

# FRAZIER FARM PARK

V5-CID-23-05

11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA, 27282

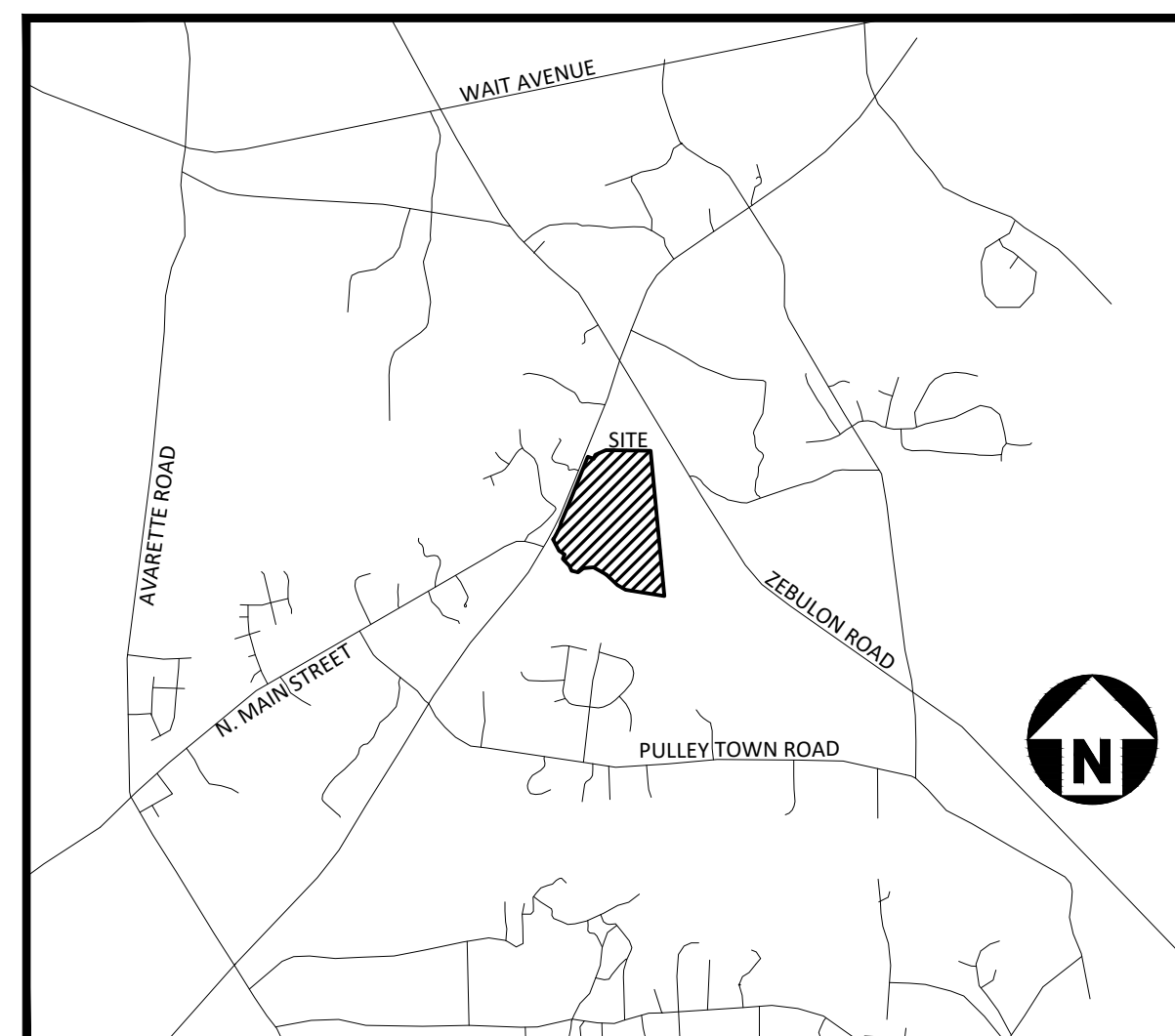
## CONSTRUCTION DRAWINGS PHASE 1A

PROJECT NUMBER: 2020110039

DATE: FEBRUARY 1, 2024

### SITE DATA

OWNER:	TOWN OF ROLESVILLE 502 SOUTHTOWN CIRCLE ROLESVILLE, NORTH CAROLINA 27571
PREPARED BY:	MCADAMS COMPANY 2905 MERIDIAN PARKWAY DURHAM, NORTH CAROLINA 27713 919.361.5000 NANEKAR@MCADAMSCO.COM
PARCEL ID NUMBER:	1779076610
TOTAL SITE ACREAGE:	±116.56 AC
LAND AREA OF PARCEL:	±105.00 AC
SITE ACREAGE AS PART OF THIS DEVELOPMENT:	±8.00 AC
CURRENT ZONING:	RL
PROPOSED PARKING:	69 SPACES
CURRENT LAND USE:	VACANT
PROPOSED LAND USE:	PUBLIC RECREATION FACILITY
ADJOINING PROPERTY OWNERS:	PIN: 1779083669, 1779263965, 1779190357
DISTURBED AREA:	±8.50 AC
FEMA REGULATIONS:	
PRE-DEVELOPMENT IMPERVIOUS AREA:	0.14 AC
POST-DEVELOPMENT IMPERVIOUS AREA:	1.92 AC
WATERSHED(S):	NEUSE



VICINITY MAP  
N.T.S.



Know what's below.  
Call before you dig.

CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.

### SHEET INDEX

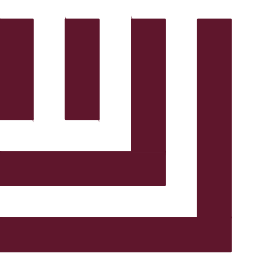
C1.00	EXISTING CONDITIONS
C1.01	EXISTING CONDITIONS
C1.10	DEMOLITION PLAN
C2.00	OVERALL SITE PLAN
C2.01	SITE PLAN 'AREA A'
C2.02	SITE PLAN 'AREA B'
C2.03	SITE PLAN 'AREA C'
C3.00	OVERALL GRADING & DRAINAGE PLAN
C3.01	GRADING & DRAINAGE PLAN: 'AREA A'
C3.02	GRADING & DRAINAGE PLAN: 'AREA B'
C3.03	GRADING & DRAINAGE PLAN: 'AREA C'
C5.00	PLAN AND PROFILE STREET "A", STA. 10+00 THRU STA. 22+95.10
C5.01	PLAN AND PROFILE STREET "B", STA. 10+00 THRU STA. 16+35
C6.00	EROSION CONTROL NOTES
C6.01	OVERALL EROSION CONTROL PLAN - STAGE 1
C6.02	OVERALL EROSION CONTROL PLAN - STAGE 2
C6.10	EROSION CONTROL DETAILS
C6.11	EROSION CONTROL DETAILS
C6.12	EROSION CONTROL DETAILS
C6.13	EROSION CONTROL DETAILS
C7.00	LOUISBURG RD WIDENING PLAN
C7.01	LOUISBURG RD STRIPING PLAN
C7.10	LOUISBURG RD WIDENING CROSS SECTIONS
C7.11	LOUISBURG RD WIDENING CROSS SECTIONS
C7.12	LOUISBURG RD WIDENING CROSS SECTIONS
C8.00	SITE DETAILS
C8.01	SITE DETAILS
C8.02	STORM DRAINAGE & UTILITY DETAILS
C8.03	STORM DRAINAGE & UTILITY DETAILS

### GENERAL NOTES:

- ANY STRUCTURE TO BE REMOVED SHALL REQUIRE A DEMOLITION PERMIT FROM BUILDING INSPECTIONS.

CID-23-05

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



MCADAMS

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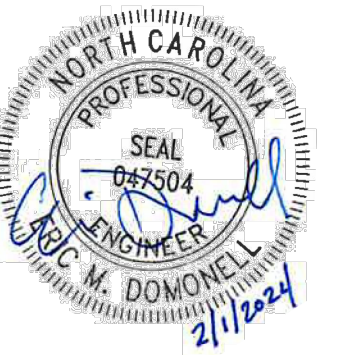
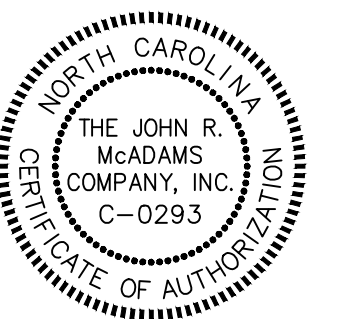
### CONTACT

ERIC DOMONELL  
domonell@mcadamsco.com  
PHONE: 919.287.0765

### CLIENT

TOWN OF ROLESVILLE  
502 SOUTHTOWN CIRCLE  
ROLESVILLE, NORTH CAROLINA 27571  
PHONE: 919.554.6582

### PROJECT DIRECTORY



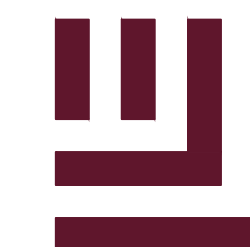
### REVISIONS

NO. DATE

### CONSTRUCTION DRAWINGS FOR:

FRAZIER FARM PARK  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NC 27282  
PROJECT NUMBER: 2020110039





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FRAZIER FARM PARK  
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REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-DM1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=100'  
DATE 02.01.2024

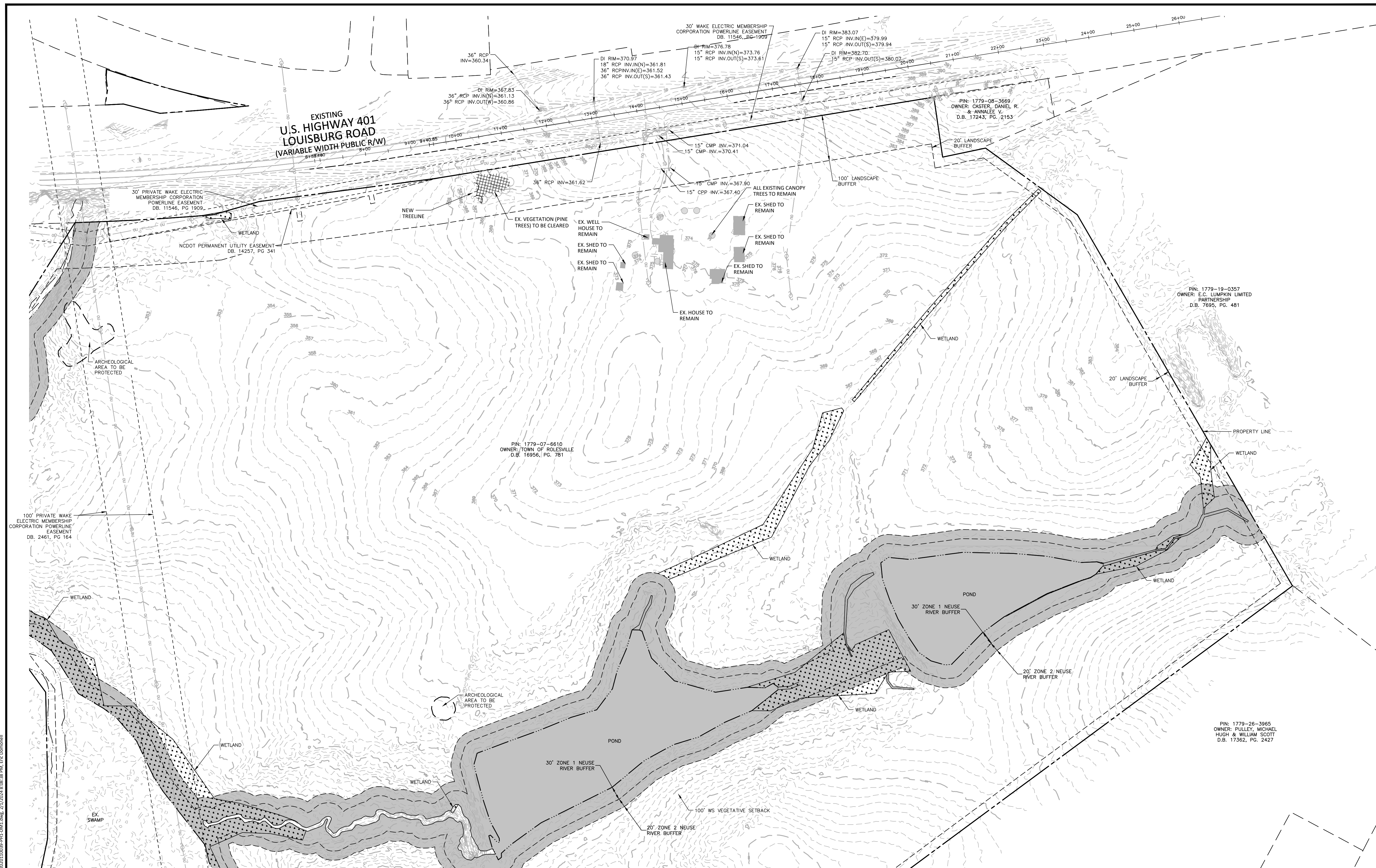
SHEET

OVERALL DEMOLITION  
PLAN

C1.10

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



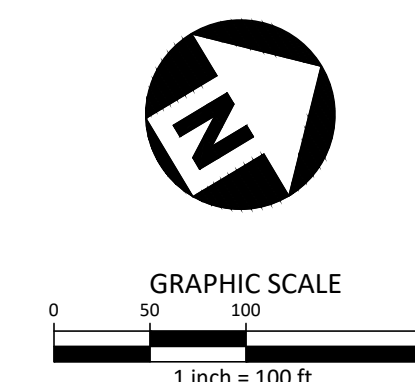
DEMOLITION NOTES

- UTILITY STATEMENT: THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL EXISTING UTILITIES ON SITE PRIOR TO DEMOLITION.
- THE CONTRACTOR SHALL PERFORM DEMOLITION ACTIVITIES AS NOTED AND SHOWN ON THESE PLANS AND SPECIFICATIONS AND AS DIRECTED BY THE OWNER.
- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY PERMITS AND PAY FEES REQUIRED FOR DEMOLITION AND HAUL-OFF FROM THE APPROPRIATE AUTHORITIES. THESE FEES ARE TO BE INCLUDED WITH THE BID. THE CONTRACTOR SHALL PREPARE ALL DOCUMENTS AND ACQUIRE APPROPRIATE PERMITS AS REQUIRED PRIOR TO THE COMMENCEMENT OF DEMOLITION.
- THE DEMOLITION PLAN IS INTENDED TO DEPICT GENERAL DEMOLITION AND UTILITY WORK. IT IS NOT INTENDED TO IDENTIFY EACH ELEMENT OF DEMOLITION OR RELOCATION. CONTRACTOR SHALL COORDINATE WITH THE OWNER AND APPROPRIATE UTILITY COMPANY PRIOR TO WORK.
- CONTRACTOR SHALL COMPLETELY DEMOLISH ALL EXISTING IMPROVEMENTS NOTED FOR REMOVAL ON THE APPROVED DEMOLITION PLAN. THIS INCLUDES, AS NECESSARY, FOUNDATIONS AND OTHER APPURTENANCES LOCATED ON AND AROUND THE IMPROVEMENTS SUCH AS SIGNS, CURBS, PAVEMENT, SIDEWALKS, LIGHT POLE BASES, HYDRANTS, BOLLARDS, ETC. ALL REMOVED MATERIAL SHALL BE DISPOSED OF OFFSITE IN A LAWFUL MANNER OR RECYCLED. IF POSSIBLE, CONTRACTOR SHALL MAKE EVERY ATTEMPT TO RECYCLE ANY DEBRIS AND RUBBISH THAT IS RECYCLABLE.
- CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AND TREE PROTECTION PRIOR TO BEGINNING DEMOLITION WORK. CONTRACTOR SHALL TAKE EXTRA PRECAUTIONS AND CARE TO PRESERVE TREES DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES TO REMAIN IN PLACE.
- ALL EXISTING ITEMS TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE SOLE EXPENSE OF THE CONTRACTOR.
- CONTRACTOR TO FLAG ALL TREES SLATED FOR REMOVAL AND SEEK APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO DEMOLISHING.

DEMOLITION LEGEND

AREA TO BE REMOVED (SIDEWALK, CURB AND GUTTER, STRUCTURES, ASPHALT, CONCRETE PAVING, ETC.)

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS



M:\Projects\WOL\2020110039 Frazier Farm PH1\04-Production\Engineering\Phase1A\CID\2020110039-PH1-DM1.dwg, 2/1/2024, 8:08:38 PM, EJC Domonelli





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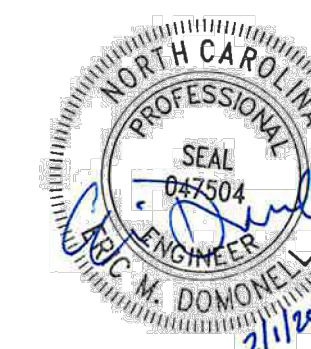
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FRAZIER FARM PARK  
CONSTRUCTION DRAWINGS  
PHASE 1A  
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ROLESVILLE, NORTH CAROLINA



REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-OAS1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=100'  
DATE 02.01.2024

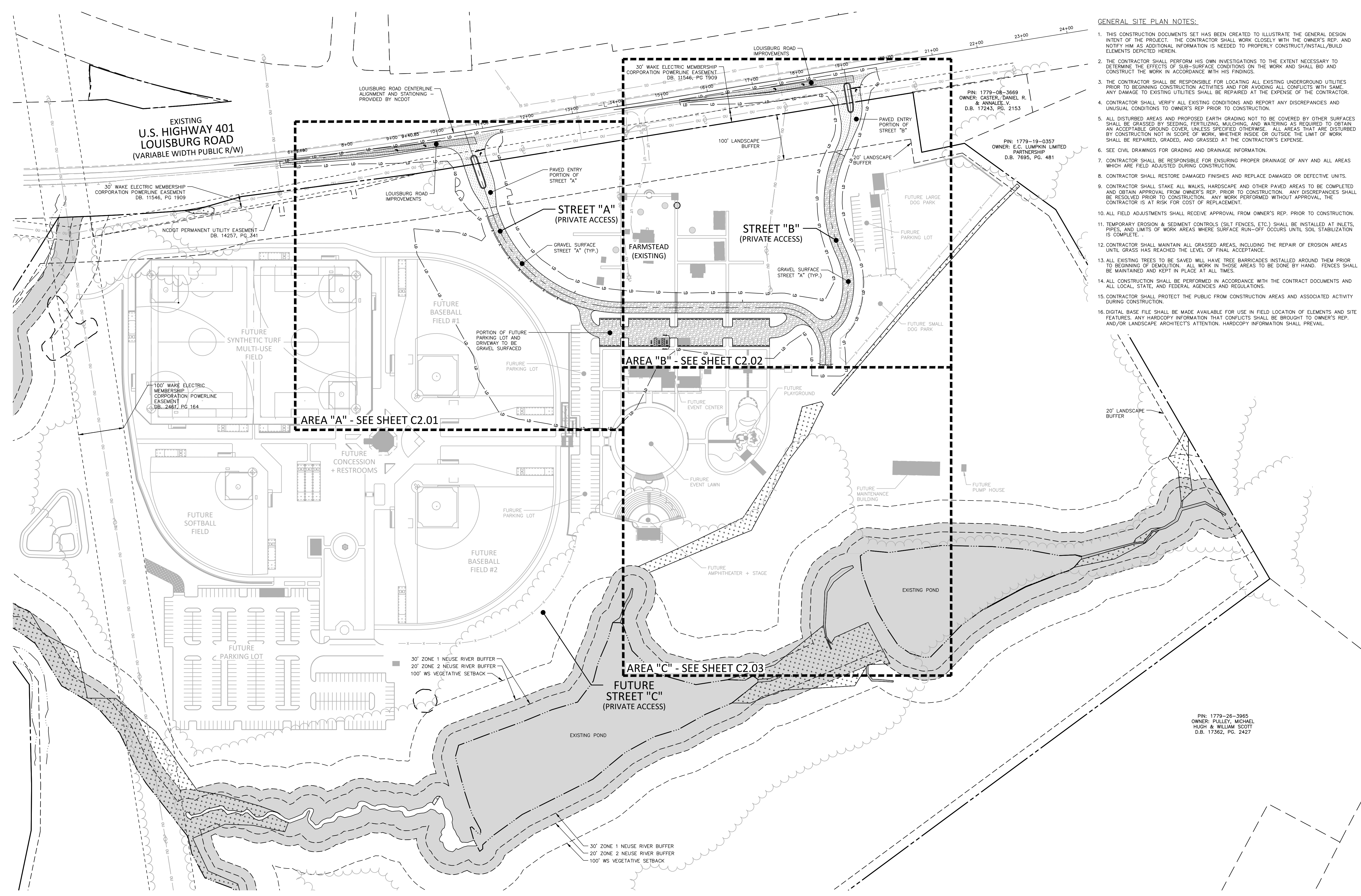
SHEET

OVERALL  
SITE PLAN  
C2.00

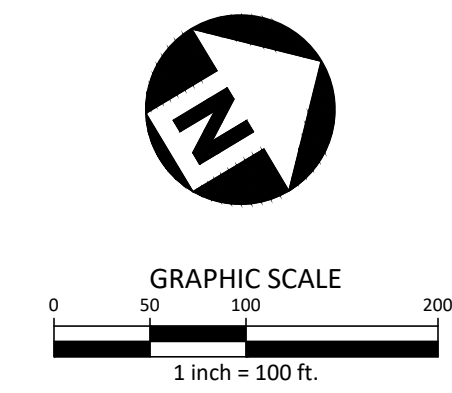
CID-23-5

GENERAL SITE PLAN NOTES:

1. THIS CONSTRUCTION DOCUMENTS SET HAS BEEN CREATED TO ILLUSTRATE THE GENERAL DESIGN INTENT OF THE PROJECT. THE CONTRACTOR SHALL WORK CLOSELY WITH THE OWNER'S REP. AND NOTIFY HIM AS ADDITIONAL INFORMATION IS NEEDED TO PROPERLY CONSTRUCT/INSTALL/BUILD ELEMENTS DEPICTED HEREIN.
2. THE CONTRACTOR SHALL PERFORM HIS OWN INVESTIGATIONS TO THE EXTENT NECESSARY TO DETERMINE THE EFFECTS OF SUB-SURFACE CONDITIONS ON THE WORK AND SHALL BID AND CONSTRUCT THE WORK IN ACCORDANCE WITH HIS FINDINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES AND FOR AVOIDING ALL CONFLICTS WITH SAME. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES AND UNUSUAL CONDITIONS TO OWNER'S REP PRIOR TO CONSTRUCTION.
5. ALL DISTURBED AREAS AND PROPOSED EARTH GRADING NOT TO BE COVERED BY OTHER SURFACES SHALL BE GRASSED BY SEEDING, FERTILIZING, MULCHING, AND WATERING AS REQUIRED TO OBTAIN AN ACCEPTABLE GROUND COVER, UNLESS SPECIFIED OTHERWISE. ALL AREAS THAT ARE DISTURBED BY CONSTRUCTION NOT IN SCOPE OF WORK, WHETHER INSIDE OR OUTSIDE THE LIMIT OF WORK SHALL BE REPAIRED, GRADED, AND GRASSED AT THE CONTRACTOR'S EXPENSE.
6. SEE CIVIL DRAWINGS FOR GRADING AND DRAINAGE INFORMATION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING PROPER DRAINAGE OF ANY AND ALL AREAS WHICH ARE FIELD ADJUSTED DURING CONSTRUCTION.
8. CONTRACTOR SHALL RESTORE DAMAGED FINISHES AND REPLACE DAMAGED OR DEFECTIVE UNITS.
9. CONTRACTOR SHALL STAKE ALL WALKS, HARDSCAPE AND OTHER PAVED AREAS TO BE COMPLETED AND OBTAIN APPROVAL FROM OWNER'S REP. PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE RESOLVED PRIOR TO CONSTRUCTION. ANY WORK PERFORMED WITHOUT APPROVAL, THE CONTRACTOR IS AT RISK FOR COST OF REPLACEMENT.
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11. TEMPORARY EROSION & SEDIMENT CONTROLS (SILT FENCES, ETC.) SHALL BE INSTALLED AT INLETS, PIPES, AND LIMITS OF WORK AREAS WHERE SURFACE RUN-OFF OCCURS UNTIL SOIL STABILIZATION IS COMPLETE.
12. CONTRACTOR SHALL MAINTAIN ALL GRASSED AREAS, INCLUDING THE REPAIR OF EROSION AREAS UNTIL GRASS HAS REACHED THE LEVEL OF FINAL ACCEPTANCE.
13. ALL EXISTING TREES TO BE SAVED WILL HAVE TREE BARRICADES INSTALLED AROUND THEM PRIOR TO BEGINNING OF DEMOLITION. ALL WORK IN THOSE AREAS TO BE DONE BY HAND. FENCES SHALL BE MAINTAINED AND KEPT IN PLACE AT ALL TIMES.
14. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ALL LOCAL, STATE, AND FEDERAL AGENCIES AND REGULATIONS.
15. CONTRACTOR SHALL PROTECT THE PUBLIC FROM CONSTRUCTION AREAS AND ASSOCIATED ACTIVITY DURING CONSTRUCTION.
16. DIGITAL BASE FILE SHALL BE MADE AVAILABLE FOR USE IN FIELD LOCATION OF ELEMENTS AND SITE FEATURES. ANY HANDCOPED INFORMATION THAT CONFLICTS SHALL BE BROUGHT TO OWNER'S REP. AND/OR LANDSCAPE ARCHITECT'S ATTENTION. HANDCOPED INFORMATION SHALL PREVAIL.



