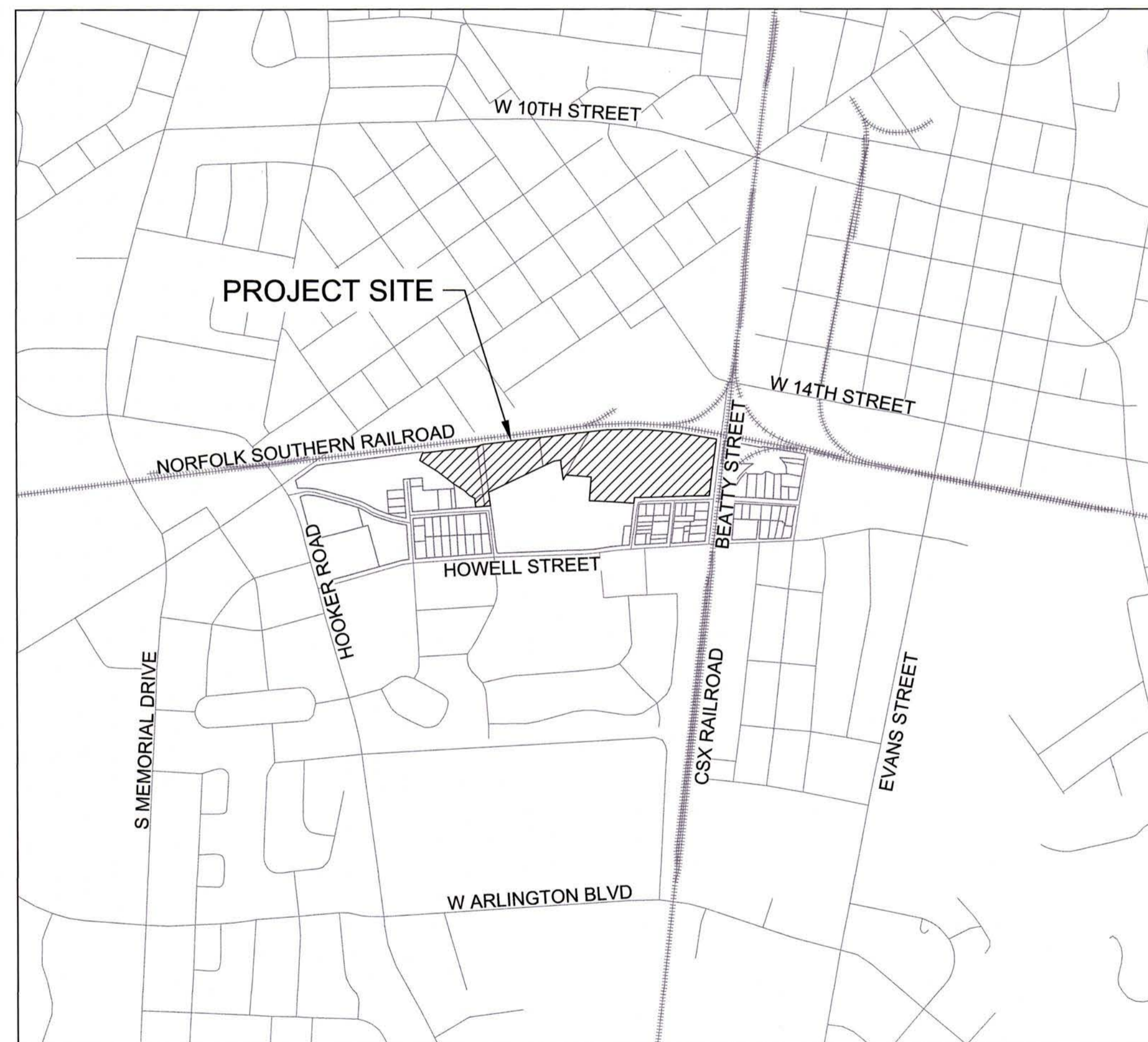


# CITY OF GREENVILLE PUBLIC WORKS

## STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA

PROJECT #



VICINITY MAP  
SCALE: 1"=800'

Sheet Number	Sheet Title
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G2	GENERAL NOTES
G3	SHEET INDEX
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C1B	RESTORATION SITE PLAN - STA 11+00 TO 14+75
C2	PLAN & PROFILE - STA 14+75 TO 18+50
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X2	FINAL SURVEY
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X5	FINAL SURVEY
X6	FINAL SURVEY
X7	FINAL SURVEY
X8	FINAL SURVEY
X9	FINAL SURVEY
X10	FINAL SURVEY



<b>CITY:</b> CITY OF GREENVILLE 1500 BEATTY STREET GREENVILLE, NC 27834 (252) 329-4683 TEL	<b>ENGINEER:</b> W.K. DICKSON 720 CORPORATE DRIVE RALEIGH, NC 27607 (919) 782-0495 TEL (919) 782-9672 FAX	<b>SURVEYOR:</b> STEWART 5410 OLD POOLE ROAD RALEIGH, NC 27610 (919) 380-8750	<b>SUE (LEVEL B):</b> STEWART 5410 OLD POOLE ROAD RALEIGH, NC 27610 (919) 380-8750	<b>GEOTECHNICAL:</b> FROEHLING & ROBERTSON, INC. 310 HUBERT STREET RALEIGH, NC 27603 (919) 828-3441 TEL (919) 828-5751 FAX	<b>SUE (LEVEL A TEST):</b> STEWART 5410 OLD POOLE ROAD RALEIGH, NC 27610 (919) 866-4738
<b>CONTACT:</b> KEVIN MULLIGAN, P.E.	<b>CONTACT:</b> MARC HORSTMAN, P.E., CFM	<b>CONTACT:</b> JORDAN SCHOFF, P.L.S.	<b>CONTACT:</b> JORDAN SCHOFF, P.L.S.	<b>CONTACT:</b> MICHAEL S. SABODISH JR., P.E., PhD	<b>CONTACT:</b> BRANDON FIRMSTONE



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**W.K. DICKSON**  
community infrastructure consultants  
720 Corporate Center Drive  
Raleigh, NC 27607  
(919) 782-0495  
(919) 782-9672  
www.wkdickson.com  
NC LICENSE NO. F-0374

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PLANS PREPARED FOR:



CITY OF GREENVILLE

PROJECT:  
PUBLIC WORKS STORMWATER  
PIPE IMPROVEMENTS PHASE 2  
GREENVILLE, NORTH CAROLINA

TITLE:  
COVER

W.K.D. PROJECT:  
20220983.00.RA  
DATE:  
3/8/2024

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G1

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GENERAL NOTES:

- 1. ALL CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL BE AS DESCRIBED IN THE PROJECT MANUAL IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE CITY OF GREENVILLE AND OTHER ENTITIES HAVING JURISDICTION OVER ASPECTS OF THE PROJECT.

STANDARD UTILITY NOTES (AS APPLICABLE):

- 1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND THE GREENVILLE UTILITIES COMMISSION (GUC) MANUAL FOR THE DESIGN AND CONSTRUCTION OF WATER AND WASTEWATER SYSTEM EXTENSIONS FOR GREENVILLE UTILITIES.

UTILITY COORDINATION:

- 1. CONTRACTOR IS FULLY RESPONSIBLE FOR CONTACTING ALL APPROPRIATE UTILITY OWNERS AND ASSURING THAT UTILITIES ARE LOCATED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

EROSION CONTROL NOTES:

- 1. CONTRACTOR SHALL BE REQUIRED TO MAINTAIN EROSION CONTROL DEVICES AND TO PREVENT SEDIMENTATION DAMAGE TO ALL ADJACENT PROPERTIES AND STREAMS IN ACCORDANCE WITH THE EROSION CONTROL PLANS AND THE CURRENT NORTH CAROLINA EROSION AND SEDIMENTATION MANUAL.

TRAFFIC AND PEDESTRIAN CONTROL GENERAL NOTES:

- 1. REFER TO PLAN SHEETS TC1 TO TC3 FOR COMPLETE TRAFFIC AND PEDESTRIAN CONTROL INFORMATION FOR THIS PROJECT.

STORM DRAINAGE PIPE & GRADING NOTES:

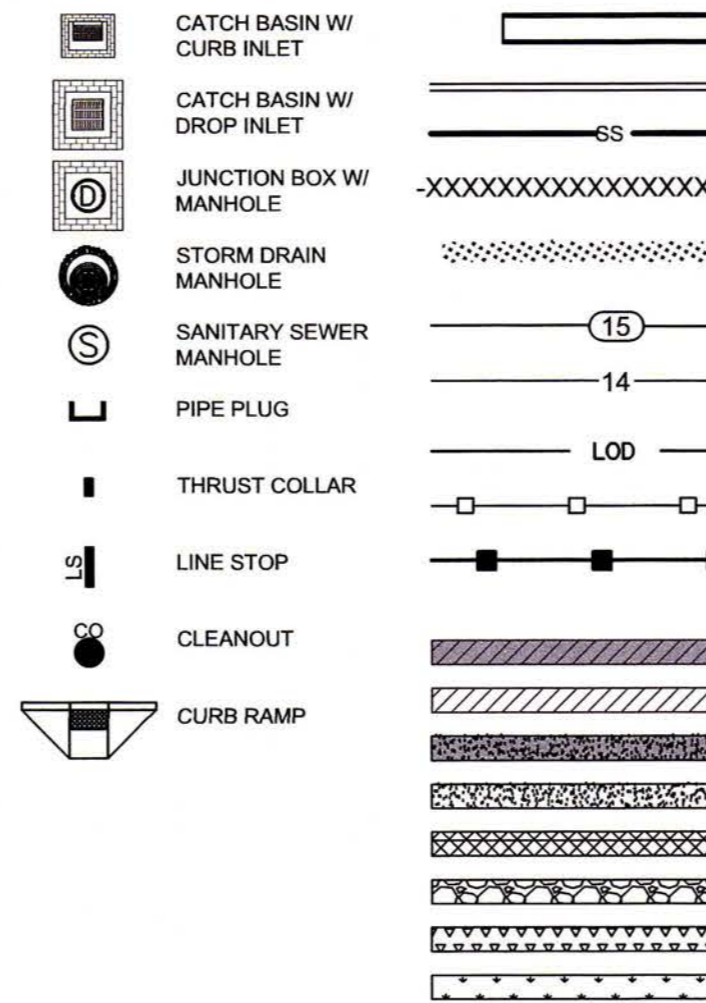
- 1. PROPOSED PIPE INVERT ELEVATIONS HAVE PRECEDENCE OVER SLOPES. HOWEVER, SLOPES SHALL NOT BE DECREASED FROM THOSE SHOWN ON PLAN WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

SURVEY NOTES:

SURVEY PERFORMED BY: STEWART ENGINEERING, SUE PERFORMED BY: STEWART ENGINEERING

- 1. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.

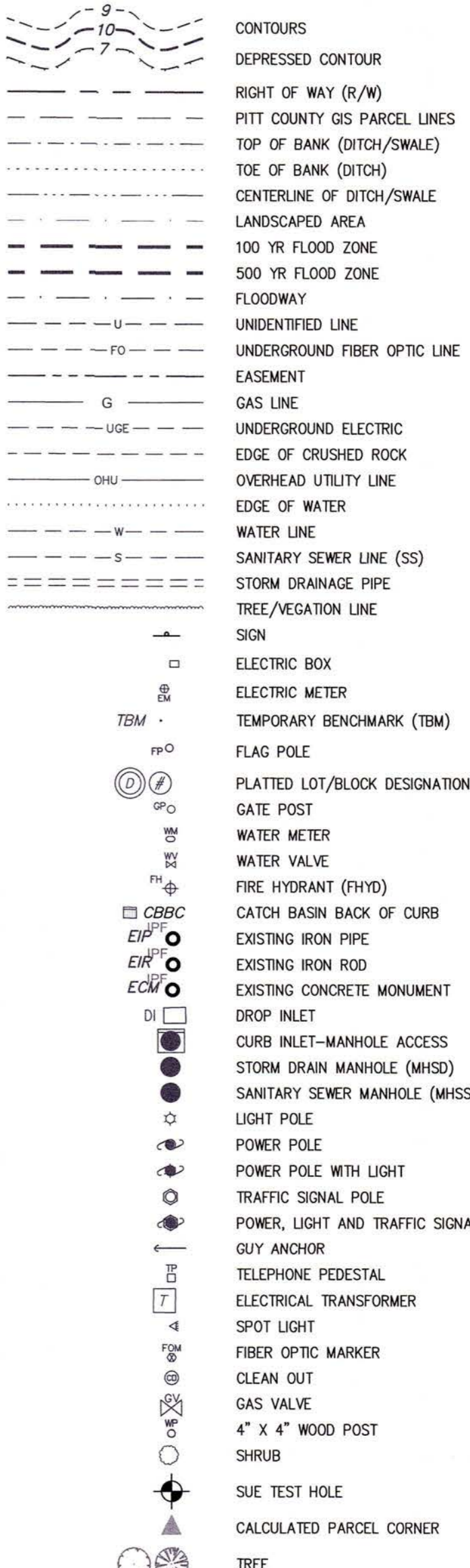
PROPOSED



ABBREVIATIONS

Table mapping symbols to abbreviations such as (E) EAST, (N) NORTH, (S) SOUTH, and various pipe types like ASPH, CIP, CLF.

EXISTING LEGEND



Revision table with columns for NO., DATE, and REVISIONS.



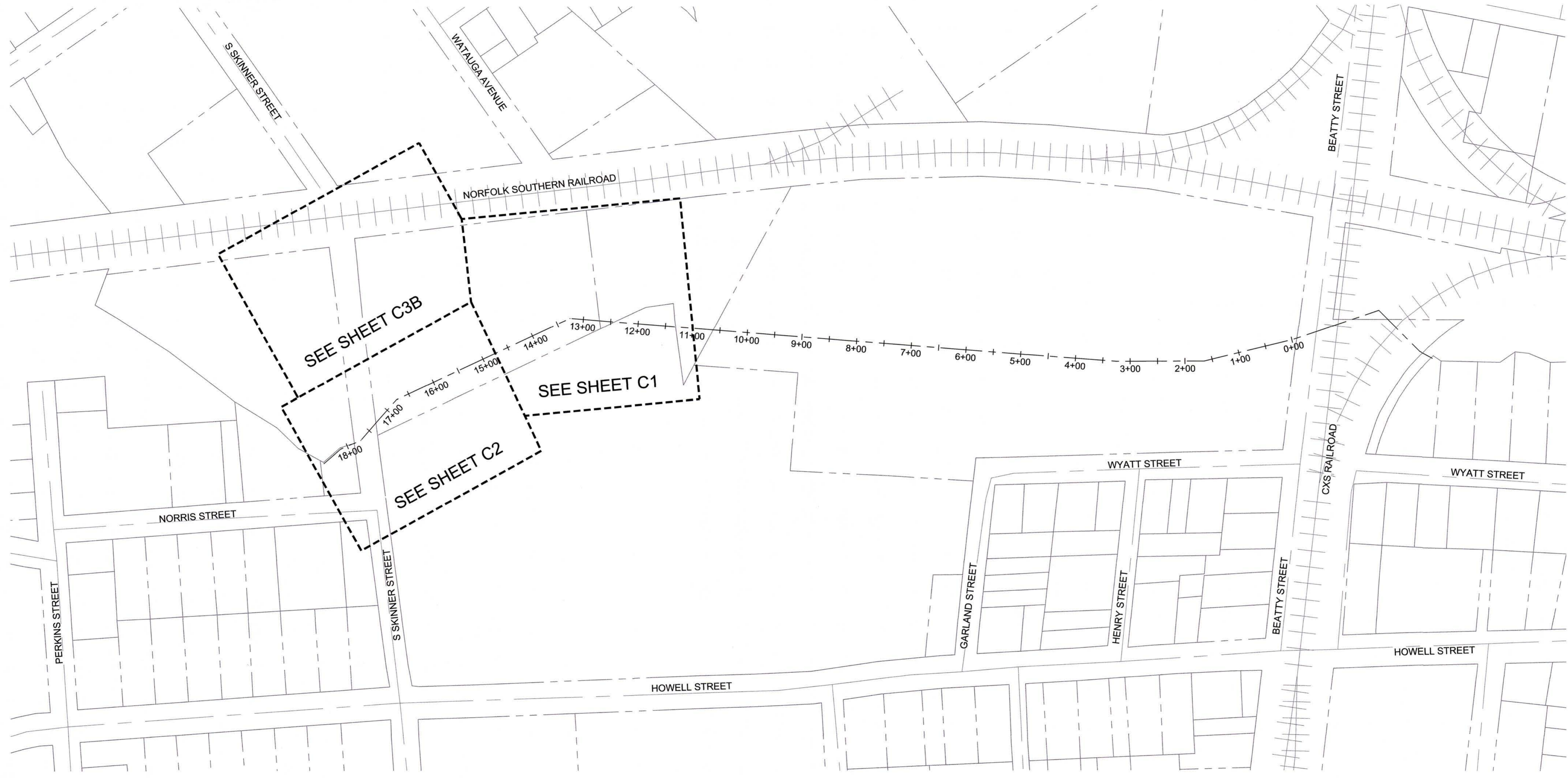
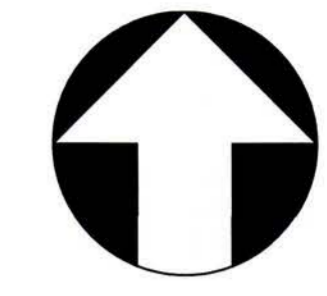
PROJECT: PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA

WKD PROJECT: 20220983.00.RA DATE: 3/8/2024

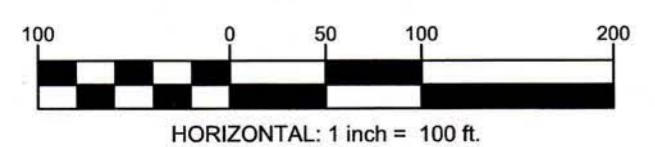
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G2





SCALE: 1"=100'



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NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
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PROJECT:  
**PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA**

TITLE:  
**SHEET INDEX**

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**3/8/2024**  
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**G3**

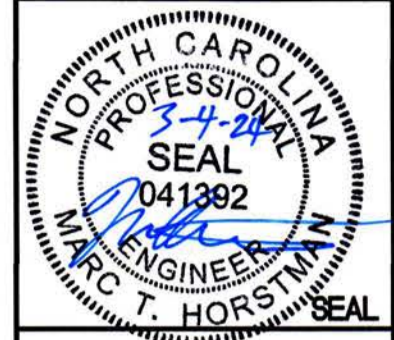












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PROJECT:  
**PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA**

TITLE:  
**RESTORATION SITE PLAN -  
 STA 11+00 TO 14+75**

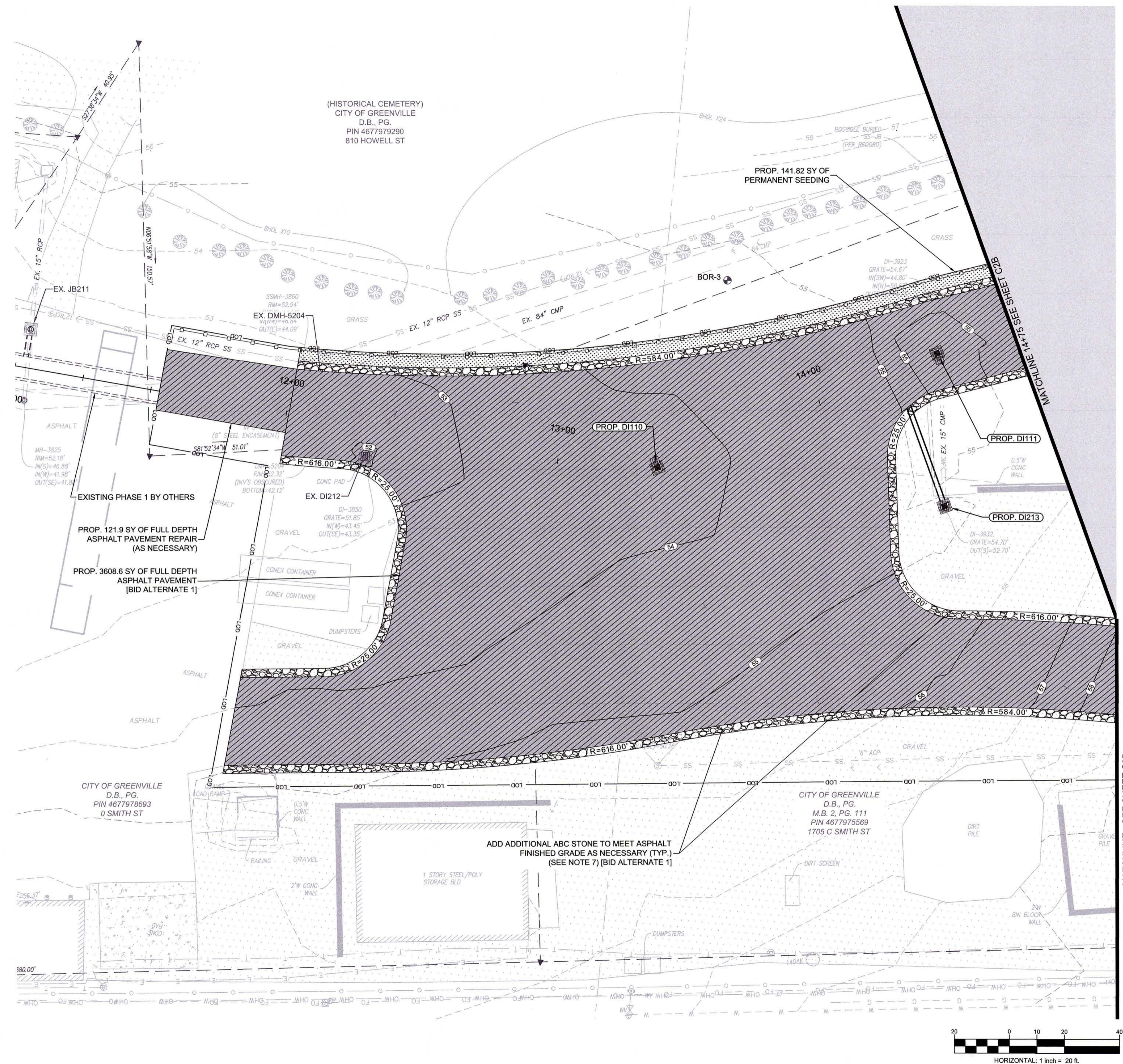
WKO PROJECT:  
**20220983.00.RA**

DATE:  
**3/8/2024**

**100% PLANS**

**C1B**

- NOTES:
- ALL EXISTING CURB OR CURB AND GUTTER TO BE REMOVED SHALL BE REPLACED WITH 2'-0" CURB AND GUTTER.
  - ALL PAVEMENT / CONCRETE CUTS SHALL BE DONE BY SAW CUTTING.
  - CONCRETE CURB & GUTTER AND SIDEWALKS SHALL BE REMOVED AND REPLACED TO THE NEAREST JOINT.
  - ASPHALT PAVEMENT REMOVAL IS REQUIRED AND IS INCIDENTAL FOR ALL REPLACEMENT CURB & GUTTER WHERE REPLACEMENT CONCRETE CURB CUTS AND CURB & GUTTER IS WIDER THAN EXISTING CONCRETE CURB CUTS AND CURB & GUTTER.
  - EXISTING PAINT MARKINGS SHALL BE REPLACED ON PAVEMENT AND CURB BEING REMOVED AND REPLACED, AND IS INCIDENTAL TO THE INSTALLATION OF THE PAVEMENT AND CURB & GUTTER.
  - THE CONTRACTOR SHALL PROVIDE PERMANENT PAVEMENT GRADING TO PROVIDE POSITIVE SURFACE RUNOFF TO PROPOSED DRAINAGE INLETS. THE CONTRACTOR SHALL ADD ADDITIONAL ABC STONE IF NECESSARY TO MATCH THE EXISTING GRAVEL SURFACE TO THE FINISHED ASPHALT GRADE. EXTENT OF ADDITIONAL STONE SHALL BE OFFSET 3 FEET MAXIMUM FROM PROPOSED ASPHALT. PAYMENT SHALL BE INCIDENTAL TO ASPHALT PAVEMENT.



LEGEND:

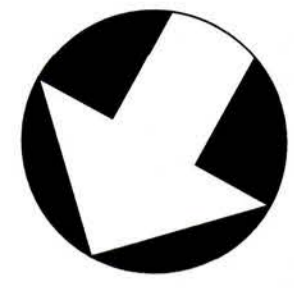
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	PROP. MILL & OVERLAY ASPHALT PAVEMENT (SEE DETAIL 1, SHEET D1)
	PROP. FULL DEPTH CONCRETE PAVEMENT (SEE DETAIL 3, SHEET D1)
	PROP. CONCRETE
	PROP. REMOVE & REPLACE CURB & GUTTER (SEE COG DETAIL 411.01, SHEET D2)
	PROP. GRAVEL / STONE REPLACEMENT
	PROP. CRUSHED STONE
	PROP. PERMANENT SOD
	PROP. PERMANENT SEEDING



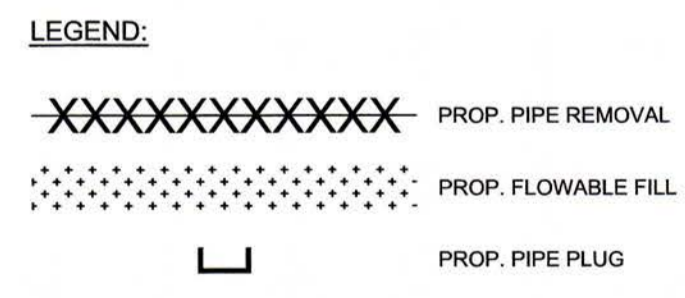
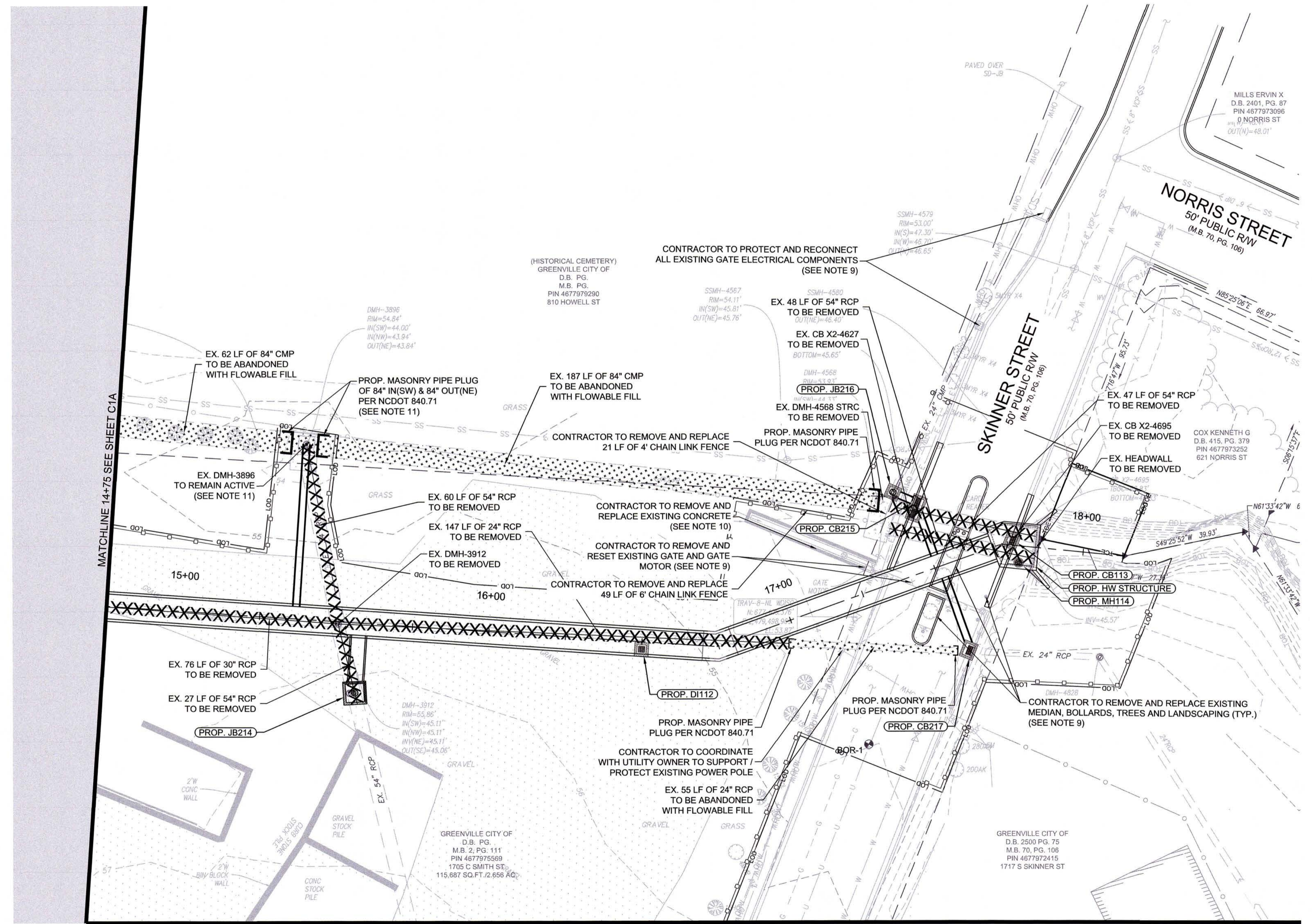








- NOTES:**
- THE EXISTENCE OR NON-EXISTENCE, LOCATION AND ELEVATION OF EXISTING UTILITIES IS AN APPROXIMATION SUBJECT TO LIMITATIONS OF SUBSURFACE UTILITY ENGINEERING (SUE).
  - CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY SIZES, MATERIALS, DEPTHS, AND LOCATION PRIOR TO CONSTRUCTION.
  - REFER TO RESTORATION SITE PLAN FOR PAVEMENT, DRIVEWAY, CURB & GUTTER, SIDEWALK, AND CURB RAMP LOCATIONS.
  - ALL PAVEMENT / CONCRETE CUTS SHALL BE DONE BY SAW CUTTING.
  - CONCRETE CURB & GUTTER AND SIDEWALKS SHALL BE REMOVED AND REPLACED TO THE NEAREST JOINT.
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  - ALL SIGNS AND POSTS WITHIN THE LOD TO BE REMOVED AND RESET.
  - THE CONTRACTOR SHALL REMOVE AND RESET EXISTING FENCING AS NEEDED, MOTORIZED GATE, GATE MOTOR, AND CARD READER(S). GATE, GATE MOTOR, AND CARD READER(S) TO BE PROTECTED AND REINSTALLED. EXISTING MEDIAN, BOLLARDS, LANDSCAPING, TREES, AND TRAFFIC SIGNS SHALL BE REMOVED AND REPLACED IN KIND. TRACK FOR THE MOTORIZED GATE SHALL BE MAINTAINED. REMOVAL AND RESETTING SHALL INCLUDE ALL ASSOCIATED ELECTRIC DEVICES AND SERVICES. REFER TO SPECIAL PROVISIONS.
  - THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING CONCRETE CURB SWALE AND CONCRETE BLOCK WALL SO THAT THE FUNCTION OF THE MOTORIZED GATE TRACK IS MAINTAINED. SEE SPECIAL PROVISIONS.
  - THE OPEN THROAT CATCH BASIN DMH-3896 IS TO REMAIN IN SERVICE. THE CONTRACTOR SHALL INSTALL WATERTIGHT MASONRY PLUGS OF THE EXISTING 84" (QTY 2) AND 54" (QTY 1) PIPE OPENINGS. FILL STRUCTURE WITH FLOWABLE FILL UP TO THE PROPOSED 24" RCP INVERT TO ENSURE POSITIVE DRAINAGE.



NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
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PROJECT:  
**PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA**

TITLE:  
**SITE PLAN - 14+75 TO 18+50**

WKD PROJECT:  
**20220983.00.RA**

DATE:  
**3/8/2024**

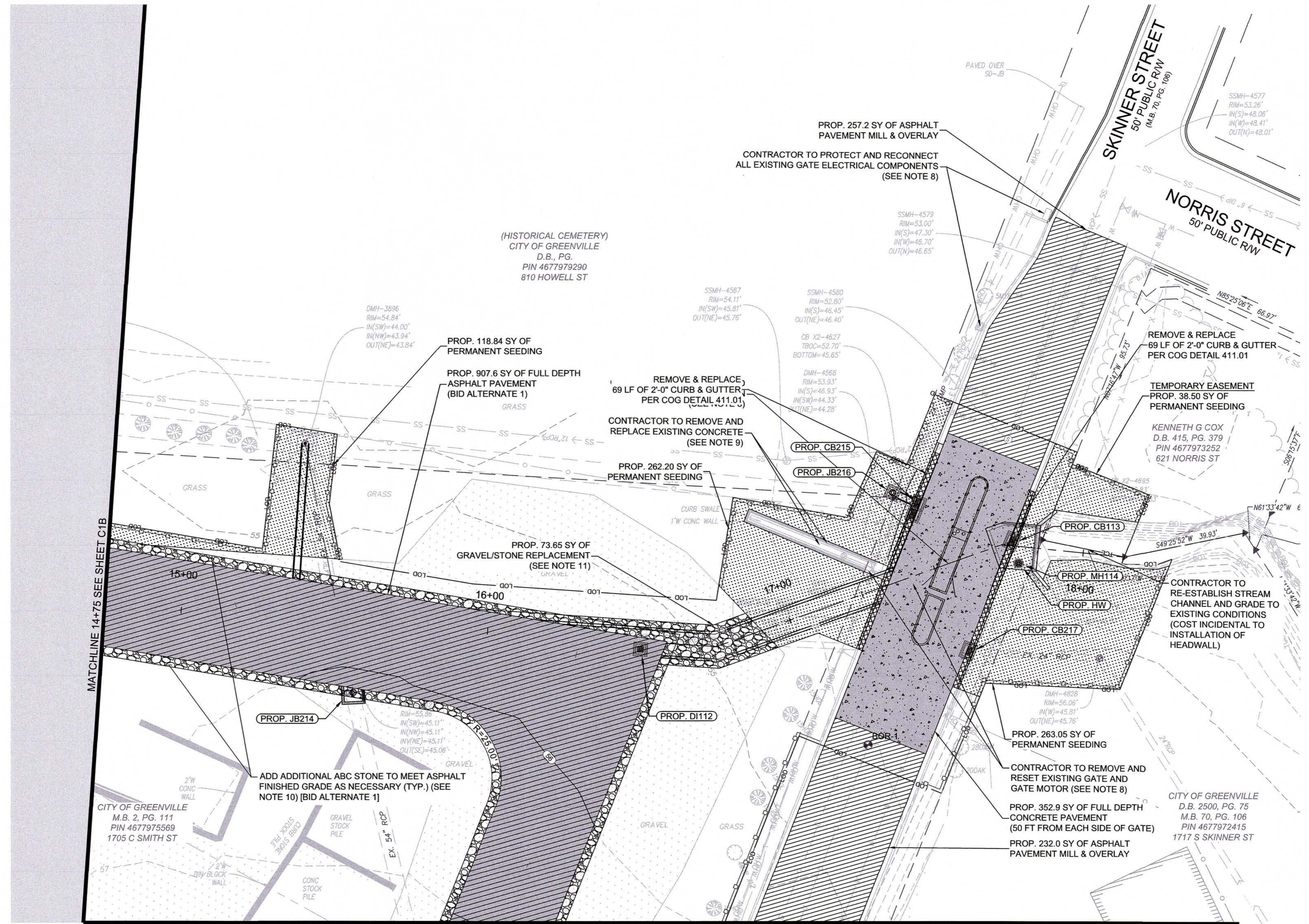
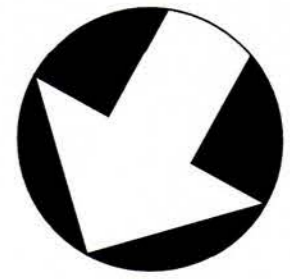
**100% PLANS**

**C2A**



**NOTES:**

1. ALL EXISTING CURB OR CURB AND GUTTER TO BE REMOVED SHALL BE REPLACED WITH 2'-0" CURB AND GUTTER.
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11. PAYMENT OF PROPOSED GRAVEL/STONE WITHIN TRENCH WIDTH SHALL BE PAID VIA #57 STONE, MISCELLANEOUS.



**LEGEND:**

- PROP. FULL DEPTH ASPHALT PAVEMENT (SEE DETAIL 2, SHEET D1)
- PROP. MILL & OVERLAY ASPHALT PAVEMENT (SEE DETAIL 1, SHEET D1)
- PROP. FULL DEPTH CONCRETE PAVEMENT (SEE DETAIL 3, SHEET D1)
- PROP. CONCRETE
- PROP. REMOVE & REPLACE CURB & GUTTER (SEE COG DETAIL 411.01, SHEET D2)
- PROP. GRAVEL / STONE REPLACEMENT
- PROP. CRUSHED STONE
- PROP. PERMANENT SOD
- PROP. PERMANENT SEEDING

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NO.	DATE	REVISIONS

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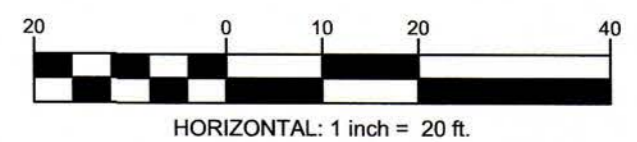
PROJECT:  
**PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA**  
 TITLE:  
**RESTORATION SITE PLAN - STA 14+75 TO 18+50**

WPK PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

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**C2B**

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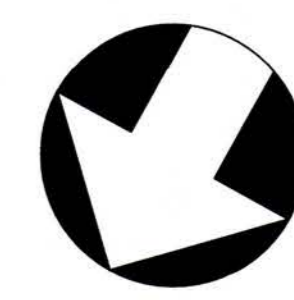
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 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA**

TITLE:  
**SITE PLAN**

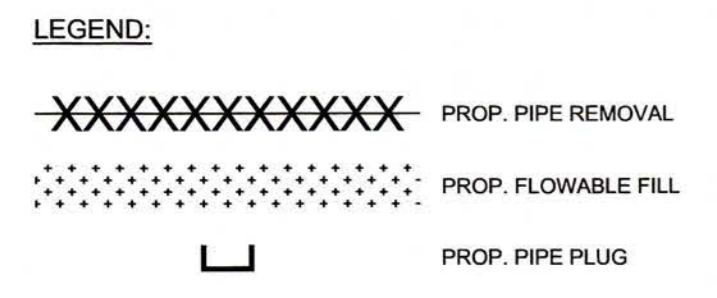
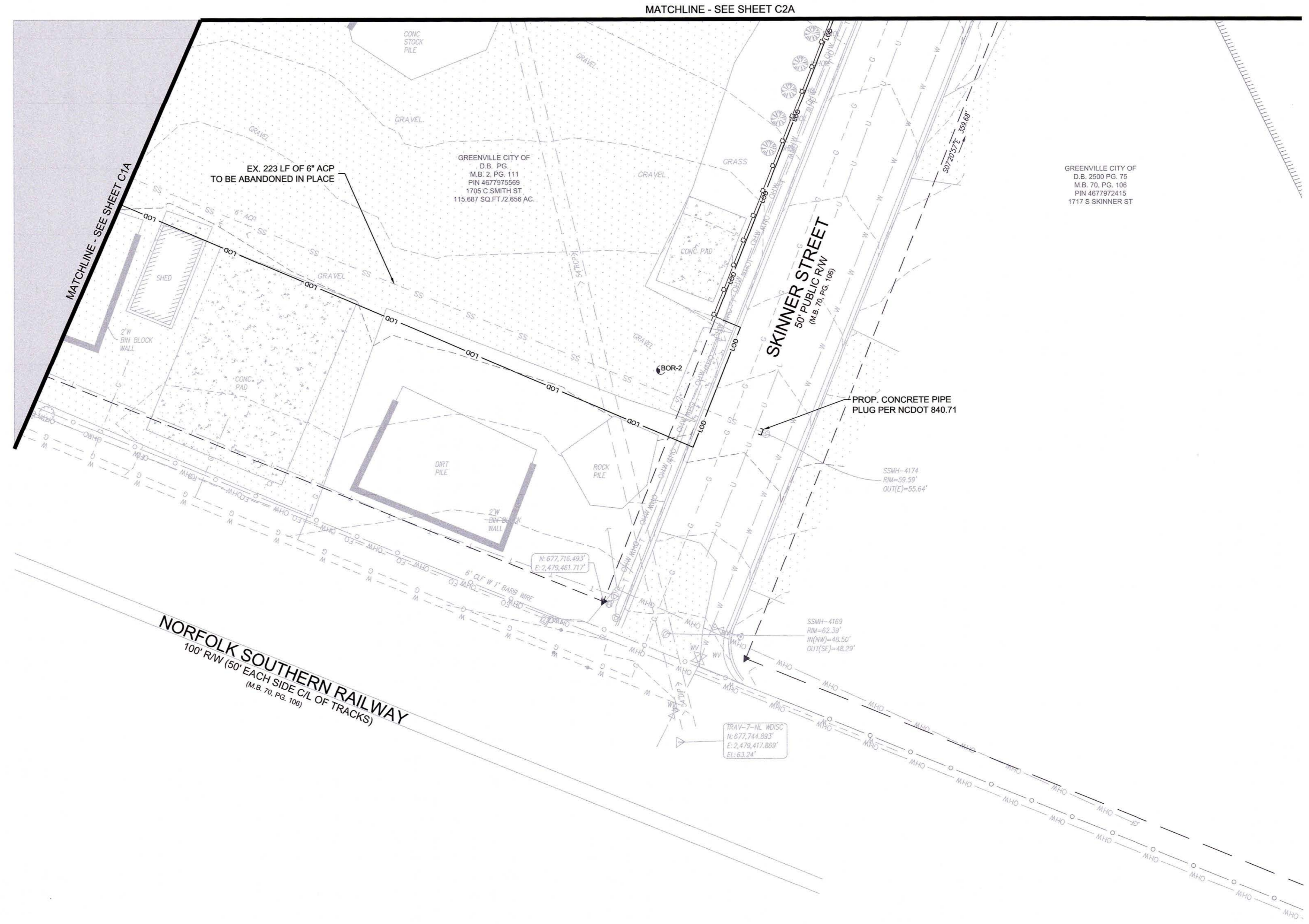
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**20220983.00.RA**  
 DATE:  
**3/8/2024**

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**C3A**



- NOTES:
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  8. ALL SIGNS AND POSTS WITHIN THE LOD TO BE REMOVED AND RESET.



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PLANS PREPARED BY:  
**W.K. DICKSON**  
 community infrastructure consultants  
 720 Corporate Center Drive  
 Raleigh, NC 27607  
 (919) 782-0495  
 (919) 782-9872  
 www.wkdickson.com  
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PLANS PREPARED FOR:  
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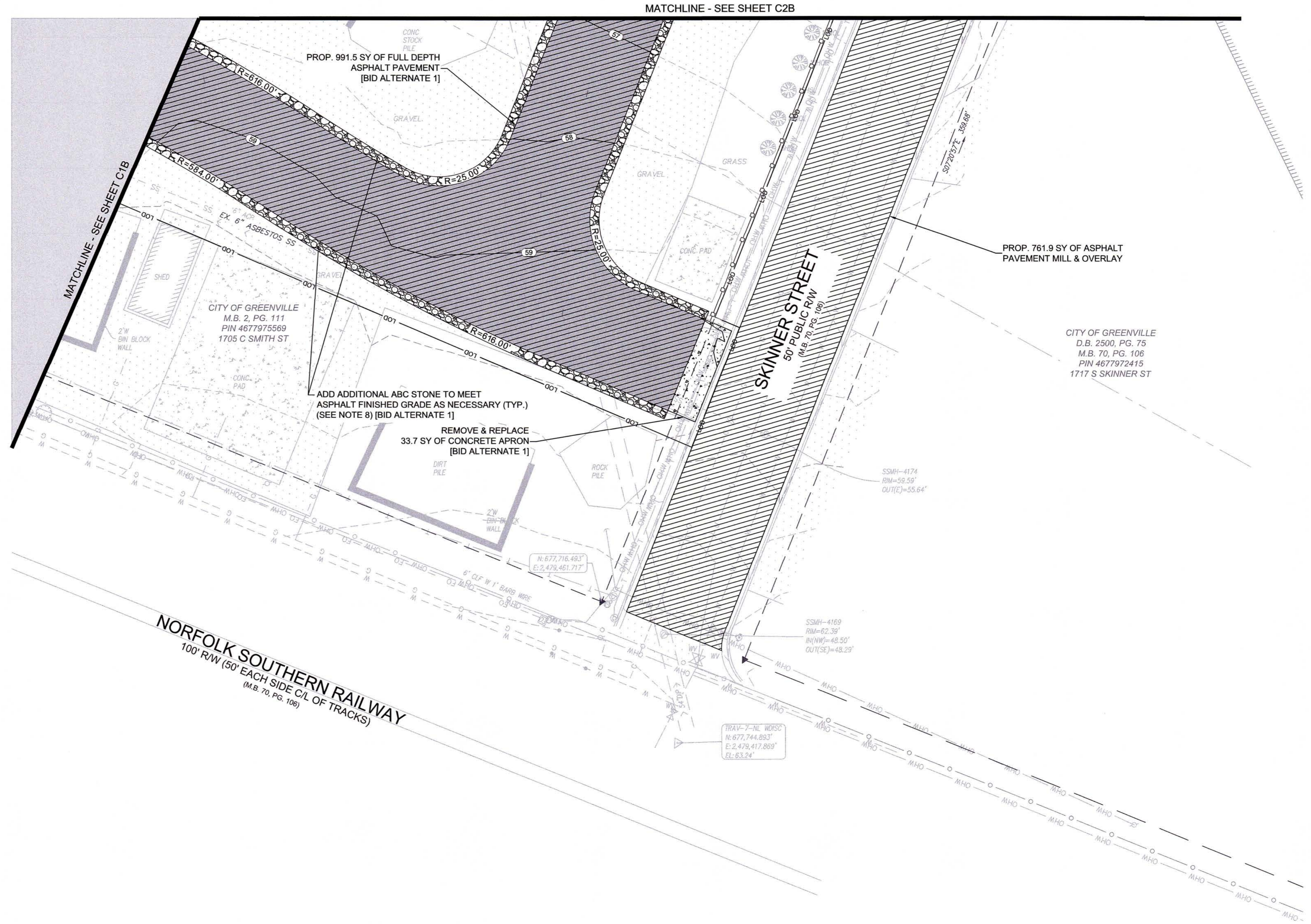
PROJECT:  
 PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA

TITLE:  
 RESTORATION SITE PLAN

W.K.D. PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

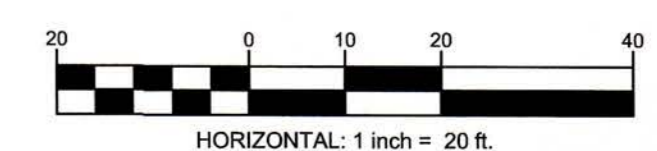
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**C3B**



**LEGEND:**

	PROP. FULL DEPTH ASPHALT PAVEMENT (SEE DETAIL 2, SHEET D1)
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	PROP. PERMANENT SEEDING



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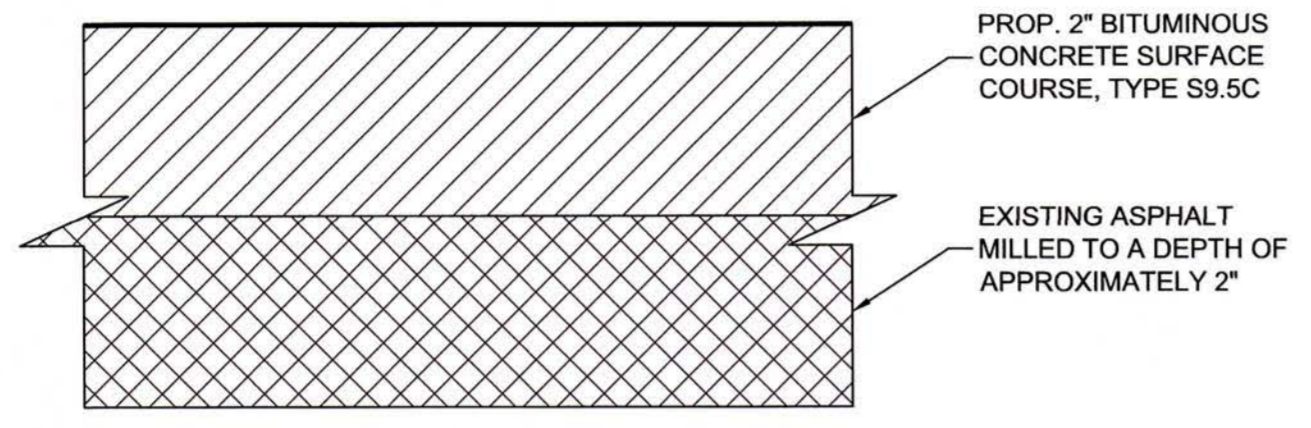
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PROJECT: PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA  
 TITLE: SITE DETAILS

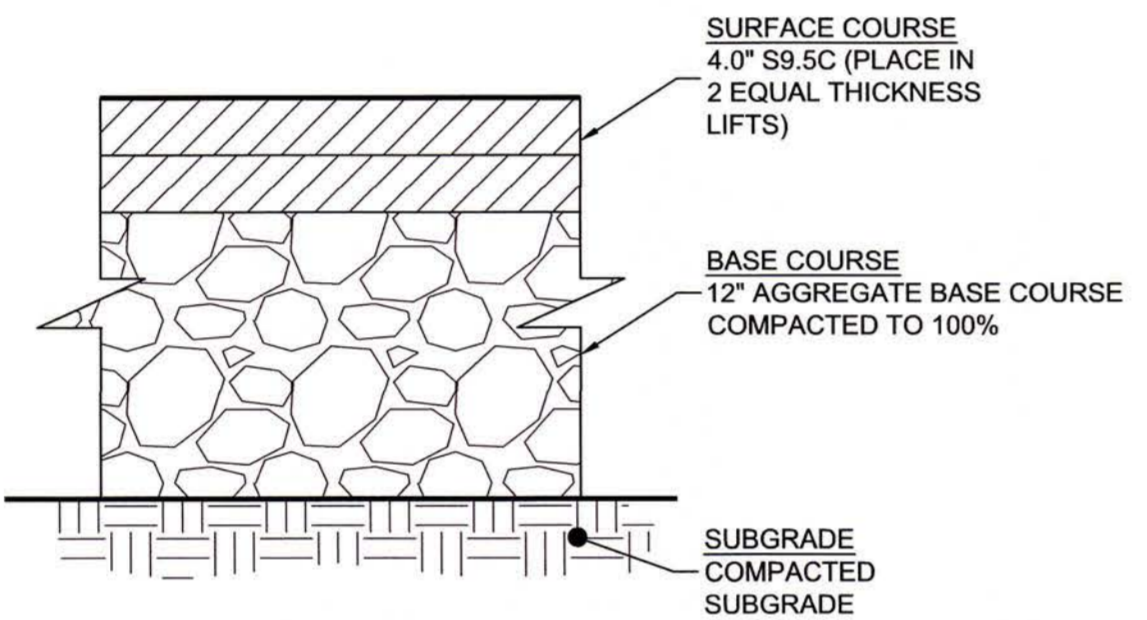
WKD PROJECT: 20220983.00.RA  
 DATE: 3/8/2024  
 100% PLANS

D1



SECTION

1 D1 MILL & OVERLAY PAVEMENT  
 NOT TO SCALE



SECTION

2 D1 FULL DEPTH ASPHALT PAVEMENT  
 NOT TO SCALE

NOTES:

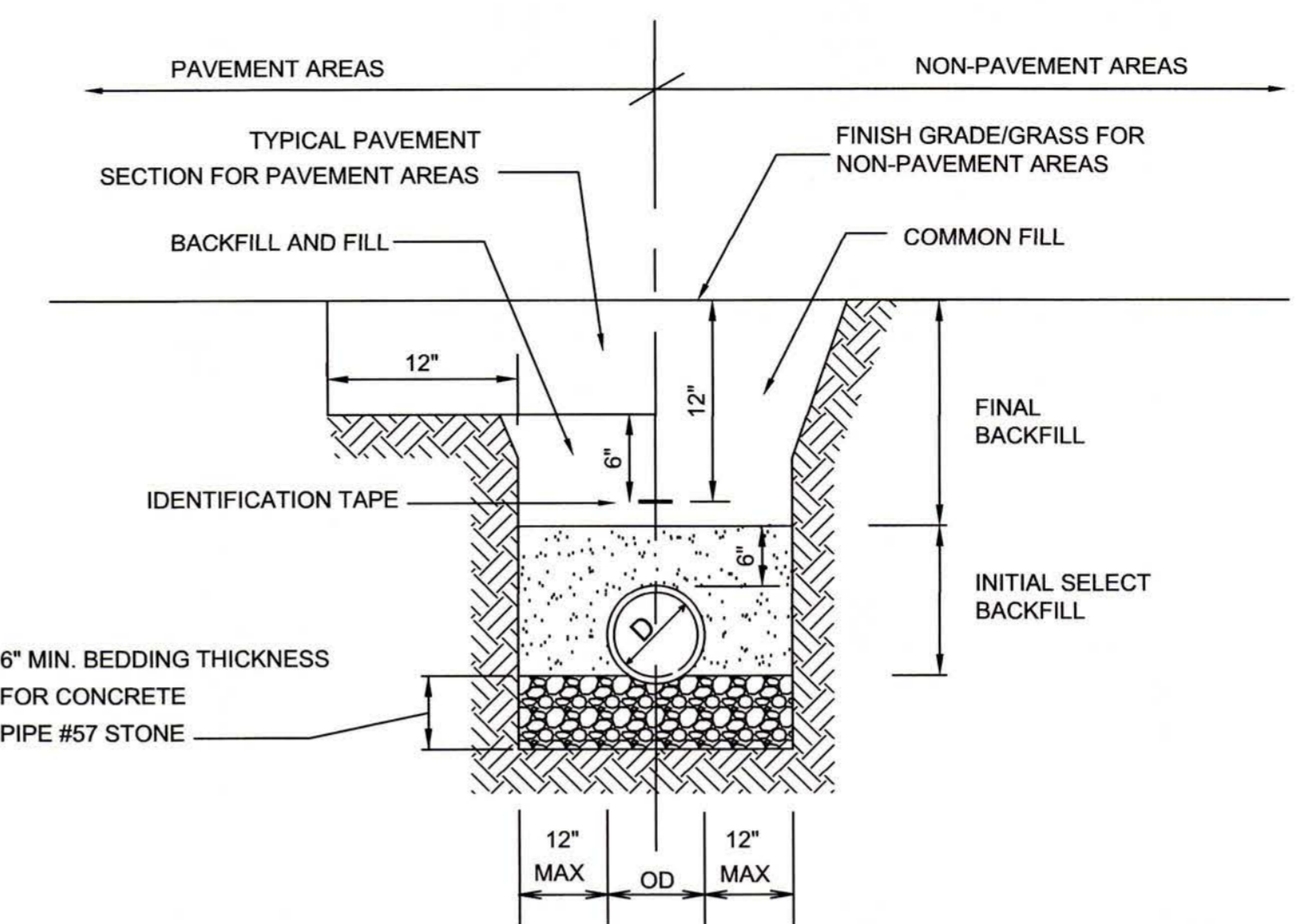
1. PROPOSED PAVEMENT SECTION DIMENSIONS SHALL BE NO LESS THAN AS SHOWN IN THIS DETAIL.
2. BASE AND SURFACE COURSE THICKNESS SHOWN ARE FINAL COMPACTED THICKNESS.

