F TOWN OF RIDGELAND
TM# 063–31–01–001

TBM IN UTILITY POLE
ELEV – 31.95
TAKEN FROM PLAT BY RICHARD KESSLERING
PLAT BOOK 19 PAGE 423

NOTES:
1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
2. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
3. CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
7. CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND REQUIREMENTS. ALL WORK WITHIN WETLAND AREAS SHALL ADHERE TO REQUIREMENTS OF US ARMY CORPS OF ENGINEERS PERMIT. ALL WORK IN SCDOT RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH SCDOT ENCROACHMENT PERMIT AND APPROVED PAVING RESTORATION AND MOT REQUIREMENTS.

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

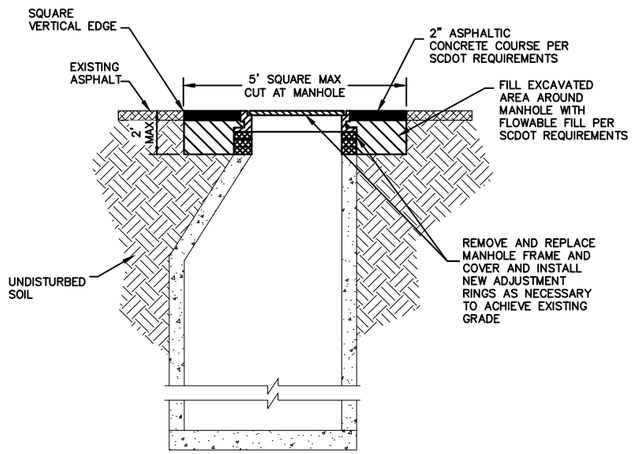
SEWER REHABILITATION PLAN
EASEMENT FROM EAST WILSON ST TO WRF

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB
DRAWN	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

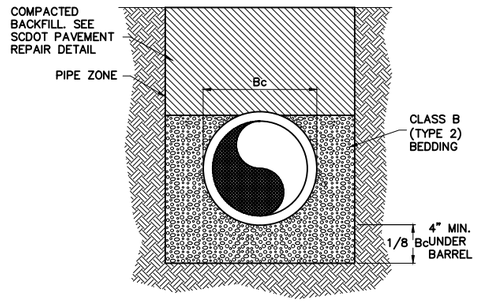
DRAWING NUMBER
C-9



SECTION

OPEN CUT SCDOT PAVEMENT REPAIR FOR LOW VOLUME ASPHALT AT MANHOLE

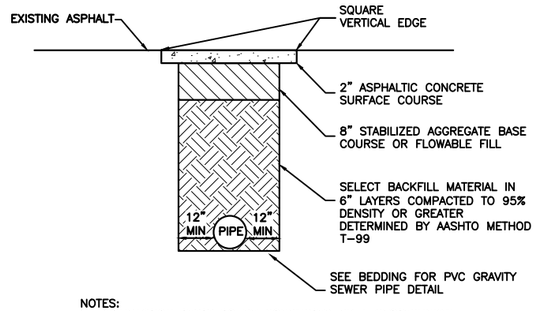
NOT TO SCALE



BEDDING FOR PVC GRAVITY SEWER PIPE

NOT TO SCALE

OPEN CUT REPAIR FOR LOW VOLUME ASPHALT

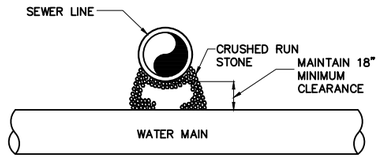


NOTES:

1. COMPACTION TESTS TO BE CONDUCTED BY A GEOTECHNICAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA AND SUBMITTED TO THE TOWN AND SCDOT FOR REVIEW AND APPROVAL PRIOR TO PAVING. TESTING RESULTS SHALL BE PROVIDED DIRECTLY TO SCDOT BY TESTING LAB.
2. COMPACTION TESTS SHALL BE CONDUCTED ON EACH SIDE OF THE MANHOLE (2 TOTAL) ABOVE THE PIPE INSTALLATION AND AS REQUIRED BY SCDOT FOR THE STRUCTURE. TESTS TO BE CONDUCTED BY A GEOTECHNICAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA AND SUBMITTED TO THE TOWN AND SCDOT FOR REVIEW AND APPROVAL PRIOR TO PAVING

SCDOT PAVEMENT REPAIR

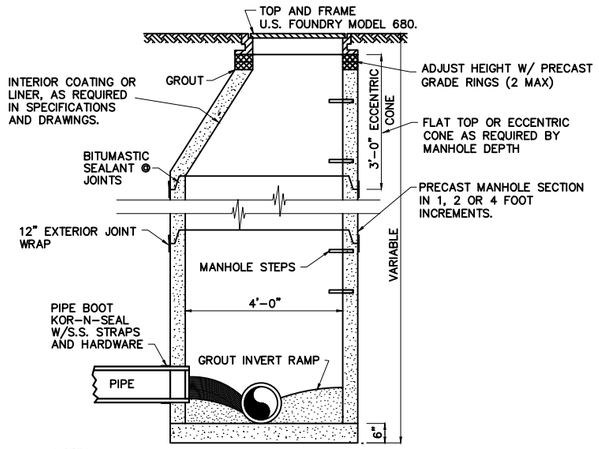
NOT TO SCALE



NOTE:
FULL JOINT OF DUCTILE IRON PIPE FOR BOTH WATER AND SEWER TO BE CENTERED AT CROSSING.

SEWER CROSSING ABOVE WATER LINE DETAIL

NOT TO SCALE



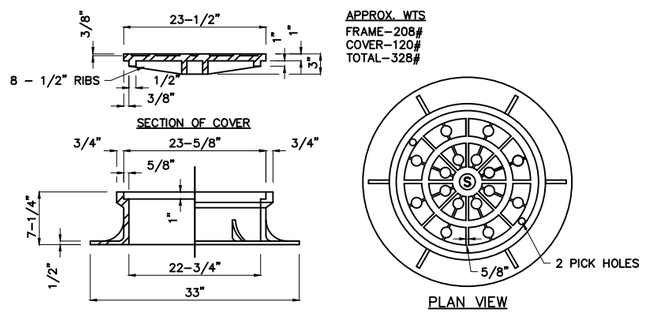
NOTES:

1. GROUT ALL JOINTS INSIDE AND OUTSIDE USING NON-SHRINK GROUT.
2. INSTALL INTERIOR COATING OR LINER AS REQUIRED IN THE SPECIFICATIONS AND DRAWINGS.
3. INSTALL SEAL WRAP EXTERIOR JOINT SEALER AS MANUFACTURED BY MAR-MAC.

SECTION

PRECAST SEWER MANHOLE

NOT TO SCALE



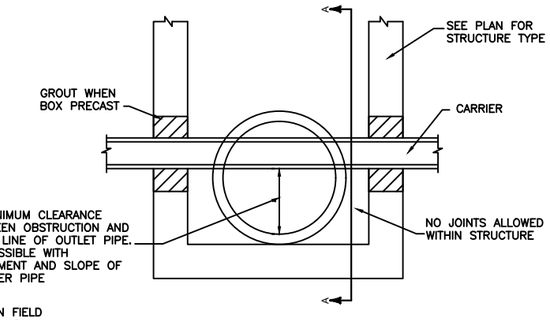
HALF SECTION FRAME HALF ELEVATION FRAME

NOTES:

1. AS MANUFACTURED U.S. FOUNDRY MODEL 680. PROVIDE WITH 2 COATS OF BITUMASTIC PAINT.
2. MACHINED BEARING SURFACES BETWEEN COVER AND FRAME.

STANDARD SEWER MANHOLE FRAME & COVER

NOT TO SCALE



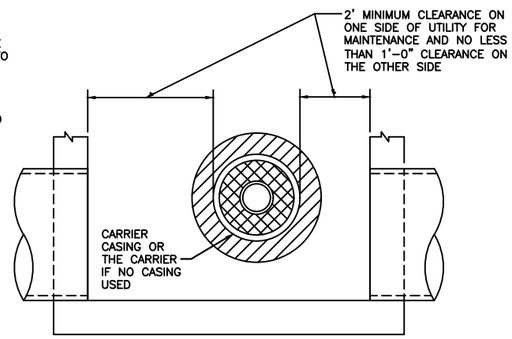
SECTION LONGITUDINAL TO CARRIER PIPE

UTILITY CONFLICT CONDITION 1
(NON-PRESSURE OR NON-FLUID CARRIER)

NOTES

1. THESE DETAILS ARE FOR CONSTRUCTION FIELD EXPEDIENCY TO RESOLVE UTILITY CONFLICTS THAT CANNOT BE REMEDIED BY RELOCATION. FOR CONFLICTS DETERMINED DURING DESIGN, USE THE CONSTRUCTION SHOP DRAWINGS FOR STRUCTURE DETAILS.
2. CONCRETE USED IN CONFLICT STRUCTURES SHALL BE AS SPECIFIED IN ASTM C478. 4000 PSI MAY BE USED IN LIEU OF CLASS I CONCRETE.
3. MAXIMUM OPENING FOR PIPE SHALL BE THE PIPE OD PLUS 6". MORTAR USED TO SEAL THE PIPE INTO THE OPENING WILL BE OF SUCH MIX THAT SHRINKAGE WILL NOT CAUSE LEAKAGE INTO OR OUT OF THE STRUCTURE.
4. IF THE CONFLICT STRUCTURE IS ROUND OR THERE ARE MULTIPLE INLET OR OUTLET PIPES, THEN THE WALL SECTION SHOULD BE REVIEWED FOR STRENGTH.

DESIGNER'S NOTES:
"SUMPED" CONFLICT MANHOLES SHALL NOT BE USED UNLESS THE SYSTEM IS HYDRAULICALLY DESIGNED TO ACCOUNT FOR THE HEADLOSS GENERATED IF THE SUMP IS COMPLETELY BLOCKED



SECTION A-A

CONFLICT DRAINAGE MANHOLE CRITERIA DETAIL

NOT TO SCALE

SOUTH CAROLINA — FOUR WATERS ENGINEERING, INC No. 5166 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — LICENSED PROFESSIONAL ENGINEER — ANGELA BURGDORF BRYAN — 7-11-19 — No. 21839

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

CONSTRUCTION DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER

D-1

REFERENCES

NATIONAL DOCUMENTS

AASHTO M 235

SCDOT DOCUMENTS

QUALIFIED PRODUCT LIST 14

RELATED DRAWINGS & KEYWORDS

719-505-01, 719-505-03, 719-420-00

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 8858 EMILY SYLVESTER EARGLE, II

SIGNATURE

MARCH 3, 2009

DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	3/2009	DSO	GENERAL REVISIONS
0	3/2008	DSO	GENERAL REVISIONS

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

DRAINAGE ACCESS MANHOLE HEAVY DUTY DRAINAGE STRUCTURE

719-505-01

EFFECTIVE LETTING DATE | MAY 2009

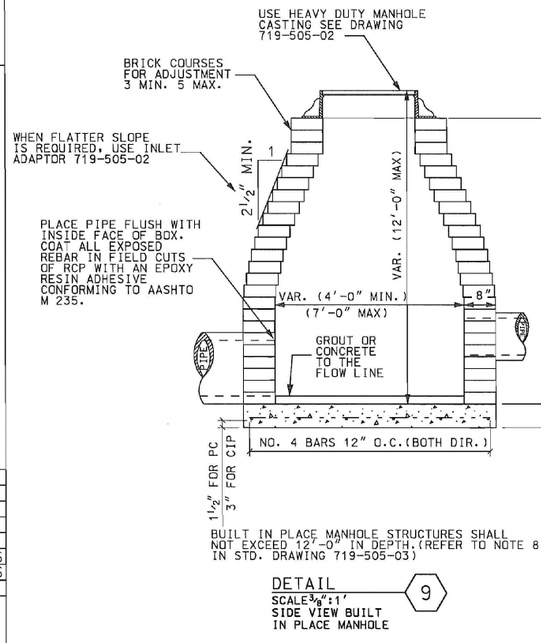
SEE QUALIFIED PRODUCT LIST 14 FOR MANUFACTURERS OF PRECAST ITEMS.

BUILT IN PLACE

① BOTTOM SLAB (CIP VARIABLE OR PC 100" DIA.X 6")
AND
② BRICK WALLS (8") (MAX 12' DEPTH)

PRECAST

③ 48" DIA. CIRCULAR DRAINAGE BASE (CONFORMING TO STD. DRAWING 719-420-00)
AND
④ 48" DIA. CIRCULAR RISER (CONFORMING TO STD. DRAWING 719-420-00)
AND
⑤ MANHOLE PC ECCENTRIC CONE

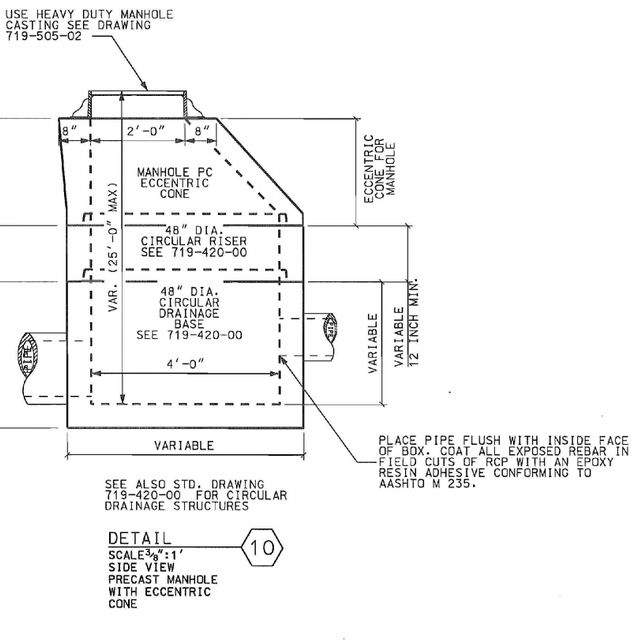


BUILT IN PLACE OPTION	PRECAST OPTION
	⑤ ECCENTRIC CONE
② BRICK	④ 48" DIA. PC CIRCULAR RISER (IF NEEDED)
	③ 48" DIA. PC CIRCULAR DRAINAGE BASE
① MANHOLE BOTTOM SLAB	

BUILT IN PLACE MANHOLE STRUCTURES SHALL NOT EXCEED 12'-0" IN DEPTH.(REFER TO NOTE 8 IN STD. DRAWING 719-505-03)