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PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

M:\Projects\WOL\2020110039\Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-OAS1.dwg, 2/1/2024, 8:08:51 PM, Eric Domonelli





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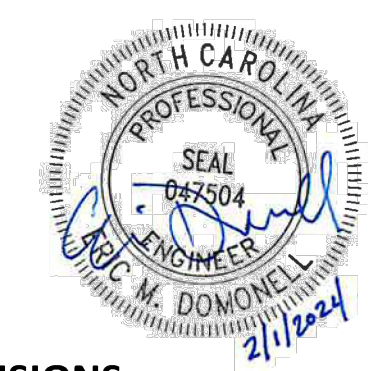
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ROLESVILLE, NORTH CAROLINA**



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-S1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=30'  
DATE 02.01.2024

**SHEET**

**SITE PLAN: AREA 'A'**

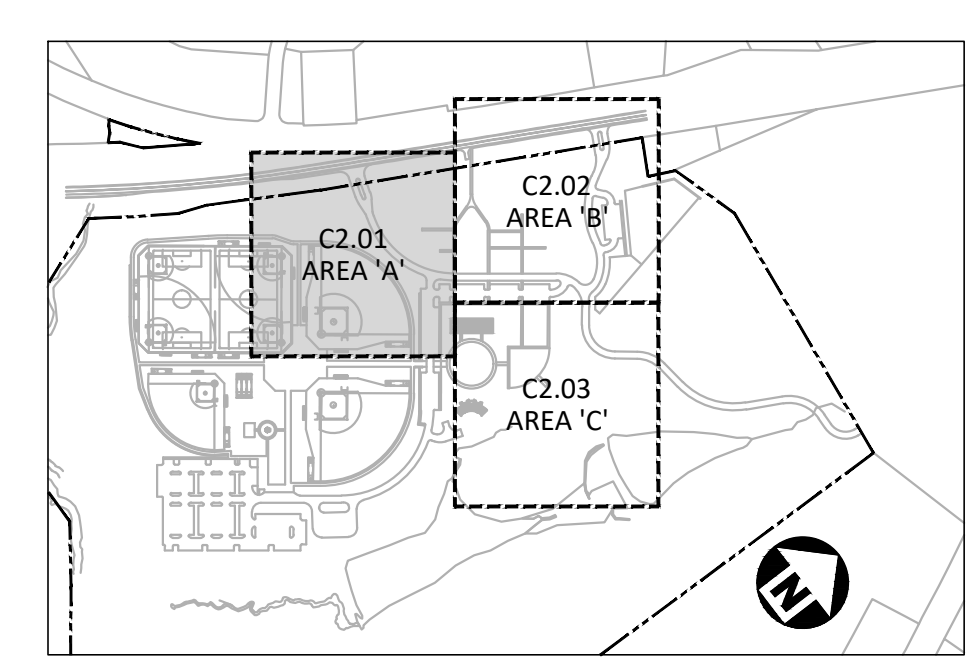
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**SITE LEGEND**

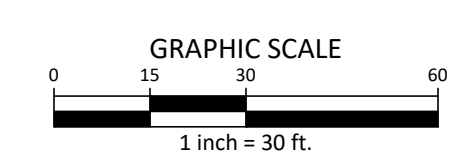
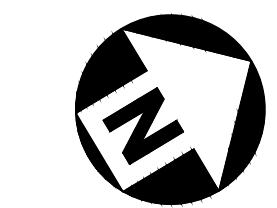
	SIGNAGE
	YARD LIGHTS
	LIGHT POLE
	POWER POLE
	TRAFFIC DIRECTIONAL ARROW
	ACCESSIBLE PARKING STALL
	VAN ACCESSIBLE PARKING STALL
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	ACCESSIBLE RAMPS
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	PHASE LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	LOT LINE
	EASEMENT LINE
	CENTERLINE
	HEAVY DUTY ASPHALT PAVEMENT
	ABC TRAVEL SURFACE TO BE ASPHALT PAVED IN FUTURE PHASE
	US-401 PAVEMENT

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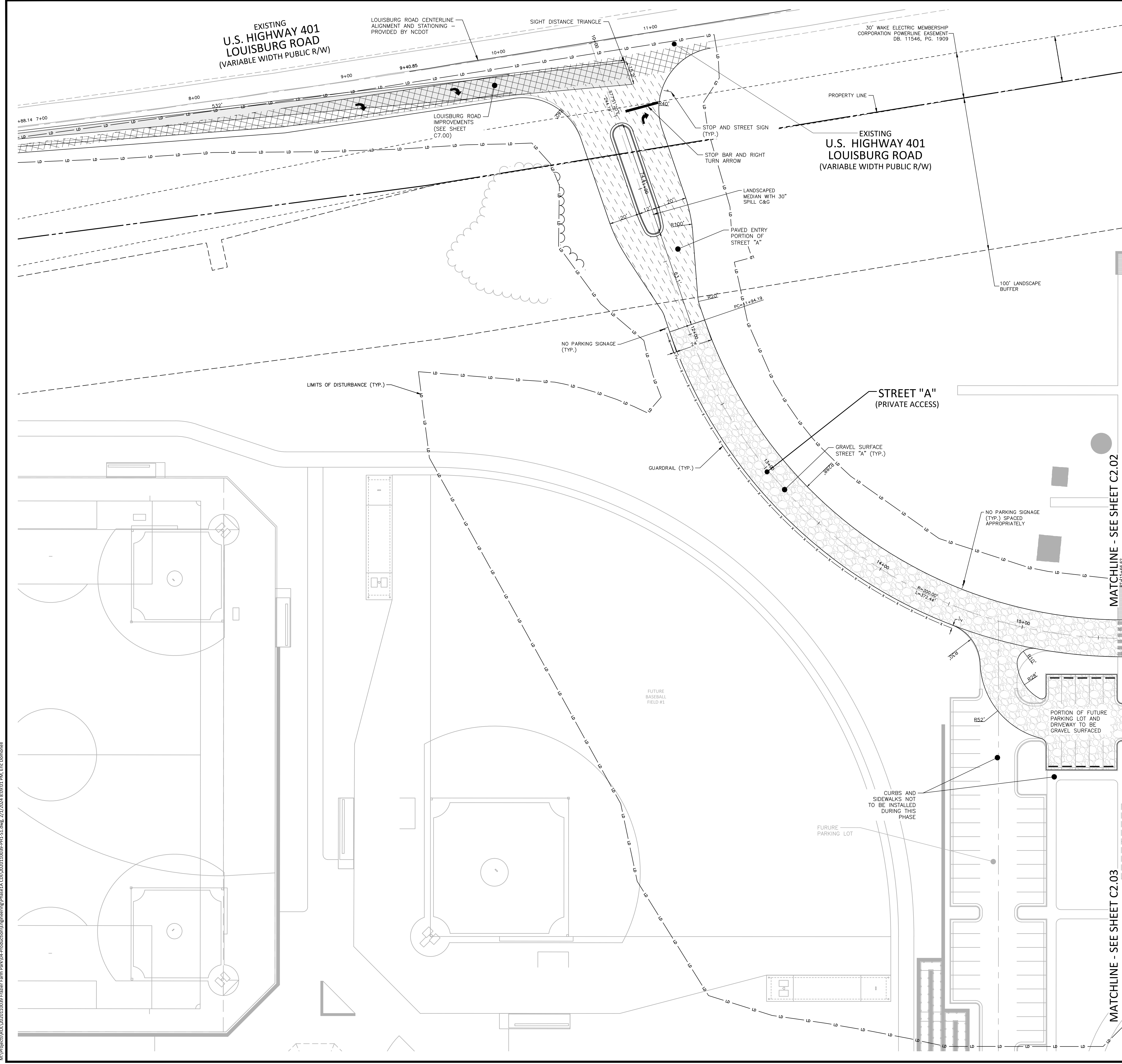
**INDEX MAP**  
N.T.S.



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CID-23-5

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M:\Projects\WOL\2020110039 Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-S1.dwg, 2/1/2024, 8:09:01 PM, Eric Domoneal





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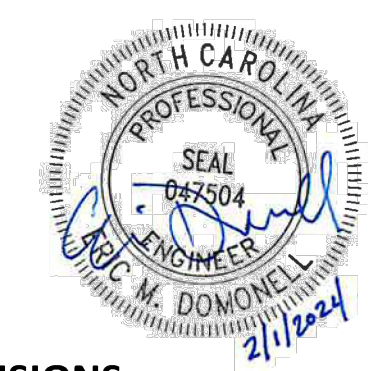
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**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-S1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=30'  
DATE 02.01.2024

**SITE PLAN: AREA 'B'**

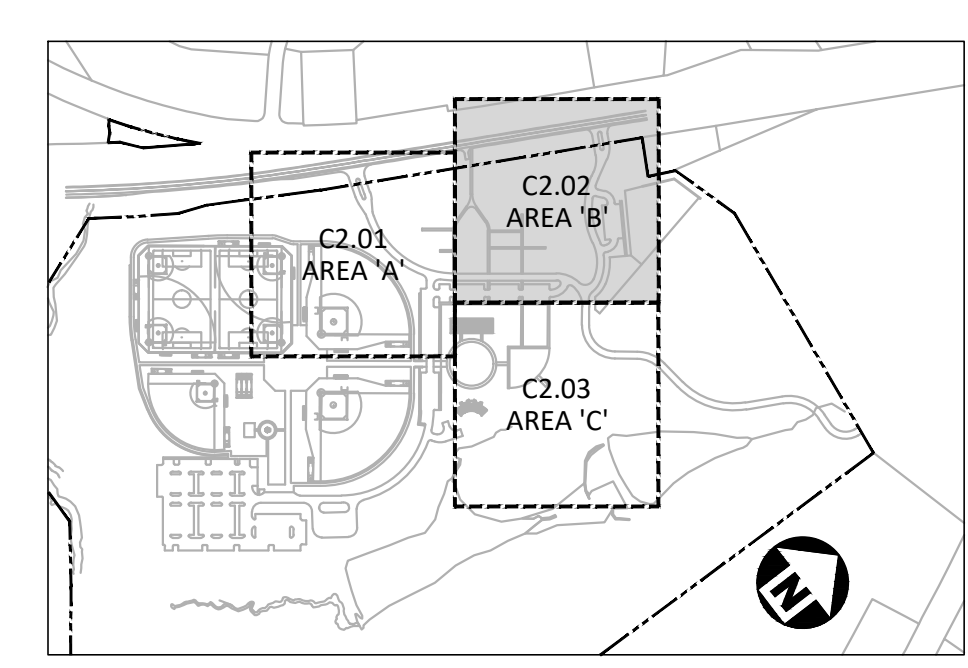
**C2.02**

**SITE LEGEND**

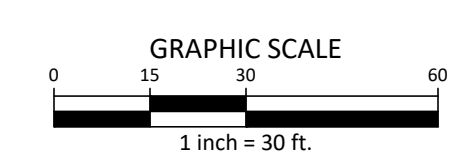
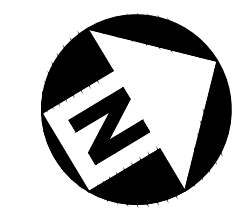
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- ALL DISTURBED AREAS AND PROPOSED EARTH GRADING NOT TO BE COVERED BY OTHER SURFACES SHALL BE GRASSED BY SEEDING, FERTILIZING, MULCHING, AND WATERING AS REQUIRED TO OBTAIN AN ACCEPTABLE GROUND COVER, UNLESS SPECIFIED OTHERWISE. ALL AREAS THAT ARE DISTURBED BY CONSTRUCTION NOT IN SCOPE OF WORK, WHETHER INSIDE OR OUTSIDE THE LIMIT OF WORK SHALL BE REPAIRED, GRADED, AND GRASSED AT THE CONTRACTOR'S EXPENSE.
- SEE CIVIL DRAWINGS FOR GRADING AND DRAINAGE INFORMATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING PROPER DRAINAGE OF ANY AND ALL AREAS WHICH ARE FIELD ADJUSTED DURING CONSTRUCTION.
- CONTRACTOR SHALL RESTORE DAMAGED FINISHES AND REPLACE DAMAGED OR DEFECTIVE UNITS.
- CONTRACTOR SHALL STAKE ALL WALKS, HARDSCAPE AND OTHER PAVED AREAS TO BE COMPLETED AND OBTAIN APPROVAL FROM OWNER'S REP. PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE RESOLVED PRIOR TO CONSTRUCTION. ANY WORK PERFORMED WITHOUT APPROVAL, THE CONTRACTOR IS AT RISK FOR COST OF REPLACEMENT.
- ALL FIELD ADJUSTMENTS SHALL RECEIVE APPROVAL FROM OWNER'S REP. PRIOR TO CONSTRUCTION.
- TEMPORARY EROSION & SEDIMENT CONTROLS (SILT FENCES, ETC.) SHALL BE INSTALLED AT INLETS, PIPES, AND LIMITS OF WORK AREAS WHERE SURFACE RUN-OFF OCCURS UNTIL SOIL STABILIZATION IS COMPLETE.
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- ALL EXISTING TREES TO BE SAVED WILL HAVE TREE BARRICADES INSTALLED AROUND THEM PRIOR TO BEGINNING OF DEMOLITION. ALL WORK IN THOSE AREAS TO BE DONE BY HAND. FENCES SHALL BE MAINTAINED AND KEPT IN PLACE AT ALL TIMES.
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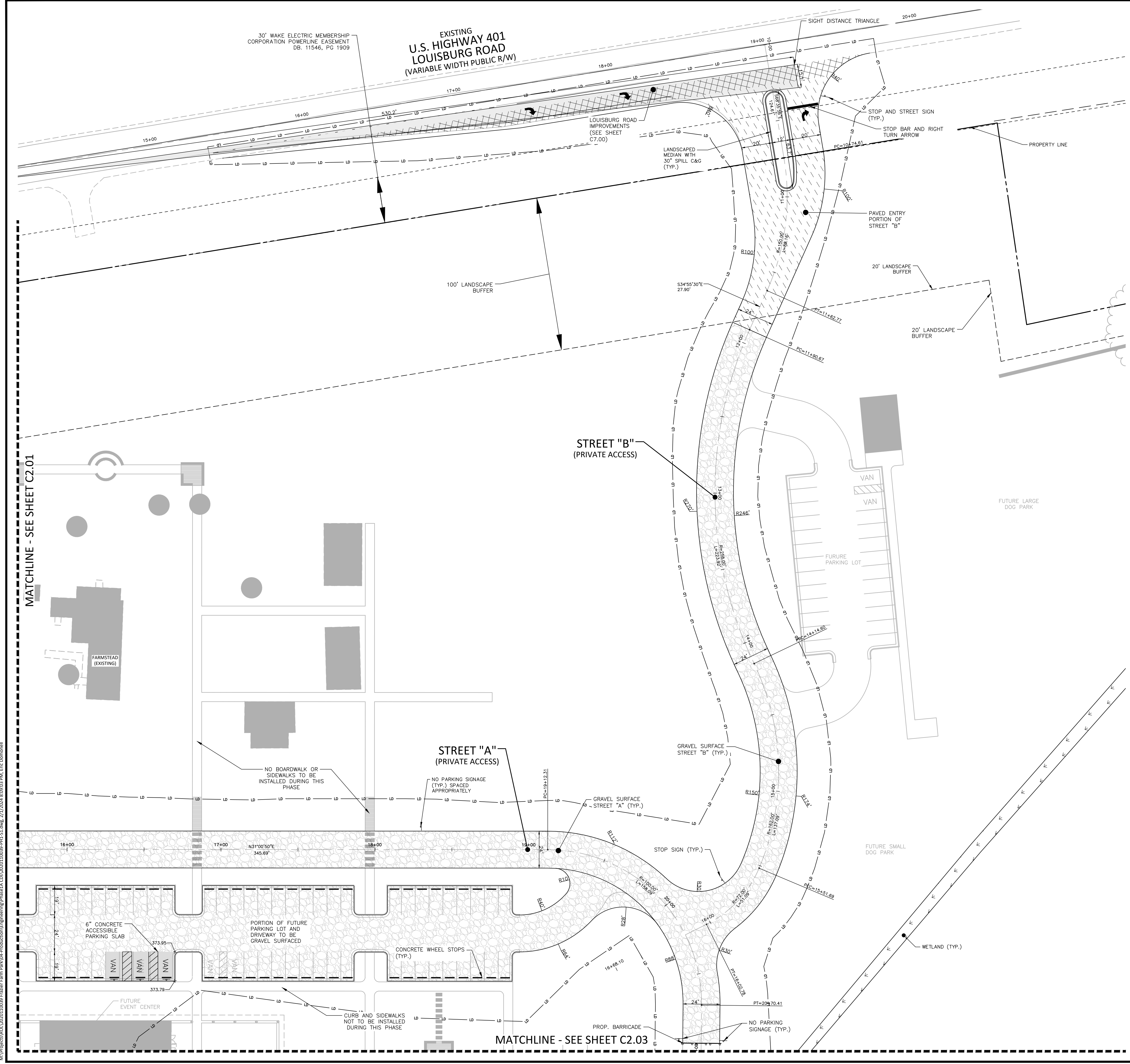
**INDEX MAP**  
N.T.S.



ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



MATCHLINE - SEE SHEET C2.01

MATCHLINE - SEE SHEET C2.03

M:\Projects\WOL\2020110039 Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-S1.dwg, 2/1/2024, 8:09:03 PM, Eric Donomel





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Durham, NC 27713

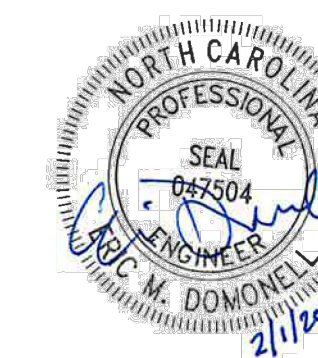
phone 919. 361. 5000  
fax 919. 361. 2269  
license number: C-0293

www.mcadamsco.com

**CLIENT**

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PHONE: 919.554.6582

**FRAZIER FARM PARK  
CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA**



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-S1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=30'  
DATE 02.01.2024

**SHEET**

**SITE PLAN: AREA 'C'**

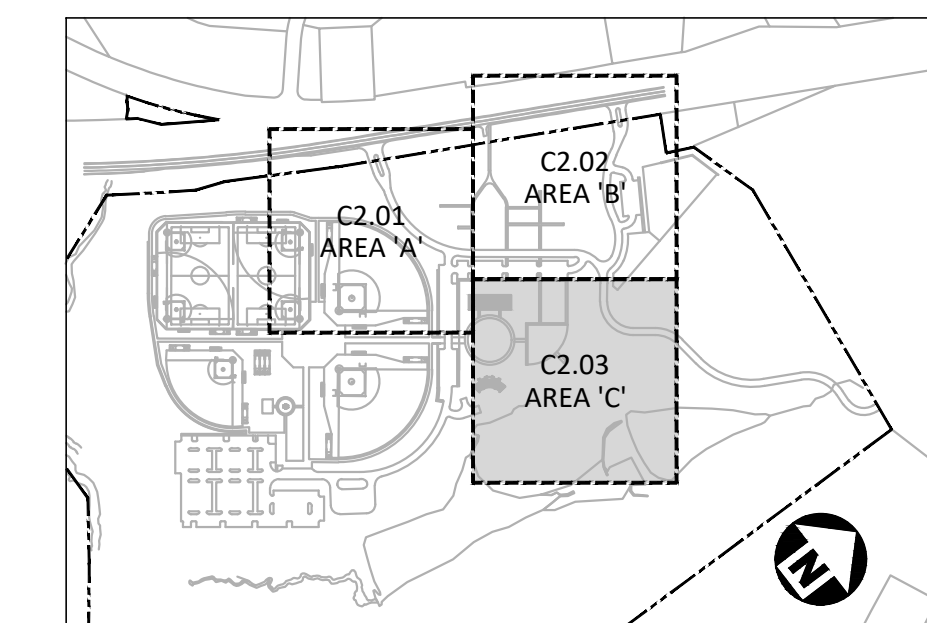
**C2.03**

**SITE LEGEND**

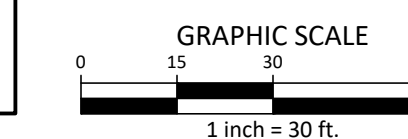
	SIGNAGE
	YARD LIGHTS
	LIGHT POLE
	POWER POLE
	TRAFFIC DIRECTIONAL ARROW
	ACCESSIBLE PARKING STALL
	VAN ACCESSIBLE PARKING STALL
	PARKING SPACE COUNT
	ACCESSIBLE RAMPS
	ACCESSIBLE ROUTE
	PHASE LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	LOT LINE
	EASEMENT LINE
	CENTERLINE
	HEAVY DUTY ASPHALT PAVEMENT
	ABC TRAVEL SURFACE TO BE ASPHALT PAVED IN FUTURE PHASE
	US-401 PAVEMENT

**GENERAL SITE PLAN NOTES:**

1. THIS CONSTRUCTION DOCUMENTS SET HAS BEEN CREATED TO ILLUSTRATE THE GENERAL DESIGN INTENT OF THE PROJECT. THE CONTRACTOR SHALL WORK CLOSELY WITH THE OWNER'S REP. AND NOTIFY HIM AS ADDITIONAL INFORMATION IS NEEDED TO PROPERLY CONSTRUCT/INSTALL/BUILD ELEMENTS DEPICTED HEREIN.
2. THE CONTRACTOR SHALL PERFORM HIS OWN INVESTIGATIONS TO THE EXTENT NECESSARY TO DETERMINE THE EFFECTS OF SUB-SURFACE CONDITIONS ON THE WORK AND SHALL BID AND CONSTRUCT THE WORK IN ACCORDANCE WITH HIS FINDINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES AND FOR AVOIDING ALL CONFLICTS WITH SAME. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
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**INDEX MAP**  
N.T.S.



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CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

MATCHLINE - SEE SHEET C2.02

LIMITS OF DISTURBANCE

FUTURE CONDITION - NOT TO BE BUILT PER THIS PHASE

FUTURE PLAYGROUND

FUTURE MAINTENANCE BUILDING

100' WS VEGETATIVE SETBACK

30' ZONE 1 NEUSE RIVER BUFFER

20' ZONE 2 NEUSE RIVER BUFFER

EXISTING POND

FUTURE EVENT CENTER

FUTURE EVENT LAWN

FUTURE AMPHITHEATER + STAGE

WETLAND

MATCHLINE - SEE SHEET C2.01

M:\Projects\WOL\2020110039 Frazier Farm PHA1\04-Production\Engineering\Phase1A\CID\2020110039-PH1-S1.dwg, 2/1/2024, 8:09:07 PM, Eric Domoneal





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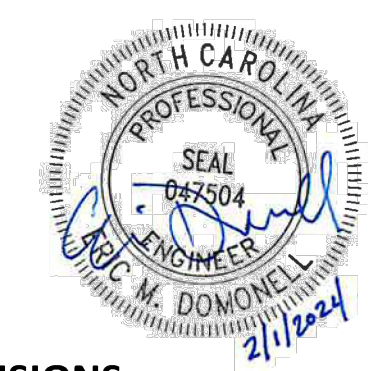
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**FRAZIER FARM PARK**  
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11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 2020110039  
FILENAME 2020110039-PH1-0A61  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=100'  
DATE 02.01.2024

**SHEET**

**OVERALL GRADING & DRAINAGE PLAN**

**C3.00**

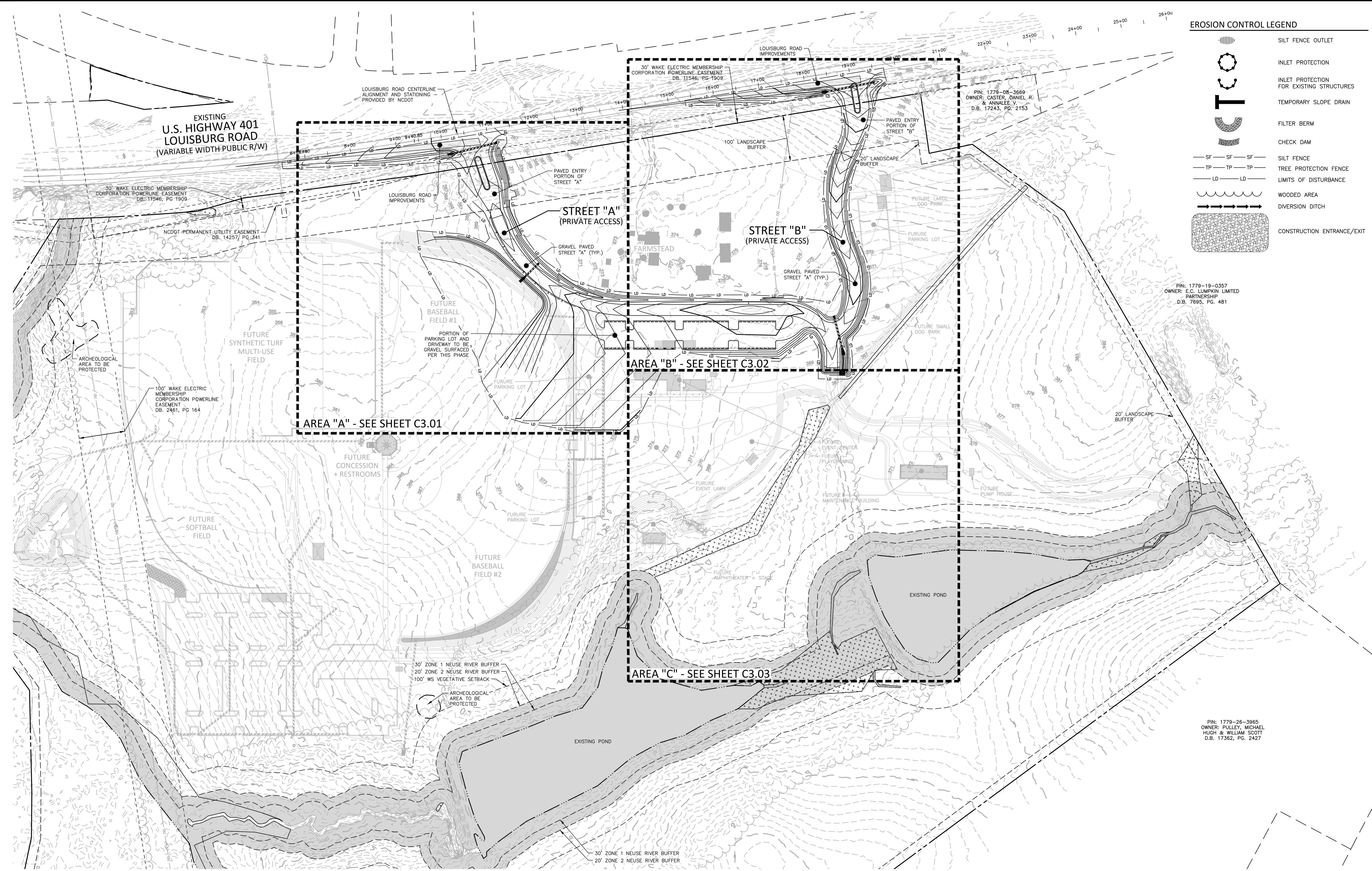
CID-23-5

**EROSION CONTROL LEGEND**

- SILT FENCE OUTLET
- INLET PROTECTION FOR EXISTING STRUCTURES
- TEMPORARY SLOPE DRAIN
- FILTER BERM
- CHECK DAM
- SILT FENCE
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- WOODED AREA
- DIVERSION DITCH
- CONSTRUCTION ENTRANCE/EXIT

PIN: 1779-19-0357  
OWNER: E.C. LUMPKIN LIMITED PARTNERSHIP  
D.B. 7695, PG. 481

PIN: 1779-26-3665  
OWNER: PULLEY, MICHAEL HUGH & WILLIAM SCOTT  
D.B. 17362, PG. 2427



**GRADING LEGEND**

- FLARED END SECTION
- ENDWALL SECTION
- CATCH BASIN
- DROP INLET
- STORM SERVICE INLET
- STORM SERVICE ROOF-RAIN
- JUNCTION BOX
- DRAINAGE FLOW ARROW
- LINE BREAK SYMBOL
- TOP & BOTTOM CURB ELEVATIONS
- TOP OF WALL ELEVATION
- BOTTOM OF WALL ELEVATION
- SPOT ELEVATION
- STORM DRAINAGE
- STORM SERVICE LINE
- ROOF DRAIN, 8" ADS
- NON-PERFORATED TUBING OR EQUAL
- COVER PVC SCHEDULE 40 IN TRAFFIC AREAS
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- WOODED AREA
- MAJOR CONTOUR
- MINOR CONTOUR
- EXISTING MINOR CONTOUR
- EASEMENT LINE

**ACCESSIBLE PARKING AREA (2% MAX. SLOPE IN ALL DIRECTIONS)**

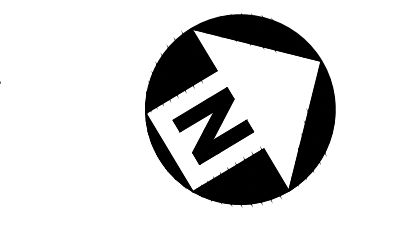
**GRADING NOTES**

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**STORM DRAINAGE NOTES:**

- ALL STORM DRAINAGE PIPES SHOWN SHALL BE CORRUGATED HDPE UNLESS NOTED OTHERWISE. CONTRACTOR TO COORDINATE WITH THE GEOTECH TO VERIFY TYPE OF BEDDING REQUIRED BASED ON SOIL CONDITIONS.
- ALL STORM DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF ROLESVILLE STANDARDS.
- ALL CONCRETE SHALL MEET A MINIMUM 3000 PSI COMPRESSIVE STRENGTH.
- ALL PIPE JOINTS SHALL BE MADE WITH PREFORMED JOINT SEALER, WHICH CONFORMS TO AASHTO SPECIFICATION M-198 FOR TYPE B FLEXIBLE PLASTIC GASKETS UNLESS OTHERWISE NOTED.
- ALL BACKFILL SHALL BE NON-PLASTIC IN NATURE, FREE FROM ROOTS, VEGETATION MATTER, WASTE CONSTRUCTION MATERIAL OR OTHER OBJECTIONABLE MATERIAL. SAID MATERIAL SHALL BE CAPABLE OF BEING COMPACTED BY MECHANICAL MEANS AND SHALL HAVE NO TENDENCY TO FLOW OR BEHAVE IN A PLASTIC MANNER UNDER THE TAMPING BLOWS OR PROOF ROLLING.
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ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS



GRAPHIC SCALE  
0 50 100 200  
1 inch = 100 ft.

