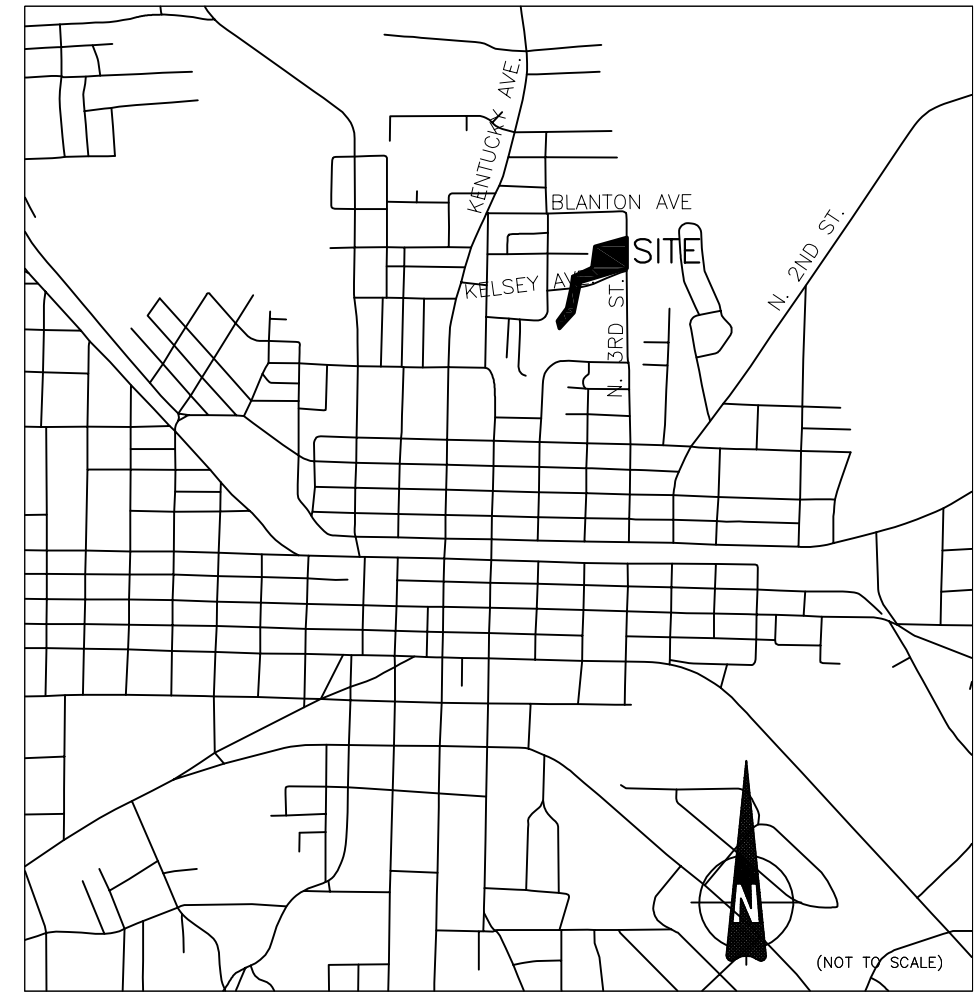


DRAWING NUMBER:	DRAWING TITLE:
C1	COVER SHEET
C2	NOTES
C3	EXISTING SITE CONDITIONS
C4	GRADING PLAN-STREAM UPPER
C5	GRADING PLAN-STREAM LOWER
C6	GRADING PLAN-BMPS
C7	CONSTRUCTION LAYOUT-UPPER REACH
C8	CONSTRUCTION LAYOUT-LOWER REACH
C9	CONSTRUCTION LAYOUT-BMPS
C10	HYDRAULIC PROFILE - STREAM
C11	SECTIONS - UPPER STREAM REACH
C12	SECTIONS - LOWER STREAM REACH
C13	PLAN AND PROFILE - KELSEY AVE. CULVERT
C14	PLAN AND PROFILE - 3RD ST. CULVERT
C15	HYDRAULIC PROFILE AND SECTION - BMPS
C16	PLANTING PLAN UPPER STREAM
C17	PLANTING PLAN LOWER STREAM AND BMPS
D1	ES&PC PLAN - CERTIFICATIONS
D2	ES&PC PLAN - CHECKLIST
D3	ES&PC PLAN - PRACTICES TABLE
D4A	ES&PC PLAN - INITIAL PHASE CONTROL PLAN
D4B	ES&PC PLAN - GRADING PHASE CONTROL PLAN
D4C	ES&PC PLAN - FINAL PHASE CONTROL PLAN
D5	ES&PC PLAN - NOTES 1
D6	ES&PC PLAN - NOTES 2
D7	ES&PC PLAN - APPENDIX 1 CHECKLIST
D8	ES&PC PLAN - DETAILS
D9	ES&PC PLAN - DETAILS
D10	ES&PC PLAN - HYDROLOGY STUDY
D11	DETAILS - WQ OUTLET
D12	DETAILS - PLANTING PLAN
D13	DETAILS - CULVERT
D14	DETAILS - CULVERT
D15	DETAILS - CULVERT
D16	DETAILS - CULVERT
D17	DETAILS - CULVERT
D18	DETAILS - WATER/SEWER
D19	DETAILS - WATER/SEWER
D20	DETAILS - BMP STRUCTURES
D21	DETAILS - STREAM RESTORATION
D22	DETAILS - STREAM RESTORATION
D23	SANITARY SEWER PROFILE
T1	ROAD DETOUR PLAN - A.Z. KELSEY AVE.
T2	ROAD DETOUR PLAN - N. THIRD ST.

CITY OF GRIFFIN CABIN CREEK WATERSHED

A. Z. KELSEY AVE PROJECT STREAM RESTORATION AND STORMWATER BMP RETROFITS FINAL DESIGN

VICINITY MAP:



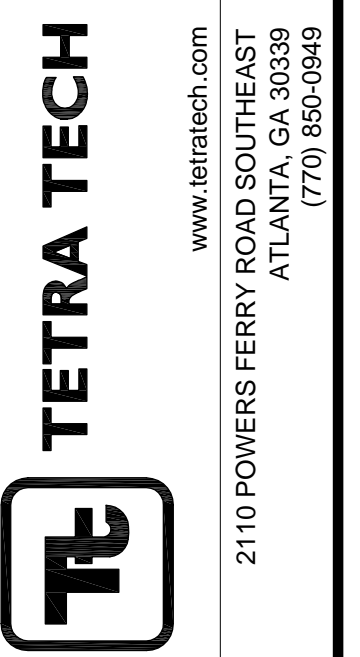
THE GPS COORDINATES FOR THE CONSTRUCTION EXIT ARE 33.257733 N LATITUDE AND 84.260042 W LONGITUDE.

DRAWINGS LEGEND:

LEGEND SYMBOL:	LEGEND TITLE:
	NOW OR FORMERLY TREE (DIAMETER & SPECIES IF KNOWN)
	SHRUB
	DUCTILE IRON
	CITY OF GRIFFIN CONTROL NETWORK MONUMENT
	ROOF DRAIN
	INVERT ELEVATION
	CLEAN OUT (SIZE AND MATERIAL)
	SIGN
	CURB INLET
	WATER VALVE
	SANITARY SEWER MANHOLE
	METAL POST
	FIRE HYDRANT
	WATER METER BOX
	UTILITY POLE
	UNDERGROUND UTILITY PAINT MARK (GAS)
	UNDERGROUND UTILITY PAINT MARK (WATER)
	UNDERGROUND UTILITY PAINT MARK (COMMUNICATION)
	SANITARY SEWER PIPE
	STORM PIPE
	GUY WIRE
	CONTOUR (MINOR)
	CONTOUR (MAJOR WITH LABEL)
	APPARENT BOUNDARY LINE
	RIP RAP STONE
	DEBRIS
	CONCRETE IN CREEK
	KUDZU GROUND COVER
	CORRUGATED METAL PIPE
	REINFORCED CONCRETE PIPE
	HIGH DENSITY POLYETHYLENE
	PROPOSED CONTOUR
	PROPOSED STRUCTURE
	PROPOSED TREE REMOVAL
	PROPOSED SILT FENCE
	PROPOSED SAFETY FENCE
	PROPOSED LIMITS OF CONSTRUCTION
	PROPOSED CLEANOUT
	PROPOSED STEP POOL
	PROPOSED ROCK CROSS VANE
	PROPOSED LOG VANE
	PROPOSED STONE RIFFLE
	PROPOSED IMBRICATED ROCK WALL

PREPARED FOR:
CITY OF GRIFFIN STORMWATER SERVICES
100 SOUTH HILL STREET
GRIFFIN, GA 30223
(770) 229-6400
AUGUST 1, 2015

RELEASED FOR BIDDING
NOT FOR CONSTRUCTION



MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

Client: CITY OF GRIFFIN Proj. Loc.: GRIFFIN, GA	Project No.: 100-ATL-T31130
Designed By: RST	Drawn By: RST
Checked By: JTS	

C1

Tuesday, July 28, 2015 1:15:26 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_S\Final_Plans\Model_Files\7-28-15\C1_COVER_DWG_LAYOUT: PROPOSED1 USER NAME: TUCKER, BOBBY

NOTES

GENERAL NOTES

1. THE INTENT OF THE DRAWINGS IS THAT THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND TRANSPORTATION NECESSARY FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THE PROJECT IN AN ACCEPTABLE MANNER, READY FOR USE, OCCUPANCY, OR OPERATION BY THE OWNER'S REPRESENTATIVE.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO WORK ALL APPLICABLE DRAWINGS AND THE APPROPRIATE SPECIFICATIONS AS A UNIT. ANY OMISSIONS, DELETIONS, OR CONFLICTS ARISING AS A RESULT OF FAILURE TO INCORPORATE ALL DRAWINGS AND SPECIFICATIONS WHICH APPLY SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND/OR ENGINEER.
3. EFFORTS HAVE BEEN MADE TO INDICATE LOCATIONS OF EXISTING STRUCTURES, PIPING, UTILITIES AND TOPOGRAPHY. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF ALL EXISTING ITEMS BEFORE INITIATING ANY CONSTRUCTION OPERATIONS. ANY EXISTING STRUCTURE, PIPING, OR UTILITY DISTURBED OR DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION OPERATIONS SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND/OR ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION ACTIVITIES WITH THE OWNER OF ANY FACILITY DISTURBED OR PLANNED TO BE DISTURBED.
4. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AND CONDITIONS AT THE SITE. ANY DISCREPANCIES BETWEEN THE ACTUAL MEASUREMENTS AND CONDITIONS SHOWN ON THE DRAWINGS SHALL BE DOCUMENTED BY THE CONTRACTOR IN WRITING AND SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR CONSIDERATION AND DECISION BEFORE THE WORK PROCEEDS.
5. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY GEORGIA 811. FOR LOCAL UTILITIES, TWO (2) FULL WORKING DAYS (NOT INCLUDING WEEKENDS OR HOLIDAYS) PRIOR TO DIGGING. CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE A MINIMUM OF 14 DAYS PRIOR TO DIGGING.
6. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL APPLICABLE OSHA REGULATIONS.
7. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A COMPLETE SET OF RECORD DRAWINGS (AS-BUILTS) IN DIGITAL AUTOCAD (.DWG) AND HARD COPY FORMAT, AND THE CONTRACTOR/INSPECTOR RED-LINED DRAWINGS UPON COMPLETION OF THE CONSTRUCTION. DRAWINGS SHALL BE REFERENCED TO THE STATE PLANE COORDINATE SYSTEM NAD83. THE RECORD DRAWINGS SHALL SHOW FINAL VERTICAL AND HORIZONTAL ALIGNMENT OF ALL BURIED UTILITIES ADDED OR MOVED AS A RESULT OF CONSTRUCTION. THEY SHALL INCLUDE ALL LINES, ACTUAL FIELD ANGLES BETWEEN LINES, SERVICE LINES AND TEE LOCATIONS, VALVE VAULTS AND VALVE BOXES, AND STUB-OUTS. THEY SHALL REFLECT ALL ALIGNMENT AND GRADE CHANGES FROM THE DESIGN DRAWINGS MADE DURING CONSTRUCTION. RECORD DRAWINGS MUST BE COMPLETED AND SUBMITTED PRIOR TO THE COMPLETION OF THE PROJECT.
8. ALL PROPERTY CORNERS ON THIS PROJECT SHALL BE RESERVED, WHETHER SHOWN OR NOT. IT MAY BE NECESSARY TO PLACE OR ADJUST MONUMENT BOXES, AS REQUIRED.
9. THE CONTRACTOR SHALL VERIFY ALL HORIZONTAL AND VERTICAL BENCHMARKS SHOWN. THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY OF ANY CONFLICTS.
10. CONTRACTOR STAGING AREAS SHALL BE LIMITED TO LIMITS OF CONSTRUCTION AS SHOWN ON THE DRAWINGS, UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE. NO EQUIPMENT OR MATERIALS SHALL BE STORED OUTSIDE THE LIMITS OF CONSTRUCTION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE INGRESS AND EGRESS FROM EACH PROJECT SITE FOR ALL VEHICLES INCLUDING, BUT NOT LIMITED TO, TRAFFIC ON ADJACENT PUBLIC ROADS, PRIVATE PARKING LOTS AFFECTED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL TRAFFIC CONTROL DEVICES FOR EACH SITE LOCATION IN ACCORDANCE WITH GA DOT STANDARDS AND SPECIFICATIONS.
12. CONTRACTOR SHALL REMOVE TEMPORARY FENCING AT THE END OF CONSTRUCTION. RESTORE SITE TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITIONS.
12. THE PROJECT SITE RESIDES WITHIN ZONE A OF THE FEMA DELINEATED FLOODPLAIN.
13. SPECIFIED AND/OR PROPRIETARY PRODUCTS SHOWN HEREIN MAY BE SUBJECT TO SUBSTITUTION WITH OTHER PRODUCTS OF EQUAL OR SUPERIOR FUNCTION AS RECOMMENDED BY THE CONTRACTOR SUBJECT TO WRITTEN REVIEW AND APPROVAL OF THE ENGINEER'S REPRESENTATIVE. WHEN THE CONTRACTOR USES PROPRIETARY PRODUCTS, IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY WITH THE SUPPLIER/MANUFACTURER THAT THEIR PRODUCT WILL FUNCTION PER THE DESIGN OR THE GIVEN FIELD CONDITIONS. THE ENGINEER'S REPRESENTATIVE SHOULD BE NOTIFIED IMMEDIATELY IF ANY DEVIATIONS FROM EXISTING FIELD CONDITIONS EXIST WHICH MAY AFFECT PRODUCT FUNCTION.

UTILITY TRENCHING

1. PLACE INITIAL BACKFILL MATERIAL AND COMPACT IT WITH APPROVED TAMPERS TO A HEIGHT OF AT LEAST ONE FOOT ABOVE THE UTILITY PIPE OR CONDUIT.
2. BRING UP THE BACKFILL EVENLY ON BOTH SIDES OF THE PIPE FOR THE FULL LENGTH OF THE PIPE. TAKE CARE TO ENSURE THOROUGH COMPACTION OF THE FILL UNDER THE HAUNCHES OF THE PIPE.

EARTHWORK SPECIFICATIONS

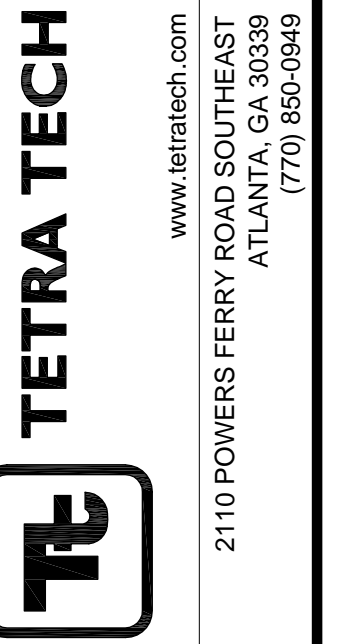
1. GRADE TO ELEVATIONS AND DIMENSIONS SHOWN ON DRAWINGS. GRADED ELEVATION TOLERANCE SHALL BE ± 0.2 FT.
2. INSTALL FINAL COVER IN ACCORDANCE WITH PERMANENT SEEDING SPECIFICATIONS WHERE APPLICABLE.
3. CONSTRUCT EARTH EMBANKMENTS FROM SATISFACTORY MATERIALS FREE OF ORGANIC OR FROZEN MATERIAL AND ROCKS WITH ANY DIMENSION GREATER THAN 3 INCHES. PLACE THE MATERIAL IN SUCCESSIVE HORIZONTAL LAYERS OF LOOSE MATERIAL NOT MORE THAN 12 INCHES IN DEPTH. SPREAD EACH LAYER UNIFORMLY ON A SOIL SURFACE THAT HAS BEEN MOISTENED OR AERATED AS NECESSARY, AND SCARIFIED OR OTHERWISE BROKEN UP SO THAT THE FILL WILL BOND WITH THE SURFACE ON WHICH IT IS PLACED. AFTER SPREADING, PLOW, DISK, OR OTHERWISE BRAKE UP EACH LAYER; MOISTEN OR AERATE AS NECESSARY; THOROUGHLY MIX; AND COMPACT TO AT LEAST 90 PERCENT LABORATORY MAXIMUM DRY DENSITY FOR COHESIVE MATERIALS OR 95 PERCENT LABORATORY MAXIMUM DRY DENSITY FOR COHESIONLESS MATERIALS. FINISH COMPACTION BY SHEEPSFOOT ROLLERS, PNEUMATIC-TIRED ROLLERS, STEEL-WHEELED ROLLERS, VIBRATORY COMPACTORS, OR OTHER APPROVED EQUIPMENT. LABORATORY COMPACTION SHOULD BE MEASURED USING THE STANDARD PROCTOR TEST.

TOPSOIL

TOPSOIL SHALL BE AS DEFINED IN ASTM D 5268. MATERIAL SUITABLE FOR TOPSOILS OBTAINED FROM OFFSITE AREAS OR EXCAVATION AREAS INDICATED ON THE DRAWINGS IS DEFINED AS: NATURAL, FRIABLE SOIL REPRESENTATIVE OF PRODUCTIVE, WELL-DRAINED SOILS IN THE AREA, FREE OF SUBSOIL, STUMPS, ROCKS LARGER THAN ONE INCH DIAMETER, BRUSH, WEEDS, TOXIC SUBSTANCES, AND OTHER MATERIAL DETRIMENTAL TO PLANT GROWTH. AMEND TOPSOIL PH RANGE TO OBTAIN A PH OF 5.5 TO 7.0.

ON AREAS TO RECEIVE TOPSOIL (I.E., DETENTION BASIN BOTTOM), PREPARE THE SUBGRADE SOIL TO A 2-INCH DEPTH FOR BONDING OF TOPSOIL WITH SUBSOIL. SPREAD TOPSOIL EVENLY TO A THICKNESS OF 3 INCHES AND GRADE TO THE ELEVATIONS AND SLOPES SHOWN. DO NOT SPREAD TOPSOIL WHEN FROZEN OR EXCESSIVELY WET OR DRY. OBTAIN MATERIAL REQUIRED FOR TOPSOIL IN EXCESS OF THAT PRODUCED BY EXCAVATION WITHIN THE GRADING LIMITS FROM OFFSITE AREAS .

NOT FOR CONSTRUCTION



MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

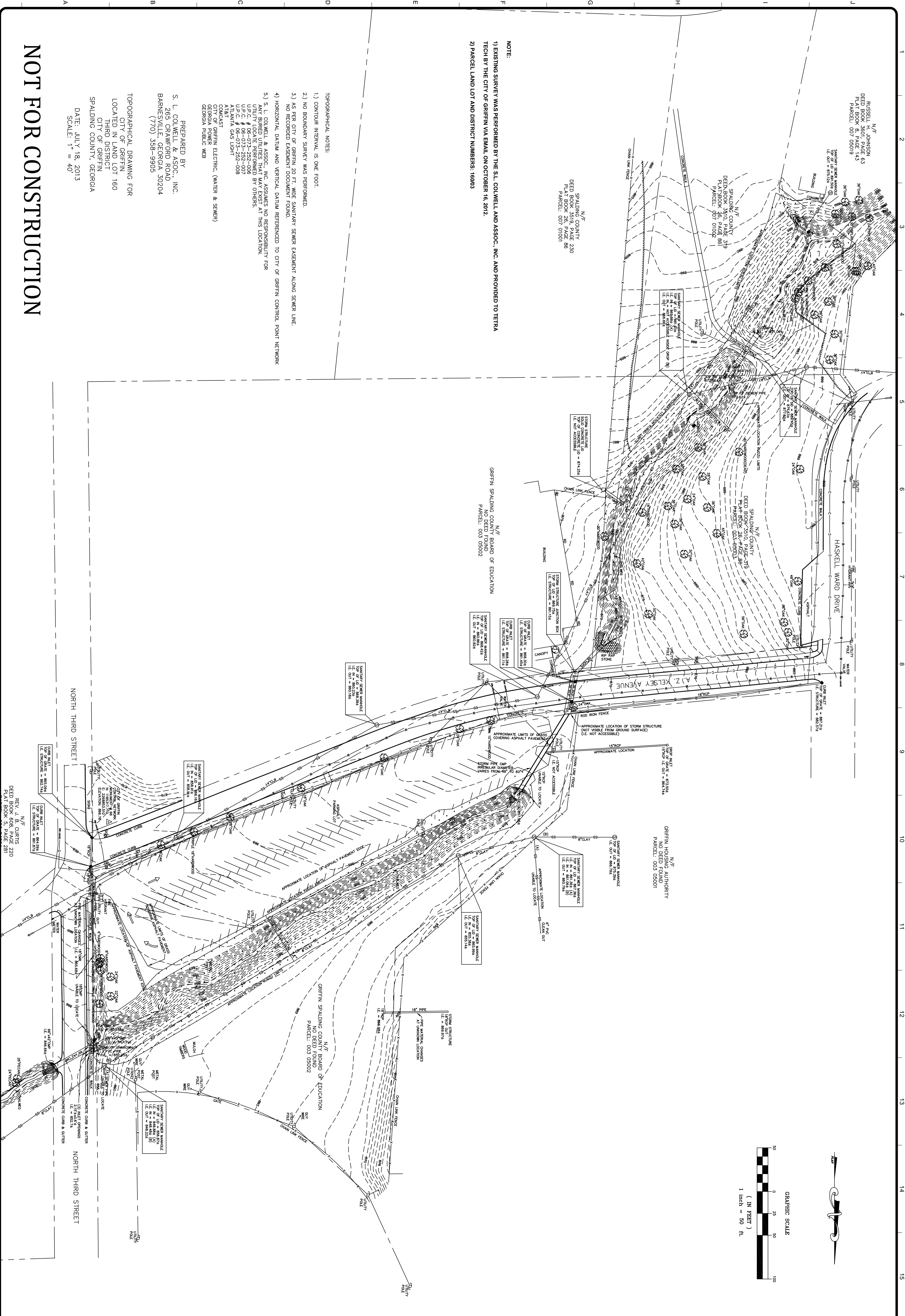
Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

NOTES

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

C2

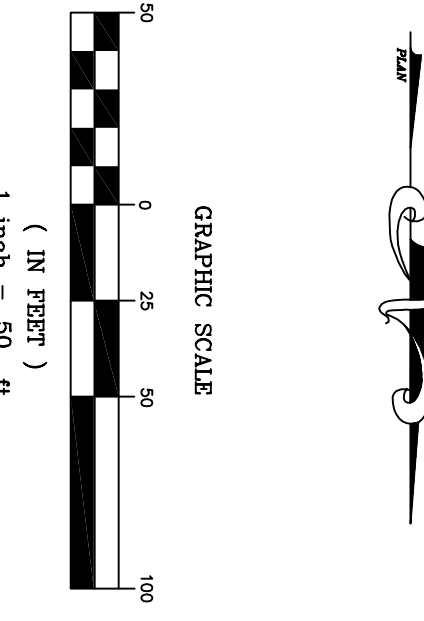


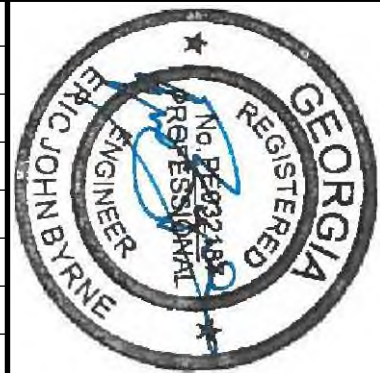


TOPOGRAPHICAL NOTES:
 1) CONTOUR INTERVAL IS ONE FOOT.
 2) NO BOUNDARY SURVEY WAS PERFORMED.
 3) AS PER CITY OF GRIFFIN 20 FT. WIDE SANITARY SEWER EASEMENT ALONG SEWER LINE. NO RECORDED EASEMENT DOCUMENT FOUND.
 4) HORIZONTAL DATUM AND VERTICAL DATUM REFERENCED TO CITY OF GRIFFIN CONTROL POINT NETWORK
 5) S. L. COLWELL & ASSOC., INC. ASSUMES NO RESPONSIBILITY FOR ANY BURIED UTILITIES THAT MAY EXIST AT THIS LOCATION.
 U.P.C. # 08-073-252-006
 U.P.C. # 08-073-252-007
 U.P.C. # 08-073-252-008
 A.T&T # 045 USR11

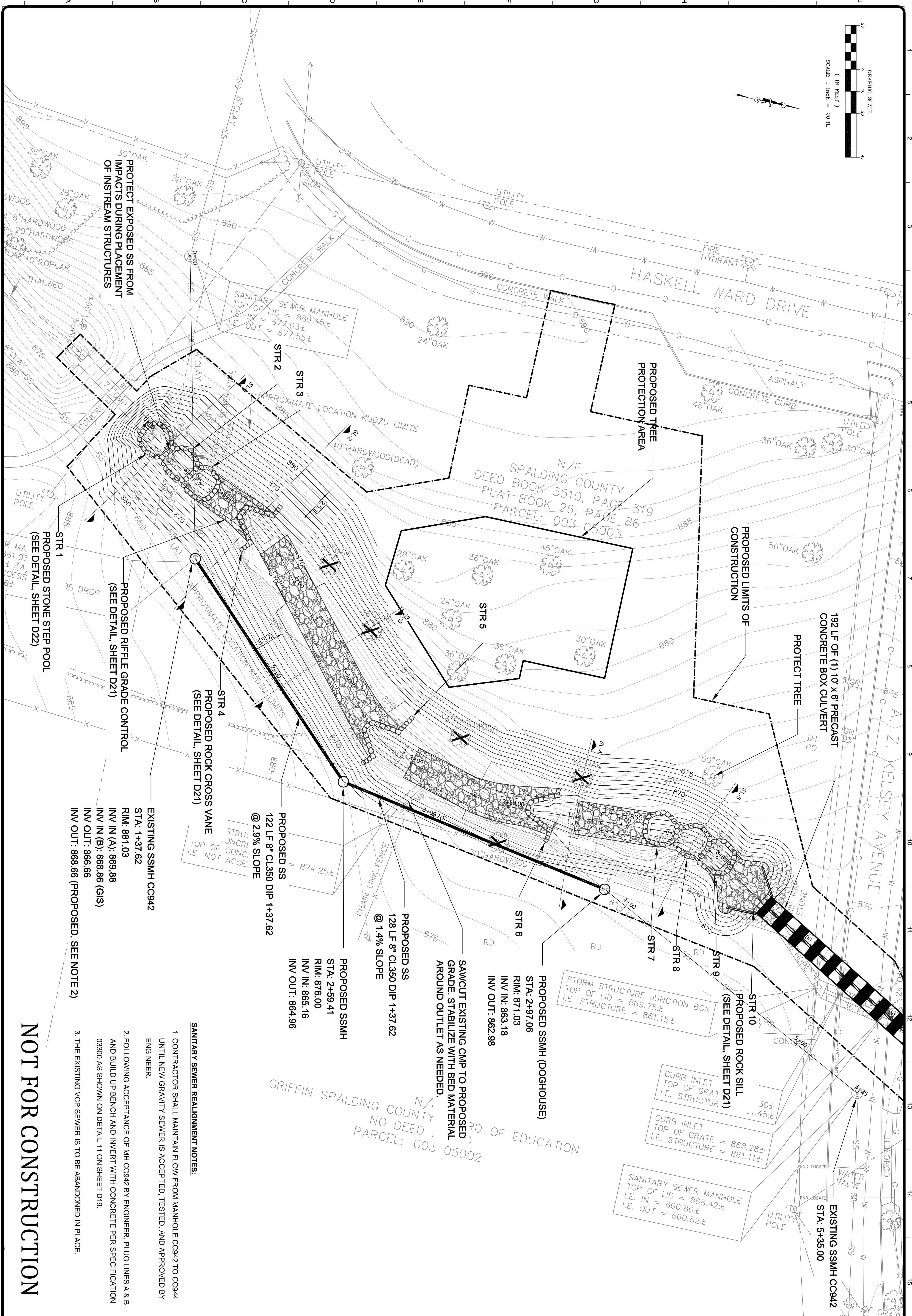
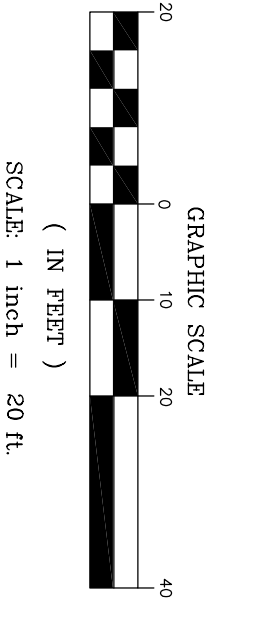
PREPARED BY
 S. L. COLWELL & ASSOC., INC.
 265 CRAWFORD ROAD
 BARNESVILLE, GEORGIA 30204
 (770) 358-9905

TOPOGRAPHICAL DRAWING FOR
 CITY OF GRIFFIN
 LOCATED IN LAND LOT 160
 THIRD DISTRICT
 CITY OF GRIFFIN
 SPALDING COUNTY, GEORGIA
 DATE: JULY 18, 2013
 SCALE: 1" = 40'

NOT FOR CONSTRUCTION



		 <p style="font-size: small;">www.tetratech.com 2110 POWERS FERRY ROAD SOUTHEAST ATLANTA, GA 30339 (770) 850-0949</p>	<p>Client: CITY OF GRIFFIN Proj. Loc.: GRIFFIN, GA</p> <p>A. Z. KELSEY AVENUE PROJECT STREAM RESTORATION AND STORMWATER BMP RETROFITS</p> <p>EXISTING CONDITIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>MARK</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td></td> <td>8-1-15</td> <td>FINAL CONSTRUCTION PLANS</td> <td>RST</td> </tr> </tbody> </table> <p>Project No.: 100-ATL-131130 Designed By: RST Drawn By: RST Checked By: JTS</p> <p style="font-size: x-large; font-weight: bold; text-align: center;">C3</p> <p style="font-size: x-small;">Copyright: Tetra Tech</p>	MARK	DATE	DESCRIPTION	BY		8-1-15	FINAL CONSTRUCTION PLANS	RST
MARK	DATE	DESCRIPTION	BY								
	8-1-15	FINAL CONSTRUCTION PLANS	RST								



PROTECT EXPOSED SS FROM IMPACTS DURING PLACEMENT OF INSTREAM STRUCTURES

PROPOSED TREE PROTECTION AREA

PROPOSED LIMITS OF CONSTRUCTION

192 LF OF (1) 10' x 6' PRECAST CONCRETE BOX CULVERT

PROTECT TREE

PROPOSED RIFFLE GRADE CONTROL (SEE DETAIL, SHEET D21)

PROPOSED ROCK CROSS VANE (SEE DETAIL, SHEET D21)

EXISTING SSMH CC942
 STA: 1+37.62
 RIM: 881.03
 INV IN (A): 869.88
 INV IN (B): 868.86 (GIS)
 INV OUT: 866.66
 INV OUT: 868.66 (PROPOSED, SEE NOTE 2)

PROPOSED SS
 122 LF 8" CL350 DIP 1+37.62
 @ 2.9% SLOPE

PROPOSED SS
 128 LF 8" CL350 DIP 1+37.62
 @ 1.4% SLOPE

PROPOSED SSMH
 STA: 2+59.41
 RIM: 876.00
 INV IN: 865.16
 INV OUT: 864.96

PROPOSED SSMH (DOGHOUSE)
 STA: 2+97.06
 RIM: 871.03
 INV IN: 863.18
 INV OUT: 862.98

STORM STRUCTURE JUNCTION BOX
 TOP OF LID = 869.75±
 I.E. STRUCTURE = 861.15±

PROPOSED ROCK SILL (SEE DETAIL, SHEET D21)

CURB INLET TOP OF GRATE I.E. STRUCTURE = 868.28±
 I.E. STRUCTURE = 861.11±

SANITARY SEWER MANHOLE
 TOP OF LID = 868.42±
 I.E. IN = 860.86±
 I.E. OUT = 860.82±

EXISTING SSMH CC942
 STA: 5+35.00

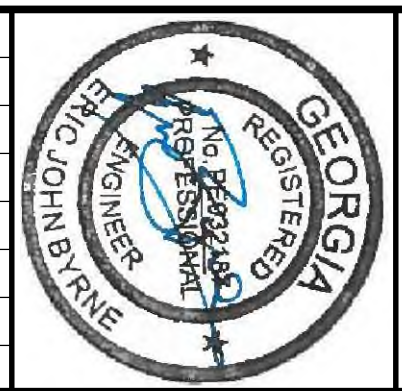
SAWCUT EXISTING CMP TO PROPOSED GRADE. STABILIZE WITH BED MATERIAL AROUND OUTLET AS NEEDED.

SANITARY SEWER REALIGNMENT NOTES:

1. CONTRACTOR SHALL MAINTAIN FLOW FROM MANHOLE CC942 TO CC944 UNTIL NEW GRAVITY SEWER IS ACCEPTED, TESTED, AND APPROVED BY ENGINEER.
2. FOLLOWING ACCEPTANCE OF MH CC942 BY ENGINEER, PLUG LINES A & B AND BUILD UP BENCH AND INVERT WITH CONCRETE PER SPECIFICATION 03300 AS SHOWN ON DETAIL 11 ON SHEET D19.
3. THE EXISTING VCP SEWER IS TO BE ABANDONED IN PLACE.

NOT FOR CONSTRUCTION

MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

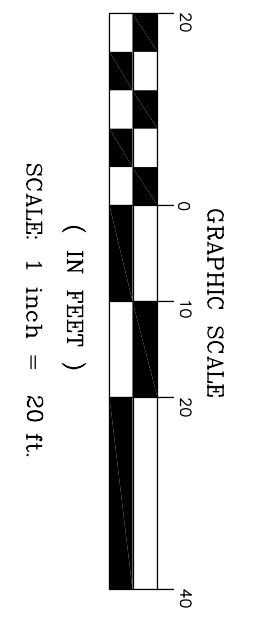
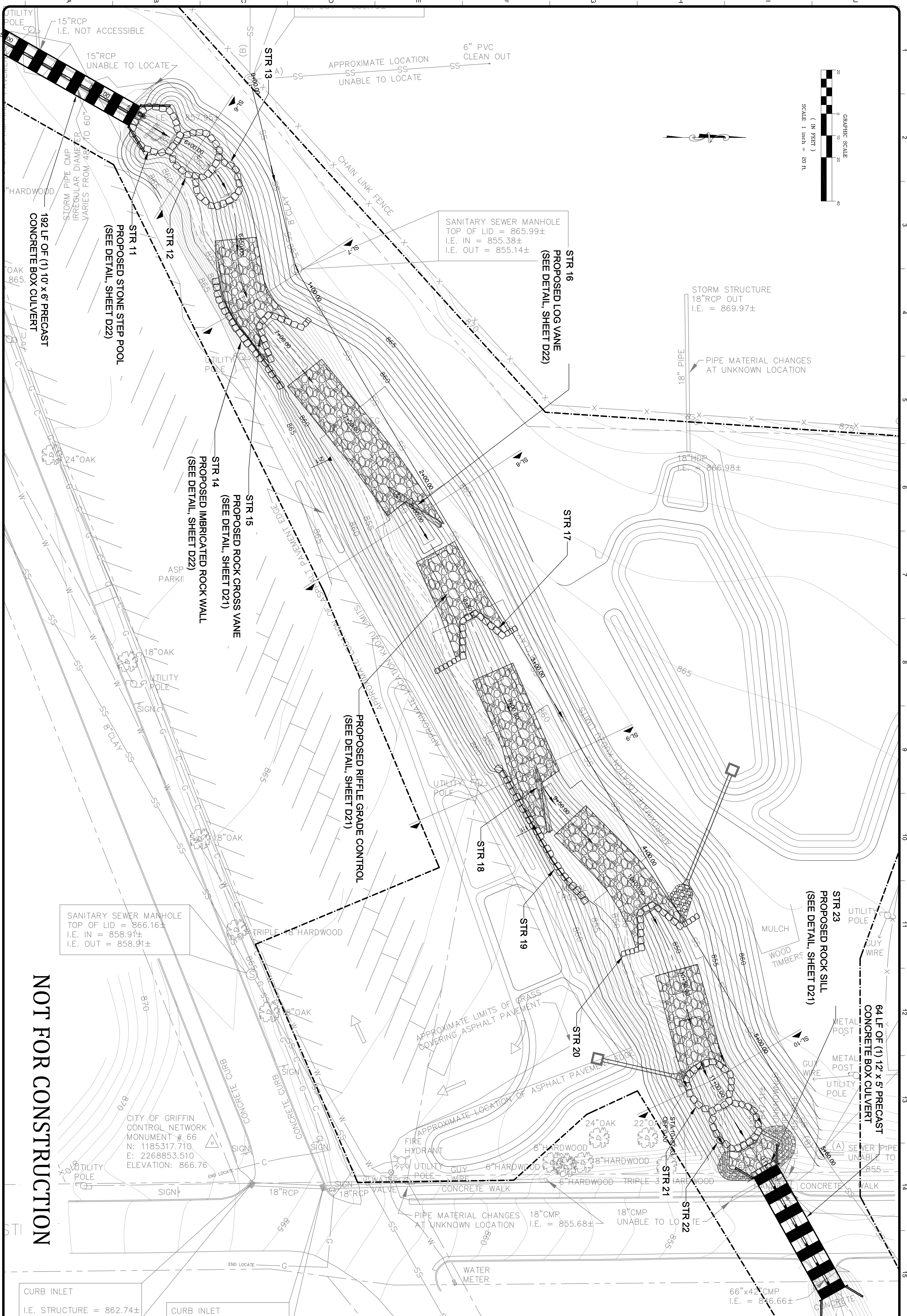


TETRA TECH
 www.tetratech.com
 2110 POWERS FERRY ROAD SOUTHEAST
 ATLANTA, GA 30339
 (770) 850-0949

C4

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 Project No.: 100-ATL-131130
 Designed By: RST
 Drawn By: RST
 Checked By: JTS

**A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
 GRADING PLAN
 UPPER STREAM REACH**



SANITARY SEWER MANHOLE
 TOP OF LID = 865.99±
 I.E. IN = 855.38±
 I.E. OUT = 855.14±

STORM STRUCTURE
 18"RCP OUT
 I.E. = 869.97±

SANITARY SEWER MANHOLE
 TOP OF LID = 866.16±
 I.E. IN = 858.91±
 I.E. OUT = 858.91±

CITY OF GRIFFIN
 CONTROL NETWORK
 MONUMENT # 66
 N: 1185317.710
 E: 2268853.510
 ELEVATION: 866.76

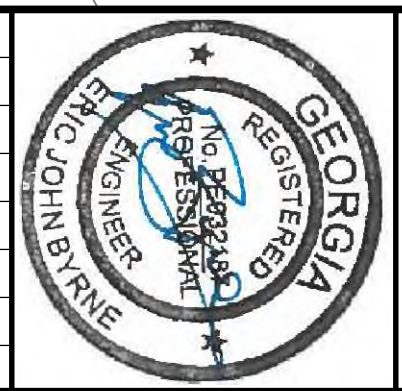
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CURB INLET
 I.E. STRUCTURE = 862.74±

CURB INLET

66"x42" CMP
 I.E. = 846.66±

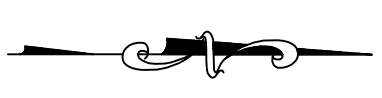
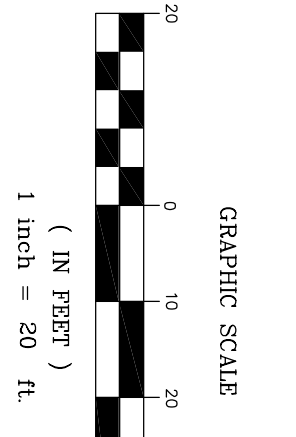
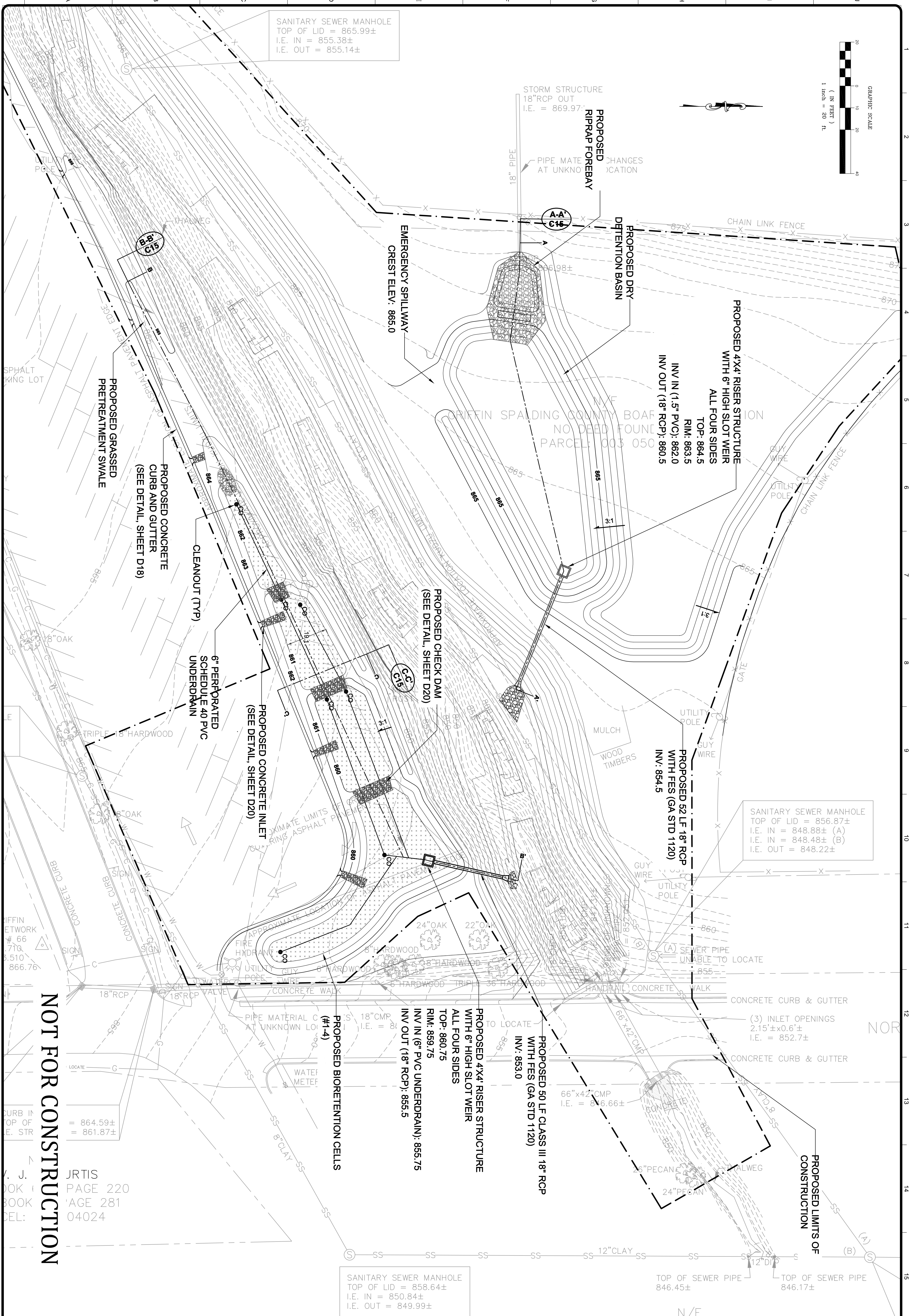
MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST



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 ATLANTA, GA 30339
 (770) 850-0949

C5
 Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 Project No.: 100-4117-131130
 Designed By: RST
 Drawn By: RST
 Checked By: JRS

**A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
 GRADING PLAN
 LOWER STREAM REACH**



NOT FOR CONSTRUCTION

JRTIS PAGE 220
 BOOK PAGE 281
 CELL: 04024

C6

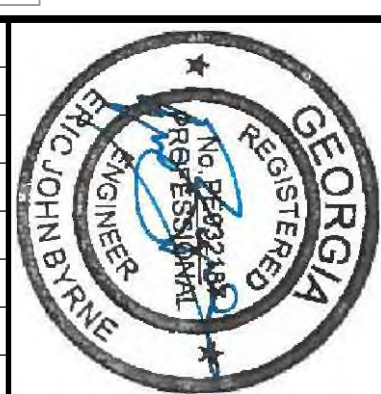
Designed By: RST
 Drawn By: RST
 Checked By: JTS

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA

**A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS**

**GRADING PLAN
 STORMWATER BMPS**

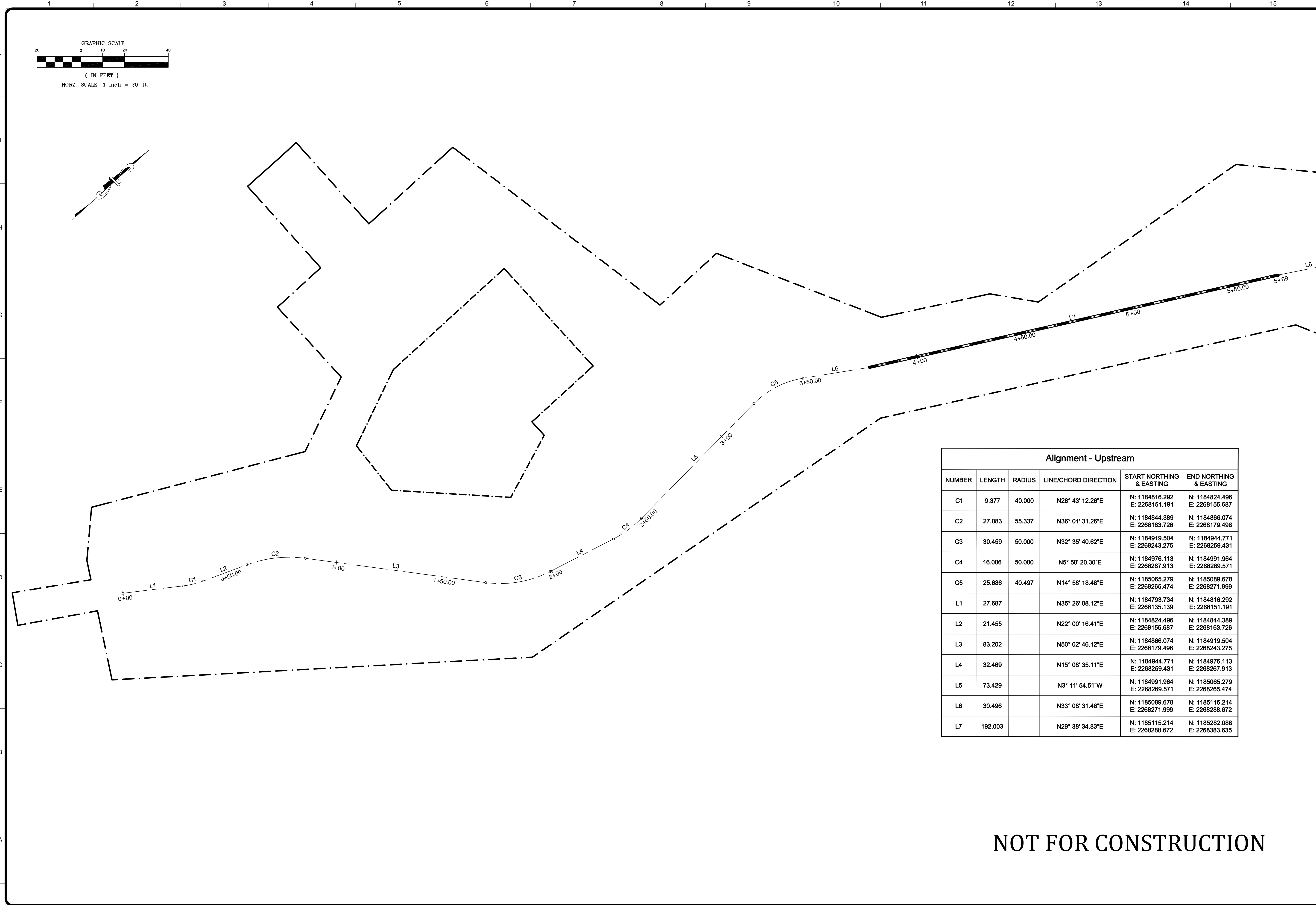
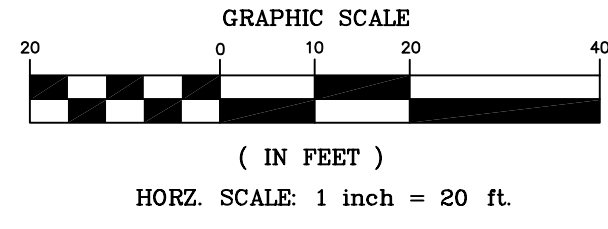
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	8-1-15	FINAL CONSTRUCTION PLANS	RST



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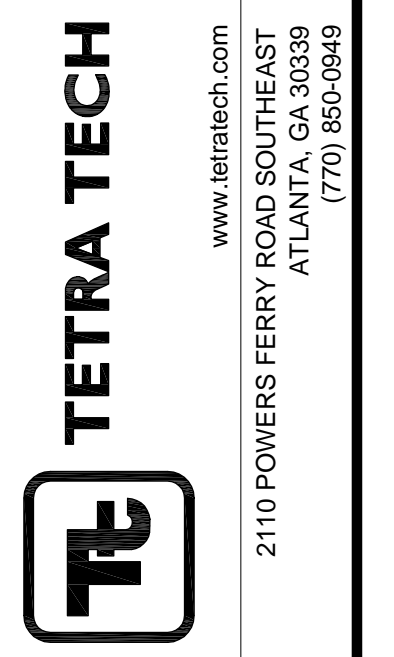
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Tuesday, July 28, 2015 1:23:55 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_S\Final_Plans\Model_Files\7-28-15\7_C8_DWG_LAYOUT_GEOMETRY-UPPER USER NAME: TUCKER, BOBBY



Alignment - Upstream					
NUMBER	LENGTH	RADIUS	LINE/CHORD DIRECTION	START NORTHING & EASTING	END NORTHING & EASTING
C1	9.377	40.000	N28° 43' 12.26"E	N: 1184816.292 E: 2268151.191	N: 1184824.496 E: 2268155.687
C2	27.083	55.337	N36° 01' 31.26"E	N: 1184844.389 E: 2268163.726	N: 1184866.074 E: 2268179.496
C3	30.459	50.000	N32° 35' 40.62"E	N: 1184919.504 E: 2268243.275	N: 1184944.771 E: 2268259.431
C4	16.006	50.000	N5° 58' 20.30"E	N: 1184976.113 E: 2268267.913	N: 1184991.964 E: 2268269.571
C5	25.686	40.497	N14° 58' 18.48"E	N: 1185065.279 E: 2268265.474	N: 1185089.678 E: 2268271.999
L1	27.687		N35° 26' 08.12"E	N: 1184793.734 E: 2268135.139	N: 1184816.292 E: 2268151.191
L2	21.455		N22° 00' 16.41"E	N: 1184824.496 E: 2268155.687	N: 1184844.389 E: 2268163.726
L3	83.202		N50° 02' 46.12"E	N: 1184866.074 E: 2268179.496	N: 1184919.504 E: 2268243.275
L4	32.469		N15° 08' 35.11"E	N: 1184944.771 E: 2268259.431	N: 1184976.113 E: 2268267.913
L5	73.429		N3° 11' 54.51"W	N: 1184991.964 E: 2268269.571	N: 1185065.279 E: 2268265.474
L6	30.496		N33° 08' 31.46"E	N: 1185089.678 E: 2268271.999	N: 1185115.214 E: 2268288.672
L7	192.003		N29° 38' 34.83"E	N: 1185115.214 E: 2268288.672	N: 1185282.088 E: 2268383.635

NOT FOR CONSTRUCTION



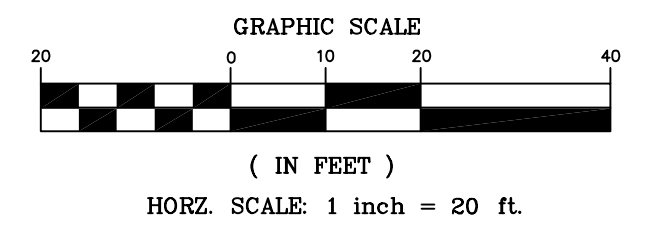
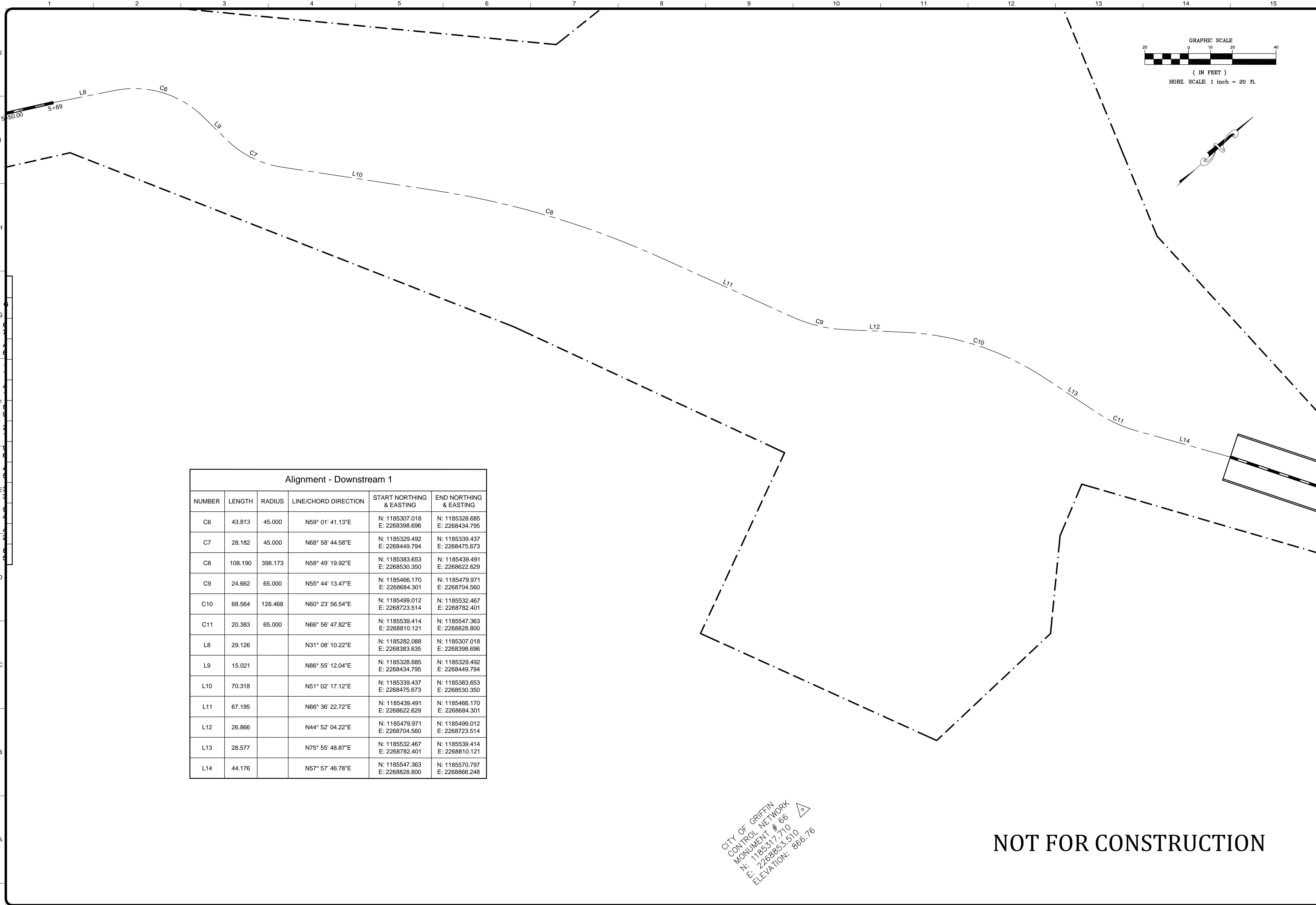
MARK	DATE	DESCRIPTION
	8-1-15	FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
GEOMETRIC LAYOUT
UPPER STREAM REACH

Project No.:	100-ATL-T31130
Designed By:	RST
Drawn By:	RST
Checked By:	JTS

C7

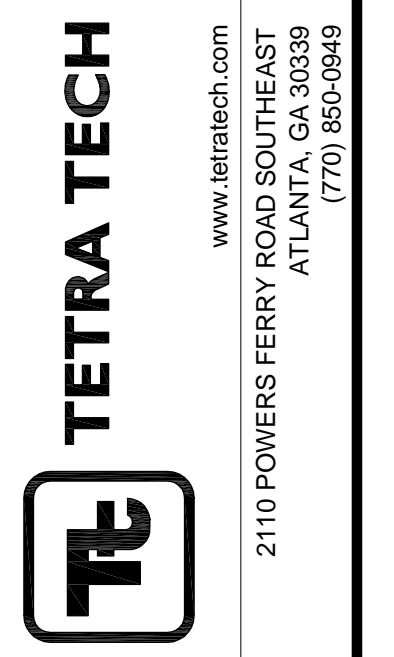
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Alignment - Downstream 1					
NUMBER	LENGTH	RADIUS	LINE/CHORD DIRECTION	START NORTHING & EASTING	END NORTHING & EASTING
C6	43.813	45.000	N59° 01' 41.13"E	N: 1185307.018 E: 2268398.696	N: 1185328.685 E: 2268434.795
C7	28.182	45.000	N68° 58' 44.58"E	N: 1185329.492 E: 2268449.794	N: 1185339.437 E: 2268475.673
C8	108.190	398.173	N58° 49' 19.92"E	N: 1185383.653 E: 2268530.350	N: 1185439.491 E: 2268622.629
C9	24.662	65.000	N55° 44' 13.47"E	N: 1185466.170 E: 2268684.301	N: 1185479.971 E: 2268704.560
C10	68.564	126.468	N60° 23' 56.54"E	N: 1185499.012 E: 2268723.514	N: 1185532.467 E: 2268782.401
C11	20.383	65.000	N66° 56' 47.82"E	N: 1185539.414 E: 2268810.121	N: 1185547.363 E: 2268828.800
L8	29.126		N31° 08' 10.22"E	N: 1185282.088 E: 2268383.635	N: 1185307.018 E: 2268398.696
L9	15.021		N86° 55' 12.04"E	N: 1185328.685 E: 2268434.795	N: 1185329.492 E: 2268449.794
L10	70.318		N51° 02' 17.12"E	N: 1185339.437 E: 2268475.673	N: 1185383.653 E: 2268530.350
L11	67.195		N66° 36' 22.72"E	N: 1185439.491 E: 2268622.629	N: 1185466.170 E: 2268684.301
L12	26.866		N44° 52' 04.22"E	N: 1185479.971 E: 2268704.560	N: 1185499.012 E: 2268723.514
L13	28.577		N75° 55' 48.87"E	N: 1185532.467 E: 2268782.401	N: 1185539.414 E: 2268810.121
L14	44.176		N57° 57' 46.78"E	N: 1185547.363 E: 2268828.800	N: 1185570.797 E: 2268866.248

CITY OF GRIFFIN
CONTROL NETWORK
N: 1185317.710
E: 2268833.510
ELEVATION: 866.76

NOT FOR CONSTRUCTION



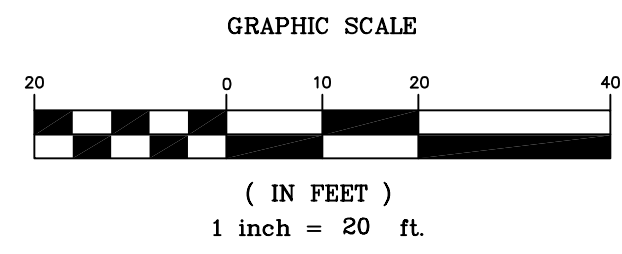
MARK	DATE	DESCRIPTION
	8-1-15	FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
GEOMETRIC LAYOUT
LOWER STREAM REACH

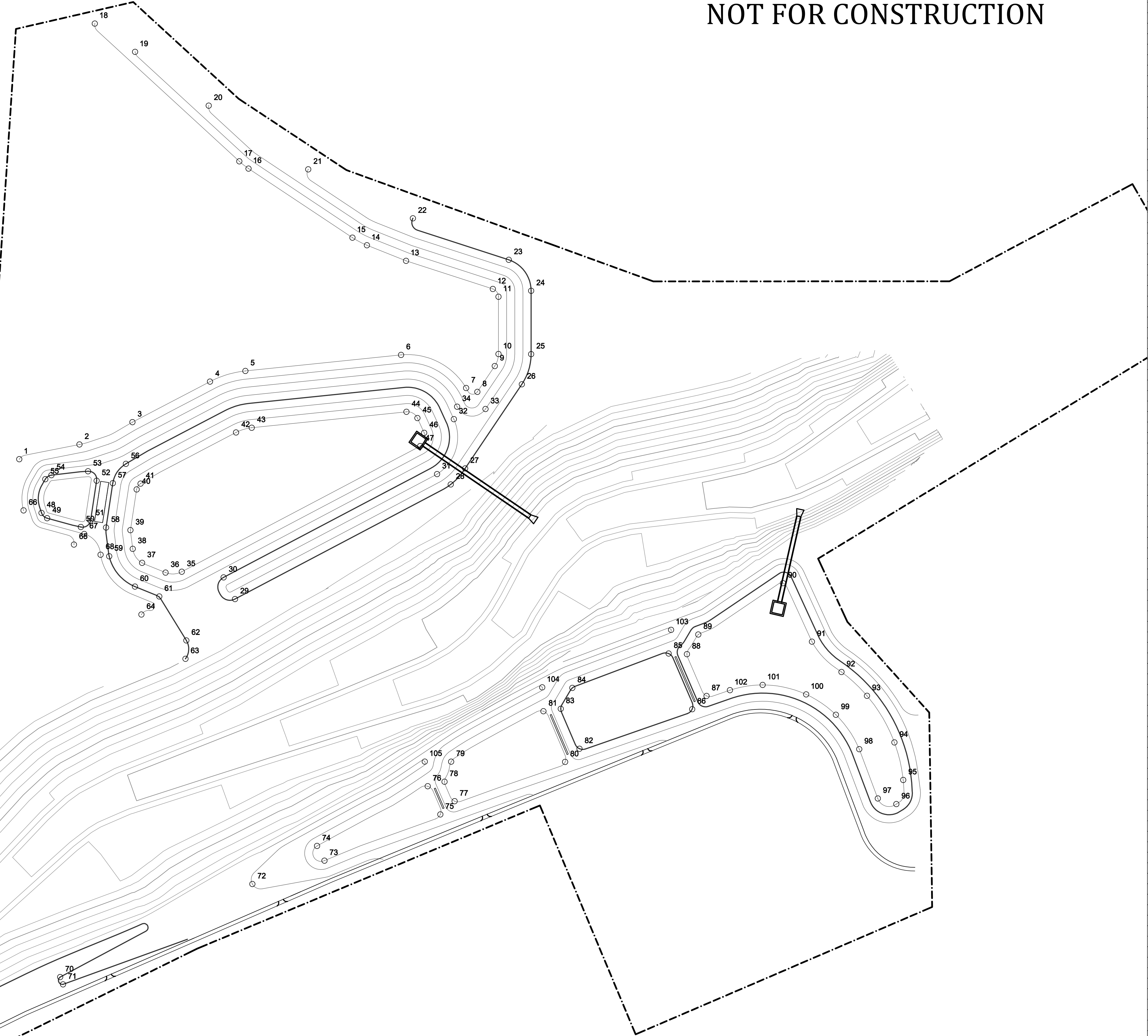
Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

C8

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NOT FOR CONSTRUCTION



Number	Easting	Northing	Elevation
1	2268536.1439'	1185548.7982'	869.00'
2	2268558.2591'	1185554.2114'	869.00'
3	2268577.7275'	1185562.4106'	869.00'
4	2268606.2145'	1185577.3123'	869.00'
5	2268619.2150'	1185581.2248'	869.00'
6	2268676.4197'	1185587.1201'	869.00'
7	2268700.3197'	1185574.9520'	869.00'
8	2268704.4437'	1185573.5371'	869.00'
9	2268710.8386'	1185583.0271'	869.00'
10	2268712.2060'	1185587.4392'	869.00'
11	2268712.2060'	1185608.4970'	869.00'
12	2268710.1313'	1185611.3507'	869.00'
13	2268678.2422'	1185621.6905'	869.00'
14	2268663.8709'	1185627.4163'	869.00'
15	2268658.5500'	1185630.2062'	869.00'
16	2268620.3665'	1185655.5898'	869.00'
17	2268616.9896'	1185658.2630'	869.00'
18	2268563.8941'	1185708.8870'	869.00'
19	2268578.6918'	1185698.4910'	868.00'
20	2268605.7456'	1185678.7272'	867.00'
21	2268642.3127'	1185655.3078'	866.00'
22	2268680.7628'	1185637.3165'	865.00'
23	2268715.9804'	1185622.0692'	865.00'
24	2268724.2060'	1185610.6782'	865.00'
25	2268724.2060'	1185587.4004'	865.00'
26	2268720.7918'	1185576.3237'	865.00'
27	2268699.9560'	1185545.4036'	865.00'
28	2268694.6634'	1185539.5172'	865.00'
29	2268615.4116'	1185497.3979'	865.00'
30	2268611.2166'	1185505.3604'	865.00'
31	2268689.6382'	1185543.3273'	866.00'
32	2268695.8121'	1185563.5064'	866.00'
33	2268707.4375'	1185567.2430'	867.00'
34	2268697.0081'	1185568.0944'	867.00'
35	2268595.8555'	1185507.4400'	862.00'
36	2268589.8962'	1185507.1212'	862.00'
37	2268581.2694'	1185510.6983'	862.00'
38	2268577.8325'	1185515.8568'	862.00'
39	2268576.9888'	1185522.7195'	862.00'
40	2268579.2654'	1185537.6876'	862.00'
41	2268580.7081'	1185539.8210'	862.00'
42	2268615.7880'	1185558.6205'	862.00'
43	2268621.5479'	1185560.3540'	862.00'
44	2268678.3921'	1185566.2122'	862.00'
45	2268682.4257'	1185563.9080'	862.00'
46	2268684.9135'	1185558.4789'	862.00'
47	2268683.4421'	1185553.6097'	862.00'
48	2268544.3236'	1185529.0588'	865.00'
49	2268546.3827'	1185527.1031'	865.00'
50	2268558.7641'	1185523.8776'	865.00'
51	2268562.3293'	1185526.1446'	865.00'
52	2268564.5710'	1185540.8841'	865.00'
53	2268561.4156'	1185544.3631'	865.00'
54	2268547.9557'	1185542.9257'	865.00'
55	2268545.7066'	1185541.4467'	865.00'
56	2268575.3194'	1185547.0919'	865.00'
57	2268570.5107'	1185539.9805'	865.00'
58	2268568.0308'	1185523.6762'	865.00'
59	2268569.1939'	1185513.1110'	865.00'
60	2268578.6485'	1185501.9766'	865.00'
61	2268587.5904'	1185498.3435'	865.00'
62	2268597.5261'	1185482.1934'	865.00'
63	2268597.2136'	1185475.4467'	865.00'
64	2268581.0234'	1185491.7200'	866.00'
65	2268556.2344'	1185517.4251'	867.00'
66	2268537.7190'	1185529.9817'	868.00'
67	2268560.0179'	1185521.3060'	866.00'
68	2268566.0209'	1185513.6951'	866.00'
69	2268502.3334'	1185339.7140'	865.00'
70	2268551.1715'	1185358.4785'	865.00'
71	2268552.2247'	1185355.7985'	865.00'
72	2268621.7848'	1185392.6746'	864.00'
73	2268648.2721'	1185401.2665'	862.00'
74	2268645.5540'	1185406.6696'	862.00'
75	2268690.8389'	1185418.2472'	862.00'
76	2268686.2061'	1185428.6139'	862.00'
77	2268696.0953'	1185423.1176'	861.00'
78	2268692.3887'	1185430.2696'	861.00'
79	2268694.8199'	1185437.6364'	861.00'
80	2268736.6866'	1185437.5435'	861.00'
81	2268728.7206'	1185456.1682'	861.00'
82	2268741.9654'	1185442.3974'	860.00'
83	2268735.0911'	1185457.0672'	860.00'
84	2268739.3385'	1185464.7450'	860.00'
85	2268774.7236'	1185477.3755'	860.00'
86	2268783.3768'	1185456.9255'	860.00'
87	2268788.6497'	1185461.7954'	859.00'
88	2268781.4390'	1185477.1431'	859.00'
89	2268785.6201'	1185484.3686'	859.00'
90	2268816.7190'	1185503.2426'	859.00'
91	2268827.3700'	1185481.7343'	859.00'
92	2268838.2267'	1185470.5879'	859.00'
93	2268847.5955'	1185461.8397'	859.00'
94	2268857.6641'	1185444.7122'	859.00'
95	2268860.9127'	1185430.9150'	859.00'
96	2268858.3771'	1185422.0541'	859.00'
97	2268851.5792'	1185424.1124'	859.00'
98	2268844.7531'	1185442.2323'	859.00'
99	2268836.1635'	1185454.8707'	859.00'
100	2268825.2378'	1185462.3629'	859.00'
101	2268809.2562'	1185465.8374'	859.00'
102	2268797.2434'	1185463.9149'	859.00'
103	2268775.6202'	1185486.0815'	862.00'
104	2268728.2781'	1185464.9503'	863.00'
105	2268685.1247'	1185437.6643'	864.00'

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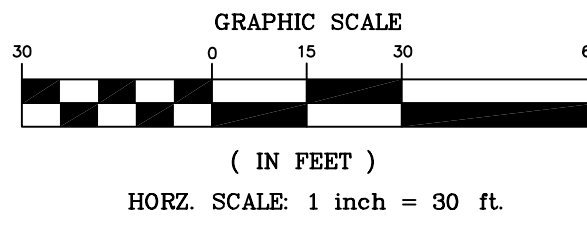
GEORGIA REGISTERED PROFESSIONAL ENGINEER
ERIC JOHN BYRNE