DETAIL 9
SCALE 3/8":1'
SIDE VIEW BUILT IN PLACE MANHOLE

FOR NOTES AND MANHOLE FRAME AND COVER DETAILS SEE STD. DRAWINGS 719-505-03 AND 719-505-04



SEE ALSO STD. DRAWING 719-420-00 FOR CIRCULAR DRAINAGE STRUCTURES

DETAIL 10
SCALE 3/8":1'
SIDE VIEW
PRECAST MANHOLE WITH ECCENTRIC CONE

TABLE 719-505A PRECAST ITEMS
MANHOLE PC BOTTOM SLAB (100" DIA. X 6")
MANHOLE PC ECCENTRIC CONE
SEE ALSO 719-505-03 & 719-420-00

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION FOUR WATERS ENGINEERING, INC No. 5166

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORFF BRYAN 7-11-19 No. 21839

Signature
Angela B. Bryan, P.E.
SC Professional Eng #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

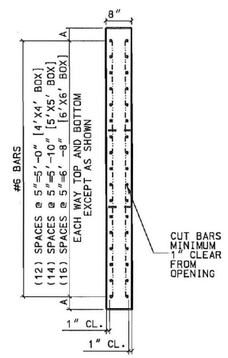
SCDOT CONSTRUCTION DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	SLD
JOB NUMBER		17-1007.21	
ISSUE DATE		JULY 2019	
ISSUE		100%	

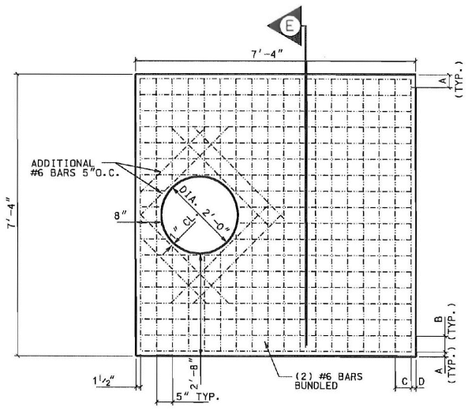
FOUR WATERS ENGINEERING
324 4th AVE N, JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-2



SECTION
SIDE ELEVATION
MANHOLE INLET
ADAPTOR

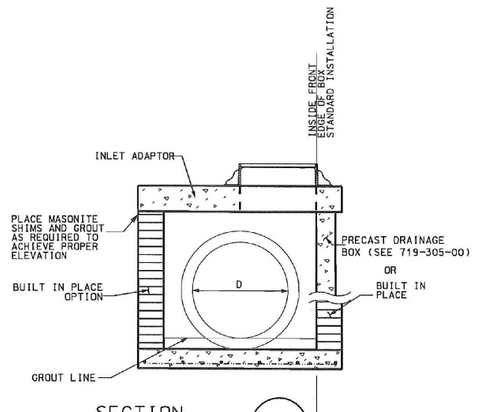
E



DETAIL
MANHOLE INLET
ADAPTOR FOR
6'X6' BOX
(88"X88"X8")

8

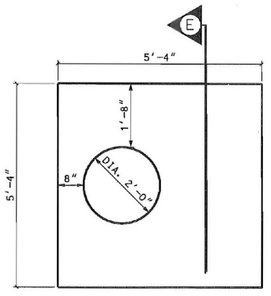
A=1½"
B=5"
C=5"
D=1½"



SECTION
SIDE ELEVATION
MANHOLE INLET
ADAPTOR INSTALLED

F

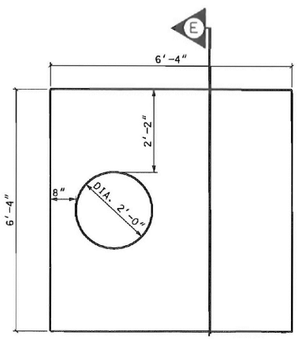
FRONT INSIDE EDGE OF BOX STANDARD INSTALLATION (SEE NOTE 3)



DETAIL
MANHOLE INLET
ADAPTOR FOR
4'X4' BOX
(64"X64"X8")

5

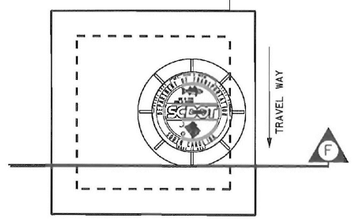
A=1½"
B=3"
C=5"
D=2½"



DETAIL
MANHOLE INLET
ADAPTOR FOR
5'X5' BOX
(76"X76"X8")

6

A=1½"
B=4"
C=3"
D=1½"



DETAIL
INSTALLED
MANHOLE INLET
ADAPTOR

7

TABLE 719-505D	
STD. DRAWINGS OF INLET ADAPTORS THAT HAVE SIMILAR STRUCTURAL DESIGN	
CB TYPE 1	719-001-04
CB TYPE 9	719-009-04
DI 24"X24"	719-105-02
DI 24"X36"	719-105-03
MANHOLE	719-505-03
JB SHALLOW	719-330-02

TABLE 719-505C PRECAST ITEMS
MANHOLE INLET ADAPTOR FOR 4X4 BOX (64"X64"X8")
MANHOLE INLET ADAPTOR FOR 5X5 BOX (76"X76"X8")
MANHOLE INLET ADAPTOR FOR 6X6 BOX (88"X88"X8")
SEE ALSO STD. DRAWING 719-505-01 & 719-505-02

THIS DRAWING IS NOT TO SCALE

NOTES:

1. ALL MATERIALS, DESIGN, MANUFACTURE, TESTING AND PRODUCT PERFORMANCE FOR PRECAST CONCRETE COMPONENTS AND ACCESORIES SHALL BE IN ACCORDANCE WITH AASHTO M 199 AND SECTION 719 OF THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).

2. FOR PRECAST CONSTRUCTION A MINIMUM OF CLASS 4000P CONCRETE SHALL BE USED.

3. MANHOLE INLET ADAPTORS ARE DESIGNED TO BE REVERSIBLE AND CAN BE ROTATED UP TO 180 DEGREES TO SATISFY FIELD CONDITIONS. ENGINEER SHALL NOTE BOX POSITION ON FINAL PLANS WHEN DIFFERENT FROM STANDARD.

4. ALL MANHOLE INLET ADAPTOR SLABS ARE TO BE A MINIMUM OF 8 INCHES THICK WITH THE REINFORCING STEEL PLACED RELATIVE TO THE CATCH BASIN OPENING.

5. REINFORCING STEEL SHALL BE ASTM A-706, LOW-ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT, GRADE 60.

6. USE OF INLET ADAPTOR SLABS ON EXISTING BOXES MUST BE APPROVED BY THE ENGINEER BEFORE INSTALLATION.

7. FOR USE ON NEW BUILT IN PLACE BRICK BOXES THE MAXIMUM OUTSIDE DIMENSIONS OF THE BOX SHALL NOT EXCEED THE OUTSIDE DIMENSIONS OF THE ADAPTOR SLAB.

8. THE ADAPTOR SLAB AS SHOWN IS DESIGNED FOR HS 25 LIVE LOAD.

9. CHAIRS ARE TO BE USED TO POSITION THE STEEL MATS IN THE ADAPTOR SLAB.

10. RISERS MUST BE PLACED BETWEEN BOX AND INLET ADAPTOR AND MAY NOT BE PLACED BETWEEN INLET ADAPTOR AND MANHOLE FRAME.

11. SEE DRAWINGS IN SECTION 719-305-01 AND 719-505-02 OF THE STANDARD DRAWINGS FOR DETAILS ON MANHOLES.

12. SEE SCDOT STANDARD DRAWINGS 719-305-00 AND 719-310-00 FOR APPROPRIATE BOX SIZE BASED ON PIPE DIAMETERS REQUIRED.

13. SUPPLY PRECAST CONCRETE COMPONENTS FOR DRAINAGE ITEMS AT EACH LOCATION FROM A SINGLE SOURCE PRECAST MANUFACTURER THAT HAS BEEN INSPECTED AND APPROVED BY THE MATERIALS AND RESEARCH ENGINEER. SUPPLY ALL INTERCHANGEABLE PRECAST PARTS ON ENTIRE PROJECT FROM A SINGLE SOURCE MANUFACTURER LISTED ON QUALIFIED PRODUCT LIST 14 UNLESS APPROVED BY RCE. ITEMS FROM MULTIPLE MANUFACTURERS SHOULD NOT BE INSTALLED IN INDIVIDUAL LOCATIONS.

14. THE USE OF PRECAST UNITS WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF OBTAINING SATISFACTORY INSTALLATIONS. SEE STANDARD DRAWINGS FOR PRECAST CONCRETE DRAINAGE BOX OR STRUCTURE FOR ADDITIONAL DETAILS AND SPECIFICATIONS.

15. LIFT HOLES AND/OR DEVICES MAY BE PLACED AS NECESSARY. ALL LIFT HOLES SHALL BE GROUTED SHUT PRIOR TO COMPLETION OF THE INSTALLATION. ALL LIFTING METHODS MUST MEET OSHA REGULATIONS.

16. THE CONTRACTOR SHALL USE MANUFACTURERS LISTED ON QUALIFIED PRODUCT LIST 14 FOR PRECAST ITEMS ON THIS DRAWING. PRECAST MANUFACTURER SHALL FOLLOW QUALIFIED PRODUCT POLICY 14 BEFORE SUPPLYING THIS ITEM ON SCDOT PROJECTS.

17. PRECAST ITEMS MODIFIED FROM THIS STANDARD SHALL NOT BE LISTED ON QUALIFIED PRODUCT LIST 14. HOWEVER, CONTRACTOR MAY SUBMIT DESIGN DRAWINGS AND CALCULATIONS TO THE ENGINEER OF RECORD FOR REVIEW.

18. JOINTS BETWEEN INSTALLED PIECES AND PRECAST ITEMS TO BE PLACED SHALL BE SEALED WITH A ½" GROUT LIFT OR AN APPROPRIATE PLASTIC PREFORMED GASKET (FROM QUALIFIED PRODUCT LIST 13.)

19. THE CONTRACT UNIT PRICE FOR MANHOLE WITH STANDARD BOX SHALL INCLUDE THE COST OF FURNISHING ALL MATERIALS AND WORK INCIDENTAL TO THE CONSTRUCTION OF THE STRUCTURE COMPLETE IN PLACE AS SHOWN INCLUDING INLET ADAPTOR, MANHOLE SYSTEM, AND SPECIFIED DRAINAGE BOX IN ACCORDANCE WITH THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION) AND THIS STANDARD DRAWING.

20. PRECAST CONCRETE CIRCULAR STRUCTURES (AS SHOWN ON 719-420-00) ARE REQUIRED FOR THE FOLLOWING APPLICATIONS UNLESS PROHIBITED BY THE PLANS OR SPECIAL PROVISIONS.

(a) ON DRAINAGE STRUCTURES WITH A DEPTH EQUAL TO OR GREATER THAN 12 FEET.

(b) ON DRAINAGE STRUCTURES WHERE THE FLOW LINE ELEVATION OF THE INLET PIPE IS EQUAL TO OR HIGHER THAN THE INSIDE TOP (SOFFIT) OF THE OUTLET PIPE.

(c) AS REQUIRED BY THE PROJECT PLANS.

21. THE PAY ITEM SHALL BE:

MANHOLE WITH STANDARD 4'X4'BOX_____EA.
MANHOLE WITH STANDARD 5'X5'BOX_____EA.
MANHOLE WITH STANDARD 6'X6'BOX_____EA.
MANHOLE WITH MODIFIED BOX NO.(_)_____EA.

REFERENCES

NATIONAL DOCUMENTS

AASHTO M 199, ASTM A 706

SCDOT DOCUMENTS

QUALIFIED PRODUCT LIST 13,
QUALIFIED PRODUCT LIST 14

RELATED DRAWINGS & KEYWORDS

719-505-01 TO 719-505-03,
719-001-04, 719-009-04,
719-105-02, 719-105-03,
719-305-00, 719-310-00,
719-330-02, 719-420-00

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 8858 EDWIN SYLVESTER EAGLE, III

SIGNATURE

MARCH 3, 2009
DATE

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
6				
5				
4				
3				
2				
1	3/2009	DSO		GENERAL REVISIONS
0	3/2008	DSO		GENERAL REVISIONS
#	DATE	CHK		DESCRIPTION

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

DRAINAGE ACCESS
MANHOLE
HEAVY DUTY
INLET ADAPTOR

719-505-02

EFFECTIVE LETTING DATE | MAY 2009

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC
No. 5166
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
7-11-19
No. 21839
ANGELA BURGDORFF BRYAN

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SCDOT MOT DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-3

STEVE DUCHARME LOCATION R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\CDS\RIDGELAND CDBG CONSTRUCTION.DWG

REFERENCES

NATIONAL DOCUMENTS

ASTM C55, ASTM A706, AASHTO M55
AASHTO M221, AASHTO M105, AASHTO M306

SCDOT DOCUMENTS

QUALIFIED PRODUCT LIST 14,
QUALIFIED PRODUCT LIST 13

RELATED DRAWINGS & KEYWORDS

719-420-00, 719-550-00

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 8858 EDWIN SYLVESTER EARGLE, II

SIGNATURE

MARCH 2, 2009
DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	3/2009	DSO	GENERAL REVISIONS
0	3/2008	DSO	GENERAL REVISIONS

SCDOT

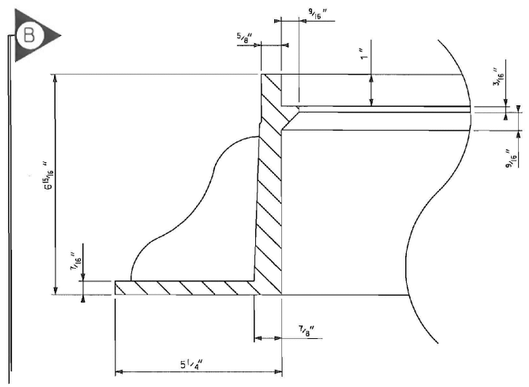
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

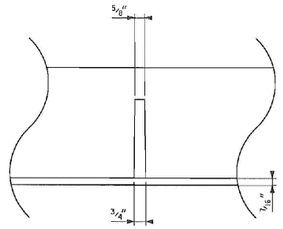
DRAINAGE ACCESS MANHOLE HEAVY DUTY CASTING

719-505-03

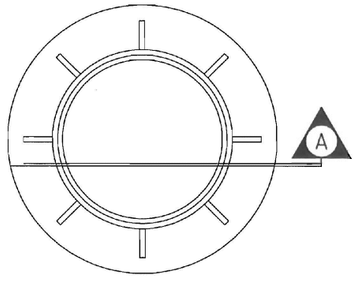
EFFECTIVE LETTING DATE | MAY, 2009



DETAIL 2
SCALE 3":1'
MANHOLE
FRAME DETAIL

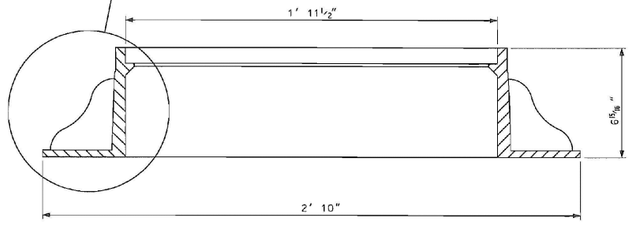


SECTION B
SCALE 1.5":1'
MANHOLE
FRAME
STIFFENER



DETAIL 1
SCALE 3":1'
PLAN VIEW
MANHOLE
FRAME

SEE DETAIL 2



SECTION A
SCALE 1.5":1'
FRONT ELEVATION
MANHOLE FRAME

NOTES:

1. FOR BUILT IN PLACE CONSTRUCTION OF THE MANHOLE, EITHER BRICK MASONRY (WALLS ONLY) OR CLASS 3000 CONCRETE MAY BE USED. FOR PRECAST CONSTRUCTION, A MINIMUM OF CLASS 4000P CONCRETE SHALL BE USED (SEE STD. DRAWING 719-420-00).