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

M:\Projects\NC\2020110039 - Frazier Farm PH1\04-Production\Engineering\Phase1A\_CID\2020110039-PH1-0A61.dwg - 2/1/2024 8:09:19 PM, Eric Domonelli





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CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA**



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-G1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=30'  
DATE 02.01.2024

**SHEET**

**GRADING & DRAINAGE  
PLAN: AREA 'A'**

**C3.01**

CID-23-5

**GRADING LEGEND**

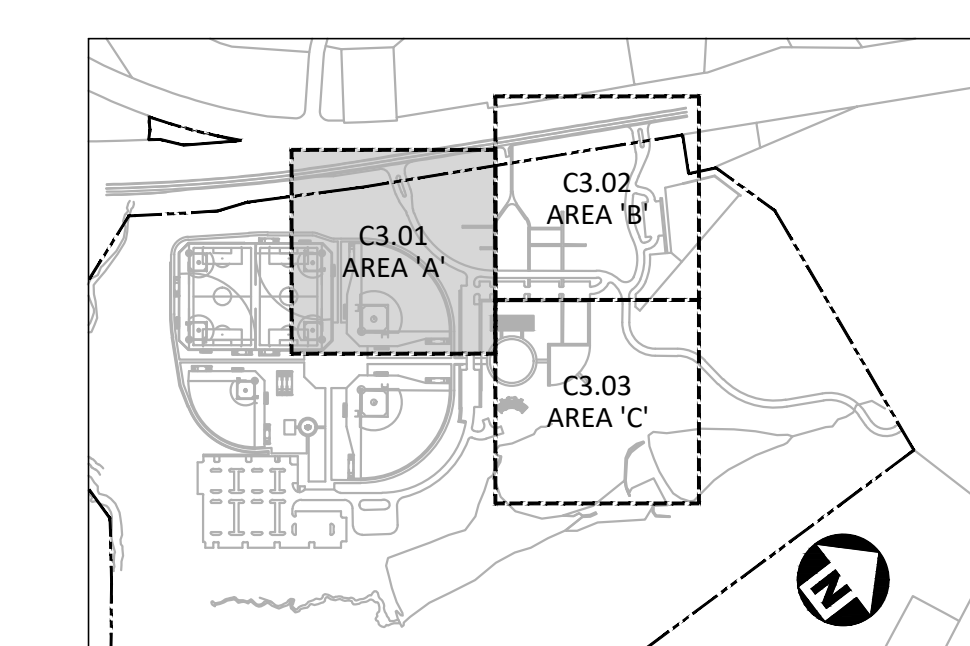
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	ENDWALL SECTION
	CATCH BASIN
	DROP INLET
	JUNCTION BOX
	DRAINAGE FLOW ARROW
	TOP & BOTTOM CURB ELEVATIONS
	SPOT ELEVATION
	STORM DRAINAGE
	TREE PROTECTION FENCE
	LIMITS OF DISTURBANCE
	WOODED AREA
	MAJOR CONTOUR
	MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EASEMENT LINE
	ACCESSIBLE PARKING AREA (2% MAX. SLOPE IN ALL DIRECTIONS)

**GRADING NOTES**

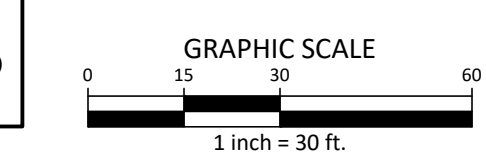
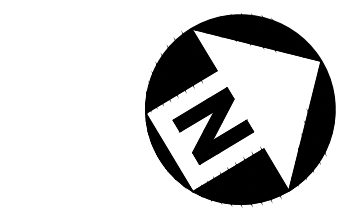
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- A PRE-CONSTRUCTION CONFERENCE WILL BE HELD PRIOR TO ANY LAND DISTURBING ACTIVITY. AS DEEMED NECESSARY, THE OWNER, ENGINEER, CONTRACTOR, AND REPRESENTATIVES FROM NCDCEQ WILL BE INVITED TO ATTEND THE MEETING. FOR NCDCEQ REPRESENTATIVES, CONTACT DIVISION OF LAND QUALITY AT (910) 433-3300 PRIOR TO START OF CONSTRUCTION.
- CONSTRUCTION, MAINTENANCE AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. TIMING OF REMOVAL SHALL BE COORDINATED WITH THE EROSION CONTROL INSPECTOR.
- EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- SOIL UNDER BUILDINGS, PAVED AREAS AND WITHIN SLOPES LESS THAN 4:1 (H:V) SHALL BE APPROVED, PLACED AND COMPACTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

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- MATERIALS DEEMED BY THE OWNER'S REPRESENTATIVE AS UNSUITABLE FOR BACKFILL PURPOSES SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL.
- BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PIPE IS LAID. THE FILL AROUND THE PIPE SHALL BE THOROUGHLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY OBTAINABLE WITH THE STANDARD PROCTOR TEST. THE TOP EIGHT (8) INCHES SHALL BE COMPACTED TO 100 PERCENT STANDARD PROCTOR.
- UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO RISE IN UNBACKFILLED TRENCHES AFTER PIPE HAS BEEN PLACED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL PIPE AND STRUCTURES FOR CRACKS OR BREAKS, PRIOR TO INSTALLATION. ANY DAMAGED ITEMS SHALL NOT BE INSTALLED.



**INDEX MAP**  
N.T.S.



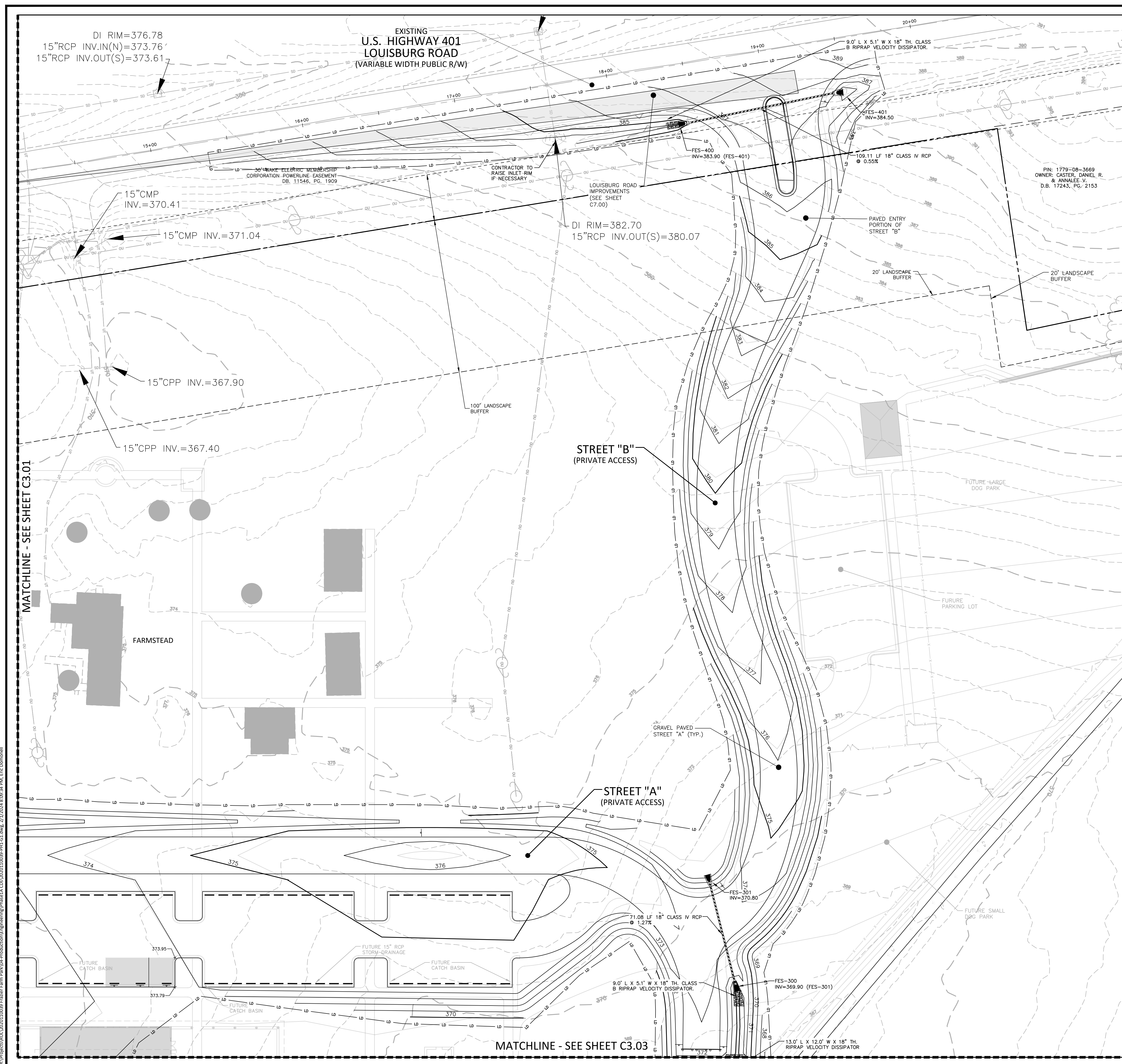
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



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**GRADING LEGEND**

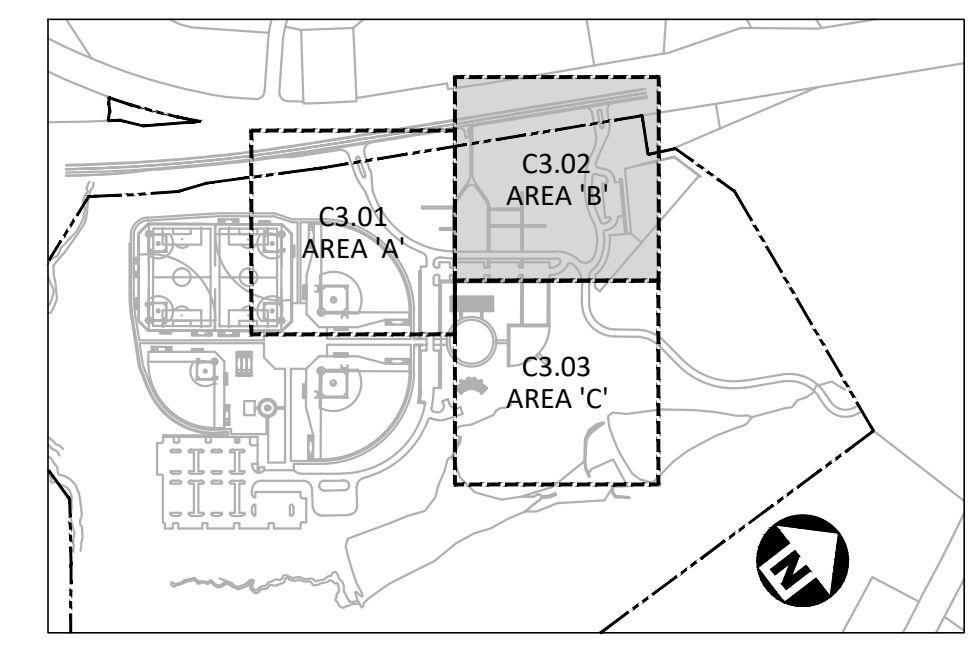
	FLARED END SECTION
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- CONSTRUCTION, MAINTENANCE AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. TIMING OF REMOVAL SHALL BE COORDINATED WITH THE EROSION CONTROL INSPECTOR.
- EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- SOIL UNDER BUILDINGS, PAVED AREAS AND WITHIN SLOPES LESS THAN 4:1 (H:V) SHALL BE APPROVED, PLACED AND COMPACTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

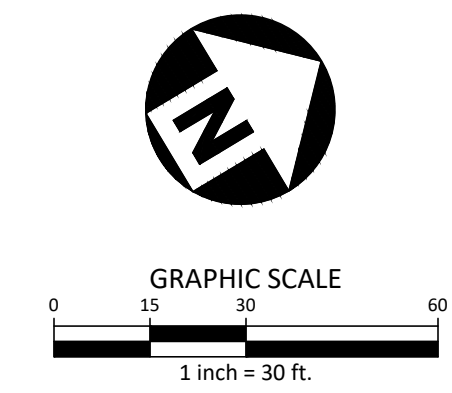
**STORM DRAINAGE NOTES:**

- ALL STORM DRAINAGE PIPES SHOWN SHALL BE CORRUGATED HDPE UNLESS NOTED OTHERWISE. CONTRACTOR TO COORDINATE WITH THE GEOTECH TO VERIFY TYPE OF BEDDING REQUIRED BASED ON SOIL CONDITIONS.
- ALL STORM DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF ROLESVILLE STANDARDS.
- ALL CONCRETE SHALL MEET A MINIMUM 3000 PSI COMPRESSIVE STRENGTH.
- ALL PIPE JOINTS SHALL BE MADE WITH PREFORMED JOINT SEALER, WHICH CONFORMS TO AASHTO SPECIFICATION M-198 FOR TYPE B. FLEXIBLE PLASTIC GASKETS UNLESS OTHERWISE NOTED.
- ALL BACKFILL SHALL BE NON-PLASTIC IN NATURE, FREE FROM ROOTS, VEGETATION MATTER, WASTE CONSTRUCTION MATERIAL OR OTHER OBJECTIONABLE MATERIAL. SAID MATERIAL SHALL BE CAPABLE OF BEING COMPACTED BY MECHANICAL MEANS AND SHALL HAVE NO TENDENCY TO FLOW OR BEHAVE IN A PLASTIC MANNER UNDER THE TAMPING BLOWS OR PROOF ROLLING.
- MATERIALS DEEMED BY THE OWNER'S REPRESENTATIVE AS UNSUITABLE FOR BACKFILL PURPOSES SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL.
- BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PIPE IS LAID. THE FILL AROUND THE PIPE SHALL BE THOROUGHLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY OBTAINABLE WITH THE STANDARD PROCTOR TEST. THE TOP EIGHT (8) INCHES SHALL BE COMPACTED TO 100 PERCENT STANDARD PROCTOR.
- UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO RISE IN UNBACKFILLED TRENCHES AFTER PIPE HAS BEEN PLACED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL PIPE AND STRUCTURES FOR CRACKS OR BREAKS, PRIOR TO INSTALLATION. ANY DAMAGED ITEMS SHALL NOT BE INSTALLED.



**INDEX MAP**  
N.T.S.

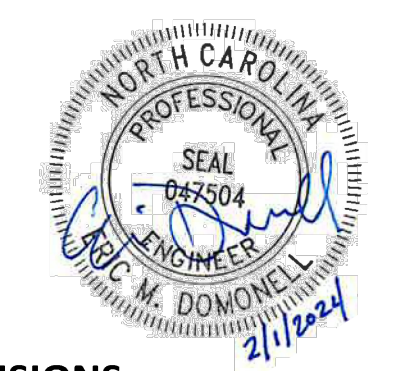
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS



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ADDRESS: 502 SOUTHTOWN CIRCLE  
ADDRESS: ROLESVILLE NC 27571  
PHONE: 919.554.6582

**FRAZIER FARM PARK**  
CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA



**REVISIONS**

NO.	DATE

**PLAN INFORMATION**

PROJECT NO.	202011039
FILENAME	2020110039-PH1-G1
CHECKED BY	EMD
DRAWN BY	SME
SCALE	1"=30'
DATE	02.01.2024

**GRADING & DRAINAGE**  
PLAN: AREA 'B'  
**C3.02**

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

M:\Projects\WOL\2020110039 Frazier Farm Park\04-Production\Engineering\Phase1A\_CD\2020110039-PH1-G1.dwg, 2/1/2024, 8:00:34 PM, Eric Donohell





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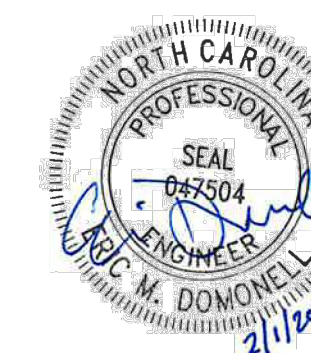
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11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA**



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-G1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=30'  
DATE 02.01.2024

**SHEET**

**GRADING & DRAINAGE  
PLAN: AREA 'C'**

**C3.03**

CID-23-5

**GRADING LEGEND**

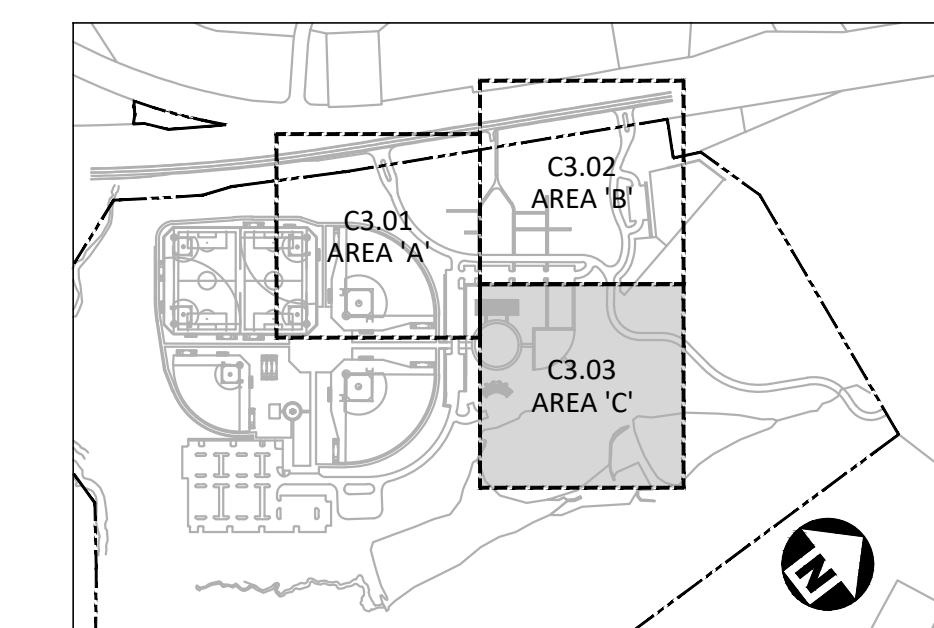
	FLARED END SECTION
	ENDWALL SECTION
	CATCH BASIN
	DROP INLET
	JUNCTION BOX
	DRAINAGE FLOW ARROW
	TOP & BOTTOM CURB ELEVATIONS
	SPOT ELEVATION
	STORM DRAINAGE
	TREE PROTECTION FENCE
	LIMITS OF DISTURBANCE
	WOODED AREA
	MAJOR CONTOUR
	MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EASEMENT LINE
	ACCESSIBLE PARKING AREA (2% MAX. SLOPE IN ALL DIRECTIONS)

**GRADING NOTES**

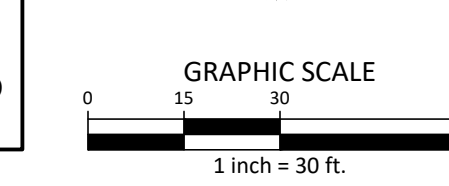
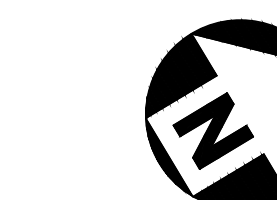
1. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. FOR NECESSARY PLAN OR GRADE CHANGES, NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
2. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH. EXCAVATION EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRES THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER, PROVIDED BY CONTRACTOR RESPONSIBLE FOR EXCAVATION.
3. CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
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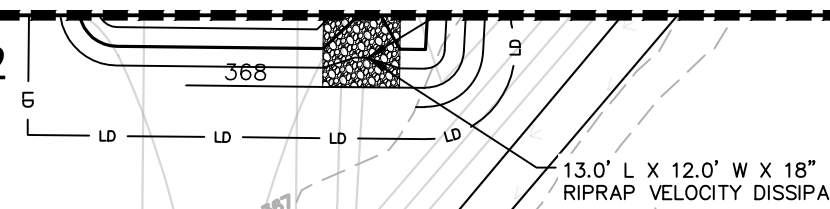


**INDEX MAP**  
N.T.S.



ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS

MATCHLINE - SEE SHEET C3.02



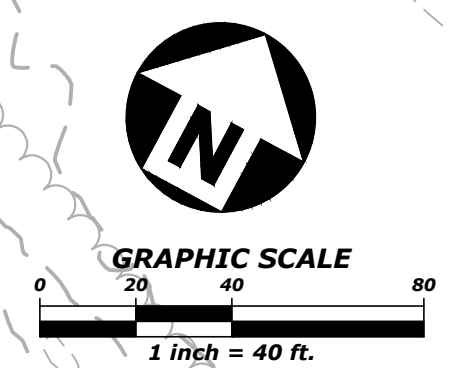
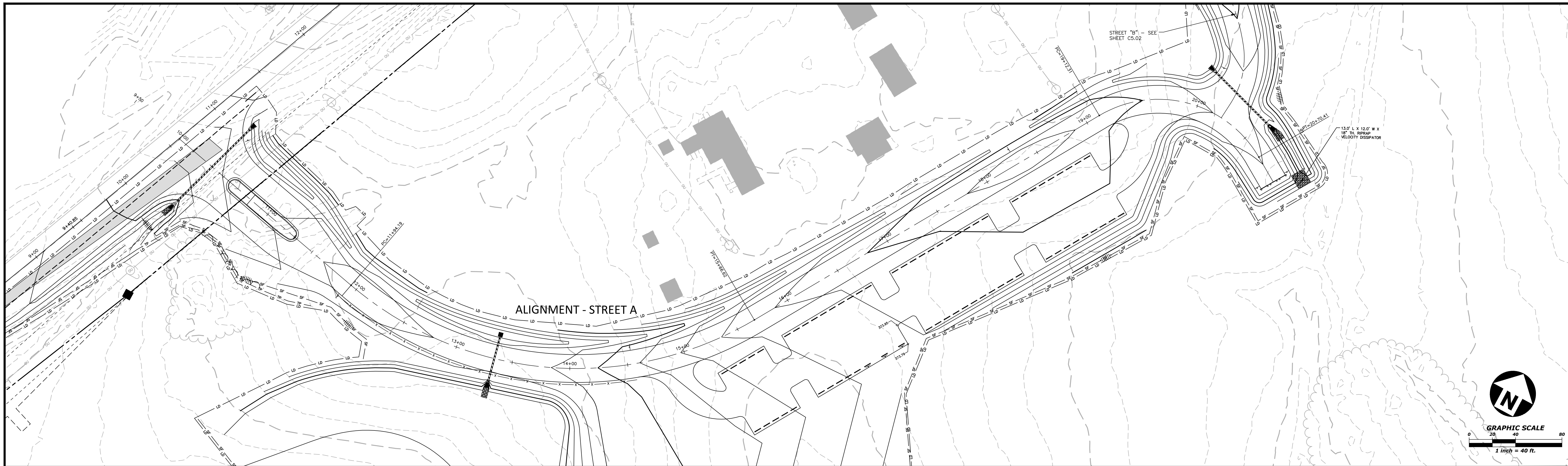
PROPOSED BORROW AREA BEYOND GRAVEL PARKING LOT AT 2.00% (TYP.), NOT TO BE GRADED BELOW FINISHED GRADE OF FUTURE PARK DEVELOPMENT (SHOWN IN GRAY). - EXTENT OF GRADING TO BE FIELD DETERMINED AS NEEDED TO GENERATE FILL MATERIAL

