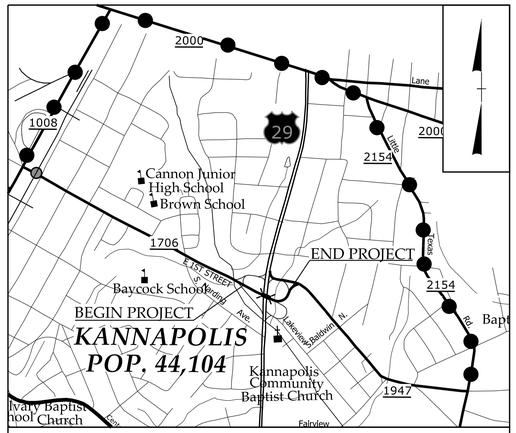
09/08/99

TIP PROJECT: B–5372

CONTRACT:



VICINITY MAP (N.T.S.)
OFF–SITE DETOUR

FINAL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

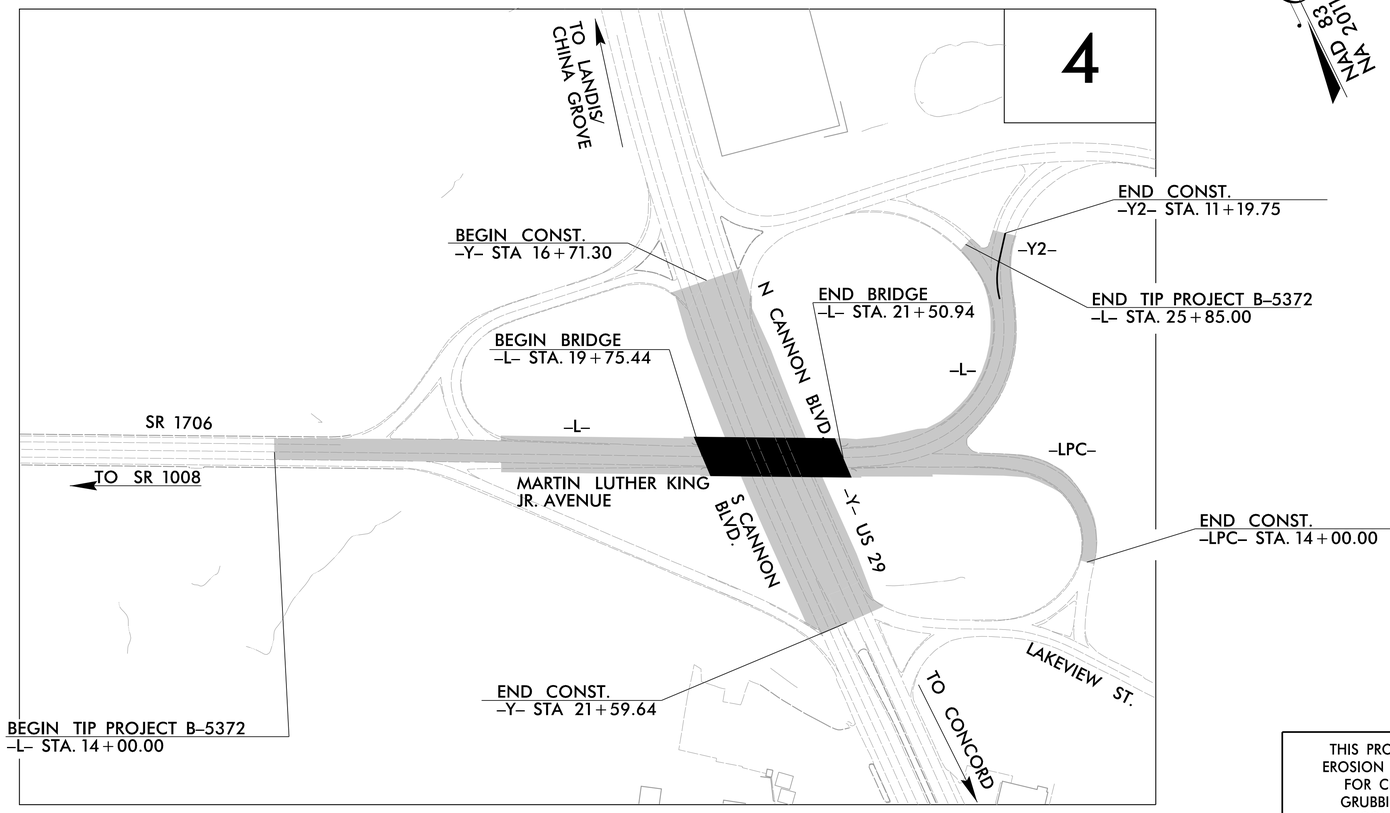
CABARRUS COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5372	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46087.1.1		P.E.
46087.2.1		ROW/UTILITY
46087.3.1		CONST.

