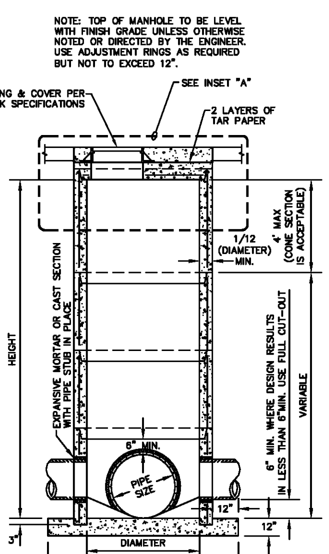
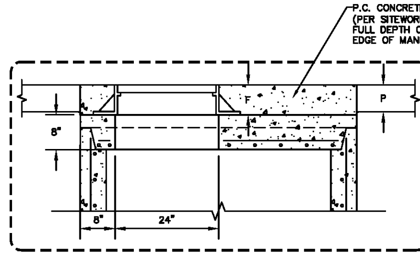
PRECAST MANHOLE

N.T.S.



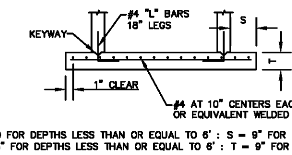
PRECAST BASE SECTION SET ON CONCRETE BLOCKS FOUNDATION SLAB AND INVERT POURED MONOLITHIC.

SECTION "A"–"A"



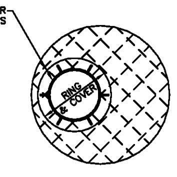
INSET "A"

FOUNDATION SLAB AND BASE SECTION MAY BE POURED MONOLITHIC OR SEPARATELY WITH A KEYWAY. INVERT SHALL BE POURED AFTER PLACEMENT OF MANHOLE.

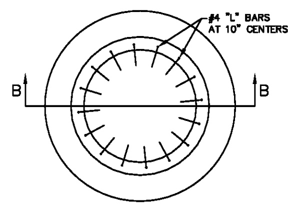


S = 0 FOR DEPTHS LESS THAN OR EQUAL TO 6' : S = 9" FOR DEPTHS GREATER THAN 6'.
T = 6" FOR DEPTHS LESS THAN OR EQUAL TO 6' : T = 9" FOR DEPTHS GREATER THAN 6'.

SECTION "B"–"B"



PLAN OF MANHOLE TOP

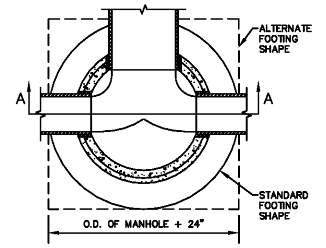


PRECAST FOUNDATION SLAB

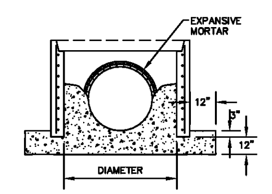
BASE SECTION DIMENSIONS	
SIZE OF PIPE	MIN. DIA.
24" OR SMALLER	48"
30" – 36"	60"
42" – 48"	72"

GENERAL NOTES:

1. PRECAST MANHOLE SHALL BE MANUFACTURED PER LATEST ASTM C478 AND C913 SPECIFICATIONS.
2. THE CONFIGURATION DETAILS SHOWN ARE DESCRIPTIVE ONLY AND MAY BE VARIED TO CONFORM WITH AN ESTABLISHED MANUFACTURING PROCEDURE.
3. FORMED OR CUT OUT OPENINGS SHALL BE PROVIDED WHERE PIPE INLETS AND OUTLETS ARE SHOWN ON THE PLANS.
4. THE TOP OF THE INLET SHALL NOT BE SET BELOW THE TOP OF THE OUTLET PIPE.
5. REINFORCEMENT SHALL BE CUT AT PIPE OPENINGS.
6. WHERE PIPES DO NOT ENTER OR EXIT RADIALLY, USE NEXT LARGER SIZE MANHOLE.
7. CIRCUMFERENTIAL REINFORCEMENT SIZE AND PLACEMENT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS TO A MAXIMUM DEPTH OF 20 FEET. OVER 20 FOOT DEPTH CIRCUMFERENTIAL REINFORCEMENT IS INCREASED TO 0.24 SQUARE INCHES STEEL REQUIRED PER LINEAR FOOT, TO A MAXIMUM DEPTH OF 30 FEET.
8. FOR PIPE CONNECTIONS, A RUBBER GASKET IN ACCORDANCE WITH ASTM RUBBER GASKET SPECIFICATIONS C443 OR C923 AND CAST INTEGRALLY IN MANHOLE MAY BE USED AS AN ALTERNATE TO EXPANSIVE MORTAR.