MARK	DATE	DESCRIPTION
B-1-15		FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
CONSTRUCTION STAKEOUT
STORMWATER BMPS

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

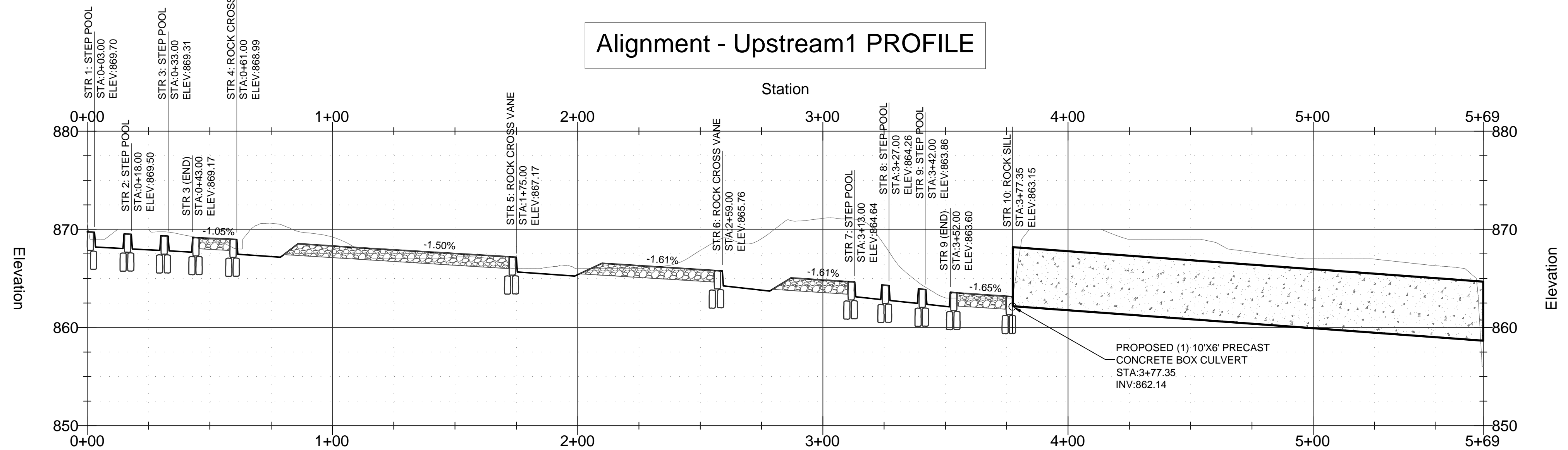
C9



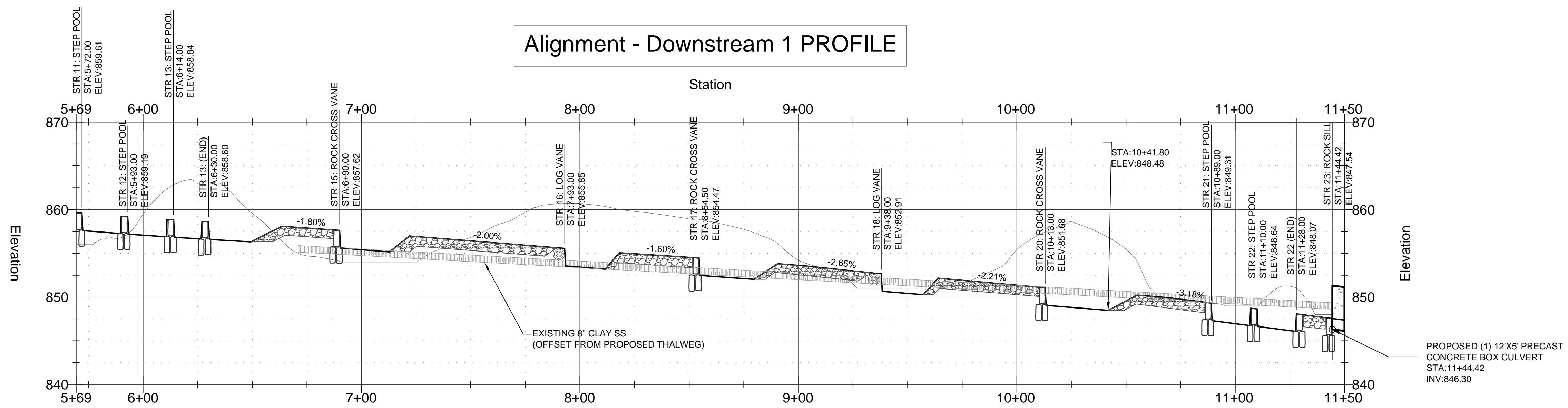
CROSS SECTION LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- △ GRADE CHANGE LOCATION
- ROCK STRUCTURE
- ▨ CONSTRUCTED RIFFLE
- LOG VANE

Alignment - Upstream1 PROFILE

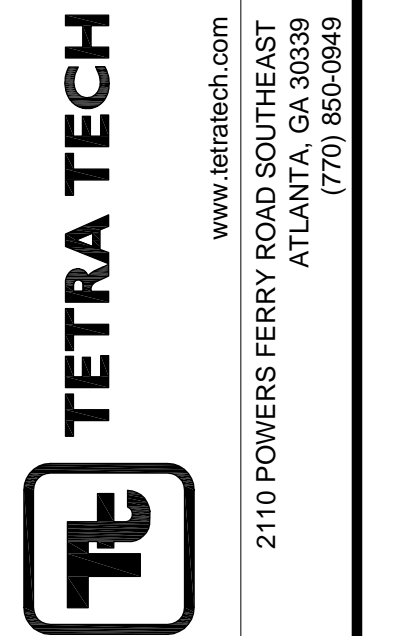


Alignment - Downstream 1 PROFILE



NOT FOR CONSTRUCTION

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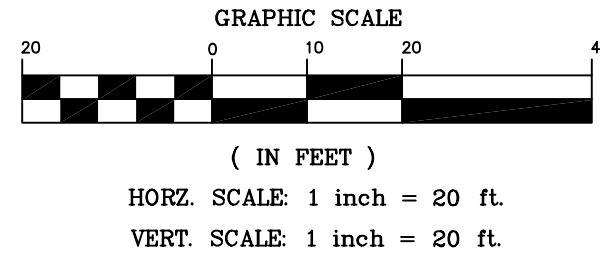


MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
**HYDRAULIC PROFILE
 STREAM**

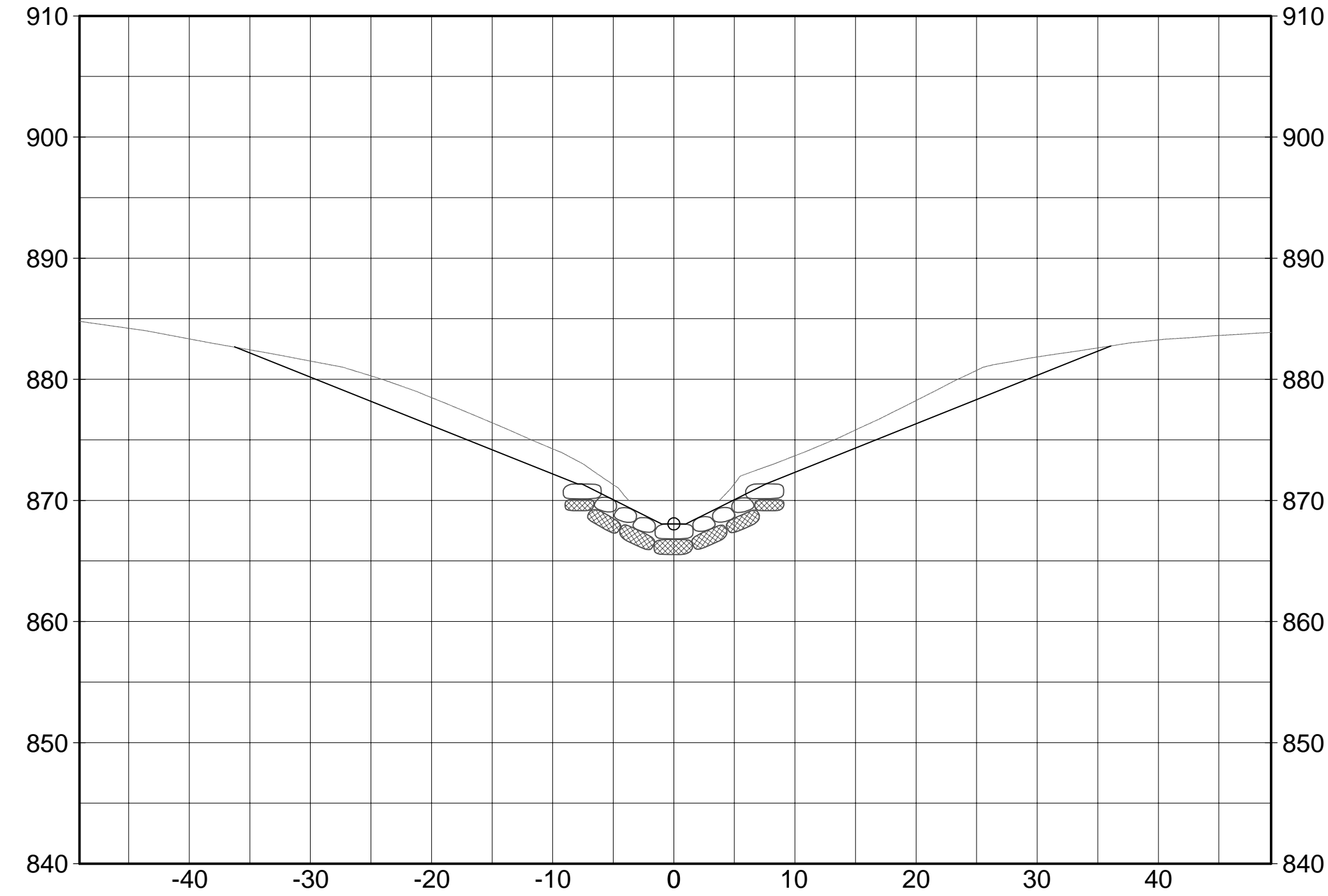
Project No.:	100-ATL-T31130
Designed By:	RST
Drawn By:	RST
Checked By:	JTS

C10



NOT FOR CONSTRUCTION

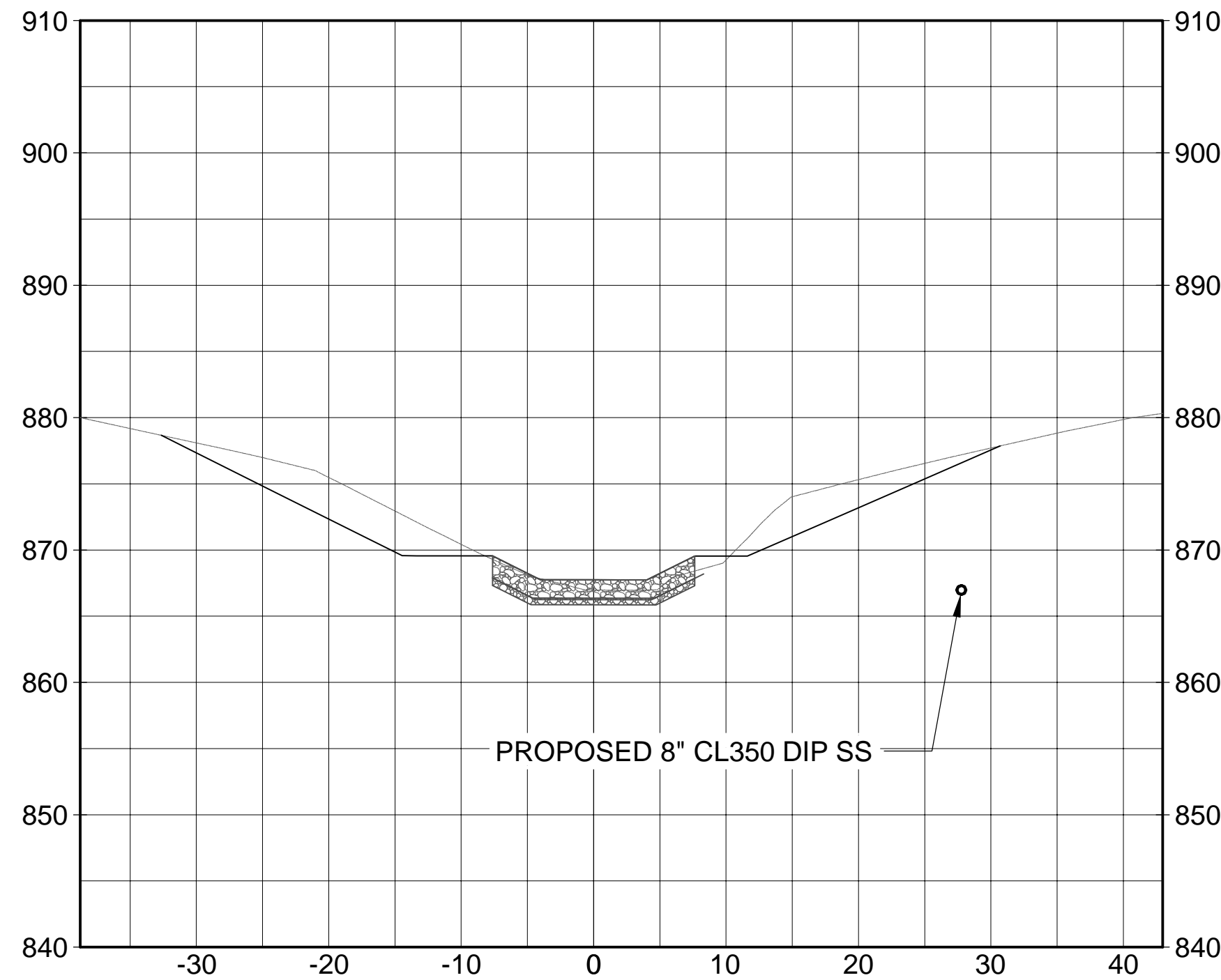
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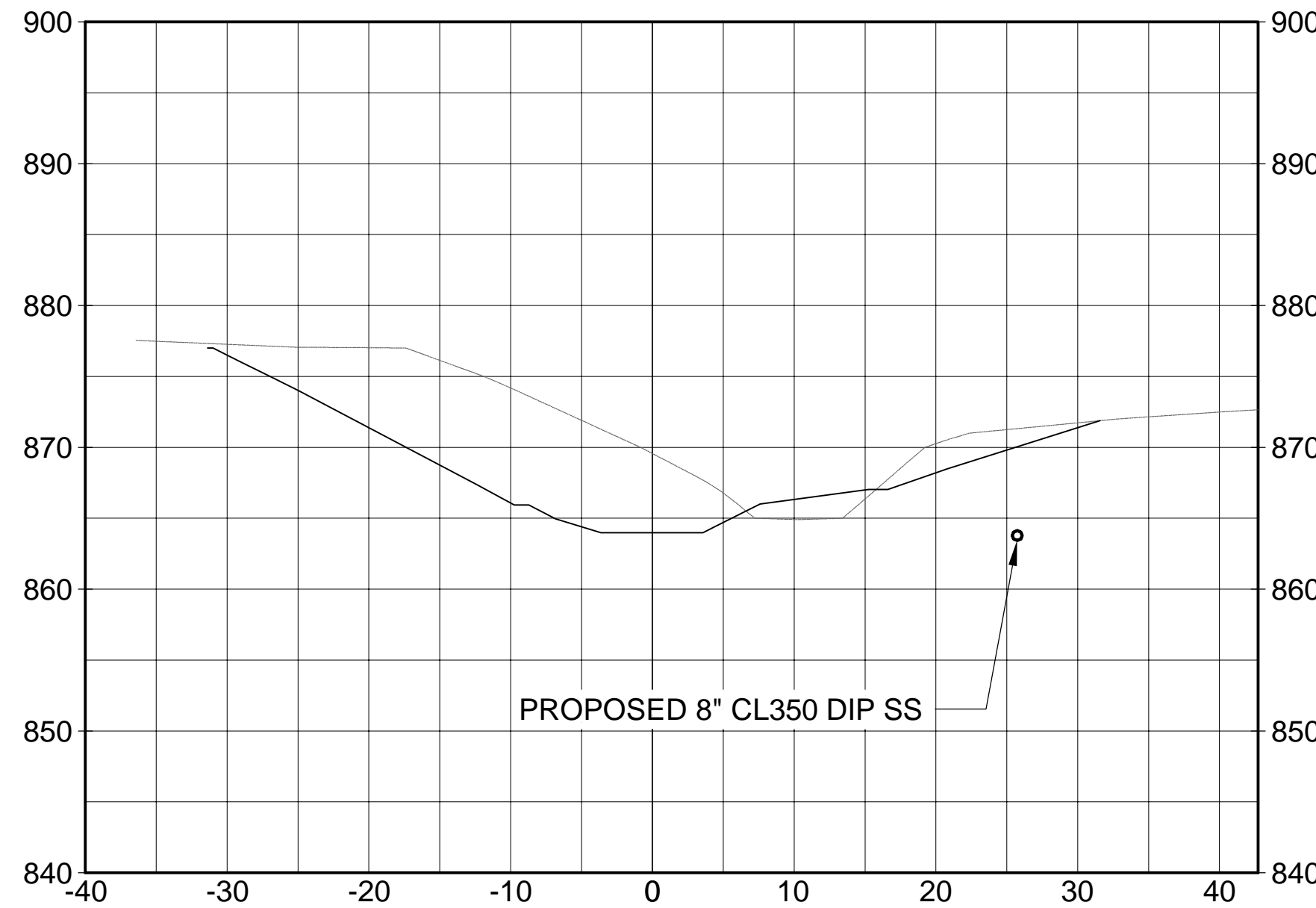
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0+66.62



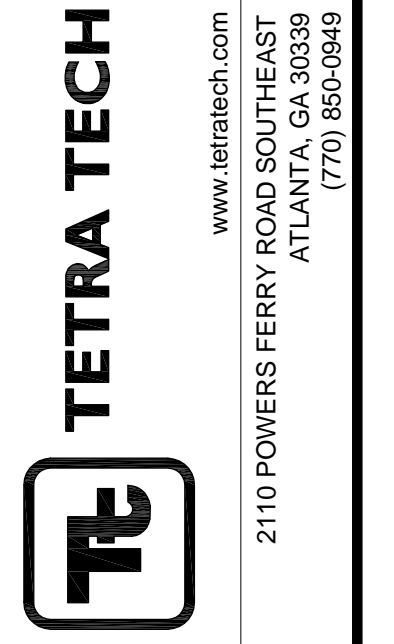
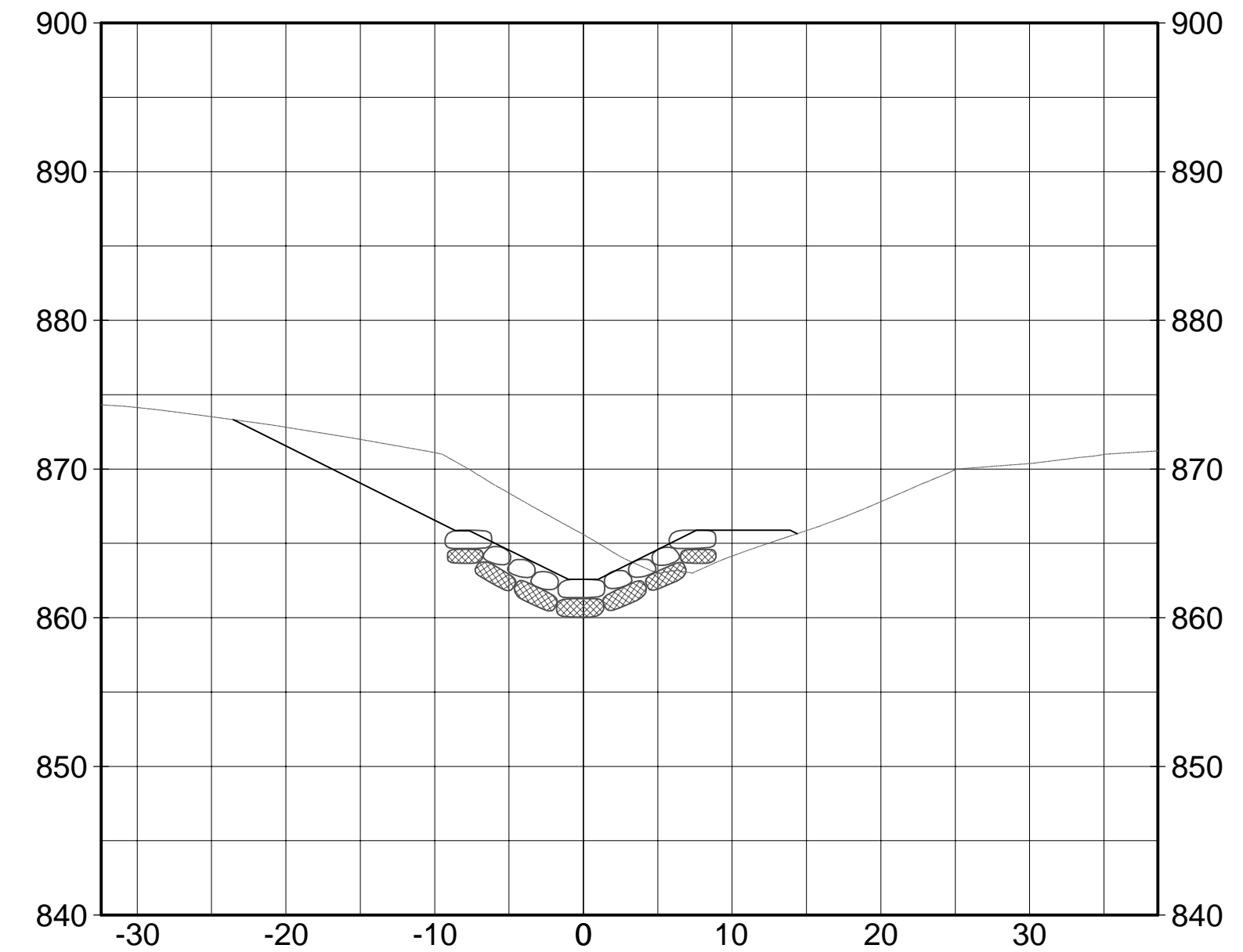
SL-3
1+36.41



SL-4
2+77.96



SL-5
3+34.01

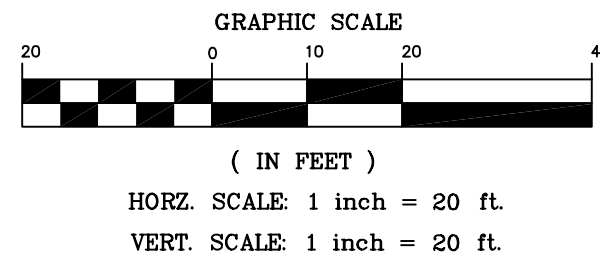


MARK	DATE	DESCRIPTION
	8-1-15	FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 Project No.: 100-ATL-T31130
 Designed By: RST
 Drawn By: RST
 Checked By: JTS

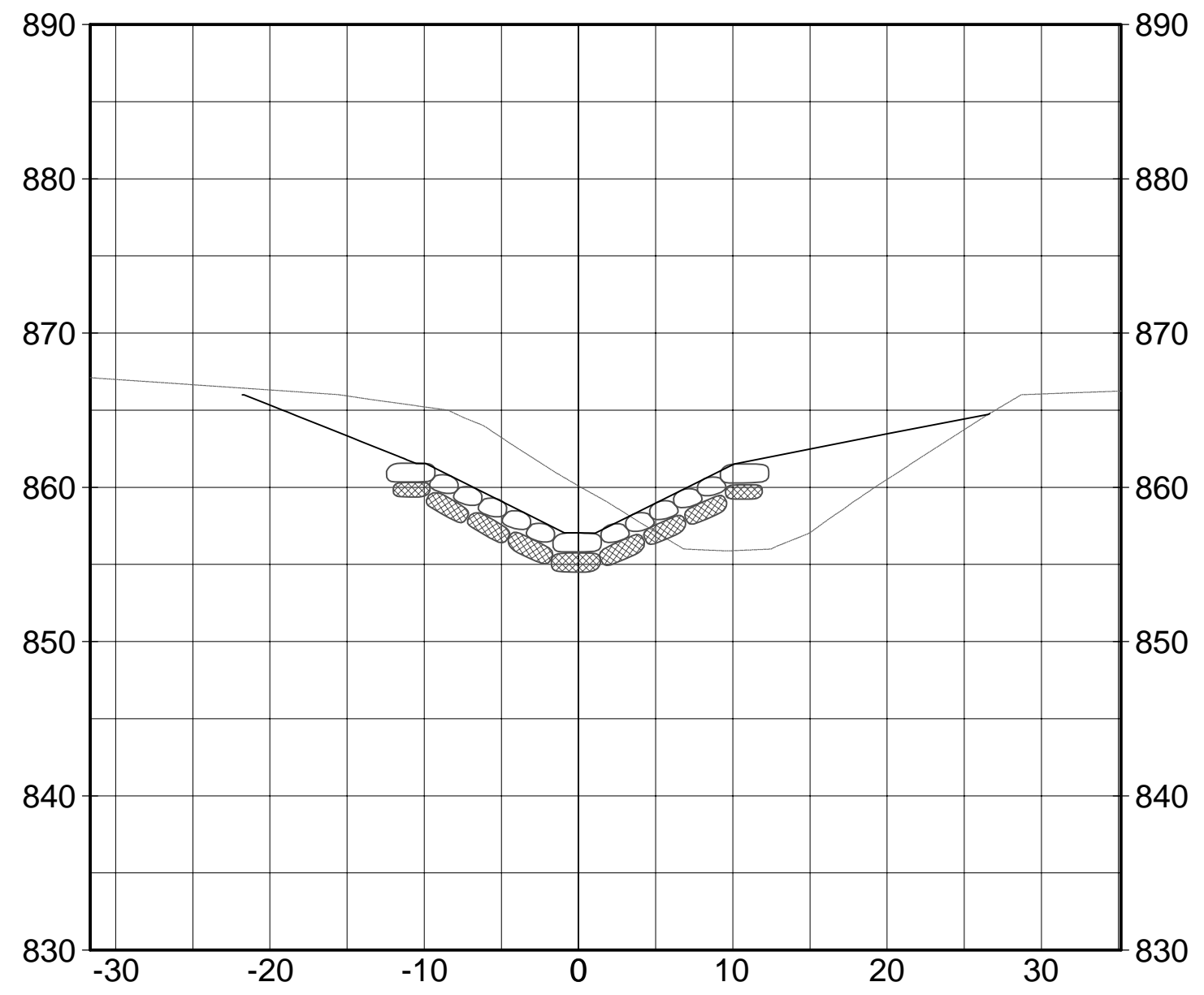
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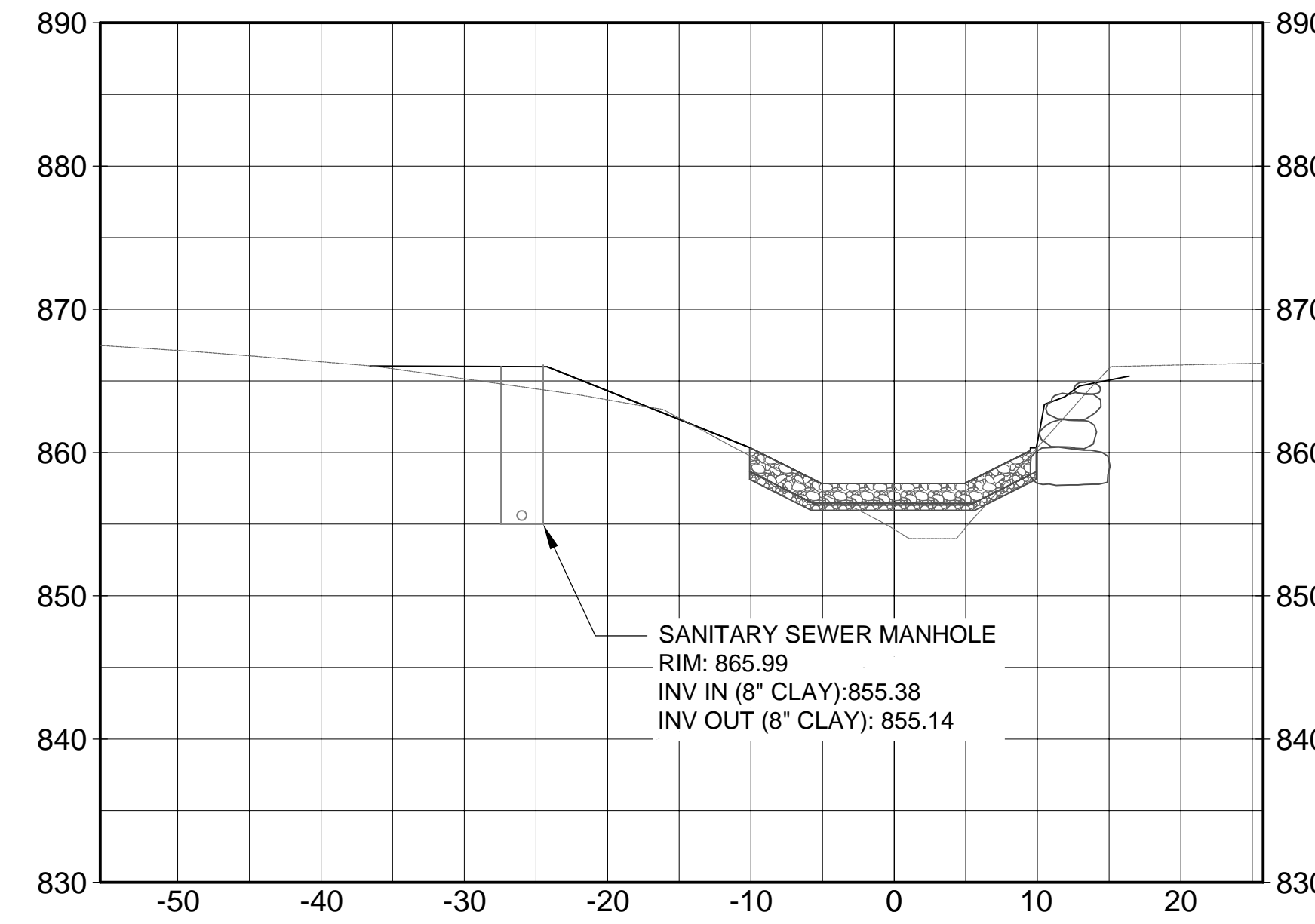


NOT FOR CONSTRUCTION

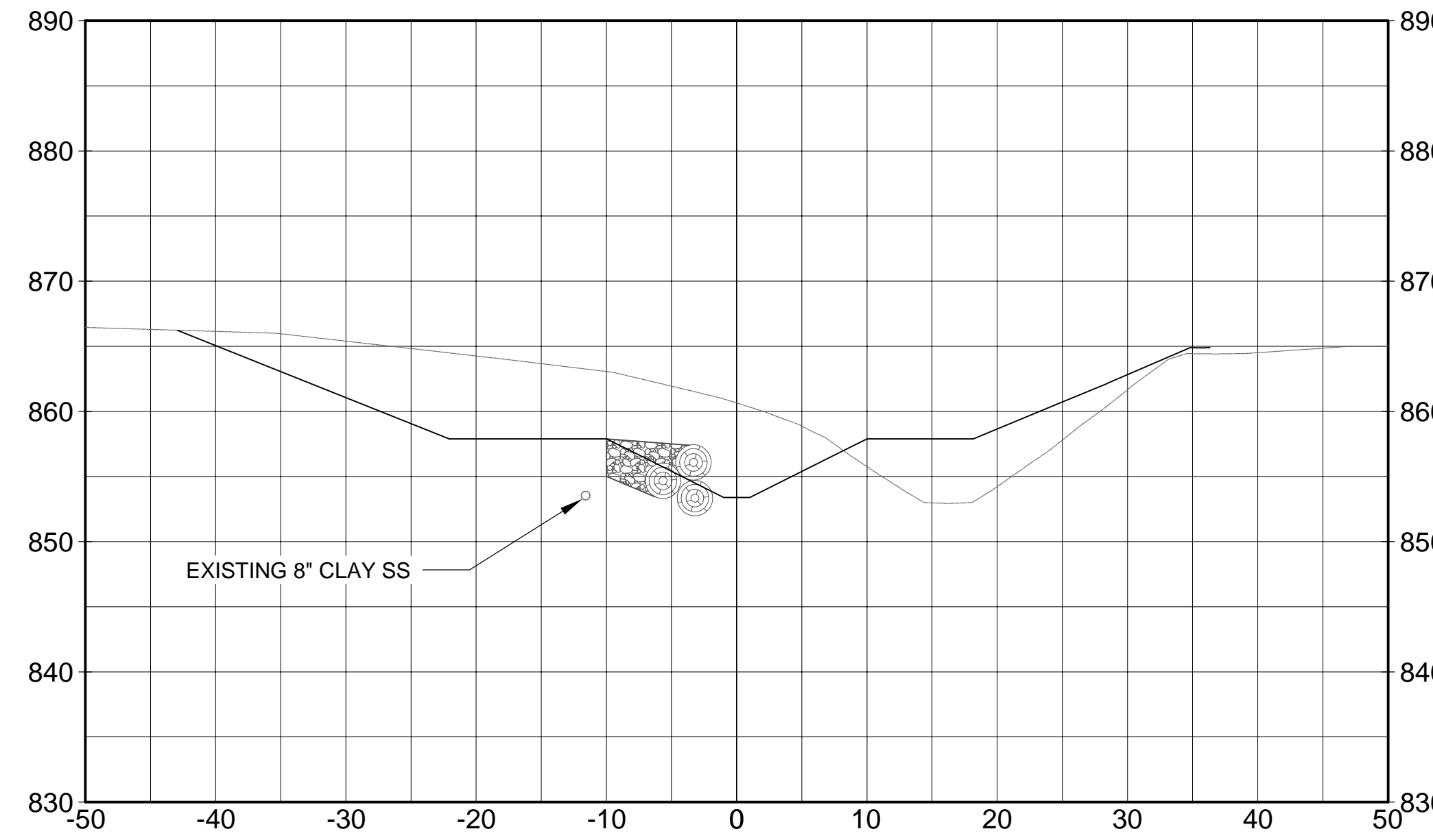
SL-6
6+01.84



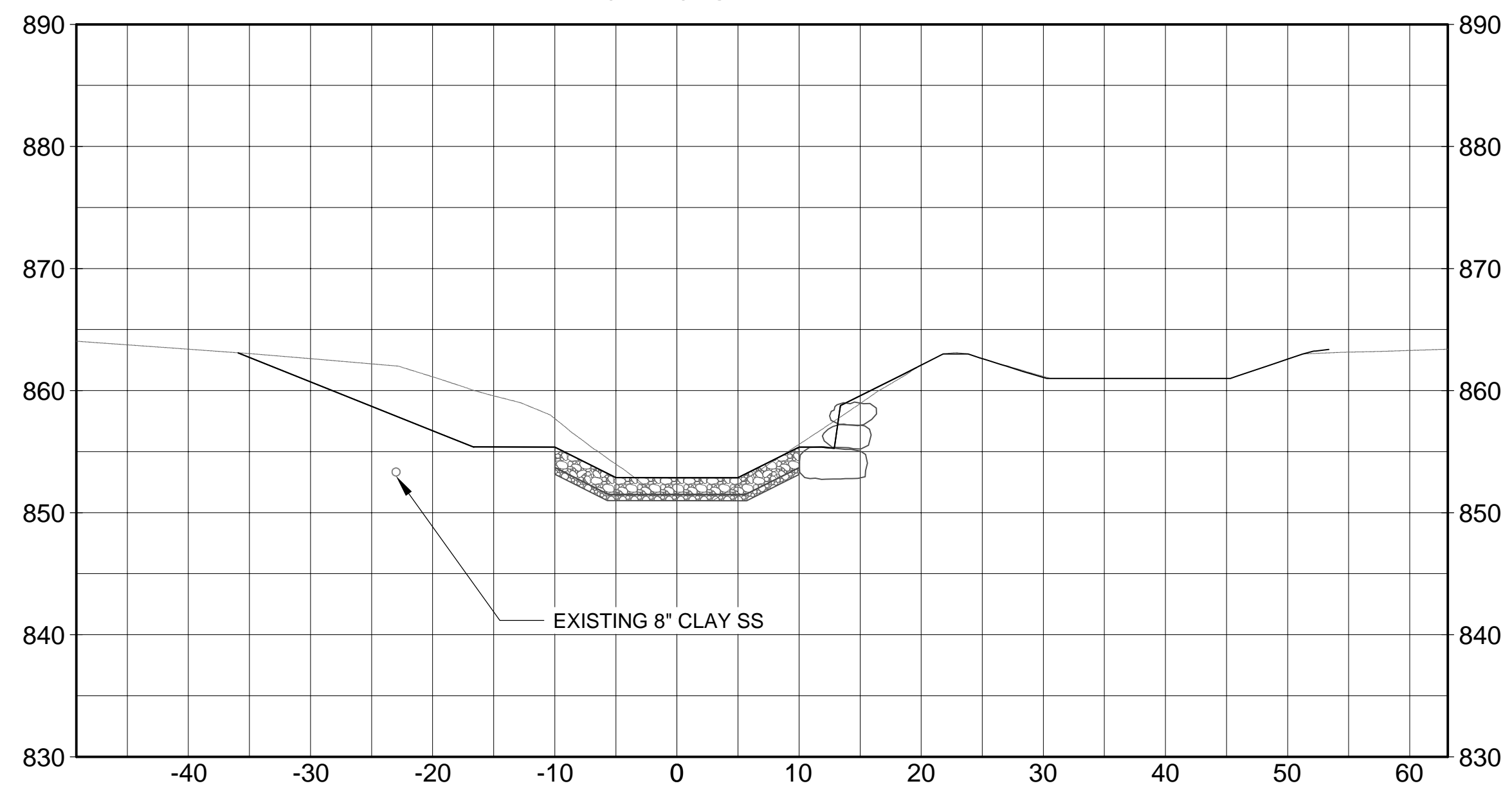
SL-7
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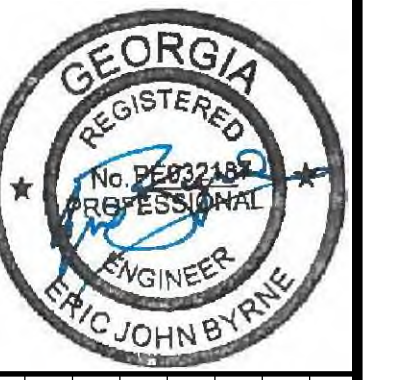
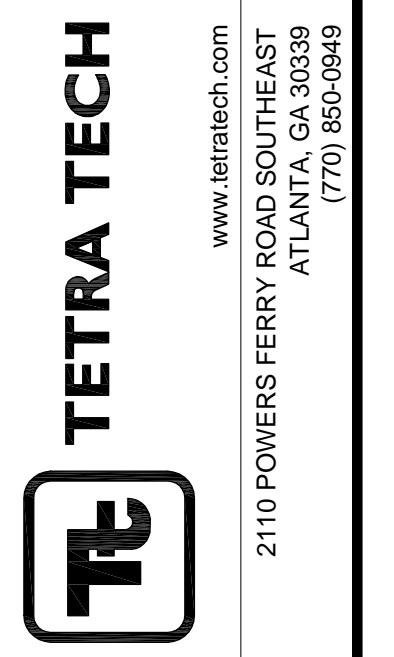
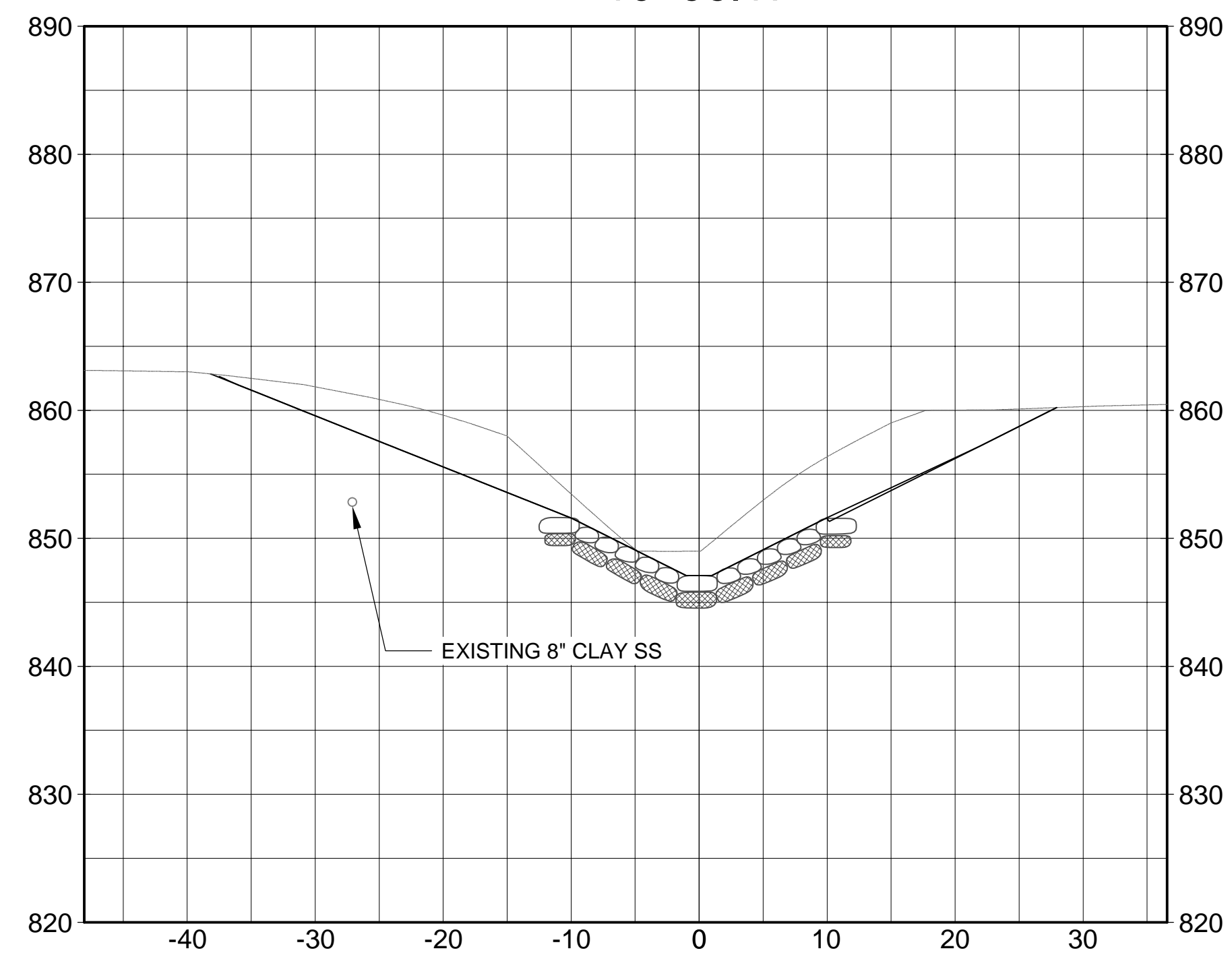
SL-8
8+01.38



SL-9
9+29.62



SL-10
10+96.17



MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

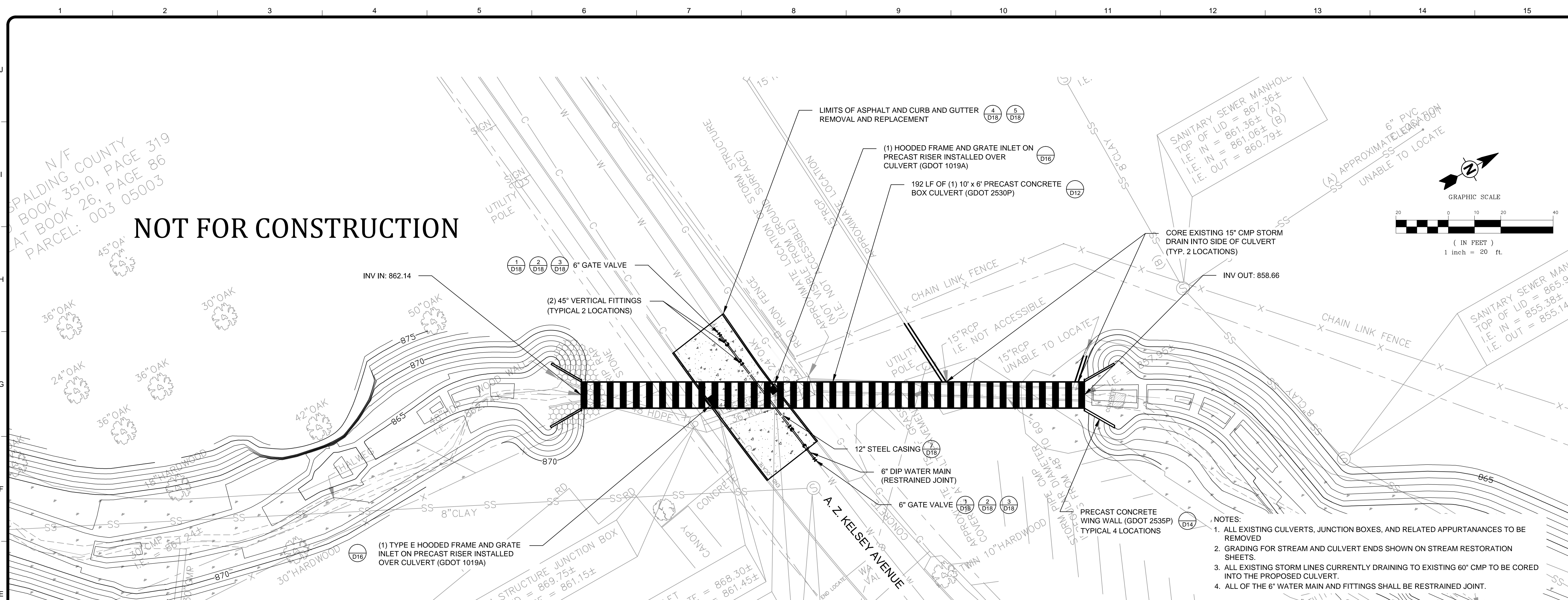
Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
 STREAM CROSS SECTIONS
 LOWER REACH

Project No.: 100-ATL-T31130
 Designed By: RST
 Drawn By: RST
 Checked By: JTS

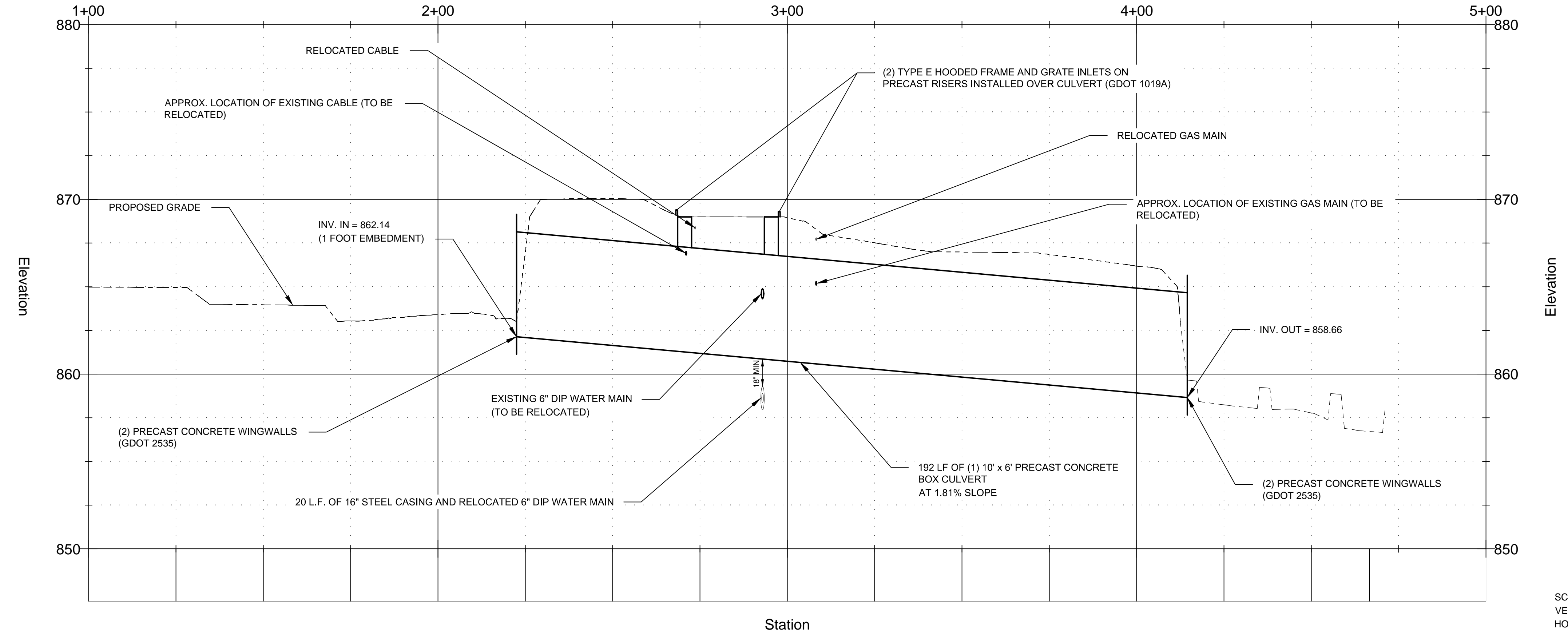
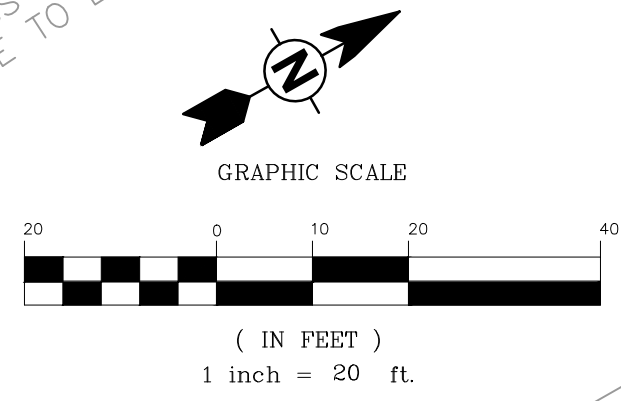
C12

Tuesday, July 28, 2015 1:14:48 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_S\Final_Plans\Model_Files\7-28-15\C4_CS_C10_C11_STRM_RES_v8.DWG LAYOUT: SECTIONS-LOWER USER NAME: TUCKER, BOBBY

Thursday, July 30, 2015 2:01:46 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_Sit\Final_Plans\Mobil_Files7-28-15\from_DavidCADModelFiles\C-SP-Culvert Plan and Profile.dwg LAYOUT: KELSEY ST USER NAME: TUCKER, BOBBY



NOT FOR CONSTRUCTION



- NOTES:
1. ALL EXISTING CULVERTS, JUNCTION BOXES, AND RELATED APPURTANANCES TO BE REMOVED
 2. GRADING FOR STREAM AND CULVERT ENDS SHOWN ON STREAM RESTORATION SHEETS.
 3. ALL EXISTING STORM LINES CURRENTLY DRAINING TO EXISTING 60" CMP TO BE CORED INTO THE PROPOSED CULVERT.
 4. ALL OF THE 6" WATER MAIN AND FITTINGS SHALL BE RESTRAINED JOINT.

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ATLANTA, GA 30339
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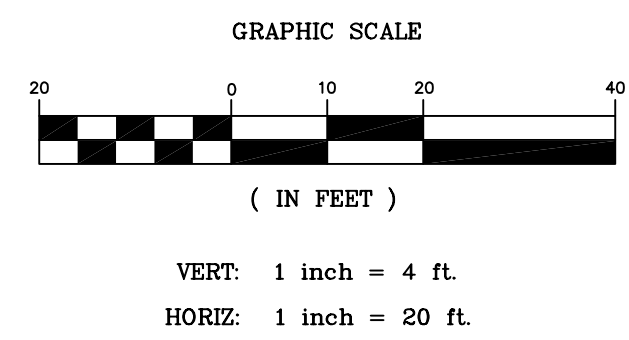
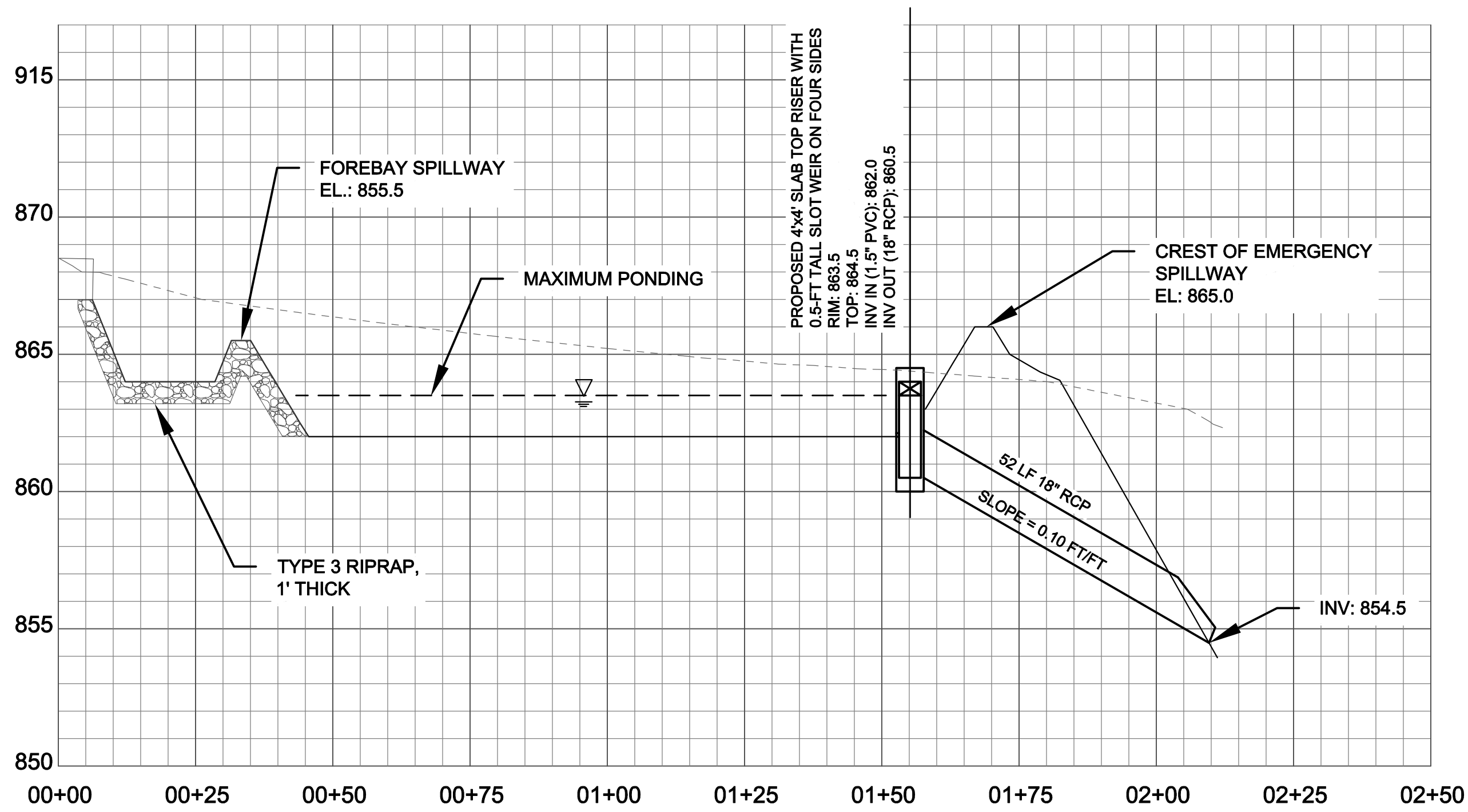
REGISTERED PROFESSIONAL ENGINEER
LAUREN SPRINGER

MARK	DATE	DESCRIPTION
DL	8-1-15	FINAL CONSTRUCTION PLANS

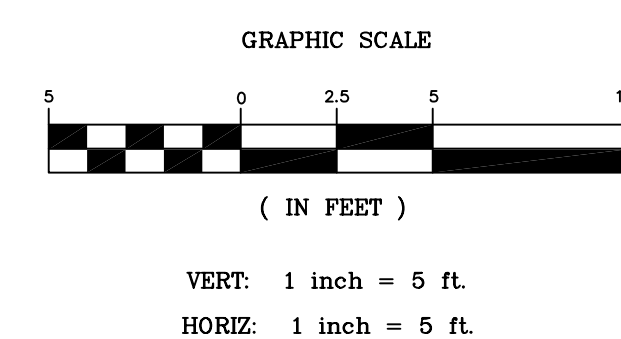
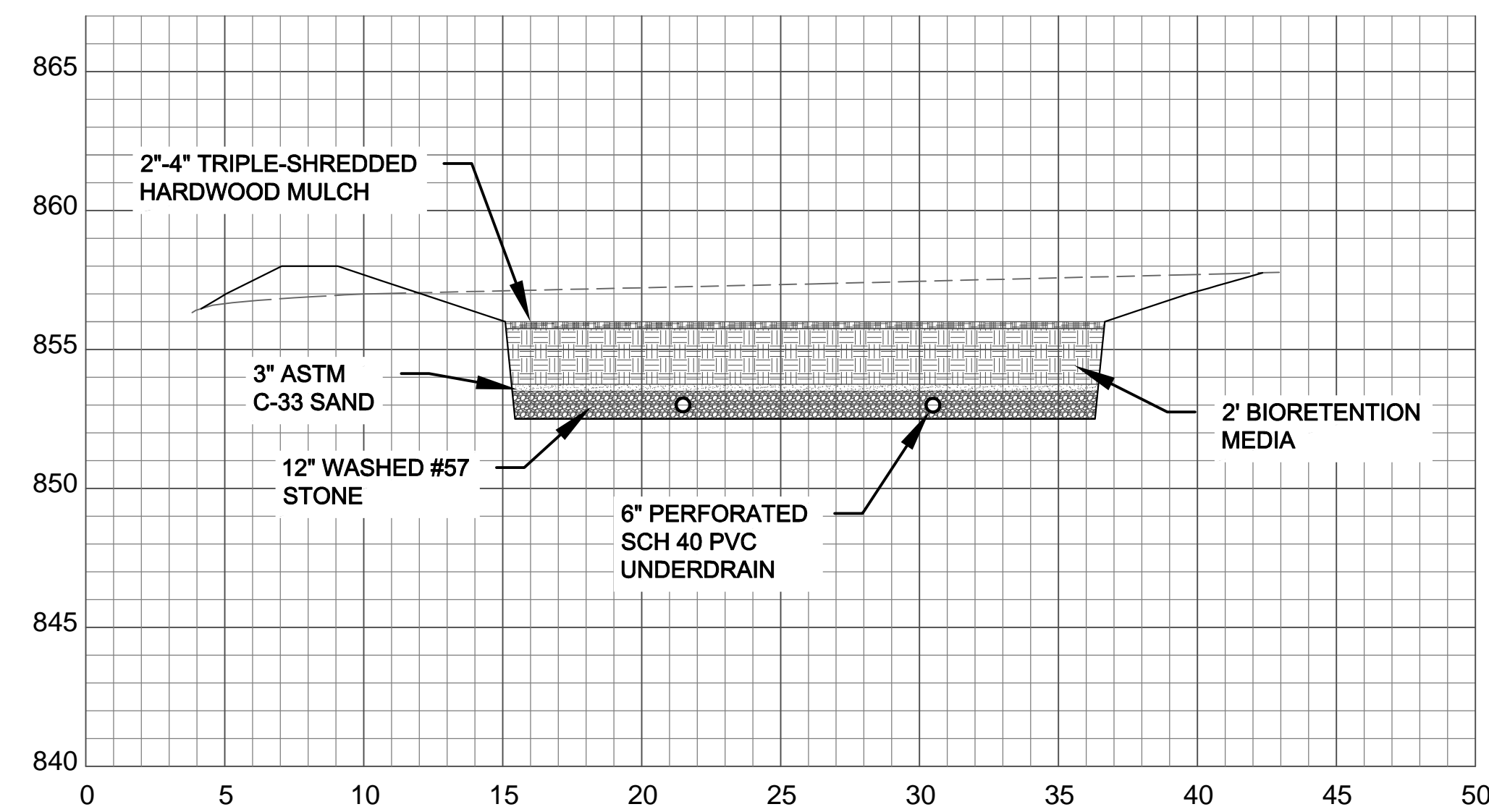
Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A.Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
A.Z. KELSEY AVE. CULVERT
DETOUR PLAN

Project No.:	100-RTP-T31130
Designed By:	DL
Drawn By:	DL
Checked By:	LS

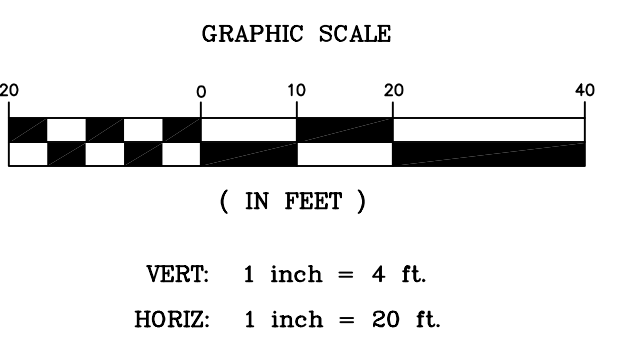
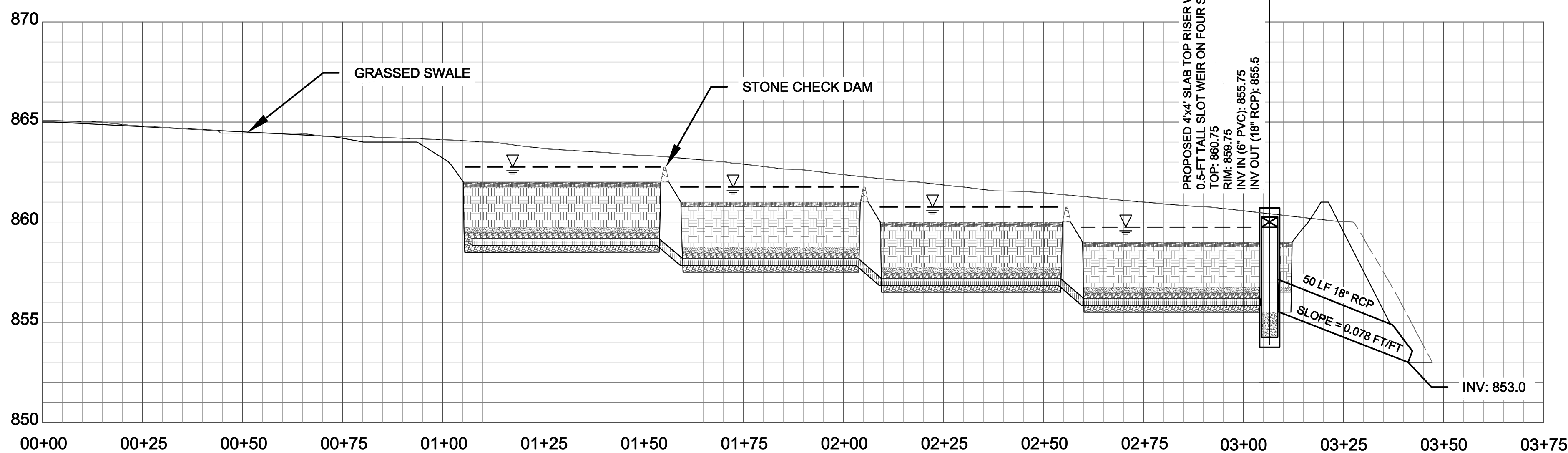
C13



PROFILE A - A'



SECTION C - C'



PROFILE B - B'

BIORETENTION MEDIA NOTES:

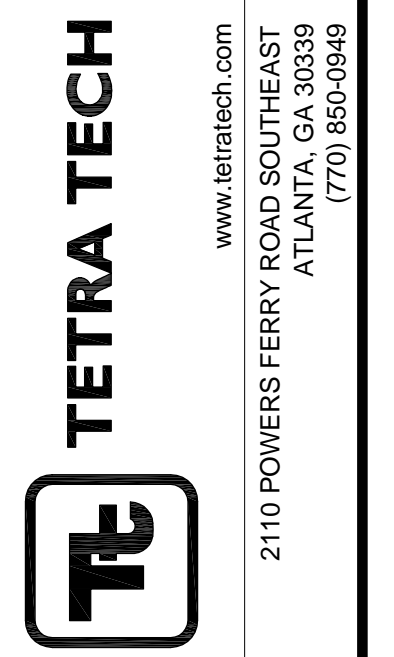
1. THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM, OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME.
2. SOILS SHOULD FALL WITHIN THE SM, ML, SC CLASSIFICATIONS OR THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS).
3. A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY SHOULD BE USED FOR DESIGN).
4. THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER.
5. BRUSH OR SEEDS FROM NOXIOUS WEEDS, SUCH AS JOHNSON GRASS, MUGWORT, NUTSEDGE, AND CANADIAN THISTLE SHOULD NOT BE PRESENT IN THE SOILS.
6. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12 TO 18", LOOSELY COMPACTED (TAMPED LIGHTLY WITH A DOZER OR BACKHOE BUCKET).