MATCHLINE - SEE SHEET C3.01

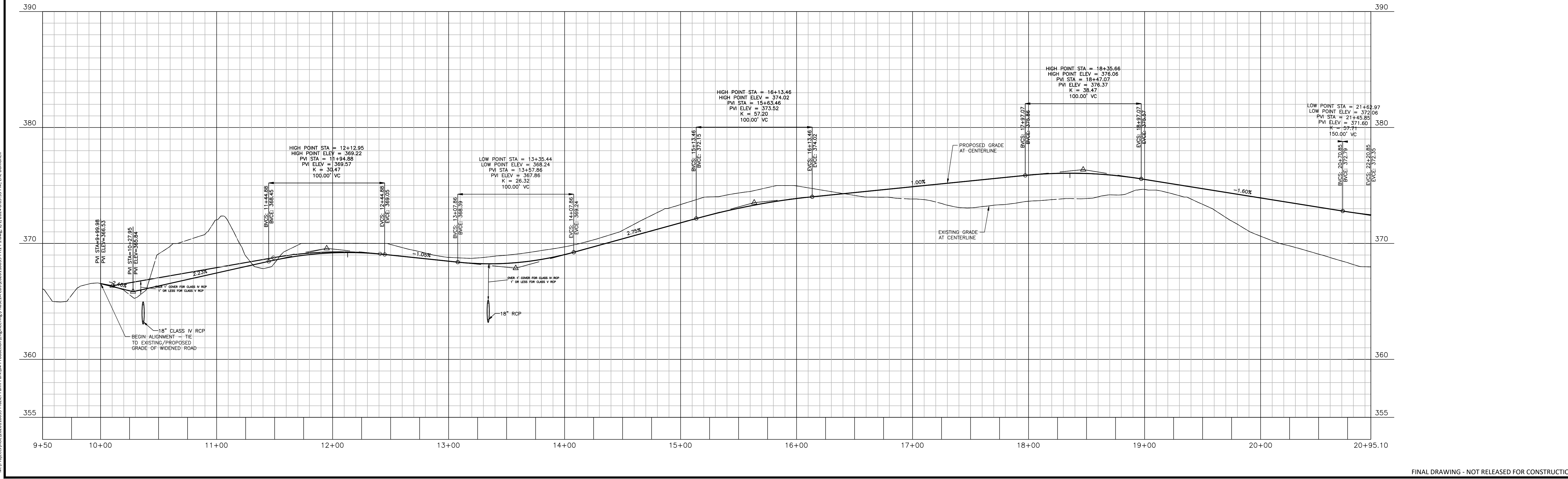
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PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION





### ALIGNMENT - STREET A



M:\Projects\BOL10039\Frazier Farm\Phase1A\CD\202110039-PH1-P1.dwg, 2/1/2024 8:00:33 PM, Eric Domonelli

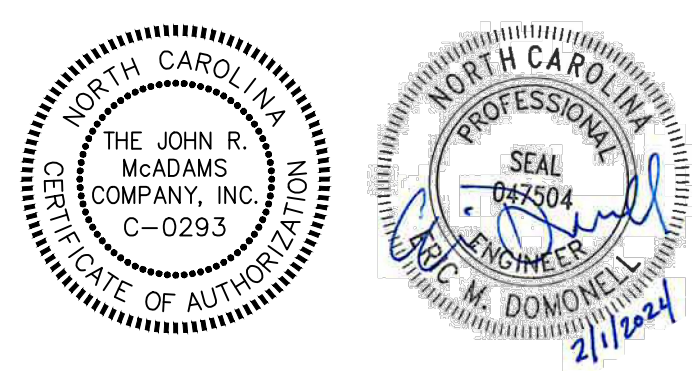
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION



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ROLESVILLE, NC 27571  
PHONE: 919. 554. 6582

**REVISIONS**  
NO. DATE



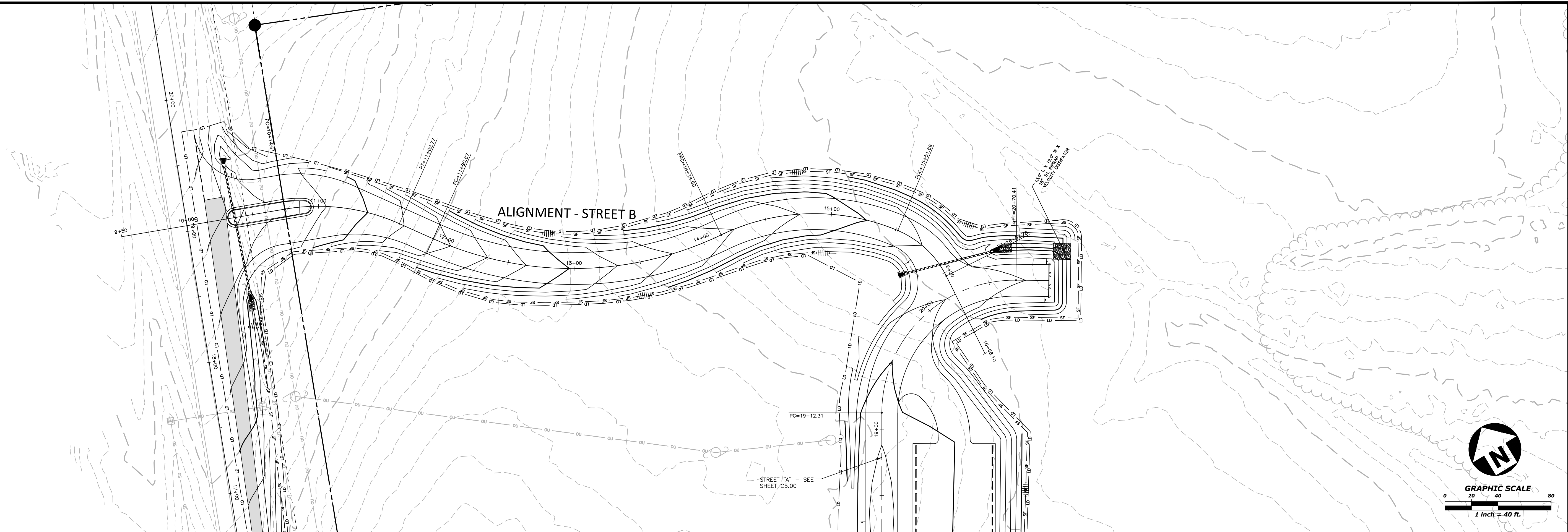
**FRAZIER FARM PARK**  
CONSTRUCTION DRAWINGS - PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA

**PLAN INFORMATION**  
PROJECT NO. 2020110039  
FILENAME 2020110039-PH1-P1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE H:1"=40' / V:1"=4'  
DATE 02.01.2024

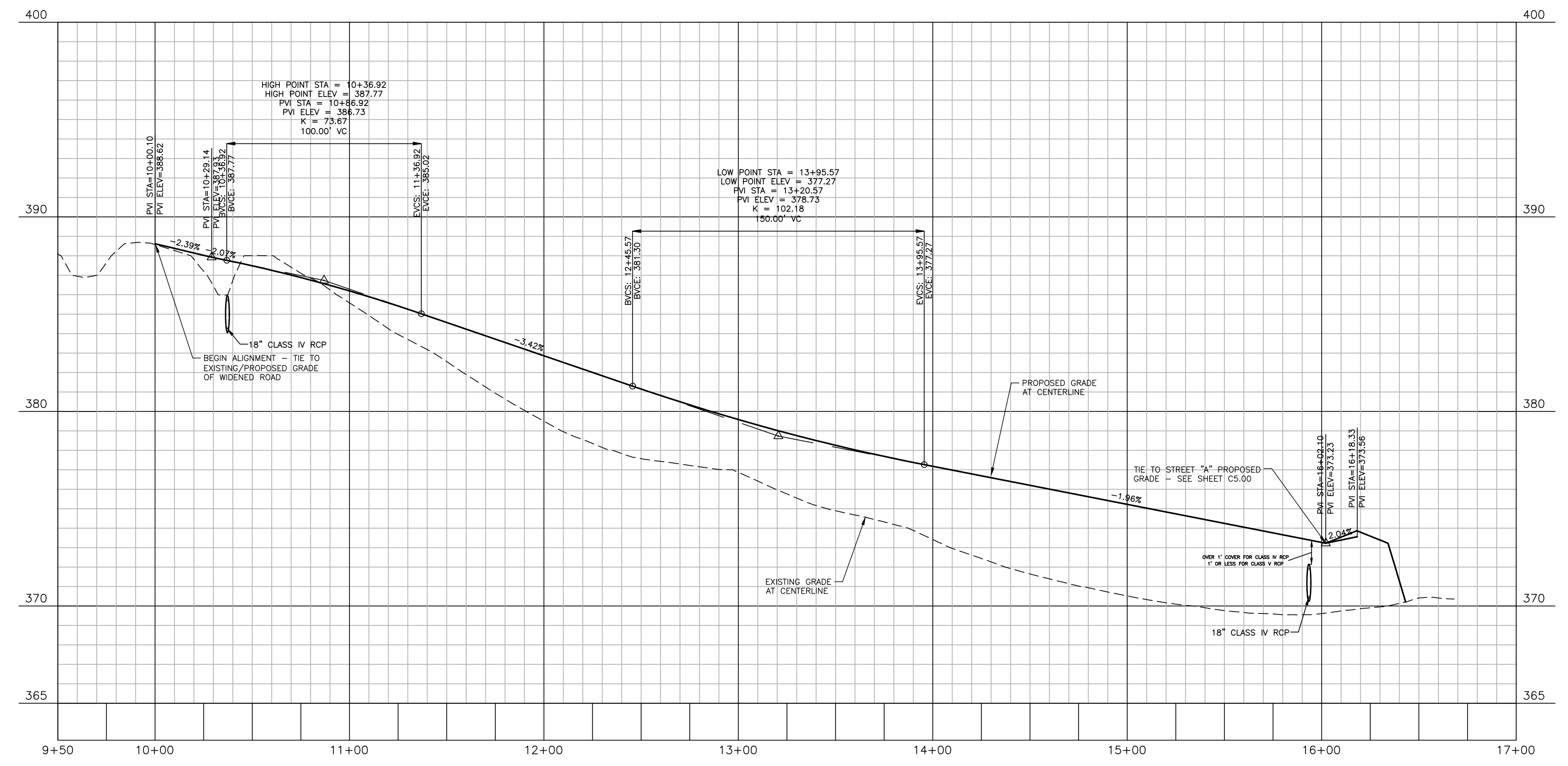
**PLAN AND PROFILE**  
STREET "A", STA. 10+00 THRU STA. 20+95.10

**C5.00**





### ALIGNMENT - STREET B



M:\Projects\B0110039\Frazer Farm Park\Production\Engineering\Phase1A\CD\2020110039-PH1-P1.dwg, 2/1/2024 8:09:55 AM, Eric Domonell

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION



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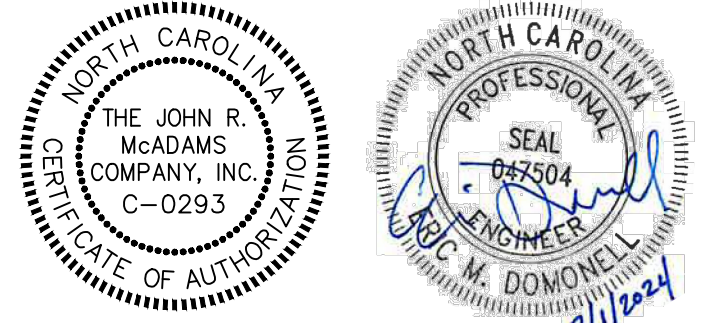
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**CLIENT**

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**REVISIONS**

NO.	DATE



THE JOHN R. McADAMS COMPANY, INC.  
C-0293

ERIC M. DOMONELL  
2/1/2024

**FRAZIER FARM PARK**  
CONSTRUCTION DRAWINGS - PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA

**PLAN INFORMATION**

PROJECT NO.	2020110039
FILENAME	2020110039-PH1-P1
CHECKED BY	EMD
DRAWN BY	SME
SCALE	H:1"=40' / V:1"=4'
DATE	02.01.2024

**PLAN AND PROFILE**  
STREET "B", STA. 10+00 THRU STA. 16+35

# C5.01



## CITY OF RALEIGH PUBLIC UTILITIES STANDARD UTILITY NOTES (AS APPLICABLE)

- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)
- UTILITY SEPARATION REQUIREMENTS:
  - A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
  - WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
  - WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASING EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
  - 5' 0" MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
  - MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS, WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & 5-49).
  - ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.
- 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
- IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
- INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
- INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
- PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.
- ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDM/Q, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
- NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
- GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT (919) 996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
- CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

## NOTES:

DEEDS OF EASEMENT FOR SANITARY SEWER PURPOSES TO CITY OF RALEIGH RECORDED IN BOOK 12249, PAGE 864 AND BOOK 12466, PAGE 1149 AND AS SHOWN ON RECORDED PLAT IN BOOK OF MAPS 2006, PAGES 2216 AND 2217, WAKE COUNTY REGISTRY.

(DEED OF EASEMENT SUPERSEDED BY BM 2008 PG 480 & 481)

RIGHT OF WAY AND UTILITY EASEMENTS RECORDED IN BOOK 13736, PAGES 1287 AND 1294 AND AS SHOWN ON RECORDED PLAT IN BOOK OF MAPS 2009, PAGE 1091, WAKE COUNTY REGISTRY.

(AS SHOWN ON SURVEY)

DEEDS OF EASEMENT FOR SANITARY SEWER PURPOSES TO CITY OF RALEIGH RECORDED IN BOOK 12249, PAGE 860 AND BOOK 12466, PAGE 1171 AND AS SHOWN ON RECORDED PLAT IN BOOK OF MAPS 2006, PAGES 2216 AND 2217, WAKE COUNTY REGISTRY.

## BY-PASS PUMPING NOTES:

- DEVELOPER SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO PROPERTY OWNER FOR ANY WORK REQUIRED WITHIN AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVERSING PRIVATE PROPERTY.
- A BYPASS PLAN SEALED BY A PE PROFESSIONAL ENGINEER MUST BE SUBMITTED TO CITY OF RALEIGH PUBLIC UTILITIES PRIOR TO PUMPING OPERATIONS TO COORDINATE WITH ENGINEERING STAFF. PUMPS SHOULD BE SIZED TO HANDLE THE PEAK FLOW (2.5 TIMES THE AVERAGE DAILY FLOW) FOR THE LINE OR AREA OF WORK. THE CONTRACTOR SHALL SECURE THE PUMPS FROM A PUMP SUPPLIER ACCORDING TO THE PROVIDED FLOW INFORMATION. PUMPING OPERATIONS MUST BE MONITORED 24 HOURS A DAY FOR EACH OF THE PUMPING OPERATION BY QUALIFIED PERSONNEL IN ORDER TO RESPOND TO PROBLEMS OR FAILURES. 100% REDUNDANCY IS REQUIRED FOR PUMPING OPERATIONS. IN ADDITION, BACK UP PUMPS ARE TO BE CONNECTED TO THE BYPASS FORCE MAIN TO FACILITATE IMMEDIATE USE UPON FAILURE OF THE PRIMARY PUMPS.

## TRAFFIC CONTROL:

- ALL EXISTING DRIVES, ROADS, SIDEWALKS, PAVED AREAS IMPACTED BY CONSTRUCTION OPERATIONS, SHALL BE REPLACED TO EXISTING CONDITION OR BETTER.

## TEMPORARY SKIMMER BASIN SPECIFICATIONS:

- CLEAR GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW BASIN AS NEEDED.
- ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER, AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES, AND THE MACHINE COMPACT IT. OVER FILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT.
- SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SHOULDER PIT UNDER THE SKIMMER OR PROVIDE A LOW SURBER OF STONE OR TIMBER.
- PLACE THE BARREL (TYPICALLY 4-INCH SCHEDULE 40 PVC PIPE) ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE. PLACE THE FILL MATERIAL AROUND THE PIPE SILLWAY IN 4-INCH LAYERS AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM THE FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES.
- PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.
- ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURER'S INSTRUCTIONS, OR AS DESIGNED.
- LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.
- EARTHEN SPILLWAYS - INSTALL THE SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT POSSIBLE. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE SPILLWAY. THE SPILLWAY SHOULD BE LINED WITH LAMINATED PLASTIC OR IMPERMEABLE GEOTEXTILE FABRIC. THE FABRIC MUST BE WIDE AND LONG ENOUGH TO COVER THE BOTTOM AND SIDES AND EXTEND ONTO THE TOP OF THE DAM FOR ANCHORING IN A TRENCH. THE EDGES MAY BE SECURED WITH 8-INCH STAPLES OR PINS. THE FABRIC MUST BE LONG ENOUGH TO EXTEND DOWN THE SLOPE AND EXTEND TO STABLE GROUND. THE WIDTH OF THE FABRIC MUST BE ONE PIECE, NOT JOINED OR SPLICED; OTHERWISE WATER CAN GET UNDER THE FABRIC. IF THE LENGTH OF THE FABRIC IS INSUFFICIENT FOR THE ENTIRE LENGTH OF THE SPILLWAY, MULTIPLE SECTIONS, SPANNING THE COMPLETE WIDTH, MAY BE USED. THE UPPER SECTION (S) SHOULD OVERLAP THE LOWER SECTION(S) SO THAT WATER CANNOT FLOW UNDER THE FABRIC. SECURE THE UPPER EDGE AND SIDES OF THE FABRIC IN A TRENCH WITH STAPLES OR PINS. (ADAPTED FROM "A MANUAL FOR DESIGNING, INSTALLING, AND MAINTAINING SKIMMER SEDIMENT BASINS," FEBRUARY, 1999, J. W. FAIRCLOTH & SON.)
- INLETS - DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE TEMPORARY SLOPE DRAINS OR DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT-LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY (REFERENCES: RUNOFF CONTROL MEASURES AND OUTLET PROTECTION).
- EROSION CONTROL - CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION (REFERENCES: SURFACE STABILIZATION).
- INSTALL POROUS BAFFLES AS SPECIFIED IN PRACTICE 6.65, POROUS BAFFLES.
- AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, FOLLOW THE BASIN REMOVAL SEQUENCE. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY (REFERENCES: SURFACE STABILIZATION)

## CONSTRUCTION SEQUENCE - STAGE 1

- REQUEST PRE-CONSTRUCTION MEETING WITH DEMLR RALEIGH REGIONAL OFFICE AT LEAST 72 HOURS PRIOR TO COMMENCING THE PROJECT. CONTACT THE OFFICE AT LEAST 48 HOURS PRIOR TO COMMENCING THE LAND-DISTURBING ACTIVITY.
- EROSION AND SEDIMENT CONTROL (E&S) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES (INCLUDING TIMBERING AND DEMOLITION) OCCUR. A COPY OF THE E&S PERMIT, THE COC, AND A HARD COPY OF THE PLANS MUST BE KEPT ON SITE, PREFERABLY IN A PERMITS BOX, AND ACCESSIBLE DURING INSPECTION.
- INSTALL TREE PROTECTION FENCE AT FINAL LOCATIONS SHOWN. CALL NCDOT TO INSPECT TREE PROTECTION FENCE. TREE PROTECTION FENCING MUST BE INSTALLED AND INSPECTED BY NCDCEQ SITE INSPECTOR PRIOR TO A GRADING PERMIT BEING ISSUED.
- ATTEND PRE-CONSTRUCTION MEETING WITH NCDCEQ EROSION CONTROL INSPECTOR.
- OBTAIN GRADING PERMIT.
- INSTALL CONSTRUCTION ENTRANCE, SILT FENCE WITH OUTLETS, AND TEMPORARY STREAM CROSSING AS SHOWN ON THIS EROSION CONTROL PLAN STAGE 1. CONTRACTOR SHALL CLEAR ONLY AS NECESSARY FOR CONSTRUCTION EQUIPMENT TO ACCESS AND INSTALL THE TEMPORARY EROSION CONTROL DEVICES. INSTALL THE REQUIRED LATERAL REPAIR FOR ALL DIVERSION DITCHES WHEN INSTALLING THE DITCHES. NO CLEARING SHALL OCCUR OUTSIDE OF THE LIMITS OF CONSTRUCTION SHOWN UNLESS PRIOR APPROVAL IS OBTAINED FROM NCDCEQ EROSION CONTROL INSPECTOR. ENSURE EXISTING SEDIMENT BASIN IS FUNCTIONING PROPERLY. IF SEDIMENT BASIN WAS CONVERTED TO AN SCM, REINSTALL THE SKIMMER AND BAFFLES AS SHOWN UNDER THE PHASE 1C INFRASTRUCTURE PLANS (22-0P-1332).
- INSTALL ALL REMAINING PERIMETER EROSION CONTROL MEASURES AS SHOWN TO PREVENT EROSION AND SEDIMENTATION FROM OCCURRING WHEN GENERAL GRADING COMMENCES.
- OBTAIN CERTIFICATE OF COMPLIANCE THROUGH ON-SITE INSPECTION BY NCDCEQ EROSION CONTROL INSPECTOR.
- PROCEED WITH CLEARING OF SITE.
- ALL EROSION AND SEDIMENTATION CONTROL PRACTICES SHALL BE CHECKED BY CONTRACTOR FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
- CLEAN SEDIMENT BASINS WHEN ONE-HALF FULL.
- ALL AREAS AND SLOPES DISTURBED DURING CONSTRUCTION AND EXPOSED SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 14 CALENDAR DAYS, FOLLOWING COMPLETION OF ANY PHASE OF GRADING OR PERIOD OF INACTIVITY. PERMANENT GROUNDCOVER IS TO BE ESTABLISHED FOR ALL DISTURBED AREAS WITHIN 14 WORKING DAYS OR 90 CALENDAR DAYS, WHICHEVER IS SHORTER, FOLLOWING COMPLETION OF CONSTRUCTION, COMPLETION OF GRADING OR PERIOD OF INACTIVITY. PERMANENT SEEDING, MULCHING AND GROUND COVER SHALL BE APPLIED TO THE SITE FOLLOWING COMPLETION OF CONSTRUCTION. HIGH QUALITY WATER (HWQ) ZONES AND PERIMETER DIKES, SWALES, DITCHES, AND SLOPES SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 7 CALENDAR DAYS.
- MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
- WITH APPROVAL FROM NCDCEQ EROSION CONTROL INSPECTOR MOVE TO EROSION CONTROL PLAN STAGE 2.

## CONSTRUCTION SEQUENCE - STAGE 2

- PROCEED WITH GRADING/BUILDING CONSTRUCTION.
- INSTALL STORM DRAINAGE SYSTEM AND DIVERT FLOW TO INLETS WITH EXCAVATED INLET PROTECTION. INSTALL RETAINING WALLS AS NECESSARY WHILE MAINTAINING EROSION CONTROL MEASURES.
- DRAIN AND REDUCE THE SEDIMENT BASIN UTILIZING THE SEDIMENT FILTER BAG WHICH WILL BE CONTINUOUSLY MONITORED DURING OPERATION, IN COORDINATION WITH NCDCEQ EROSION CONTROL INSPECTOR
- CLEAN SEDIMENT BASIN WHEN ONE-HALF FULL
- ALL EROSION AND SEDIMENTATION CONTROL PRACTICES SHALL BE CHECKED BY CONTRACTOR FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
- ALL AREAS AND SLOPES DISTURBED DURING CONSTRUCTION AND EXPOSED SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 14 CALENDAR DAYS, FOLLOWING COMPLETION OF ANY PHASE OF GRADING OR PERIOD OF INACTIVITY. PERMANENT GROUNDCOVER IS TO BE ESTABLISHED FOR ALL DISTURBED AREAS WITHIN 14 WORKING DAYS OR 90 CALENDAR DAYS, WHICHEVER IS SHORTER, FOLLOWING COMPLETION OF CONSTRUCTION, COMPLETION OF GRADING OR PERIOD OF INACTIVITY. PERMANENT SEEDING, MULCHING AND GROUND COVER SHALL BE APPLIED TO THE SITE FOLLOWING COMPLETION OF CONSTRUCTION. HIGH QUALITY WATER (HWQ) ZONES AND PERIMETER DIKES, SWALES, DITCHES, AND SLOPES SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 7 CALENDAR DAYS.
- CONTINUE INSTALLATION OF PAVEMENT, CURB AND GUTTER.
- ALL EROSION AND SEDIMENTATION CONTROL PRACTICES SHALL BE CHECKED BY CONTRACTOR FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
- ALL AREAS AND SLOPES DISTURBED DURING CONSTRUCTION AND EXPOSED SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 14 CALENDAR DAYS, FOLLOWING COMPLETION OF ANY PHASE OF GRADING OR PERIOD OF INACTIVITY. PERMANENT GROUNDCOVER IS TO BE ESTABLISHED FOR ALL DISTURBED AREAS WITHIN 14 WORKING DAYS OR 90 CALENDAR DAYS, WHICHEVER IS SHORTER, FOLLOWING COMPLETION OF CONSTRUCTION, COMPLETION OF GRADING OR PERIOD OF INACTIVITY. PERMANENT SEEDING, MULCHING AND GROUND COVER SHALL BE APPLIED TO THE SITE FOLLOWING COMPLETION OF CONSTRUCTION. HIGH QUALITY WATER (HWQ) ZONES AND PERIMETER DIKES, SWALES, DITCHES, AND SLOPES SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 7 CALENDAR DAYS.
- PERIMETER MEASURES MUST BE LEFT IN PLACE UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. AFTER SITE IS PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEASURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE. SEDIMENTS BASINS MAY NOT BE REMOVED OR CONVERTED TO PERMANENT SCMS UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. NCDCEQ SHOULD BE NOTIFIED 10-DAYS PRIOR TO REMOVAL OF A BASIN.
- REQUEST FINAL APPROVAL BY NCDCEQ EROSION CONTROL INSPECTOR.
- FILL IN EXCAVATED STORAGE AREAS AND DEWATER USING SEDIMENT FILTER BAGS. REMOVE EROSION CONTROL MEASURES FROM ALL AREAS THAT HAVE BEEN PERMANENTLY STABILIZED AND STABILIZE THE AREAS OF THE DEVICE REMOVAL WITH APPROVAL FROM EROSION CONTROL INSPECTOR.
- WHEN THE PROJECT IS COMPLETE, THE PERMITTEE SHALL CONTACT DEMLR TO CLOSE OUT THE E&S PLAN.