LOCATION: BRIDGE NO. 109 ON SR 1706 (E. 1st ST.) OVER US 29

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



NAD 83 2011

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

50 25 0 50 100
PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG–010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

Johnson, Mirmiran, & Thompson Inc.
2550 West Tyvola Road, Suite 120,
Charlotte, NC, 28217
License No: C-3097

Prepared in the Office of:

Johnson, Mirmiran, & Thompson Inc.

2550 West Tyvola Road, #120, Charlotte, NC, 28217
PHONE (704)-357-0488

Designed by:

JON C. FORD — 4238

NAME — *LEVEL III CERTIFICATION NO.*

NORTH CAROLINA PROFESSIONAL SEAL 047435 ENGINEER JON C. FORD

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

8/7/2024 10:36:30 AM
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User:osmith

PROJECT REFERENCE NO.	SHEET NO.
B-5372	EC-2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

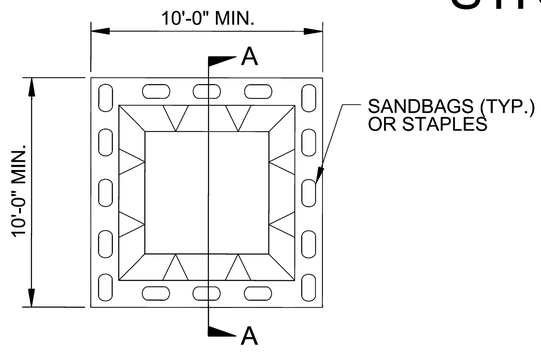
EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C

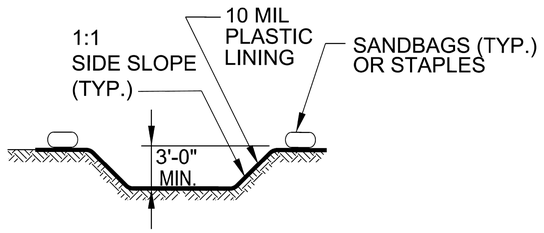
Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	A
1635.02	Rock Pipe Inlet Sediment Trap Type B	B
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW
1636.03	Excelsior Wattle Barrier	—EW—EW—EW—
1636.03	Coir Fiber Wattle Barrier	—CFW—CFW—CFW—

PROJECT REFERENCE NO.	SHEET NO.
B-5372	EC-2A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

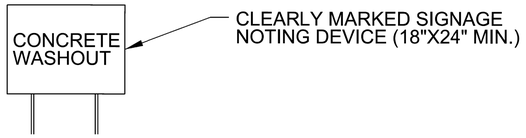
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A



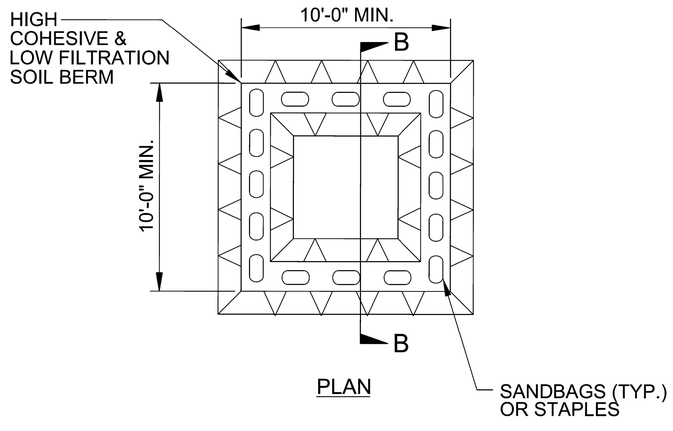
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