BIORETENTION MEDIA CHARACTERISTICS:

PARAMETER	VALUE
PH RANGE	5.2 TO 7.00
ORGANIC MATTER	1.5 TO 4.0%
MAGNESIUM	35 LBS. PER ACRE, MINIMUM
PHOSPHORUS (P2O5)	75 LBS. PER ACRE, MINIMUM
POTASSIUM (K2O)	85LBS. PER ACRE, MINIMUM
SOLUBLE SALTS	500 PPM
CLAY	10 TO 25%
SILT	30 TO 55%
SAND	35 TO 60%

NOT FOR CONSTRUCTION

Tuesday, July 28, 2015 1:40:50 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_S\Final_Plans\BMPs_Profile.dwg LAYOUT: PROFILE_BMPS USER NAME: TUCKER, BOBBY



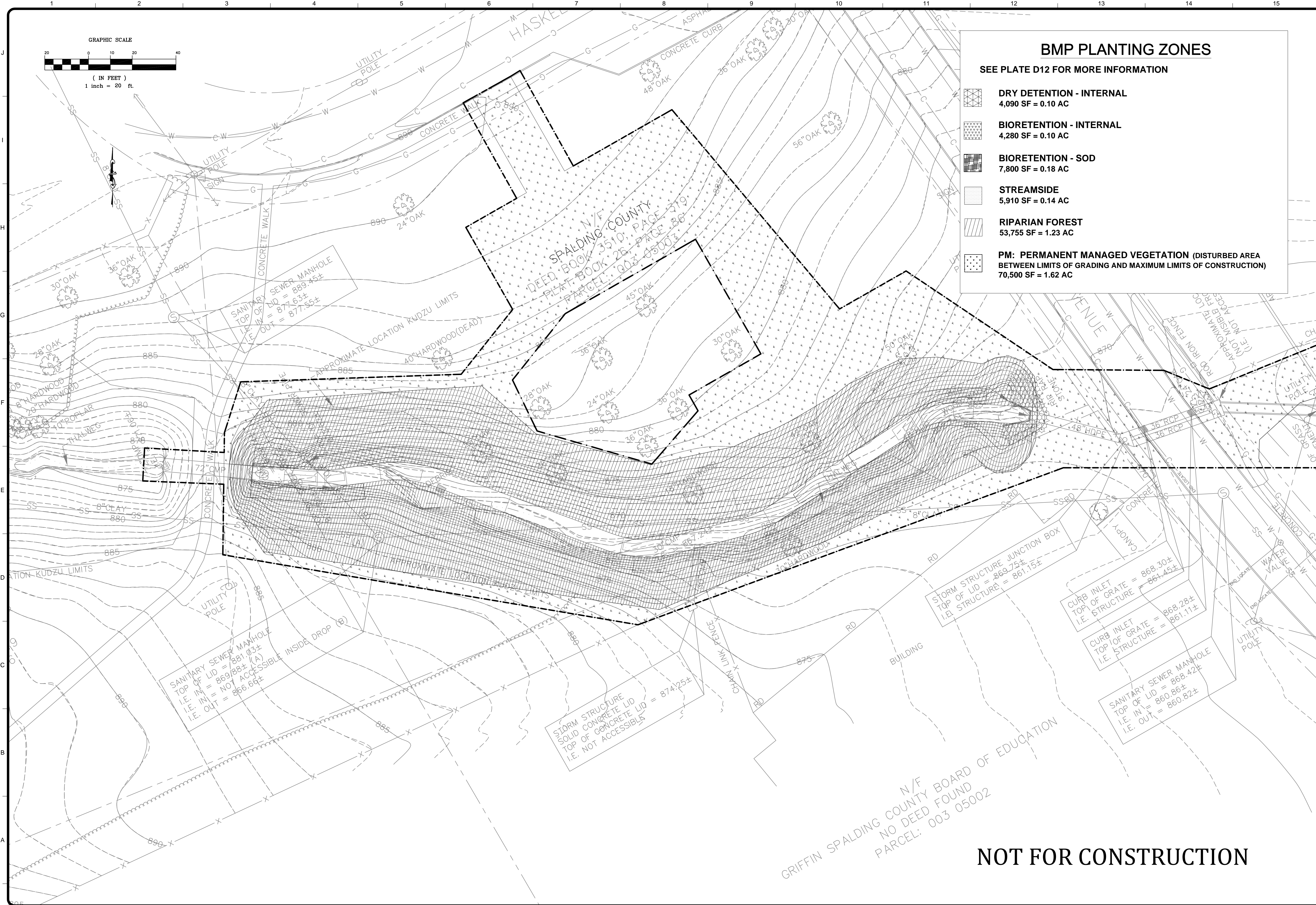
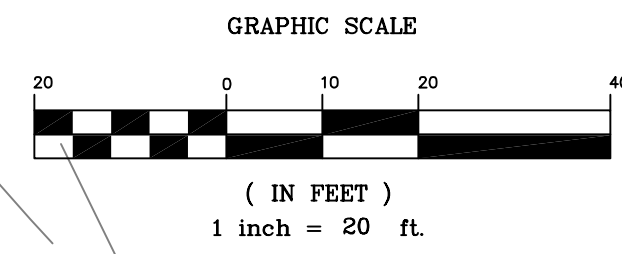
MARK	DATE	DESCRIPTION	BY	RST
	8-1-15	FINAL CONSTRUCTION PLANS		

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
HYDRAULIC PROFILES
STORMWATER BMPS

Project No.:	100-ATL-T31130
Designed By:	RST
Drawn By:	RST
Checked By:	JTS

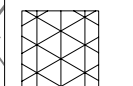


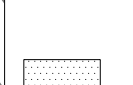
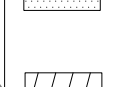
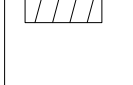
C15

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BMP PLANTING ZONES

SEE PLATE D12 FOR MORE INFORMATION

-  **DRY DETENTION - INTERNAL**
4,090 SF = 0.10 AC
-  **BIORETENTION - INTERNAL**
4,280 SF = 0.10 AC
-  **BIORETENTION - SOD**
7,800 SF = 0.18 AC
-  **STREAMSIDE**
5,910 SF = 0.14 AC
-  **RIPARIAN FOREST**
53,755 SF = 1.23 AC
-  **PM: PERMANENT MANAGED VEGETATION (DISTURBED AREA BETWEEN LIMITS OF GRADING AND MAXIMUM LIMITS OF CONSTRUCTION)**
70,500 SF = 1.62 AC

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(770) 850-0949

Griffin
Growing Together

GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 253248
ERIC JOHN BYRNE

MARK	DATE	DESCRIPTION
RST	8-1-15	FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

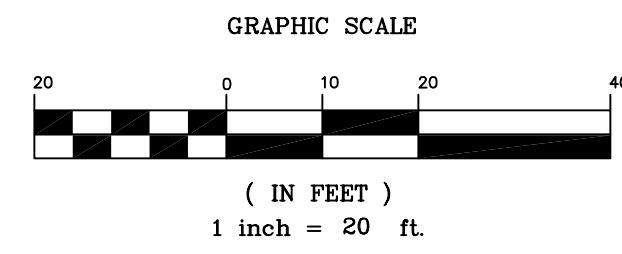
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
PLANTING PLAN
UPPER STREAM

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

C16

NOT FOR CONSTRUCTION

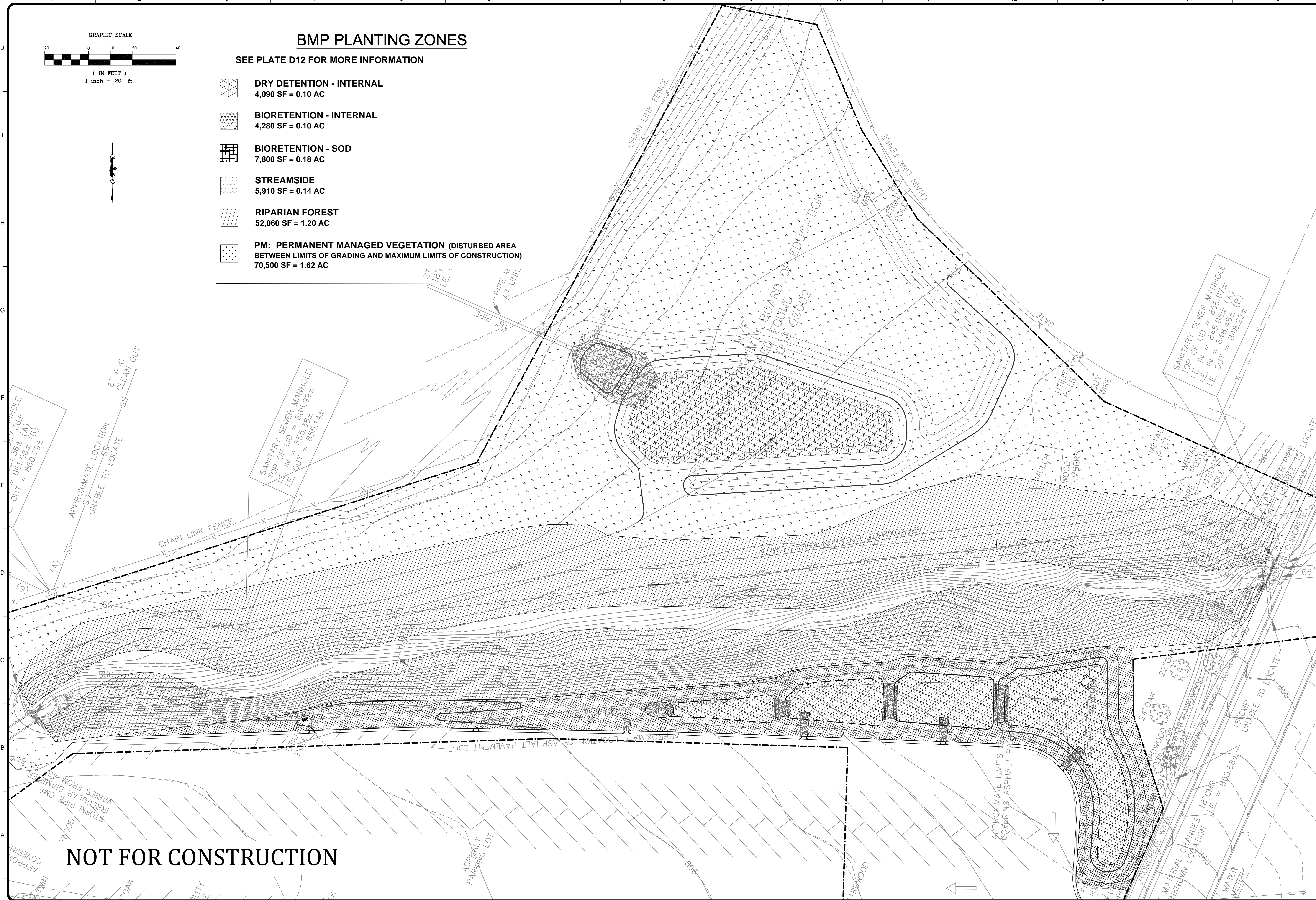
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BMP PLANTING ZONES

SEE PLATE D12 FOR MORE INFORMATION

- DRY DETENTION - INTERNAL**
4,090 SF = 0.10 AC
- BIORETENTION - INTERNAL**
4,280 SF = 0.10 AC
- BIORETENTION - SOD**
7,800 SF = 0.18 AC
- STREAMSIDE**
5,910 SF = 0.14 AC
- RIPARIAN FOREST**
52,060 SF = 1.20 AC
- PM: PERMANENT MANAGED VEGETATION (DISTURBED AREA BETWEEN LIMITS OF GRADING AND MAXIMUM LIMITS OF CONSTRUCTION)**
70,500 SF = 1.62 AC



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GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 252248
ERIC JOHN BYRNE

MARK	DATE	DESCRIPTION	BY	RST
	8-1-15	FINAL CONSTRUCTION PLANS	RST	

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

**A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
PLANTING PLAN
LOWER STREAM AND BMPS**

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

C17

CERTIFICATIONS

PLAN CERTIFICATION

I certify that the permittee's Erosion, Sedimentation and Pollution Control (ESPC) Plan provides for an appropriate and comprehensive system of best management practices as required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. GAR 100001. I certify under penalty of law that this Plan was prepared after a visit to the locations described herein by myself or an authorized agent, under my supervision.

Name: ERIC BYRNE Seal

Title: PROJECT ENGINEER - CIVIL ENGINEER OF RECORD

Certification Number: 68887

Signature: _____ Date: _____

DESIGN PROFESSIONAL INSPECTION AND/OR DELEGATION OF AUTHORITY

As required in Permit No. GAR 100001 (Part IV, A.7.) an inspection of the installation of the initial control measures (BMPs) by the design professional shall be conducted within seven (7) days after the initial construction activities commence. This inspection shall determine if the identified BMPs have been installed and are being maintained as designed. The results of the inspection shall be submitted to the Primary Permittee (Owner and/or Operator/Contractor) within seven (7) days after the inspection. The Primary Permittee shall correct all deficiencies within two (2) business days of receipt of the inspection report; unless weather related site conditions are such that additional time is required. Under the above certification, I, Eric Byrne:

agree to conduct the required inspection.
 agree and delegate to the following alternate design professional to conduct the require inspection.

Name: ERIC BYRNE Title: CERTIFIED DESIGN PROFESSIONAL (68887), GA

Signature: _____ Date: _____

PLAN CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or person's who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: JAMES MOORE Title: DEPUTY DIRECTOR - STORMWATER

Signature: _____ Date: _____

Primary Permittee:

JAMES MOORE
 DEPUTY DIRECTOR - STORMWATER
 100 SOUTH HILL ST.
 GRIFFIN, GA 30223
 MOBILE: 678-233-4367

24-Hour Contact:

JAMES MOORE
 DEPUTY DIRECTOR - STORMWATER
 CITY OF GRIFFIN
 MOBILE: 678-233-4367

SCHEDULE:

THE CONSTRUCTION PROJECT IS ANTICIPATED TO BE COMPLETED BY SEPTEMBER 30, 2015. THE FOLLOWING CHART PROVIDES DETAILS OF THE APPROXIMATE TIMELINE FOR PROJECT COMPLETION:

ACTIVITY OR PHASE	DATE
1. Advertise for bids	September 1, 2014
2. Bids due	October 1, 2014
3. Award contract	November 1, 2014
4. Pre-construction meeting	February 1, 2015
5. Install sediment and erosion control practices	April 1, 2015
6. Close AZ Kelsey Ave and implement traffic control	April 8, 2015
7. Replace culvert at AZ Kelsey and reopen AZ Kelsey Ave	June 27, 2015
8. Complete grading and sewer realignment in upper restoration reach	July 31, 2015
9. Close N. 3rd Street and implement traffic control	July 31, 2015
10. Replace N. 3rd Street culvert and re-open	September 30, 2015
11. Complete grading lower restoration reach/stormwater BMPs	August 30, 2015
12. Install permanent vegetation	October 30, 2015
13. Project closeout	January 30, 2016

NOTES:

- OWNERS OR OPERATORS OR BOTH SHALL SUBMIT A NOTICE OF INTENT (NOI) IN ACCORDANCE WITH NPDES REQUIREMENTS AT LEAST 14 DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
- NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.**
- AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.**
- WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.**
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.**
- EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.**
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.**
- THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION.**
- CONTRACTOR SHALL CLEAN AND MAINTAIN SEDIMENT TRAPS PERIODICALLY. ALL STORM DRAIN STRUCTURES SHALL BE FREE OF SEDIMENTS AND OTHER DELETERIOUS MATERIALS BEFORE SECURING TOPS & COVERS FOR FINAL GRADING.
- BMP REMOVAL
 - EVALUATE SITE TO DETERMINE WHEN BMPs ARE NO LONGER NEEDED (THE AREA HAS STABILIZED - POTENTIAL OF SEDIMENT LADEN WATER EXITING THE AREA HAS PASSED)
 - REMOVE SEDIMENT BUILDUP IN FRONT OF BMP
 - REMOVE BMP
 - RE-VEGETATE AREA DISTURBED BY BMP REMOVAL

INITIAL PHASE

PRIOR TO THE LAND DISTURBING CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE AREA SITE DEVELOPMENT INSPECTOR.

THE CONTRACTOR SHALL OBSERVE THE PROJECT SEQUENCE SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN CAREFUL SCHEDULING AND PERFORMANCE TO ENSURE THAT LAND STRIPPED OF ITS NATURAL COVER IS EXPOSED ONLY IN SMALL QUANTITIES.

A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE AT ALL TIMES.

PRIOR TO COMMENCING LAND DISTURBING ACTIVITY, THE LIMITS OF LAND DISTURBANCE AND ALL STREAM BUFFERS SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.

PRIOR TO ANY OTHER CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED AT EACH POINT OF ENTRY TO OR FROM THE SITE OR ONTO ANY PUBLIC ROADWAY. THE CONSTRUCTION EXIT, CONSISTING OF A MINIMUM PAD SIZE OF 20 FEET BY 50 FEET WITH A MINIMUM OF 6" THICK STONE, SHALL BE PLACED AS SHOWN ON THE PLAN AND FOLLOWING THE CONSTRUCTION SEQUENCE SHOWN ON THE PLAN. THE STONE SIZE SHOULD CONSIST OF COURSE AGGREGATE BETWEEN 1-1/2" & 3-1/2" IN DIAMETER AND OVERLAID ON A GEOTEXTILE UNDERLINER. THE GEOTEXTILE UNDERLINER SHALL MEET THE REQUIREMENTS OF AASHTO M288-96, SECTION 7.3 SEPARATION REQUIREMENTS.

TWO ROWS OF TYPE "S" SILT FENCE SHOULD BE INSTALLED AT THE LOCATIONS SHOWN ON THE PLAN AND FOLLOWING THE CONSTRUCTION SEQUENCE SHOWN ON THE PLAN. THE SILT FENCE SHOULD BE PLACED IN ACCORDANCE WITH THE MANUAL FOR EROSION CONTROL IN GEORGIA, TABLE 6-27.2. THE SILT FENCE SHOULD BE KEPT ERECT AT ALL TIMES AND REPAIRED WHEN REQUESTED BY THE SITE INSPECTOR OR THE PROJECT DESIGN PROFESSIONAL OF RECORD. SILT SHOULD BE REMOVED WHEN ACCUMULATION REACHES 1/2 HEIGHT OF THE BARRIER. THE SILT FENCE SHOULD BE INSPECTED DAILY FOR ANY FAILURES. ANY FAILURES OF SAID FENCING SHOULD BE REPAIRED IMMEDIATELY.

TREE PROTECTION FENCING, AS INDICATED WITHIN THE PLANS, SHOULD BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBANCE ACTIVITY AND MAINTAINED UNTIL PERMANENT VEGETATION IS INSTALLED. THE TREE PROTECTION FENCING SHOULD BE INSPECTED DAILY. ANY FAILURES OF SAID FENCING SHOULD BE REPAIRED IMMEDIATELY.

GRADING PHASE

THE FOLLOWING EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE PRELIMINARY GRADING PHASE OF CONSTRUCTION:

DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN CAREFUL SCHEDULING AND PERFORMANCE TO ENSURE THAT LAND STRIPPED OF ITS NATURAL COVER IS EXPOSED ONLY IN SMALL QUANTITIES AND THEREFORE LIMITED DURATIONS, BEFORE PERMANENT EROSION PROTECTION IS ESTABLISHED.

EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER THE GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE DESIGN PROFESSIONAL IMMEDIATELY.

TEMPORARY DIKES SHALL BE INSTALLED ABOVE AND BELOW THE WORK AREA AS SHOWN ON THE PLAN AND FOLLOWING THE CONSTRUCTION SEQUENCE SHOWN ON THE PLAN. THE TEMPORARY DIKES SHOULD BE PLACED IN ACCORDANCE WITH THE DETAIL SHOWN ON PLATE D-11. SILT SHOULD BE REMOVED WHEN ACCUMULATION REACHES 1/2 HEIGHT OF THE BARRIER. THE DIKES SHOULD BE INSPECTED DAILY FOR ANY FAILURES. ANY FAILURES OF THE DIKE(S) SHOULD BE REPAIRED IMMEDIATELY.

PUMP-AROUND EQUIPMENT SHALL BE ARRANGED AS SHOWN IN THE PLAN AND FOLLOWING THE CONSTRUCTIONS SEQUENCE SHOWN ON THE PLAN. PUMP-AROUND OPERATIONS SHOULD BE PERFORMED BY PLACING THE INTAKE LINE ON THE UPSTREAM SIDE OF THE UPSTREAM DIKE AS SHOWN IN THE DETAIL, PLATE D-11. AND PUMP THE WATER INTO THE DOWNSTREAM CHANNEL BELOW THE DOWNSTREAM DIKE. USING A SECOND DEWATERING PUMP, THE WORK AREA SHALL BE DEWATERED TO MAINTAIN A DRY WORK AREA. WATER PUMPED FROM THE WORK AREA SHALL PASS THROUGH A SILT BAG PRIOR TO DISCHARGE BELOW THE DOWNSTREAM DIKE AS SHOWN ON THE PLANS AND IN THE DETAIL, PLATE D-11.

A TEMPORARY ROCK FILTER DAM SHALL BE INSTALLED BELOW THE DOWNSTREAM DIKE AS SHOWN ON THE PLAN AND FOLLOWING THE CONSTRUCTION SEQUENCE SHOWN ON THE PLAN. THE TEMPORARY ROCK FILTER DAM SHOULD BE PLACED IN ACCORDANCE WITH THE DETAIL SHOWN ON PLATE D-8 AND IN ACCORDANCE WITH . SILT SHOULD BE REMOVED WHEN ACCUMULATION REACHES 1/2 HEIGHT OF THE BARRIER. THE ROCK FILTER DAM SHOULD BE INSPECTED DAILY FOR ANY FAILURES. ANY FAILURES OF THE ROCK FILTER DAM SHOULD BE REPAIRED IMMEDIATELY.

AFTER INSTALLATION OF INITIAL EROSION CONTROL MEASURES, THE SITE CONTRACTOR SHALL SCHEDULE AN INSPECTION BY THE PROJECT DESIGN PROFESSIONAL. INSPECTIONS ARE REQUIRED FOR EACH CONSTRUCTION SEQUENCE SHOWN ON THE PLAN. NO OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE PROJECT DESIGN PROFESSIONAL APPROVED THE INSTALLATION OF SAID EROSION CONTROL MEASURES. IF UNFORESEEN CONDITIONS EXIST IN THE FIELD THAT WARRANT ADDITIONAL EROSION CONTROL MEASURES, THE CONTRACTOR MUST CONSTRUCT ANY ADDITIONAL EROSION CONTROL DEVICES DEEMED NECESSARY BY THE SITE INSPECTION.

AFTER APPROVAL OF THE INITIAL EROSION CONTROL INSTALLATION, THE CONTRACTOR MAY PROCEED WITH EXCAVATION.

THE DESIGN PROFESSIONAL WHO PREPARED THE EROSION CONTROL PLANS WILL INSPECT THE INSTALLATION OF BMPs WITHIN SEVEN DAYS AFTER CONSTRUCTION ACTIVITY BEGINS FOR EACH SEQUENCE SHOWN ON THE PLANS.

NO BURN OR BURY PITS SHALL BE PERMITTED ON THE CONSTRUCTION SITE WITHOUT WRITTEN PERMISSION BY THE OWNER AND/OR THE ENGINEER OF RECORD.

ALL SILT FENCE MUST MEET THE REQUIREMENTS OF SECTION 171-TEMPORARY SILT FENCE FOR THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, STANDARD SPECIFICATIONS, LATEST EDITION.

ALL ITEMS IN THIS SECTION OF THE SPECIFICATIONS SHALL MEET THE REQUIREMENTS SET FORTH IN SECTION 161, 162, 163, AND 164 OF THE GEORGIA DOT STANDARD SPECIFICATIONS, FOR ROADS AND BRIDGES.

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 7 DAYS OF LAND DISTURBANCE.

ALL DISTURBED AREAS LEFT MULCHED AFTER 30 DAYS SHALL BE STABILIZED WITH TEMPORARY VEGETATION.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES WHILE ROADWAY AND PARKING LOT IMPROVEMENTS ARE BEING MADE.

TYPE "S" SILT FENCE SHOULD BE INSTALLED AT THE TOE OF ALL FILL SLOPES 10 FEET OR GREATER IN HEIGHT. THE SILT FENCE SHOULD BE PLACED IN ACCORDANCE WITH THE MANUAL FOR EROSION CONTROL IN GEORGIA, TABLE 6-27.2. THE SILT FENCE SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED ON THE SLOPE. SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 1/2 HEIGHT OF THE BARRIER.

FINAL PHASE

THE FOLLOWING EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE FINAL EROSION CONTROL PHASE OF CONSTRUCTION:

UPON COMPLETION OF THE PROJECT AND RECEIPT OF THE CERTIFICATE OF COMPLETION, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND DISPOSE OF THEM UNLESS NOTED OTHERWISE ON PLANS.



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 ATLANTA, GA 30339
 (770) 850-0949



MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
 ESPC PLAN

Project No.:	100-ATL-T31130
Designed By:	RST
Drawn By:	RST
Checked By:	JTS

D1

NOT FOR CONSTRUCTION

Tuesday, July 28, 2015 1:44:57 PM DRAWING: C:\PROJECTS\Griffin\StFinal_Plans\ModeL_Files\7-28-15\D1_D11_gpb_v3_DWG LAYOUT: D1_USER NAME: TUCKER, BOBBY

**EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
STAND ALONE CONSTRUCTION PROJECTS**

SWCD: _____

Project Name: _____ Address: _____

City/County: _____ Date on Plans: _____

Plan Included

Page # Y/N

TO BE SHOWN ON ES&PC PLAN

- | | | |
|--------|--------------------------|---|
| D2 | <input type="checkbox"/> | 1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.
<i>(The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)</i> |
| D1 | <input type="checkbox"/> | 2 Level II certification number issued by the Commission, signature and seal of the certified design professional.
<i>(Signature, seal and Level II number must be on each sheet pertaining to ES&PC plan or the Plan will not be reviewed)</i> |
| N/A | <input type="checkbox"/> | 3 Limit of disturbance shall be no greater than 50 acres at any one time without prior written authorization from the EPD District Office. If EPD approves the request to disturb 50 acres or more at any one time, the plan must include at least 4 of the BMPs listed in Appendix 1 of this checklist.*
<i>(A copy of the written approval by EPD must be attached to the plan for the plan to be reviewed.)</i> |
| D1 | <input type="checkbox"/> | 4 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls. |
| D1 | <input type="checkbox"/> | 5 Provide the name, address and phone number of primary permittee. |
| D4 | <input type="checkbox"/> | 6 Note total and disturbed acreage of the project or phase under construction. |
| C1/D4 | <input type="checkbox"/> | 7 Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees. |
| C1 | <input type="checkbox"/> | 8 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions. |
| D5 | <input type="checkbox"/> | 9 Description of the nature of construction activity. |
| C1 | <input type="checkbox"/> | 10 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary. |
| D5 | <input type="checkbox"/> | 11 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, etc. which may be affected. |
| D1 | <input type="checkbox"/> | 12 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on page 15 of the permit. |
| D1 | <input type="checkbox"/> | 13 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on page 15 of the permit.* |
| D1 | <input type="checkbox"/> | 14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation.**" |
| D1/D4 | <input type="checkbox"/> | 15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation without first acquiring the necessary variances and permits." |
| D1 | <input type="checkbox"/> | 16 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional.**" |
| D1/D4 | <input type="checkbox"/> | 17 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a section 404 permit.**" |
| D1/D4 | <input type="checkbox"/> | 18 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities." |
| D1/D4 | <input type="checkbox"/> | 19 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source." |
| D1/D4 | <input type="checkbox"/> | 20 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding." |
| D4/D7 | <input type="checkbox"/> | 21 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III. C. of the Permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment.* |
| D5 | <input type="checkbox"/> | 22 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 21 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan.* |
| D4 | <input type="checkbox"/> | 23 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited.* |
| D5 | <input type="checkbox"/> | 24 Provide BMPs for the remediation of all petroleum spills and leaks. |
| D5/D10 | <input type="checkbox"/> | 25 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed.* |

D5

D1

D6

D6

D6

D6

D6

D10

D1

D4

C3

NA

D4

D4

D10

D10

D10

D4/D7

D10

D4

D7

D4

D8/D9/D

C16

26 Description of the practices that will be used to reduce the pollutants in storm water discharges.*

27 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).

28 Provide complete requirements of inspections and record keeping by the primary permittee.*

29 Provide complete requirements of sampling frequency and reporting of sampling results.*

30 Provide complete details for retention of records as per Part IV.F. of the permit.*

31 Description of analytical methods to be used to collect and analyze the samples from each location.*

32 Appendix B rationale for NTU values at all outfall sampling points where applicable.*

33 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged.*

34 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the plan may combine all of the brmps into a single phase.*

35 Graphic scale and north arrow.

36 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Map Scale	Ground Slope	Contour Intervals, ft.
1 inch = 100ft or larger scale	Flat 0 - 2% Rolling 2 - 8% Steep 8% +	0.5 or 1 1 or 2 2.5 or 10

37 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org.

38 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.

39 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.

40 Delineation and acreage of contributing drainage basins on the project site.

41 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions.*

42 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.

43 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.

44 Soil series for the project site and their delineation.

45 The limits of disturbance for each phase of construction.

46 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the plan.

47 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.

48 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.

49 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

*If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream the * checklist items would be N/A.

Effective January 1, 2014

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MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
ESPC PLAN

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

D2

GEORGIA UNIFORM CODING SYSTEM

FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES GEORGIA SOIL AND WATER CONSERVATION COMMISSION

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT			A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Ct	CONSTRUCTION ROAD STABILIZATION			A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE			A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE			A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gt	GRADE STABILIZATION STRUCTURE			Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	ROCK FILTER DAM			A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	RETAINING WALL			A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING			A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN			A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER			A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEEP BERM			Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sr	TEMPORARY STREAM CROSSING			A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION			A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING			A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN			A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING			The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION			To protect desirable trees from injury during construction activity.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE			Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)			Planting vegetation on dunes that are denuded artificially constructed, or re-nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)			Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING)			Establishing a temporary vegetative cover with fast growing seedlings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)			Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (SODDING)			A permanent vegetative cover using sods on highly erodible or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS			Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Co	FLOCCULANTS AND COAGULANTS			Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM VEGETATION)			The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION			A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	TACKIFIERS AND BINDERS			Substance used to anchor straw or hay mulch by causing the organic material to bind together.

GoSWCC (Amended - 2013)

NOT FOR CONSTRUCTION

D3

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 Project No.: 100-ATL-T31130
 Designed By: RST
 Drawn By: RST
 Checked By: JTS

A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
 ESPC PLAN



GENERAL CONSTRUCTION SEQUENCE:

1ST SEQUENCE

1. INSTALL EROSION CONTROL PRACTICES IN UPPER REACH PER EROSION CONTROL SEQUENCE #1-7.
2. COMPLETE STREAM RESTORATION OF UPPER REACH AND A.Z. KELSEY AVENUE CULVERT REPLACEMENT.

2ND SEQUENCE

3. INSTALL SILT FENCE AT DRY DETENTION AREA.
4. COMPLETE GENERAL GRADING OF DRY DETENTION BASIN.
5. COMPLETE UPPER REACH/A.Z. KELSEY AVENUE CULVERT AND DRY DETENTION BASIN EROSION CONTROL SEQUENCE #S 8-10.

3RD SEQUENCE

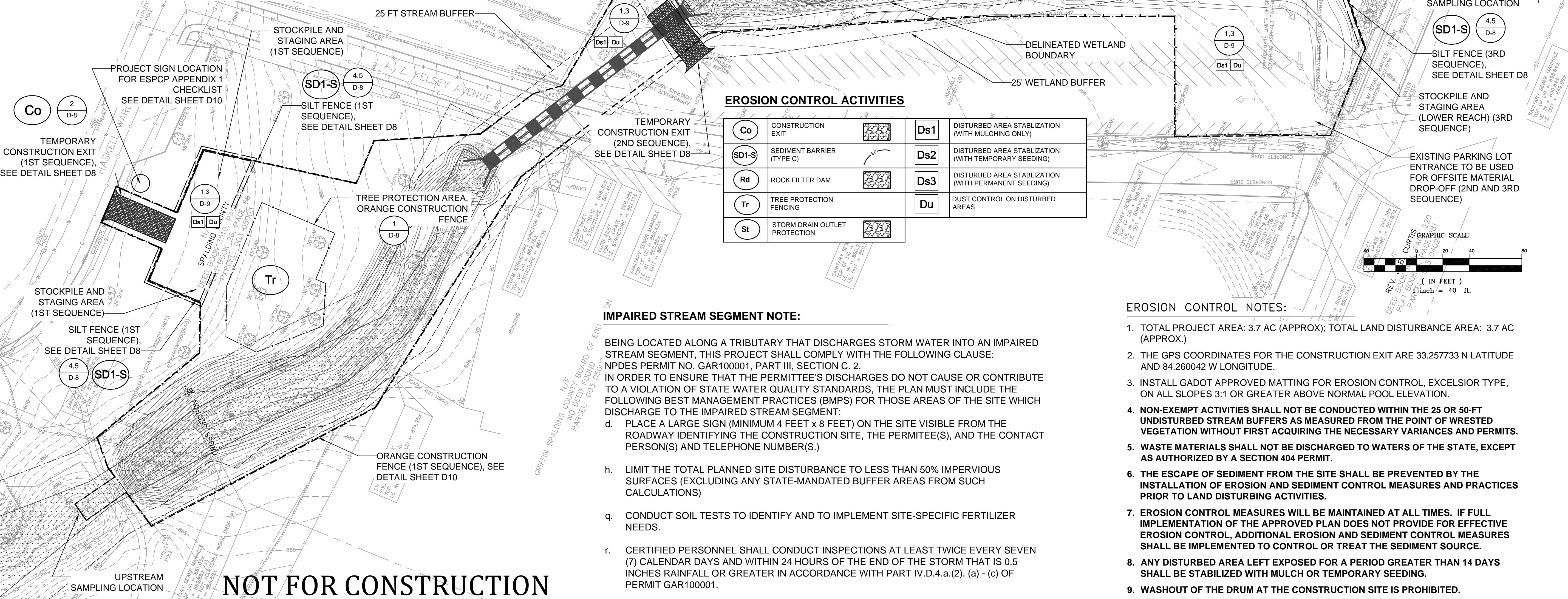
6. INSTALL EROSION CONTROL PRACTICES IN LOWER REACH PER CONSTRUCTION SEQUENCE #2-7.
7. COMPLETE STREAM RESTORATION OF LOWER REACH AND THIRD STREET CULVERT REPLACEMENT.
8. CONSTRUCT BIRETENTION AREAS, CONCRETE CURB, AND NECESSARY PARKING LOT IMPROVEMENTS.
9. COMPLETE EROSION CONTROL SEQUENCE #S 8-10 FOR LOWER REACH RESTORATION AND BIRETENTION AREA CONSTRUCTION.

APPENDIX 1 CHECKLIST NOTES:

- h. THIS CONSTRUCTION INCLUDES THE REMOVAL OF OVER 9,000 SQ.FT. OF ASPHALT, WHICH WILL REDUCE IMPERVIOUS AREA ADJACENT TO THE STREAM AND FOR THE ENTIRE PROJECT IN GENERAL.
- q. CONDUCT SOIL TESTS TO IDENTIFY AND TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.
- r. CERTIFIED PERSONNEL SHALL CONDUCT INSPECTIONS AT LEAST TWICE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(2). (a) - (c) OF PERMIT GAR100001.

EROSION CONTROL SEQUENCE:

1. INSTALL TEMPORARY CONSTRUCTION ENTRANCE ACCORDING TO GASWCC STD (CO).
2. INSTALL THE TEMPORARY SILT FENCING AS SHOWN ON PLANS ACCORDING TO GASWCC STD SD1-S.
4. ARRANGE PUMP-AROUND EQUIPMENT. INSTALL TEMPORARY DIKE AT THE UPSTREAM AND DOWNSTREAM WORK LIMIT AS SHOWN IN THE DETAIL ON PLATE D-10.
5. INSTALL ROCK FILTER DAM BELOW DOWNSTREAM DIKE AS SHOWN ON THE PLANS AND DETAIL ON PLATE D-8.
6. BEGIN PUMP-AROUND OPERATION BY PLACING INTAKE LINE ON THE UPSTREAM SIDE OF THE UPSTREAM DIKE AS SHOWN IN THE DETAIL, PLATE D-10. PUMP THE WATER INTO THE DOWNSTREAM CHANNEL BELOW THE DOWNSTREAM DIKE.
7. DEWATER WORK AREA THROUGH A DEWATERING PUMP TO MAINTAIN A DRY WORK AREA. WATER PUMPED FROM THE WORK AREA SHALL PASS THROUGH A SILT BAG PRIOR TO DISCHARGE AS SHOWN ON THE PLANS AND IN THE DETAIL ON PLATE D-10.
8. FOLLOWING COMPLETION OF GRADING AND STRUCTURES, REMOVE BYPASS AND DEWATERING PUMPS.
9. REMOVE TEMPORARY DIKES AND ROCK FILTER DAMS. STABILIZE ALL DISTURBED AREAS AS APPROPRIATE AND IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
10. ONCE CONSTRUCTION IS COMPLETE AND ALL AREAS HAVE BEEN PERMANENTLY STABILIZED TO THE SATISFACTION OF THE CONTRACTING OFFICER, REMOVE TEMPORARY SILT FENCE AND TEMPORARY CONSTRUCTION ENTRANCES.



NOT FOR CONSTRUCTION

IMPAIRED STREAM SEGMENT NOTE:

BEING LOCATED ALONG A TRIBUTARY THAT DISCHARGES STORM WATER INTO AN IMPAIRED STREAM SEGMENT, THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CLAUSE: NPDES PERMIT NO. GAR100001, PART III, SECTION C. 2. IN ORDER TO ENSURE THAT THE PERMITTEE'S DISCHARGES DO NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF STATE WATER QUALITY STANDARDS, THE PLAN MUST INCLUDE THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPs) FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO THE IMPAIRED STREAM SEGMENT:

- d. PLACE A LARGE SIGN (MINIMUM 4 FEET x 8 FEET) ON THE SITE VISIBLE FROM THE ROADWAY IDENTIFYING THE CONSTRUCTION SITE, THE PERMITEE(S), AND THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S).
- h. LIMIT THE TOTAL PLANNED SITE DISTURBANCE TO LESS THAN 50% IMPERVIOUS SURFACES (EXCLUDING ANY STATE-MANDATED BUFFER AREAS FROM SUCH CALCULATIONS)
- q. CONDUCT SOIL TESTS TO IDENTIFY AND TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.
- r. CERTIFIED PERSONNEL SHALL CONDUCT INSPECTIONS AT LEAST TWICE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(2). (a) - (c) OF PERMIT GAR100001.

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(770) 850-0949

Griffin
Growing Together

GEORGIA REGISTERED PROFESSIONAL ENGINEER
ERIC JOHN BYRNE

MARK	DATE	DESCRIPTION	BY	RST
	8-1-15	FINAL CONSTRUCTION PLANS	RST	

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
ESPC PLAN - INITIAL PHASE

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

D4-A

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GENERAL CONSTRUCTION SEQUENCE:

1ST SEQUENCE

1. INSTALL EROSION CONTROL PRACTICES IN UPPER REACH PER EROSION CONTROL SEQUENCE #1-7.
2. COMPLETE STREAM RESTORATION OF UPPER REACH AND A.Z. KELSEY AVENUE CULVERT REPLACEMENT.

2ND SEQUENCE

3. INSTALL SILT FENCE AT DRY DETENTION AREA.
4. COMPLETE GENERAL GRADING OF DRY DETENTION BASIN.

5. COMPLETE UPPER REACH/A.Z. KELSEY AVENUE CULVERT AND DRY DETENTION BASIN EROSION CONTROL SEQUENCE #S 8-10.

3RD SEQUENCE

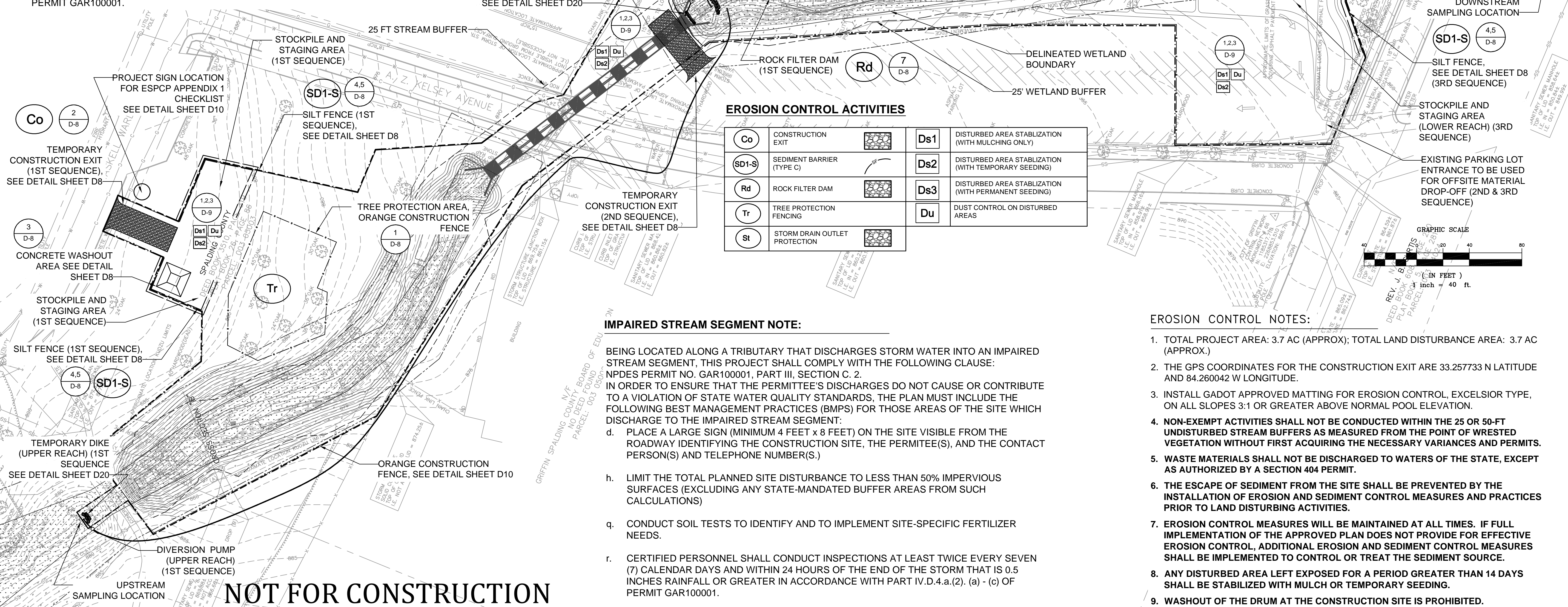
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9. COMPLETE EROSION CONTROL SEQUENCE #S 8-10 FOR LOWER REACH RESTORATION AND BIORETENTION AREA CONSTRUCTION.

APPENDIX 1 CHECKLIST NOTES:

- h. THIS CONSTRUCTION INCLUDES THE REMOVAL OF OVER 9,000 SQ.FT. OF ASPHALT, WHICH WILL REDUCE IMPERVIOUS AREA ADJACENT TO THE STREAM AND FOR THE ENTIRE PROJECT IN GENERAL.
- q. CONDUCT SOIL TESTS TO IDENTIFY AND TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.
- r. CERTIFIED PERSONNEL SHALL CONDUCT INSPECTIONS AT LEAST TWICE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(2). (a) - (c) OF PERMIT GAR100001.

EROSION CONTROL SEQUENCE:

1. INSTALL TEMPORARY CONSTRUCTION ENTRANCE ACCORDING TO GASWCC STD (CO).
2. INSTALL THE TEMPORARY SILT FENCING AS SHOWN ON PLANS ACCORDING TO GASWCC STD SD1-S.
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10. ONCE CONSTRUCTION IS COMPLETE AND ALL AREAS HAVE BEEN PERMANENTLY STABILIZED TO THE SATISFACTION OF THE CONTRACTING OFFICER, REMOVE TEMPORARY SILT FENCE AND TEMPORARY CONSTRUCTION ENTRANCES.



EROSION CONTROL ACTIVITIES

Co	CONSTRUCTION EXIT		Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
SD1-S	SEDIMENT BARRIER (TYPE C)		Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
Rd	ROCK FILTER DAM		Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)
Tr	TREE PROTECTION FENCING		Du	DUST CONTROL ON DISTURBED AREAS
St	STORM DRAIN OUTLET PROTECTION			

IMPAIRED STREAM SEGMENT NOTE:

BEING LOCATED ALONG A TRIBUTARY THAT DISCHARGES STORM WATER INTO AN IMPAIRED STREAM SEGMENT, THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CLAUSE: NPDES PERMIT NO. GAR100001, PART III, SECTION C. 2. IN ORDER TO ENSURE THAT THE PERMITTEE'S DISCHARGES DO NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF STATE WATER QUALITY STANDARDS, THE PLAN MUST INCLUDE THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPs) FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO THE IMPAIRED STREAM SEGMENT:

- d. PLACE A LARGE SIGN (MINIMUM 4 FEET x 8 FEET) ON THE SITE VISIBLE FROM THE ROADWAY IDENTIFYING THE CONSTRUCTION SITE, THE PERMITTEE(S), AND THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S).
- h. LIMIT THE TOTAL PLANNED SITE DISTURBANCE TO LESS THAN 50% IMPERVIOUS SURFACES (EXCLUDING ANY STATE-MANDATED BUFFER AREAS FROM SUCH CALCULATIONS)
- q. CONDUCT SOIL TESTS TO IDENTIFY AND TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.
- r. CERTIFIED PERSONNEL SHALL CONDUCT INSPECTIONS AT LEAST TWICE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(2). (a) - (c) OF PERMIT GAR100001.

EROSION CONTROL NOTES:

1. TOTAL PROJECT AREA: 3.7 AC (APPROX); TOTAL LAND DISTURBANCE AREA: 3.7 AC (APPROX.)
2. THE GPS COORDINATES FOR THE CONSTRUCTION EXIT ARE 33.257733 N LATITUDE AND 84.260042 W LONGITUDE.
3. INSTALL GADOT APPROVED MATTING FOR EROSION CONTROL, EXCELSIOR TYPE, ON ALL SLOPES 3:1 OR GREATER ABOVE NORMAL POOL ELEVATION.
4. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
5. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
6. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
7. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
8. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
9. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED.

NOT FOR CONSTRUCTION

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Griffin
Growing Together

GEORGIA REGISTERED PROFESSIONAL ENGINEER
ERIC JOHN BYRNE

MARK	DATE	DESCRIPTION	BY	RST
	8-1-15	FINAL CONSTRUCTION PLANS		

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

ESPC PLAN - GRADING PHASE

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
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GENERAL CONSTRUCTION SEQUENCE:

1ST SEQUENCE

1. INSTALL EROSION CONTROL PRACTICES IN UPPER REACH PER EROSION CONTROL SEQUENCE #1-7.
2. COMPLETE STREAM RESTORATION OF UPPER REACH AND A.Z. KELSEY AVENUE CULVERT REPLACEMENT.

2ND SEQUENCE

3. INSTALL SILT FENCE AT DRY DETENTION AREA.
4. COMPLETE GENERAL GRADING OF DRY DETENTION BASIN.
5. COMPLETE UPPER REACH/A.Z. KELSEY AVENUE CULVERT AND DRY DETENTION BASIN EROSION CONTROL SEQUENCE #'S 8-10.

3RD SEQUENCE

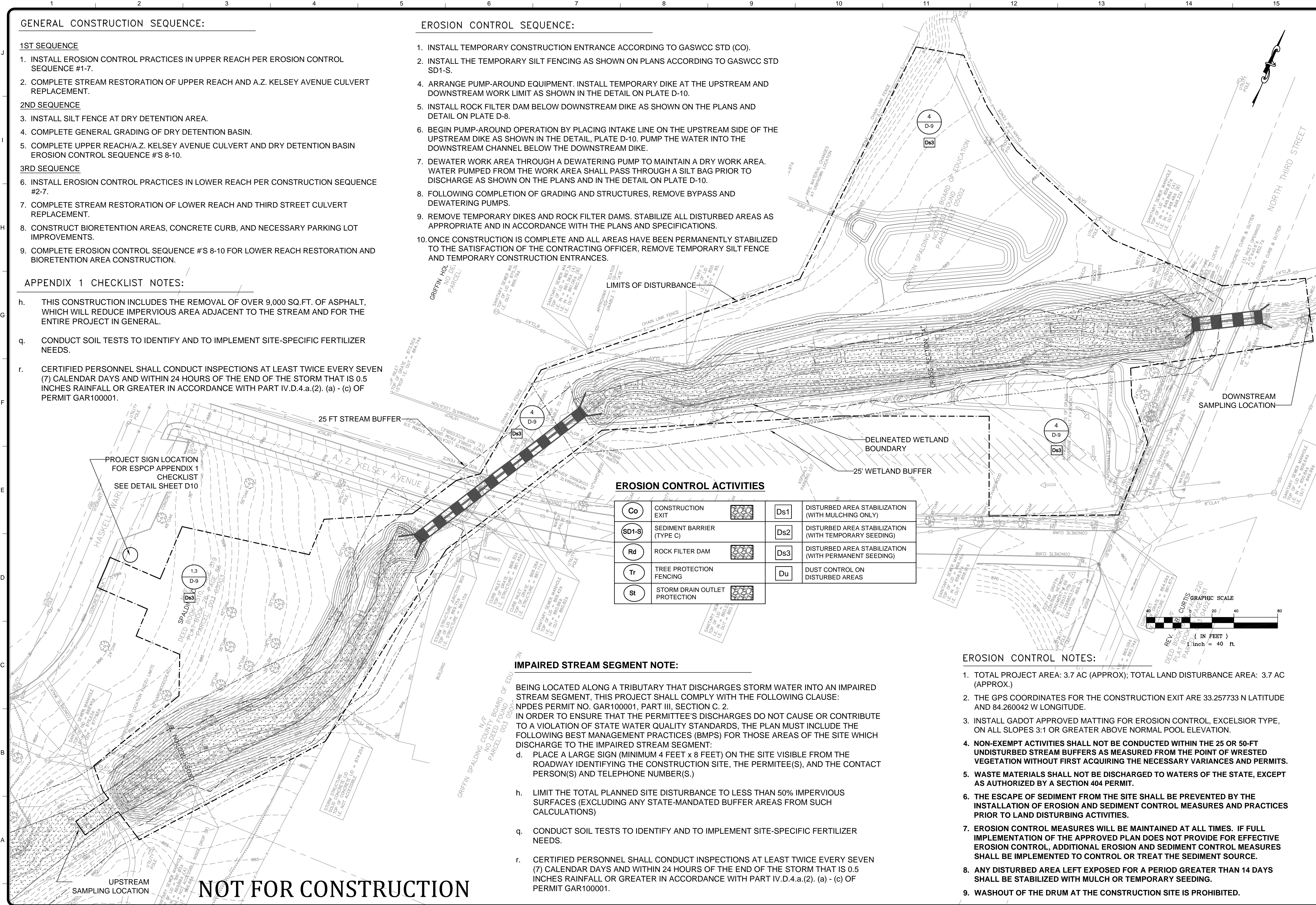
6. INSTALL EROSION CONTROL PRACTICES IN LOWER REACH PER CONSTRUCTION SEQUENCE #2-7.
7. COMPLETE STREAM RESTORATION OF LOWER REACH AND THIRD STREET CULVERT REPLACEMENT.
8. CONSTRUCT BIOTENTION AREAS, CONCRETE CURB, AND NECESSARY PARKING LOT IMPROVEMENTS.
9. COMPLETE EROSION CONTROL SEQUENCE #'S 8-10 FOR LOWER REACH RESTORATION AND BIOTENTION AREA CONSTRUCTION.

APPENDIX 1 CHECKLIST NOTES:

- h. THIS CONSTRUCTION INCLUDES THE REMOVAL OF OVER 9,000 SQ.FT. OF ASPHALT, WHICH WILL REDUCE IMPERVIOUS AREA ADJACENT TO THE STREAM AND FOR THE ENTIRE PROJECT IN GENERAL.
- q. CONDUCT SOIL TESTS TO IDENTIFY AND TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.
- r. CERTIFIED PERSONNEL SHALL CONDUCT INSPECTIONS AT LEAST TWICE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(2). (a) - (c) OF PERMIT GAR100001.

EROSION CONTROL SEQUENCE:

1. INSTALL TEMPORARY CONSTRUCTION ENTRANCE ACCORDING TO GASWCC STD (CO).
2. INSTALL THE TEMPORARY SILT FENCING AS SHOWN ON PLANS ACCORDING TO GASWCC STD SD1-S.
4. ARRANGE PUMP-AROUND EQUIPMENT. INSTALL TEMPORARY DIKE AT THE UPSTREAM AND DOWNSTREAM WORK LIMIT AS SHOWN IN THE DETAIL ON PLATE D-10.
5. INSTALL ROCK FILTER DAM BELOW DOWNSTREAM DIKE AS SHOWN ON THE PLANS AND DETAIL ON PLATE D-8.
6. BEGIN PUMP-AROUND OPERATION BY PLACING INTAKE LINE ON THE UPSTREAM SIDE OF THE UPSTREAM DIKE AS SHOWN IN THE DETAIL, PLATE D-10. PUMP THE WATER INTO THE DOWNSTREAM CHANNEL BELOW THE DOWNSTREAM DIKE.
7. DEWATER WORK AREA THROUGH A DEWATERING PUMP TO MAINTAIN A DRY WORK AREA. WATER PUMPED FROM THE WORK AREA SHALL PASS THROUGH A SILT BAG PRIOR TO DISCHARGE AS SHOWN ON THE PLANS AND IN THE DETAIL ON PLATE D-10.
8. FOLLOWING COMPLETION OF GRADING AND STRUCTURES, REMOVE BYPASS AND DEWATERING PUMPS.
9. REMOVE TEMPORARY DIKES AND ROCK FILTER DAMS. STABILIZE ALL DISTURBED AREAS AS APPROPRIATE AND IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
10. ONCE CONSTRUCTION IS COMPLETE AND ALL AREAS HAVE BEEN PERMANENTLY STABILIZED TO THE SATISFACTION OF THE CONTRACTING OFFICER, REMOVE TEMPORARY SILT FENCE AND TEMPORARY CONSTRUCTION ENTRANCES.



EROSION CONTROL ACTIVITIES

Co	CONSTRUCTION EXIT	Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
SD1-S	SEDIMENT BARRIER (TYPE C)	Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
Rd	ROCK FILTER DAM	Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)
Tr	TREE PROTECTION FENCING	Du	DUST CONTROL ON DISTURBED AREAS
St	STORM DRAIN OUTLET PROTECTION		

IMPAIRED STREAM SEGMENT NOTE:

BEING LOCATED ALONG A TRIBUTARY THAT DISCHARGES STORM WATER INTO AN IMPAIRED STREAM SEGMENT, THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CLAUSE: NPDES PERMIT NO. GAR100001, PART III, SECTION C. 2. IN ORDER TO ENSURE THAT THE PERMITTEE'S DISCHARGES DO NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF STATE WATER QUALITY STANDARDS, THE PLAN MUST INCLUDE THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPs) FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO THE IMPAIRED STREAM SEGMENT:

- d. PLACE A LARGE SIGN (MINIMUM 4 FEET x 8 FEET) ON THE SITE VISIBLE FROM THE ROADWAY IDENTIFYING THE CONSTRUCTION SITE, THE PERMITTEE(S), AND THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S).
- h. LIMIT THE TOTAL PLANNED SITE DISTURBANCE TO LESS THAN 50% IMPERVIOUS SURFACES (EXCLUDING ANY STATE-MANDATED BUFFER AREAS FROM SUCH CALCULATIONS)
- q. CONDUCT SOIL TESTS TO IDENTIFY AND TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.
- r. CERTIFIED PERSONNEL SHALL CONDUCT INSPECTIONS AT LEAST TWICE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF THE STORM THAT IS 0.5 INCHES RAINFALL OR GREATER IN ACCORDANCE WITH PART IV.D.4.a.(2). (a) - (c) OF PERMIT GAR100001.

EROSION CONTROL NOTES:

1. TOTAL PROJECT AREA: 3.7 AC (APPROX); TOTAL LAND DISTURBANCE AREA: 3.7 AC (APPROX.)
2. THE GPS COORDINATES FOR THE CONSTRUCTION EXIT ARE 33.257733 N LATITUDE AND 84.260042 W LONGITUDE.
3. INSTALL GADOT APPROVED MATTING FOR EROSION CONTROL, EXCELSIOR TYPE, ON ALL SLOPES 3:1 OR GREATER ABOVE NORMAL POOL ELEVATION.
4. **NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.**
5. **WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.**
6. **THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.**
7. **EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.**
8. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
9. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED.

NOT FOR CONSTRUCTION

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GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 2663248
ERIC JOHN BYRNE

MARK	DATE	DESCRIPTION	BY	RST
	8-1-15	FINAL CONSTRUCTION PLANS		

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
ESPC PLAN - FINAL PHASE

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

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1.0 INTRODUCTION
THIS PROJECT SPECIFIC EROSION, SEDIMENTATION AND POLLUTION CONTROL (ESPC) PLAN IS INTENDED TO SATISFY THE REQUIREMENTS UNDER THE STATE OF GEORGIA, DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION (GA EPD) GENERAL PERMIT NO. GAR100001. THIS PERMIT REGULATES POINT SOURCE DISCHARGES TO THE WATERS OF THE STATE OF GEORGIA FROM STAND-ALONE CONSTRUCTION PROJECTS THAT WILL RESULT IN LAND DISTURBANCE EQUAL TO, OR GREATER THAN, ONE (1) ACRE OCCURRING AFTER THE EFFECTIVE DATE OF THIS PERMIT.

SPECIFICALLY, THIS PLAN COVERS THE KELSEY AVENUE STREAM RESTORATION AND STORMWATER BMP RETROFITS PROJECT, WHICH IS LOCATED ALONG KELSEY AVENUE IN THE CITY OF GRIFFIN, SPALDING COUNTY. THE GENERAL LOCATION OF THE KELSEY AVENUE STREAM RESTORATION AND STORMWATER BMP RETROFITS PROJECT IS PRESENTED IN THE VICINITY MAP ON SHEET C1.

THE OBJECTIVE OF THIS PLAN IS TO CONTROL EROSION, SEDIMENTATION, AND OTHER POLLUTANTS AT SMALL AND MEDIUM-SIZED CONSTRUCTION SITES THROUGH THE IMPLEMENTATION OF BEST MANAGEMENT PRACTICES (BMPs). A DESCRIPTION OF THE SITE AND PROJECT, INCLUDING THE ESTIMATED SEQUENCE OF EVENTS AND IMPACTED AREA, IS PROVIDED IN SECTION 1.1. THE BMPs THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE ARE DESCRIBED IN SECTION 2.0. THE REQUIRED INSPECTIONS FOR THE SUGGESTED BMPs ARE IDENTIFIED IN SECTION 3.0. THE PROCEDURES TO ENSURE THE TIMELY MAINTENANCE OF MEASURES OUTLINED IN SECTION 2.0 ARE DESCRIBED IN SECTION 4.0. THE SAMPLING PROCEDURES TO CONFIRM THAT INSTALLED CONTROL MEASURES ARE FUNCTIONING AS DESIGNED ARE PRESENTED IN SECTION 5.0. FINALLY, REPORTING REQUIREMENTS ARE SPECIFIED IN SECTION 6.0.

THE PROPOSED PROJECT DISTURBS APPROXIMATELY 3.7 ACRES. THE NOTICE OF INTENT (NOI) IS ANTICIPATED TO BE ON OR BEFORE DECEMBER 15, 2014. FOR THE PURPOSES OF THIS PLAN AND GEORGIA GENERAL PERMIT GAR100001, THE PRIMARY PERMITTEE SHALL BE JAMES MOORE (CITY OF GRIFFIN) FOR THIS PROJECT.

1.1 PROJECT DESCRIPTION
THE CONSTRUCTION PROJECT FOR WHICH THIS PLAN IS INTENDED IS LOCATED IN THE VICINITY OF A. Z. KELSEY AVENUE AND NORTH 3RD STREET IN THE CITY OF GRIFFIN. IT INCLUDES 960 FEET OF STREAM RESTORATION, TWO STORMWATER BEST MANAGEMENT PRACTICES (BMPs) INCLUDING A DRY DETENTION BASIN AND A BIORETENTION AREA THAT WILL DISCHARGE INTO THE RESTORED STREAM SEGMENT, AND REPLACEMENT OF TWO UNDERSIZED CULVERTS AT NORTH 3RD STREET AND A. Z. KELSEY AVENUE. THE CENTER OF THE PROJECT AREA IS LOCATED AT APPROXIMATELY LATITUDE 33.2588 AND LONGITUDE -84.2585. THE LAND LOT/DISTRICT IS 160/03 FOR ALL OF THE PARCELS IN THE PROJECT AREA.

SOIL DISTURBING ACTIVITIES
SOIL DISTURBING ACTIVITIES FOR THE KELSEY AVENUE PROJECT WILL INCLUDE:

- INSTALLING STABILIZED CONSTRUCTION ENTRANCES
- INSTALL EROSION & SEDIMENT CONTROL PER THE ESPC PLAN
- TEMPORARY STAGING AND LAYDOWN AREAS TO FACILITATE CONSTRUCTION OF THE DRY DETENTION BASIN, BIORETENTION AREA, STREAM RESTORATION, AND CULVERT REPLACEMENTS
- CONSTRUCTION OF A DRY DETENTION BASIN, BIORETENTION AREA, STREAM RESTORATION, AND CULVERT REPLACEMENTS
- OTHER EROSION AND SEDIMENTATION CONTROLS TO BE INSTALLED INCLUDE: INLET PROTECTION AND OUTLET PROTECTION FOR EXISTING DRAINAGE STRUCTURES, TEMPORARY AND PERMANENT SOIL STABILIZATION, MAINTAINING EXISTING GRADES, SLOPES, AND STORM WATER FLOWS, AS WELL AS MINIMIZING THE REMOVAL OF EXISTING TREES AND VEGETATION.

1.2 IMPACTED AREA
THE TOTAL AREA OF THE SITE THAT IS ANTICIPATED TO BE DISTURBED BY EXCAVATION, GRADING, LAYDOWN, STAGING, TEMPORARY FACILITIES, OR OTHER ACTIVITIES IS APPROXIMATELY 3.7 ACRES.

1.3 SITE DRAINAGE AND RECEIVING WATERS
THE PROJECT AREA IS LOCATED APPROXIMATELY 0.8 STREAM MILES UPSTREAM OF THE CONFLUENCE WITH CABIN CREEK. THE GEORGIA EPD LISTS CABIN CREEK ON ITS DRAFT 2012 CLEAN WATER ACT 303(D) LIST OF IMPAIRED STREAMS THAT DO NOT MEET THEIR DESIGNATED USES. CABIN CREEK IS ON THE NOT SUPPORTING LIST FOR ITS DESIGNATED USE OF FISHING. TWO CRITERIA WERE VIOLATED -- BIOTA (DUE TO SEDIMENT) AND FECAL COLIFORM. THE TMDL FOR BIOTA CALLS FOR A 51.1% REDUCTION IN SEDIMENT LOAD IN CABIN CREEK AND THE TMDL FOR FECAL COLIFORM CALLS FOR A 64% REDUCTION. THERE ARE NO SITE SPECIFIC CONDITIONS OR REQUIREMENTS FOR THE KELSEY AVENUE PROJECT IN THE TMDL IMPLEMENTATION PLAN. HOWEVER, BECAUSE THE PROJECT IS WITHIN 1-LINEAR MILE OF THE IMPAIRED STREAM SEGMENT, PART III.C OF PERMIT GAR100001 IS REQUIRED. THE FOUR (4) BMPs SELECTED TO MEET THESE REQUIREMENTS ARE SHOWN IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN ON SHEET D4, AND D7, THE DETAIL SHEET.

THE SITE GRADING AND DRAINAGE PLAN FOR THE KELSEY AVENUE PROJECT AS WELL AS THE ASSOCIATED SOIL DISTURBING ACTIVITIES ARE PROVIDED AS PART OF THE ATTACHED CONSTRUCTION DRAWINGS. THE ATTACHED DRAWINGS SHOW DRAINAGE PATTERNS, EXISTING SLOPES, AN OUTLINE OF THE AREAS CONTRIBUTING TO RUNOFF (INCLUDING AREAS NOT TO BE DISTURBED) AND THE PROPOSED SAMPLING POINT FOR THE SITE. THE SITE DRAINAGE WILL BE MAINTAINED BY GRADING THE SITE TO MATCH EXISTING DRAINAGE FEATURES. THE OVERALL SITE DRAINAGE WILL NOT BE IMPACTED SIGNIFICANTLY.

SOIL TYPES: THE SOIL SERIES ALONG THE STREAM CHANNEL CONSISTS OF ALLUVIAL LAND, MODERATELY WET (ALP) WHICH IS SURROUNDED BY CECIL SANDY CLAY LOAM, 6 TO 10 PERCENT SLOPES, SEVERELY ERODED (CZC3).

STATE WATERS: AN UNNAMED STREAM FLOWS THROUGH THE PROJECT AREA AND IS A TRIBUTARY TO CABIN CREEK WHICH SUPPORTS WARM WATER FISHERIES. THE STREAM IS DESIGNATED AS A ZONE A FLOODPLAIN ACCORDING TO THE FEMA MAP. THE STREAM IS LIKELY A STATE WATER AND A FEDERALLY JURISDICTIONAL WATER/WETLAND. THESE AREAS ARE IDENTIFIED ON SHEET D4. THE PROJECT SITE CONTAINS APPROXIMATELY 34,940 SQ. FT. OF WETLAND ASSOCIATED WITH A HEAVILY IMPACTED URBAN CHANNEL WHICH ULTIMATELY DISCHARGES TO CABIN CREEK.

STREAM BUFFER AREAS: THE PROJECT SITE CONTAINS 34,940 SQ. FT. OF WETLANDS AND 1,253 FT. OF STREAM AS NOTED ABOVE. IN ADDITION THE SITE CONTAINS 81,265 SQ. FT. OF 25' BUFFER. THE BUFFER CONDITION IS GENERAL VERY POOR WITH ERODING BANKS AND INVASIVE KUDZU ON THE BANKS AND ADJACENT UPLAND. SEVERAL SIZABLE HARDWOOD TREES ARE IN THE BUFFER, AND A TREE PROTECTION AREA HAS BEEN DESIGNATED (SEE SHEET C4). THE PROJECT CONSTRUCTION WILL RESULT IN REPAIR OF THE ERODING BANK AND RE-VEGETATION OF THE BUFFER AREA, BUT SEVERAL TREES WILL NEED TO BE REMOVED TO ACCOMMODATE STREAM BANK GRADING, AS INDICATED ON THE GRADING PLANS. A BUFFER VARIANCE PERMIT WILL BE SUBMITTED TO GA EPD PRIOR TO CONSTRUCTION.

ATTACHED CONSTRUCTION DRAWINGS INCLUDE THE FOLLOWING:

- AREAS OF SOIL DISTURBANCE,
- THE LOCATION OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS FOR EACH PHASE OF THE PROJECT IDENTIFIED IN THE PLAN,,
- APPROXIMATE SLOPES ANTICIPATED AFTER MAJOR GRADING ACTIVITIES,
- THE LOCATION OF AREAS WHERE STABILIZATION PRACTICES ARE EXPECTED TO OCCUR, AND
- THE LOCATION(S) WHERE STORM WATER IS DISCHARGED.

2.0 CONTROLS
THE FOLLOWING SECTION INCLUDES A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE

CONSTRUCTION SITE INCLUDING: (1) INITIAL PERIMETER CONTROL PHASE BMPs, (2) INTERMEDIATE GRADING AND DRAINAGE PHASE BMPs, AND (3) FINAL STABILIZATION PHASE BMPs. THIS SECTION IDENTIFIES THE APPROPRIATE STAGING AND ACCESS REQUIREMENTS FOR CONSTRUCTION. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES. ADDITIONALLY, THE APPROPRIATE CONTROL MEASURES AND THE TIMING DURING THE CONSTRUCTION PROCESS ARE DESCRIBED FOR EACH MAJOR ACTIVITY CONTAINED IN SECTION 1.1. INSTALLATION, IMPLEMENTATION AND MAINTENANCE OF ALL CONTROLS DESCRIBED IN THIS SECTION ARE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING. ANY DEVIATION FROM THIS ESPC PLAN MUST BE DOCUMENTED IN THE CHECKLISTS IDENTIFIED IN SECTION 3.0. EROSION AND SEDIMENTATION CONTROL IS VITAL TO PROTECTION OF THE SURFACE WATER IN THE CITY OF GRIFFIN FROM BEING IMPACTED WITH SEDIMENT FOLLOWING PRECIPITATION EVENTS ON THE CONSTRUCTION SITE. THIS ESPC PLAN INCLUDES MEASURES TO PERFORM THE FOLLOWING:

- MINIMIZE THE AMOUNT OF DISTURBED SOIL
- PREVENT RUNOFF THAT ORIGINATES IN OFFSITE AREAS FROM FLOWING ACROSS DISTURBED AREAS
- SLOW DOWN THE RUNOFF FLOWING ACROSS THE SITE
- REMOVE SEDIMENT FROM ONSITE RUNOFF BEFORE IT LEAVES THE SITE
- MEET OR EXCEED LOCAL OR STATE REQUIREMENTS FOR SEDIMENT AND EROSION CONTROL PLANS PLACEMENT AND MAINTENANCE OF EROSION CONTROL DEVICES MUST BE A VIGILANT PURSUIT BY THE CONSTRUCTION CONTRACTOR DURING ALL STAGES OF CONSTRUCTION, INCLUDING THE FINAL STABILIZATION PHASE UNTIL A PERMANENT VEGETATIVE COVER OR OTHER MEANS OF SOIL STABILIZATION HAS BEEN ESTABLISHED.

2.1 EROSION AND SEDIMENT CONTROLS
THE EROSION AND SEDIMENT CONTROL BMPs TO BE IMPLEMENTED BY THE CITY OF GRIFFIN AT THE SUBJECT SITE ARE OUTLINED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN ON SHEET D4, AND D7, THE DETAIL SHEET. THE IMPLEMENTATION SCHEDULE (D1 AND D4) SHOULD BE FOLLOWED BASED ON THE CONTROL MEASURES SHOWN ON SHEET D4.

2.2 STABILIZATION PRACTICES
ANY SITE WHERE SOILS ARE EXPOSED TO WATER, WIND, OR ICE CAN HAVE SOIL EROSION AND SEDIMENTATION PROBLEMS. HUMAN ACTIVITIES CAN ACCELERATE EROSION BY REMOVING VEGETATION, COMPACTING OR DISTURBING THE SOIL, CHANGING NATURAL DRAINAGE PATTERNS, AND BY COVERING THE GROUND WITH IMPERMEABLE SURFACES (PAVEMENT, CONCRETE, BUILDINGS, ETC.). THEREFORE, PLANNING FOR TEMPORARY AND PERMANENT STABILIZATION PRACTICES AT A SITE NEEDS TO BE IMPLEMENTED. TEMPORARY STABILIZATION MEASURES CAN BE TAKEN, SUCH AS TEMPORARY SEEDING, MULCHING, CHEMICAL STABILIZATION, AND DUST CONTROL. TEMPORARY STABILIZATIONS HAVE SHORT-TERM ADVANTAGES. FOR THIS REASON, PERMANENT STABILIZATION MEASURES, SUCH AS PERMANENT SEEDING AND PLANTING, BUFFER ZONES, PRESERVATION OF NATURAL VEGETATION, AND STREAM BANK STABILIZATION, NEED TO BE IMPLEMENTED TO LIMIT EROSION AND FLUCTUATING DRAINAGE PATTERNS. THE SITE-SPECIFIC STABILIZATION PRACTICES FOR EACH STABILIZATION PHASE OF THE PROJECT WILL BE IMPLEMENTED BY THE CONSTRUCTION CONTRACTOR PER THE LANDSCAPING PLANS FOR THIS PROJECT. THE FOLLOWING PARAGRAPHS DISCUSS STABILIZATION PRACTICES FOR THE PROJECT AREA.

PRIOR TO CLEARING AND OTHER CONSTRUCTION ACTIVITIES, EROSION CONTROL MEASURES SUCH AS SILT FENCING SHALL BE INSTALLED FIRST. ROUGH GRADING OF THE STORMWATER MANAGEMENT AND STREAM RESTORATION AREAS SHALL OCCUR NEXT. EXCAVATION AND GENERAL GRADING OPERATIONS WILL OCCUR AFTERWARD.

FINAL STABILIZATION USING VEGETATIVE PRACTICES WILL BE IMPLEMENTED AS SOON AS POSSIBLE FOLLOWING ACTIVE CONSTRUCTION ACTIVITIES. THE PROJECT PLANTING PLANS AND SPECIFICATIONS SHALL GOVERN, HOWEVER, TABLE 6-4.1 IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, FIFTH EDITION, SHOW THE PLANTS, PLANTING RATE AND PLANTING DATES FOR TEMPORARY AND PERMANENT COVER SHALL BE UTILIZED WHEN NOT SPECIFICALLY COVERED IN THE PLANS OR SPECIFICATIONS. SPALDING COUNTY IS LOCATED IN THE SOUTHERN PIEDMONT PORTION OF THE MAJOR LAND RESOURCE AREAS (MLRA) OF GEORGIA. THIS RESOURCE AREA IS DENOTED BY A P UNDER THE RESOURCE AREA HEADING OF THE PLANTS, PLANTING RATES, AND PLANTING DATE TABLES. ALL TEMPORARY AND PERMANENT COVER WILL COMPLY WITH THE REQUIREMENTS OF CHAPTER 6, SECTION II OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, FIFTH EDITION.

2.3 STORM WATER MANAGEMENT
THE MEASURES SHOWN IN THE CONSTRUCTION DRAWINGS INCLUDE SILT FENCING, CONSTRUCTION EXITS, TEMPORARY DIKES, DEWATERING AREA, AND DIVERSION PUMPING WILL BE INSTALLED PRIOR TO AND CONCURRENT WITH LAND DISTURBING ACTIVITIES. THEY ARE NOT NECESSARILY INTENDED TO CONTROL POLLUTANTS IN STORM WATER DISCHARGES THAT WILL OCCUR AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED AND THE SITE HAS UNDERGONE FINAL STABILIZATION. THE DRY DETENTION BASIN AND BIORETENTION AREA THAT ARE BEING CONSTRUCTED AS PART OF THIS PROJECT WILL PROVIDE TREATMENT OF STORMWATER RUNOFF FROM A LARGE PORTION OF THE PROJECT WATERSHED AFTER THE PROJECT IS COMPLETED.

2.4 OTHER CONTROLS
PRACTICES OTHER THAN EROSION AND SEDIMENTATION CONTROL WILL ALSO BE IMPLEMENTED AT THE CONSTRUCTION SITE TO PREVENT CONTAMINANTS, SUCH AS PETROLEUM, OILS, AND LUBRICANTS (POL) AND ANTIFREEZE, FROM BEING DISCHARGED TO SURFACE WATERS. USE OF CONSTRUCTION VEHICLES, HAZARDOUS CHEMICALS, AND NON-STORM WATER DISCHARGES POTENTIALLY PRODUCE WASTE STREAMS THAT CONTAIN CONTAMINANTS THAT MUST NOT BE DISCHARGED. BMPs WILL BE DEVELOPED, IMPLEMENTED, AND MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION ACTIVITIES TO PREVENT ANY UNAUTHORIZED DISCHARGES TO SURFACE WATER.