NOTES:

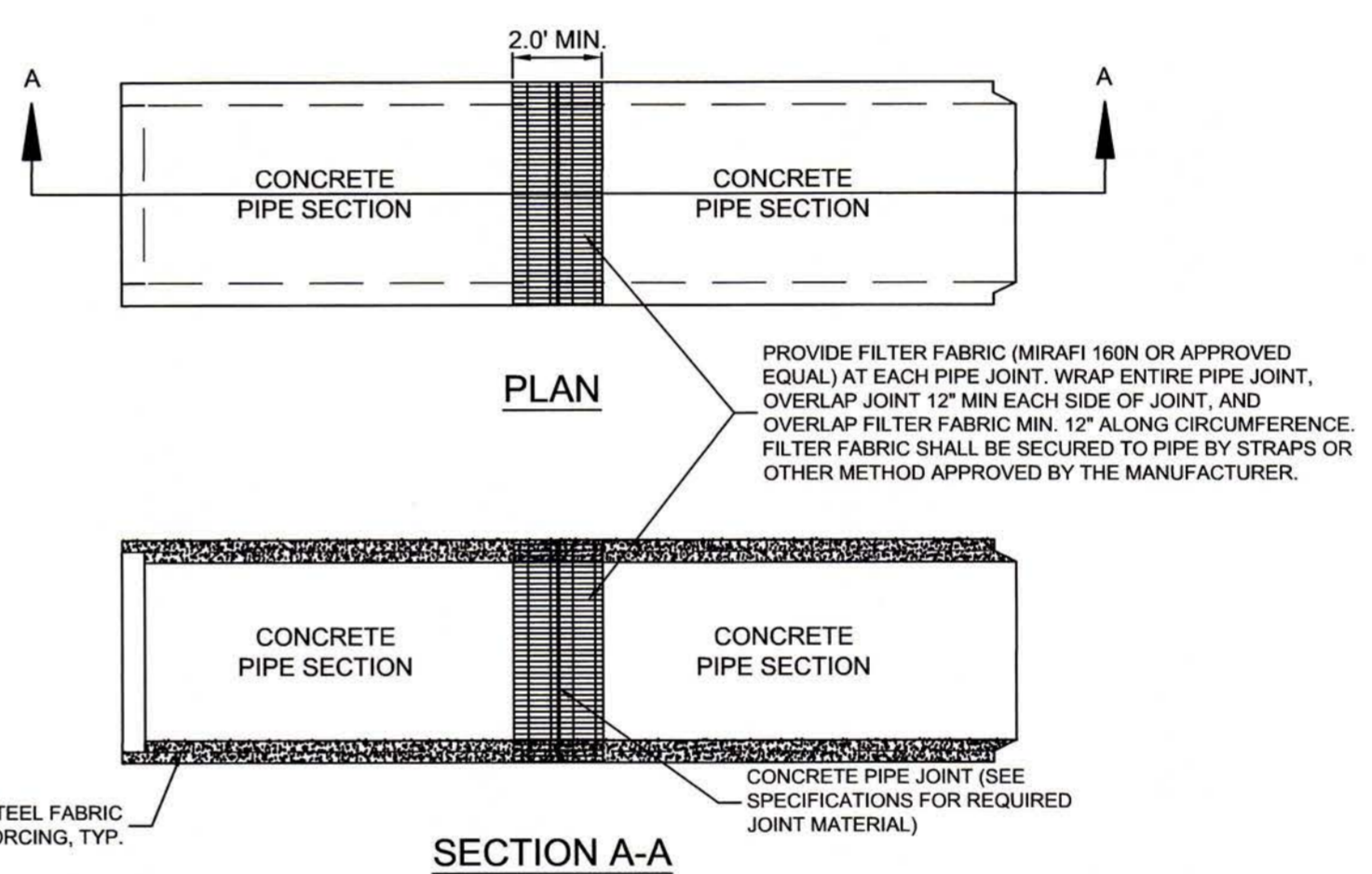
1. PROPOSED PAVEMENT SECTION DIMENSIONS SHALL BE NO LESS THAN AS SHOWN IN THIS DETAIL.
2. BASE COURSE THICKNESS SHOWN ARE FINAL COMPACTED THICKNESS.
3. REFER TO SHEET D7 FOR ADDITIONAL DETAILS.

SECTION

3 D1 FULL DEPTH CONCRETE PAVEMENT  
 NOT TO SCALE



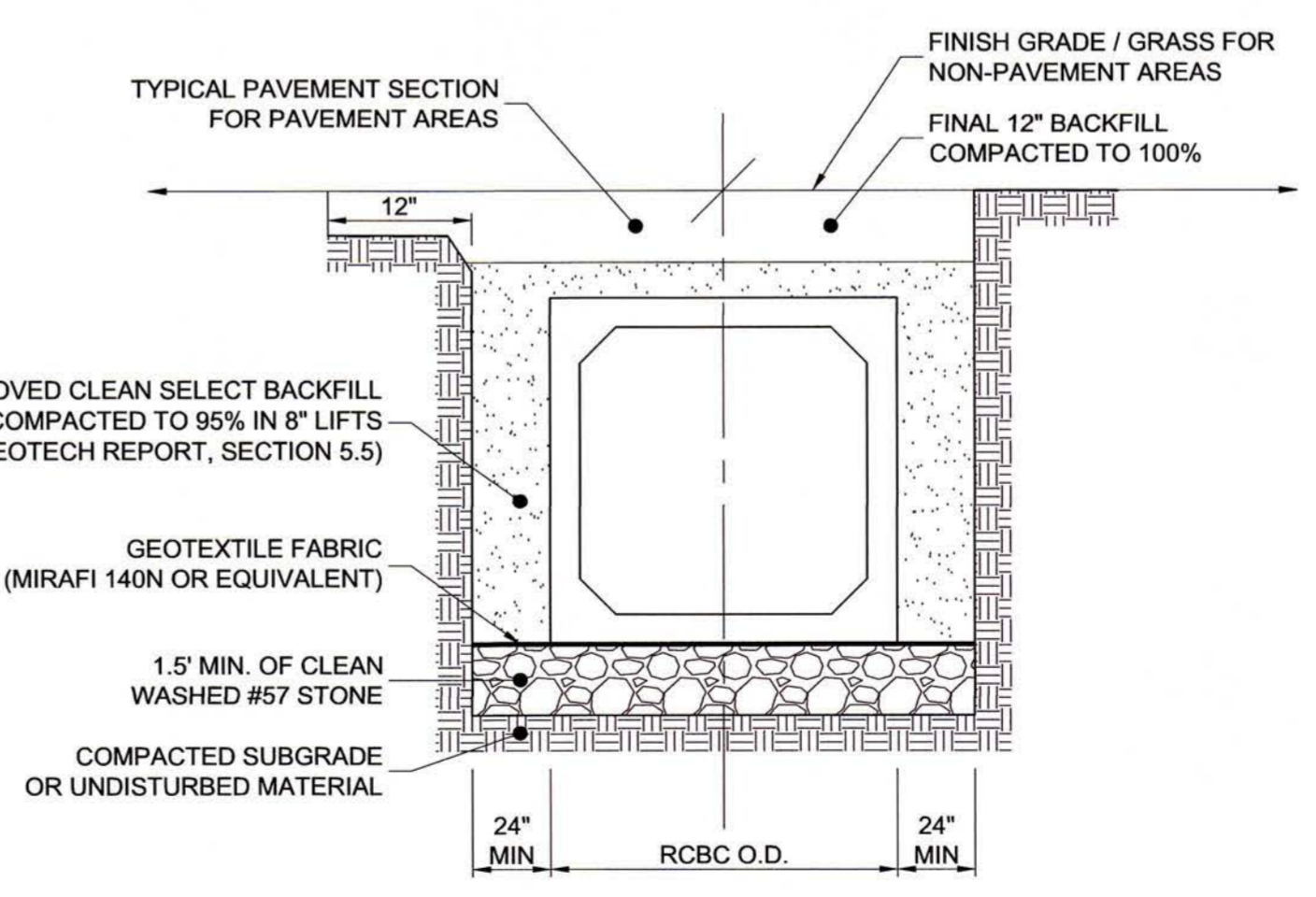
4 D1 STORM DRAIN PIPE TRENCH DETAIL  
 NOT TO SCALE



5 D1 CONCRETE PIPE JOINT DETAIL  
 NOT TO SCALE

NOTES:

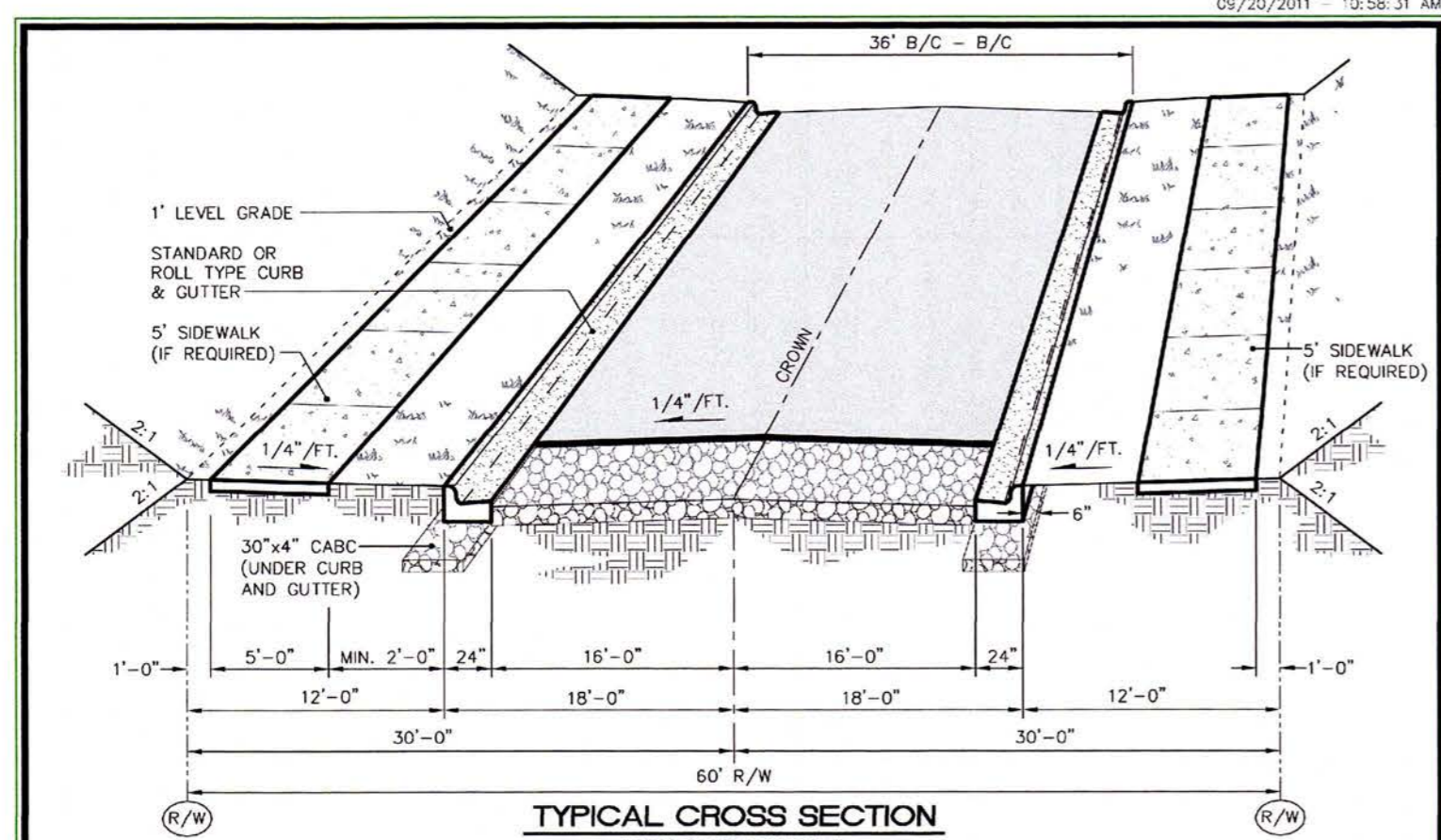
1. THE PRECAST UNITS SHALL BE CAREFULLY POSITIONED ON THE PREPARED FOUNDATION. FEMALE END UPGRADE WITH MALE END FULLY INSERTED AND EACH JOINT CHECKED FOR ALIGNMENT. SATISFACTORY FITTING AND PROPER GRADE SHALL BE MAINTAINED AS THE WORK PROCEEDS.
2. CARE SHALL BE TAKEN DURING BACKFILL AND COMPACTION TO MAINTAIN ALIGNMENT AND PREVENT DAMAGE TO THE JOINTS. UNITS THAT BECOME MISALIGNED, SHOW EXCESSIVE SETTLEMENT OR HAVE OTHERWISE BEEN DAMAGED SHALL, AT THE DISCRETION OF THE ENGINEER, BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY.
3. ALL TRENCHING OPERATIONS SHALL MEET OSHA STANDARDS.
4. A MINIMUM OF 24 INCHES FROM OUTSIDE DIAMETER OF BOX CULVERT TO SIDE OF TRENCH MUST BE ALLOWED FOR COMPACTION OF FILL MATERIAL. BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE BOX CULVERT IS LAID. THE FILL AROUND THE THE BOX CULVERT SHALL BE PLACED IN LIFTS NOT TO EXCEED 8 INCHES. UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE CULVERT HAS BEEN PLACED. COMPACTION REQUIREMENTS SHALL BE ATTAINED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE AND THOROUGHLY COMPACTED INTO PLACE.



6 D1 RCBC TRENCH DETAIL  
 NOT TO SCALE

FINAL DESIGN - NOT FOR CONSTRUCTION





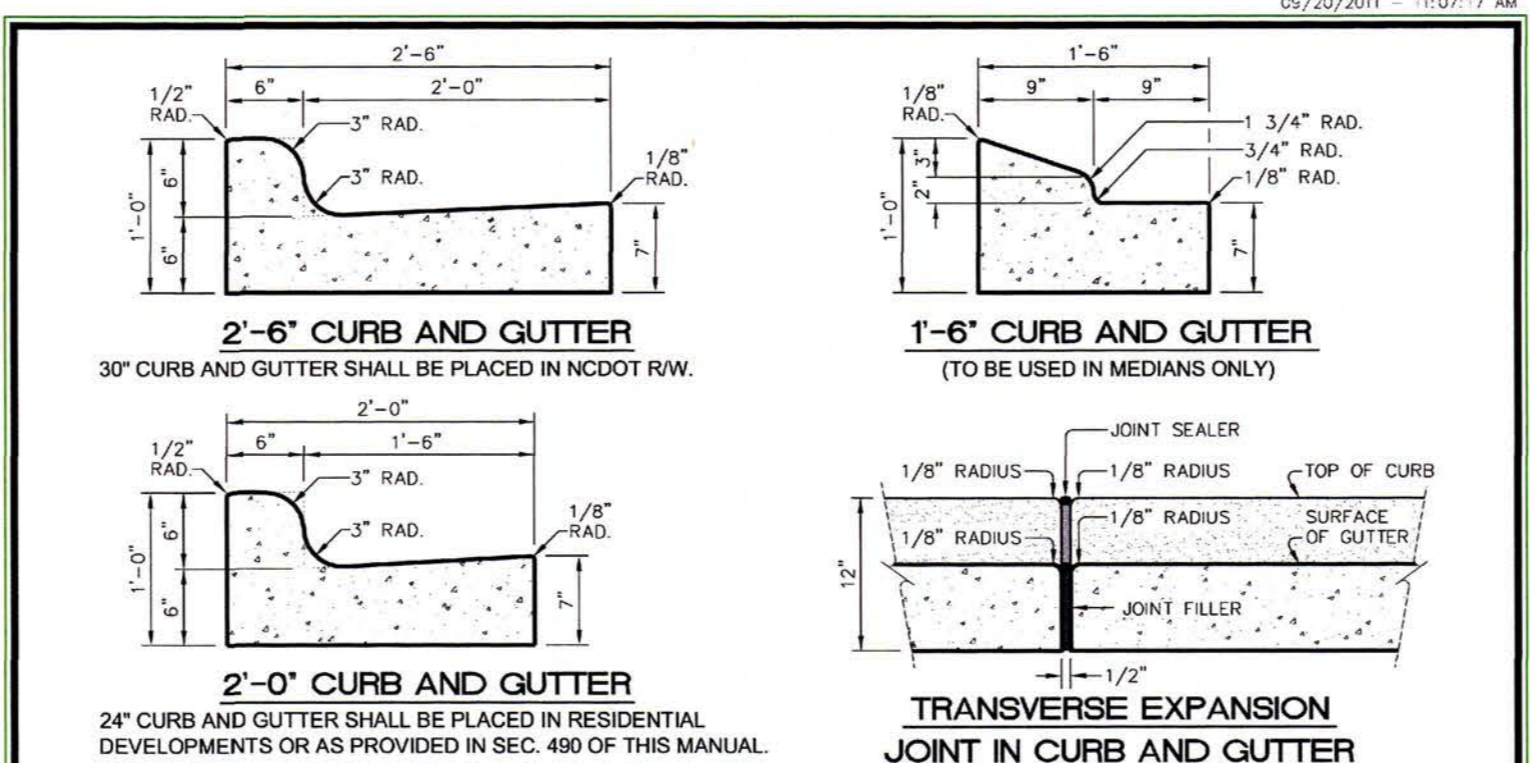
**NOTES:**

- Pavement design to be according to procedure described in Std. detail No. 490.01.
- May only be used in cases where projected traffic volumes will not exceed 1500 - 3500 ADT based on trip generation factors shown on Std. detail No. 491.02.

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**COLLECTOR STREET (CURB & GUTTER)**

Scale: Not to scale. Sheet # 1 of 1. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].



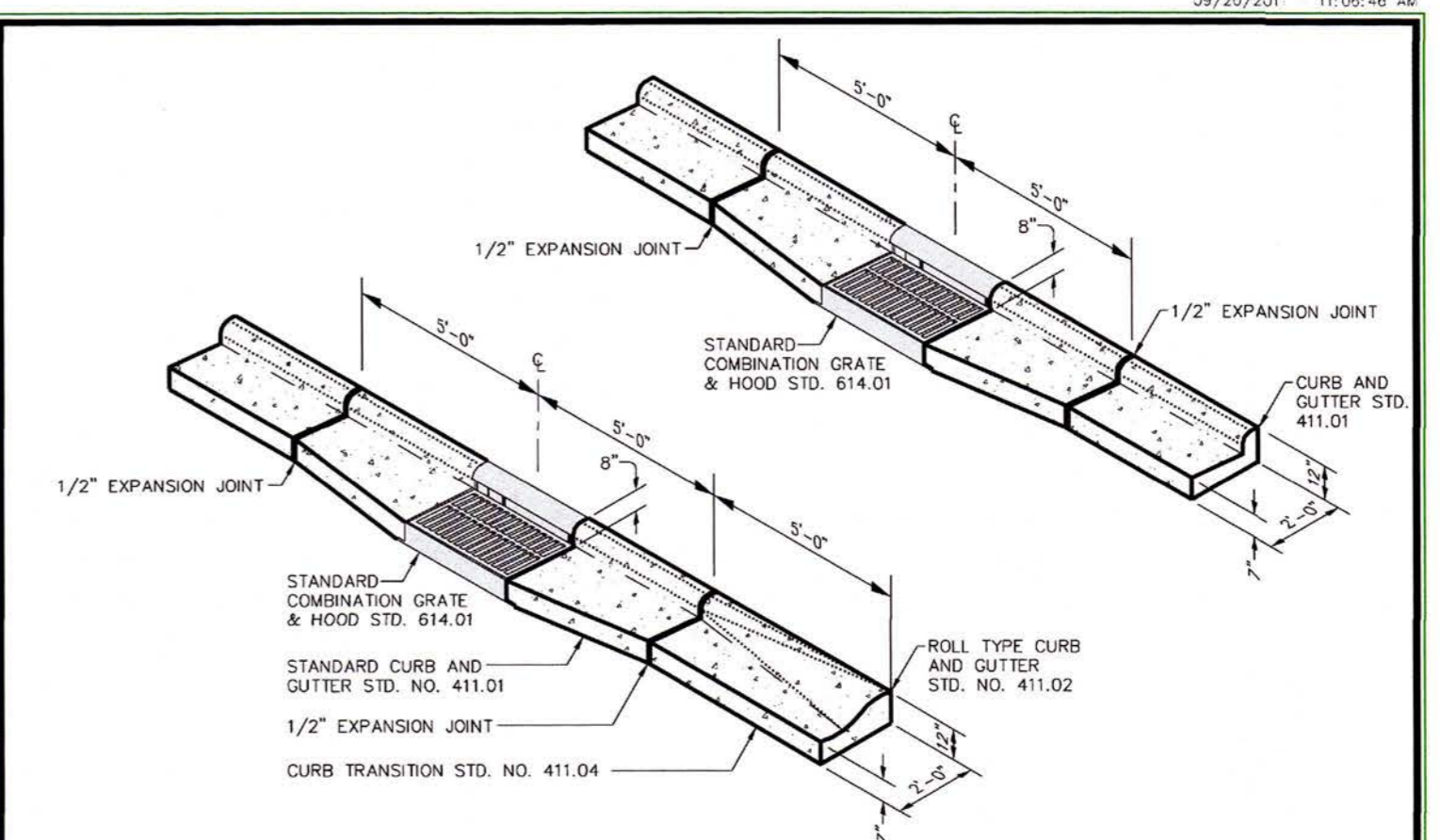
**NOTES:**

- Contraction joints shall be placed at 10' intervals, except that 15' spacing may be used when a machine is used or when satisfactory support for the face form can be obtained without the use of templates at 10' intervals. Joint spacing may be altered by the engineer to prevent uncontrolled cracking.
- Contraction joints may be installed by the use of templates or formed by other approved methods. Where such joints are not formed by templates, a minimum depth of 1 1/2\"/>

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**STANDARD CURB & GUTTER**

Scale: Not to scale. Sheet # 1 of 1. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].



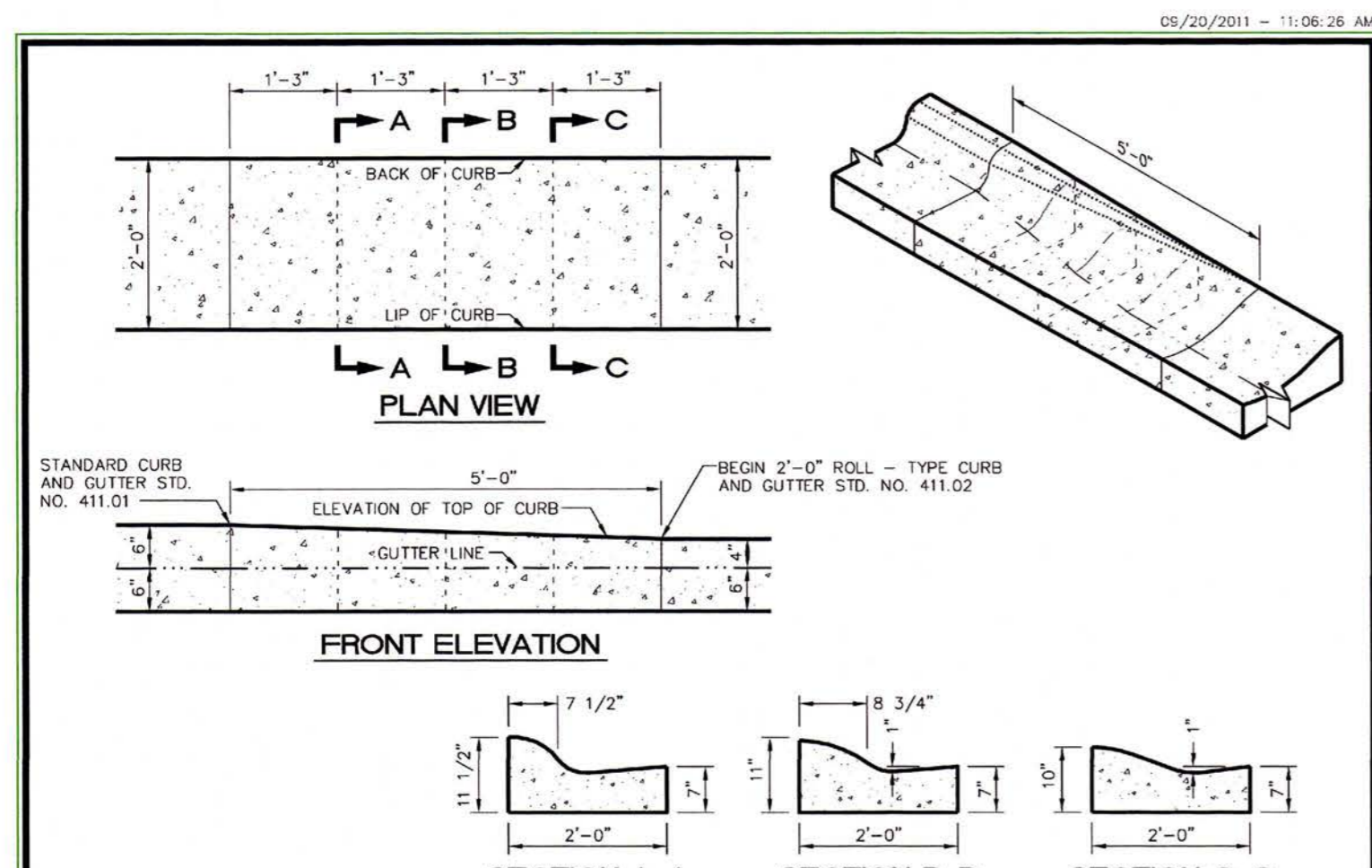
**NOTES:**

- See sheet 4 of 4 for dimensions.
- See Std. detail No. 610.01 for standard notes.

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**STANDARD CATCH BASIN FRAME 2'-0" IN CURB AND GUTTER**

Scale: Not to scale. Sheet # 1 of 1. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].



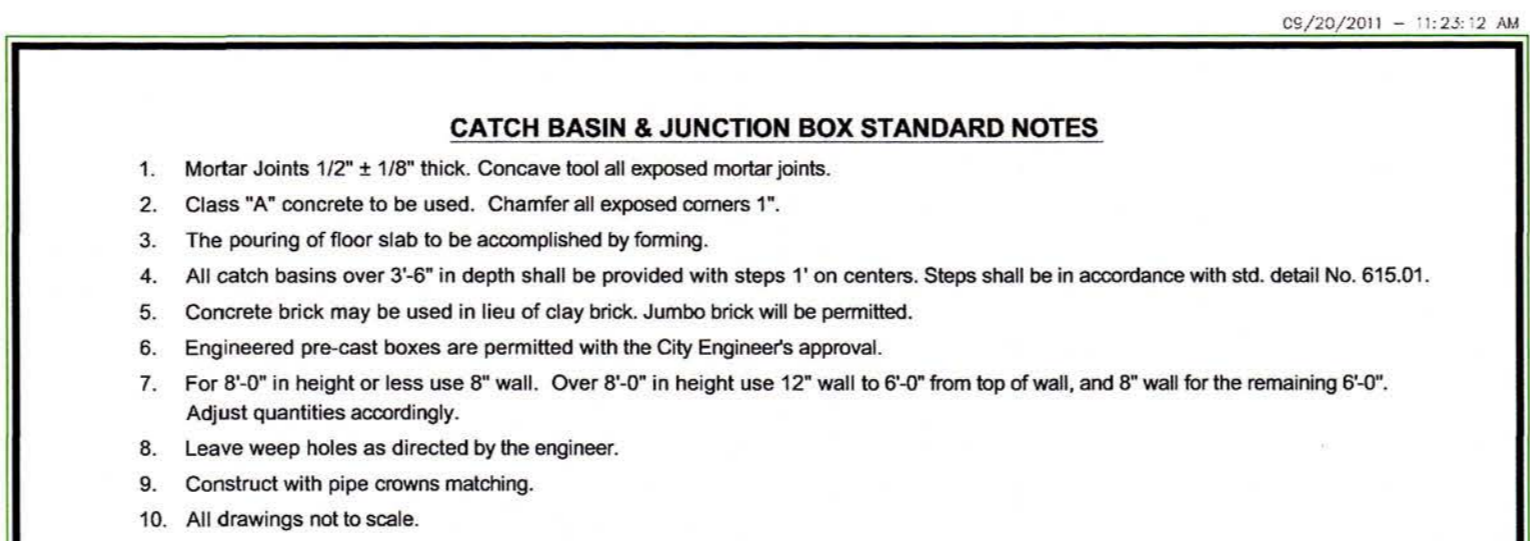
**NOTES:**

- Transition is NOT to be located within the curb radius.

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**CURB TRANSITION - 2'-0" C&G TO 2'-0" ROLL TYPE C&G**

Scale: Not to scale. Sheet # 1 of 1. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].



**CATCH BASIN & JUNCTION BOX STANDARD NOTES**

- Mortar joints 1/2" ± 1/8" thick. Concave tool all exposed mortar joints.
- Class "A" concrete to be used. Chamfer all exposed corners 1".
- The pouring of floor slab to be accomplished by forming.
- All catch basins over 3'-6" in depth shall be provided with steps 1" on centers. Steps shall be in accordance with std. detail No. 615.01.
- Concrete brick may be used in lieu of clay brick. Jumbo brick will be permitted.
- Engineered pre-cast boxes are permitted with the City Engineer's approval.
- For 8'-0" in height or less use 8" wall. Over 8'-0" in height use 12" wall to 6'-0" from top of wall, and 8" wall for the remaining 6'-0". Adjust quantities accordingly.
- Leave weep holes as directed by the engineer.
- Construct with pipe crowns matching.
- All drawings not to scale.

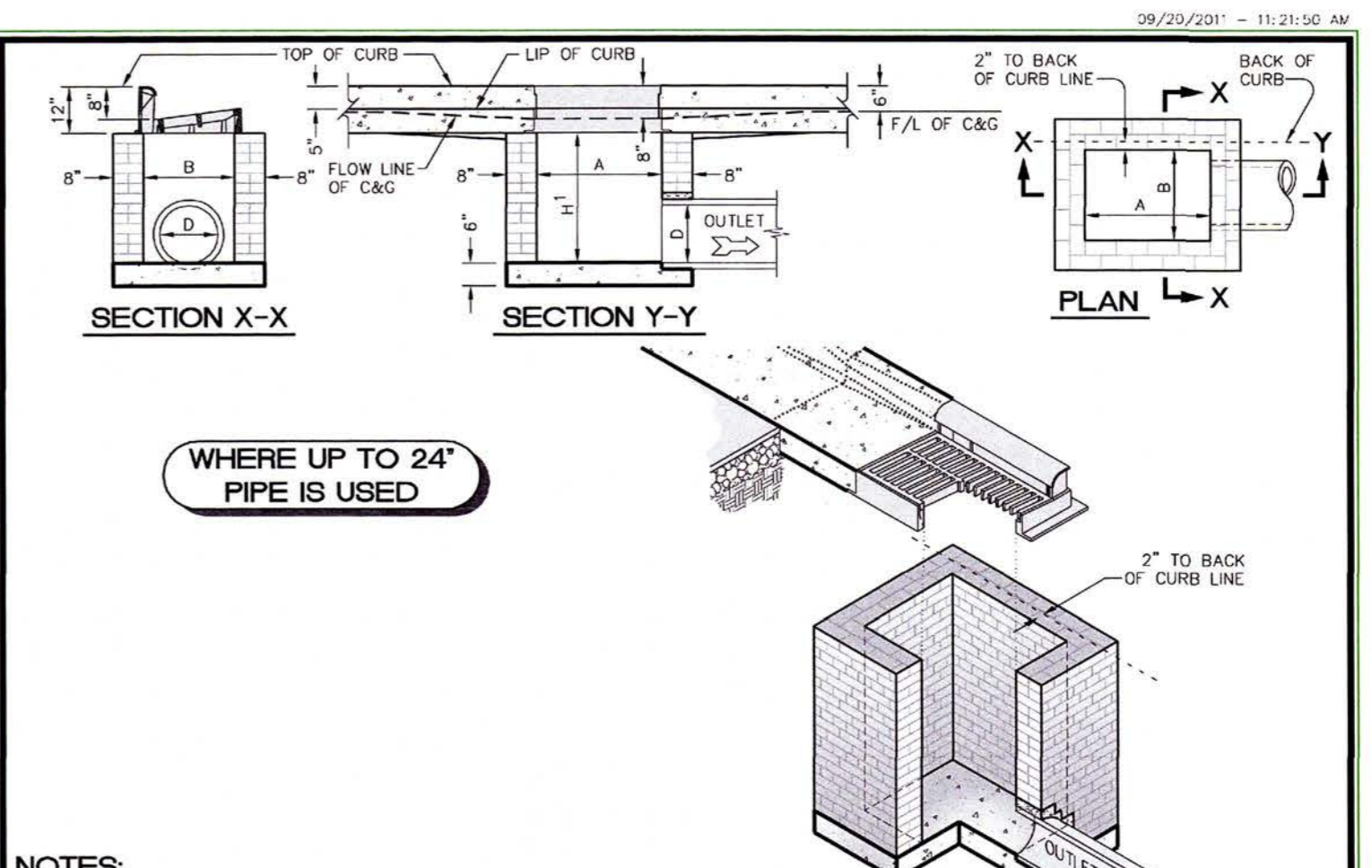
**MANHOLE STANDARD NOTES**

- Mortar joints 1/2" ± 1/8" thick. Concave tool all exposed mortar joints.
- Class "A" concrete to be used. Chamfer all exposed corners 1".
- Forms to be used for the construction of the base.
- Where the manhole top is exposed to road traffic, the top of the manhole is to be flush with the ground. At other locations it should be a minimum of 9" above the ground.
- Manholes over 3'-6" in depth shall be provided with steps 1" on centers. Steps shall be in accordance with Std. detail No. 615.01.
- Over 36" pipe design requires City Engineer's approval.
- For manholes over 12 ft. vertical wall depth, brick masonry wall thickness shall be 12".
- For manholes with a vertical wall depth less than 12 ft., brick masonry wall thickness shall be 8".
- All drawings not to scale.

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**STANDARD CATCH BASIN AND MANHOLE NOTES**

Scale: Not to scale. Sheet # 1 of 1. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].



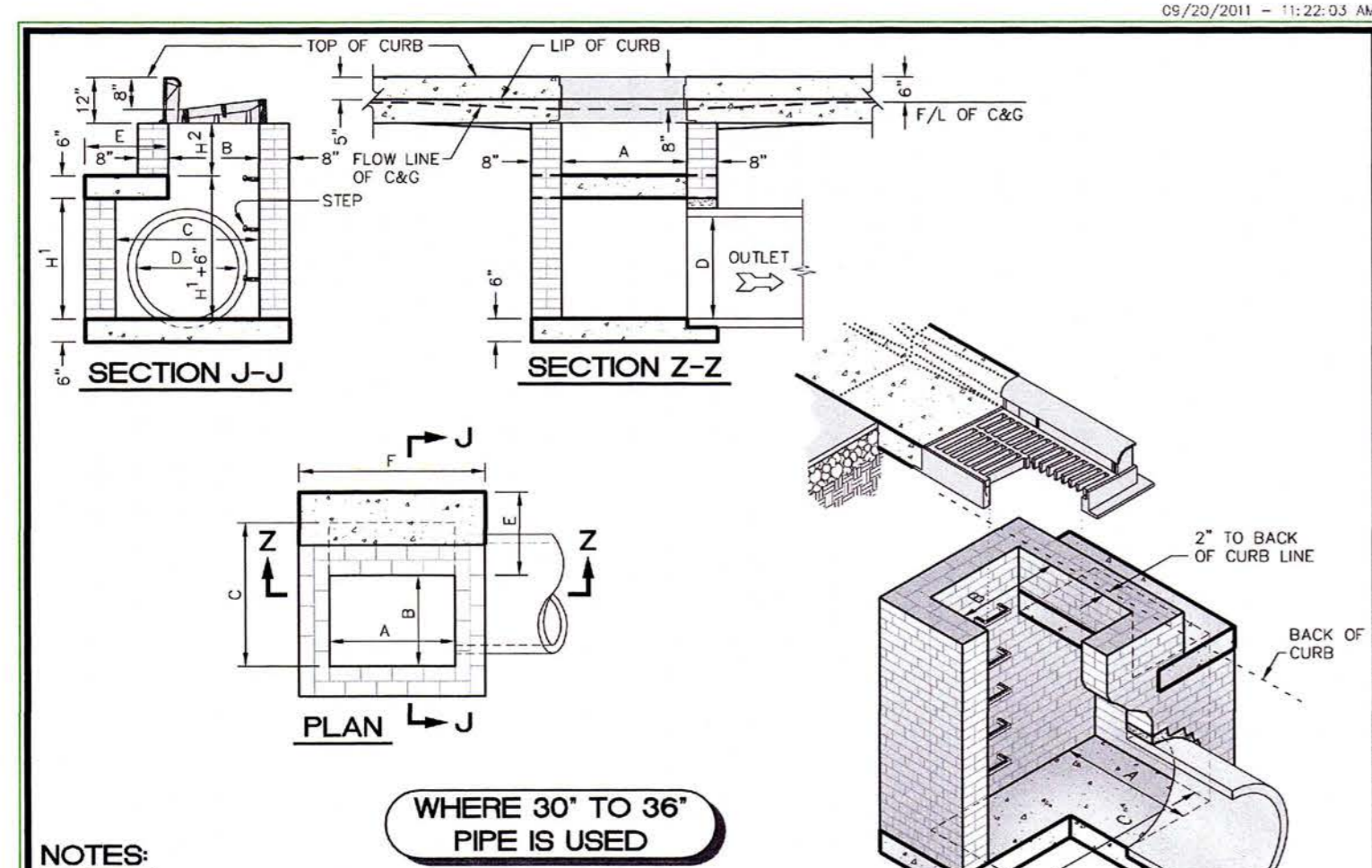
**NOTES:**

- See sheet 4 of 4 for dimensions.
- See Std. detail No. 610.01 for standard notes.

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**STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE)**

Scale: Not to scale. Sheet # 1 of 4. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].



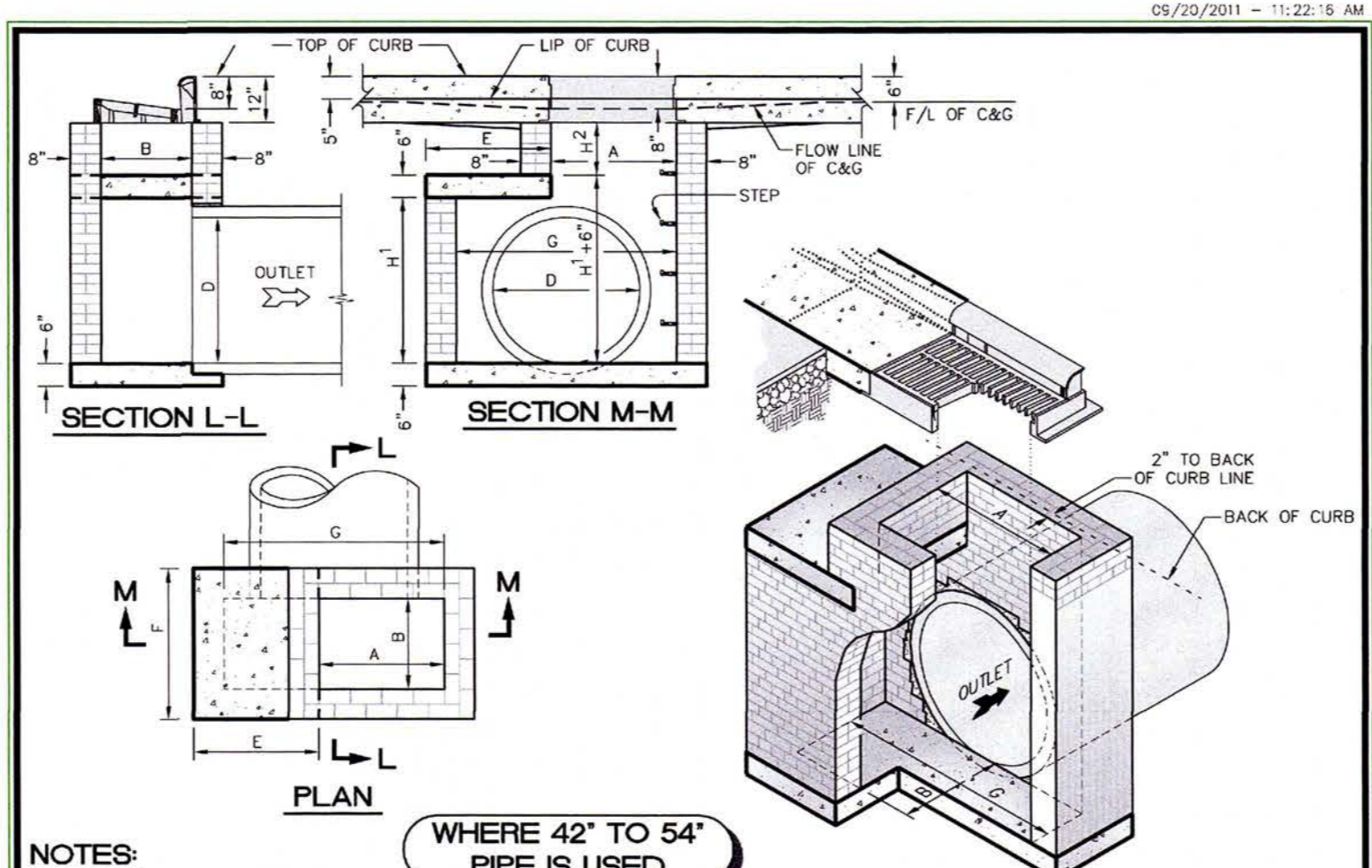
**NOTES:**

- See sheet 4 of 4 for dimensions.
- See Std. detail No. 610.01 for standard notes.

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**STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE)**

Scale: Not to scale. Sheet # 1 of 4. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].



**NOTES:**

- See sheet 4 of 4 for dimensions.
- See Std. detail No. 610.01 for standard notes.

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PUBLIC WORKS DEPARTMENT  
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Greenville, North Carolina 27634

**STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE)**

Scale: Not to scale. Sheet # 1 of 4. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].

DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN																					
DIMENSIONS OF BOX & PIPE						COVER DIMENSIONS				REINFORCEMENT			CUBIC YARDS OF CONCRETE IN BOX					BRICK MASONRY			
PIPE	SPAN	WIDTH	WIDTH	SPAN	HEIGHT	HEIGHT	MIN. W"	MIN. W"	E	F	QTY	QTY	QTY	TOTAL	TOP SLAB	FLOOR	TOTAL	CU YDS	PER FT. OF HEIGHT		
15"	3'-0"	2'-2"	-	-	2'-6"	-	-	-	-	-	-	-	-	-	-	-	-	0.281	0.281	0.602	0.321
18"	3'-0"	2'-2"	-	-	2'-10"	-	-	-	-	-	-	-	-	-	-	-	-	0.281	0.281	0.909	0.321
24"	3'-0"	2'-2"	-	-	3'-4"	-	-	-	-	-	-	-	-	-	-	-	-	0.281	0.281	1.070	0.321
30"	3'-0"	2'-2"	3'-4"	-	3'-2"	1'-10"	4'-4"	4'-1"	4'-1"	4'-1"	3	4'-1"	4'-1"	45	0.147	0.374	0.521	1.306	-	-	0.321
36"	3'-0"	2'-2"	3'-10"	-	3'-2"	2'-4"	4'-4"	4'-2"	4'-1"	3	4'-1"	4'-1"	4'-1"	49	0.187	0.415	0.602	1.586	-	-	0.321
42"	3'-0"	2'-2"	4'-5"	4'-4"	3'-2"	2'-1"	3'-6"	4'-1"	3'-3"	3	3'-3"	3'-3"	3'-3"	38	0.135	0.373	0.508	1.811	-	-	0.321
48"	3'-0"	2'-2"	5'-0"	4'-10"	3'-2"	2'-6"	3'-6"	4'-2"	4'-2"	4	3'-3"	3'-3"	3'-3"	40	0.173	0.410	0.583	2.148	-	-	0.321
54"	3'-0"	2'-2"	5'-7"	5'-4"	3'-2"	3'-3"	3'-6"	4'-0"	6	3'-3"	3'-3"	3'-3"	3'-3"	48	0.211	0.448	0.659	2.510	-	-	0.321

**PLAN OF TOP SLAB**

**ELEVATION**

**SECTION R-R**

**SECTION S-S**

**NOTES:**

- See sheet 4 of 4 for dimensions.
- See Std. detail No. 610.01 for standard notes.

**CITY OF GREENVILLE, N.C.**  
PUBLIC WORKS DEPARTMENT  
1500 Beatty Street  
Greenville, North Carolina 27634

**STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE)**

Scale: Not to scale. Sheet # 1 of 4. Date: 9/16/11. Description: APPROVAL. Drawn by: JTD. Check by: [blank].

PLANS PREPARED BY:  
**W.K. DICKSON**  
community infrastructure consultants  
720 Corporate Center Drive  
Raleigh, NC 27607  
(919) 782-0495  
(919) 782-9672  
www.wkdickson.com  
NC LICENSE NO. F-0374



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NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
**Greenville**  
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PROJECT:  
**PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA**

DATE:  
**3/8/2024**

TITLE:  
**COG DETAILS**

**100% PLANS**

**D2**





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NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
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PROJECT:  
**PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA**  
 TITLE:  
**COG DETAILS**

WKD PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

100% PLANS

D3

FINAL DESIGN - NOT FOR CONSTRUCTION

09/20/2011 - 11:26:37 AM

### DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES

PIPE D	DIMENSIONS OF BOX & PIPE			REINFORCEMENT BARS	COVER DIMENSIONS		CUBIC YARDS			DEDUCTIONS FOR ONE PIPE CU. YDS.	
	SPAN A	WIDTH B	HEIGHT H		E	F	BASE & COVER CU. YD.	MIN. WALL PER CU. YD.	FT. HT. CU. YD.	C.S.	R.C.
15"	2'-0"	2'-0"	2'-6"	12	3'-1"	3'-4"	0.412	0.857	0.263	0.031	0.047
18"	2'-4"	2'-4"	2'-6"	14	3'-5"	3'-8"	0.498	0.814	0.296	0.044	0.065
24"	3'-0"	3'-0"	3'-3"	16	4'-1"	4'-4"	0.695	1.176	0.362	0.078	0.133
30"	3'-4"	3'-4"	3'-6"	16	4'-5"	4'-8"	0.807	1.481	0.395	0.122	0.170
36"	4'-0"	4'-0"	4'-3"	20	5'-1"	5'-4"	1.033	1.959	0.461	0.176	0.238
42"	4'-8"	4'-8"	4'-9"	22	5'-9"	6'-0"	1.333	2.503	0.527	0.240	0.323
48"	5'-0"	5'-0"	5'-3"	24	6'-1"	6'-4"	1.486	2.940	0.560	0.313	0.422
54"	5'-6"	5'-6"	5'-9"	26	6'-7"	6'-10"	1.729	3.502	0.609	0.396	0.535
60"	6'-0"	6'-0"	6'-3"	28	7'-1"	7'-4"	1.992	4.118	0.658	0.459	0.660
66"	6'-6"	6'-6"	6'-9"	30	7'-7"	7'-10"	2.273	4.778	0.708	0.591	0.798

**NOTES:**  
 1. Use #5 bar dowels at 12" centers.  
 2. If reinforced concrete pipe is set in base slab of box, add to base as shown on std. detail 610.03.  
 3. Adjust the steel, concrete and brick masonry quantities to include the addition of the manhole (i.e. diagonal bars shortened around opening in top slab, additional variable height brick masonry, opening in top slab).  
 4. Maximum depth of this structure from top to bottom slab to top elevation is 12'-0".  
 5. See Std. detail No. 610.01 for standard notes.

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**CITY OF GREENVILLE, N.C.**  
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Scale: not to scale    Sheet # 2 of 2    Detail # 613.01

05/20/2011 - 11:26:23 AM

**15" TO 66" PIPE IS USED**

**NOTES:**  
 1. See sheet 2 of 2 for dimensions.

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05/20/2011 - 11:26:33 AM

**NOTES:**  
 1. See Std. detail No. 610.01 for standard notes.

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Scale: not to scale    Sheet # 1 of 1    Detail # 610.03

09/20/2011 - 11:24:58 AM

**NOTES:**  
 1. Steps differing in dimensions, configuration, or materials from those shown may also be used provided the contractor has furnished the City with details of the proposed steps and has received written approval from the city for the use of such steps.  
 2. All steps shall protrude from inside face of structural wall.

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**CITY OF GREENVILLE, N.C.**  
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Scale: not to scale    Sheet # 1 of 1    Detail # 615.01

05/20/2011 - 11:24:58 AM

**NOTES:**  
 1. Approximate weight 383 pounds.  
 2. All castings shall be made of clean even grain, tough gray cast iron. Casting shall be smooth, true to pattern and free from projections, sand holes, warp and other defects.  
 3. All castings shall be coated with coal tar pitch varnish while hot.  
 4. The iron used for these castings shall conform to the specifications of ASTM Designation A48 for Class 30 Gray Iron.  
 5. All castings used for storm drain structures shall have "STORM SEWER" cast on them.  
 6. All covers must be "MADE/MANUFACTURED IN USA" and indicated on cover.

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**CITY OF GREENVILLE, N.C.**  
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Scale: not to scale    Sheet # 1 of 1    Detail # 614.03

05/20/2011 - 11:26:58 AM

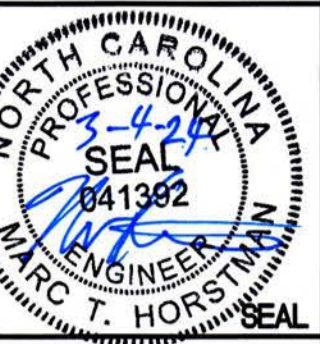
**NOTES:**  
 1. All hoods must be stamped "FLOWS TO RIVER"  
 2. All grates must be "MADE/MANUFACTURED IN USA" and indicated on grate.  
 3. All castings shall be coated with coal tar pitch varnish while hot.

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**CITY OF GREENVILLE, N.C.**  
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Scale: not to scale    Sheet # 1 of 1    Detail # 614.01





SIDE SYSTEM STRUCTURE TABLE				
STRUCTURE ID	GRATE / RIM	INV. IN	INV. OUT	STRUCTURE DIMENSIONS
DI213	54.73'	-	43.40' (18" SE)	DEPTH: 11.33' INNER STRUCTURE DIMENSIONS: 36 X 36 INCH RECTANGULAR STRUCTURE DETAIL: PROP. TRAFFIC BEARING DROP INLET PER NCDOT 840.35
JB214	56.18'	45.34' (54" NW)	41.72' (54" SE)	DEPTH: 14.46' INNER STRUCTURE DIMENSIONS: 66 X 66 INCH RECTANGULAR STRUCTURE DETAIL: PROP. JB W/ MH PER COG 613.01
CB215	52.00'	46.26' (24" E)	43.55' (24" NW)	DEPTH: 8.45' INNER STRUCTURE DIMENSIONS: 26 X 80 INCH RECTANGULAR STRUCTURE DETAIL: PROP. DOUBLE CB W/ CI PER COG 610.03
JB216	53.28'	TBD (24" S) (SEE NOTE 1)	46.43' (24" W)	DEPTH: 6.85' INNER STRUCTURE DIMENSIONS: 36 X 36 INCH RECTANGULAR STRUCTURE DETAIL: PROP. JB W/ MH PER COG 613.01
CB217	52.93'	45.65' (24" SW)	43.65' (24" SE)	DEPTH: 9.28' INNER STRUCTURE DIMENSIONS: 26 X 36 INCH RECTANGULAR STRUCTURE DETAIL: PROP. CB W/ CI PER COG 610.02

CHIMNEY STRUCTURE TABLE				
STRUCTURE ID	GRATE / RIM	-	TOP OF RCBC	STRUCTURE DIMENSIONS
DI110	53.25'	-	47.76'	DEPTH: 5.49' INNER STRUCTURE DIMENSIONS: 36 X 36 INCH RECTANGULAR STRUCTURE DETAIL: PROP. TRAFFIC BEARING DROP INLET PER NCDOT 840.35
DI111	54.50'	-	48.09'	DEPTH: 6.41' INNER STRUCTURE DIMENSIONS: 36 X 36 INCH RECTANGULAR STRUCTURE DETAIL: PROP. TRAFFIC BEARING DROP INLET PER NCDOT 840.35
DI112	55.00'	-	48.71'	DEPTH: 6.29' INNER STRUCTURE DIMENSIONS: 36 X 36 INCH RECTANGULAR STRUCTURE DETAIL: PROP. TRAFFIC BEARING DROP INLET PER NCDOT 840.35
CB113	52.00'	(SEE NOTE 2)	50.67'	DEPTH: 1.33' INNER STRUCTURE DIMENSIONS: 26 X 36 INCH RECTANGULAR RISER INCIDENTAL TO CUSTOM HEADWALL STRUCTURE. DETAIL: PROP. STD CATCH BASIN ASSEMBLY FRAME, HOOD & GRATE PER COG 614.01
MH114	52.67'	(SEE NOTE 2)	50.67'	DEPTH: 2.00' INNER STRUCTURE DIMENSIONS: 24 INCH DIAMETER RISER INCIDENTAL TO CUSTOM HEADWALL STRUCTURE DETAIL: PROP. STD MANHOLE FRAME & COVER PER COG 614.03

**NOTES:**

- CONTRACTOR SHALL VERIFY PIPE SIZE AND INVERTS PRIOR TO SHOP DRAWING SUBMITTAL.
- STRUCTURE IS INCIDENTAL TO THE DESIGN AND INSTALLATION OF THE CUSTOM DROP HEADWALL STRUCTURE. MASONRY RISERS SHALL BE PROVIDED TO OBTAIN REQUIRED GRATE / RIM ELEVATIONS. (REFER TO DETAIL SHEET S2)

NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
  
**Greenville**  
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PROJECT:  
 PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA

TITLE:  
 STORM STRUCTURES TABLE

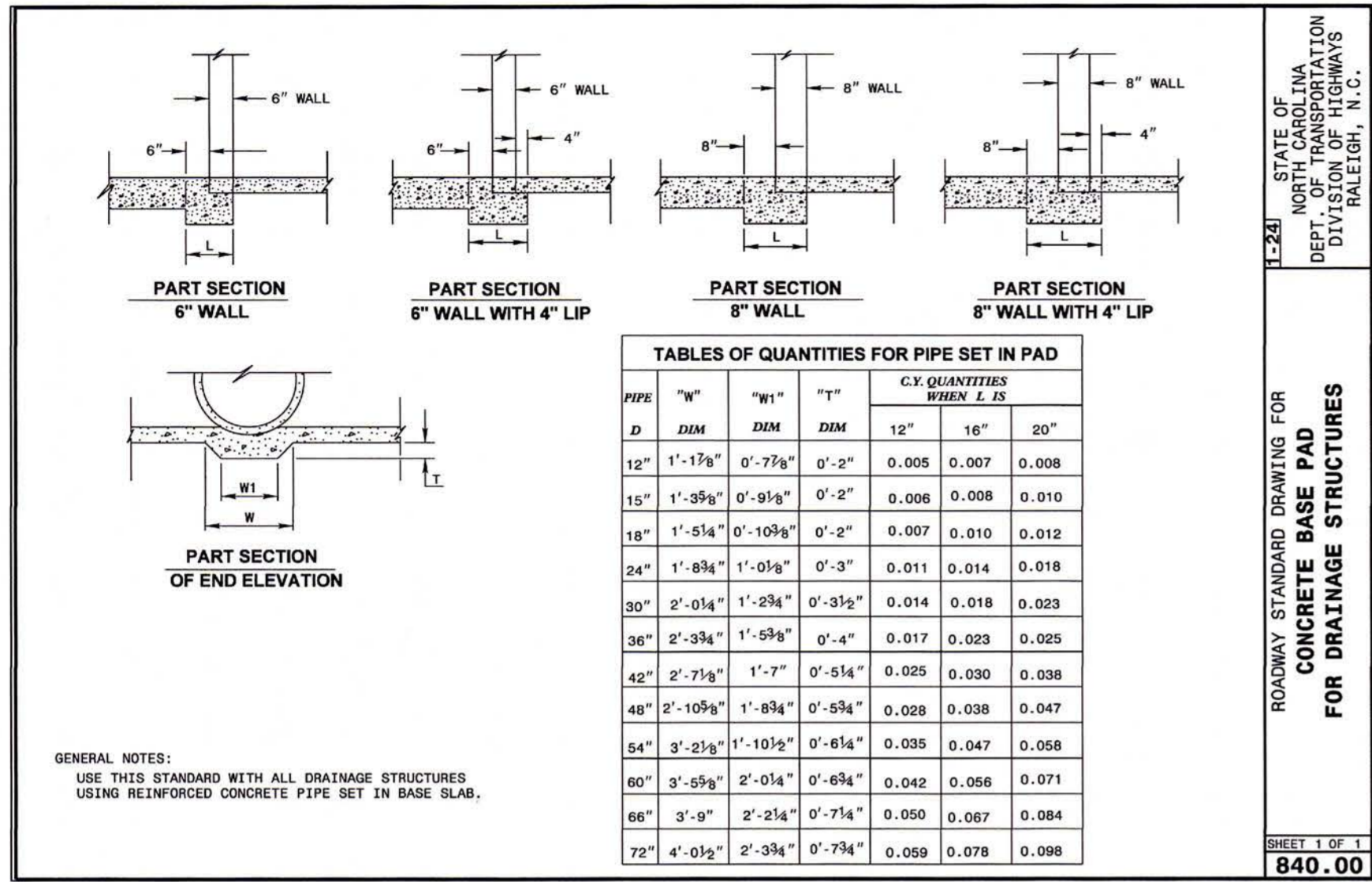
WKD PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

100% PLANS

**D4**

FINAL DESIGN - NOT FOR CONSTRUCTION





**TABLES OF QUANTITIES FOR PIPE SET IN PAD**

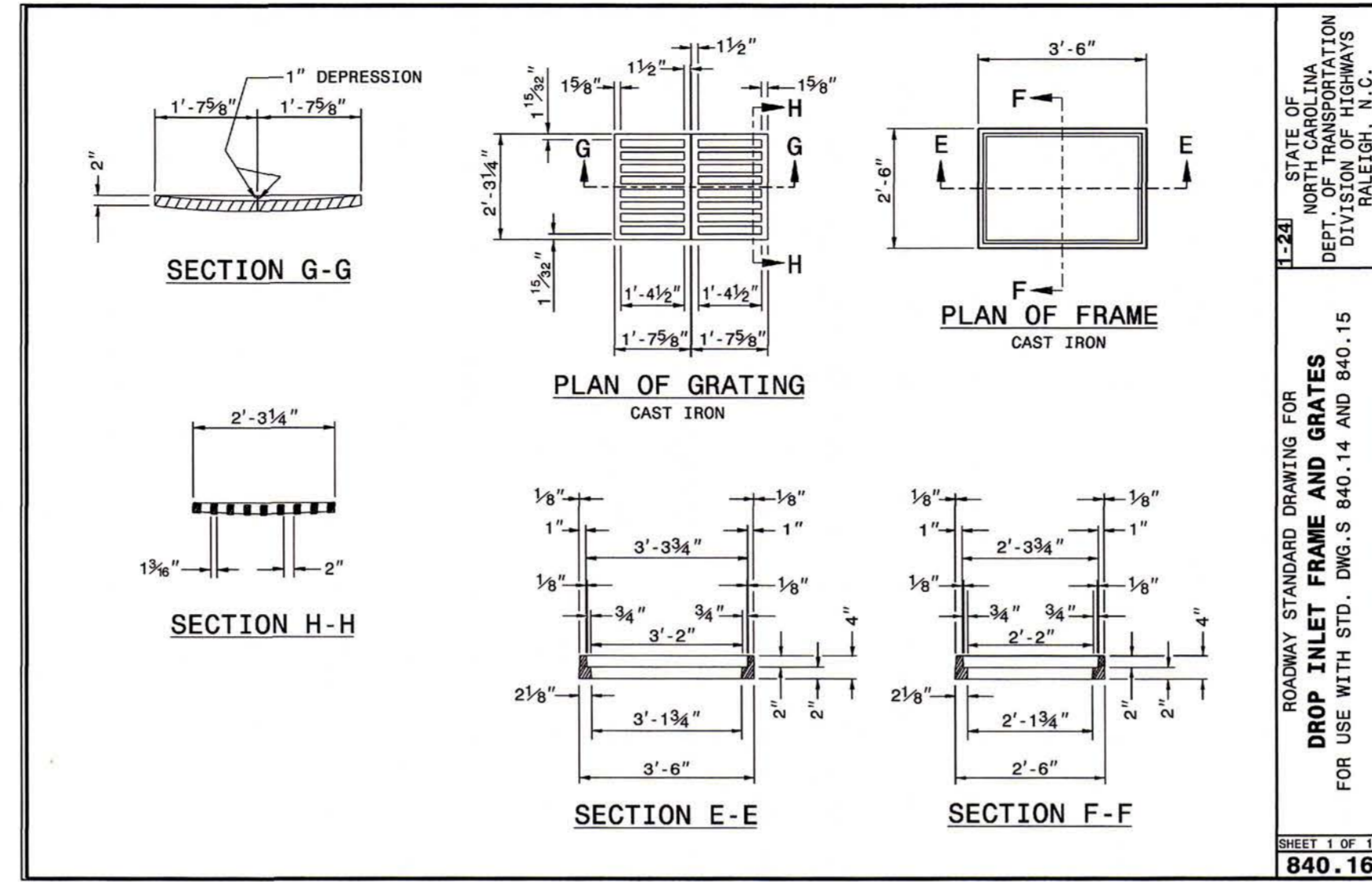
PIPE	"W"	"W1"	"T"	C.Y. QUANTITIES WHEN L IS		
D	DIM	DIM	DIM	12"	18"	20"
12"	1'-1 1/8"	0'-7 3/8"	0'-2"	0.005	0.007	0.008
15"	1'-3 5/8"	0'-9 1/8"	0'-2"	0.006	0.008	0.010
18"	1'-5 1/4"	0'-10 3/4"	0'-2"	0.007	0.010	0.012
24"	1'-8 3/4"	1'-0 1/8"	0'-3"	0.011	0.014	0.018
30"	2'-0 1/4"	1'-2 3/4"	0'-3 1/2"	0.014	0.018	0.023
36"	2'-3 3/4"	1'-5 3/4"	0'-4"	0.017	0.023	0.025
42"	2'-7 1/8"	1'-7"	0'-5 1/4"	0.025	0.030	0.038
48"	2'-10 5/8"	1'-8 3/4"	0'-5 3/4"	0.028	0.038	0.047
54"	3'-2 1/8"	1'-10 1/2"	0'-6 1/4"	0.035	0.047	0.058
60"	3'-5 5/8"	2'-0 1/4"	0'-6 3/4"	0.042	0.058	0.071
66"	3'-9"	2'-2 1/4"	0'-7 1/4"	0.050	0.067	0.084
72"	4'-0 1/2"	2'-3 3/4"	0'-7 3/4"	0.059	0.078	0.098

GENERAL NOTES:  
USE THIS STANDARD WITH ALL DRAINAGE STRUCTURES  
USING REINFORCED CONCRETE PIPE SET IN BASE SLAB.

