PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2C-12

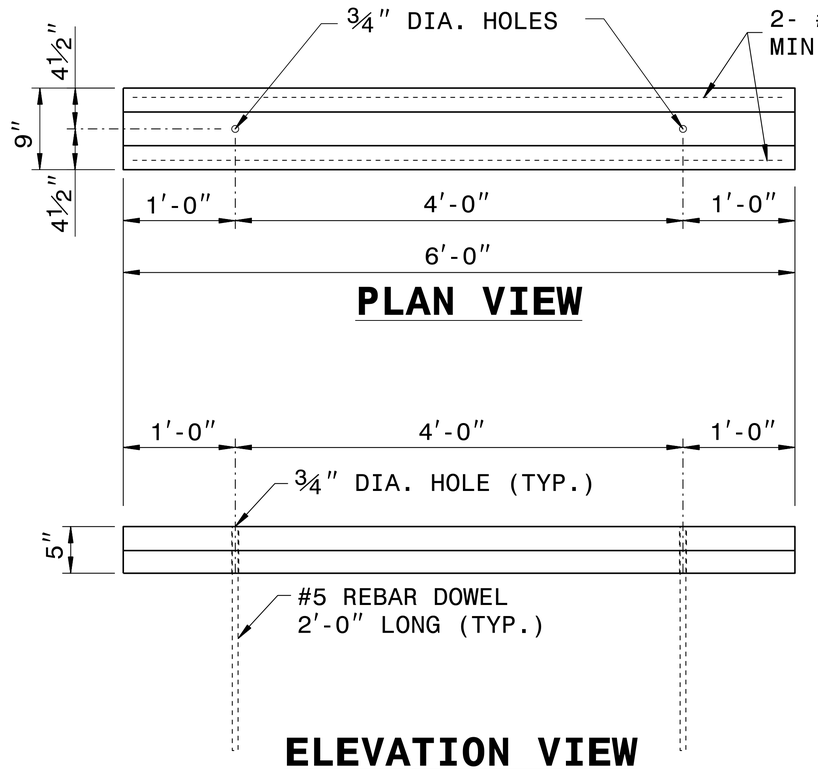
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

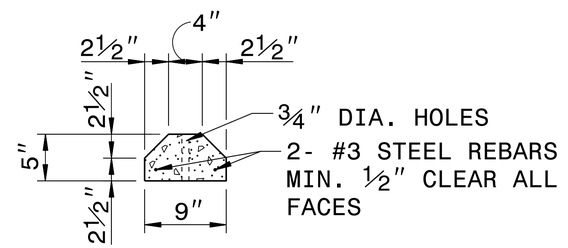
PRECAST CONCRETE PARKING CURB

SHEET 1 OF 1

PRCSTCRB



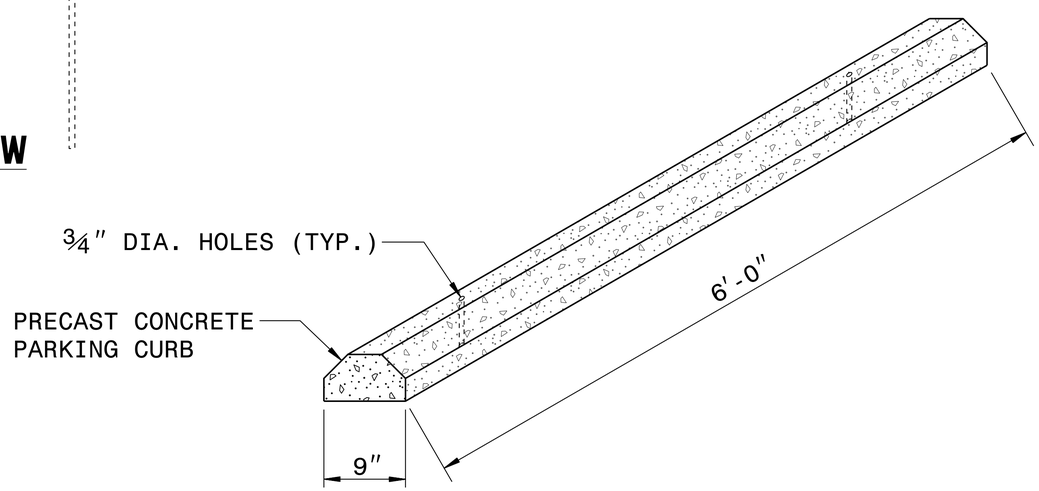
PLAN VIEW



END VIEW

ELEVATION VIEW

CENERAL NOTES:
-CONCRETE COMPRESSIVE STRENGTH
 4000psi MIN.
-ASTM A615M - GRADE 400 REINFORCING
 STEEL.



ISOMETRIC VIEW

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

PRECAST CONCRETE PARKING CURB

SHEET 1 OF 1

PRCSTCRB

DocuSigned by:
Nicole Hackler
58843293C...
SEAL
33144
NORTH CAROLINA PROFESSIONAL ENGINEER
NICOLE HACKLER
4/27/2023

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Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. WARD DATE: 5-97
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: s:eric\usr\details\metric\stand\prstcrb_eng.dgn

30-NOV-2018 13:30
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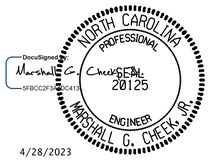
jhowerton AT CSD-292595

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-1



4/28/2023

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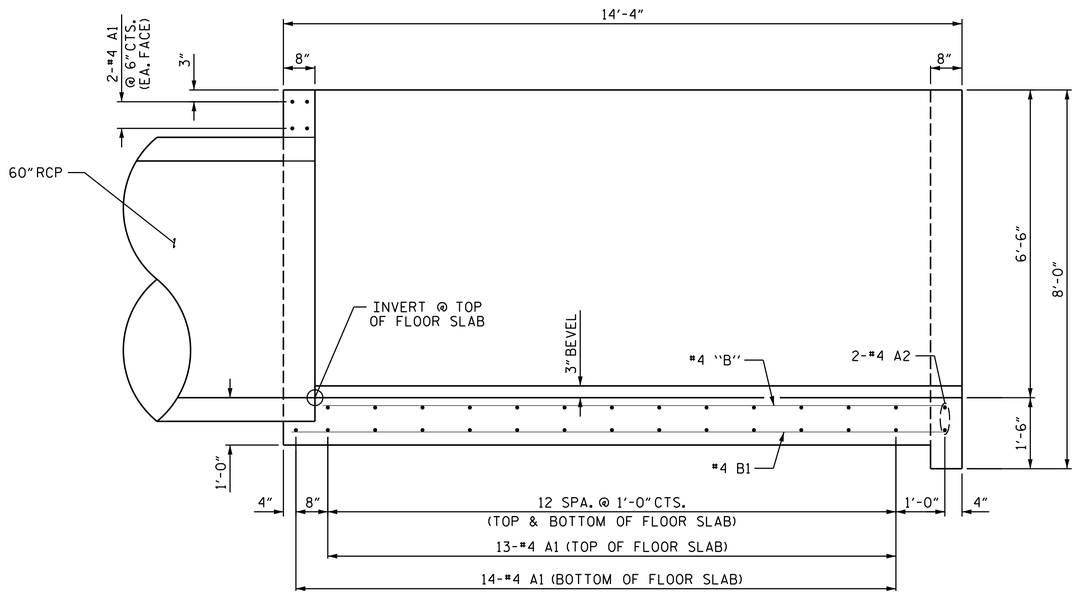
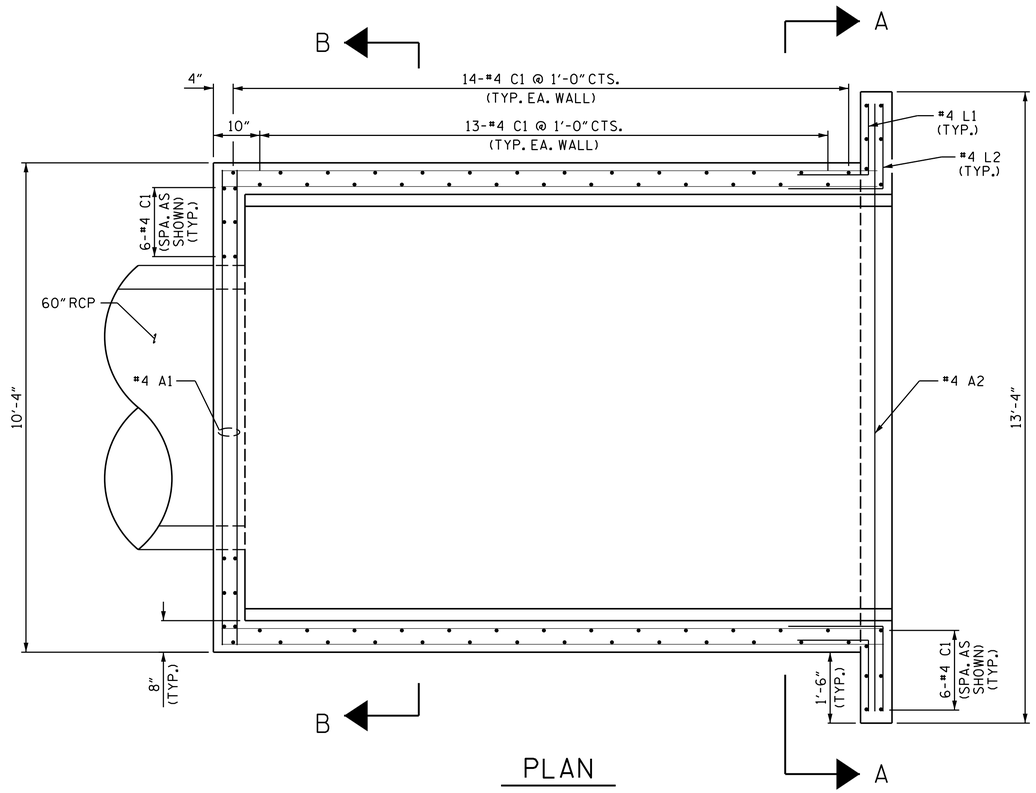
TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

SPECIAL DESIGN ENDWALL

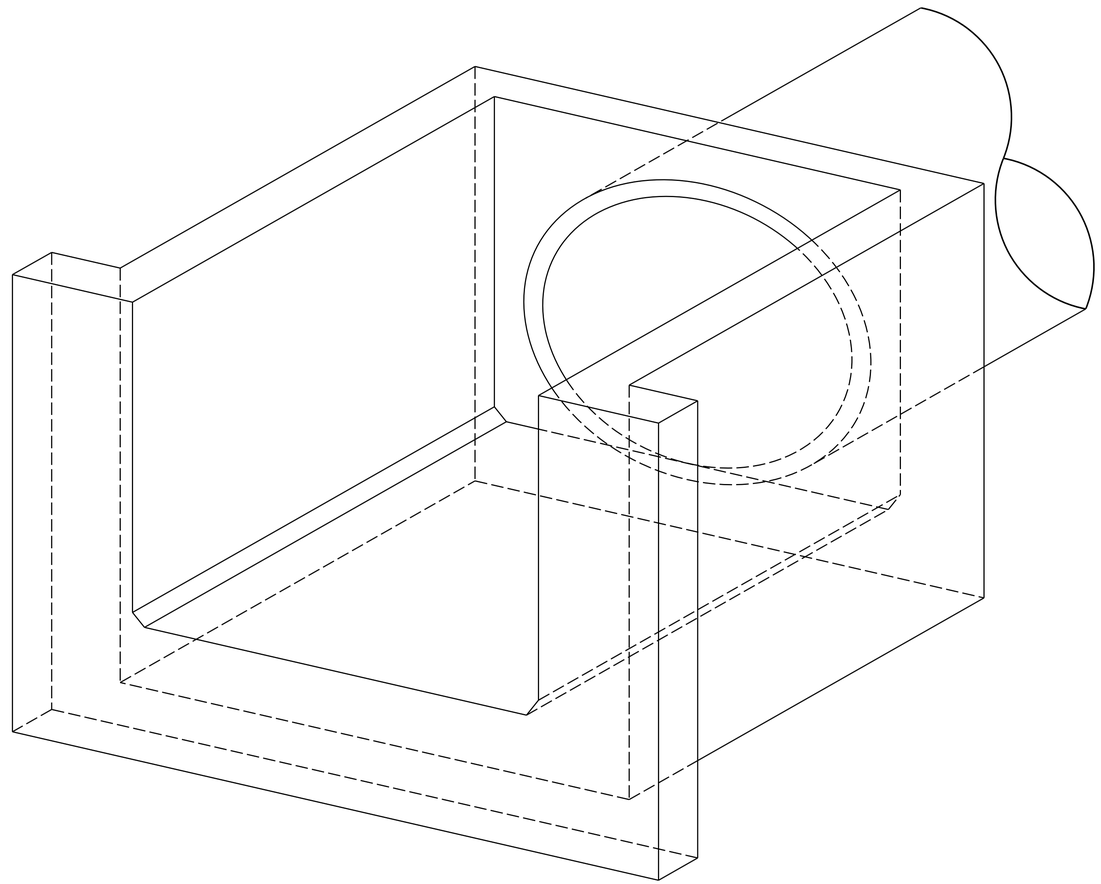
-L- STA. 44+98 LT
STRUCTURE #0656



SECTION ALONG ℄



PLAN

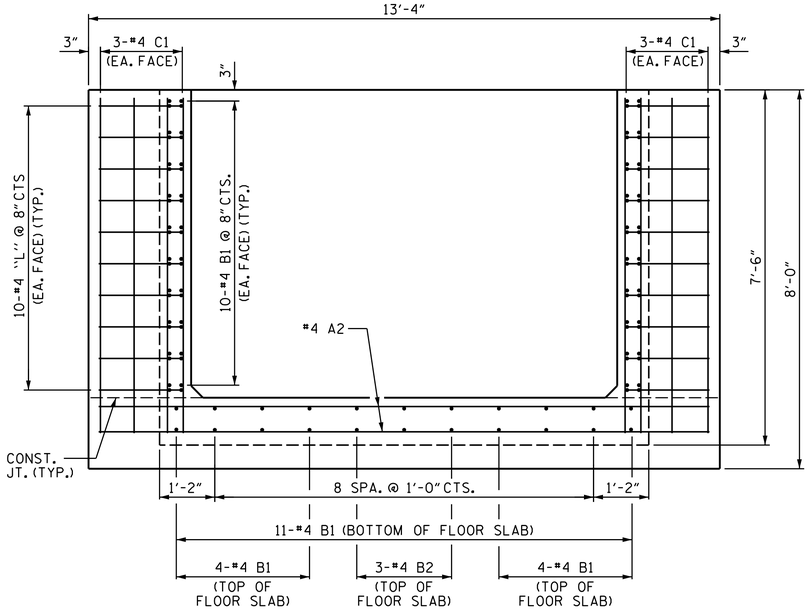


DRAWN BY : STM DATE : 09/21
CHECKED BY : MGC DATE : 09/21

2/15/2022
X:\NCDOT\R-3833C\Structures\Energy Dissipator.dgn
User:smassinople

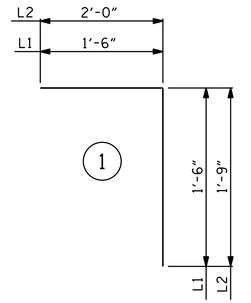
SPECIAL DESIGN ENDWALL

-L- STA. 44+98 LT
STRUCTURE #0656



SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-2

DocuSigned by: Marshall G. Cheek 5FBCC2F3A4DC413...

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK, JR.

4/28/2023

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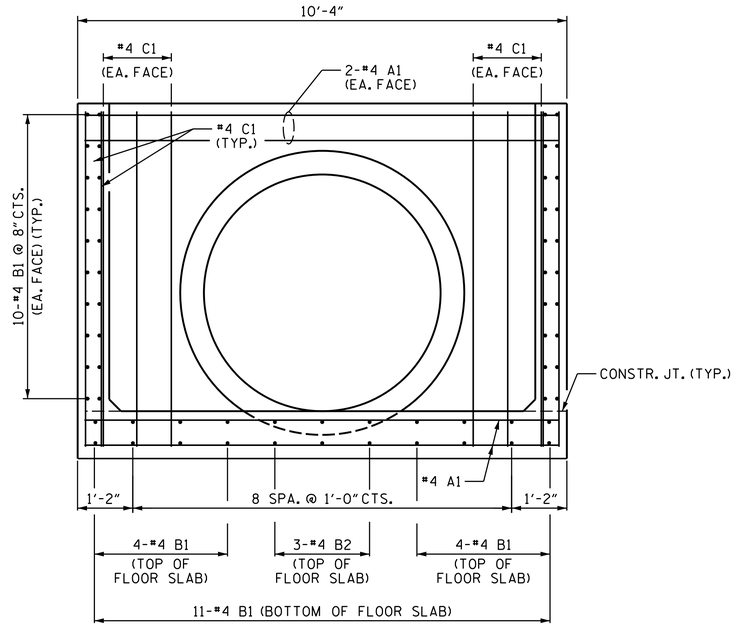
TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

BILL OF MATERIAL

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
A1	31	#4	STR	10'-0"	207
A2	2	#4	STR	13'-0"	17
B1	59	#4	STR	13'-10"	545
B2	3	#4	STR	13'-2"	26
C1	78	#4	STR	7'-1"	369
L1	20	#4	1	3'-0"	40
L2	20	#4	1	3'-9"	50
REINFORCING STEEL					1254 LBS.
CLASS B CONCRETE					11.6 C.Y.



SECTION B-B

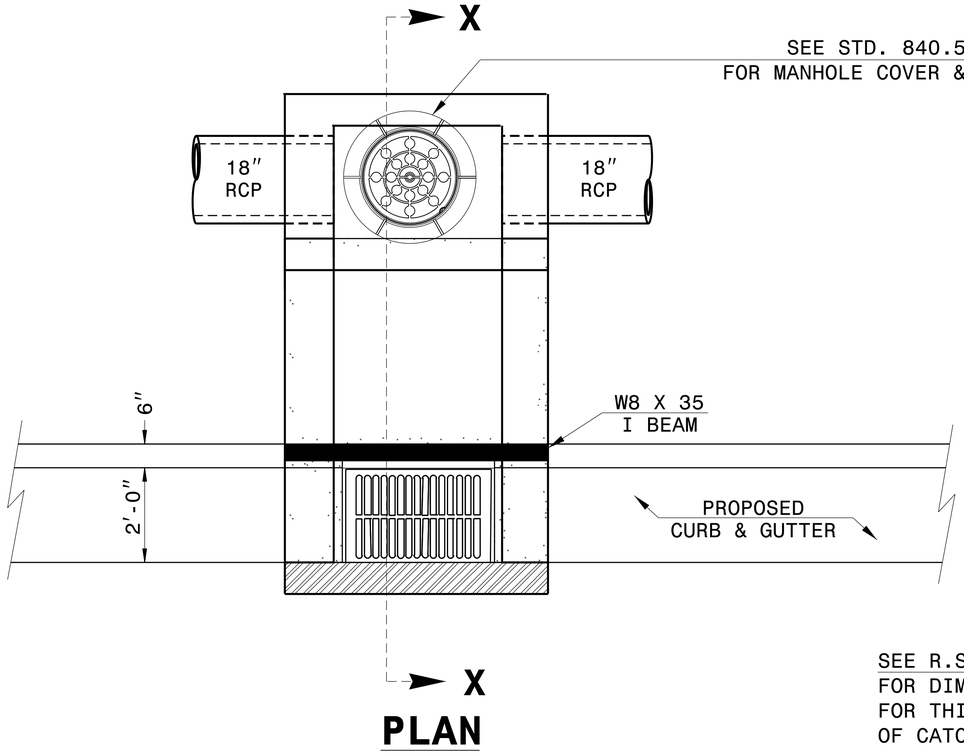
NOTES

ALL REINFORCING STEEL SHALL BE 2" CLEAR.

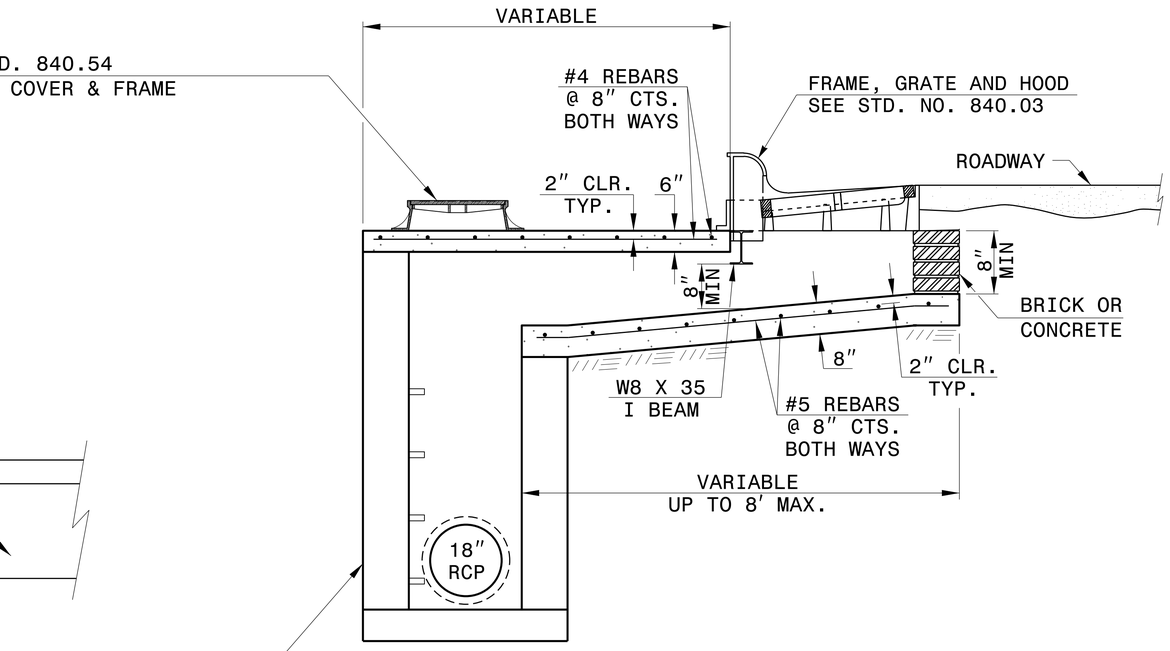
DRAWN BY : STM DATE : 09/21
CHECKED BY : MGC DATE : 09/21

2/15/2022
X:\NCDOT\R-3833C\Structures\Energy Dissipator.dgn
User:smassinople

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-3



PLAN



SECTION X-X

NOTES:

MORTAR JOINTS ½″ TO ¼″ THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

PROVIDE ALL CATCH BASINS OVER 3′-6″ IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144

DocuSigned by: Nicole Hyatt 5884323D...

4/27/2023

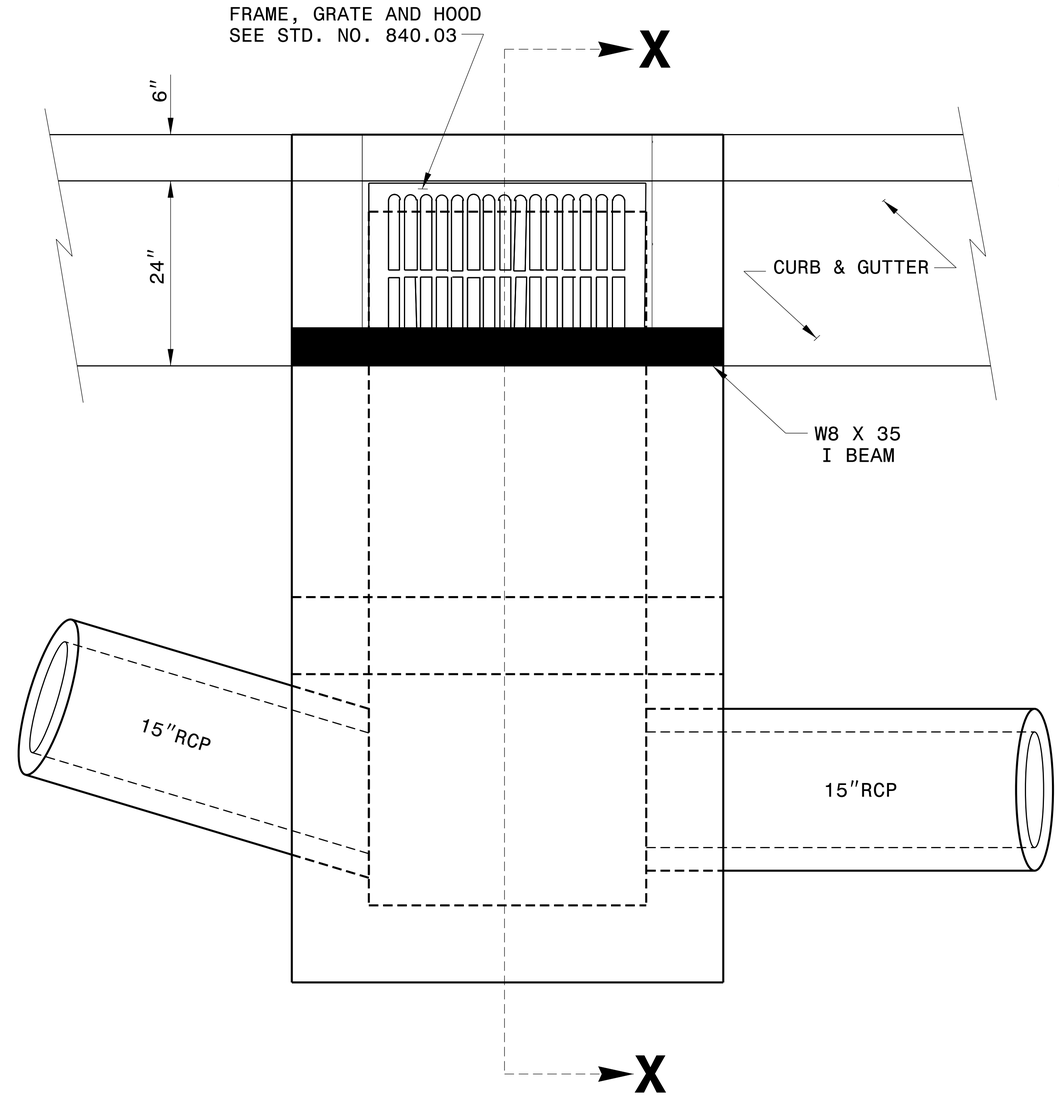
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

PROPOSED OFFSET CATCH BASIN

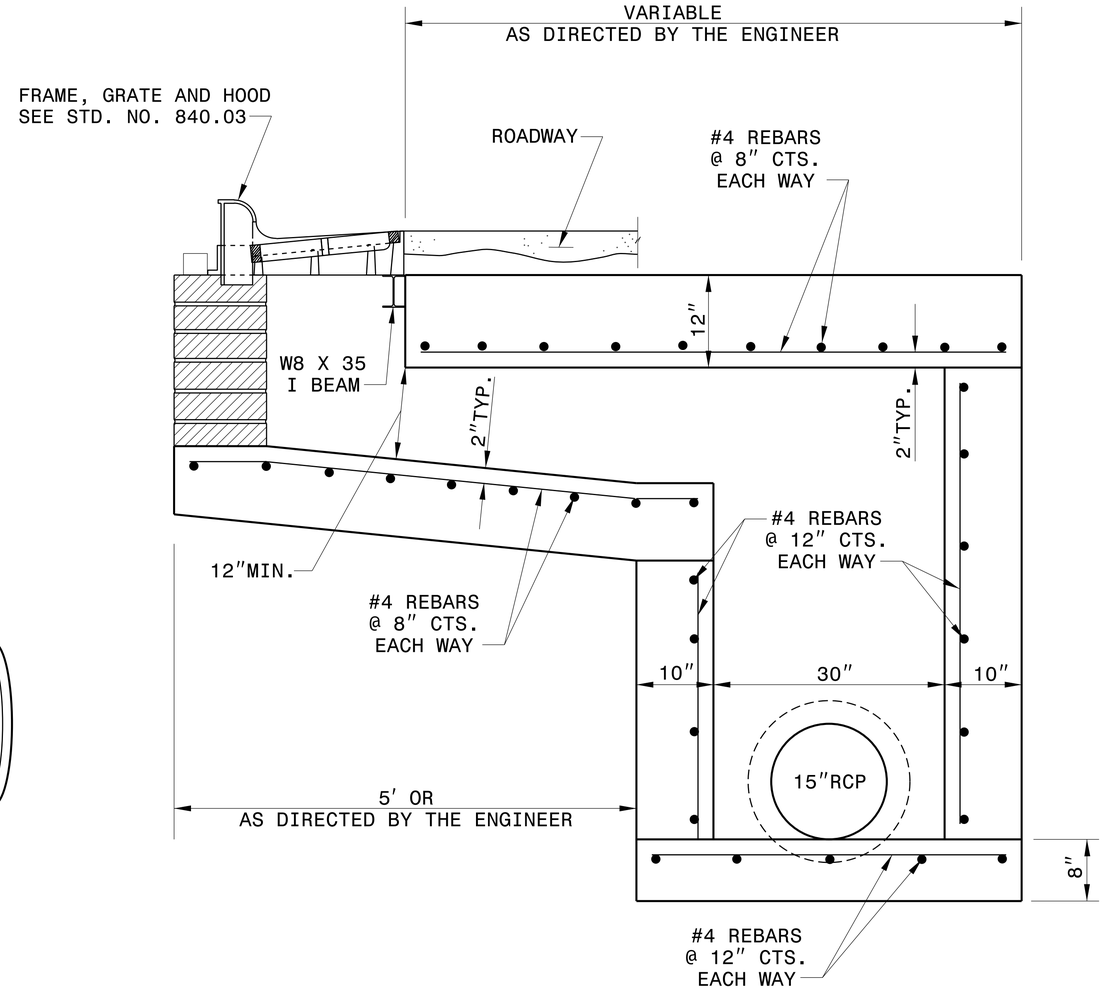
ORIGINAL BY: _____ DATE: _____
MODIFIED BY: K. KEMPF DATE: 2/22/13
CHECKED BY: _____ DATE: _____
FILE SPEC.: nbritt/english/hydro/840d06 offset boxes.dgn

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$SUN$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-4



PLAN



SECTION X-X

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

DocuSigned by: Nicole Britt 5884325D3A4B4...