2. BRICK WALLS ARE TO BE 8" THICK. CONCRETE BRICK AND SIMILAR SOLID UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 55, GRADE S-II.

3. CORBELLING (RACKING) OF BRICK MASONRY FOR MANHOLES SHALL BE AT A MIN. RATE OF 2.5:1.

4. THE BOTTOM SLAB OF THE BOX SHALL BE A MINIMUM OF 6" THICK REINFORCED CONCRETE (CLASS 3000 OR 4000P) CONCRETE WITH A REINFORCING STEEL AREA OF 0.20 SQUARE INCHES PER FOOT. WIRE MESH MAY BE USED IN LIEU OF STEEL BARS PROVIDED A MINIMUM OF 0.20 SQUARE INCHES PER FOOT IS MET.

5. MORTAR SHALL BE TYPE S OR M.

6. REINFORCING STEEL SHALL BE ASTM A-706, LOW-ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT, GRADE 60. WIRE MESH SHALL CONFORM TO AASHTO M 55 AND M 221.

7. SEE STANDARD DRAWING 719-550-00 FOR STEPS, WHICH ARE REQUIRED WHEN STRUCTURE DEPTH EXCEEDS 4'-6".

8. SEE STANDARD DRAWINGS 719-420-00 AND 719-425-00 FOR DEPTHS GREATER THAN 12'. PRECAST CONCRETE CIRCULAR DRAINAGE STRUCTURES ARE REQUIRED WHEN THE DEPTH FROM THE TOP OF THE DRAINAGE BOX BOTTOM SLAB TO THE TOP OF THE GROUND EXCEEDS 12'-0".

9. LOCATION AND SIZE OF PIPES ARE SITE SPECIFIC (SEE DRAINAGE PLANS). THE BOTTOM OF THE CATCH BASIN IS TO BE GROUTED TO THE LOWEST FLOW LINE ELEVATION OF ALL PIPES. IF BOTTOM SLAB IS CAST IN PLACE WITH PIPES INSTALLED, BOTTOM SLAB THICKNESS MUST BE ACHIEVED BEYOND PIPE OUTSIDE DIAMETER.

10. FOR CONCENTRIC AND ECCENTRIC CONES REFER TO STD. DRAWINGS 719-420-00.

11. CASTINGS SHALL CONFORM TO AASHTO M 105, CLASS 35 B. CASTING SHALL MEET LOAD TEST OF AASHTO M 306.

12. CASTINGS SHALL BE MANUFACTURED SO AS TO PREVENT THE COVER FROM RATTLING UNDER TRAFFIC.

13. ONLY ONE VENT HOLE (1" DIA.) SHALL BE MANUFACTURED IN COVER WITH 2 PICK HOLES (MAX 1" DIA.).

14. ALTERNATE COVER FACES THAT MEET THE ABOVE SPECIFICATION ARE ACCEPTABLE. MANHOLE SHALL BE LINED UP WITH THE INTERIOR OF THE BOX AS SHOWN.

15. ALL MANUFACTURING PROCESSES FOR THE MANHOLE COVER AND RING MUST OCCUR IN THE UNITED STATES.

16. THE CONTRACT UNIT PRICE FOR MANHOLES SHALL INCLUDE THE COST OF FURNISHING ALL MATERIALS (BUILT IN PLACE OR PRECAST) AND WORK INCIDENTAL TO THE CONSTRUCTION OF THE STRUCTURE COMPLETE IN PLACE AS SHOWN IN ACCORDANCE WITH THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).

17. THE USE OF PRECAST UNITS WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF OBTAINING SATISFACTORY INSTALLATIONS. SEE STANDARD DRAWINGS FOR PRECAST CONCRETE DRAINAGE STRUCTURE FOR ADDITIONAL DETAILS AND SPECIFICATIONS.

18. LIFT HOLES AND/OR DEVICES MAY BE PLACED AS NECESSARY. ALL LIFT HOLES SHALL BE GROUTED SHUT PRIOR TO COMPLETION OF THE INSTALLATION ALL LIFTING METHODS MUST MEET OSHA REGULATIONS.

19. THE CONTRACTOR SHALL USE A SINGLE SOURCE MANUFACTURER LISTED ON QUALIFIED PRODUCT LIST 14 FOR PRECAST ITEMS ON THIS DRAWING.

20. PRECAST MANUFACTURER MUST MEET ALL OTHER REQUIREMENTS OF QUALIFIED PRODUCT POLICY 14.

21. PRECAST ITEMS MODIFIED FROM THIS STANDARD SHALL NOT BE LISTED ON QUALIFIED PRODUCT LIST 14. HOWEVER, CONTRACTION MAY SUBMIT DESIGN DRAWINGS AND CALCULATIONS TO THE ENGINEER OF RECORD FOR REVIEW.

22. JOINTS BETWEEN INSTALLED PIECES AND PRECAST ITEMS TO BE PLACED SHALL BE SEALED WITH A ½" GROUT LIFT OR AN APPROPRIATE PLASTIC PREFORMED GASKET (FROM QUALIFIED PRODUCT LIST 13.)

PRECAST INSTALLATION NOTES:

23. BED SHALL BE PREPARED AND COMPACTED FOR PRECAST DRAINAGE STRUCTURE AS REQUIRED BY SCDOT STANDARD SPECIFICATIONS FOR PRECAST ITEMS. ELEVATION OF BEDDING MATERIAL SHALL BE APPROPRIATE TO ACCOMMODATE ELEVATION OF ALL PIPES AND REQUIRED TOP ELEVATION.

24. PLACE AND LEVEL PRECAST CIRCULAR DRAINAGE STRUCTURE.

25. PIPES SHALL BE INSTALLED AND GROUTED IN PLACE.

26. PIPES AND CIRCULAR DRAINAGE STRUCTURE SHALL BE BACKFILLED AND COMPACTED AS REQUIRED BY SCDOT STANDARD SPECIFICATIONS (LATEST EDITION).

27. ANY LOCATION WHERE THE ABOVE REQUIREMENTS CANNOT BE MET SHALL BE COMPLETED USING CAST IN PLACE MATERIALS MEETING THE REQUIREMENTS OF THIS STANDARD DRAWING. ANY ADDITIONAL MATERIALS OR COSTS ASSOCIATED WITH THE USE OF PRECAST SHALL BE PAID FOR BY THE CONTRACTOR AND MAY NOT BE CHARGED TO SCDOT.

28. PRECAST CONCRETE CIRCULAR STRUCTURES (AS SHOWN ON 719-420-00) ARE REQUIRED FOR THE FOLLOWING APPLICATIONS UNLESS PROHIBITED BY THE PLANS OR SPECIAL PROVISIONS.

(a) ON DRAINAGE STRUCTURES WITH A DEPTH EQUAL TO OR GREATER THAN 12 FEET.

(b) ON DRAINAGE STRUCTURES WHERE THE FLOW LINE ELEVATION OF THE INLET PIPE IS EQUAL TO OR HIGHER THAN THE INSIDE TOP (SOFFIT) OF THE OUTLET PIPE.

(c) AS REQUIRED BY THE PROJECT PLANS.

29. THE PAY ITEM SHALL BE:
MANHOLE_____EA

SOUTH CAROLINA FOUR WATERS ENGINEERING, INC No. 5166 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORF BRYAN
7-11-19
No. 21839

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

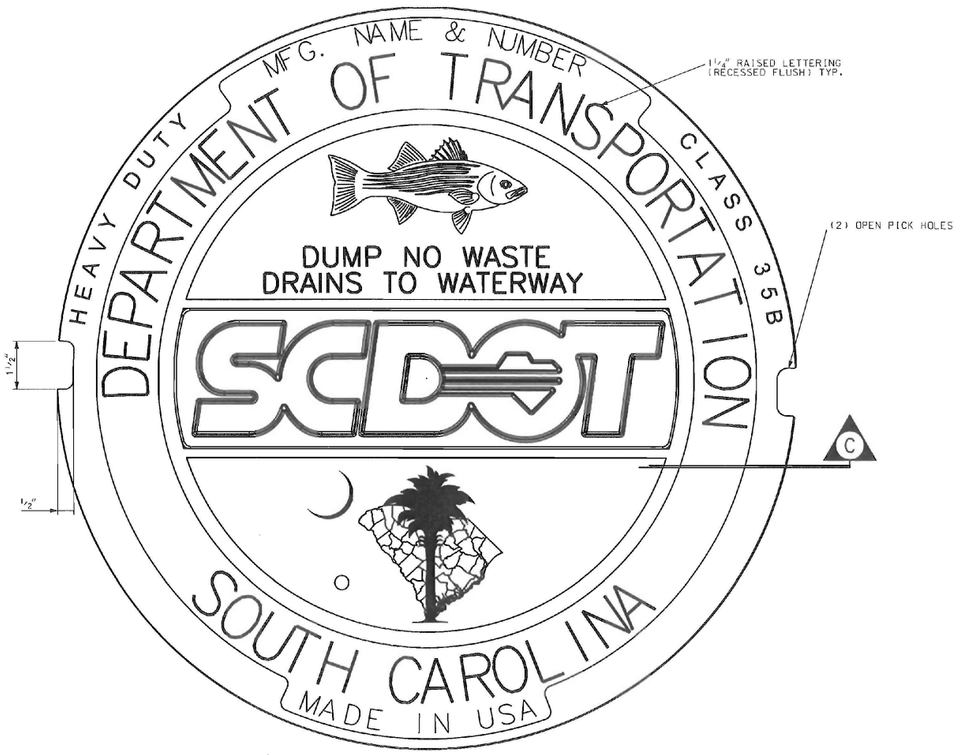
SCDOT MOT DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

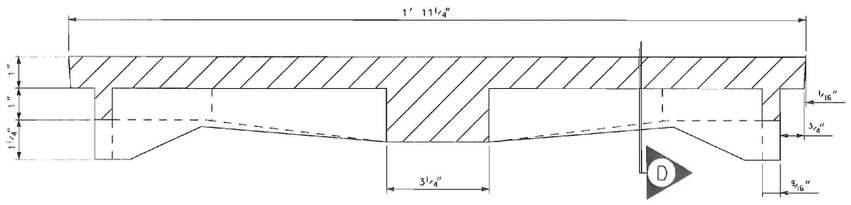
DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-100721
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 4th AVE N, JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

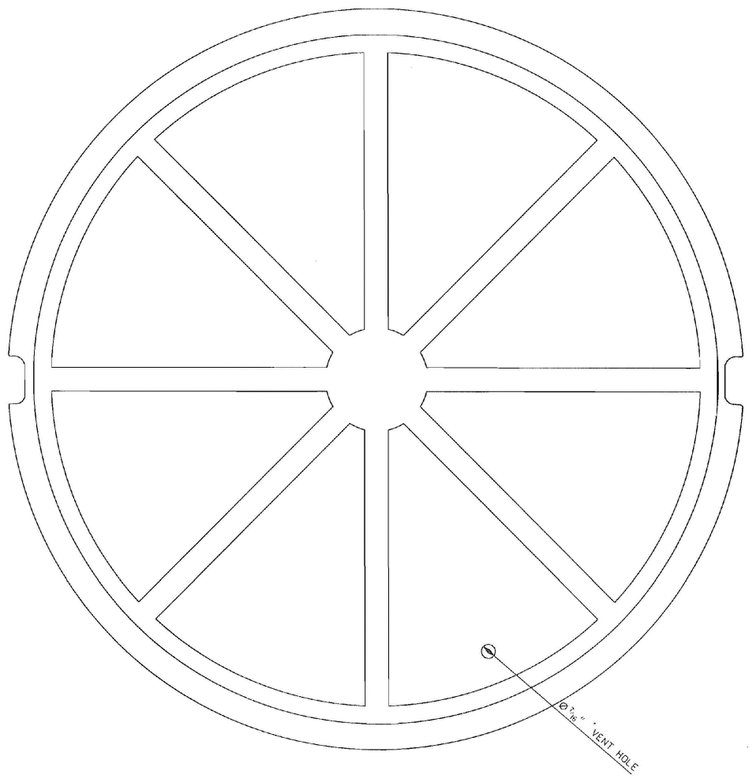
DRAWING NUMBER
D-4



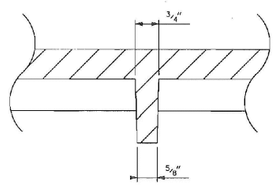
DETAIL 3
SCALE 3"=1'
PLAN VIEW
MANHOLE
COVER



SECTION C
SCALE 3"=1'
FRONT ELEVATION
MANHOLE COVER



DETAIL 4
SCALE 3"=1'
BOTTOM VIEW
MANHOLE
COVER



SECTION D
SCALE 3"=1'
REINFORCING
TIN DETAIL

FOUR WATERS ENGINEERING, INC No. 5166 CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA

7-11-19
SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA BURGDORFF BRYAN

REFERENCES

NATIONAL DOCUMENTS
ASTM C55, ASTM A706, AASHTO M55
AASHTO M221, AASHTO M105, AASHTO M306

SCDOT DOCUMENTS
QUALIFIED PRODUCT LIST 14,
QUALIFIED PRODUCT LIST 13

RELATED DRAWINGS & KEYWORDS
719-420-00, 719-550-00

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 21242 JAMES W. KENDALL, JR.