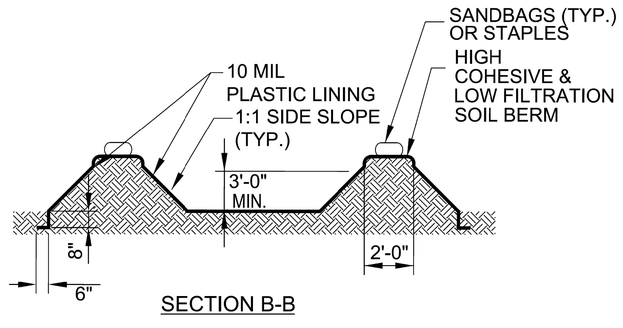
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

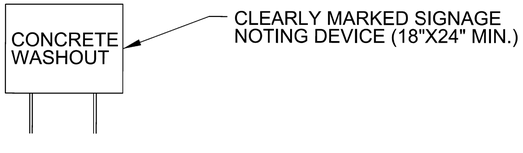
NOT TO SCALE



PLAN



SECTION B-B



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-5372	EC-3A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (STRAW)

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-Y-	17+00	18+50	LT	255
4	-Y-	17+00	18+00	RT	170
4	-Y-	19+50	21+00	LT	255
4	-Y-	20+00	21+00	RT	170
4	-Y-	21+17	21+44	LT	60
5	-L-	18+34	20+17	RT	1178
5	-LPC-	10+00	14+00	RT	2202
5	-L-	21+04	23+33	LT	1383
			SUBTOTAL		5673
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					9275
				TOTAL	14948
				SAY	15000

PROJECT REFERENCE NO.	SHEET NO.
B-5372	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

PROJECT REFERENCE NO.	SHEET NO.
B-5372	EC-04/CONST.04

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

REVISIONS

8/17/99

5/30/2024 9:40:03 AM
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-L-

PI Sta 22+20.05
△ = 25° 03' 06.3" (LT)
D = 22° 55' 05.9"
L = 109.31'
T = 55.54'
R = 250.00'
R.O. = SEE PLANS
SE = 0.04
V = 30 mph

PI Sta 24+04.92
△ = 78° 39' 33.1" (LT)
D = 35° 48' 35.5"
L = 219.66'
T = 131.10'
R = 160.00'
R.O. = SEE PLANS
SE = 0.04
V = 25 mph

PI Sta 25+44.94
△ = 37° 52' 24.5" (LT)
D = 38° 11' 49.9"
L = 99.15'
T = 51.46'
R = 150.00'
R.O. = SEE PLANS
SE = 0.04
V = 25 mph

PI Sta 26+96.20
△ = 52° 17' 47.1" (LT)
D = 35° 48' 35.5"
L = 146.04'
T = 78.55'
R = 160.00'

-Y-

PI Sta 13+58.32
△ = 7° 00' 57.1" (LT)
D = 1° 30' 28.0"
L = 465.31'
T = 232.95'
R = 3,800.00'

PI Sta 18+08.02
△ = 6° 43' 45.3" (LT)
D = 1° 35' 29.6"
L = 422.81'
T = 211.65'
R = 3,600.00'

-Y2-

PI Sta 10+89.79
△ = 19° 03' 06.3" (RT)
D = 55° 37' 37.1"
L = 34.25'
T = 17.28'
R = 103.00'

-LPC-

PI Sta 12+23.69
△ = 28° 21' 14.7" (RT)
D = 44° 04' 25.2"
L = 64.33'
T = 32.84'
R = 130.00'
R.O. = SEE PLANS
SE = 0.04
V = 20 mph

PI Sta 14+28.38
△ = 116° 40' 08.1" (RT)
D = 57° 17' 44.8"
L = 203.63'
T = 162.13'
R = 100.00'
SE = 0.04
V = 20 mph

DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground
6:1
D
4:1 or Flatter
Front Ditch Slope
Min. D = 1.0 Ft.