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144

4/27/2023

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

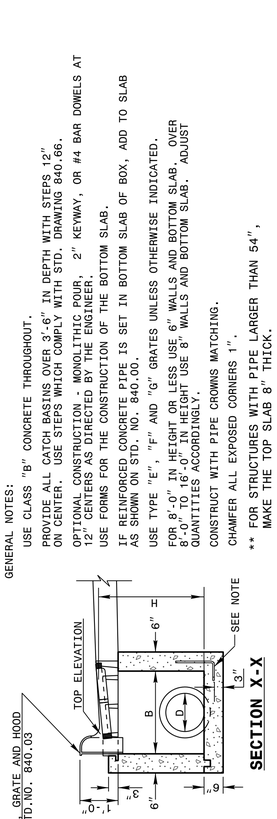
PROPOSED OFFSET CATCH BASIN

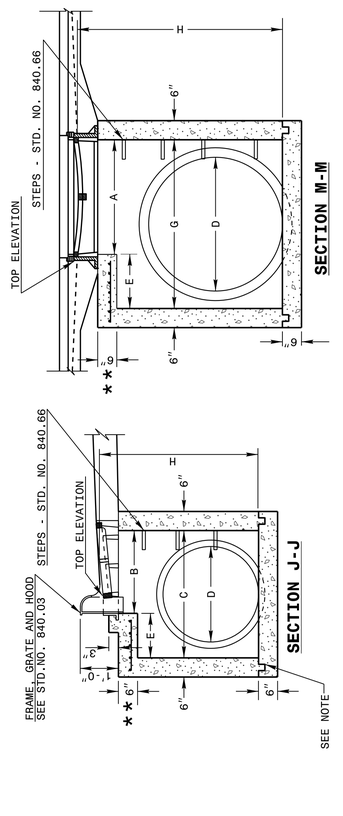
ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 10-30-2012
CHECKED BY: _____ DATE: _____
FILE SPEC.: nbritt/english/hydro/840d06.dgn

$$$$$$SYSTIME$$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$

5/14/99

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.

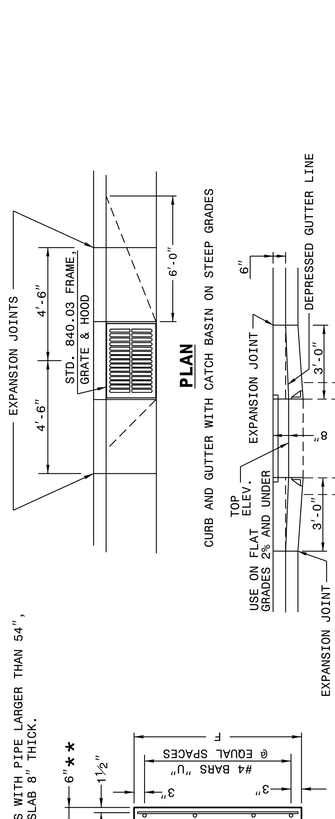




STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 1 OF 2 — 840D02



* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

PIPE D	DIMENSIONS OF BOX AND PIPE COVER SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	DIMENSION E	DIMENSION F	BARS-U NO.	BARS-U LENGTH	BARS-V NO.	BARS-V LENGTH	TOTAL LBS.	CU.YDS. CONC. IN BOX TOP SLAB	CU.YDS. CONC. IN BOX BOTTOM SLAB	CU.YDS. CONC. IN BOX TOT. CONC. FOR MINIMUM HEIGHT H	DEDUCTIONS ONE PIPE C.M.	DEDUCTIONS ONE PIPE R.C.
12"	3'-0"	2'-2"	--	--	2'-0"	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			2'-3"									0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			2'-6"									0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-1"									0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"	3'-4"	3'-10"	1'-2"	4'-4"	4	1'-6"	2	4'-1"	39	0.123	0.347	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	3'-10"	4'-4"	1'-8"	4'-10"	4	1'-11"	3	4'-7"	43	0.161	0.432	1.714	0.132	0.178
42"	3'-0"	2'-2"	4'-5"	4'-5"	4'-11"	2'-2"	5'-5"	5	2'-5"	3	5'-2"	47	0.200	0.543	1.738	0.160	0.243
48"	3'-0"	2'-2"	5'-0"	5'-0"	5'-6"	2'-10"	6'-0"	5	3'-1"	4	5'-9"	51	0.235	0.667	2.052	0.235	0.317
54"	3'-0"	2'-2"	5'-7"	5'-7"	6'-0"	3'-5"	6'-7"	6	3'-8"	5	6'-4"	56	0.289	0.802	2.387	0.297	0.401
60"	3'-0"	2'-2"	6'-3"	6'-3"	6'-6"	4'-1"	7'-3"	6	4'-4"	5	7'-0"	61	0.340	0.973	2.722	0.363	0.546
66"	3'-0"	2'-2"	6'-11"	6'-11"	7'-0"	4'-9"	7'-11"	7	5'-0"	6	7'-8"	66	0.391	1.160	3.057	0.440	0.655
72"	3'-0"	2'-2"	7'-6"	7'-6"	7'-6"	5'-3"	8'-6"	7	5'-6"	6	8'-3"	72	0.442	1.340	3.392	0.524	0.774
78"	3'-0"	2'-2"	8'-1"	8'-1"	8'-0"	5'-11"	9'-1"	8	6'-2"	7	8'-10"	78	0.493	1.530	3.727	0.615	0.893
84"	3'-0"	2'-2"	8'-9"	8'-9"	8'-6"	6'-7"	9'-9"	8	6'-10"	7	9'-6"	84	0.544	1.760	4.062	0.713	1.010

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 2 OF 2 — 840D02

4/27/2023

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ORIGINAL BY: 2002 Std.840.01 DATE:
MODIFIED BY: E.E. WARD DATE: 3-1-02
CHECKED BY: DATE:
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jhowerton
AT CSD-292595

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-6

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

PRECAST MANHOLE 7′, 8′ AND 9′ DIAMETER

SHEET 1 OF 1

840D52

GENERAL NOTES

USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.

DESIGN, FABRICATE AND ASSEMBLE PRECAST MANHOLE COMPONENTS IN ACCORDANCE WITH AASHTO M199.

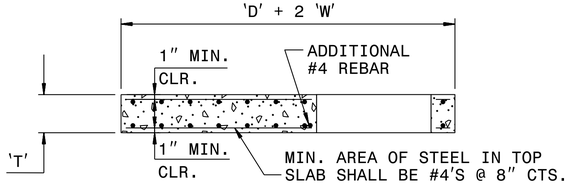
ASSEMBLE RISER AND GRADE RINGS WITH STEPS SPACED 16″ FROM THE TOP TO THE BOTTOM OF THE MANHOLE.

WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, THE TOP OF THE MANHOLE IS TO BE FLUSH WITH THE GROUND. AT OTHER LOCATIONS IT SHOULD BE A MINIMUM OF 9″ ABOVE THE GROUND.

DEPTH OF FILL LIMITED TO 30′-0″ FROM FINSH GRADE TO TOP OF BOTTOM SLAB.

THE MIN. SLAB THICKNESS 'T' SHALL BE THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.

* TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.



FLAT TOP SLAB

FRAME AND GRATES	STD. NO.
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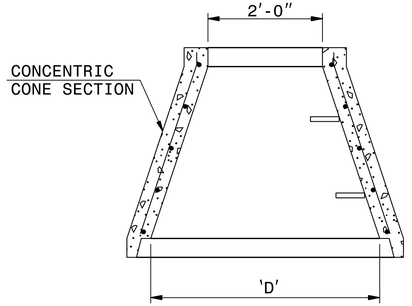
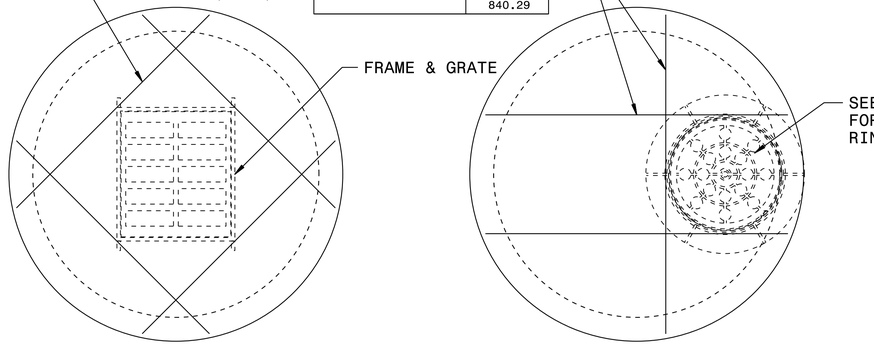
NONTRAFFIC BEARING:	840.16
	840.20
	840.22
	840.24
	840.29

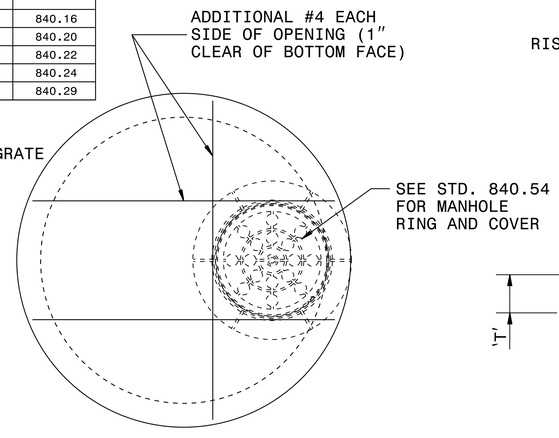


ALTERNATE CONE SECTION

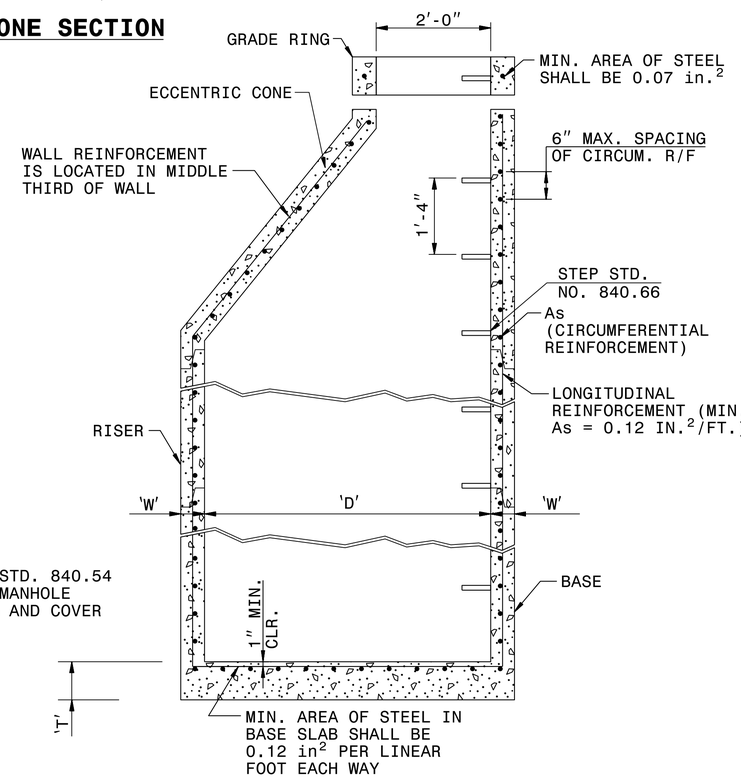
D	W	T	As
INTERNAL DIAMETER (FT.)	MIN. WALL THICKNESS (IN.)	MIN. TOP/BOTTOM SLAB THICKNESS (IN.)	MIN. CIRCUMFERENTIAL AREA OF STEEL PER VERTICAL FT. (SQ. IN.)
7	8.0	8	0.21
8	8.5	8	0.24
9	9.0	9	0.27



GRATED INLET OPTION



MANHOLE OPTION



TYPICAL MANHOLE SECTION

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

PRECAST MANHOLE 7′, 8′ AND 9′ DIAMETER

SHEET OF

840D52

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DocuSigned by: Nicole Tisdale 58843230340...
4/27/2023

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144 NICOLE R. TISDALE

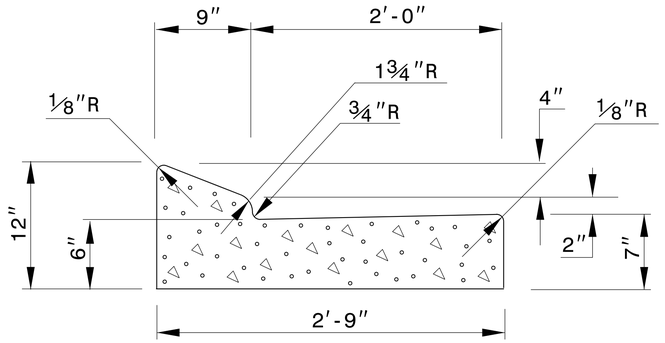
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

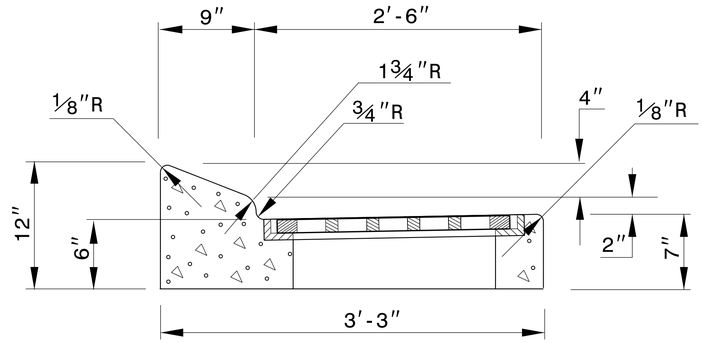
ORIGINAL BY: T.S.Spell DATE: 7-17-00
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: ds174:usr/details/stand/840d52_8&9.dgn

5/14/99

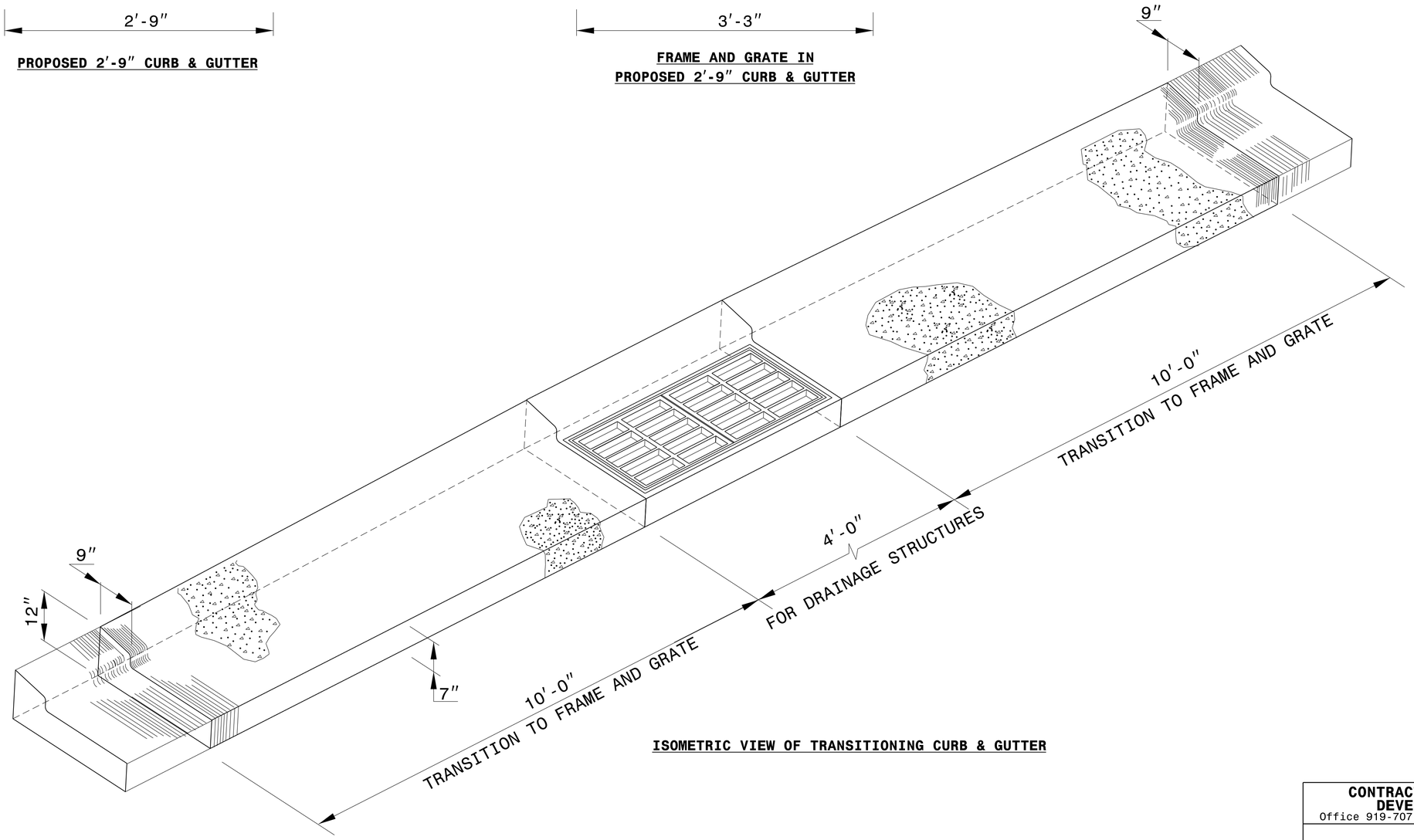
PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-7



PROPOSED 2′-9″ CURB & GUTTER



FRAME AND GRATE IN
PROPOSED 2′-9″ CURB & GUTTER



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

DocuSigned by: Nicole 588432303...
NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M. KEMPF
4/27/2023

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DETAIL OF 2′-9″ TO FRAME AND GRATE

ORIGINAL BY:_____ DATE:_____
MODIFIED BY:_____ DATE:_____
CHECKED BY:_____ DATE:_____
FILE SPEC.: kkempf/english/curb gutter transition.dgn

8/17/99

ENERGY DISSIPATOR BASIN & CHANNEL CHANGE

SHEET 1 OF 2

1″ = 10′

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-8
R/W SHEET NO.	

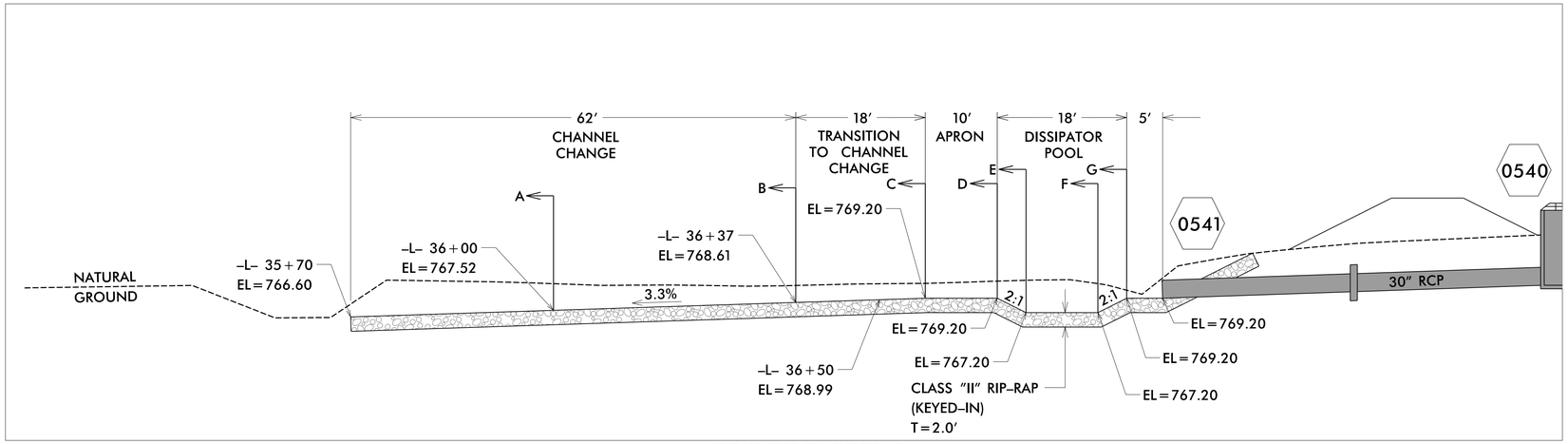
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044158 ENGINEER BENJAMIN J. HENEGAR

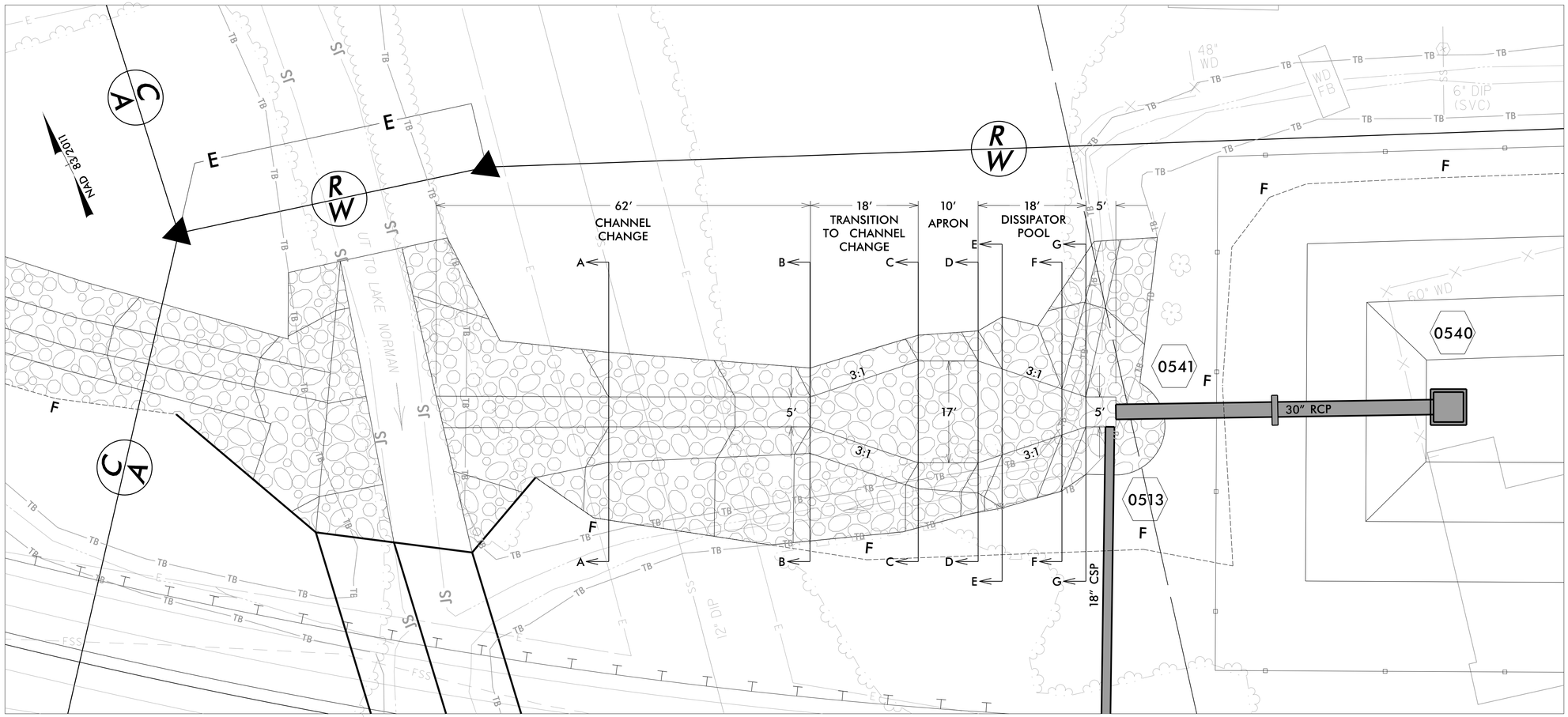
DocuSigned by: Benjamin Henegar

4/27/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROFILE VIEW



PLAN VIEW

8/17/99

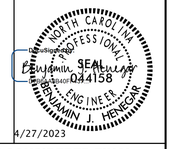
ENERGY DISSIPATOR BASIN & CHANNEL CHANGE

SHEET 2 OF 2

1″ = 10′

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-9
R/W SHEET NO.	

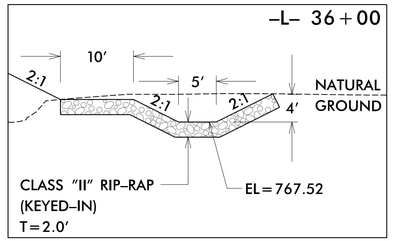
HYDRAULICS ENGINEER



4/27/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CROSS SECTIONS



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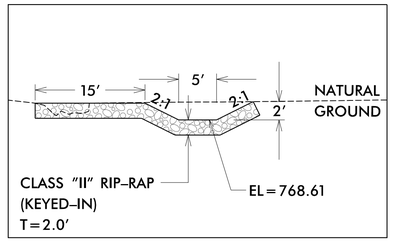

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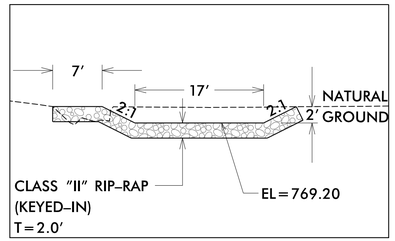

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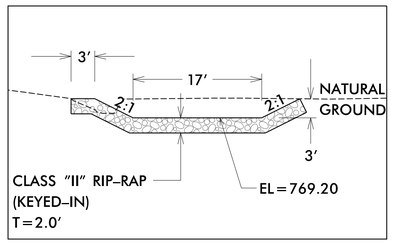

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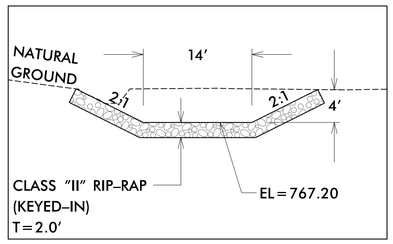

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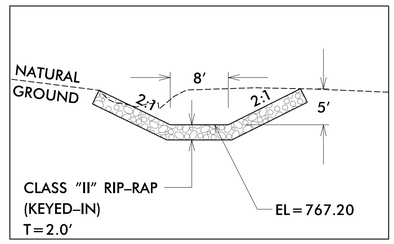

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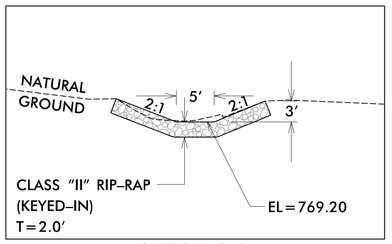

SECTION G–G

8/17/99

DRY DETENTION BASIN

SHEET 1 OF 5

1″=10′

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-10
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044158 ENGINEER BENJAMIN J. HENEGAR

8/24/2023

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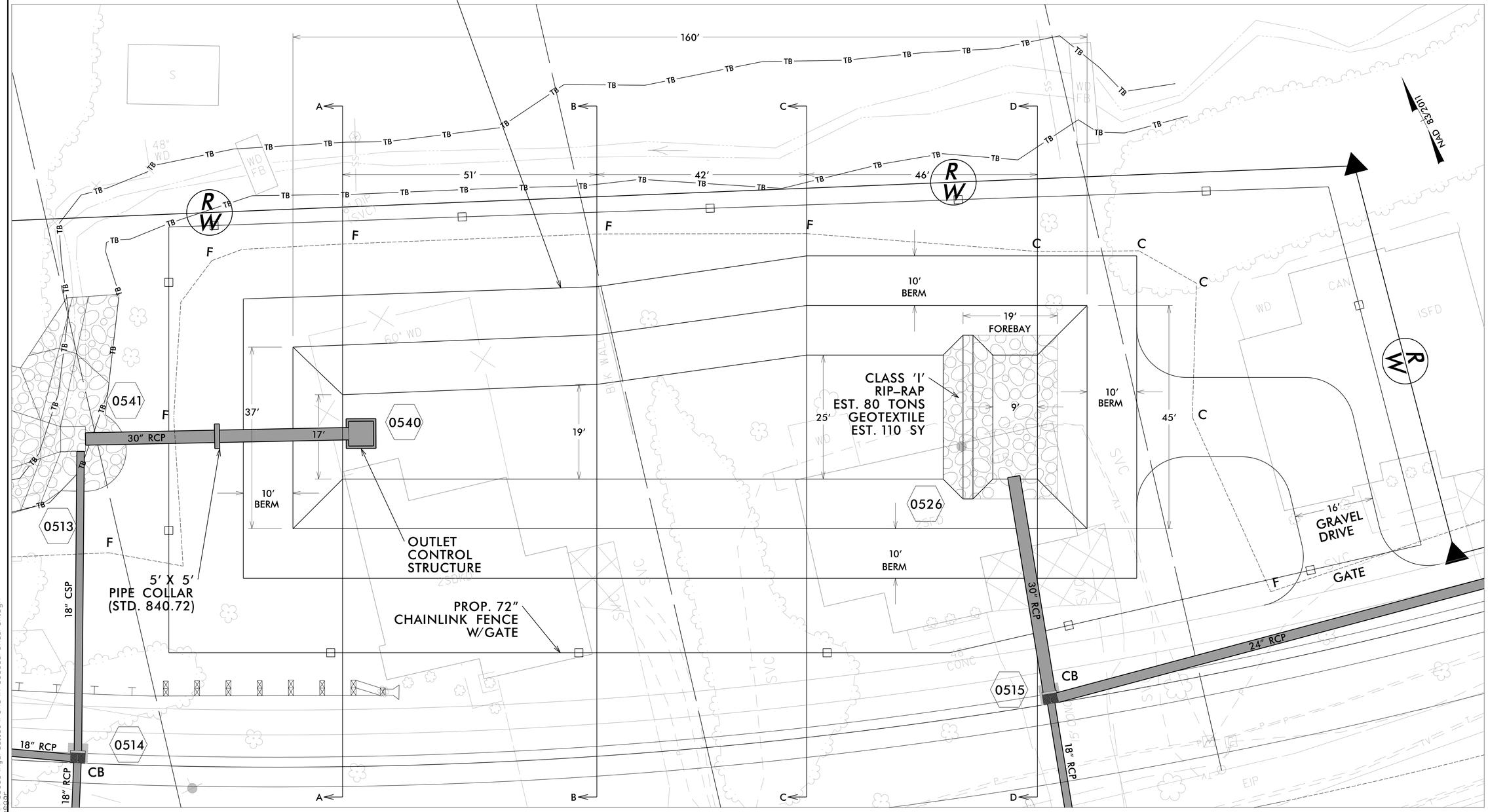
DRY DETENTION BASIN
EST. 19,500 CY UNCLASSIFIED EXCAVATION
EST. 22,500 CY BORROW EXCAVATION