BELOW IS A LIST OF GENERAL BMPs THAT WILL BE FOLLOWED DURING EACH STABILIZATION PHASE OF THIS CONSTRUCTION PROJECT (CONSTRUCTION DRAWINGS SHOW SPECIFIC BMPs):

- WORKSITE HOUSEKEEPING: MAINTAIN GOOD HOUSEKEEPING PRACTICES AT THE PROJECT JOBSITE AND EQUIPMENT/MATERIAL STORAGE LOCATIONS.
- WASTE PICKUP AND DISPOSAL: REGULARLY PICK UP AND DISPOSE OF WASTE, AND RECYCLABLES.
- EQUIPMENT MAINTENANCE: ENSURE EQUIPMENT IS WORKING PROPERLY; HOWEVER, DO NOT USE THE GARRISON FOR ROUTINE MAINTENANCE OF PROJECT EQUIPMENT. ONLY EMERGENCY MAINTENANCE IS ALLOWED ON PROJECT EQUIPMENT AND VEHICLES.
- MATERIAL STORAGE: STORE CONTAINERS, DRUMS, AND BAGS AWAY FROM DIRECT TRAFFIC ROUTES, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AND IN A MANNER TO PROTECT AGAINST CONTAMINATION OF STORM WATER.
- POL SPILLS AND LEAKS: MINOR SPILLS AND LEAKS FROM CONSTRUCTION EQUIPMENT ARE A SOURCE OF POTENTIAL DISCHARGE. DO NOT USE WATER TO WASH DOWN PETROLEUM, OIL AND LUBRICANT (POL) SPILLS FROM PAVEMENTS. POL SPILLS MUST BE REMOVED WITH APPROPRIATE SPILL CLEAN-UP EQUIPMENT AND MATERIALS.
- SPILLS REPORTING: ALL LEAKS AND SPILLS REGARDLESS OF THE QUANTITY MUST BE REPORTED BY THE CITY OF GRIFFIN. FOR SPILLS OVER FIVE GALLONS, THE CONTRACTOR WILL IMMEDIATELY CALL 911. THE FIRE DEPARTMENT WILL IN-TURN NOTIFY THE CITY'S SPILL REPRESENTATIVE.
- SPILL KITS: HAVE A FULL-SERVICE SPILL KIT ON SITE FOR MINOR LEAKS AND DRIPS. SPILLS KITS SHOULD INCLUDE ABSORBENT PADS,

SPILL BOOMS, PERSONNEL PROTECTION EQUIPMENT, AND DISPOSAL BAGS.

- DRIP PAN USE DURING FUELING: USE DRIP PANS AND ABSORBENT PADS WHEN FUELING CONSTRUCTION EQUIPMENT AND PROVIDING EMERGENCY MAINTENANCE ON EQUIPMENT. ABSORBENTS ARE TO BE HANDLED IN ACCORDANCE WITH RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) REGULATIONS.
 - DRIP PAN USE DURING VEHICLE STORAGE: USE DRIP PANS UNDER HEAVY EQUIPMENT LEFT IDLE FOR TWO OR MORE CALENDAR DAYS.
 - VISUAL INSPECTIONS: VISUALLY INSPECT CONSTRUCTION EQUIPMENT DAILY FOR LEAKS AND SPILLS.
 - HAZMAT STORAGE: STORE HAZARDOUS MATERIALS (INCLUDING POL) ON SITE IN COVERED AREAS WITH SECONDARY CONTAINMENT (FOR EXAMPLE, FLAMMABLE LOCKER). CONTAINERS/TANKS FOR FUEL (MOGAS/DIESEL) SHOULD HAVE SECONDARY CONTAINMENT THAT MEETS REGULATORY REQUIREMENTS.
 - PROTECTING STORM DRAINS: DO NOT DISPOSE OF WASTE IN A STORM DRAIN (FOR EXAMPLE PAINT, OIL, CONCRETE, ETC.).
 - VEHICLE WASHING PROHIBITION: WASH VEHICLES OFF THE GARRISON. THE EXCEPTION TO THIS IS RINSING MUD OFF TIRES AT THE CONSTRUCTION EXIT. WHEN DOING THIS, MAKE SURE THAT NOTHING DISCHARGES TO THE STORM DRAIN AND THAT ALL RINSATE SOAKS INTO THE GROUND UNDER THE CONSTRUCTION EXIT.
 - VEHICLE OPERATION: DO NOT OPERATE LEAKING EQUIPMENT. PROVIDE EMERGENCY REPAIR TO PREVENT FURTHER LEAKS
 - CONCRETE WASHOUT: ALL CONCRETE WASTE AND LIQUIDS FROM WASHING CONCRETE DELIVERY VEHICLES, CHUTES, AND HOPPERS POST DELIVERY WILL BE CONTAINED AT DESIGNATED LOCATIONS ON THE SITE. THE CONCRETE WASHOUT WILL BE CONDUCTED AT A DESIGNATED LOCATION AT LEAST 500 FEET FROM WATERS OF THE STATE, 50 FEET FROM ALL STORM DRAIN INLETS, AND 50 FEET FROM OPEN DRAINAGE DITCHES.
- THE SPECIFIC BMPs LISTED IN THE CONSTRUCTION DRAWINGS WILL BE FOLLOWED TO CONTROL THE RELEASE OF ANY SOLID WASTE, SANITARY WASTE, AND/OR PETROLEUM TO THE WATERS OF THE STATE. SPECIFICALLY, THE FOLLOWING "OTHER MEASURES" WILL BE UTILIZED AT THE SITE:
- OFF-SITE VEHICLE TRACKING OF DIRT, SOILS, AND SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED OR ELIMINATED TO THE MAXIMUM EXTENT PRACTICAL. AS SHOWN IN THE CONSTRUCTION DRAWINGS, THE STONE CONSTRUCTION ENTRANCE AND EXIT ARE THE BMPs FOR MINIMIZING OFF-SITE TRACKING OF SOILS. UNDER CONDITIONS WHERE SOILS HAVE HIGH MOISTURE CONTENT, IT MAY BE NECESSARY TO BUILD A WASH AREA TO REMOVE SOLIDS FROM VEHICLES LEAVING THE PROJECT SITE.
 - ALL APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER OR SEPTIC SYSTEM REGULATIONS WILL BE MET. ALL PORTABLE TOILETS WILL BE EQUIPPED WITH INTERNAL DUAL CONTAINMENT OR WILL BE PLACED IN A BERMED AREA.
 - THE USE OF ANY PETROLEUM PRODUCTS ON-SITE WILL COMPLY WITH ALL STATE AND LOCAL REGULATIONS FOR STORAGE AND HANDLING. PORTABLE OR PERMANENT PETROLEUM DISPENSING UNITS WILL HAVE DUAL CONTAINMENT OR BE PLACED IN AN IMPERVIOUS BERMED AREA THAT IS ABLE TO HOLD 130% OF THE TOTAL VOLUME OF THE LARGEST TANK. ANY PETROLEUM PRODUCT STORAGE WILL BE INSPECTED PER THE REQUIREMENTS SPECIFIED IN SECTION 3.0. ANY SPILLS WILL BE CLEANED IMMEDIATELY WITH ABSORBENT MATERIAL AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.

3.0 INSPECTIONS
A. PERMITEE REQUIREMENTS:

- EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITEE'S SITE. CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
- MEASURE RAINFALL ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY UNTIL A NOTICE OF TERMINATION IS SUBMITTED. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
- CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OF RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITEE'S CONSTRUCTION SITE THAT HAVE NOT UNDERGONE FINAL STABILIZATION; (B) AREAS USED BY THE PRIMARY PERMITEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION THAT HAVE NOT UNDERGONE FINAL STABILIZATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITEE'S SITE SHALL BE OBSERVED TO ENSURE THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION, THE PERMITEE MUST COMPLY WITH PART IV.D.4.a.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
- CERTIFIED PERSONNEL (PROVIDED BY PRIMARY PERMITEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THE PERMIT (I.E., UNTIL A NOTICE OF TERMINATION IS RECEIVED BY EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
- BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
- A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.a.(5) OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THE PERMIT.



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Tuesday, July 28, 2015 1:49:05 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_SitFinal_Plans\ModeL_Files7-28-15\D1_D11_gh_v3.dwg LAYOUT: D5 USER NAME: TUCKER, BOBBY

MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

Project No.: 100-ATL-T31130

Designed By:	RST
Drawn By:	RST
Checked By:	JTS

D5

NOT FOR CONSTRUCTION

4.0 MAINTENANCE

THE PLAN SHALL INCLUDE A DESCRIPTION OF PROCEDURES TO ENSURE THE TIMELY MAINTENANCE OF VEGETATION, EROSION, AND SEDIMENT CONTROL MEASURES AND OTHER PROTECTIVE MEASURES IDENTIFIED IN THE SITE PLAN.

5.0 SAMPLING REQUIREMENTS

THE PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THE PERMIT. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

(A) SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:

(1) A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE SITE OR THE STAND ALONE CONSTRUCTION; (A) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES AS SHOWN ON A USGS TOPOGRAPHIC MAP, AND ALL OTHER PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORM WATER IS DISCHARGED AND (B) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION OF THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORM WATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;

(2). A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT, HANDLE AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;

(3). WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION STIE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES). A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH DISCHARGE RESULTS IN THE TURBIDITY OF RECEIVING WATER(S) BEING INCREASED BY MORE THAN TEN (10) NEPHELOMETRIC TURBIDITY UNITS FOR WATERS CLASSIFIED AS TROUT STREAMS OR MORE THAN TWENTYFIVE (25) NEPHELOMETRIC TURBIDITY UNITS FOR WATERS SUPPORTING WARM WATER FISHERIES; AND

(4). ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

(5). TURBIDITY SAMPLING MUST OCCUR IN THE LIVE STREAM. THEREFORE, APPENDIX B RATIONALLE FOR OUTFALL SAMPLING POINTS IS NOT APPLICABLE. THE TURBIDITY OF RECEIVING WATERS SHOULD NOT BE INCREASED BY MORE THAN 25 NEPHELOMETRIC TURBIDITY UNITS FOR WATERS SUPPORTING WARM WATER FISHERIES.

6.1 SAMPLE TYPE

ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

(1). SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.

(2). SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.

(3). LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.

(4). MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED USING A DIRECT READING, PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.

(5). SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E.

6.2 SAMPLING POINTS

(1) FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL RECEIVING WATER(S), OR ALL OUTFALL(S), OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S). SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THE PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) USING THE FOLLOWING MINIMUM GUIDELINES:

(A). THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.

(B). THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.

(C). IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNEL(S).

(D). CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.

(E). THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.

(F). THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.

(G). PERMITTEES DO NOT HAVE TO SAMPLE SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES AND AREAS LOCATED OUTSIDE THE WASTE DISPOSAL LIMITS OF A LANDFILL CELL THAT HAS BEEN CERTIFIED BY EPD FOR WASTE DISPOSAL, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION).

(H). ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING, AND FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORM WATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

6.3 SAMPLING FREQUENCY

(1). THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.

(2). HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THE PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.

(3). SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING EVENTS:
 (A). FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THE PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION;

(B). IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THE PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION, WHICHEVER COMES FIRST;

(C). AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPS IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN

OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPS ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;

(D). WHERE SAMPLING PURSUANT TO (A), (B), OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.a.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NO RELIEVE THE PERMITEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B), OR (C) ABOVE; AND

(E). EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (C) ABOVE.

*NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING AT ANY TIME OF THE DAY OR WEEK.

(7). NON-STORMWATER DISCHARGES. EXCEPT FOR FLOWS FROM FIRE FIGHTING ACTIVITIES, SOURCES OF NON-STORM WATER LISTED IN PART III.A.2. OF THE PERMIT THAT ARE COMBINED WITH STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY MUST BE IDENTIFIED IN THE PLAN. THE PLAN SHALL IDENTIFY AND ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORM WATER COMPONENT(S) OF THE DISCHARGE.

6.0 REPORTING

(1) THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C BY THE 15TH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS IF ANY STORMWATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

(2) ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

(A). THE RAINFALL AMOUNT, DATE, EXACT PLACE, AND TIME OF SAMPLING OR MEASUREMENTS;

(B). THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;

(C).THE DATE(S) ANALYSES WERE PERFORMED;

(D). THE TIME(S) ANALYSES WERE INITIATED;

(E).THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;

(F). REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;

(G). THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC. USED TO DETERMINE THESE RESULTS;

(H). RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU"; AND

(I). CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

(3) ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THE PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI. IF AN ELECTRONIC SUBMITTAL IS PROVIDED BY EPD THEN THE WRITTEN CORRESPONDENCE MAY BE SUBMITTED ELECTRONICALLY; IF REQUIRED, A PAPER COPY MUST ALSO BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL OR SIMILAR SERVICE.

7.0 RETENTION OF RECORDS

(1) THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A "N.O.T." IS SUBMITTED IN ACCORDANCE WITH PART VI.

- (A). A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
- (B). A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THE PERMIT;
- (C). THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THE PERMIT;
- (D). A COPY OF ALL MONITORING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THE PERMIT;
- (E). A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.A OF THE PERMIT;
- (F). A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THE PERMIT; AND
- (G). DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.A.(2) OF THE PERMIT.

(2) COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THE PERMIT AND ALL OTHER RECORDS REQUIRED BY THE PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE "N.O.T." IS SUBMITTED IN ACCORDANCE WITH PART VI. OF THE PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

STORM DRAIN OUTLET PROTECTION CALCULATIONS:

Kelsey Avenue Project
 Erosion, Sediment, and Pollution Control Plan
 Storm Drain Outlet Protection Calculations

Prepared By: Eric Byrne
 Updated: 3/6/2014

FLOW CHARACTERISTICS

	Comments
<i>Bioretention</i>	
(1) Pipe Diameter (in) =	18.00 Inner Diameter
(2) Flow Rate (cfs) =	9.20
(3) Velocity (fps) =	6.20
(4) Tailwater Condition =	minimum
<i>Detention Basin</i>	
(5) Pipe Diameter (in) =	18.00 Inner Diameter
(6) Flow Rate (cfs) =	14.10
(7) Velocity (fps) =	8.27
(8) Tailwater Condition =	minimum

APRON DIMENSIONS

<i>Bioretention</i>	
(9) Apron Width at the Headwall - W1 (ft) =	4.50 (1) * 3
(10) Apron Length - La (ft) (ft) =	6.00 Designed in Accordance with GSWCC Figure 6-34.1
(11) Downstream Width - W2 (ft) =	7.00
(12) Average Stone Diameter (d50) (in) =	9.00
(13) Stone Depth (ft) =	2.50
<i>Detention Basin</i>	
(14) Apron Width at the Headwall - W1 (ft) =	4.50 (5) * 3
(15) Apron Length - La (ft) =	7.50 Designed in Accordance with GSWCC Figure 6-34.1
(16) Downstream Width - W2 (ft) =	8.50
(17) Average Stone Diameter (d50) (in) =	16.00
(18) Stone Depth (ft) =	2.50

RIPRAP CLASS

<i>Bioretention</i>	
Riprap Class II	
Median Particle Diameter: 9 (in)	
The following values are an 'average' of the size fraction range for the selected riprap class	
d15: 6.65 (in)	
d50: 9.5 (in)	
d85: 12.75 (in)	
d100: 18 (in)	
<i>Detention Basin</i>	
Riprap Class IV	
Median Particle Diameter: 15 (in)	
The following values are an 'average' of the size fraction range for the selected riprap class	
d15: 11.1 (in)	
d50: 16 (in)	
d85: 21.25 (in)	
d100: 30 (in)	



MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
ESPC PLAN

Project No.:	100-ATL-T31130
Designed By:	RST
Drawn By:	RST
Checked By:	JTS

D6

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APPENDIX 1

THE ES&PC PLAN MUST INCLUDE AT LEAST FOUR (4) OF THE FOLLOWING BMPs FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO A IMPAIRED STREAM SEGMENT AND FOR SITES WHICH EPD HAS APPROVED IN WRITING A REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME.

The four items chosen must be appropriate for the site conditions.

Plan Page #	Included Y/N	
<input type="checkbox"/>	<input type="checkbox"/>	a. During construction activities, double the width of the 25 foot undisturbed vegetated buffer along all State waters requiring a buffer and the 50 foot undisturbed vegetated buffer along all State waters classified as "trout streams" requiring a buffer. During construction activities, EPD will not grant variances to any such buffers that are increased in width.
<input type="checkbox"/>	<input type="checkbox"/>	b. Increase all temporary sediment basins and retrofitted storm water management basins to provide sediment storage of at least 3600 cubic feet (134 cubic yards) per acre drained.
<input type="checkbox"/>	<input type="checkbox"/>	c. Use baffles in all temporary sediment basins and retrofitted storm water management basins to at least double the conventional flow path length to the outlet structure.
D4/D10	Y	d. A large sign (minimum 4 feet x 8 feet) must be on the site on the actual start date of construction visible from a public roadway identifying the construction site, the permittee(s), and the contact person(s) and telephone number(s) until a NOT has been submitted.
<input type="checkbox"/>	<input type="checkbox"/>	e. Use anionic polyacrylamide (PAM) and/or mulch to stabilize areas left disturbed for more than seven (7) calendar days in accordance with Part III. D.1. of the NPDES Permit.
<input type="checkbox"/>	<input type="checkbox"/>	f. Conduct turbidity sampling after every rain event of 0.5 inch or greater within any 24 hour period, recognizing the exceptions specified in Part IV.D.6.d. of the NPDES Permits.
<input type="checkbox"/>	<input type="checkbox"/>	g. Comply with the applicable end-of-pipe turbidity effluent limit, without the "BMP defense" as provided for in O.C.G.A. 12-7-6 (a)(1).
D7	Y	h. Reduce the total planned site disturbance to less than 50% impervious surfaces (excluding any State-mandated buffer areas from such calculations). All calculations must be included on the plan.
<input type="checkbox"/>	<input type="checkbox"/>	i. Limit the amount of disturbed area at any one time to no greater than 25 acres or 50% of the total planned is less. All calculations must be included on the plan.
<input type="checkbox"/>	<input type="checkbox"/>	j. Use "Dirt II" techniques available on the EPD website, www.gaepd.org (e.g., seep berms, sand filters, anionic PAM) to model and manage construction storm water runoff (including sheet flow). All calculations must be included on the Plan.
<input type="checkbox"/>	<input type="checkbox"/>	k. Add appropriate organic soil amendments (e.g., compost) and conduct pre- and post-construction soil sampling to a depth of six (6) inches to document improved levels of soil carbon after final stabilization of the construction site.
<input type="checkbox"/>	<input type="checkbox"/>	l. Use mulch filter berms, in addition to a silt fence, on the site perimeter wherever construction storm water (including sheet flow) may be discharged. Mulch filter berms cannot be placed in waterways or areas of concentrated flow.
<input type="checkbox"/>	<input type="checkbox"/>	m. Apply the appropriate Georgia Department of Transportation approved erosion control matting or blankets or bonded fiber matrix to all slopes steeper than 3:1. All graphical illustrations must be included on the Plan.
<input type="checkbox"/>	<input type="checkbox"/>	n. Use appropriate erosion control matting or blankets instead of concrete in all construction storm water ditches and storm drainages designed for a 25 year, 24 hour rainfall event.
<input type="checkbox"/>	<input type="checkbox"/>	o. Use anionic PAM under a passive dosing method (e.g., flocculant blocks) within construction storm water ditches and storm drainages that feed into temporary sediment basins and retrofitted management basins.
<input type="checkbox"/>	<input type="checkbox"/>	p. Install sod for a minimum 20 foot width (in lieu of seeding) after final grade has been achieved, along the site perimeter wherever storm water (including sheet flow) may be discharged.
D4	Y	q. Conduct soil tests to identify and to implement site-specific fertilizer needs.
D4	Y	r. Certified personnel for primary permittees shall conduct inspections at least twice every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater in accordance with Part IV.D.4.a.(3)(a) - (c); secondary permittees, Part IV.D.4.b.(3)(a) - (c); and tertiary permittees Part IV.D.4.c.(3)(a) - (c).
<input type="checkbox"/>	<input type="checkbox"/>	s. Apply the appropriate compost blankets (minimum depth 1.5 inches) to protect soil surfaces until vegetation is established during the final stabilization phase of the construction activity.
<input type="checkbox"/>	<input type="checkbox"/>	t. Use alternative BMPs whose performance has been documented to be superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the State Soil and Water Conservation Commission). (If using this item please refer to the Alternative BMP guidance document found at www.gaswcc.georgia.gov)
<input type="checkbox"/>	<input type="checkbox"/>	u. Limit the total planned site disturbance to less than 15% impervious surfaces (excluding any state mandated buffer areas from such calculations). All calculations must be included in the plan.

Effective January 1, 2014

DISTURBED AREA / SEDIMENT STORAGE CALCULATIONS

Kelsey Avenue Project
Erosion, Sediment, and Pollution Control Plan
Silt Fence, Dike, and Rock Filter Dam Sediment Storage Calculations*

Prepared By: Eric Byrne
Updated: 7/4/2014

REQUIRED SEDIMENT STORAGE:

(1) Area of Disturbance (ac) = 3.70 Calculated from AutoCAD
(2) Required Volume of Sediment Storage (cy) = 247.90 67 cy/ac * (1)

Comments:

SEDIMENT STORAGE CAPACITY:

SILT FENCE
(1) Length of Silt Fence (ft) = 1240.85 From Drawings
(2) Silt Fence Height (Type C) (ft) = 2.33 Type C Silt Fence
(3) H - Height of Captured Sediment (ft) = 1.17 Half of Silt Fence Height (Max. Allowable Height)
(4) Existing Grade (Typical for this Location) (%) = 10.00 Conservative Typical Value
(5) W - Width of Captured Sediment (ft) = 11.70 Available Space from Existing Conditions
(6) Volume of Captured Sediment (cf) = 8493.00 1/2 * (1) * (3) * (5)
(7) Available Volume of Silt Fence Storage (cy) = 314.56 (6) / 27

DIKE(S)
(8) Length of Dike (ft) = 15.00 Conservative Estimate
(9) Height of Dike (ft) = 4.00 Conservative Estimate
(10) H - Height of Captured Sediment (ft) = 2.00 Half of Dike Height (Max. Allowable Height)
(11) Existing Grade (Typical for this Location) (%) = 10.00 Conservative Typical Value
(12) W - Width of Captured Sediment (ft) = 11.70 Available Space from Existing Conditions
(13) Volume of Captured Sediment (cf) = 175.50 1/2 * (8) * (10) * (12)
(14) Available Volume of Dike Storage (cy) = 13.00 ((13) / 27) * 2 Dikes

ROCK FILTER DAM(S)
(15) Length of ROCK FILTER DAM (ft) = 15.00 Conservative Estimate
(16) Height of ROCK FILTER DAM (ft) = 4.00 Conservative Estimate
(17) H - Height of Captured Sediment (ft) = 2.00 Half of Dike Height (Max. Allowable Height)
(18) Existing Grade (Typical for this Location) (%) = 10.00 Conservative Typical Value
(19) W - Width of Captured Sediment (ft) = 11.70 Available Space from Existing Conditions
(20) Volume of Captured Sediment (cf) = 175.50 1/2 * (15) * (17) * (19)
(21) Available Volume of Rock Filter Dam Storage (cy) = 13.00 ((20) / 27) * 2 Rock Filter Dams

TOTAL
(22) Total Available Volume of Sediment Storage (cy) = 340.56

Is Required Sediment Storage Volume Satisfied? NO*

*Although sediment storage capacity is achieved with the silt fence, dike, and rock filter dam installations, the actual sediment storage will be less than 67 cubic yards per acre drained due to the location and area of disturbance each of these measures treats. Permit No. GAR100001 does not allow for temporary or permanent sediment storage in perennial and intermittent waters, thus sediment storage for the stream restoration and culvert components of this project can not be achieved. Because sediment storage is not allowed in the stream, alternative BMPs will be used to minimize sediment transport from construction activities in the stream which includes the following:
i) Pump around equipment and silt bag
ii) Dikes
iii) Rock Filter Dams
Traditional BMPs (i.e. silt fences, seeding, good house keeping, etc.) will be used to treat the upland areas and keep sediment from entering the adjacent stream.

PRE AND POST CONSTRUCTION IMPERVIOUS AREA CALCULATIONS

THIS CONSTRUCTION INCLUDES THE REMOVAL OF OVER 9,000 SQ.FT. OF ASPHALT, WHICH WILL REDUCE IMPERVIOUS AREA ADJACENT TO THE STREAM AND FOR THE ENTIRE PROJECT IN GENERAL. RUNOFF FROM THE PARKING LOT WILL ENTER THE FOUR-CELL BIoretention AREA VIA SEVERAL CURB CUTS AND A GRASSED PRE-TREATMENT SWALE, AND DISCHARGE FROM THE BMP THROUGH A CONCRETE RISER-STRUCTURE AND CULVERT TO THE STREAM. BIoretention LANDSCAPING WILL INCLUDE NATIVE PLANTINGS OF WOODY SHRUBS AND HERBACEOUS PERENNIALS.

ROCK FILTER DAM RIP-RAP CALCULATIONS

GRADED RIP-RAP STONE (Bank Full Velocity)

Feature	Bank Full Velocity (feet/sec)	N.S.A. No.*	Size Inches (Sq. Opening)			Filter Stone N.S.A. No.*
			Max.	Avg.**	Min.	
In-Stream Structures	6.5	R-3	6	3	2	FS-2

* National Stone Association

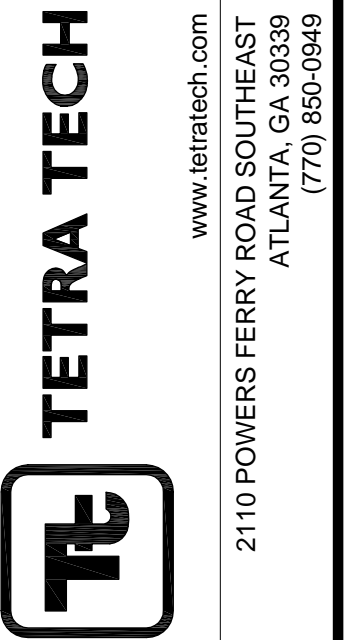
** At least 50% of the individual stone particles must be equal or larger than this listed size

NORTH 3RD STREET CULVERT OUTLET PROTECTION CALCULATIONS

Parameter	Value	Units
Select Culvert and Flow		
Crossing	North 3rd Street	
Culvert	North 3rd Street	
Flow	286	cfs
Culvert Data		
Culvert Width (including multiple barrels)	12	ft
Culvert Height	5	ft
Outlet Depth	2.42	ft
Outlet Velocity	9.85	ft/s
Froude Number	1.12	
Tailwater Depth	1.81	ft
Tailwater Velocity	10.13	ft/s
Tailwater Slope (SO)	0.0176	
External Dissipator Data		
External Dissipator Category	Streambed Level Structures	
External Dissipator Type	Riprap Basin	
Restrictions		
Froude Number	<3	
Input Data		
Condition to be used to Compute Basin Outlet Velocity	Best Fit Curve	
D50 of the Riprap Mixture		
Note:	Minimum HS/D50 = 2 is Obtained if D50 = 0.462 ft	
D50 of the Riprap Mixture	0.477	ft
DMax of the Riprap Mixture	2	ft
Results		
Brink Depth	2.42	ft
Brink Velocity	9.847	ft/s
Depth (YE)	2.42	ft
Riprap Thickness	3	ft
Riprap Foreslope	4	ft
Check HS/D50		
Note:	OK if HS/D50 > 2.0	
HS/D50	1.744	
HS/D50 Check	HS/D50 is NOT OK	
Check HS/D50		
Note:	OK if 0.1 < D50/YE < 0.7	
Check D50/YE	0.197	
D50/YE Check	D50/YE is OK	
Basin Length (LB)	48	ft
Basin Width	44	ft
Apron Length	12	ft
Pool Length	36	ft
Pool Depth (HS)	0.832	ft
TW/YE	0.747	
Tailwater Depth (TW)	1.808	ft
Average Velocity with TW	3.322	ft/s
Critical Depth (Yc)	1.077	ft
Average Velocity with Yc	5.753	ft/s

CULVERT AND STORM DRAIN OUTLET PROTECTION NOTES:

THE KELSEY AVENUE CULVERT, DETENTION BASIN OUTLET, AND BIoretention OUTLET DISCHARGE INTO THE STREAM RESTORATION SEGMENT(S) OF THE PROJECT. OUTLET PROTECTION IN THESE AREAS IS PROVIDED BY THE STRUCTURAL FEATURES SHOWN IN THE PLANS FOR THE STREAM RESTORATION. TEMPORARY RIPRAP APRONS MAY BE REQUIRED FOR THE DETENTION BASIN OUTLET AND BIoretention OUTLET DURING CONSTRUCTION. TEMPORARY OUTLET PROTECTION DETAILS ARE SHOWN ON PLATE D8 AND OUTLET PROTECTION CALCULATIONS FOR THESE FEATURES IS SHOWN ON PLATE D10.



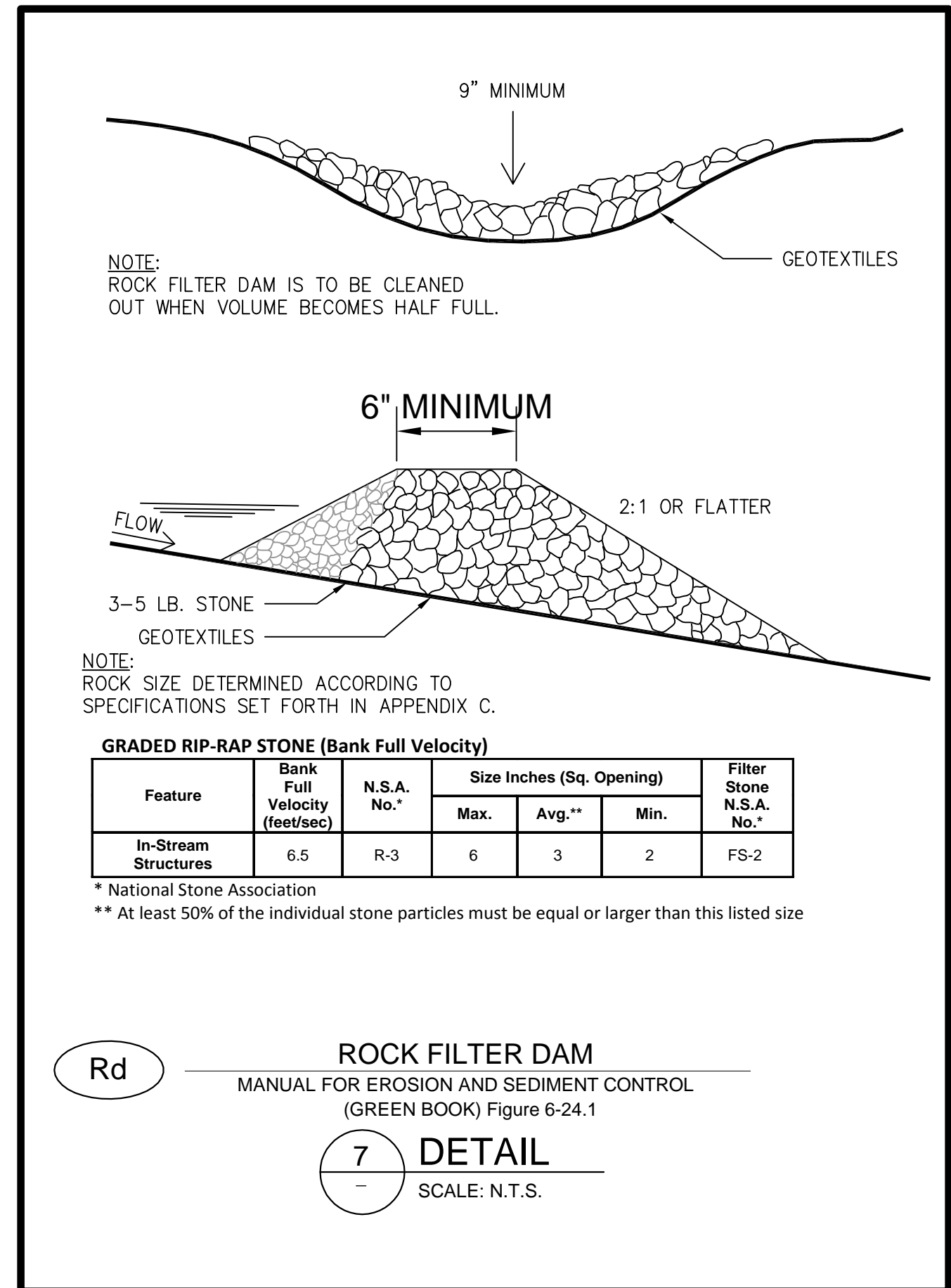
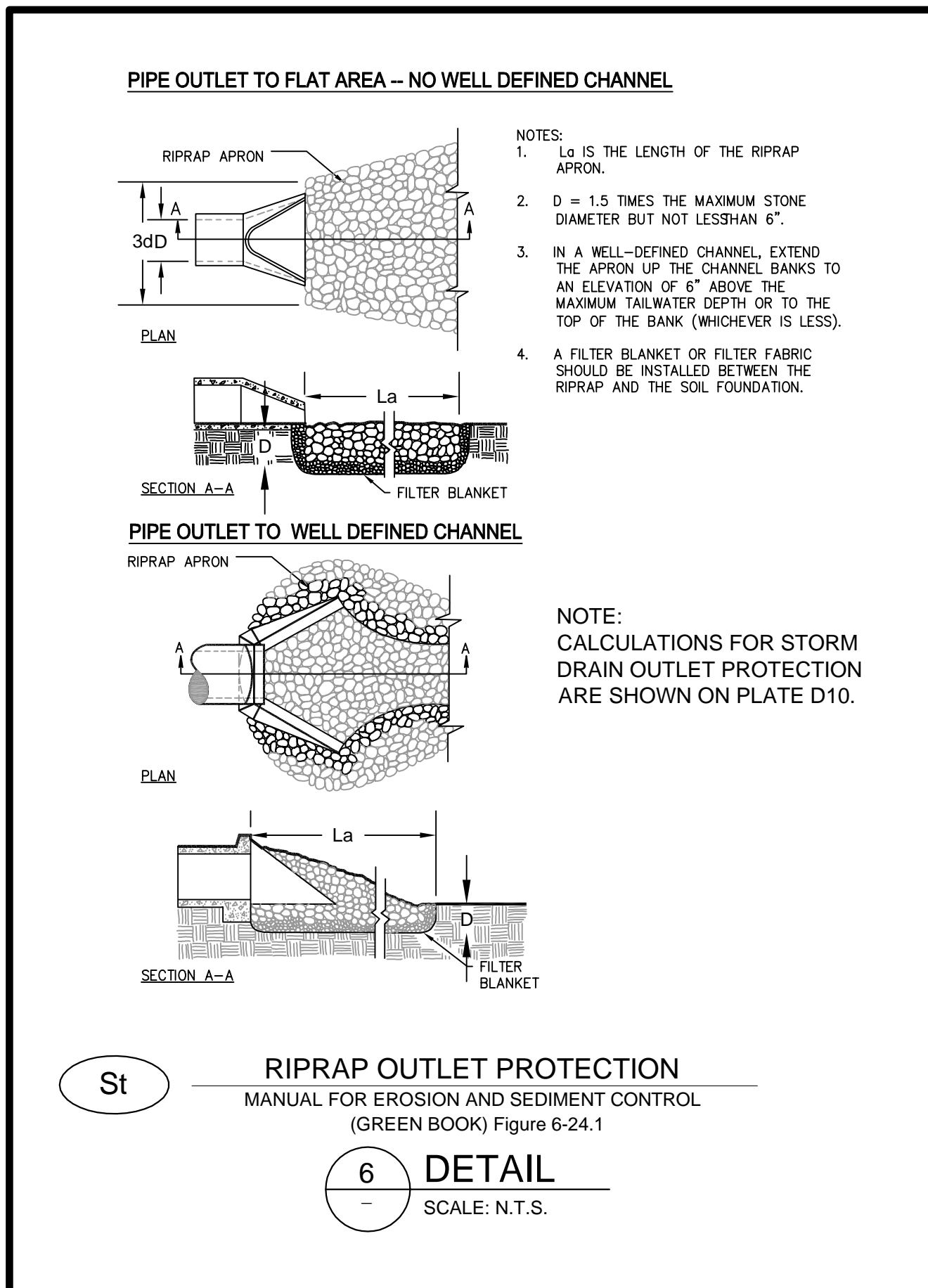
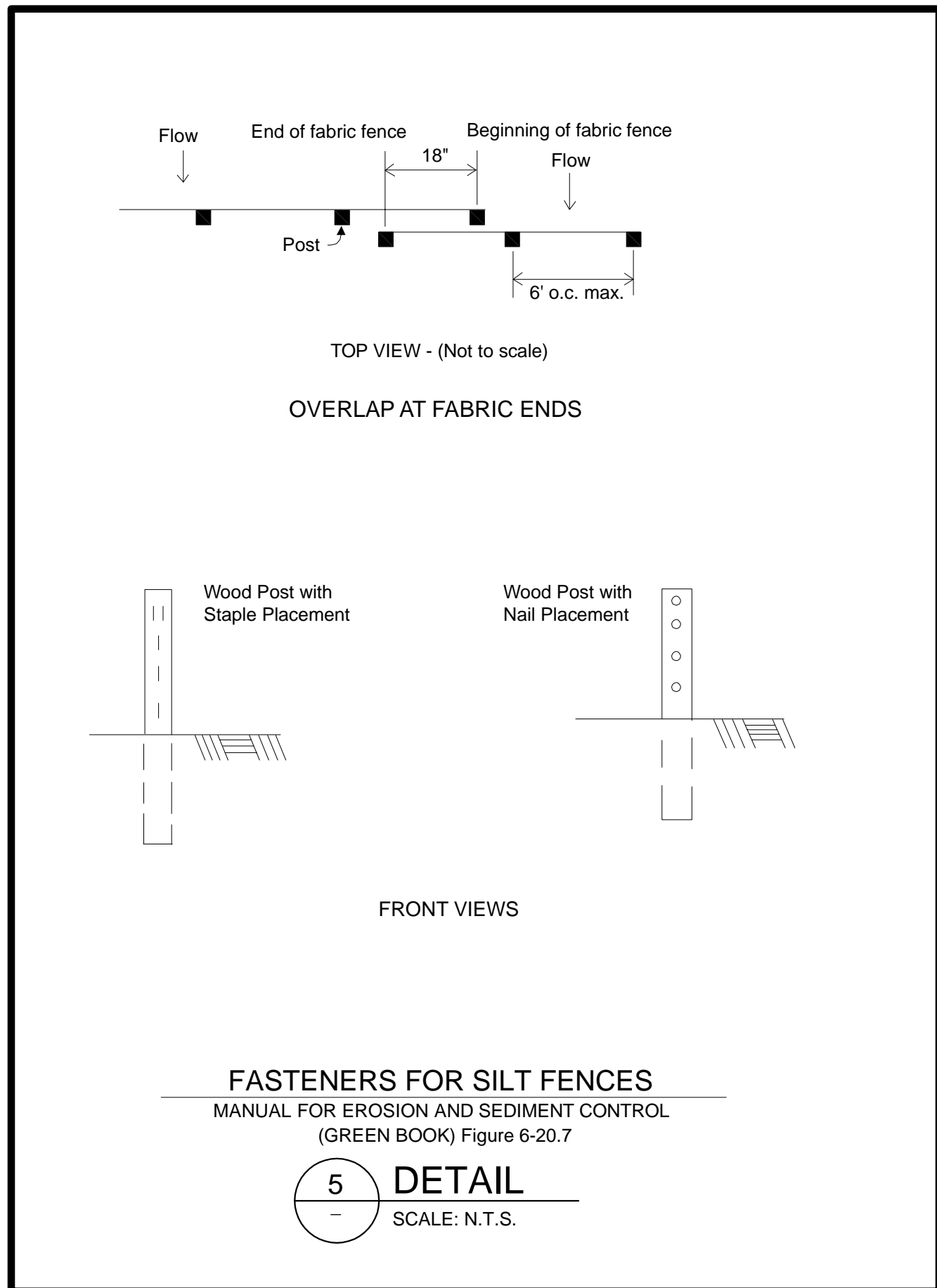
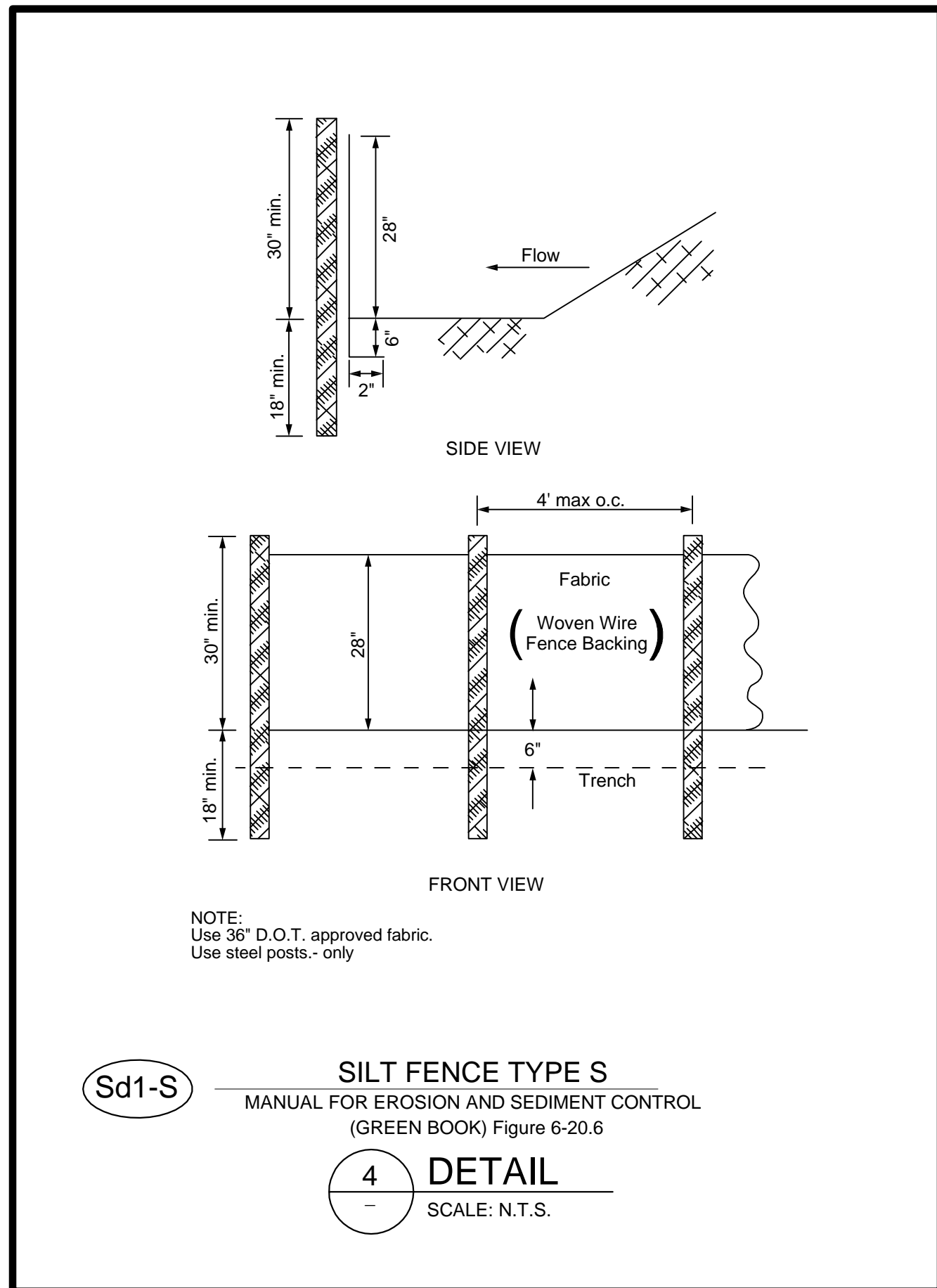
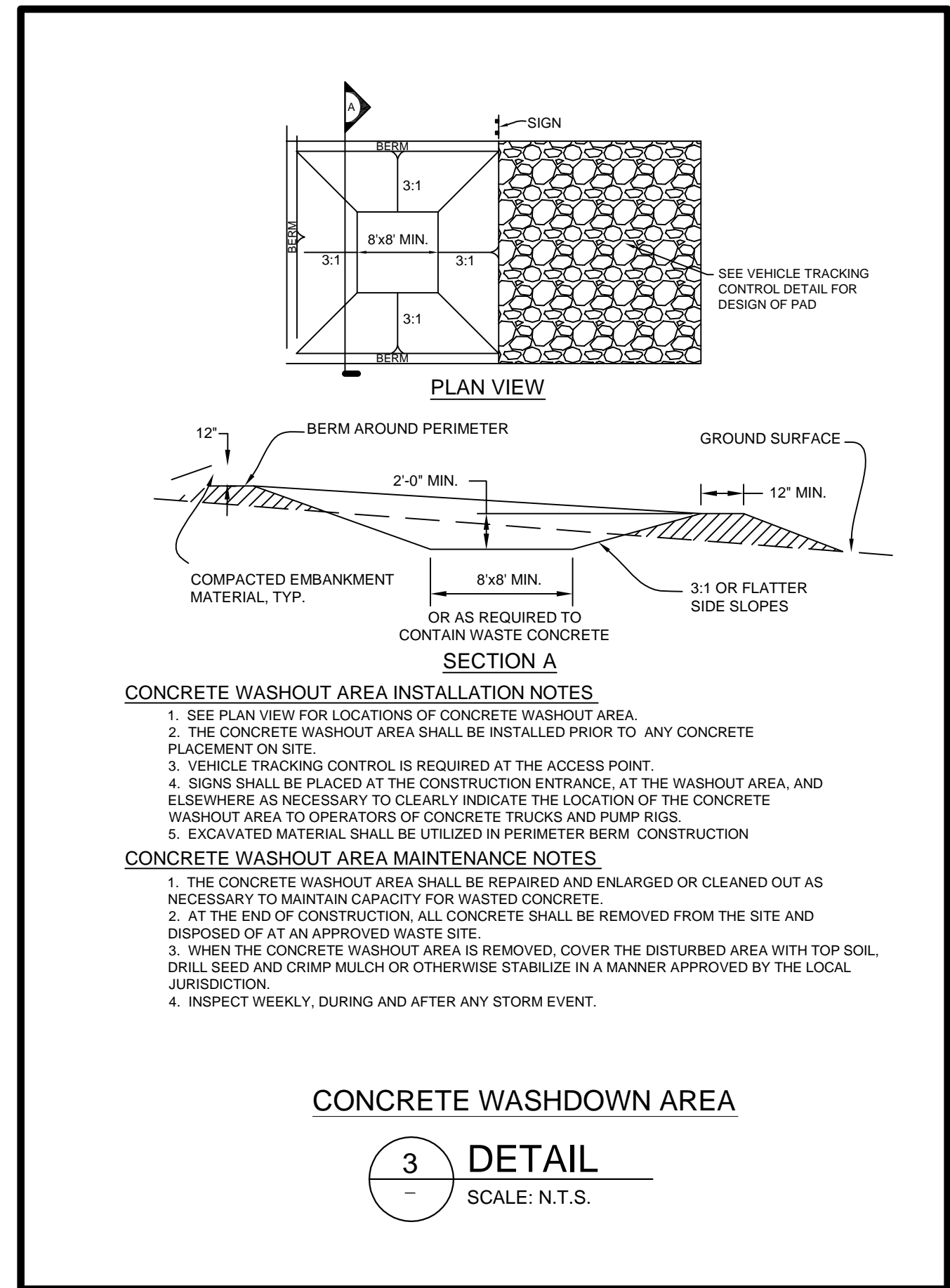
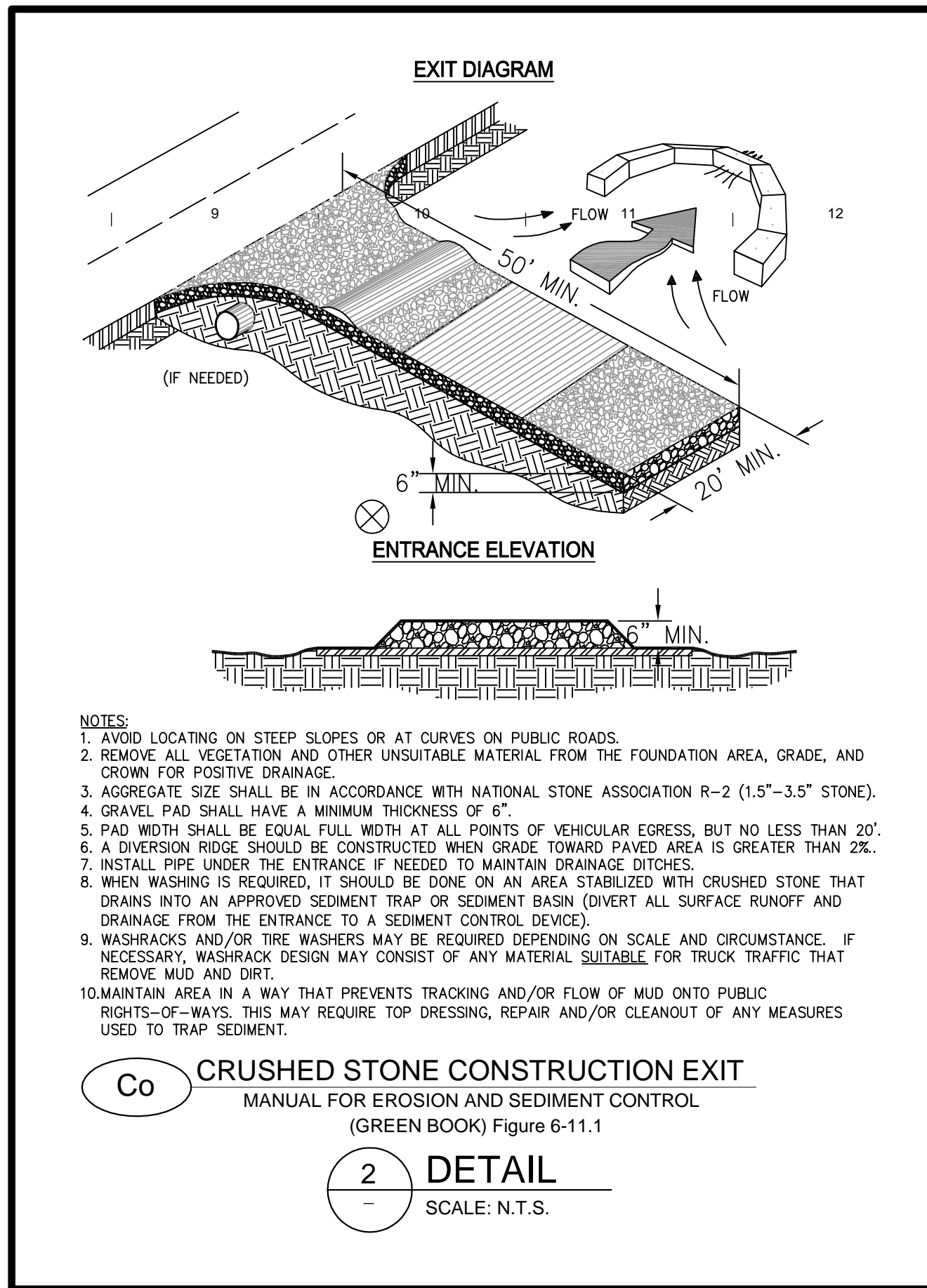
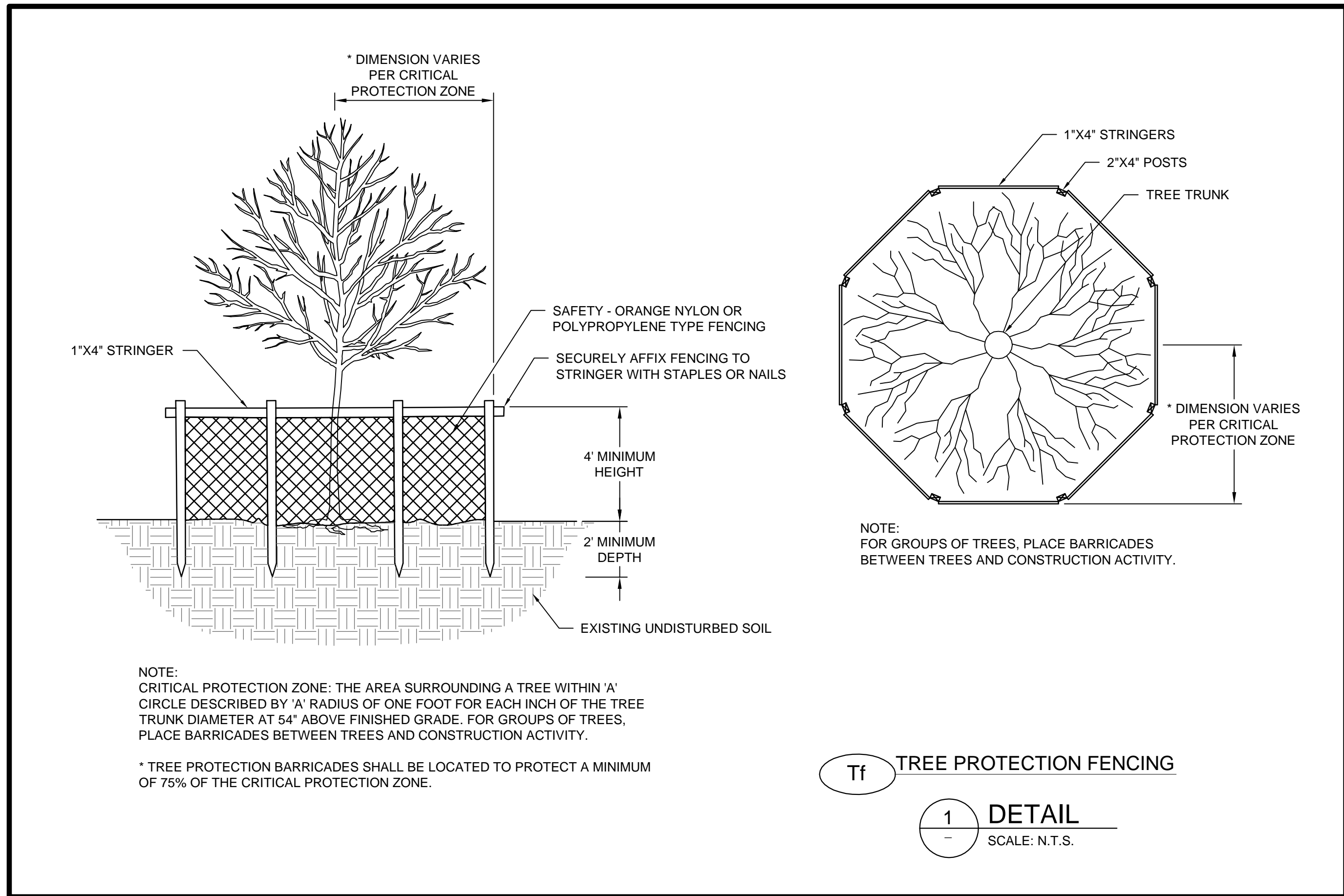
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	8-1-15	FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

D7

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TETRA TECH
 www.tetra.tech.com
 2110 POWERS FERRY ROAD SOUTHEAST
 ATLANTA, GA 30339
 (770) 850-0949

Griffin
 Growing Together

GEORGIA REGISTERED PROFESSIONAL ENGINEER
 No. 223248
 ERIC JOHN BYRNE

MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	RST

Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA

A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS

ESPC PLAN

Project No.: 100-ATL-T31130
 Designed By: RST
 Drawn By: RST
 Checked By: JTS

D8

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DRAINAGE AREA CHARACTERISTICS

Parameter	STR-1	STR-2a	STR-2b	STR-2c	STR-3	BR-1 ¹	DP-1 ¹
Area (acres)	56.2	8.60	2.9	4.9	12.5	1.31	3.18
Total Imperviousness (%)	28.8%	17.4%	50.0%	31.4%	35.1%	89.7%	45.3%
Directly Connected Imperv. (%)	14.0%	12.2%	35.0%	22.0%	22.7%	89.7%	13.6%
Hydraulic Length (ft)	3,005	965	904	1,016	1,085	550	630
Hydraulic Slope (ft/ft)	0.036	0.057	0.053	0.031	0.053	0.014	0.059

SCS CURVE NUMBER INPUTS

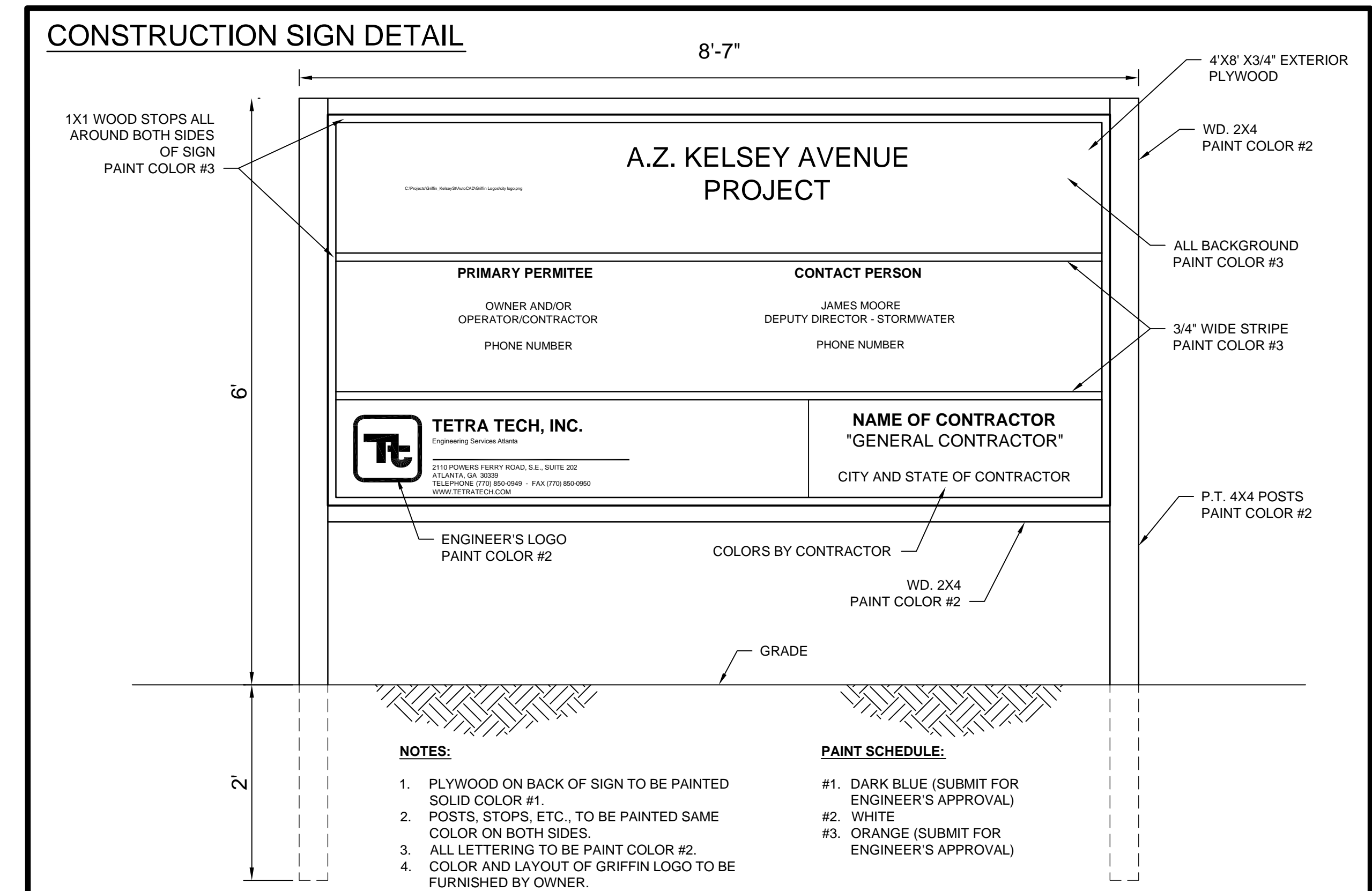
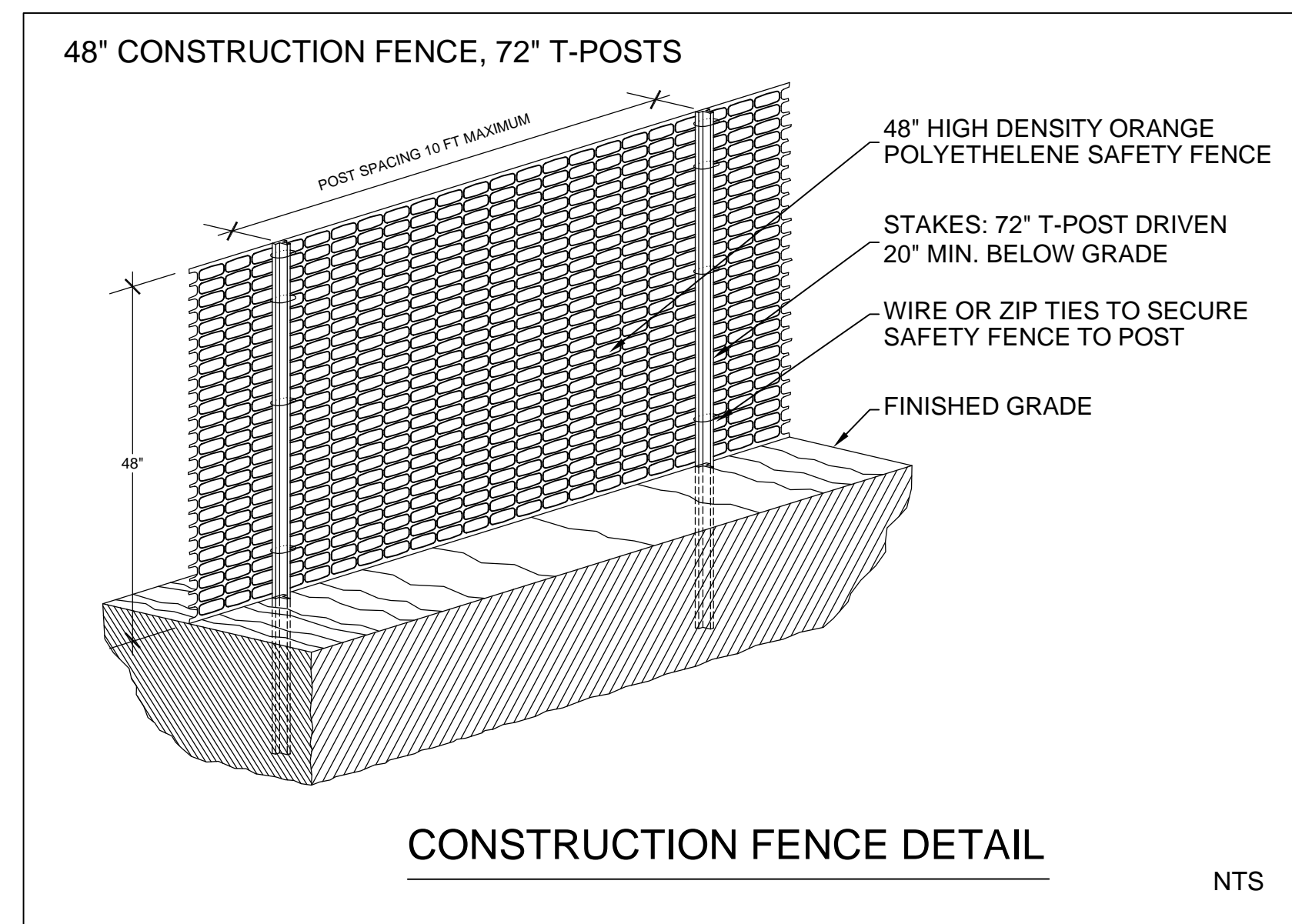
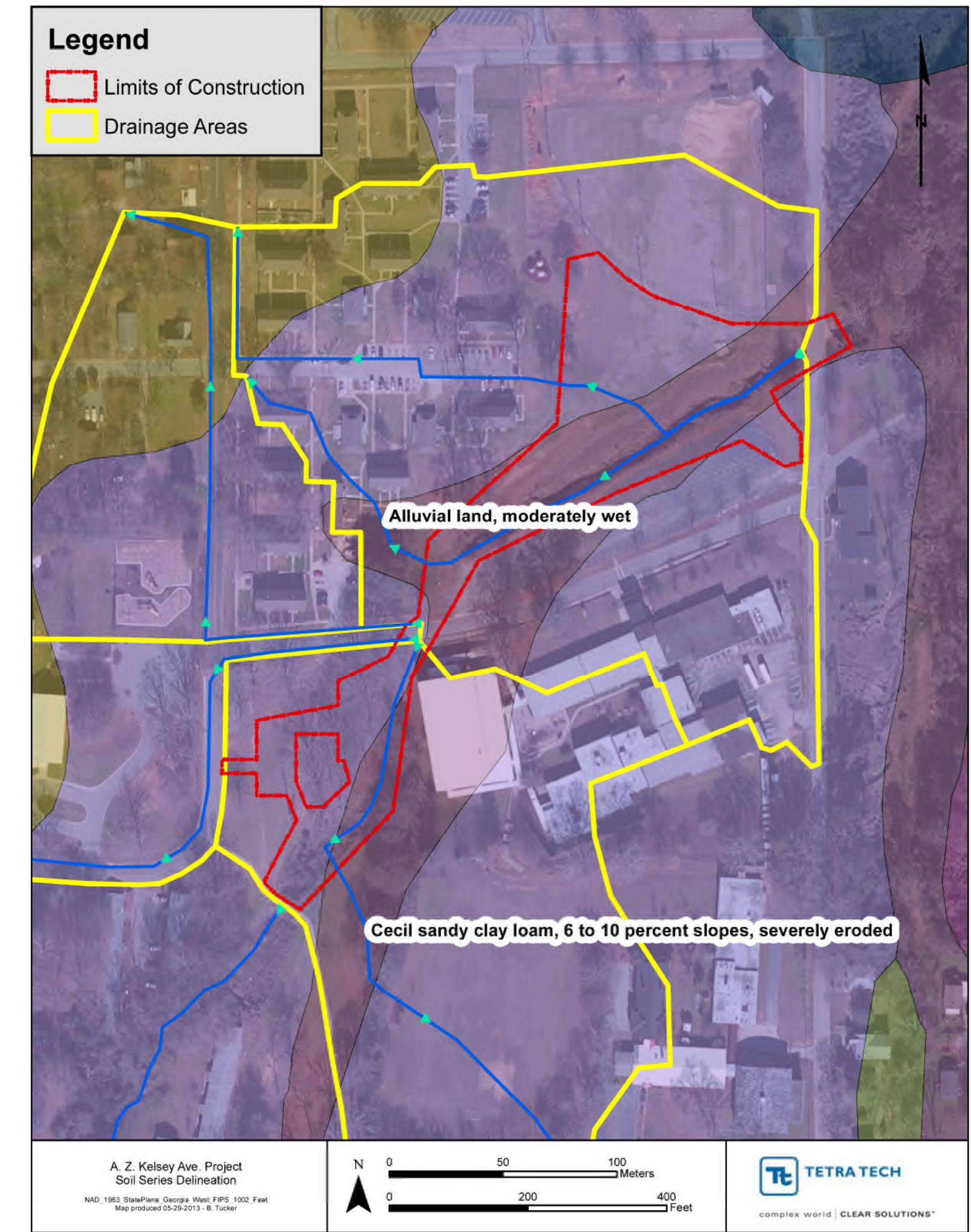
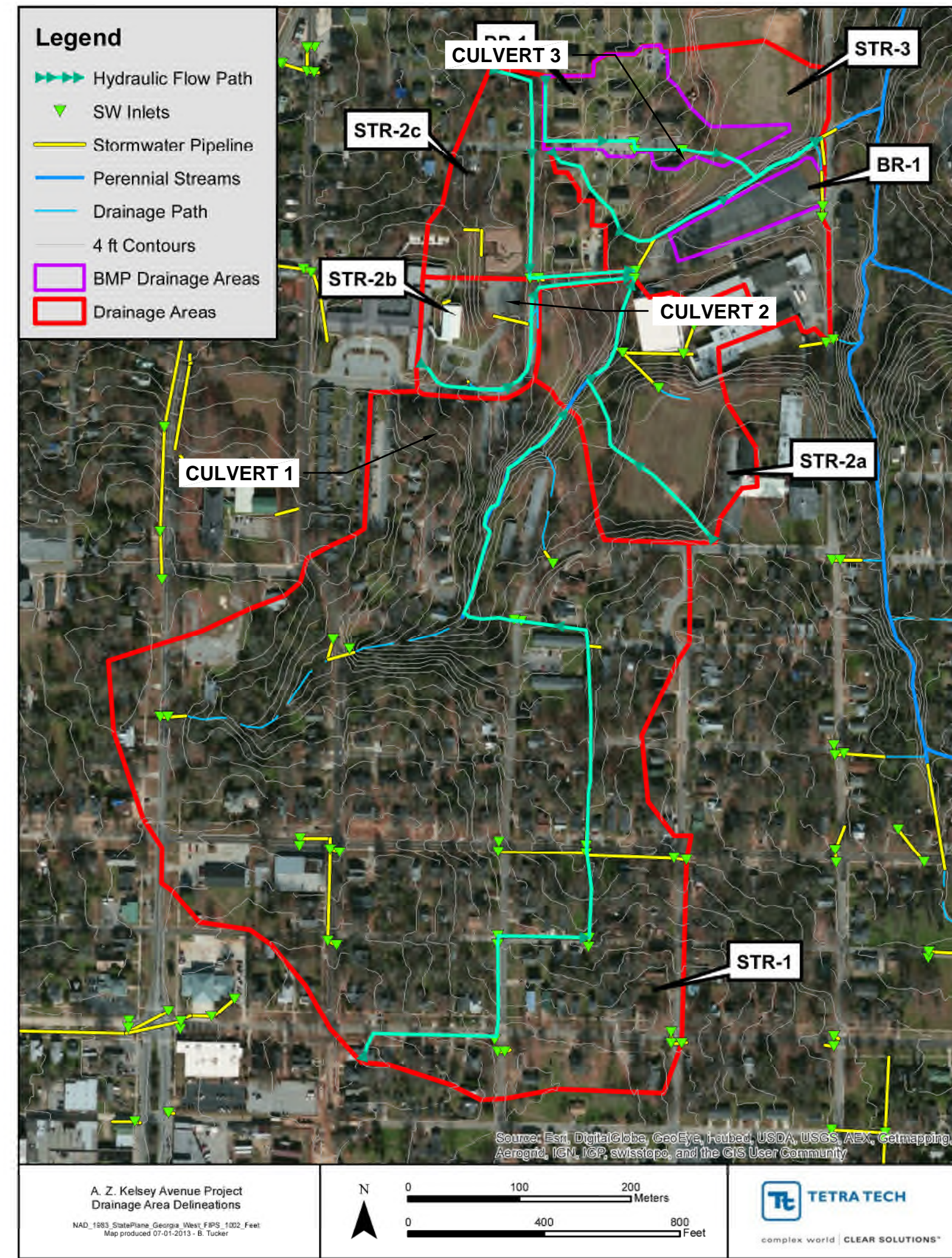
Parameter	STR-1	STR-2a	STR-2b	STR-2c	STR-3	BR-1	DP-1
Composite Curve Number	81.6	79.5	82.8	78.4	80.5	78.4	78.4
Initial Abstractions (in)	0.45	0.52	0.42	0.55	0.48	0.55	0.55