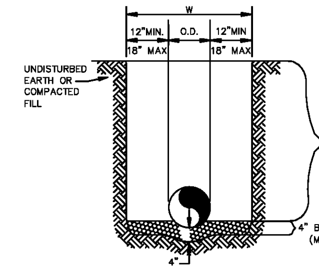


PLAN OF FOOTING



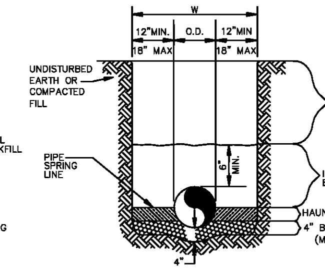
PRECAST BASE SECTION SET ON CONCRETE BLOCKS FOUNDATION SLAB AND INVERT POURED MONOLITHIC.

ALTERNATE FOOTING



REINFORCED CONCRETE PIPE (RCP) AND SPIRAL RIB PIPE SMALLER THAN 60"ø

N.T.S.



ALL OTHER PIPES INCLUDING SPIRAL RIB PIPE 60"ø AND LARGER

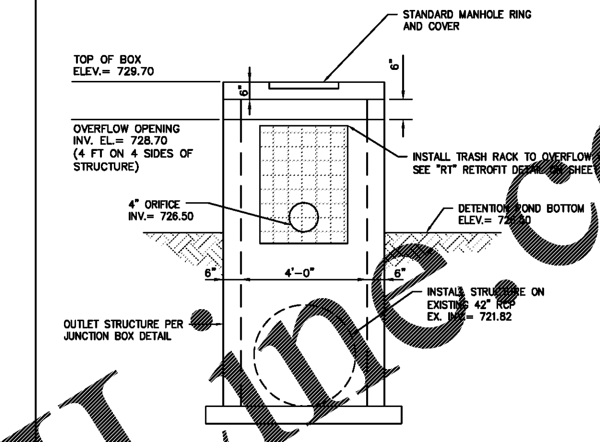
N.T.S.

GENERAL NOTES

1. BEDDING SHALL BE CLASS I–A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I–B COMPACTED TO 85% STANDARD PROCTOR.
2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I–A OR CLASS I–B OR CLASS II COMPACTED TO 85% PROCTOR.
3. INITIAL BACKFILL SHALL BE CLASS I–A WORKED BY HAND, OR CLASS I–B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR.
5. FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3. AND 4.
6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV–A COMPACTED TO 95% STANDARD PROCTOR.
7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321–LATEST EDITION.
8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV–A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
9. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
10. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