PLAN VIEW

8/24/2023
K:\NCDOT\R-3833C\Hydraulics\Pond\R-3833C_Pond_PSH.dgn
User:bhenegar

8/17/99

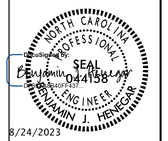
DRY DETENTION BASIN

SHEET 2 OF 5

1″=10′

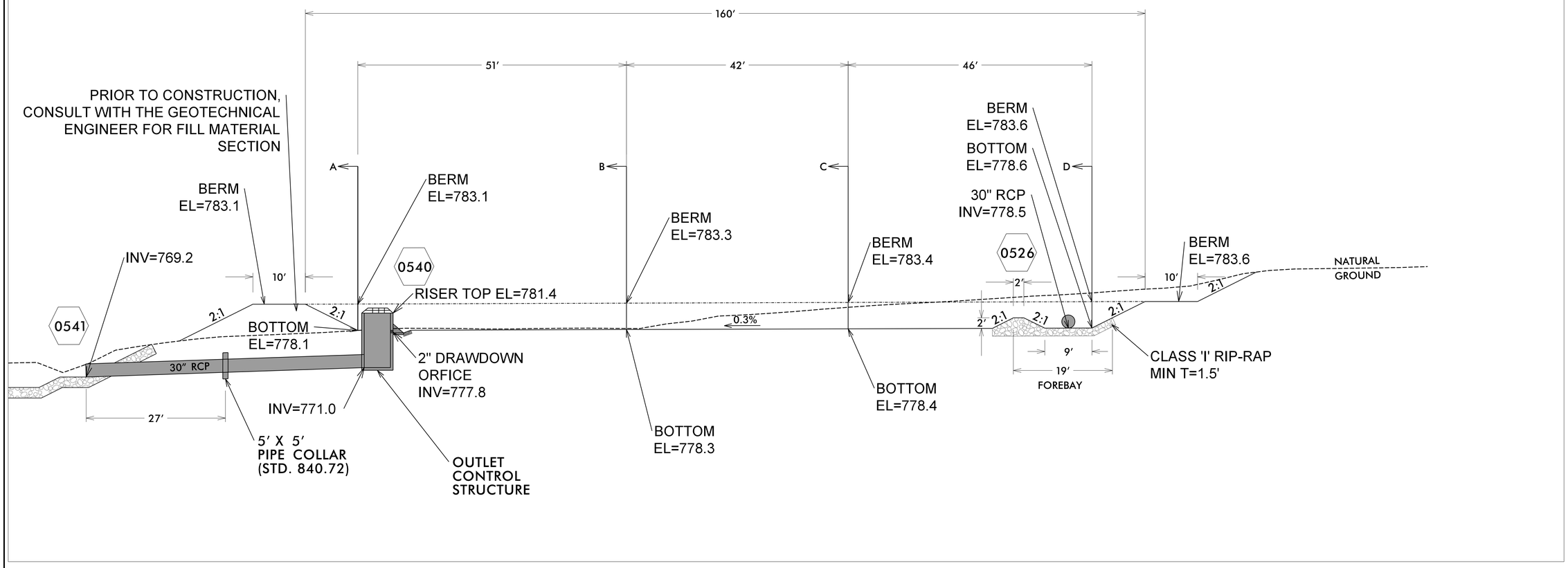
PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-11
R/W SHEET NO.	

HYDRAULICS ENGINEER



8/24/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROFILE VIEW

8/23/2023
R-3833C\Hydraulics\Pond\R-3833C_Pond_PSH.dgn
User:bhenegar

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-12
R/W SHEET NO.	

HYDRAULICS ENGINEER

Benjamin J. Henegar

4/27/2023

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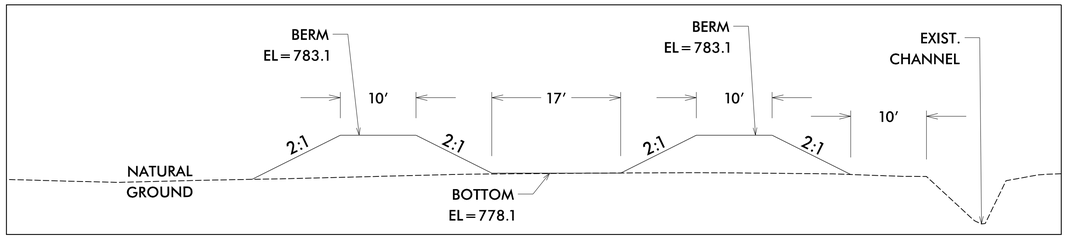
DRY DETENTION BASIN

SHEET 3 OF 5

1″ = 10′

CROSS SECTIONS



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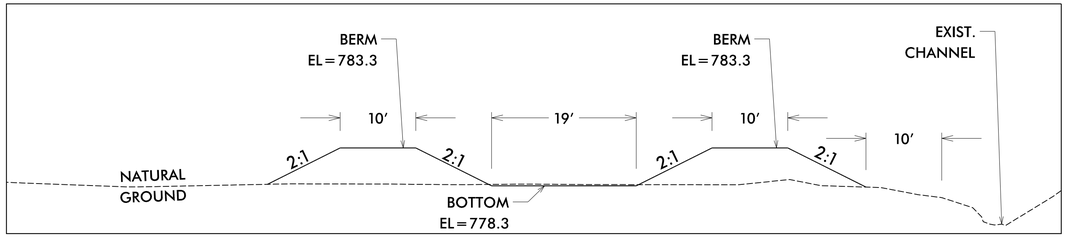

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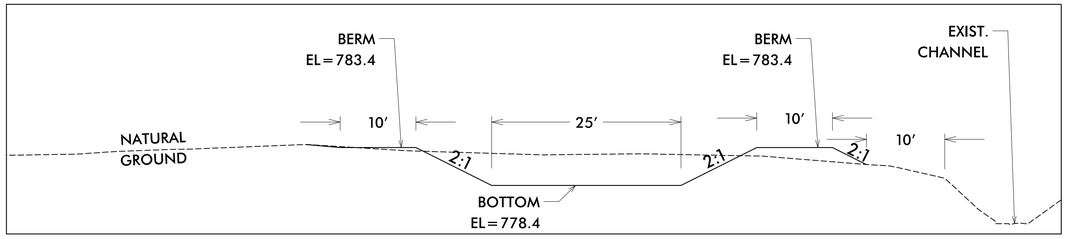

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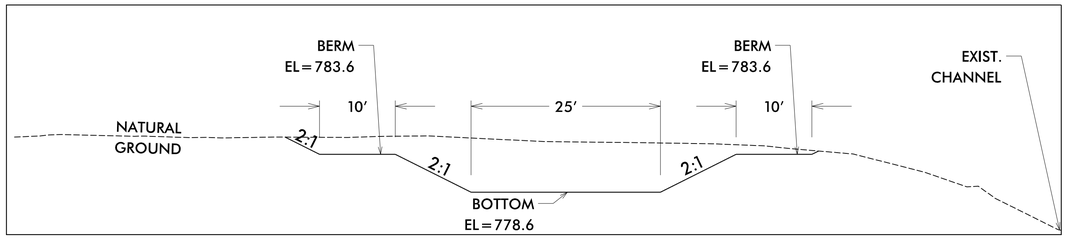

SECTION D–D

2/15/2022
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User:bhenegar
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-13
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044158 ENGINEER BENJAMIN J. HENEGAR

Benjamin J. Henegar

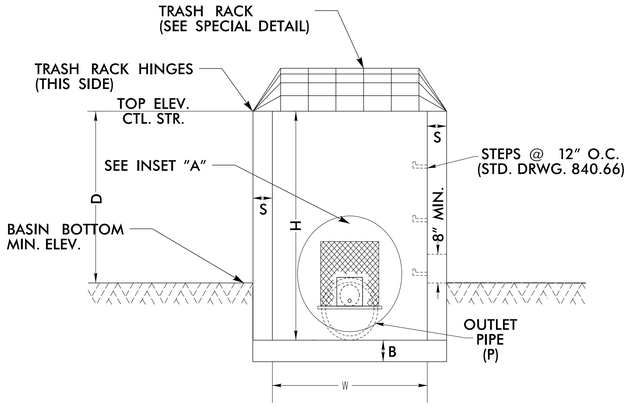
4/27/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

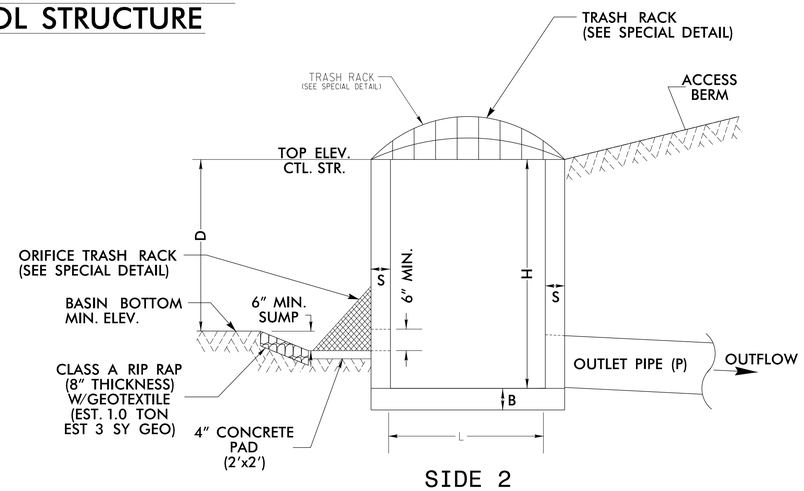
DRY DETENTION BASIN

SHEET 4 OF 5

DRY DETENTION OUTLET CONTROL STRUCTURE



SIDE 1



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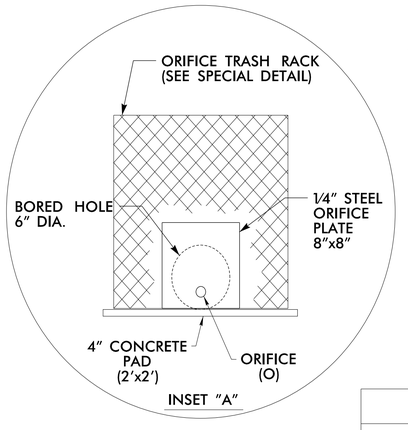

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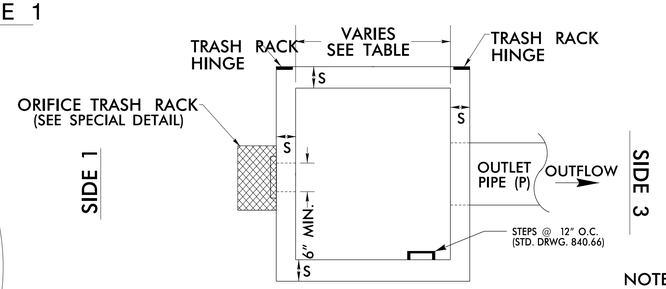

SIDE 2

PLAN VIEW

TRASH RACK NOT SHOWN FOR CLARITY

NOTES:
1. NO BEDDING MATERIAL TO BE USED. THERFORE, DO NOT FOLLOW STANDARD DRAWINGS FOR METHOD OF PIPE INSTALLATION FOR OUTLET PIPE THROUGH EMBANKMENT.

2. PAYMENT OF THE TRASH RACKS & 4" CONCRETE PAD ARE INCIDENTAL TO BASIN OUTLET CONTROL STRUCTURE.

MINIMUM DIMENSIONS FOR DRY DETENTION BASIN DRAWDOWN STRUCTURE

STATION	STRUCTURE NUMBER	S (INCHES)	B (INCHES)	TOP ELEVATION CONTROL STRUCTURE	CTL. STR. DIMENSIONS			ORIFICE DIAMETER (O) INCHES	ORIFICE INV. ELEV.	OUTLET PIPE INV.	OUTLET PIPE DIAMETER(P) INCHES	OUTLET PIPE MATERIAL
					W	L	H					
–L– 37+56 LT	0540	6"	6"	781.4'	5.0'	5.0'	10.4'	2"	777.8'	771.0'	30"	RCP*

*USE CLASS 'III' RCP WITH SEALED JOINTS

NOT TO SCALE

3/20/2023
X:\NCDOT\R-3833C\Hydraulics\Pond\R-3833C_Pond_PSH.dgn
User:bhenegar

8/17/99

DRY DETENTION BASIN
SHEET 5 OF 5

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-14
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044158 ENGINEER BENJAMIN J. HENEGAR

4/27/2023

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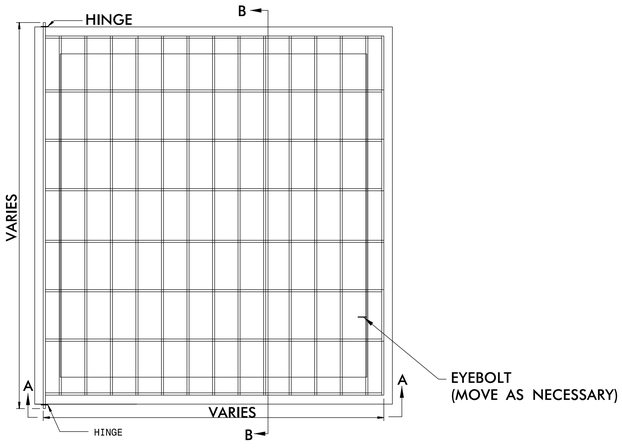
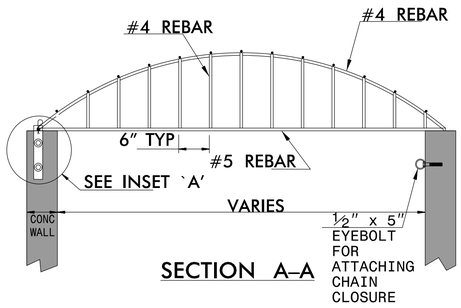
REBAR & ORIFICE TRASH RACKS
(N.T.S.)

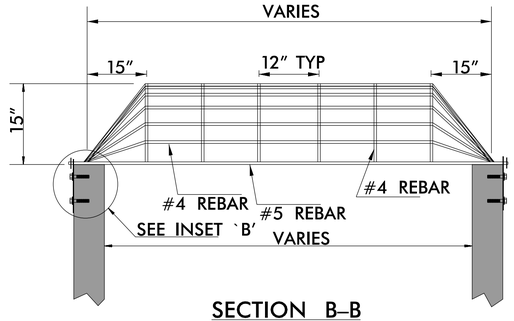
RISER TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A 1/4" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. EYEBOLT FOR CHAIN CLOSURE SHALL BE INSTALLED BY THE SAME METHOD AS THE HINGE PLATE BOLTS.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR REBAR AND GALVANIZED IN ACCORDANCE WITH ASTM A-153.



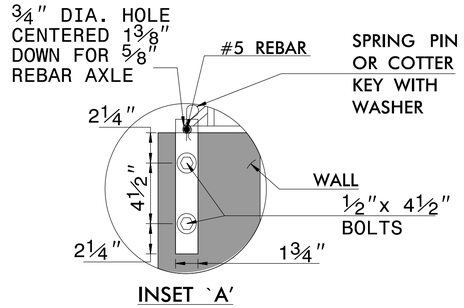
PLAN



SECTION A-A



SECTION B-B



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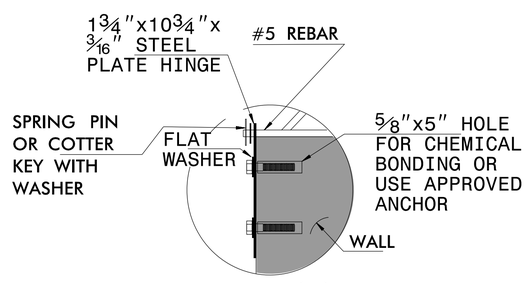
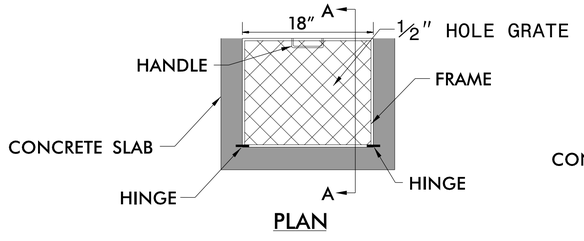


INSET `B'

REBAR TRASH RACK
NOT TO SCALE



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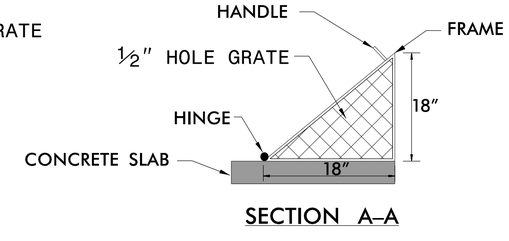
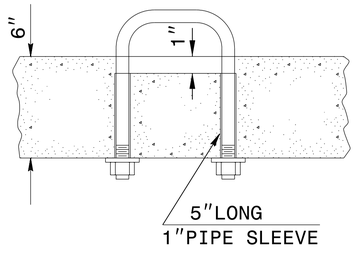


SECTION A-A

ORIFICE TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A 1/4" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. REMOVEABLE ORIFICE TRASH RACK SHALL BE ATTACHED TO CONCRETE BOX BY HINGE OR SLIDE RAIL SYSTEM.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR GALVANIZED IN ACCORDANCE WITH ASTM A-153.

ORIFICE TRASH RACK
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-15



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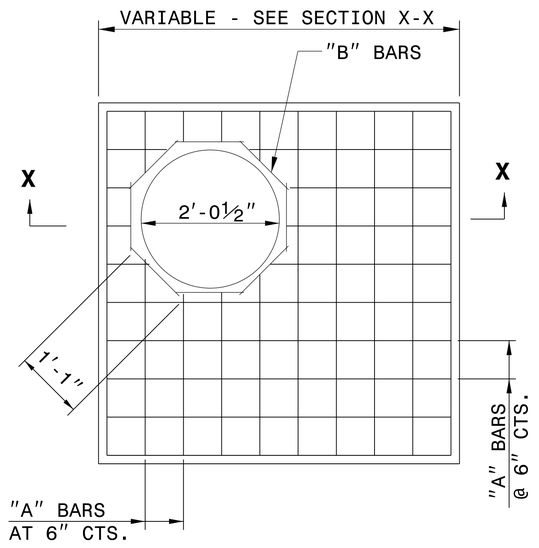
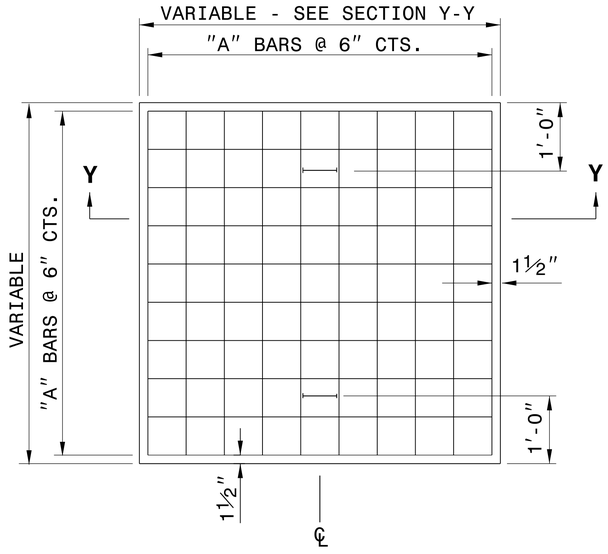


PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

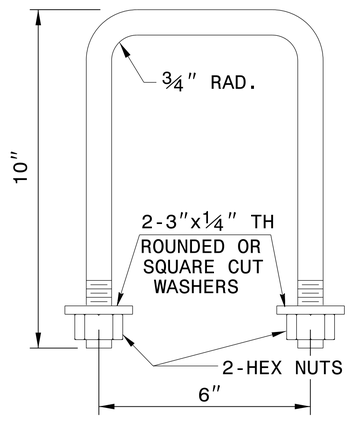
BILL OF MATERIALS

REINFORCING STEEL

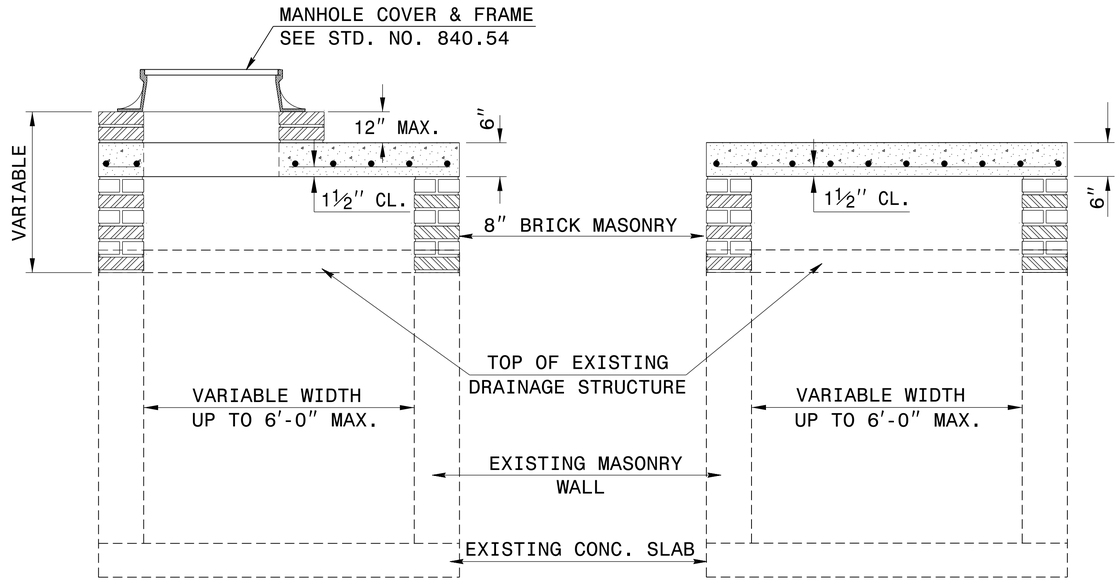
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *

MASONRY	CU YDS
TOP SLAB CONCRETE CLASS "B"	.4326 *
BRICK MASONRY PER FT HT (MIN)	.4111

* NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DETAIL OF HANDLE



SECTION X-X

SECTION Y-Y

DocuSigned by: Nicole M. Hickler 5884323C
SEAL 33144
NORTH CAROLINA PROFESSIONAL ENGINEER NICOLE M. HICKLER
4/27/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV.1997
MODIFIED BY: T.S.S. DATE: FEB.2000
CHECKED BY: DATE:
FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-16

DocuSigned by: Marshall G. Cheek
5FBCC2F3A4D8433...

4/28/2023

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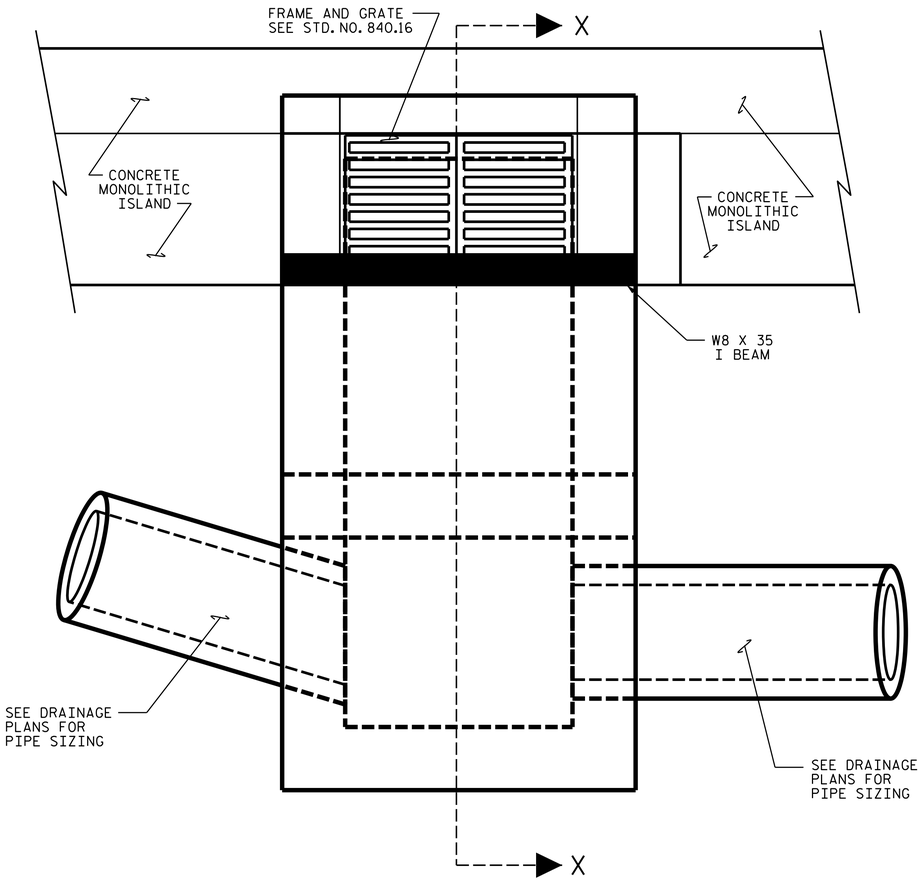
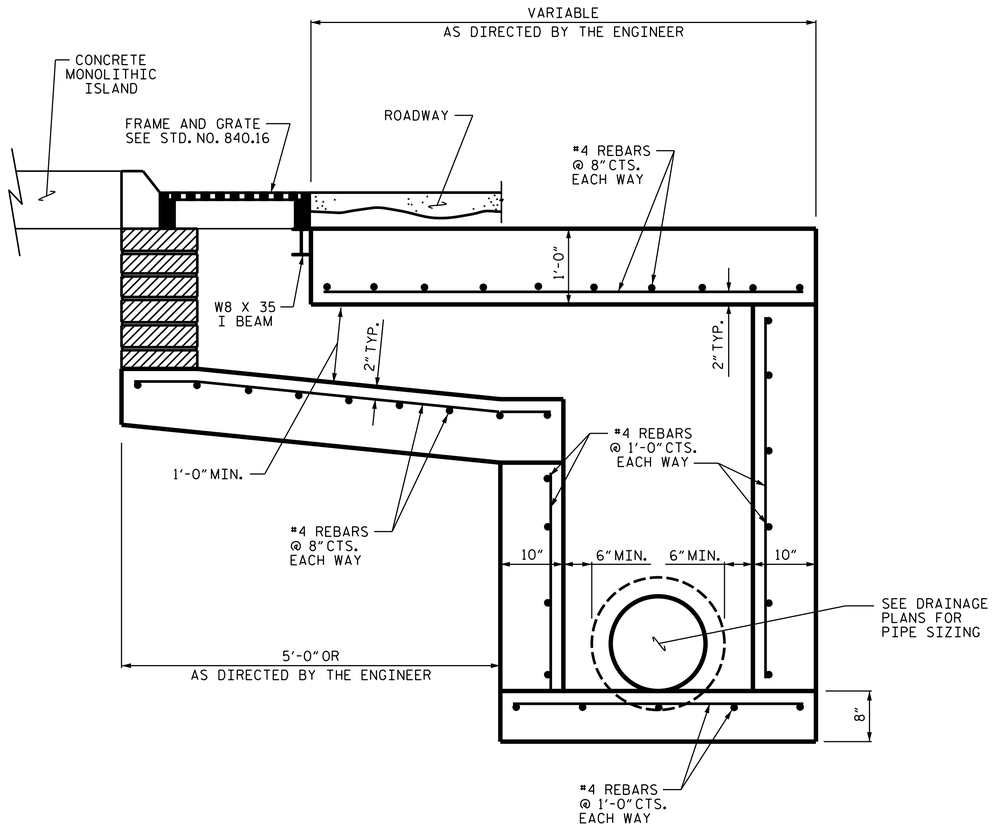
TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



PLAN



SECTION X-X

OFFSET DI W/ SLAB LID

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

DRAWN BY : STM DATE : 03/23
CHECKED BY : MGC DATE : 03/23

3/29/2023
X:\NCDOT\R-3833C\Structures\Offset Boxes\Offset Boxes_STM.dgn
User:smassinople

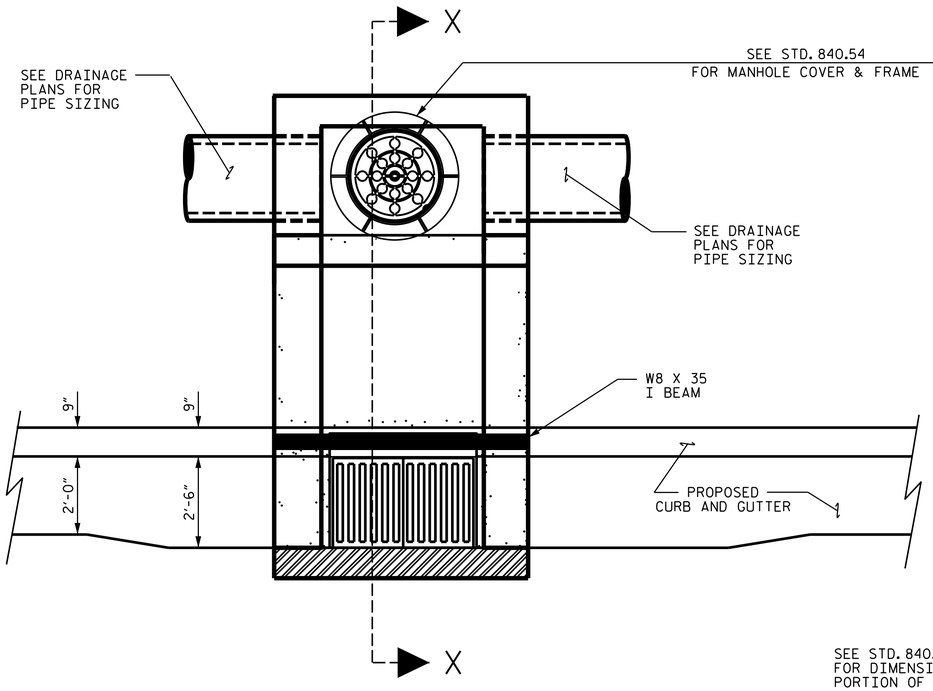
PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-17

DocuSigned by: Marshall G. Cheek
5FBCC2F3A4D8433...