## EROSION CONTROL NOTES:

- EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. THE CONTRACTOR SHALL CALL FOR A INSPECTION BY NCDCEQ SEDIMENTATION AND EROSION CONTROL (SEC) ONCE INITIAL MEASURES ARE IN PLACE.
- REQUIRED TREE PROTECTION FENCING SHALL BE INSTALLED AND INSPECTED AND A PRE-CONSTRUCTION CONFERENCE SCHEDULED WITH THE TOWN'S URBAN FORESTER PRIOR TO BEGINNING LAND DISTURBANCE.
- GRADING PERMIT WILL NOT BE ISSUED UNTIL NCDCEQ HAS RECEIVED NOTIFICATION FROM THE ECOSYSTEM ENHANCEMENT PROGRAM OR AN APPROVED NUTRIENT OFFSET BANK THAT A RECEIPT HAS BEEN ISSUED TO THE DEVELOPER AND THE LOCAL GOVERNMENT STATING THE NITROGEN BUY DOWN HAS BEEN COMPLETED.
- SEDIMENT/EROSION CONTROL DEVICES MUST BE CHECKED AFTER EACH STORM EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE.
- IN ADDITION TO THE REQUIREMENT DURING CONSTRUCTION FOR THE INSPECTION OF EROSION CONTROL DEVICES AFTER EVERY RAINFALL, THE CONTRACTOR SHALL INSPECT THE EROSION AND SEDIMENT CONTROL DEVICES AND OFFSITE ROADWAYS DAILY, MAKE ANY NECESSARY REPAIRS OR ADJUSTMENTS TO THE DEVICES, REMOVE DEPOSITION OF WET OR DRY SILT ON ADJACENT ROADWAYS AND MAINTAIN INSPECTION LOGS DOCUMENTING THE DAILY INSPECTIONS AND ANY NECESSARY REPAIRS.
- A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
- CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GRADING CONTRACTOR UNLESS OTHERWISE NOTED.
- ANY GRADING BEYOND THE DENOTED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
- NO DEBRIS SHALL BE TRACKED ONTO ANY EXISTING PAVED AREAS OR PUBLIC RIGHT OF WAY. IF THE SITUATION OCCURS WHERE MUD, ROCK AND DEBRIS IS TRACKED ONTO PAVEMENT, THE CONTRACTOR SHALL CLEAN THE PAVEMENT AND INSTALL ADDITIONAL MEASURES TO PREVENT THE FUTURE OCCURRENCE.
- DURING THE CONSTRUCTION PHASE, ADDITIONAL EROSION AND SEDIMENT CONTROLS MAY BE REQUIRED IF THE PROPOSED MEASURES DO NOT CONTAIN THE SEDIMENT ON SITE. THE EROSION CONTROL INSPECTOR MAY REQUIRE ADDITIONAL FIELD MEASURES AS NECESSARY TO PROVIDE ADEQUATE PROTECTION FROM RECEIVING WATER COURSES.
- PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE STRIPPING OF TOPSOIL OR LOWERING OF EXISTING GRADE AROUND A TREE, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRASPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA AND SHALL BE POSTED ON THE PROTECTION FENCE. A PROTECTION FENCE CONSTRUCTED OF MATERIAL RESISTANT TO DEGRADATION BY SUN, WIND, AND MOISTURE FOR THE DURATION OF THE CONSTRUCTION, SHALL BE INSTALLED AT THE SAME TIME AS THE EROSION CONTROL MEASURES AND SHALL BE IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE.
- A CONSTRUCTION SEQUENCE HAS BEEN PROVIDED. INSTALLATION OF ALL PROPOSED SEDIMENTATION & EROSION CONTROL MEASURES IN THE SEQUENCE(S) PROVIDED AND MAINTENANCE OF THOSE DEVICES IS REQUIRED. THE CONTRACTOR MAY BE ALLOWED, WITH PRIOR APPROVAL FROM THE OWNER, TO COORDINATE CHANGES TO THE PLAN WITH THE ON-SITE SEDIMENTATION & EROSION CONTROL INSPECTOR AND THE ENGINEER.
- CUT AND FILL SLOPE THAT IS TWO TO ONE (2:1) OR GREATER SHALL BE STABILIZED WITH PERMANENT SLOPE RETENTION DEVICES OR A SUITABLE COMBINATION OF PLANTINGS AND RETENTION DEVICES. SLOPES GREATER THAN THREE TO ONE (3:1) SHALL NOT BE STABILIZED WITH TURF GRASS BUT MUST BE STABILIZED WITH VEGETATION THAT REQUIRES MINIMAL MAINTENANCE. WEEPING LOVE GRASS, RED FESCUE OR OTHER APPROVED VARIETY. (CHAPTER 7, PART 2, SECTION 4, (G) LDO).
- PROVIDE INLET PROTECTION AROUND ALL SITE STORAGE INLETS. PROTECT OPEN PIPES UNDER CONSTRUCTION WITH EITHER PLYWOOD OR WITH MESH AND GRAVEL WEIRS. RUNOFF SHALL NOT BE ALLOWED IN ANY OPEN TRENCH.
- CONTRACTOR TO VERIFY SILT FENCE OUTLET PLACEMENT AT LOW POINTS AS THEY EXIST OR DEVELOP. ADDITIONAL SILT FENCE OUTLETS MAY BE REQUIRED TO PREVENT EROSION DURING AND AFTER CONSTRUCTION AND LAND DISTURBING ACTIVITIES. IF ADDITIONAL SILT FENCE OUTLETS ARE NECESSARY, CONTRACTOR TO ADD ADDITIONAL SILT FENCE OUTLETS PER ENGINEER, NCDCEQ EROSION CONTROL INSPECTOR, OR OWNER DIRECTION. IF PONDING OF WATER OR SEDIMENT OCCURS ALONG SILT FENCE, CONTRACTOR SHALL INSTALL AN ADDITIONAL SILT FENCE OUTLET.
- TEMPORARY DIVERSIONS SHALL BE MAINTAINED DAILY BY CONTRACTOR SO THAT THEY ARE FUNCTIONAL AT THE END OF EACH WORKDAY AND WHEN STOPPING WORK FOR RAIN.
- THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
- TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE TOWN'S ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE TOWN'S ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
- CONSTRUCTION ENTRANCES MUST BE MODIFIED TO ACHIEVE ADA COMPLIANCE WHERE APPLICABLE.
- THE STREETS IN FRONT OF THE PROJECT AREA WILL BE KEPT CLEAN AT ALL TIMES OR A WASH STATION WILL BE REQUIRED.
- THE PROJECT MAY REQUIRE A PRE-CONSTRUCTION CONFERENCE BEFORE THE GRADING PERMIT IS ISSUED.
- THE SKIMMER AND SEDIMENT BASIN OUTLET PIPE MUST BE ON SITE BEFORE THE GRADING PERMIT IS ISSUED.
- THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
- THE TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREAS) WITHOUT WRITTEN AUTHORIZATION OF THE TOWN'S ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE TOWN'S ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.

## STOCKPILE NOTES

### DESIGN CRITERIA

- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
- STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
- STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
- OFF-SITE SPILL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY UDO AND STATE REGULATIONS. ALL SPILL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY NCDCEQ OF ANY OFFSITE DISPOSAL OF SOIL, PRIOR TO DISPOSAL. FILL OF FEM FLOODWAYS AND NON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).
- EEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
- THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE IS REQUIRED.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).
- STOCKPILE MUST HAVE SILT FENCE WRAPPED AROUND THE LOW SIDE(S) AND A SILT FENCE OUTLET AT ALL LOW POINTS.

## TEMPORARY SEEDING SCHEDULE

SEEDING DATE	SEEDING MIXTURE	APPLICATION RATE
JAN 1 - MAY 1	RYE (GRAIN)	120 LBS/AC
	KOBE LESPEDEZA	50 LBS/AC
	GERMAN MILLET	40 LBS/AC
MAY 1 - AUG 15	RYE (GRAIN)	120 LBS/AC
AUG 15 - DEC 30		

SOIL AMENDMENTS  
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 LB/AC GROUND AGRICULTURE LIMESTONE AND 750 LB/AC 10-10-10 FERTILIZER (FROM AUG 15 - DEC 30, INCREASE 10-10-10 FERTILIZER TO 1000 LB/AC).

MULCH  
APPLY 4000 LB/AC 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  
JAN 1 - AUG 15: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE, AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

AUG 15 - DEC 30: REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOP DRESS WITH 50 LB/AC OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/AC KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

NOTE: USE THE TEMPORARY SEEDING SCHEDULE ONLY WHEN DATE IS NOT CORRECT TO USE THE PERMANENT SEEDING SCHEDULE.

## PERMANENT SEEDING SCHEDULE

SEEDING DATE	SEEDING MIXTURE	APPLICATION RATE
AUG 25 - OCT (BEST)	TALL FESCUE	200 LBS/AC
	RYE (GRAIN)	50 LBS/AC
	GERMAN MILLET	50 LBS/AC

FEB - APR 15 (POSSIBLE)  
TALL FESCUE 200 LBS/AC  
RYE (GRAIN) 50 LBS/AC  
GERMAN MILLET 50 LBS/AC

SOIL AMENDMENTS  
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 LB/AC GROUND AGRICULTURE LIMESTONE AND 1000 LB/AC 10-10-10 FERTILIZER.

MULCH  
APPLY 4000 LB/AC 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  
INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR; USE SOIL TESTS OR APPLY 150 LB/AC 10-10-10 FERTILIZER. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES.

## TEMPORARY DIVERSION SPECIFICATIONS:

- REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL IN THE LOCATIONS OF TEMPORARY DIVERSIONS PRIOR TO CONSTRUCTION OF DIVERSION CHANNELS AND/OR RIDGES.
- ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS. SEE TEMPORARY DIVERSION SWALE DESIGN SUMMARY TABLE.
- ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE REGULATIONS. ALL SPILL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY NCDCEQ OF ANY OFFSITE DISPOSAL OF SOIL, PRIOR TO DISPOSAL. FILL OF FEM FLOODWAYS AND NON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).
- EEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
- THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE IS REQUIRED.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).
- STOCKPILE MUST HAVE SILT FENCE WRAPPED AROUND THE LOW SIDE(S) AND A SILT FENCE OUTLET AT ALL LOW POINTS.

## SEEDBED PREPARATION

AREAS TO BE SEED TO BE SCARIFIED 4" DEEP. A FIRM, WELP PULVERIZED, UNIFORM SEEDBED SHOULD BE PROVIDED. FERTILIZER SHALL BE PLACED DURING SCARIFICATION AS FOLLOWS:

LIME: 45 LBS / 1,000 SF  
PHOSPHOROUS: 20 LBS / 1,000 SF  
FERTILIZER: 17 LBS / 1,000 SF

## REQUIRED GROUND STABILIZATION TIMEFRAMES

SITE AREA DESCRIPTION	STABILIZE WITHIN THIS MANY CALENDAR DAYS AFTER CEASING LAND DISTURBANCE	TIMEFRAME VARIATIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7	NONE
HIGH QUALITY WATER (HWQ) ZONES	7	NONE
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
SLOPES 3:1 TO 4:1	14	7-DAYS FOR PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND HOW ZONES
AREAS WITH SLOPES FLATTER THAN 4:1	14	10-DAYS FOR FALLS LAKE WATERSHED UNLESS THERE IS ZERO SLOPE

### BUILDING WASTES HANDLING

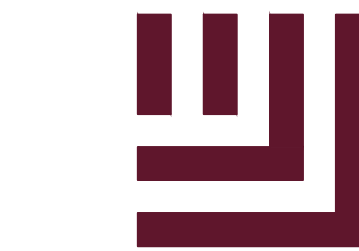
- NO PAINT OR LIQUID WASTES IN STREAM OR STORM DRAINS
- DEDICATED AREAS FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
- EARTHEN-MATERIAL STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
- CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATER, WETLANDS, OR BUFFERS.

## CONTRACTOR'S MAINTENANCE PLAN:

- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
- SEDIMENT BASINS SHALL BE INSPECTED REGULARLY DURING LAND DISTURBING ACTIVITIES AND AFTER EACH RUNOFF-PRODUCING RAINFALL. SEDIMENT SHALL BE REMOVED AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF EACH BASIN. PORTIONS OF THE BASIN'S GRAVEL FACING THAT ARE CONTAMINATED BY SEDIMENT SHALL BE REPLACED WITH FRESH GRAVEL DURING EACH SEDIMENT REMOVAL EPISODE.
- SEDIMENT FENCES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND AFTER EACH RUNOFF PRODUCING RAINFALL. REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED AS NEEDED TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAINFALL EVENT, AND TO REDUCE PRESSURE ON THE FENCE. FENCING MATERIALS AND SEDIMENT DEPOSITS SHALL BE REMOVED, AND THE AREA BROUGHT TO GRADE FOLLOWING STABILIZATION OF UPGRADMENT DISTURBED AREAS.
- DIVERSION DITCHES MUST REMAIN IN PLACE UNTIL PROJECT IS STABILIZED.
- EROSION CONTROL DURING SITE CONSTRUCTION WILL BE ACCOMPLISHED BY USE OF SILT FENCING AND SILT FENCE OUTLETS. DEVICES MUST BE EMPTIED WHEN SEDIMENT ACCUMULATION HAS REACHED 6" DEPTH.

## BASIN REMOVAL SEQUENCE:

- SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
- CONTACT NCDCEQ - RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDCEQ-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ON-SITE. THE EMAIL SHOULD INCLUDE: E&S JURISDICTION; WAKE COUNTY, WAKE COUNTY PROJECT; NAME, NUMBER, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING: A) REASON FOR CONVERSION, B) BASIN #, C) DEWATERING METHOD, AND D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCGDL. (KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION)
- AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDCEQ-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON DAY 11, WHICHEVER IS SOONER, REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
- PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
- INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
- WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVISE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION. NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.







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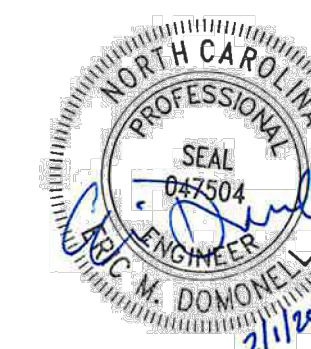
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license number: C-0293

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**CLIENT**

NAME: TOWN OF ROLESVILLE  
ADDRESS: 502 SOUTHTOWN CIRCLE  
ADDRESS: ROLESVILLE NC 27571  
PHONE: 919.554.6582

**FRAZIER FARM PARK**  
CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-EC1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=100'  
DATE 02.01.2024

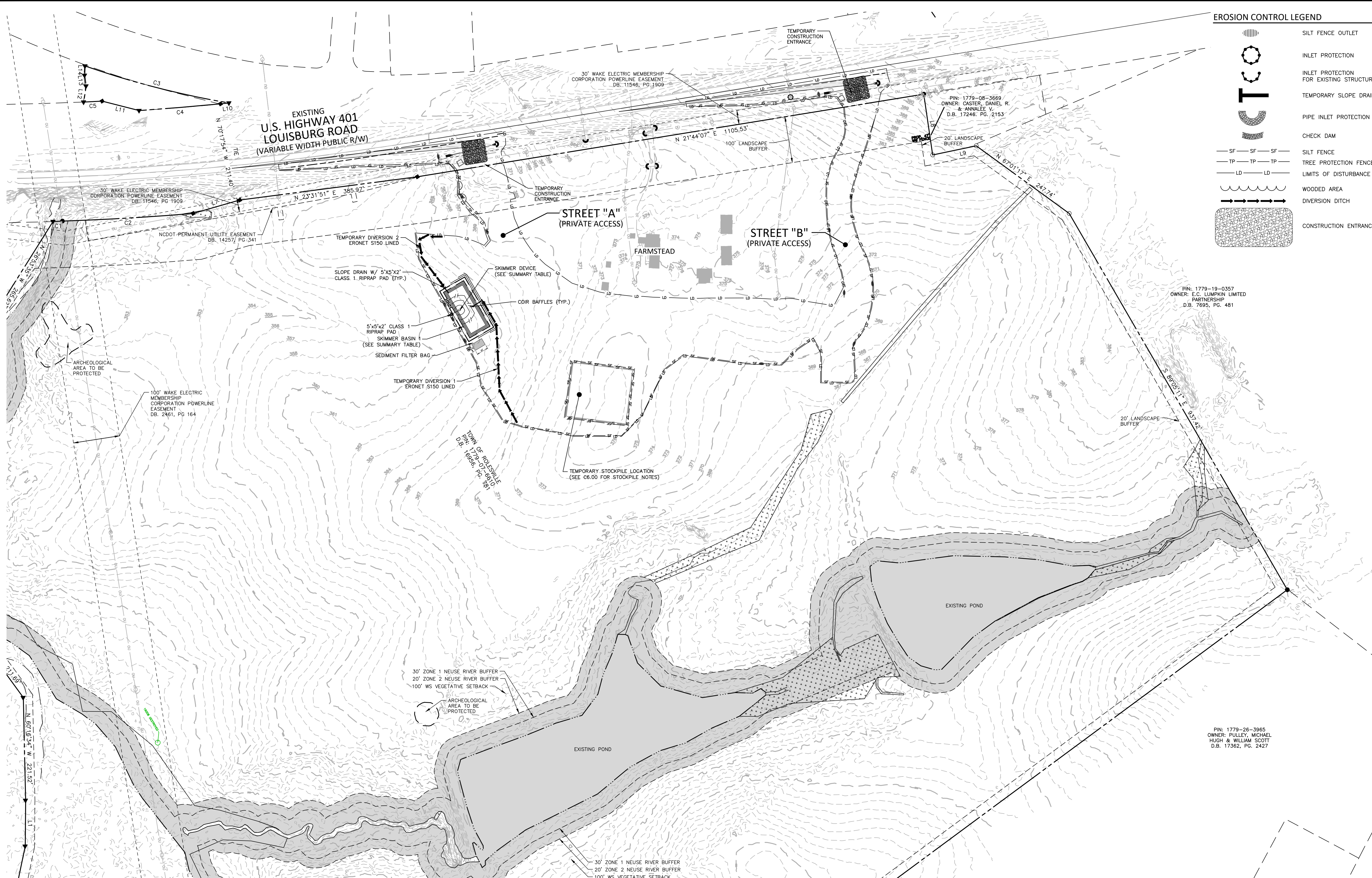
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**OVERALL EROSION CONTROL PLAN-STAGE I**

**C6.01**

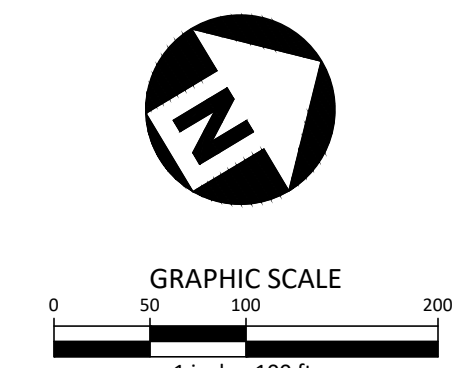
**EROSION CONTROL LEGEND**

- SILT FENCE OUTLET
- INLET PROTECTION FOR EXISTING STRUCTURES
- TEMPORARY SLOPE DRAIN
- PIPE INLET PROTECTION
- CHECK DAM
- SILT FENCE
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- WOODED AREA
- DIVERSION DITCH
- CONSTRUCTION ENTRANCE/EXIT



SEDIMENT BASIN SUMMARY TABLE				
ID	BOTTOM LENGTH X WIDTH	SPILLWAY LENGTH	SKIMMER AND ORIFICE SIZE	SIDESLOPES
SB-1	100' X 37'	15'	2" SKIMMER W/ 1.4" ORIFICE	2:1

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS



CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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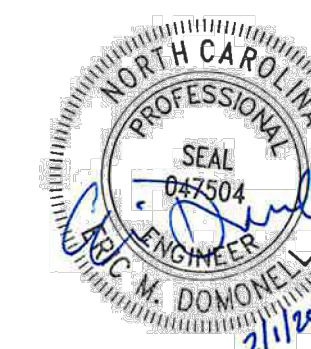
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PROJECT NO. 202011039  
FILENAME 2020110039-PH1-EC2  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=100'  
DATE 02.01.2024

**SHEET**

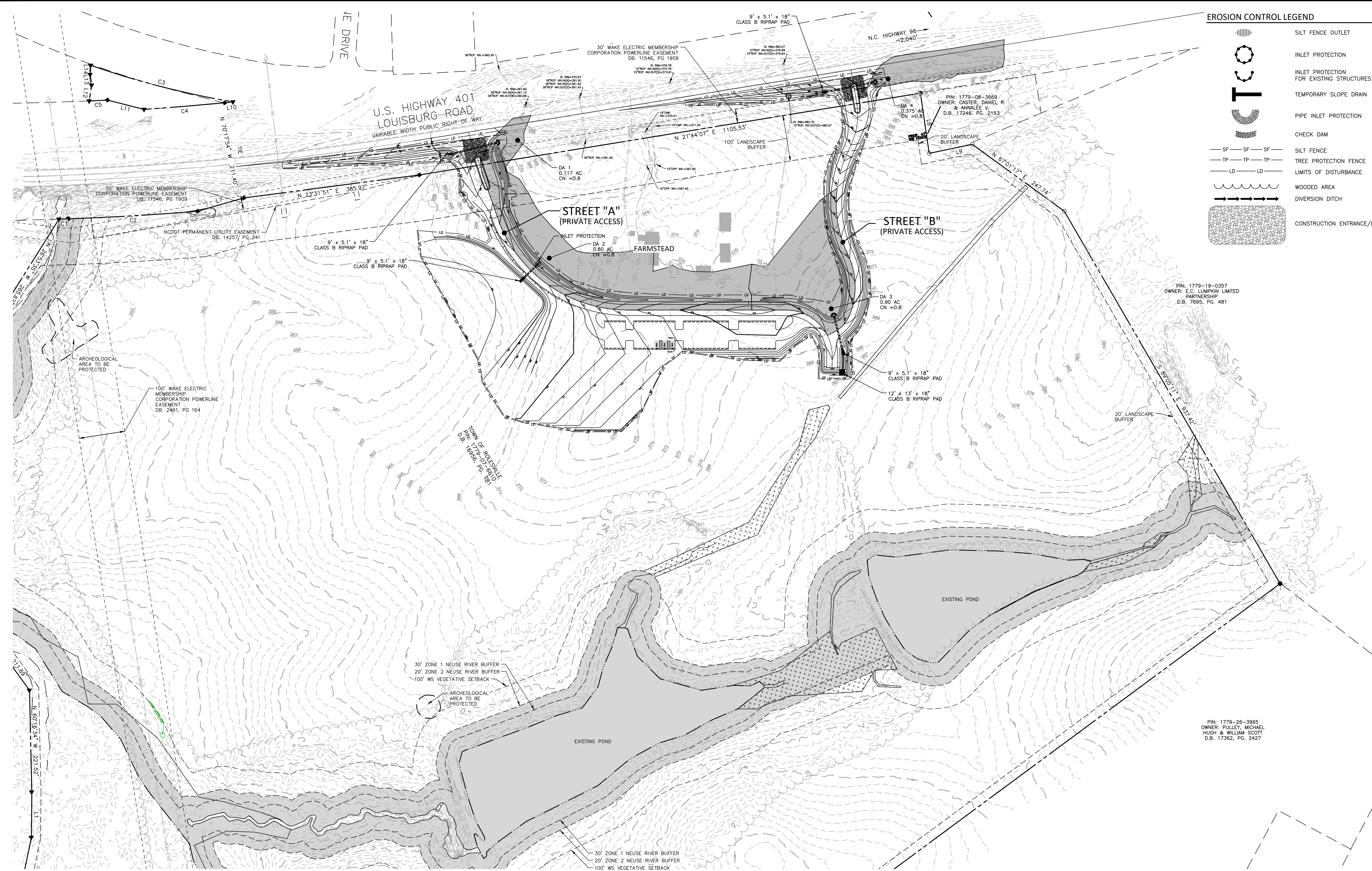
**OVERALL EROSION CONTROL PLAN-STAGE II**

**C6.02**

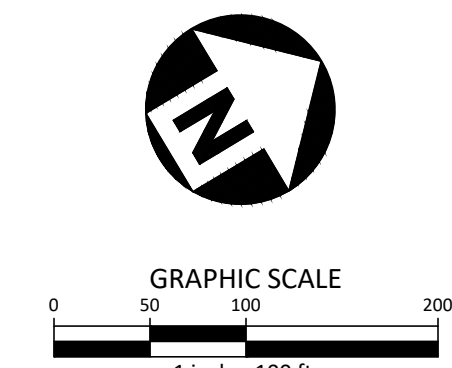
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**EROSION CONTROL LEGEND**

- SILT FENCE OUTLET
- INLET PROTECTION
- INLET PROTECTION FOR EXISTING STRUCTURES
- TEMPORARY SLOPE DRAIN
- PIPE INLET PROTECTION
- CHECK DAM
- SILT FENCE
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- WOODED AREA
- DIVERSION DITCH
- CONSTRUCTION ENTRANCE/EXIT



ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS



PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-ECN3  
CHECKED BY EMD  
DRAWN BY SME  
SCALE N/A  
DATE 02.01.2024

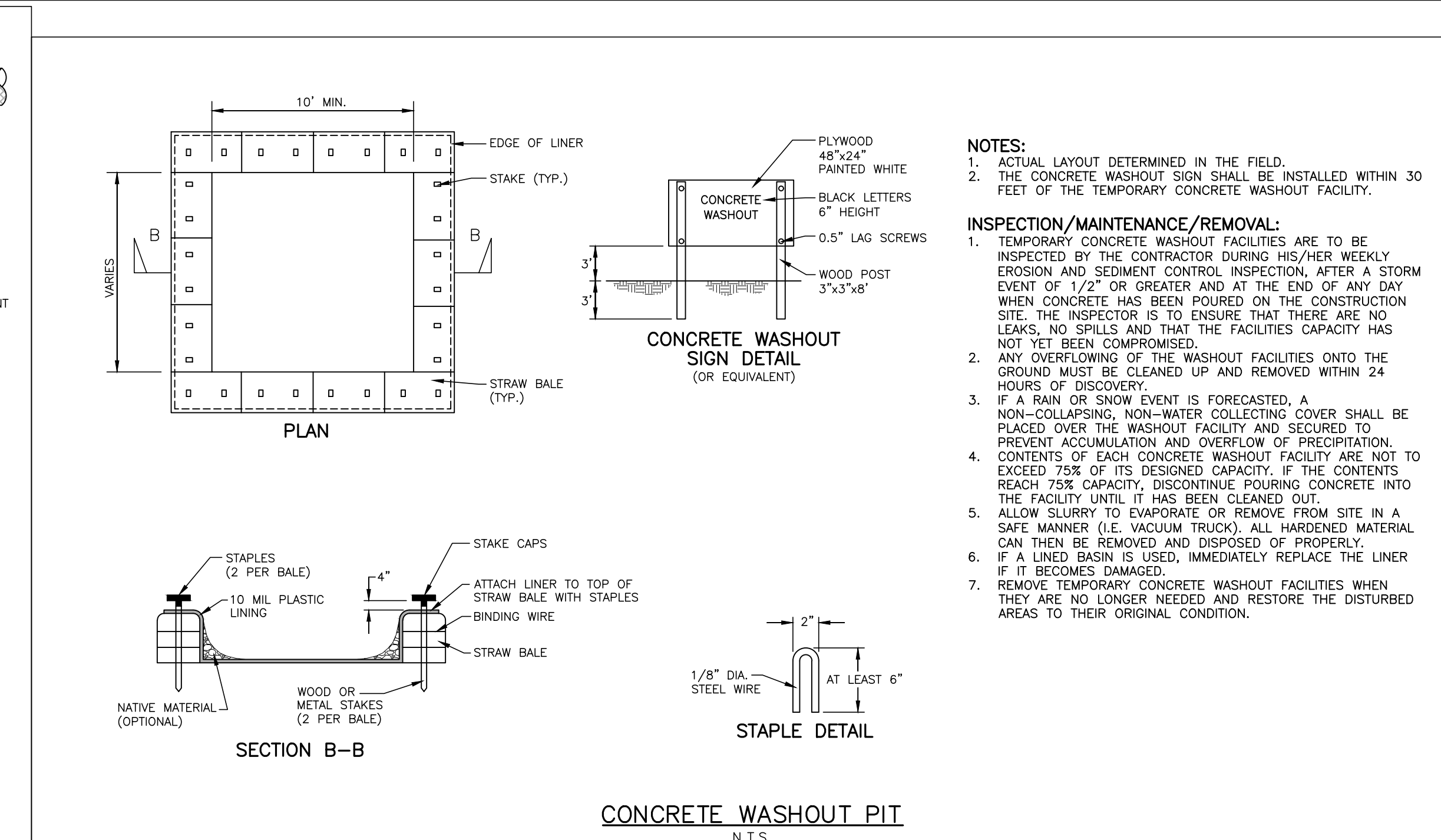
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EROSION CONTROL  
DETAILS