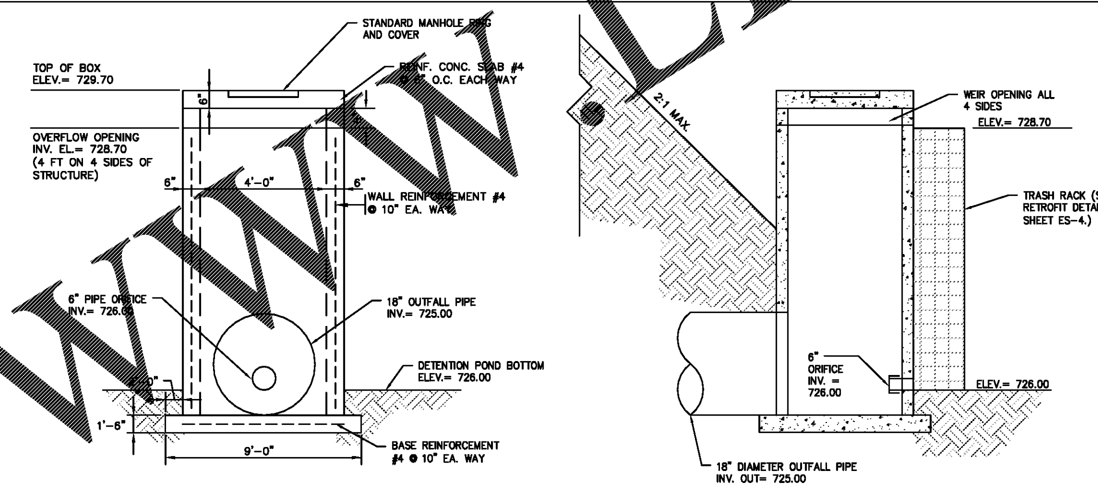
STORM SEWER TRENCH AND BEDDING

N.T.S.



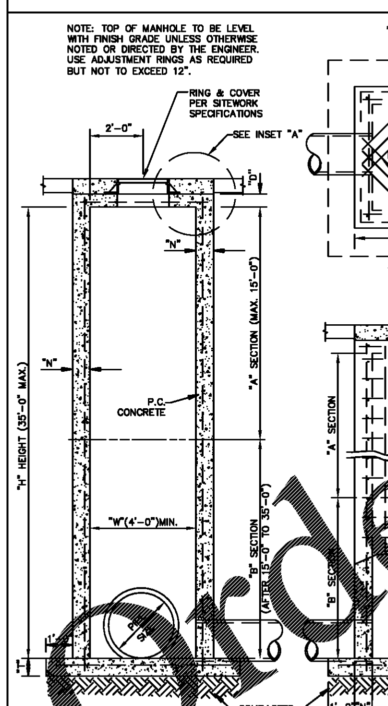
OUTLET CONTROL STRUCTURE DETENTION POND #2

N.T.S.

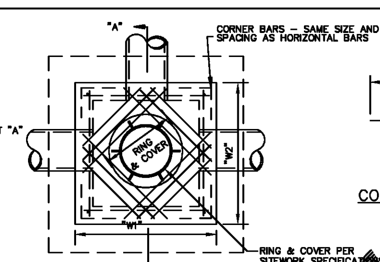


OUTLET CONTROL STRUCTURE DETENTION POND #1

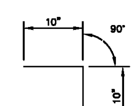
N.T.S.



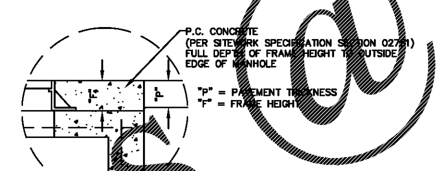
SECTION "A"–"A"



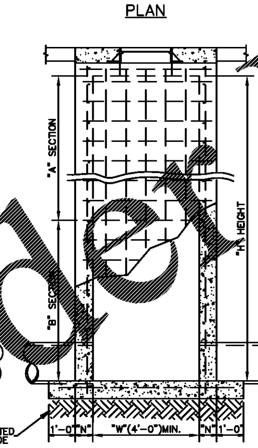
PLAN



CORNER BAR



INSET "A"



ELEVATION

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. ALL REINFORCING BARS TO HAVE 2" COVER.
3. SEE GRADING AND DRAINAGE PLAN FOR PIPE SIZES, LOCATIONS, AND FLOW LINES.
4. PIPES SHALL CONNECT TO THE ENDS OR SIDES OF THE INLET. CONNECTION SHALL NOT BE MADE AT CORNERS OF BOX.
5. ALL REINFORCING BARS TO BE GRADE 60.
6. PRECAST MANHOLE MAY BE USED UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.

PRECAST MANHOLE SPECIFICATIONS

ASTM C478 – PRECAST REINFORCED CONCRETE MANHOLE SECTIONS
ASTM C913 – PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES
CONCRETE: 4000 PSI AE (MIN.)
JOINT: WATERTIGHT RUBBER GASKET

REINFORCEMENT SCHEDULE, BASE	
SECTION	
"A"	#4's @ 6" E.W.
"B"	#6's @ 6" E.W.