PRE-CONDITION PEAK DISCHARGES (CFS)

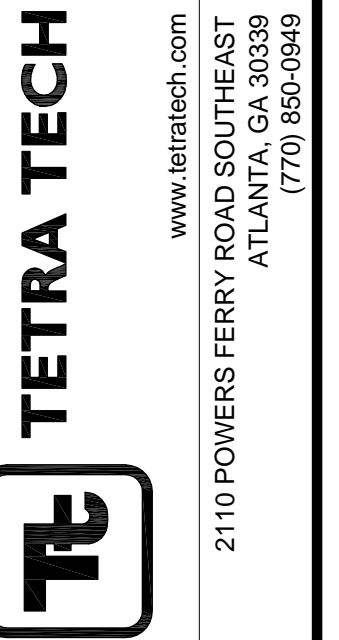
	Culvert 1	Culvert 2	Culvert 3	Detention Basin	Bioretention
Watershed Size (ac)	56.2	187.5	85.1	3.18	1.31
1-yr peak (cfs)	129	150	167	11.1	5.8
2-yr peak (cfs)	161	188	208	13.3	6.5
5-yr peak (cfs)	207	244	273	16.2	7.5
10-yr peak (cfs)	241	285	318	18.6	8.4
25-yr peak (cfs)	290	343	385	21.8	9.6
50-yr peak (cfs)	323	384	432	24.1	10.4
100-yr peak (cfs)	360	429	482	26.4	11.3

POST-CONDITION PEAK DISCHARGES (CFS)

Location	1-Yr	2-Yr	10-Yr	50-Yr	100-Yr
Culvert 1	94	107	138	209	237
Culvert 2	110	127	167	253	288
Culvert 3	123	142	187	286	325



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BY	DATE	DESCRIPTION
RST	8-1-15	FINAL CONSTRUCTION PLANS

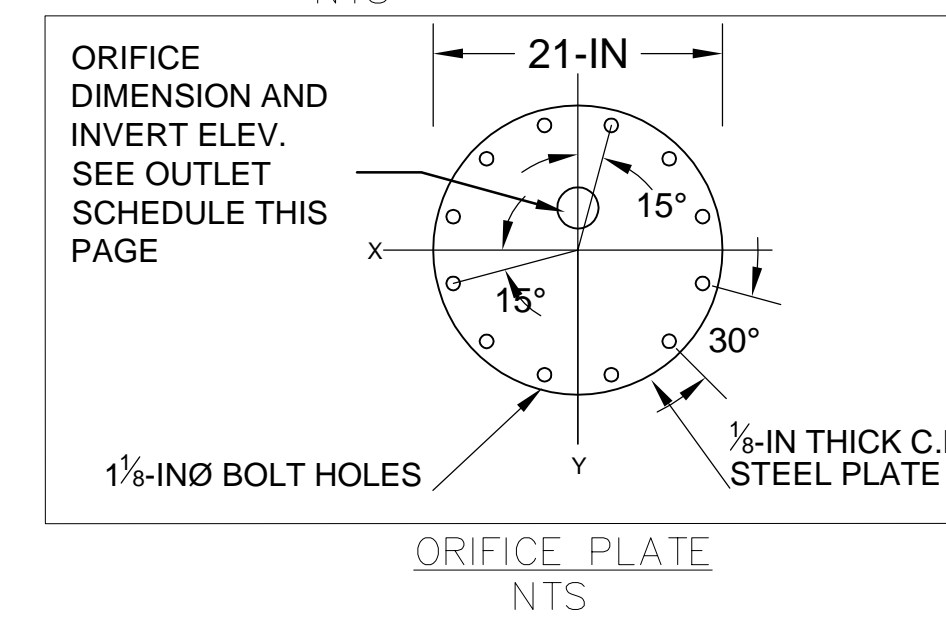
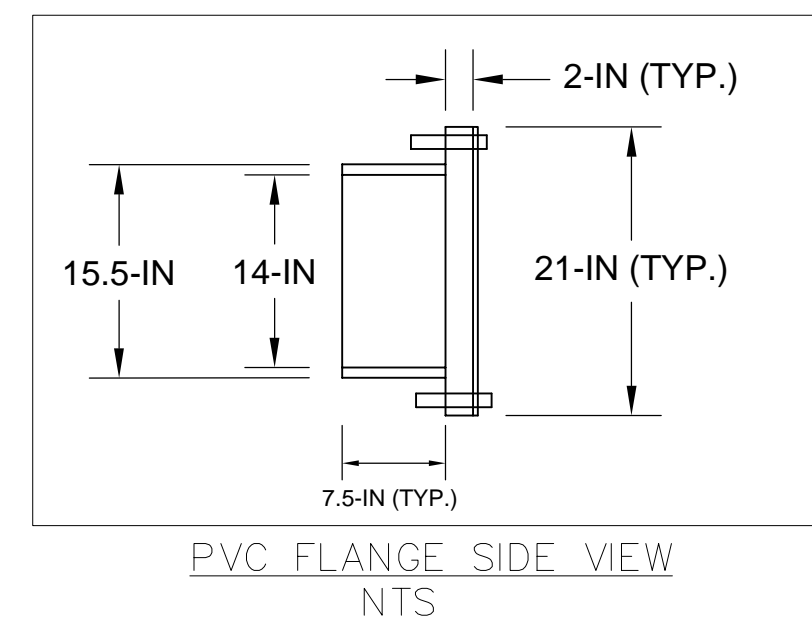
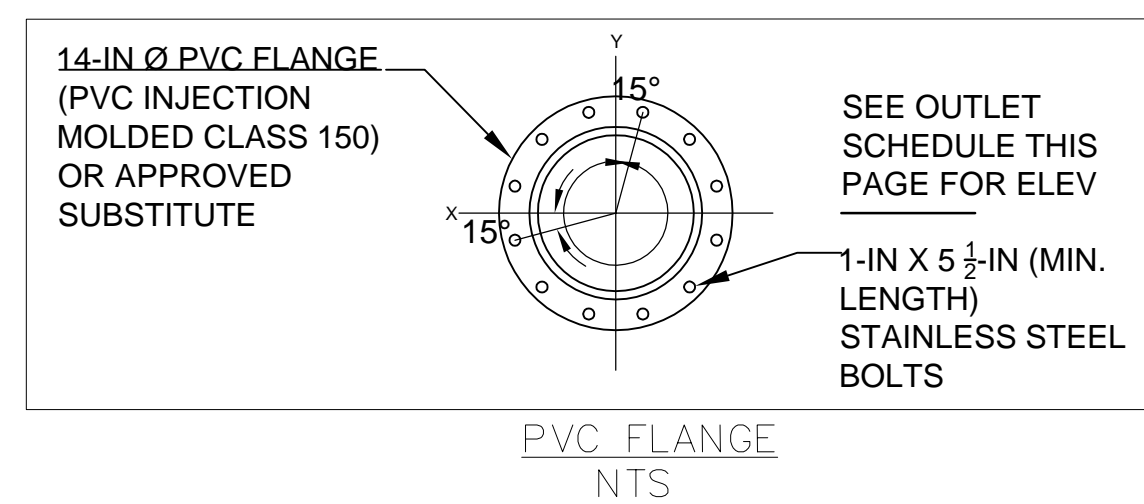
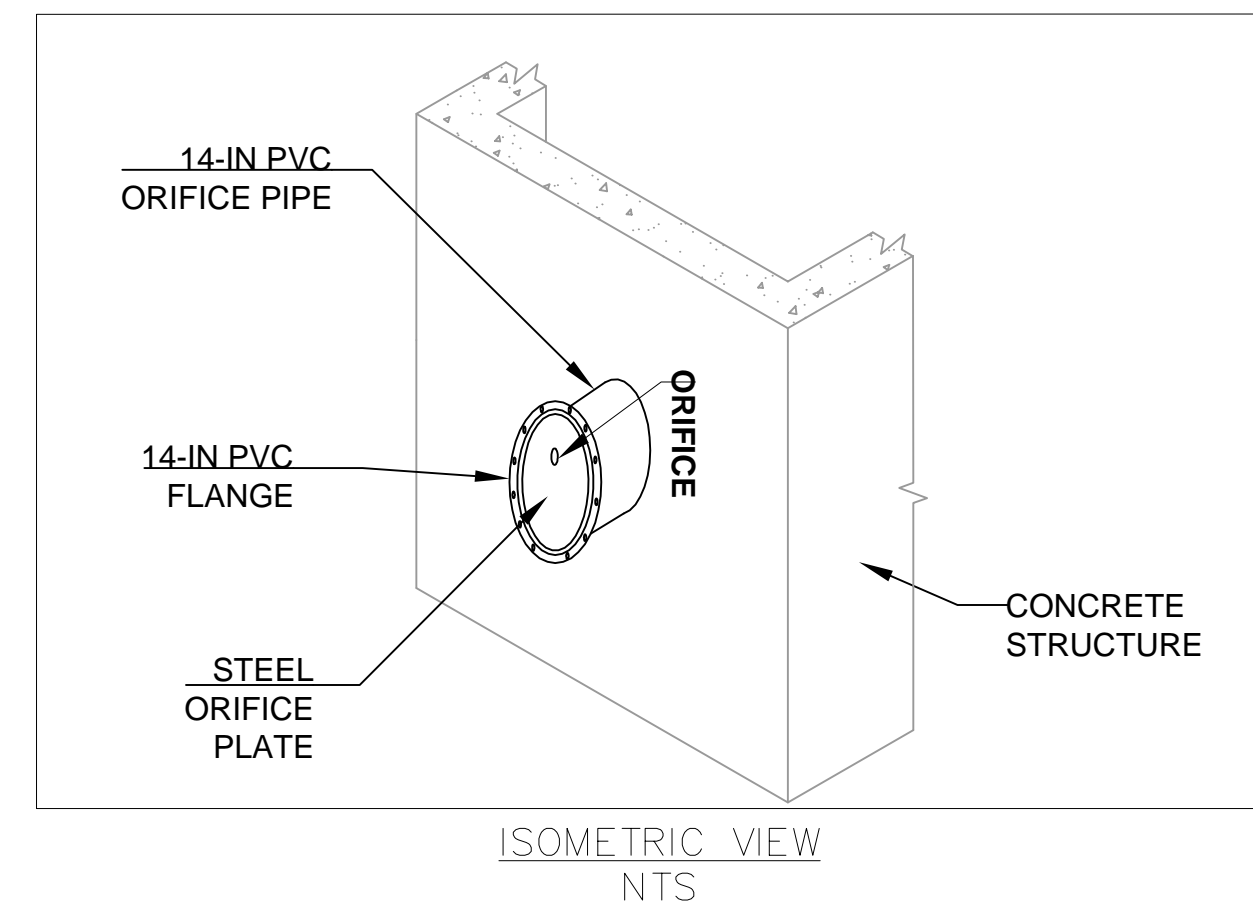
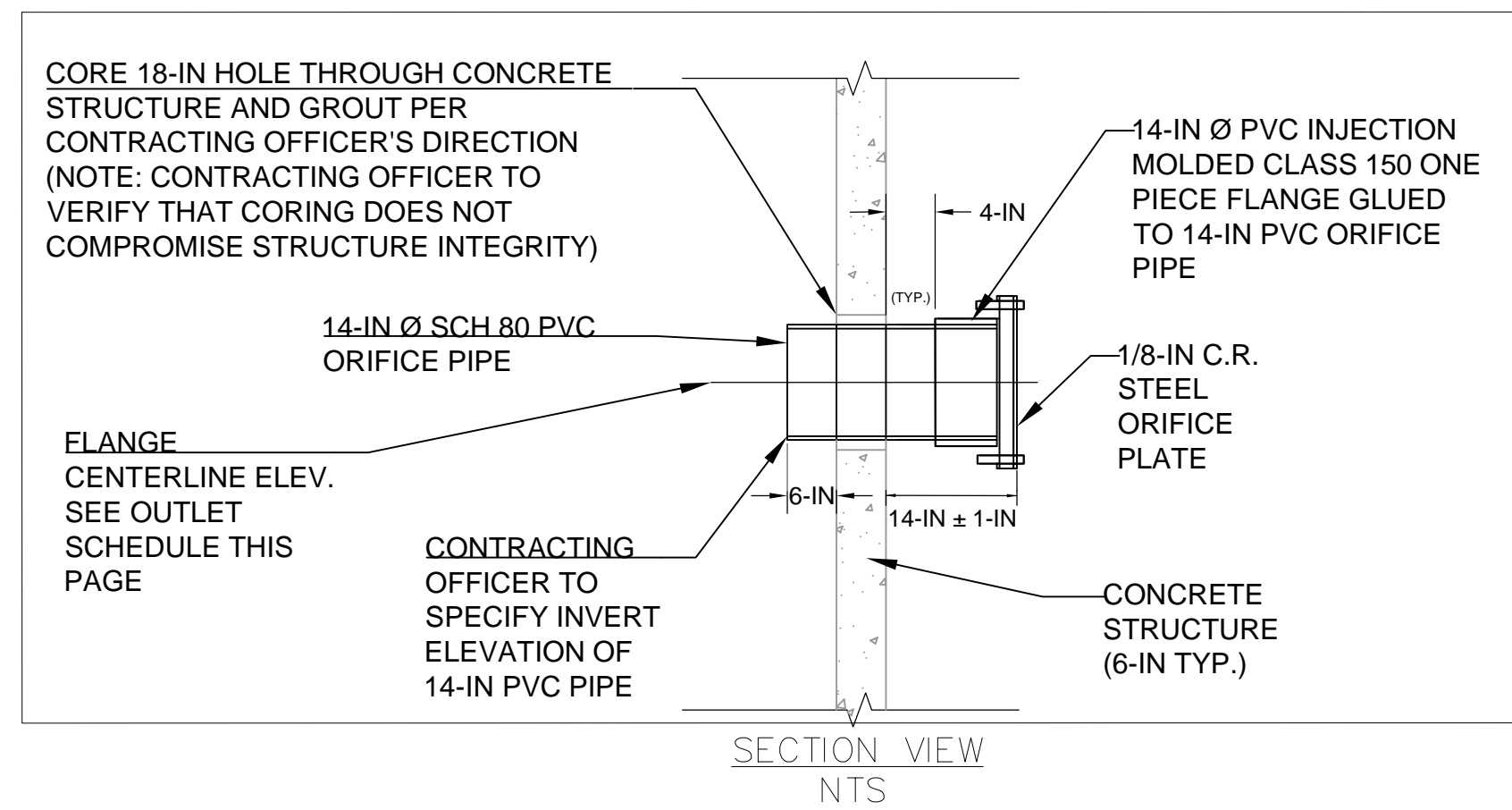
Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
 A. Z. KELSEY AVENUE PROJECT
 STREAM RESTORATION AND
 STORMWATER BMP RETROFITS
 ESPC PLAN

Project No.:	100-ATL-T31130
Designed By:	RST
Drawn By:	RST
Checked By:	JTS

D10

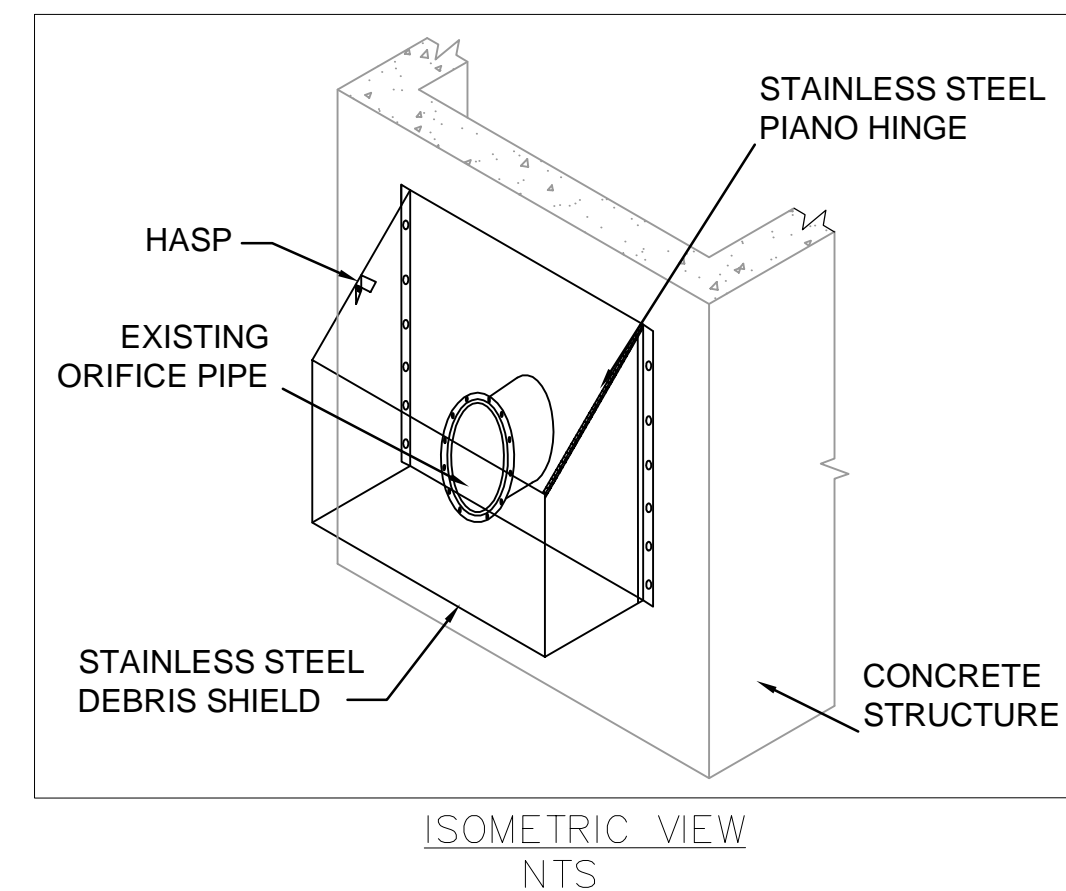
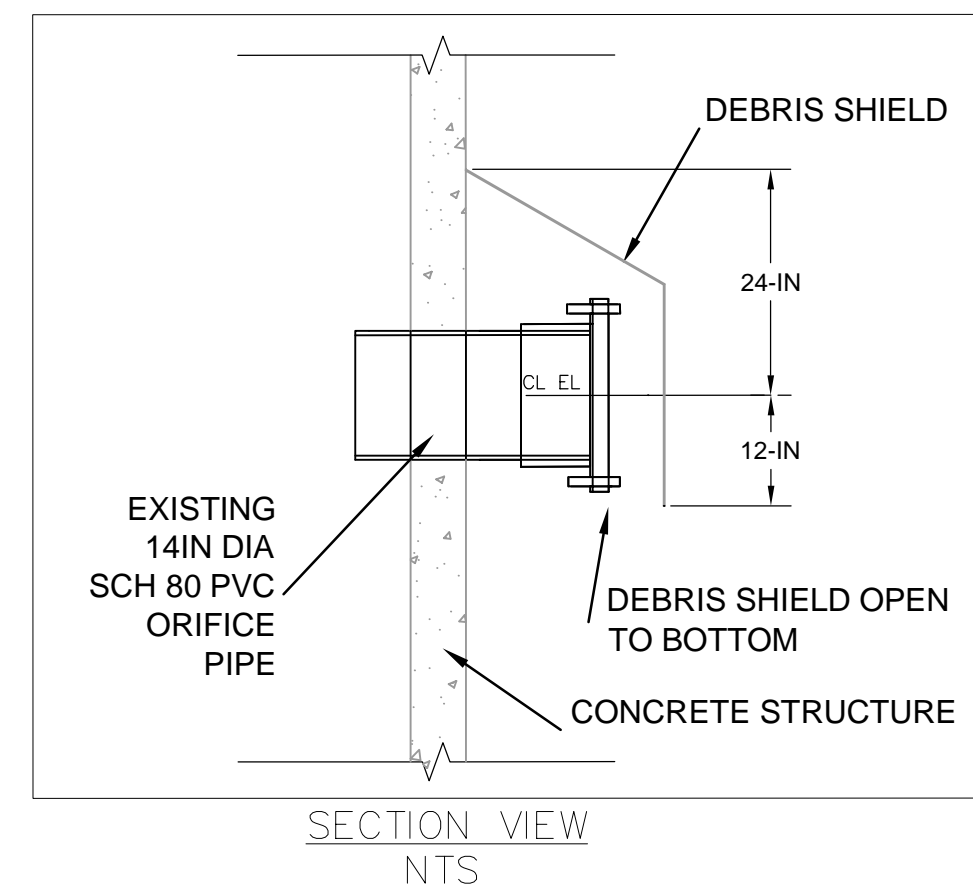
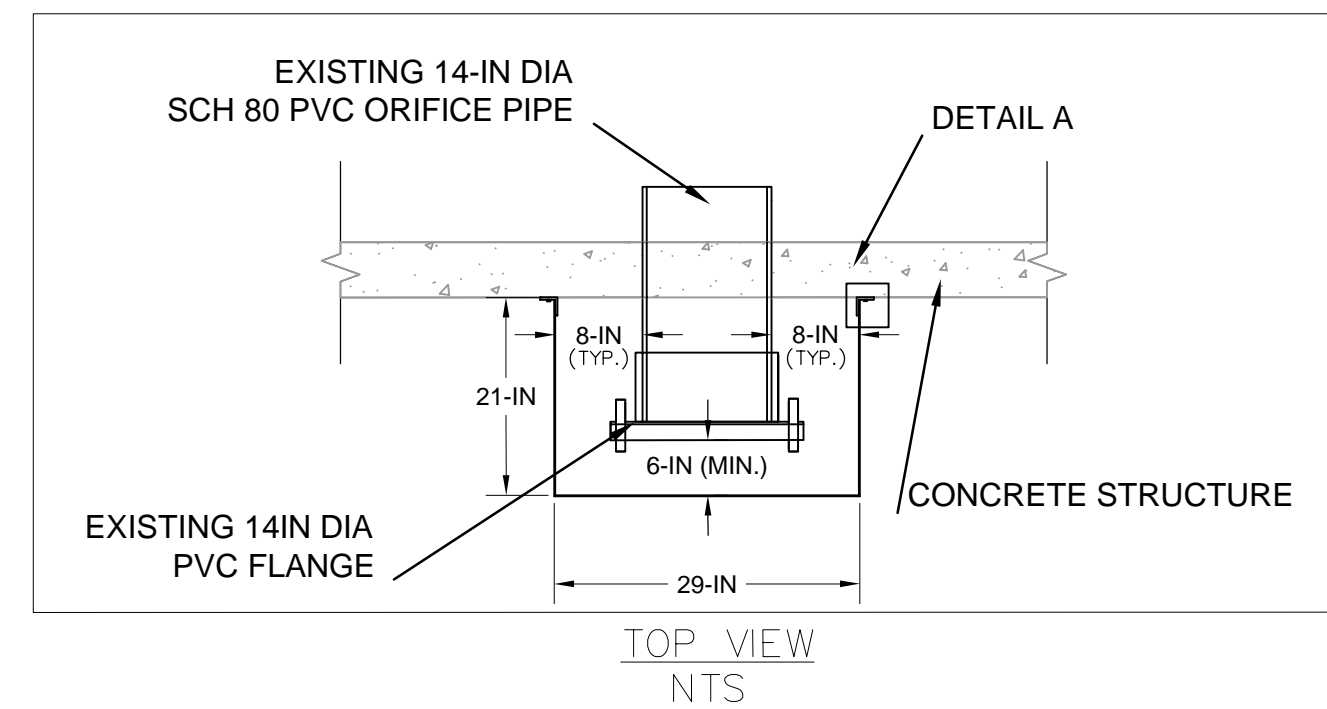
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FLANGE AND ORIFICE PLATE DETAIL

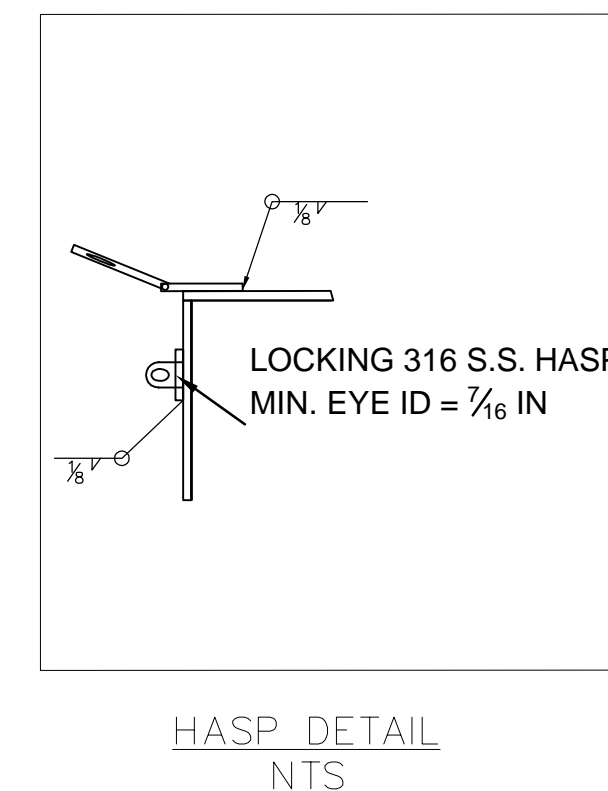
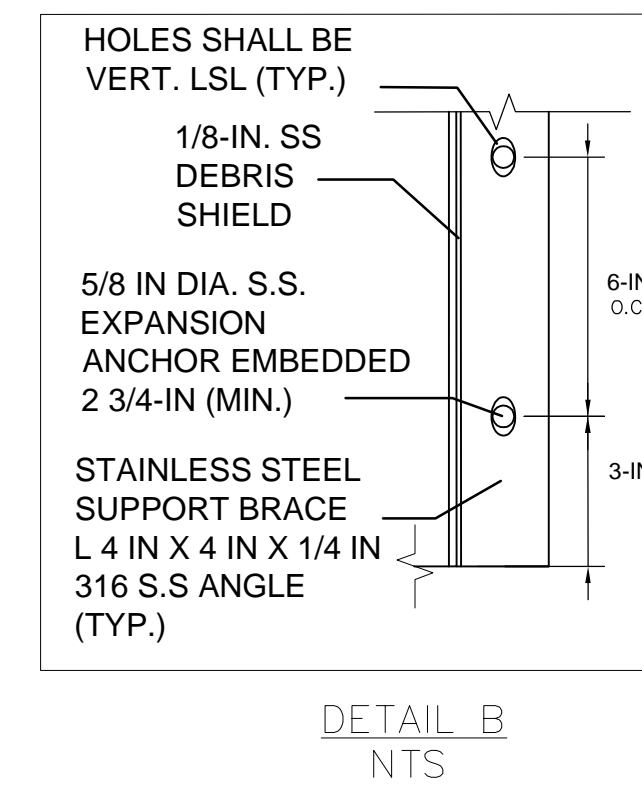
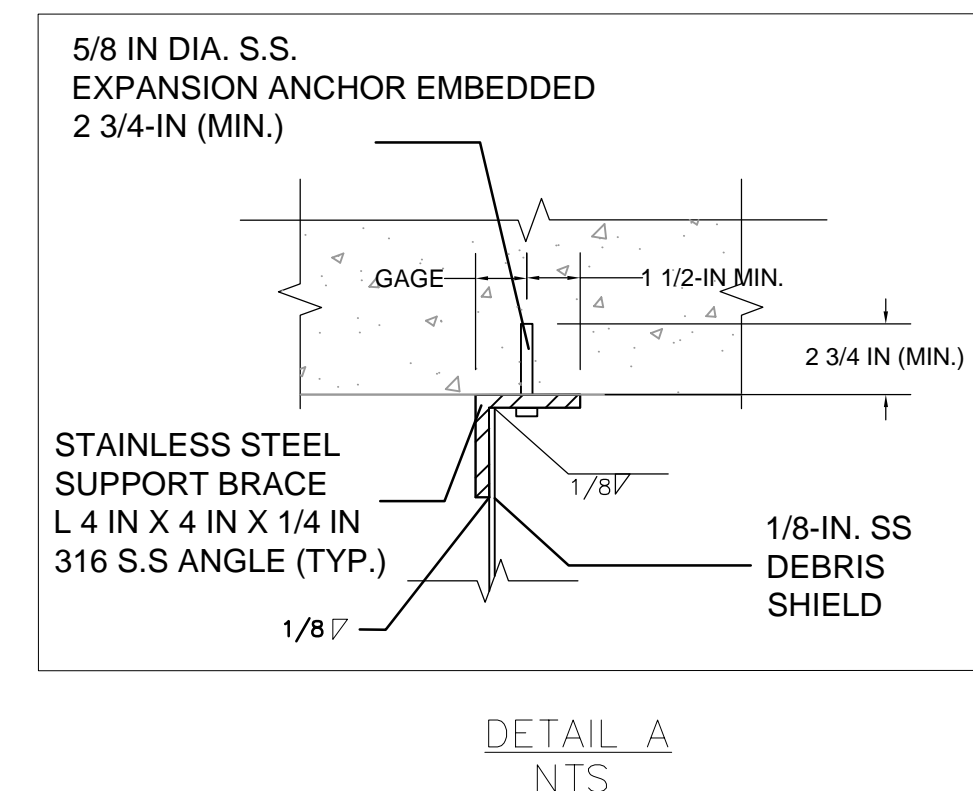
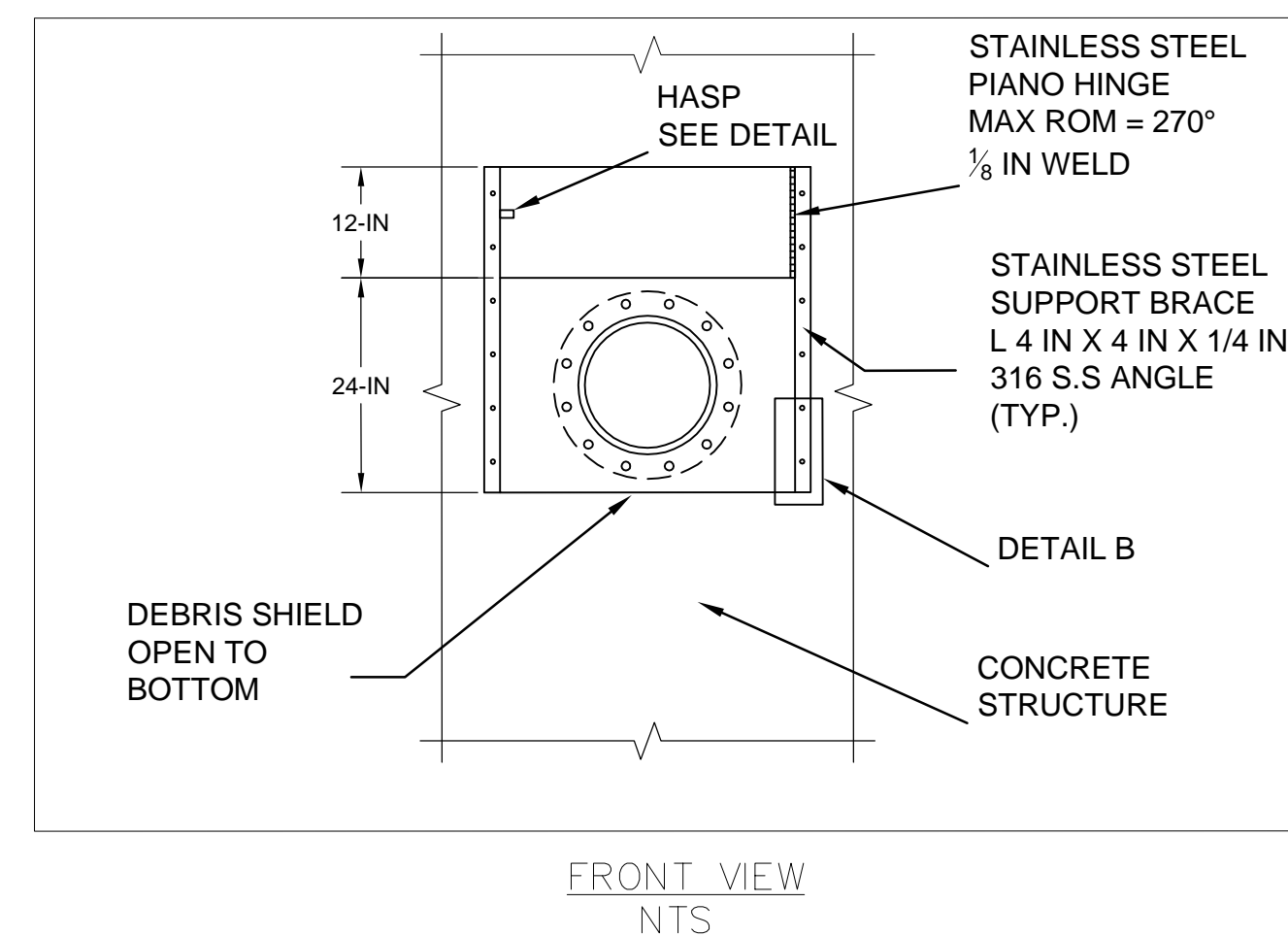
NOTE: INSTALL FLANGE SO THAT THE BOLT HOLES ARE ROTATED 15° FROM THE X AND Y CENTERLINE AXIS



OUTLET SCHEDULE

OUTLET FEATURE	BASIN
FLANGE CENTERLINE (FT)	862.0
ORIFICE DIA. (IN)	1.5
ORIFICE ELEV. (FT)	862.0

DEBRIS SHIELD DETAIL



NOTES:

1. DEBRIS SHIELD TO BE CONSTRUCTED FROM 1/8-IN STAINLESS STEEL AND WELDED TO ANGLE SUPPORT BRACE.
2. CONTRACTOR TO ENSURE SURFACE OF CONCRETE STRUCTURE IS CLEAN OF SOIL, DEBRIS, AND AESTHETIC FASCIA MATERIAL PRIOR TO DEBRIS SHIELD INSTALLATION.
3. MAINTAIN A MINIMUM OF 8-INCHES EDGE DISTANCE FROM CENTERLINE OF ANY ANCHOR BOLT TO ANY EDGE OF CONCRETE INCLUDING CONCRETE JOINTS.
4. INSTALL ANCHOR BOLTS IN STRICT ACCORDANCE TO MANUFACTURER'S INSTRUCTIONS.

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PLANT LIST

ZONE: BIORETENTION - INTERNAL

Botanical Name	Common Name	Classification	Main or Alternate Species	Spacing (feet on center)	Type
<i>Eupatorium purpurea</i>	Joe Pye Weed	Herbaceous	Main	1	Quart
<i>Panicum virgatum</i>	Switchgrass	Herbaceous	Main	1	Quart
<i>Lobelia cardinalis</i>	Cardinal Flower	Herbaceous	Main	2	Quart
<i>Panicum virgatum</i>	Switchgrass	Herbaceous	Main	1	Quart
<i>Rudbeckia laciniata</i>	Greenhead Coneflower	Herbaceous	Main	1	Quart
<i>Scirpus cyperinus</i>	Woolgrass	Herbaceous	Alt.	2	Quart
<i>Hemerocallis spp.</i>	Day Lily	Herbaceous	Alt.	1	Quart
<i>Hamamelis virginiana</i>	Witch Hazel	Decid. Shrub	Main	8	Gallon
<i>Hypericum densiflorum</i>	Common St. John's Wort	Decid. Shrub	Main	8	Gallon
<i>Lindera benzoin</i>	Spicebush	Decid. Shrub	Alt.	8	Gallon
<i>Aronia arbutifolia</i>	Red Chokeberry	Decid. Shrub	Main	8	Gallon

NOTE: PLANT SELECTION SHOULD INCLUDE AT LEAST 3 SHRUB SPECIES AND 6 HERBACEOUS SPECIES

ZONE: PERMANENT MANAGED VEGETATION

Species (Cultivar; Common Name)	Application Rate (lbs/acre)
<i>Festuca arundinacea</i> (Schedonorus phoenix; KY 31 Tall Fescue)	100

ZONE: RIPARIAN FOREST

Botanical Name	Common Name	Classification	Main or Alternate Species	Spacing (feet on center)	Type
<i>Quercus alba</i>	White Oak	Tree	Main	Random	Gallon
<i>Quercus palustris</i>	Pin Oak	Tree	Main	Random	Gallon
<i>Quercus phellos</i>	Willow Oak	Tree	Main	Random	Gallon
<i>Acer negundo</i>	Box Elder	Tree	Main	Random	Gallon
<i>Acer rubrum</i>	Red Maple	Tree	Main	Random	Gallon
<i>Betula nigra</i>	River Birch	Tree	Main	Random	Gallon
<i>Liquidambar styraciflua</i>	Sweet Gum	Tree	Main	Random	Gallon
<i>Nyssa sylvatica</i>	Black Gum	Tree	Main	Random	Gallon
<i>Platanus occidentalis</i>	American Sycamore	Tree	Main	Random	Gallon
<i>Ilex opaca</i>	American Holly	Tree	Main	Random	Gallon
<i>Cornus florida</i>	Flowering Dogwood	Shrub	Main	Random	Gallon
<i>Lindera benzoin</i>	Northern Spicebush	Shrub	Main	Random	Gallon
<i>Viburnum dentatum</i>	Southern Arrowwood	Shrub	Main	Random	Gallon
<i>Ilex verticillata</i>	Common Winterberry	Shrub - Stream bank	Main	5	Gallon
<i>Lindera benzoin</i>	Northern Spicebush	Shrub - Stream bank	Main	5	Gallon
<i>Sambucus canadensis</i>	Elderberry	Shrub - Stream bank	Main	5	Gallon
<i>Viburnum dentatum</i>	Southern Arrowwood	Shrub - Stream bank	Main	5	Gallon

NOTE: PLANTS WITH 'SHRUB - STREAM BANK' CLASSIFICATION SHALL BE PLANTED BETWEEN EDGE OF MAIN CHANNEL AND 10 FEET UP-SLOPE.

ZONE: STREAM SIDE

Botanical Name	Common Name	Classification	Main or Alternate Species	Spacing (feet on center)	Type
<i>Alnus serrulata</i>	Brookside Alder	Tree	Main	2	Live Stake
<i>Cornus amomum</i>	Silky Dogwood	Shrub	Main	2	Live Stake
<i>Salix nigra</i>	Black Willow	Tree	Main	2	Live Stake
<i>Viburnum dentatum</i>	Southern Arrowwood	Shrub	Main	2	Live Stake

PLANTING SCHEDULE

TRANSPLANTED AND LIVE STAKE PLANTS

Zone: Bioretention - Internal				
Cell #	1	2	3	4
Cell Area (s.f.)	442	810	1,040	2,012
Common Name				
Herbaceous Stem Count (#)				
Joe Pye Weed	74	135	173	335
Switchgrass	74	135	173	335
Cardinal Flower	18	34	43	84
Switchgrass	74	135	173	335
Greenhead Coneflower	74	135	173	335
Woolgrass	18	34	43	84
Tree/Shrub Stem Count (#)				
Witch Hazel	2.0	3.0	3.0	6.0
Common St. John's Wort	3.0	4.0	5.0	10.0
Red Chokeberry	3.0	4.0	5.0	10.0
Zone: Riparian Forest				
Common Name				
Stem Count (#)				
White Oak	124			
Pin Oak	124			
Willow Oak	124			
Box Elder	19			
Red Maple	19			
River Birch	19			
Sweet Gum	19			
Black Gum	19			
American Sycamore	19			
American Holly	19			
Flowering Dogwood	19			
Northern Spicebush	19			
Southern Arrowwood	19			
Zone: Riparian Forest - Stream Bank				
Common Name				
Stem Count (#)				
Common Winterberry	556			
Northern Spicebush	556			
Elderberry	556			
Southern Arrowwood	556			
Zone: Stream Side				
Common Name				
Stem Count (#)				
Brookside Alder	369			
Silky Dogwood	369			
Black Willow	369			
Southern Arrowwood	369			

DIRECT SEEDING

ZONE: DRY DETENTION - INTERNAL (0.10 AC)

Species (Common Name)	Percent of Mix
<i>Elymus virginicus</i> (Virginia Wild Rye)	40
<i>Carex vulpinoidea</i> (Fox Sedge)	29
<i>Panicum virgatum</i> (Switchgrass)	20
<i>Iris versicolor</i> (Blue flag)	5
<i>Rudbeckia hirta</i> (Blackeyed Susan)	4
<i>Verbena hastata</i> (Blue vervain)	2

NOTE: APPLY AT 25 LBS/ACRE

ZONE: RIPARIAN FOREST (1.23 AC)

Species (Common Name)	Percent of Mix
<i>Elymus virginicus</i> (Virginia Wild Rye)	19%
<i>Elymus riparius</i> (Riverbank Wild Rye)	19%
<i>Panicum clandestinum</i> (Deer Tongue Grass)	19%
<i>Panicum dichotomiflorum</i> (Smooth Panic Grass)	19%
<i>Sorghastrum nutans</i> (Indian Grass)	19%
<i>Rosa caroliniana</i> (Carolina Rose)	0.4%
<i>Andropogon ternarius</i> (Split beard Bluestem)	0.4%
<i>Asclepias tuberosa</i> (Butterflyweed)	0.4%
<i>Coreopsis pubescens</i> (Star Tickseed)	0.4%
<i>Echium purpureum</i> (Purple Coneflower)	0.4%
<i>Eupatorium serotinum</i> (Late-flowering Thoroughwort)	0.4%
<i>Helianthus mollis</i> (Downy Sunflower)	0.4%
<i>Ruellia humilis</i> (Wild Petunia)	0.4%
<i>Carex scoparia</i> (Blunt Broom Sedge)	0.4%
<i>Carex vulpinoidea</i> (Fox Sedge)	0.4%
<i>Juncus effusus</i> (Soft Rush)	0.4%
<i>Solidago juncea</i> (Early Goldenrod)	0.4%
<i>Eupatorium fistulosum</i> (Joe Pye Weed)	0.4%
<i>Solidago speciosa</i> (Showy Goldenrod)	0.4%
<i>Penstemon digitalis</i> (Penstemon)	0.4%
<i>Verbena hastata</i> (Blue Vervain)	0.4%
<i>Rudbeckia hirta</i> (Black Eyed Susan)	0.4%
<i>Lindera benzoin</i> (Northern Spicebush)	0.4%

NOTE: APPLY AT 50 LBS/ACRE

ZONE: PM (1.60 AC)

Species (Common Name)	Percent of Mix
<i>Festuca arundinacea</i> (Tall Fescue)	100.00

NOTE: APPLY AT 50 LBS/ACRE

TEMPORARY SEEDING

Zone: PM and Riparian Forest (2.82 AC)

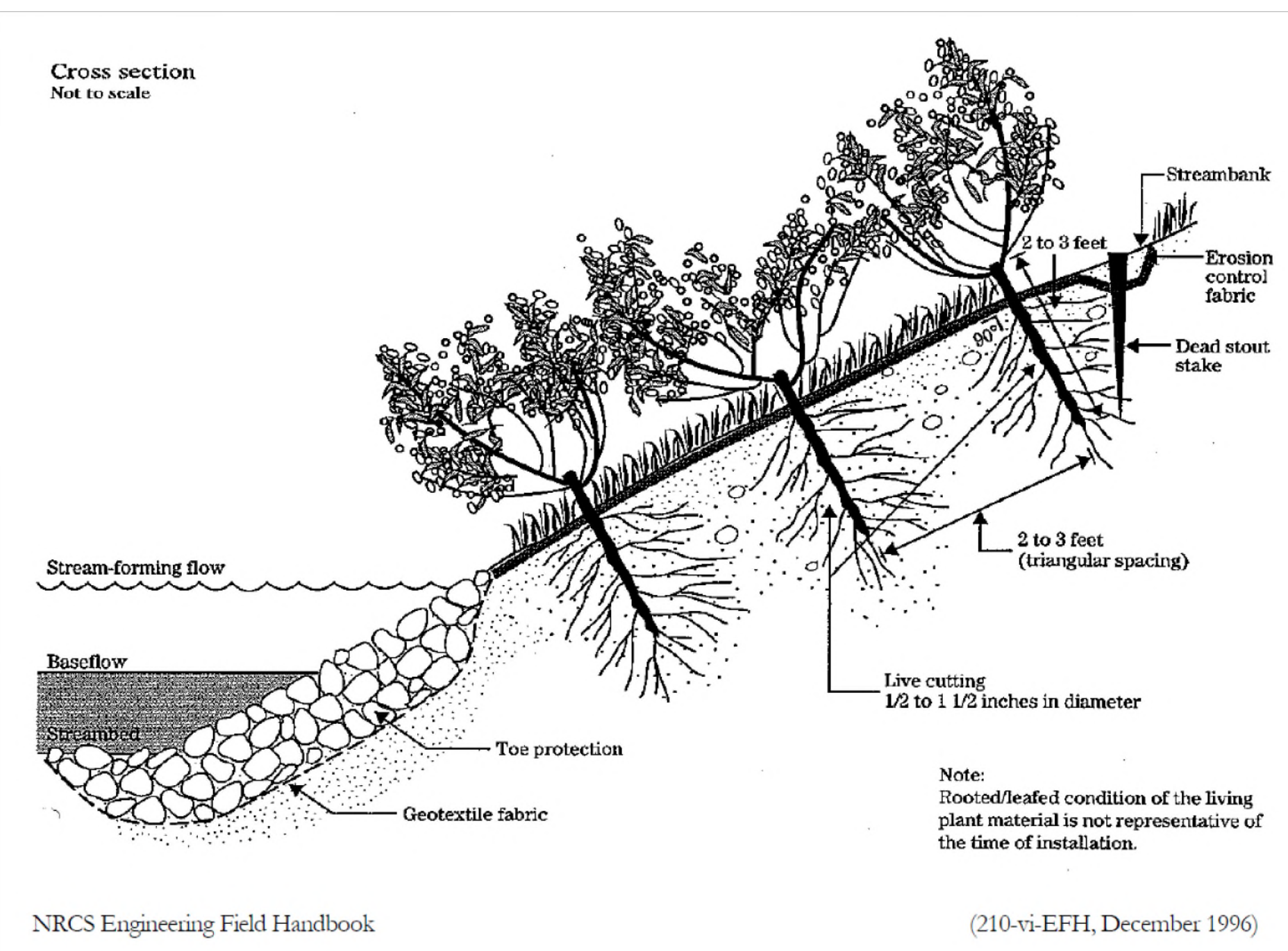
Common Name	Scientific Name	Dates	Rate (lbs/acre)
Annual Rye	<i>Secale cereale</i>	Aug. 15 - May 1	120
German Millet	<i>Setaria italica</i> var. 'Stramineofructa'	May 1 - Aug. 15	40

SEEDING SPECIFICATIONS:

- USE APPROVED MECHANICAL HAND SEEDERS OR OTHER APPROVED EQUIPMENT TO BROADCAST SEED.
- DISTRIBUTE SEED EVENLY OVER ENTIRE AREA AT THE RATE SPECIFIED (REFER TO TABLES ON THIS PLATE).
- LIME: 2,000 LBS/AC AGRICULTURAL LIMESTONE OR BY SOIL TEST.
- FERTILIZER: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 10-10-10 AT 750 LBS/AC JAN. 1 - AUG 15; 1,000 LBS/AC AUG. 15 - DEC. 30.
- MULCH: APPLY 4,000 LBS/AC. STRAW. ANCHOR STRAW BY TACKING WITH NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.
- NOTE: GROUND COVER (SEEDING, MULCH AND/OR NETTING) SHALL BE ESTABLISHED ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS FOLLOWING THE COMPLETION OF GRADING.

LIVE STAKE SPECIFICATIONS:

- THE CUTTINGS SHOULD BE TAMPED INTO THE GROUND AT RIGHT ANGLES TO THE SLOPE AND ANGLED DOWNSTREAM. THEY SHOULD BE TAMPED INTO THE GROUND CAREFULLY FOR APPROXIMATELY 4/5 OF THEIR LENGTH. A DEAD BLOW HAMMER WORKS BEST TO TAMP THE LIVE STAKES INTO THE GROUND.
- STAKES SHOULD BE SPACED AT THE SPECIFIED PLANTING RATE BUT PLACED IN A RANDOM CONFIGURATION TO PREVENT GULLIES FROM FORMING AND TO PRODUCE A MORE NATURAL EFFECT IN THE RE-VEGETATION AREA.
- DO NOT STRIP BARK DURING THE REMOVAL OF THE SIDE BRANCHES AND DURING ACTUAL INSTALLATION. CUTS SHOULD BE DONE WITH A SAW RATHER THAN AN AX.
- INSTALL THE LIVE STAKES THE SAME DAY THEY ARE PREPARED.
- START THE INSTALLATION AT THE WATER'S EDGE AND WORK UP THE BANK.
- CUTTINGS THAT SPLIT OR BECOME "MUSHROOMED" DURING TAMPING SHOULD BE REPLACED.
- IT IS IMPORTANT TO FOOT COMPACT AROUND EACH LIVE STAKE AFTER IT HAS BEEN INSTALLED.
- INSTALL THE CUTTINGS RIGHT SIDE UP. BE SURE THAT THE BUDS ARE POINTING UPWARD.



LIVE STAKE INSTALLTION DETAIL

TETRA TECH
www.tetra.tech.com
2110 POWERS FERRY ROAD SOUTHEAST
ATLANTA, GA 30339
(770) 850-0949

Griffin Growing Together
REGISTERED PROFESSIONAL ENGINEER
ERIC JOHN BYRNE

GEORGIA REGISTERED PROFESSIONAL ENGINEER
ERIC JOHN BYRNE

DATE	DESCRIPTION	BY
8-1-15	FINAL CONSTRUCTION PLANS	RST

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
PLANTING DETAILS

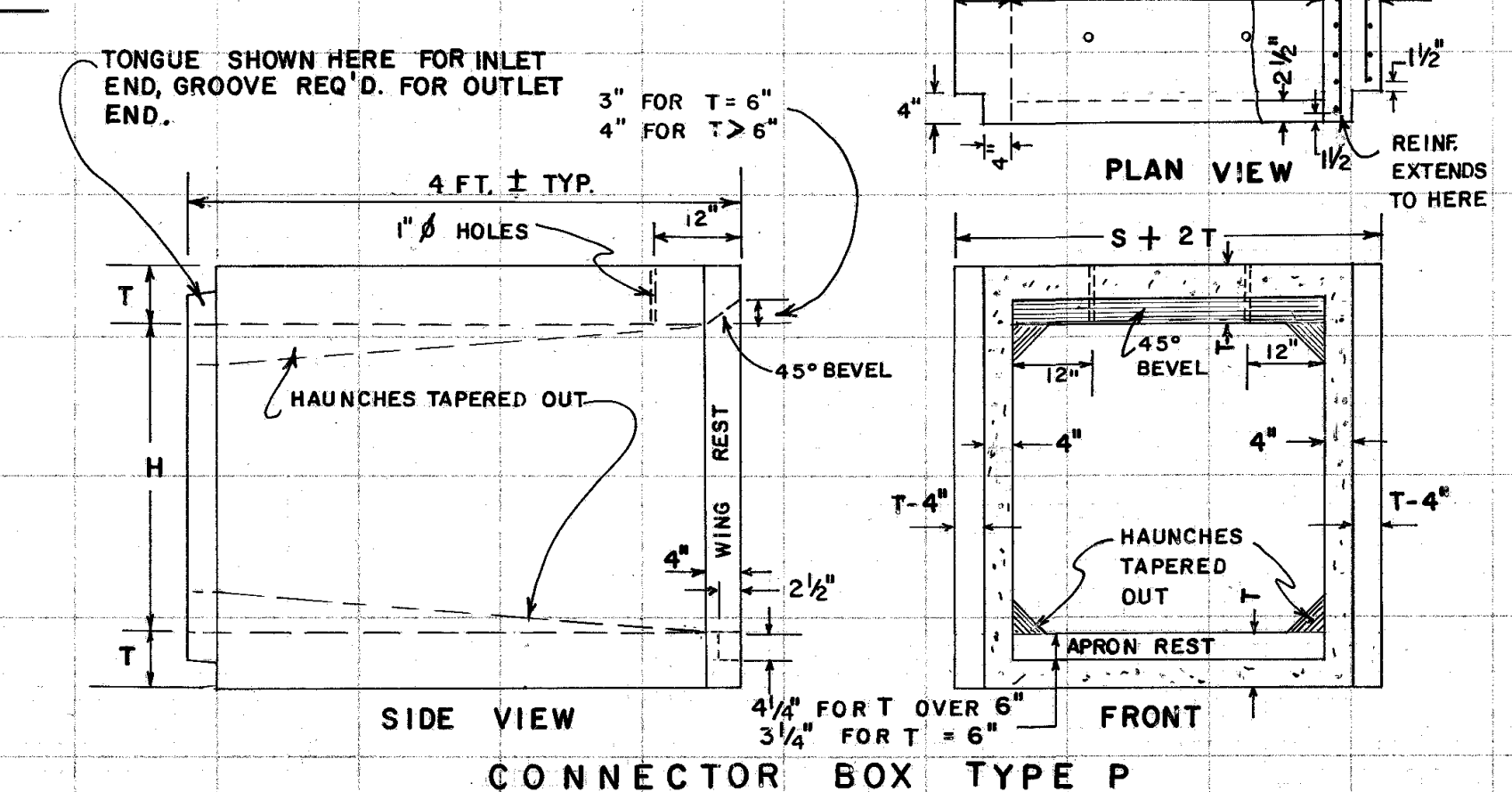
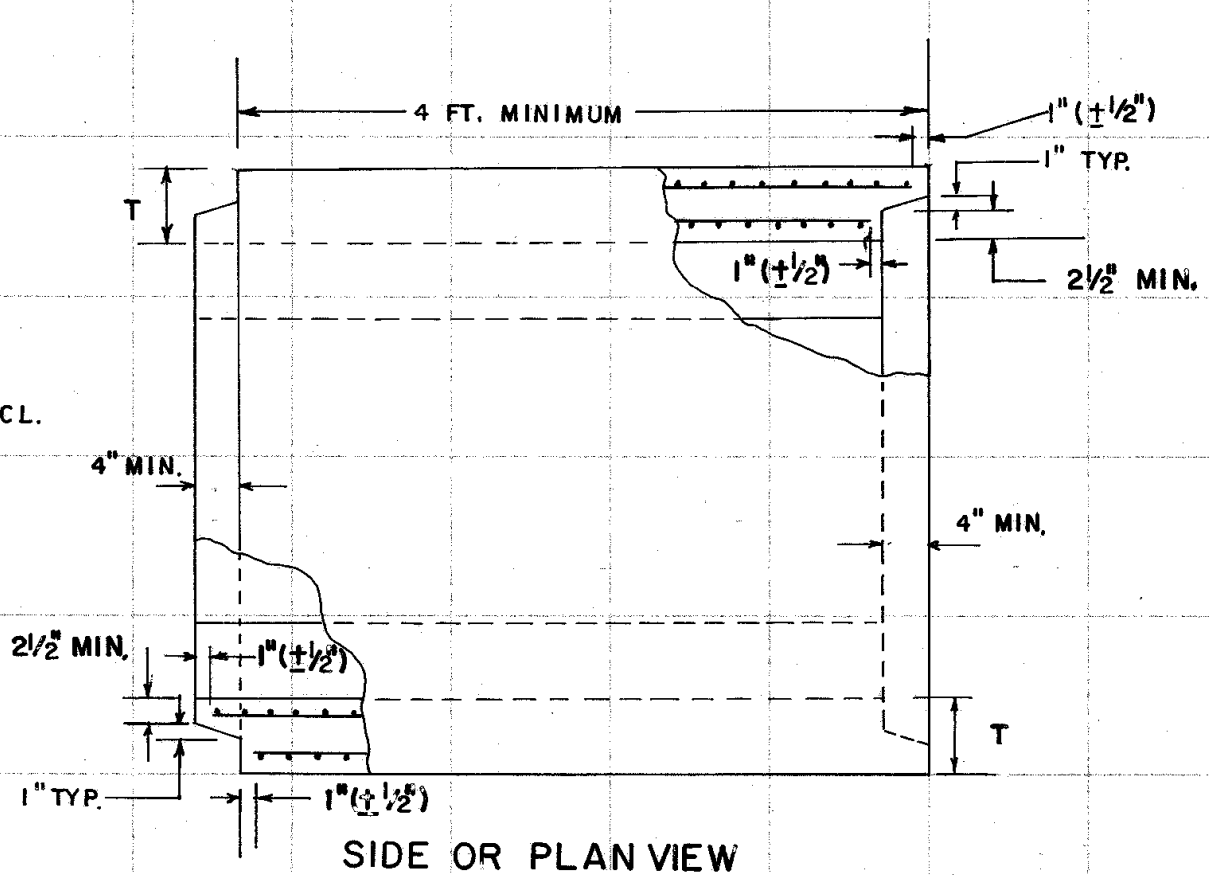
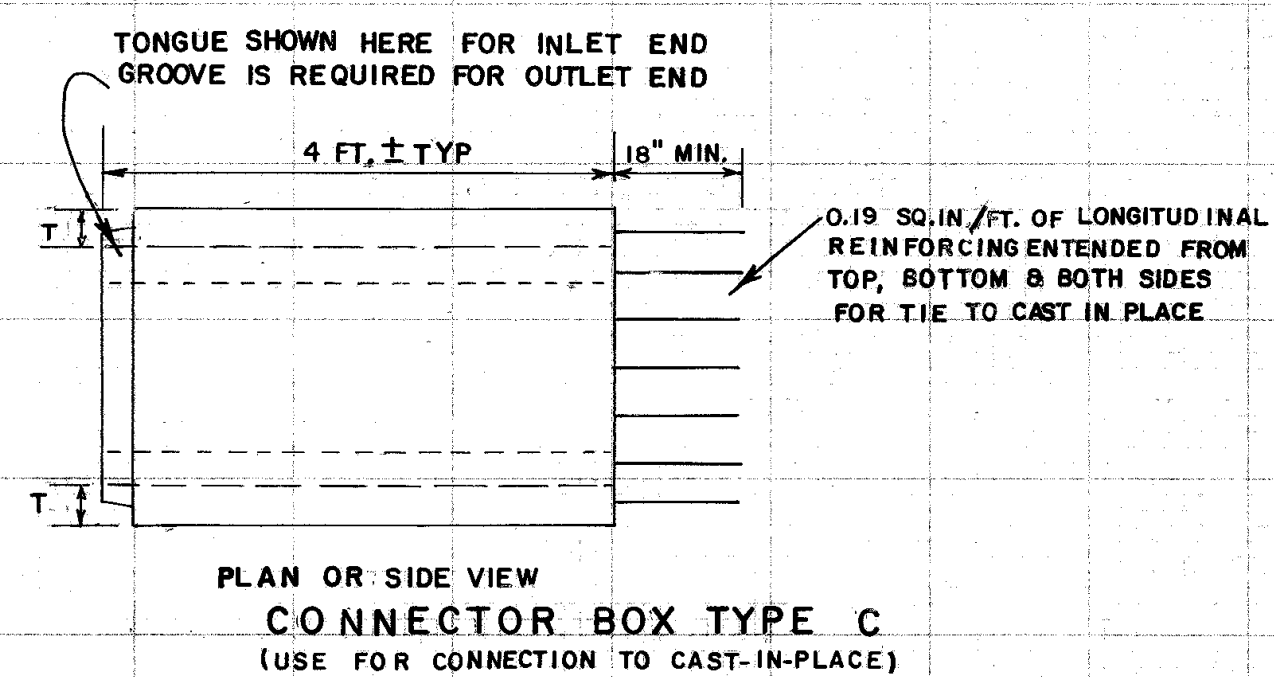
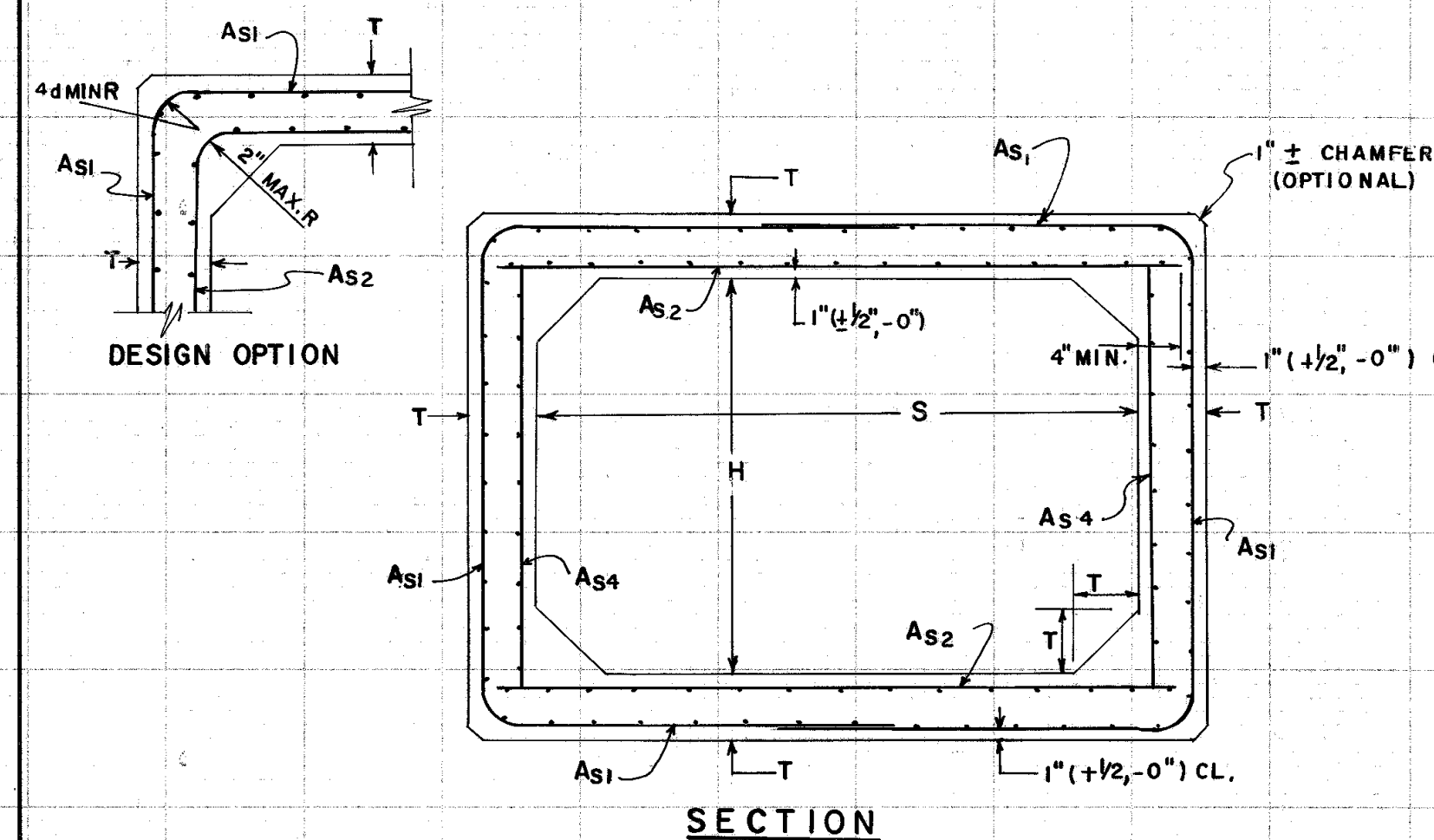
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Designed By:	RST
Drawn By:	RST
Checked By:	JTS

D12

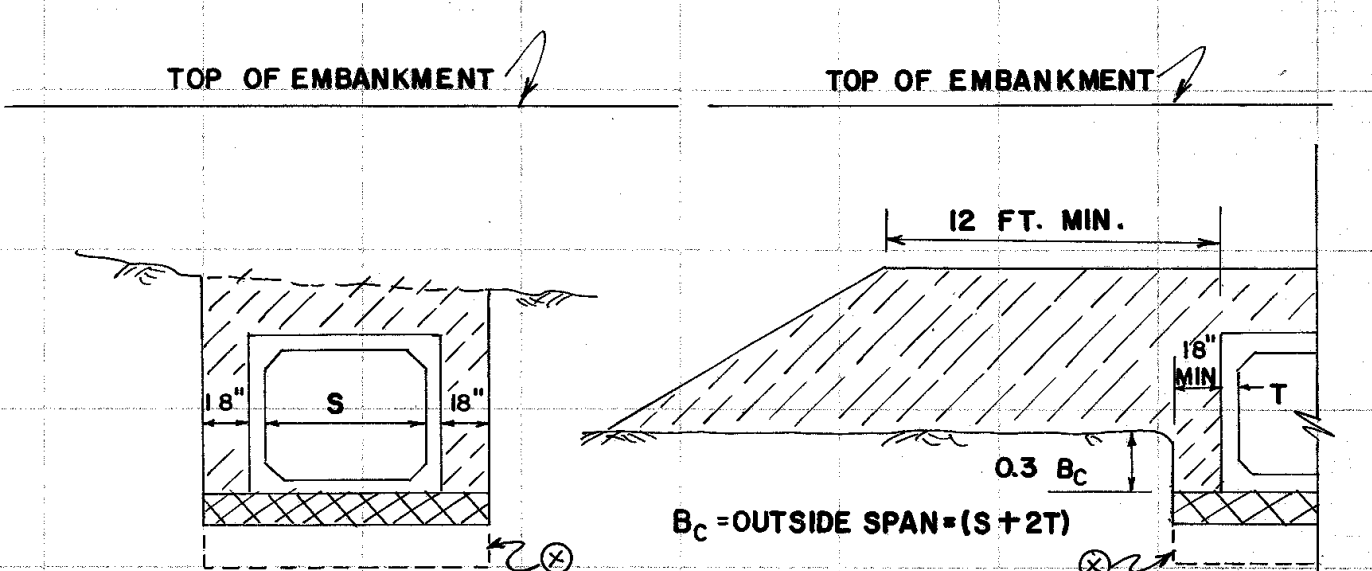
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CULVERT SIZE	DESIGN I-A 2 FT. MINIMUM COVER					DESIGN I-B 3 FT. MINIMUM COVER					CULVERT SIZE	
	SPAN (FT.)	HEIGHT (FT.)	MINIMUM AREAS OF CIRCUMFERENTIAL REINFORCING STEEL (SQ. IN. PER LIN. FT.)			MINIMUM AREA OF CIRCUMFERENTIAL REINFORCING STEEL (SQ. IN. PER LIN. FT.)			MAXIMUM FILL HEIGHTS (FEET)	T (INCHES)		HEIGHT (FT.)
S	H	As1	As2	As4	MAXIMUM FILL HEIGHTS (FEET)	As1	As2	As4	MAXIMUM FILL HEIGHTS (FEET)	T	H	S
4'	4'	6	0.21	0.27	0.12	16	0.13	0.18	0.12	10	6	3
4'	4'	6	0.18	0.30	0.12	16	0.12	0.19	0.12	10	6	4
4'	4'	6	0.24	0.33	0.14	16	0.15	0.23	0.14	10	6	5
4'	4'	6	0.27	0.37	0.17	16	0.20	0.27	0.17	10	7	6
4'	4'	6	0.26	0.29	0.14	16	0.17	0.21	0.14	10	6	3
4'	4'	6	0.24	0.33	0.14	16	0.16	0.23	0.14	10	6	4
4'	4'	6	0.20	0.35	0.14	16	0.14	0.25	0.14	10	6	5
4'	4'	6	0.25	0.39	0.17	16	0.18	0.29	0.17	10	7	6
5'	4'	3	0.32	0.33	0.17	16	0.23	0.23	0.17	10	7	3
5'	4'	4	0.27	0.37	0.17	16	0.20	0.27	0.17	10	7	4
5'	4'	5	0.25	0.39	0.17	16	0.18	0.29	0.17	10	7	5
5'	4'	6	0.23	0.41	0.17	16	0.17	0.30	0.17	10	7	6
5'	4'	8	0.35	0.41	0.19	16	0.25	0.27	0.19	10	8	4
5'	4'	10	0.31	0.44	0.19	16	0.23	0.29	0.19	10	8	5
5'	4'	12	0.28	0.47	0.19	14	0.21	0.34	0.19	10	8	6
5'	4'	14	0.26	0.44	0.19	14	0.19	0.36	0.19	10	8	7
5'	4'	16	0.43	0.40	0.19	10	0.33	0.30	0.19	8	8	4
5'	4'	18	0.38	0.43	0.19	10	0.30	0.33	0.19	8	8	5
5'	4'	20	0.35	0.47	0.19	10	0.27	0.35	0.19	8	8	6
5'	4'	22	0.33	0.50	0.19	10	0.25	0.38	0.19	8	8	7
5'	4'	24	0.31	0.53	0.19	10	0.24	0.43	0.19	8	8	8
5'	4'	26	0.47	0.45	0.22	10	0.38	0.38	0.22	8	9	4
5'	4'	28	0.43	0.45	0.22	10	0.35	0.39	0.22	8	9	5
5'	4'	30	0.40	0.48	0.22	10	0.32	0.42	0.22	8	9	6
5'	4'	32	0.37	0.52	0.22	10	0.30	0.45	0.22	8	9	7
5'	4'	34	0.35	0.54	0.22	10	0.28	0.47	0.22	8	9	8
5'	4'	36	0.33	0.57	0.22	10	0.27	0.49	0.22	8	9	9
5'	4'	38	0.35	0.61	0.24	10	0.30	0.55	0.24	8	10	10
5'	4'	40	0.50	0.46	0.24	10	0.44	0.42	0.24	8	10	4
5'	4'	42	0.47	0.46	0.24	10	0.41	0.42	0.24	8	10	5
5'	4'	44	0.44	0.50	0.24	10	0.38	0.45	0.24	8	10	6
5'	4'	46	0.41	0.53	0.24	10	0.35	0.48	0.24	8	10	7
5'	4'	48	0.38	0.56	0.24	10	0.33	0.51	0.24	8	10	8
5'	4'	50	0.36	0.60	0.24	10	0.32	0.53	0.24	8	10	9
5'	4'	52	0.35	0.61	0.24	10	0.30	0.55	0.24	8	10	10



STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



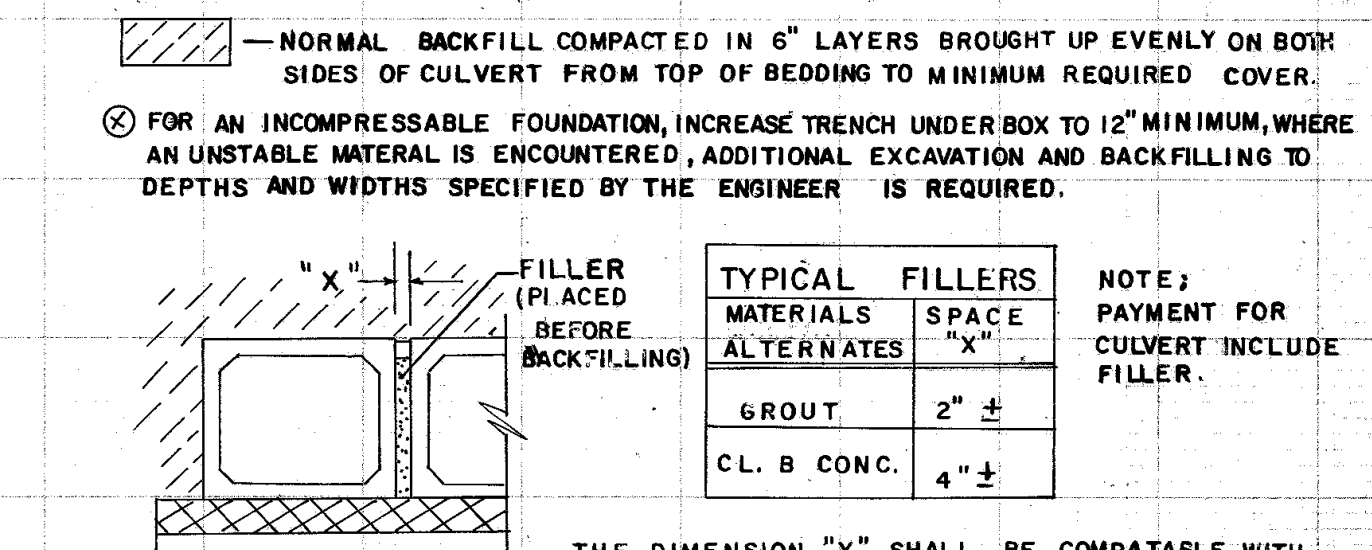
TRENCH INSTALLATION **EMBANKMENT INSTALLATION**

MINIMUM TRENCH DEPTH = 0.3' Bc + BEDDING DEPTH

— 6" MIN. DEPTH OF FOUNDATION BACKFILL MATERIAL TYPE II FOR WET AREAS OR 3" MIN. DEPTH FOUNDATION BACKFILL MATERIAL TYPE I OTHERWISE. TYPE I AND II MATERIAL BOTH MAY BE USED IF SPECIFIED. CLASS I SOIL SHALL BE REQUIRED FOR TYPE I BACKFILL MATERIAL.