James W. Kendall Jr.
SIGNATURE

AUGUST 23, 2012
DATE

#	DATE	CHK	DESCRIPTION
5			
4			
3	8/2012	DSO	DETAIL 4 NEW DIMENSION
2	3/2010	DSO	GENERAL REVISIONS
1	3/2009	DSO	GENERAL REVISIONS
0	3/2008	DSO	GENERAL REVISIONS

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

DRAINAGE ACCESS
MANHOLE
HEAVY DUTY
CASTING

719-505-04
EFFECTIVE LETTING DATE | JAN., 2013

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SCDOT MOT DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	SLD
JOB NUMBER	17-1007.21		
ISSUE DATE	JULY 2019		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N, JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-5

STEVE DUCHARME LOCATION R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\CDES\RIDGELAND CDBG CONSTRUCTION.DWG

REFERENCES

NATIONAL DOCUMENTS

AASHTO M199, AASHTO M55, AASHTO M, ASTM A706

SCDOT DOCUMENTS

SECTION 718 SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, QUALIFIED PRODUCT LIST 14

RELATED DRAWINGS & KEYWORDS

719-550-00, 719-425-00

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER EDWIN SYLVESTER EARGLE, III NO. 8858

SIGNATURE

MARCH 2, 2009

DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	3/2009	KNB	REVISED TABLE B
0	3/2008	DSO	GENERAL REVISIONS

SCDOT

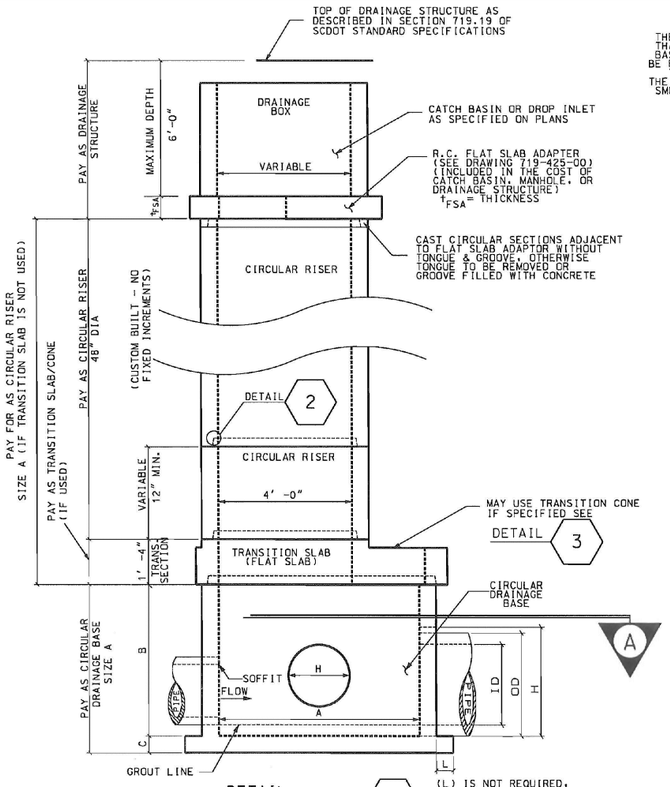
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

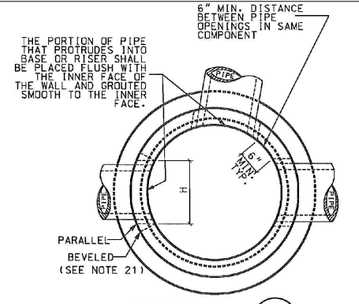
DRAINAGE SUBSTRUCTURE CIRCULAR DRAINAGE BASE AND RISER

719-420-00

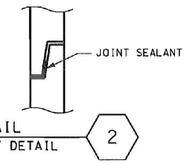
EFFECTIVE LETTING DATE | MAY, 2009



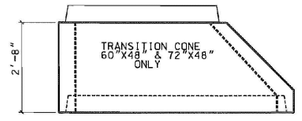
DETAIL 1
CIRCULAR DRAINAGE STRUCTURE WITH TRANSITION SLAB, RISERS, AND CATCH BASIN



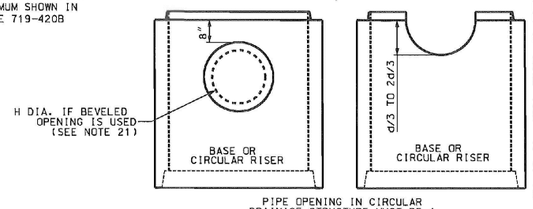
SECTION A
PLAN VIEW CIRCULAR DRAINAGE BASE



DETAIL 2
JOINT DETAIL



DETAIL 3



PIPE OPENING IN CIRCULAR DRAINAGE STRUCTURE MUST BE A MINIMUM OF 8" FROM TOP OF BOX UNLESS TOP OF THE CIRCULAR DRAINAGE STRUCTURE IS IN THE MIDDLE OF PIPE THIRD.

DETAIL 4
PIPE PLACEMENT

TABLE 719-420B

RCP INSIDE DIA. (ID)	MAX OUTSIDE DIA. (OD)	MINIMUM OPENING (H)	MINIMUM REQUIRED DRAINAGE BASE DIA. (A)	DRAINAGE BASE (PAY HEIGHT) (**NOTE)	BOTTOM THICKNESS (C)	(L) MAX
15"	21"	24"	48"	48"	6"	6"
18"	24½"	28"	48"	48"	6"	6"
24"	31½"	34"	48"	48"	6"	6"
30"	38½"	42"	60"	60"	8"	8"
36"	45½"	49"	60"	60"	8"	8"
42"	52½"	56"	72"	72"	8"	8"
48"	59½"	64"	72"	72"	8"	8"
54"	66½"	71"	84"	80"	8"	8"
60"	73½"	78"	96"	88"	8"	8"
66"	80½"	85"	120"	96"	10"	10"
72"	87½"	92"	120"	96"	10"	10"

** THE ADDITIONAL HEIGHT OF BASE ABOVE "BASE PAY HEIGHT" WILL BE PAID AS RISER OF THE APPROPRIATE DIAMETER

TABLE 719-420A PRECAST ITEMS

(A)	DRAINAGE BASE	CIRCULAR RISER	TRANSITION SLAB	TRANSITION CONE
48"	48" DIA. CIRCULAR DRAINAGE BASE	48" DIA. CIRCULAR RISER		
60"	60" DIA. CIRCULAR DRAINAGE BASE	60" DIA. CIRCULAR RISER	60" DIA. TO 48" DIA. CIRCULAR TRANSITION SLAB	60" DIA. TO 48" DIA. CIRCULAR TRANSITION CONE
72"	72" DIA. CIRCULAR DRAINAGE BASE	72" DIA. CIRCULAR RISER	72" DIA. TO 48" DIA. CIRCULAR TRANSITION SLAB	72" DIA. TO 48" DIA. CIRCULAR TRANSITION CONE
84"	84" DIA. CIRCULAR DRAINAGE BASE	84" DIA. CIRCULAR RISER	84" DIA. TO 48" DIA. CIRCULAR TRANSITION SLAB	
96"	96" DIA. CIRCULAR DRAINAGE BASE	96" DIA. CIRCULAR RISER	96" DIA. TO 48" DIA. CIRCULAR TRANSITION SLAB	
120"	120" DIA. CIRCULAR DRAINAGE BASE	120" DIA. CIRCULAR RISER	120" DIA. TO 48" DIA. CIRCULAR TRANSITION SLAB	

THIS DRAWING IS NOT TO SCALE

NOTES:

1. ALL MATERIALS, DESIGN, MANUFACTURING, TESTING AND PRODUCT PERFORMANCE FOR PRECAST CONCRETE COMPONENTS AND ACCESSORIES SHALL BE IN ACCORDANCE WITH AASHTO M 199 AND SECTION 719 OF THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).

2. PRECAST CONSTRUCTION SHALL USE A MINIMUM OF CLASS 4000P CONCRETE.

3. BASE SECTIONS SHALL HAVE A BOTTOM POURED MONOLITHICALLY WITH THE WALL OR A SCDOT APPROVED WATER-STOP CAST INTO THE BOTTOM FOR THE JOINT TO THE WALL. PIPE MAY EXTEND INTO THE FLOOR TO THE BASE A MAXIMUM OF TWO INCHES.

4. TRANSITION SLAB AND CONE SECTIONS SHALL PROVIDE FOR TRANSITION TO NO LESS THAN 48" DIAMETER RISERS OR TOP CONES WITH A JOINT EQUAL TO THAT OF A RISER SECTION. THE MINIMUM SLOPE ANGLE FOR TRANSITION CONE WALLS SHALL BE 45 DEGREES. TRANSITION SLABS AND CONE SECTIONS SHALL BE DESIGNED TO MEET A HS 20 LIVE LOAD.

5. JOINTS SHALL BE TONGUE AND GROOVE. JOINT SEALANT SHALL MEET THE REQUIREMENTS OF SUPPLEMENTAL TECHNICAL SPECIFICATION SC-M-714. SIZE AND AMOUNT OF SEALANT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

6. REINFORCING STEEL SHALL BE ASTM A-706, LOW-ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT, GRADE 60. WIRE MESH SHALL CONFORM TO AASHTO M 55 AND M.

7. SEE STANDARD DRAWING 719-550-00 FOR STEPS, WHICH ARE REQUIRED WHEN STRUCTURE DEPTH EXCEEDS 4'-6". STEPS SHALL BE ALIGNED IN ALL SECTIONS TO FORM A CONTINUOUS LADDER. STEPS SHALL BE ALIGNED WITH OPENING IN TOP OR FLAT SLAB ADAPTER SO AS TO PROVIDE REASONABLE ACCESS.

8. LOCATION AND SIZE OF PIPES ARE SITE SPECIFIC, (SEE DRAINAGE PLANS). THE BOTTOM OF THE DRAINAGE BASE IS TO BE GROUTED TO THE LOWEST FLOW LINE ELEVATION OF ALL PIPES.

9. AFTER PIPE IS SET INTO THE DRAINAGE STRUCTURE, THE REMAINING OPENING AROUND THE PIPE MUST BE SEALED WITH BRICK AND MORTAR OR CONCRETE FOR THE FULL WALL THICKNESS OF THE STRUCTURE.

10. USE TYPE M MORTAR IN ACCORDANCE WITH SECTION 718 OF THE SCDOT STANDARD SPECIFICATION.

11. SEE DRAWINGS IN SECTION 719 OF THE STANDARD DRAWINGS FOR DETAILS ON CATCH BASINS, DROP INLETS, AND MANHOLES.

12. PRECAST CONCRETE STRUCTURES ARE REQUIRED FOR THE FOLLOWING APPLICATIONS UNLESS PROHIBITED BY THE PLANS OR SPECIAL PROVISIONS.

(a) ON DRAINAGE STRUCTURES WITH A DEPTH EQUAL TO OR GREATER THAN 12 FEET.

(b) ON DRAINAGE STRUCTURES WHERE THE FLOW LINE ELEVATION OF THE INLET PIPE IS EQUAL TO OR HIGHER THAN THE INSIDE TOP (SOFFIT) OF THE OUTLET PIPE.

(c) AS REQUIRED BY THE PROJECT PLANS.

13. PRECAST CONCRETE STRUCTURES MAY BE USED ON ANY OTHER APPLICATION UNLESS PROHIBITED BY THE PLANS OR SPECIAL PROVISIONS.

14. SEE STANDARD DRAWING 719-425-00 FOR DETAILS OF THE FLAT SLAB ADAPTER.

15. SCDOT REQUIRES CONTRACTOR/MANUFACTURER TO PROVIDE SHOP DRAWINGS TO THE RESIDENT CONSTRUCTION ENGINEER PRIOR TO MANUFACTURE. THE MANUFACTURER IS RESPONSIBLE FOR CONFIGURATION OF THE PRECAST CONCRETE CIRCULAR DRAINAGE STRUCTURE IN ACCORDANCE WITH THIS STANDARD DRAWING.

PRECAST NOTES:

16. THE USE OF PRECAST UNITS WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF OBTAINING SATISFACTORY INSTALLATIONS. SEE STANDARD DRAWINGS FOR PRECAST CONCRETE DRAINAGE BOX OR STRUCTURE FOR ADDITIONAL DETAILS AND SPECIFICATIONS.

17. LIFT HOLES AND/OR DEVICES MAY BE PLACED AS NECESSARY. ALL LIFT HOLES SHALL BE GROUTED SHUT PRIOR TO COMPLETION OF THE INSTALLATION. ALL LIFTING METHODS MUST MEET OSHA REGULATIONS.

18. THE CONTRACTOR SHALL USE A SINGLE SOURCE MANUFACTURER CHOSEN FORM THE LIST ON QUALIFIED PRODUCT LIST 14 FOR PRECAST ITEMS ON THIS DRAWING.

19. PRECAST MANUFACTURER SHALL MEET ALL REQUIREMENTS OF QUALIFIED PRODUCT POLICY 14.

20. CONTRACTOR MAY SUBMIT DESIGN DRAWINGS AND CALCULATIONS FOR MODIFICATIONS TO THIS ITEM ON A PROJECT BY PROJECT BASIS. MODIFICATIONS TO THESE ITEMS WILL NOT BE LISTED ON ANY QUALIFIED PRODUCT LIST. SUBMIT ALL PROPOSALS FOR PROJECT SPECIFIC MODIFICATIONS TO THE RESIDENT ENGINEER FOR REVIEW BY THE ENGINEER OF RECORD.

PRECAST INSTALLATION NOTES:

21. H DIMENSION FOR HOLE OPENING IS MEASURED FROM THE INSIDE FACE OF THE DRAINAGE STRUCTURE AS SHOWN IN SECTION A. FOR BEVELED OPENINGS , 8" DIMENSION SHOWN IN DETAIL 4 IS MEASURED FROM THE LARGEST HOLE DIMENSION ON THE OUTSIDE FACE OF THE DRAINAGE STRUCTURE.

22. BED SHALL BE PREPARED AND COMPACTED FOR PRECAST DRAINAGE STRUCTURE AS REQUIRED BY SCDOT STANDARD SPECIFICATIONS FOR PRECAST ITEMS. ELEVATION OF BEDDING MATERIAL SHALL BE APPROPRIATE TO ACCOMMODATE ELEVATION OF ALL PIPES AND REQUIRED BOX TOP ELEVATION.