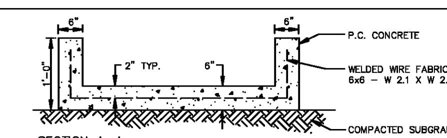
TABLE OF 'W' DIMENSIONS			
PIPE SIZE	SKEW OF CROSS DRAIN		
SINGLE	STRAIGHT	30°	45°
24"	4'–0"	4'–0"	4'–10"
30"	4'–0"	4'–7"	5'–8"
36"	4'–0"	5'–3"	6'–5"
42"	5'–3"	5'–11"	7'–3"
48"	5'–10"	6'–7"	8'–0"
60"	7'–0"	7'–10"	9'–8"
DOUBLE	FOR "A" SECTION ONLY		
24"	7'–0"	7'–10"	9'–5"
30"	8'–2"	9'–2"	11'–0"
36"	9'–4"	10'–6"	12'–6"
42"	10'–6"	11'–10"	14'–2"
48"	11'–8"	13'–2"	15'–10"

REINFORCEMENT SCHEDULE, WALLS			
SECTION	WIDTH ("W")	HOR.	VERT.
"A"	4'	#4's @ 9"	#4's @ 10"
	BETWEEN 4' & 7'	#6's @ 9"	#4's @ 10"
	GREATER THAN 7'	#5's @ 4 1/2"	#4's @ 10"
"B"	4'	#4's @ 6"	#4's @ 10"
	BETWEEN 4' & 7'	#6's @ 6"	#4's @ 10"

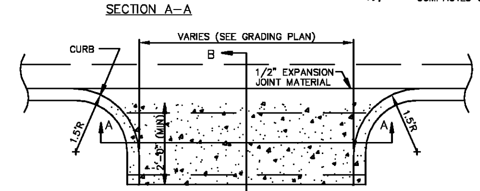
TABLE OF "T" & "N" DIMENSIONS				
SECTION	WIDTH ("W")	"T"	"N"	"D"
"A"	BETWEEN 4' & 7'	6" + PIPE THICKNESS	8"	6"
	GREATER THAN 7'	6" + PIPE THICKNESS	8"	8"
"B"	4'	6" + PIPE THICKNESS	8"	8"
	BETWEEN 4' & 7'	6" + PIPE THICKNESS	10"	8"

REINFORCEMENT SCHEDULE, TOP		
DIMENSIONS	STEEL	SPECIAL PATTERN
W1 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W2 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W1 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W2 = 7' OR GREATER	#4'S @ 6" E.W.	DIAGONAL @ COVER
W1 = 7' OR GREATER	#4's @ 6" E.W.	DIAGONAL @ COVER
W2 = 7' OR GREATER	#4's @ 6" E.W.	DIAGONAL @ COVER

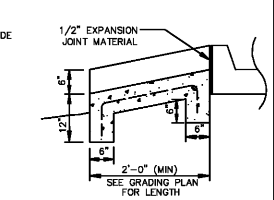
JUNCTION BOX



SECTION A–A



PLAN



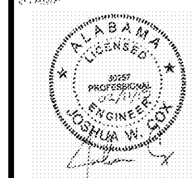
SECTION B–B

CONCRETE FLUME

N.T.S.

Buckel Design Group, LLC.
3471 DONAVILLE ST
DULUTH, GA 30096
PHONE: 404-567-5701
FAX: 404-567-5703
WWW.BDGSE.COM

STAMP



PROPOSED COMMERCIAL DEVELOPMENT
TRUSSVILLE, JEFFERSON COUNTY, AL

FOR: GEMCAP DEVELOPMENT
WINSTON-SALEM, NORTH CAROLINA

REVISION	BY

DRAWN GDL
CHECKED ADB
ISSUED DATE 2/11/2019
ISSUED FOR PERMIT REVIEW
PROJECT NO. 18-188
FILE 18-188 Details

GRADING DETAILS

SHEET D-3

USER Glynch – Feb 14, 2019 – 9:56am
P:\Project Drawing Files\Site Department\2018\18-188 Trussville, AL\18-188 Details.dwg – LAYOUT: D-3

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