FROM STA. 17+00 TO STA. 18+50 -Y- LT
FROM STA. 17+00 TO STA. 18+00 -Y- RT
FROM STA. 20+50 TO STA. 21+00 -Y- LT
FROM STA. 20+00 TO STA. 21+00 -Y- RT

DETAIL 2
LATERAL BASE DITCH
(Not to Scale)

Natural Ground
2:1
D
2:1
B
b
1"/Ft.
Fill Slope
Min. D = 1.0 Ft.
B = 2.0 Ft.
b = 2.0 Ft. (MIN.)

FROM STA. 20+98 TO STA. 21+46 -L- LT
FROM STA. 22+30 TO STA. 22+70 -L- LT

DETAIL 3
RIP RAP AT EMBANKMENT
(Not to Scale)

10'min.
Ditch Grade
1.0'min.
1.5'
GEOTEXTILE

Type of Liner = 10 TONS,CL I Rip–Rap
Geotextile = 14sy
QUANTITIES DO NOT INCLUDE MATERIAL ALONG SLOPE
SEE DETAIL 4

FROM STA. 21+57 TO STA. 21+67 -L- LT
FROM STA. 21+96 TO STA. 22+06 -L- LT

DETAIL 4
INLET CHANNEL CHANGE
(Not to Scale)

Natural Ground
2:1
D
2:1
B
Maintain Natural Channel Bed to extent possible
Type of Liner = 68 TONS,CL I Rip–Rap
Geotextile = 115 sy
Min. D = 3.0 Ft.
B = 4.0 Ft.
Length = 80 Ft.
DDE = 145 cu yd.

STA. 21+84 -L- LT

DETAIL 5
OUTLET CHANNEL CHANGE
(Not to Scale)

Natural Ground
2:1
D
2:1
B
Natural Ground
Maintain Natural Channel Bed to extent possible
Type of Liner = 30 TONS,CL I Rip–Rap
Geotextile = 51sy
Min. D = 3.0 Ft.
B = 4.0 Ft.
Length = 44 Ft.
DDE = 120 cu yd.

STA. 22+70 -L- RT

DETAIL 6
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground
2:1
D
2:1
Natural Ground
Min. D = 1.0 Ft.

FROM STA. 16+67 TO STA. 17+04 -L- LT

DETAIL 7
LATERAL BASE DITCH
(Not to Scale)

Natural Ground
2:1
d
D
2:1
B
b
1"/Ft.
Fill Slope
GEOTEXTILE
*When B is < 6.0'
Type of Liner = 20 TONS, CL I Rip–Rap
Geotextile = 36 sy
Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2 Ft.
b = 2 Ft. (MIN.)

FROM STA. 21+46 TO STA. 21+57 -L- LT
FROM STA. 22+06 TO STA. 22+30 -L- LT

DETAIL 8
SPECIAL CUT DITCH w/HINGE
(Not to Scale)

Natural Ground
VARIABLE
4:1
D
4:1 or Flatter
Front Ditch Slope
6.0'
Min. D = 1.0 Ft.

FROM STA. 18+00 TO STA. 18+50 RT
FROM STA. 19+50 TO STA. 20+50 RT

DETAIL 9
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground
2:1
D
2:1
Natural Ground
DDE = 100CY
Min. D = 1.0 Ft.