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ROADWAY STANDARD DRAWING FOR  
**CONCRETE BASE PAD  
FOR DRAINAGE STRUCTURES**

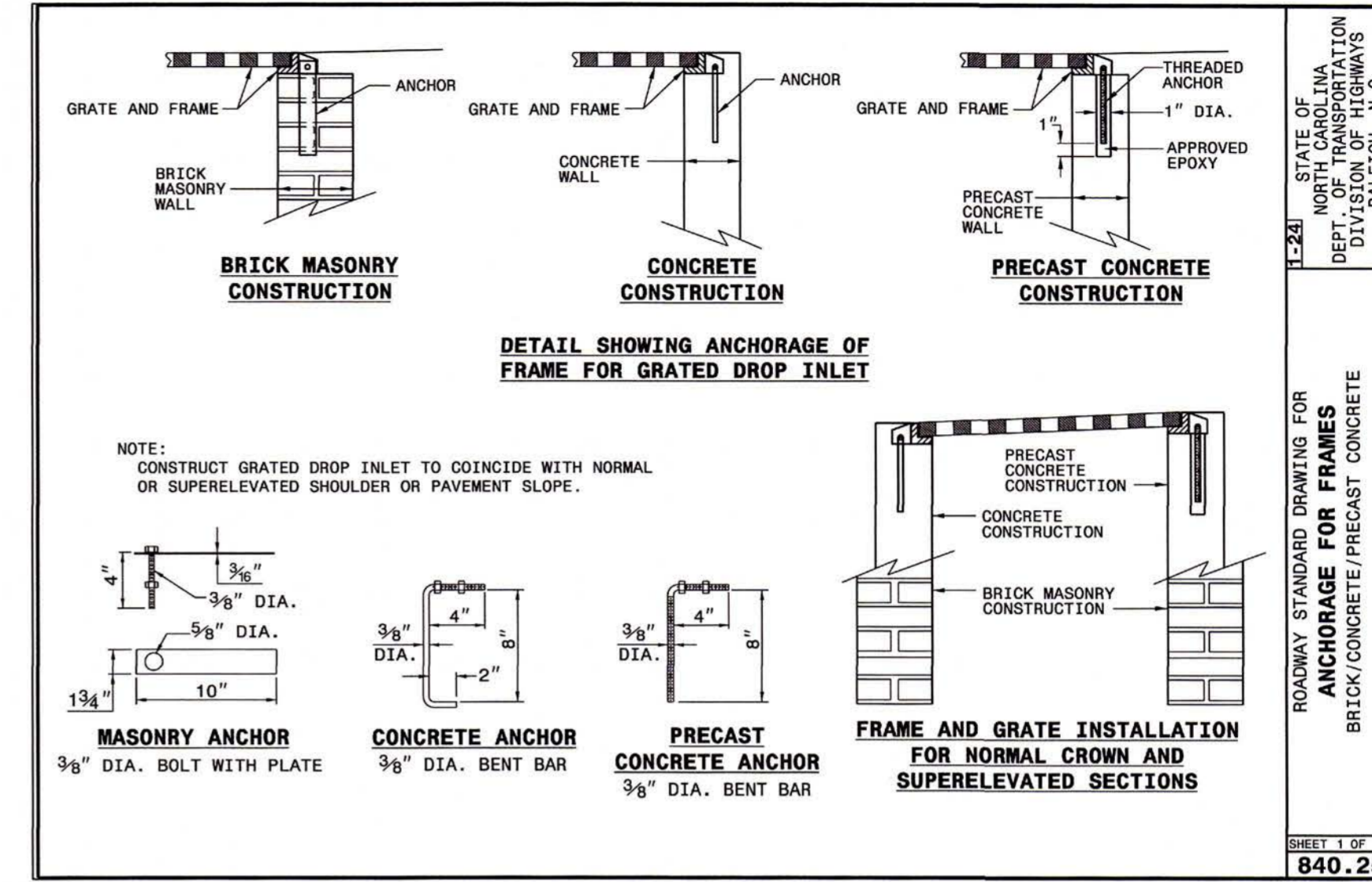
SHEET 1 OF 1  
**840.00**



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ROADWAY STANDARD DRAWING FOR  
**DROP INLET FRAME AND GRATES**  
FOR USE WITH STD. DWG. S 840.14 AND 840.15

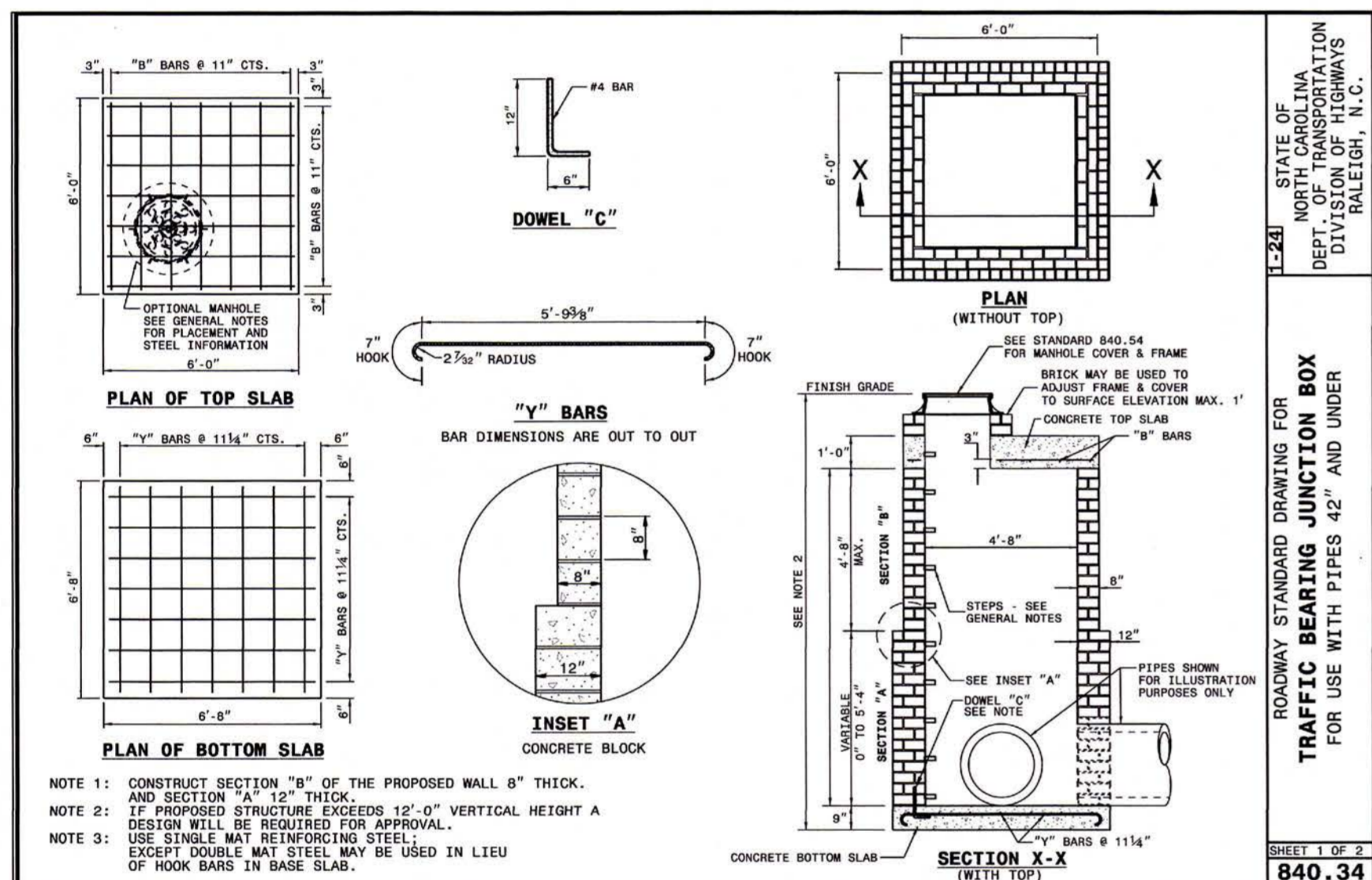
SHEET 1 OF 1  
**840.16**



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ROADWAY STANDARD DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840.25**

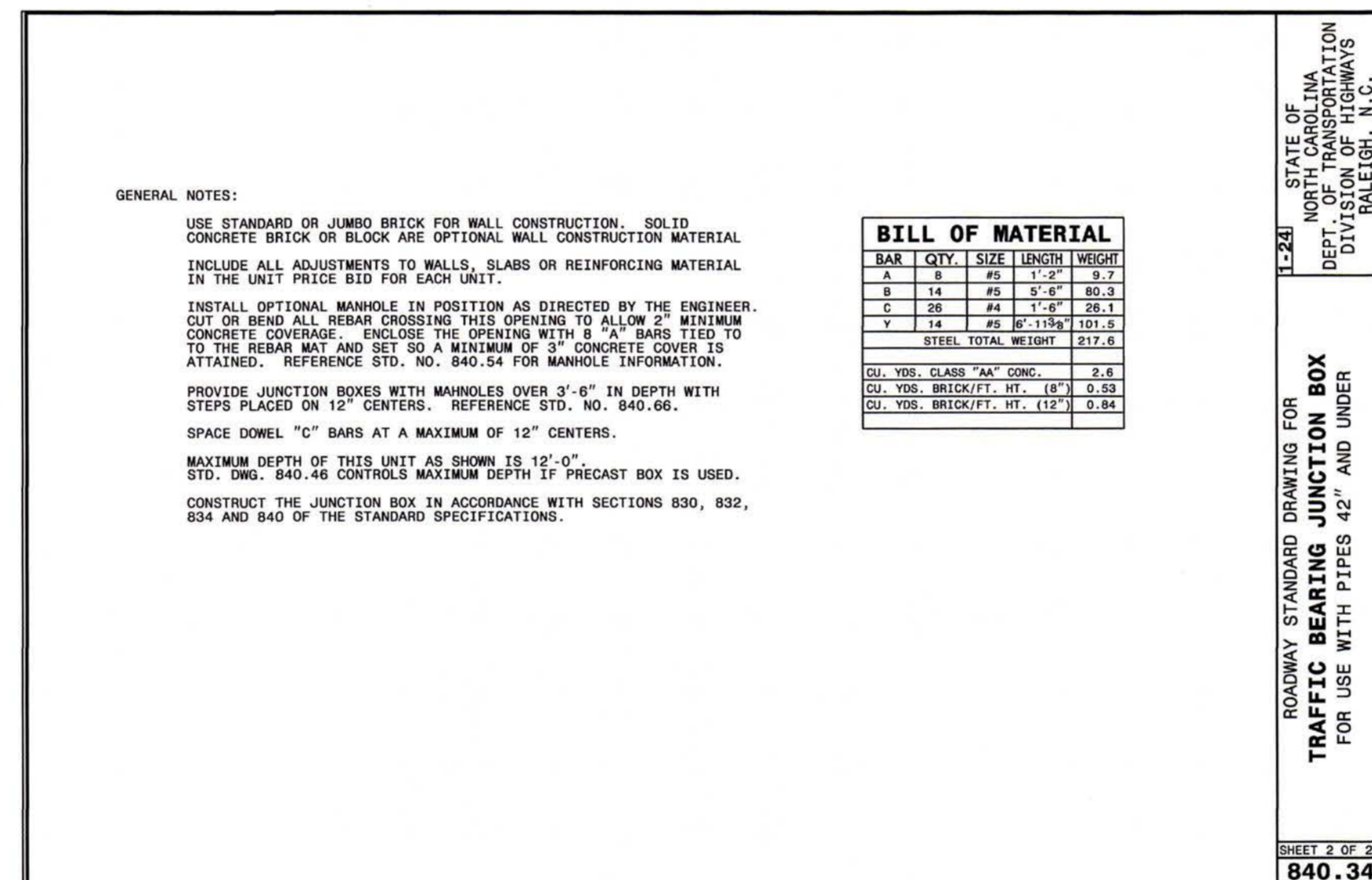


NOTE 1: CONSTRUCT SECTION "B" OF THE PROPOSED WALL 8" THICK, AND SECTION "A" 12" THICK.  
NOTE 2: IF PROPOSED STRUCTURE EXCEEDS 12'-0" VERTICAL HEIGHT A DESIGN WILL BE REQUIRED FOR APPROVAL.  
NOTE 3: USE SINGLE MAT REINFORCING STEEL EXCEPT DOUBLE MAT STEEL MAY BE USED IN LIEU OF HOOK BARS IN BASE SLAB.

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ROADWAY STANDARD DRAWING FOR  
**TRAFFIC BEARING JUNCTION BOX**  
FOR USE WITH PIPES 42" AND UNDER

SHEET 1 OF 2  
**840.34**



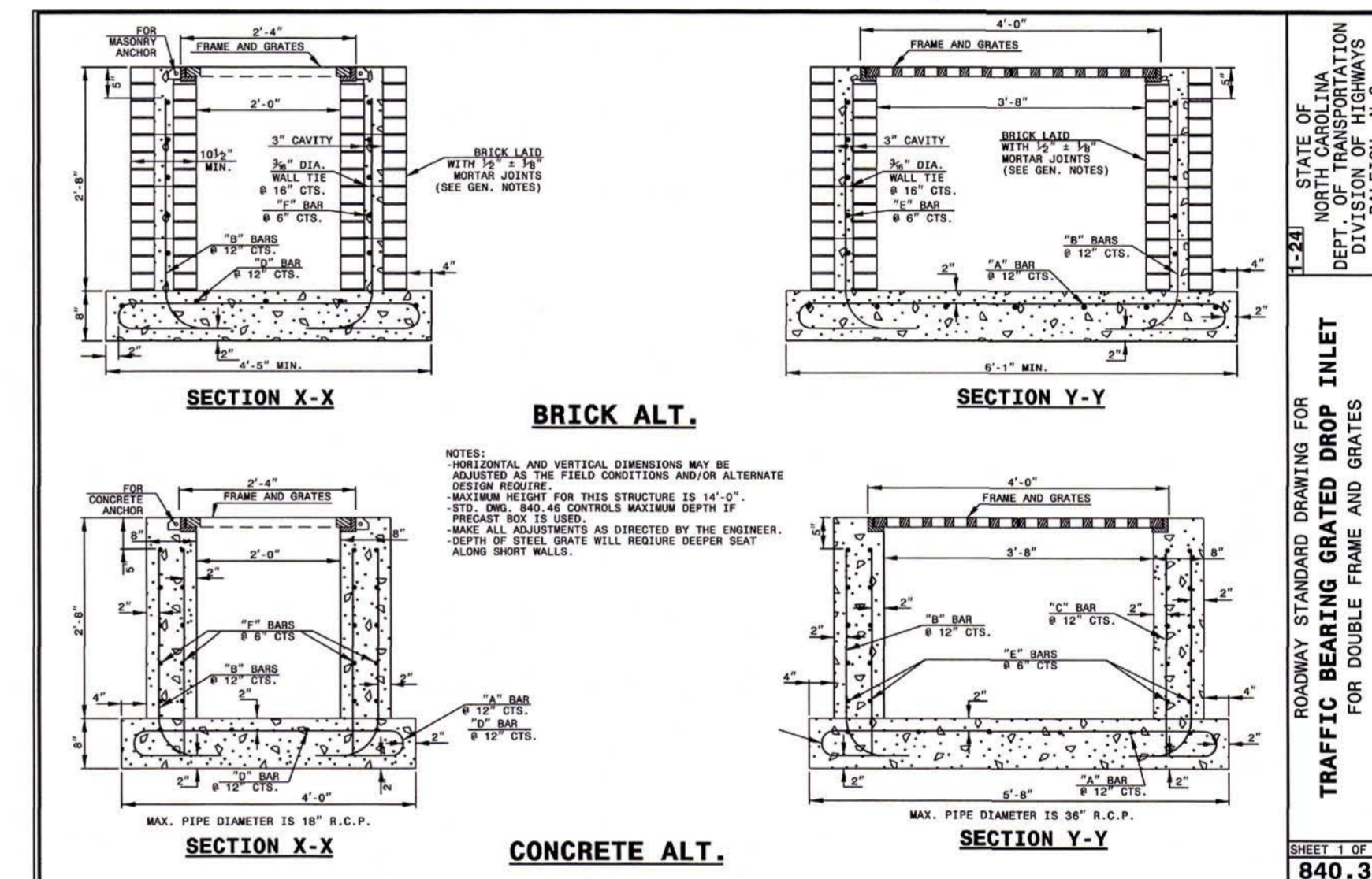
**BILL OF MATERIAL**

BAR	QTY	SIZE	LENGTH	WEIGHT
A	8	#5	1'-2"	9.7
B	16	#5	3'-6"	80.3
C	50	#4	1'-0"	25.1
Y	14	#5	2'-13 1/2"	101.5
STEEL TOTAL WEIGHT				217.6
CONC. CLASS "A" CONC.				2.6
CUL. VOS. BRICK/FT. HT. (12")				0.53
CUL. VOS. BRICK/FT. HT. (12")				0.84

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ROADWAY STANDARD DRAWING FOR  
**TRAFFIC BEARING JUNCTION BOX**  
FOR USE WITH PIPES 42" AND UNDER

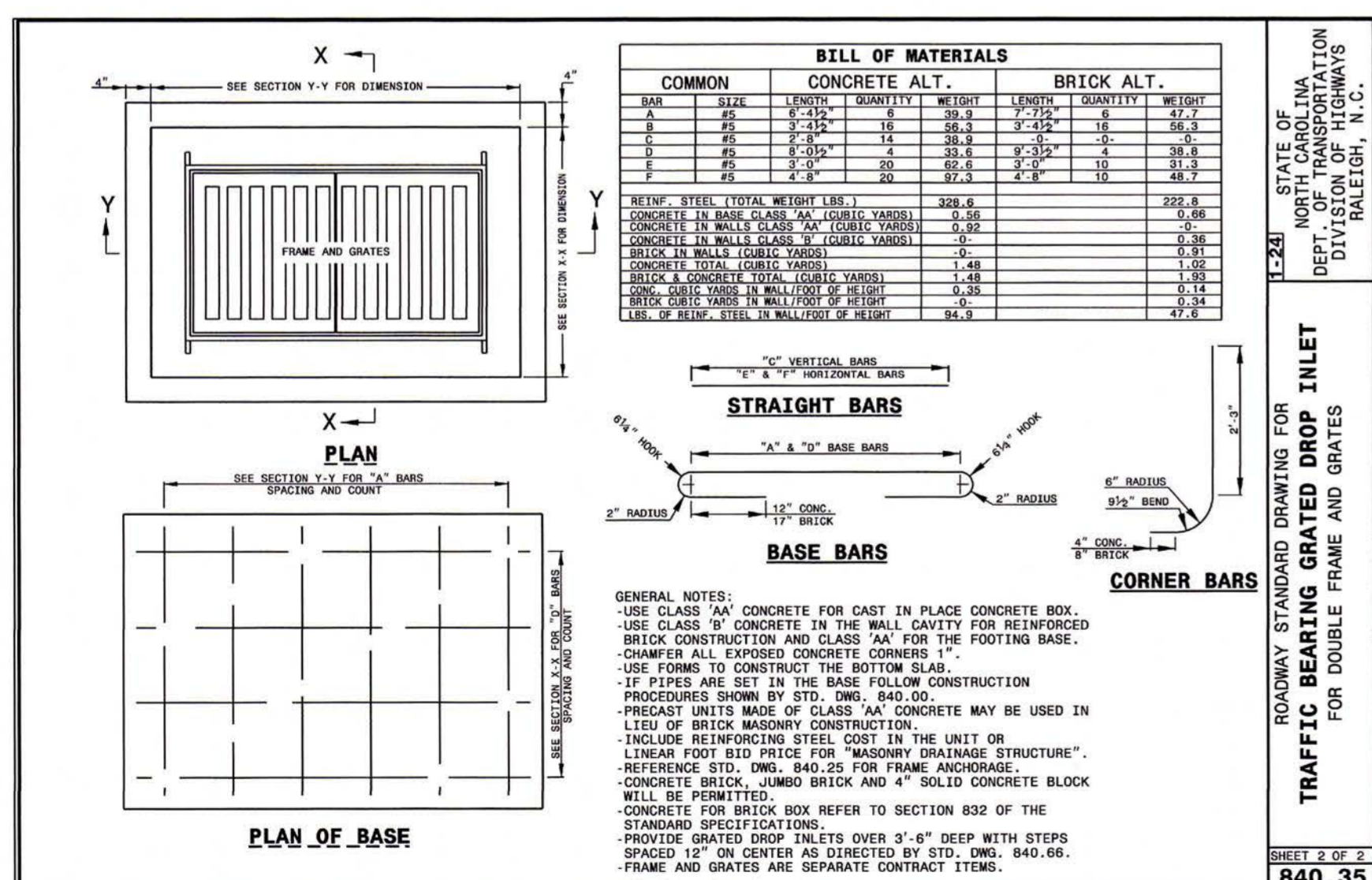
SHEET 2 OF 2  
**840.34**



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ROADWAY STANDARD DRAWING FOR  
**TRAFFIC BEARING GRATED DROP INLET**  
FOR DOUBLE FRAME AND GRATES

SHEET 1 OF 2  
**840.35**



**BILL OF MATERIALS**

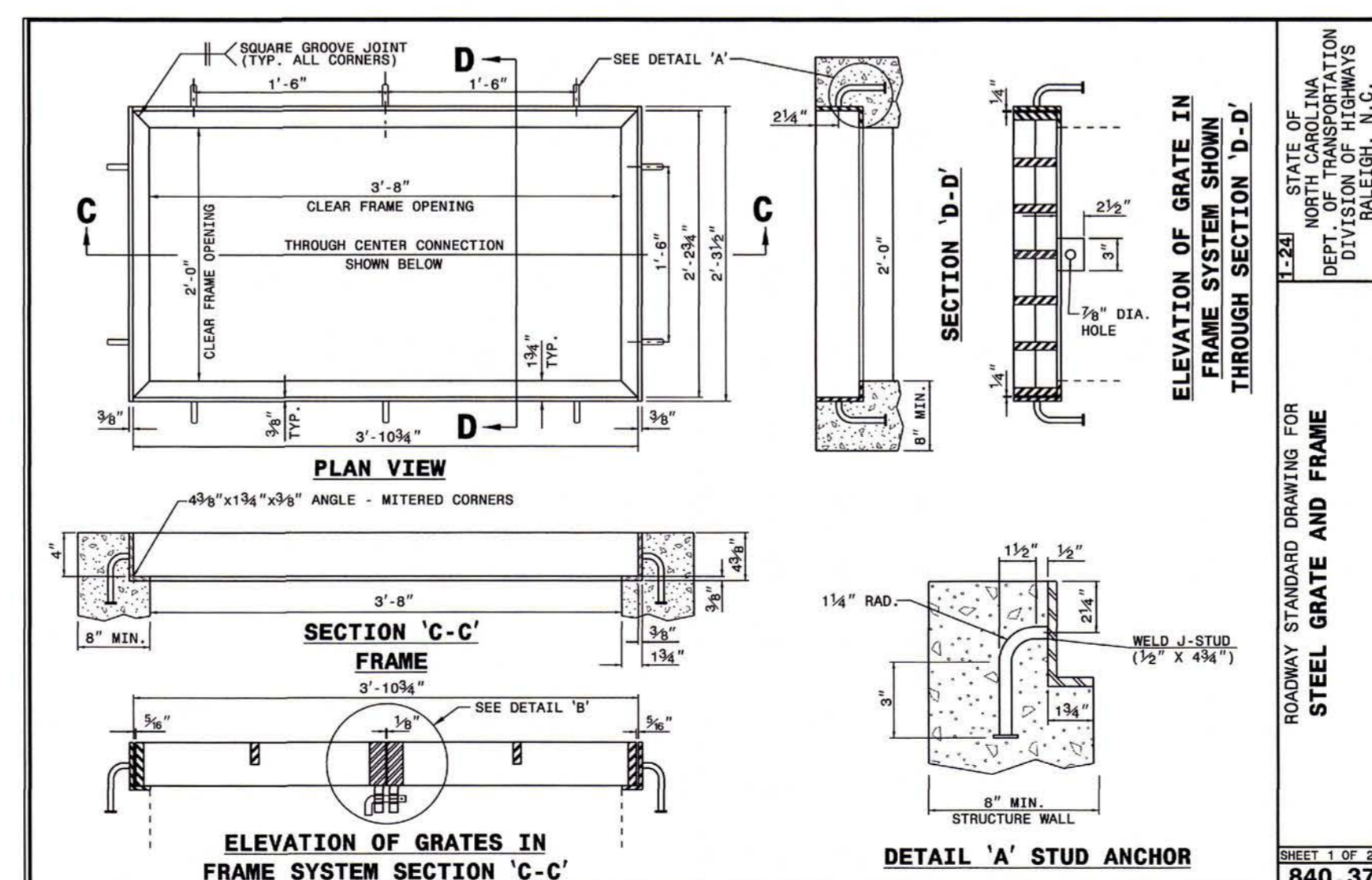
BAR	SIZE	LENGTH	QUANTITY	WEIGHT	LENGTH	QUANTITY	WEIGHT	
A	#5	3'-3 1/2"	8	39.9	3'-4 1/2"	16	51.2	
B	#5	3'-3 1/2"	16	59.8	3'-4 1/2"	16	59.8	
C	#5	3'-3 1/2"	4	19.9	3'-4 1/2"	4	19.9	
D	#5	3'-3 1/2"	4	19.9	3'-4 1/2"	4	19.9	
E	#5	3'-3 1/2"	4	19.9	3'-4 1/2"	4	19.9	
F	#5	3'-3 1/2"	4	19.9	3'-4 1/2"	4	19.9	
REIN. STEEL TOTAL WEIGHT (LBS.)				208.6	220.6			
CONCRETE IN BASE SLAB (CUBIC YARDS)				0.59	0.59			
CONCRETE IN WALLS CLASS "A" (CUBIC YARDS)				0.62	0.36			
CONCRETE IN WALLS CLASS "A" (CUBIC YARDS)				0.62	0.36			
CONCRETE TOTAL (CUBIC YARDS)				1.48	1.31			
CUL. VOS. BRICK/FT. HT. (12")				1.48	1.31			
CUL. VOS. BRICK/FT. HT. (12")				1.48	1.31			
LBS. OF REIN. STEEL IN WALL FOOT OF HEIGHT				84.9	47.6			

GENERAL NOTES:  
-USE CLASS "A" CONCRETE FOR CAST IN PLACE CONCRETE BOX.  
-USE CLASS "B" CONCRETE IN THE WALL CAVITY FOR REINFORCED BRICK CONSTRUCTION AND CLASS "A" FOR THE FOOTING BASE.  
-CHAMFER ALL EXPOSED CONCRETE CORNERS 1".  
-USE FORMS TO CONSTRUCT THE BOTTOM SLAB.  
-IF PIPES ARE SET IN THE BASE FOLLOW CONSTRUCTION PROCEDURES SHOWN BY STD. DWG. 840.00.  
-PRECAST UNITS MADE OF CLASS "A" CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONSTRUCTION.  
-INCLUDE REINFORCING STEEL COST IN THE UNIT OR LINEAR FOOT BID PRICE FOR "MASONRY DRAINAGE STRUCTURE".  
-REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE.  
-CONCRETE BRICK, JUMBO BRICK AND 4" SOLID CONCRETE BLOCK WILL BE PERMITTED.  
-CONCRETE FOR BRICK BOX REFER TO SECTION 832 OF THE STANDARD SPECIFICATIONS.  
-PROVIDE GRATED DROP INLETS OVER 3'-6" DEEP WITH STEPS SPACED 12" ON CENTER AS DIRECTED BY STD. DWG. 840.66.  
-FRAME AND GRATES ARE SEPARATE CONTRACT ITEMS.

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ROADWAY STANDARD DRAWING FOR  
**TRAFFIC BEARING GRATED DROP INLET**  
FOR DOUBLE FRAME AND GRATES

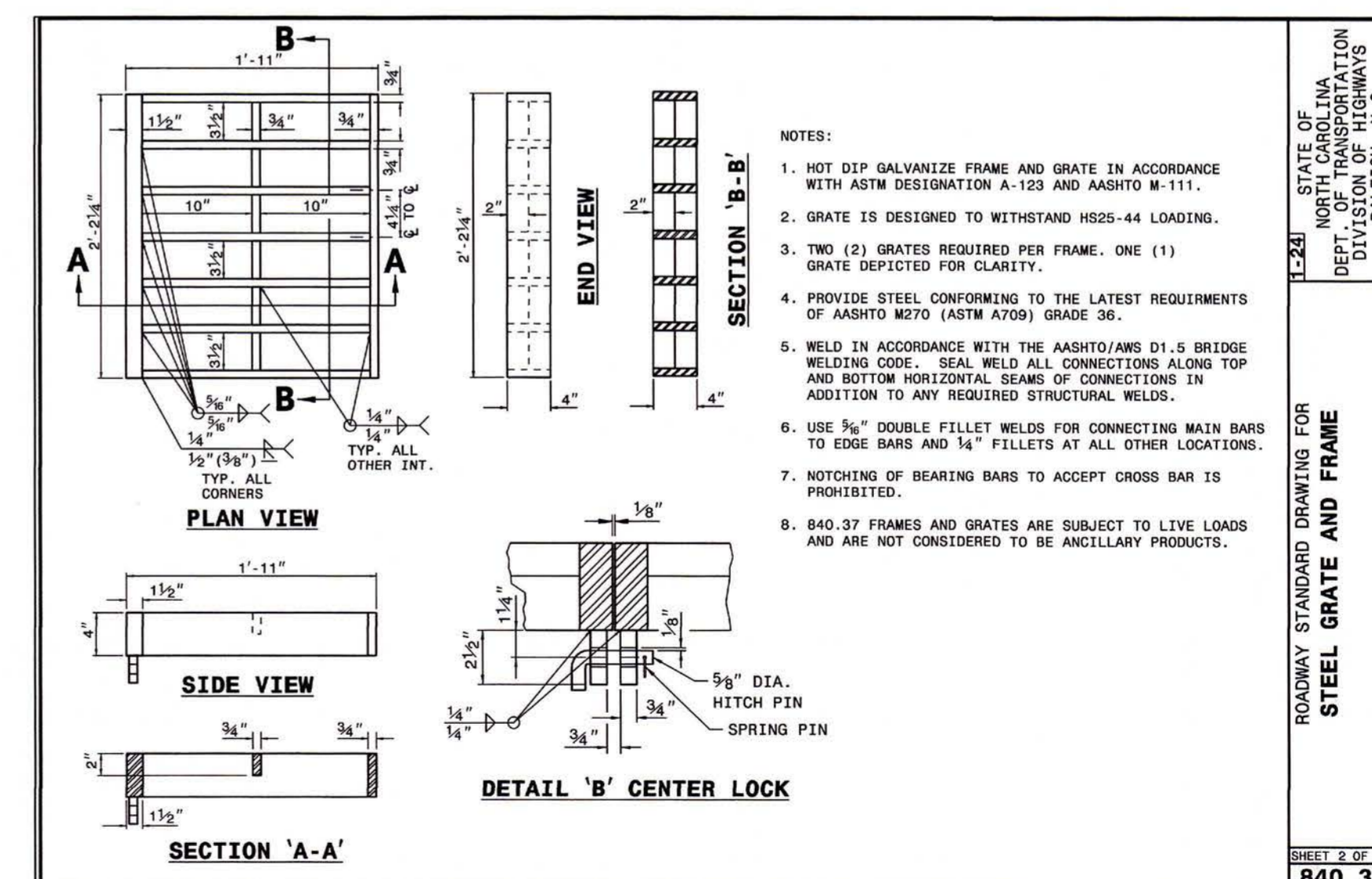
SHEET 2 OF 3  
**840.35**



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ROADWAY STANDARD DRAWING FOR  
**STEEL GRATE AND FRAME**

SHEET 1 OF 2  
**840.37**



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ROADWAY STANDARD DRAWING FOR  
**STEEL GRATE AND FRAME**

SHEET 2 OF 3  
**840.37**

PLANS PREPARED BY:  
**W.K. DICKSON**  
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STATE OF NORTH CAROLINA  
PROFESSIONAL SEAL  
941392  
ENGINEER  
MARC T. HORSTMANN

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NORTH CAROLINA  
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PROJECT:  
**PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA**

WPKD PROJECT:  
**20220983.00.RA**  
DATE:  
**3/8/2024**

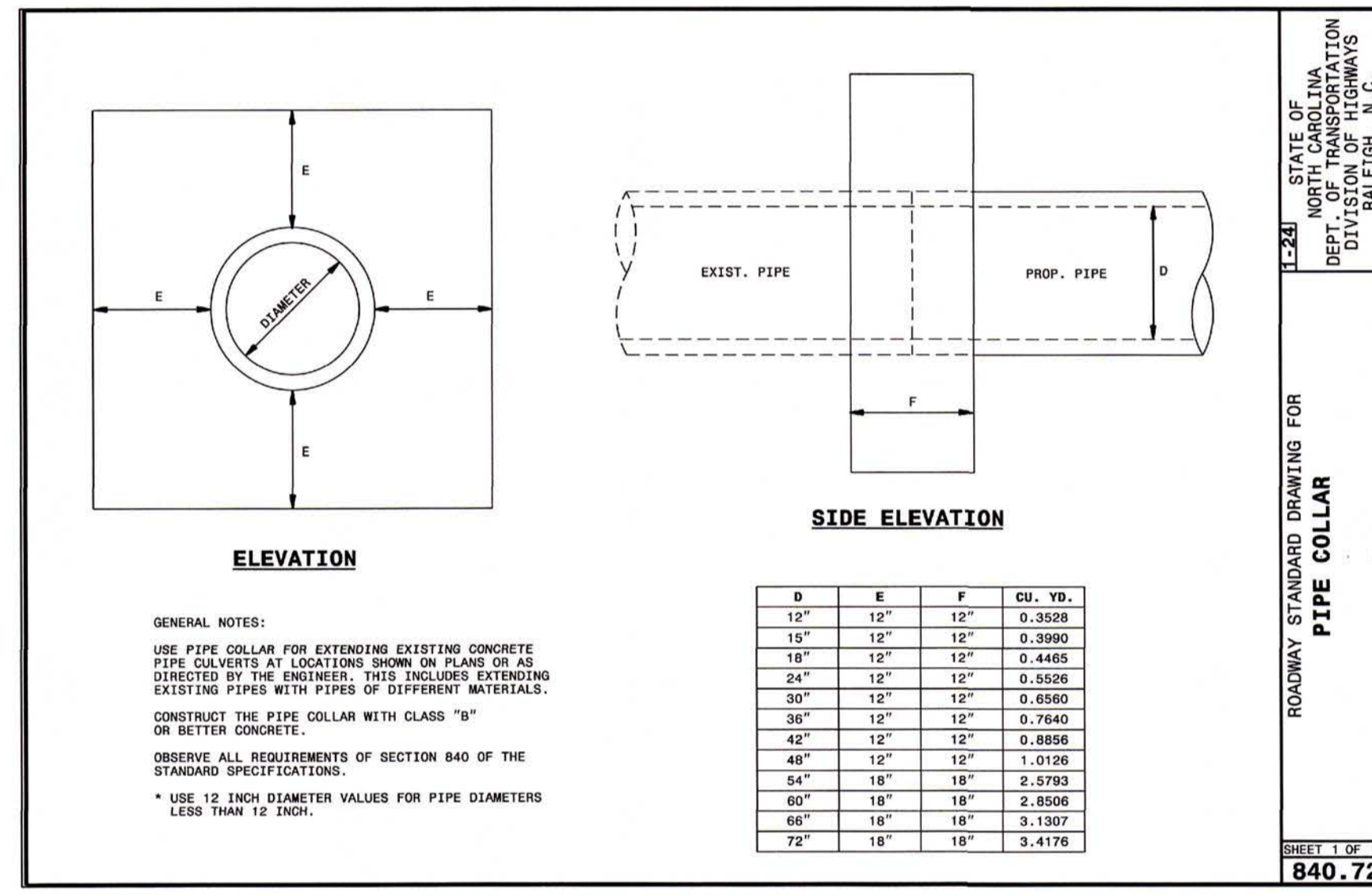
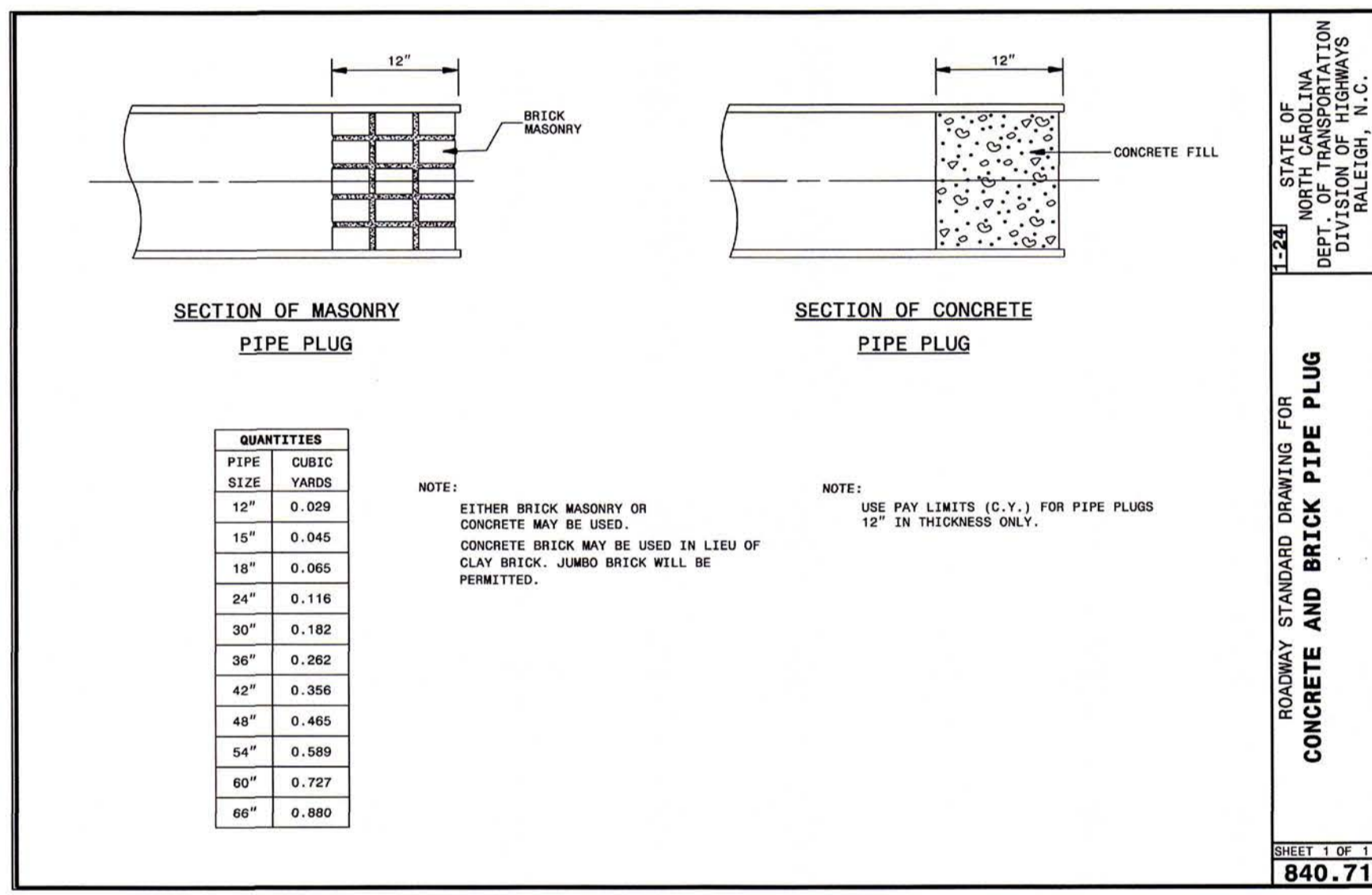
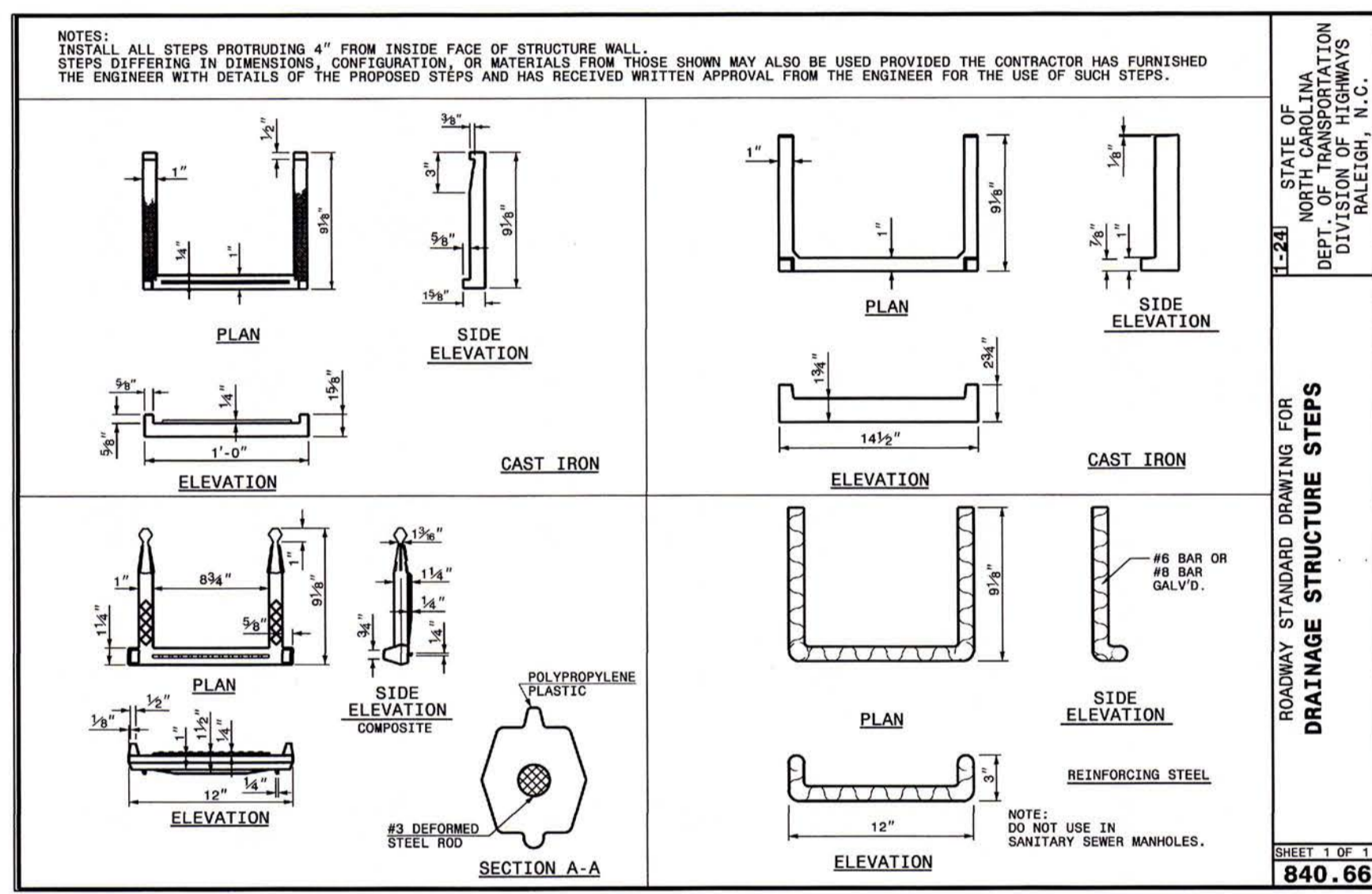
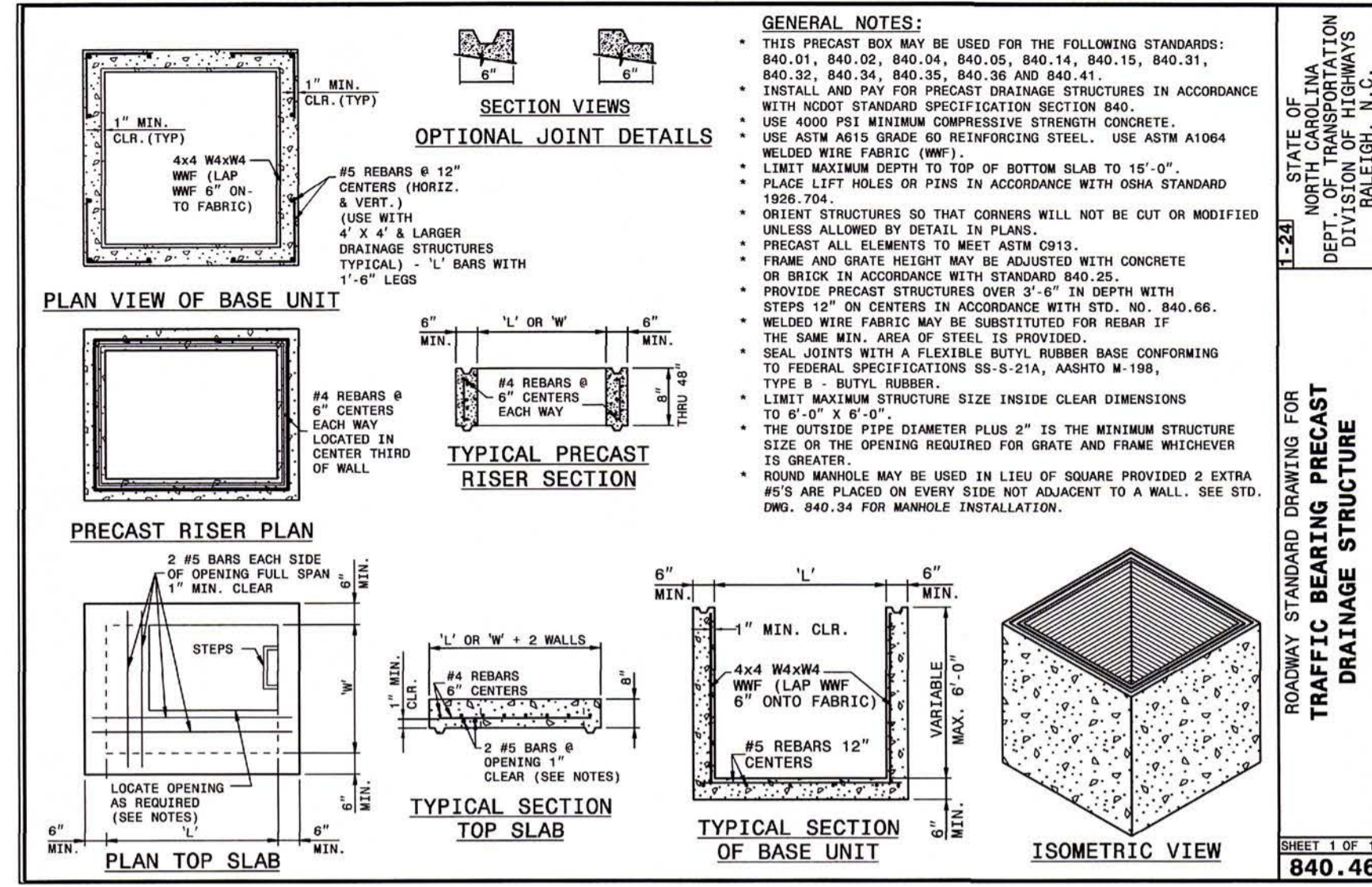
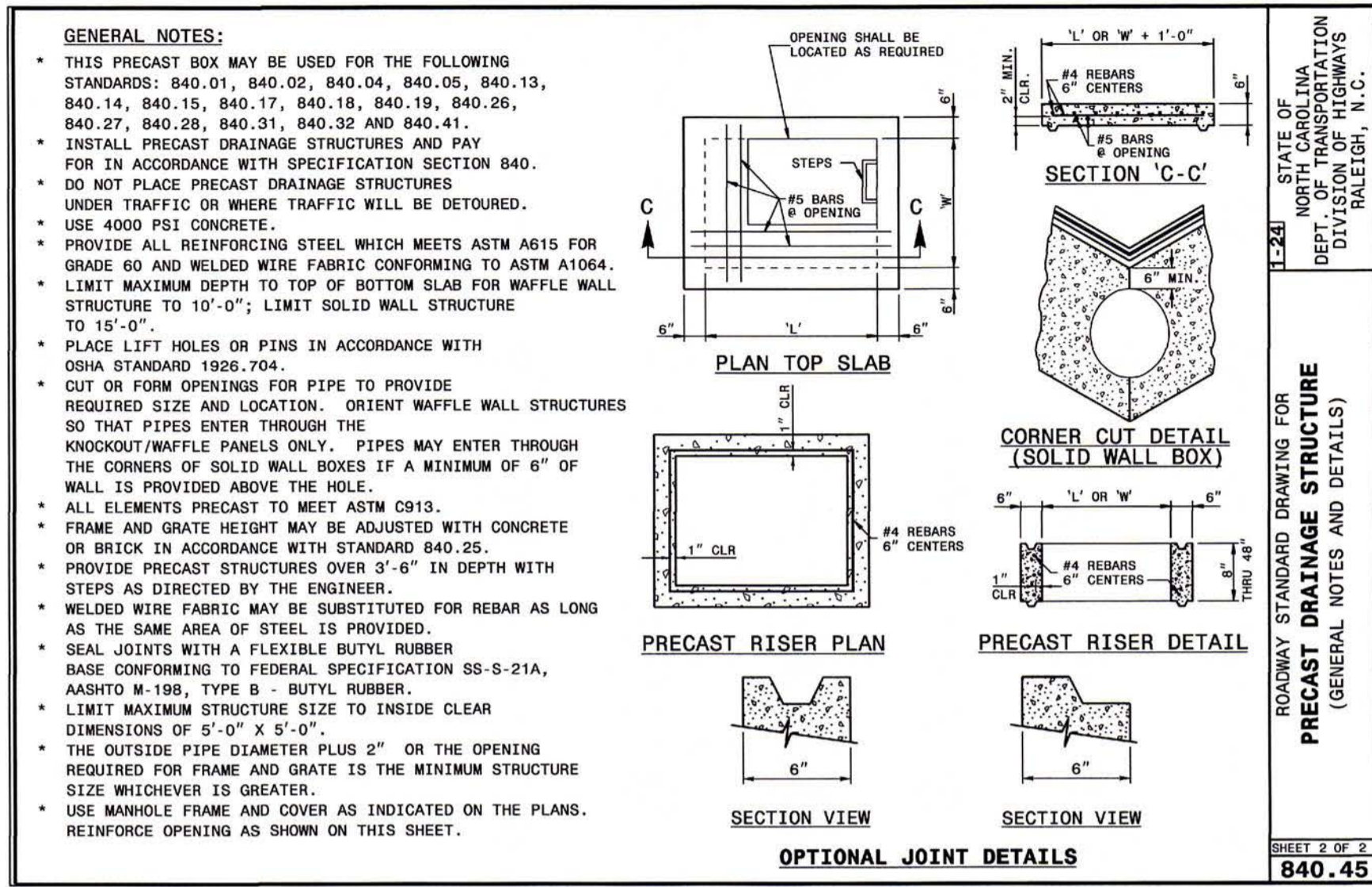
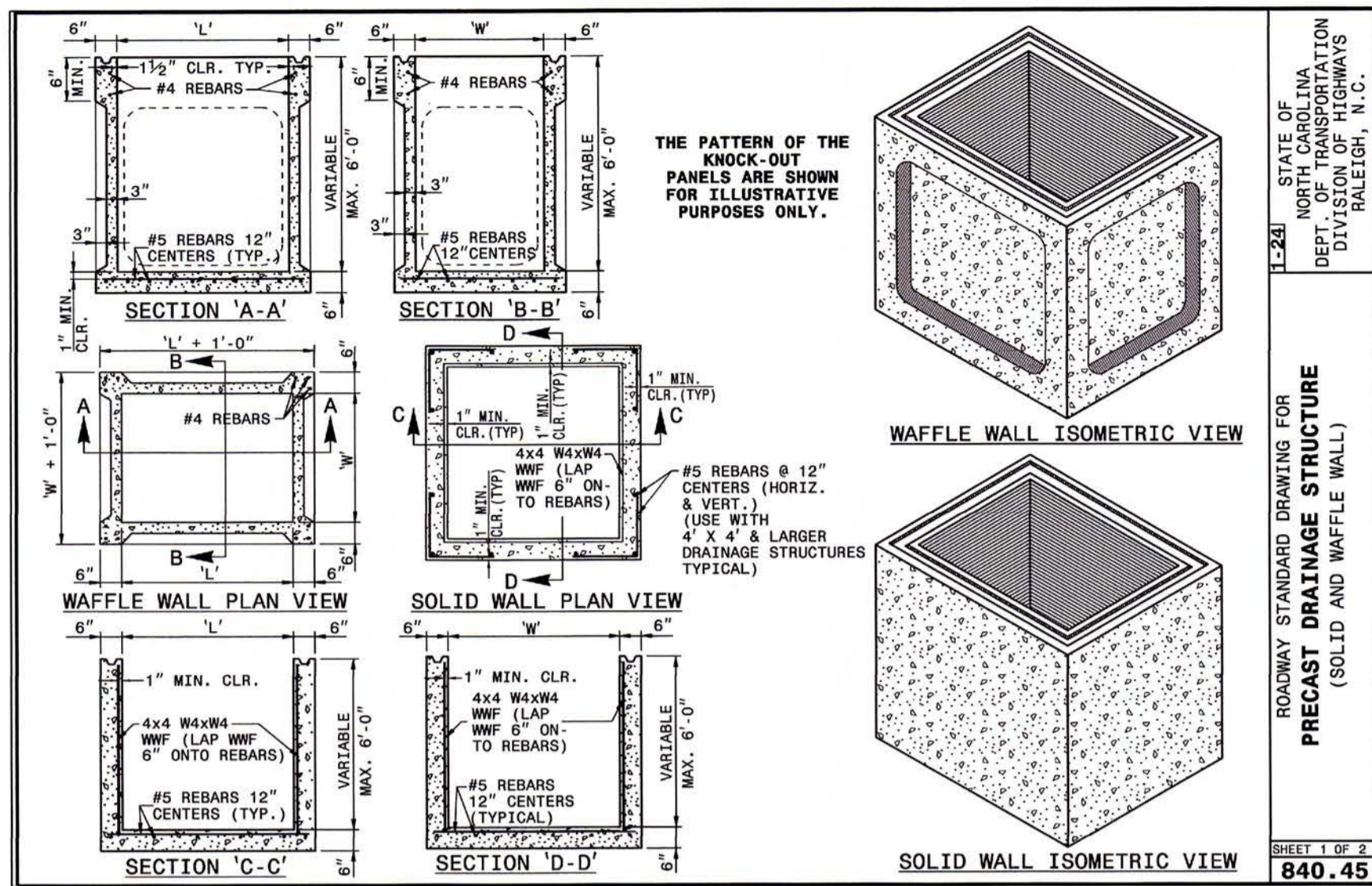
100% PLANS

FINAL DESIGN - NOT FOR CONSTRUCTION

NO. DATE REVISIONS

TITLE  
**NCDOT DETAILS**





PLANS PREPARED BY:  
**W.K. DICKSON**  
COMMUNITY INFRASTRUCTURE CONSULTANTS  
720 Corporate Center Drive  
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NO. DATE REVISIONS

PLANS PREPARED FOR:  
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PROJECT:  
PUBLIC WORKS STORMWATER  
PIPE IMPROVEMENTS PHASE 2  
GREENVILLE, NORTH CAROLINA

TITLE:  
NC DOT DETAILS

W.K.D. PROJECT:  
20220983.00.RA  
DATE:  
3/8/2024

100% PLANS

D6

FINAL DESIGN - NOT FOR CONSTRUCTION





SEAL

NO.	DATE	REVISIONS

PROJECT:  
**PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA**

TITLE:  
**NCDDOT DETAILS**

WKD PROJECT:  
**20220983.00.RA**  
 DATE:  
**3/8/2024**

100% PLANS

D7

FINAL DESIGN - NOT FOR CONSTRUCTION

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ROADWAY STANDARD DRAWING FOR  
**EXPANSION JOINT LAYOUT**  
 FOR RIGID DOWELED PAVEMENT AT BRIDGES

SHEET 1 OF 1  
**700.02**

**SECTION THRU JOINT LAYOUT**

**EXPANSION JOINT DETAIL**

GENERAL NOTES:  
 -USE AN APPROVED TYPE OF DOWEL ASSEMBLY IN ALL TRANSVERSE EXPANSION JOINTS.  
 -DURING PLACEMENT OF THE CONCRETE AND DESIGNED TO PERMIT UNRESTRICTED MOVEMENT OF THE PAVEMENT SLAB. SEE STANDARD 700.03 FOR DOWEL ASSEMBLY.  
 -EXTEND EXPANSION JOINT ADJACENT TO THE APPROACH SLAB ACROSS THE ENTIRE PAVEMENT WIDTH INCLUDING THE PAVED SHOULDERS.  
 -SEE STD. DWG. 700.01 FOR TOLERANCE AND BAR SIZE.