— NORMAL BACKFILL COMPACTED IN 6" LAYERS BROUGHT UP EVENLY ON BOTH SIDES OF CULVERT FROM TOP OF BEDDING TO MINIMUM REQUIRED COVER.

⊗ FOR AN INCOMPRESSIBLE FOUNDATION, INCREASE TRENCH UNDER BOX TO 12" MINIMUM, WHERE AN UNSTABLE MATERIAL IS ENCOUNTERED, ADDITIONAL EXCAVATION AND BACKFILLING TO DEPTHS AND WIDTHS SPECIFIED BY THE ENGINEER IS REQUIRED.



MULTIPLE LINE

NOTE: A CULVERT COMBINATION HAVING A TOTAL CLEAR SPAN/8 HEIGHT EQUAL TO OR EXCEEDING THAT SPECIFIED MAY BE SUBSTITUTED. EXAMPLE: A TRIPLE 6'x6' MAY BE SUBSTITUTED FOR A DOUBLE 9'x6' OR VICE VERSA.

- GENERAL NOTES:**
- SPECIFICATIONS: GA. STANDARD, CURRENT EDITION, AND SUPPLEMENTS THERETO, CONCRETE SHALL CONFORM TO SECTION 843, 5000 PSI, MINIMUM.
 - REINFORCING REQUIREMENTS NOT SHOWN SHALL BE ACCORDING TO A.A.S.H.T.O. M-259, MINIMUM CLEARANCE FOR CIRCUMFERENTIAL REINFORCEMENT SHALL BE 1" WITH LESS THAN 1" OF CLEARANCE BEING CAUSE FOR REJECTION.
 - ALL JOINTS BETWEEN PRECAST SECTIONS SHALL BE TONGUE & GROOVE WITH JOINT MATERIAL. JOINTS BETWEEN CAST-IN-PLACE AND PRECAST SECTIONS SHALL HAVE LONGITUDINAL STEEL EXTENDING FROM TOP, BOTTOM AND BOTH SIDE SLABS OF THE PRECAST BOX TIED TO THE CAST-IN-PLACE REINFORCEMENT.
 - CULVERTS LARGER THAN THE SPECIFIED SIZE MAY BE SUBSTITUTED WITH PAYMENT BEING BASED UPON THE SPECIFIED SIZE RATHER THAN THE SUBSTITUTION, SUCH A SUBSTITUTION MUST BE APPROVED BY THE ENGINEER, MINIMUM COVER MUST BE RETAINED AND NO ADVERSE EFFECTS PRODUCED.
 - ALTERNATES: CAST-IN-PLACE BOX CULVERTS OR OTHER APPROVED PRECAST DESIGNS.
 - LOADING: HS-20 AND ANY FILL HEIGHTS BETWEEN THE MINIMUM AND MAXIMUM SHOWN.
 - ONLY ONE DESIGN OF PRECAST BOX CULVERT IS TO BE USED FOR ANY INSTALLATION.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
PRECAST BOX CULVERT BARRELS
4' x 3' THRU 10' x 10'
SINGLE & MULTIPLE LINES

NO SCALE MARCH, 1985

MADE	4" J.T. DEPTH MIN.	6-22-85	DATE
REVISION			
DES. R.M.U.	(SUBMITTED)	<i>Stan G. Hadden</i>	NUMBER
DRW. R.M.U.	STATE ROAD & AIRPORT DESIGN ENGR		2530 P
TR. G.M.E.	(APPROVED)	<i>Bill Rino</i>	
CHK. R.K.C.	STATE HIGHWAY ENGINEER		

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ATLANTA, GA 30339
(770) 850-0949

Griffin
Growing Together
REGISTERED PROFESSIONAL ENGINEER
LAUREN SPRINGER

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

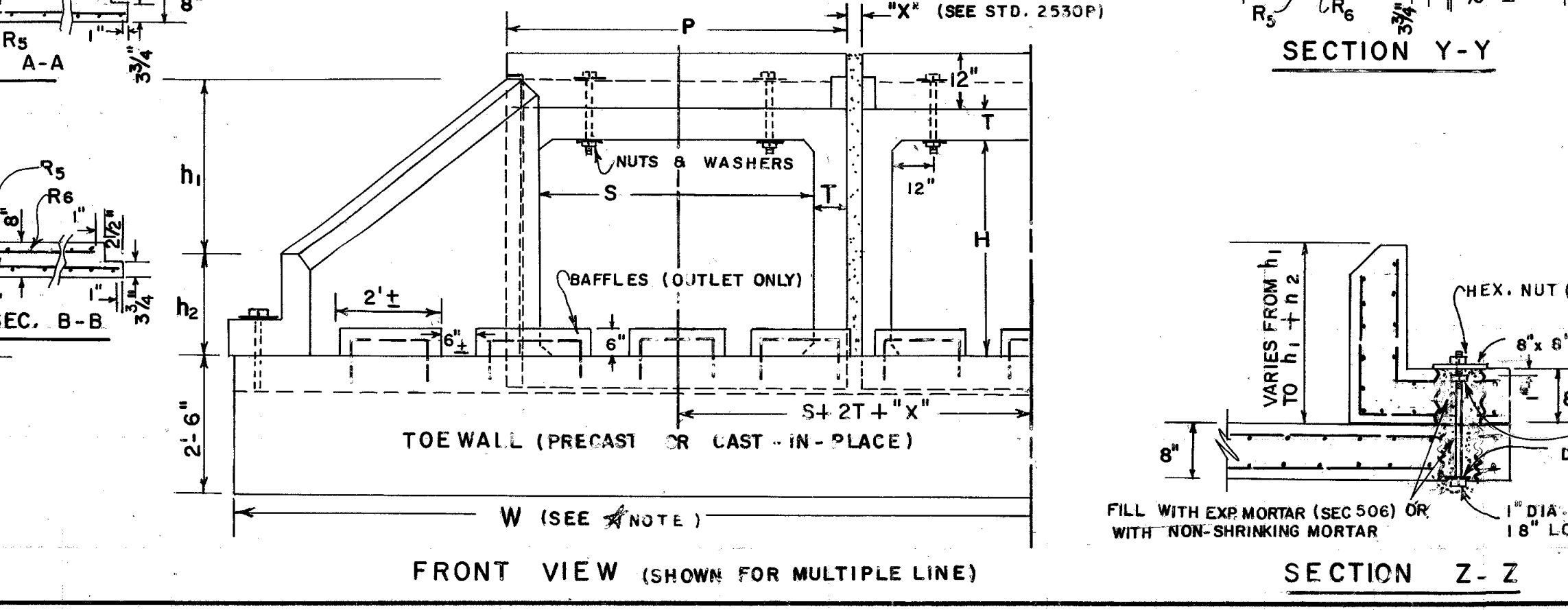
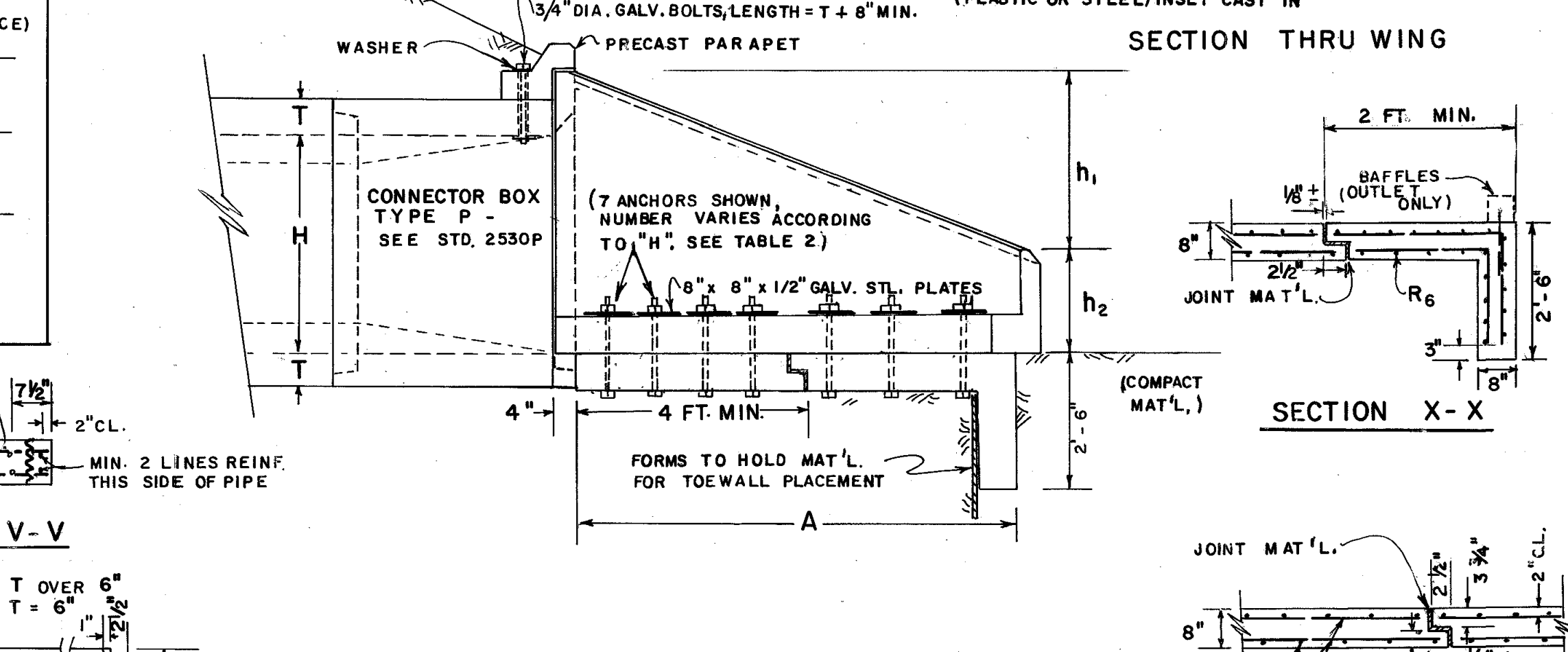
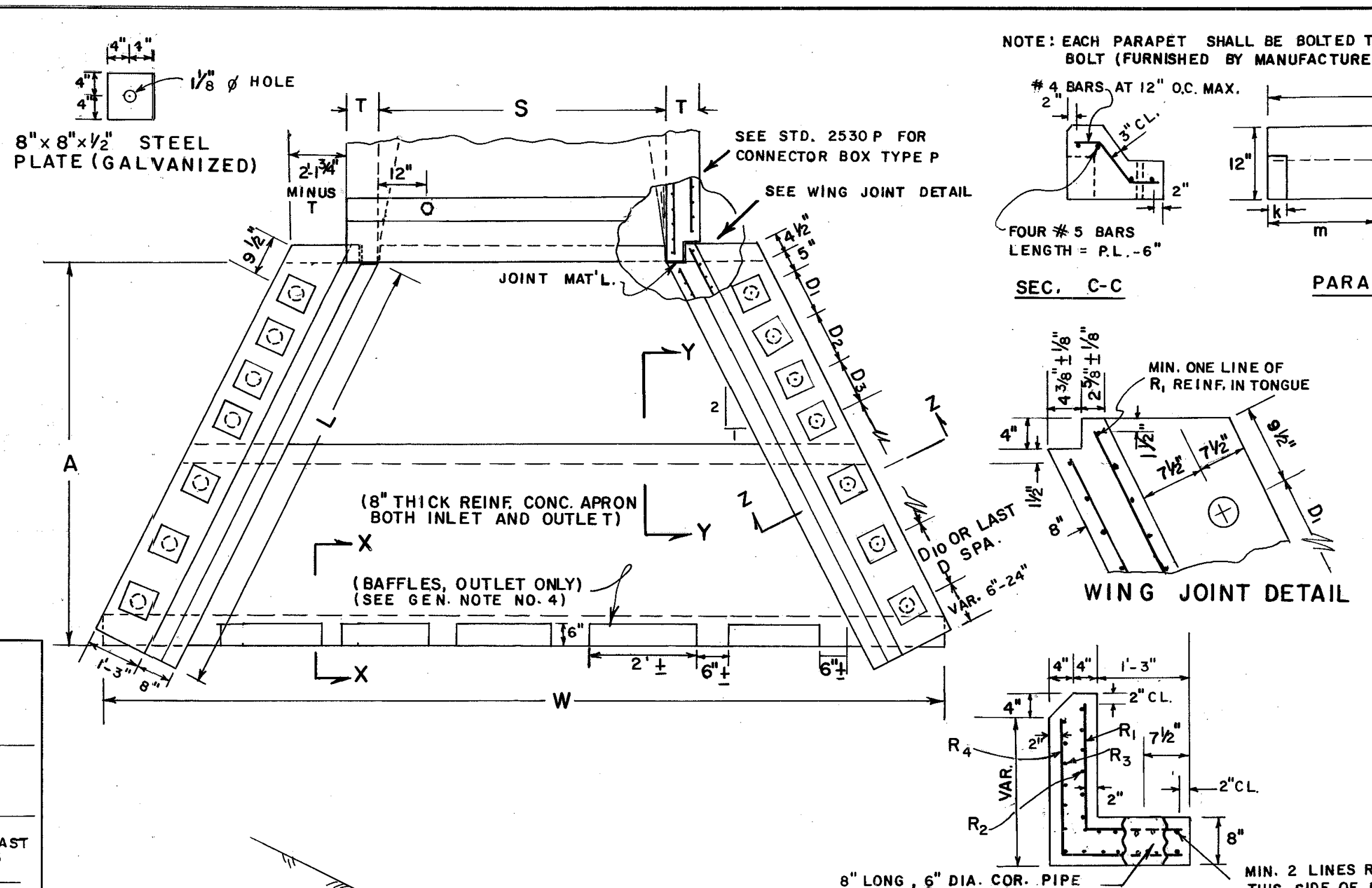
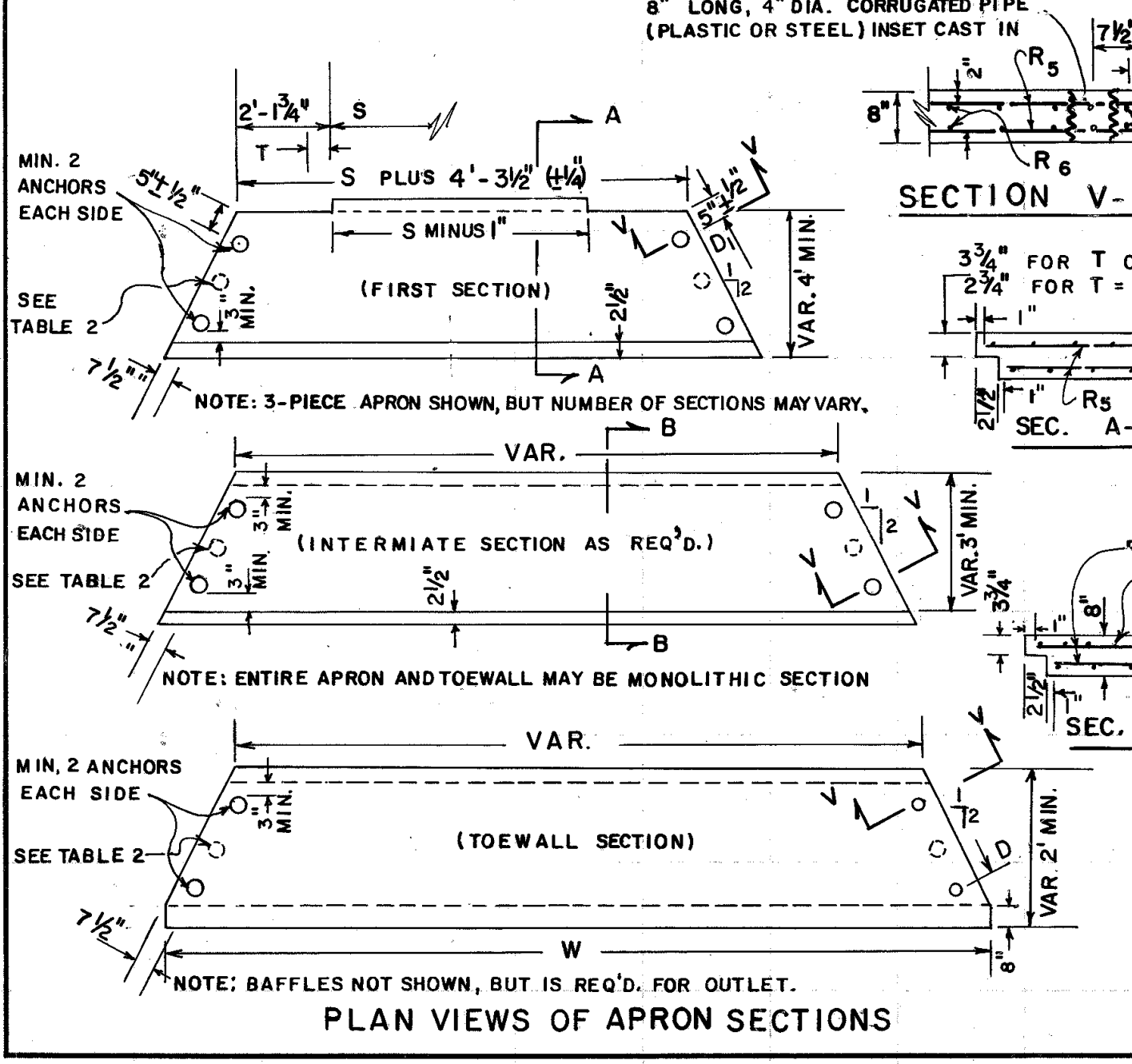
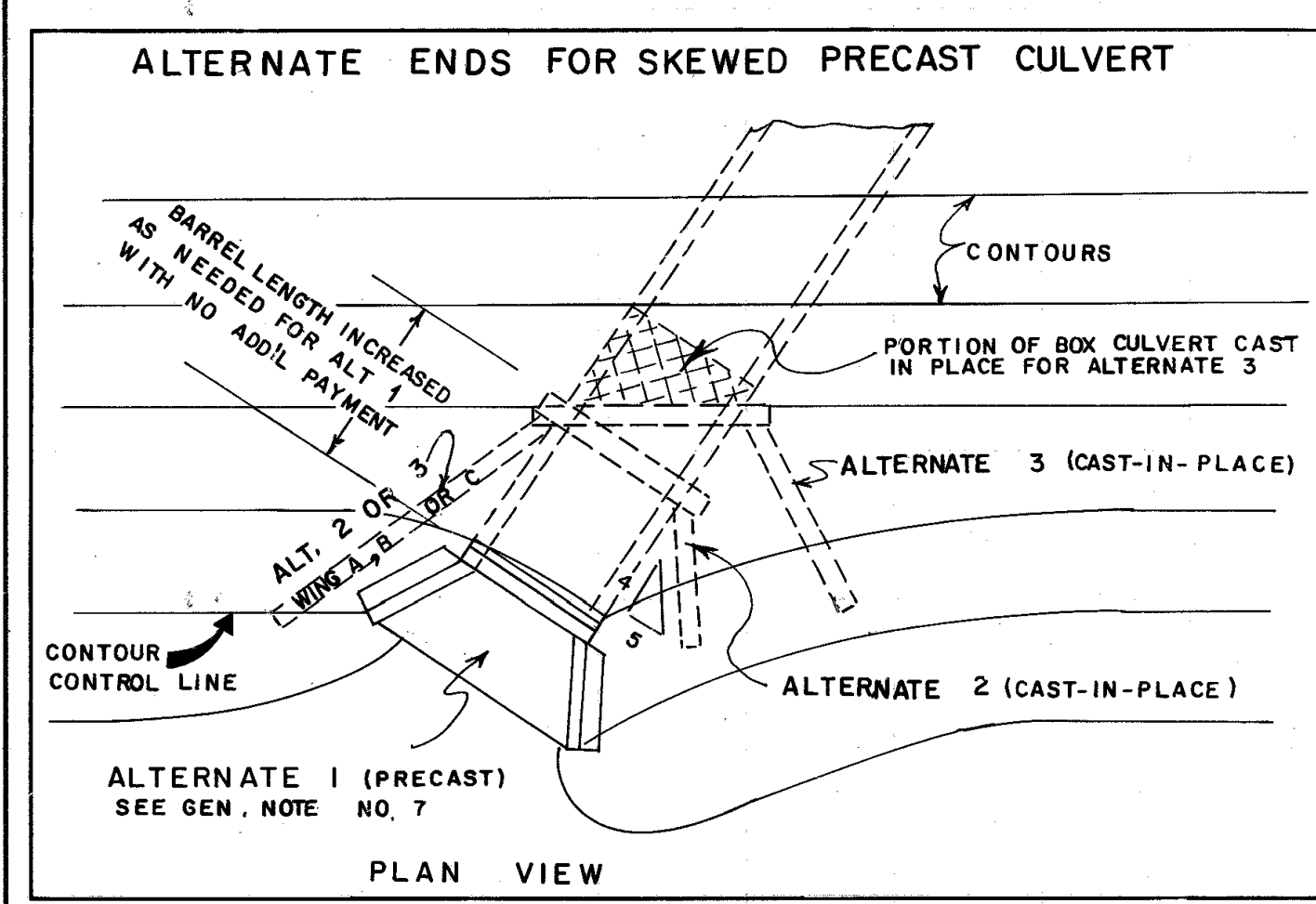
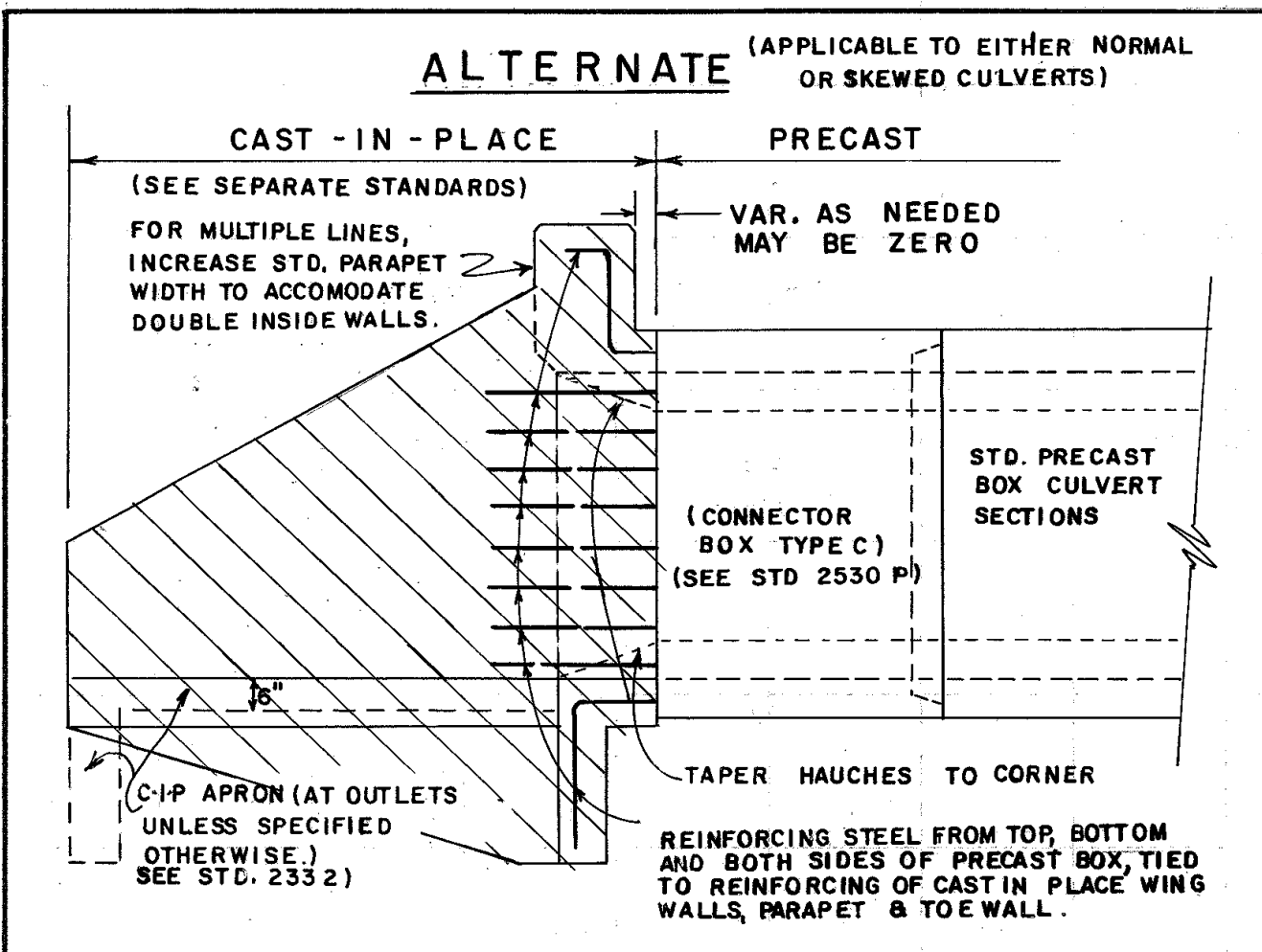
A.Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

CONSTRUCTION
DETAILS

Project No.: 100-RTP-T31130
Designed By: DL
Drawn By: DL
Checked By: LS

D13
Copyright: Tetra Tech

Thursday, July 30, 2015 2:15:05 PM DRAWING: C:\PROJECTS\GIS\Griffin\Kelsey_Sit\Final_Plans\ModelFiles\Details_DWG_LAYOUT.D14 USER NAME: TUCKER, BOBBY



NOTE: EACH PARAPET SHALL BE BOLTED TO BOX WITH TWO-3/4" GALV. BOLTS WITH 2 GALV. WASHERS WITH EACH BOLT (FURNISHED BY MANUFACTURER)

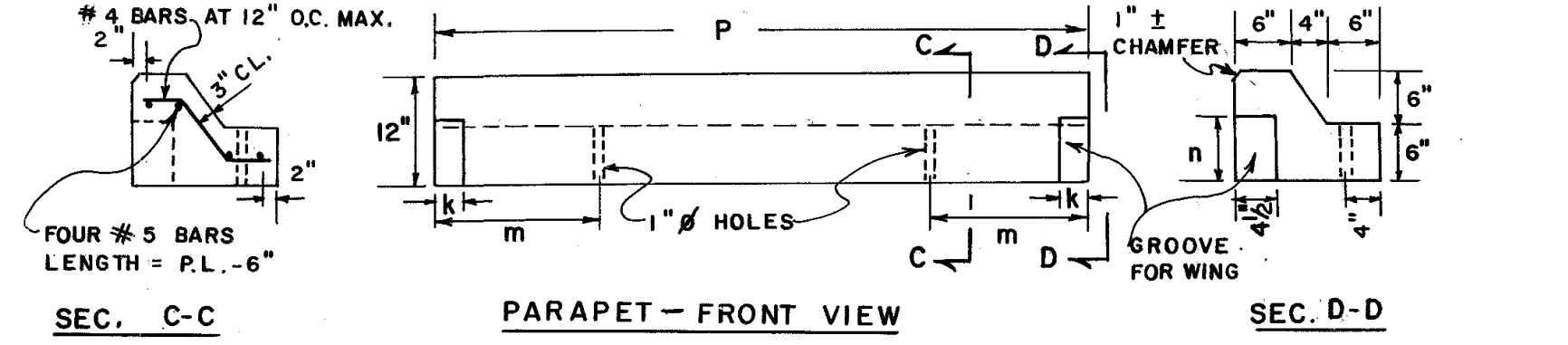


TABLE 1 - PARAPET DIMENSIONS

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

TABLE 2 - WINGWALL DIMENSIONS, ANCHOR SPACINGS, WINGWALL & APRON REINFORCING

CULVERT HEIGHT (RISE)	APRON	WINGWALL (±1/4") DIMENSIONS		MAX. SPACINGS (INCHES) FOR WINGWALL TO APRON ANCHOR CONNECTIONS EACH WING. SEE NOTE #3 (±1/2")										STEEL AREAS SQ. IN./LIN. FT.			
		A	L	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	D ₈	D ₉	D ₁₀	R ₁	R ₂		
3'	6'	6'-8"	2'-0"	1'-6"	48"	66"										0.19	0.19
4'	8'	9'-2"	3'-8"	1'-6"	48"	66"										0.19	0.19
5'	8'	9'-2"	3'-8"	2'-6"	48"	66"										0.19	0.19
6'	12'	13'-4"	5'-4"	1'-10"	31"	48"	66"									0.20	0.19
7'	12'	13'-4"	5'-4"	2'-10"	20"	31"	48"	66"								0.32	0.19
8'	16'	18'-4"	7'-4"	1'-10"	15"	20"	31"	48"	66"							0.48	0.19
9'	16'	18'-4"	7'-4"	2'-10"	12"	15"	15"	20"	31"	48"	66"					0.68	0.19
10'	16'	18'-4"	7'-4"	3'-10"	12"	12"	12"	15"	15"	19"	20"	20"	31"	48"		0.93	0.19

STEEL AREAS FOR R₃, R₄, R₅ & R₆ SHALL BE THE SAME AS FOR R₂

TABLE 3 - TOEWALL WIDTHS

S	H	W (±1/4")
4'	3	13'-7 1/2"
4'	4	15'-7 1/2"
5'	5	15'-7 1/2"
5'	6	19'-7 1/2"
5'	7	19'-7 1/2"
5'	8	16'-7 1/2"
6'	5	16'-7 1/2"
6'	6	20'-7 1/2"
6'	7	15'-7 1/2"
6'	8	17'-7 1/2"
7'	5	18'-7 1/2"
7'	6	22'-7 1/2"
7'	7	22'-7 1/2"
8'	4	19'-7 1/2"
8'	5	19'-7 1/2"
8'	6	23'-7 1/2"
8'	7	23'-7 1/2"
8'	8	27'-7 1/2"
9'	4	20'-7 1/2"
9'	5	20'-7 1/2"
9'	6	24'-7 1/2"
9'	7	24'-7 1/2"
9'	8	28'-7 1/2"
9'	9	28'-7 1/2"
10'	4	21'-7 1/2"
10'	5	21'-7 1/2"
10'	6	25'-7 1/2"
10'	7	25'-7 1/2"
10'	8	29'-7 1/2"
10'	9	29'-7 1/2"
10'	10	29'-7 1/2"

*NOTE: WIDTHS ARE FOR SINGLE LINES; FOR MULTIPLE LINES ADD S + 2T + "X" FOR EACH ADDITIONAL LINE; WHERE S = CLEAR SPAN, T = WALL THICKNESS, & "X" = SPACE BETWEEN LINES.

- GENERAL NOTES:**
- SPECIFICATION: GA. STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
 - MATERIALS FOR PRECAST PARAPETS, PRECAST WINGWALLS AND PRECAST APRONS SHALL BE 5000 P.S.I. CONCRETE (SEC. 500) AND WELDED WIRE FABRIC OR GRADE 60 REBARS. CAST-IN-PLACE CONSTRUCTION SHALL BE CLASS "A" CONCRETE AND GRADE 40 REBARS.
 - ALL PRECAST WINGWALLS (BOTH INLET & OUTLET) REQUIRE 8" THICK REINFORCED CONCRETE APRONS FOR ANCHOR CONNECTIONS. APRONS MAY BE PRECAST OR CAST IN PLACE. SPACINGS (IN TABLE 2) FOR WINGWALL TO APRON CONNECTIONS ARE MAXIMUM AND MAY BE REDUCED DUE TO WING LENGTH, APRON JOINTS, ETC. EACH APRON SECTION MUST HAVE A MINIMUM OF 2 CONNECTIONS ON EACH SIDE OR AS REQUIRED BY TABLE 2, WHICHEVER IS MORE.
 - OUTLET BAFFLES SHALL BE CL. A CONCRETE MIN. REINFORCED WITH NO. 4 REBARS. BAFFLES MAY BE FIELD CAST ONTO NO. 4 REBARS GROUPTED 6" MIN. INTO APRON OR PRECAST BAFFLES MAY BE SECURED TO APRON BY GROUTING BARS EXPOSED FROM BAFFLES INTO APRON 6" MIN. OR SECURED WITH NO. 4 GALV. EXPANSION ANCHOR BOLTS. 2 DOVEL CONNECTIONS OR 2 ANCHORS SHALL BE REQUIRED FOR EACH SEPARATE BAFFLE OR BAFFLES MAY BE CONSTRUCTED MONOLITHIC WITH APRON.
 - SEE STANDARD 2530P FOR DETAILS OF PRECAST BOX CULVERTS AND CONNECTOR BOXES TYPE P & TYPE C
 - LIFTING HOLES AND HANDLING DEVICES SHALL BE ACCORDING TO GA. STD. SPECIFICATIONS AND MAY VARY PER MANUFACTURER. PRECAST SECTIONS ARE NOT TO BE LIFTED BY OR THRU THE PIPE SLEEVE INSETS.
 - PRECAST ENDS ARE STANDARD ALTERNATES FOR SINGLE OR FOR MULTIPLE LINE PRECAST BOX CULVERT BARRELS NORMAL TO THE ROADWAY. SKEWED INSTALLATIONS MAY HAVE PRECAST ENDS WHERE ROADSIDE GEOMETRICS ARE COMPATIBLE. THE ALLOWANCE OF PRECAST ENDS WITH SKEWED PRECAST BARRELS, EITHER SINGLE OR MULTIPLE LINE, SHALL BE AS SHOWN IN THE PLANS OR APPROVED BY THE ENGINEER FOR A GIVEN LOCATION. CAST-IN-PLACE ENDS (SEE SEPARATE STANDARDS) SHALL BE USED FOR EITHER SKEWED OR NON-SKEWED PRECAST BARRELS WHERE PRECAST ENDS ARE NOT USED.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

**STANDARD
PRECAST BOX CULVERT ENDS
WINGWALLS, PARAPETS, TOEWALLS & APRONS**

NO SCALE

MARCH, 1985

JES. R.M.U. (SUBMITTED) *Harold Hardin*
DRW. R.M.U. STATE ROAD & AIRPORT DESIGN ENGR.
TRA. G.M.E. (APPROVED) *Harold Hardin*
CHK. R.K.C. STATE HIGHWAY ENGINEER

NUMBER
2535 P

TETRA TECH

www.tetra-tech.com
2110 POWERS FERRY ROAD SOUTH-EAST
ATLANTA, GA 30339
(770) 850-0949

Griffin
Growing Together



BY	DL	DESCRIPTION	DATE	MARK
		FINAL CONSTRUCTION PLANS	8-1-15	

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

A.Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

CONSTRUCTION
DETAILS

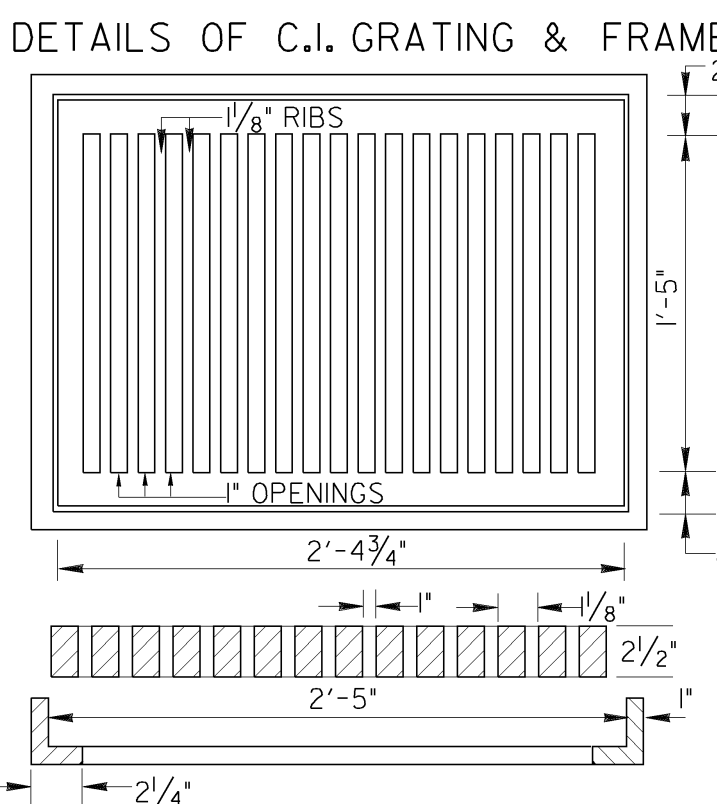
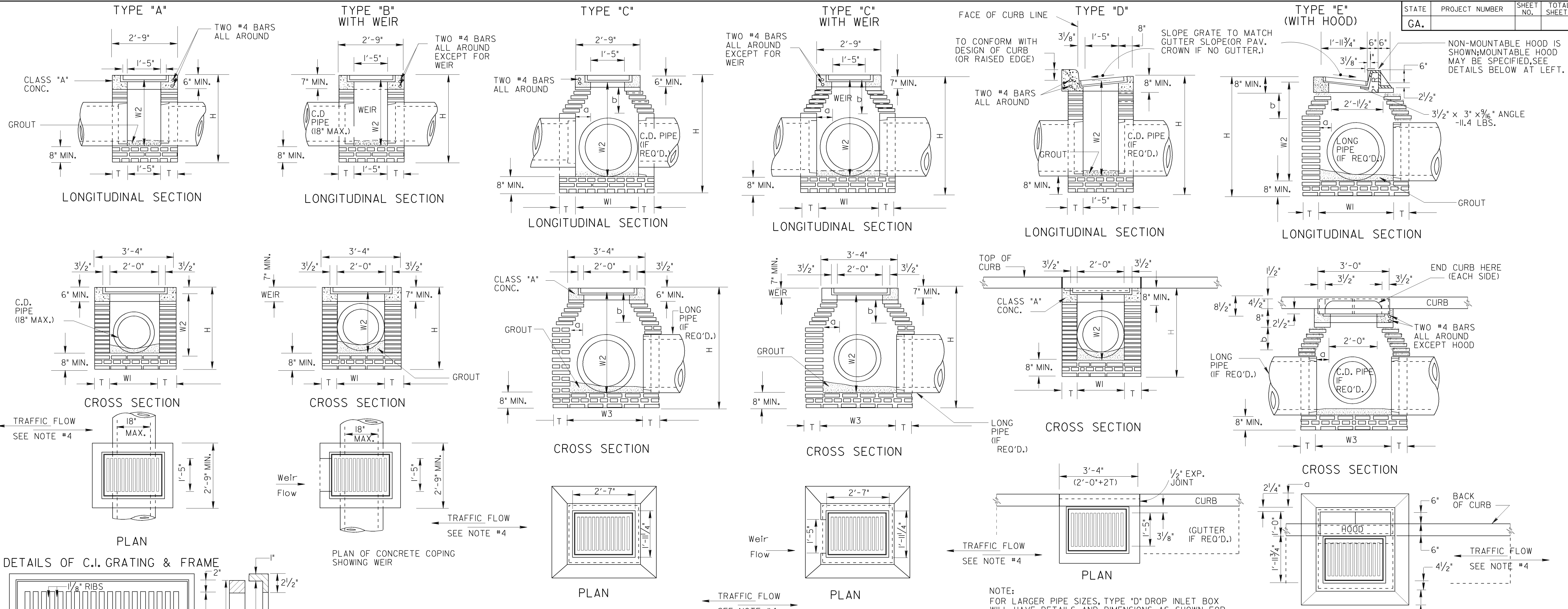
Project No.: 100-RTP-T31130

Designed By: DL
Drawn By: DL
Checked By: LS

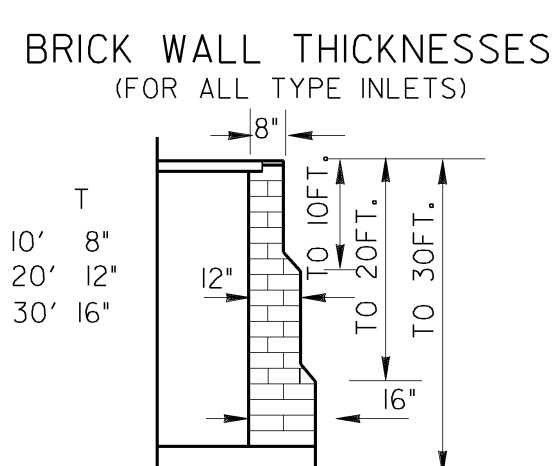
NOT FOR CONSTRUCTION

D14

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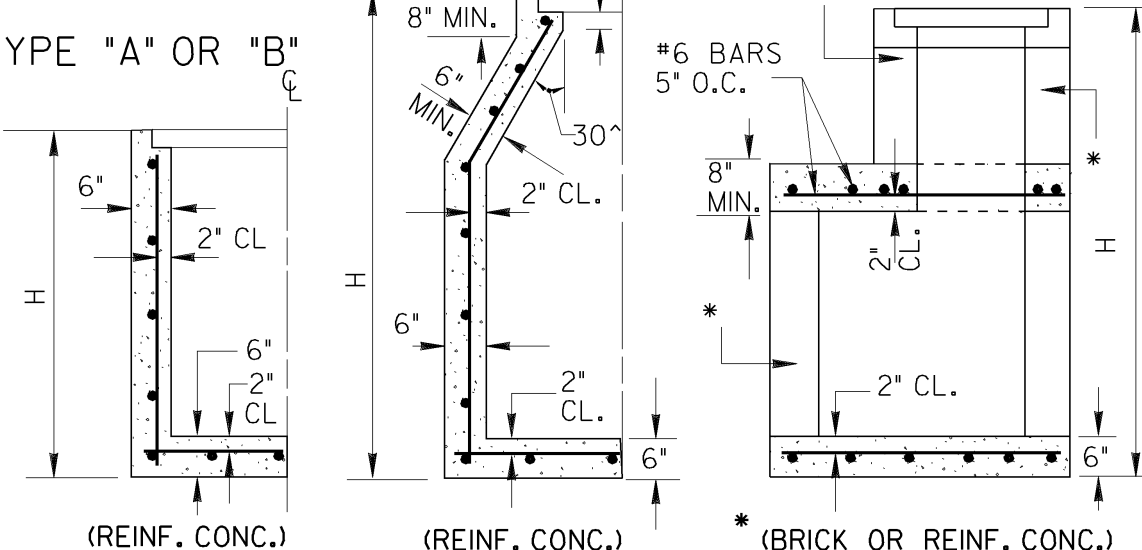


SPECIAL NOTE:
STANDARD 1019A INLETS ARE FOR USE AT LOW POINTS & WHERE HYDRAULIC LOW CAPACITY GRATES ARE SUFFICIENT. WHERE HIGHER CAPACITY GRATES ARE NEEDED ON A CONTINUOUS GRADE, STANDARD 1019B IS RECOMMENDED.



NOTE:
DETAILS NOT SHOWN FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO THAT SHOWN FOR BRICK MASONRY.

CONSTRUCTION ALTERNATES



NOTE: CONCRETE WALLS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS, BUT WHERE H IS OVER 9 FT., AND PIPE IS OVER 30" I.D., THE HORIZONTAL STEEL, WHICH IS MORE THAN 9 FT. DEEP WILL BE INCREASED TO 6" SPACINGS. 6" CONC. BOTTOM SLABS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS.

NOTE: FOR PRECAST ALTERNATES, SEE STD. 1019-A PRECAST AND/OR STD. 1040 PRECAST AND BUILT-IN-PLACE COMPONENTS MAY BE USED IN COMBINATIONS WHICH PROVIDE PROPER FITS AND STRUCTURAL ADEQUACY.

- GENERAL NOTES:**
- SPECIFICATIONS: GEORGIA STANDARD AND CURRENT EDITION, AND SUPPLEMENTS THERETO.
 - 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE RIGID PAVEMENT, CONCRETE SIDEWALK OR CONCRETE GUTTER MEETS DROP INLETS.
 - ALIGNMENT, NUMBER AND SIZES OF PIPES SHOWN ARE ONLY TYPICAL. SEE PLANS FOR ACTUAL PIPE CULVERT REQUIREMENTS.
 - ALL TYPE DROP INLETS WILL BE CONSTRUCTED (AS SHOWN), SO THAT THE GRATE BARS ARE PERPENDICULAR TO THE FLOW OF TRAFFIC EXCEPT ON LIMITED ACCESS PROJECTS OR WHERE BICYCLES ARE PROHIBITED.
 - BRICK MASONRY WITH CLASS 'A' CONC. TOP PORTION IS SHOWN AS STANDARD CONSTRUCTION WITH ALTERNATES PERMITTED AS SHOWN. BOTTOM SLAB MAY BE 8" MIN. NON-REINFORCED CONCRETE, 8" BRICK OR 6" MIN. REINFORCED CONCRETE. SEE APPLICABLE STANDARDS FOR ALTERNATE PRECAST CONSTRUCTION.

NOTE:
MINIMUM DIMENSIONS GIVEN IN TABLE BELOW ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONCRETE PIPES WITH NORMAL COVER AND CLEARANCES. THESE DIMENSIONS MAY BE MODIFIED IF SO DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. DIMENSIONS GIVEN ARE MINIMUM EXCEPT FOR 'a' WHICH IS MAXIMUM.

D	TYPE 'A' or 'B' BRICK OR REINF. CONC.			TYPE 'C' OR 'D' (BRICK)			TYPE 'E' (BRICK)			TYPE 'C', 'D' OR 'E' (REINFORCED CONCRETE)												
	W1	W2	H(min.)	W1	W2	W3	a (MAX.)	b	H(min.)	W1	W2	W3	a (MAX.)	b	H(min.)							
15"	2'-0"	2'-7"	3'-3 1/2"	2'-2 1/4"	2'-9 1/8"	2'-9 1/8"	0'-4 3/8"	0'-7 1/8"	3'-9 1/2"	3'-2 1/4"	3'-1"	3'-0 5/8"	0'-7 3/8"	1'-1 1/8"	3'-11 1/2"	2'-0"	2'-1"	2'-7"	2'-0"	3/2"	6"	3'-6"
18"	2'-0"	2'-10"	3'-7"	2'-2 1/4"	3'-2 1/2"	2'-9 1/8"	0'-4 3/8"	0'-7 1/8"	4'-1"	3'-2 1/4"	3'-4 1/2"	3'-0 5/8"	0'-7 3/8"	1'-1 1/8"	4'-1"	2'-0"	2'-1"	3'-7"	2'-0"	3/2"	6"	3'-11"
24"	~	~	~	2'-8 1/8"	3'-3 3/8"	3'-3 3/8"	0'-7 3/8"	0'-7 3/8"	4'-9"	3'-2 1/4"	3'-11 1/2"	3'-0 5/8"	0'-7 3/8"	1'-1 1/8"	4'-8 1/4"	2'-8"	2'-9"	3'-8"	2'-6"	6 1/2"	11 1/4"	4'-7"
30"	~	~	~	3'-7 1/4"	4'-0 1/4"	3'-10 1/6"	1'-0 1/8"	1'-9"	5'-10"	3'-5 1/2"	4'-8 3/8"	3'-4"	0'-8"	1'-1 1/8"	5'-6 1/6"	3'-4"	3'-6"	4'-9"	3'-0"	6 1/2"	16 1/2"	5'-10"
36"	~	~	~	4'-1 1/8"	6'-0 5/8"	4'-8 1/6"	1'-4 1/8"	2'-2 1/4"	6'-11 1/8"	3'-1 1/2"	5'-8 3/8"	3'-4"	0'-11"	1'-7 1/8"	6'-7 1/6"	3'-10"	4'-0"	5'-10"	3'-9"	1'-2"	2'-0"	6'-10"
42"	~	~	~	4'-5"	7'-1 1/4"	5'-0"	1'-6"	2'-7 3/8"	8'-0 1/4"	4'-6 1/2"	7'-5 1/8"	4'-5"	1'-2 1/2"	2'-4 3/8"	8'-4 3/8"	4'-5"	4'-6"	7'-0"	4'-3"	1'-5"	2'-5 1/2"	7'-11"
48"	~	~	~	5'-0"	8'-2 3/4"	5'-7"	1'-9 1/2"	3'-1 1/4"	9'-1 1/4"	5'-1 1/2"	8'-6 1/8"	5'-0"	2'-1 1/2"	2'-7 3/8"	9'-5 3/8"	5'-0"	5'-0"	8'-2"	5'-0"	1'-9 1/2"	3'-1 1/2"	9'-2"
54"	~	~	~	5'-7"	9'-4"	6'-2"	2'-1"	3'-7 1/2"	10'-2 1/2"	5'-8 1/2"	9'-7 3/4"	5'-7"	1'-9 1/2"	3'-1 1/4"	10'-6 1/4"	5'-6"	5'-6"	9'-2"	5'-6"	2'-0 1/2"	3'-6 1/2"	10'-0"
60"	~	~	~	6'-2"	1'-4 3/8"	6'-9"	2'-4 1/2"	4'-1 3/8"	11'-3 1/4"	6'-3 1/2"	10'-8 3/8"	6'-2"	2'-1"	3'-7 3/8"	1'-7 3/8"	6'-0"	6'-0"	10'-3"	6'-0"	2'-3 1/2"	4'-0"	11'-1"

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
DROP INLETS
(BUILT-IN-PLACE)

SCALE AS SHOWN
REV. & REDR. AUG., 1999

DES. (SUBMITTED) *James A. Kelsey*
REV. (APPROVED) *Paul L. Smith*
TRA. (APPROVED) *Paul L. Smith*
CHK. (APPROVED) *Paul L. Smith*

NUMBER
1019A

MARK	DATE	DESCRIPTION
DL <td>8-1-15 <td>FINAL CONSTRUCTION PLANS</td> </td>	8-1-15 <td>FINAL CONSTRUCTION PLANS</td>	FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

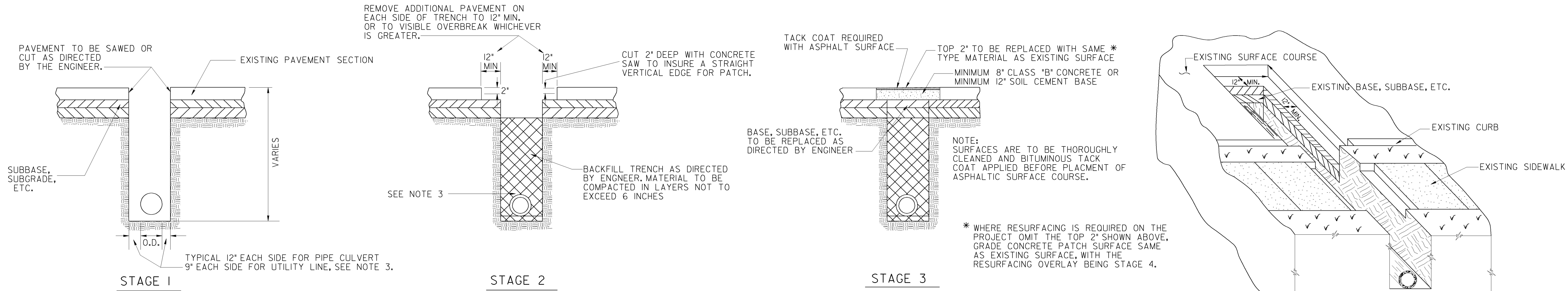
A.Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

CONSTRUCTION
DETAILS

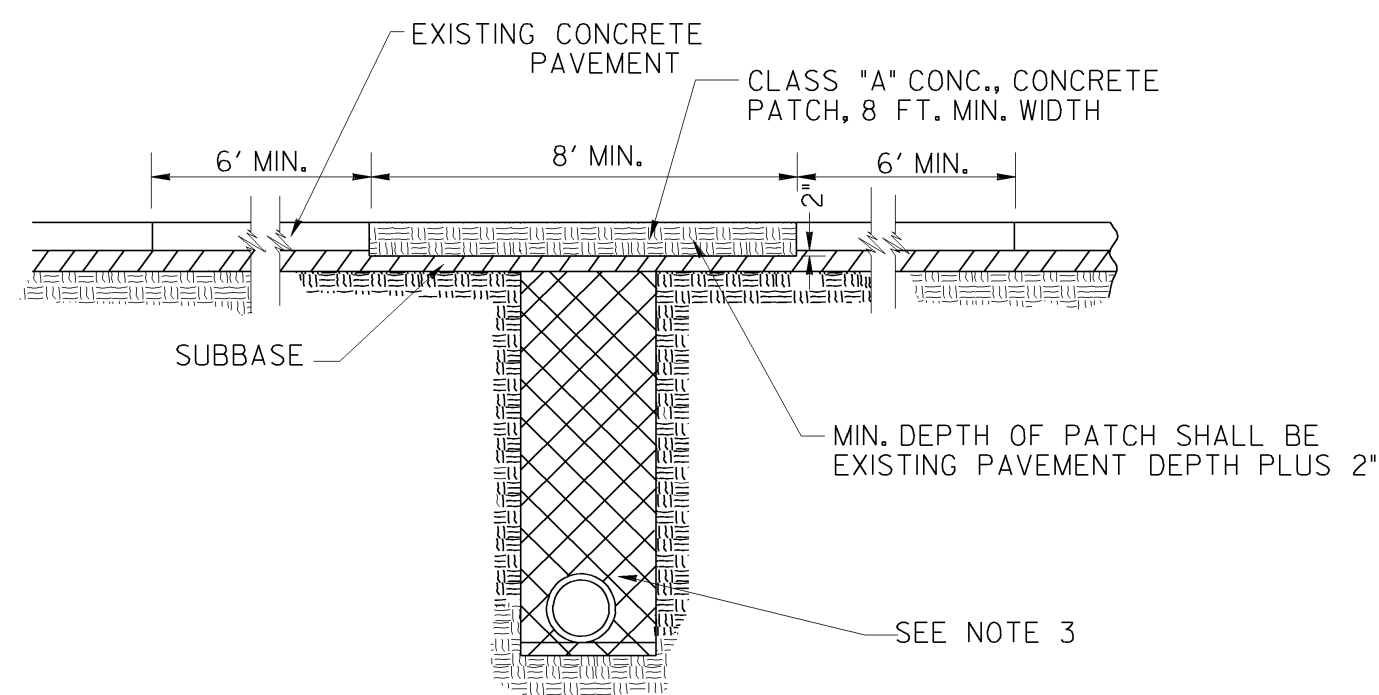
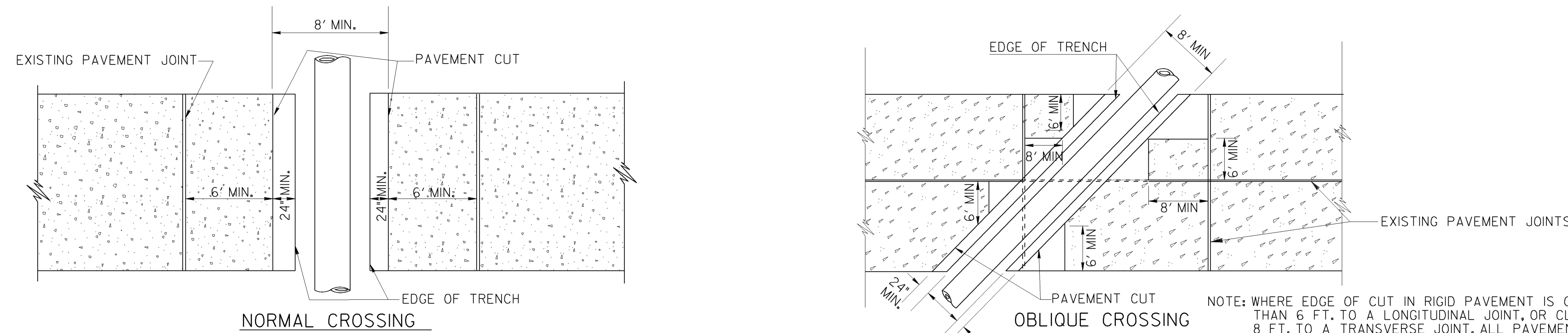
Project No.: 100-RTP-T31130
Designed By: DL
Drawn By: DL
Checked By: LS

STORM DRAIN AND UTILITY INSTALLATION BY OPEN CUT - GENERAL

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



STORM DRAIN AND UTILITY INSTALLATION BY OPEN CUT ACROSS P.C. CONCRETE PAVING



NOTE: WHEN THE CONCRETE IS POURED, IT SHALL BE STRUCK OFF AT AN ELEVATION SLIGHTLY HIGHER THAN THE INTENDED SURFACE AND TAMPED TO OFFSET SHRINKAGE. MECHANICAL VIBRATING EQUIPMENT SHALL BE USED TO CONSOLIDATE THE PLACED CONCRETE, ESPECIALLY AT THE EDGES AND AROUND THE STEEL AT JOINTS. THE CONCRETE SHALL THEN BE TAMPED A SECOND TIME, THEN SCREEDED AND CHECKED WITH A STRAIGHT EDGE TO GIVE THE SAME SURFACE GRADE AS THE EXISTING PAVEMENT.

NOTE: WHERE EDGE OF CUT IN RIGID PAVEMENT IS CLOSER THAN 6 FT. TO A LONGITUDINAL JOINT, OR CLOSER THAN 8 FT. TO A TRANSVERSE JOINT, ALL PAVEMENT IN THAT AREA (SHADED) IS TO BE REPLACED AS DIRECTED BY THE ENGINEER.

ALL PAVEMENT JOINTS ARE TO BE RE-ESTABLISHED. DOWELS AND TIE-BARS ARE TO BE REPLACED.

GENERAL NOTES:

- SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
- (a) OTHER PAVEMENT REPLACEMENT MATERIALS, SUCH AS HIGH EARLY STRENGTH CONCRETE, MAY BE SUBSTITUTED FOR MATERIALS SHOWN WHEN CALLED FOR IN THE PLANS OR BY THE ENGINEER.
(b) PAYMENT FOR PIPE OR UTILITY SHALL INCLUDE SAWING AND/OR CUTTING AND REMOVING EXISTING PAVEMENT AND REPLACING THE PAVEMENT AS SPECIFIED. PAYMENT FOR PIPE OR UTILITY INCLUDES THIS PAVEMENT REPLACEMENT MATERIAL, REGARDLESS OF WHERE MATERIALS SHOWN ARE USED OR WHERE OTHER MATERIALS SUCH AS HIGH EARLY STRENGTH CONCRETE ARE USED.
(c) PAYMENT FOR PIPE CULVERT OR UTILITY INSTALLATION SHALL INCLUDE REPLACING IN KIND ANY PORTIONS OF SIDEWALK, CURB, CURB & GUTTER, MEDIAN PAVING, DRIVEWAYS, ETC., WHICH ARE DISTURBED DUE TO THE INSTALLATION.
- TRENCH DETAIL SHOWN IS GENERAL, SEE STANDARD 1030D FOR DETAILS REQUIRED FOR PIPE CULVERT INSTALLATIONS. SEE THE UTILITIES MANUAL FOR UTILITY INSTALLATION REQUIREMENTS.
- AFTER REMOVING EXISTING PAVEMENT, THE SUBBASE AND VERTICAL FACE OF EXISTING PAVING SHALL BE DAMPED (BUT NOT WET), ADDITIONALLY, THE VERTICAL FACE OF THE EXISTING PAVEMENT SHALL BE PAINTED WITH A SOLUTION OF PORTLAND CEMENT AND WATER MIXED TO THE CONSISTENCY OF HEAVY PAINT. THE CONCRETE MIX SHALL THEN BE POURED BEFORE THIS SURFACE DRIES OUT. AFTER CONCRETE IS POURED, IT SHALL BE WORKED INTO ALL CORNERS AND INTO ALL ROUGH SURFACES OF THE EXISTING PAVEMENT.
- WHERE PIPE IS REMOVED, BUT NOT REPLACED, PAYMENT FOR PIPE REMOVAL INCLUDES ALL ITEMS DESCRIBED IN GENERAL NOTE 2., WITH ALL OTHER NOTES AND DETAILS ALSO BEING APPLICABLE.

NOTE: THIS STANDARD IS FOR USE WHERE PERMANENT PAVEMENT PATCHING IS REQUIRED. TEMPORARY PATCHING, IF REQUIRED, SHALL BE ACCORDING TO OTHER DETAILS, SPECIFICATIONS, AND/OR AS DIRECTED BY THE ENGINEER.

DATE		DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
REVISION		STANDARD	
		PAVEMENT PATCHING DETAILS (STORM DRAIN OR UTILITY INSTALLATIONS BY OPEN CUT ACROSS EXISTING PAVEMENT)	
NO SCALE		REV. & REDR., AUG. 1999	
BY	REV. (SUBMITTED)	James H. Kennel STATE ROAD & AIRPORT DESIGN ENGR.	NUMBER 1401
TRA.	(APPROVED)	David L. Smith CHIEF ENGINEER	
CHK.			