FROM STA. 21+17 TO STA. 21+44 -Y- LT

8/17/99

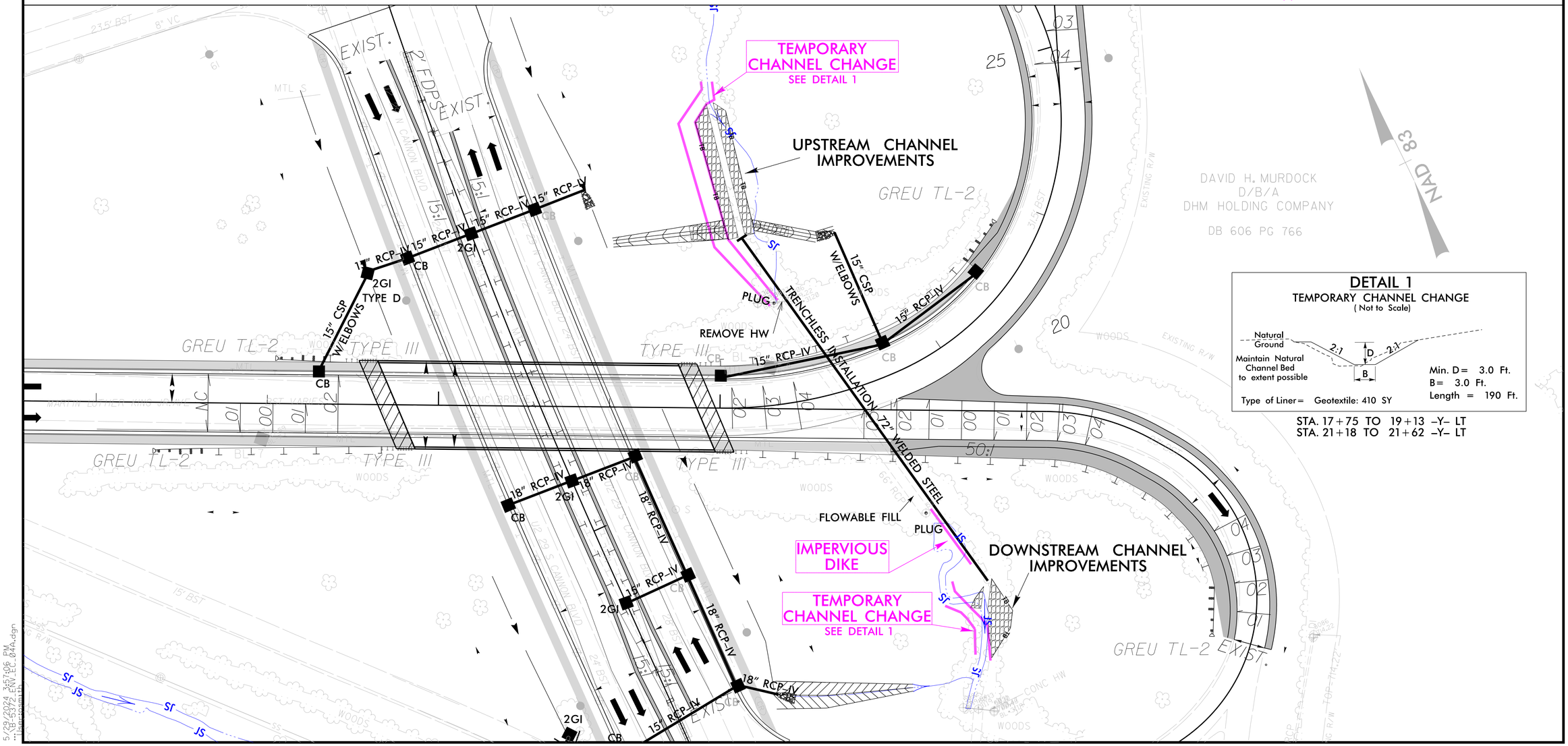
PROJECT REFERENCE NO.	SHEET NO.
B-5372	EC-4A/CONST.04
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 22+40 –L–

PHASE I

1. INSTALL TEMPORARY CHANNEL CHANGE AT INLET END AND OUTLET END OF EXISTING 66" RCP.
2. INSTALL IMPERVIOUS DIKE.

NOTES: UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED DURING CULVERT CONSTRUCTION.



DETAIL 1
TEMPORARY CHANNEL CHANGE
(Not to Scale)

Min. D = 3.0 Ft.
B = 3.0 Ft.
Length = 190 Ft.
Type of Liner = Geotextile: 410 SY

STA. 17+75 TO 19+13 –Y– LT
STA. 21+18 TO 21+62 –Y– LT

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PROJECT REFERENCE NO.	SHEET NO.
B-5372	EC-4B/CONST.04