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ROADWAY STANDARD DRAWING FOR  
**CONCRETE PAVEMENT JOINTS**  
 CONSTRUCTION AND CONTRACTION JOINTS

SHEET 2 OF 2  
**700.01**

**LONGITUDINAL CONSTRUCTION JOINT**

**LONGITUDINAL JOINT**

**EMERGENCY TRANSVERSE CONSTRUCTION JOINT**

GENERAL NOTES:  
 -CONSTRUCT TRANSVERSE CONSTRUCTION JOINTS AT THE END OF EACH DAY'S OPERATION (PLANNED JOINT) OR WHEN THE PLACING OF CONCRETE IS SUSPENDED FOR MORE THAN 30 MINUTES (EMERGENCY JOINT).  
 -USE AN APPROVED HEADER AT EMERGENCY JOINTS STD. DWG. 700.04 AND DESIGNED TO PERMIT THE PLACEMENT OF AND CORRECTLY HOLD IN PLACE TIE BARS.  
 -USE TIE BARS OF THE SAME DIAMETER AS DOWEL BARS FOR EMERGENCY TRANSVERSE CONSTRUCTION JOINTS.  
 -LOCATE PLANNED TRANSVERSE CONSTRUCTION JOINTS AT THE SPACING REQUIRED FOR CONTRACTION JOINTS. USE AN APPROVED METHOD OF INSTALLING DOWELS IN ALL PLANNED TRANSVERSE CONSTRUCTION JOINTS.  
 -DO NOT LOCATE EMERGENCY TRANSVERSE CONSTRUCTION JOINTS LESS THAN 6' FROM ANY CONTRACTION JOINT OR PLANNED CONSTRUCTION JOINT.  
 -DO NOT PLACE TIE BARS IN LONGITUDINAL JOINTS WITHIN 1'-4" OF A TRANSVERSE JOINT.  
 \*WHEN UTILIZING AN EARLY ENTRY SAW, CUT THE JOINT TO A MINIMUM DEPTH OF 3".

SLAB THICKNESS "D"	TIE BAR THICKNESS "T"	TIE BAR LENGTH "L"
8 1/2" OR LESS	1/2"	30"
9" OR ABOVE	5/8"	30"

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ROADWAY STANDARD DRAWING FOR  
**CONCRETE PAVEMENT JOINTS**  
 CONSTRUCTION AND CONTRACTION JOINTS

SHEET 1 OF 2  
**700.01**

**TRANSVERSE CONTRACTION JOINT**

**PLANNED TRANSVERSE CONSTRUCTION JOINT**

GENERAL NOTES:  
 -FORM TRANSVERSE CONTRACTION JOINTS BY SAWING WITH APPROVED EQUIPMENT.  
 -SPACE TRANSVERSE CONTRACTION JOINTS AT INTERVALS OF 15'.  
 -USE A DOWEL ASSEMBLY OR OTHER APPROVED DOWEL INSERTION TECHNIQUE IN ALL TRANSVERSE CONTRACTION JOINTS.  
 -DOWEL ASSEMBLIES ARE COVERED IN DETAIL 700.03.  
 -PROVIDE SMOOTH DOWEL BARS. PROVIDE DEFORMED TIE BARS.  
 -DOWEL BARS IN TRANSVERSE CONTRACTION JOINTS SHALL BE EPOXY COATED.  
 \*WHEN UTILIZING AN EARLY ENTRY SAW, CUT THE JOINT TO A MINIMUM DEPTH OF 3".

SLAB THICKNESS "D"	DOWEL BAR DIA. "D"	DOWEL LENGTH "L"
8" OR LESS	1"	14"
8 1/2" TO 9 1/2"	1 1/8"	16"
10" TO 10 1/2"	1 1/4"	18"
11" AND ABOVE	1 1/2"	18"

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ROADWAY STANDARD DRAWING FOR  
**CONCRETE PAVEMENT HEADER BOARD**

SHEET 1 OF 1  
**700.04**

**TRANSVERSE HEADER SECTION**

**ISOMETRIC VIEW**

**PLAN**

NOTE: UPON COMPLETION OF FINAL SLAB, REMOVE DOWEL BARS AT SUCH TIME AS CONCRETE HAS CURED ENOUGH TO LEAVE A CAVITY FOR RESETTING AT A LATER DATE.

USE WOOD OR METAL FORM OF SUFFICIENT RIGIDITY TO ADEQUATELY SUPPORT THE EDGES OF THE SLAB.

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ROADWAY STANDARD DRAWING FOR  
**DOWEL ASSEMBLY**

SHEET 2 OF 2  
**700.03**

**SECTION - CONTRACTION**

**SECTION - EXPANSION**

**PARTIAL PLAN CONTRACTION**

**PARTIAL PLAN EXPANSION**

**CROSS SECTIONAL VIEWS**

GENERAL NOTES:  
 -USE BRIDG CONSTRUCTED DOWEL ASSEMBLY CAPABLE OF HOLDING THE DOWEL BAR IN PROPER POSITION DURING PLACEMENT OF CONCRETE AND DESIGNED AS TO PERMIT UNRESTRICTED MOVEMENT OF THE SLAB. USE DOWEL ASSEMBLY APPROVED BY THE ENGINEER PRIOR TO USE.  
 -USE DOWEL ASSEMBLY MANUFACTURED WITH DOWELS ALTERNATELY WELDED TO FRAME MEMBERS.  
 -USE STAKING PIN OR APPROVED ALTERNATE.  
 -SME CUT PROXY COATED DOWELS. PROXY AS NECESSARY TO FACILITATE PROPER WELDING OF THE DOWEL TO THE ASSEMBLY FRAME.  
 -TOUCH UP OF THE BUFFER AREA WILL NOT BE REQUIRED.  
 -RESISTANCE WELD FRAME MEMBERS; DOWELS AND SPREADER WIRES MAY BE ARC WELDED. WELD IN ACCORDANCE WITH AWS WELDING CODE.  
 -FULLY GIP THE DOWEL ASSEMBLIES TO ASSURE A COMPLETE COATING OF MAX.  
 -SEE DETAIL 700.01 FOR DOWEL BAR SIZES.

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ROADWAY STANDARD DRAWING FOR  
**DOWEL ASSEMBLY**

SHEET 1 OF 2  
**700.03**

**STAKING PIN**

**STAKING PIN ALTERNATE**

**ISOMETRIC VIEW**

**TYPICAL UNIT DIMENSIONS**

GENERAL NOTES:  
 -USE BRIDG CONSTRUCTED DOWEL ASSEMBLY CAPABLE OF HOLDING THE DOWEL BAR IN PROPER POSITION DURING PLACEMENT OF CONCRETE AND DESIGNED AS TO PERMIT UNRESTRICTED MOVEMENT OF THE SLAB. USE DOWEL ASSEMBLY APPROVED BY THE ENGINEER PRIOR TO USE.  
 -USE DOWEL ASSEMBLY MANUFACTURED WITH DOWELS ALTERNATELY WELDED TO FRAME MEMBERS.  
 -USE STAKING PIN OR APPROVED ALTERNATE.  
 -SME CUT PROXY COATED DOWELS. PROXY AS NECESSARY TO FACILITATE PROPER WELDING OF THE DOWEL TO THE ASSEMBLY FRAME.  
 -TOUCH UP OF THE BUFFER AREA WILL NOT BE REQUIRED.  
 -RESISTANCE WELD FRAME MEMBERS; DOWELS AND SPREADER WIRES MAY BE ARC WELDED. WELD IN ACCORDANCE WITH AWS WELDING CODE.  
 -FULLY GIP THE DOWEL ASSEMBLIES TO ASSURE A COMPLETE COATING OF MAX.  
 -SEE DETAIL 700.01 FOR DOWEL BAR SIZES.

SLAB THICKNESS	WIRE SIZE	LEG
8" OR LESS	2	2
8 1/2" - 10"	2	2
10 1/2" & ABOVE	2 1/2	2 1/2

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ROADWAY STANDARD DRAWING FOR  
**TYING PROPOSED PAVEMENT TO EXISTING PAVEMENT**

SHEET 1 OF 1  
**700.05**

**LONGITUDINAL SECTION 'A-A'**

**LONGITUDINAL OR TRANSVERSE SECTION 'A-A'**

**PLAN**

GENERAL NOTES:  
 -JOIN PAVEMENTS AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER.  
 -PLACE TIE BARS (DEFORMED STEEL BARS) ALONG THE LONGITUDINAL JOINTS AT 30" ON CENTER. PLACE DOWEL BARS (SMOOTH STEEL BARS) ALONG THE TRANSVERSE JOINTS AT 12" ON CENTER. THE PLACEMENT AND/OR SPACING OF TIE OR DOWEL BARS MAY BE MODIFIED BY THE PLANS OR THE ENGINEER. MEASURE THE HOLES TO ACCEPT THESE BARS, THE O.D. OF THE BAR PLUS 1/8" IN DIAMETER AND 1/2" THE LENGTH OF THE BAR PLUS 1" UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER OF THE ADHESIVE. USE RETAINING WASHERS (NYLON, PLASTIC OR COMPOSITE) ON ALL BARS TO HOLD THE ADHESIVE MATERIAL IN PLACE. THE RETAINING WASHERS SHALL BE: L.D.=BAR O.D., O.D.=HOLE I.D. + 1/4" MIN., THICKNESS=3/8" MIN.  
 -SEE STANDARD DRAWING 700.01 FOR BAR SIZES AND OTHER JOINT RELATED INFORMATION. PROVIDE ADHESIVE SPOILING MATERIAL SPECIFIED BY SECTION 10B1 OF THE STANDARD SPECIFICATIONS FOR TYPE 3 OR 3A ADHESIVES.  
 -SEE TYPICAL SECTIONS FOR PAVEMENT COMPOSITION, SUMMARY OF QUANTITIES AND FOR OTHER SPECIFIC INFORMATION.



**GENERAL STRUCTURAL NOTES:**

**I. FOUNDATIONS:**

- FOUNDATION DESIGN IS BASED ON ALLOWABLE SOIL BEARING PRESSURES AS STATED IN A SUBSURFACE EXPLORATION REPORT NO. 688-0006 REVISION 1 PREPARED BY FROELING & ROBERTSON, INC. DATED MAY 22, 2023.

**II. STRUCTURAL CONCRETE:**

- CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS NOTED OTHERWISE.
- NORMAL-WEIGHT CONCRETE SHALL HAVE A MAXIMUM UNIT WEIGHT OF 145 PCF, UNLESS NOTED OTHERWISE.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GR60, INCLUDING TIES AND STIRRUPS.
- MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
  - UNFORMED SURFACES IN CONTACT WITH THE GROUND.....3"
  - FORMED SURFACES EXPOSED TO EARTH OR WEATHER.....2"
  - FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER.....1 1/2"
- FINISHES SHALL CONFORM TO REQUIREMENTS OF ACI 301.

**III. MISCELLANEOUS:**

- STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH CIVIL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.
- NO OPENING SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL-ENGINEER-OF-RECORD.
- NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL-ENGINEER-OF-RECORD.
- OPENINGS 1'-4" AND LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO CIVIL DRAWINGS FOR SUCH OPENINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOADS APPLIED TO THE STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE APPLIED. DO NOT SCALE THESE DRAWINGS; USE DIMENSIONS.
- ELEVATIONS OF TOP SLABS SHALL BE INTERPRETED AS PLUS OR MINUS WITH THE INTENT THAT THE CONTRACTOR WILL HAVE SOME FLEXIBILITY IN THE FIELD.
- CONTRACTOR SHALL CONTACT TESTING AGENCY OR WK DICKSON (919-782-0495) TO CHECK REBAR PRIOR TO CONCRETE POUR.

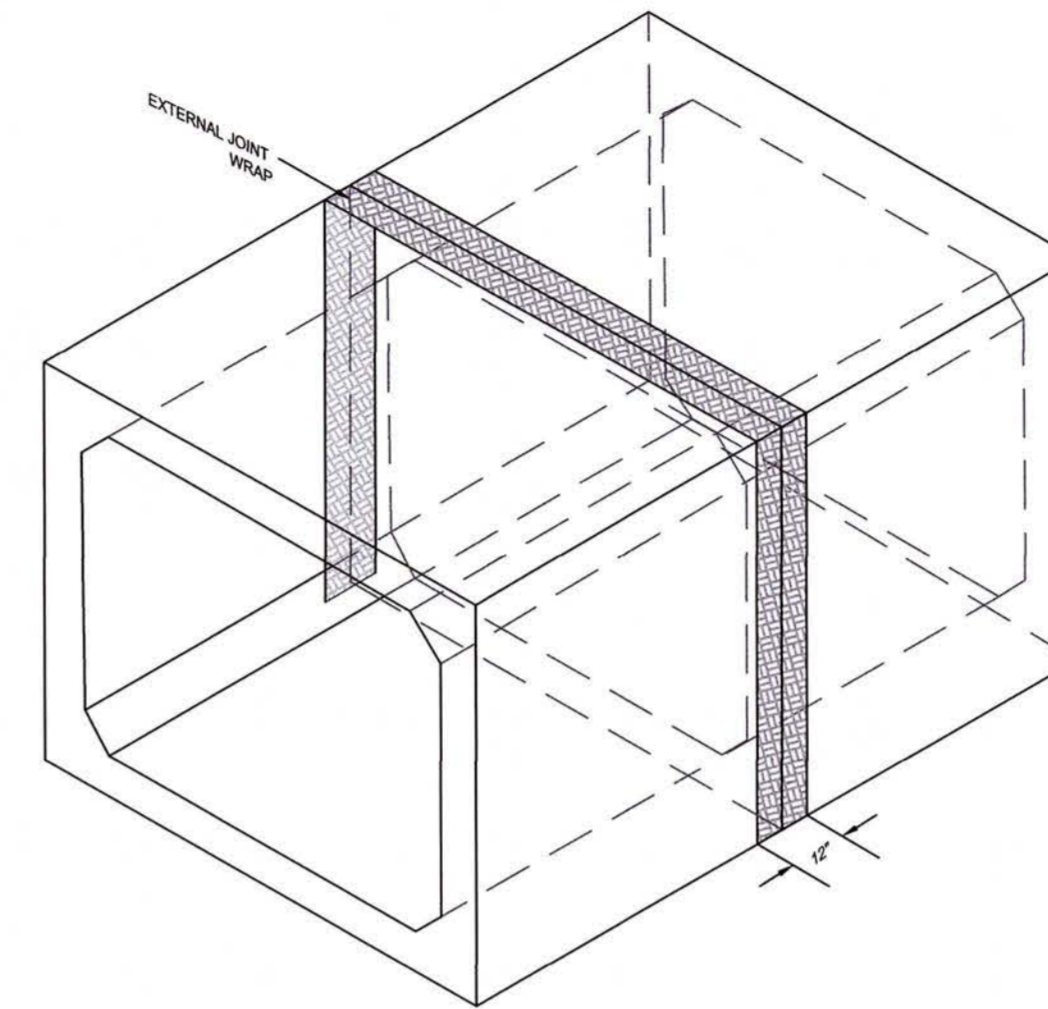
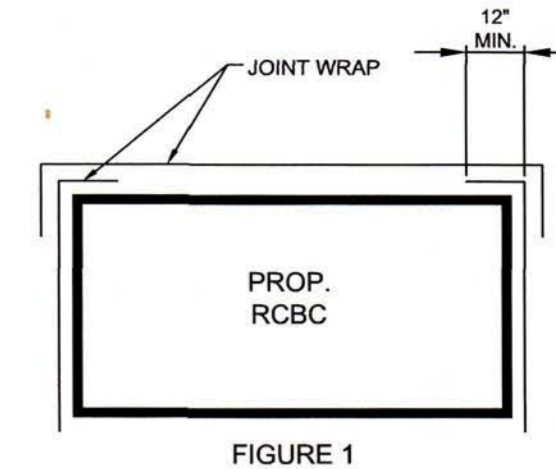
GRADES, ELEVATIONS AND LOCATION SHOWN ARE APPROXIMATE. AS DIRECTED BY THE ENGINEER, THEY MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN CONDITIONS. WEEPHOLES ARE TO BE CONSTRUCTED IN ALL DRAINAGE STRUCTURES. WEEPHOLES SHOULD BE ON 8' CENTER WITH A MINIMUM OF 1 WEEPHOLE PER WALL. WEEPHOLES ARE TO BE COVERED ON THE OUTSIDE OF THE STRUCTURE BY A BAG MADE OF FILTER FABRIC FILLED WITH #78 STONE. THERE WILL BE NO SEPARATE PAYMENT FOR THIS WORK. STATION, OFFSETS AND ELEVATIONS REFER TO THE CENTER OF DROP INLETS, MANHOLES AND JUNCTION BOXES, AND THE MIDPOINT OF THE GRATE FOR CATCH BASINS. UPON APPROVAL BY THE ENGINEER, CONTRACTOR MAY SUBSTITUTE BRICK STRUCTURES WITH PRECAST STRUCTURES.

BAR SIZE	Ld (INCHES)	HOOK LEG
3	13	7
4	17	9
5	21	11
6	26	14
7	37	16
8	43	18
9	53	23
10	65	25
11	78	28

DEVELOPMENTAL LENGTH FOR STANDARD REINFORCING BARS

**NOTES:**

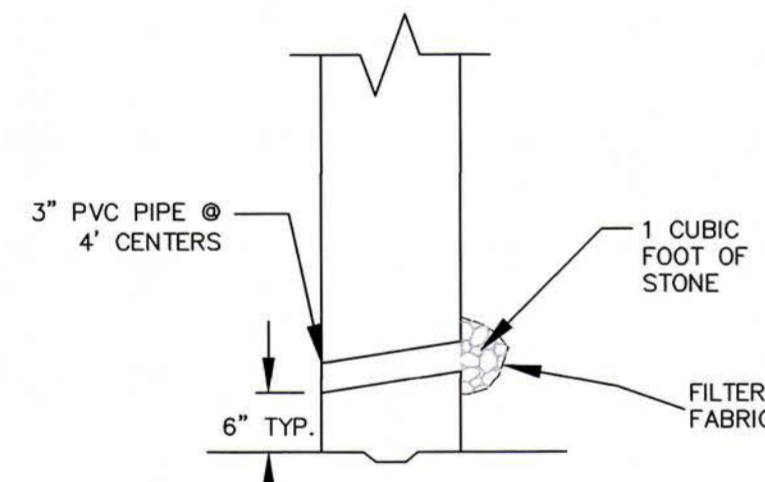
- SEAL THE EXTERNAL JOINT WITH AN OUTSIDE SEALER WRAP THAT IS AT LEAST 12 INCHES WIDE AND COVERS THE JOINT COVERING ALL THREE SIDES OF THE BOX SECTION. USE CONWRAP CS-212 FROM CONCRETE SEALANTS, INC., EZ-WRAP FROM PRESS-SEAL GASKET CORPORATION, SEAL WRAP FROM MAR-MAC MANUFACTURING CO., INC. CADILLOC EXTERNAL PIPE JOINT FROM CADILLOC, OR AN APPROVED EQUAL FOR THE OUTSIDE SEALER WRAP. IF THE OUTSIDE SEALER WRAP IS NOT APPLIED IN A CONTINUOUS STRIP ALONG THE ENTIRE JOINT, A 12 INCH MINIMUM LAP OF THE OUTSIDE SEALER WRAP IS PERMITTED. BEFORE PLACING THE OUTSIDE SEALER WRAP, CLEAN AND PRIME THE AREA RECEIVING THE OUTSIDE SEALER WRAP IN ACCORDANCE WITH THE SEALER WRAP MANUFACTURER RECOMMENDATIONS. THE JOINT WRAP MANUFACTURER INSTALLATION RECOMMENDATION SHALL BE INCLUDED WITH THE SHOP DRAWINGS SUBMITTED FOR REVIEW. THE EXTERNAL JOINT WRAP SHALL BE INSTALLED IN TWO PIECES AS SHOWN IN FIGURE 1.
- COVER THE EXTERNAL JOINT SEALER WITH A 3 FOOT STRIP OF FILTER FABRIC CONFORMING TO TYPE 4 REQUIREMENTS IN SECTION 1056 OF THE NCDOT STANDARD SPECIFICATIONS.



1  
S1

**RCBC AND EXTERNAL JOINT WRAP DETAIL**

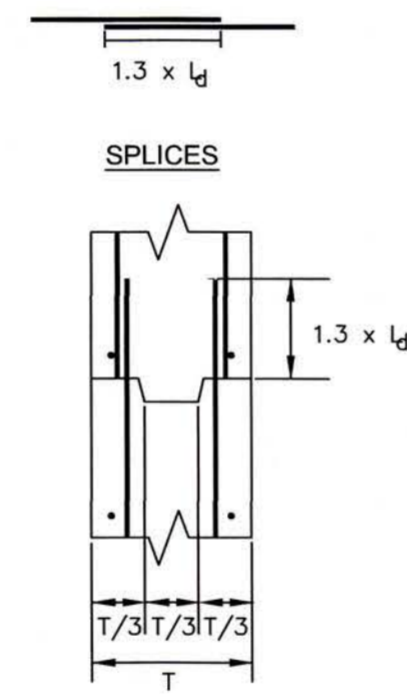
NOT TO SCALE



2.1  
S1

**WEEP HOLE SECTION DETAIL Y**

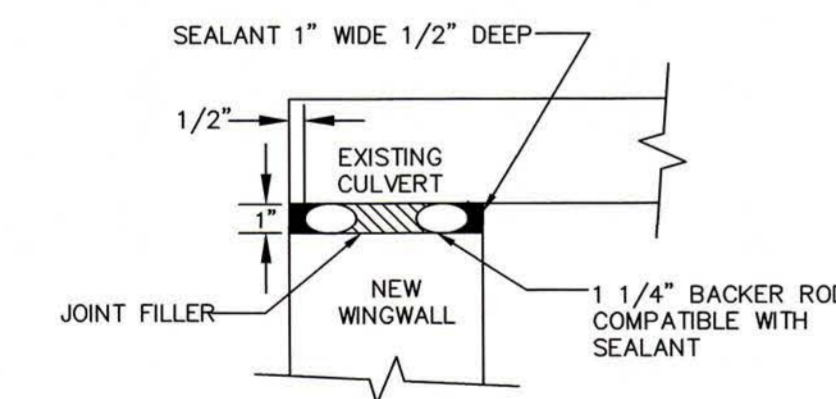
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2.2  
S1

**OPTIONAL WALL OR SLAB CONSTRUCTION JOINT**

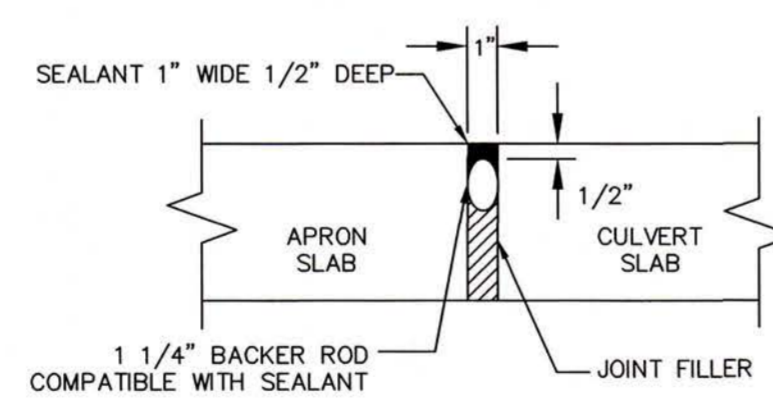
NOT TO SCALE



2.3  
S1

**ISOLATION JOINT BETWEEN WING WALL AND CULVERT DETAIL**

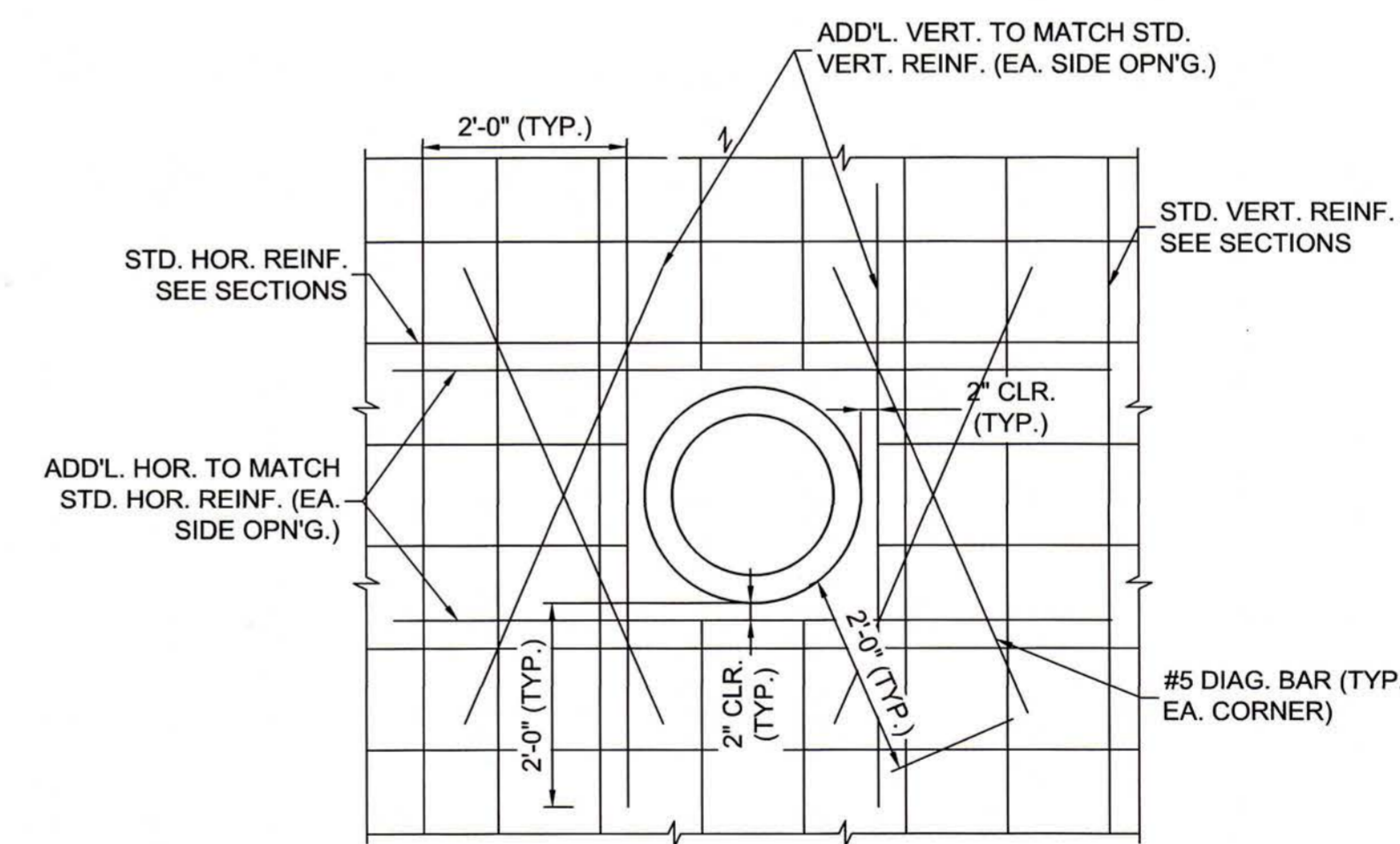
NOT TO SCALE



2.4  
S1

**ISOLATION JOINT BETWEEN APRON AND CULVERT SLAB**

NOT TO SCALE



3  
S1

**TYP. CIRCULAR PIPE CONCRETE WALL OPENING**

NOT TO SCALE

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(919) 782-9972  
www.wkdickson.com  
NC LICENSE NO. F-0374



NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
**Greenville**  
NORTH CAROLINA  
Find yourself in good company  
CITY OF GREENVILLE

PROJECT: PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA  
TITLE: RCBC DETAILS

WKD PROJECT: 20220983.00.RA  
DATE: 3/8/2024

100% PLANS

S1



Know what's below.  
Call before you dig.

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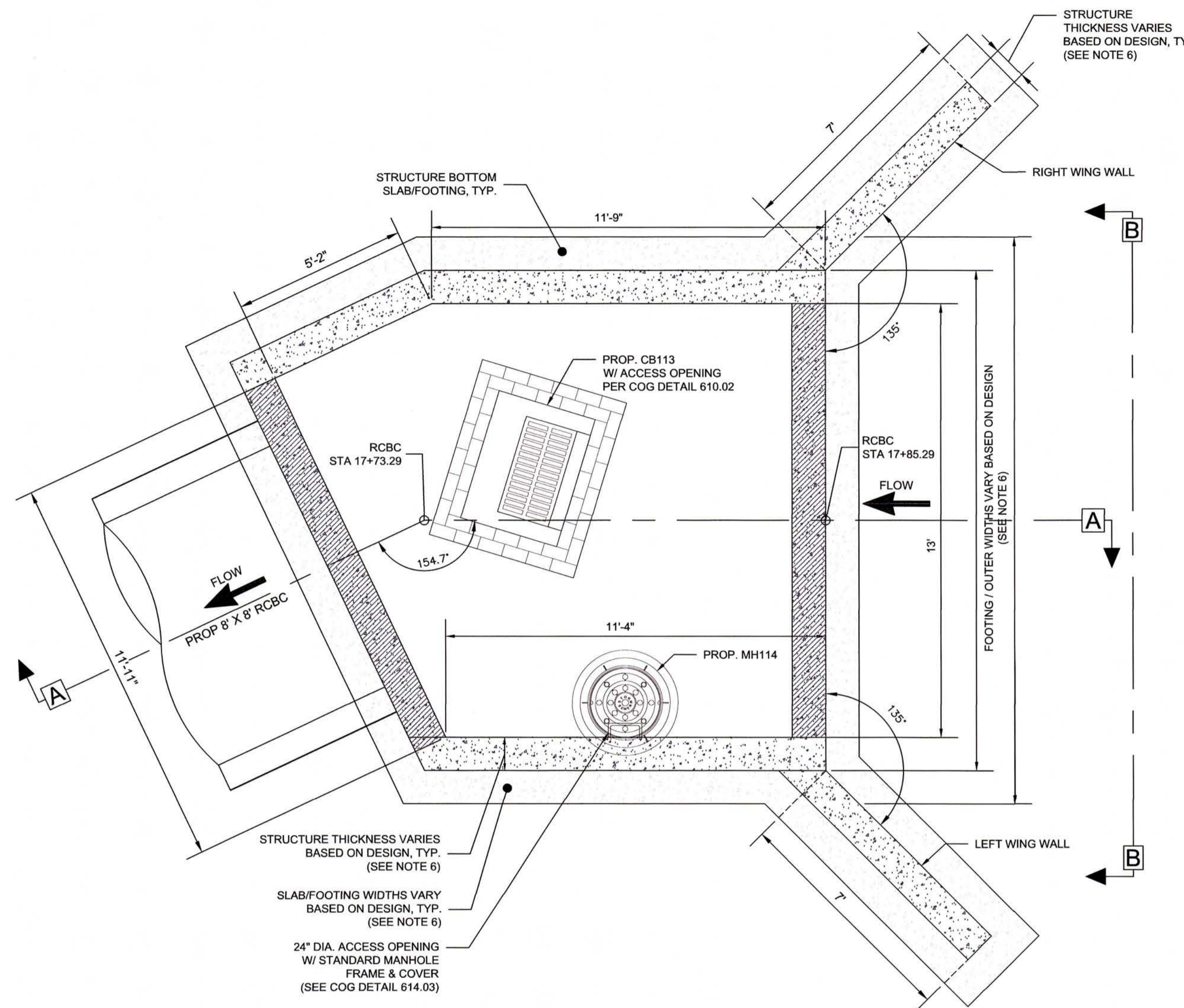
NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
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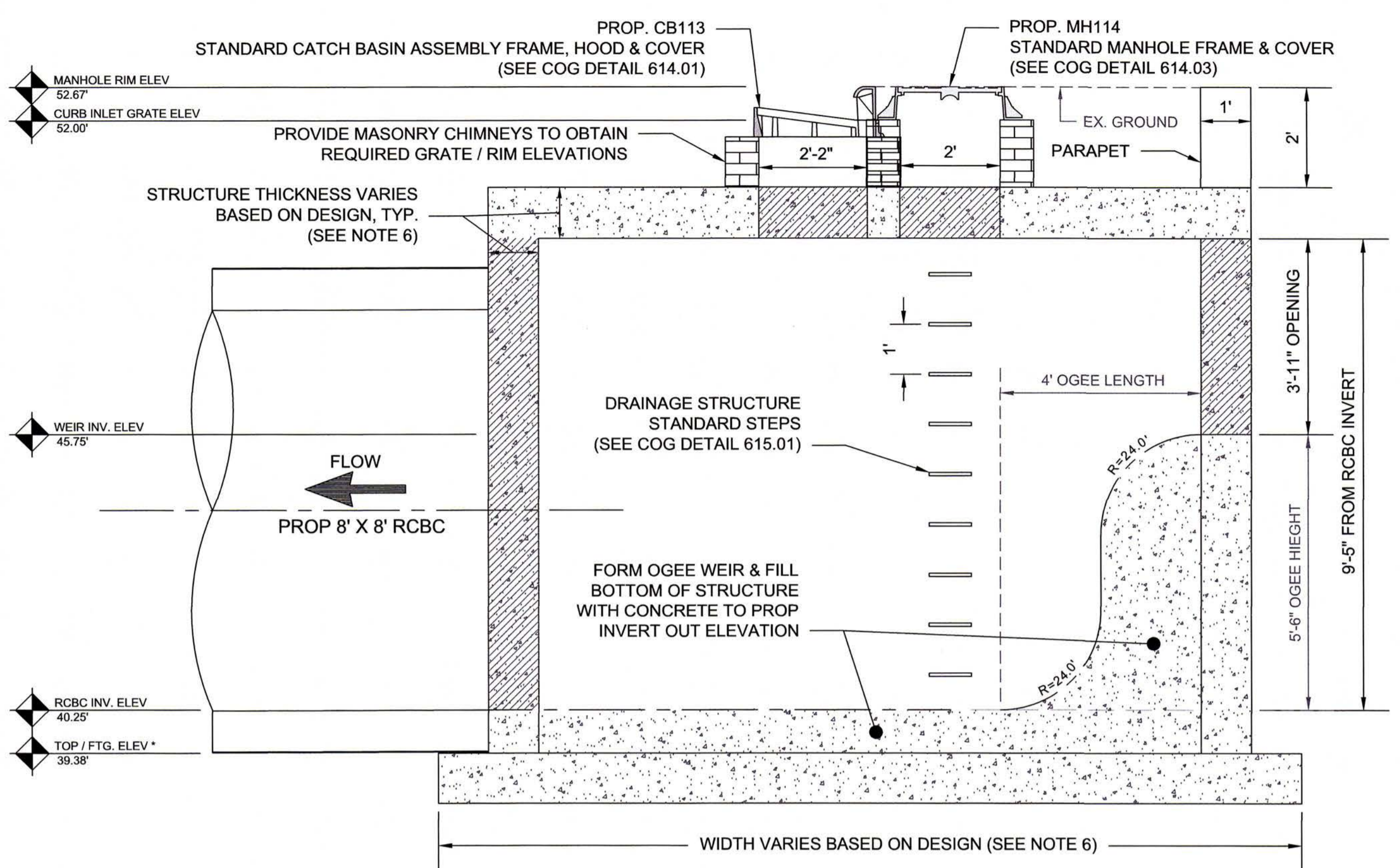
PROJECT:  
 PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA  
 TITLE: CUSTOM DROP HEADWALL  
 STRUCTURE DETAIL

WKD PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

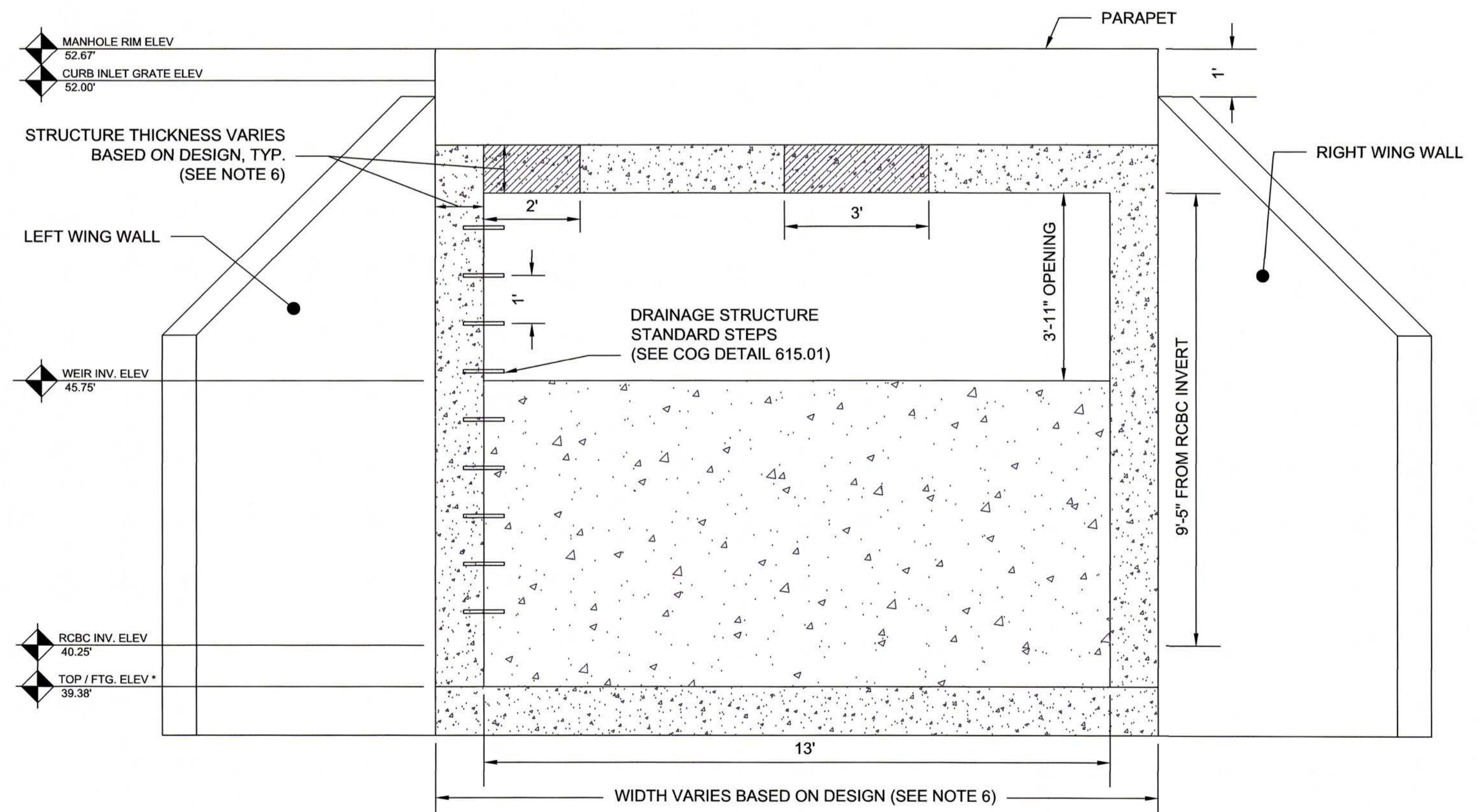
100% PLANS



PLAN VIEW



SECTION A-A



SECTION B-B

- NOTES:
- REFER TO STORM DRAIN PROFILES FOR PIPE INVERT ELEVATIONS AND STRUCTURE TOP/RIM ELEVATIONS. FOOTING ELEVATIONS VARY DEPENDING ON PIPE THICKNESS AND STRUCTURE VERTICAL DIMENSIONS.
  - THE DESIGN TO INCLUDE REQUIRED REINFORCING, DETAILS, AND SHOP DRAWINGS FOR CUSTOM TRAFFIC RATED STRUCTURES SHALL BE PROVIDED BY THE PRECAST MANUFACTURER. THE DESIGN CALCULATIONS AND SHOP DRAWINGS ARE SUBJECT TO APPROVAL BY THE ENGINEER.
  - LOCATIONS OF PREFABRICATED HOLES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL FIELD MEASURE AND SUPPLY THE PRECAST MANUFACTURER EXACT LOCATIONS FOR FINAL SHOP DRAWINGS.
  - PLEASE REFER TO THE REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION PREPARED BY FROEHLING & ROBERTSON, INC. DATED 22 MAY 2023, FOR ALL SUBSURFACE RECOMMENDATIONS. SOIL TEST BORING LOCATIONS SHOWN ON PLANS ARE APPROXIMATE.
  - STRUCTURE WALL THICKNESS, TOP SLAB AND BOTTOM SLAB/FOOTING FOUNDATION DIMENSIONS, AND STRUCTURE VERTICAL DIMENSIONS ARE APPROXIMATE. FINAL WALL THICKNESS, SLAB/FOOTING DIMENSIONS, AND STRUCTURE VERTICAL DIMENSIONS ARE TO BE DETERMINED BY PRECAST MANUFACTURER. INSIDE HORIZONTAL DIMENSIONS SHALL NOT BE CHANGED UNLESS APPROVED BY THE ENGINEER.
  - THE CONTRACTOR MUST PROVIDE A SHOP DRAWING SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER THAT INDICATES THE PRE-CAST STRUCTURE MEETS OR EXCEEDS THE DESIGN PARAMETERS SHOWN ON THESE STRUCTURE SHEETS. THE CONTRACTOR MUST SUBMIT ANTI-FLOTATION CALCULATIONS WITH THIS SHOP DRAWING SUBMITTAL.
  - CURB INLET AND MANHOLE RIM ACCESS STRUCTURES ARE INCIDENTAL TO THE DESIGN, CONSTRUCTION AND COST OF THE HEADWALL STRUCTURE.
  - CUSTOM HEADWALL STRUCTURE SHALL BE HS-20 TRAFFIC LOAD BEARING.

1  
S2  
CUSTOM DROP HEADWALL STRUCTURE DETAIL  
SCALE: 3/8" = 1'-0"

FINAL DESIGN - NOT FOR CONSTRUCTION



**EROSION CONTROL NOTES:**

- REFER TO SHEETS G2 - GENERAL NOTES AND EC2 - EROSION CONTROL NOTES FOR ADDITIONAL NOTES.
- LIMIT OF DISTURBED AREA:**  
2.517 AC (109,650 SF)
- NO ON-SITE BURIAL OF VEGETATION OR CONSTRUCTION DEBRIS WILL BE PERMITTED.
- ANY DISTURBANCE BEYOND THE CONSTRUCTION LIMITS SHOWN ON THE PLANS IS A VIOLATION OF THE NORTH CAROLINA SEDIMENTATION POLLUTION CONTROL ACT AND THE CONTRACT SPECIFICATIONS.
- PLEASE REFERENCE PLAN SHEET DETAILS AND NCDENR STANDARDS FOR CONSTRUCTION OF EROSION CONTROL MEASURES.
- ALL DISTURBED AREAS SHALL BE SEEDED. USE TEMPORARY PLANT COVER, MULCHING, AND/OR STRUCTURES TO CONTROL RUNOFF AND PROTECT AREAS SUBJECT TO EROSION DURING CONSTRUCTION. CHANNEL BANKS SHALL BE SEEDED DAILY UPON COMPLETION OF FINAL GRADING.
- INSTALL PERMANENT VEGETATIVE COVER AND THE LONG-TERM EROSION PROTECTION MEASURES OR STRUCTURES AS SOON AS PRACTICAL IN THE CONSTRUCTION PROCESS. APPROPRIATE EROSION CONTROL MEASURES MUST BE PLACED BETWEEN THE DISTURBED AREA AND AFFECTED WATERWAY AND MAINTAINED UNTIL PERMANENTLY VEGETATED.
- AT A MINIMUM, EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY LOCAL GOVERNING AGENCIES.
- IF IT IS DETERMINED DURING THE COURSE OF CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE (DESPITE THE PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES), THE PERSON RESPONSIBLE FOR THE LAND DISTURBING ACTIVITY IS OBLIGATED TO TAKE ADDITIONAL PROTECTIVE ACTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF ANY SOIL TRACKED INTO THE PUBLIC RIGHT-OF-WAY.
- THE LOCATIONS OF SOME EROSION CONTROL MEASURES MAY HAVE TO BE ALTERED FROM THOSE SHOWN ON THE PLANS IF DRAINAGE PATTERNS CHANGE DURING CONSTRUCTION, SUBJECT TO THE REVIEW AND APPROVAL OF THE PROJECT ENGINEER.
- NO STOCKPILING SHALL OCCUR OVERNIGHT. REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS FROM STOCKPILE AT THE END OF EACH WORKING DAY.
- STABILIZATION MEASURES SHALL BE INITIATED AT THE END OF EACH DAY IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED EXCEPT WHERE CONSTRUCTION ACTIVITIES SHALL BE REINITIATED WITHIN 7 CALENDAR DAYS.
- SILT FENCING TO BE INSTALLED AROUND ALL SPOILS AREAS TO PREVENT LOSS OF SEDIMENT.
- SEE SHEET EC8 FOR SEEDING AND STABILIZATION DETAILS.
- NO WASTE, SPOIL, SOLIDS, OR FILL OF ANY KIND SHALL OCCUR IN WETLANDS, WATERS, OR RIPARIAN AREAS BEYOND THE FOOTPRINT OF THE IMPACTS DEPICTED IN THE PRE-CONSTRUCTION NOTIFICATION. ALL CONSTRUCTION ACTIVITIES, INCLUDING THE DESIGN, INSTALLATION, OPERATION, AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL BEST MANAGEMENT PRACTICES, SHALL BE PERFORMED SO THAT NO VIOLATIONS OF STATE WATER QUALITY STANDARDS, STATUTES, OR RULES OCCUR. [15A NCAC 02H .0501 AND .0502]
- THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY AND ALONG THE CONSTRUCTION CORRIDOR WITHIN THESE BOUNDARIES APPROVED UNDER THIS AUTHORIZATION SHALL BE CLEARLY MARKED WITH ORANGE WARNING FENCING (OR SIMILAR HIGH VISIBILITY MATERIAL) FOR THE AREAS, THAT HAVE BEEN APPROVED TO INFRINGE WITHIN THE BUFFER, WETLAND OR WATER PRIOR TO ANY LAND DISTURBING ACTIVITIES TO ENSURE COMPLIANCE WITH 15 NCAC 02H .0500. [15A NCAC 02H .0506 (B)(2) AND (C)(2) AND 15A NCAC 02H .0507(C)]

**CONSTRUCTION SEQUENCE:**

- THE CITY OF GREENVILLE SHALL CONDUCT THE PRE-CONSTRUCTION MEETING INCLUDING THE ENGINEER, THE CONTRACTOR'S SUPERINTENDENT, THE PROJECT INSPECTOR AND OTHER AFFECTED PARTIES. CALL THE CITY OF GREENVILLE ENGINEERING DIVISION (252) 329-4467 TO SCHEDULE THE MEETING. A MINIMUM 24-HOUR NOTICE IS REQUIRED. NO PERSON MAY INITIATE A LAND DISTURBANCE ACTIVITY BEFORE NOTIFYING THE CITY OF THE DATE OF THE LAND DISTURBING ACTIVITY. COORDINATE WITH THE CITY ON NOTIFYING NCDEQ PER ITEM #4 BELOW.
- A RAIN GAUGE WILL BE INSTALLED ON SITE & COPIES OF PLAN APPROVED BY NCDEQ, PLAN APPROVAL LETTER WITH ANY MODIFICATIONS OR PERFORMANCE RESERVATIONS, ANY 401/404 DOCUMENTATION, & A MINIMUM OF THE PAST 30 DAYS OF SELF-INSPECTION REPORTS WILL BE KEPT ON SITE UNTIL PROJECT IS CLOSED OUT BY THIS OFFICE.
- ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED UNTIL ALL UPGRADE DRAINAGE AREAS HAVE BEEN STABILIZED WITH THE ESTABLISHMENT OF PERMANENT VEGETATION.
- TO FACILITATE IN CLEANUP OF PAVED SURFACES, A LAYER OF SAND, SCREENINGS OR FINES WILL BE PLACED BEFORE DEPOSITION OF ANY EXCAVATED MATERIAL OR USE BY EQUIPMENT/VEHICLES ASSOCIATED WITH THE PROJECT.
- ANY DEWATERING ON THE PROJECT IS TO BE DONE THROUGH A SILT BAG.
- AT THE BEGINNING OF THE WORK, INSTALL AND STABILIZE THE GRAVEL CONSTRUCTION ENTRANCES/EXIT PATHS AT THE LOCATION OF THE WORK SITE. THE CONSTRUCTION ENTRANCES/EXIT PATHS SHALL BE INSTALLED AS SHOWN ON THE PLANS AND DETAILS OR AS DIRECTED BY THE PROJECT INSPECTOR.
- AFTER ESTABLISHMENT OF THE CONSTRUCTION ENTRANCE/EXIT, ALL PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CLEARING AND GRUBBING/CONSTRUCTION INCLUDING SILT FENCE, TREE PROTECTION FENCE, AND CONSTRUCTION FENCE. INSTALL INLET PROTECTION ON ALL INLETS WITHIN LIMITS OF DISTURBANCE. ONLY CLEAR/DISTURB THE MINIMUM AREAS NECESSARY TO INSTALL THE EROSION CONTROL MEASURES.
- PRIOR TO CLEARING AND GRUBBING/CONSTRUCTION, THE CONTRACTOR SHALL REQUEST AN ON-SITE INSPECTION FROM THE PROJECT INSPECTOR. ONLY WITH PROJECT INSPECTOR APPROVAL, GRUBBING/CONSTRUCTION MAY BEGIN.
- INSTALL OPEN CHANNEL WITH PLANTINGS AND CLOSED STORM DRAINAGE SYSTEM WITH INLET PROTECTION AND RIPRAP OUTLET PROTECTION, WATER SYSTEM AND SEWER SYSTEM. IN GENERAL, CONSTRUCTION WILL BEGIN AT BEATTY STREET AND PROCEED IN THE UPSLOPE DIRECTION.
- PERFORM GRADING AND UTILITY CONSTRUCTION OPERATIONS IN A MANNER AND SEQUENCE SO AS TO REDUCE UNNECESSARY DISTURBANCE OF SURFACE COVER AND TO MINIMIZE INTERRUPTIONS OF WATER AND SEWER SERVICE. PROVIDE TEMPORARY STABILIZATION OF DISTURBED AREAS PER SEEDING PLAN.
- INSTALL CONCRETE WASHOUT. ACTUAL LAYOUT TO BE DETERMINED IN FIELD.
- CONTRACTOR SHALL COMPLETE REMAINING WORK ITEMS INCLUDING UTILITIES, SIDEWALK, DRIVEWAY, CURB AND GUTTER, PAVEMENT REPLACEMENT, MILL AND OVERLAY, FINAL GRADING, PLANTINGS, AND STABILIZATION.
- ONLY WITH PROJECT INSPECTOR APPROVAL, REMOVE REMAINING EROSION CONTROL MEASURES.
- ALL GROUND COVER TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR IN CRITICAL AREAS, AT THE END OF EACH DAY.
- ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. CONTRACTOR SHALL REMOVE ALL TEMPORARY CONTROL DEVICES ONCE CONSTRUCTION IS COMPLETE, THE SITE IS STABILIZED, AND ONLY WITH PROJECT INSPECTOR APPROVAL.

**MAINTENANCE:**

FOLLOW THE CONSTRUCTION SEQUENCE THROUGHOUT PROJECT DEVELOPMENT. ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED, MAINTAINED, AND ADJUSTED AS NEEDED DURING THE DEMOLITION OR CLEARING AND GRUBBING PHASES AS WELL AS THROUGHOUT THE LIFE OF AND UNTIL PERMANENT VEGETATION ON THE PROJECT IS ESTABLISHED. WHEN CHANGES IN CONSTRUCTION ACTIVITIES ARE NEEDED, AMEND THE SEQUENCE SCHEDULE IN ADVANCE TO MAINTAIN MANAGEMENT CONTROL.

**NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM:**

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. TO SIMPLIFY DOCUMENTATION OF SELF-INSPECTION REPORTS AND NPDES SELF-MONITORING REPORTS, A COMBINED FORM WAS CREATED. THE NEW FORM WAS DEVELOPED TO SATISFY THE REQUIREMENTS OF THE SEDIMENTATION POLLUTION CONTROL ACT (SPCA) AND THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES, NCG 010000, BEGINNING AUGUST 1, 2013. THE DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES IS RESPONSIBLE FOR ADMINISTERING BOTH THE SPCA AND THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES, NCG 010000. THE COMBINED FORM SHOULD MAKE IT EASIER TO COMPLY WITH SELF-INSPECTION REQUIREMENTS.

THE COMBINED SELF-MONITORING FORM IS AVAILABLE AS A PDF AND WORD DOCUMENT FROM THE LAND QUALITY WEB SITE, [HTTPS://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/EROSION-SEDIMENT-CONTROL-FORMS](https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control-forms).

IF YOU HAVE QUESTIONS, CONTACT THE LAND QUALITY SECTION OF THE NCDEQ WASHINGTON REGIONAL OFFICE AT 252-946-6481.