23. PLACE AND LEVEL PRECAST DRAINAGE STRUCTURE.

24. PIPES SHALL BE INSTALLED AND GROUTED IN PLACE.

25. PIPES AND DRAINAGE STRUCTURE SHALL BE BACKFILLED AND COMPACTED AS REQUIRED BY SCDOT STANDARD SPECIFICATIONS.

PAYMENT:

26. THE COST OF THE FLAT SLAB ADAPTER SHALL BE INCLUDED IN THE BID PRICE OF THE INLET STRUCTURE CATCH BASIN, DROP INLET, OR MANHOLE.

27. THE CONTRACT UNIT PRICE FOR PRECAST COMPONENTS SHALL INCLUDE THE COST OF FURNISHING ALL MATERIALS (BUILT IN PLACE OR PRECAST) AND WORK INCIDENTAL TO THE CONSTRUCTION OF THE STRUCTURE COMPLETE IN PLACE AS SHOWN, IN ACCORDANCE WITH THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).

28. IF PRECAST CONCRETE CIRCULAR DRAINAGE STRUCTURES ARE USED TO CONSTRUCT CATCH BASINS, DROP INLETS, JUNCTION BOXES OR MANHOLES, THEN EXTRA DEPTH OF BOX WILL NOT BE MEASURED AND PAID FOR.

29. THE PAY ITEM SHALL BE:

PRECAST CONCRETE DRAINAGE BASE-__"DIA. _____EACH
PRECAST CONCRETE RISER- __"DIA._____L.F.
PRECAST CONCRETE TRANSITION SECTION - FLAT SLAB(__"TO__")____EACH
PRECAST CONCRETE TRANSITION SECTION CONE(__"TO__")_____EACH
CATCH BASIN, DROP INLET, MANHOLE (AS SPECIFIED)_____EACH

SOUTH CAROLINA FOUR WATERS ENGINEERING, INC No. 5166 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER ANGELA BURGDORFF BRYAN No. 21839 7-11-19

Signature
Angela B. Bryan, P.E.
SC Professional Eng #21839

Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SCDOT MOT DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE	JULY
DATE	2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N, JACKSONVILLE BEACH, FLORIDA 32250
904.414.2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-6

STEVE DUCHARME LOCATION: R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X-DGS\RIDGELAND CDBG CONSTRUCTION.DWG

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL JR

SIGNATURE

6/1/2018

DATE

#	DATE	CHK	DESCRIPTION
5			
4			
3			
2			
1	4-27-18	WEM	REVISED FLAGGING OPERATIONS NOTE 1
0	1-14-15	JCS	NEW DRAWING

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

FLAGGING OPERATIONS TWO-LANE TWO-WAY PRIMARY & SECONDARY ROUTES

610-005-00

EFFECTIVE LETTING DATE | JAN 2019

FLAGGING OPERATIONS
GENERAL NOTES

(ALL NOTES, SPECIFICATIONS AND REQUIREMENTS ON THIS STANDARD DRAWING APPLY TO ALL SUBSEQUENT STANDARD DRAWINGS REGARDING FLAGGING OPERATIONS UNLESS OTHERWISE NOTED)

FLAGGING OPERATIONS -

1. KEY FEATURES RELEVANT TO FLAGGING OPERATIONS:

   APPROACH TAPER - THIS IS A ONE-LANE TWO-WAY TAPER PLACED IN THE TRAVEL LANE WHERE THE WORK ACTIVITY TAKES PLACE. THIS TAPER PRECEDES THE BUFFER SPACE AND THE WORK ACTIVITY AREA. THE LENGTH OF THIS TAPER MAY VARY FROM 50 FEET TO 100 FEET. INSTALL AND MAINTAIN NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES EQUALLY SPACED AT 10' TO 25' INTERVALS AS NECESSARY TO CORRESPOND WITH THE LENGTH OF THE TAPER.

   DOWNSTREAM TAPER - THIS TAPER, PLACED IN THE TRAVEL LANE WHERE THE WORK ACTIVITY TAKES PLACE, FOLLOWS THE WORK ACTIVITY AREA AND SERVES AS THE TERMINATION AREA FOR THE CLOSURE OF THE TRAVEL LANE. THE LENGTH OF THIS TAPER MAY VARY FROM 50 FEET TO 100 FEET. INSTALL AND MAINTAIN NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES IN THIS TAPER.

   FLAGGER STATION - THIS IS THE SPECIFIC LOCATION OF THE FLAGGER.

   CLOSED LANE FLAGGER - THIS FLAGGER IS STATIONED ADJACENT TO THE FIRST TRAFFIC CONTROL DEVICE IN THE APPROACH TAPER WHO CONTROLS THE TRAFFIC THAT REQUIRES RELOCATION FROM THE TRAVEL LANE BEING CLOSED TO TRAFFIC.

   OPEN LANE FLAGGER - THIS FLAGGER IS STATIONED 100 FEET BEYOND THE LAST TRAFFIC CONTROL DEVICE IN THE DOWNSTREAM TAPER WHO CONTROLS THE TRAFFIC OPERATING IN THE TRAVEL LANE REMAINING OPEN TO TRAFFIC.

   SIDE ROAD FLAGGER - THIS FLAGGER IS STATIONED ON AN INTERSECTING SIDE ROAD AND CONTROLS THE SIDE ROAD TRAFFIC ENTERING INTO THE ROADWAY WHERE THE WORK ACTIVITY AREA IS LOCATED.

   BUFFER SPACE - THIS AREA IS LOCATED BETWEEN THE DOWNSTREAM END OF THE APPROACH TAPER AND THE NEAREST LIMITS OF THE WORK ACTIVITY AREA AND MAY PROVIDE SOME RECOVERY SPACE FOR AN ERRANT VEHICLE. THE PRESENCE OF PERSONNEL, TOOLS, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. WITHIN THE LIMITS OF THE BUFFER SPACE IS PROHIBITED. HOWEVER, WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE BUFFER SPACE ARE UNAVAILABLE, A TRUCK MOUNTED ATTENUATOR MAY TEMPORARILY ENCROACH UPON THE BUFFER SPACE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE SECTION BELOW ENTITLED, "BUFFER SPACE", WHEN APPROVED BY THE ENGINEER.

   WORK ACTIVITY AREA - PERSONNEL, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. ARE PRESENT WITHIN THIS AREA TO CONDUCT THE WORK.

   LIMITS of the WORK ACTIVITY AREA - THIS IS THE BOUNDARY OF THE WORK ACTIVITY AREA FIRST ENCOUNTERED, FROM EITHER DIRECTION, BY MOTORISTS PASSING BY THE WORK ACTIVITY AREA IN THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC AND CONTROLLED BY THE FLAGGERS.

   APPROACH LANE - TRAFFIC APPROACHES AN INTERSECTION OR A SPECIFIC LOCATION IN THIS TRAVEL LANE.

   DEPARTURE LANE - TRAFFIC DEPARTS FROM AN INTERSECTION OR A SPECIFIC LOCATION IN THIS TRAVEL LANE.

   MAINLINE APPROACH - THIS IS AN APPROACH TO THE WORK ACTIVITY AREA ON THE ROADWAY WHERE THE WORK ACTIVITY AREA IS LOCATED.

   SIDE ROADS - THESE ROADS INTERSECT THE ROADWAY ON WHICH THE WORK ACTIVITY AREA IS LOCATED.

   LIMITS of the INTERSECTION - THE LIMITS OF OR THE PHYSICAL AREA WITHIN AN INTERSECTION IS DEFINED BY THE LOCATION OF STOP BARS WHEN PRESENT, WHEN STOP BARS ARE ABSENT, THE LIMITS OF OR THE PHYSICAL AREA WITHIN AN INTERSECTION IS DEFINED BY THE LOCATION POINTS WHERE THE CORNER RADII BETWEEN ADJACENT ROADWAY APPROACHES TIE TO THE EDGE OF PAVEMENT OR THE EDGE OF TRAVEL LANE ADJACENT TO THE EDGE OF PAVEMENT OF EACH ROADWAY.

2. INSTALL, CONDUCT AND MAINTAIN FLAGGING OPERATIONS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, THE STANDARD DRAWINGS, THE MUTCD AND THE "SOUTH CAROLINA FLAGGER'S HANDBOOK" UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. INSTALL ALL SIGNS RELATIVE TO A FLAGGING OPERATION PRIOR TO INITIATION OF THE OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION. EQUIP EACH FLAGGER WITH A 24" x 24" STOP/SLOW PADDLE MOUNTED ON A RIGID HANDLE WITH A MINIMUM LENGTH OF 7 FEET. THE DEPARTMENT PROHIBITS THE USE OF FLAGS EXCEPT DURING EMERGENCY SITUATIONS.
3. LANE CLOSURES FOR FLAGGING OPERATIONS ARE RESTRICTED TO A MAXIMUM DISTANCE OF 2 MILES UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE WORK LIMITS WILL COMPLY WITH THE CONTRACT AND SHALL REQUIRE THE ENGINEER'S APPROVAL PRIOR TO BEGINNING THE WORK.
4. INSTALL AND MAINTAIN THE PROPER ARRAY OF ADVANCE WARNING SIGNS FOR EACH "MAINLINE APPROACH" WHEN A FLAGGING OPERATION IS IN PLACE AND ACTIVE. WHEN NECESSARY TO RELOCATE THE "FLAGGER STATION" WHILE ACTIVELY MAINTAINING THE FLAGGING OPERATION, INSTALL AN ADDITIONAL ARRAY OF ADVANCE WARNING SIGNS AT THE LOCATION RELATIVE TO THE NEW "FLAGGER STATION" AND REMOVE THE ORIGINAL ARRAY OF ADVANCE WARNING SIGNS IMMEDIATELY UPON COMPLETION OF THE RELOCATION OF THE FLAGGER TO THE NEW "FLAGGER STATION".
5. INSTALL ALL ADVANCE WARNING SIGNS IMMEDIATELY PRIOR TO INITIATING A FLAGGING OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION.
6. MAINTAIN TWO-WAY RADIO COMMUNICATIONS BETWEEN ALL FLAGGERS.

NIGHTTIME FLAGGING OPERATIONS -

1. EACH FLAGGER SHALL WEAR SAFETY APPAREL IN COMPLIANCE WITH THE REQUIREMENTS OF ANSI/ ISEA 107 STANDARD PERFORMANCE FOR CLASS 3 RISK EXPOSURE, LATEST REVISION, WHEN CONDUCTING NIGHTTIME FLAGGING OPERATIONS.
2. ILLUMINATE EACH "FLAGGER STATION" WITH ANY COMBINATION OF PORTABLE LIGHTS, STANDARD ELECTRIC LIGHTS, EXISTING STREET LIGHTS, ETC. THAT WILL PROVIDE A MINIMUM ILLUMINATION LEVEL OF 108 Lx OR 10 fc WHEN CONDUCTING NIGHTTIME FLAGGING OPERATIONS.
3. SUPPLEMENT EACH ARRAY OF ADVANCE WARNING SIGNS ON EACH "MAINLINE APPROACH" WITH A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN. THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED ON THE "SIDE ROADS" INTERSECTING THE ROADWAY WHERE THE "WORK ACTIVITY AREA" IS LOCATED. ALSO, THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED DURING DAYTIME FLAGGING OPERATIONS UNLESS OTHERWISE DIRECTED BY THE STANDARD DRAWINGS. INSTALL THE CHANGEABLE MESSAGE SIGNS IN ADVANCE OF THE ADVANCE WARNING SIGN ARRAYS. THE MESSAGES SHOULD BE "PREPARE TO STOP", "FLAGGER AHEAD". A TRUCK MOUNTED CHANGEABLE MESSAGE SIGN IS NOT AN ACCEPTABLE ALTERNATIVE TO A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN DURING NIGHTTIME FLAGGING OPERATIONS.
4. UTILIZE PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES IN PLACE OF 36" STANDARD TRAFFIC CONES DURING NIGHTTIME FLAGGING OPERATIONS.

BUFFER SPACE -

1. THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE BASED UPON THE LEGAL POSTED REGULATORY SPEED LIMIT OF THE ROADWAY PRIOR TO BEGINNING THE WORK.

SPEED LIMIT	DISTANCES
LOW SPEED ≤ 35 MPH	200 FEET
INTERMEDIATE SPEED 40 - 50 MPH	300 FEET
HIGH SPEED 55 MPH	400 FEET

2. THE PRESENCE OF PERSONNEL, TOOLS, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. WITHIN THE LIMITS OF THE "BUFFER SPACE" IS PROHIBITED. A TRUCK MOUNTED ATTENUATOR IS THE ONLY WORK VEHICLE THAT MAY TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" IN ACCORDANCE WITH THE CONDITIONS SPECIFIED IN THE FOLLOWING NOTE WHEN APPROVED BY THE ENGINEER. SEE NOTE NO. 3.
3. WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE UNAVAILABLE DUE TO FIELD CONDITIONS, IT MAY BE NECESSARY FOR A TRUCK MOUNTED ATTENUATOR TO TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED ATTENUATOR IS THE ONLY VEHICLE PERMITTED TO TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" AND THIS ENCROACHMENT IS ONLY PERMITTED WHEN ALL REASONABLE OPTIONS TO AVOID DOING SO HAVE BEEN EXHAUSTED. WHEN ENCROACHMENT UPON THE "BUFFER SPACE" IS APPROVED BY THE ENGINEER, MINIMIZE THE TIME DURATION OF THE ENCROACHMENT BY REMOVAL OF THE TRUCK MOUNTED ATTENUATOR FROM THE "BUFFER SPACE" AT THE FIRST OPPORTUNITY THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" BECOME AVAILABLE.

SIGNS AND TRAFFIC CONTROL DEVICES -

1. MEASURE THE ADVANCE WARNING SIGN LOCATIONS FOR EACH APPROACH FROM THE "FLAGGER STATION" LOCATED ON THAT APPROACH.
2. INSTALL THE ADVANCE WARNING SIGNS AS SPACING INTERVALS BASED UPON THE POSTED REGULATORY SPEED LIMIT OF THE ROADWAY PRIOR TO BEGINNING ANY WORK. THE ADVANCE WARNING SIGN SPACING INTERVALS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS TO THESE DISTANCES MAY BE NECESSARY DUE TO EXISTING SIGNS, INTERSECTING ROADWAYS, HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS. SEE TABLE A.
3. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF NCHRP REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org .
7. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED IN THE EVENT A DAYTIME FLAGGING OPERATION EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH EITHER PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE III OR GREATER FLEXIBLE MICROPRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
8. DELINEATE THE TANGENT AREA OF THE LANE CLOSURE WITH THE NECESSARY TRAFFIC CONTROL DEVICES TO MINIMIZE ENCROACHMENT BY MOTORISTS INTO THE CLOSED TRAVEL LANE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ON ROADWAYS WITH POSTED REGULATORY SPEED LIMITS OF 35 MPH OR LESS, INSTALL THE TRAFFIC CONTROL DEVICES AT SPACING INTERVALS OF 25 FEET. ON ROADWAYS WITH POSTED REGULATORY SPEED LIMITS OF 40 MPH OR GREATER, INSTALL THE TRAFFIC CONTROL DEVICES AT SPACING INTERVALS OF 50 FEET. SEE TABLE B.