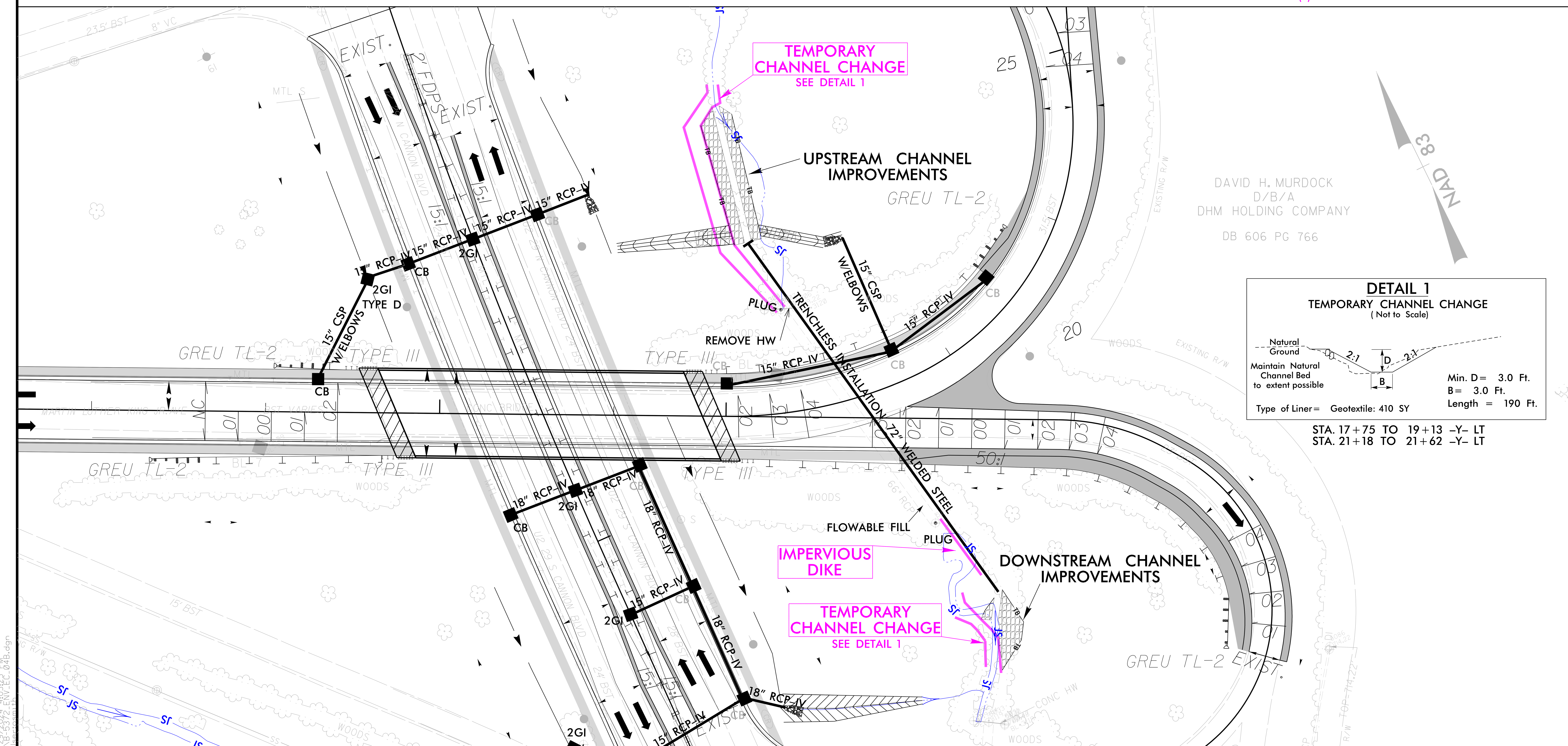
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 22+40 -L-

PHASE II

1. WHILE MAINTAINING A TEMPORARY CONNECTION OF THE STREAM FLOW TO THE EXISTING PIPE, JACK AND BORE THE PROPOSED 72" WELDED STEEL PIPE.
2. CONSTRUCT UPSTREAM AND DOWNSTREAM CHANNEL IMPROVEMENTS.
3. ESTABLISH PUMP AROUND OPERATION, THEN RE-DIRECT FLOW FROM TEMPORARY CHANNEL TO PERMANENT CHANNEL. UTILIZE SPECIAL STILLING BASINS AS NEEDED.
4. FILL EXISTING 66" RCP WITH FLOWABLE FILL AND FILL IN ALL REMNANT CHANNELS.

NOTES: UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED DURING CULVERT CONSTRUCTION.