IF THE SAME PERSON CONDUCTS THE LAND DISTURBING ACTIVITY AND ANY RELATED BORROW OR WASTE ACTIVITY, THE RELATED BORROW OR WASTE ACTIVITY SHALL CONSTITUTE PART OF THE LAND-DISTURBING ACTIVITY, UNLESS THE BORROW OR WASTE ACTIVITY IS REGULATED UNDER THE MINING ACT OF 1971 OR IS A LANDFILL REGULATED BY THE DIVISION OF WASTE MANAGEMENT. IF THE LAND-DISTURBING ACTIVITY AND ANY RELATED BORROW OR WASTE ACTIVITY ARE NOT CONDUCTED BY THE SAME PERSON, THEY SHALL BE CONSIDERED SEPARATE LAND-DISTURBING ACTIVITIES AND MUST BE PERMITTED EITHER THROUGH THE SEDIMENTATION POLLUTION CONTROL ACT AS A ONE-USE BORROW SITE OR THROUGH THE MINING ACT.

**MAINTENANCE PLAN:**

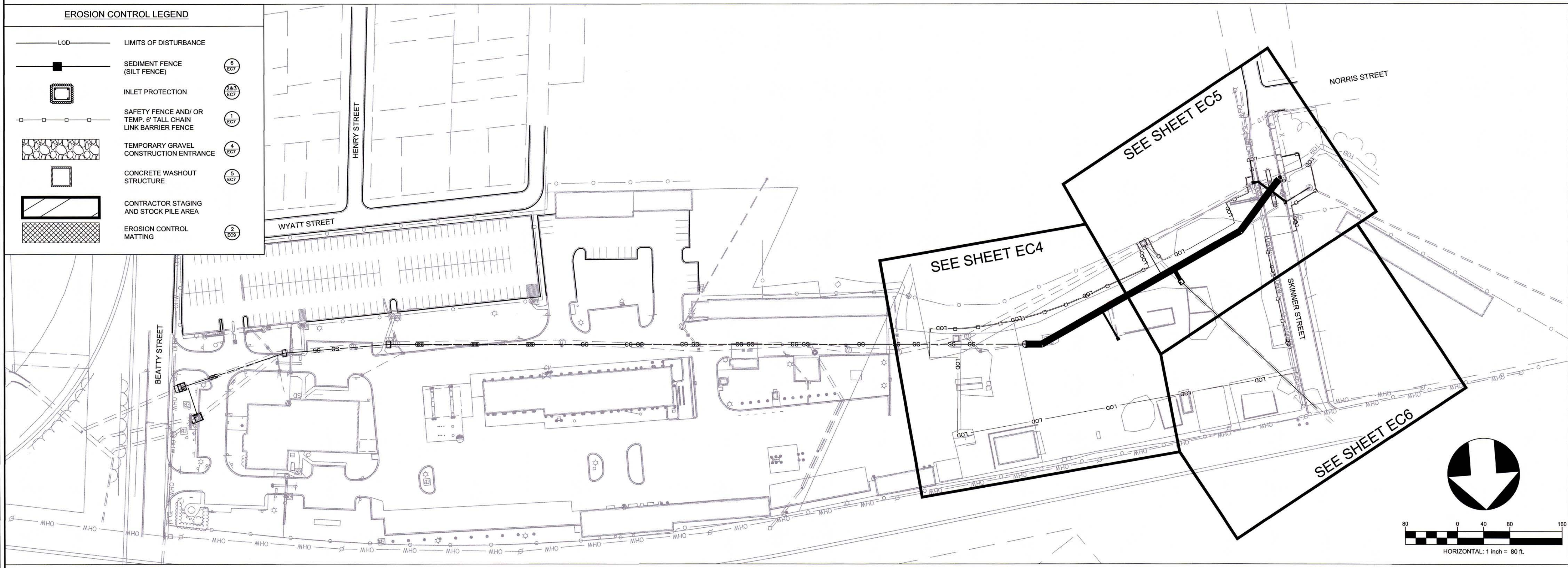
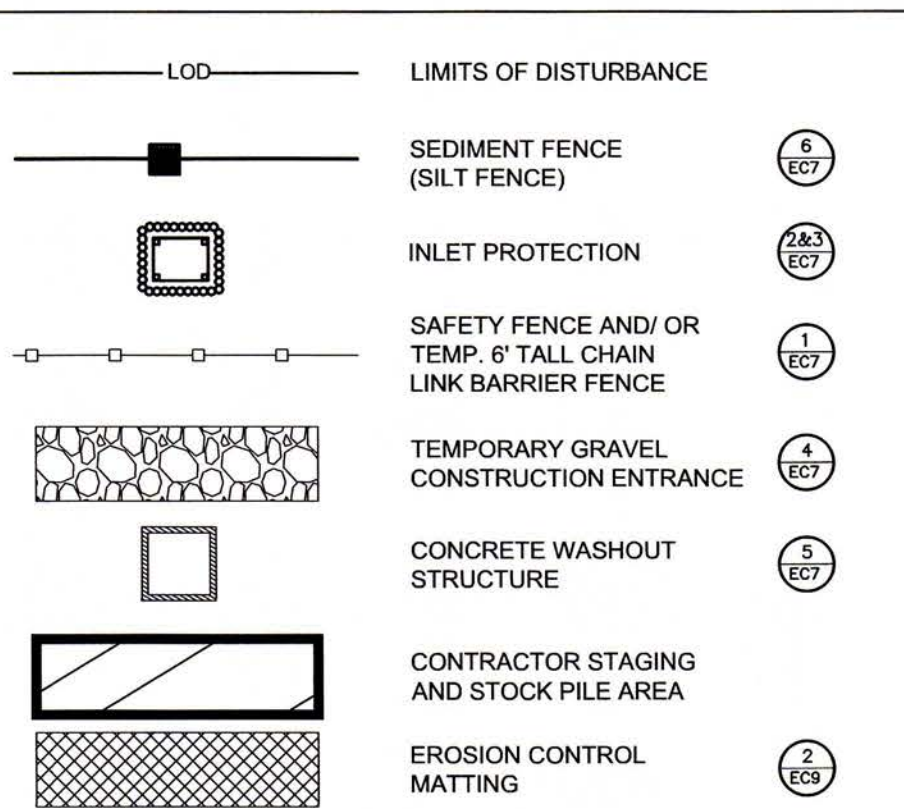
THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES FOR CORRECT OPERATION AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAIN EVENT GREATER THAN OR EQUAL TO 1.0 INCHES OF PRECIPITATION DURING ANY 24-HOUR PERIOD. ANY REQUIRED REPAIRS WILL BE MADE IMMEDIATELY BY THE CONTRACTOR TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES AS DESIGNED. INSPECTIONS BY THE CONTRACTOR MUST BE MADE AND LOGGED ON THE REQUIRED FORM, ALSO PER NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT, A RAIN GAUGE MUST BE INSTALLED ON AND KEPT ONSITE.

- THE CONTRACTOR SHALL REMOVE SEDIMENT FROM EROSION CONTROL DEVICES WHEN STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOLS NO LONGER DRAIN PROPERLY.
- THE CONTRACTOR SHALL REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN IT BECOMES 0.5 FOOT DEEP AT THE FENCE. SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
- THE CONTRACTOR SHALL FERTILIZE, RESEED AS NECESSARY, AND MULCH ALL SEEDED AREAS ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.

**VEGETATIVE PLAN:**

- EROSION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED. THE CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
- DISTURBED AREAS NOT AT FINAL GRADING AND LEFT IDLE SHALL BE TEMPORARILY VEGETATED PER THE GROUND COVER SCHEDULE SHOWN ON SHEET EC3. UPON COMPLETION OF FINAL GRADING, PERMANENT VEGETATION SHALL BE ESTABLISHED PER THE GROUND COVER SCHEDULE. GRADED SLOPES SHALL BE ESTABLISHED PER THE GROUND COVER SCHEDULE.
- ALL OTHER DISTURBED AREAS WILL BE STABILIZED BY PERMANENTLY VEGETATING WITH SEED AND MULCH AS RECOMMENDED BY THE PERMANENT SEEDING SPECIFICATIONS DUE TO THE RESTRAINTS ON THE LENGTH OF IMPROVEMENTS AND/OR DURATION OF EXPOSED DISTURBED AREAS.
- ONCE PERMANENT VEGETATION IS ESTABLISHED, THE CONTRACTOR SHALL SCHEDULE A FINAL INSPECTION IN ORDER TO OBTAIN A CERTIFICATE OF COMPLETION. AFTER APPROVAL, ALL REMAINING TEMPORARY EROSION CONTROL MEASURES SHOULD BE REMOVED.

**EROSION CONTROL LEGEND**



**EROSION CONTROL SHEET INDEX**

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NC LICENSE NO. F-0374



NO.	DATE	REVISIONS

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PLANS PREPARED FOR:  
**Greenville**  
NORTH CAROLINA  
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CITY OF GREENVILLE

PROJECT:  
PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA  
TITLE:  
EROSION CONTROL COVER

WKD PROJECT:  
20220983.00.RA  
DATE:  
3/8/2024  
100% PLANS

**EC1**

FINAL DESIGN - NOT FOR CONSTRUCTION



**LAND GRADING ( NCDENR 6.02):**

**CONSTRUCTION SPECIFICATIONS**

- CONSTRUCT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL PRACTICES AND MEASURES IN ACCORDANCE WITH THE APPROVED SEDIMENTATION CONTROL PLAN AND CONSTRUCTION SCHEDULE.
- REMOVE GOOD TOPSOIL FROM AREAS TO BE GRADED AND FILLED AND PRESERVE IT FOR USE IN THE FINISHING OF GRADING FOR ALL CRITICAL AREAS.
- SCARIFY AREAS TO BE TOPSOILED TO A MINIMUM DEPTH OF 2 INCHES BEFORE PLACING TOPSOIL.
- CLEAR AND GRUB AREAS TO BE FILLED. REMOVE TREES, VEGETATION, ROOTS, OR OTHER OBJECTIONABLE MATERIAL THAT WOULD AFFECT THE PLANNED STABILITY OF THE FILL.
- ENSURE THAT FILL MATERIAL IS FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER MATERIALS INAPPROPRIATE FOR CONSTRUCTING STABLE FILLS.
- PLACE ALL FILL IN LAYERS (NOT TO EXCEED 9 INCHES IN THICKNESS) AND COMPACT THE LAYERS AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, OR OTHER RELATED PROBLEMS.
- DO NOT INCORPORATE FROZEN, SOFT, OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES.
- DO NOT PLACE FILL ON A FROZEN FOUNDATION DUE TO POSSIBLE SUBSIDENCE AND SLIPPAGE.
- KEEP DIVERSIONS AND OTHER WATER CONVEYANCE MEASURES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
- HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH APPROVED METHODS.
- PERMANENTLY STABILIZE ALL GRADED AREAS IMMEDIATELY AFTER FINAL GRADING IS COMPLETED IN EACH AREA SHOWN ON THE GRADING PLAN PER REQUIRED NPDES SOIL STABILIZATION TIME FRAMES.
- SHOW TOPSOIL STOCKPILES, BORROW, AND SPOIL AREAS ON THE PLANS. MAKE SURE THEY ARE ADEQUATELY PROTECTED FROM EROSION. INCLUDE FINAL STABILIZATION OF THESE AREAS ON THE PLANS.

**MAINTENANCE**

PERIODICALLY CHECK ALL GRADED AREAS IN ADDITION TO THE SUPPORTING EROSION AND SEDIMENTATION CONTROL PRACTICES, ESPECIALLY AFTER HEAVY RAINFALLS. PROMPTLY REMOVE ALL SEDIMENT FROM DIVERSION AND OTHER WATER-DISPOSAL PRACTICES. IF WASHOUTS OR BREAKS OCCUR, REPAIR THEM IMMEDIATELY. PROMPT MAINTENANCE OF SMALL ERODED AREAS BEFORE THEY BECOME SIGNIFICANT GULLIES IS AN ESSENTIAL PART OF AN EFFECTIVE EROSION AND SEDIMENTATION CONTROL PLAN.

**GRASS-LINED CHANNELS (NCDENR 6.30):**

**CONSTRUCTION SPECIFICATIONS**

- REMOVE ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA, THEN DISPOSE OF THEM PROPERLY.
- EXCAVATE THE CHANNEL AND SHAPE IT TO NEAT LINES AND DIMENSIONS SHOWN ON THE PLANS PLUS A 0.2-FT OVERCUT AROUND THE CHANNEL PERIMETER TO ALLOW FOR BULKING DURING SEEDBED PREPARATIONS AND SOD BULDOZ.
- REMOVE AND PROPERLY DISPOSE OF ALL EXCESS SOIL SO THAT SURFACE WATER MAY ENTER THE CHANNEL FREELY.
- THE PROCEDURE USED TO ESTABLISH GRASS IN THE CHANNEL WILL DEPEND UPON THE SEVERITY OF THE CONDITIONS AND SELECTION OF SPECIES. PROTECT THE CHANNEL WITH MULCH OR A SUFFICIENT TEMPORARY LINER IN ORDER TO WITHSTAND ANTICIPATED VELOCITIES DURING THE ESTABLISHMENT PERIOD.

**MAINTENANCE**

DURING THE ESTABLISHMENT PERIOD, CHECK GRASS-LINED CHANNELS AFTER EVERY RAINFALL. AFTER GRASS IS ESTABLISHED, PERIODICALLY CHECK THE CHANNEL. IN ADDITION, CHECK GRASS AFTER EVERY HEAVY RAINFALL EVENT THAT OCCURS. IMMEDIATELY MAKE NECESSARY REPAIRS. IT IS PARTICULARLY IMPORTANT TO CHECK THE CHANNEL OUTLET AND ALL ROAD CROSSINGS FOR BANK STABILITY AND EVIDENCE OF PIPING OR SCOUR HOLES. REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIGNED CARRYING CAPACITY. KEEP THE GRASS IN A HEALTHY, VIGOROUS CONDITION AT ALL TIMES SINCE IT IS THE PRIMARY EROSION PROTECTION FOR THE CHANNEL.

**TOPSOILING (NCDENR 6.04):**

**CONSTRUCTION SPECIFICATIONS**

**MATERIALS**

- DETERMINE WHETHER THE QUALITY AND QUANTITY OF AVAILABLE TOPSOIL JUSTIFIES SELECTIVE HANDLING. QUALITY TOPSOIL HAS THE FOLLOWING CHARACTERISTICS:
  - TEXTURE - LOAM, SANDY LOAM, AND SLIT LOAM ARE BEST; SANDY CLAY LOAM, SILTY CLAY LOAM, CLAY LOAM, AND LOAMY SAND ARE FAIR. DO NOT USE HEAVY CLAY AND ORGANIC SOILS SUCH AS PEAT OR MUCK AS TOPSOIL.
  - ORGANIC MATTER CONTENT - (SOMETIMES REFERRED TO AS "HUMIC MATTER") SHOULD BE GREATER THAN 1.5% BY WEIGHT.
  - ACIDITY - pH SHOULD BE GREATER THAN 3.6 BEFORE LIMING. LIMING IS REQUIRED IF pH IS LESS THAN 6.0.
  - SOLUBLE SALTS - SHOULD BE LESS THAN 500 PPM.
  - SODIUM - SODIUM ADSORPTION RATIO SHOULD BE LESS THAN 12.

THE DEPTH OF MATERIAL MEETING THE ABOVE QUALIFICATIONS SHOULD BE AT LEAST 2 INCHES. SOIL FACTORS SUCH AS ROCK FRAGMENTS, SLOPE, DEPTH TO WATER TABLE, AND LAYER THICKNESS AFFECT THE EASE OF EXCAVATION AND SPREADING OF TOPSOIL.

GENERALLY, THE UPPER PART OF THE SOIL, WHICH IS RICHEST IN ORGANIC MATTER, IS MOST DESIRABLE; HOWEVER, MATERIAL EXCAVATED FROM DEEPER LAYERS MAY BE WORTH STORING IF IT MEETS THE OTHER CRITERIA LISTED ABOVE.

ORGANIC SOILS SUCH AS MUCKS AND PEATS DO NOT MAKE GOOD TOPSOIL. THEY CAN BE IDENTIFIED BY THEIR EXTREMELY LIGHT WEIGHT WHEN DRY.

**STRIPPING**

STRIP TOPSOIL ONLY FROM THOSE AREAS THAT WILL BE DISTURBED BY EXCAVATION, FILLING, ROAD BUILDING, OR COMPACTION BY EQUIPMENT. A 4 TO 6-INCH STRIPPING DEPTH IS COMMON, BUT DEPTH VARIES DEPENDING ON THE SITE. DETERMINE DEPTH OF STRIPPING BY TAKING SOIL CORES AT SEVERAL LOCATIONS WITHIN EACH AREA TO BE STRIPPED. TOPSOIL DEPTH GENERALLY VARIES ALONG A GRADIENT FROM HILLTOP TO TOE OF THE SLOPE. PUT SEDIMENT BASINS, DIVERSIONS, AND OTHER CONTROLS INTO PLACE BEFORE STRIPPING.

**STOCKPILING**

- SELECT A STOCKPILE LOCATION THAT AVOIDS SLOPES, NATURAL DRAINAGEWAYS, AND TRAFFIC ROUTES. ON LARGE SITES, RESPREADING IS EASIER AND MORE ECONOMICAL WHEN TOPSOIL IS STOCKPILED IN SMALL PILES LOCATED NEAR AREAS WHERE THEY WILL BE USED. ALL STOCKPILE AREAS USED SHALL BE STABILIZED WITH SILT FENCE AND SEEDED PER THE LATEST NPDES RULES.
- SEDIMENT BARRIERS - USE SEDIMENT FENCES OR OTHER BARRIERS WHERE NECESSARY TO RETAIN SEDIMENT.
- TEMPORARY SEEDING - PROTECT TOPSOIL STOCKPILES BY TEMPORARILY SEEDING PER THE LATEST NPDES RULES.
- PERMANENT VEGETATION - IF STOCKPILES WILL NOT BE USED WITHIN 12 MONTHS THEY MUST BE STABILIZED WITH PERMANENT VEGETATION IN ORDER TO CONTROL EROSION AND WEED GROWTH.

**SITE PREPARATION**

- BEFORE SPREADING TOPSOIL, ESTABLISH EROSION AND SEDIMENTATION CONTROL PRACTICES SUCH AS DIVERSIONS, BERMS, DIKES, WATERWAYS, AND SEDIMENT BASINS.
- GRADING - MAINTAIN GRADES IN THE AREAS TO BE TOPSOILED ACCORDING TO THE APPROVED PLANS. DO NOT ALTER THE GRADES BY ADDING TOPSOIL.
- LIMING OF SUBSOIL - WHERE THE EXISTING SUBSOIL pH IS 6.0, LESS THAN 6.0 PH, OR IS COMPOSED OF HEAVY CLAYS; INCORPORATE AGRICULTURAL LIMESTONE IN AMOUNTS RECOMMENDED BY SOIL TESTS OR SPECIFIED FOR THE SEEDING MIXTURE TO BE USED. INCORPORATE LIME TO A DEPTH OF AT LEAST 2 INCHES BY DISKING.
- ROUGHENING - IS IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL. LOOSEN THE SUBGRADE BY DISKING OR SCARIFYING TO A DEPTH OF AT LEAST 4 INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL. IF NO AMENDMENTS HAVE BEEN INCORPORATED, LOOSEN THE SOIL TO A DEPTH OF AT LEAST 6 INCHES BEFORE SPREADING TOPSOIL.

**SPREADING TOPSOIL**

- DO NOT SPREAD TOPSOIL WHILE IT IS FROZEN, MUDDY, OR WHEN SUBGRADE IS WET OR FROZEN. CORRECT ANY IRREGULARITIES IN THE SURFACE THAT RESULT FROM TOPSOILING OR OTHER OPERATIONS TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
- COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL. AVOID EXCESSIVE COMPACTION, AS IT INCREASES RUNOFF AND INHIBITS SEED GERMINATION. LIGHT PACKING WITH A ROLLER IS RECOMMENDED WHERE HIGH-MAINTENANCE TURF IS TO BE ESTABLISHED.
- ON SLOPES AND AREAS THAT WILL NOT BE MOWED, THE SURFACE MAY BE LEFT ROUGH AFTER SPREADING TOPSOIL. A DISK MAY BE USED TO PROMOTE BONDING AT THE INTERFACE BETWEEN TOPSOIL AND SUBSOIL.
- AFTER TOPSOIL APPLICATION, FOLLOW PROCEDURE FOR SEEDBED PREPARATION, TAKING CARE TO AVOID EXCESSIVE MIXING OF TOPSOIL INTO THE SUBSOIL.

**RIP RAP (NCDENR 6.15):**

**CONSTRUCTION SPECIFICATIONS**

SUBGRADE PREPARATION - PREPARE THE SUBGRADE FOR RIP RAP AND FILTER TO THE REQUIRED LINES AND GRADES SHOWN ON THE PLANS. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY APPROXIMATING THAT OF THE SURROUNDING UNDISTURBED MATERIAL OR OVERFILL DEPRESSIONS WITH RIP RAP. REMOVE BRUSH, TREES, STUMPS AND OTHER OBJECTIONAL MATERIAL. CUT THE SUBGRADE SUFFICIENTLY DEEP SO THAT THE FINISHED GRADE OF THE RIP RAP WILL BE AT THE ELEVATION OF THE SURROUNDING AREA. CHANNELS SHALL BE EXCAVATED SUFFICIENTLY TO ALLOW PLACEMENT OF THE RIP RAP IN A MANNER SUCH THAT THE FINISHED INSIDE DIMENSIONS AND GRADE OF THE RIP RAP MEET DESIGN SPECIFICATIONS.

SAND AND GRAVEL FILTER BLANKET - PLACE THE FILTER BLANKET IMMEDIATELY AFTER THE GROUND FOUNDATION IS PREPARED. FOR GRAVEL, SPREAD FILTER STONE IN A UNIFORM LAYER TO THE SPECIFIED DEPTH. WHERE MORE THAN ONE LAYER OF FILTER MATERIAL IS USED, SPREAD THE LAYERS WITH MINIMAL MIXING.

SYNTHETIC FILTER FABRIC - PLACE THE CLOTH FILTER DIRECTLY ON THE PREPARED FOUNDATION. OVERLAP THE EDGES BY AT LEAST 12 INCHES, AND SPACE ANCHOR PINS EVERY 3 FT ALONG THE OVERLAP. BURY THE UPSTREAM END OF THE CLOTH A MINIMUM OF 12 INCHES BELOW GROUND AND WHERE NECESSARY, BURY THE LOWER END OF THE CLOTH OR OVERLAP WITH THE NEXT SECTION AS REQUIRED. TAKE CARE NOT TO DAMAGE THE CLOTH WHEN PLACING RIP RAP. IF DAMAGE OCCURS REMOVE THE RIP RAP AND REPAIR THE SHEET BY ADDING ANOTHER LAYER OF FILTER MATERIAL WITH A MINIMUM OVERLAP OF 12 INCHES AROUND THE DAMAGED AREA. IF EXTENSIVE DAMAGE IS SUSPECTED, REMOVE AND REPLACE THE ENTIRE SHEET.

WHERE LARGE STONES ARE USED OR MACHINE PLACEMENT IS DIFFICULT, A 4-INCH LAYER OF FINE GRAVEL OR SAND MAY BE NEEDED TO PROTECT THE FILTER CLOTH.

STONE PLACEMENT - PLACEMENT OF RIP RAP SHALL FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER. PLACE RIP RAP SO THAT IT FORMS A DENSE, WELL-GRADED MASS OF STONE WITH A MINIMUM OF Voids. THE DESIRED DISTRIBUTION OF STONES THROUGHOUT THE MASS MAY BE OBTAINED BY SELECTIVE LOADING AT THE QUARRY AND CONTROLLED DUMPING DURING FINAL PLACEMENT. PLACE RIP RAP TO ITS FULL THICKNESS IN ONE OPERATION. DO NOT PLACE RIP RAP BY DUMPING THROUGH CHUTES OR OTHER METHODS THAT CAUSE SEGREGATION OF STONE SIZES. TAKE CARE NOT TO DISLodge THE UNDERLYING BASE OR FILTER WHEN PLACING THE STONES.

THE FINISHED SLOPE SHOULD BE FREE OF POCKETS OF SMALL STONE OR CLUSTERS OF LARGE STONES. HAND PLACING MAY BE NECESSARY TO ACHIEVE THE PROPER DISTRIBUTION OF STONE SIZES TO PRODUCE A RELATIVELY SMOOTH, UNIFORM SURFACE. THE FINISHED GRADE OF THE RIP RAP SHOULD BLEND WITH THE SURROUNDING AREA. NO OVERFALL OR PROTRUSION OF RIP RAP SHALL BE APPARENT.

**MAINTENANCE**

INSPECT RIPRAP AT REGULAR INTERVALS AS WELL AS AFTER MAJOR RAINS AND MAKE REPAIRS PROMPTLY. GIVE SPECIAL ATTENTION TO THE OUTLET AND INLET SECTIONS AND OTHER POINTS WHERE CONCENTRATED FLOW ENTERS. CAREFULLY CHECK STABILITY AT ROAD CROSSINGS AND LOOK FOR INDICATIONS OF PIPING, SCOUR HOLES, BANK FAILURES, OR DISLodGED STONES. IF NOT SATISFACTORY, MAKE REPAIRS IMMEDIATELY. MAINTAIN ALL VEGETATION ADJACENT TO THE RIPRAP IN A HEALTHY, VIGOROUS CONDITION TO PROTECT THE AREA FROM EROSION AND SCOUR DURING OUT-OF-BANK FLOW. CONTROL OF WEED AND BRUSH GROWTH MAY BE NEEDED IN SOME LOCATIONS.

**TEMPORARY AND PERMANENT VEGETATION SEEDBED PREPARATION:**

**1. PREPARATION OF SUBSOIL**

- COMPLETE OPERATIONS IN THE AREA TO BE SEEDED AND PREPARE SUBSOIL TO ELIMINATE UNEVEN AREAS AND LOW SPOTS. BRING SURFACE TO THE APPROXIMATE DESIGN CONTOURS.
- SCARIFY SUBSOIL TO A DEPTH OF 3 INCHES. REMOVE WEEDS, ROOTS, STONES AND FOREIGN MATERIALS 1-1/2 INCHES IN DIAMETER AND LARGER.

**2. PLACING TOPSOIL**

- PLACE TOPSOIL DURING DRY WEATHER AND ON DRY UNFROZEN SUBSOIL WHERE INDICATED ON DRAWINGS.
- SPREAD TOPSOIL TO A MINIMUM DEPTH OF 4 INCHES. REMOVE VEGETABLE MATTER AND FOREIGN NON-ORGANIC MATERIAL FROM TOPSOIL WHILE SPREADING. GRADE SURFACE TO PROVIDE POSITIVE DRAINAGE AND PREVENT WATER PONDING. LIGHTLY COMPACT TOPSOIL WITH AT LEAST ONE PASS OF A CULTIPACKER OR SIMILAR EQUIPMENT
- MAINTAIN THE FINISHED SURFACES BY PROTECTING AND REPLACING TOPSOIL AND SUBSOIL AS NECESSARY UNTIL THE AREA IS ACCEPTED UNDER THE CONTRACT.

**3. APPLICATION OF LIME**

- LIMING SHALL BE DONE IMMEDIATELY AFTER GRADING HAS REACHED THE FINE GRADING STAGE, EVEN THOUGH ACTUAL SEEDING MAY NOT BE DONE UNTIL SEVERAL MONTHS LATER.
- SPREAD LIME EVENLY BY MEANS OF A MECHANICAL DISTRIBUTOR.
- WHEN LIME IS DISTRIBUTED BY COMMERCIAL LIMING DEALERS, SALES SLIPS SHOWING THE TONNAGE DELIVERED SHALL BE FILED WITH THE ENGINEER AND SHALL SHOW THE FULL TONNAGE REQUIRED FOR THE ACRES TREATED.
- INCORPORATE LIME IN THE TOP 2 TO 3 INCHES OF SOIL BY HARROWING, DISKING, OR OTHER APPROVED MEANS.

**4. APPLICATION OF FERTILIZER**

- SPREAD FERTILIZER NOT MORE THAN 2 WEEKS IN ADVANCE OF SEEDING.
- TO VERIFY APPLICATION RATE, DETERMINE ACREAGE TO BE FERTILIZED AND PROVIDE ENGINEER WITH TOTAL WEIGHT OF FERTILIZER APPLIED TO THE AREA.
- PROVIDE MECHANICAL SPREADER FOR EVEN DISTRIBUTION AND SPREAD HALF OF THE RATE IN ONE DIRECTION, AND THE OTHER HALF AT RIGHT ANGLES TO THE FIRST. MIX THOROUGHLY INTO UPPER 2 TO 3 INCHES OF SOIL BY DISKING, HARROWING OR OTHER APPROVED METHODS.

**5. SEEDING**

- ACCOMPLISH SEEDING BY MEANS OF AN APPROVED POWER-DRAWN SEED DRILL, COMBINATION CORRUGATED ROLLER-SEEDER, APPROVED HAND OPERATED MECHANICAL SEEDER, OR OTHER APPROVED METHODS TO PROVIDE EVEN DISTRIBUTION OF SEED.
- DO NOT SEED WHEN GROUND IS EXCESSIVELY WET OR EXCESSIVELY DRY. AFTER SEEDING, ROLL AREA WITH A ROLLER, NOT LESS THAN 18 INCHES IN DIAMETER AND WEIGHING NOT MORE THAN 210 POUNDS PER FOOT OF WIDTH. UPON COMPLETION OF ROLLING, WATER AREA WITH A FINE SPRAY.
- IMMEDIATELY FOLLOWING SEEDING, APPLY MULCH OR MATTING. DO NOT SEED AREAS IN EXCESS OF THAT WHICH CAN BE MULCHED ON SAME DAY.
- APPLY WATER WITH A FINE SPRAY IMMEDIATELY AFTER EACH AREA HAS BEEN MULCHED. SATURATE TO 4 INCHES OF SOIL DEPTH.
- MULCHING AND MATTING
  - APPLY MULCH OR MATTING AS REQUIRED TO RETAIN SOIL AND GRASS, BUT NO LESS THAN THE FOLLOWING:
    - SLOPES FROM 0 TO 20 PERCENT BY SPREADING A LIGHT COVER OF MULCH OVER SEEDED AREA AT THE RATE OF NOT LESS THAN 85 LBS. PER 1000 SQ. FT. USE TACK TO PREVENT DISRUPTION OF MULCH.
    - SLOPES GREATER THAN 20 PERCENT MULCH WITH MATTING. PIN MATTING TO THE GROUND WITH WIRE STAPLES AT 1 FOOT INTERVALS (UNLESS INTERVAL SPACING IS INDICATED OTHERWISE ON THE PLANS) IMMEDIATELY AFTER SEEDING.
  - OTHER TYPES OF MULCH AND ANCHORING METHODS MAY BE USED UPON APPROVAL BY THE ENGINEER.

**7. PROTECTION**

- PROTECT SEEDED AREAS FROM DAMAGE BY BARRICADES, SIGNS, AND OTHER APPROPRIATE MEANS. MAINTAIN AND PROTECT SLOPES FROM WEATHER DAMAGE.

PLANS PREPARED BY:



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NO.	DATE	REVISIONS

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PROJECT:  
**PUBLIC WORKS STORMWATER  
PIPE IMPROVEMENTS PHASE 2  
GREENVILLE, NORTH CAROLINA**

TITLE:  
**EROSION CONTROL NOTES**

Wkd PROJECT:  
**20220983.00.RA**  
DATE:  
**3/8/2024**  
**100% PLANS**

**EC2**

FINAL DESIGN - NOT FOR CONSTRUCTION



**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**  
 Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

**SECTION E: GROUND STABILIZATION**

Site Area Description	Required Ground Stabilization Timeframes	
	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

**Note:** After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> <li>Temporary grass seed covered with straw or other mulches and tackifiers</li> <li>Hydroseeding</li> <li>Roller erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Shrubs or other permanent plantings covered with mulch</li> <li>Uniform and evenly distributed ground cover sufficient to restrain erosion</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> <li>Roller erosion control products with grass seed</li> </ul>

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging off-site.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

**EQUIPMENT AND VEHICLE MAINTENANCE**

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g. dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste off-site as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

**PAINT AND OTHER LIQUID WASTE**

- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

**PORTABLE TOILETS**

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

**EARTHEN STOCKPILE MANAGEMENT**

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

**HERBICIDES, PESTICIDES AND RODENTICIDES**

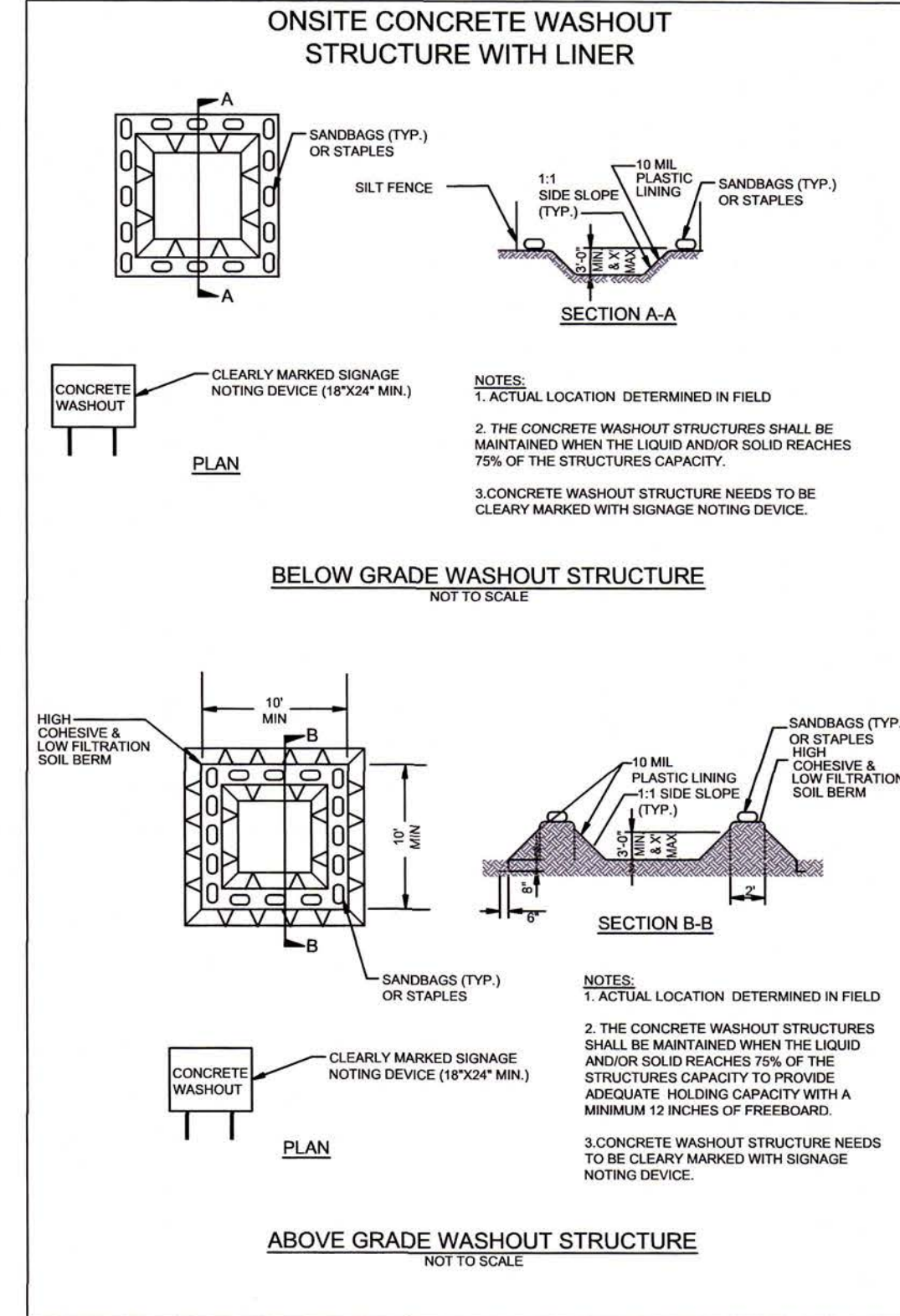
- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

**HAZARDOUS AND TOXIC WASTE**

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

**CONCRETE WASHOUTS**

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within 10' perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.



**NCG01 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 04/01/19**

**PART II, SECTION G, ITEM (4)  
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT**

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items.
- The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit.
- Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems.
- Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above.
- Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION A: SELF-INSPECTION**

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event $\geq 1.0$ inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SODs)	At least once per 7 calendar days and within 24 hours of a rain event $\geq 1.0$ inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event $\geq 1.0$ inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event $\geq 1.0$ inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION B: RECORDKEEPING**

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

**2. Additional Documentation to be Kept on Site**

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- This General Permit as well as the Certificate of Coverage, after it is received.
- Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION C: REPORTING**

**1. Occurrences that Must be Reported**

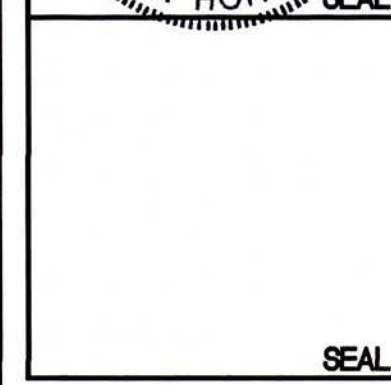
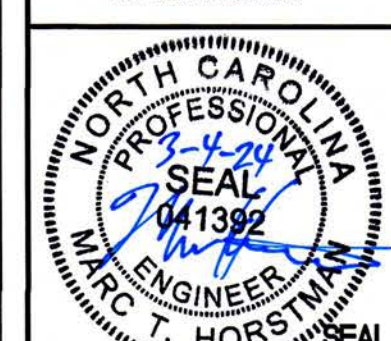
- Permittees shall report the following occurrences:
- Visible sediment deposition in a stream or wetland.
  - Oil spills if:
    - They are 25 gallons or more,
    - They are less than 25 gallons but cannot be cleaned up within 24 hours,
    - They cause sheen on surface waters (regardless of volume), or
    - They are within 100 feet of surface waters (regardless of volume).
  - Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
  - Anticipated bypasses and unanticipated bypasses.
  - Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.</li> <li>If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.</li> </ul>
(b) Oil spills and release of hazardous substances per item 1(b)-(c) above	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.</li> </ul>
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.</li> </ul>
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(j)(7)]	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. [40 CFR 122.41(j)(6)].</li> <li>Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>

**NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING EFFECTIVE: 04/01/19**



NO.	DATE	REVISIONS

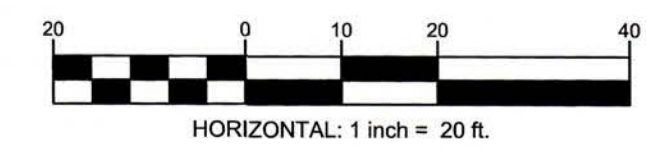
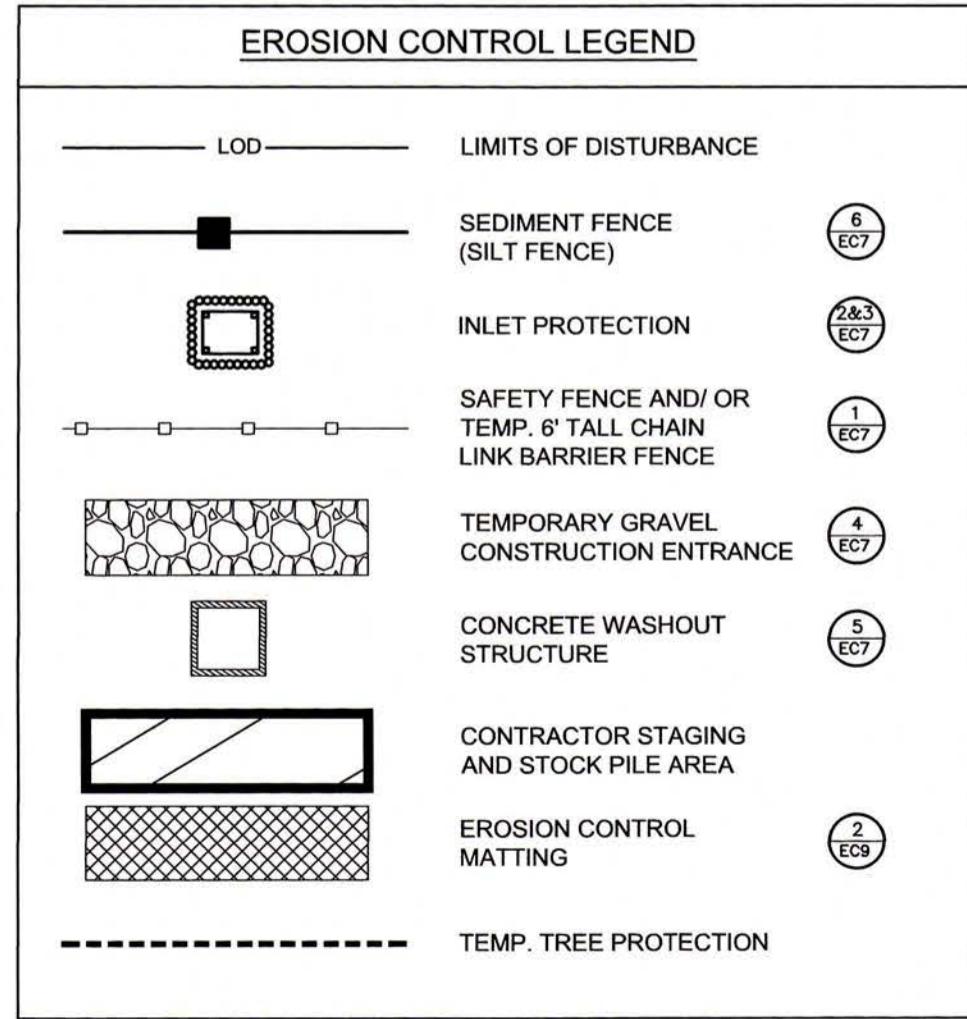
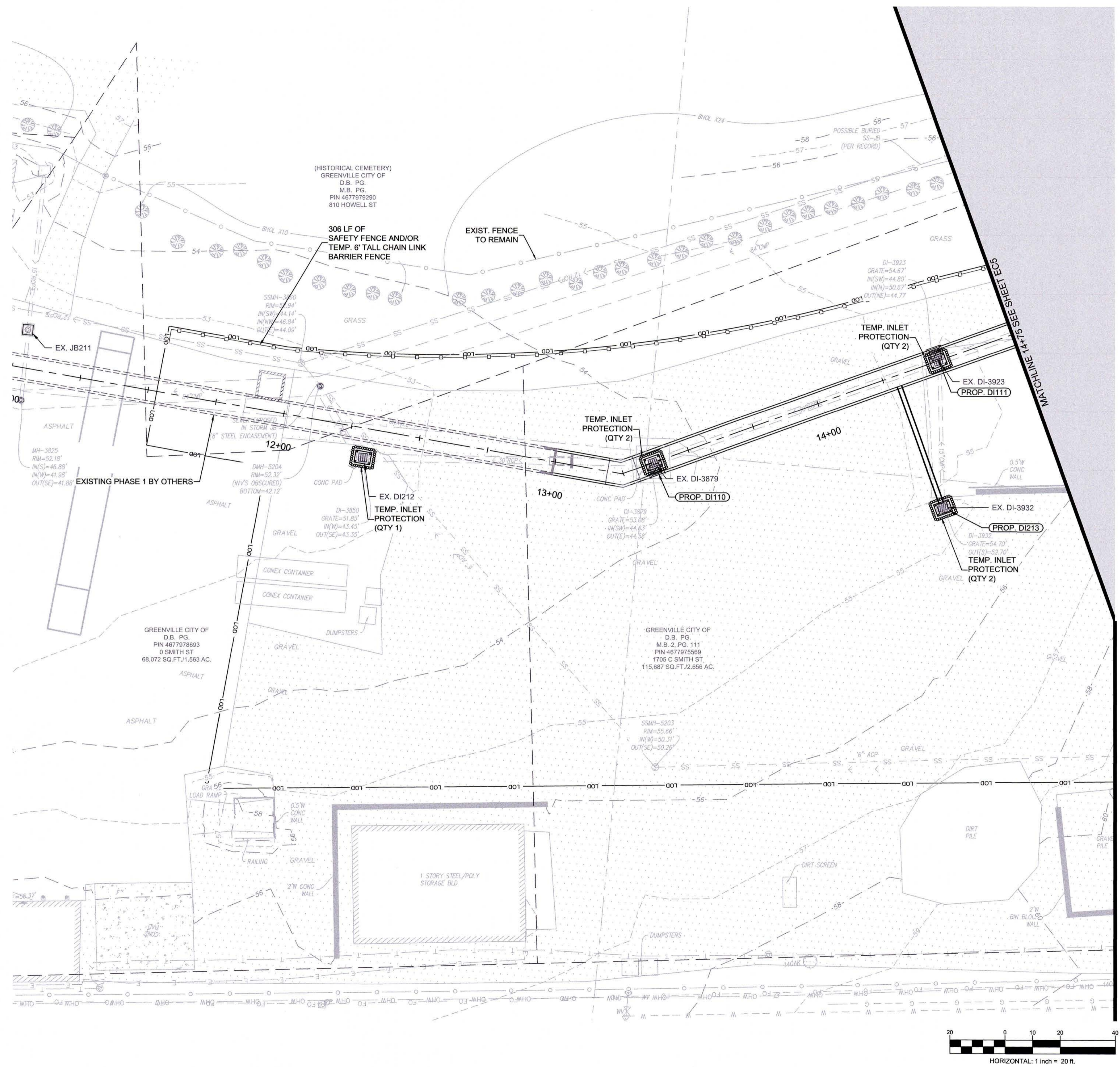
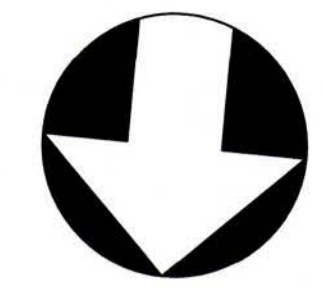
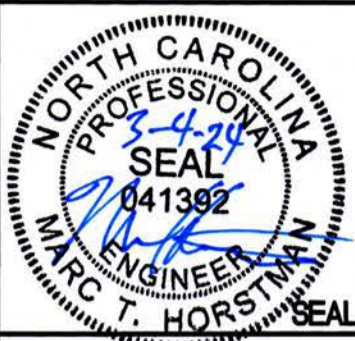


**PROJECT:** PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA  
**DATE:** 3/8/2024  
**100% PLANS**  
**TITLE:** EROSION CONTROL NCG01 NOTES  
**WKO PROJECT:** 20220983.00.RA  
**FINAL DESIGN - NOT FOR CONSTRUCTION**



**LIMITS OF DISTURBANCE**  
 SHEET EC4: 52,126 SF (1.197 AC)  
 SHEET EC5: 37,029 SF (0.850 AC)  
 SHEET EC6: 20,799 SF (0.477 AC)  
 TOTAL: 109,954 SF (2.524 AC)

PLANS PREPARED BY:  
**W.K. DICKSON**  
 community infrastructure consultants  
 720 Corporate Center Drive  
 Raleigh, NC 27607  
 (919) 782-0495  
 (919) 782-9872  
 www.wkdickson.com  
 NC LICENSE NO. F-6374



NO.	DATE	REVISIONS

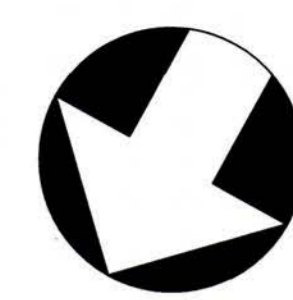
PLANS PREPARED FOR:  
**Greenville**  
 NORTH CAROLINA  
 Find yourself in good company.  
 CITY OF GREENVILLE

PROJECT: PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA  
 TITLE: EROSION CONTROL PLAN

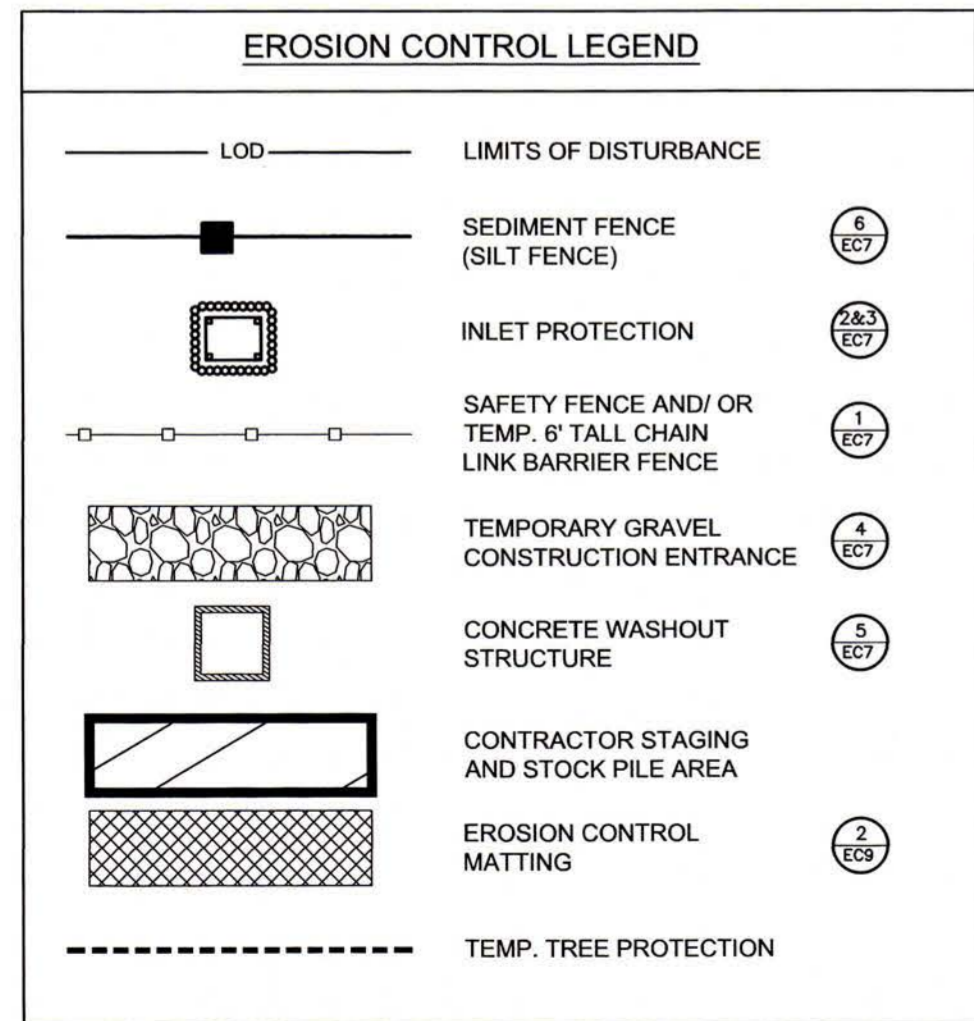
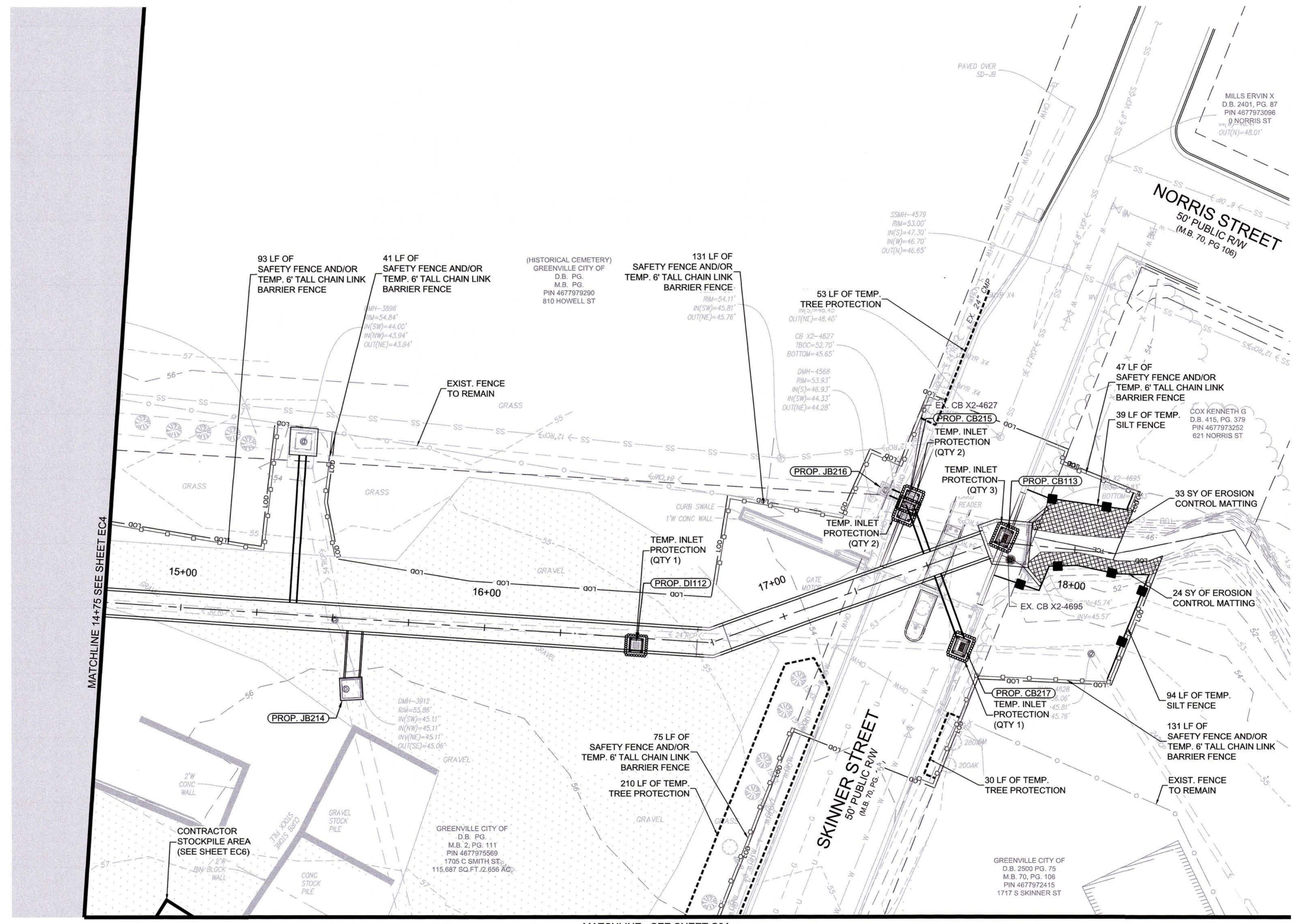
W.K.D. PROJECT: 20220983.00.RA  
 DATE: 3/8/2024  
 100% PLANS

**EC4**





**LIMITS OF DISTURBANCE**  
 SHEET EC4: 52,126 SF (1.197 AC)  
 SHEET EC5: 37,029 SF (0.850 AC)  
 SHEET EC6: 20,799 SF (0.477 AC)  
 TOTAL: 109,954 SF (2.524 AC)



NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
**Greenville**  
 NORTH CAROLINA  
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PROJECT:  
 PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA

TITLE:  
 EROSION CONTROL PLAN

W.K.D. PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

100% PLANS

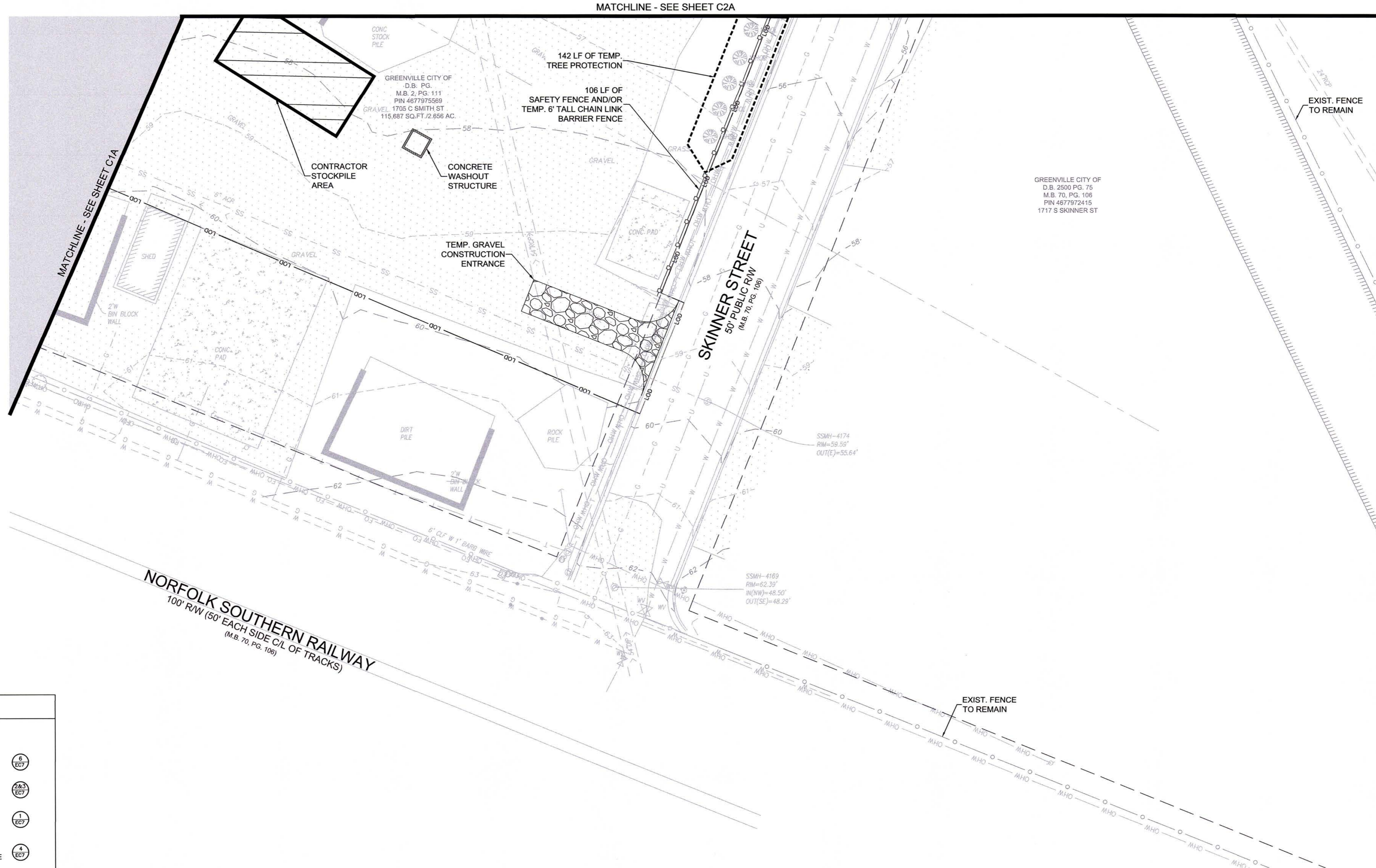
**EC5**

FINAL DESIGN - NOT FOR CONSTRUCTION

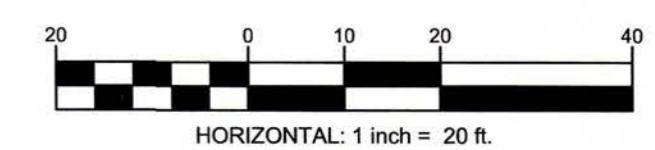




**LIMITS OF DISTURBANCE**  
 SHEET EC4: 52,126 SF (1.197 AC)  
 SHEET EC5: 37,029 SF (0.850 AC)  
 SHEET EC6: 20,799 SF (0.477 AC)  
 TOTAL: 109,954 SF (2.524 AC)