ADVANCE WARNING ARROW PANEL -

1. DURING FLAGGING OPERATIONS, AN ADVANCE WARNING ARROW PANEL SHALL OPERATE IN THE "FOUR CORNERS" CAUTION MODE WHEN LOCATED WITHIN OR IN BETWEEN THE LIMITS OF THE ADVANCE WARNING SIGN ARRAYS SPECIFIC TO A FLAGGING OPERATION. OPERATION OF AN ADVANCE WARNING ARROW PANEL IN AN ARROW, CHEVRON OR ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE WHEN LOCATED WITHIN OR IN BETWEEN THE LIMITS OF THE ADVANCE WARNING SIGN ARRAYS AS SPECIFIED HEREINBEFORE IS PROHIBITED.
2. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION. THE SPECIFIC LOCATION OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS.

TRUCK MOUNTED ATTENUATOR -

1. A TRUCK MOUNTED ATTENUATOR IS OPTIONAL. UTILIZATION OF A TRUCK MOUNTED ATTENUATOR SHOULD BE CONSIDERED WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE UNAVAILABLE DUE TO FIELD CONDITIONS. HOWEVER, A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL MAY BE UTILIZED IN PLACE OF A TRUCK MOUNTED ATTENUATOR DURING TRAFFIC CONTROL SETUPS FOR WORK ACTIVITIES SUCH AS ASPHALT CONCRETE PLACEMENT OPERATIONS WHEN APPROVED BY THE ENGINEER.
2. WHEN UTILIZING A TRUCK MOUNTED ATTENUATOR, ENSURE THE TRUCK HAS THE CORRECT GROSS VEHICULAR WEIGHT (GVW) REQUIRED FOR THE TYPE OF TRUCK MOUNTED ATTENUATOR BEING UTILIZED. A DIRECT TRUCK MOUNTED TRUCK MOUNTED ATTENUATOR, A UNIT MOUNTED AND ATTACHED TO BRACKETS OR SIMILAR DEVICES CONNECTED TO THE FRAME OF THE TRUCK, REQUIRES A TRUCK WITH A MINIMUM GVM OF 15,000 POUNDS (ACTUAL WEIGHT) UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. A TRAILER TOWED TRUCK MOUNTED ATTENUATOR, A TRAILER TYPE UNIT TOWED FROM BEHIND AND ATTACHED TO THE FRAME OF THE TRUCK VIA A PINTLE HOOK / HITCH, REQUIRES A TRUCK WITH A MINIMUM GVM OF 10,000 POUNDS (ACTUAL WEIGHT) UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR (4) SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE IN ITS ENTIRETY AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
3. LOCATE THE TRUCK MOUNTED ATTENUATOR APPROXIMATELY 100 FEET IN ADVANCE OF THE "WORK ACTIVITY AREA" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

GENERAL -

1. CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENCROACH ONTO THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
2. IF WORK IS BEING CONDUCTED AT TWO DIFFERENT LOCATIONS AT THE SAME TIME, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 2 MILES FROM THE LAST TRAFFIC CONTROL DEVICE IN THE "DOWNSTREAM TAPER" OF THE FIRST LANE CLOSURE TO THE FIRST TRAFFIC CONTROL DEVICE IN THE "APPROACH TAPER" OF THE SECOND LANE CLOSURE ENCOUNTERED BY A MOTORIST UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	*
* ≤ 35 MPH LOW SPEED	200
* 40 - 50 MPH INTERMEDIATE SPEED	350
* 55 MPH HIGH SPEED	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

THIS DRAWING IS NOT TO SCALE

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION FOUR WATERS ENGINEERING, INC No. 5166

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORFF BRYAN 7-11-19 No. 21839

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

SCDOT MOT DETAILS

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 4th AVE N, JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-7

STEVE DICHARME LOCATION R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\VA\CDS\RIDGELAND CDBG CONSTRUCTION.DWG

DRAWING 610-005-10 NOTES

1. SEE STANDARD DRAWING NO. 610-005-00 FOR ALL GENERAL NOTES AND REQUIREMENTS.

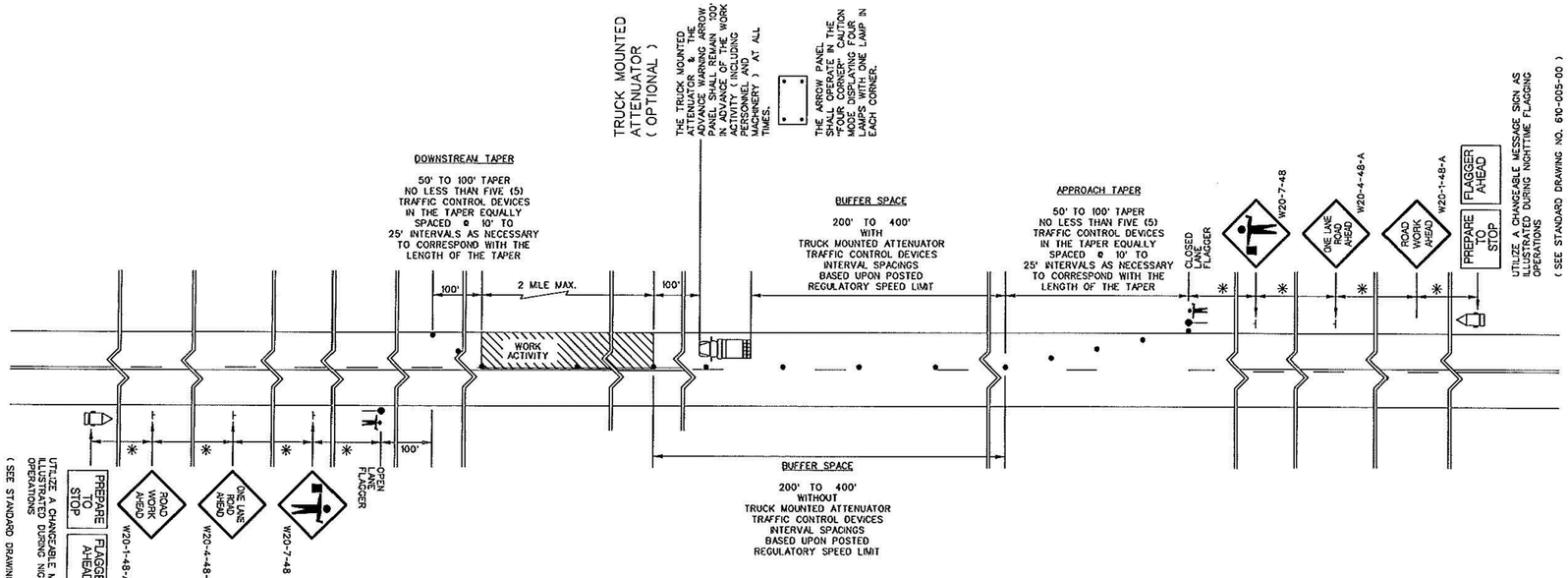


TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	✳
# ≤ 35 MPH LOW SPEED	200
# 40 - 50 MPH INTERMEDIATE SPEED	350
# 55 MPH HIGH SPEED	500

REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

THIS DRAWING IS NOT TO SCALE

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE F. McCONNELL, JR

SIGNATURE

7/27/15
DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1			
0	1-15-15	JCS	NEW DRAWING

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

FLAGGING OPERATIONS TWO-LANE TWO-WAY ROADWAYS WITHOUT INTERSECTIONS

610-005-10

EFFECTIVE LETTING DATE: JAN 2016

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION FOUR WATERS ENGINEERING, INC No. 5166

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 21839 ANGELA BURGDORFF BRYAN
7-11-19

Signature
Angela B. Bryan, P.E.
SC Professional Engr #21839
Date

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SCDOT MOT DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-8

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL JR

SIGNATURE

6/1/2018
DATE

#	DATE	CHK	DESCRIPTION
5			
4			
3			
2			
1	4-27-18	WEM	REVISED WORK ACTIVITY DIMENSION AND NOTE 5
0	1-15-15	JCS	NEW DRAWING

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

FLAGGING OPERATIONS WORK ZONES CONTINUING THROUGH STOP SIGN CONTROLLED SIDE ROADS

610-005-20

EFFECTIVE LETTING DATE | JAN 2019

DRAWING 610-005-20 NOTES

1. SEE STANDARD DRAWING NO. 610-005-00 FOR ALL GENERAL NOTES AND REQUIREMENTS. THE FOLLOWING NOTES ARE SPECIFIC REQUIREMENTS FOR THIS STANDARD DRAWING.
2. WHEN THE WORK ZONE PROCEEDS THROUGH OR MUST ENCROACH UPON THE "LIMITS OF THE INTERSECTION", DO NOT ALLOW THE "APPROACH TAPER" OR THE "DOWNSTREAM TAPER" OF THE LANE CLOSURE TO ENCROACH UPON THE "LIMITS OF THE INTERSECTION". ONLY THE "BUFFER SPACE" OR THE "WORK ACTIVITY AREA" OF THE LANE CLOSURE MAY ENCROACH UPON THE "LIMITS OF THE INTERSECTION".
3. WHEN THE WORK ZONE PROCEEDS THROUGH OR MUST ENCROACH UPON THE "LIMITS OF THE INTERSECTION" WITH "STOP SIGN CONTROLLED" "SIDE ROADS", UTILIZE FLAGGERS TO CONTROL THE TRAFFIC FROM THE INTERSECTING "SIDE ROADS" UNLESS OTHERWISE DIRECTED BY THE ENGINEER. MAINTAIN THESE FLAGGERS IN PLACE FOR THE DURATION THAT ANY PORTION OF THE "BUFFER SPACE" OR THE "WORK ACTIVITY AREA" MAY ENCROACH UPON THE "LIMITS OF THE INTERSECTION".
4. WHEN THE WORK ZONE PROCEEDS THROUGH OR MUST ENCROACH UPON THE "LIMITS OF THE INTERSECTION" WITH "STOP SIGN CONTROLLED" "SIDE ROADS", THE CONTRACTOR SHOULD CONTINUE THE WORK OPERATIONS THROUGH THE INTERSECTION TO A LOCATION POINT BEYOND THE "LIMITS OF THE INTERSECTION" THAT WILL PERMIT THE WORK TRAIN TO CLEAR THE INTERSECTION AND THE LOCATION OF THE SUBSEQUENT "FLAGGER STATION" BE NO LESS THAN 200' PAST THE "LIMITS OF THE INTERSECTION" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. WHEN THE WORK ZONE PROCEEDS THROUGH A "STOP SIGN CONTROLLED" "SIDE ROAD" INTERSECTION, CONTINUE THE WORK OPERATIONS THROUGH THE INTERSECTION TO A SPECIFIC LOCATION POINT WITHIN THE "DEPARTURE LANE" NO LESS THAN 300 FT TO 500 FT BEYOND THE LIMITS OF THE INTERSECTION TO ALLOW THE WORK TRAIN AND ALL PORTIONS OF THE LANE CLOSURE TO CLEAR THE INTERSECTION.
6. MAINTAIN THE MAXIMUM TIME DURATION OF 5 TO 7½ MINUTES FOR STOPPED TRAFFIC ON THE ROADWAY WHERE THE WORK ACTIVITY IS LOCATED AND BEING CONDUCTED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WHEN ANY PORTION OF THE "WORK ACTIVITY AREA" ENCROACHES UPON THE "LIMITS OF THE INTERSECTION", VARIOUS TYPES OF WORK MAY REQUIRE TRAFFIC TO AND FROM THE "SIDE ROADS" BE STOPPED FOR TIME DURATIONS GREATER THAN THE MAXIMUM TIME DURATION OF 5 TO 7½ MINUTES. ONLY WHEN APPROVED BY THE ENGINEER MAY THE MAXIMUM TIME DURATION OF 5 TO 7½ MINUTES FOR STOPPED TRAFFIC FOR THE SIDE ROAD TRAFFIC BE EXCEEDED. IN THE EVENT THE TYPE OF WORK REQUIRES THE SIDE ROAD TRAFFIC BE STOPPED FOR TIME DURATIONS GREATER THAN 5 TO 7½ MINUTES, THE SIDE ROAD TRAFFIC MAY BE STOPPED FOR TIME PERIODS UP TO 20 MINUTES IF APPROVED BY THE ENGINEER. IF THE SIDE ROAD TRAFFIC MUST BE STOPPED FOR TIME PERIODS GREATER THAN 20 MINUTES, CLOSURE OF THE "SIDE ROADS" MAY BE CONSIDERED IF APPROVED BY THE ENGINEER. IN THE EVENT CLOSURE OF THE "SIDE ROADS" IS APPROVED, CLOSE THE "SIDE ROADS" TO TRAFFIC IN ACCORDANCE WITH THE REQUIREMENTS OF STANDARD DRAWING NO. 610-510-00. INSTALL AND MAINTAIN APPROPRIATE DETOURS WHEN NECESSARY AND AS DIRECTED BY THE ENGINEER.