MARK	DATE	DESCRIPTION	BY
	8-1-15	FINAL CONSTRUCTION PLANS	DL

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA

A.Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

CONSTRUCTION
DETAILS

Project No.:	100-RTP-T31130
Designed By:	DL
Drawn By:	DL
Checked By:	LS

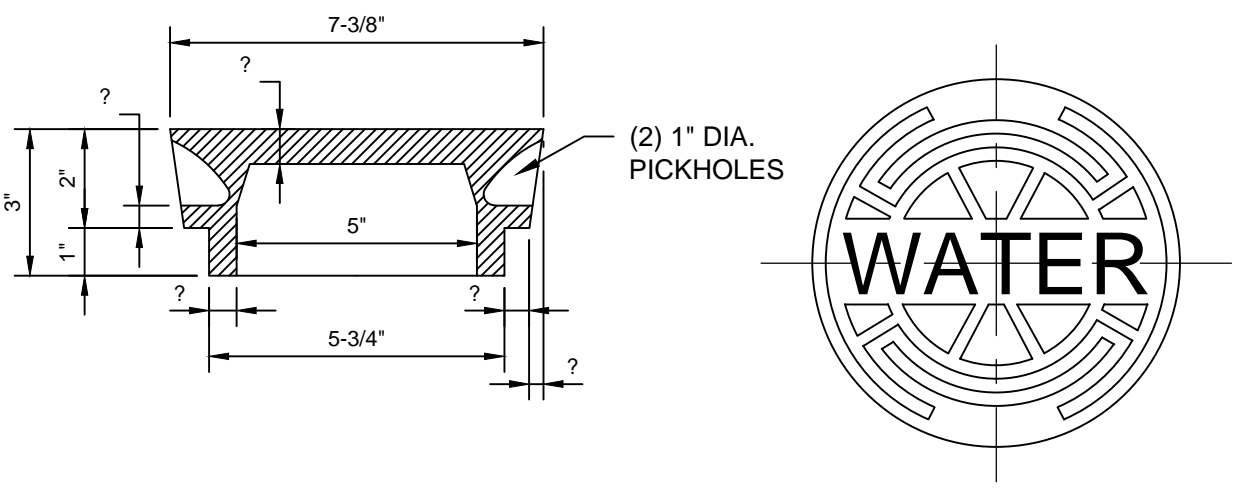
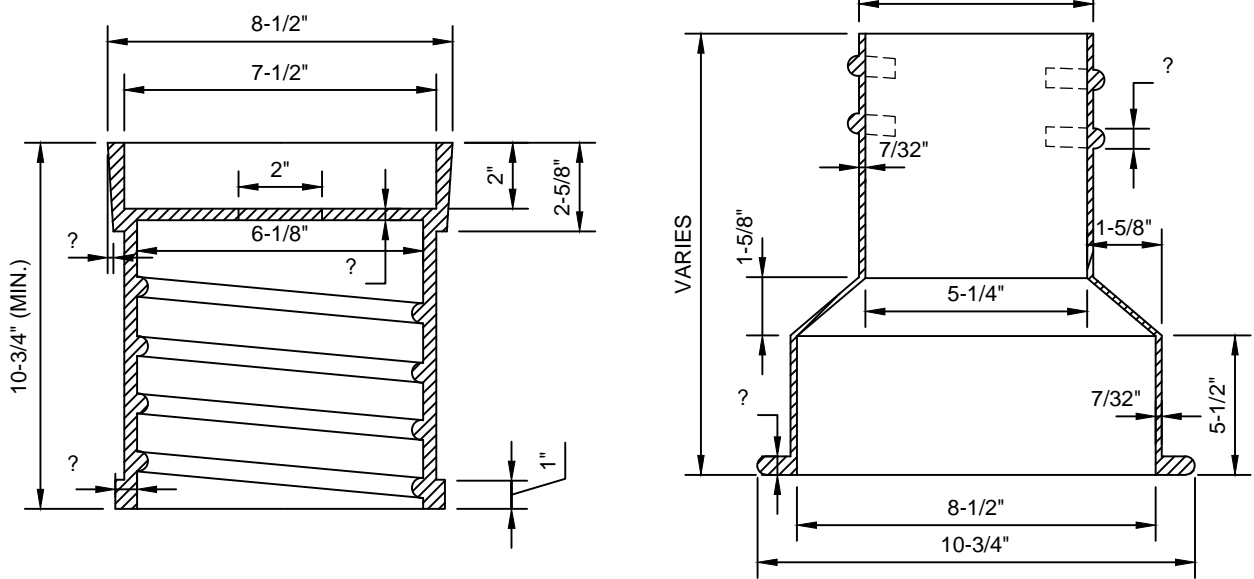
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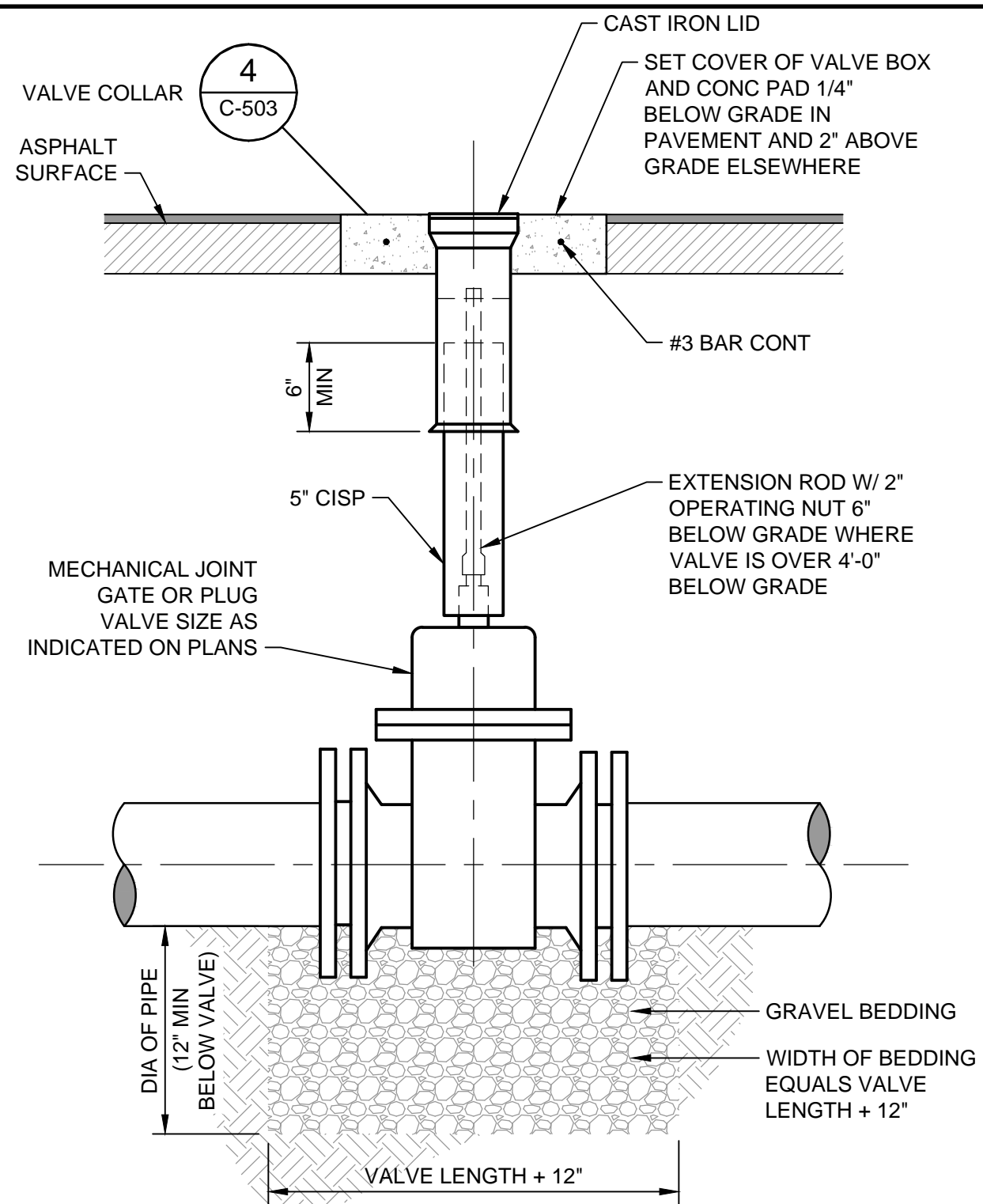
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NOT FOR CONSTRUCTION



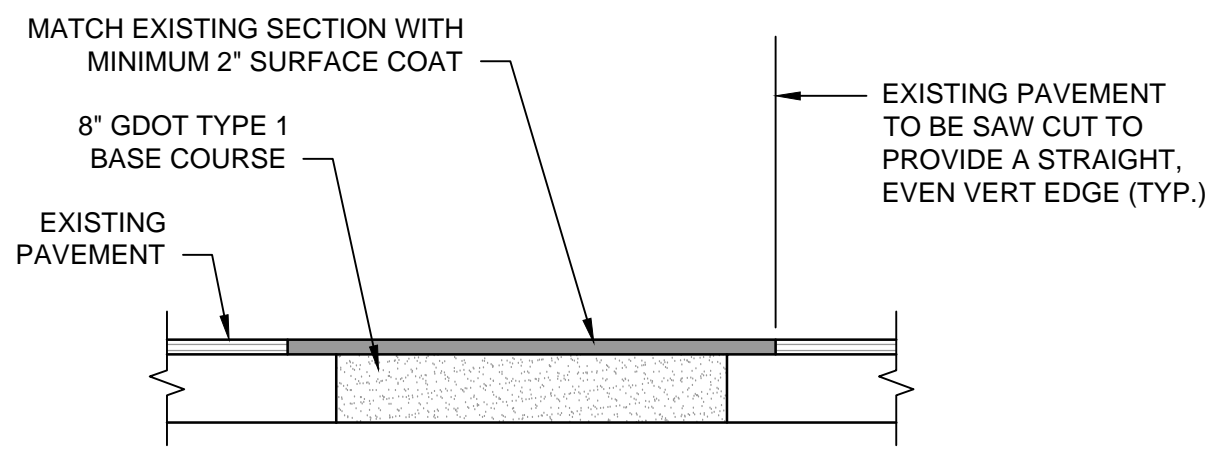
ADJUSTABLE VALVE BOX AND COVER

1
SCALE: N.T.S.



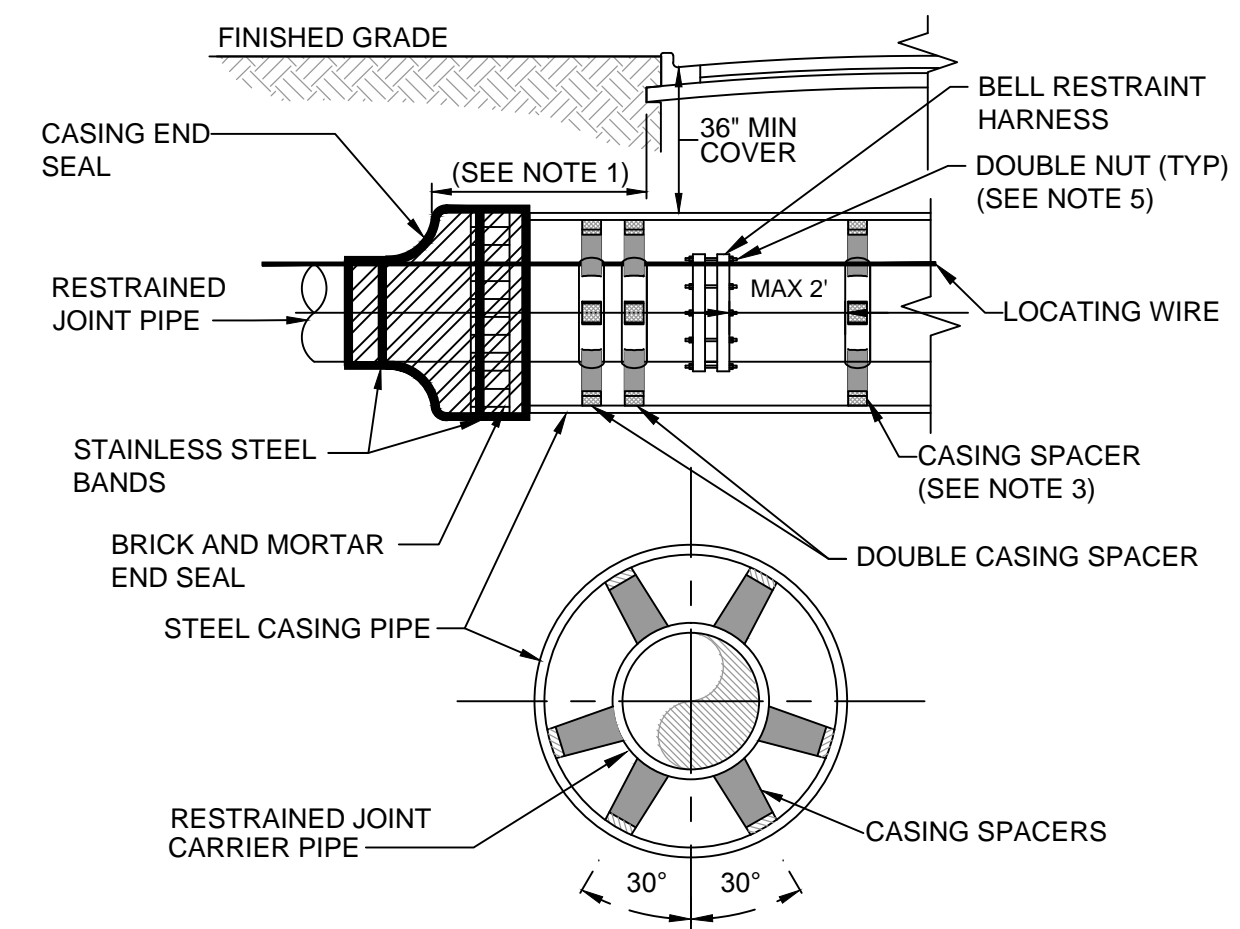
VALVE

3
SCALE: N.T.S.



- NOTES:
- MAINTAIN 2% CROWN FROM CENTER LINE OF ROAD EACH DIRECTION ON STREET

5
SCALE: N.T.S.



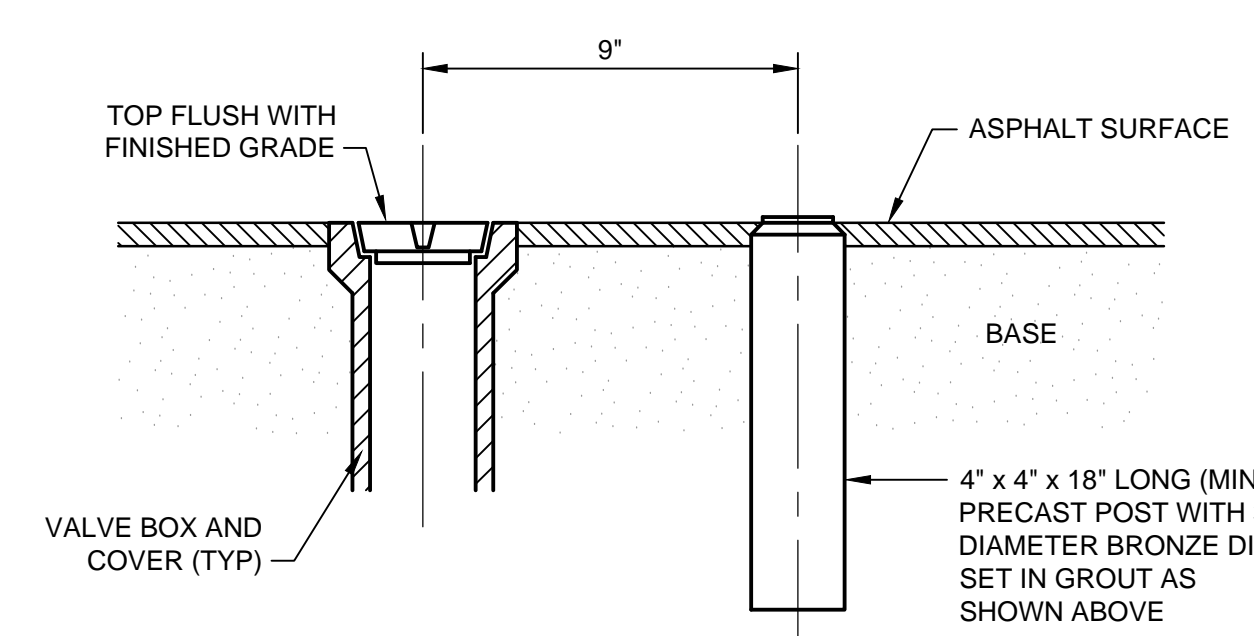
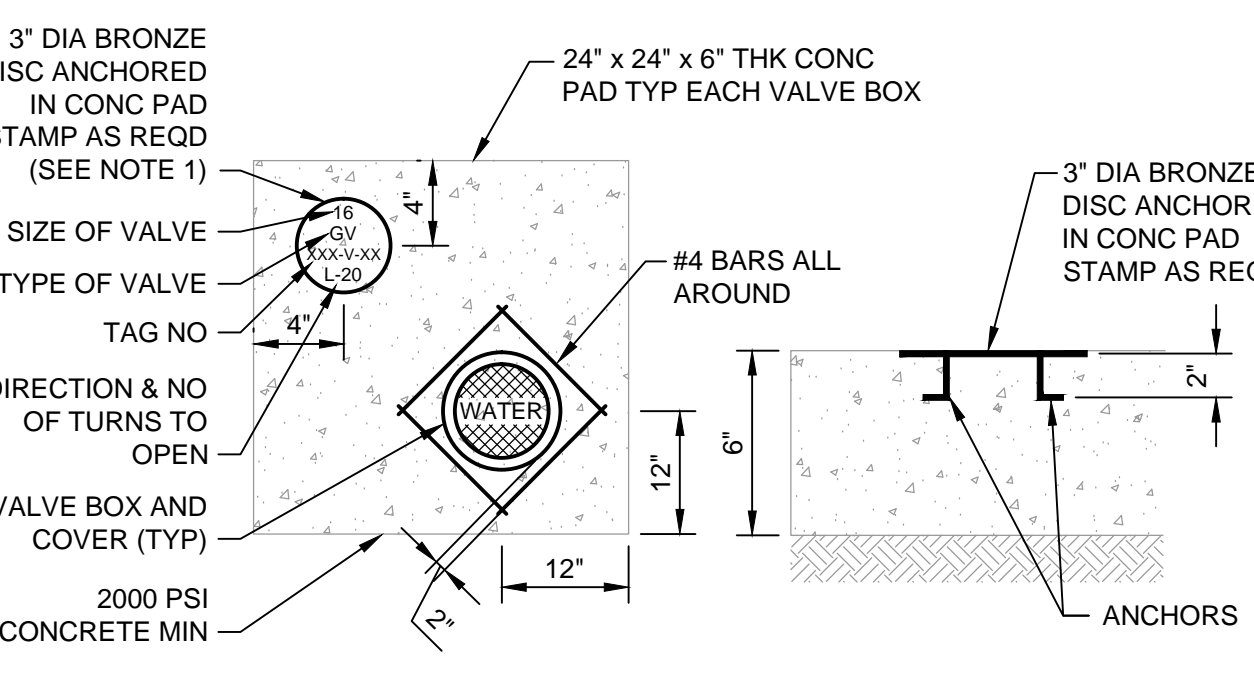
(VARIES BY CASING SIZE)

CARRIER PIPE NOMINAL DIAMETER	4	6	8	10	12	16	20	24	30	36	42
MINIMUM CASING OUTSIDE DIAMETER (INCHES)	16	16	18	20	24	30	36	42	48	54	60
MINIMUM CASING WALL THICKNESS (INCHES)	.250"	.250"	.250"	.250"	.250"	.312"	.375"	.500"	.500"	.500"	.500"

- NOTES:
- CASING SHALL BE INSTALLED AS INDICATED ON PLANS.
 - REQUIREMENTS OF CITY OF GRIFFIN SHALL BE MET.
 - DISTANCE BETWEEN SPACERS TO BE PER MANUFACTURER'S SPECIFICATIONS, OR MAX OF 6.5', WHICHEVER IS MORE STRINGENT.
 - USE OF FLOWABLE FILL IN THE ANNULAR SPACE BETWEEN THE CASING AND CARRIER PIPE IS PROHIBITED.
 - PIPE IN CASING SHALL HAVE A MECHANICAL BELL RESTRAINT HARNESS WHERE RODS ARE DOUBLE NUTTED TO PRECLUDE OVERBELLING THE JOINT DURING PUSHING CARRIER PIPE CASING.

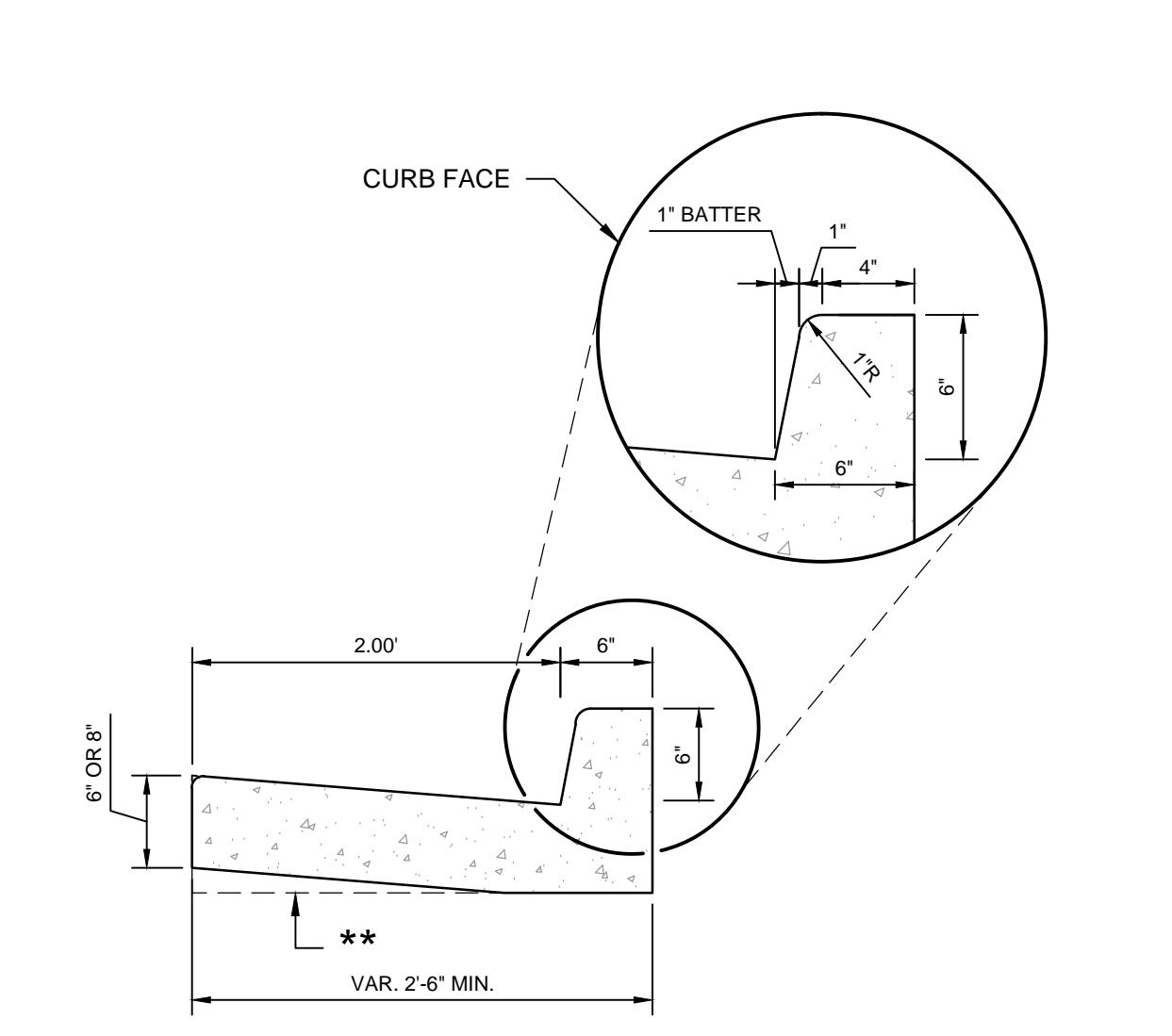
CASING PIPE AND CASING SPACERS

DETAIL 7
SCALE: NTS



NOTE:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.

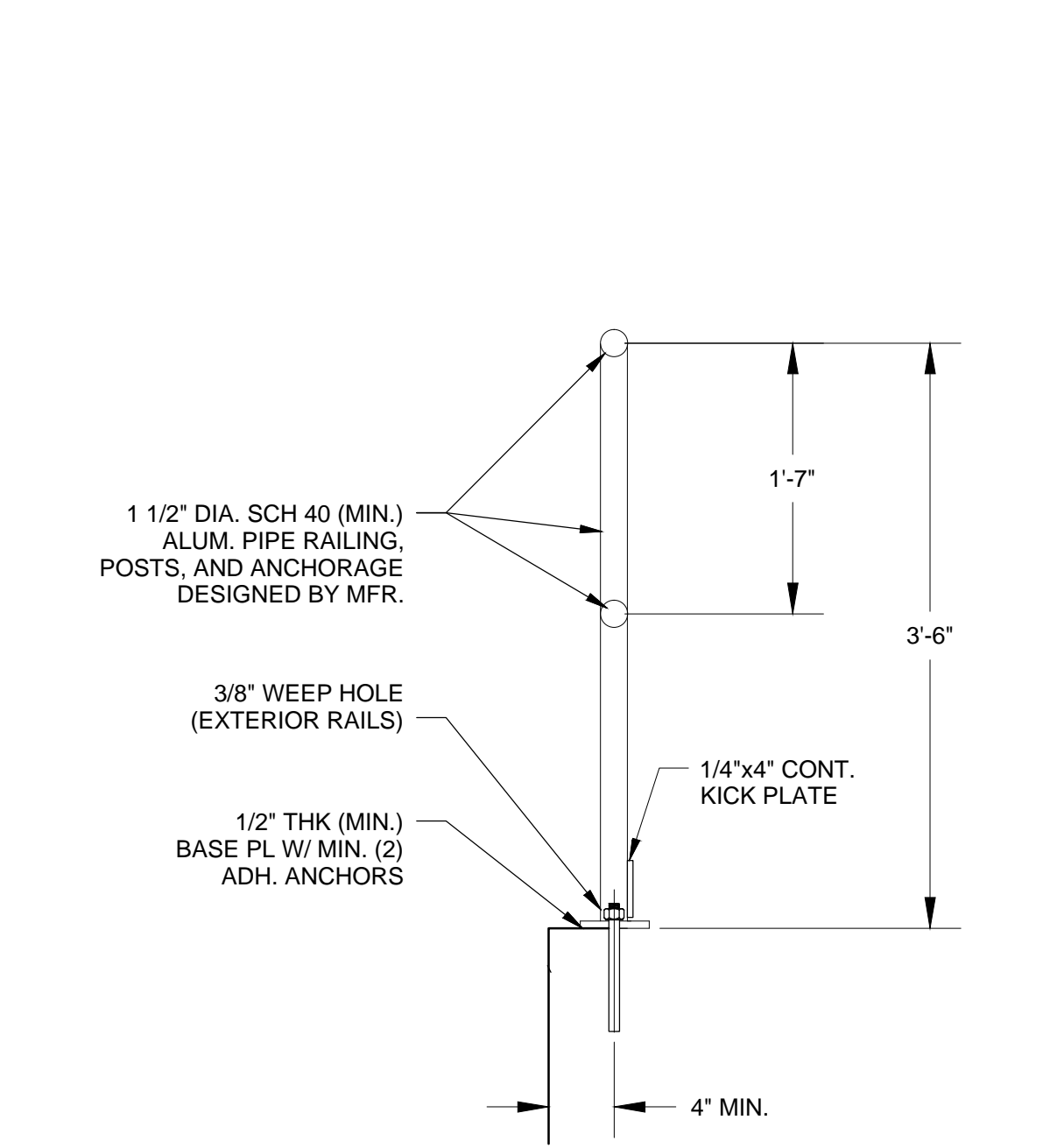
VALVE COLLAR
2
SCALE: N.T.S.



** AT CONTRACTOR'S OPTION THE GUTTER THICKNESS MAY BE INCREASED AT EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER PARALLEL WITH PAVING BASE COURSE, BUT THE GUTTER THICKNESS MUST NOT BE LESS THAN THE SPECIFIED 6" OR 8" AT ANY POINT.

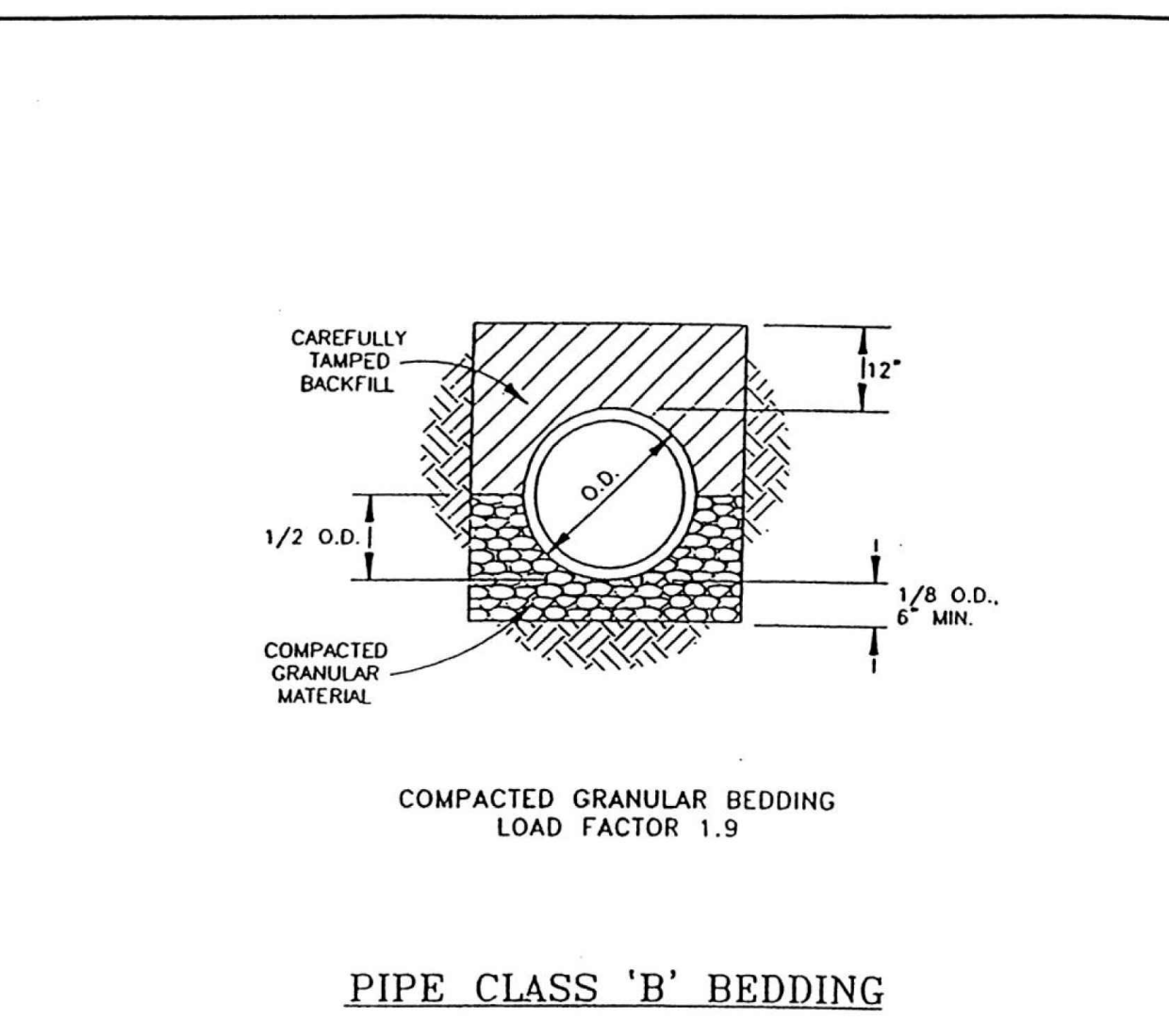
CONCRETE CURB AND GUTTER

4
SCALE: N.T.S.



NOTE: CONTRACTOR TO ANCHOR GUARDRAIL POSTS IN GROUTED HOLE.

6
SCALE: N.T.S.



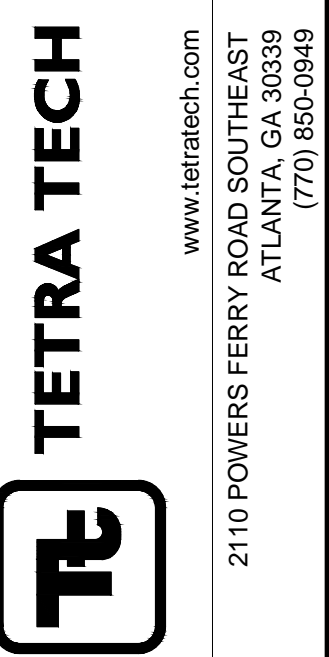
PIPE CLASS 'B' BEDDING



PIPE CLASS "B" BEDDING
CONSTRUCTION STANDARD

DATE 12/96
APPROVED 1/8/02
EFFECTIVE 2/2002

8



MARK	DATE	DESCRIPTION
DL	8-1-15	FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A.Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
CONSTRUCTION
DETAILS

Project No.: 100-RTP-T31130
Designed By: DL
Drawn By: DL
Checked By: LS

D18

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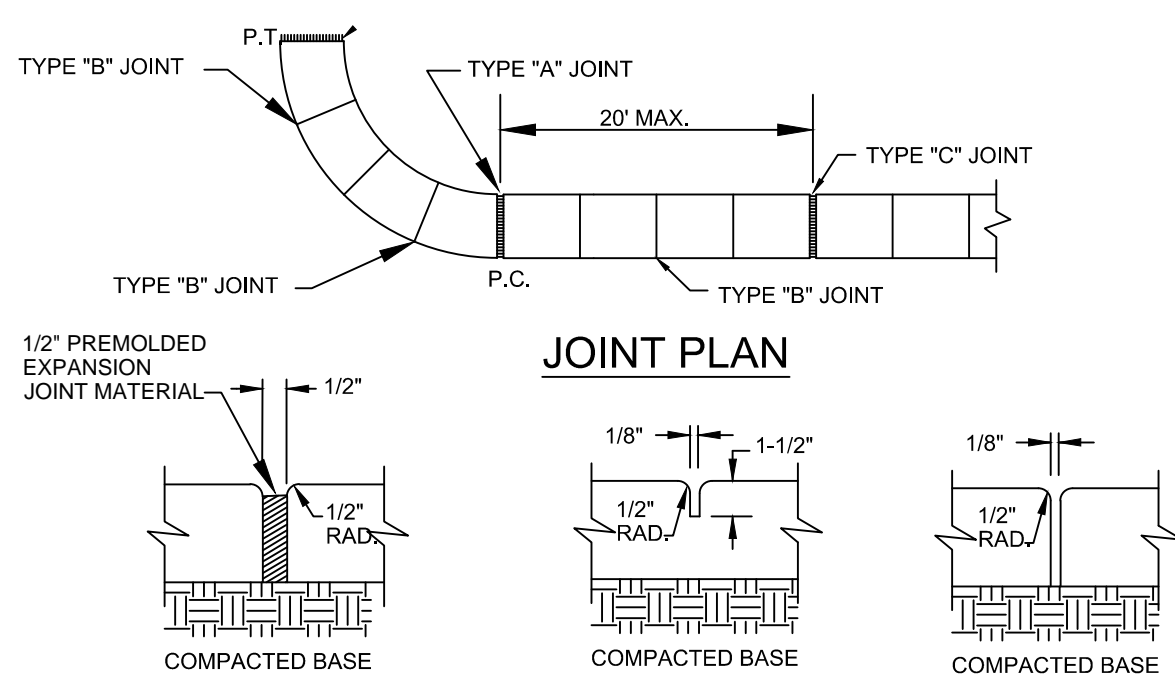
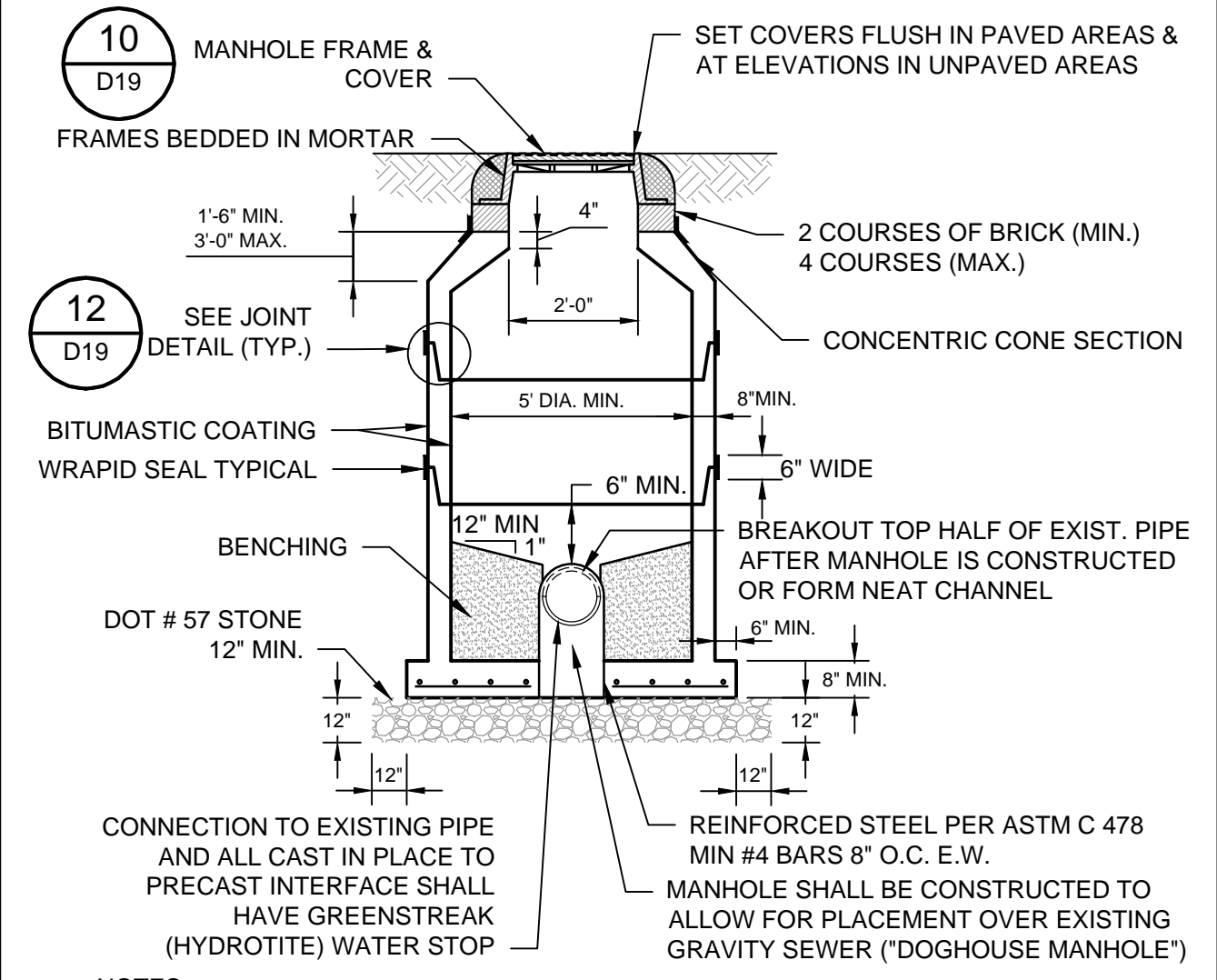


TABLE OF SIDEWALK JOINTS

TYPE	LOCATION
"A"	JOINT SHALL BE PLACED AT P.C. AND P.T. OF CURVES. JUNCTION OF EXISTING SIDEWALKS. EVERY 60' ON NEW SIDEWALKS AND WHERE SIDEWALKS ABUT CONCRETE CURBS, DRIVEWAYS AND SIMILAR STRUCTURES.
"B"	JOINT SHALL BE PLACED 5'-0" ON CENTER
"C"	JOINT SHALL BE PLACED AT 20' INTERVALS

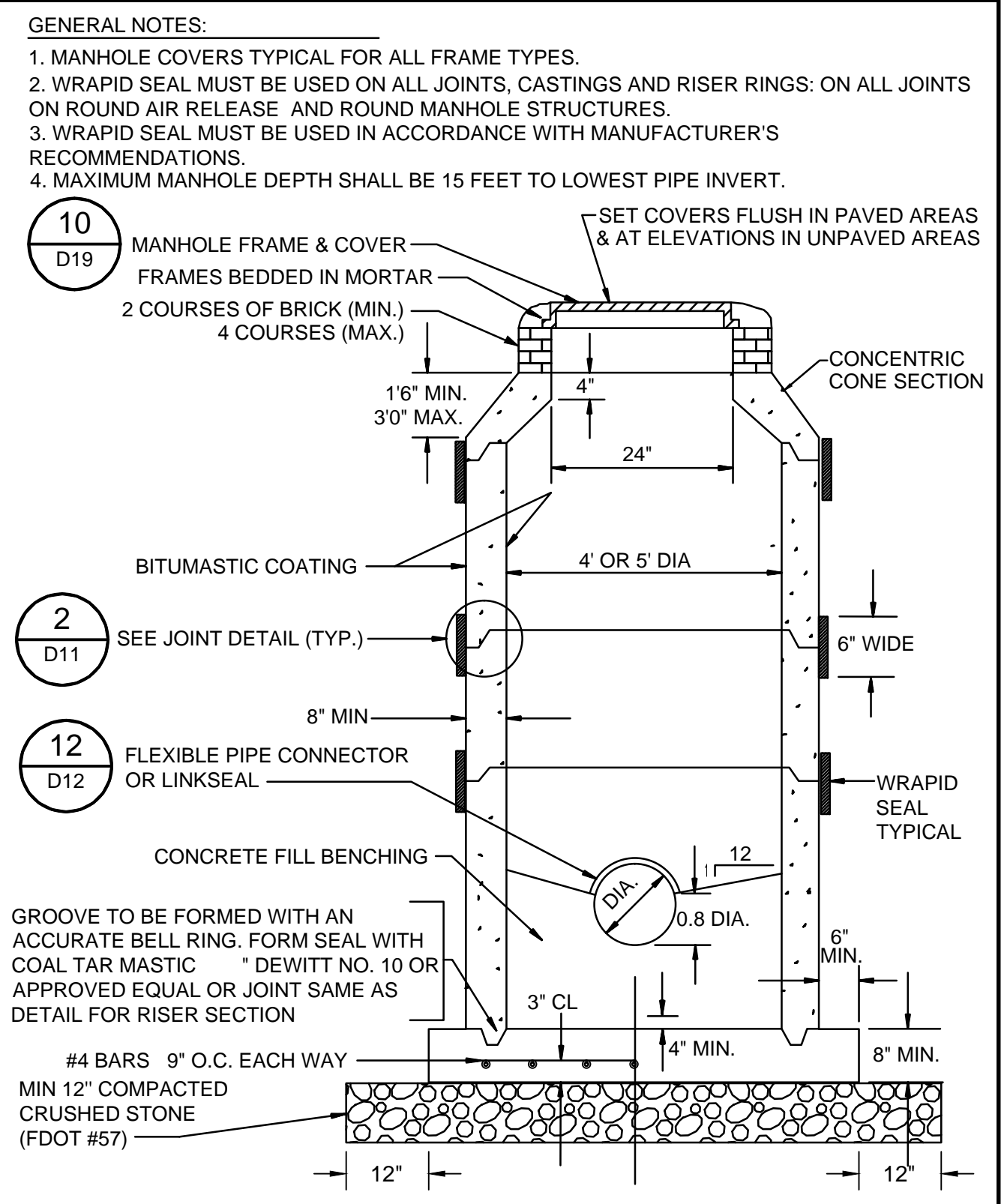
- NOTES:**
- SIDEWALK SHALL BE 4" THICK EXCEPT AT DRIVEWAYS WHERE THE THICKNESS SHALL BE 6"
 - THE USE OF REINFORCEMENT WILL NOT BE PERMITTED, EXCEPT AT DRIVEWAYS.
 - CONCRETE TO BE CLASS-1, 3000 PSI
 - SIDEWALKS, CURB RAMPS AND SIDEWALK CROSS SLOPES SHALL MEET THE REQUIREMENTS OF THE "AMERICANS WITH DISABILITIES ACT" (ADA) (0.02 CROSS SLOPE MAX)
 - PROVIDE LIGHT BROOM SURFACE FINISH WITH TROWEL SMOOTH BORDER AT EDGE OF SLAB AND EXPANSION JOINTS.

CONCRETE SIDEWALK DETAILS
DETAIL 9
SCALE: N.T.S.



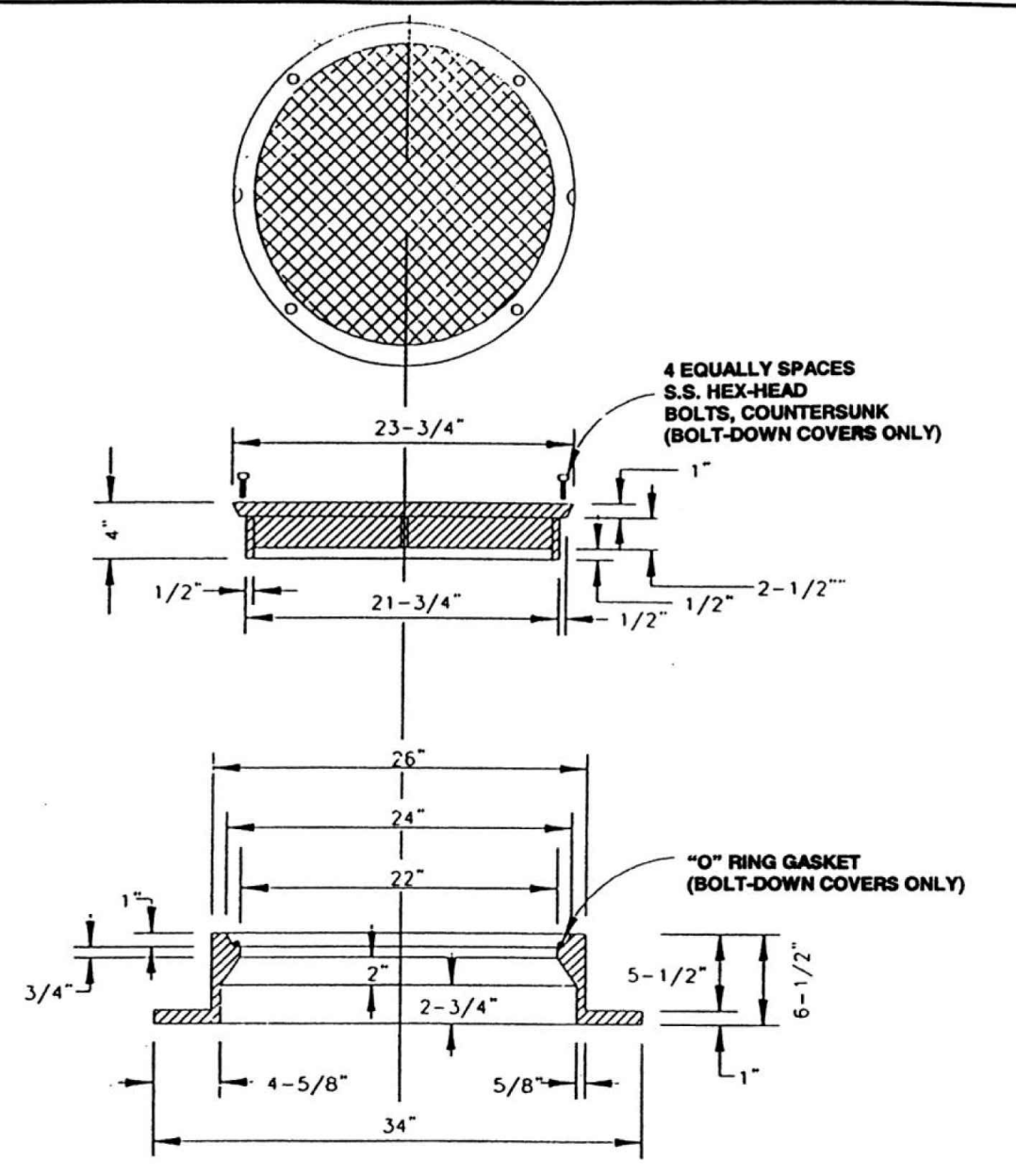
- NOTES:**
- DOGHOUSE OPENING MAY ONLY BE USED WHEN PLACING A NEW MANHOLE OVER AN EXISTING LINE; OTHERWISE, THE OPENING MUST BE CAST. SIZE, LOCATION AND ANGLE OF ENTRY SHOULD BE AS REQUIRED BY THE PLANS.
 - OPENINGS IN PRECAST UNITS ARE TO BE 4" MINIMUM TO 8" MAXIMUM LARGER THAN THE OUTSIDE DIAMETER OF THE PROPOSED PIPE.
 - MANHOLE COVERS TYPICAL FOR ALL FRAME TYPES.
 - WRAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS; ON ALL JOINTS ON ROUND AIR RELEASE AND ROUND MANHOLE STRUCTURES.
 - WRAPID SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - MAXIMUM MANHOLE DEPTH SHALL BE 15 FEET TO LOWEST PIPE INVERT.

DOGHOUSE MANHOLE
DETAIL 11
SCALE: N.T.S.



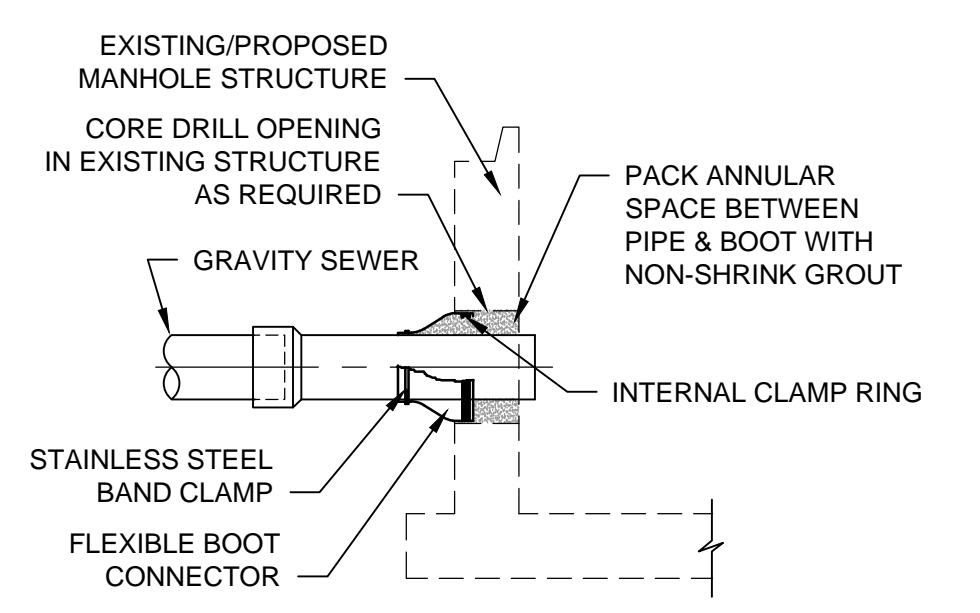
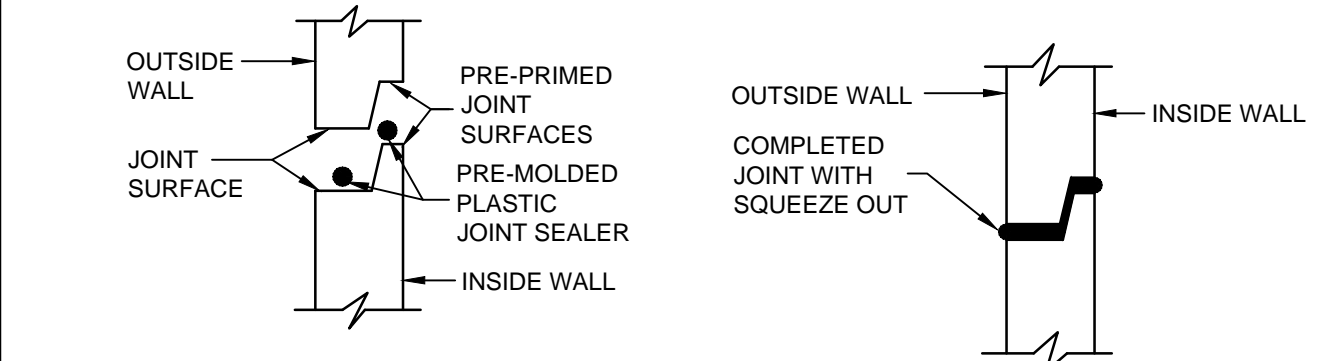
PRECAST CONCRETE MANHOLE
DETAIL 13
SCALE: N.T.S.

NOT FOR CONSTRUCTION

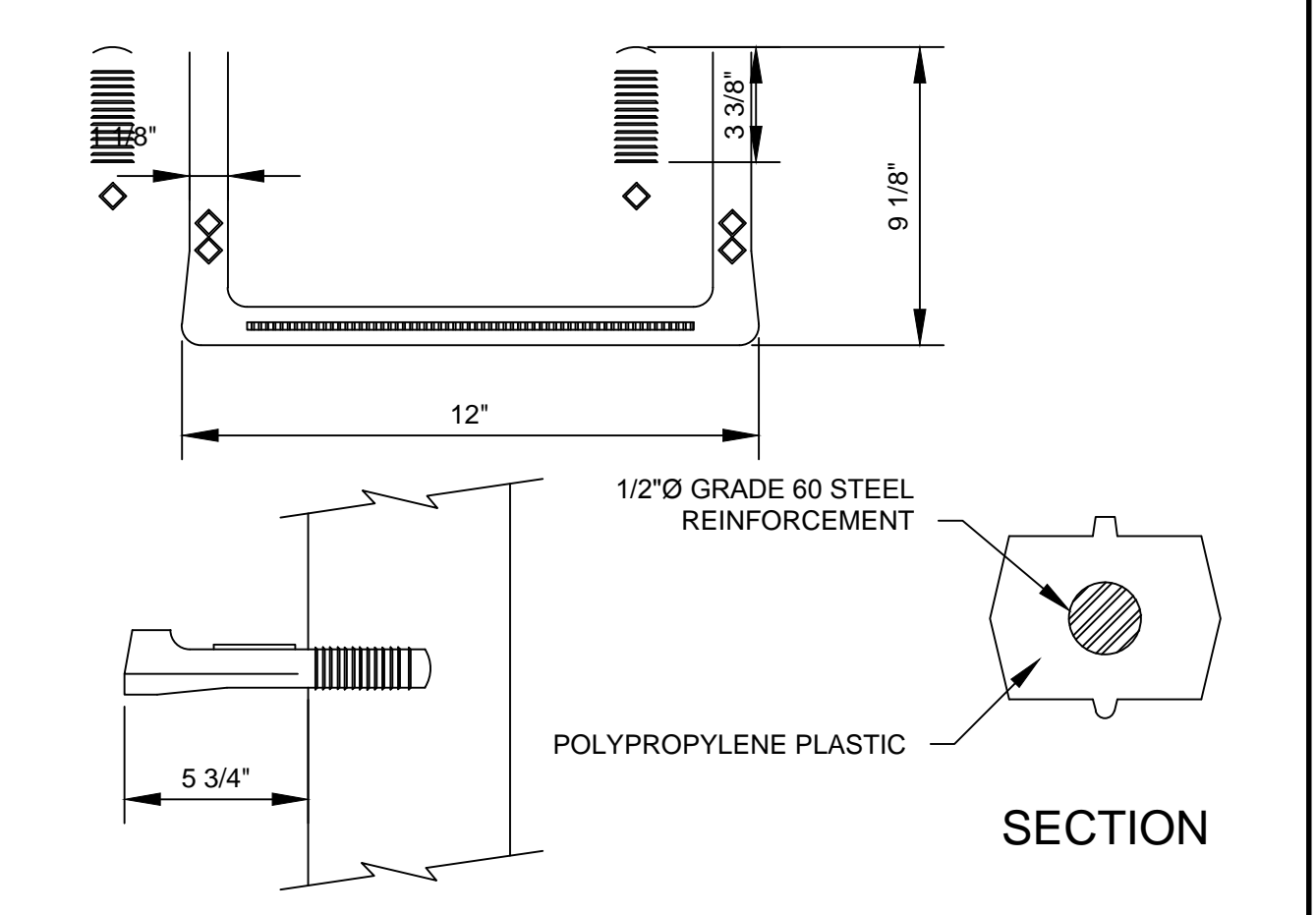


- NOTES:**
- STANDARD MANHOLE FRAME AND COVER DOES NOT REQUIRE "O" RING GASKET AND BOLTS. ONLY BOLT-DOWN MANHOLE COVER REQUIRES "O" RING GASKET AND BOLTS.
 - BOLT-DOWN MANHOLE COVERS REQUIRED WHERE MANHOLES ARE LOCATED IN FLOOD PLAIN OR IN AREAS SUBJECT TO FLOODING.

STANDARD MANHOLE FRAME & COVER
CONSTRUCTION STANDARD
DATE 12/96
APPROVED 1/8/02
EFFECTIVE 2/2002
10



MANHOLE CONNECTION
DETAIL 12
SCALE: N.T.S.



STANDARD MANHOLE STEP DETAIL
DETAIL 14
SCALE: N.T.S.

Thursday, July 30, 2015 2:25:38 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_Sit\Final_Plans\Model_Files\Details .DWG LAYOUT: D19 USER NAME: TUCKER, BOBBY

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LAUREN SPRINGER

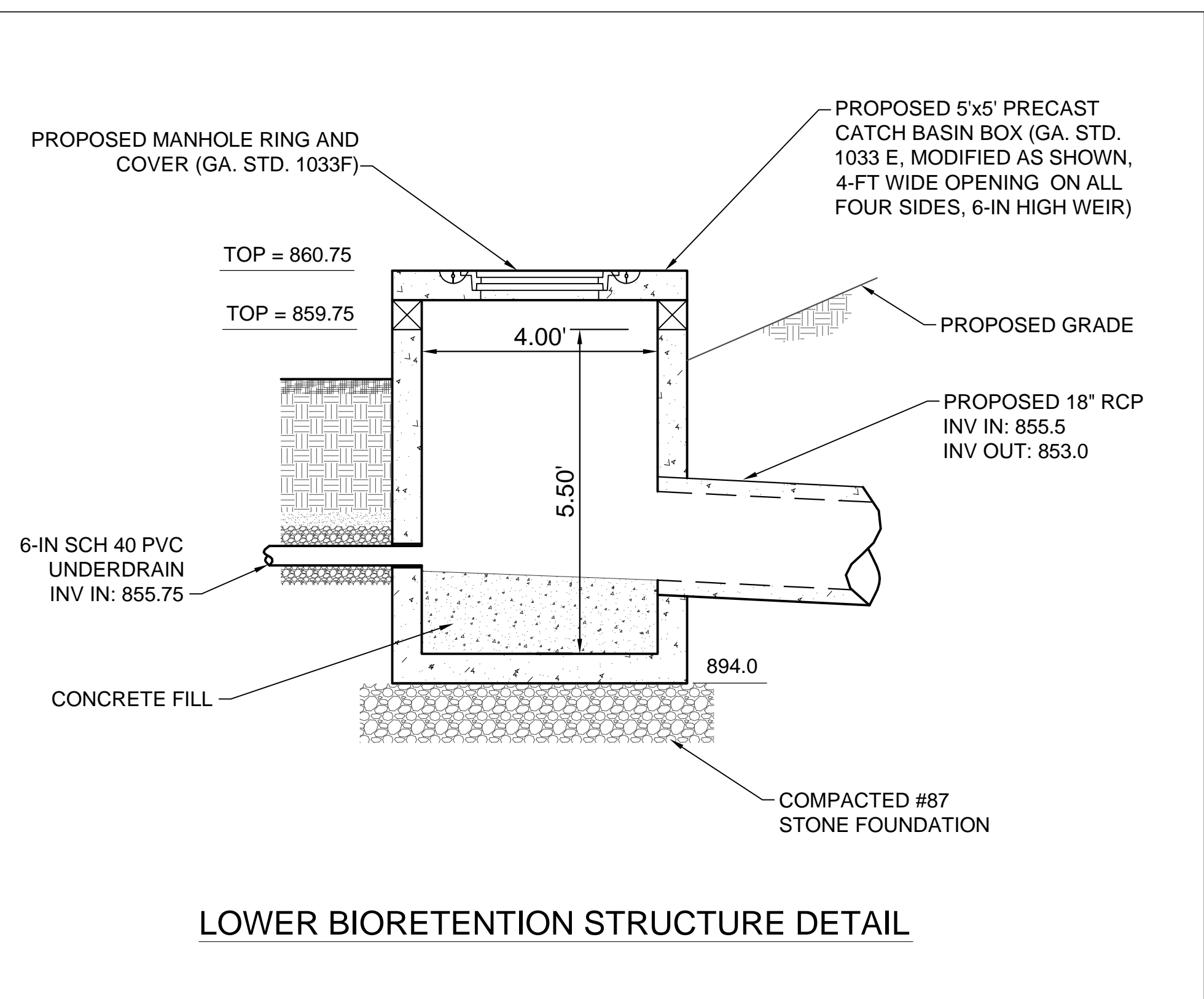
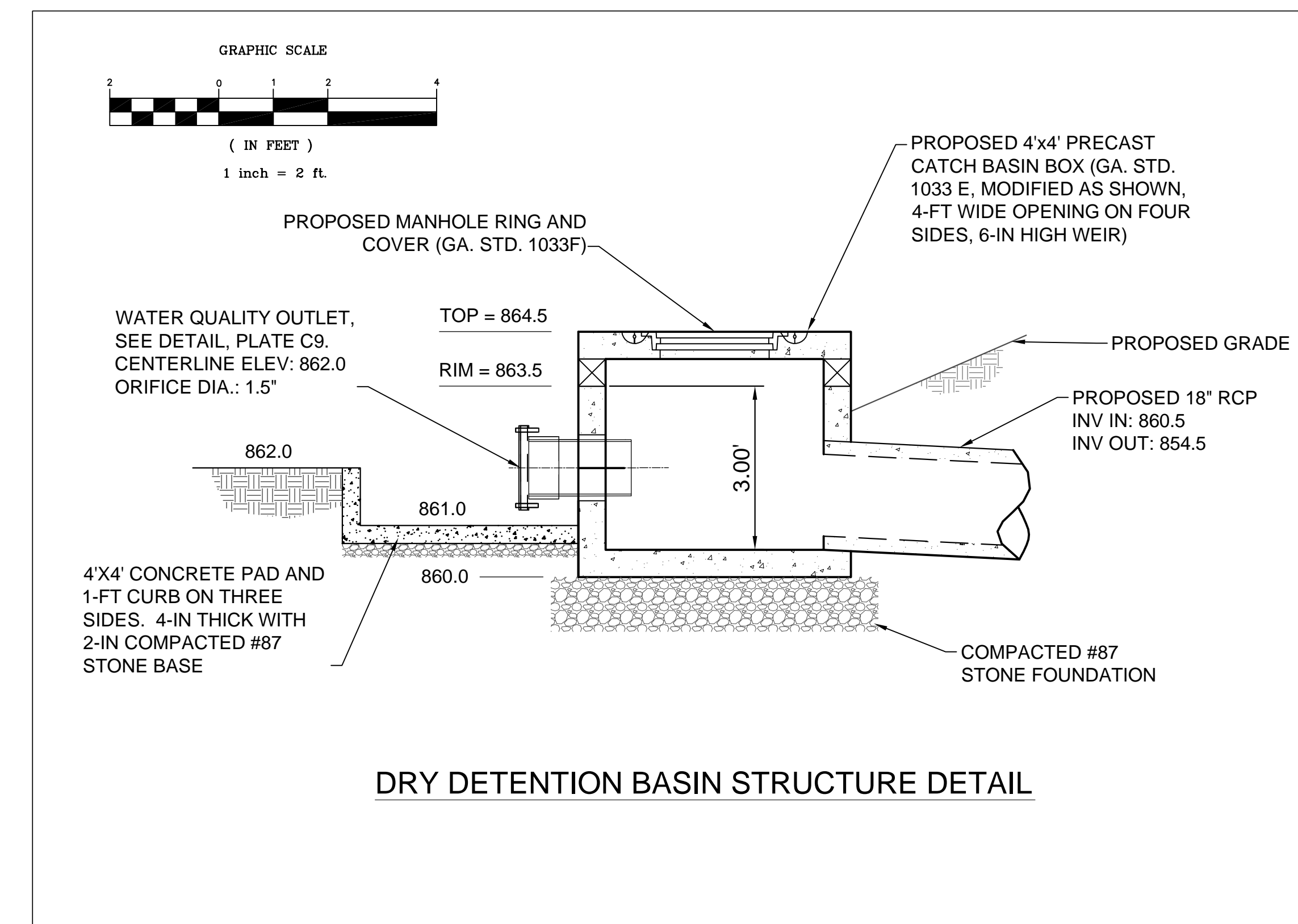
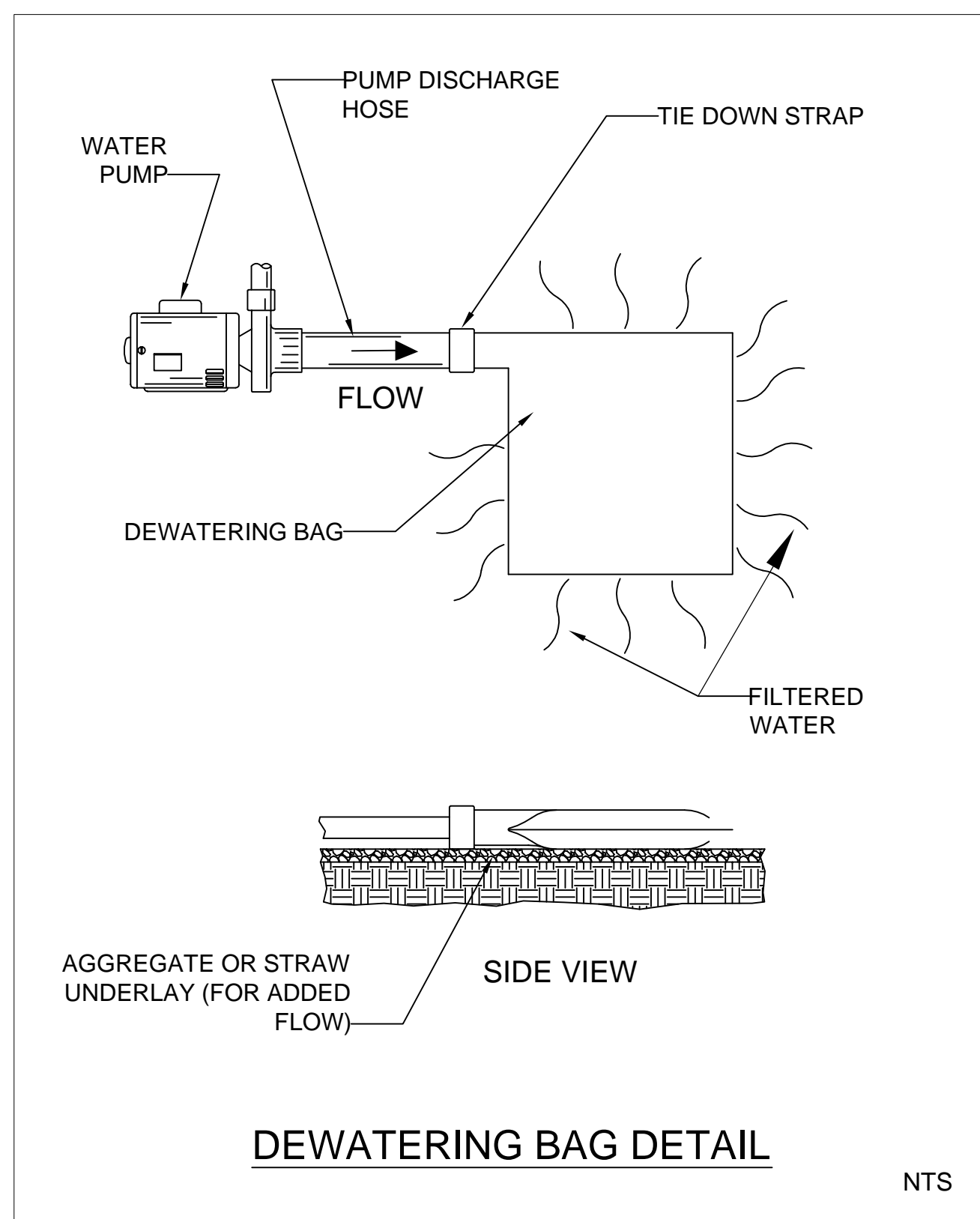
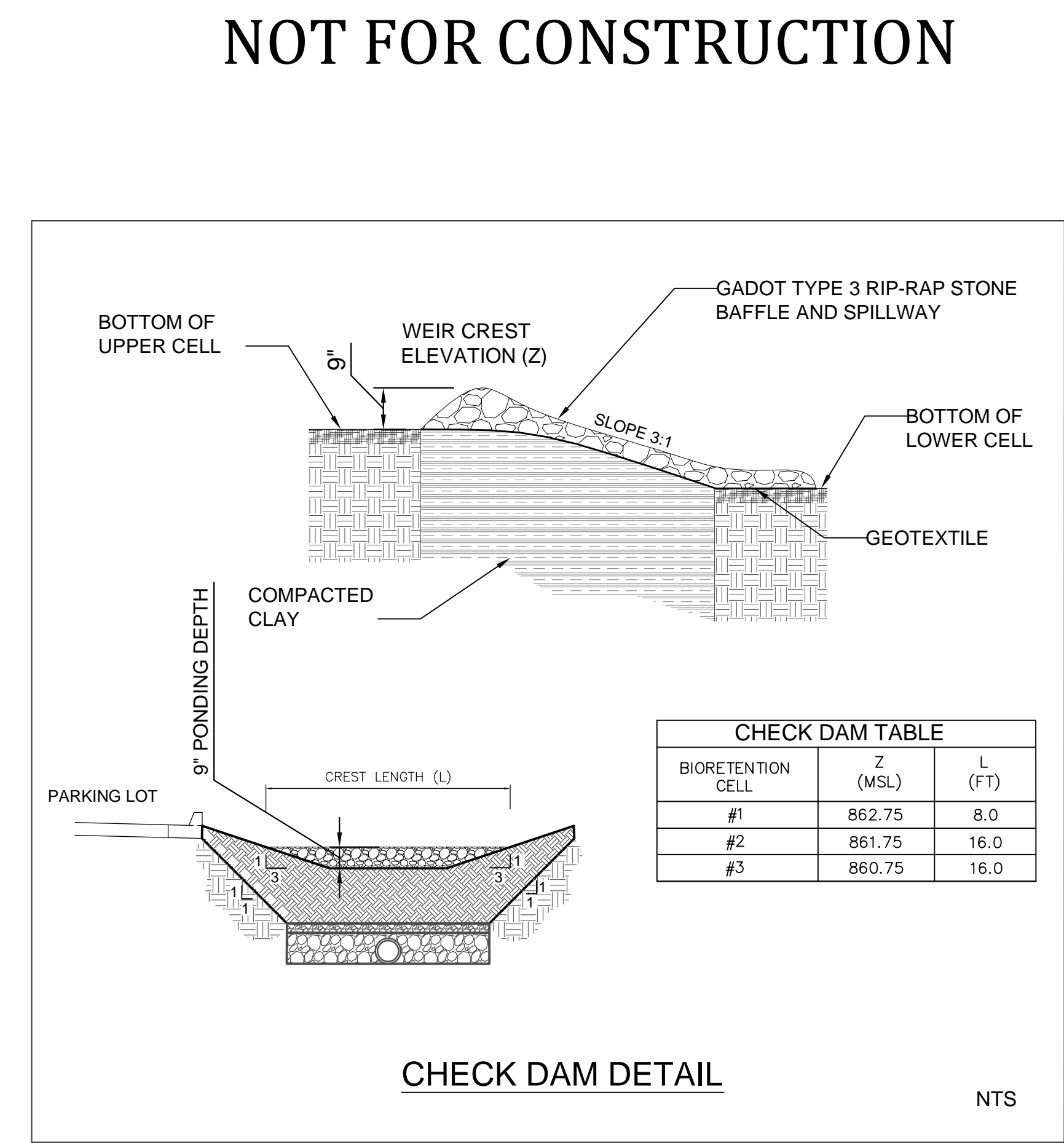
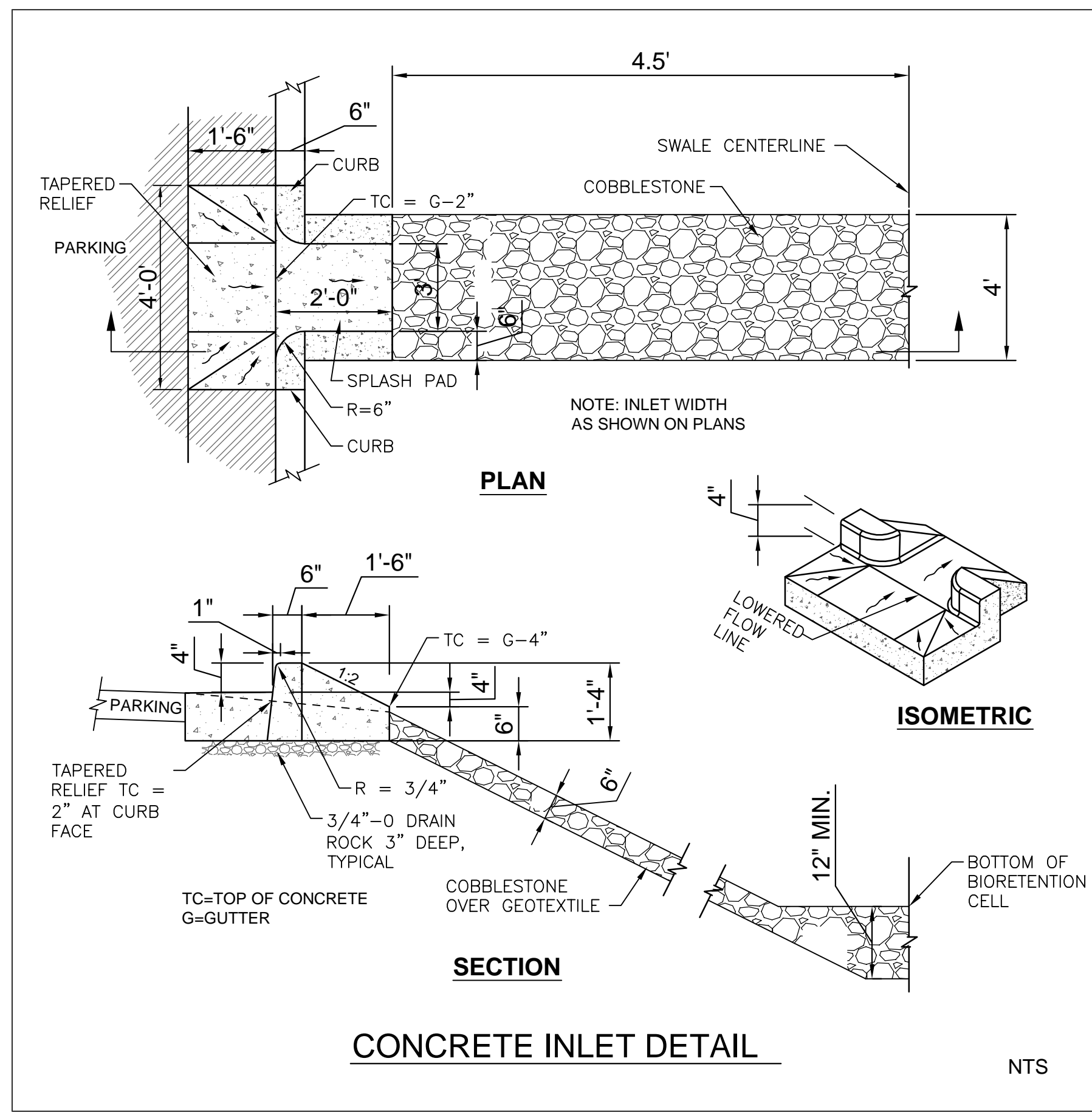
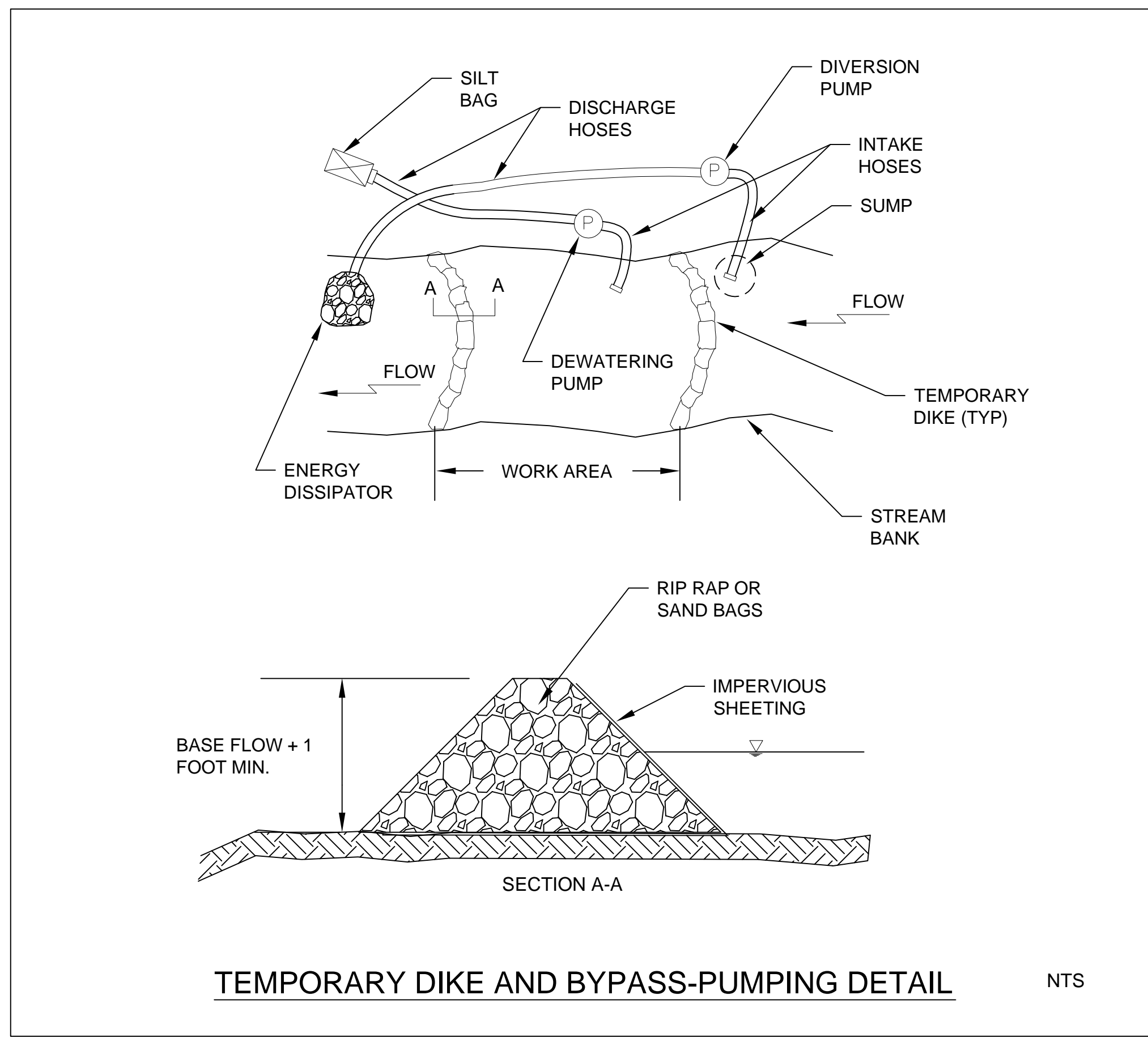
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DL	8-1-15	FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A.Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
**CONSTRUCTION
DETAILS**