EROSION CONTROL LEGEND	
— LOD —	LIMITS OF DISTURBANCE
— ■ —	SEDIMENT FENCE (SILT FENCE) (6/EC7)
□	INLET PROTECTION (2&3/EC7)
— ○ —	SAFETY FENCE AND/OR TEMP. 6' TALL CHAIN LINK BARRIER FENCE (1/EC7)
▨	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE (4/EC7)
□	CONCRETE WASHOUT STRUCTURE (5/EC7)
▩	CONTRACTOR STAGING AND STOCK PILE AREA
▨	EROSION CONTROL MATTING (2/EC9)
- - -	TEMP. TREE PROTECTION



NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
**Greenville**  
 NORTH CAROLINA  
 Find yourself in good company.  
 CITY OF GREENVILLE

PROJECT:  
 PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA

TITLE:  
 EROSION CONTROL PLAN

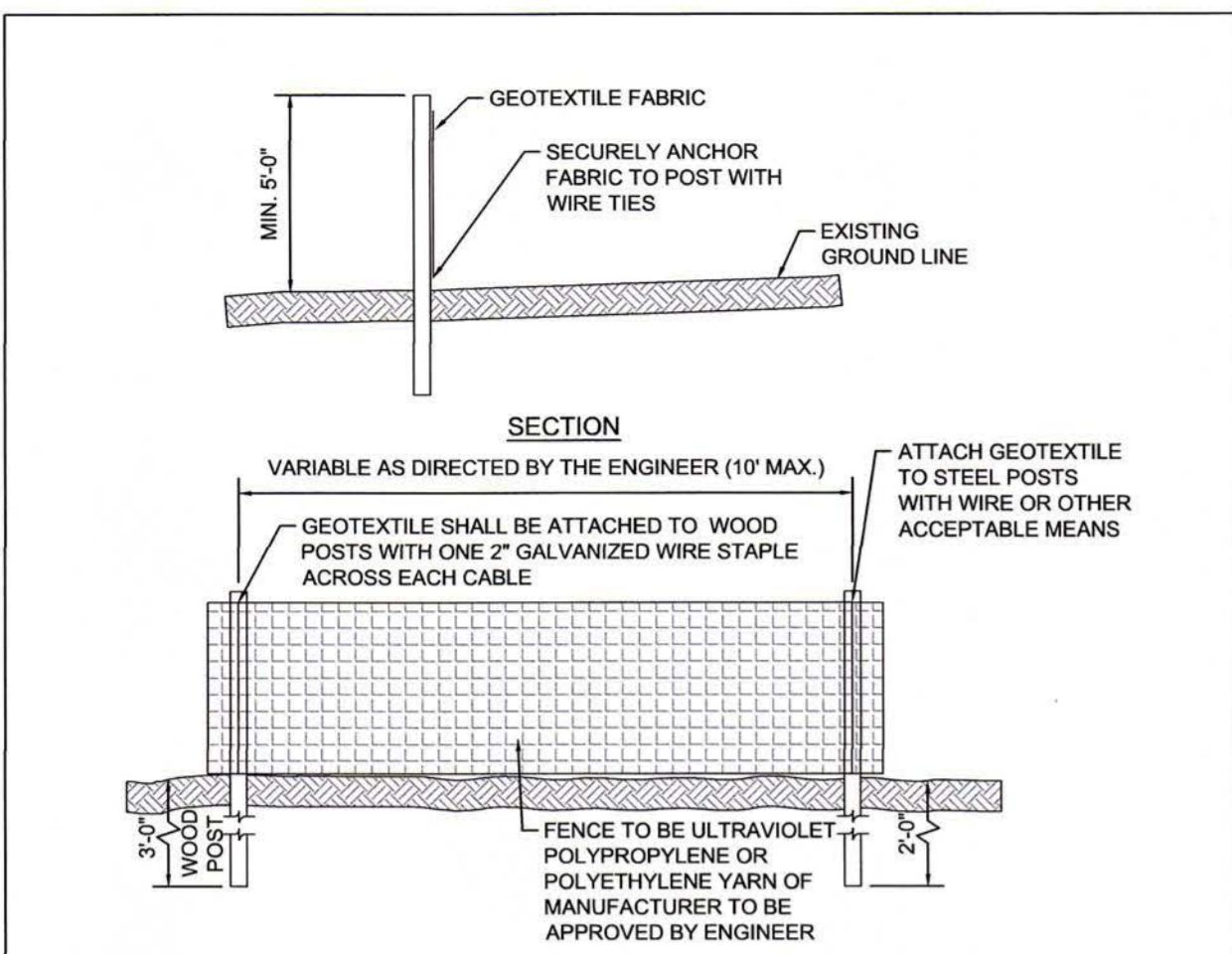
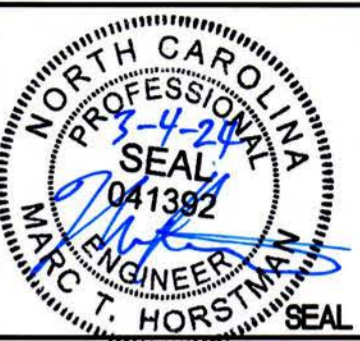
W.K.D. PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

100% PLANS

**EC6**

FINAL DESIGN - NOT FOR CONSTRUCTION

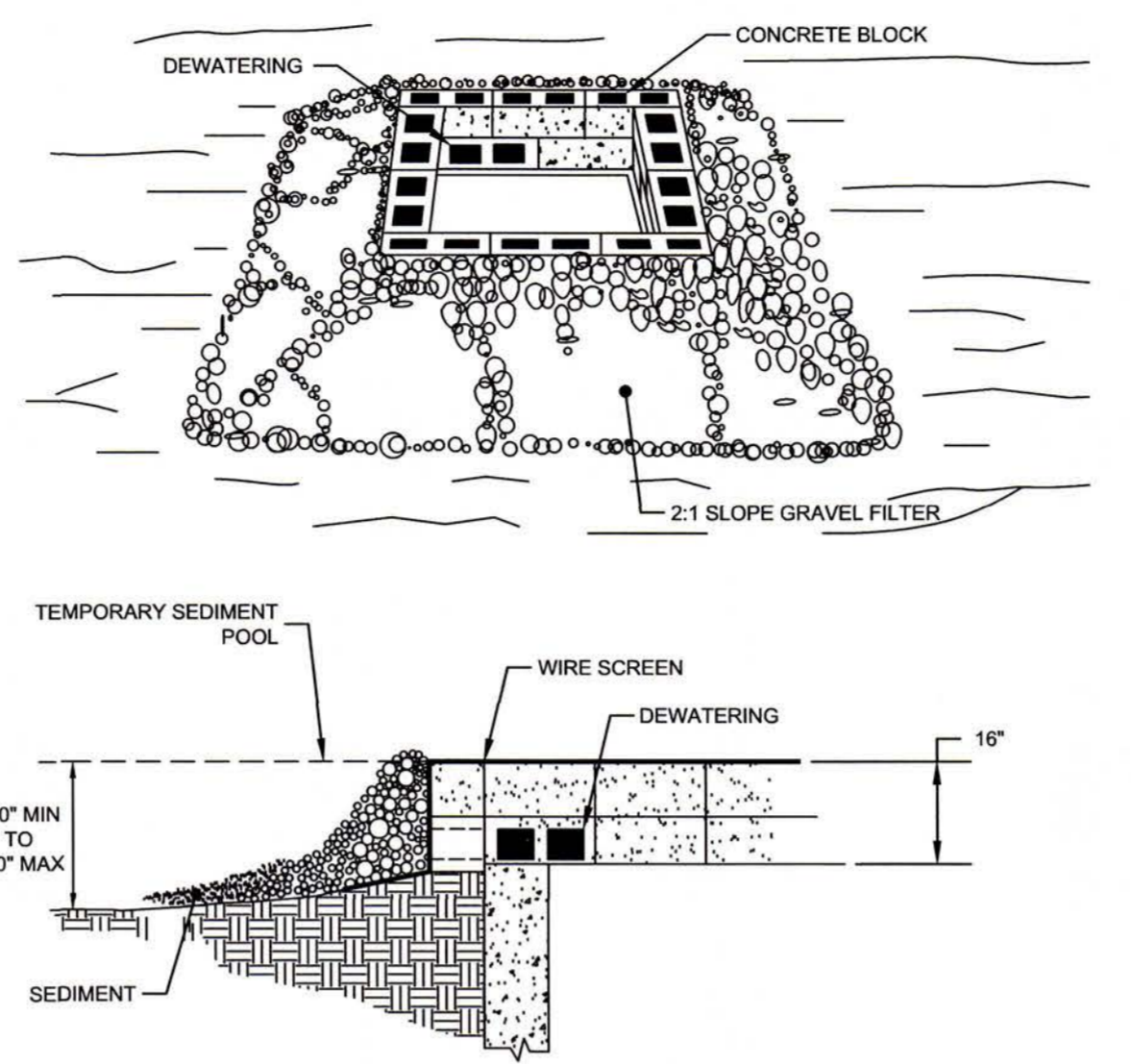




- NOTES:**
- POLYETHYLENE OR POLYPROPYLENE FENCE SHALL BE A HIGHLY VISIBLE PRECONSTRUCTED SAFETY FENCE APPROVED BY THE ENGINEER. THE FENCE MATERIAL SHALL HAVE AN ULTRAVIOLET COATING.
  - EITHER WOOD POSTS OR STEEL POSTS MAY BE USED. WOOD POSTS SHALL BE HARDWOOD WITH A WEDGE OR PENCIL TIP AT ONE END, AND SHALL BE AT LEAST 5 FT. IN LENGTH WITH A MINIMUM NOMINAL 2" X 2" CROSS SECTION. STEEL POSTS SHALL BE AT LEAST 5 FT. IN LENGTH, AND HAVE A MINIMUM WEIGHT OF 0.85 LBS/FT OF LENGTH.
  - POSTS SHALL BE SET AT A MAXIMUM SPACING OF 10 FT., MAINTAINED IN A VERTICAL POSITION AND HAND SET OR SET WITH A POST DRIVER. POSTS SHALL BE INSTALLED A MINIMUM OF 2 FT. INTO THE GROUND. IF HAND SET, ALL BACKFILL MATERIAL SHALL BE THOROUGHLY TAMPED. WOOD POSTS MAY BE SHARPENED TO A DULL POINT IF POWER DRIVEN. POSTS DAMAGED BY POWER DRIVING SHALL BE REMOVED AND REPLACED PRIOR TO FINAL ACCEPTANCE. THE TOPS OF ALL WOOD POSTS SHALL BE CUT AT A 30-DEGREE ANGLE. THE WOOD POSTS MAY, AT THE OPTION OF THE CONTRACTOR, BE CUT AT THIS ANGLE EITHER BEFORE OR AFTER THE POSTS ARE ERECTED.

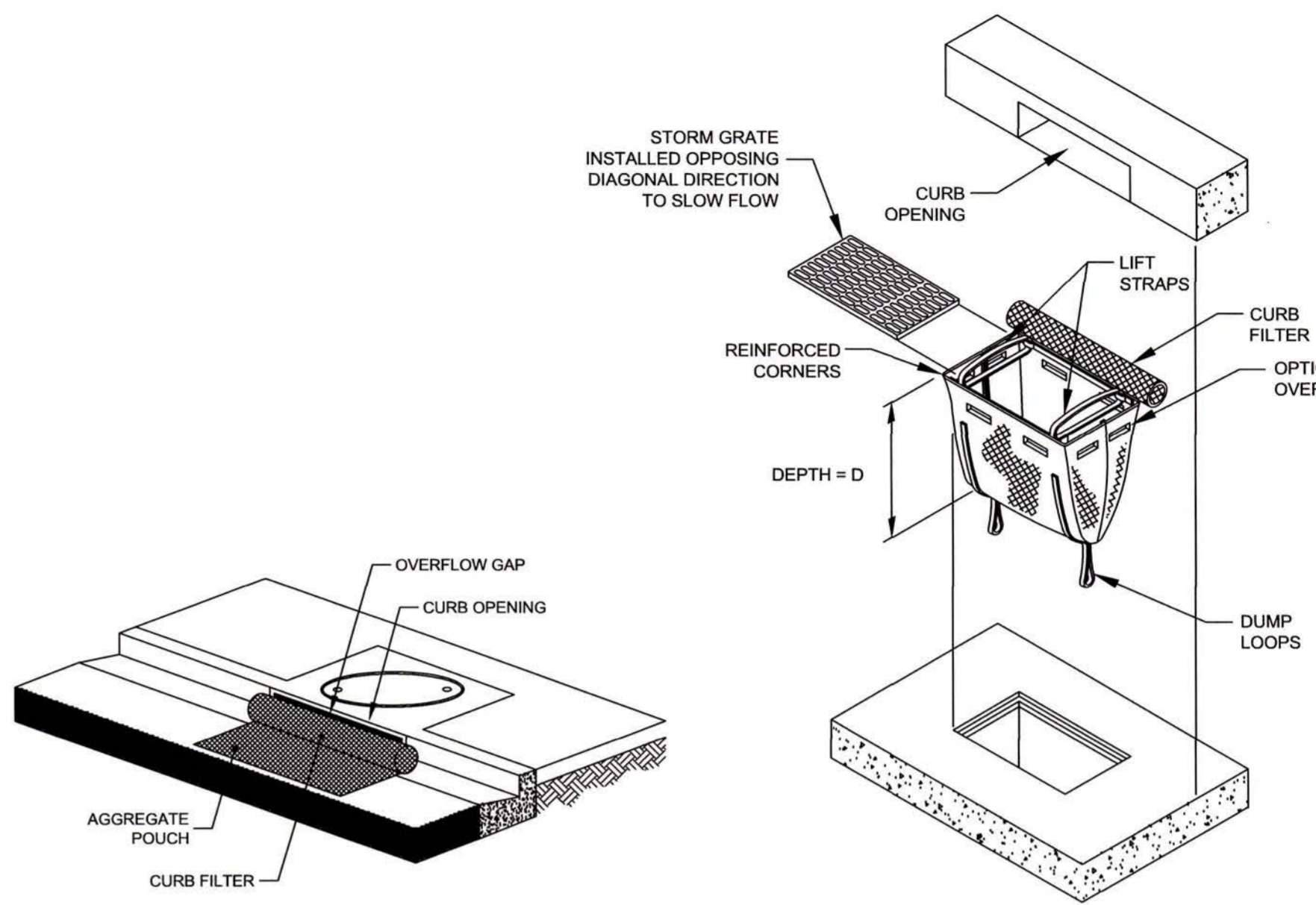
SAFETY FENCE		NO.	DATE	REVISION
SHEET NO. 1 OF 1	SCALE: NOT TO SCALE	DWG. BY: WKD	DATE: 5/18/2015	PATH AND FILENAME:

**1 SAFETY FENCE**  
 EC7 NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- NOTES:**
- LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2 X 4 WOOD STUDS THROUGH BLOCK OPENINGS.
  - CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
  - USE CLEAN GRAVEL, 3/4 TO 1/2 INCH IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #57 WASHED STONE IS RECOMMENDED.

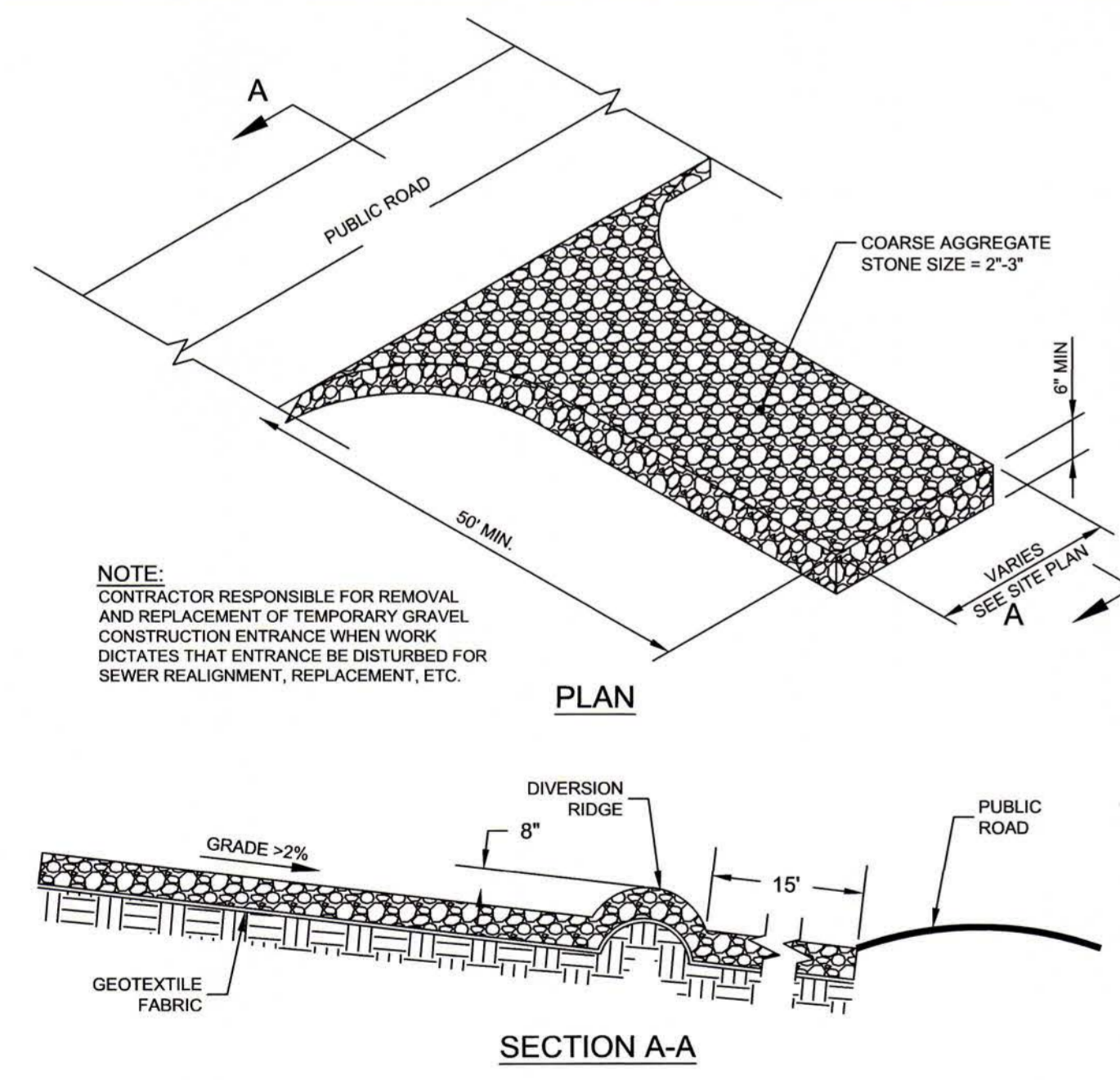
**2 BLOCK AND GRAVEL INLET PROTECTION**  
 EC7 NOT TO SCALE



**SILT BAG CURB INLET FILTER**  
 NOT TO SCALE

**SILT SACK**  
 NOT TO SCALE

**3 TEMPORARY INLET PROTECTION**  
 EC7 NOT TO SCALE



**INSTALLATION**

AVOID CURVES IN PUBLIC ROADS AND STEEP SLOPES. REMOVE ALL VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE AND CROWN FOUNDATION FOR POSITIVE DRAINAGE.

IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 SIDE SLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FT FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.

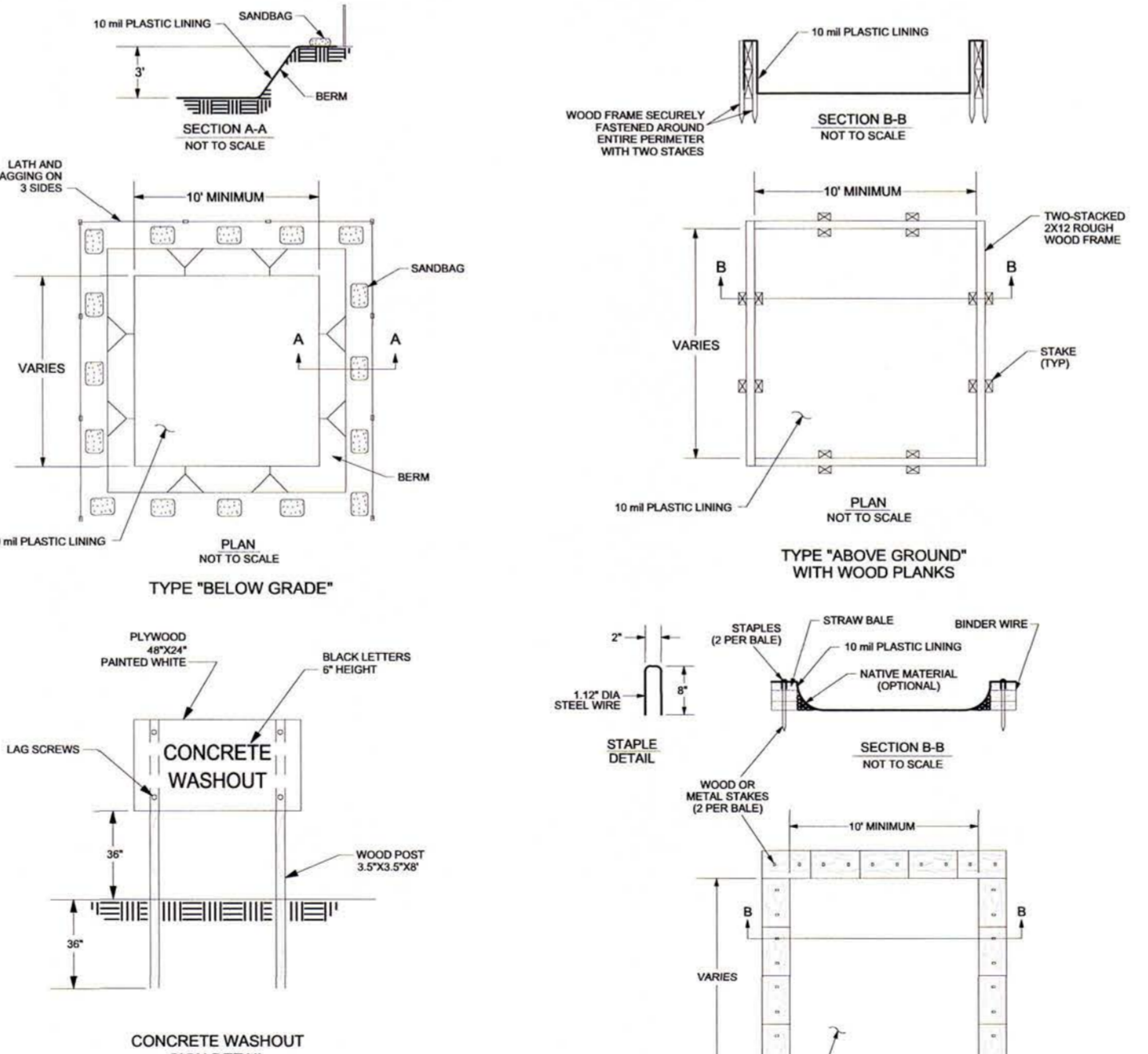
PLACE GEOTEXTILE FABRIC ON GRADED FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.

PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPED FOR DRAINAGE.

DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.

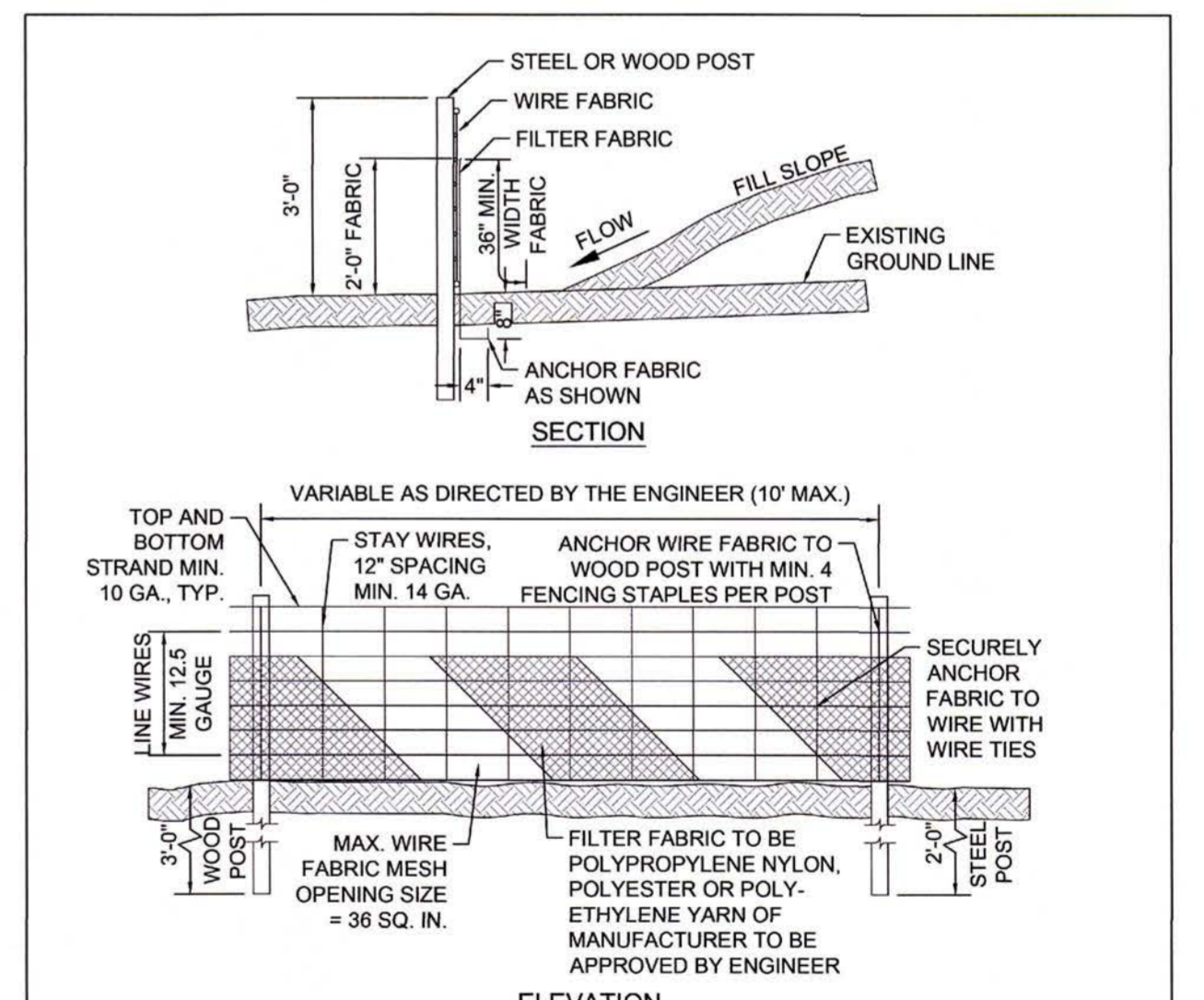
INSTALL PIPE UNDER PAD IF NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

**4 TEMPORARY GRAVEL CONSTRUCTION ENTRANCE**  
 EC7 NOT TO SCALE



- NOTES:**
- ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
  - A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
  - MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
  - HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.
  - MUST BE LOCATED >50 FT AWAY FROM INLETS/WATERWAYS UNLESS THERE IS NO OTHER PRACTICAL ALTERNATIVE.

**5 CONCRETE WASHOUT STRUCTURE**  
 EC7 NOT TO SCALE



- NOTES:**
- THE CONTRACTOR SHALL MAINTAIN ALL SILT FENCING BY REMOVING AND DISPOSING OF SILT ACCUMULATIONS AS DIRECTED BY THE ENGINEER. FILTER FABRIC SHALL BE REPLACED WHEN IT HAS DETERIORATED TO SUCH EXTENT THAT IT REDUCES THE EFFECTIVENESS OF THE SILT FENCE.
  - FILTER FABRIC SHALL HAVE A MINIMUM TENSILE STRENGTH (@ 20% MAX. ELONGATION) OF 30lbs/LIN. IN., WIRE FABRIC REQUIRED.
  - IF EXTRA STRENGTH FABRIC IS UTILIZED (MIN. TENSILE STRENGTH = 50 lbs/LIN. IN. @ MAX. 20% ELONGATION), WIRE FABRIC IS OPTIONAL, MAXIMUM POST SPACING = 6 FEET.
  - POSTS SHALL BE 4" DIA. PINE, 2" DIA. OAK OR 1.33 lbs/ft STEEL UNLESS OTHERWISE APPROVED BY ENGINEER.

TEMPORARY SILT FENCE		NO.	DATE	REVISION
SHEET NO. 1 OF 1	SCALE: NOT TO SCALE	DWG. BY: WKD	DATE: 5/18/2015	PATH AND FILENAME: K:\KWD Standard Details\EC001.dwg

**6 TEMPORARY SILT FENCE**  
 EC7 NOT TO SCALE

NO.	DATE	REVISIONS



**TEMPORARY SEEDING**

**LATE WINTER/EARLY SPRING**

**TEMPORARY SEEDING MIXTURE**

SPECIES	RATE (lb/acre)
RYE (GRAIN)	120
ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)	50

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

**SEEDING DATES**

COASTAL PLAIN - DEC.1-APR. 15

**SOIL AMENDMENTS**

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

**MULCH**

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE**

REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

**SUMMER**

**TEMPORARY SEEDING MIXTURE**

SPECIES	RATE (lb/acre)
GERMAN MILLET	40

IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LB/ACRE.

**SEEDING DATES**

COASTAL PLAIN - APR. 15-AUG. 15

**SOIL AMENDMENTS**

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

**MULCH**

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS AN ANCHORING TOOL.

**MAINTENANCE**

REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

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

**FALL**

**TEMPORARY SEEDING MIXTURE**

SPECIES	RATE (LB/ACRE)
RYE	120

**SEEDING DATES**

COASTAL PLAIN AND PIEDMONT - AUG. 15-DEC. 30

**SOIL AMENDMENTS**

FOLLOW SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

**MULCH**

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE**

REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

**CHANNEL SEEDING**

**TEMPORARY SEED MIX**

- LATE WINTER/EARLY SPRING
  - RYE (GRAIN) @ 120 LB/ACRE
- SUMMER
  - GERMAN MILLET @ 40 LB/ACRE
  - SUDANGRASS @ 50 LB/ACRE (AS A SUBSTITUTE)
- FALL
  - RYE (GRAIN) @ 120 LB/ACRE

**PERMANENT RIPARIAN SEED MIX**

- IDEALLY PLANTED EITHER AUG-SEPT OR MAR-APR
  - REDDTOP @ 7 LB/ACRE
  - SWITCH GRASS @ 50 LB/ACRE
  - SEDGE @ 10 LB/ACRE
  - RICE CUTGRASS @ 20 LB/ACRE

**NOTE:**

ALTERNATIVE SPECIES MAY BE USED UPON APPROVAL BY THE ENGINEER.

**CONSTRUCTION NOTES:**

- INSTALL EROSION CONTROL MEASURES AS SHOWN ON PLANS. THE CONTRACTOR MAY MODIFY OR RELOCATE EROSION CONTROL MEASURES TO MAKE ADJUSTMENTS FOR UNFORESEEN FIELD CONDITIONS. ALL RELOCATION SHALL HAVE THE APPROVAL OF THE ENGINEER.
- CLEAR AND GRUB AREA OF ALL TRASH AND EXOTIC/INVASIVE VEGETATION.
- STABILIZE GRADED BANKS WITH SEED AND MULCH.
- INSTALL EROSION CONTROL MATTING AND PLANTS AS NOTED ON SHEETS D4 AND EC5.

**1**  
**EC8** TEMPORARY & PERMANENT SEEDING DETAILS

09/20/2011 - 10:55:28 AM

**SEEDING AND MULCHING:**

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

**All Roadway Areas**

March 1 - August 31	September 1 - February 28
50# Tall Fescue	50# Tall Fescue
10# Centipede	10# Centipede
25# Bermudagrass (hulled)	35# Bermudagrass (hulled)
500# Fertilizer	500# Fertilizer
4000# Limestone	4000# Limestone

**Water and Borrow Locations**

March 1 - August 31	September 1 - February 28
75# Tall Fescue	75# Tall Fescue
25# Bermudagrass (hulled)	35# Bermudagrass (hulled)
500# Fertilizer	500# Fertilizer
4000# Limestone	4000# Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

**Approved Tall Fescue Cultivars**

2nd Millennium	Chipper	Focus	Masterpiece	Quest	Titan Ltd.
Avenge	Coronado	Grande II	Malador	Rebel Exeda	Titanium
Barlexas	Coyote	Greenkeeper	Malador GT	Rebel Sentry	Tomohawk
Barlexas II	Davinci	Greystone	Millennium	Regiment II	Tacer
Barrera	Dynasty	Inferno	Monlaik	Rembrandt	Trooper
Barrington	Dominion	Justice	Mustang 3	Rendition	Turbo
Blitmore	Duster	Jaguar 3	Olympic Gold	Scorpion	Ultimate
Bingo	Endeavor	Kalahari	Padre	Shelby	Waltpack
Bravo	Escalade	Kentucky 31	Paraiso	Signia	Wolfpack
Cayenne	Falcon II, III, IV & V	Kitty Hawk	Picasso	Silverstar	
Chapel Hill	Fidelity	Kitty Hawk 2000	Piedmont	Southern Choice II	
Chesapeake	Finesse II	Lexington	Pure Gold	Stetson	
Constitution	Firebird	Magellan	Prospect	Tarheel	

PUBLIC WORKS DEPARTMENT  
1500 Beatty Street  
Greenville, North Carolina 27634

**CITY OF GREENVILLE, N.C.**  
USE WITH THE CITY OF GREENVILLE, N.C. STANDARD SPECIFICATIONS ONLY

**EROSION CONTROL GUIDE**

Scale: not to scale  
Sheet # 2 of 3  
Date: 9/19/11  
Approval: APPROVAL  
Sheet # 310.01

09/20/2011 - 12:13:56 PM

On cut and fill slopes 2:1 or steeper Centipede shall be applied at a rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

All areas seeded and mulched shall be tacked with asphalt. Crimping of straw in lieu of asphalt tack shall not be allowed on projects.

**CRIMPING STRAW MULCH:**

Crimping shall be required on projects adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8'.

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1500 Beatty Street  
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**EROSION CONTROL GUIDE**

Scale: not to scale  
Sheet # 3 of 3  
Date: 9/19/11  
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Sheet # 310.01

**PERMANENT SEEDING**



NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
**Greenville**  
NORTH CAROLINA  
find yourself in good company  
CITY OF GREENVILLE

PROJECT:  
**PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA**

TITLE:  
**EROSION CONTROL DETAILS**

W.K.D. PROJECT:  
**20220983.00.RA**

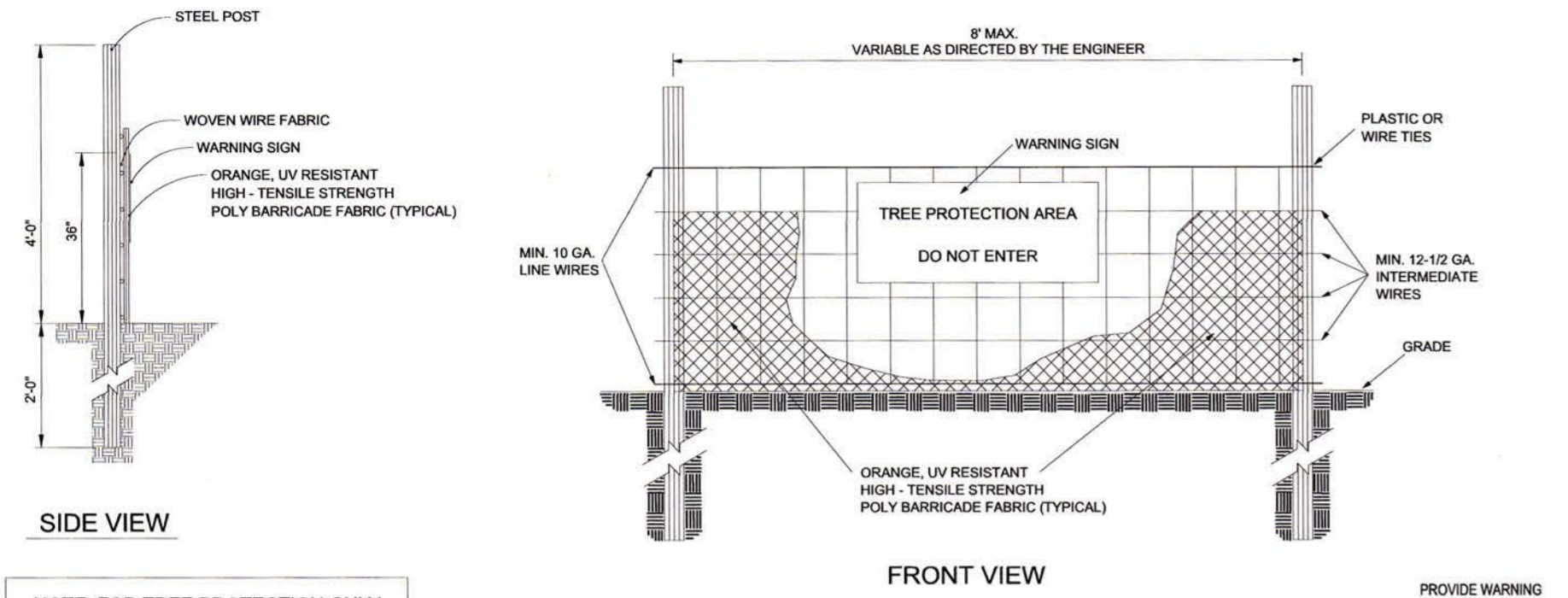
DATE:  
**3/8/2024**

**100% PLANS**

**EC8**

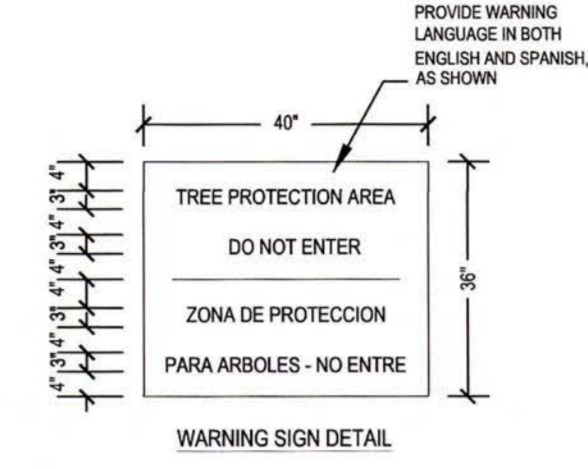
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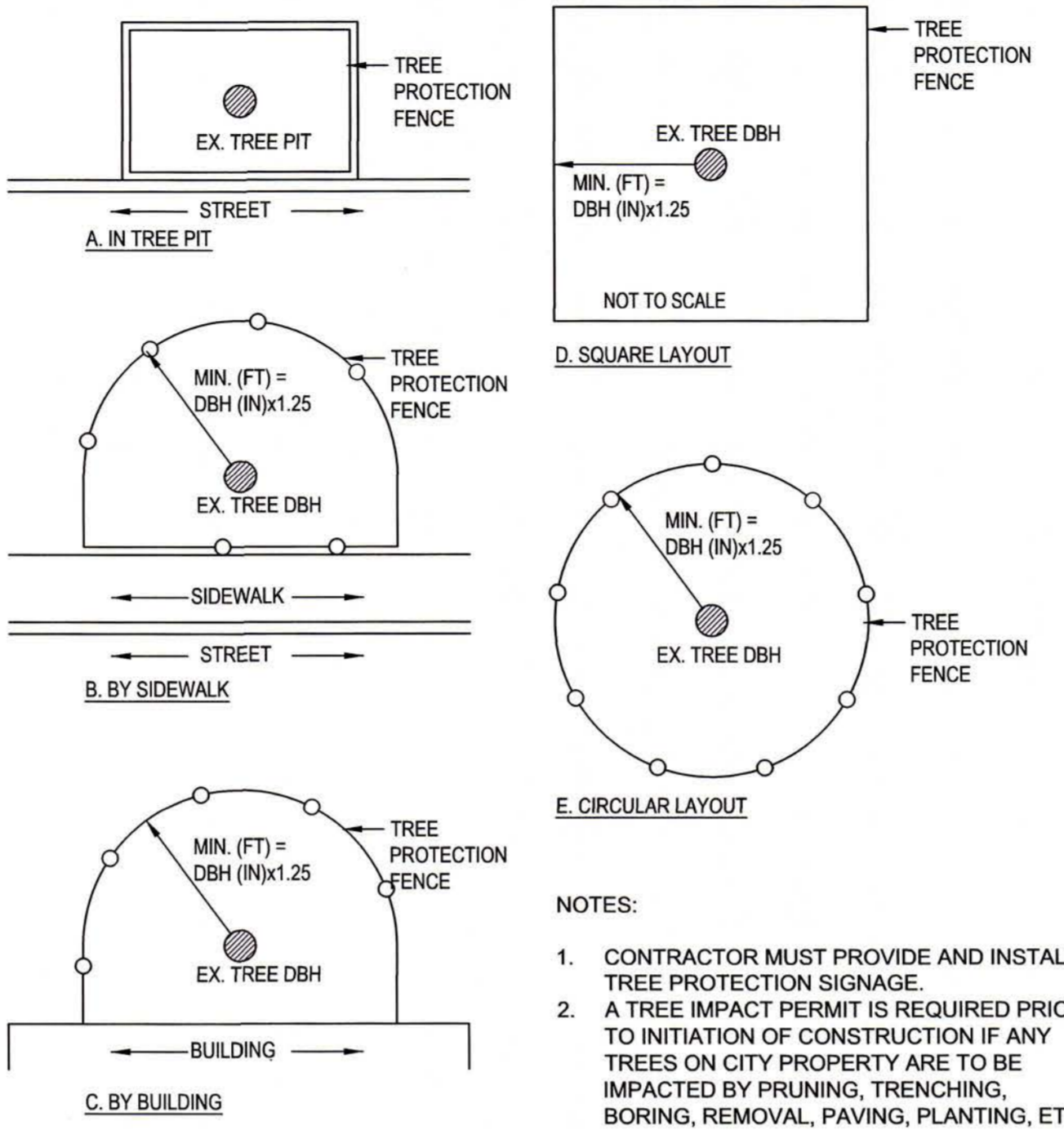
NOTE: FOR TREE PROTECTION ONLY

- NOTES:
- TREE PROTECTION FENCING MUST BE INSTALLED AT A MINIMUM RADIUS OF THE CRITICAL ROOT ZONE (TREE PROTECTION FENCE LAYOUTS A-E FOR EXAMPLES).
  - THE TREE PROTECTION FENCING MUST REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNLESS OTHERWISE APPROVED BY URBAN FORESTRY STAFF.
  - APPROVED IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION WHEN APPLICABLE.
  - SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER FOR THE REMAINDER.
  - FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTED AREA.
  - ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
  - ADDITIONAL SIGNS MAY BE REQUIRED BASED ON ACTUAL FIELD CONDITIONS.
  - SIGNS ARE TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL WITH LETTERS A MINIMUM OF 3" HIGH, CLEARLY LEGIBLE AND SPACED AS SHOWN.



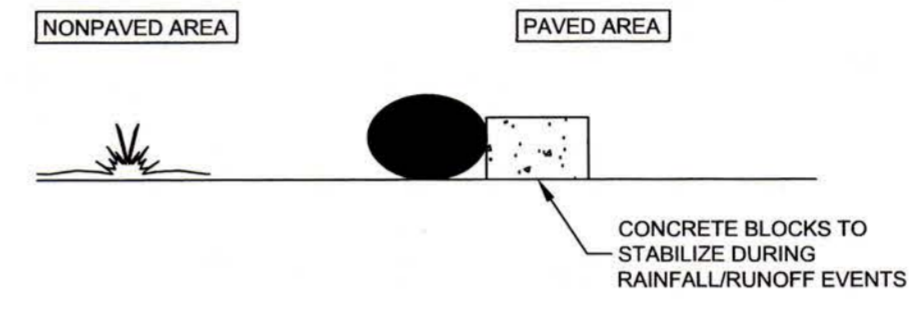
1 TEMPORARY TREE PROTECTION  
EC9 NOT TO SCALE

TREE PROTECTION FENCE LAYOUT

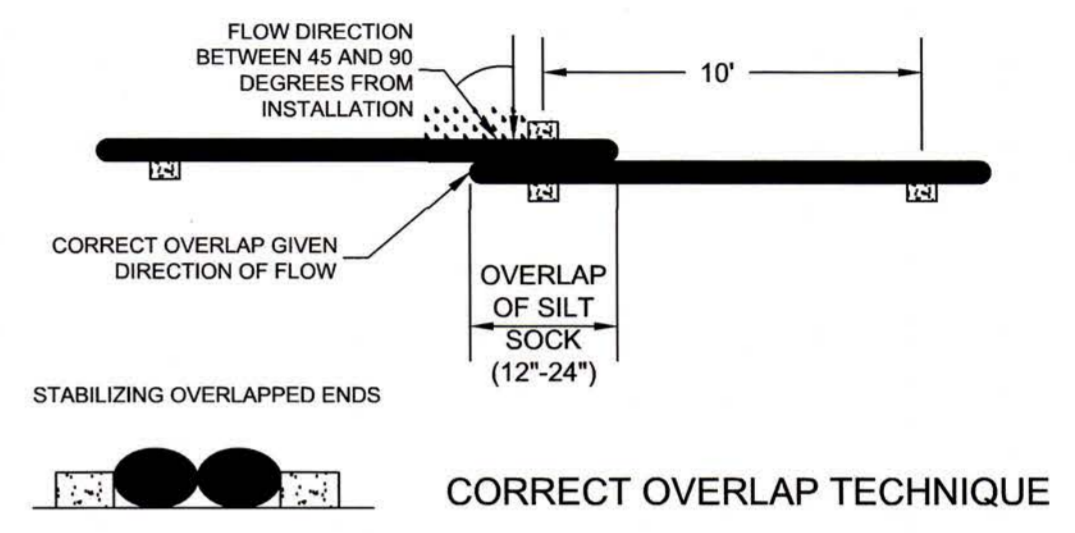


- NOTES:
- CONTRACTOR MUST PROVIDE AND INSTALL TREE PROTECTION SIGNAGE.
  - A TREE IMPACT PERMIT IS REQUIRED PRIOR TO INITIATION OF CONSTRUCTION IF ANY TREES ON CITY PROPERTY ARE TO BE IMPACTED BY PRUNING, TRENCHING, BORING, REMOVAL, PAVING, PLANTING, ETC.

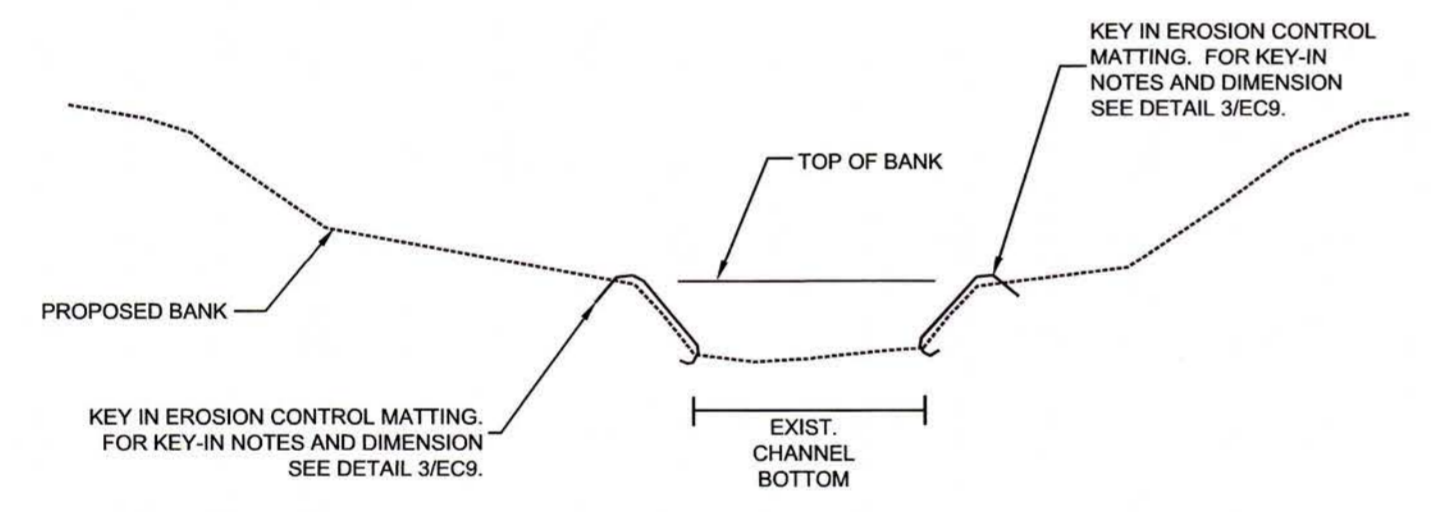
PAVED GROUND APPLICATION



THIS DETAIL IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY IN THE EVENT CONDITIONS WARRANT ITS USE.



4 SILT SOCK (SUBSTITUTE FOR SILT FENCE IN PAVED AREAS)  
EC9 NOT TO SCALE



- NOTES:
- LINE ALL CHANNEL BANKS WITH EROSION CONTROL MATTING. SEE DETAIL 3/EC9 FOR KEY-IN DETAILS ONLY.
  - PREPARE SOIL FOR SEEDING PER CONTRACT DOCUMENTS.
  - PLACE SEED AND SOIL AMENDMENTS. **DO NOT** MULCH AREAS WHERE MATTING IS TO BE INSTALLED UNLESS RECOMMENDED BY THE MATTING MANUFACTURER.
  - INSTALL EROSION CONTROL MATTING OVER SEED.

2 COIR FIBER MATTING  
EC9 NOT TO SCALE

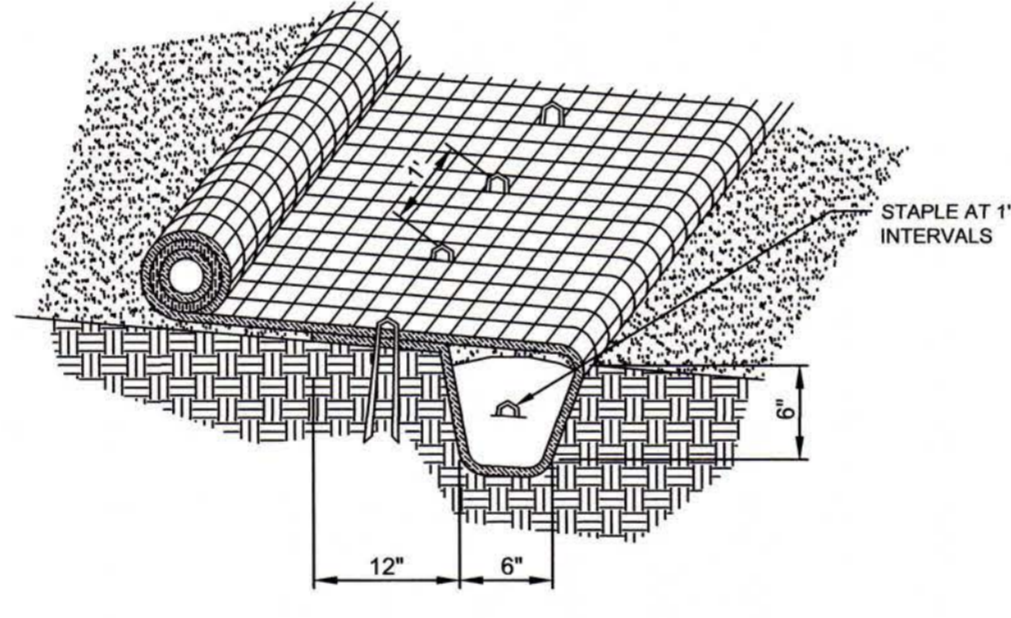


FIGURE 1 INITIAL ANCHOR TRENCH

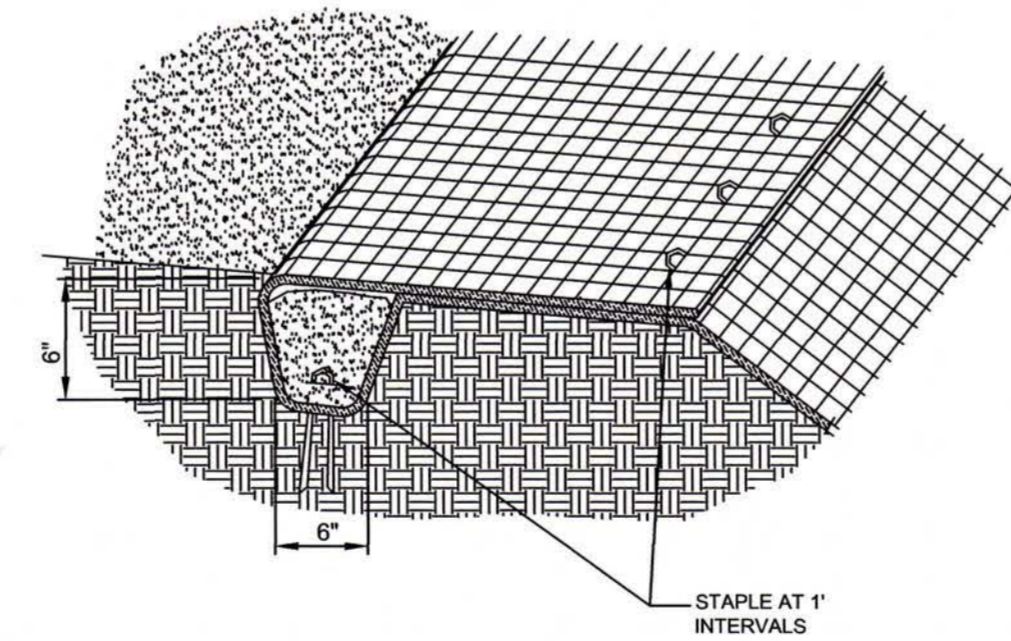


FIGURE 3 TERMINAL ANCHOR TRENCH

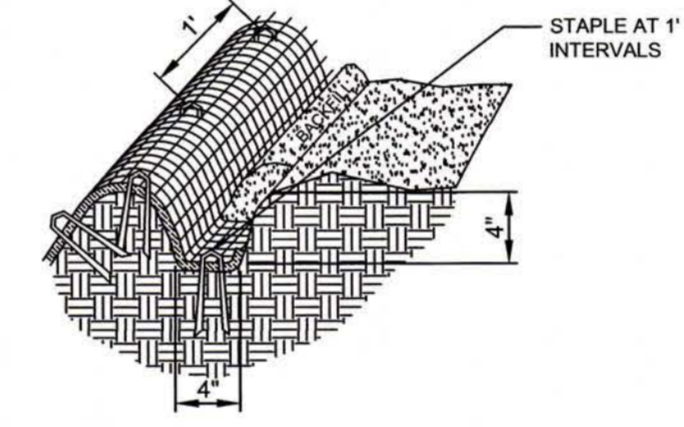


FIGURE 2 BANK TERMINATION

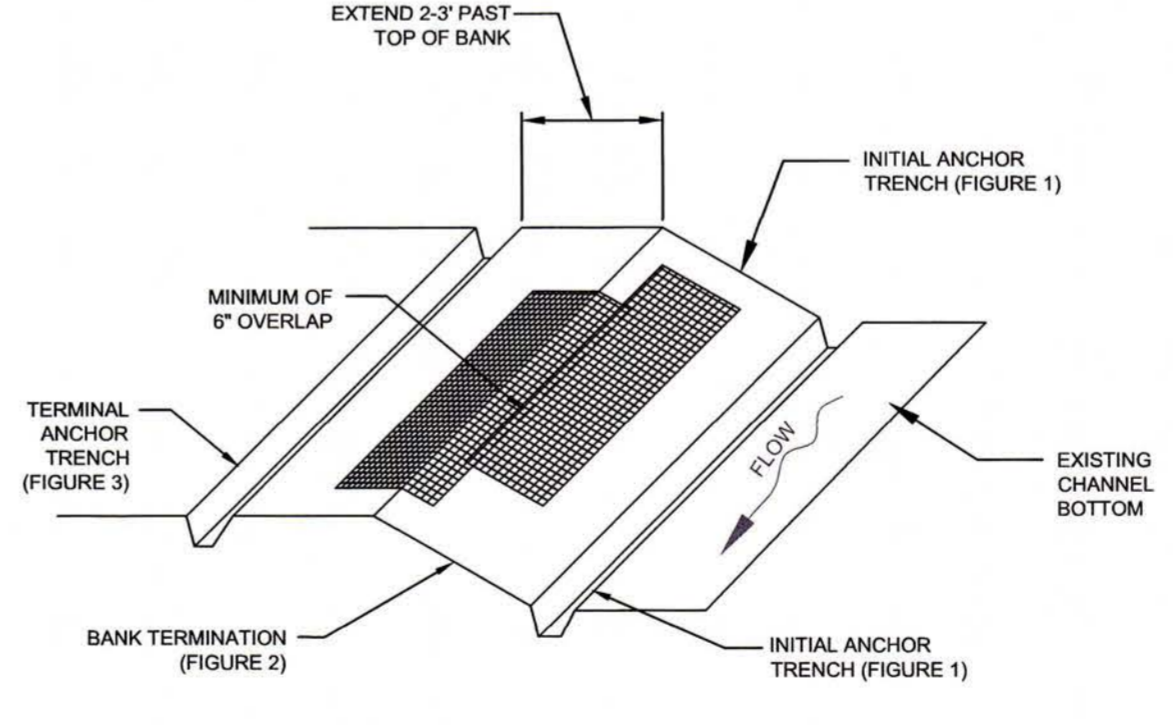


FIGURE 4 TRENCH AND CHECK SLOT LAYOUT

3 EROSION CONTROL MATTING INSTALLATION  
EC9 NOT TO SCALE

INSTALLATION NOTES:

EROSION CONTROL MATTING SHALL BE EXCELSIOR WITH A MINIMUM PERMISSIBLE SHEAR STRESS OF 1.75 LBS PER SQ FT.