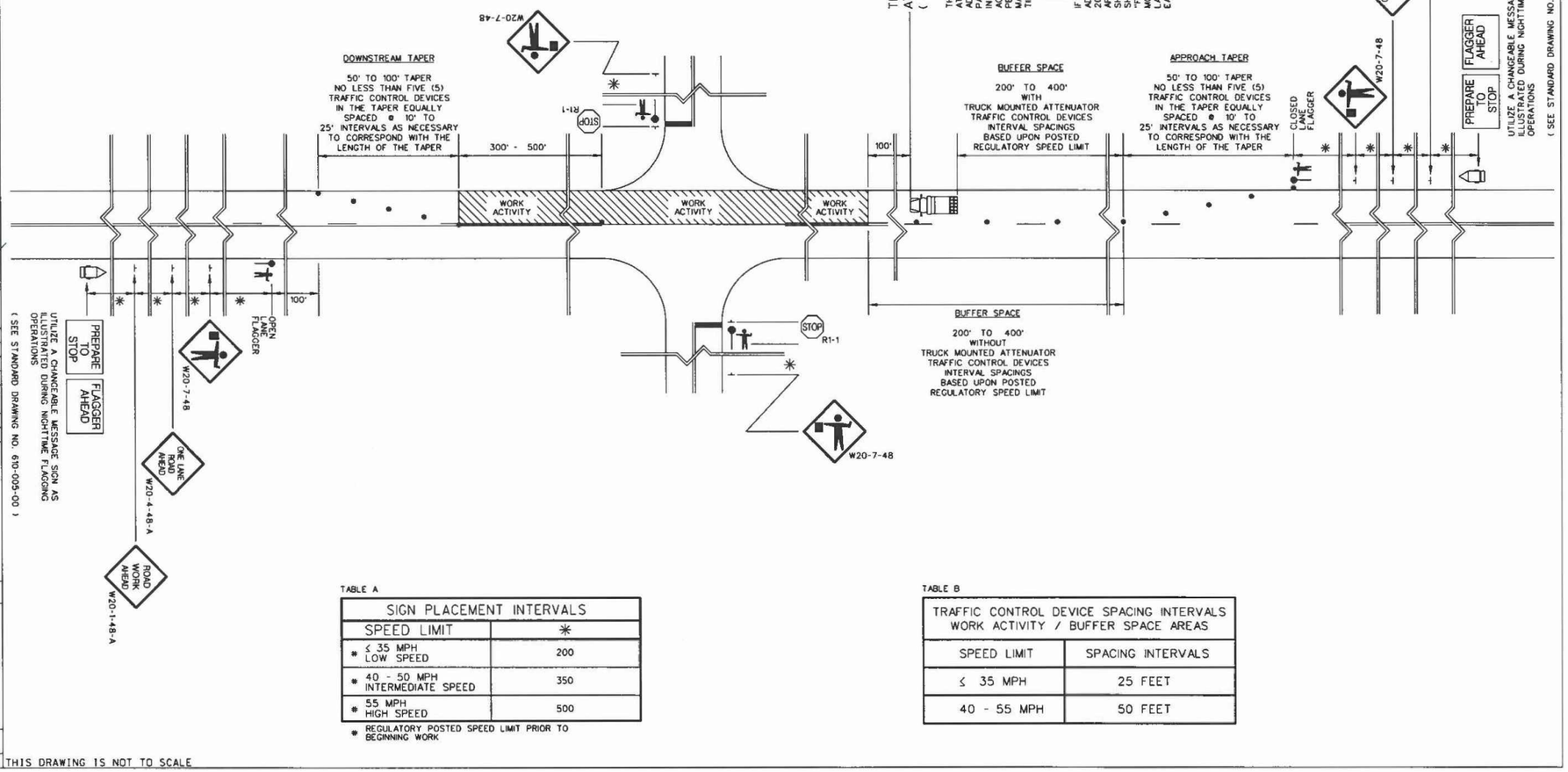


TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	*
* ≤ 35 MPH LOW SPEED	200
* 40 - 50 MPH INTERMEDIATE SPEED	350
* 55 MPH HIGH SPEED	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

THIS DRAWING IS NOT TO SCALE

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION FOUR WATERS ENGINEERING, INC No. 5166

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORFF BRYAN 7-11-19 No. 21839

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng #21839

Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SCDOT MOT DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.#:31101 WWW.4WENG.COM

DRAWING NUMBER
D-9

STEVE BUCHANAN LOCATION: R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\COS\RIDGELAND CDBG CONSTRUCTION.DWG

DRAWING 610-005-30 NOTES

1. SEE STANDARD DRAWING NO. 610-005-00 FOR ALL GENERAL NOTES AND REQUIREMENTS. THE FOLLOWING NOTES ARE SPECIFIC REQUIREMENTS FOR THIS STANDARD DRAWING.
2. WHEN THE WORK ZONE PROCEEDS THROUGH OR MUST ENCROACH UPON THE "LIMITS OF THE INTERSECTION", DO NOT ALLOW THE "APPROACH TAPER" OR THE "DOWNSTREAM TAPER" OF THE LANE CLOSURE TO ENCROACH UPON THE "LIMITS OF THE INTERSECTION". ONLY THE "BUFFER SPACE" OR THE "WORK ACTIVITY AREA" OF THE LANE CLOSURE MAY ENCROACH UPON THE "LIMITS OF THE INTERSECTION".
3. WHEN THE WORK ZONE PROCEEDS THROUGH OR MUST ENCROACH UPON THE "LIMITS OF THE INTERSECTION" WITH "STOP SIGN CONTROLLED" "SIDE ROADS", UTILIZE FLAGGERS TO CONTROL THE TRAFFIC FROM THE INTERSECTING "SIDE ROADS" UNLESS OTHERWISE DIRECTED BY THE ENGINEER. MAINTAIN THESE FLAGGERS IN PLACE FOR THE DURATION THAT ANY PORTION OF THE "BUFFER SPACE" OR THE "WORK ACTIVITY AREA" MAY ENCROACH UPON THE "LIMITS OF THE INTERSECTION".
4. WHEN THE WORK ZONE PROCEEDS THROUGH AN INTERSECTION VIA A "STOP SIGN CONTROLLED" "APPROACH LANE", THE CONTRACTOR SHOULD CONTINUE THE WORK OPERATIONS THROUGH THE INTERSECTION TO A LOCATION POINT WITHIN THE "DEPARTURE LANE" BEYOND THE "LIMITS OF THE INTERSECTION" THAT WILL PERMIT THE WORK TRAIN TO CLEAR THE INTERSECTION AND THE LOCATION OF THE SUBSEQUENT "FLAGGER STATION" BE NO LESS THAN 200' PAST THE "LIMITS OF THE INTERSECTION" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. WHEN THE WORK ZONE PROCEEDS THROUGH A "STOP SIGN CONTROLLED" INTERSECTION, CONTINUE THE WORK OPERATIONS THROUGH THE INTERSECTION TO A SPECIFIC LOCATION POINT WITHIN THE "DEPARTURE LANE" NO LESS THAN 300 FT TO 500 FT BEYOND THE LIMITS OF THE INTERSECTION TO ALLOW THE WORK TRAIN AND ALL PORTIONS OF THE LANE CLOSURE TO CLEAR THE INTERSECTION.
6. MAINTAIN THE MAXIMUM TIME DURATION OF 5 TO 7½ MINUTES FOR STOPPED TRAFFIC ON THE ROADWAY WHERE THE WORK ACTIVITY IS LOCATED AND BEING CONDUCTED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WHEN ANY PORTION OF THE "WORK ACTIVITY AREA" ENCROACHES UPON THE "LIMITS OF THE INTERSECTION", VARIOUS TYPES OF WORK MAY REQUIRE TRAFFIC TO AND FROM THE "SIDE ROADS" BE STOPPED FOR TIME DURATIONS GREATER THAN THE MAXIMUM TIME DURATION OF 5 TO 7½ MINUTES. ONLY WHEN APPROVED BY THE ENGINEER MAY THE MAXIMUM TIME DURATION OF 5 TO 7½ MINUTES FOR STOPPED TRAFFIC FOR THE SIDE ROAD TRAFFIC BE EXCEEDED. THE PRESENCE OF "STOP SIGN CONTROLLED" "SIDE ROADS" ON ALL APPROACHES TO THE INTERSECTION INDICATES HIGH TRAFFIC VOLUMES ON THE "SIDE ROADS". THEREFORE, MINIMIZE EXCEEDING THE MAXIMUM TIME DURATION OF 5 TO 7½ MINUTES FOR STOPPED TRAFFIC ON THE "SIDE ROADS". THE CONTRACTOR AND THE ENGINEER SHALL DISCUSS THE TIME REQUIREMENTS FOR CONDUCTING THE WORK AND SHALL DETERMINE A MAXIMUM TIME DURATION FOR STOPPING THE SIDE ROAD TRAFFIC PRIOR TO ANY PORTION OF THE LANE CLOSURE OR THE "WORK ACTIVITY AREA" ENCROACHING UPON THE "LIMITS OF THE INTERSECTION".

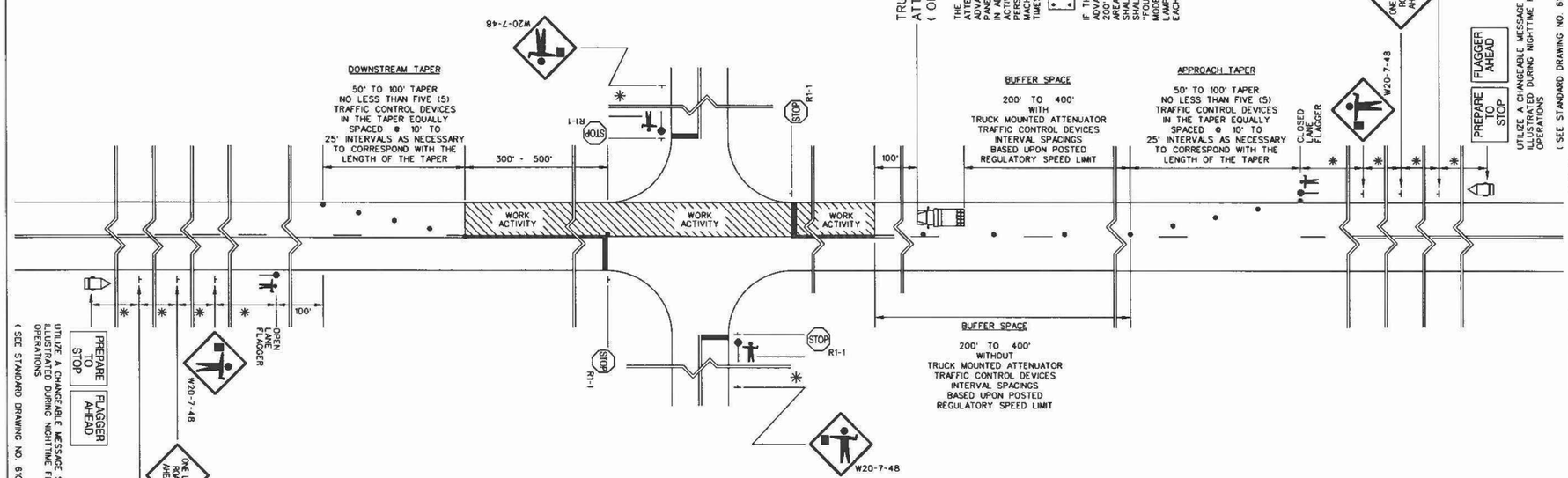


TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	*
* ≤ 35 MPH LOW SPEED	200
* 40 - 50 MPH INTERMEDIATE SPEED	350
* 55 MPH HIGH SPEED	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

THIS DRAWING IS NOT TO SCALE

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC
No. 5166

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
ANGELA A. BURGDORFF BRYAN
7-11-19
No. 21839

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
NO. 24242
WILLIE E. McCONNELL, JR

SIGNATURE
6/1/2018
DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	4-27-18	WEM	NOTE 5 ADDED
0	8-12-14	JCS	NEW DRAWING

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

FLAGGING OPERATIONS WORK ZONES CONTINUING THROUGH STOP SIGN CONTROLLED INTERSECTIONS ALL APPROACHES

610-005-30

EFFECTIVE LETTING DATE | JAN 2019

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng #21839
Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SCDOT MOT DETAILS

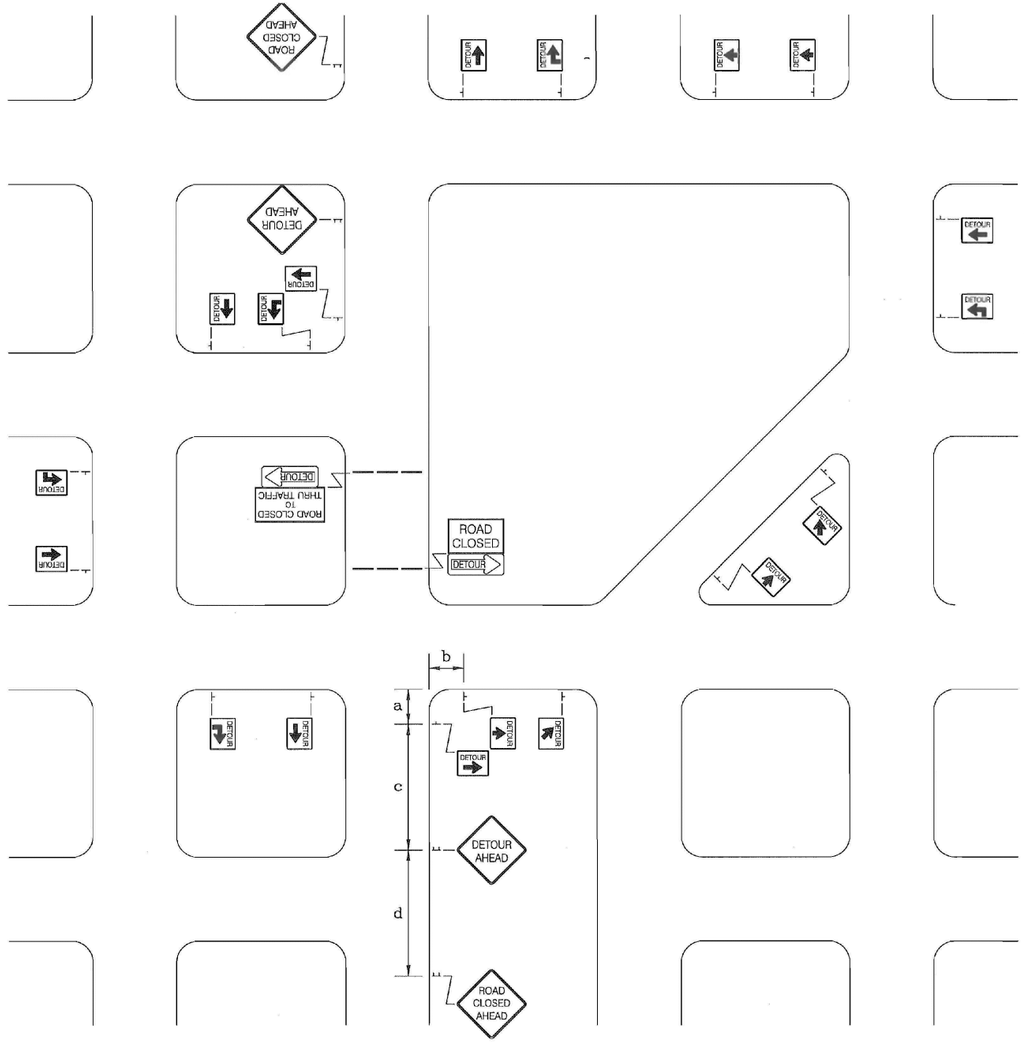
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-10

STEVE DUCHARME LOCATION: R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\COS\RIDGELAND CDBG CONSTRUCTION.DWG



THIS DRAWING IS NOT TO SCALE

GENERAL NOTES

1.) ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.