4/28/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



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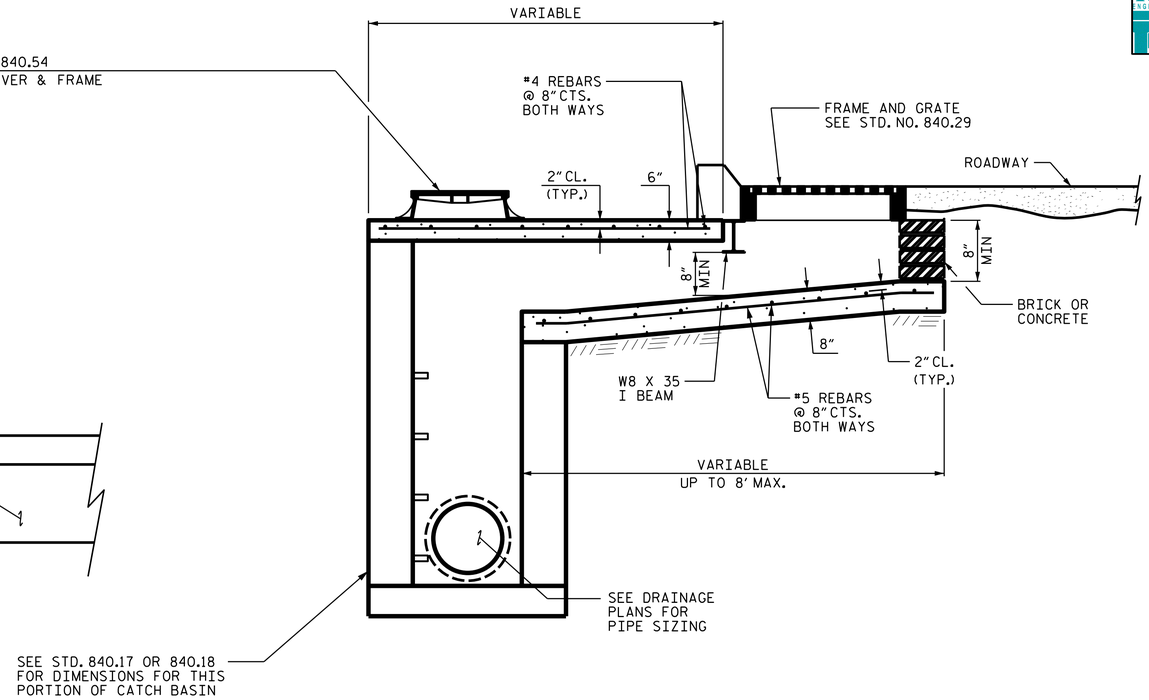


SECTION X-X

OFFSET 2GI W/ MANHOLE

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 1'-0" ON CENTER.
USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66
USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

DRAWN BY : STM DATE : 03/23
CHECKED BY : MGC DATE : 03/23

3/29/2023
X:\NCDOT\R-3833C\Structures\Offset Boxes\Offset Boxes_STM.dgn
User:smassinople

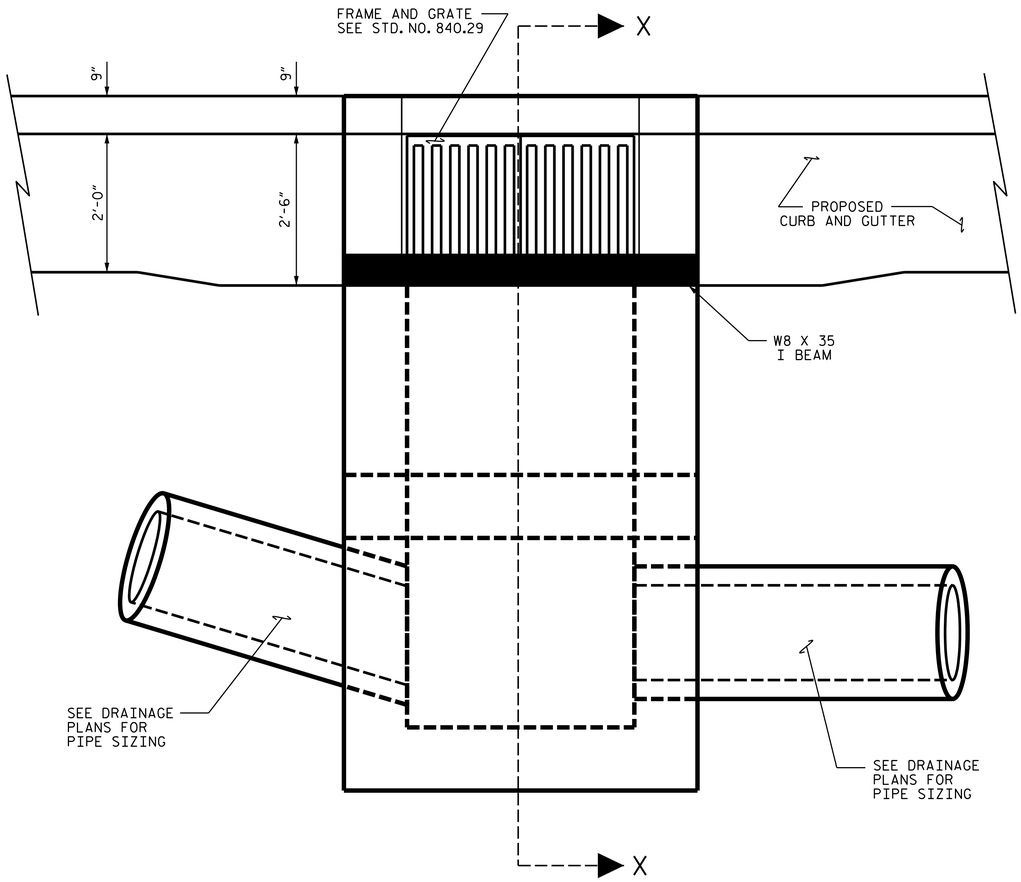
PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-18

DocuSigned by: Marshall G. Cheek
5FBCC2F3A4D8433...

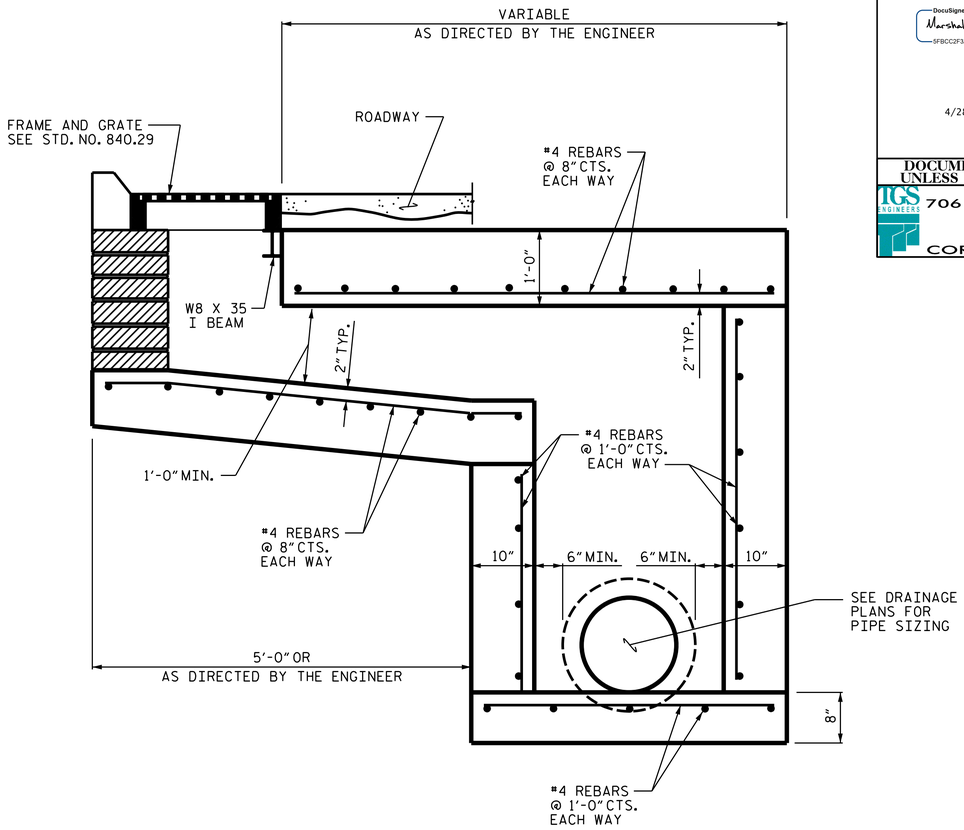
4/28/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



PLAN



SECTION X-X

OFFSET 2GI W/ SLAB LID

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

DRAWN BY : STM DATE : 03/23
CHECKED BY : MGC DATE : 03/23

3/29/2023
X:\NCDOT\R-3833C\Structures\Offset Boxes\Offset Boxes_STM.dgn
User:smassinople

5/14/99

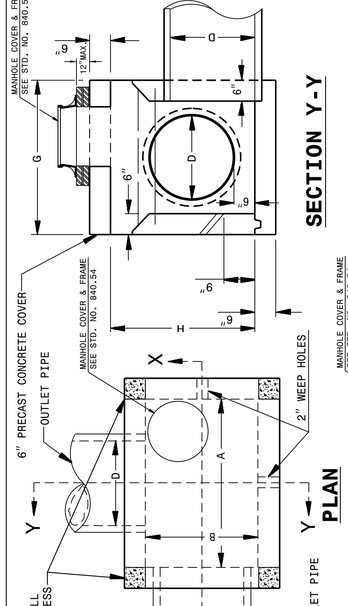
PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2D-19

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE CATCH BASIN
(3 OR 4 SIDE OPEN THROAT)
(MANHOLE OPTIONAL)

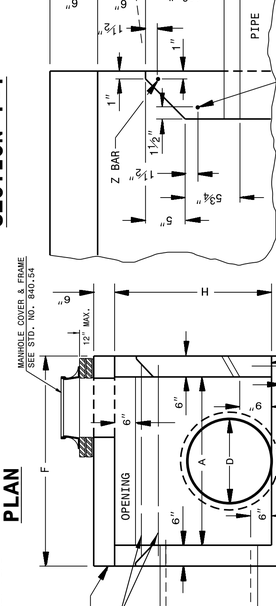
SHEET 1 OF 2 — **840D04**

GENERAL NOTES:
ALL CATCH BASINS OVER 3'-6" IN DEPTH TO BE PROVIDED WITH STEPS 12" ON CENTERS. STEPS SHALL BE IN ACCORDANCE WITH STD. 840.66.
ALL EXPOSED CORNERS TO BE CHAMFERED 1".
CLASS "B" CONCRETE TO BE USED THROUGHOUT.
2" PIPE WEEPHOLES TO BE PLACED AS DIRECTED BY ENGINEER.
THE 6" OPENING SHOWN MAY BE INCREASED TO 8" MAXIMUM IF DEEMED TO BE NECESSARY BY THE ENGINEER.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #5 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STD. DWG. 840.00.
A STONE DRAIN CONSISTING OF 1 CUBIC FOOT OF NO. 78M STONE CONTAINED IN A BAG OF POROUS FABRIC SHALL BE PLACED AT EACH WEEP HOLE. FOR 8' IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8' IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. QUANTITIES TO BE ADJUSTED ACCORDINGLY.
DIMENSIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.



SECTION Y-Y

PLAN



PART SECTION Y-Y
SHOWING METHOD OF CONSTRUCTION IF INCREASED OPENING IS USED

SECTION X-X

PART SECTION Y-Y
SHOWING METHOD OF CONSTRUCTION FOR 6" OPENING

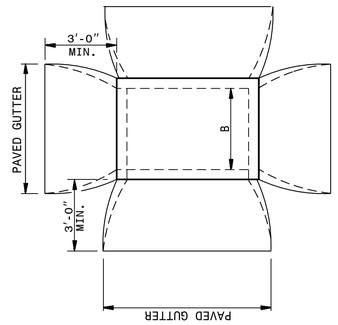
DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H)

PIPE D	*DIM'S OF BOX & PIPE SPAN* A	*WIDTH* B	*HEIGHT* H	*MIN. REINFORCING BARS - X* NO.	LENGTH	*BARS - Y* NO.	LENGTH	*TOP & BOT. SLAB DIMENSIONS* F	G	*CU. YDS. CONC. IN BOX* TOP SLAB	BOT. SLAB	WALL	*TOTAL QUANTITIES BOX & SLABS* LBS. REINF.	FT. HT.	*DEDUCTION ONE PIPE* C.S.	R.C.	*DED. ONE (1) THROAT OPENING* YD^3
12"	3'-6"	2'-3"	1'-10"	4	3'-0"	6	4'-3"	3'-6"	3'-6"	0.181	0.271	0.250	27	1.046	0.015	0.032	0.046
15"	3'-6"	2'-3"	2'-1"	4	3'-0"	6	4'-3"	4'-6"	3'-6"	0.181	0.271	0.250	27	1.108	0.023	0.036	0.046
18"	4'-0"	2'-8"	2'-4"	5	3'-5"	7	4'-9"	5'-0"	3'-8"	0.226	0.340	0.284	35	1.379	0.033	0.049	0.053
24"	4'-0"	2'-8"	2'-10"	5	3'-5"	7	4'-9"	5'-0"	3'-8"	0.226	0.340	0.284	35	1.521	0.059	0.085	0.053
30"	4'-0"	3'-6"	3'-4"	5	4'-3"	9	4'-9"	5'-6"	4'-6"	0.278	0.417	0.315	43	1.916	0.092	0.127	0.053
36"	4'-6"	4'-0"	3'-10"	5	4'-9"	10	5'-3"	5'-0"	4'-6"	0.340	0.510	0.352	51	2.390	0.132	0.178	0.059
42"	5'-0"	4'-6"	4'-4"	5	5'-3"	12	5'-9"	6'-0"	5'-6"	0.407	0.611	0.389	64	2.914	0.180	0.243	0.066
48"	5'-0"	5'-0"	4'-10"	5	5'-9"	13	5'-9"	6'-0"	6'-0"	0.444	0.666	0.407	68	3.298	0.235	0.317	0.066

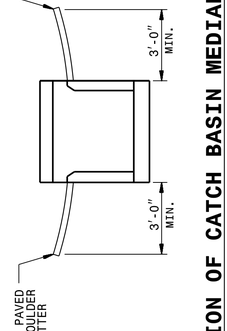
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE CATCH BASIN
(3 OR 4 SIDE OPEN THROAT)
(MANHOLE OPTIONAL)

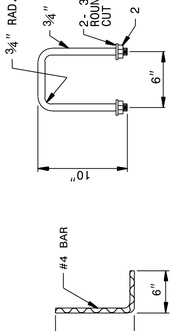
SHEET 2 OF 2 — **840D04**



PLAN OF CATCH BASIN IN MEDIAN STRIP

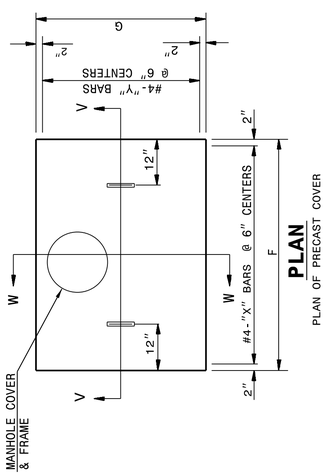


SECTION OF CATCH BASIN MEDIAN STRIP
DETAIL SHOWING METHOD OF PLACING CATCH BASIN AND PAVED SHOULDER GUTTER

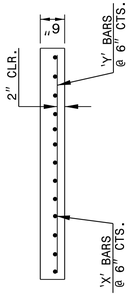


DETAIL OF HANDLE

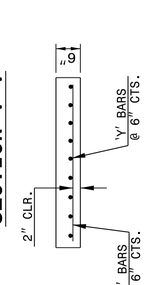
DOWEL



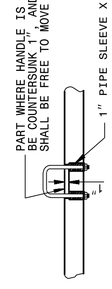
PLAN
PLAN OF PRECAST COVER



SECTION V-V



SECTION W-W



PART SECTION
THRU COVER SHOWING HANDLE

DocuSigned by: Nicole M. Hancock 5884323C...
4/27/2023
NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M. HANCOCK

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

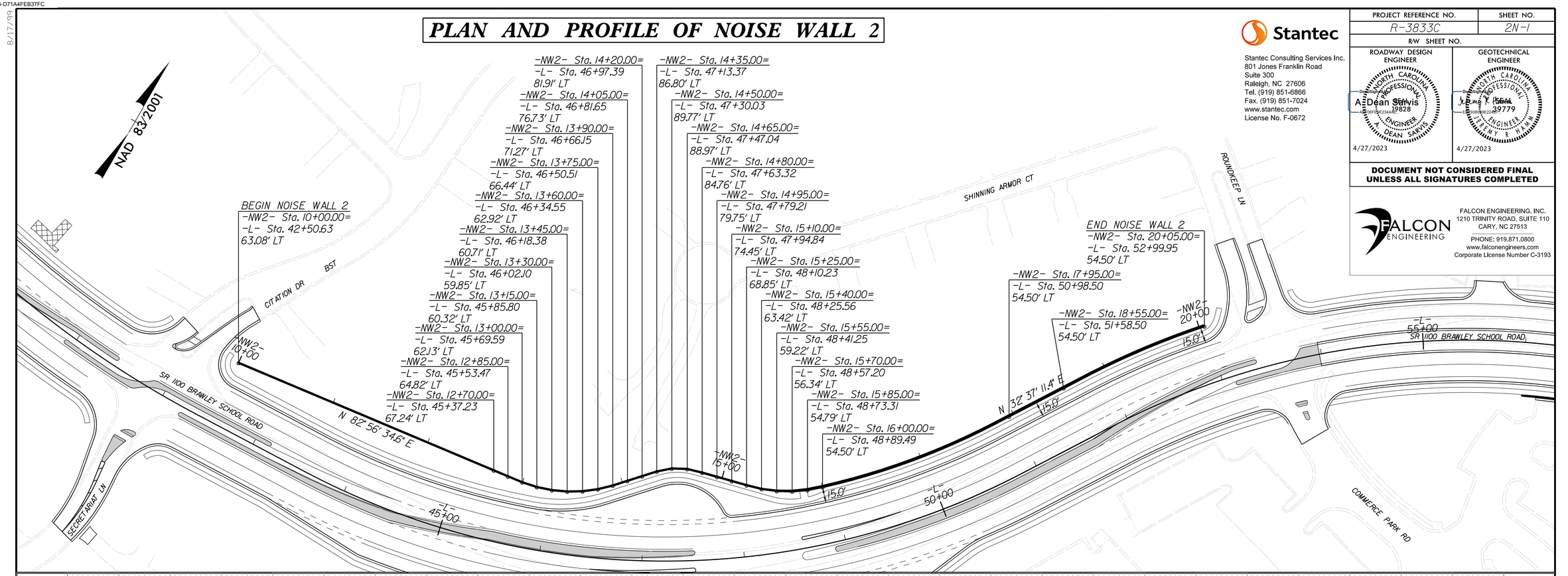
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 07-03-2014
CHECKED BY: _____ DATE: _____
FILE SPEC.: details/nbritt/english/hydro/840d04.dgn

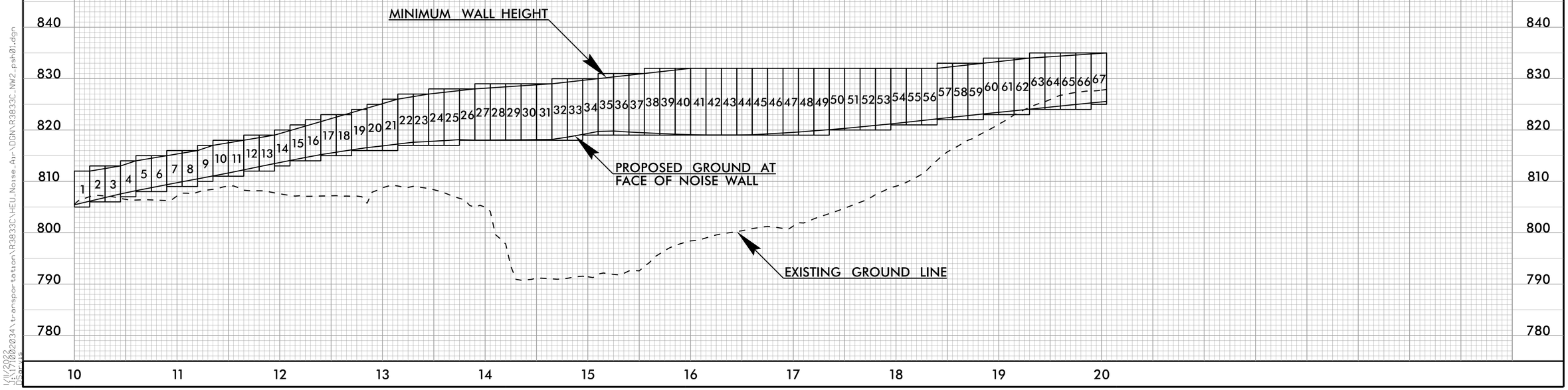
8/17/99

PLAN AND PROFILE OF NOISE WALL 2



NOISE WALL 2

PANEL NUMBER	1	2-3	4	5-6	7-8	9	10-11	12-13	14	15	16	17-18	19	20	21	22-23	24-25	26	27-31	32-33	34	35-37	38-49	50-53	54-56	57-59	60-62	63-66	67
TOP ELEVATION	812'	813'	814'	815'	816'	817'	818'	819'	820'	821'	822'	823'	824'	825'	826'	827'	828'	828'	829'	830'	830'	831'	832'	832'	832'	833'	834'	835'	835'
PANEL LENGTH	15'	30'	15'	30'	30'	15'	30'	30'	15'	15'	15'	30'	15'	15'	15'	30'	30'	15'	75'	30'	15'	45'	180'	60'	45'	45'	45'	60'	15'
PANEL HEIGHT	7'	7'	7'	7'	7'	7'	7'	7'	7'	7'	8'	8'	8'	9'	10'	10'	11'	10'	11'	12'	11'	12'	13'	12'	11'	11'	11'	11'	10'



Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
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www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	2N-1
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19828 A. DEAN SARVIS
A Dean Sarvis
4/27/2023

GEOTECHNICAL ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 39779 JEFFREY R. HAWK
4/27/2023

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FALCON ENGINEERING
FALCON ENGINEERING, INC.
1210 TRINITY ROAD, SUITE 110
CARY, NC 27513
PHONE: 919.871.0800
www.falconengineers.com
Corporate License Number C-3193

COMPUTED BY: LRS DATE: 9/17/2021
CHECKED BY: ADS DATE: 3/25/2023

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

Summary of Earthwork

Volumes in Cubic Yards

STATION	STATION	TOTAL UNCLASS.	UNDERCUT	EMBANK. +%	BORROW	WASTE
L_LT1 18+50.00	48+00.00	403		41,378	41,125	150
DRY DETENTION BASIN		19,500		25,875	25,875	19,500
Y1_NORTH 13+00.00	14+25.00	65		12	0	54
Y2 13+00.00	13+50.00	29		75	46	0
Y3 12+22.00	13+00.00	49		2	0	47
	SUBTOTAL	20,046		67,341	67,045	19,750
L_LT2 48+50.00	61+50.00	198		12,938	12,740	
Y6 11+70.00	12+50.00	90		60		30
	SUBTOTAL	288		12,997	12,739	30
Y_LT1 14+00.00	34+49.00	361		3,810	3,559	
DRWY5 10+50.00	11+50.00	0		653	653	0
	SUBTOTAL	361		4,463	4,212	110
Y_LT3 40+87.00	56+00.00	3,516		561		2,955
DRWY7 10+84.67	11+50.00	253		1		252
DRWY8 10+25.00	11+50.00	144		95		49
	SUBTOTAL	3,913		657		3,255
L_LT_RT 63+00.00	75+50.00	520		47,944	47,674	250
Y_LT2 34+50.00	40+87.00	289		4,614	4,325	
DRWY3 10+50.00	11+00.00			347	347	
DRWY4 10+50.00	11+00.00	6		132	126	
DRWY6 10+75.00	11+24.06	25		428	403	
	SUBTOTAL	840		53,464	52,874	250
L_RT1 18+50.00	48+00.00	6,530		18,053	11,973	450
Y1_SOUTH 15+50.00	18+75.00	96		138	42	
DRWY1 10+50.00	11+00.00	53		15		38
DRWY2 11+00.00	11+60.00	10		451	441	
Y4 10+50.00	11+50.00	9		327	318	
	SUBTOTAL	6,698		18,983	12,773	488
L_RT2 48+50.00	61+50.00	996		7,263	6,267	
Y_RT2 38+00.00	57+00.00	1,366		1,926		0
Y5 11+00.00	17+50.00	233		431	298	100
Y7 15+50.00	16+00.00	19		23	4	
	SUBTOTAL	2,614		9,643	7,129	100
Y_RT1 14+00.00	38+00.00	1,997		1,385	0	612
	SUBTOTAL	1,997		1,384	0	612
TOTAL		36,757		168,932	156,772	24,595
MATERIAL FOR SHOULDER CONSTRUCTION				679	679	
LOSS DUE TO CLEARING & GRUBBING		-600			600	
WASTE IN LIEU OF BORROW					-3,895	-3,895
PROJECT TOTAL		36,157		169,610	154,155	20,700
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					7,708	
GRAND TOTAL		36,157		169,610	161,862	20,700
SAY		36,200			161,900	

EST. DDE = 1210 CUBIC YARDS
EST. SHALLOW UNDERCUT = 400 CUBIC YARDS
EST.SHALLOW UNDERCUT BY STATIONS = 1,550 CUBIC YARDS
TOTAL SHALLOW UNDERCUT = 1,950 CUBIC YARDS
PER GEOTECH RECOMMENDATION, ESTIMATED 9,350 CUBIC YARDS OF UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER.
PSV = 21,430 CUBIC YARDS

Note: Earthwork quantities are calculated by Stantec. These earthwork quantities are based in part on subsurface data provided by Falcon Engineering.

Quantities are approximate only. The Resident Engineer will use methods including but not limited to recross–sectioning, truck measurement, and aerial surveys to compute final quantities for which the contractor will be paid.