SITE PREPARATION

- GRADE AND COMPACT AREA.
- REMOVE ALL ROCKS, CLODS, VEGETATION, AND OBSTRUCTIONS SO THAT MATTING WILL HAVE DIRECT CONTACT WITH THE SOIL.
- PREPARE SEEDBED BY LOOSENING 3 TO 4 INCHES OF TOPSOIL ABOVE FINAL GRADE.
- APPLY ANY TREATMENT SUCH AS LIME OR FERTILIZERS TO THE SOIL IF NEEDED.
- DO NOT** MULCH AREAS WHERE MATTING IS TO BE INSTALLED.

SEEDING

SEE SHEET EC8 FOR SEEDING REQUIREMENTS.  
APPLY SEED TO SOIL BEFORE PLACING MATTING.

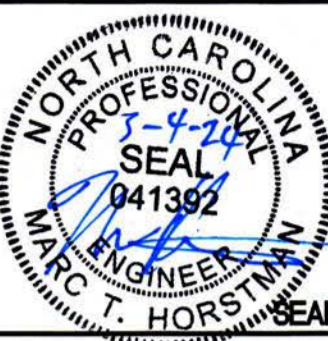
INSTALLATION ON BANKS

- EXTEND MAT 2 TO 3 FEET OVER CREST OF SLOPE AND EXCAVATE A 6" x 6" TERMINAL ANCHOR TRENCH. SEE FIGURE 4.
- ANCHOR MAT IN TRENCH WITH STAPLES AT 1 FOOT SPACING, BACKFILL AND COMPACT SOIL.
- OVERLAP ADJACENT MATS 6" AND ANCHOR WITH STAPLES EVERY 18" ACROSS THE OVERLAP. THE HIGHER ELEVATION MAT SHOULD BE PLACED OVER THE LOWER ELEVATION MAT.
- EDGES SHOULD BE SHINGLED AWAY FROM THE FLOW OF WATER.
- LAY MAT LOOSE TO ALLOW CONTACT WITH SOIL. **DO NOT** STRETCH TIGHT.
- ANCHOR MAT USING U-SHAPED WIRE STAPLES OR GEOTEXTILE PINS.

MAINTENANCE

- INSPECT ROLLED EROSION CONTROL MATTING AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAIN FALL EVENT. REPAIR IMMEDIATELY IF NECESSARY.
- GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED AND EROSION MUST NOT OCCUR BENEATH THE MATTING.
- ANY AREAS OF THE MATTING THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
- IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED WITH THE ERODED AREA PROTECTED.
- MONITOR AND REPAIR THE MATTING AS NECESSARY UNTIL GROUND COVER HAS BEEN ESTABLISHED.

PLANS PREPARED BY:  
**W.K. DICKSON**  
community infrastructure consultants  
Transportation + Water Resources  
Urban Development + Geomatics  
720 Corporate Center Drive  
Raleigh, NC 27607  
(919) 782-3855  
(919) 782-9672  
www.wkdickson.com  
NC LICENSE NO. F-694



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NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
**Greenville**  
Water & Sewer Utility  
Find yourself in good company  
CITY OF GREENVILLE

PROJECT:  
PUBLIC WORKS STORMWATER  
PIPE IMPROVEMENTS PHASE 2  
GREENVILLE, NORTH CAROLINA  
TITLE:  
EROSION CONTROL DETAILS

WKD PROJECT:  
20220983.00.RA  
DATE:  
3/8/2024

100% PLANS

EC9

FINAL DESIGN - NOT FOR CONSTRUCTION



**GENERAL NOTES**

ALL TRAFFIC CONTROL DEVICES AND PROCEDURES SHALL CONFORM TO THE CURRENT EDITION OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, THE NCDOT ROADWAY STANDARD DRAWINGS AND THE CURRENT EDITION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

ADAPT THE TRAFFIC CONTROL PLANS, WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVING DEVICES.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) THE CONTRACTOR SHALL BE REQUIRED TO FURNISH, INSTALL, RELOCATE, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES, WARNINGS AND/OR CHANNELING DEVICES FOR WORK SITES AND DETOUR ROUTES AS SHOWN IN TRAFFIC CONTROL PLANS UNLESS OTHERWISE SPECIFIED WITHIN THE TRAFFIC CONTROL PLANS. THE LOCATION AND POSITIONING OF THESE BARRICADES, SIGNS, ETC. SHALL BE APPROVED AND INSPECTED BY THE PROJECT INSPECTOR.

B) THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT INSPECTOR PRIOR TO BEGINNING ANY WORK THAT WILL REQUIRE THE PLACEMENT OF SIGNS OR OTHER TRAFFIC CONTROL DEVICES BY THE CONTRACTOR. ALL INFORMATION MUST BE IN WRITING TO THE ENGINEER REGARDING THE TRAFFIC CONTROL PLAN. THE CONTRACTOR IS TO NOTIFY THE ENGINEER 10 WORKING DAYS IN ADVANCE OF ANY ROAD CLOSURE.

C) THE CONTRACTOR SHALL MARK ALL HAZARDS WITHIN THE LIMITS OF THE PROJECT WITH WELL-MAINTAINED SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES SHALL BE MOVED, SUPPLEMENTED, CHANGED, OR REMOVED AS REQUIRED DURING THE PROGRESS OF CONSTRUCTION AS APPROVED BY THE ENGINEER.

D) THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS AND TENANTS ACCESS TO THEIR PROPERTY THROUGHOUT THE PROJECT, INCLUDING INGRESS AND EGRESS FOR BUSINESSES.

E) TRAFFIC CONTROL PLANS (TCP) FOR THIS PROJECT CONSIST OF SEVERAL TYPICAL DRAWINGS AND STANDARDS SHOWING TRAFFIC CONTROL DEVICES TO BE USED WHERE VARIOUS TYPES OF CONSTRUCTION ACTIVITIES ARE OCCURRING ON THE PROJECT. THESE DRAWINGS ARE FOR TYPICAL SITUATIONS AND SHOULD BE ADAPTED TO THE ACTUAL FIELD CONDITIONS. UNFORESEEN FIELD SITUATIONS MAY PREVENT THE ADAPTION OF THE PRESCRIBED TYPICAL DRAWING OR STANDARD EXACTLY AS SHOWN. THE CONTRACTOR, AT THE DIRECTION OF THE ENGINEER, SHALL MOVE, SUPPLEMENT, CHANGE, AND/OR REMOVE THE TRAFFIC CONTROL DEVICES ASSOCIATED WITH THESE TYPICAL DRAWINGS AND/OR STANDARD DRAWINGS TO ENSURE THAT THE MOTORIST AND PEDESTRIANS CAN PASS THROUGH THE CONSTRUCTION AREA IN A SAFE AND EFFICIENT MANNER.

F) CONSTRUCTION PHASING MAY DICTATE THAT TWO OR MORE TYPICAL DRAWINGS OR STANDARDS BE USED IN ONE AREA OF CONSTRUCTION. CHANNELIZING DEVICES ASSOCIATED WITH THESE TYPICALS SHALL BE MOVED, SUPPLEMENTED, CHANGED, OR REMOVED AS REQUIRED BY THE CONSTRUCTION PHASING OF THE PLANS. THE LOCATION AND POSITIONING OF THESE DEVICES SHALL BE APPROVED BY THE ENGINEER TO ENSURE THAT THE MOTORIST DOES NOT RECEIVE FALSE INFORMATION WHEN TWO OR MORE TYPICALS AND/OR ROADWAY STANDARD DRAWINGS OVERLAP.

G) TEMPORARY OPERATIONAL SIGNS ARE GENERALLY MOUNTED ON PORTABLE SUPPORTS. THESE ARE NORMALLY USED FOR SHORT-TERM OPERATIONS TO WARN AND GUIDE TRAFFIC THROUGH OR AROUND CONSTRUCTION AREAS WITHIN A CONSTRUCTION ZONE. OPERATIONAL SIGNS SHALL BE INSTALLED PRIOR TO THE START OF OPERATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIGNS SHALL BE MAINTAINED IN PROPER POSITION AND KEPT CLEAN AND LEGIBLE AT ALL TIMES. INSTALL SAND BAG BALLAST, OR OTHER APPROVED DEVICES TO PREVENT MOVEMENT OF SIGNS BY WIND OR PASSING VEHICLES AS NEEDED. SIGNS SHALL BE REMOVED WHEN NOT APPLICABLE. THE BOTTOM OF THE SIGN SHALL BE A MINIMUM OF 1 FOOT ABOVE THE PAVEMENT SURFACE.

H) WORK ON THE PROJECT OR ANY SEPARATE ACTIVITY THEREIN SHALL NOT START UNTIL ALL OF THE REQUIRED SIGNS, BARRICADES, WARNING, AND/OR CHANNELIZING DEVICES ARE INSTALLED AND INSPECTED AND THEN APPROVED BY THE PROJECT INSPECTOR AND PERMITS HAVE BEEN ACQUIRED.

I) ANY EXISTING PAVEMENT MARKINGS DETERMINED BY THE ENGINEER TO BE MISLEADING OR IN CONFLICT WITH THE TRAFFIC CONTROL PLAN SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR PRIOR TO PROCEEDING WITH ANY CONSTRUCTION ACTIVITY.

J) ALL TEMPORARY PAVEMENT MARKINGS APPLIED BY THE CONTRACTOR SHALL BE IN PAINT UNLESS OTHERWISE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS.

K) THE CONTRACTOR MUST BE PREPARED TO PROVIDE FLAGGERS DURING CONSTRUCTION ACTIVITY.

L) FLAGGERS' ATTIRE SHALL INCLUDE A FLUORESCENT VEST, SHIRT, OR JACKET WORN AS THE OUTER LAYER OF CLOTHING. THE FLAGGER SHALL BE EQUIPPED WITH A STOP/SLOW PADDLE (SEE MUTCD, PART VI, SECTION 6E, PAGE 6E-1). RED FLAGS WILL BE ACCEPTABLE IN LIEU OF THE PADDLE IN EMERGENCY SITUATIONS ONLY. FLAGGERS, PROPERLY EQUIPPED AND INSTRUCTED, WILL BE PROVIDED BY THE CONTRACTORS AND STATIONED AT THE LOCATIONS SPECIFIED OR AS DIRECTED BY THE ENGINEER. A FLUORESCENT CAP MAY BE REQUIRED.

M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

N) THE CONTRACTOR SHALL REPAIR ALL DRIVEWAYS, DRIVEWAY PIPES, CURB AND GUTTER, SIDEWALKS AND STREET TO EXISTING CONDITIONS OR BETTER.

O) PEDESTRIAN CONSIDERATIONS IN WORK ZONES:

THERE ARE THREE THRESHOLD CONSIDERATIONS IN PLANNING FOR PEDESTRIAN SAFETY IN TEMPORARY TRAFFIC CONTROL ZONES:

- 1) PEDESTRIANS SHOULD NOT BE LED INTO CONFLICT WITH WORK SITE VEHICLES, EQUIPMENT OR OPERATIONS.
- 2) PEDESTRIANS SHOULD NOT BE LED INTO DIRECT CONFLICTS WITH TRAFFIC MOVING THROUGH OR AROUND THE WORK SITE.
- 3) PEDESTRIANS SHOULD BE PROVIDED WITH A SAFE, CONVENIENT TRAVEL PATH THAT REPLICATES, AS NEARLY AS POSSIBLE, THE EXISTING PEDESTRIAN FACILITY THROUGH THE WORK SITE.

THE NEEDS OF ALL PEDESTRIANS, INCLUDING THE VISUALLY IMPAIRED, THE HEARING IMPAIRED AND THOSE WITH OTHER PHYSICAL DISABILITIES, MUST BE ACCOMMODATED AT WORK SITES.

EVERY EFFORT SHOULD BE MADE TO SEPARATE PEDESTRIAN TRAFFIC FROM BOTH WORK SITE ACTIVITY AND ADJACENT TRAFFIC. PROTECTIVE BARRICADES, FENCING, HANDRAILS, AND BRIDGES, TOGETHER WITH WARNING AND GUIDANCE DEVICES AND SIGNS SHOULD BE UTILIZED SO THAT THE PASSAGEWAY FOR PEDESTRIANS IS SAFE AND WELL-DEFINED. WHERE IT IS NECESSARY TO DIVERT PEDESTRIANS INTO THE PARKING LANE OF A STREET, APPROVED BARRICADING AND DELINEATION SHALL BE PROVIDED TO SEPARATE THE PEDESTRIAN WALKWAY FROM THE ADJACENT TRAFFIC LANE. AT NO TIME SHALL PEDESTRIANS BE DIVERTED INTO A PORTION OF THE STREET WHICH IS OPEN TO VEHICULAR TRAFFIC, WHEN A SAFE PASSAGEWAY CAN BE PROVIDED AROUND A WORK SITE. SIGNING SHOULD BE USED TO DIRECT PEDESTRIANS TO SAFE STREET CROSSINGS IN ADVANCE OF THE WORK AREA. SIGNS SHOULD BE PLACED AT THE INTERSECTIONS NEAREST TO THE WORK SITE SO THAT PEDESTRIANS, PARTICULARLY IN HIGH TRAFFIC-VOLUME AREAS, ARE NOT CONFRONTED WITH MID-BLOCK WORK SITES THAT WILL ENCOURAGE THEM TO WALK ALONG OR THROUGH THE WORK ZONE OR TO MAKE A MID-BLOCK CROSSING. IT SHOULD BE RECOGNIZED THAT PEDESTRIANS GENERALLY WILL NOT RETRACE THEIR STEPS TO MAKE A SAFE CROSSING. CONSEQUENTLY, AMPLE ADVANCE NOTIFICATIONS OF SIDEWALK CLOSURES IS IMPORTANT. IN AREAS WHERE OVERHEAD CONSTRUCTION IS TAKING PLACE ADJACENT TO A PUBLIC PEDESTRIAN AREA, A COVERED WALKWAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTERS 11 AND 24 OF THE NORTH CAROLINA STATE BUILDING CODE. WHERE PEDESTRIAN ACCESS IS TO BE MAINTAINED ACROSS AN EXCAVATION, A BRIDGE DESIGNED TO SUPPORT A LOAD OF NOT LESS THAN 150 LBS/SQ. FT. SHALL BE CONSTRUCTED. SUITABLE RAMPS SHALL BE PROVIDED AT EACH END AND FENCES AND HANDRAILS SHALL BE PROVIDED ALONG EACH SIDE. (SEE SECTION 2401.1 OF THE NORTH CAROLINA STATE BUILDING CODE).

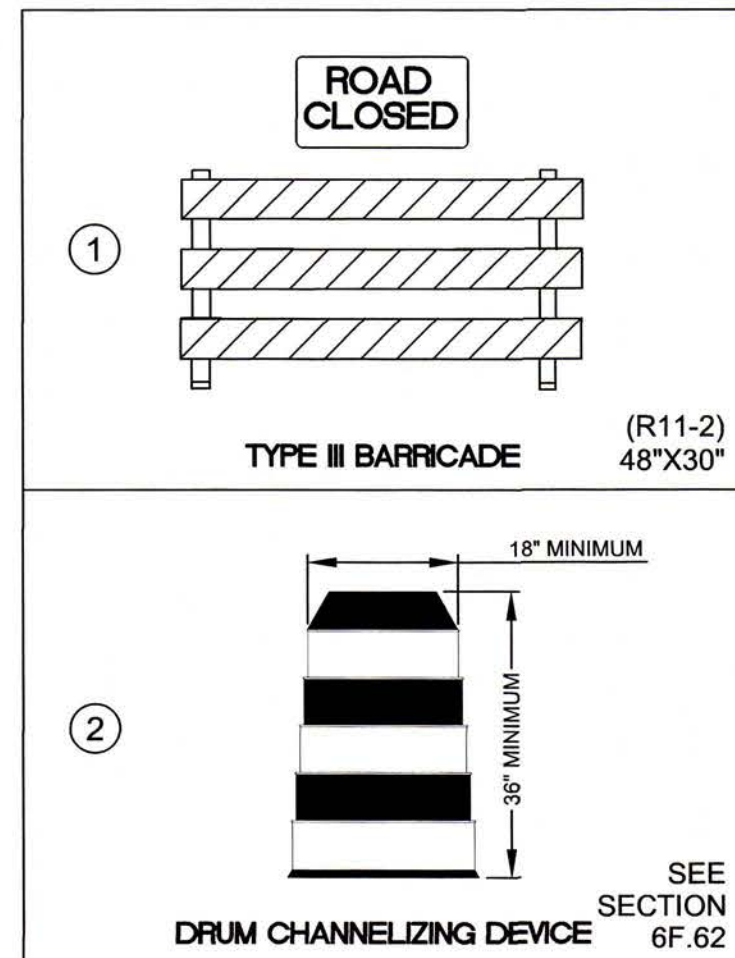
**TRAFFIC CONTROL NOTES**

1. PROJECT NOTES ARE NOT INTENDED TO BE USED AS GENERAL NOTES FOR THE PROJECT. THEY ARE TO BE USED AT SPECIFIC LOCATIONS AS REQUIRED BY THE DETAILS OF THE TRAFFIC CONTROL PLANS.
2. TRAFFIC CONTROL DEVICES SHALL BE LOCATED NO CLOSER THAN 5 FT. TO A TRENCH AT EXISTING GRADE, MEASURED FROM THE SIDE FACING TRAFFIC.
3. MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES SHALL BE 20 FT. IN TANGENT AREAS, 20 FT. IN TAPERS, AND 10 FT. IN RADI UNLESS OTHERWISE INDICATED ON THE PLANS.
4. WHEN USING TYPE III BARRICADES WITH 'ROAD CLOSED' SIGN ATTACHED, BARRICADES SHALL BE OF SUFFICIENT LENGTH TO CLOSE ROADWAY. UNLESS OTHERWISE APPROVED AT EACH ROAD CLOSURE LOCATION BY THE PROJECT INSPECTOR, ALL TYPE III BARRICADES SHALL INCLUDE FLASHING WARNING LIGHTS.
5. WHEN USING TYPE III BARRICADES WITH 'ROAD CLOSED TO THRU TRAFFIC' SIGN ATTACHED, BARRICADES SHALL BE OF SUFFICIENT LENGTH TO CLOSE 1/2 ROADWAY. CONTRACTOR SHOULD BE AWARE THAT WHEN THE CONSTRUCTION AREA IS IN OR NEAR A VERTICAL CREST OR HORIZONTAL CURVE, THE WORK AREA SHALL BE EXTENDED SO THAT LANE CLOSURE BEGINS IN ADVANCE OF THE CURVE AND MINIMUM STOPPING SIGHT DISTANCE IS MET.
6. WHEN TRAFFIC PROCEEDS THROUGH OR ADJACENT TO CONSTRUCTION ACTIVITY OR A WORK ZONE, FLAGGER(S) AND FLAGGER SYMBOL SIGN(S) (W20-7A) SHALL BE USED AS DIRECTED BY THE PROJECT INSPECTOR TO SLOW AND/OR STOP TRAFFIC AND DIRECT IT THROUGH THE WORK AREA. SIGN W20-7A SHALL NOT BE DISPLAYED EXCEPT WHEN FLAGGER IS PRESENT.
7. THE CONTRACTOR SHALL MAINTAIN A SMOOTH TRANSITION FROM EXISTING PAVEMENT TO PROPOSED PAVING OPERATION.
8. INSTALL ADVANCE WARNING DEVICES FOR FULL ROAD CLOSURE.
9. CONTRACTOR SHALL SUPPLY AND INSTALL ALL TEMPORARY PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
10. THE CONTRACTOR SHALL FOLLOW THE PHASING AS DESCRIBED HEREIN. THE CONTRACTOR SHALL COMPLETE THE REQUIREMENTS OF EACH CONSTRUCTION PHASE IN SEQUENCE. WHEN A CONSTRUCTION PHASE IS DIVIDED INTO STEPS, THE CONTRACTOR SHALL COMPLETE THE REQUIREMENTS OF EACH STEP IN SEQUENCE. (EXAMPLE: THE REQUIREMENTS OF PHASE I SHALL BE COMPLETED BEFORE PROCEEDING TO PHASE II; THE REQUIREMENTS OF STEP 1 OF PHASE I SHALL BE COMPLETED BEFORE PROCEEDING TO STEP 2 OF PHASE I). ALL WORK DESCRIBED IN THE PROJECT PHASING SHALL BE PERFORMED BY THE CONTRACTOR, EXCEPT WHERE IT IS SPECIFIED FOR CERTAIN WORK TO BE PERFORMED BY OTHERS.
11. THE CONTRACTOR SHALL NOT BE ALLOWED TO STOP TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME IN ANY ONE DIRECTION. EXCEPT AS DIRECTED BY THE CONTRACT DOCUMENTS.
12. AT NIGHT AND DURING PERIODS OF CONSTRUCTION INACTIVITY FOR TRENCHING AND EXCAVATION WORK, THE DIFFERENCE IN ELEVATION BETWEEN LANES SHALL NOT EXCEED 1 INCH. A MAXIMUM OF 2 INCHES SHALL BE ALLOWED DURING PAVEMENT MILLING AND OVERLAY WORK.
13. IF DURING TRENCHING AND EXCAVATION WORK WITH A DIFFERENCE IN GRADE BETWEEN LANES GREATER THAN 1 INCH OR GREATER THAN 2 INCHES FOR PAVEMENT MILLING AND OVERLAY WORK IS TO REMAIN OVERNIGHT, BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE OR USE TRAFFIC BEARING STEEL PLATES.
14. FLAGGER(S) AND FLAGGER AHEAD SYMBOL SIGN(S) (W20-7A) MAY BE REQUIRED TO DIRECT TRAFFIC THROUGH CONSTRUCTION ZONE DURING PAVEMENT DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
15. THE CONTRACTOR SHALL REPLACE ANY EXISTING PAVEMENT MARKINGS WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION ACTIVITIES AT THE END OF THE PROJECT CONSTRUCTION.
16. INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL BUSINESSES AND DWELLINGS AFFECTED BY THE PROJECT. SPECIAL ATTENTION SHALL BE PAID TO FIRE HYDRANTS.
17. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AT ALL TIMES.
18. THE CITY STANDARD WORK HOURS ARE MONDAY THRU FRIDAY 8:00 AM TO 5:00 PM. NO WORK SHALL COMMENCE OUTSIDE OF STANDARD WORK HOURS OR DURING THE WEEKEND WITHOUT WRITTEN APPROVAL FROM THE CITY ENGINEER OR THEIR AUTHORIZED AGENT.

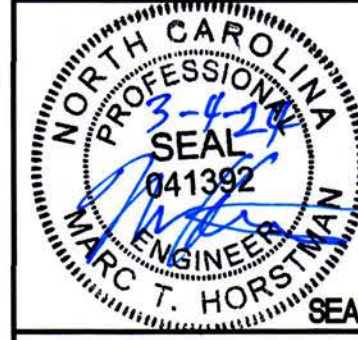
**TRAFFIC CONTROL PLAN:**

1. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A TRAFFIC CONTROL PLAN AND PHASING PLAN TO BE REVIEWED AND APPROVED BY W.K. DICKSON AS PART OF THE SHOP DRAWING REVIEW PROCESS. THE TRAFFIC CONTROL PLAN AND PHASING PLAN SHALL DETAIL THE CONTRACTOR'S APPROACH FOR REMOVAL AND INSTALLATION OF NEW CONSTRUCTION MATERIALS TO INCLUDE WHEN SPECIFIC WORK WILL BE PERFORMED, WHAT TIME OF DAY (I.E. NIGHTTIME, DAYTIME) AND WHEN ROADS WILL BE TEMPORARILY CLOSED.
2. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO UPDATE THE CITY'S REPRESENTATIVE WEEKLY, AND PROVIDE INFORMATION ON THE UPCOMING WORK WEEK AND TEMPORARY ROAD CLOSURES WITH A MINIMUM OF 72 HOURS ADVANCE NOTICE PRIOR TO ANY TEMPORARY ROAD CLOSURE.
3. REFER TO PROJECT MANUAL FOR MORE DETAILS ON THE TRAFFIC CONTROL PLAN.

**SIGN LEGEND**



PLANS PREPARED BY:  
**W.K. DICKSON**  
 community infrastructure consultants  
 720 Corporate Center Drive  
 Raleigh, NC 27607  
 (919) 782-0495  
 (919) 782-9872  
 www.wkdickson.com  
 NC LICENSE NO. F-0374



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PLANS PREPARED FOR:  
**Greenville**  
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 CITY OF GREENVILLE

PROJECT:  
**PUBLIC WORKS STORMWATER PIPE IMPROVEMENTS PHASE 2 GREENVILLE, NORTH CAROLINA**  
 TITLE:  
**TRAFFIC CONTROL NOTES**

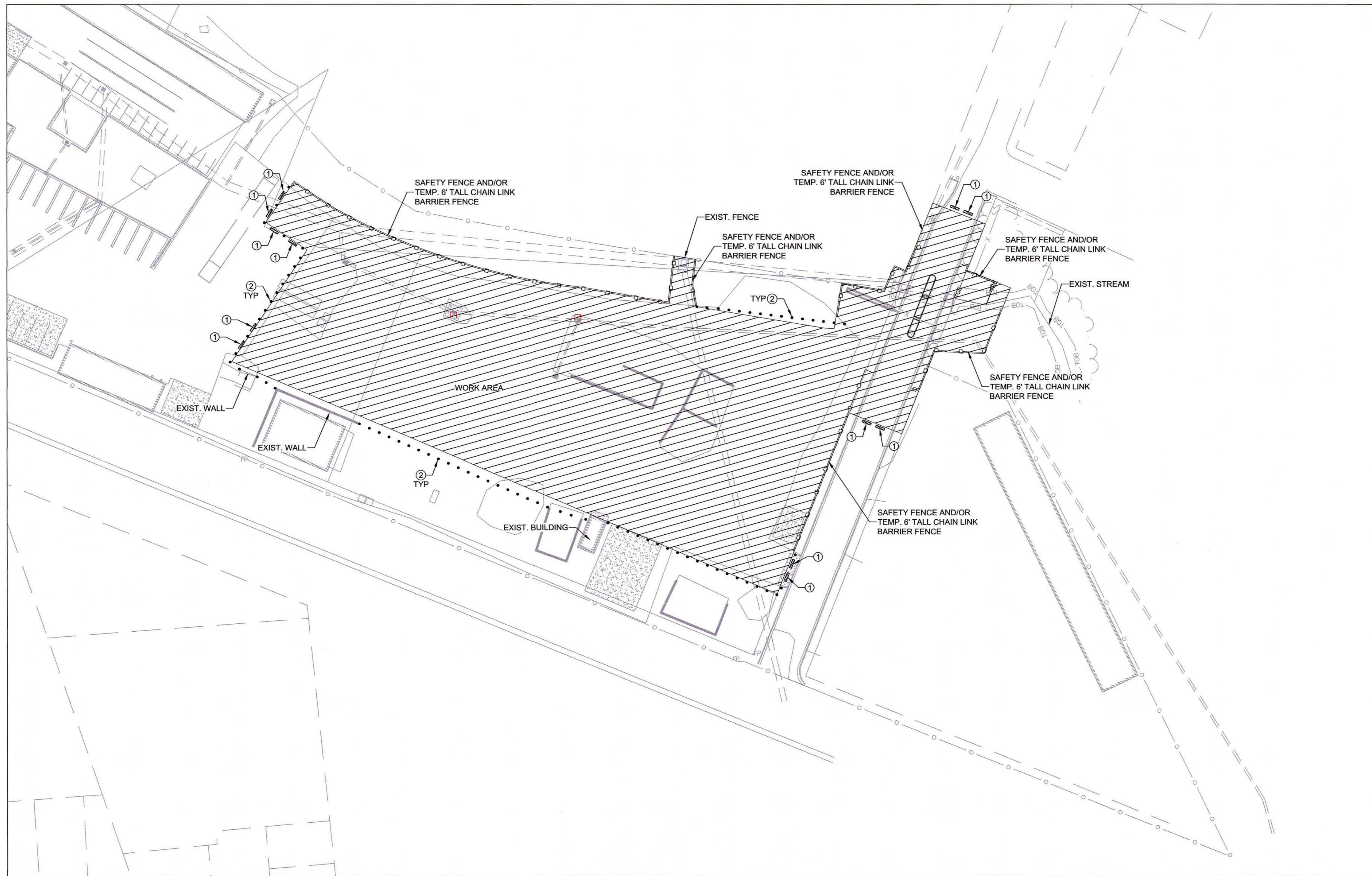
WKD PROJECT:  
**20220983.00.RA**  
 DATE:  
**3/8/2024**

100% PLANS

**TC1**

FINAL DESIGN - NOT FOR CONSTRUCTION





TRAFFIC CONTROL PLAN

NOTES:

1. SEE SHEET TC1 FOR SIGN LEGEND AND NOTES.
2. DIAGRAM SHOWN FOR REPRESENTATIONAL PURPOSES ONLY. REFER TO SHEET TC3 FOR NCDOT TRAFFIC CONTROL DETAILS FOR SIGN SPACING AND FURTHER INFORMATION.

FINAL DESIGN - NOT FOR CONSTRUCTION

PLANS PREPARED BY:  
**W.K. DICKSON**  
 community infrastructure consultants  
 720 Corporate Center Drive  
 Raleigh, NC 27607  
 (919) 782-0455  
 (919) 782-9672  
 www.wkdickson.com  
 NC LICENSE NO. F-6874



SEAL

NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
**Greenville**  
North Carolina  
 Find yourself in good company.  
 CITY OF GREENVILLE

PROJECT:  
 PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA  
 TITLE:  
 TRAFFIC CONTROL PLAN

W.K.D. PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

100% PLANS

**TC2**





SEAL

NO.	DATE	REVISIONS

PLANS PREPARED FOR:  
**Greenville**  
 NORTH CAROLINA  
*Find yourself in good company.*  
 CITY OF GREENVILLE

PROJECT:  
**PUBLIC WORKS STORMWATER  
 PIPE IMPROVEMENTS PHASE 2  
 GREENVILLE, NORTH CAROLINA**

TITLE:  
**TRAFFIC CONTROL DETAILS**

WKD PROJECT:  
 20220983.00.RA  
 DATE:  
 3/8/2024

100% PLANS

TC3

FINAL DESIGN - NOT FOR CONSTRUCTION

**GENERAL NOTES**

- BALLASTING SHALL BE ACHIEVED BY THE SAND BAG, TIRE-SIDEWALL, OR PREFORMED WEIGHTED BASE METHODS. USE THE TIRE BALLAST AS SPECIFIED BY THE MANUFACTURER. DO NOT PLACE BALLAST ON TOP OF THE DRUM.
- IF NECESSARY PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE DRUM SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.
- ALL DRUMS MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCT LIST.
- REFER TO THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR ADDITIONAL INFORMATION.

STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.  
 1-24  
 ROADWAY STANDARD DRAWING FOR  
**DRUMS**  
 SHEET 1 OF 1  
**1130.01**

**GENERAL NOTES**

- HORIZONTAL RAILS FOR BARRICADES MAY BE CONSTRUCTED OF APPROVED COMPOSITE, HOLLOW/CORRUGATED EXTRUDED RIGID POLYOLEFIN, HIGH DENSITY POLYETHYLENE, OR OTHER NCDOT APPROVED MATERIAL.
- BARRICADE SHALL BE LIMITED TO A MAXIMUM LENGTH OF 8 FT UNLESS NCDOT APPROVED.
- ONLY NCDOT APPROVED COMPOSITE AND ROLL-UP SIGNS MAY BE MOUNTED ON THE BARRICADE RAILS. MOUNT SIGNS TO BARRICADE RAILS TO ENSURE SIGN WILL NOT BECOME DETACHED UNDER NORMAL WIND AND TRAFFIC CONDITIONS.
- SIGNS SHALL BE MOUNTED A MINIMUM OF 1 FOOT FROM THE GROUND TO THE BOTTOM OF THE SIGN UNLESS SIGN R11-3 IS REQUIRED BY THE PLANS OR DIRECTED BY THE ENGINEER.
- ASSEMBLY OF THE GENERIC BARRICADES MUST BE SELF CERTIFIED BY THE ASSEMBLER.
- BARRICADES USED TO CLOSE A ROADWAY SHALL EXTEND ACROSS THE ENTIRE ROADWAY. WHERE LOCAL TRAFFIC MUST BE MAINTAINED, THEY MAY BE PLACED IN A STAGGERED PATTERN.
- STRIPES ON WORK ZONE BARRICADE RAILS SHALL BE ALTERNATE ORANGE AND WHITE RETROREFLECTIVE STRIPES, SLOPED DOWNWARD TOWARDS THE SIDE WHICH TRAFFIC IS TO PASS OR TURN IN DETOURING. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.
- USE RED AND WHITE STRIPES FOR PERMANENT BARRICADES.
- ALL BARRICADES MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST.
- PLACE SANDBAGS OR OTHER APPROVED BALLASTING METHODS ON THE FEET OF THE FRAME. DO NOT PLACE SANDBAGS ON TOP OF A STRIPED RAIL OR STABILIZER BAR. DO NOT BALLAST BARRICADES BY HEAVY OBJECTS SUCH AS ROCKS, CHAINS OF CONCRETE OR OTHER ITEMS THAT WOULD CAUSE DAMAGE IF THE BARRICADE IS STRUCK BY A VEHICLE.

STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.  
 1-24  
 ROADWAY STANDARD DRAWING FOR  
**BARRICADES**  
 TYPE - III  
 SHEET 1 OF 1  
**1145.01**

**GENERAL NOTES**

- USE HAND SIGNALING DEVICES SUCH AS STOP-SLOW PADDLES, FLASHLIGHTS TO CONTROL TRAFFIC. USE STOP-SLOW PADDLES AS THE PRIMARY DEVICE.
- FABRICATE STOP-SLOW PADDLES FROM SHEET METAL OR OTHER LIGHT SEMI RIGID MATERIAL. PROVIDE A RIGID HANDLE OF SUFFICIENT LENGTH SO THE PADDLE IS HELD AT 6'-7" ABOVE GROUND LEVEL.
- PROVIDE STOPPING SIGHT DISTANCE TO EACH FLAGGER STATION. REFER TO RSD. 1101.11, SHEET 2.
- ILLUMINATE FLAGGER STATIONS DURING NIGHT OPERATIONS.
- FOLLOW FLAGGER QUALIFICATIONS AND METHODS OF HAND-SIGNALING PROCEDURES IN ACCORDANCE WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- ALL FLAGGERS MUST BE CERTIFIED BY AN NCDOT APPROVED TRAINING RESOURCE.

STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.  
 1-24  
 ROADWAY STANDARD DRAWING FOR  
**FLAGGERS**  
 SHEET 1 OF 1  
**1150.01**



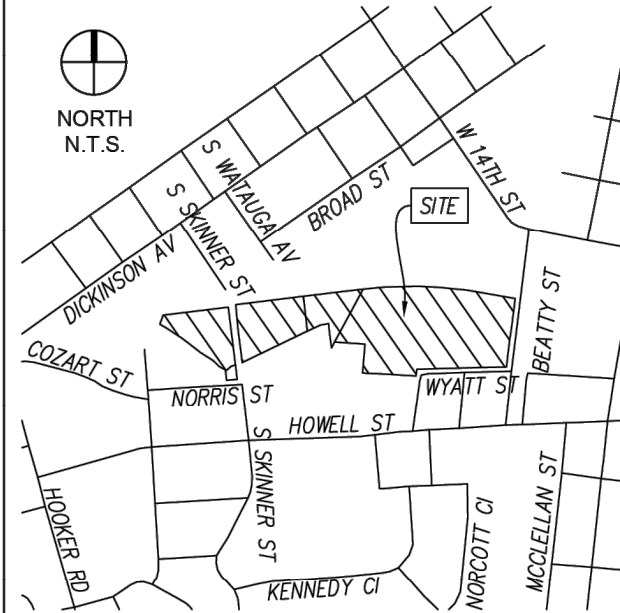


**STEWART**

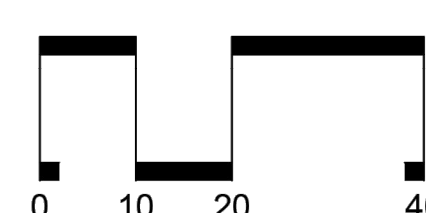
5410 OLD POOLE RD  
RALEIGH, NC 27610  
T 919.360.8750

FIRM LICENSE #: C-1051  
www.stewartinc.com  
PROJECT #: G23004

Vicinity Map:



NORTH  
NAD83(2011)



SCALE: 1" = 20'

Title:

### EXISTING CONDITIONS SURVEY FOR:

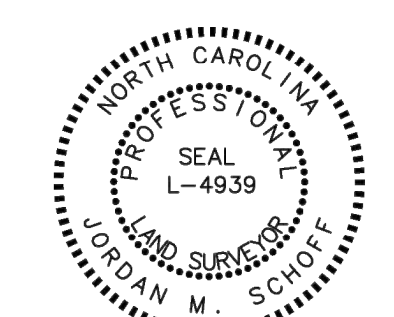
## GREENVILLE PW YARD STORM

GREENVILLE TOWNSHIP, CITY OF GREENVILLE  
PITT COUNTY, NORTH CAROLINA  
DATE: 03/03/2023 SCALE: 1"=20'  
CONTOUR INTERVAL = 1 FOOT  
PREPARED FOR:  
WK DICKSON

Revisions:

No.	Date	Description
01	03/24/2023	COMMENTS
02	03/29/2023	COMMENTS
03	06/13/2023	UTILITY UPDATE
04	07/03/2023	COMMENTS

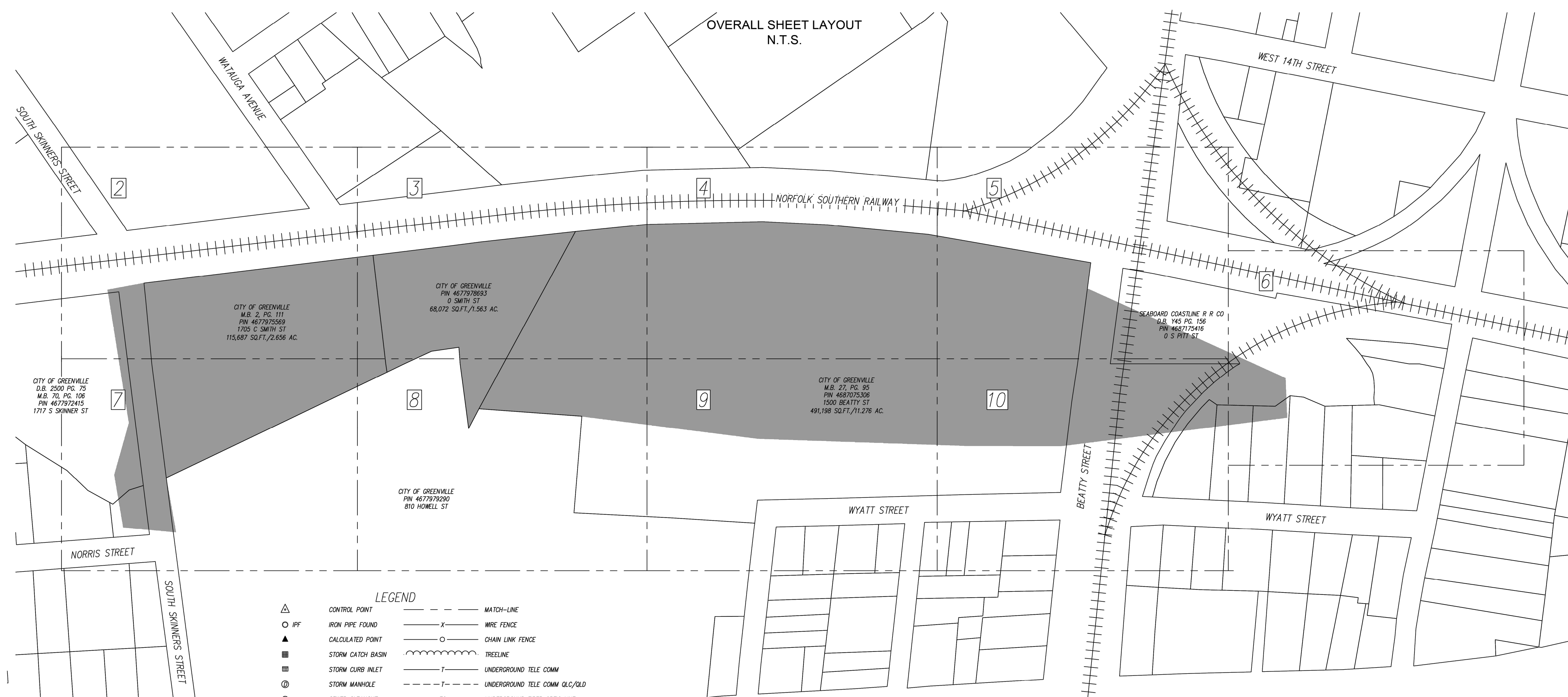
Seal:



I, JORDAN M. SCHOFF, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT THIS GROUND SURVEY WAS PERFORMED AT THE 95 PERCENT CONFIDENCE LEVEL TO MEET FEDERAL GEOGRAPHIC DATA COMMITTEE STANDARDS; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS FOR A TOPOGRAPHIC/PLANIMETRIC SURVEY TO THE ACCURACY OF CLASS A AND VERTICAL ACCURACY WHEN APPLICABLE TO THE CLASS B STANDARD, AND THAT THE ORIGINAL DATA WAS OBTAINED IN JANUARY AND FEBRUARY; THAT THE SURVEY WAS COMPLETED ON MARCH 3RD AND REVISED ON JULY 3, 2023; THAT CONTOURS SHOWN AS [CONTINUOUS LINES] MAY NOT MEET THE STATED STANDARD; AND ALL COORDINATES ARE BASED ON NAD83(2011) AND ALL ELEVATIONS ARE BASED ON NAVD 88.

DocuSigned by:  
*Jordan M. Schoff*  
JORDAN M. SCHOFF, PLS # 4939

### OVERALL SHEET LAYOUT N.T.S.



### LEGEND

△	CONTROL POINT	---	MATCH-LINE
○ IPF	IRON PIPE FOUND	-X-	WIRE FENCE
▲	CALCULATED POINT	○	CHAIN LINK FENCE
■	STORM CATCH BASIN	~	TREELINE
■	STORM CURB INLET	-T-	UNDERGROUND TELE COMM
⊙	STORM MANHOLE	-T-	UNDERGROUND TELE COMM QLC/QLD
⊙	SEWER CLEANOUT	-FO-	UNDERGROUND FIBER OPTIC LINE
⊙	SEWER MANHOLE	-FO-	UNDERGROUND FIBER OPTIC LINE QLC/QLD
⊙	SEWER VALVE	-G-	UNDERGROUND GAS LINE
⊙	FIRE DEPT. CONNECTION	-G-	UNDERGROUND GAS LINE QLC/QLD
⊙	FIRE HYDRANT	-E-	UNDERGROUND ELECTRIC LINE
⊙	HOTBOX	-E-	UNDERGROUND ELECTRIC LINE QLC/QLD
⊙	IRRIGATION VALVE	-HVP-	UNDERGROUND HIGH VOLTAGE
⊙	WATER METER	-W-	UNDERGROUND WATER LINE
⊙	WATER VALVE	-W-	UNDERGROUND WATER LINE QLC/QLD
⊙	GAS METER	-SS-	SANITARY SEWER LINE
⊙	GAS VALVE	-SS-	SANITARY SEWER LINE QLC/QLD
⊙	TEL-COM PEDESTAL	==	STORM DRAIN LINE
⊙	FIBER OPTIC BOX	-SD-	STORM DRAIN LINE QLC/QLD
⊙	FIBER OPTIC MARKER	-CATV-	CABLE TELEVISION
⊙	TRAFFIC SIGNAL BOX	-CATV-	CABLE TELEVISION QLC/QLD
⊙	POWER BOX/METER	-U-	UNIDENTIFIED LINE
⊙	POWER MARKER	-U-	UNIDENTIFIED LINE QLC/QLD
⊙	POWER METER	-OHW-	OVERHEAD WIRES
⊙	HANDHOLE	---	UNKNOWN DESTINATION
⊙	GUY WIRE	■	CONCRETE SURFACE
⊙	LIGHT POLE	■	GRAVEL SURFACE
⊙	UTILITY POLE	■	PROJECT LIMITS
⊙	BOLLARD	DIP	DUCTILE IRON PIPE
⊙	FINISH FLOOR ELEV.	PVC	POLYVINYL CHLORIDE PIPE
⊙	MAILBOX	RCP	REINFORCED CONCRETE PIPE
⊙	SIGN	CMP	CORRUGATED METAL PIPE
⊙	FLAG POLE	ASB	ASBESTOS PIPE
⊙	GATE	CLF	CHAIN LINK FENCE
⊙	BUSH	MYR	MYRTLE
⊙	HOLLY	OAK	OAK
⊙	MAP	MAPLE	MAPLE

### GENERAL NOTES

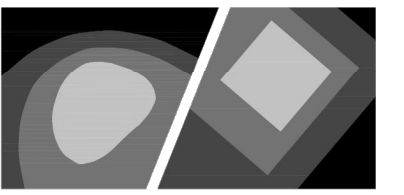
- THIS SURVEY MAP IS INTENDED TO REPRESENT THE EXISTING CONDITIONS/TOPOGRAPHY ON A PORTION OF THE PROPERTY OF CITY OF GREENVILLE, PIN 467792415, 467792569, 467792893, & 4687075306 AND IS NOT A BOUNDARY SURVEY. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THEREFORE ALL ENCUMBRANCES UPON THE PROPERTY MAY NOT BE SHOWN.
- THE PROPERTY LINES SHOWN HEREON HAVE BEEN CONFIRMED FROM A PARTIAL SURVEY BY STEWART ENGINEERING. PROPERTY LINES SHOWN OFFSET FROM THE CENTERLINE OF BORDERING RAILROADS, ROAD RIGHT OF WAY CENTERLINES, AND OTHER REFERENCES LISTED HEREON.
- HORIZONTAL DATUM IS NAD 83 (2011) AND VERTICAL DATUM IS NAVD88. BASED ON GPS METHODS USING REAL-TIME KINEMATIC SOLUTIONS FOR THE SURVEY CONTROL POINTS SHOWN HEREON AND TIED TO NORTH CAROLINA GEODETIC SURVEY MONUMENT "TICKLEN".  
"TICKLEN"  
N 676570.4994'  
E 2486875.2750'  
EL 58.71'
- THE INITIAL STATE PLANE POSITIONS FOR THIS SURVEY WERE SCALED FROM GRID TO GROUND FROM A PROJECT LOCATION OF N:677484.418 E:2481216.790, AN ELEVATION OF 53.55', (TRAV-1) USING A COMBINED FACTOR OF 0.99989362.
- THIS DRAWING DOES NOT CONFORM TO N.C. GS47-30 AND THEREFORE IS NOT FOR RECORDATION.
- ALL DISTANCES ARE IN U.S. SURVEY FEET. AREA COMPUTED BY COORDINATE METHOD.
- UTILITIES SHOWN HEREON ARE BASED ON ABOVE-GROUND VISIBLE EVIDENCE AND UTILITY DESIGNATION/MARKING SERVICES (LEVEL B) PERFORMED AS A PART OF THIS SURVEY. ANY LINES LABELED AS QLC OR QLD ARE BASED ON RECORD INFORMATION. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES BEFORE COMMENCING CONSTRUCTION.
- TREES SHOWN HEREON MAY NOT REPRESENT ALL VEGETATION ON THE SUBJECT PROPERTY.
- THE SUBJECT PROPERTY IS ZONED "U" (CITY OF GREENVILLE).
- THE SUBJECT PROPERTY LIES IN ZONE X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE AND FUTURE CONDITIONS 1% ANNUAL CHANCE FLOODPLAIN), BASED ON THE FLOOD INSURANCE RATE MAP NUMBER 3720467700K AND 3720468700K DATED 07/07/2014. FRIS.NC.GOV.
- SITE ADDRESS: 1500 BEAUTY STREET

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	677484.42'	2481216.79'	53.55	TRAV-1-REBAR WDISC
3	677820.15'	2481014.89'	53.63	TRAV-3-NL WDISC
4	677857.81'	2480663.22'	55.28	TRAV-4-NL WDISC
5	677828.73'	2480272.47'	52.82	TRAV-5-NL WDISC
6	677787.61'	2479851.89'	57.74	TRAV-6-NL WDISC
7	677744.89'	2479417.87'	63.24	TRAV-7-NL WDISC
8	677405.38'	2479498.97'	53.87	TRAV-8-NL WDISC
9	677578.50'	2479827.11'	53.84	TRAV-9-NL WDISC
10	677537.40'	2480241.01'	51.41	TRAV-10-NL WDISC
11	677515.12'	2480630.91'	50.54	TRAV-11-NL WDISC

G:\Projects\2023\G23004 - WKD-Greenville PW Yard Stormwater Improvements\DWG\G23004-EX.dwg Jul 03, 2023 - 10:38am

Project number: G23004 Sheet:  
Date: 03/03/2023  
Drawn by: WJT  
Checked by: JMS



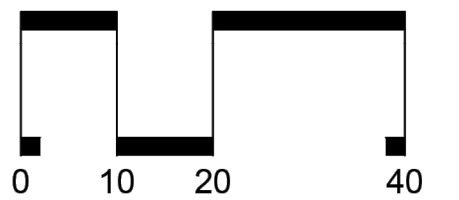
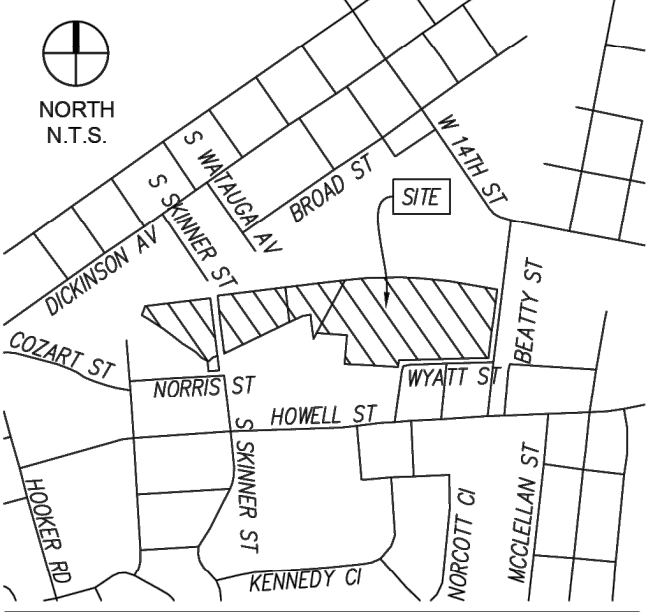


# STEWART

5410 OLD POOLE RD  
RALEIGH, NC 27610  
T 919.380.8750

FIRM LICENSE #: C-1051  
www.stewartinc.com  
PROJECT #: G23004

Vicinity Map:



SCALE: 1" = 20'

Title:

## EXISTING CONDITIONS SURVEY FOR:

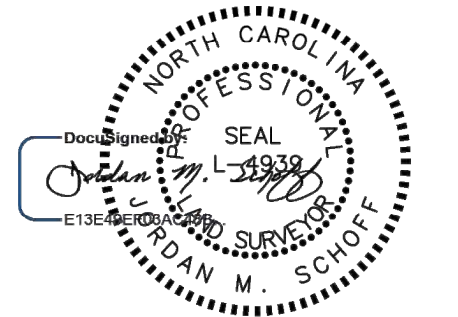
# GREENVILLE PW YARD STORM

GREENVILLE TOWNSHIP, CITY OF GREENVILLE  
PITT COUNTY, NORTH CAROLINA  
DATE: 03/03/2023 SCALE: 1"=20'  
CONTOUR INTERVAL = 1 FOOT  
PREPARED FOR:  
WK DICKSON

Revisions:

No.	Date	Description
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03	06/13/2023	UTILITY UPDATE
04	07/03/2023	COMMENTS

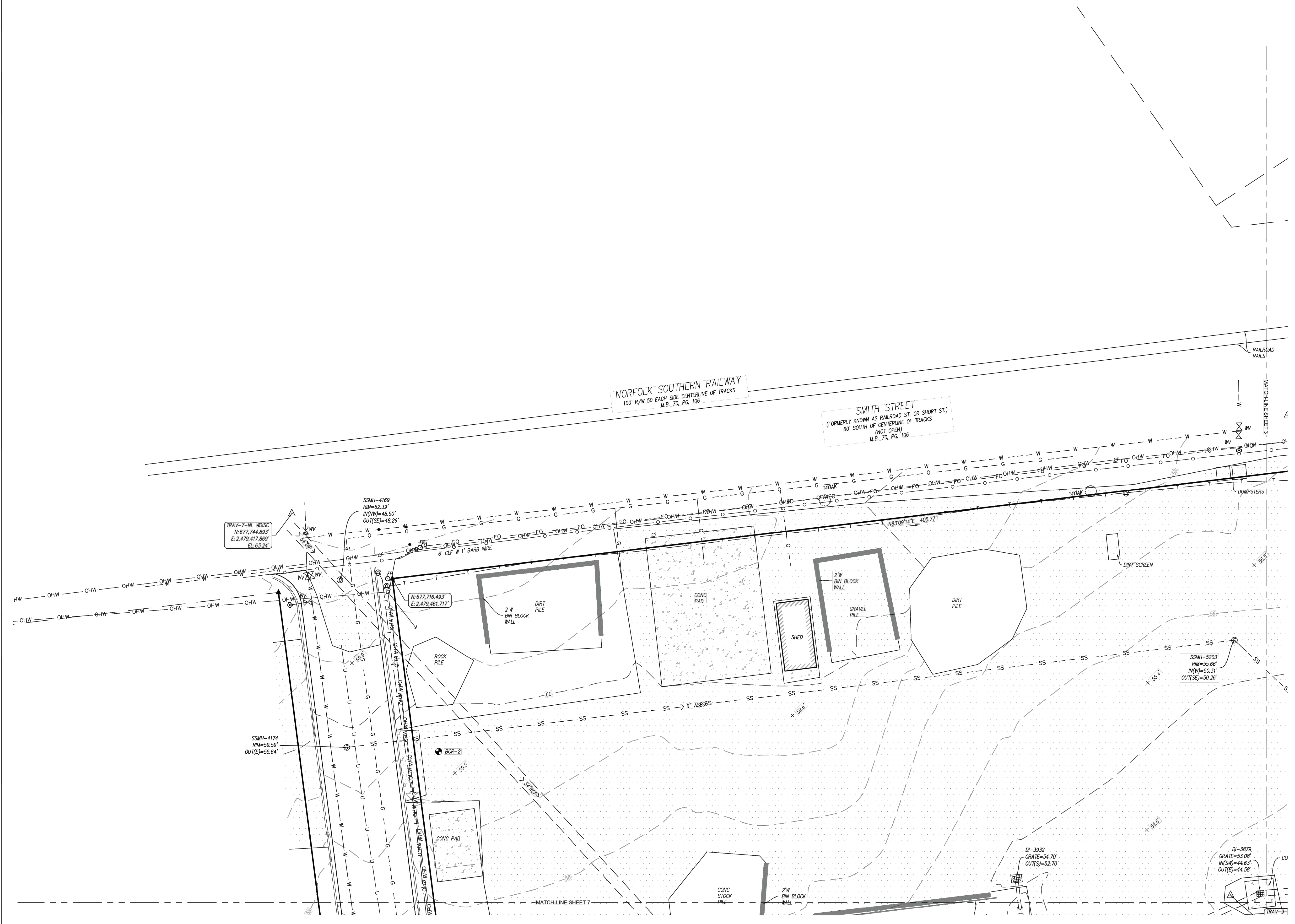
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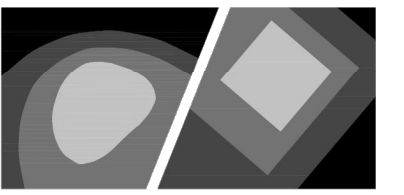
Project number: G23004 Sheet:  
Date: 03/03/2023  
Drawn by: WJT  
Checked by: JMS