C6.10

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS CID-2315

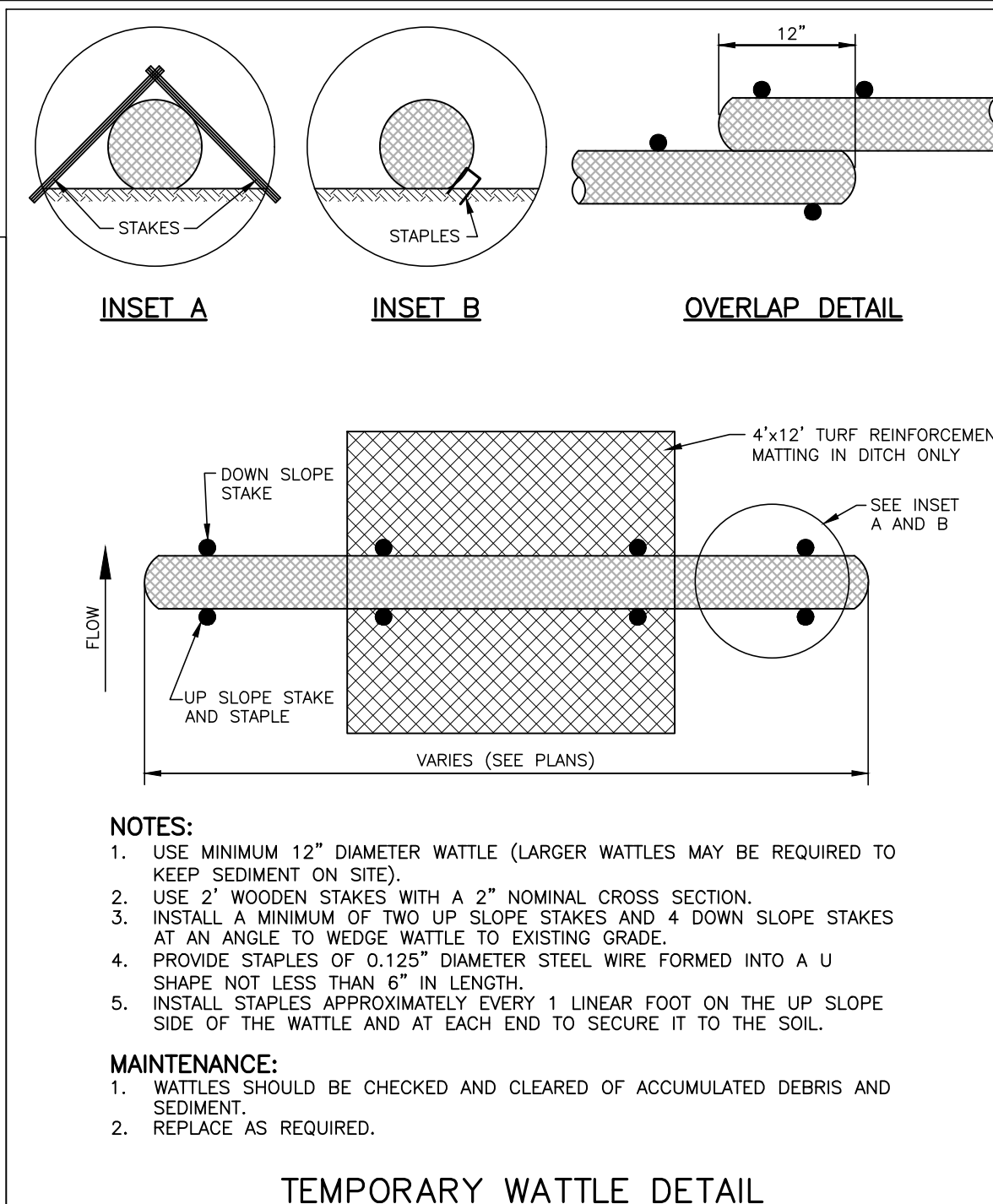
PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



- NOTES: 1. ACTUAL LAYOUT DETERMINED IN THE FIELD. 2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

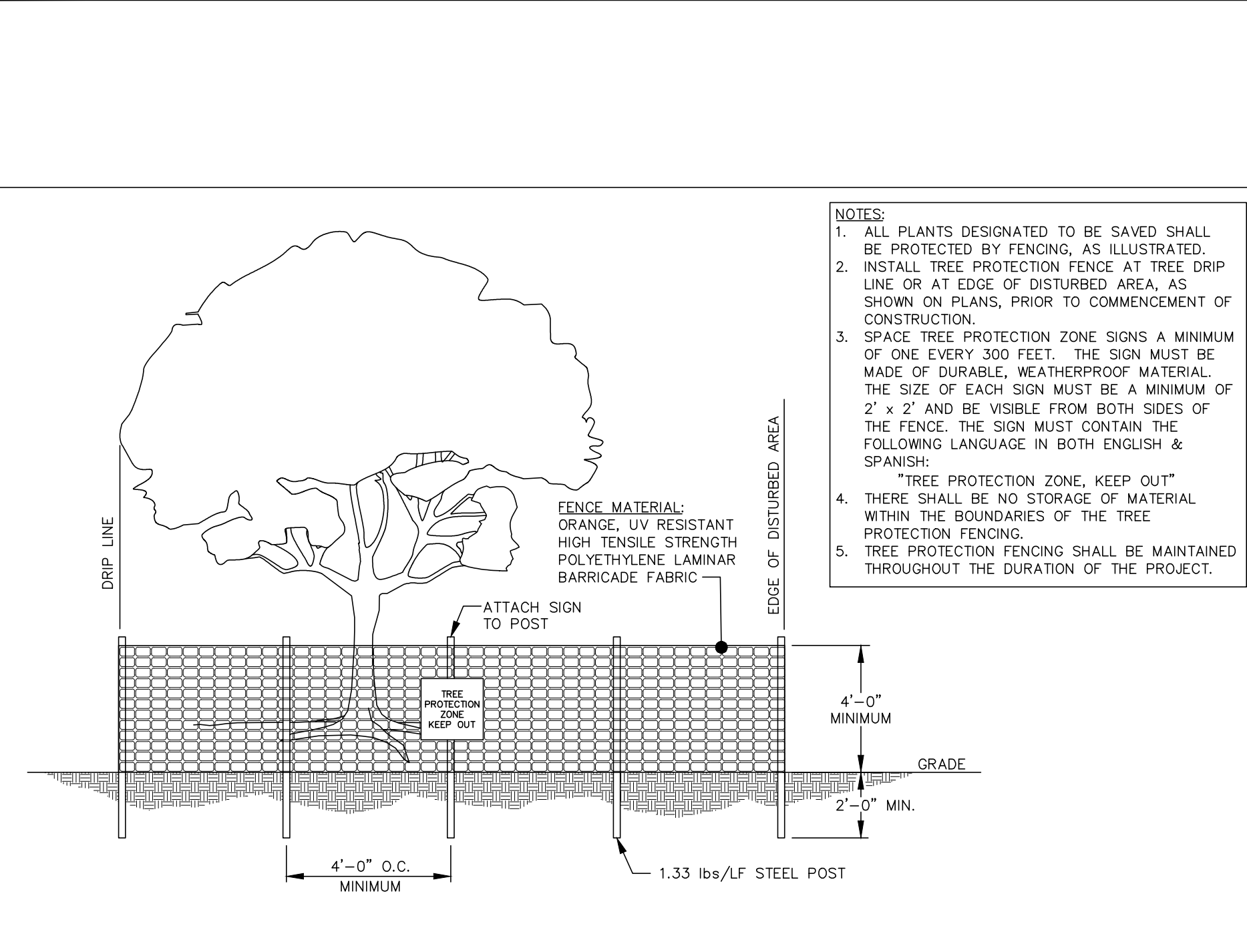
INSPECTION/MAINTENANCE/REMOVAL:

- 1. TEMPORARY CONCRETE WASHOUT FACILITIES ARE TO BE INSPECTED BY THE CONTRACTOR DURING HIS/HER WEEKLY EROSION AND SEDIMENT CONTROL INSPECTION, AFTER A STORM EVENT OF 1/2" OR GREATER AND AT THE END OF ANY DAY WHEN CONCRETE HAS BEEN POURED ON THE CONSTRUCTION SITE. THE INSPECTOR IS TO ENSURE THAT THERE ARE NO LEAKS, NO SPILLS AND THAT THE FACILITIES CAPACITY HAS NOT YET BEEN COMPROMISED. 2. ANY OVERFLOWING OF THE WASHOUT FACILITIES ONTO THE GROUND MUST BE CLEANED UP AND REMOVED WITHIN 24 HOURS OF DISCOVERY. 3. IF A RAIN OR SNOW EVENT IS FORECASTED, A NON-COLLAPSING, NON-WATER COLLECTING COVER SHALL BE PLACED OVER THE WASHOUT FACILITY AND SECURED TO PREVENT ACCUMULATION AND OVERFLOW OF PRECIPITATION. CONTENTS OF EACH CONCRETE WASHOUT FACILITY ARE NOT TO EXCEED 75% OF ITS DESIGNED CAPACITY. IF THE CONTENTS REACH 75% CAPACITY, DISCONTINUE POURING CONCRETE INTO THE FACILITY UNTIL IT HAS BEEN CLEANED OUT. 4. ALLOW SLURRY TO EVAPORATE OR REMOVE FROM SITE IN A SAFE MANNER (I.E. VACUUM TRUCK). ALL HARDENED MATERIAL CAN THEN BE REMOVED AND DISPOSED OF PROPERLY. 5. IF A LINED BASIN IS USED, IMMEDIATELY REPLACE THE LINER IF IT BECOMES DAMAGED. 6. REMOVE TEMPORARY CONCRETE WASHOUT FACILITIES WHEN THEY ARE NO LONGER NEEDED AND RESTORE THE DISTURBED AREAS TO THEIR ORIGINAL CONDITION.



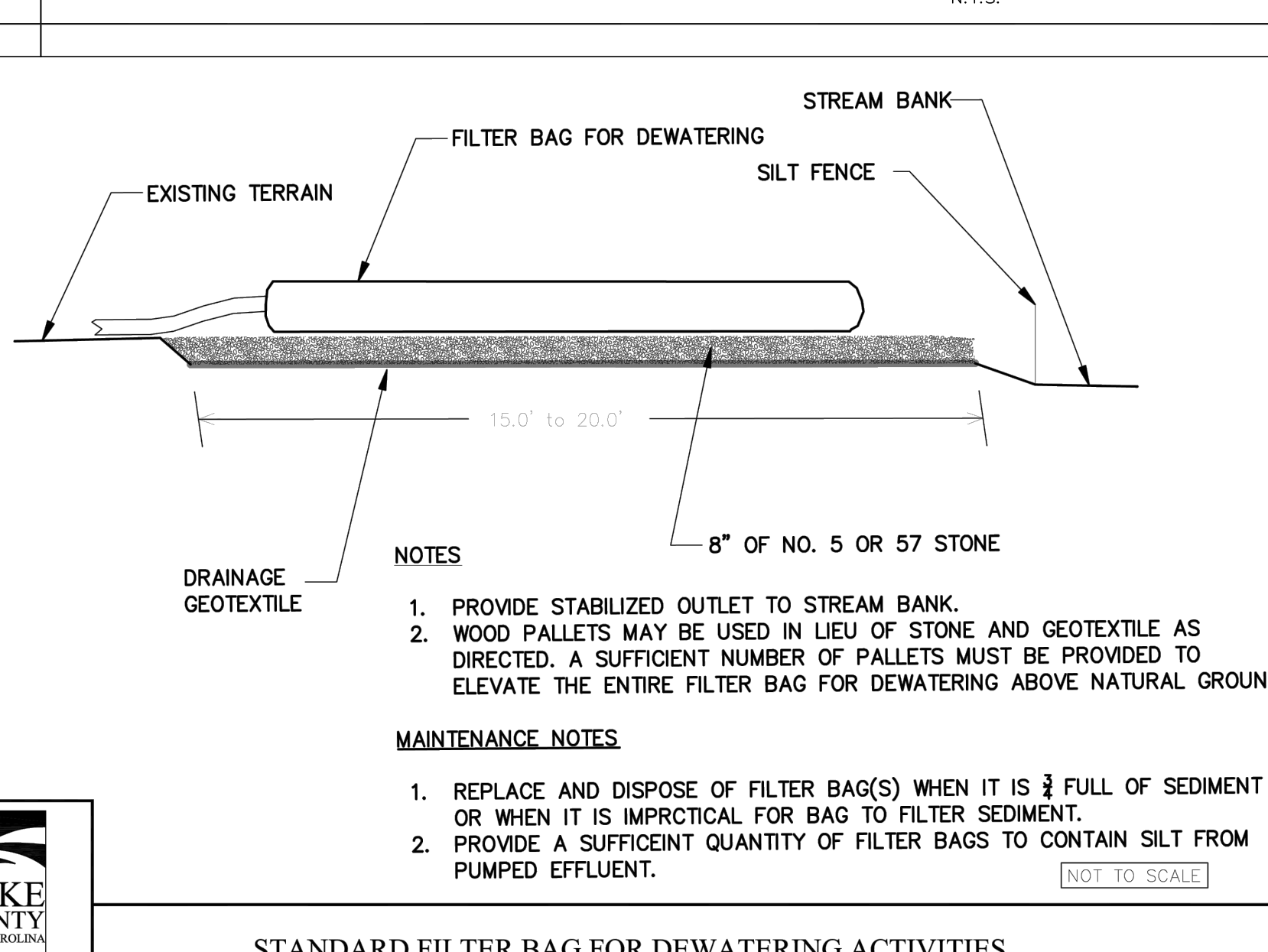
- NOTES: 1. USE MINIMUM 12" DIAMETER WATTLE (LARGER WATTLES MAY BE REQUIRED TO KEEP SEDIMENT ON SITE). 2. USE 2" WOODEN STAKES WITH A 2" NOMINAL CROSS SECTION. 3. INSTALL A MINIMUM OF TWO UP SLOPE STAKES AND 4 DOWN SLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO EXISTING GRADE. 4. PROVIDE STAPLES OF 0.125" DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 6" IN LENGTH. 5. INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON THE UP SLOPE SIDE OF THE WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

- MAINTENANCE: 1. WATTLES SHOULD BE CHECKED AND CLEARED OF ACCUMULATED DEBRIS AND SEDIMENT. 2. REPLACE AS REQUIRED.



- NOTES: 1. ALL PLANTS DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING, AS ILLUSTRATED. 2. INSTALL TREE PROTECTION FENCE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA, AS SHOWN ON PLANS, PRIOR TO COMMENCEMENT OF CONSTRUCTION. 3. SPACE TREE PROTECTION ZONE SIGNS A MINIMUM OF ONE EVERY 300 FEET. THE SIGN MUST BE MADE OF DURABLE, WEATHERPROOF MATERIAL. THE SIZE OF EACH SIGN MUST BE A MINIMUM OF 2' x 2' AND BE VISIBLE FROM BOTH SIDES OF THE FENCE. THE SIGN MUST CONTAIN THE FOLLOWING LANGUAGE IN BOTH ENGLISH & SPANISH: "TREE PROTECTION ZONE, KEEP OUT" 4. THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING. 5. TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

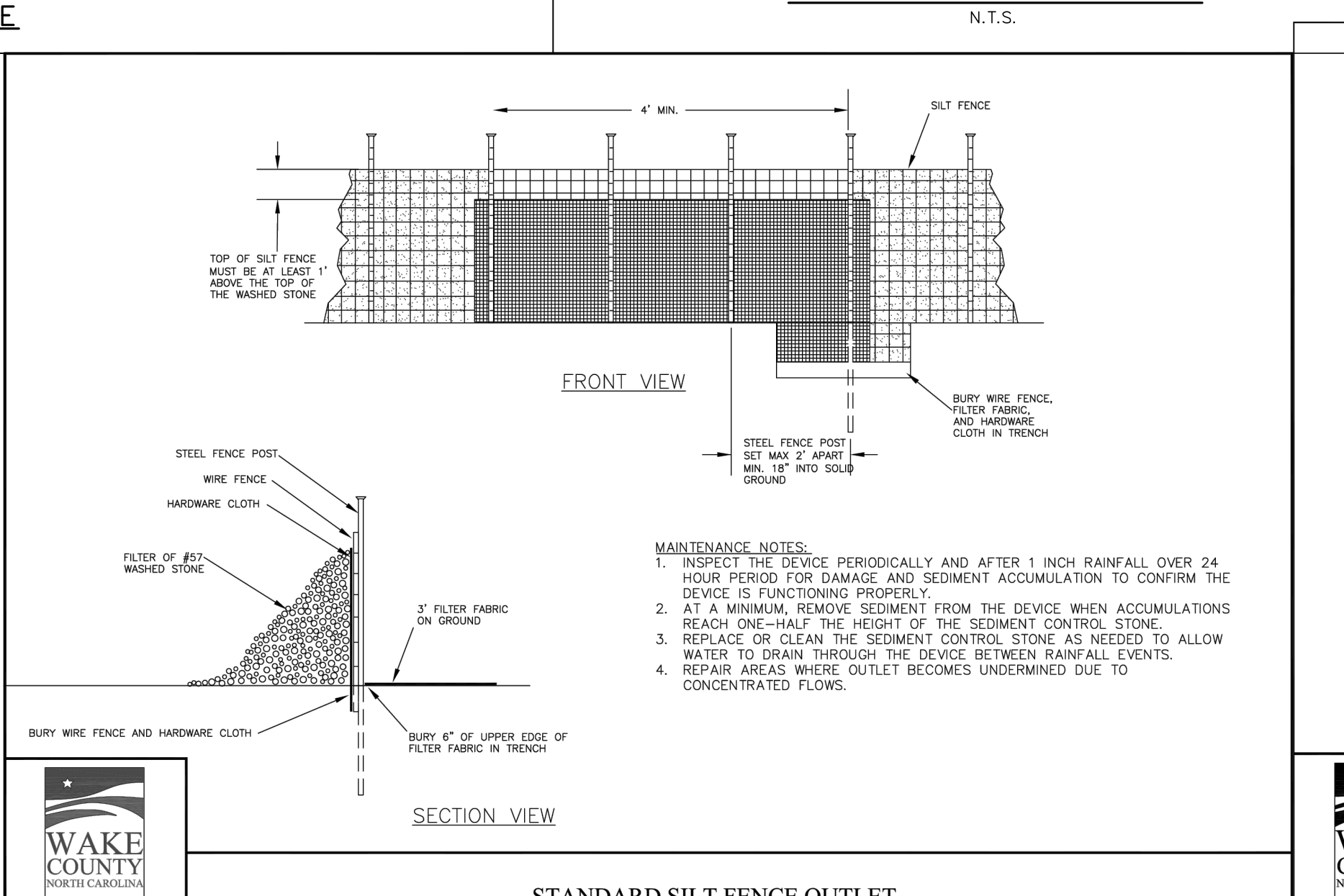
TREE PROTECTION FENCE  
N.T.S.



- NOTES: 1. PROVIDE STABILIZED OUTLET TO STREAM BANK. 2. WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE FILTER BAG FOR DEWATERING ABOVE NATURAL GROUND.

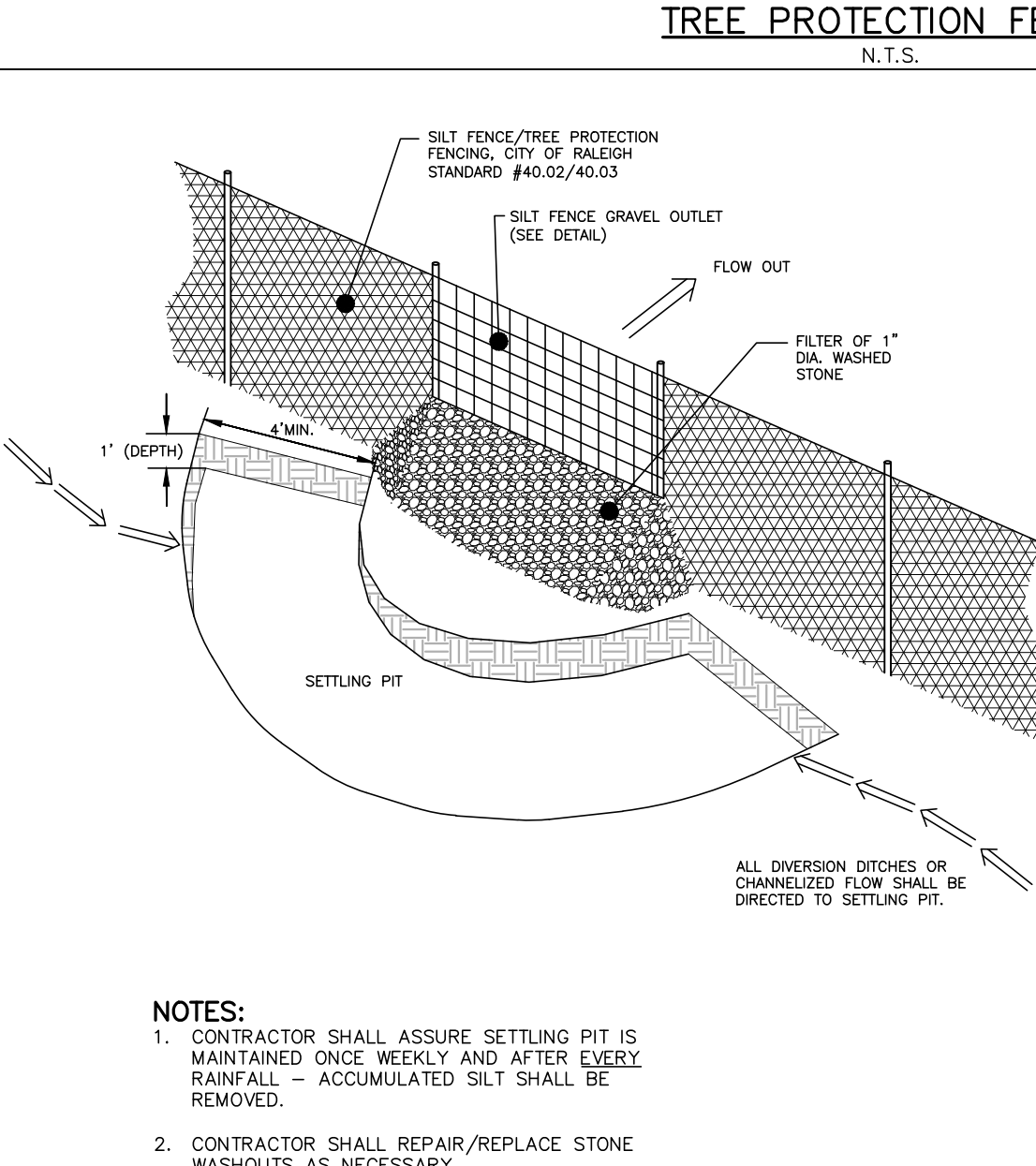
MAINTENANCE NOTES:

- 1. REPLACE AND DISPOSE OF FILTER BAG(S) WHEN IT IS 3/4 FULL OF SEDIMENT OR WHEN IT IS IMPRACTICAL FOR BAG TO FILTER SEDIMENT. 2. PROVIDE A SUFFICIENT QUANTITY OF FILTER BAGS TO CONTAIN SILT FROM PUMPED EFFLUENT.



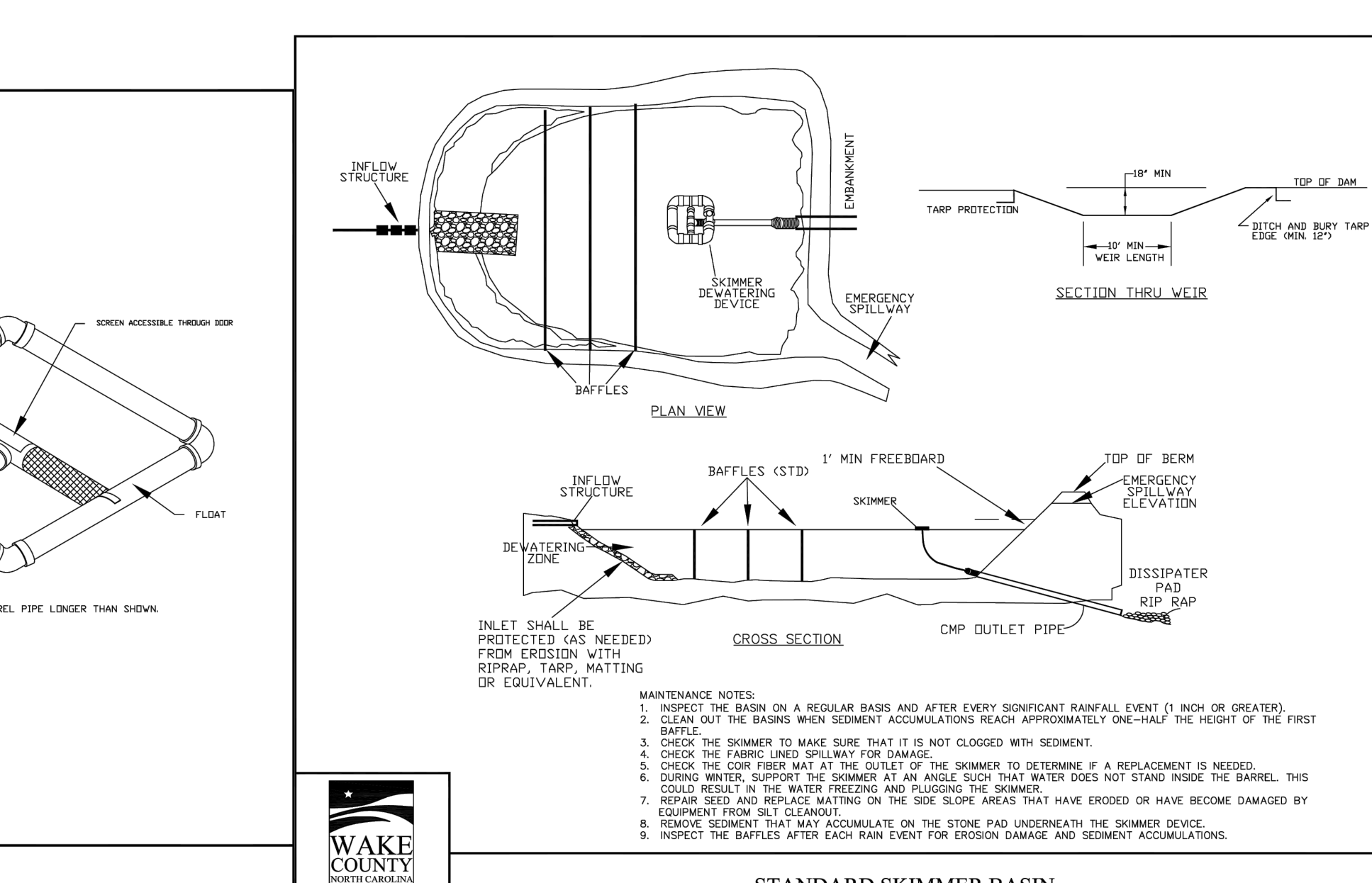
- MAINTENANCE NOTES: 1. INSPECT THE DEVICE PERIODICALLY AND AFTER 1 INCH RAINFALL OVER 24 HOUR PERIOD FOR DAMAGE AND SEDIMENT ACCUMULATION TO CONFIRM THE DEVICE IS FUNCTIONING PROPERLY. 2. AT A MINIMUM, REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE. 3. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS. 4. REPAIR AREAS WHERE OUTLET BECOMES UNDERMINED DUE TO CONCENTRATED FLOWS.