COMPUTED BY: *LRS* DATE: *12/8/2021*

CHECKED BY: *ADS* DATE: *3/25/2023*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	*3B-2*

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL

GUARDRAIL SUMMARY

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH (LF)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL BERM WIDTH FROM FACE	FLARE LENGTH		W		ANCHORS				IMPACT ATTENUATOR IA-MASH TL-3		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	GREU TL-2	CAT-1	B-77	G	NG				
-L-	24+43.75	37+50	LT	1153.77	183.45'		36+50	24+50	18'	14'/17.5'	50'	0'	1'	0'	1		1							**17.5' total berm width at wall**
-L-	-DRWY2- 10+88.01	-L- 39+56.25	LT / RT	498.75	41.61'		-L- 34+89.10	-L- 39+50.00	18'	14'	N/A	N/A	N/A	N/A			2							
-L-	57+35.00	60+32.65	RT	270.71	15.25'		58+35.00	60+27.17	2'	10'	50'	0'	1'	0'	1		1							
-L-	-Y- 35+37.77	-L- 61+11.53	RT/LT	85.77	63.11'		-L- 61+51.27	-L- 61+17.78	14'/18'	14'/16'	50'	0'	1'	0'	1		1							**16' total berm width at wall**
-L-	-L- 64+23.00	-Y- 33+20.00	LT	332.80	60.07'		-L- 63+48.00	-Y- 33+13.75	14'	14'	50'	0'	1'	0'	1		1							
-L-	-Y- 38+19.12	-L- 65+92.43	LT/RT	353.66	72.11'		-Y- 37+69.12	-L- 65+86.18	20'/14.75'	20' / 14.75'	50'	0'	1'	0'	1		1							**Odd offsets at end to match police station drive**
-L-	66+26.70	68+56.25	RT	180.51			66+32.95	68+50.00	20'	20'	0'	0'	0'	0'			2							
-Y-	31+20.37	32+83.88	RT	134.40			31+98.00	32+27.00	2'	5.5'	0'	0'	0'	0'				2		1	29			**Total berm width = 1/2 of median width**
-Y-	33+05.01	31+41.37	RT	134.40			32+27.00	31+98.00	2'	5.5'	0'	0'	0'	0'				2		1	29			**Total berm width = 1/2 of median width**
-Y-	39+58.37	41+21.62	LT	134.40			40+36.00	40+65.00	2'	5.5'	0'	0'	0'	0'				2		1	29			**Total berm width = 1/2 of median width**
-Y-	41+42.63	39+79.37	LT	134.40			40+65.00	40+36.00	2'	5.5'	0'	0'	0'	0'				2		1	29			**Total berm width = 1/2 of median width**
-Y-	-Y- 41+63.84	-Y5- 17+51.52	RT/LT	279.26	34.64'		-Y- 42+00.00	-Y- 44+42.47	14'	14'	50'	0'	1'	0'	1		1							
-L-	-L- 34+72	-L- 38+28	RT																			365		
-L-	-L- 46+94	-L- 52+51	LT																			554		
															6		**10**	**8**	**0**	**4**	**116**	**919**		
			SUBTOTAL	3692.830	470.24																			
		LESS DEDUCTIONS FOR ANCHORS																						
		GREU TL-3 @ 50' EA =		300.00																				
		CAT-1 @ 6.25' E		62.50																				
		B-77 @ 22.875' EA =		183.00																				
		IA-MASH TL-3 @ 21.00' EA =		84.00																				
		PROJECT TOTALS:		3063.33																				
		SAY:		**3087.50**	**487.50**		**Additional Posts**	**10**	**EA**															
							8' Guardrail Posts	**4**	**EA**															**At Retaining Wall 4. See Detail 2C-11**

COMPUTED BY: LRS DATE: 9/17/2021
CHECKED BY: ADS DATE: 3/21/2023

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	3B-3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT REMOVAL SUMMARY

LINE	STATION	STATION	LOCATION	ASPHALT REMOVAL (SY)
L MEDIAN AREA	22+32	30+38	CL	1862
L, Y7	53+55	53+91	RT	110
L MEDIAN AREA	53+98	61+44	CL	1584
L	58+06	58+91	LT	91
L	63+77	64+05	LT	29
Y	19+31	19+69	LT	69
Y	24+31	25+76	LT	198
Y MEDIAN AREA	30+66	36+31	CL	1026
Y	33+70	35+60	LT	150
Y MEDIAN AREA	37+62	42+11	CL	476
Y2	13+25	13+52	RT	30
Y3	12+80	13+11	RT	215
Y4	10+40	11+25	LT,RT	493
Y6	12+14	12+51	RT	24
DRWY8	10+24	11+31	LT,RT	300
TEMPORARY PAVEMENT REMOVAL				
L	34+06	38+00	LT	163
			TOTAL	6820
			SAY	**6820**

CHAIN LINK FENCE, 48" FABRIC

STATION TO STATION	LT OR RT	A FABRIC LF	B END BRACE	C CORNER BRACE	D LINE BRACE	E LINE POSTS EA	F TERMINAL POSTS EA
-L- 25+20.00 TO 32+41.7	LT	747.97	2	0	1	62.16	3
-L- 61+17.78 TO 61+50.87	LT	37.61	2	0	0	2.80	2
Y 42+93.61 TO 43+13.17	RT	19.56	2	0	0	1.30	2
Y 43+47.04 TO 43+52.51	LT	55.27	2	0	0	4.27	2
TOTAL	0.00	860.41	0	0	0	70.53	9
SAY	**0.00**	**861.00**	**0**	**0**	**0**	**71.00**	**9.00**

CHAIN LINK FENCE, 72" FABRIC

STATION TO STATION	LT OR RT	A FABRIC LF	B END BRACE	C CORNER BRACE	D LINE BRACE	E LINE POSTS EA	F TERMINAL POSTS EA
-L- 37+13 TO 39+84	LT	633.00	2	5	0	53.25	7
0.00	0.00	0.00	0	0	0	0.00	0
0.00	0.00	0.00	0	0	0	0.00	0
0.00	0.00	0.00	0	0	0	0.00	0
TOTAL	0.00	633.00	0	0	0	53.25	7
SAY	**0.00**	**633.00**	**0**	**0**	**0**	**54.00**	**7.00**

BREAKING OF EXISTING ASPHALT PAVEMENT

LINE	STATION	STATION	LOCATION	SQUARE YARDS
L	62+50	67+35	LT,RT	2473
L	67+64	67+11	LT,RT	151
L	67+64	70+51	LT,RT	715
			TOTAL	3,339
			SAY	**3,340**

TGSLTW1014

COMPUTED BY: BJH DATE: 8/18/23

CHECKED BY: REL DATE: 8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)													C. S. PIPE								R. C. PIPE CLASS III								R. C. PIPE CLASS IV								ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE / THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	12 .064	15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																														CY	CY	CY	LIN. FT.	
L 20+99	46 LT	0401		840.9																																										1			1			1																																				
		0401	0402		837.5	828.4																																	252																																																			
L 23+50	45 LT	0402		831.7																																										1			1			1																																				
		0402	0403		828.4	821.2																																	160																																																			
L 25+13	45 LT	0403		824.7																																										1			1			1																																				
		0403	0423		821.2	820.8																																	44																																																			
L 25+13	57 RT	0404		824.2																																										1	5.0	0.8	1		1																																						
		0404	0409		813.4	813.0	0.5																																	56																																																		
L 21+94	8 RT	0405		838.5																																										1								1			1	1																															
		0405	0406		835.0	832.8																																	36																																																			
L 21+94	45 RT	0406		837.5																																										1			1		1																																						
		0406	0408		832.8	819.7																																	176																																																			
L 21+94	61 RT	0407		838.0																																										1											1	1																															
		0407	0406		833.0	832.8																											16																																																															
L 23+70	45 RT	0408		830.9																																										1	5.0	1.2	1		1																																						
		0408	0413		819.7	817.0	0.4																																104																																																			
L 25+70	57 RT	0409		821.3																																										1	3.3		1		1																																						
		0409	0414		813.0	812.6	0.5																																	64																																																		
L 24+95	82 RT	0412		827.9																																										1	5.0	1.1									1	1																															
		0412	0404		816.8	813.9																											32																																																														
L 24+73	57 RT	0413		826.1																																										1	4.1		1		1																																						
		0413	0404		817.0	813.9	0.7																																40																																																			
DRWY1 10+62	21 LT	0414		819.1																																										1	1.5		1		1																																						
		0414	0422		812.6	812.4	0.6																																	28																																																		
Y1 15+46	29 RT	0415		847.6																																										1			1	1																																							
		0415	0416		844.0	843.7																																	24																																																			
Y1 15+45	5 RT	0416		848.2																																										1								1			1	1																															
		0416	0417		843.7	841.5																																	44																																																				
Y1 15+52	40 LT	0417		847.6																																										1	1.1		1	1																																							
		0417	0418		841.5	840.9																																	72																																																			
L 19+30	72 RT	0418		845.7																																										1			1		1																																						
		0418	0407		840.9	833.0																																	264																																																			
Y1 15+83	25 LT	0419		848.9																																										1	2.1		1		1																																						
		0419	0417		841.8	841.5																																	28																																																			
Y1 16+59	23 LT	0420		848.6																																										1	1.1		1			1																																				
		0420	0419		842.5	841.8																																	72																																																				
Y1 16+59	23 RT	0421		848.7																																										1			1		1																																						
		0421	0420		845.5	842.5																																	44																																																			
L 26+60	45 RT	0422		816.7																																										1			1		1																																						
		0422	0527		812.4	805.5	0.6																																	128																																																		
L 25+13	0 CL	0423		826.1																																										1	5.0	1.9																									1			1																	TBJB W/ MH
		0423	0404		814.2	813.9																																	56																																																			
L 27+90	12 LT	0501		811.7																																										1																			1					1																			TRAFFIC BEARING 2GI
		0501	0502		808.2	800.7																																	172																																																			
L 29+63	11 LT	0502		804.2																																										1																			1					1																			TRAFFIC BEARING 2GI
		0502	0503		800.7	786.9																																	172																																																			
L 31+37	5 LT	0503		796.6																																										1	4.7							1				1																				1												OFFSET DI W/ SLAB LID
		0503	0507		786.9	786.6																																	44																																																			
L 32+57	8 LT	0504		791.0																																										1								1			1	1																															
		0504	0529		787.4	787.1																																	32																																																			
SHEET TOTALS																															48								1836	276						25	37.9	5.0	16	2	10	4		4			5	6							2				1	2		1					1												

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY: BJH **DATE:** 8/18/23

CHECKED BY: REL **DATE:** 8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)													C. S. PIPE								R. C. PIPE CLASS III								R. C. PIPE CLASS IV								ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
		FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	12 .064	15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		GRATE TYPE E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																														CY	CY	CY	LIN. FT.	
L 33+60	7 LT	0505		787.0																																										1								1			1	1																														
		0505	0509		783.5	782.1																																	60																																																			
L 29+63	43 RT	0506		801.9																																										1			1		1																																					
		0506	0507		798.1	786.1	0.8																																	168																																																
L 31+37	42 RT	0507		794.3																																										1	3.7		1		1																																					
		0507	0508		785.6	784.4	0.4																																		116																																															
L 32+57	41 RT	0508		790.0																																										1	0.6		1		1																																					
		0508	0537		784.4	780.3	0.4																																		216																																															
L 34+19	8 RT	0509		785.6																																										1								1			1	1																														
		0509	0510		782.1	780.0																																	48																																																			
L 34+18	41 LT	0510		784.5																																										1			1			1																																				
		0510	0511		780.0	778.0																																	56																																																			
L 34+77	41 LT	0511		782.5																																										1			1			1																																				
		0511	0531		778.0	767.6	0.4																52																																																													2					18" CSP W/ ROD & LUG, GASKETS, AND 2 ELBOWS
L 36+03	41 LT	0512		781.4																																										1			1	1																																						
		0512	0514		778.1	777.6																																	88																																																			
L 36+95	41 LT	0514		781.9																																										1			1		1																																					
		0514	0513		777.6	769.2	0.9																64																																																													2					18" CSP W/ ROD & LUG, GASKETS, AND 2 ELBOWS
L 39+00	41 LT	0515		787.0																																										1			1		1																																					
		0515	0526		782.7	778.5																																			44																																															
L 40+96	41 LT	0516		796.6																																										1			1		1																																					
		0516	0515		792.3	782.7																																		188																																																
L 35+91	7 LT	0517		783.0																																										1								1			1	1																														
		0517	0518		779.5	779.3																																	16																																																			
L 35+91	8 RT	0518		783.6																																										1								1			1	1																														
		0518	0519		779.3	779.1																																	12																																																			
L 36+03	8 RT	0519		783.6																																										1								1			1	1																														
		0519	0520		779.1	778.5																																	92																																																			
L 36+95	8 RT	0520		784.1																																										1	0.6							1			1	1																														
		0520	0514		778.5	777.6																																	48																																																			
L 39+00	8 RT	0521		789.2																																										1								1			1	1																														
		0521	0515		785.5	783.6	0.8																																48																																																			
L 40+96	8 RT	0522		798.8																																										1								1			1	1																														
		0522	0542		795.4	794.8																																	16																																																			
L 33+94	77 RT	0523		780.5																																										1											1	1																														
		0523	0524		777.3	776.9																								68																																																											
DRWY2 10+98	19 LT	0524		784.1																																										1	2.2		1	1																																						
		0524	0525		776.9	775.5																								36																																																											
DRWY2 11+21	39 LT	0525		780.3																																										1																						1				1																	JB W/ MH
L 27+90	44 RT	0527		809.3																																										1			1		1																																					
		0527	0506		805.5	798.1	0.7																																	164																																																
L 35+29	7 LT	0528		783.3																																										1								1			1	1																														
		0528	0517		779.8	779.5																																	60																																																			
L 32+57	43 LT	0529		791.3																																										1			1			1																																				
		0529	0530		787.1	782.6																																	112																																																			
L 33+65	80 LT	0530		786.1																																										1			1			1																																				
		0530	0510		782.6	780.0																																	64																																																			
L 28+32	96 LT	0534		790.8																																										1	0.4																					1				1																	JB W/ MH
		0534	0535		785.4	783.4	0.5																											44																																																							
L 28+68	74 LT	0535		788.8																																										1	0.4																					1				1																	JB W/ MH
SHEET TOTALS																							116							104				44					720	520	376						26	7.9		13	2	7	4		9			10	10										3				3												4					

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

DocuSign Envelope ID: 86A640B4-54EE-4135-8897-4C5A1F510D1E

TGSLTW1014

COMPUTED BY:	BJH	DATE:	8/18/23
CHECKED BY:	REL	DATE:	8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE 12 .064	15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY
		0535	0536		783.4	783.1	0.5																												36											
L 34+73	57 RT	0537		786.0																																												
		0537	0538		780.3	771.3	0.4																											108												
L 35+77	48 RT	0538		785.5																																												
		0538	0539		768.3	766.9	0.4																											32												
L 37+23	106 LT	0540		781.4																																												
		0540	0541		771.0	769.2																												56												
L 40+96	7 LT	0542		798.2																																												
		0542	0543		794.8	790.0	0.6																																	96						
L 40+00	3 RT	0543		793.4																																												
		0543	0521		790.0	785.5	0.7																																	100						
L 42+58	41 LT	0601		804.8																																												
		0601	0655		800.9	797.8																																			60					
L 48+09	132 LT	0602		790.7																																												
		0602	0625		787.7	787.0	0.3																									16														
L 45+25	41 LT	0603		814.6																																												
		0603	0623		811.3	803.2	0.4																																	132						
L 47+25	76 LT	0604		817.0																																												
		0604	0622		813.7	812.6																																		68						
L 42+00	6 LT	0605		803.2																																												
		0605	0542		795.7	794.8	0.6																																	100						
L 42+28	4 RT	0606		804.9																																												
		0606	0605		796.0	795.7	0.5																																	28						
L 42+23	77 RT	0607		801.0																																												
		0607	0606		796.7	796.0																																		72						
Y4 11+33	22 LT	0608		800.4																																												
		0608	0607		797.8	797.2																										60														
L 43+86	4 RT	0609		811.5																																												
		0609	0606		803.7	796.0	0.3																																	156						
L 43+86	77 RT	0610		807.0																																												
		0610	0609		804.4	803.7																																		72						
L 45+00	3 RT	0611		815.8																																												
		0611	0609		812.3	803.7																																		112						
L 46+59	3 LT	0612		819.4																																												
		0612	0622		813.1	812.6																																		48						
L 46+85	72 RT	0613		818.9																																												
		0613	0612		813.9	813.1																																		80						
Y5 10+81	14 LT	0614		823.2																																												
		0614	0613		819.6	813.9																																		184						
Y5 11+34	14 LT	0615		825.2																																												
		0615	0614		820.1	819.6																																		48						
Y5 12+22	14 LT	0616		828.5																																												
		0616	0615		820.9	820.1																																		80						
Y5 13+04	14 LT	0617		830.6																																												
		0617	0616		827.0	820.9																																		80						
Y5 12+40	27 RT	0618		827.5																																												
		0618	0616		821.3	820.9																																		44						
Y5 13+04	18 RT	0619		830.6																																												
		0619	0617		827.3	827.0																																		32						
Y5 13+04	27 RT	0620		831.1																																												
SHEET TOTALS																																76		196	36					1532	60					

STRUCTURE NUMBER FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
0535	0536																																													
0537		1	0.7																					1				1																		JB W/ MH
0537	0538																																													
0538		1	5.0	7.2																							1	1																		MH, 5' DIA.
0538	0539																																													
0540		1	5.0	0.4																												1														DRY DETENTION OUTLET STRUCTURE
0540	0541																																									0.6560			30" RCP-III W/ PIPE COLLAR
0542		1								1			1	1																																
0542	0543																																													
0543		1								1			1	1																																
0543	0521																																													
0601		1			1		1																																							
0601	0655																																													
0602		1																										1											1							4 SIDED OTCB W/ MH
0602	0625																																													
0603		1			1		1																																							
0603	0623																																													
0604		1			1	1																																								
0604	0622																																													
0605		1	2.5							1			1	1																																
0605	0542																																													
0606		1	3.9							1				1																			1													OFFSET DI W/ SLAB LID
0606	0605																																													
0607		1											1	1																																
0607	0606																																													
0608		1											1	1																																
0608	0607																																													
0609		1	2.8							1				1																			1													OFFSET DI W/ SLAB LID
0609	0606																																													
0610		1											1	1																																
0610	0609																																													
0611		1								1			1	1																																
0611	0609																																													
0612		1	1.3							1			1	1																																
0612	0622																																													
0613		1											1	1																																
0613	0612																																													
0614		1			1		1																																							
0614	0613																																													
0615		1	0.1		1		1																																							
0615	0614																																													
0616		1	2.6		1		1																																							
0616	0615																																													
0617		1			1		1																																							
0617	0616																																													
0618		1	1.2										1	1																																
0618	0616																																													
0619		1			1			1																																						
0619	0617																																													
0620		1											1	1																																
SHEET TOTALS		25	25.1	7.6	8	1	6	1		7			11	13										1			1	3				1	2						1				0.6560			

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY:	BJH	DATE:	8/18/23
CHECKED BY:	REL	DATE:	8/18/23

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-3833C	3D-4

**Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".**

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)								DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE								R. C. PIPE CLASS III								R. C. PIPE CLASS IV								ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)
SIZE								12	15	18	24	30	36	42	48						12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	
THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%														.064	.064	.064	.064	.079	.079	.109	.109																	CY
		0620	0619		827.6	827.3																									8														
Y5 13+68	14 LT	0621		831.6																																									
L 46+54	53 LT	0622		817.2																																									
		0622	0603		812.6	811.3	0.4																																120						
L 43+86	41 LT	0623		809.7																																									
		0623	0601		802.8	800.9																																		124					
L 48+84	54 LT	0627		796.5																																									
		0627	0626		790.5	787.5																														60									
L 49+36	42 LT	0628		818.0																																									
		0628	0651		812.7	811.9	0.3																																				76		
L 49+36	8 RT	0629		820.2																																									
		0629	0628		816.4	814.5																																	48						
L 50+34	41 LT	0630		819.1																																									
		0630	0628		813.8	812.7																																					92		
L 52+78	41 LT	0631		824.2																																									
		0631	0654		817.8	817.0																																					76		
L 52+78	6 LT	0632		823.3																																									
		0632	0631		819.2	818.8																																	36						
L 53+18	7 RT	0633		823.4																																									
		0633	0632		819.6	819.2																																	40						
L 53+13	48 LT	0634		826.0																																									
		0634	0631		818.2	817.8																																					36		
Y6 11+70	25 RT	0635		824.3																																									
		0635	0653		819.2	819.0																																	24						
Y6 11+96	22 LT	0636		823.8																																									
		0636	0653		820.5	819.0																																	48						
L 54+04	41 LT	0637		826.6																																									
		0637	0634		821.3	818.2																																					96		
L 54+04	9 LT	0638		825.5																																									
		0638	0637		822.0	821.7																																	32						
L 50+01	46 RT	0639		821.0																																									
L 50+05	70 RT	0640		818.5																																									
		0640	0639		814.5	814.3	0.3																									24													
L 50+92	42 RT	0641		820.8																																									
		0641	0639		815.9	809.2	0.4																																			96			
L 51+33	69 RT	0642		824.5																																									
		0642	0641		818.6	815.9																												52											
L 51+58	66 RT	0643		823.9																																									
		0643	0642		820.6	818.6																									24														
L 52+05	0 CL	0644		822.2																																									
		0644	0654		818.4	818.0																																	40						
L 52+05	49 RT	0645		821.3																																									
		0645	0641		817.4	816.3																																		112					
L 52+78	49 RT	0646		821.7																																									
		0646	0645		817.9	817.4																																		68					
L 53+04	74 RT	0647		825.4																																									
		0647	0646		819.5	818.4																									36														
Y7 10+72	17 RT	0648		823.6																																									
		0648	0647		820.0	819.5																									48														
Y7 10+72	17 LT	0649		823.6																																									
							SHEET TOTALS																								116	24		52		60			388	304		96	376		

LINE & STATION	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
			0' THRU 5' EACH	5' THRU 10' A LIN. FT.	10' AND ABOVE B LIN. FT.		E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																													CY	CY	CY	LIN. FT.	
	0620	0619																																											
Y5 13+68	0621		1	5.0	0.5	1		1																																					
L 46+54	0622		1			1		1																																					
	0622	0603																																											
L 43+86	0623		1	1.9		1		1																																					
	0623	0601																																											
L 48+84	0627		1	1.0																							1																			JB W/ SLAB LID
	0627	0626																																											
L 49+36	0628		1	0.3		1	1																																						
	0628	0651																																											
L 49+36	0629		1								1			1	1																														
	0629	0628																																											
L 50+34	0630		1	0.3		1		1																																					
	0630	0628																																											
L 52+78	0631		1	1.4		1		1																																					
	0631	0654																																											
L 52+78	0632		1								1			1	1																														
	0632	0631																																											
L 53+18	0633		1								1			1	1																														
	0633	0632																																											
L 53+13	0634		1	2.8		1		1																																					
	0634	0631																																											
Y6 11+70	0635		1	0.1		1	1																																						
	0635	0653																																											
Y6 11+96	0636		1																					1	30																					DRIVEWAY DI, GRATE L=30'
	0636	0653																																											
L 54+04	0637		1	0.3		1		1																																					
	0637	0634																																											
L 54+04	0638		1																				1					1																		TRAFFIC BEARING 2GI
	0638	0637																																											
L 50+01	0639		1	5.0	3.8	1			1																																				
L 50+05	0640		1											1	1																														
	0640	0639																																											
L 50+92	0641		1			1			1																																				
	0641	0639																																											
L 51+33	0642		1	0.9																										1	1																MH, 6' DIA.
	0642	0641																																											
L 51+58	0643		1			1	1																																						
	0643	0642																																											
L 52+05	0644		1								1			1	1																														
	0644	0654																																											
L 52+05	0645		1						1																						1	1														OFFSET CB W/ MH
	0645	0641																																											
L 52+78	0646		1						1																						1	1														OFFSET CB W/ MH
	0646	0645																																											
L 53+04	0647		1	0.9		1	1																																						
	0647	0646																																											
Y7 10+72	0648		1			1			1																																				
	0648	0647																																											
Y7 10+72	0649		1			1		1																																					
SHEET TOTALS			26	19.9	4.3	15	4	8	5		4			5	5							1	1	30	1		1	1	3	2																

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY:	BJH	DATE:	8/18/23
CHECKED BY:	REL	DATE:	8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-5

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".**

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)								DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE								R. C. PIPE CLASS III								R. C. PIPE CLASS IV							
SIZE								12	15	18	24	30	36	42	48						12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48
THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%														.064	.064	.064	.064	.079	.079	.109	.109																
		0649	0648		820.3	820.0																																	32					
L 54+19	41 RT	0650		823.6																																								
		0650	0646		820.3	818.4	0.3																																132					
L 48+54	41 LT	0651		818.4																																								
		0651	0626		806.4	801.4	0.3																													52										
L 50+34	8 RT	0652		820.5																																								
		0652	0630		816.7	815.7																																	48					
Y6 11+95	26 RT	0653		824.4																																								
		0653	0634		819.0	818.2																																	60					
L 52+04	41 LT	0654		822.6																																								
		0654	0630		817.0	813.8																																					168	
Y3 12+98	6 RT	0655		802.2																																								
		0655	0516		797.8	792.3																																		92				
L 55+24	41 LT	0701		829.8																																								
		0701	0637		824.5	821.3																																					124	
L 56+64	41 LT	0702		834.7																																								
		0702	0701		827.4	825.0	0.3																																			148		
L 56+64	9 LT	0703		833.6																																								
		0703	0702		829.3	828.8																																	32					
L 58+70	55 LT	0704		840.8																																								
		0704	0702		829.6	827.4	0.3																																			216		
L 58+95	42 LT	0705		842.9																																								
		0705	0704		837.3	834.5	0.7																																	28				
L 58+95	9 LT	0706		841.8																																								
		0706	0705		838.0	837.7																																	32					
L 61+30	43 LT	0707		848.0																																								
		0707	0705		841.9	837.3	0.6																																	236				
Y 36+24	50 RT	0708		848.3																																								
		0708	0707		842.5	841.9	0.6																																	64				
Y 35+30	55 RT	0709		848.0																																								
		0709	0708		843.4	842.5	0.6																																	88				
Y 34+21	55 RT	0710		848.4																																								
		0710	0709		844.4	843.4	0.5																																	104				
Y 35+25	15 LT	0711		851.0																																								
		0711	0712		847.2	844.8																																	28					
Y 35+25	45 LT	0712		852.0																																								
		0712	0713		840.8	840.4																																		72				
L 63+03	86 LT	0713		852.0																																								
		0713	0714		840.4	840.1																																		52				
L 63+48	62 LT	0714		851.9																																								
		0714	0715		840.1	839.4																																		132				
L 64+90	62 LT	0715		846.6																																								
		0715	0717		839.4	836.7	0.4																																	96				
L 64+90	11 RT	0716		849.6																																								
		0716	0715		846.6	842.4																																	72					
L 65+97	62 LT	0717		841.3																																								
		0717	0719		836.7	826.0	0.4																																	108				
L 66+92	80 LT	0718		829.5																																								
		0718	0719		826.9	826.4																							48														
L 67+10	38 LT	0719		837.3																																								
SHEET TOTALS																															48				52				436	1072		364	292	

LINE & STATION	FROM	TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
				A		B		GRATE TYPE				D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																																		
			CY	0' THRU 5' EACH	5' THRU 10' LIN. FT.	10' AND ABOVE LIN. FT.		E	F	G																																	CY	CY	CY	LIN. FT.	
	0649	0648																																													
L 54+19	0650			1			1			1																																					
	0650	0646																																													
L 48+54	0651			1	5.0	2.0	1		1																																						
	0651	0626																																													
L 50+34	0652			1								1			1	1																															
	0652	0630																																													
Y6 11+95	0653			1	0.4		1			1																																					
	0653	0634																																													
L 52+04	0654			1	0.6		1		1																																						
	0654	0630																																													
Y3 12+98	0655			1																						1				1																	JB W/ MH
	0655	0516																																													
L 55+24	0701			1	0.3		1		1																																						
	0701	0637																																													
L 56+64	0702			1	2.3		1		1																																						
	0702	0701																																													
L 56+64	0703			1																				1					1																		TRAFFIC BEARING 2GI
	0703	0702																																													
L 58+70	0704			1	5.0	1.2	1		1																																						
	0704	0702																																													
L 58+95	0705			1	0.6		1		1																																						
	0705	0704																																													
L 58+95	0706			1																				1					1																		TRAFFIC BEARING 2GI
	0706	0705																																													
L 61+30	0707			1	1.1		1		1																																						
	0707	0705																																													
Y 36+24	0708			1	0.8					1																								1													OFFSET CB W/ SLAB LID
	0708	0707																																													
Y 35+30	0709			1			1	1																																							
	0709	0708																																													
Y 34+21	0710			1			1			1																																					
	0710	0709																																													
Y 35+25	0711			1																				1					1																		TRAFFIC BEARING 2GI
	0711	0712																																													
Y 35+25	0712			1	5.0	1.2	1	1																																							
	0712	0713																																													
L 63+03	0713			1	5.0	1.6	1		1																																						
	0713	0714																																													
L 63+48	0714			1	5.0	1.8	1			1																																					
	0714	0715																																													
L 64+90	0715			1	2.2		1			1																																					
	0715	0717																																													
L 64+90	0716			1																				1					1																		TRAFFIC BEARING 2GI
	0716	0715																																													
L 65+97	0717			1			1			1																																					
	0717	0719																																													
L 66+92	0718			1											1	1																															
	0718	0719																																													
L 67+10	0719			1	5.0	1.3	1			1																																					
SHEET TOTALS				25	38.3	9.1	17	2	8	8		1			2	2							4			1		4		1		1															

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY: BJH DATE: 8/18/23
CHECKED BY: REL DATE: 8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-6