Project No.: 100-RTP-T31130
Designed By: DL
Drawn By: DL
Checked By: LS

D19

Tuesday, July 28, 2015 1:57:48 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_S\Final_Plans\Model_Files\7-28-15\D20_D22_DETAILS.DWG LAYOUT: D20 USER NAME: TUCKER, BOBBY



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GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 22832 AB
ERIC JOHN BYRNE

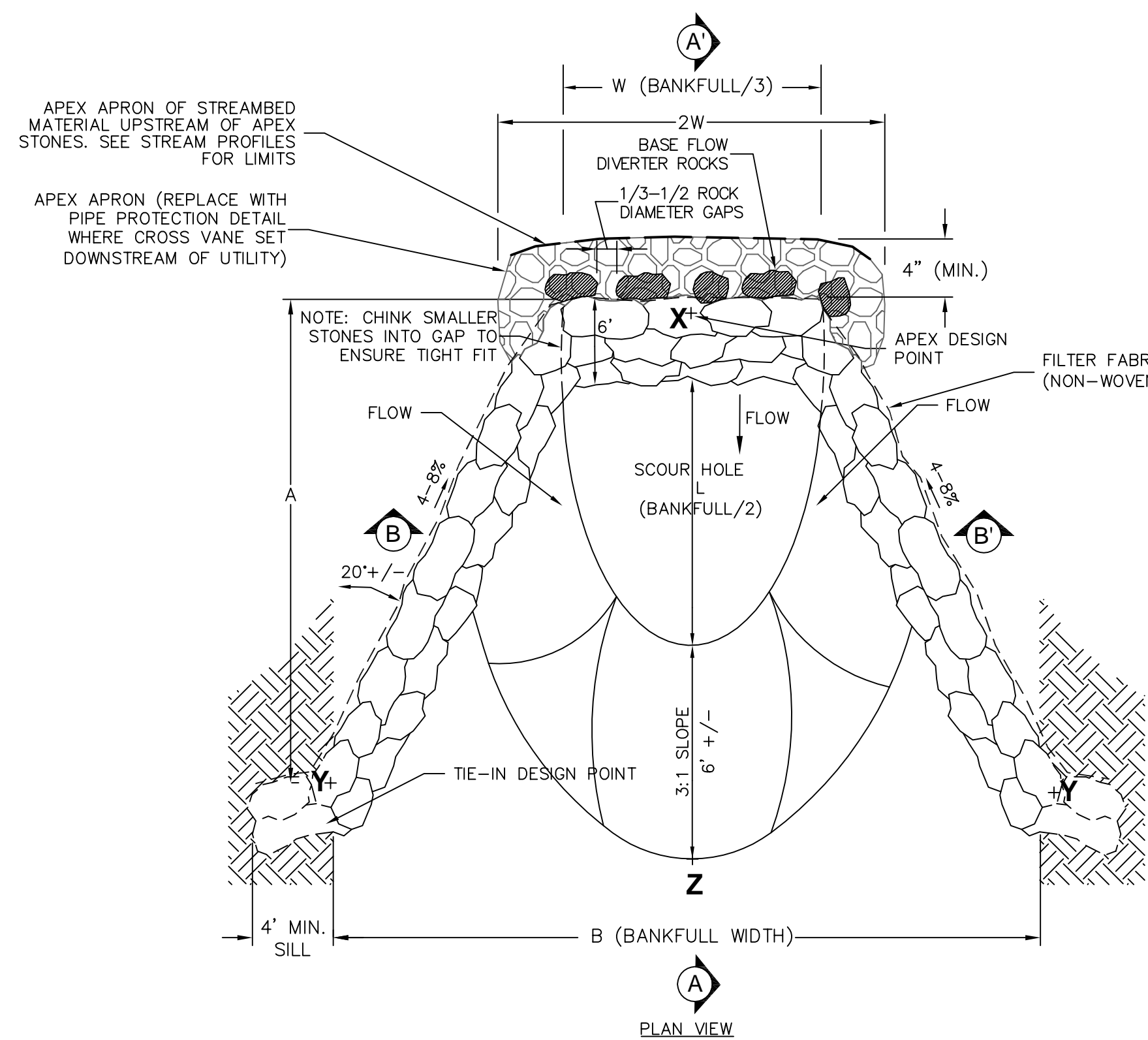
MARK	DATE	DESCRIPTION
B-1-15		FINAL CONSTRUCTION PLANS

Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
DETAILS

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

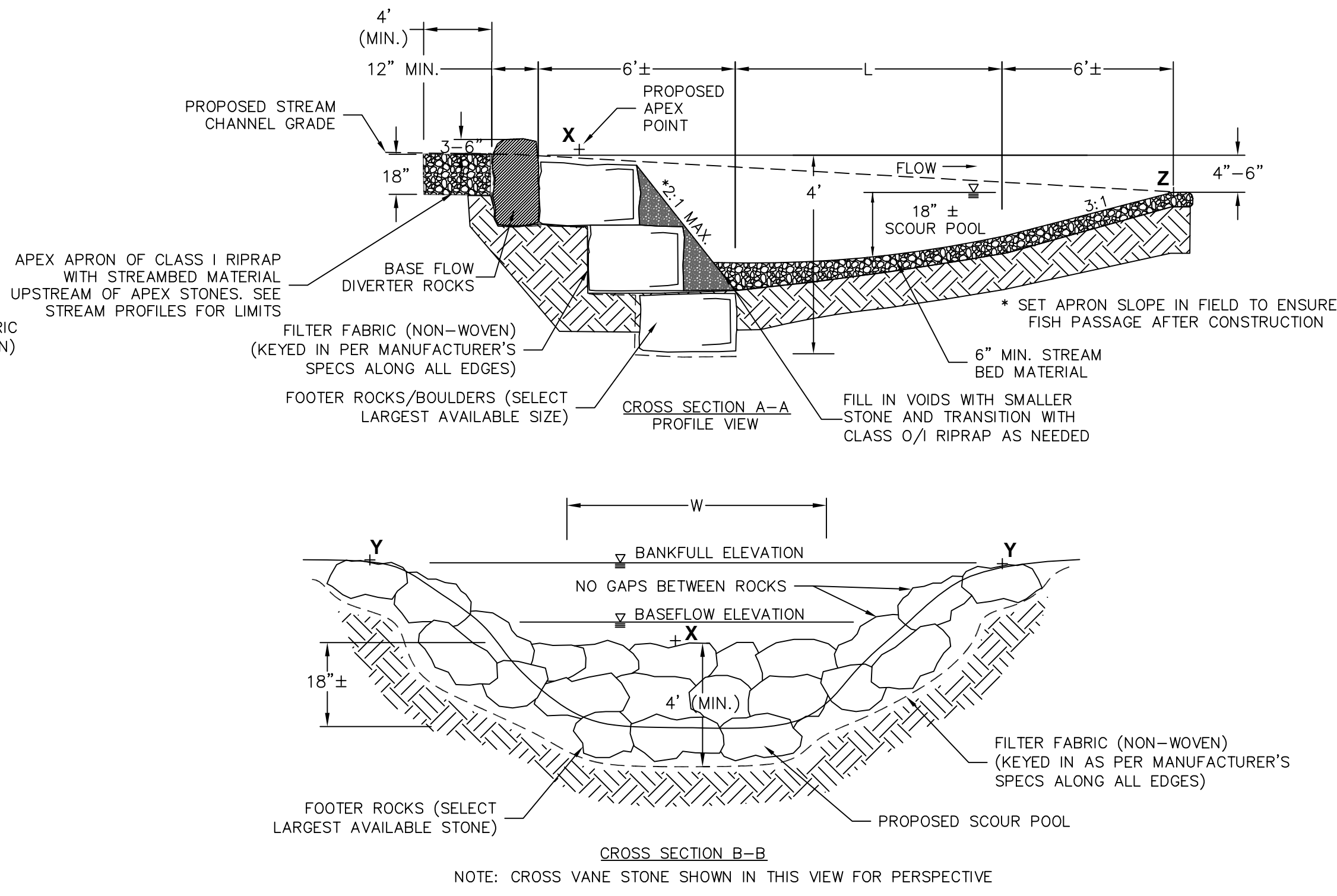
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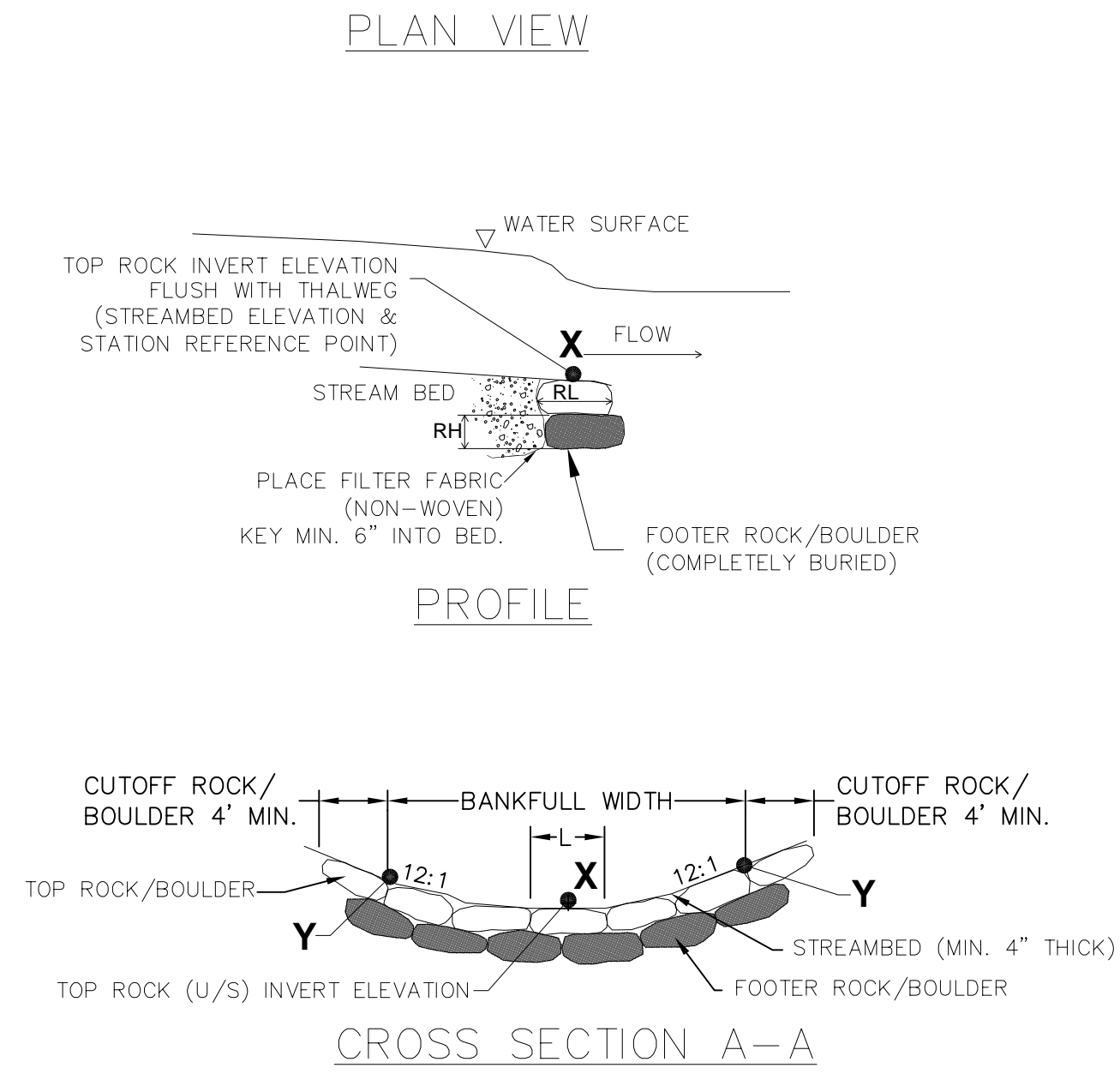
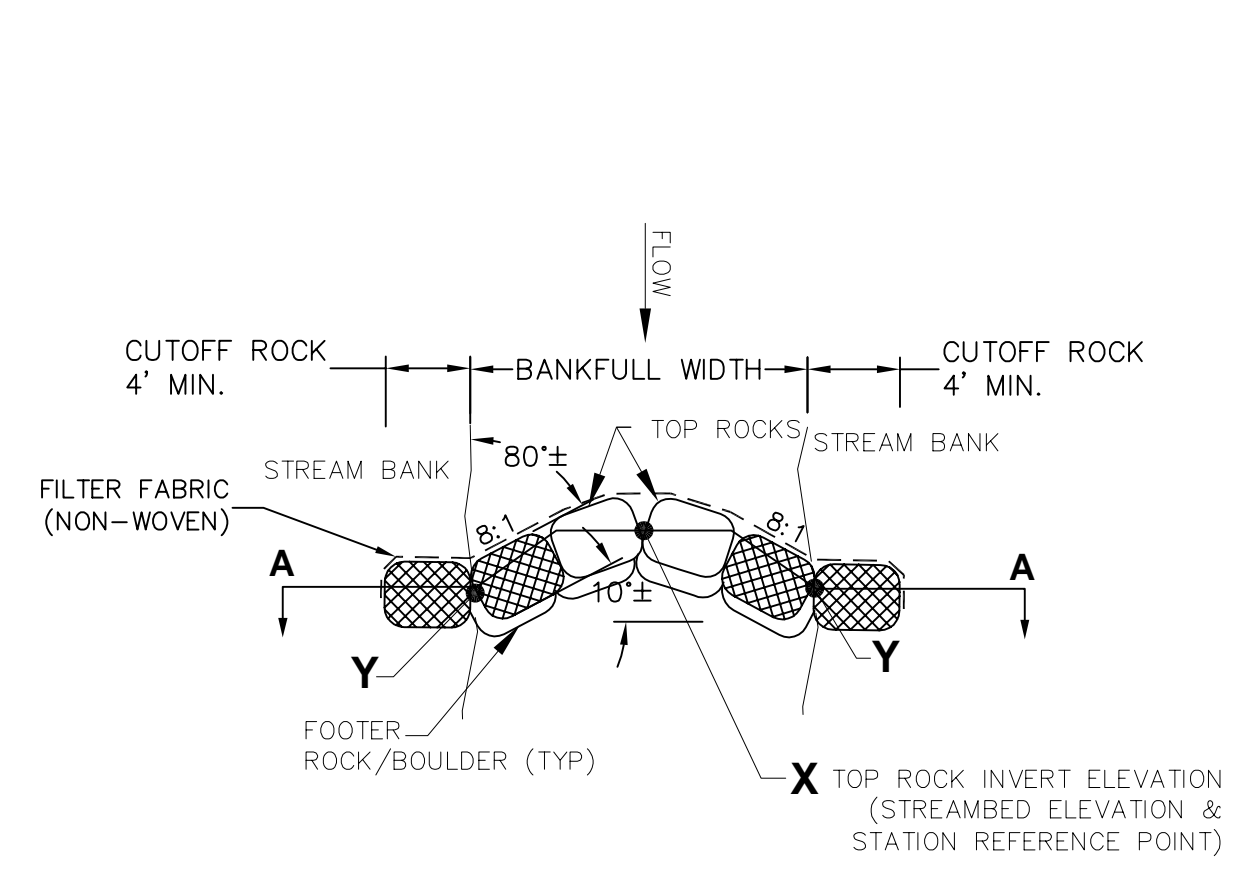


CROSS VANE TABLE

DESIGNATION	APEX STATION	A (FT)	B (FT)	W (FT)	RH (FT)	RL (FT)	RD (FT)	X (MSL)	Y (MSL)	Z (MSL)
STR 4	0+61	13	15.2	6	0.75	1.5	1.0	868.98	870.62	868.54
STR 5	1+75	13	15.2	6	0.75	1.5	1.0	867.17	868.80	866.75
STR 6	2+59	13	15.2	6	0.75	1.5	1.0	865.76	867.04	865.34
STR 15	6+90	17	20	7.5	0.75	1.5	1.0	857.62	859.89	857.12
STR 17	8+54	17	20	7.5	0.75	1.5	1.0	854.47	856.73	853.97
STR 20	10+13	17	20	7.5	0.75	1.5	1.0	851.68	853.30	851.18



- NOTES:**
- ALL DIMENSION/ELEVATIONS TO BE FIELD ADJUSTED TO ENSURE STABLE INSTALLATION, FISH PASSAGE, AND TIE-IN TO BANKS.
 - ROCK/BOULDER SHALL BE RECTANGULAR BLOCK SHAPE.
 - THE MINIMUM ELEVATION DISTANCE BETWEEN ELEVATION "X" AND ELEVATION "Y" IS 4-INCHES.
 - ACTUAL APEX ROCKS/BOULDERS SHALL BE FIELD SELECTED BY THE ENGINEER.
 - STONE PLACEMENT SHALL BE FIELD ADJUSTED TO CREATE BOWL SHAPE AND ENSURE STONE WILL REMAIN IN PLACE OVER FULL RANGE OF FLOW CONDITIONS.
 - REPLACEMENT OF ROCKS/BOULDERS MAY BE REQUIRED BASED UPON INSPECTION OF COMPLETED INSTALLATION TO MEET DESIGN INTENT AND PERMIT REQUIREMENTS.
 - TIE IN SILLS SHALL EXTEND 4' MINIMUM INTO STABLE CHANNEL BANK.
 - ROCKS/BOULDERS SHALL BE TIGHT FITTING WITH NO VOIDS/GAPS LARGER THAN 4 INCHES. VOIDS ALONG APEX AND VANE ARMS SHALL BE CHINKED IN WITH SMALLER NON-WEATHERING STONE TO ESTABLISH SURFACE FLOW AND INTERCONNECTION OF ROCKS.
 - WHERE CROSS VANE SETS DOWNSTREAM OF UTILITY CROSSING, REPLACE APEX APRON WITH PIPE PROTECTION DETAIL. LOCATE CROSS VANE APEX DOWNSTREAM OF UTILITY AND SET ORIENTATION TO MATCH CHANNEL.
 - STREAMBED MATERIAL SHALL COME FROM SALVAGED SOURCE FIRST AND THEN FURNISHED AS NECESSARY. OFFSITE STREAMBED MATERIAL SHALL BE USED TO CHOKE BOTTOM LAYERS OF ROCK WITH SALVAGED MATERIAL ON TOP.
 - STATION REFERENCE POINT "X" IS LOCATED AT CENTER OF CHANNEL UNLESS SPECIFIED OTHERWISE.



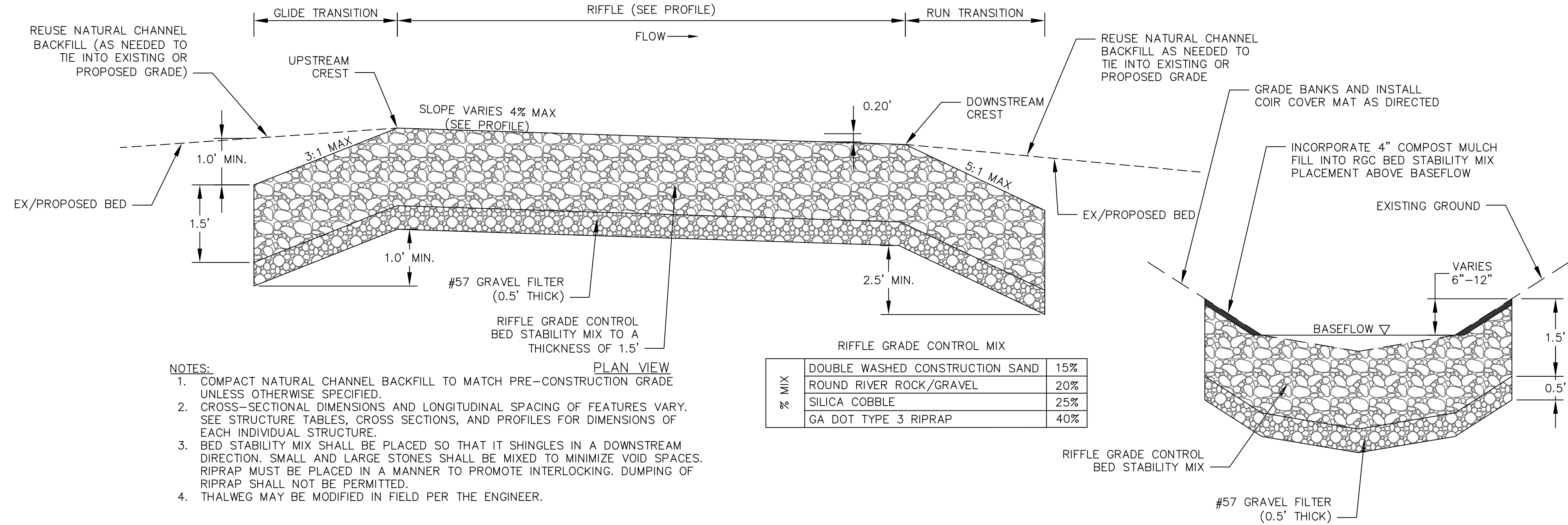
- NOTES:**
- SILL SHALL BE CONSTRUCTED BY EXCAVATING A TRENCH SLIGHTLY LARGER THAN THE SILL DIMENSIONS.
 - TOP ROCKS SHALL BE SUPPORTED BY A FOOTER ROCK AND SHINGLED UPSTREAM AND INTO STREAM BANK. ALL ROCKS SHALL BE INTERLOCKED MINIMIZING OR ELIMINATING GAPS WITH NO VOIDS/GAPS LARGER THAN 4 INCHES.
 - THE MINIMUM ELEVATION DISTANCE BETWEEN ELEVATION "X" AND ELEVATION "Y" IS 4-INCHES.
 - PLACE FILTER FABRIC (NON-WOVEN) ON UPSTREAM SIDE OF SILL. FABRIC SHALL COVER THE UPSTREAM FACE OF THE ENTIRE SILL (EXCLUDING CUTOFF SILL) AND SHALL EXTEND A MAXIMUM OF 2 FEET UPSTREAM OF STRUCTURE.
 - DISTURBED STREAMBED SHALL BE BACKFILLED WITH 6" MIN. OF STREAMBED MATERIAL OR RIFLE GRADE CONTROL MIX TO MEET FINISHED GRADE.
 - STREAM BANK AROUND STRUCTURE SHALL BE BACKFILLED AND HAND COMPACTED.
 - SEE STRUCTURE TABLE, PROFILE, AND GRADING SHEET FOR ALL DIMENSIONS AND ELEVATIONS.
 - SILL ROCKS/BOULDERS SHALL BE FLUSH WITH FINISHED GRADE AND CUTOFF ROCKS SHALL EXTEND A MINIMUM OF 4 FEET INTO STREAMBANK.
 - PROVIDE DROP STONE/RIPRAP APRON DOWNSTREAM OF SILL AS DIRECTED.

ROCK SILL (RS) TABLE

STRUCTURE #	STATION	OFFSET	INVERT ELEVATION (X)	TIE-IN ELEVATION (Y)	BANKFULL WIDTH
STR 10	3+77	0	863.15'	863.15'	15.2'
STR 23	11+44	0	847.54'	847'-6.48"	20.0'

ROCK SILL DETAIL
NO SCALE

CROSS VANE DETAIL
NO SCALE



RIFLE GRADE CONTROL MIX

% MIX	COMPONENT	PERCENTAGE
15%	DOUBLE WASHED CONSTRUCTION SAND	15%
20%	ROUND RIVER ROCK/GRAVEL	20%
25%	SILICA COBBLE	25%
40%	GA DOT TYPE 3 RIPRAP	40%

- NOTES:**
- COMPACT NATURAL CHANNEL BACKFILL TO MATCH PRE-CONSTRUCTION GRADE UNLESS OTHERWISE SPECIFIED.
 - CROSS-SECTIONAL DIMENSIONS AND LONGITUDINAL SPACING OF FEATURES VARY. SEE STRUCTURE TABLES, CROSS SECTIONS, AND PROFILES FOR DIMENSIONS OF EACH INDIVIDUAL STRUCTURE.
 - BED STABILITY MIX SHALL BE PLACED SO THAT IT SHINGLES IN A DOWNSTREAM DIRECTION. SMALL AND LARGE STONES SHALL BE MIXED TO MINIMIZE VOID SPACES. RIPRAP MUST BE PLACED IN A MANNER TO PROMOTE INTERLOCKING. DUMPING OF RIPRAP SHALL NOT BE PERMITTED.
 - THALWEG MAY BE MODIFIED IN FIELD PER THE ENGINEER.

RIFLE GRADE CONTROL DETAIL
NO SCALE

RIFLE GRADE CONTROL SECTION

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ERIC JOHN BYRNE

DATE	DESCRIPTION	BY	RST
8-1-15	FINAL CONSTRUCTION PLANS		

DETAILS
Client: CITY OF GRIFFIN
Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

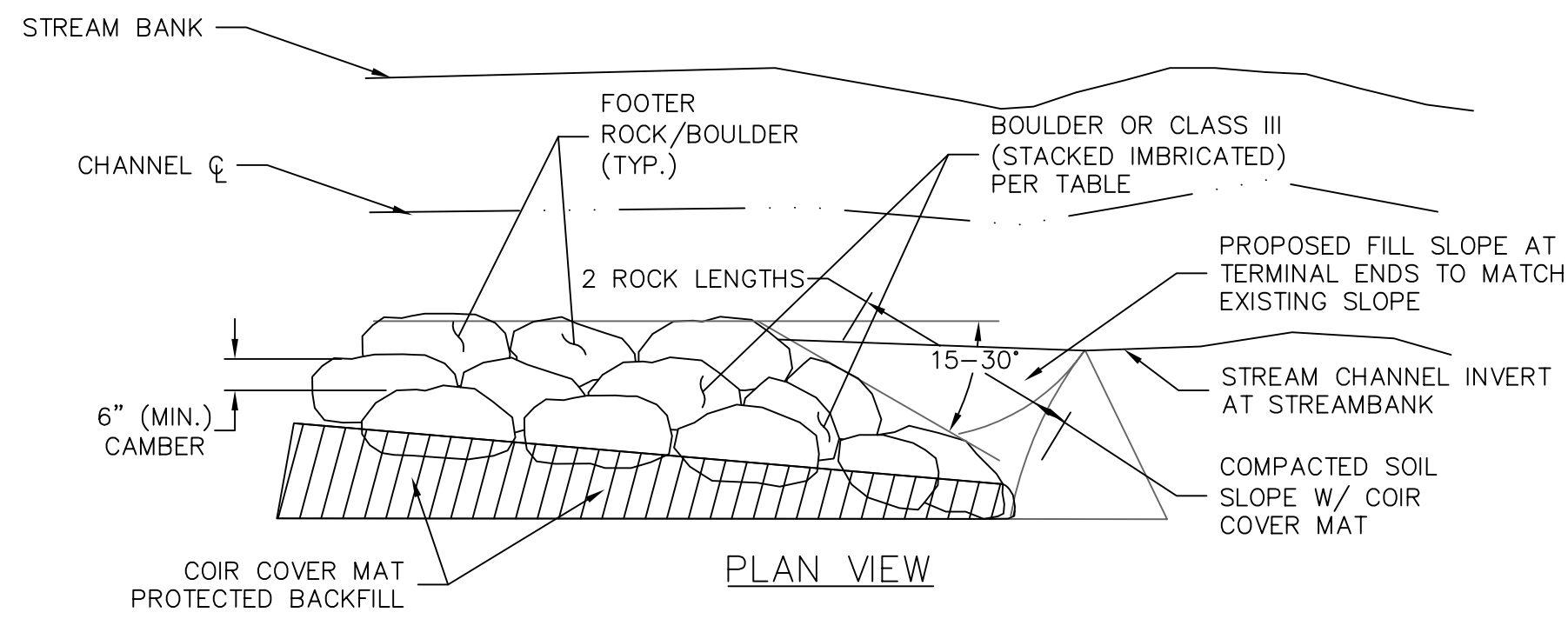
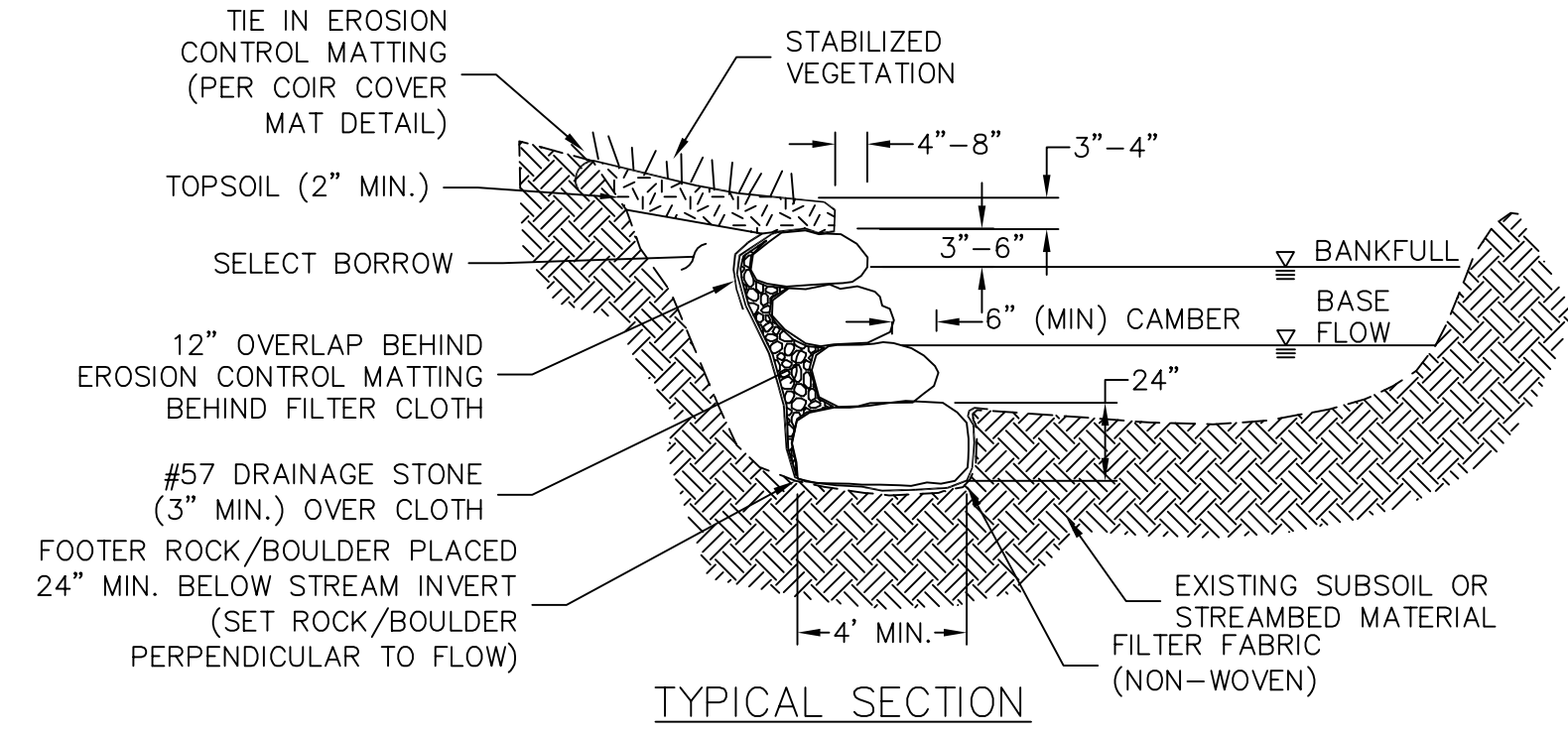
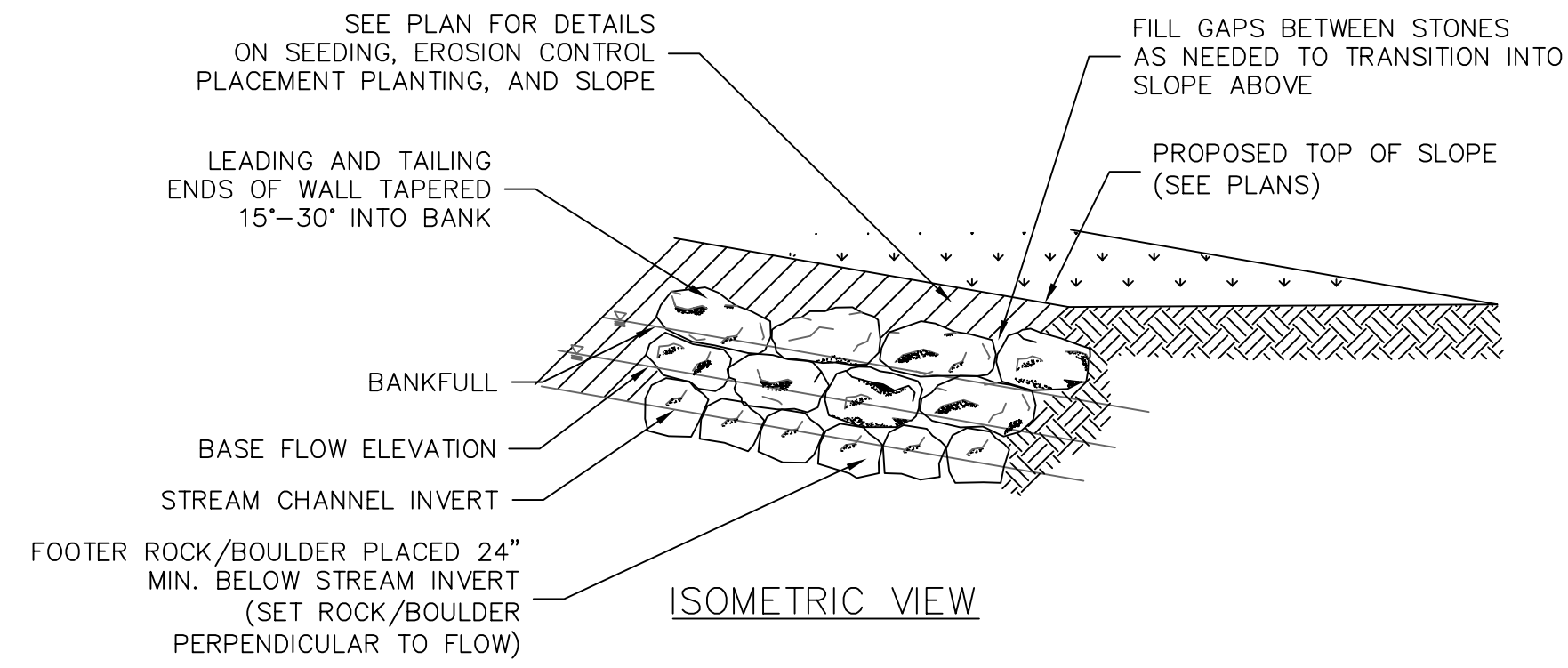
Project No.: 100-ATL-T31130

Designed By:	RST
Drawn By:	RST
Checked By:	JTS

D21

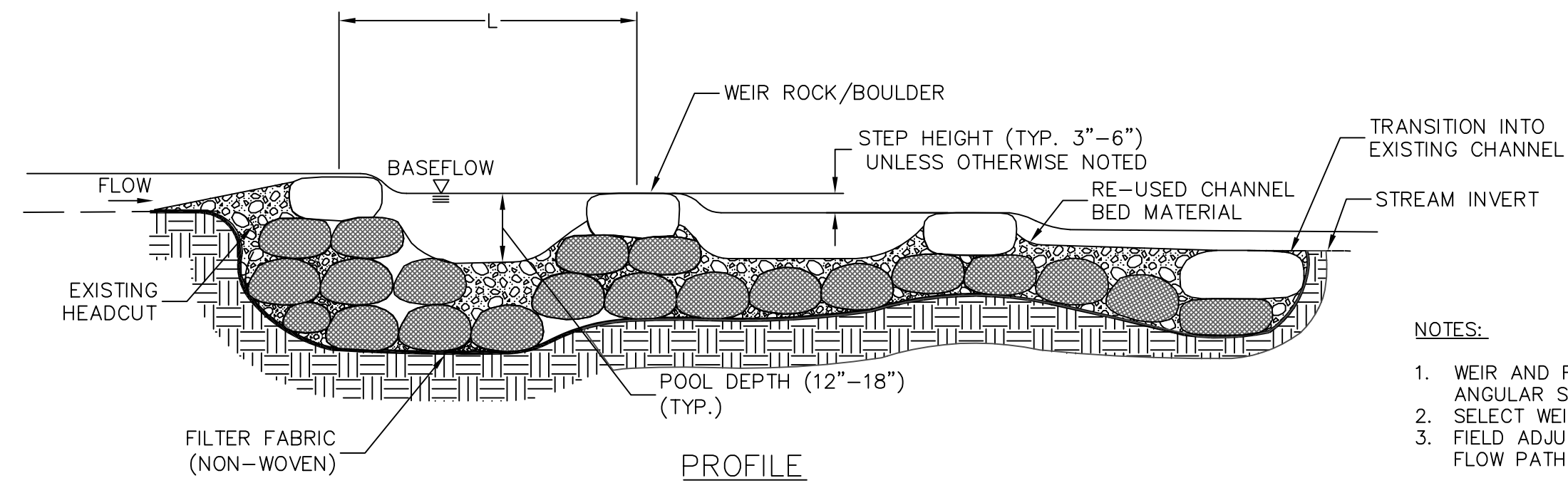
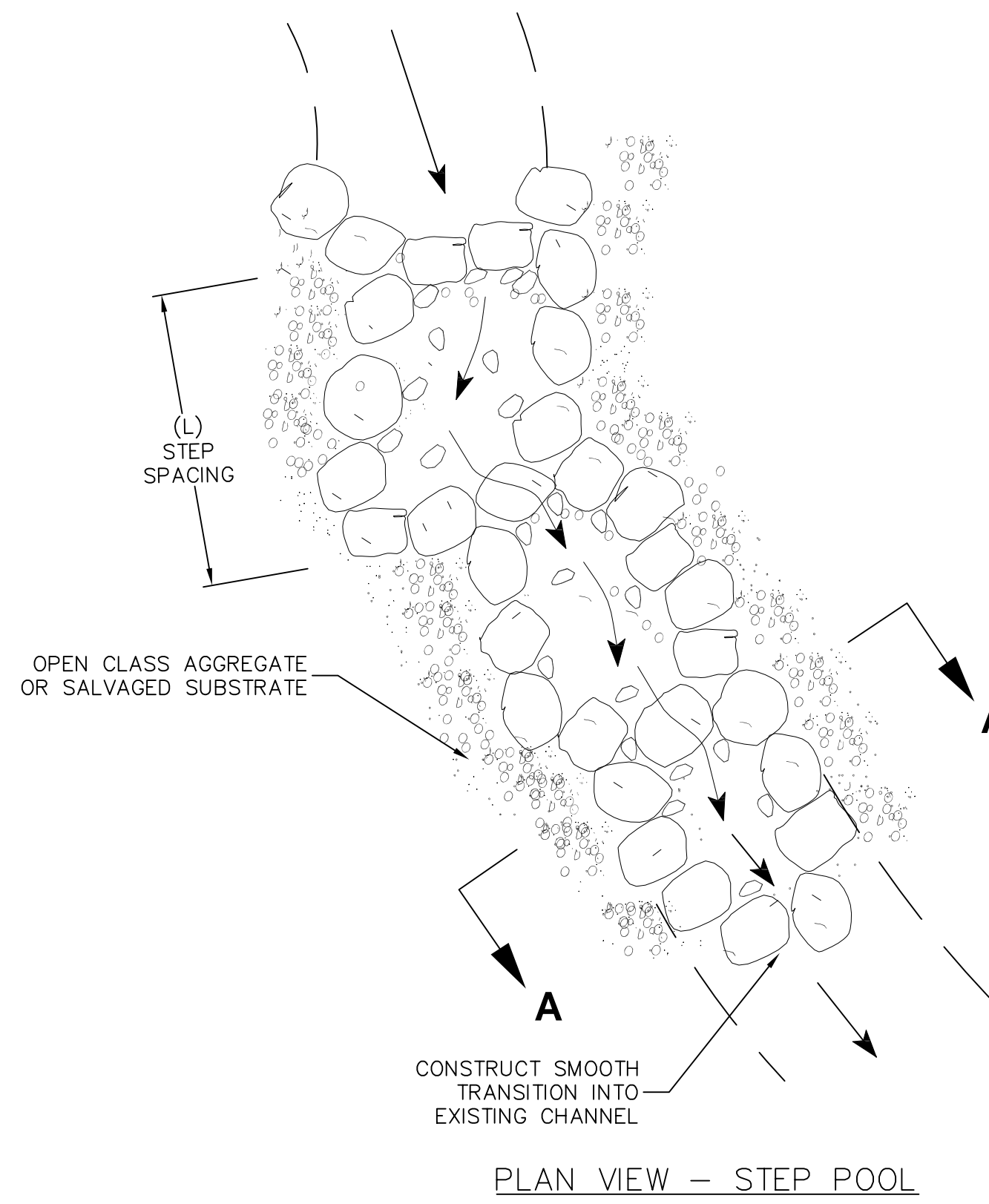
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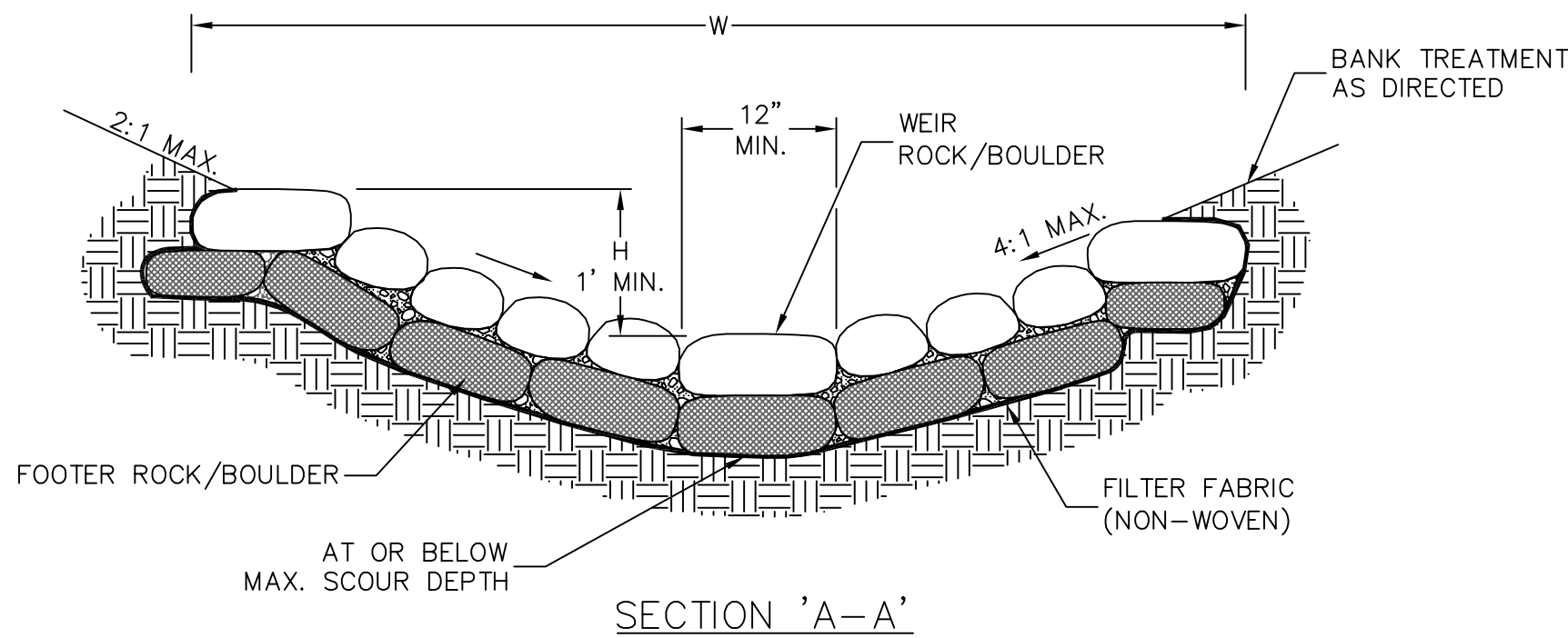


IMBRICATED ROCK WALL TABLE							
DESIGNATION	STATION	OFFSET	TOP ELEV.	BOTTOM ELEV.	MIN. ROCK SIZES		
					L (FT)	W (FT)	H (FT)
STR 15	6+67	8.2	863.8	860.5	2.0-3.0	3.0-4.0	2.0
STR 15	6+95	9.9	863.0	860.0	2.0-3.0	3.0-4.0	2.0
STR 15	7+16	11.6	863.6	859.6	2.0-3.0	3.0-4.0	2.0
STR 20	9+24	13.4	858.9	855.5	2.0-3.0	3.0-4.0	2.0
STR 20	9+55	15.6	858.3	854.8	2.0-3.0	3.0-4.0	2.0
STR 20	9+75	20.1	857.9	854.4	2.0-3.0	3.0-4.0	2.0
STR 20	9+90	18.5	856.6	854.0	2.0-3.0	3.0-4.0	2.0

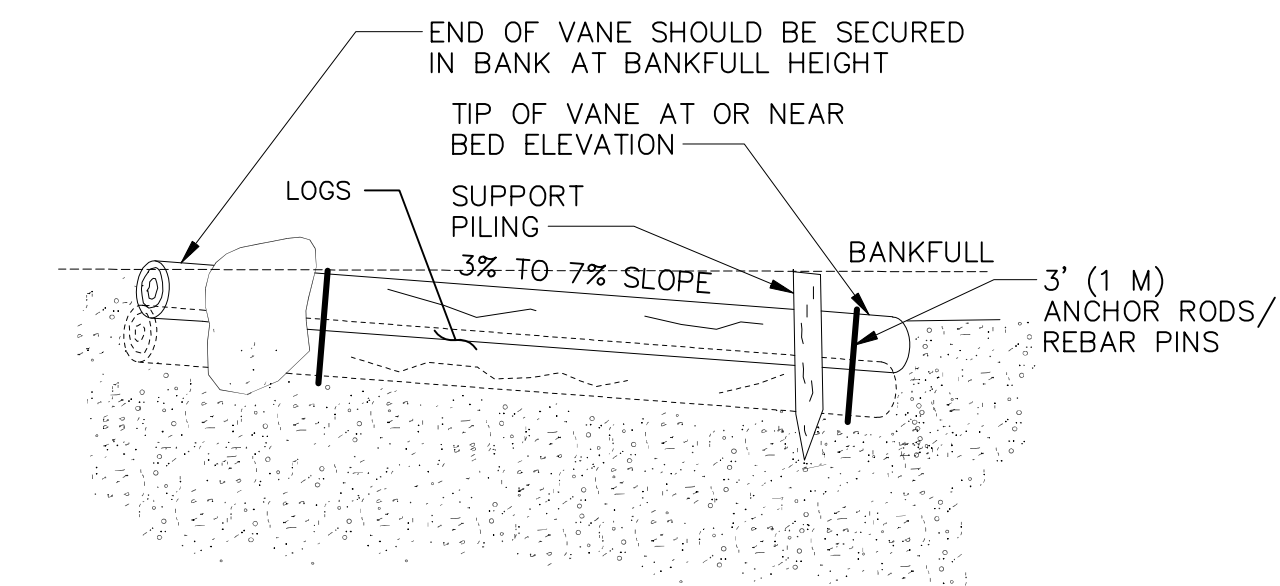
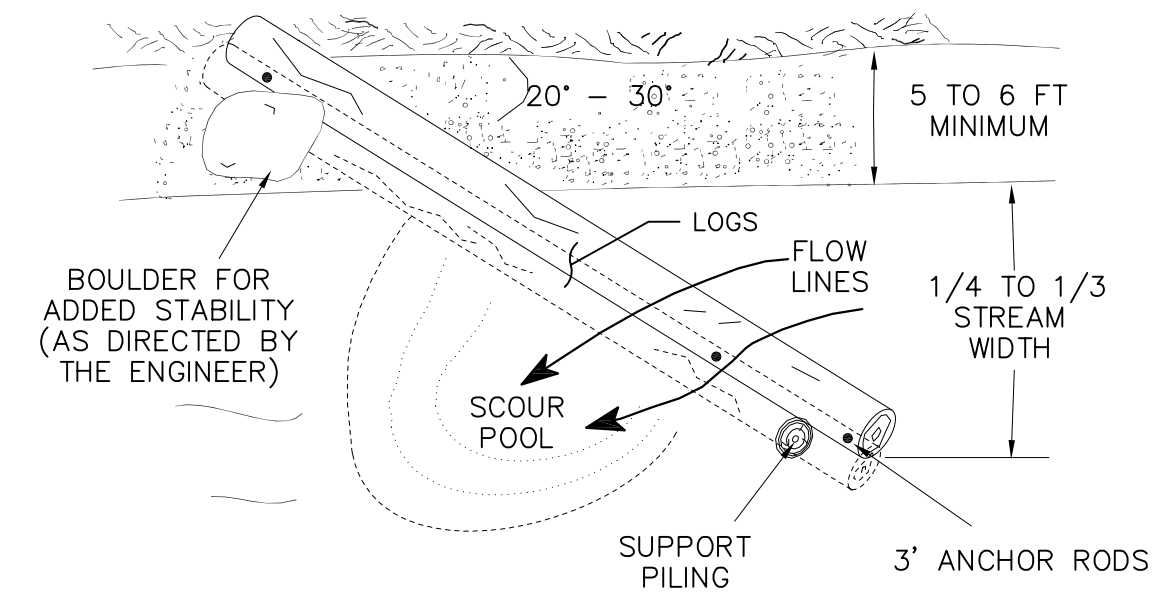
IMBRICATED ROCK WALL DETAIL
NO SCALE



- NOTES:
- WEIR AND FOOTER ROCKS TO BE TYPE I RIPRAP WITH ANGULAR SHAPE.
 - SELECT WEIR ROCKS TO BE LARGEST ROCKS FOR APEX.
 - FIELD ADJUST ROCK PLACEMENT TO ENSURE STABLE FLOW PATH AND TRANSITION INTO ADJACENT BANKS.



STEP POOL DETAIL
NO SCALE



LOG VANE DETAIL
NO SCALE

STEP POOL TABLE									
DESIGNATION	APEX STATION	OFFSET	L (FT)	H (FT)	W (FT)	RL (FT)	RH (FT)	RW (FT)	
STR 1	0+03	0	15	1.5	17	1.5	0.75	1.0	
STR 2	0+18	0	15	1.5	17	1.5	0.75	1.0	
STR 3	0+33	0	15	1.5	17	1.5	0.75	1.0	
STR 7	3+13	0	15	1.5	17	1.5	0.75	1.0	
STR 8	3+27	0	15	1.5	17	1.5	0.75	1.0	
STR 9	3+42	0	15	1.5	17	1.5	0.75	1.0	
STR 11	5+72	0	20	2.0	23	1.5	0.75	1.0	
STR 12	5+93	0	20	2.0	23	1.5	0.75	1.0	
STR 13	6+14	0	16	2.0	23	1.5	0.75	1.0	
STR 21	10+89	0	20	2.0	23	1.5	0.75	1.0	
STR 22	11+28	0	20	2.0	23	1.5	0.75	1.0	

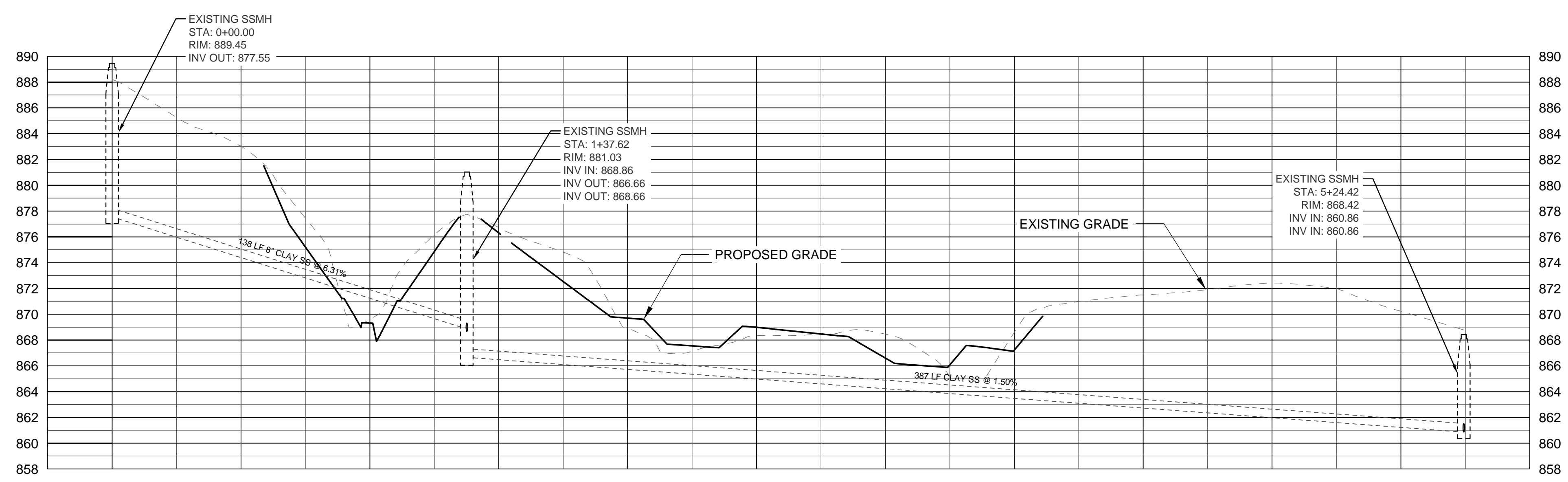
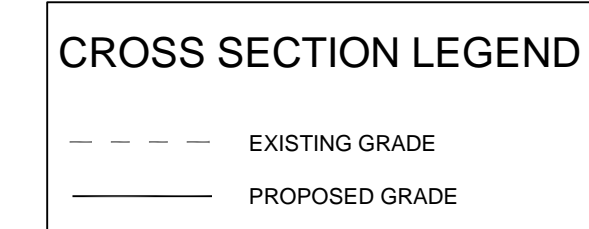
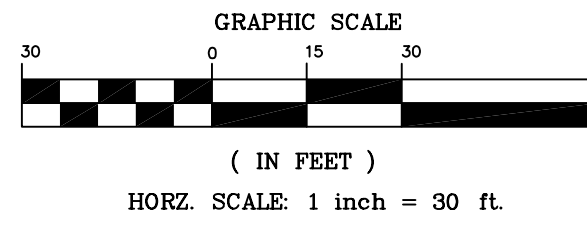


MARK	DATE	DESCRIPTION
	8-1-15	FINAL CONSTRUCTION PLANS

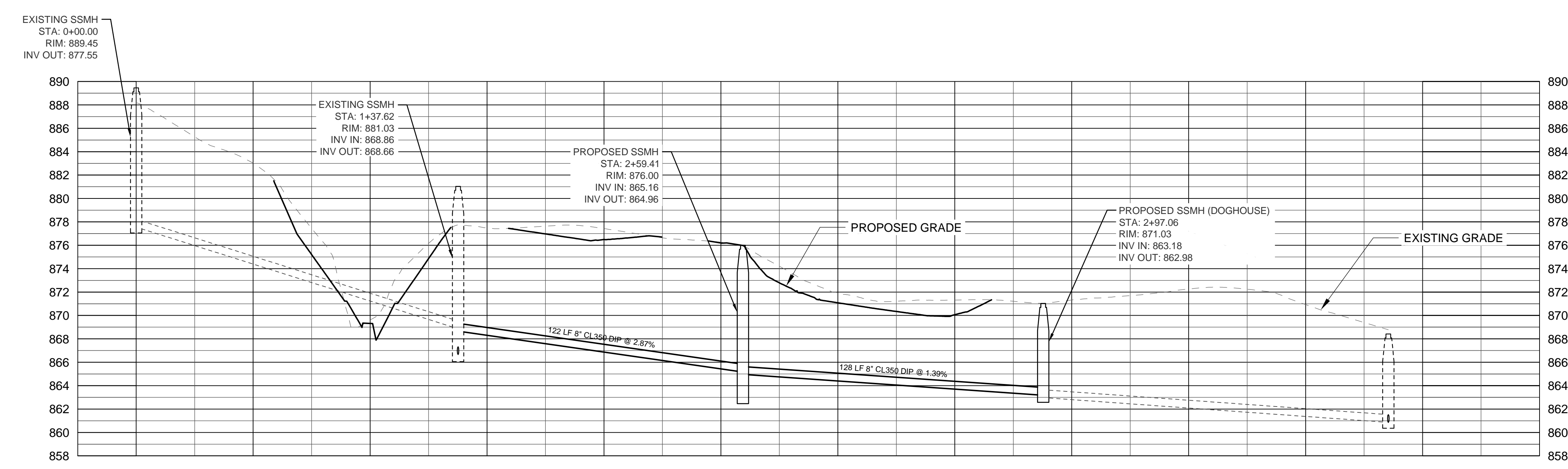
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Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS

Project No.: 100-ATL-T31130
Designed By: RST
Drawn By: RST
Checked By: JTS

D22



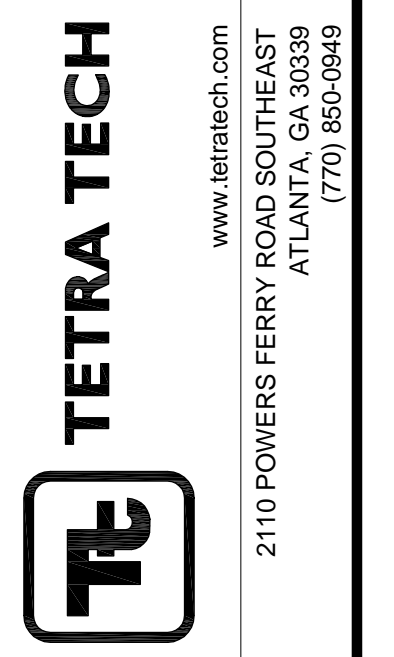
Existing Sanitary Sewer Profile - Upper Reach
-0+25.00 TO 5+50.00
Horizontal Scale 20
Vertical Scale 4



Proposed Sanitary Sewer Profile - Upper Reach
-0+25.00 TO 6+00.00
Horizontal Scale 20
Vertical Scale 4

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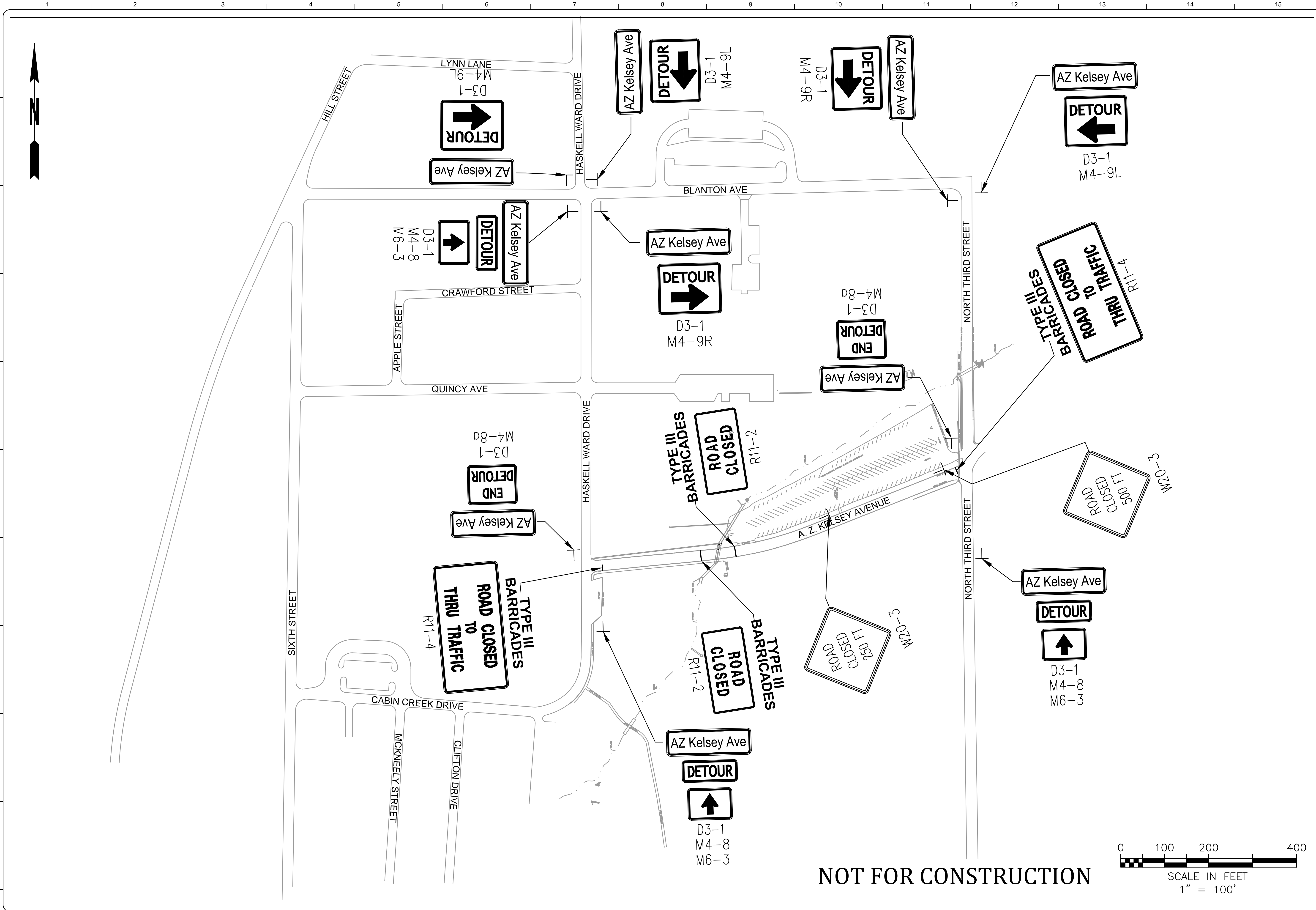
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Client: CITY OF GRIFFIN
 Proj. Loc.: GRIFFIN, GA
A. Z. KELSEY AVENUE PROJECT
STREAM RESTORATION AND
STORMWATER BMP RETROFITS
SEWER PROFILE
UPPER REACH

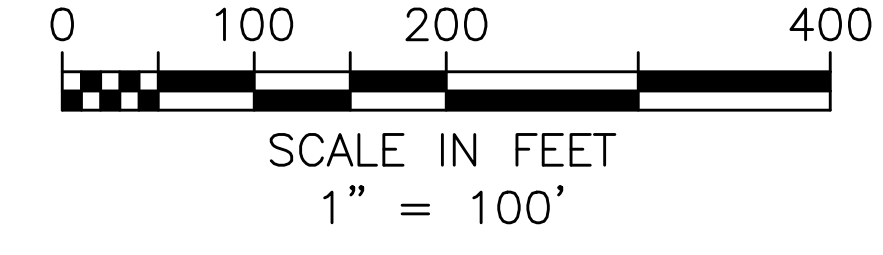
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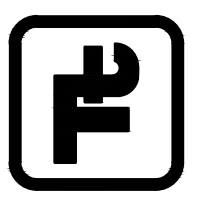


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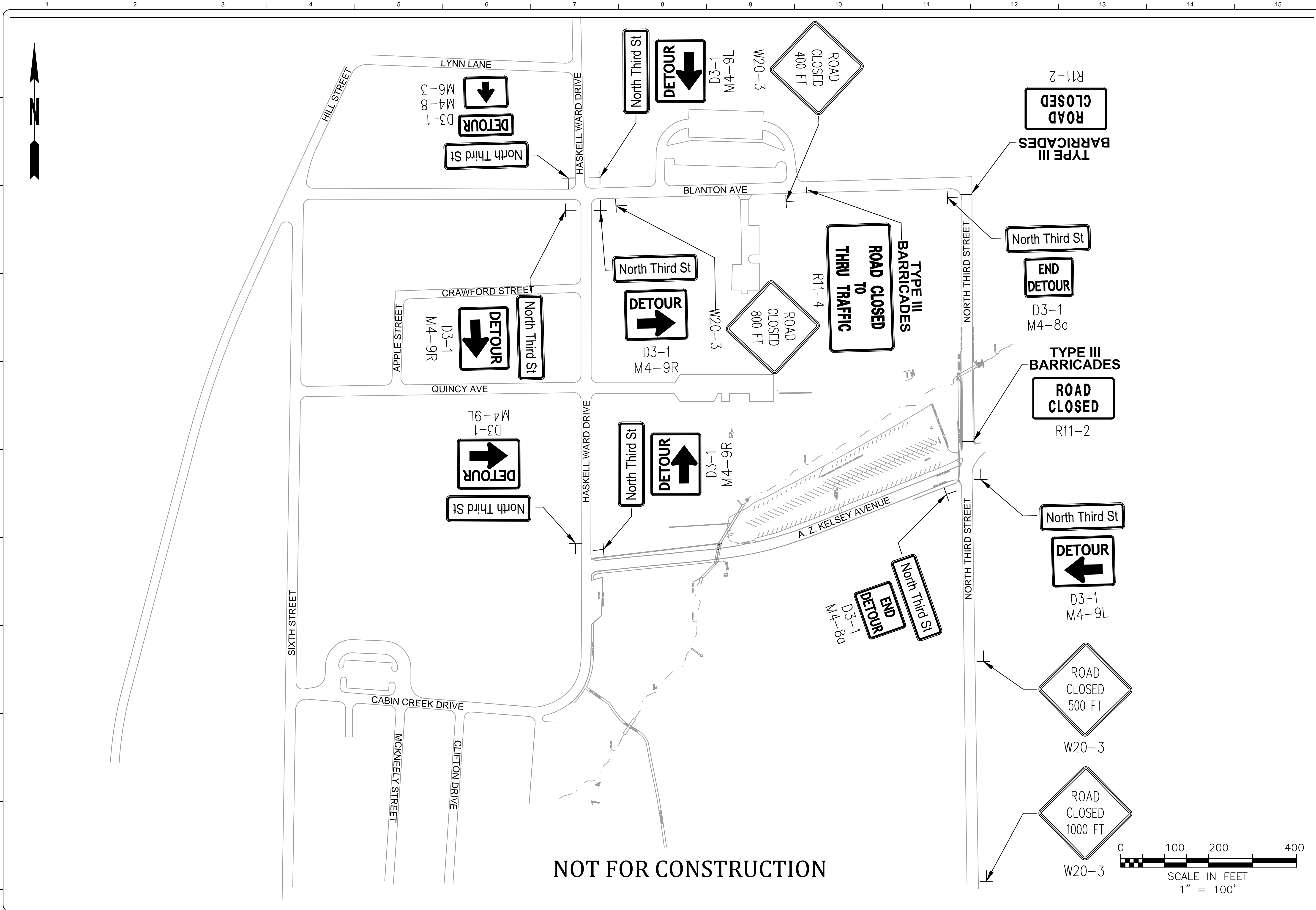


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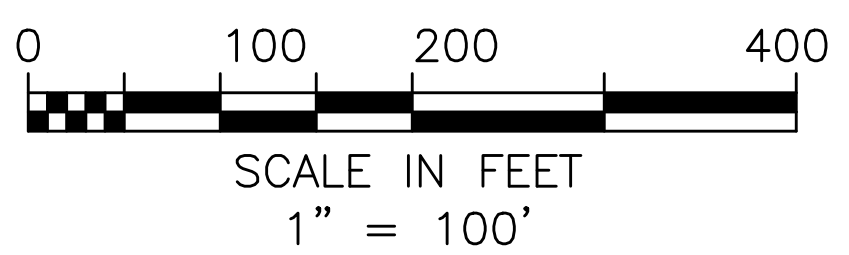


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Client: CITY OF GRIFFIN Proj. Loc.: GRIFFIN, GA	Project No.: 100-RTP-T31130 Designed By: DCF Drawn By: DCF Checked By: CNR
MARK DATE DESCRIPTION 4-25-14 FINAL CONSTRUCTION PLANS	BY DL
T1	

Thursday, July 30, 2015 4:56:40 PM DRAWING: C:\PROJECTS\Griffin\Kelsey_S\Final_PlansModel_Files\7-28-15\from_David\CADModelFiles\DETOUR PLAN .DWG LAYOUT: DETOUR-2 USER NAME: TUCKER, BOBBY



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	8-1-15	FINAL CONSTRUCTION PLANS	DL
Client: CITY OF GRIFFIN Proj. Loc.: GRIFFIN, GA Project: A.Z. KELSEY AVENUE PROJECT STREAM RESTORATION AND STORMWATER BMP RETROFITS NORTH 3RD STREET DETOUR PLAN			
Project No.: 100-RTP-T31130		Designed By: DCF	
Drawn By: DCF		Checked By: CNR	
T2			
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