8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
B-5372	EC-05/CONST.04

FINAL GRADE
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

Place Matting for Erosion Control on Slopes as Work Allows.
–L– 18+34 to 20+17 RT
–LPC– 10+00 to 14+00 RT
–L– 21+04 to 23+33 LT

REVISIONS

8/17/99

7/8/2024 2:54:18 PM
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User:smith

–L–

PI Sta 22+20.05
△ = 25° 03' 06.3" (LT)
D = 22° 55' 05.9"
L = 109.31'
T = 55.54'
R = 250.00'
R.O. = SEE PLANS
SE = 0.04
V = 30 mph

PI Sta 24+04.92
△ = 78° 39' 33.1" (LT)
D = 35° 48' 35.5"
L = 219.66'
T = 131.10'
R = 160.00'
R.O. = SEE PLANS
SE = 0.04
V = 25 mph

PI Sta 25+44.94
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D = 38° 11' 49.9"
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R = 150.00'
R.O. = SEE PLANS
SE = 0.04
V = 25 mph

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D = 35° 48' 35.5"
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R = 160.00'

–Y–

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R = 103.00'

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PI Sta 12+23.69
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D = 44° 04' 25.2"
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T = 32.84'
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R.O. = SEE PLANS
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V = 20 mph

PI Sta 14+28.38
△ = 116° 40' 08.1" (RT)
D = 57° 17' 44.8"
L = 203.63'
T = 162.13'
R = 100.00'
SE = 0.04
V = 20 mph

BRIDGE NO.109
SR 1706 (E 1ST ST.)
US. 29 (N.CANNON BLVD.)
YEAR 2015/2040 (ADT) IN HUNDREDS

CORNERSTONE CABARRUS, LLC
DB 11220 PG 022
BK DB 5149 PG 004
PB 46 PG 63

CASTLE AND COOKE CHIPOLA
DB 8845 PG 016
PB 56 PG 25

–L– POT Sta. 28+04.38
–L– PT Sta. 27+63.69
–L– PC Sta. 26+17.65
–L– PT Sta. 25+92.63
–Y– PT Sta. 15+90.69
–Y– PC Sta. 15+96.37
–Y– S 8° 32' 26.1" W
N 78° 56' 21.0" W
N 26° 38' 15.8" W
S 63° 20' 48.6" E
S 63° 20' 40.6" E
S 34° 59' 33.9" E
S 8° 40' 34.2" W
S 1° 48' 40.8" W

BEGIN TIP PROJECT B-5372
–L– STA.14+00.00
BEGIN MILL AND FILL

END TIP PROJECT B-5372
–L– STA.25+85.00

BEGIN MILL AND FILL
–Y– STA.16+71.30

END MILL AND FILL
–Y– STA.21+59.64

BEGIN CURB AND GUTTER
–Y– STA.17+09.42

END CURB AND GUTTER
–Y– STA.21+36.38

BEGIN BRIDGE
–L– STA.19+75.44

END BRIDGE
–L– STA.21+50.94

BEGIN APPROACH SLAB
–L– STA.19+64.53

END APPROACH SLAB
–L– STA.21+68.35

–L– POT Sta. 20+59.44=F
–Y– POC Sta. 19+20.58

–Y– PT Sta. 20+19.18

END CONST.
–Y2– STA.11+19.76
–Y2– PT Sta. 11+06.76
–Y2– PC Sta. 10+72.51
–Y2– POT Sta. 10+00.00=
–L– Sta. 24+66.33 –L– +15.00
–LPC– PT Sta. 12+55.19
–LPC– +60.00
–LPC– PC Sta. 12+66.25
–LPC– POT Sta. 10+00.00
–LPC– PT Sta. 14+69.87
–LPC– POT Sta. 14+75.84
–L– PC Sta. 24+93.48
–L– PCC Sta. 22+73.82
–L– PCC Sta. 24+04.46
–L– PC Sta. 21+64.51
–L– PT Sta. 21+85.85