STANDARD SILT FENCE OUTLET



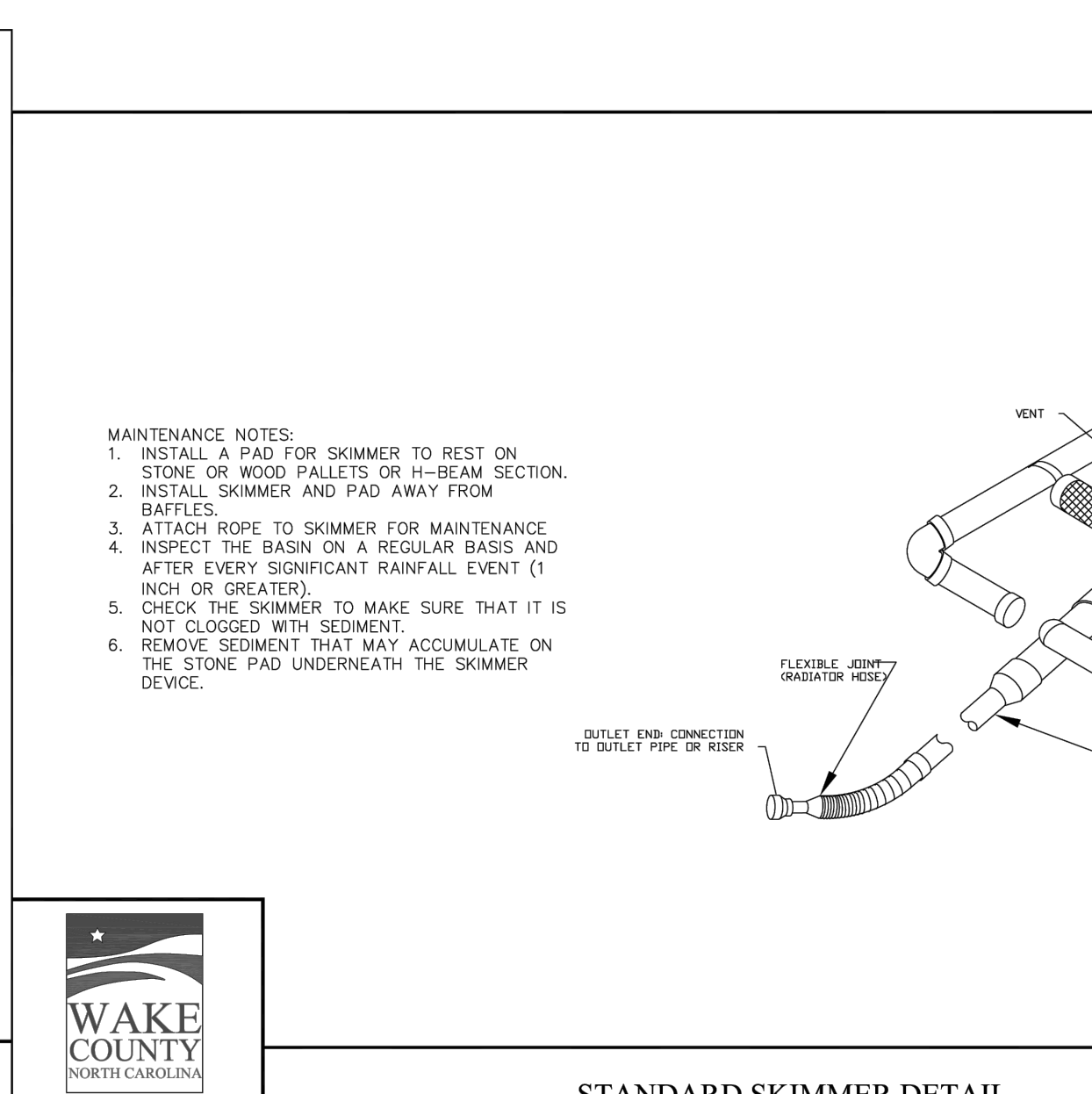
- NOTES: 1. CONTRACTOR SHALL ASSURE SETTLING PIT IS MAINTAINED ONCE WEEKLY AND AFTER EVERY RAINFALL - ACCUMULATED SILT SHALL BE REMOVED. 2. CONTRACTOR SHALL REPAIR/REPLACE STONE WASHOUTS AS NECESSARY.

SILT FENCE OUTLET SETTLING PIT  
N.T.S.



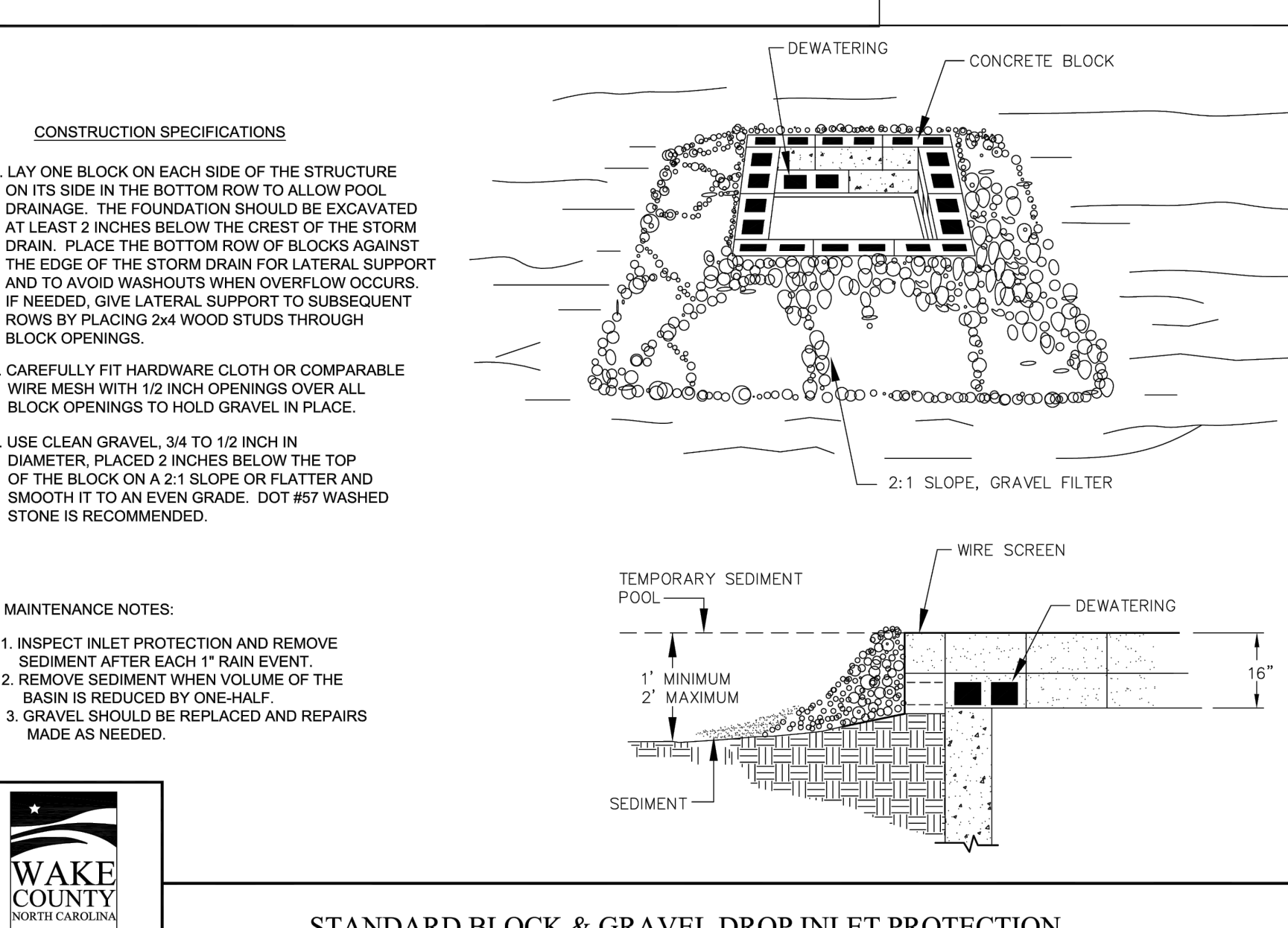
- MAINTENANCE NOTES: 1. INSPECT THE BASIN ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER) BAFFLE. 2. CLEAN OUT THE BASIN WHEN SEDIMENT ACCUMULATIONS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. 3. CHECK THE SKIMMER TO MAKE SURE THAT IT IS NOT CLOGGED WITH SEDIMENT. 4. CHECK THE FABRIC END SPILLWAY FOR DAMAGE. 5. DURING WINTER, SUPPORT THE SKIMMER AT AN ANGLE SUCH THAT WATER DOES NOT STAND INSIDE THE BARREL. THIS COULD RESULT IN THE WATER FREEZING AND PLUGGING THE SKIMMER. 6. REPAIR AND REPLACE MATTING ON THE SIDE SLOPE AREAS THAT HAVE ERODED OR HAVE BECOME DAMAGED BY EQUIPMENT FROM OIL CLEANSING. 7. REMOVE SEDIMENT THAT MAY ACCUMULATE ON THE STONE PAD UNDERNEATH THE SKIMMER DEVICE. 8. INSPECT THE BAFFLES AFTER EACH RAIN EVENT FOR EROSION DAMAGE AND SEDIMENT ACCUMULATIONS.

STANDARD SKIMMER BASIN



- MAINTENANCE NOTES: 1. INSTALL A PAD FOR SKIMMER TO REST ON STONE OR WOOD PALLETS OR IN-BEAM SECTION. 2. INSTALL SKIMMER AND PAD AWAY FROM BAFFLES. 3. ATTACH ROPE TO SKIMMER FOR MAINTENANCE. 4. INSPECT THE BASIN ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER). 5. CHECK THE SKIMMER TO MAKE SURE THAT IT IS NOT CLOGGED WITH SEDIMENT. 6. REMOVE SEDIMENT THAT MAY ACCUMULATE ON THE STONE PAD UNDERNEATH THE SKIMMER DEVICE.

STANDARD SKIMMER DETAIL



- CONSTRUCTION SPECIFICATIONS: 1. 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 2x4 WOOD STUDS THROUGH BLOCK OPENINGS. 2. CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2 INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE. 3. 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.

- MAINTENANCE NOTES: 1. INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH 1" RAIN EVENT. 2. REMOVE SEDIMENT WHEN VOLUME OF THE BASIN IS REDUCED BY ONE-HALF. 3. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.

STANDARD BLOCK & GRAVEL DROP INLET PROTECTION

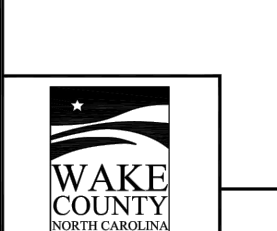
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EFFECTIVE: 01/31/08

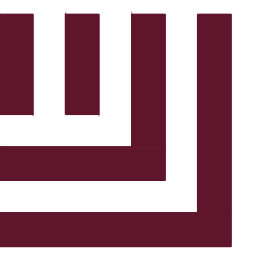


EFFECTIVE: 01/31/08



EFFECTIVE: 01/31/08





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REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-ECN3  
CHECKED BY EMD  
DRAWN BY SME  
SCALE N/A  
DATE 02.01.2024