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION	OFFSET		STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)													C. S. PIPE							
SIZE									12	15	18	24	30	36	42	48						12	15	18	24	30	36	42	48
THICKNESS OR GAUGE			FROM	TO	FT.	FT.	FT.	%									DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	.064	.064	.064	.064	.079	.079	.109	.109
			0719	0801		826.0	824.9	0.6																					
L 67+12	12	RT	0720		838.3																								
			0720	0719		834.4	833.5																						
L 55+68	41	RT	0721		828.0																								
			0721	0650		824.7	820.3																						
L 56+17	53	RT	0722		832.3																								
L 57+27	42	RT	0723		833.6																								
			0723	0721		830.3	824.7																						
L 58+67	59	RT	0724		837.9																								
			0724	0745		832.4	831.7																						
L 58+92	73	RT	0725		835.6																								
			0725	0726		833.4	833.3																						
L 59+09	75	RT	0726		835.7																								
L 59+99	66	RT	0727		843.4																								
			0727	0724		835.1	832.4																						
L 59+99	95	RT	0728		838.0																								
			0728	0727		835.4	835.1																						
Y 38+77	73	RT	0729		846.3																								
Y 39+39	89	RT	0730		839.9																								
Y 39+56	55	RT	0731		846.9																								
			0731	0730		835.6	831.9																						
Y 40+48	55	RT	0732		845.8																								
			0732	0731		842.5	835.6																						
Y 42+30	43	RT	0733		845.1																								
			0733	0735		833.5	832.7																						
Y 42+30	76	RT	0734		836.4																								
			0734	0733		833.8	833.5																						
Y 42+95	43	RT	0735		844.7																								
			0735	0736		832.7	828.6																						
Y 42+95	76	RT	0736		831.5																								
Y 42+95	5	LT	0737		845.6																								
			0737	0735		835.0	832.7																						
Y 42+85	65	LT	0738		844.3																								
			0738	0737		835.5	835.0																						
Y 40+97	55	LT	0739		845.8																								
			0739	0744		842.5	841.5																						
Y 39+50	8	LT	0740		848.5																								
			0740	0741		844.9	841.9																						
Y 38+71	8	LT	0741		849.7																								
Y 34+45	9	LT	0742		851.0																								
			0742	0743		847.2	845.6																						
Y 34+45	43	LT	0743		852.2																								
			0743	0712		841.2	840.8																						
Y 42+05	55	LT	0744		844.9																								
			0744	0738		841.5	838.4																						
L 57+93	50	RT	0745		835.6																								
			0745	0723		831.7	830.3																						
L 66+51	11	RT	0746		841.5																								
			0746	0720		837.7	834.4																						
L 66+14	99	RT	0747									128																	
SHEET TOTALS												128																	

STRUCTURE NUMBER FROM	TO	R. C. PIPE CLASS III								R. C. PIPE CLASS IV								ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03			
		12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		GRATE TYPE E	F	G	
0719	0801												108													
0720																			1							
0720	0719											48														
0721																			1			1			1	
0721	0650											140														
0722																			1			1	1			
0723																			1			1			1	
0723	0721											148														
0724																			1	0.5		1			1	
0724	0745											68														
0725																			1				1			
0725	0726										16															
0726																			1				1			
0727																			1	3.3		1			1	
0727	0724											124														
0728																			1							
0728	0727			28																						
0729																										
0730																			1	3.0						
0731																			1	5.0	1.3	1		1		
0731	0730			40																						
0732																			1			1		1		
0732	0731											92														
0733																			1	5.0	1.6	1		1		
0733	0735											64														
0734																			1							
0734	0733			32																						
0735																			1	5.0	2.0	1		1		
0735	0736											32														
0736																			1				1			
0737																			1	5.0	0.6					
0737	0735											48														
0738																			1	3.8		1			1	
0738	0737											60														
0739																			1			1			1	
0739	0744											108														
0740																			1							
0740	0741											76														
0741																			1	2.8						
0742																			1							
0742	0743											32														
0743																			1	5.0	1.0	1			1	
0743	0712												80													
0744																			1			1			1	
0744	0738											80														
0745																			1			1			1	
0745	0723											60														
0746																			1							
0746	0720											60														
0747																										
SHEET TOTALS				100							16	1240	188						26	38.4	6.5	14	4	4	9	

STRUCTURE NUMBER FROM	TO	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
0719	0801																																				
0720													1					1																			TRAFFIC BEARING 2GI
0720	0719																																				
0721																																					
0721	0650																																				
0722																																					
0723																																					
0723	0721																																				
0724																																					
0724	0745																																				
0725																							1														MIN. DEPTH CB
0725	0726																																				
0726																							1														MIN. DEPTH CB
0727																																					
0727	0724																																				
0728					1	1																															
0728	0727																																				
0729																				1								1									ADJ. EXIST. DI AND CONVERT TO JB W/ MH
0730					1	1																															
0731																																					
0731	0730																																				
0732																																					
0732	0731																																				
0733																																					
0733	0735																																				
0734					1	1																															
0734	0733																																				
0735																																					
0735	0736																																				
0736																							1														MIN. DEPTH CB
0737		1				1																			1												OFFSET DI W/ SLAB LID
0737	0735																																				
0738																																					
0738	0737																																				
0739																																					
0739	0744																																				
0740													1														1										OFFSET 2GI W/ SLAB LID
0740	0741																																				
0741													1							1						1											OFFSET 2GI W/ MH
0742													1					1																			TRAFFIC BEARING 2GI
0742	0743																																				
0743																																					
0743	0712																																				
0744																																					
0744	0738																																				
0745																																					
0745	0723																																				
0746													1					1																			TRAFFIC BEARING 2GI
0746	0720																																				
0747																																					
SHEET TOTALS		1			3	4							5					3		2			3		1	1	1	1									

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY: BJH DATE: 8/18/23

CHECKED BY: REL DATE: 8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-7

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE 12 .064	15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 68+18	38 LT	0801		832.1																																									1	2.2		1			1																																									
		0801	0802		824.9	816.0	0.6																																		128																																																	
L 69+47	38 LT	0802		826.9																																									1	5.0	1.9	1			1																																									
		0802	0804		815.0	813.8	0.5																																				120																																															
L 69+47	68 LT	0803		821.1																																									1	0.3													1					2																									4GI-A
		0803	0802		815.8	815.5	0.6																										32																																																										
L 70+59	56 LT	0804		823.5																																									1	4.7		1			1																																									
		0804	0829		813.8	813.3	0.6																																				52																																															
L 70+55	71 LT	0805		819.5																																									1											1	1																															
		0805	0804		815.5	815.2																									16																																																													
L 71+75	34 LT	0806		818.3																																									1	1.3		1			1																																									
		0806	0808		812.0	806.3																																					156																																														
L 71+75	50 LT	0807		817.5																																									1											1	1																															
		0807	0806		814.9	813.9																									16																																																											
L 73+28	32 LT	0808		813.4																																									1	2.1		1			1																																									
		0808	0810		806.3	801.9	0.3																																						152																																														
L 74+78	46 LT	0809		806.2																																									1											1	1																															
		0809	0810		803.6	803.4																									16																																																											
L 74+79	32 LT	0810		807.2																																									1	0.3		1			1																																									
		0810	0811		801.9	798.6	0.4																																						96																																														
L 75+76	21 LT	0811		803.7																																									1	0.3		1			1																																									
		0811	0825		798.4	795.5	0.4																																						52																																														
L 70+54	7 LT	0813		821.9																																									1								1			1	1																															
		0813	0814		818.1	816.6																																	32																																																			
L 70+83	5 RT	0814		820.4																																									1								1			1	1																															
		0814	0815		816.6	815.7																																	28																																																			
L 70+83	36 RT	0815		819.0																																									1			1		1																																										
		0815	0816		815.7	812.0																																	116																																																			
L 72+06	33 RT	0816		815.3																																									1			1		1																																										
		0816	0817		812.0	808.8																																	116																																																			
L 73+28	40 RT	0817		812.2																																									1					1																						1	1																	OFFSET CB W/ MH
		0817	0818		808.8	808.5																																	40																																																			
L 73+28	3 LT	0818		813.1																																									1								1			1	1																															
		0818	0808		808.5	808.2																																	28																																																			
L 74+79	27 RT	0819		807.2																																									1					1																							1																OFFSET CB W/ SLAB LID
		0819	0810		803.9	803.4																																	56																																																			
L 72+06	4 LT	0820		817.0																																									1								1			1	1																															
		0820	0818		813.2	808.5																																	120																																																			
L 76+31	19 LT	0825		801.7																																									1	1.2		1		1																																										TIE TO 42" RCP BUILT ON WILSON AVE. PROJECT
L 75+77	37 LT	0826		803.0																																									1											1	1																															
		0826	0811		800.4	800.2																									16																																																											
DRWY4 10+97	19 LT	0829		821.3																																									1	3.0		1			1																																									
		0829	0806		813.3	812.5	0.6																																				76																																															
Y 19+72	44 RT	0901																																																																																									
		0901	0902		857.8	857.4	0.4																								16																																																											
Y 19+71	30 RT	0902																																																																																			0.4465			
Y 19+68	2 RT	0903		861.0																																									1								1			1	1																															
Y 19+67	19 LT	0904																																																																																			0.4465			
		0904	0905		855.8	852.8	0.5																								28																																																											
Y 19+64	45 LT	0905		855.3																																									1															1				1																									
SHEET TOTALS																														108		32						536	128		248	456			24	20.4	1.9	11		5	8		5			9	9	1	1				3								1	1	1												0.8930			

ABBREVIATIONS	
C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY:	BJH	DATE:	8/18/23
CHECKED BY:	REL	DATE:	8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	Drainage Pipe 15	Drainage Pipe 18	Drainage Pipe 24	Drainage Pipe 30	Drainage Pipe 36	Drainage Pipe 42	Drainage Pipe 48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE 12 .064	C. S. PIPE 15 .064	C. S. PIPE 18 .064	C. S. PIPE 24 .064	C. S. PIPE 30 .079	C. S. PIPE 36 .079	C. S. PIPE 42 .109	C. S. PIPE 48 .109	R. C. PIPE CLASS III 12	R. C. PIPE CLASS III 15	R. C. PIPE CLASS III 18	R. C. PIPE CLASS III 24	R. C. PIPE CLASS III 30	R. C. PIPE CLASS III 36	R. C. PIPE CLASS III 42	R. C. PIPE CLASS III 48	R. C. PIPE CLASS IV 12	R. C. PIPE CLASS IV 15	R. C. PIPE CLASS IV 18	R. C. PIPE CLASS IV 24	R. C. PIPE CLASS IV 30	R. C. PIPE CLASS IV 36	R. C. PIPE CLASS IV 42	R. C. PIPE CLASS IV 48	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	CONCRETE TRANSITIONAL SECTION C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
		0905	0906		852.3	851.2	0.5																								112																																																												
Y8 18+76	22 RT	0906		856.0																																										1														1				1																												
		0906	0915		851.2	844.8	0.6																								88																																																												
Y8 16+84	23 RT	0907		839.0																																										1														1				1																												
		0907	0908		836.0	824.7	0.8																								112																																																												
Y8 15+71	20 RT	0908		829.9																																										1	0.7												1					1																												
		0908	0909		824.2	816.6	0.6																									128																																																										
Y8 14+44	18 RT	0909		821.4																																										1													1					1																												
		0909	0910		816.6	815.3	0.7																									60																																																											
Y 14+35	32 RT	0911							40																																																																																		
Y 15+48	36 RT	0912							32																																																																																		
Y 16+88	40 RT	0913																																					44																																																						
Y 18+45	42 RT	0914								36																																																																															
Y8 17+83	24 RT	0915		847.8																																										1														1				1																												
		0915	0907		844.8	836.0	0.6																								96																																																												
Y 25+15	42 LT	1001		862.7																																										1			1			1																																								
		1001	1002		859.4	853.3																																			248																																																				
Y 27+63	44 LT	1002		858.1																																										1	5.0	0.5	1			1																																								
		1002	1004		847.6	846.9	0.3																																		140																																																					
Y 27+63	21 LT	1003		858.9																																										1	5.0	1.2						1				1																			1														OFFSET DI W/ SLAB LID
		1003	1002		847.7	847.6																																			20																																																					
Y 29+05	44 LT	1004		855.4																																										1	3.5		1			1																																								
		1004	1005		846.9	846.2	0.4																																		136																																																					
Y 30+42	43 LT	1005		853.3																																										1	2.1		1			1																																								
		1005	1009		846.2	844.6	0.5																																		284																																																					
Y 32+23	70 LT	1006		849.9																																										1	4.9		1	1																																									
Y 32+25	58 LT	1007		851.1																																																																						1									1									CONVERT EXIST. CB TO JB W/ MH
DRWY5 10+91	14 LT	1008		848.7																																										1			1			1																																								
		1008	1006		845.4	840.0																																			104																																																					
Y 33+25	43 LT	1009		852.9																																										1	5.0	1.1	1			1																																								
		1009	0743		841.8	841.2																																				124																																																			
Y 33+25	6 RT	1010		851.1																																										1	4.0																	1					1																			TRAFFIC BEARING 2GI
		1010	1009		842.1	841.8																																			48																																																					
Y 24+06	60 RT	1011							36																																																																																		
Y 24+48	62 RT	1012																																																																																									
		1012	1025		861.3	859.6																																			52																																																				
Y 25+85	59 RT	1013		861.5																																										1											1	1																																			
		1013	1026		858.1	857.9																																			16																																																				
Y 26+57	92 RT	1014		859.2																																										1			1			1																																								
		1014	1015		855.9	848.5																																			108																																																			
Y 27+63	60 RT	1015		857.7																																										1	4.2		1			1																																								
		1015	1003		848.5	847.7																																			80																																																			
Y 28+35	45 RT	1016		856.6																																										1			1			1																																								
		1016	1018		853.3	849.9																																			148																																																				
Y 29+83	10 RT	1017		854.9																																										1								1			1	1																																	
		1017	1018		851.2	849.9																																			32																																																				
Y 29+83	44 RT	1018		854.0																																										1			1			1																																								
		1018	1020		849.9	848.9	0.4																																			80																																																		
Y 29+83	53 RT	1019		854.9																																										1																										1	1																	MH, 6' DIA.
		1019	1018		850.5	849.9																										8																																																											
SHEET TOTALS									108	36																					408	196								1460	204						21	34.4	2.8	11	1		10		2			2	3	2	3				5	1					1	1	2					1				1									

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY:	BJH	DATE:	8/18/23
CHECKED BY:	REL	DATE:	8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-9

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC
Y 30+63	43	RT	1020		852.7																
			1020	1022		848.9	847.2	0.4													
Y 30+63	65	RT	1021		852.5																
			1021	1020		849.9	849.3														
Y 31+78	55	RT	1022		851.0																
			1022	1023		847.2	845.6	0.4													
Y 32+90	56	RT	1023		849.4																
			1023	0710		845.6	844.4	0.5													
Y 23+23	55	RT	1024							28											
Y 24+95	43	RT	1025		862.9																
			1025	1026		859.6	857.9														
Y 25+85	43	RT	1026		861.6																
			1026	1014		857.9	855.9														
Y 44+65	55	LT	1101		843.3																
			1101	0738		840.0	835.5														
Y 46+49	86	LT	1103		840.9																
			1103	1104		837.6	837.3														
Y 46+87	43	LT	1104		841.3																
			1104	1105		837.3	837.1														
Y 47+25	43	LT	1105		840.7																
			1105	1106		837.1	836.6														
Y 44+39	43	RT	1107		843.8																
			1107	0735		839.8	832.7														
Y 45+56	9	LT	1108		843.5																
			1108	1109		840.1	839.8														
Y 45+56	14	RT	1109		843.5																
			1109	1110		839.8	839.0														
Y 46+48	10	RT	1110		842.7																
			1110	1111		839.0	838.4														
Y 46+49	43	RT	1111		841.7																
			1111	1112		838.4	837.4														
Y 47+24	43	RT	1112		840.7																
			1112	1129		837.4	836.2														
Y 48+00	59	RT	1113		837.0																
			1113	1114		834.5	833.7														
Y5 16+24	14	LT	1115		838.0																
			1115	1118		834.6	832.9														
Y5 16+24	14	RT	1116		838.4																
			1116	1115		834.9	834.6														
Y5 16+24	25	RT	1117		838.3																
			1117	1116		836.4	836.0														
Y5 15+51	14	LT	1118		836.2																
			1118	1119		832.9	827.8														
Y5 14+27	14	LT	1119		833.1																
			1119	0621		827.8	825.0														
Y5 14+27	17	RT	1120		833.5																
			1120	1119		828.1	827.8														
Y5 14+27	28	RT	1121		831.6																
			1121	1120		828.2	828.1														
Y 51+27	51	LT	1122								48										
SHEET TOTALS										28	48										

LINE & STATION	OFFSET		FROM	TO	C. S. PIPE 12 .064	15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
Y 30+63	43	RT	1020																									
			1020	1022																				116				
Y 30+63	65	RT	1021																									
			1021	1020											20													
Y 31+78	55	RT	1022																									
			1022	1023																				108				
Y 32+90	56	RT	1023																									
			1023	0710																				124				
Y 23+23	55	RT	1024																									
Y 24+95	43	RT	1025																									
			1025	1026																			88					
Y 25+85	43	RT	1026																									
			1026	1014																			88					
Y 44+65	55	LT	1101																									
			1101	0738																			180					
Y 46+49	86	LT	1103																									
			1103	1104																			56					
Y 46+87	43	LT	1104																									
			1104	1105																			36					
Y 47+25	43	LT	1105																									
			1105	1106											32													
Y 44+39	43	RT	1107																									
			1107	0735																			144					
Y 45+56	9	LT	1108																									
			1108	1109																			20					
Y 45+56	14	RT	1109																									
			1109	1110																			92					
Y 46+48	10	RT	1110																									
			1110	1111																			32					
Y 46+49	43	RT	1111																									
			1111	1112																			76					
Y 47+24	43	RT	1112																									
			1112	1129											24													
Y 48+00	59	RT	1113																									
			1113	1114											100													
Y5 16+24	14	LT	1115																									
			1115	1118																			72					
Y5 16+24	14	RT	1116																									
			1116	1115																			28					
Y5 16+24	25	RT	1117																									
			1117	1116										12														
Y5 15+51	14	LT	1118																									
			1118	1119																			124					
Y5 14+27	14	LT	1119																									
			1119	0621																			60					
Y5 14+27	17	RT	1120																									
			1120	1119																			28					
Y5 14+27	28	RT	1121																									
			1121	1120											12													
Y 51+27	51	LT	1122																									
SHEET TOTALS														12	188								1124	348				

LINE & STATION	OFFSET		FROM	TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30
Y 30+63	43	RT	1020			1			1			1															
			1020	1022																							
Y 30+63	65	RT	1021			1											1	1									
			1021	1020																							
Y 31+78	55	RT	1022			1			1			1															
			1022	1023																							
Y 32+90	56	RT	1023			1			1			1															
			1023	0710																							
Y 23+23	55	RT	1024																								
Y 24+95	43	RT	1025			1			1			1															
			1025	1026																							
Y 25+85	43	RT	1026			1			1			1															
			1026	1014																							
Y 44+65	55	LT	1101			1			1			1															
			1101	0738																							
Y 46+49	86	LT	1103			1			1	1																	
			1103	1104																							
Y 46+87	43	LT	1104			1			1			1															
			1104	1105																							
Y 47+25	43	LT	1105			1			1			1															
			1105	1106																							
Y 44+39	43	RT	1107			1			1		1																
			1107	0735																							
Y 45+56	9	LT	1108			1								1				1									
			1108	1109																							
Y 45+56	14	RT	1109			1								1			1	1									
			1109	1110																							
Y 46+48	10	RT	1110			1								1			1	1									
			1110	1111																							
Y 46+49	43	RT	1111			1			1		1																
			1111	1112																							
Y 47+24	43	RT	1112			1			1		1																
			1112	1129																							
Y 48+00	59	RT	1113			1											1	1									
			1113	1114																							
Y5 16+24	14	LT	1115			1			1		1																
			1115	1118																							
Y5 16+24	14	RT	1116			1			1			1															
			1116	1115																							
Y5 16+24	25	RT	1117			1															1			1			
			1117	1116																							
Y5 15+51	14	LT	1118			1			1		1																
			1118	1119																							
Y5 14+27	14	LT	1119			1	0.3		1		1																
			1119	0621																							
Y5 14+27	17	RT	1120			1	0.4		1			1															
			1120	1119																							
Y5 14+27	28	RT	1121			1											1	1									
			1121	1120																							
Y 51+27	51	LT	1122																								
SHEET TOTALS						24	0.7		17	1	6	10		3			5	6			1			1			

LINE & STATION	OFFSET		FROM	TO	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
Y 30+63	43	RT	1020																							
			1020	1022																						
Y 30+63	65	RT	1021																							
			1021	1020																						
Y 31+78	55	RT	1022																							
			1022	1023																						
Y 32+90	56	RT	1023																							
			1023	0710																						
Y 23+23	55	RT	1024																							
Y 24+95	43	RT	1025																							
			1025	1026																						
Y 25+85	43	RT	1026																							
			1026	1014																						
Y 44+65	55	LT	1101																							
			1101	0738																						
Y 46+49	86	LT	1103																							
			1103	1104																						
Y 46+87	43	LT	1104																							
			1104	1105																						
Y 47+25	43	LT	1105																							
			1105	1106																						
Y 44+39	43	RT	1107																							
			1107	0735																						
Y 45+56	9	LT	1108											1												OFFSET DI W/ SLAB LID
			1108	1109																						
Y 45+56	14	RT	1109																							
			1109	1110																						
Y 46+48	10	RT	1110																							
			1110	1111																						
Y 46+49	43	RT	1111																							
			1111	1112																						
Y 47+24	43	RT	1112																							
			1112	1129																						
Y 48+00	59	RT	1113																							
			1113	1114																						
Y5 16+24	14	LT	1115																							
			1115	1118																						
Y5 16+24	14	RT	1116																							
			1116	1115																						
Y5 16+24	25	RT	1117																							
			1117	1116																						
Y5 15+51	14	LT	1118																							
			1118	1119																						
Y5 14+27	14	LT	1119																							
			1119	0621																						
Y5 14+27	17	RT	1120																							
			1120	1119																						
Y5 14+27	28	RT	1121																							
			1121	1120																						
Y 51+27	51	LT	1122																							
SHEET TOTALS														1												

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY: BJH DATE: 8/18/23

CHECKED BY: REL DATE: 8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-10

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION	OFFSET		STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)												C. S. PIPE							R. C. PIPE CLASS III							R. C. PIPE CLASS IV							ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE THICKNESS OR GAUGE			FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	12 .064	15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		GRATE TYPE E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																													CY	CY	CY	LIN. FT.	
Y 53+56	47	LT	1123							36																																																																														
Y 55+18	51	LT	1124							36																																																																														
Y 55+79	47	LT	1125							44																																																																														
Y 51+56	45	RT	1126								36																																																																													
Y 53+69	47	RT	1127								36																																																																													
Y 57+71	83	RT	1128									68																																																																												
Y 47+32	67	RT	1129		838.7																																									1										1	1																														
			1129	1113		836.2	834.5																								68																																																									
L 48+69	65	LT																																																																																						34	REMOVE EXIST. 48" RCP (PARTIAL)
DRWY2 10+77	5	LT																																																																																						67	REMOVE EXIST. 18" RCP
DRWY2 10+63	0	CL																																																																																						36	REMOVE EXIST. 15" HDPE
DRWY2 10+95	24	LT																																																																																						74	REMOVE EXIST. 15" HDPE (PARTIAL)
L 20+58	42	LT																																																																																						137	REMOVE EXIST. 15" RCP
L 21+92	38	LT																																																																																						125	REMOVE EXIST. 15" RCP
L 26+14	22	RT																																																																																						69	REMOVE EXIST. 18" RCP
L 24+97	21	RT																																																																																						28	REMOVE EXIST. 18" RCP
L 22+10	31	RT																																																																																						31	REMOVE EXIST. 15" CMP
L 26+00	25	LT																																																																																						101	REMOVE EXIST. 15" HDPE
L 26+52	2	LT																																																																																			3				FILL EXIST. 18" RCP (PARTIAL)
L 26+54	65	LT																																																																																					0.065		PLUG EXIST. 18" RCP
L 26+53	45	LT																																																																																						40	REMOVE EXIST. 18" RCP (PARTIAL)
L 33+82	7	LT																																																																																						24	REMOVE EXIST. 18" RCP
L 33+49	88	LT																																																																																						32	REMOVE EXIST. 24" RCP
DRWY2 10+35	6	LT																																																																																						69	REMOVE EXIST. 18" RCP
Y5 11+94	26	RT																																																																																						73	REMOVE EXIST. 15" CMP
Y5 12+69	20	RT																																																																																						53	REMOVE EXIST. 15" RCP
Y5 14+23	20	RT																																																																																						4	REMOVE EXIST. 15" RCP (PARTIAL)
Y5 14+21	21	RT																																																																																					0.045		PLUG EXIST. 15" RCP
L 43+09	22	RT																																																																																						129	REMOVE EXIST. 24" RCP
L 41+15	21	RT																																																																																						259	REMOVE EXIST. 24" RCP
L 38+71	35	RT																																																																																						246	REMOVE EXIST. 24" RCP
L 38+03	9	LT																																																																																						24	REMOVE EXIST. 15" RCP
L 39+04	5	LT																																																																																						21	REMOVE EXIST. 15" CMP
L 40+05	12	LT																																																																																						27	REMOVE EXIST. 15" CMP
L 45+77	48	RT																																																																																						15	REMOVE EXIST. 15" CMP
L 52+97	1	LT																																																																																			5				FILL EXIST. 18" RCP
Y6 12+62	7	RT																																																																																						68	REMOVE EXIST. 12" RCP
Y7 10+34	24	RT																																																																																						9	REMOVE EXIST. 36" RCP
Y7 10+36	0	CL																																																																																						37	REMOVE EXIST. 36" RCP
L 54+01	34	RT																																																																																						26	REMOVE EXIST. 36" RCP
L 54+60	30	RT																																																																																						79	REMOVE EXIST. 24" RCP
L 55+21	34	LT																																																																																						13	REMOVE EXIST. 24" RCP (PARTIAL)
L 55+11	1	RT																																																																																			6				FILL EXIST. 24" RCP
L 55+92	28	LT																																																																																						147	REMOVE EXIST. 24" RCP
L 56+68	49	LT																																																																																						25	REMOVE EXIST. 24" RCP
L 57+72	50	LT																																																																																						205	REMOVE EXIST. 24" RCP
Y 42+85	69	RT																																																																																						22	REMOVE EXIST. 18" HDPE
Y 42+66	23	LT																																																																																						17	REMOVE EXIST.18" RCP (PARTIAL)
Y 42+74	46	RT																																																																																						29	REMOVE EXIST.18" RCP (PARTIAL)
Y 42+70	8	RT																																																																																			3				FILL EXIST. 18" RCP
SHEET TOTALS											116	72	68																		68														1										1	1																										17		0.110	2395	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

TGSLTW1014

COMPUTED BY: BJH **DATE:** 8/18/23

CHECKED BY: REL **DATE:** 8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-11

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
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D.I.	DROP INLET
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H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET		STRUCTURE NUMBER FROM	TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)								DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE								R. C. PIPE CLASS III								R. C. PIPE CLASS IV								ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	OFFSET CB W/ MH, SEE SHEET 2D-3	OFFSET CB W/ SLAB LID, SEE SHEET 2D-4	MIN. DEPTH CB, SEE SHEET 2D-5	DRY DET. OUTLET CTL. STR, SEE SHEET 2D-13	OFFSET DI W/ SLAB LID, SEE SHEET 2D-16	OFFSET 2GI W/ MH, SEE SHEET 2D-17	OFFSET 2GI W/ SLAB LID, SEE SHEET 2D-18	CONVERT EXIST. D.I. TO J.B., SEE SHEET 2D-15	CONVERT EXIST. C.B. TO J.B., SEE SHEET 2D-15	3 OR 4 SIDED OTCB, SEE DETAIL SHEET 2D-19	15" C.S. ELBOW	18" C.S. ELBOW	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
									12	15	18	24	30	36	42	48						12 .064	15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48		0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																																		
Y 28+01	3	RT																																																																																					3				FILL EXIST. 18" RCP (PARTIAL)
Y 27+92	27	RT																																																																																								9	REMOVE EXIST.18" RCP (PARTIAL)
Y 27+55	32	RT																																																																																							68	REMOVE EXIST. 12" RCP / 15" HDPE
Y 26+21	33	RT																																																																																							16	REMOVE EXIST. 12" RCP
Y 31+74	25	LT																																																																																							48	REMOVE EXIST. 18" RCP
Y 28+75	28	RT																																																																																							56	REMOVE EXIST. 15" RCP
Y 29+53	29	RT																																																																																							44	REMOVE EXIST. 15" RCP
Y 30+41	31	RT																																																																																							27	REMOVE EXIST. 12" RCP
Y 29+93	45	RT																																																																																							23	REMOVE EXIST. 15" RCP
Y 29+94	47	RT																																																																																							23	REMOVE EXIST. 15" RCP
L 47+23	180	LT																																																																																							216	REMOVE EXIST. 48" CMP / 60" HDPE
L 50+06	64	RT																																																																																							15	REMOVE EXIST. 24" RCP (PARTIAL)
L 50+03	48	RT																																																																																						6	REMOVE EXIST. 48" RCP (PARTIAL)
L 59+02	73	RT																																																																																						12	REMOVE EXIST. 15" RCP (PARTIAL)
L 58+93	72	RT																																																																																						5	REMOVE EXIST. 6" DIP (PARTIAL)
L 52+96	62	RT																																																																																						27	REMOVE EXIST. 18" RCP
L 49+71	13	LT																																																																																							55	REMOVE EXIST. 15" RCP
L 51+52	61	RT																																																																																							15	REMOVE EXIST. 18" CMP
Y5 16+06	18	RT																																																																																							20	REMOVE EXIST. 12" HDPE
L 63+98	49	LT																																																																																							40	REMOVE EXIST. 18" RCP
L 66+13	36	RT																																																																																							75	REMOVE EXIST. 24" RCP
L 69+72	61	LT																																																																																								32	REMOVE EXIST. 15" RCP
L 70+27	54	LT																																																																																							80	REMOVE EXIST. 18" RCP
L 70+63	61	LT																																																																																							20	REMOVE EXIST. 12" CMP
DRWY4 11+05	2	LT																																																																																							52	REMOVE EXIST. 18" RCP
L 71+31	38	LT																																																																																							32	REMOVE EXIST. 18" RCP
L 71+75	34	LT																																																																																							17	REMOVE EXIST. 18" RCP
L 67+20	75	LT																																																																																							35	REMOVE EXIST. 24" CMP
L 76+21	26	LT																																																																																							22	REMOVE EXIST. 24" RCP
Y 14+36	23	RT																																																																																								35	REMOVE EXIST. 12" RCP
Y 15+44	23	RT																																																																																							48	REMOVE EXIST. 15" RCP
Y 16+90	22	RT																																																																																							39	REMOVE EXIST. 15" CMP
Y 18+46	24	RT																																																																																							29	REMOVE EXIST. 12" RCP
Y 19+71	49	LT																																																																																						0.029		PLUG EXIST. 6" HDPE
Y 47+55	38	RT																																																																																							27	REMOVE EXIST. 15" CMP
Y 51+51	33	RT																																																																																							33	REMOVE EXIST. 24" RCP
Y 51+90	34	RT																																																																																							46	REMOVE EXIST. 18" RCP
Y 52+49	35	RT																																																																																							69	REMOVE EXIST. 18" RCP
Y 53+72	34	RT																																																																																							25	REMOVE EXIST. 24" RCP
Y 56+60	90	RT																																																																																							145	REMOVE EXIST. 24" RCP
Y 57+66	93	RT																																																																																							62	REMOVE EXIST. 30" CMP
Y 51+09	53	LT																																																																																							43	REMOVE EXIST. 15" RCP
Y 50+83	31	LT																																																																																						41	REMOVE EXIST. 15" HDPE
Y 51+61	31	LT																																																																																							113	REMOVE EXIST. 15" RCP
Y 52+25	33	LT																																																																																							15	REMOVE EXIST. 15" HDPE
Y 52+64	33	LT																																																																																							62	REMOVE EXIST. 15" HDPE
Y 53+57	34	LT																																																																																							24	REMOVE EXIST. 24" RCP
Y 55+24	40	LT																																																																																							49	REMOVE EXIST. 12" RCP
Y 56+07	40	LT																																																																																							112	REMOVE EXIST. 15" HDPE
SHEET TOTALS																																																																																								3		0.029	2107	
PROJECT TOTALS										136	200	200	68											116							116	1160	220	228	132	52	60		16	9272	3100	376	708	1124			223	271.4		122	17	54	59		36			53	59	3	4	1			9	13	1	30	6	1	11	3	16	3	2	3	1	6	1	1	1	1	1		4	20	1.5490	0.139	4502	