EXIST. R/W

SKIMMER BASIN 4.3
53' x 26' x 3'
1.5" Skimmer, 1" Orifice
5' Weir

SKIMMER BASIN 4.1
50' x 25' x 3'
1.5" Skimmer, 1" Orifice
5' Weir

SKIMMER BASIN 4.2
44' x 22' x 3'
1.5" Skimmer, 0.875" Orifice
4' Weir

Impact Attenuator TL-2
Impact Attenuator TL-3

PERMIT SITE 1
PERMIT SITE 2

RET POND

RETAIN

SPECIAL CUT DITCH
SEE DETAIL 1

LATERAL 2' BASE DITCH
SEE DETAIL 7

RIP RAP AT EMBANKMENT
SEE DETAIL 3

'V' DITCH
SEE DETAIL 6

SPECIAL CUT DITCH
SEE DETAIL 8

CL B RIP RAP
EST 2 TONS
EST 7 SYGF

CL B RIP RAP
EST 3 TONS
EST 10 SYGF

CHANNEL CHANGE
SEE DETAIL 4

FLOWABLE FILL

PIPE CLEAN W/ NO SCOUR ISSUES

REMOVE HW

TRENCHLESS REHABILITATION OF CMP

100' UNIFORM TAPER

19' TYP.

SKEW 66°43'38.9"

DAVID H. MURDOCK D/B/A DHM HOLDING COMPANY DB 606 PG 766

WATER COMPANY AQUISITION CORP. C/O CITY OF KANNAPOLIS DB 734 PG 335

YATES INVESTMENT PROPERTIES, LLC DB 11475 PG 248 PB 68 PG 50

HOELL PROPERTIES, LLC DB 9440 PG 022

DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 6:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D = 1.0 Ft.
FROM STA. 17+00 TO STA. 18+50 –Y– LT
FROM STA. 17+00 TO STA. 18+00 SFY– RT
FROM STA. 20+50 TO STA. 21+00 –Y– LT
FROM STA. 20+00 TO STA. 21+00 –Y– RT

DETAIL 2
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, b, 1'/Ft., B, Fill Slope
Min. D = 1.0 Ft.
B = 2.0 Ft.
b = 2.0 Ft. (MIN.)
FROM STA. 20+98 TO STA. 21+46 –L– LT
FROM STA. 22+30 TO STA. 22+70 –L– LT

DETAIL 3
RIP RAP AT EMBANKMENT
(Not to Scale)
10'min., 1.0'min., 1.5', Ditch Grade, GEOTEXTILE
Type of Liner = 10 TONS,CL I Rip-Rap
Geotextile = 16y
QUANTITIES DO NOT INCLUDE MATERIAL ALONG SLOPE SEE DETAIL 4
FROM STA. 21+57 TO STA. 21+67 –L– LT
FROM STA. 21+96 TO STA. 22+06 –L– LT

DETAIL 4
INLET CHANNEL CHANGE
(Not to Scale)
Natural Ground, Maintain Natural Channel Bed to extent possible, 2:1, D, 2:1, B
Min. D = 3.0 Ft.
B = 4.0 Ft.
Type of Liner = 68 TONS,CL I Rip-Rap Length = 80 Ft.
Geotextile = 115 sy DDE = 145 cu yd.
STA. 21+84 –L– LT

DETAIL 5
OUTLET CHANNEL CHANGE
(Not to Scale)
Natural Ground, Maintain Natural Channel Bed to extent possible, 2:1, D, 2:1, B
Min. D = 3.0 Ft.
B = 4.0 Ft.
Type of Liner = 30 TONS,CL I Rip-Rap Length = 44 Ft.
Geotextile = 51sy DDE = 120 cu yd.
STA. 22+70 –L– RT

DETAIL 6
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground
Min. D = 1.0 Ft.
FROM STA. 16+67 TO STA. 17+04 –L– LT

DETAIL 7
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2:1, d, D, 2:1, b, 1'/Ft., Fill Slope, GEOTEXTILE, B
*When B is < 6.0'
Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2 Ft.
b = 2 Ft. (MIN.)
Type of Liner = 20 TONS, CL I Rip-Rap
Geotextile = 36 sy
FROM STA. 21+46 TO STA. 21+57 –L– LT
FROM STA. 22+06 TO STA. 22+30 –L– LT

DETAIL 8
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
Natural Ground, TANGENT, 4:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D = 1.0 Ft.
FROM STA. 18+00 TO STA. 18+50 RT
FROM STA. 19+50 TO STA. 20+50 RT

DETAIL 9
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground
DDE = 100CY
Min. D = 1.0 Ft.
FROM STA. 21+17 TO STA. 21+44 –Y– LT