2 of 10  
**X2**

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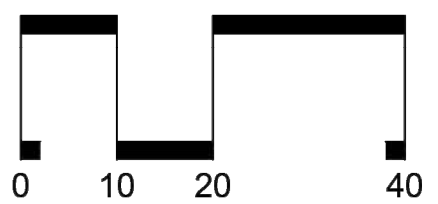
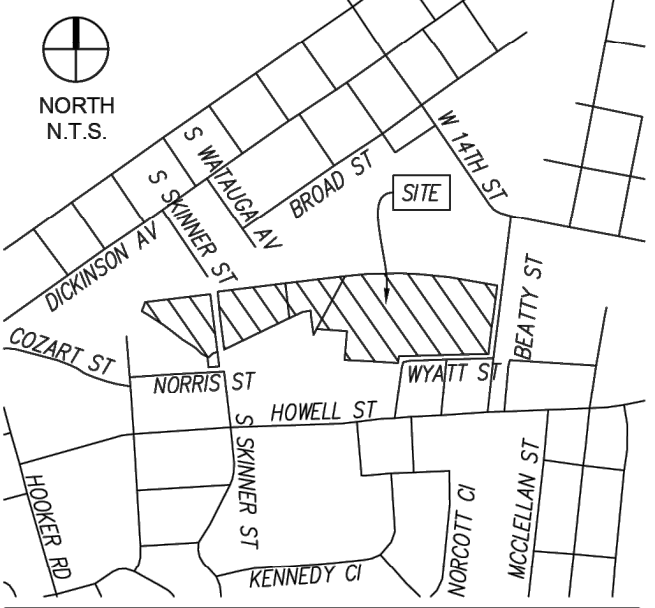


STEWART

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T 919.380.8750

FIRM LICENSE #: C-1051  
www.stewartinc.com  
PROJECT #: G23004

Vicinity Map:



SCALE: 1" = 20'

Title:

EXISTING CONDITIONS  
SURVEY FOR:

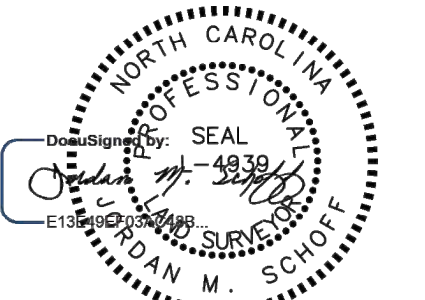
GREENVILLE PW  
YARD STORM

GREENVILLE TOWNSHIP, CITY OF GREENVILLE  
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Revisions:

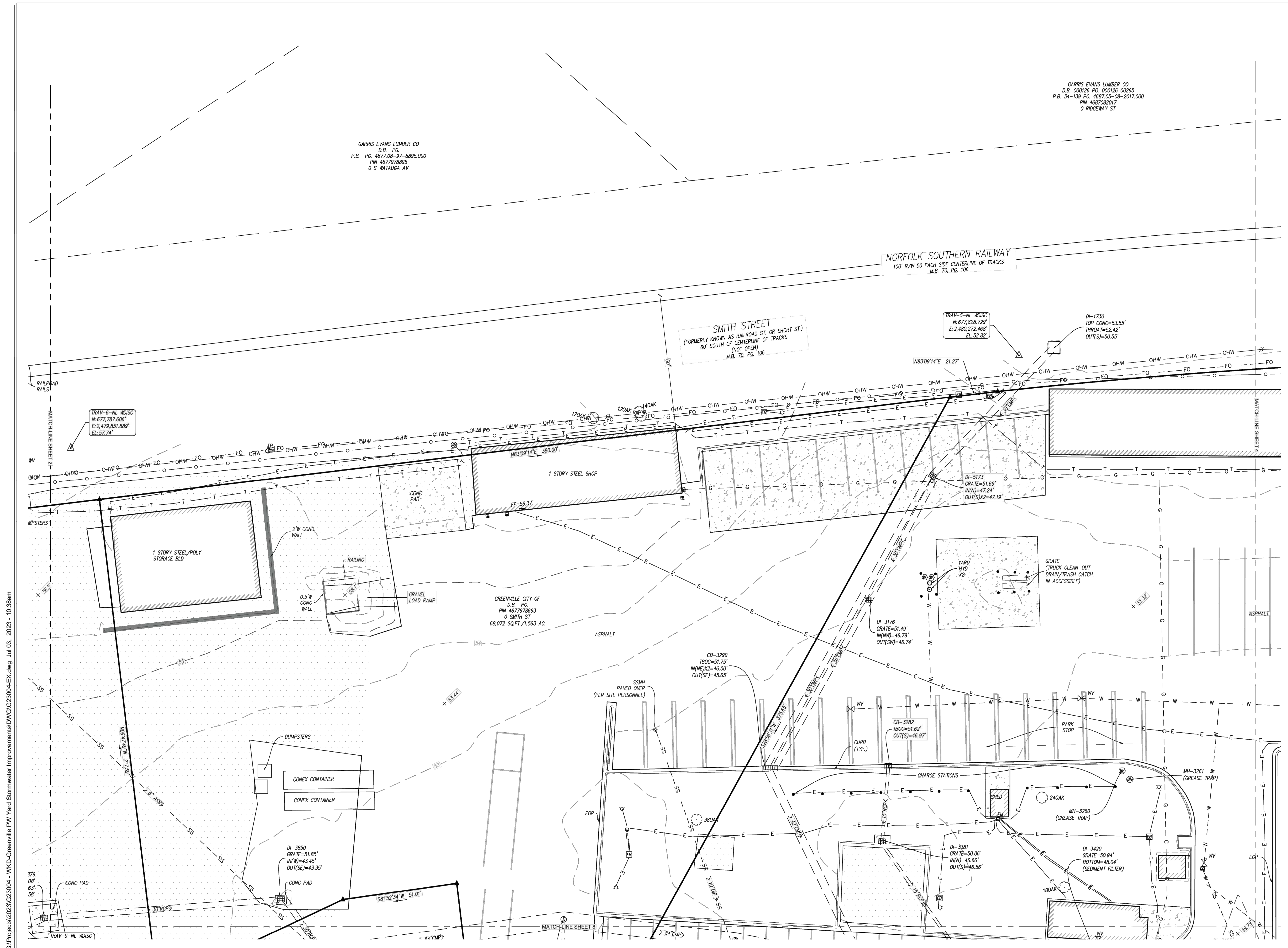
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04	07/03/2023	COMMENTS

Seal:



Project name: G23004 Sheet:  
Date: 03/03/2023  
Drawn by: WJT  
Checked by: JMS

3 of 10  
X3



GARRIS EVANS LUMBER CO  
D.B. PG.  
P.B. PG. 4677.08-97-8895.000  
PIN 4677978895  
0 S WATAUGA AV

GARRIS EVANS LUMBER CO  
D.B. 000128 PG. 000128 00265  
P.B. 34-139 PG. 4687.05-08-2017.000  
PIN 4687082017  
0 RIDGEWAY ST

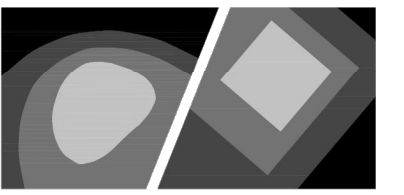
NORFOLK SOUTHERN RAILWAY  
100' R/W 50 EACH SIDE CENTERLINE OF TRACKS  
M.B. 70, PG. 106

SMITH STREET  
(FORMERLY KNOWN AS RAILROAD ST. OR SHORT ST.)  
60' SOUTH OF CENTERLINE OF TRACKS  
(NOT OPEN)  
M.B. 70, PG. 106

GREENVILLE CITY OF  
D.B. PG.  
PIN 4677978693  
0 SMITH ST  
68,072 SQ.FT./1.563 AC.

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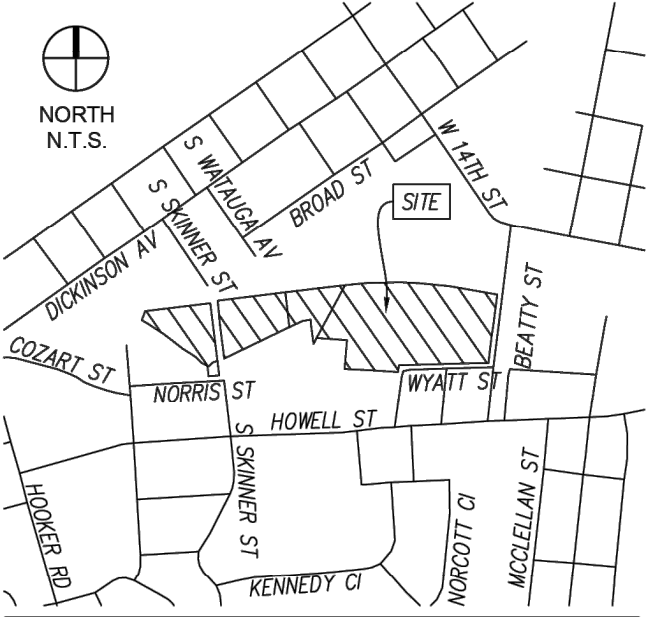


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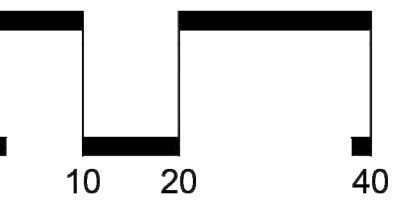
5410 OLD POOLE RD  
RALEIGH, NC 27610  
T 919.380.8750

FIRM LICENSE #: C-1051  
www.stewartinc.com  
PROJECT #: G23004

Vicinity Map:



NORTH  
NAD83(2011)



SCALE: 1" = 20'

Title:

## EXISTING CONDITIONS SURVEY FOR:

## GREENVILLE PW YARD STORM

GREENVILLE TOWNSHIP, CITY OF GREENVILLE  
PITT COUNTY, NORTH CAROLINA  
DATE: 03/03/2023 SCALE: 1"=20'  
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WK DICKSON

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Seal:



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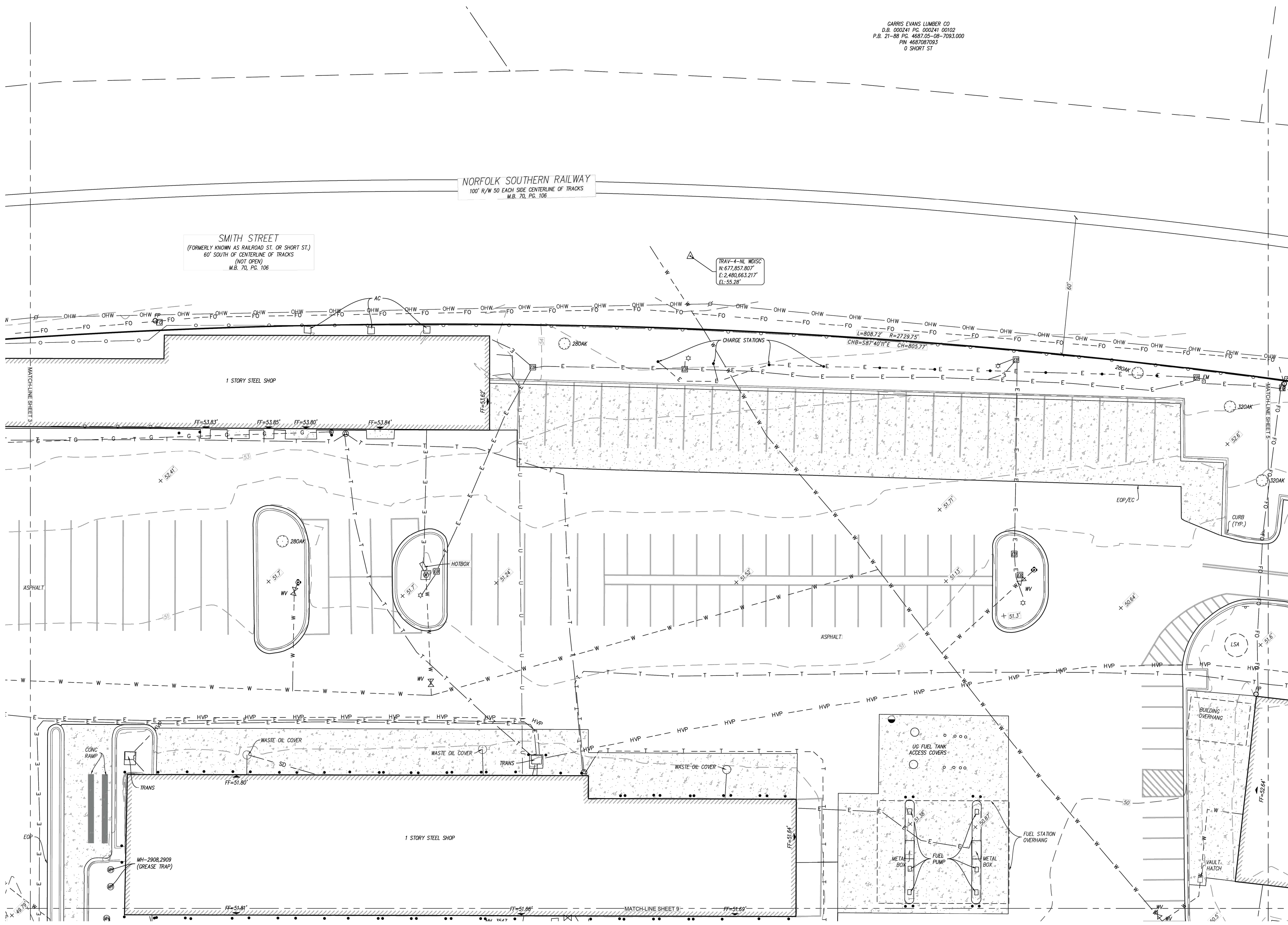
4 of 10  
X4

GARRIS EVANS LUMBER CO  
D.B. 000241 PG. 000241 00102  
P.B. 21-88 PG. 468705-08-7093.000  
PIN 4687087093  
O SHORT ST

NORFOLK SOUTHERN RAILWAY  
100' R/W 50' EACH SIDE CENTERLINE OF TRACKS  
M.B. 70, PG. 106

SMITH STREET  
(FORMERLY KNOWN AS RAILROAD ST. OR SHORT ST.)  
60' SOUTH OF CENTERLINE OF TRACKS  
(NOT OPEN)  
M.B. 70, PG. 106

TRAV-4-NL WDISC  
N: 677,857.807'  
E: 2,480,663.217'  
EL: 55.28'



G:\Projects\2023\G23004 - WKD-Greenville PW Yard Stormwater Improvements\DWG\G23004-EX.dwg Jul 03, 2023 - 10:38am



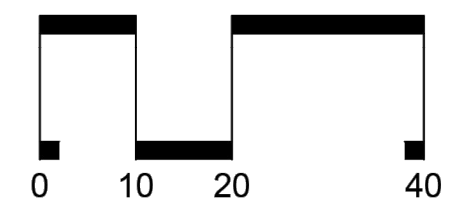
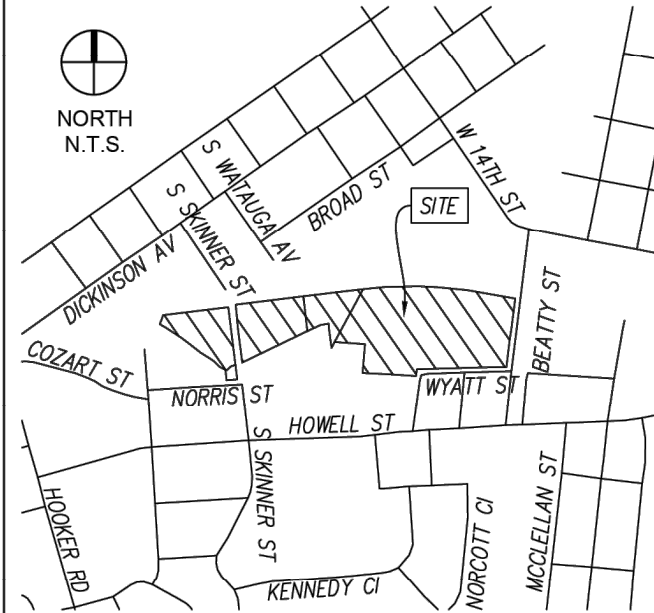


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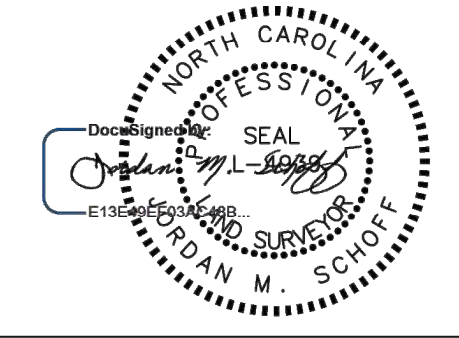
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01	03/24/2023	COMMENTS
02	03/29/2023	COMMENTS
03	06/13/2023	UTILITY UPDATE
04	07/03/2023	COMMENTS

Seal:



Project number: G23004 Sheet:  
Date: 03/03/2023  
Drawn by: WJT  
Checked by: JMS

### 5 of 10 X5

EVANS DAVID A JR  
D.B. 000109 PG. 000109 00785  
P.B. PG. 468705-08-9074.000  
PIN 468708074  
615 W FOURTEENTH ST

GREENVILLE CITY OF  
D.B. 002540 PG. 002540 00566  
P.B. MB72-132 PG. 468705-17-4818.000  
PIN 4687174818  
0 W FOURTEENTH ST

CAROLINA COSTAL RAILWAY  
100' R/W 50 EACH SIDE CENTERLINE OF TRACKS  
M.B. 72, PG. 113

SMITH STREET  
(FORMERLY KNOWN AS RAILROAD ST. OR SHORT ST.)  
60' SOUTH OF CENTERLINE OF TRACKS  
(NOT OPEN)  
M.B. 70, PG. 106

TRAV-3-NL WDISC  
N:677,820.151'  
E:2,481,014.892'  
EL:53.63'

DMH-1867  
RIM=55.79'  
IN(W)=46.54'  
IN(N)=42.69'  
OUT(S)=42.59'

TRAV-2-REBAR WCAP  
N:677,747.921'  
E:2,481,248.616'  
EL:55.22'

DMH-1081  
RIM=52.59'  
IN(N)=39.44'  
IN(SE)=39.44'  
IN(SE)=46.84'  
OUT(SW)=39.34'

SSMH-1965  
RIM=50.89'  
IN(N)=43.49'  
OUT(SE)=43.44'

DMH-1183  
RIM=50.71'  
(INV'S OBSCURED)  
BOTTOM=38.71'

DI-1960  
GRATE=48.79'  
(INV'S OBSCURED)  
BOTTOM=37.09'

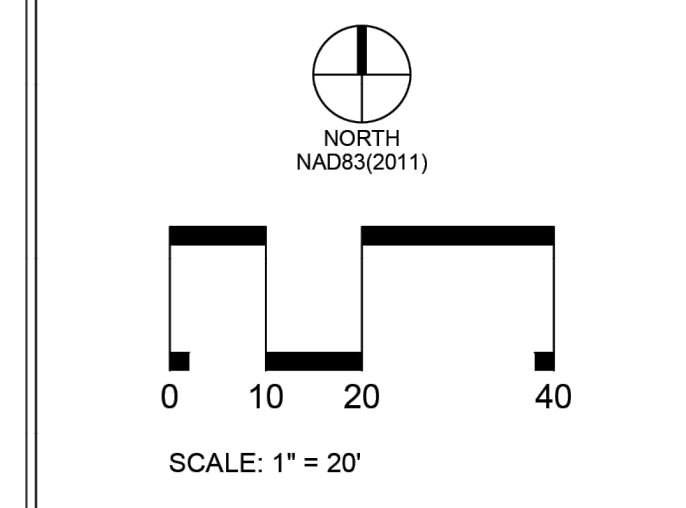
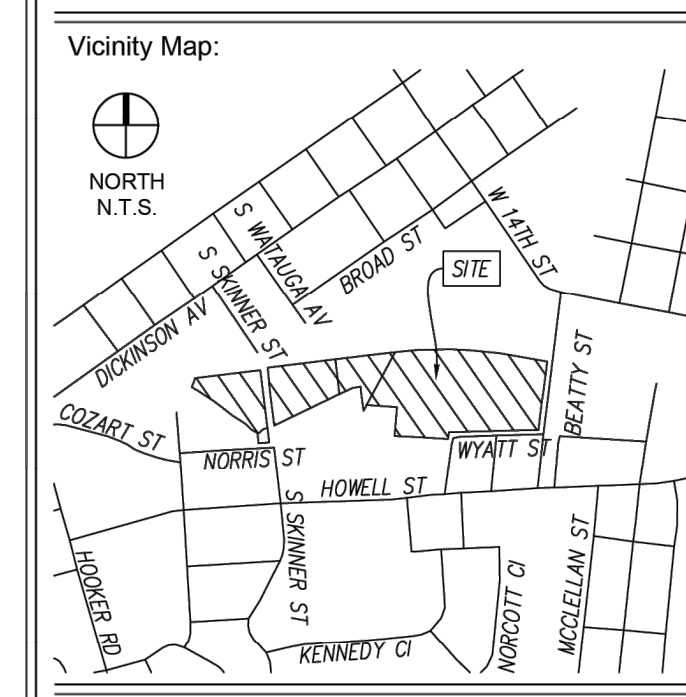
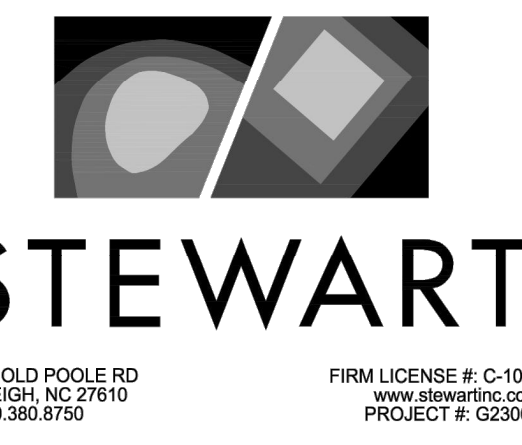
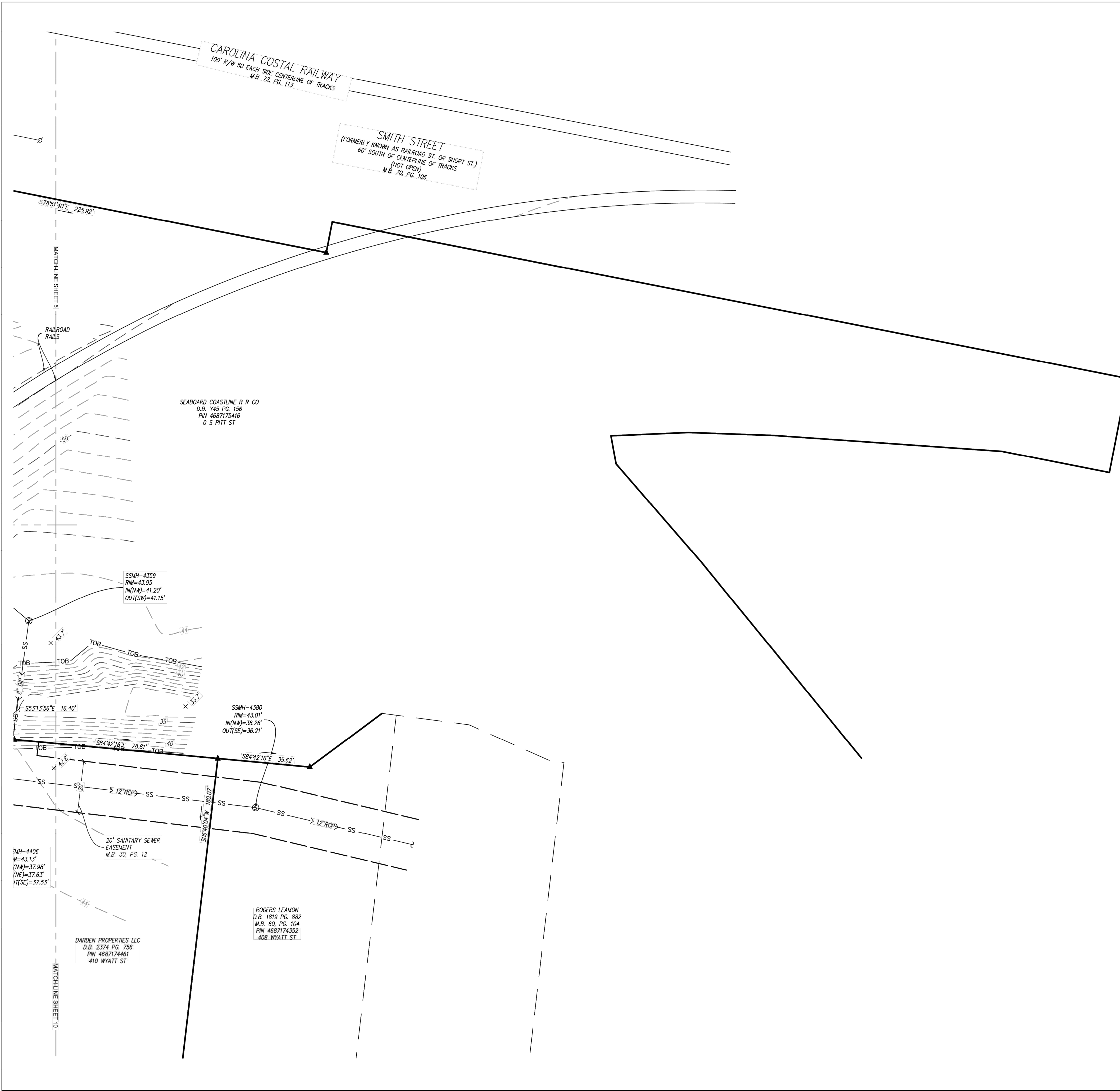
CB-1075  
TBOC=52.40'  
IN(SE)=47.10'  
OUT(NW)=47.10'

CB-1884  
TBOC=52.16'  
OUT(NW)=47.38'

G:\Projects\2023\G23004 - WKD-Greenville PW Yard Stormwater Improvements\DWG\G23004-EX.dwg Jul 03, 2023 - 10:38am



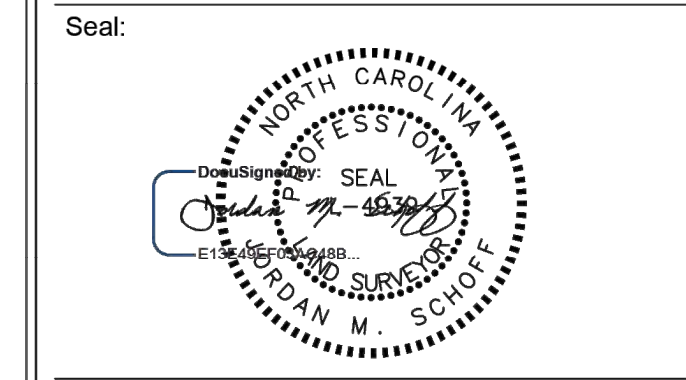
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Title:  
**EXISTING CONDITIONS SURVEY FOR:**  
**GREENVILLE PW YARD STORM**  
 GREENVILLE TOWNSHIP, CITY OF GREENVILLE  
 PITT COUNTY, NORTH CAROLINA  
 DATE: 03/03/2023 SCALE: 1"=20'  
 CONTOUR INTERVAL = 1 FOOT  
 PREPARED FOR:  
 WK DICKSON

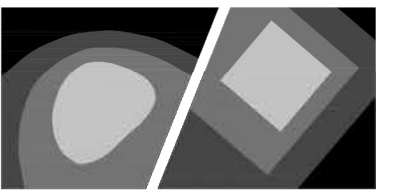
Revisions:

No.	Date	Description
01	03/24/2023	COMMENTS
02	03/29/2023	COMMENTS
03	06/13/2023	UTILITY UPDATE
04	07/03/2023	COMMENTS



Project number: G23004 Sheet:  
 Date: 03/03/2023  
 Drawn by: WJT  
 Checked by: JMS  
 6 of 10  
**X6**



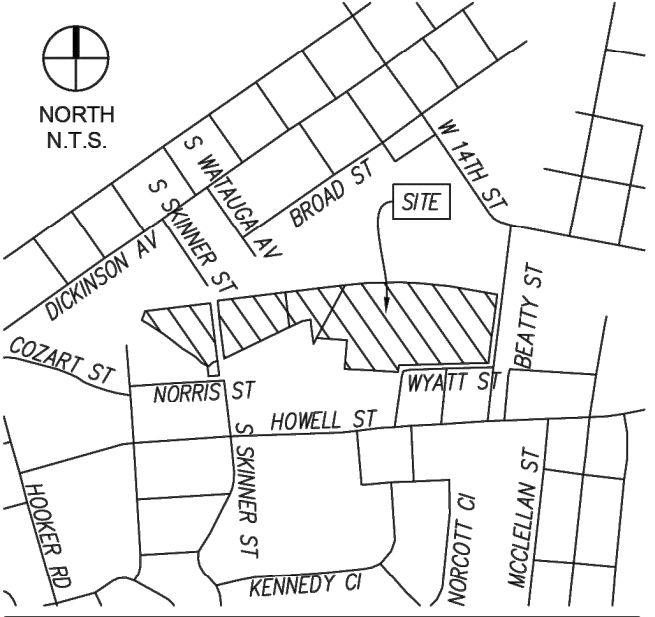


**STEWART**

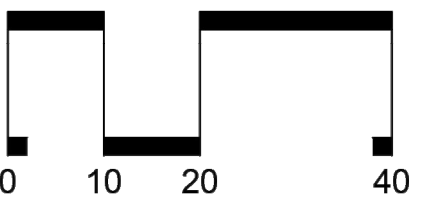
5410 OLD POOLE RD  
RALEIGH, NC 27610  
T 919.380.8750

FIRM LICENSE #: C-1051  
www.stewartinc.com  
PROJECT #: G23004

Vicinity Map:



NORTH  
NAD83(2011)



SCALE: 1" = 20'

Title:

**EXISTING CONDITIONS  
SURVEY FOR:**

**GREENVILLE PW  
YARD STORM**

GREENVILLE TOWNSHIP, CITY OF GREENVILLE

PITT COUNTY, NORTH CAROLINA

DATE: 03/03/2023 SCALE: 1"=20'

CONTOUR INTERVAL = 1 FOOT

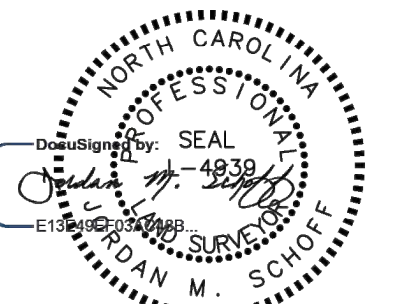
PREPARED FOR:

WK DICKSON

Revisions:

No.	Date	Description
01	03/24/2023	COMMENTS
02	03/29/2023	COMMENTS
03	06/13/2023	UTILITY UPDATE
04	07/03/2023	COMMENTS

Seal:



Project number: G23004 Sheet:

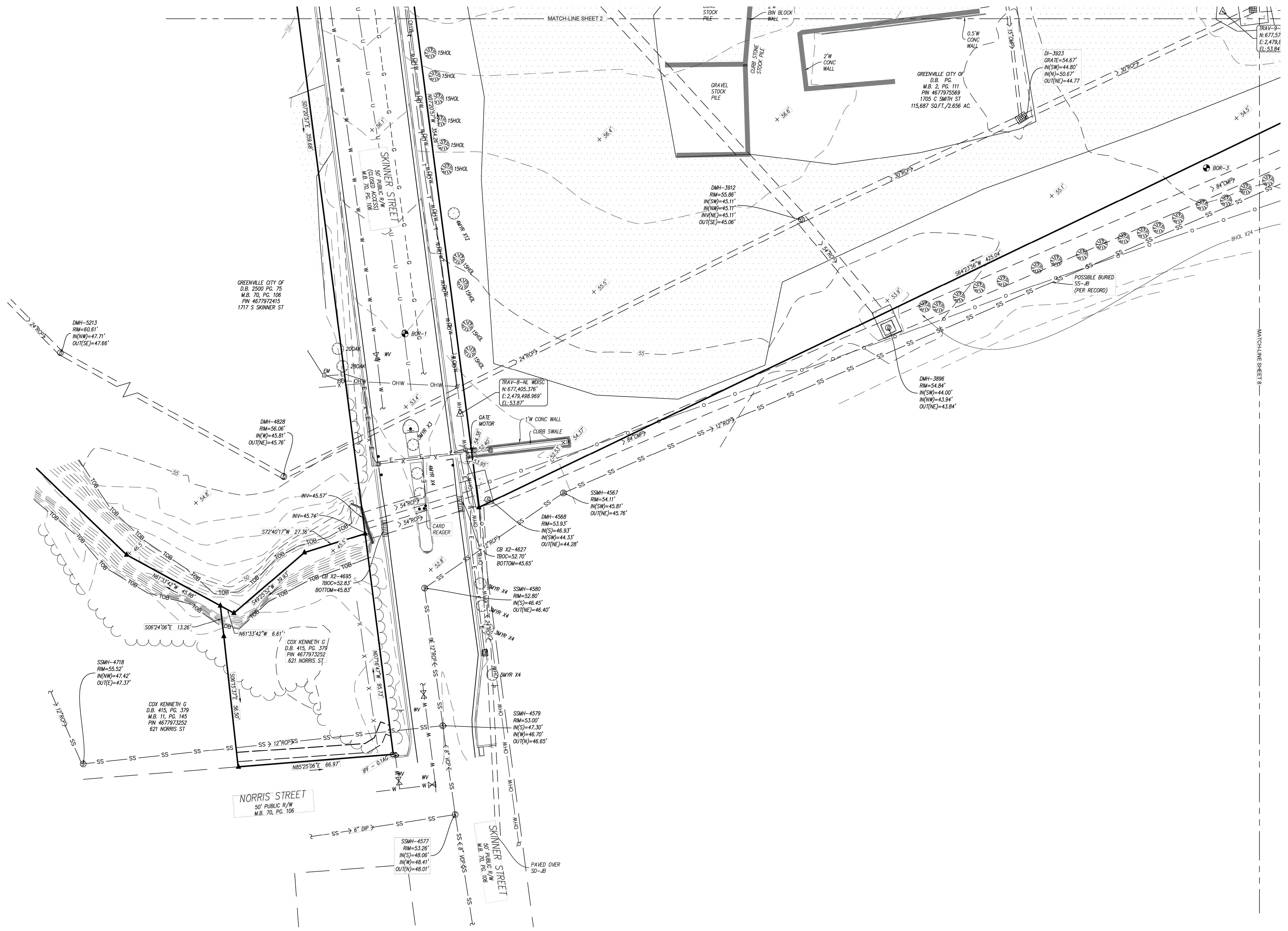
Date: 03/03/2023

Drawn by: WJT

Checked by: JMS

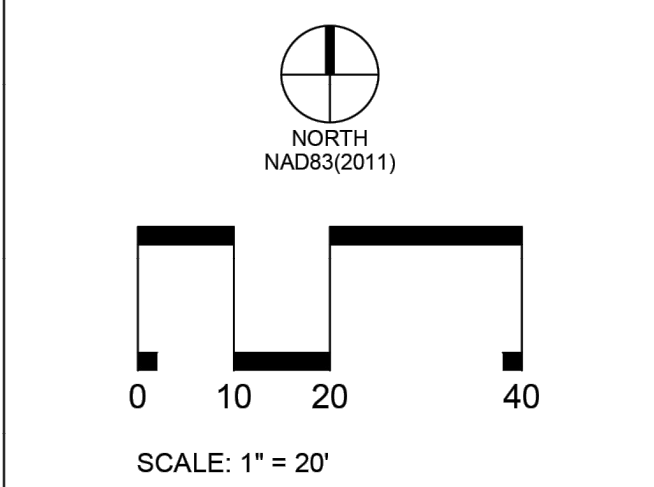
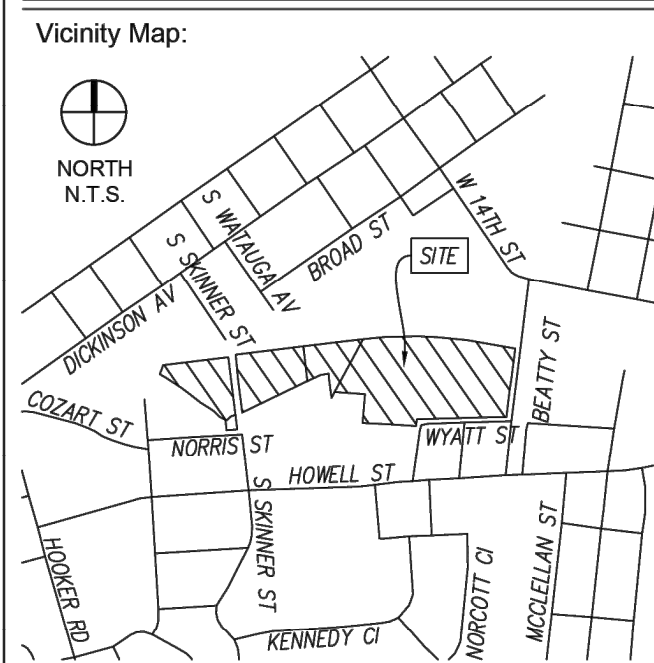
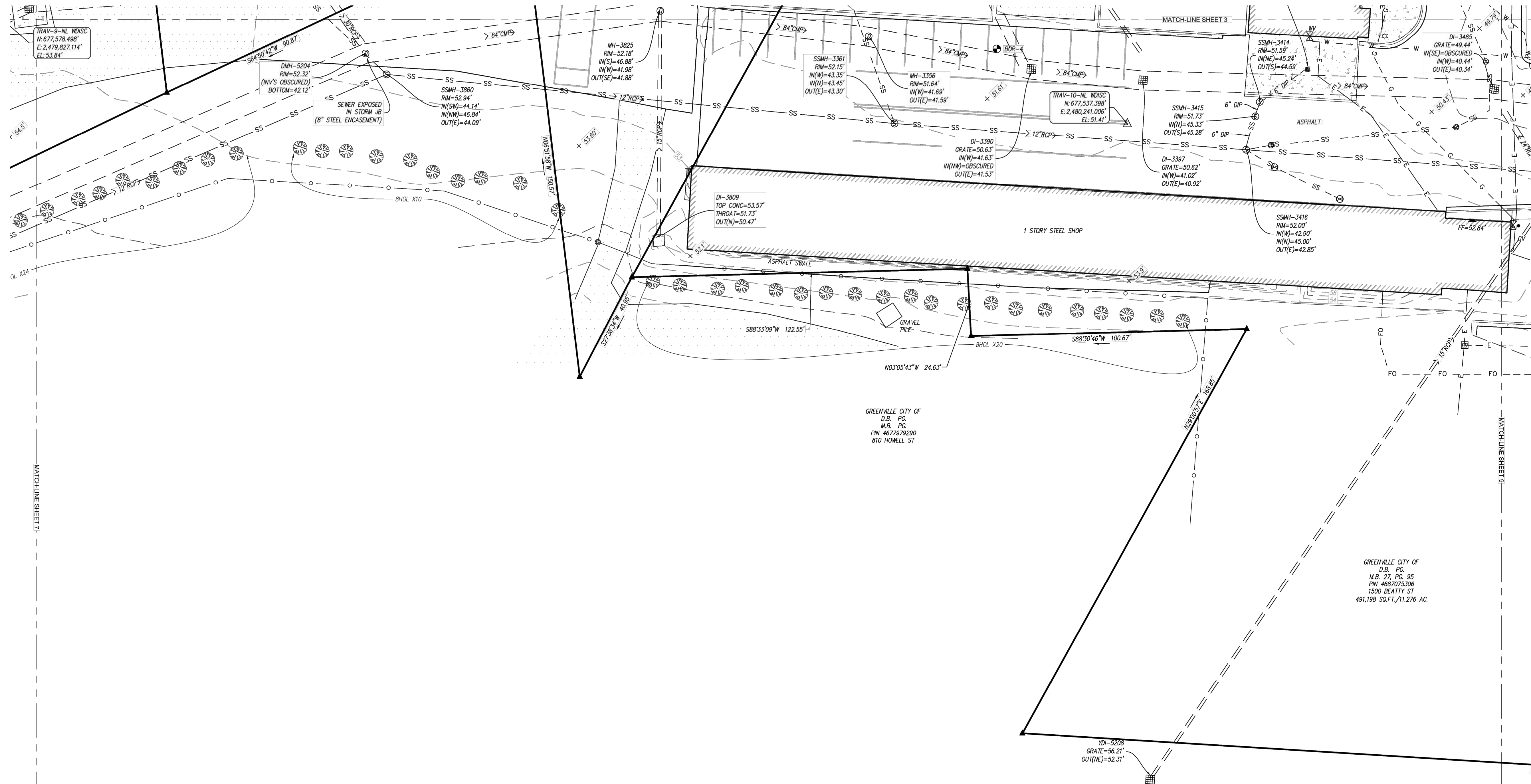
7 of 10  
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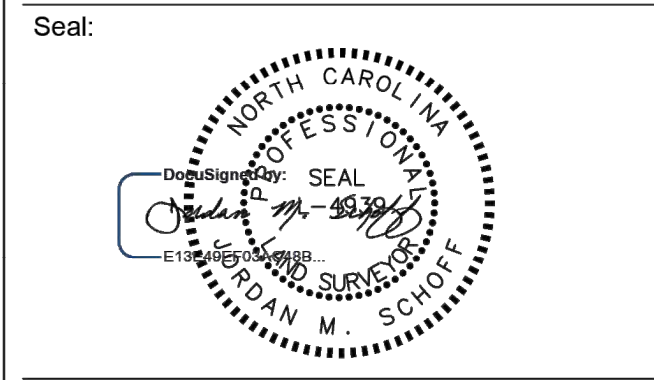
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Title:  
**EXISTING CONDITIONS SURVEY FOR:**  
**GREENVILLE PW YARD STORM**  
 GREENVILLE TOWNSHIP, CITY OF GREENVILLE  
 PITT COUNTY, NORTH CAROLINA  
 DATE: 03/03/2023 SCALE: 1"=20'  
 CONTOUR INTERVAL = 1 FOOT  
 PREPARED FOR:  
 WK DICKSON

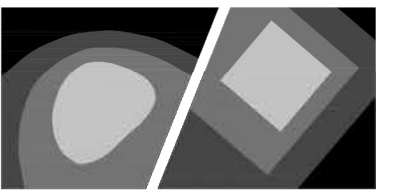
Revisions:

No.	Date	Description
01	03/24/2023	COMMENTS
02	03/29/2023	COMMENTS
03	06/13/2023	UTILITY UPDATE
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Project number: G23004 Sheet:  
 Date: 03/03/2023  
 Drawn by: WJT  
 Checked by: JMS  
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**X8**



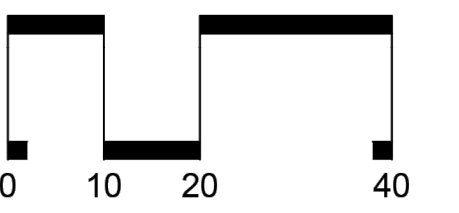
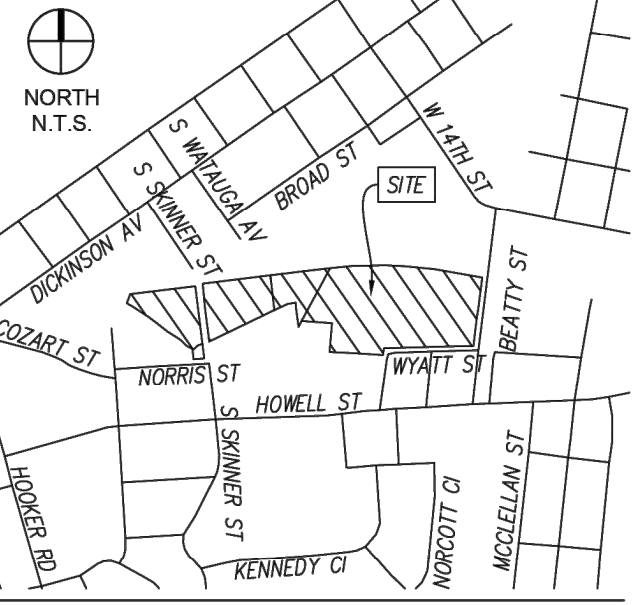


# STEWART

5410 OLD POOLE RD  
RALEIGH, NC 27610  
T 919.380.8750

FIRM LICENSE #: C-1051  
www.stewartinc.com  
PROJECT #: G23004

Vicinity Map:



SCALE: 1" = 20'

Title:

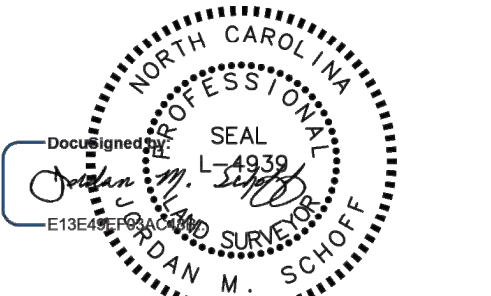
## EXISTING CONDITIONS SURVEY FOR: GREENVILLE PW YARD STORM

GREENVILLE TOWNSHIP, CITY OF GREENVILLE  
PITT COUNTY, NORTH CAROLINA  
DATE: 03/03/2023 SCALE: 1"=20'  
CONTOUR INTERVAL = 1 FOOT  
PREPARED FOR:  
WK DICKSON

Revisions:

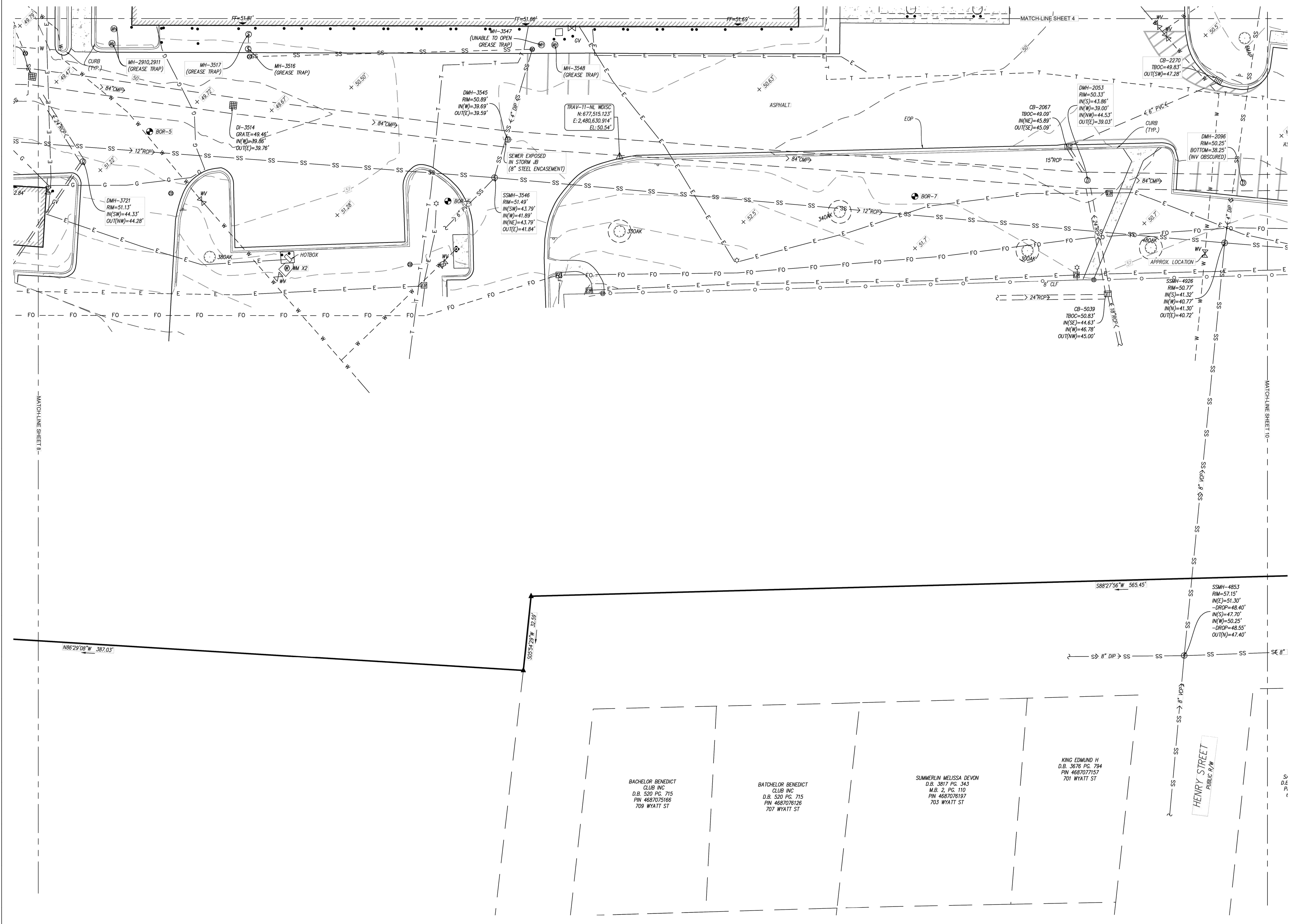
No.	Date	Description
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03	06/13/2023	UTILITY UPDATE
04	07/03/2023	COMMENTS

Seal:



Project name: G23004 Sheet:  
Date: 03/03/2023  
Drawn by: WJT  
Checked by: JMS

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X9



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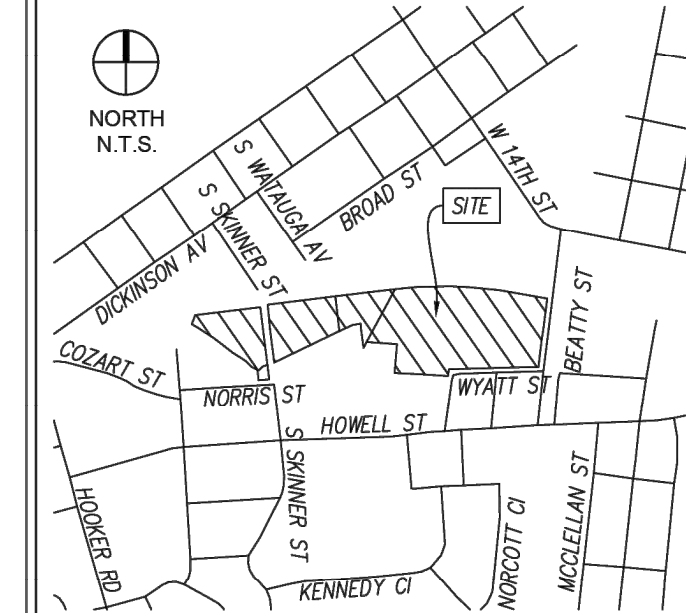


# STEWART

5410 OLD POOLE RD  
RALEIGH, NC 27610  
T 919.380.8750

FIRM LICENSE # C-1051  
www.stewartinc.com  
PROJECT # G23004

Vicinity Map:



SCALE: 1" = 20'

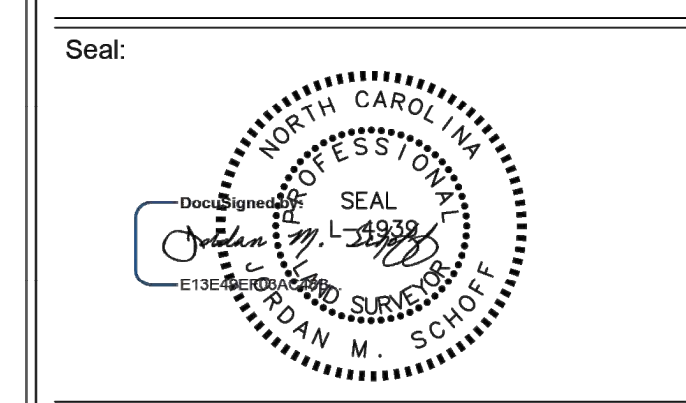
Title:

## EXISTING CONDITIONS SURVEY FOR:

# GREENVILLE PW YARD STORM

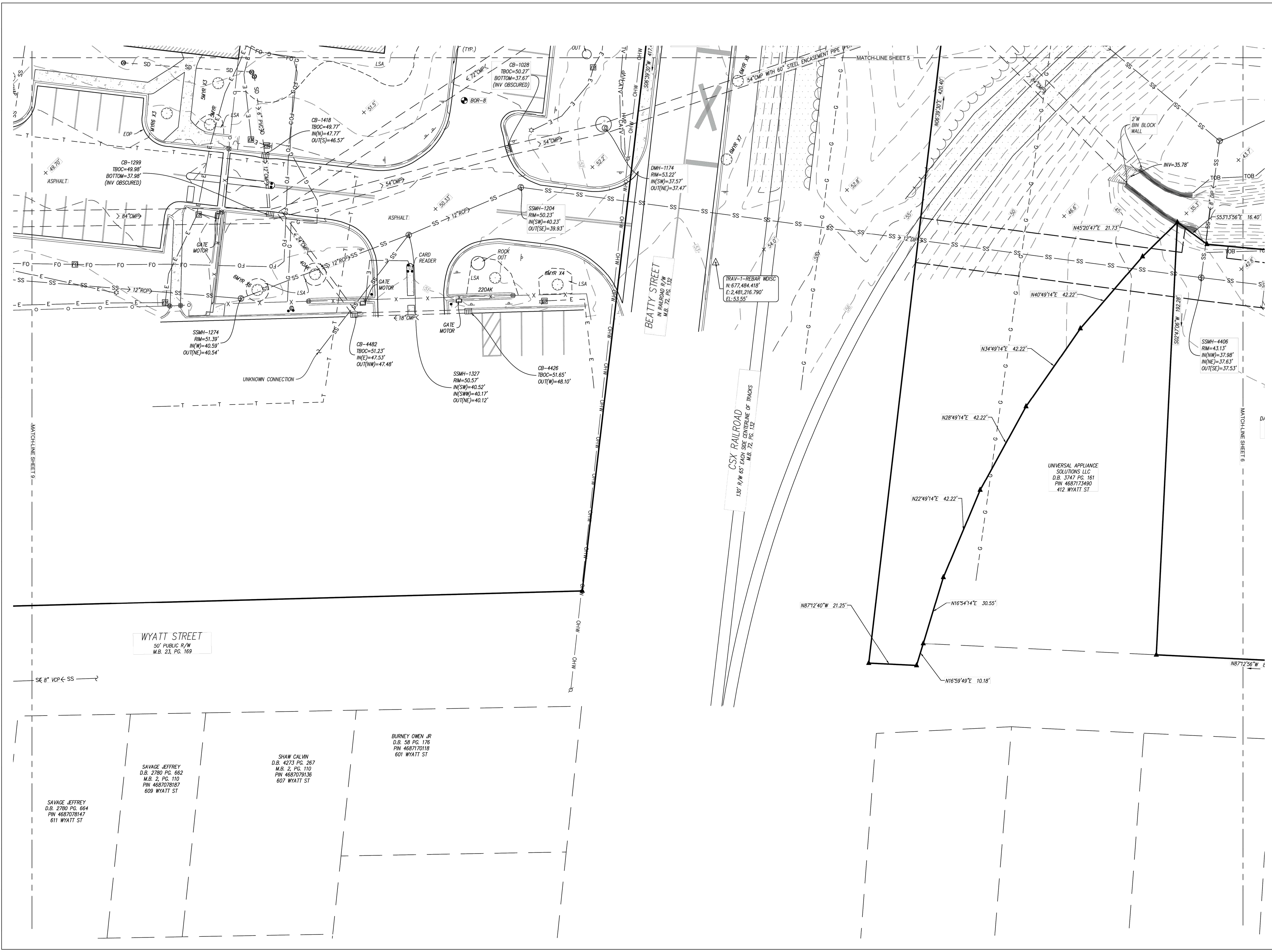
GREENVILLE TOWNSHIP, CITY OF GREENVILLE  
PITT COUNTY, NORTH CAROLINA  
DATE: 03/03/2023 SCALE: 1"=20'  
CONTOUR INTERVAL = 1 FOOT  
PREPARED FOR:  
WK DICKSON

Revisions:		
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Checked by: JMS

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**X10**



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