TGSLTW1014

COMPUTED BY:	BJH	DATE:	8/18/23
CHECKED BY:	REL	DATE:	8/18/23

PROJECT NO.	SHEET NO.
R-3833C	3D-12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)												C. S. PIPE									R. C. PIPE CLASS III							R. C. PIPE CLASS IV						
SIZE / THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%	54	60	66	72	78	84		DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	54	60	66	72	78	84				54	60	66	72	78	84		54	60	66	72	78	84	
L 46+00	248 LT	0624		786.0																																						
		0624	0656		777.5	776.8																								68												
L 47+94	123 LT	0625		798.0																																						
		0625	0624		783.5	777.5																								192												
L 48+29	87 LT	0626		809.6																																						
		0626	0625		786.5	783.5																								44												
L 44+98	257 LT	0656																																								
SHEET TOTALS																														304												
PROJECT TOTALS																														304												

LINE & STATION	FROM	TO	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29
			CY	MASONRY CY		GRATE TYPE E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05															
L 46+00	0624			9.500																						
	0624	0656																								
L 47+94	0625			13.800																						
	0625	0624																								
L 48+29	0626			20.000																						
	0626	0625																								
L 44+98	0656		11.600																							
SHEET TOTALS			11.600	43.300																						
PROJECT TOTALS			11.600	43.300																						

LINE & STATION	FROM	TO	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	SPECIAL DESIGN ENDWALL, SEE SHEET 2D-1	SPECIAL DESIGN MH, SEE SHEET 2D-6	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.		FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
																						CY	CY	CY	LIN. FT.	
L 46+00	0624											1		1												MH SPC DSN, 8' DIA
	0624	0656																								
L 47+94	0625											1		1												MH SPC DSN, 8' DIA
	0625	0624																								
L 48+29	0626											1		1												MH SPC DSN, 8' DIA
	0626	0625																								
L 44+98	0656												1													SPC DSN ENDWALL
SHEET TOTALS												3	1	3												
PROJECT TOTALS												3	1	3												

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

COMPUTED BY:	BJH	DATE:	8/18/2023
CHECKED BY:	REL	DATE:	8/18/2023

(08-05-21)

TIP/PROJECT NO.	SHEET NO.
R-3833C	3D- 13

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

Note: Not intended for use in determining bid quantities. Only a stormwater control measure device summary list for easy reference and location.

SUMMARY OF STORMWATER CONTROL MEASURES

CONST SHEET NO.	SCM TYPE	LINE	STATION	Location LT/RT/CL	Latitude	Longitude
5	Dry Detention Basin	-L-	38+00	LT	35.577324	-80.847116

SUMMARY OF STORMWATER CONTROL MEASURES

CONST SHEET NO.	SCM TYPE	LINE	STATION	Location LT/RT/CL	Latitude	Longitude

SUMMARY OF STORMWATER CONTROL MEASURES

CONST SHEET NO.	SCM TYPE	LINE	STATION	Location LT/RT/CL	Latitude	Longitude

COMPUTED BY: W. Scott Hunsberger DATE: 1/12/22
CHECKED BY: Jeremy R. Hamm DATE: 1/12/22

(12-17-19)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-3833C	3G-1

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	500
				TOTAL LF:	500

***UD = Underdrain**
***BD = Blind Drain**
***SD = Subsurface Drain**

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	21+00	23+50	ASU(1)	12	450	960	1450		
-L-	71+25	72+25	ASU(1)	12	50	120	200		
-L-	74+00	75+50	ASU(1)	12	150	400	550		
-Y-	19+25	25+00	ASU(1)	12	800	1770	2700		
-Y5-	15+00	17+50	ASU(1)	12	100	200	300		
CONTINGENCY			ASU(1)	12	400	800	1200		
				TOTAL CY/TONS/SY:	1950	4250**	6400**	0	0

***ASU(1/2) = Aggregate Subgrade (Type 1 or 2)**
***AST = Aggregate Stabilization**
****Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.**

PROJ. REFERENCE NO.	SHEET NO.
R-3833C	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	BLACKWELDER DONALD L+SHARON
2	4	BRAWLEY BOBBY P+BETTY M
3	4	WELCH CAROL M+EDWARD T MARZANO
4	4	IH6 PROPERTY NC LP
5	4	SCAGLIONE MICHAEL L
6	4	GFS DEVELOPMENT INC
7	4,5	ST THERESE CATHOLIC CHURCH
8	4	GARCIA REYES V+MARTHA A MARQUEZ CARDENAS
009	4	BERTUCCI ROBERT J+MARIA
010	4,5	WELLS KERRY ELLEN
011	5	GARDNER CHRISTIAN A
012	5	DIRTY MO ACRES LLC
013	5	JOLLY DARREN B
014	5	LAURA G. MORGAN AND HUSBAND, JEFFREY P. MORGAN
015	5	SCHAUMBURG PAUL E
016	5	SPADE EDWARD C JR
017	5	GFS DEVELOPMENT INC
018	5	CNB CORP
019	5	MARLO CORPORATION
020	5	RICHARD CHARLENE LNew Owner: Mark Webber
021	5	TURNER JOHNNY DOUGLAS JR
022	5	JOSE FRIAS
023	5	TURNER HARVEY O+DARLENE J
024	5	PAPUGA ROBERT J
025	5	OSTEC REALTY LLC
026	5,6	ZDRENTAN DUMITRU+LIDIA
027	5,6	MORTON DANIELLE L+BRENT A
028	6	BOGGS KATHY
029	6	RANDAZZO DONALD JAMES II+ANGELA
030	6	GREENLEE WARREN+ROGER WAY JR+M SHEA
031	6	DEW DANIEL JOSEPH
032	6	ALEXANDER CHARLES B REVOC LVG TR
033	6	BURNS TAMMY L
034	6	TUTOR TIME MOORESVILLE LLC
035	6	NESTER P JEAN
036	6	HARRIS ALBERT
037	6	MCGINNIS DAVID M+ELIZABETH A
038	6	BARTEAU CURTIS+BARBARA
039	6	MULTIPLE CONDO OWNERS OF 125 COMMERCE PARK
040	6	HACKETT DAVID F+MARIANNA A
041	6	THEISEN FAMILY TRUST
042	6,7	HUTCHISON WILLIAM A+FAYE A
043	6,7	STATE EMPLOYEES CREDIT UNION
044	6,7	SNH SE MOORESVILLE LLC
045	7	NASSAR+SIMONETTI INVESTMENT LLC
046	7	RUSHER OIL COMPANY
047	7,8,11	TOWN OF MOORESVILLE
048	7,8,10	HC 2000 INC
049	8	PERRO DAVID+SARAH
050	8	LHNH COUNTRY CLUB APARTMENTS LLC
051	8	TOWN OF MOORESVILLE
052	8	WALLACH BRIAN K+SUSAN T
053	8	GIBBS JOE B JR+CATHY M
054	8	MASCOLO PETER A
055	8	AMMASAI PALANISAMY+THAVAPRI
056	9	BSL SALES & RENTALS LLC
057/058	9	SPIFFY LUBE PROPERTIES LLC
059/060	9	BSL SALES & RENTALS LLC
061	9	VICKIE A MILLER
062	9	E.L. & SANDRA M JAMES

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
063	9	HILDA L MORTON
064	9	COFFEY PROPERTIES LLC
065	9,10	WALLACE J. PERRIEN & MARY B. PERRIEN TRUSTEES OF THE WALLACE J. PERRIEN AND MARY B. PERRIEN REVOCABLE TRUST
066	10	ROBERT D & ALICE J KERLIN
067	10	STEPHEN B & JANET O POPE
068	10	MARATHEA GROUP LLC
069	10	GLENDA M SLATER & JUDITH M MCDANIELS
070	10	GATES CONSTRUCTION COMPANY
071	10	TOWN & COUNTRY STORAGE MOORESVILLE LLC
072	7,10	RHG DEVELOPMENT CO LLC
073	7,11	BRAWLEY COMMERCE PARK COA INC
074	11	COUNTRY ROADS OF THE CAROLINAS LLC
075	11	DAVID T & JACALYN BEST
076	11	GEORGE HOLSHOUSER & LORRA LEE HOLSHOUSER
077	11	LORRA LEE HOLSHOUSER
078	11	GEORGE HOWARD HOLSHOUSER
079	11	RHONDA H AND CHRISTOPHER DISIBBIO
080	11	ABBERLY GREEN MOORESVILLE PHASE II LIMITED PARTNERSHIP
081	11	ATIRAM, LLC
082	6,11	TOWN OF MOORESVILLE
083	10	SOUTHERN TRUCKIN HOLDINGS, LLC
084	11	GAREN NELSON
085/089	11	GLENDA S. DINGLER
086	6	TERRY WAYNE BROWN AND WIFE, BARBARA J. BROWN
087/088	11	KAZAKOS BROTHERS PROPERTIES, LLC
090	11	KENNETH A. AND SUSAN B KOONTZ
091	11	LAKE NORMAN CHRISTIAN MINISTRIES
092	11	ABBERLY GREEN MOORESVILLE PHASE I LIMITED PARTNERSHIP
093	9	JAMES D. CABE, JR. AND FRANCES B. CABE
094	9	THOMAS E. BRIDGES AND WIFE, TELMA BRIDGES
095	6	RWS REAL ESTATE INVESTMENTS
096	6	JERRY W. PARTIN

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	04
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19828 A. DEAN SARVIS
A. Dean Sarvis, PE
4/27/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044158 BENJAMIN J. HENEGAR
Benjamin J. Henegar, PE
4/27/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

Stantec
Stantec Consulting Services Inc
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

FOR -L- PROFILE SEE SHEET 12
FOR -Y1- PROFILE SEE SHEET 17
FOR -Y2- PROFILE SEE SHEET 17
FOR -DRWY1- PROFILE SEE SHEET 19

UPGRADE EXISTING SIGNAL

NAD 83/NA 2011

BEGIN PROJECT R-3833C
-L- POT STA. 17+52.26

JOSE CHALITA BRUZUAL
CARMEN MORENO DE CHALITA
DB 2321 PG 2027
PB 23 PG 27

POT Sta. 10+00.00

EDWARD R. PRICE, JR.
BONNIE S. PRICE
DB 927 PG 333
PB 23 PG 27

BARRY KEITH DEEL
REBECCA R. DEEL
DB 1403 PG 2742
PB 23 PG 27

DAVID L. HARDING
DEBORAH L. HARDING
DB 1736 PG 2146
PB 23 PG 27

BEGIN CONSTRUCTION
-Y1- POT STA. 13+00.00
BEGIN CONSTRUCTION
-Y2- POT STA. 13+00.00

INAE PARRISH
MICHAEL PARRISH
DB 2200 PG 456
PB 23 PG 27

JOHN J. MAHONEY
REGINA M. MAHONEY
DB 2374 PG 972
PB 23 PG 27

DARREN B. JOLLY
DB 930 PG 1466
PB 23 PG 27

POT Sta. 10+00.00

BY26-85

DB 2319 PG 2218
BETHANY S. HOWARD
PB 23 PG 27

PAUL H. MORGAN
VANDA J. MORGAN
DB 1757 PG 2218
PB 23 PG 116

-L- POT Sta. 26+03.04
-DRWY1- POT STA. 10+00.00
S 8° 03' 17.4" W

CARL M. KORCZYKOWSKI
LORI J. KORCZYKOWSKI
DB 2275 PG 574
PB 23 PG 27

GFS DEVELOPMENT, INC.
DB 981 PG 903
PB 23 PG 27

MICHAEL L. SCAGLIONE
DB 1938 PG 1459
PB 23 PG 116

GFS DEVELOPMENT, INC.
DB 981 PG 903
PB 23 PG 116

REYES V. GARCIA
MARTHA A. MARQUEZ-CARDENAS
DB 1956 PG 333
PB 23 PG 116

ROBERT J. BERTUCCI
MARIA BERTUCCI
DB 1003 PG 58
PB 23 PG 116

WELLS KERRY ELLEN
DB 2574 PG 713
PB 23 PG 116

BRAWLEY BOBBY P & BETTY M
DB 2390 PG 1814
PB 22 PG 65

CAROL M. WELCH
EDWARD T. MARZANO
DB 13E PG 679
DB 2199 PG 1560
PB 23 PG 27

JIMMY G. CALDWELL
DB 1372 PG 1683

PT Sta. 17+39.18

DB 727 PG 440
DOYLE A. TILLIS
FANNETTA R. TILLIS

S 17° 41' 28.6" W -Y2-

S 17° 46' 00.0" W -Y1-

I16 PROPERTY NC LP
DB 2466 PG 1269
PB 23 PG 27

R3833C-2 DESTROYED

SAWCUT EXISTING ISLAND

15+00

20+00

25+00

S 70° 34' 26.0" E

PC Sta. 15+29.03

PT Sta. 15+95.54

-L- POT Sta. 21+86.27
-Y2- POT STA. 14+03.25

-L- POT Sta. 18+17.35
-Y1- POT Sta. 14+84.94

PC Sta. 10+82.43

END CONSTRUCTION
-DRWY1- POC STA. 11+05.00

PT Sta. 11+49.85
S 1° 36' 10.5" E

POT Sta. 12+00.00

MATCHLINE -L- STA 27+00.00 SEE SHEET 5

-Y1-
PI Sta 15+62.88
△ = 26° 05' 59.1" (LT)
D = 39° 14' 37.3"
L = 66.51'
T = 33.84'
R = 146.00'
SE = EXIST.

WILLIAM L. PETTIT
VERNIE B. PETTIT
DB 1333 PG 1920
PB 17 PG 21

JEREMY E. KLINGEL
DB 13E PG 570
DB 2157 PG 1754
PB 17 PG 21

DONALD L. BLACKWELDER
SHARON P. BLACKWELDER
DB 753 PG 794
PB 17 PG 21

DB 685 PG 508
DB 685 PG 504
PB 27 PG 15
ST. THERESE CATHOLIC CHURCH
C/O MICHAEL J. BEGLEY
BISHOP OF THE ROMAN CATHOLIC
DIOCESE OF CHARLOTTE

-L-

PI Sta 14+92.44	PI Sta 29+82.38
△ = 18° 53' 52.5" (RT)	△ = 25° 07' 19.4" (RT)
D = 3° 47' 39.9"	D = 4° 46' 28.7"
L = 498.04'	L = 526.16'
T = 251.30'	T = 267.37'
R = 1,510.00'	R = 1,200.00'
SE = .04	SE = .04
INC = EXIST./49'	INC = 49'

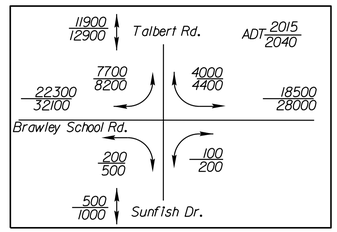
TERRY A. BOYLES
TERESA S. BOYLES
DB 822 PG 451
PB 17 PG 21

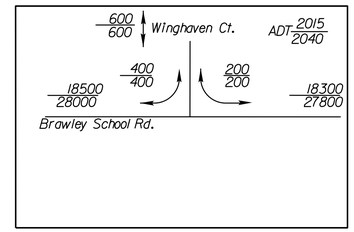
END CONSTRUCTION
-Y1- POT STA. 18+84.36

S 8° 19' 59" E 201.00

POT Sta. 20+13.48

-DRWY1-
PI Sta 11+16.22
△ = 9° 39' 27.8" (LT)
D = 14° 19' 26.2"
L = 67.42'
T = 33.79'
R = 400.00'
SE = SEE PLANS
INC = 18'





3/30/2023
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RPSAS

5/14/99

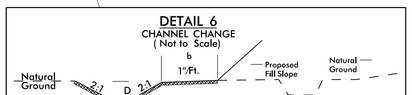
-L-	-DRWY2-
PI Sta 29+82.38	PI Sta 38+56.09
△ = 25° 07' 19.4" (RT)	△ = 46° 35' 27.8" (LT)
D = 4° 46' 28.7"	D = 5° 43' 46.5"
L = 526.16'	L = 813.17'
T = 267.37'	T = 430.58'
R = 1,200.00'	R = 1,000.00'
SE = .04	SE = .04
INC = 49'	INC = 49'

DETAIL 5
LATERAL BASE DITCH
(Not to Scale)

*When B is < 6.0'
Type of Liner= Class "I" Rip-Rap
D= 2.0 Ft.
B= 4.0 Ft.
b= 5.0 Ft.

FROM -L- STA. 29+00 TO STA. 33+00 LT

DETAIL 6
CHANNEL CHANGE
(Not to Scale)



Type of Liner= Class "II" Rip-Rap*
D= 2.0 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
*Rip-Rap to be Keyed-In, Embedded Below Stream Bed, and Top-Dressed with Native Material to Remove Voids.

FROM -L- STA. 33+00 TO STA. 35+55 LT

FOR -L- PROFILE SEE SHEET 12 AND 13
FOR -DRWY2- PROFILE SEE SHEET 19

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	05
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19828 ENGINEER A. DEAN SARVIS
A. Dean Sarvis
8/24/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 044158 ENGINEER BENJAMIN J. HENEGAR
Benjamin J. Henegar
8/24/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
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CORP. LICENSE NO.: C-0275

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License No. F-0672

2007 AN 38 DAN

MATCHLINE -L- STA 27+00.00 SEE SHEET 4

MATCHLINE -L- STA 41+00.00 SEE SHEET 6

10 WELLS KERRY ELLEN DB 2574 PG 713 PB 23 PG 116

11 GARDNER CHRISTIAN A DB 2434 PG 389 PB 26 PG 9

12 DIRTY MO ACRES, LLC DB 1899 PG 2366 PB 26 PG 9

13 DARREN B. JOLLY DB 1192 PG 2050 PB 26 PG 9

LAURA L. GRIFFIN DB 1739 PG 1467 PB 23 PG 116

14 JKB SMART RESIDENTIAL, LLC DB 1896 PG 1737 PB 23 PG 114

15 SCHAUMBURG PAUL E. DB 2377 PG 2129 PB 26 PG 9

16 SPADE EDWARD C JR DB 2516 PG 331 PB 23 PG 114

17 GFS DEVELOPMENT, INC. DB 981 PG 905 PB 23 PG 114

18 MARLO CORPORATION DB 1780 PG 550

19 MARLO CORPORATION DB 1780 PG 550

20 CHARLENE L. RICHARD DB 2146 PG 1753 PB 25 PG 123

21 JOHNNY DOUGLAS TURNER, JR. DB 1104 PG 535 PB 25 PG 104

22 PAUL T. BRITTON LINDA A. BRITTON DB 1957 PG 680 PB 25 PG 123

23 HARVEY O. TURNER DARLENE J. TURNER DB 977 PG 1997 PB 25 PG 104

24 ROBERT JAY PAPUGA DB 2411 PG 1970 PB 25 PG 104

25 OSTEC REALTY LLC DB 2415 PG 2366 PB 25 PG 123

26 ZORENTAN DUMITRU & LIDIA DB 2488 PG 073 PB 25 PG 104

27 DANIELLE & BRENT A. MORTON DB 2355 PG 832 PB 25 PG 123

DAVID KEITH WOOD, JR. DB 2308 PG 1812 PB 25 PG 104

AMERICAN HOMES 4 RENT PROPERTIES NINE, LLC DB 2337 PG 944 PB 25 PG 104

KRISTEN N. BROOME DB 2346 PG 910 PB 25 PG 104

JAMES RAY WEIDMAN BROOK JUNE WEIDMAN DB 2190 PG 740 PB 25 PG 104

NEAL B. SHUE JENNIFER GREEN SHUE DB 2190 PG 740 PB 25 PG 104

-L- POC Sta. 34+42.00
-DRWY2- POT Sta. 10+00.00
S 43° 36' 12.1" W

PC Sta. 34+25.51

PT Sta. 32+41.17

PC Sta. 27+15.01

PT Sta. 12+27.40
N 45° 34' 10.8" W

-DRWY2- POC Sta. 11+60.00

END CONSTRUCTION

BEGIN CULVERT
-L- STA. 35+85.80
2 @ 12'x9' RCBC
FLOODPLAIN BENCH (DOWNSTREAM)
SEE DETAIL 2

END CULVERT
-L- STA. 36+14.76
ENERGY DISSIPATOR BASIN & CHANNEL CHANGE
SEE SHEET 2D-8
CLASS II RIP-RAP
EST. 400 TONS
EST. 320 CY DDE

FLOODPLAIN BENCH (UPSTREAM)
SEE DETAIL 1

5' STD. BASE DITCH
SEE DETAIL 4
CLASS 'II' RIP-RAP
EST. 35 TONS
L=35 FT
S=2.8%
EST. 40 CY DDE

DRY DETENTION BASIN
SEE SHEET 2D-10
EST. 19,500 CY UNCLASSIFIED EXCAVATION
EST. 22,500 CY BORROW EXCAVATION

RIP-RAP TO EXTEND TO WALL FACE
-L- 31+00 TO 32+00 RT

4' LATERAL BASE DITCH
SEE DETAIL 5
CLASS 'I' RIP-RAP
EST. 700 TONS
GEOTEXTILE
EST. 1150 SY
EST. 420 CY DDE

CHANNEL CHANGE
SEE DETAIL 6
CLASS 'II' RIP-RAP
EST. 640 TONS
EST. 410 CY DDE

+41.17' END WALL END FENCE

Retaining Wall

OFFSET DI W/ 04 SLAB LID

CSP W/ ROD & LUG GASKETS & 2- ELBOWS

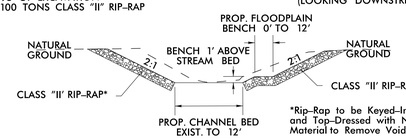
18" CSP W/ ROD & LUG, GASKETS, & 2- ELBOWS

CONNECTION TO BOX CULVERT

MATCHLINE -L- STA 40+00

DETAIL 1
FLOODPLAIN BENCH (UPSTREAM)
(NOT TO SCALE)
(LOOKING DOWNSTREAM)

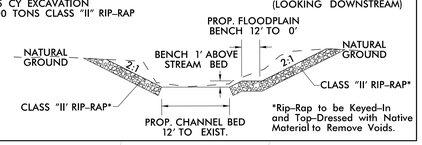
LENGTH = 50' (FROM CULVERT FACE)
EST. 95 CY EXCAVATION
EST. 100 TONS CLASS "II" RIP-RAP



*Rip-Rap to be Keyed-In and Top-Dressed with Native Material to Remove Voids.

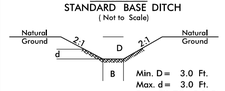
DETAIL 2
FLOODPLAIN BENCH (DOWNSTREAM)
(NOT TO SCALE)
(LOOKING DOWNSTREAM)

LENGTH = 50' (FROM CULVERT FACE)
EST. 95 CY EXCAVATION
EST. 100 TONS CLASS "II" RIP-RAP



*Rip-Rap to be Keyed-In and Top-Dressed with Native Material to Remove Voids.

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



Min. D= 3.0 Ft.
Max. d= 3.0 Ft.
B= EX. TO 5.0 Ft.
Type of Liner= Class "II" Rip-Rap (To be Keyed-in, Embedded Below Stream Bed, and Top-Dressed with Native Material to Remove Voids.)