2.) IN AREAS WITH PAVED SHOULDERS OR CURB & GUTTER, GROUND MOUNT ALL DETOUR SIGN ASSEMBLIES 2 FEET FROM EITHER THE PAVEMENT EDGE OF A PAVED SHOULDER OR THE FACE OF A CURB. IN AREAS WITH NO PAVED SHOULDERS OR CURB & GUTTER, GROUND MOUNT ALL DETOUR SIGN ASSEMBLIES 6-12 FEET FROM THE NEAR EDGE OF AN ADJACENT TRAVEL LANE TO THE NEAREST EDGE OF THE SIGN ASSEMBLY. MOUNT EACH DETOUR SIGN ASSEMBLY SO THE BOTTOM EDGE OF THE BOTTOM SIGN HAS A MINIMUM MOUNTING HEIGHT OF NO LESS THAN 5 FEET ABOVE THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.

3.) SPACINGS INDICATED ARE FOR NORMAL CONDITIONS: ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.

4.) MOUNT ALL SIGNS SUCH THAT THEY ARE STRAIGHT AND LEVEL AND THE FACE OF THE SIGNS ARE PERPENDICULAR TO THE SURFACE OF THE ROADWAY.

5.) REFLECTORIZE ALL DETOUR MARKERS, DETOUR SIGNS, AND DETOUR ARROW SIGNS WITH A FLUORESCENT ORANGE COLORED PRISMATIC REFLECTIVE SHEETING.

6.) ALL TRAFFIC CONTROL DEVICES, INCLUDING TYPE III BARRICADES, PORTABLE SIGN SUPPORTS, SIGN SUBSTRATUMS, BREAKAWAY SYSTEMS FOR GROUND MOUNTED SIGN SUPPORTS, WARNING LIGHTS, ETC., SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL BE APPROVED BY THE DEPARTMENT. ALL APPROVED TRAFFIC CONTROL DEVICES ARE INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES". THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org .

7.) SPECIAL SIGN MOUNTING ASSEMBLIES MAY BE NECESSARY IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS, OR DOUBLEFACED GUARDRAIL AND SHALL BE PROVIDED BY THE CONTRACTOR.

8.) REFLECTORIZE ALL BARRICADES WITH A TYPE III HIGH INTENSITY REFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.

9.) ALL SUPPLEMENTAL SIGNS ATTACHED TO TYPE III BARRICADES SHALL BE CONSTRUCTED OF AN APPROVED REFLECTIVE ROLL-UP MATERIAL OR AN APPROVED ALUMINUM COMPOSITE MATERIAL. ONLY THOSE ALUMINUM COMPOSITE MATERIALS INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" SUCH AS "ALPOLIC", "DIBOND", OR "REYNOLITE" ARE APPROVED. ALL OTHER RIGID SIGN SUBSTRATUMS, INCLUDING .08 AND .10 ALUMINUM SIGN BLANKS, ARE PROHIBITED FOR ATTACHMENT TO A TYPE III BARRICADE.

10.) THE TRAFFIC CONTROL SETUP SHOWN IS A TYPICAL INSTALLATION FOR A SECONDARY ROADWAY. SPECIFIC SIGNING WILL BE BASED ON SITE CONDITIONS AND SHALL REQUIRE THE ENGINEER'S APPROVAL PRIOR TO INSTALLATION. ROAD AND STREET NAMES MAY ALSO BE USED.

11.) THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT CONSTRUCTION OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS, AND/OR THE ENGINEER.

12.) THE TRAFFIC CONTROL SETUP ILLUSTRATED ON THIS STANDARD DRAWING, INCLUDING INSTALLATION AND MAINTENANCE OF THE DETOUR SIGNING AND ALL TRAFFIC CONTROL DEVICES PERTINENT TO THE DETOUR, SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE BID ITEM FOR TRAFFIC CONTROL.

13.) COORDINATE THE SIGNS IN EACH SIGN ASSEMBLY ACCORDING TO LOCATION, ROUTE, DIRECTION, SIZE, AND COLOR.

TYPICAL SIGNS

DETOUR AHEAD — W20-2-48-A	ROAD CLOSED AHEAD — W20-3-48-A
DETOUR — M4-9-30	
DETOUR — M4-9L-30	DETOUR — M4-9.2L-30
DETOUR — M4-9R-30	DETOUR — M4-9.2R-30
DETOUR — M4-9.1L-30	DETOUR — M4-10L-48
DETOUR — M4-9.1R-30	DETOUR — M4-10R-48
ROAD CLOSED — R11-2-48	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY — R11-3a-60-XX
ROAD CLOSED TO THRU TRAFFIC — R11-4-60	BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY — R11-3b-60-XX

SIGN PLACEMENT AND SPACING INTERVALS

SPEED LIMIT	a	b	c	d
35 mph OR LESS	50'	100'	200'	200'
40 mph TO 50 mph	75'	150'	350'	350'
55 mph OR GREATER	100'	200'	500'	500'

LEGEND

- TYPE II BARRICADE (6 FEET)
- SINGLE POST SIGN ASSEMBLY
- DUAL POSTS SIGN ASSEMBLY

SOUTH CAROLINA — FOUR WATERS ENGINEERING, INC No. 5166 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER — No. 21839 — 7-11-19 — ANGELA BURGDORFF BRYAN

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER — NO. 24242 — WILLIE E. McCONNELL, JR

SIGNATURE

1-30-2008

DATE

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
6				
5				
4				
3				
2				
1				
0	8-30-07	JCS		DRAWING NO. UPDATE
#	DATE	CHK		DESCRIPTION

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

DETOUR SIGNING FOR SECONDARY ROUTES

610-610-00

EFFECTIVE LETTING DATE | MAY 2008

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839

Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SCDOT MOT DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-11

STEVE DUCHARME LOCATION: R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\X\CDS\RIDGELAND CDBG CONSTRUCTION.DWG

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR

SIGNATURE

8/2/12

DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	2-15-11	JCS	GENERAL UPDATE
0	8-22-07	JCS	DRAWING NO. UPDATE

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

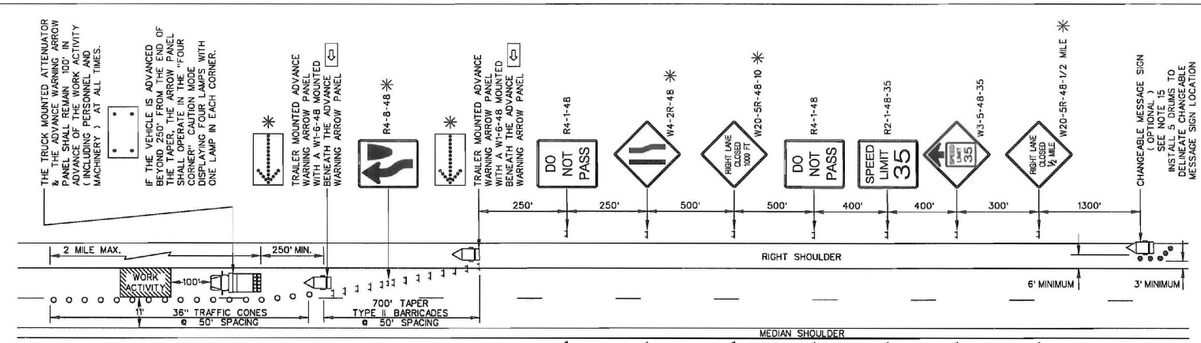
STANDARD DRAWING

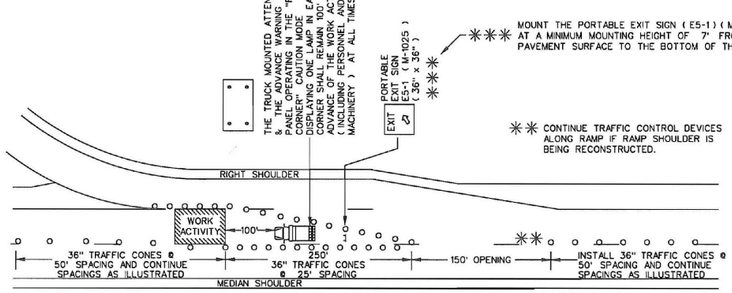
LANE CLOSURE
DAYTIME
MULTILANE
PRIMARY ROUTES

610-025-00

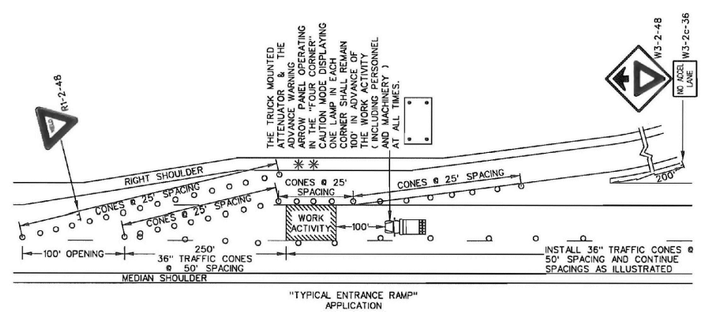
EFFECTIVE LETTING DATE JAN. 2013

THIS DRAWING IS NOT TO SCALE





"TYPICAL EXIT RAMP" APPLICATION (NO SCALE)



"TYPICAL ENTRANCE RAMP" APPLICATION (NO SCALE)

✳ LEFT LANE CLOSURE

1. SIGNS ILLUSTRATED ARE FOR A RIGHT LANE CLOSURE.
2. WHEN CLOSING THE LEFT TRAVEL LANE, USE THE FOLLOWING:
   2 - W20-5L-48-10 2 - W20-5L-48-1/2 MILE
   2 - W4-2L-48 1 - R4-7-48
3. THE STRIPES ON THE BARRICADES TO THE LEFT OF TRAFFIC SHALL SLOPE DOWNWARD FROM THE UPPER LEFT TO THE LOWER RIGHT.
4. THE FLASHING ARROW AND THE "LARGE ARROW" SIGN (W1-6-48) SHALL POINT TO THE RIGHT.
5. THE CHANGEABLE MESSAGE SIGN SHALL FLASH ALTERNATELY TO READ "LEFT LANE CLOSED", "MERGE RIGHT".

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THIS TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PAVEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS; ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org .
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL.
8. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH EITHER PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE III FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
9. REFLECTORIZE ALL BARRICADES WITH A TYPE VIII OR IX PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2012 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE II BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 4 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THIS TRAFFIC CONTROL SETUP. HOWEVER, WHEN A CHANGEABLE MESSAGE SIGN IS UTILIZED, INSTALL THE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS, THE ENGINEER, THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 5 PORTABLE PLASTIC DRUMS FOR DELINEATION AS ILLUSTRATED. 36" STANDARD TRAFFIC CONES OR 42" OVERSIZED TRAFFIC CONES ARE PROHIBITED AS SUBSTITUTES FOR THE PORTABLE PLASTIC DRUMS IN THIS APPLICATION. DURING A RIGHT LANE CLOSURE, THE SIGN SHOULD FLASH ALTERNATELY TO READ "RIGHT LANE CLOSED", "MERGE LEFT" AT A RATE THAT WILL PERMIT MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A LANE CLOSURE ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND

○ 36" TRAFFIC CONES

SOUTH CAROLINA FOUR WATERS ENGINEERING, INC No. 5166 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER 7-11-19 No. 21839 ANGELA BURGDORFER BRYAN

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839

Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SCDOT MOT DETAILS

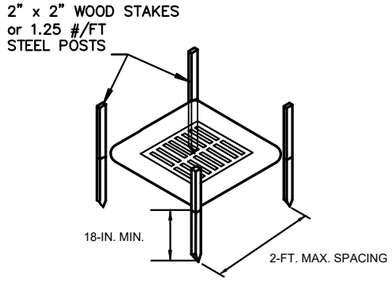
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN		
ABB	SLD		
JOB NUMBER	17-1007.21		
ISSUE DATE	JULY 2019		
ISSUE	100%		

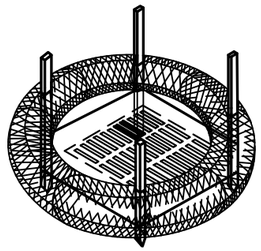
FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER
D-12

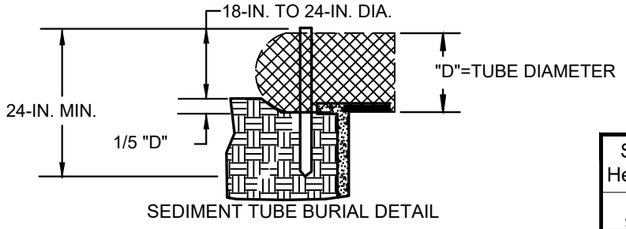
STEVE DUCHARME LOCATION: R:\17-1007.21 RIDGELAND SEWER IMPROVEMENTS\A\CDS\RIDGELAND CDBG CONSTRUCTION.DWG



POST INSTALLATION DETAIL



SEDIMENT TUBE INSTALLATION DETAIL



SEDIMENT TUBE BURIAL DETAIL

PLAN SYMBOL

A

South Carolina Department of Health and Environmental Control

Type A

SEDIMENT TUBE INLET PROTECTION

STANDARD DRAWING NO. SC-07A PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

TYPE A – FILTER FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

TYPE A – POST REQUIREMENTS

1. Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Install posts to a minimum of 24-inches. A minimum height of 1- to 2- inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
4. Post spacing shall be at a maximum of 3-feet on center.

TYPE A – INSPECTION & MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
7. Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
8. Inlet protection structures should be removed after all the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

South Carolina Department of Health and Environmental Control

Type A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC-07 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

FOUR WATERS ENGINEERING, INC No. 5166 CERTIFICATE OF AUTHORIZATION SOUTH CAROLINA

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER ANGELA BURGDORFF BRYAN 7-11-19 No. 21839

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				

Signature
Angela B. Bryan, P.E.
SC Professional Eng. #21839

Date

TOWN OF RIDGELAND SEWER SYSTEM REHABILITATION

SEDIMENT & EROSION CONTROL DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	SLD
JOB NUMBER	17-1007.21
ISSUE DATE	JULY 2019
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N, JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DRAWING NUMBER

D-13