-L- STA. 36+90 LT

RICKY D. CARPENTER DB 1721 PG 2481 PB 25 PG 123

TOMAS RIVERA LYDIA E. RIVERA DB 1160 PG 730

8/24/2023
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	06
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19828 ENGINEER A. DEAN SARVIS — A. Dean Sarvis — 8/21/2023

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 044158 ENGINEER BENJAMIN J. HENEGAR — Benjamin Henegar — 8/21/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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FOR -L- PROFILE SEE SHEET 13
FOR -Y3- PROFILE SEE SHEET 17
FOR -Y4- PROFILE SEE SHEET 18
FOR -Y5- PROFILE SEE SHEET 18
FOR -Y6- PROFILE SEE SHEET 18
FOR -Y7- PROFILE SEE SHEET 18

★ PROPOSED TRAFFIC SIGNAL

NAD 83/NA 2011

-L-

PI Sta 38+56.09	PI Sta 47+51.10	PI Sta 56+10.32
△ = 46° 35' 27.8" (LT)	△ = 55° 20' 14.2" (LT)	△ = 59° 26' 02.5" (RT)
D = 5° 43' 46.5"	D = 7° 38' 22.0"	D = 7° 38' 22.0"
L = 813.17'	L = 724.36'	L = 777.99'
T = 430.58'	T = 393.24'	T = 428.09'
R = 1,000.00'	R = 750.00'	R = 750.00'
SE = .04	SE = .04	SE = .04
INC = 49'	INC = 49'	INC = 49'

-Y3-

PI Sta 10+70.41	PI Sta 12+80.38
△ = 27° 38' 58.0" (RT)	△ = 29° 20' 09.7" (LT)
D = 24° 45' 47.2"	D = 25° 27' 53.2"
L = 111.66'	L = 115.20'
T = 56.94'	T = 58.89'
R = 231.38'	R = 225.00'
SE = SEE PLANS	SE = SEE PLANS
INC = 10'	INC = 10'

-Y4-

PI Sta 11+75.35
△ = 43° 28' 09.6" (RT)
D = 31° 43' 24.8"
L = 137.03'
T = 72.00'
R = 180.61'
SE = SEE PLANS
INC = 18'

-Y5-

PI Sta 11+71.17
△ = 53° 12' 03.0" (LT)
D = 37° 12' 18.2"
L = 142.99'
T = 77.12'
R = 154.00'
SE = SEE PLANS
INC = 18'

-Y7-

PI Sta 11+15.22
△ = 33° 58' 21.8" (LT)
D = 19° 26' 48.7"
L = 174.70'
T = 90.00'
R = 294.63'
SE = .04
INC = N/A

DETAIL 7
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)

FROM -L- STA. 46+85 TO STA. 47+90 RT

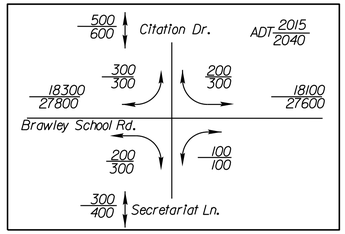
DETAIL 9
TOE PROTECTION
(Not to Scale)

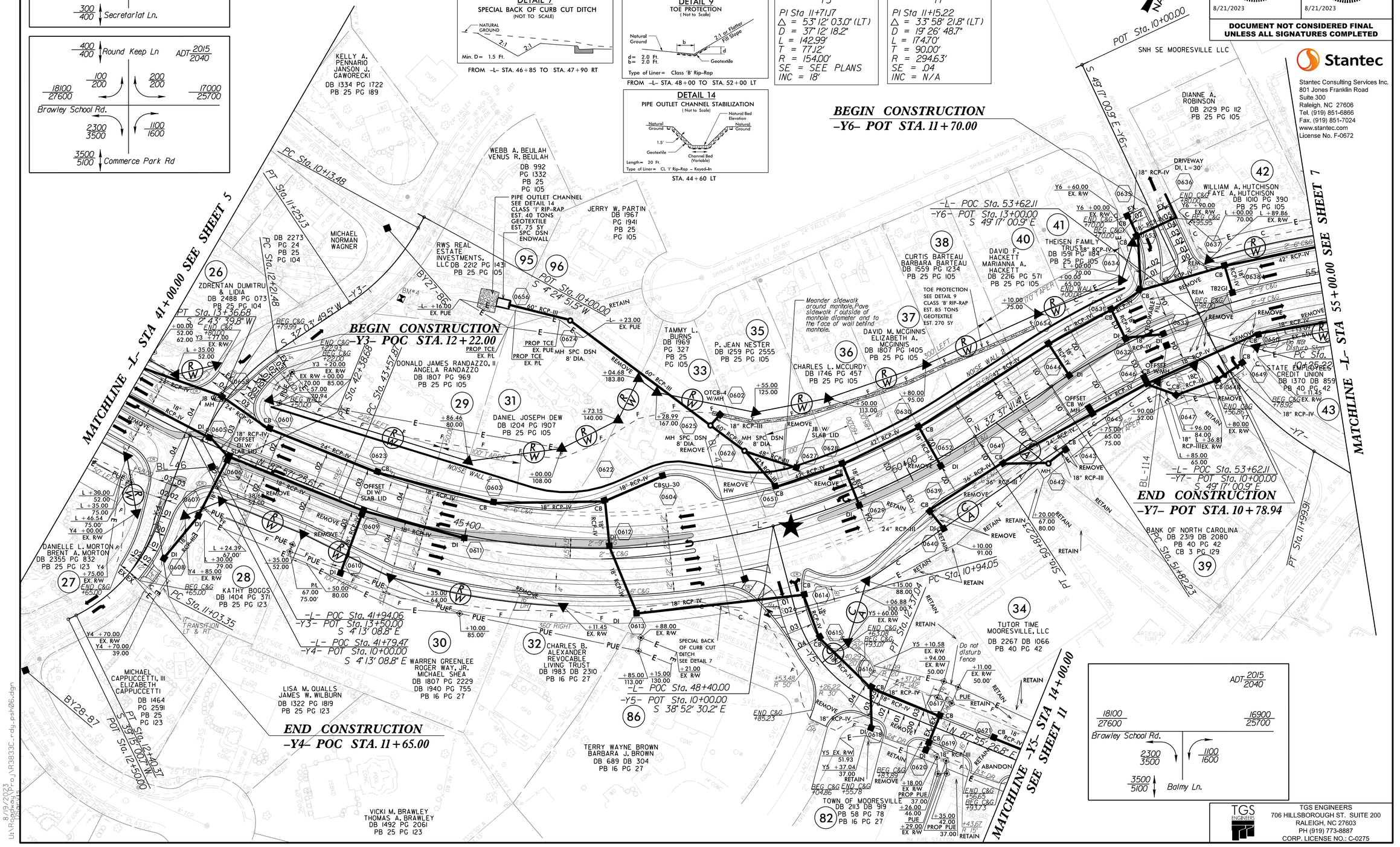
Type of Liner= Class 'B' Rip-Rap

FROM -L- STA. 48+00 TO STA. 52+00 LT

DETAIL 14
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)

STA. 44+60 LT





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8/19/2023
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06.dgn

5/14/99

FOR -L- PROFILE SEE SHEET 13 AND 14
FOR -Y- PROFILE SEE SHEET 15 AND 16
FOR -Y7- PROFILE SEE SHEET 18
FOR -DRWY3- PROFILE SEE SHEET 19
FOR -DRWY6- PROFILE SEE SHEET 19
FOR -DRWY7- PROFILE SEE SHEET 19

UPGRADE EXISTING SIGNAL

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	07
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19828 A. DEAN SARVIS
A. Dean Sarvis
5/15/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044158 BENJAMIN J. HENEGAR
5/15/2023

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MATCHLINE -Y- STA 34+00.00 SEE SHEET 10

MATCHLINE -Y- STA 55+00.00 SEE SHEET 9

MATCHLINE -Y- STA 68+00.00 SEE SHEET 8

MATCHLINE -Y- STA 43+00.00 SEE SHEET 11

72 RHG DEVELOPMENT COMPANY, LLC DB 1093 DB 1640

44 SNH SE MOORESVILLE LLC DB 2126 DB 598

45 NASSAR & SIMONETTI INVESTMENT LLC DB 2491 DB 2273 REMOVE PB 42 PG 69

46 RUSHER OIL COMPANY DB 1434 DB 1831 PB 42 PG 69

48 HC 2000, INC. DB 1069 PG 212

43 STATE EMPLOYEES' CREDIT UNION DB 1370 DB 859 PB 40 PG 42

47 TOWN OF MOORESVILLE DB 594 DB 312 DB 2004 PG 1795

51 TOWN OF MOORESVILLE DB 594 DB 312 DB 2004 PG 1795

73 BRAWLEY COMMERCE PARK CONDOMINIUM OWNERS' ASSOCIATION, INC. DB 1902 DB 1248 CB 2 PG 55 CB 3 PG 1

BEGIN CONSTRUCTION -Y7- POC STA. 15+35.00

BEGIN CONSTRUCTION -DRWY3- POT STA. 10+05.00

END CONSTRUCTION -DRWY6- POT STA. 11+24.06

BEGIN CONSTRUCTION -DRWY7- POT STA. 10+84.67

-DRWY7- POT Sta. 10+43.58
-DRWY8- POT Sta. 10+00.00 N 26° 28' 30.3" E
POT Sta. 10+00.00

-L- POT Sta. 62+08.79
-Y- POC Sta. 36+96.02
-L- POC Sta. 66+12.33
-DRWY6- POT Sta. 10+00.00

-Y- POT Sta. 41+03.25
-Y7- POT Sta. 16+56.38
S 68° 17' 27.3" E
-Y- POT Sta. 42+49.74
-DRWY7- POT Sta. 12+14.86

-L- POT Sta. 67+75.00
-DRWY3- POT Sta. 11+50.00

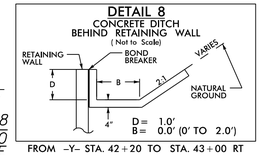
FOR TEMPORARY DRWY8 DESIGN SEE SHEET 2B-4

-L-	
PI Sta 56+10.32	PI Sta 65+30.95
△ = 59° 26' 02.5" (RT)	△ = 26° 03' 12.1" (LT)
D = 7° 38' 22.0"	D = 9° 32' 57.5"
L = 777.99'	L = 272.83'
T = 428.09'	T = 138.82'
R = 750.00'	R = 600.00'
SE = .04	SE = .04
INC = 49'	INC = 42'

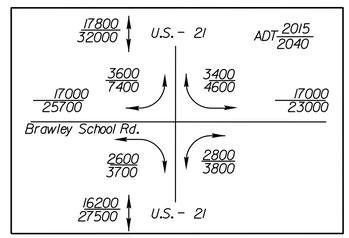
-DRWY3-	-Y-
PI Sta 10+58.04	PI Sta 35+73.50
△ = 49° 57' 59.0" (RT)	△ = 23° 13' 29.2" (RT)
D = 190° 59' 09.4"	D = 3° 34' 51.6"
L = 26.16'	L = 648.56'
T = 13.98'	T = 328.79'
R = 30.00'	R = 1,600.00'
SE = SEE PLANS	SE = .04
INC = 10'	INC = 36'

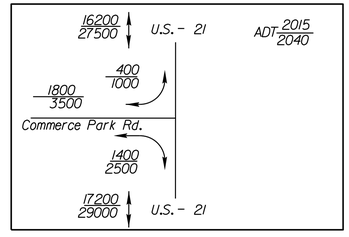
-Y7-
PI Sta 15+29.16
△ = 14° 57' 55.4" (RT)
D = 13° 12' 09.7"
L = 113.35'
T = 57.00'
R = 433.97'
SE = .04
INC = 10'

DETAIL 8
CONCRETE DITCH BEHIND RETAINING WALL
(Not to Scale)



FROM -Y- STA. 42+20 TO STA. 43+00 RT





5/15/2023
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RSarvis

5/14/99

-L-	
PI Sta 71+36.42	PI Sta 79+88.35
△ = 27° 26' 06.9" (RT)	△ = 17° 58' 41.5" (LT)
D = 9° 32' 57.5"	D = 6° 21' 58.3"
L = 287.30'	L = 282.40'
T = 146.46'	T = 142.37'
R = 600.00'	R = 900.00'
SE = .04	SE = EXIST
INC = 42'	INC = EXIST

FOR -L- PROFILE SEE SHEET 14
FOR -DRWY4- PROFILE SEE SHEET 19

NAD 83/NA 2001

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	08
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19828 ENGINEER A. DEAN SARVIS
A. Dean Sarvis
4/27/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 044158 ENGINEER BENJAMIN J. HENEGAR
4/27/2023

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BEGIN CONSTRUCTION -DRWY4- POT STA. 10+35.00

-L- POT STA. 75+82.64 TIE TO TOWN OF MOORESVILLE WILSON AVENUE WIDENING PROJECT

PC Sta. 78+45.98

SEE SHEET 7

-L- STA 68+00.00

MATCHLINE

LHNH-COUNTRY CLUB APARTMENTS LLC
DB 2290 PG 2078
50

HC 2000, INC.
DB 1069 PG 212
48

DAVID PERRO
SARAH PERRO
DB 2231 PG 1407
49

BRIAN K WALLACH
DB 1268 PG 1167
PB 24 PG 159
52

JOE B GIBBS JR.
DB 2395 PG 210
PB 24 PG 159
53

PETER A MASCOLO
DB 1898 PG 472
PB 24 PG 159
54

PALANISAMY AMMASAI
DB 1449 PG 1130
PB 24 PG 159
55

YOKO MIURA
DB 1183 PG 1548
PB 24 PG 61

THOMAS P ROGERS
DB 1680 PG 1405
PB 24 PG 61

THOMAS E BRIDGES
DB 1612 PG 4
PB 24 PG 159
94

VINCE GANGEMI
DB 2431 PG 2231
PB 34 PG 73

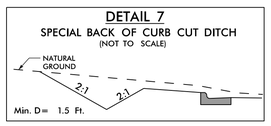
TOWN OF MOORESVILLE
DB 2004 PG 1795
TRACT A
PB 65 PG 62
47

TOWN OF MOORESVILLE
DB 594 DB 312
DB 2004 PG 1795
51

DRWY4 +16.00 17.00
POT Sta. 10+00.00
S 11° 35' 58.1" E
BEG C&G +34.88
END C&G +34.89
+20.00 PROP PUE
R3833C-4
Remove Flag Poles
Do Not Disturb Sign
TOE PROTECTION SEE DETAIL 9 CLASS 'B' RIP-RAP EST. 35 TONS GEOTEXTILE EST. 100 SY
EX. R/W
REMOVE
18" RCP-III
18" RCP-IV
24" RCP-IV
36" RCP-IV
42" RCP-IV
42" C
42" RCP
RETAIN
SPECIAL BACK OF CURB CUT DITCH SEE DETAIL 7
EC BASIN
100' TAPER
GTD
REM
TIE TO SYSTEM BUILT ON WILSON AVE. PROJECT
Do not disturb entrance signs
OFFSET CB W/ MH
OFFSET CB W/ SLAB LID
10' MULTI-USE PATH
END C&G +82.64
S 86° 33' 51.3" E
75+00
80+00
70+00
N 66° 00' 01.8" E
-L- POC Sta. 70+85.60
-DRWY4- POT Sta. 11+50.00
305.38' THROUGH LANE DROP RIGHT
287.3' MEDIAN TRANSITION LEFT & RIGHT
150' APER
1 CAT 1
END C&G +09.86
PC Sta. 69+89.96
PT Sta. 72+77.26
Do not disturb concrete cart path
Do not disturb concrete cart path

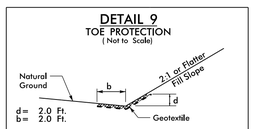
END PROJECT R-3833C -L- POT STA. 76+55.48

DETAIL 7
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



FROM -L- STA. 72+25 TO STA. 74+78 LT

DETAIL 9
TOE PROTECTION
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM -L- STA. 68+00 TO STA. 69+45 LT

3/30/2023
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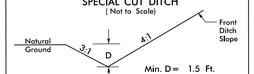
RSmith

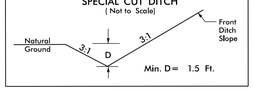
5/14/99

DETAIL 10
SPECIAL CUT DITCH
(Not to Scale)



FROM –Y– STA. 13+50 TO STA. 19+00 RT

DETAIL 11
SPECIAL CUT DITCH
(Not to Scale)



FROM –Y– STA. 19+00 TO STA. 20+50 RT

–Y–
PI Sta 19+29.27
△ = 20° 24' 17.5" (LT)
D = 4° 05' 33.2"
L = 498.58'
T = 251.96'
R = 1,400.00'
SE = .04
INC = 49'

–Y8–

PI Sta 14+16.69	PI Sta 17+78.28
△ = 12° 45' 47.8" (LT)	△ = 12° 04' 22.2" (RT)
D = 13° 19' 28.6"	D = 6° 21' 58.3"
L = 95.79'	L = 189.64'
T = 48.09'	T = 95.17'
R = 430.00'	R = 900.00'
SE = N/A	SE = N/A
INC = N/A	INC = N/A

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

FOR –Y– PROFILE SEE SHEET 15

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	09
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER A. DEAN SARVIS 19828
A. Dean Sarvis
4/27/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044158 BENJAMIN J. HENEGAR
Benjamin J. Henegar
4/27/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
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Raleigh, NC 27606
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Fax. (919) 851-7024
www.stantec.com
License No. F-0672

JAMES F RITCHIE
DB 639 PG 654

MT CLONINGER PROPERTIES LLC
DB 2397 PG 1782

JAMES F RITCHIE
DB 692 PG 664

POT Sta. 10+00.00

10+00

BEGIN CONSTRUCTION –Y– POT STA. 13+75.00

EX. R/W 53.00

SPIFFY LUBE PROPERTIES LLC
DB 2381 PG 69
57

SPIFFY LUBE PROPERTIES LLC
DB 2336 PG 2013
58

PC Sta. 16+77.31

S 23°38'48.1"W

15+00

EX. R/W 55.00

EDEN ENTERPRISES INC
DB 2287 PG 143
PB 17 PG 93

TRIPLE SSS INC
DB 1189 PG 1117

56
BSL SALES & RENTALS LLC
DB 2617 PG 2198
PB 5 PG 55

SPECIAL CUT DITCH
SEE DETAIL 10

59
BSL SALES+RENTALS LLC
DB 2415 PG 2400
PB 5 PG 55

60
BSL SALES+RENTALS LLC
DB 2415 PG 2400
PB 5 PG 55

EX. R/W 70.00

61
MILLER VICKIE A
DB 980 PG 1552
PB 5 PG 55

63
MORTON HILDA L
DB 06E PG 347
PB 5 PG 55

64
COFFEY PROPERTIES LLC
DB 1945 PG 604
PB 5 PG 55

SPECIAL CUT DITCH
SEE DETAIL 11

M+M OF MOORESVILLE INC
DB 750 PG 977
PB 5 PG 55

EDEN ENTERPRISES INC
DB 1531 PG 1937
PB 5 PG 55

MORTON HILDA L ETAL
DB 06E PG 347
PB 5 PG 55

87.5' MEDIAN TRANSITION LEFT & RIGHT

PC Sta. 13+68.59

DB 2282 PG 2303
BRETT MERCIER
PB 7 PG 4

LINDA CATHERINE TUCKER MURPHY
DB 1291 PG 1637
PB 7 PG 4

CHARLES LANE MILLER
DB 17E PG 220
PB 7 PG 4

MARK C FOLEY
KRISTIE L FOLEY
DB 2523 PG 2222
PB 7 PG 4

PT Sta. 14+64.38

JAMES D CABE
FRANCES B CABE
DB 1595 PG 2
PB 7 PG 93

NANCY L EPPERSON
JOHN VANDERWERK
DB 1894 PG 2099
PB 7 PG 4

SANDRA M JAMES
DB 1121 PG 796
PB 48 PG 24

PC Sta. 16+83.11

SANDRA M JAMES
DB 1332 PG 2147
PB 7 PG 4
62

EX. R/W 53.00

PLUG

COLLAR AND EXTEND W/18" RCP-III

100' TAPER

20+00

MATCHLINE –Y– STA 21+00.00 SEE SHEET 10

3/30/2023
U:\R3833C\roj\R3833C_rdy.pstn09.dgn
DGN: RDY.DGN

5/14/99

LINDA CATHERINE DB 1291 PG 1637
TUCKER MURPHY PB 7 PG 4

JAMES D CABE
FRANCES B CABE
DB 1395 PG 2
PB 7 PG 4

NANCY L EDRESON
DON VANNORTWICK
DB 1894 PG 2099
PB 7 PG 4

URIEL VILLEGAS
DB 2180 PG 1596
PB 7 PG 4

-Y8-
PI Sta 17+78.28
Δ = 12° 04' 22.2" (RT)
D = 6° 21' 58.3"
L = 189.64'
T = 95.17'
R = 900.00'
SE = N/A
INC = N/A

-Y-	
PI Sta 19+31.22	PI Sta 35+73.50
Δ = 20° 21' 13.5" (LT)	Δ = 23° 13' 29.2" (RT)
D = 4° 05' 33.2"	D = 3° 34' 51.6"
L = 497.34'	L = 648.56'
T = 251.32'	T = 328.79'
R = 1,400.00'	R = 1,600.00'
SE = .04	SE = .04
INC = 49'	INC = 49'

-DRWY5-
PI Sta 11+22.18
Δ = 90° 49' 57.1" (LT)
D = 114° 35' 29.6"
L = 79.27'
T = 50.73'
R = 50.00'
SE = SEE PLANS
INC = 10'

FOR -Y- PROFILE SEE SHEET 15
FOR -DRWY5- PROFILE SEE SHEET 19

PROPOSED TRAFFIC SIGNAL

NAD 83/NA 2011

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	10
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
A. Dean Sarvis
4/27/2023

HYDRAULICS ENGINEER
Benjamin J. Henegar
SEAL 044158
4/27/2023

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BEGIN CONSTRUCTION
-DRWY5- POT STA. 10+14.00

-Y- POC Sta. 21+09.23
-Y8- POT Sta. 19+33.14

PT Sta. 21+75.89

KENNETH DOUTHIT ET AL.
DB 10E PG 14
PB 7 PG 4

SOUTHERN TRUCKIN HOLDINGS, LLC
DB 2506 PG 400

ROBERT D. KERLIN
DB 2117 PG 279
PB 25 PG 193

HC 2000, INC.
DB 1069 PG 212

MARATHEA GROUP, L.L.C.
DB 1080 PG 790

RHG DEVELOPMENT COMPANY, LLC
DB 1093 DB 1640

GATES CONSTRUCTION COMPANY, INC.
DB 731 PG 544

POPE STEPHEN B+JANET
DB 683 PG 219
PB 5 PG 55

GLENDA M SLATER
DB 1173 PG 754

STEPHEN B POPE
DB 683 PG 219
PB 5 PG 55

WALLACE J. PERRIEN & MARY B. PERRIEN TRUSTEES OF THE WALLACE J. PERRIEN & MARY B. PERRIEN REVOCABLE TRUST
DB 2434 PG 389
PB 5 PG 55

A TOWN AND COUNTRY STORAGE-MOORESVILLE, LLC
DB 2272 DB 434
DB 1783 PG 2412

PT Sta. 18+72.75
N 87° 54' 38.7" W

PT Sta. 11+50.72
N 85° 08' 10.5" W

PC Sta. 10+71.45

PC Sta. 32+44.71

-DRWY5- POT Sta. 12+00.00
-Y- POC Sta. 32+90.00

MATCHLINE -Y- STA 21+00.00 SEE SHEET 9

MATCHLINE -Y- STA 34+00.00 SEE SHEET 7

5/14/99

FOR TEMPORARY DRWY8 DESIGN SEE SHEET 2B-4

MATCHLINE -Y- STA 43+00.00 SEE SHEET 7

MATCHLINE -Y5- STA 14+00.00 SEE SHEET 6

-DRWY8-
PI Sta 10+78.24
Δ = 89° 59' 29.5" (RT)
D = 150° 46' 42.1"
L = 59.68'
T = 37.99'
R = 38.00'

PT Sta. 10+99.93S 63° 32' 00.1" E

-Y- POT Sta. 45+30.00
-Y5- POT Sta. 18+22.77
-Y- POT Sta.65+60.01
-DRWY8- POT Sta. 12+33.20

PC Sta. 10+40.24

PC Sta. 16+84.00

N 85° 53' 57.7" E
PT Sta. 16+28.39

PC Sta. 15+22.37

PT Sta. 17+66.16
S 63° 32' 00.1" E

PC Sta. 48+05.60

PT Sta. 49+76.68

S 26° 27' 59.9" W

S 25° 29' 11.7" W

50+00

55+00

45+00

300' THROUGH LANE DROP RIGHT

150' TAPER

575' MEDIAN TRANSITION LEFT & RIGHT

270' LEFT

RESET STOCKPILED FENCE

REMOVE TEMPORARY FENCE

END REMOVE TEMPORARY DRIVE +30.27

END PERMANENT DRIVE +32.87

REPLACE C & G AND SIDEWALK

BEG REMOVE TEMPORARY DRIVE

CONCRETE DITCH BEHIND RETAINING WALL SEE DETAIL 8

CLASS 'B' RIP-RAP EST. 3 TON GEOTEXTILE EST. 10 SY

SPECIAL CUT DITCH SEE DETAIL 10

STD. 'V' DITCH SEE DETAIL 13 S=7.0% EST. 10 CY DDE EST. 15 SY PSRM

SPECIAL CUT DITCH SEE DETAIL 12 CLASS 'B' RIP-RAP EST. 250 TONS GEOTEXTILE EST. 660 SY

OFFSET DI W/ SLAB LID

SEAL ABANDONED WELL

Do not disturb sign

Do Not Disturb Brick Column or Wall

Retaining Wall 5

Retaining Wall 6

CONCRETE PARKING CURB FOR END SPACE

2'-6" C&G

2'-0" C&G

18" RCP-IV

15" RCP-III

18" RCP-III

REMOVE 18" RCP-IV

REMOVE 4 LF 18" RCP-IV

PLUG 18" RCP-IV

2GI-D

DETAIL 8
CONCRETE DITCH BEHIND RETAINING WALL
(Not to Scale)

RETAINING WALL
BOND BREAKER
VARIES
NATURAL GROUND
D
B
2:1
4"

D= 1.0'
B= 0.0' (0" TO 2.0")

FROM -Y- STA. 43+00 TO STA. 43+60 RT

DETAIL 10
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground
3:1
4:1
D
Front Ditch Slope

Min. D= 1.5 Ft.

FROM -Y- STA. 47+50 TO STA. 56+86 LT
FROM -Y- STA. 49+00 TO STA. 51+39 RT

DETAIL 12
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground
3:1
4:1
d
D
Geotextile
B
Front Slope Ditch

Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.

Type of Liner= Class 'B' Rip-Rap

FROM -Y- STA. 51+72 TO STA. 57+40 RT

DETAIL 13
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground
3:1
D
d

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.

Type of Liner= PSRM

-Y- STA. 50+95 LT
-Y5- STA. 54+95 LT

FOR -Y- PROFILE SEE SHEET 16
FOR -Y5- PROFILE SEE SHEET 18

PROPOSED TRAFFIC SIGNAL

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
R-3833C	11
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19828 A. DEAN SARVIS
Digitally signed by A. Dean Sarvis
Date: 2023.08.21 08:23:44 -04'00'
8/21/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044158 BENJAMIN J. HENEGAR
Digitally signed by Benjamin J. Henegar
Date: 2023.08.21 08:19:37 -04'00'
8/21/2023

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-Y-
PI Sta 48+91.15
Δ = 0° 58' 48.8" (LT)
D = 0° 34' 22.6"
L = 171.08'
T = 85.54'
R = 10,000.00'
SE = .04
INC = 49'

-Y5-	
PI Sta 17+26.09	PI Sta 15+75.39
Δ = 30° 34' 02.2" (RT)	Δ = 2° 01' 29.1" (LT)
D = 37° 12' 18.2"	D = 1° 54' 35.5"
L = 82.16'	L = 106.02'
T = 42.08'	T = 53.01'
R = 154.00'	R = 3,000.00'
SE = SEE PLANS	SE = SEE PLANS
INC = 18'	INC = 18'

END CONSTRUCTION
-Y- POT STA. 56+40.00

8/19/2023
U:\R\Roadway\Design\R3833C_rdy_psh11.dgn
RSarvis

TOWN OF MOORESVILLE DB 594 DB 312 DB 2004 PG 1795

TOWN OF MOORESVILLE DB 2004 PG 1795 TRACT A PB 65 PG 62

GEORGE HOWARD HOLSHOUSER DB 2050 PG 1140 TRACT II

73 BRAWLEY COMMERCE PARK CONDOMINIUM OWNERS' ASSOCIATION, INC. DB 1902 DB 1248 CB 2 PG 55 CB 3 PG 1

74 COUNTRY ROADS OF THE CAROLINAS, LLC DB 2289 DB 1884

75 DAVID T. BEST JACALYN K. BEST DB 733 DB 836 PB 16 PG 27

76 GEORGE HOWARD HOLSHOUSER LORRA LEE HOLSHOUSER DB 943 DB 1997

77 HOLSHOUSER LORRA LEE DB 95E PG 287

78 GEORGE HOWARD HOLSHOUSER DB 2050 PG 1140

79 RHONDA H DISIBBIO DB 2351PG 1898

80 ABBERLY GREEN - MORRESVILLE - PHASE II, LIMITED PARTNERSHIP DB 1818 PG 1449 PB 50 PG 127

81 ATIRAM LLC DB 2482 PG 1039 PB 8 PG 37

82 TOWN OF MOORESVILLE ABANDON DB 213 DB 919 PB 58 PG 78 PB 16 PG 27

87 KAZAKOS BROTHERS PROPERTIES LLC DB 2391PG 1206 PB 16 PG 27

88 KAZAKOS BROTHERS PROPERTIES LLC DB 2391PG 1206 PB 16 PG 27

89 DINGLER PAUL L+GLENDA S DB 845 PG 689 PB 16 PG 27

84 NELSON GAREN A+TONYA E DB 1215 PG 1641 PB 16 PG 27

85 DINGLER PAUL L+GLENDA S DB 845 PG 689 PB 16 PG 27

90 KOONTZ KENNETH A+SUSAN B DB 2052 PG 1643 PB 16 PG 27

91 DB 778 PG 184 PB 16 PG 27 LAKE NORMAN CHRISTIAN MINISTRIES CH NAZARENE

92 ABBERLY GREEN - MORRESVILLE - PHASE I, LIMITED PARTNERSHIP DB 1641PG 1767 PB 50 PG 127

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3833C	12

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19828 ENGINEER A. DEAN SARVIS
A Dean Sarvis
4/27/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 044158 ENGINEER BENJAMIN I HENEGAR
Benjamin Henegar
4/27/2023

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–L–

BEGIN PROJECT R–3833C
–L– POT STA. 17+52.26

–Y1– TALBERT

BEGIN GRADE
–L– STA. 20+40.00
EL. 844.11'

–Y2– WINGHAVEN

END INCIDENTAL MILLING
CONTINUE 3" RESURFACING
–L– STA. 18+79.13
EL. 848.02'

BEGIN 3" INCIDENTAL MILLING SEE SHEET 2A–1
BEGIN 3" RESURFACING
–L– STA. 18+42.13
EL. 848.18'

FOR –L– PLAN SEE SHEET 4

–L–

PI = 24+55.00
EL = 829.38'
VC = 400'
K = 191
DS = 50+ MPH

(–)3.5500%
(–)5.6400%

BM2 ELEVATION = 830.00
N 670572 E 1449709
BL STATION 24+78 128 RIGHT
L STATION 26+04 150.07 RIGHT
RR SPIKE IN 30" OAK

–DRWY1–

PI = 27+30.00
EL = 813.87'
VC = 150'
K = 112
DS = 50 MPH

(–)5.6400%
(–)4.3000%

BEGIN 4' LAT. BASE DITCH
–L– STA. 29+00.00 LT
EL=783.05

PI = 31+00.00
EL = 797.96'
VC = 150'
K = 777
DS = 50+ MPH

(–)4.3068%
(–)4.5000%

–L– STA. 32+00.00 LT
EL=775.60

(–) 2.4848%

(–) 3.0500%

END 4' LAT. BASE DITCH
BEGIN CHANNEL CHANGE
–L– STA. 33+00.00 LT
EL=772.55

(–) 3.0500%

–L– STA. 34+00.00 LT
EL=769.50

(–) 1.5484%

END CHANNEL CHANGE
–L– STA. 35+55.00 LT
EL=767.10

(–)4.5000%

–DRWY2–

PI = 36+50.00
EL = 773.21'
VC = 805'
K = 79
DS = 45 MPH

2 @ 12' x 9' RCBC

SPECIAL DITCH GRADE LEFT

SPECIAL DITCH GRADE RIGHT

BM3 ELEVATION = 796.17
N 670129 E 1450272
BL STATION 32+81 215 RIGHT
L STATION 34+06 214 RIGHT
CHISLED SQUARE ON CORNER OF CONC CURB

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 1600	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 774.3	FT
BASE DISCHARGE	= 1800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 775.0	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING ELEVATION	= 785.7	FT

FOR –L– PLAN SEE SHEET 4 & 5

3/30/2023
J:\38\Highway\Proj\R3833C_rdy_pfl_layout.dgn
DESIGN