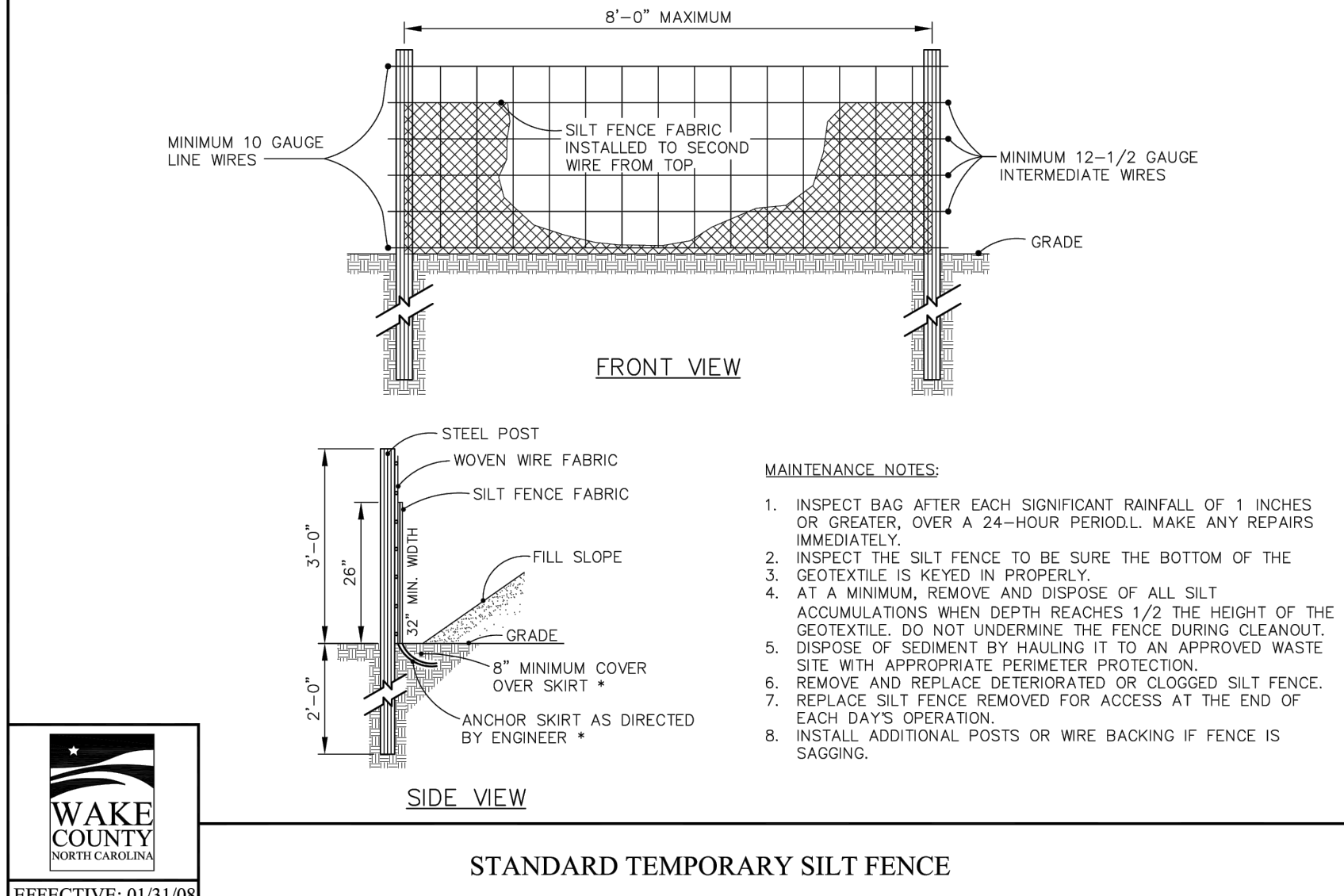
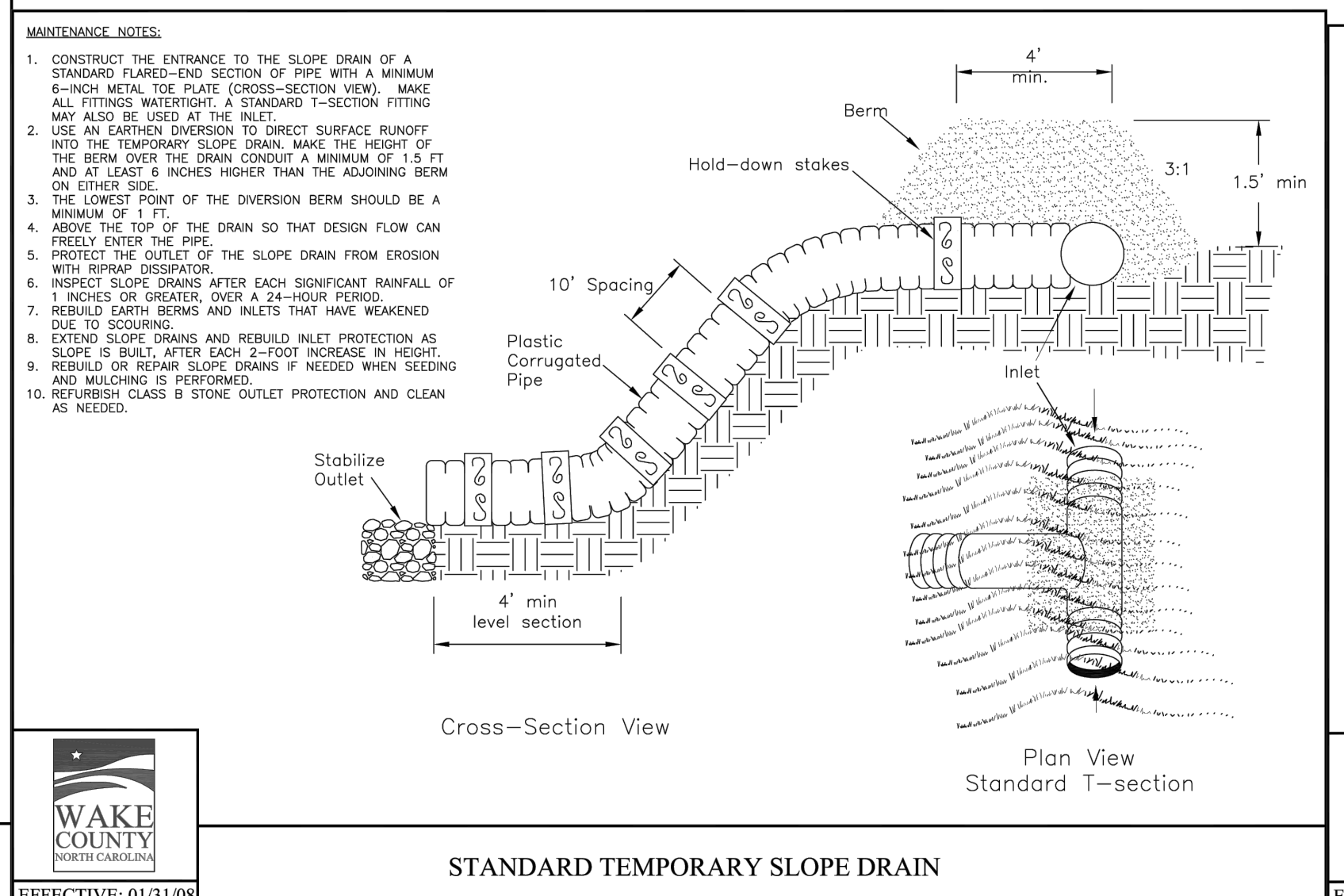
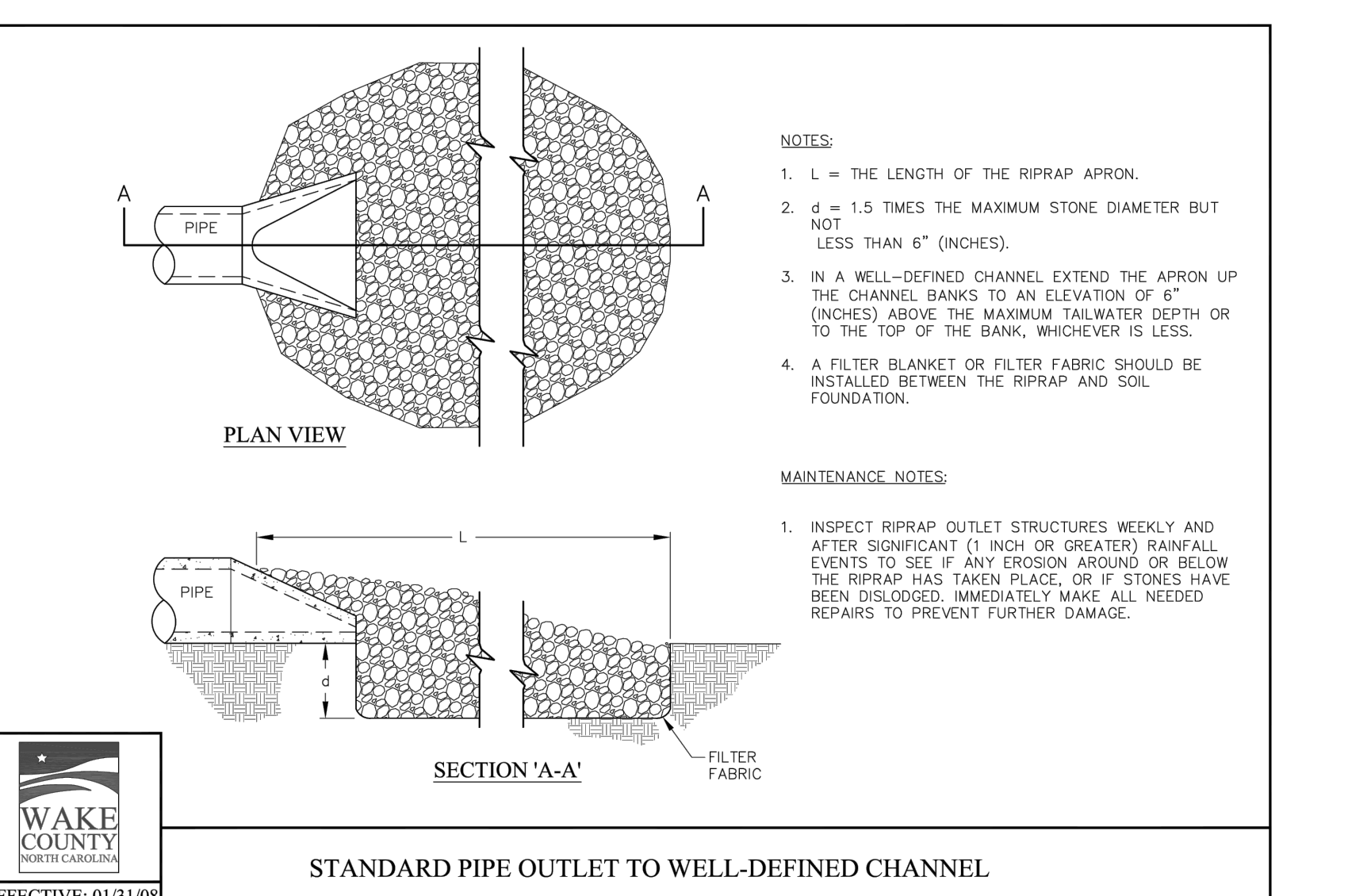
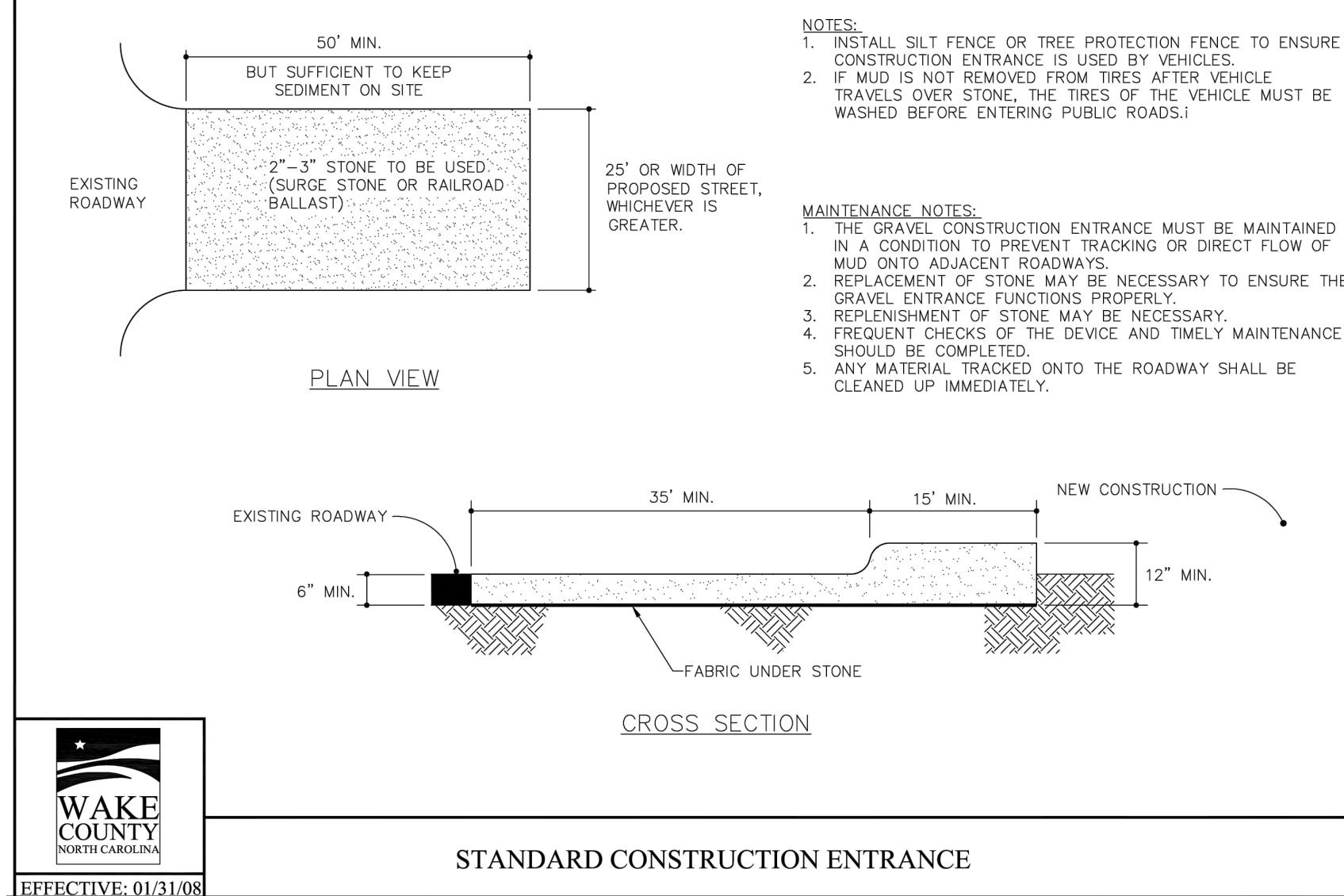
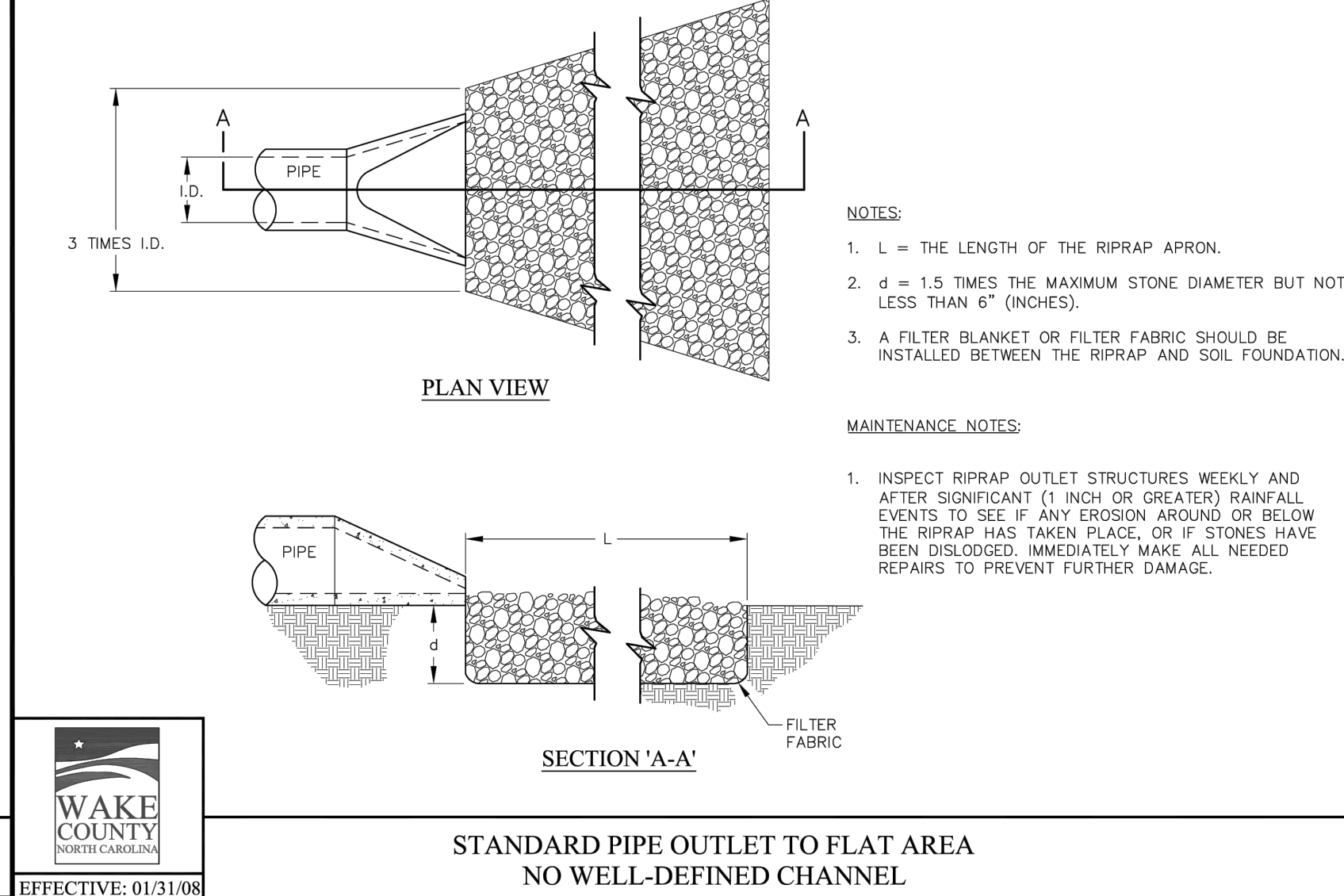
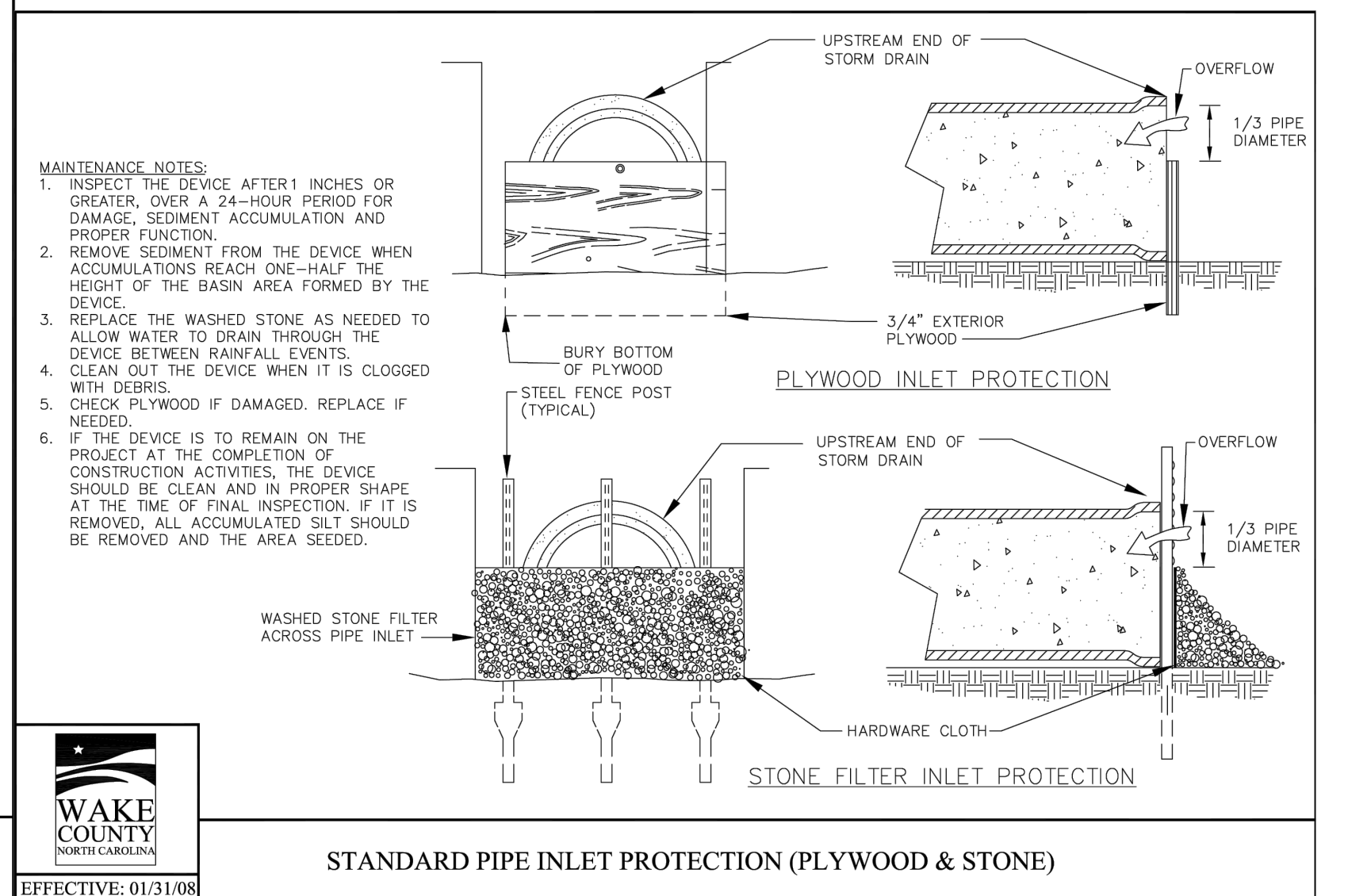
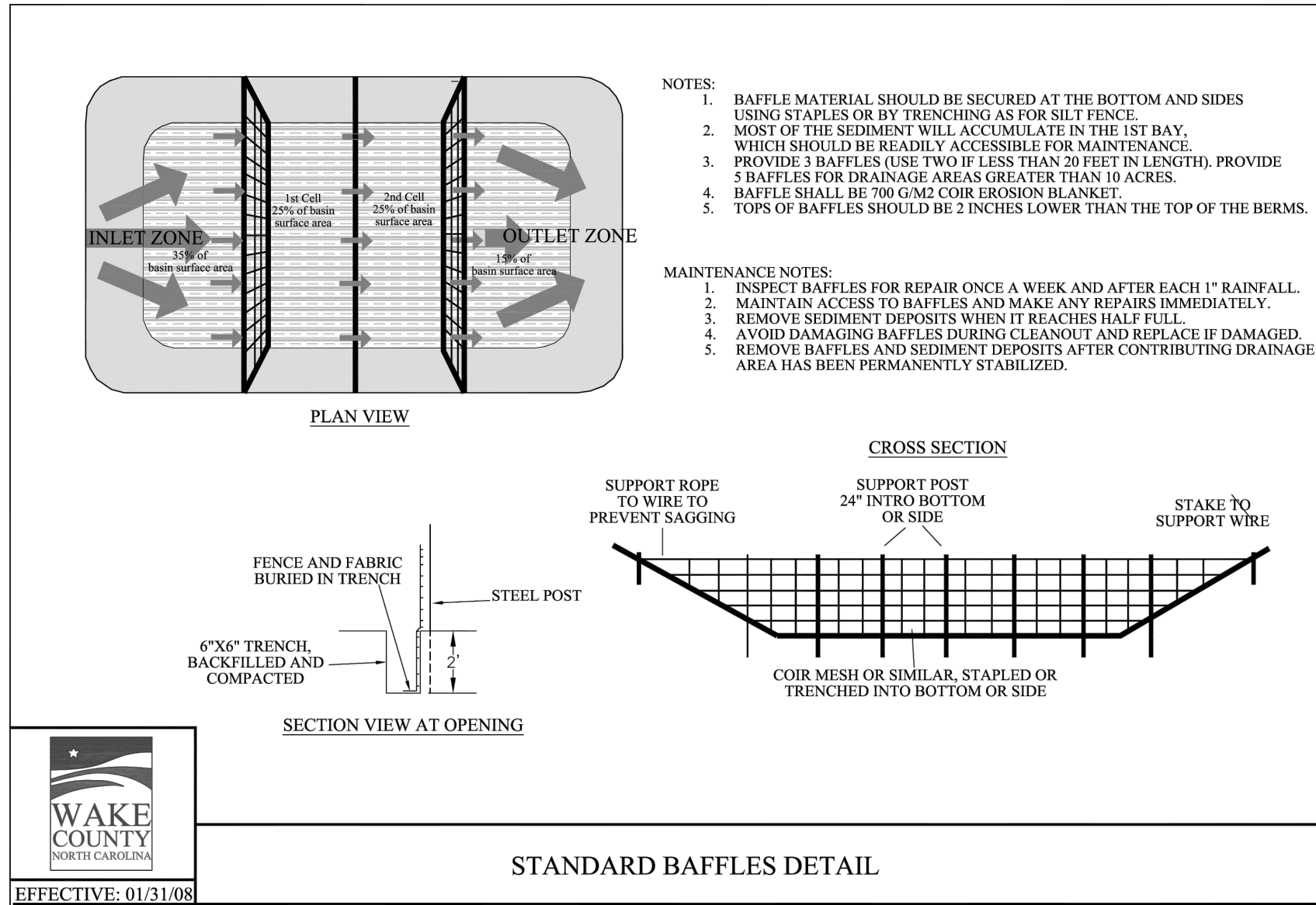
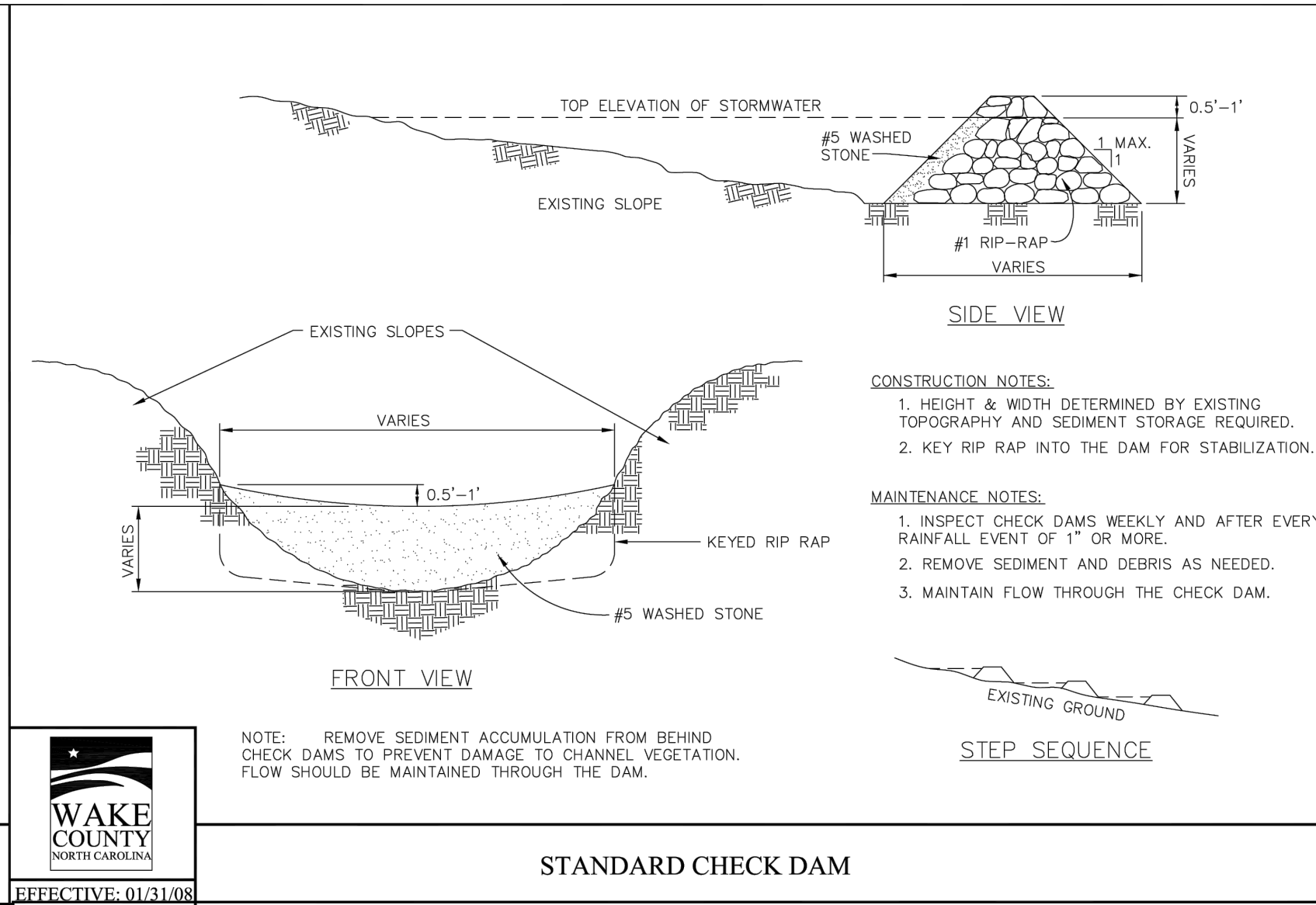
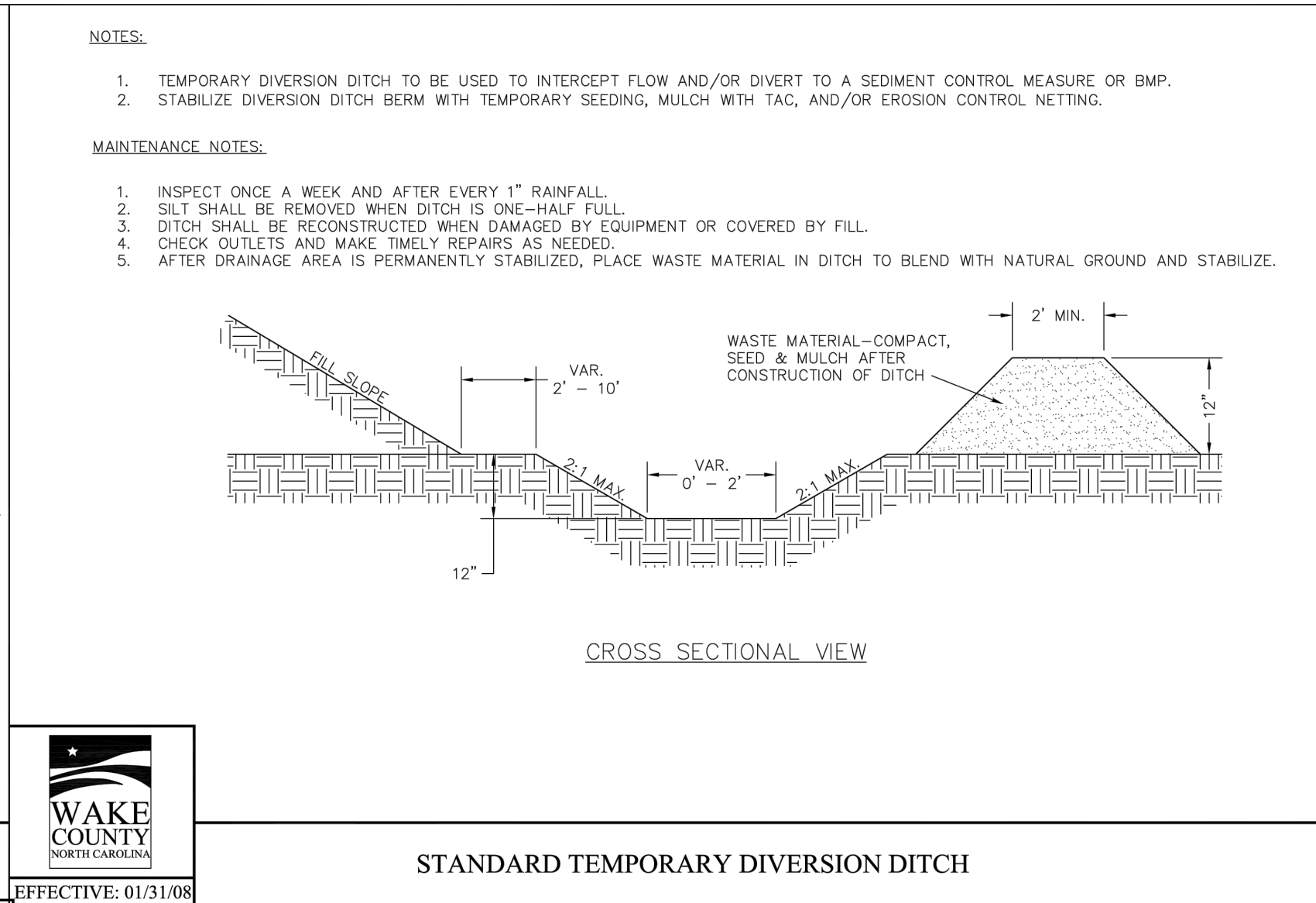
SHEET

EROSION CONTROL  
DETAILS

C6.11

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS CID-2315

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



M:\Projects\WOL\2020110039-Frazier Farm PH1-ECN3.dwg, 2/1/2024, 8:10:39 PM, Eric Domonelli



**CLIENT**

NAME: TOWN OF ROLESVILLE  
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ADDRESS: ROLESVILLE NC 27571  
PHONE: 919.554.6582

**FRAZIER FARM PARK**  
CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-ECN3  
CHECKED BY EMD  
DRAWN BY SME  
SCALE N/A  
DATE 02.01.2024

**SHEET**

**EROSION CONTROL  
DETAILS**

**C6.12**






ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS CID-23.5

PRELIMINARY DRAWING - NOT RELEASED 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.

**Temporary and Permanent Groundcover\***

STABILIZATION TIMEFRAMES (Effective Aug. 3, 2011)		
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
 Perimeter dikes, swales, ditches, 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 or flatter	14 days	7 days for slopes greater than 50' in length.
 All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

\*-For Falls Lake watershed, in disturbed areas where grading activities are incomplete, provide temporary groundcover no later than seven (7) days for slopes steeper than 3:1; ten (10) days for slopes equal to or flatter than 3:1; fourteen (14) days for areas with no slope.

**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>Roiled 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> </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 offsite.
- 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 of waste containers on site to manage the quantity of waste produced.
- 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. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow.
- Dispose waste off-site at an approved disposal facility.

**PAINT AND OTHER LIQUID WASTE**

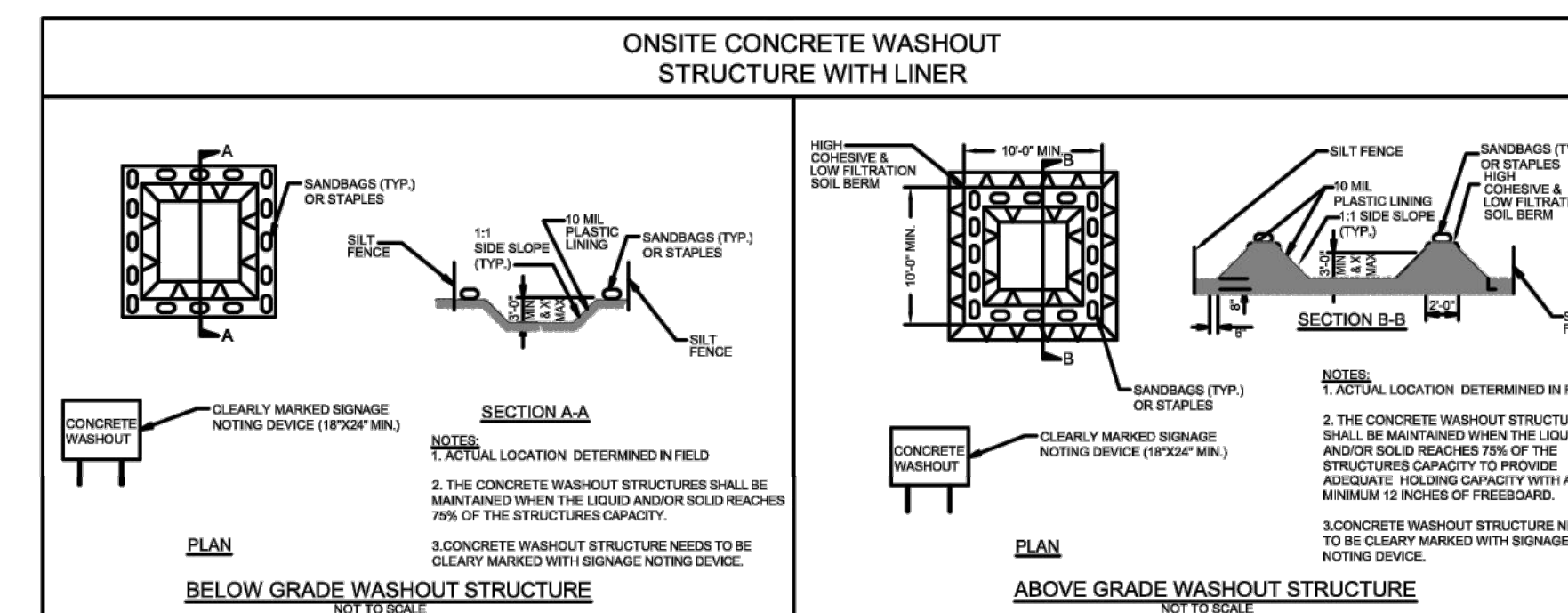
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, 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.



**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 lot 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.

**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.

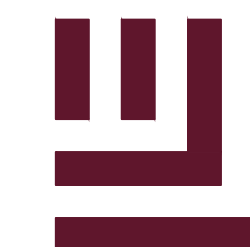
**HAZARDOUS AND TOXIC WASTE**

- 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.

**NCG01 GROUND STABILIZATION AND MATERIALS HANDLING**

**EFFECTIVE: 03/01/19**





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REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-ECN3  
CHECKED BY EMD  
DRAWN BY SME  
SCALE N/A  
DATE 02.01.2024

SHEET

EROSION CONTROL  
DETAILS

C6.13

ALL CONSTRUCTION SHALL BE IN  
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OF ROLESVILLE ENGINEERING DESIGN AND  
CONSTRUCTION STANDARDS CID-2315

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

- (a) Visible sediment deposition in a stream or wetland.
- (b) 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).
- (a) 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.
- (b) Anticipated bypasses and unanticipated bypasses.
- (c) 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 Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, 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 <b>NC 303(d) list</b> 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>• <b>Within 24 hours</b>, 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>• <b>A report at least ten days before the date of the bypass, if possible.</b> 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>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, 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(l)(7)]	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, 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 reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).</li> <li>• Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>

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 documented in the manner described:

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

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency 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:

- (a) This general permit as well as the certificate of coverage, after it is received.
- (b) Records of inspections made during the previous 30 days. 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.
- (c) All data used to complete the Notice of Intent and older 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 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 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 [40 CFR 122.41]:
(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 un-attended 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 > 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. Corrective actions taken, and 7. Date of actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event > 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. Actions taken to correct/prevent sedimentation, and 7. Date of actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event > 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. Date of 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 > 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. Evidence and actions taken to reduce sediment contributions, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.

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



NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 03/01/19





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**FRAZIER FARM PARK**  
CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-RW1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=40'  
DATE 02.01.2024

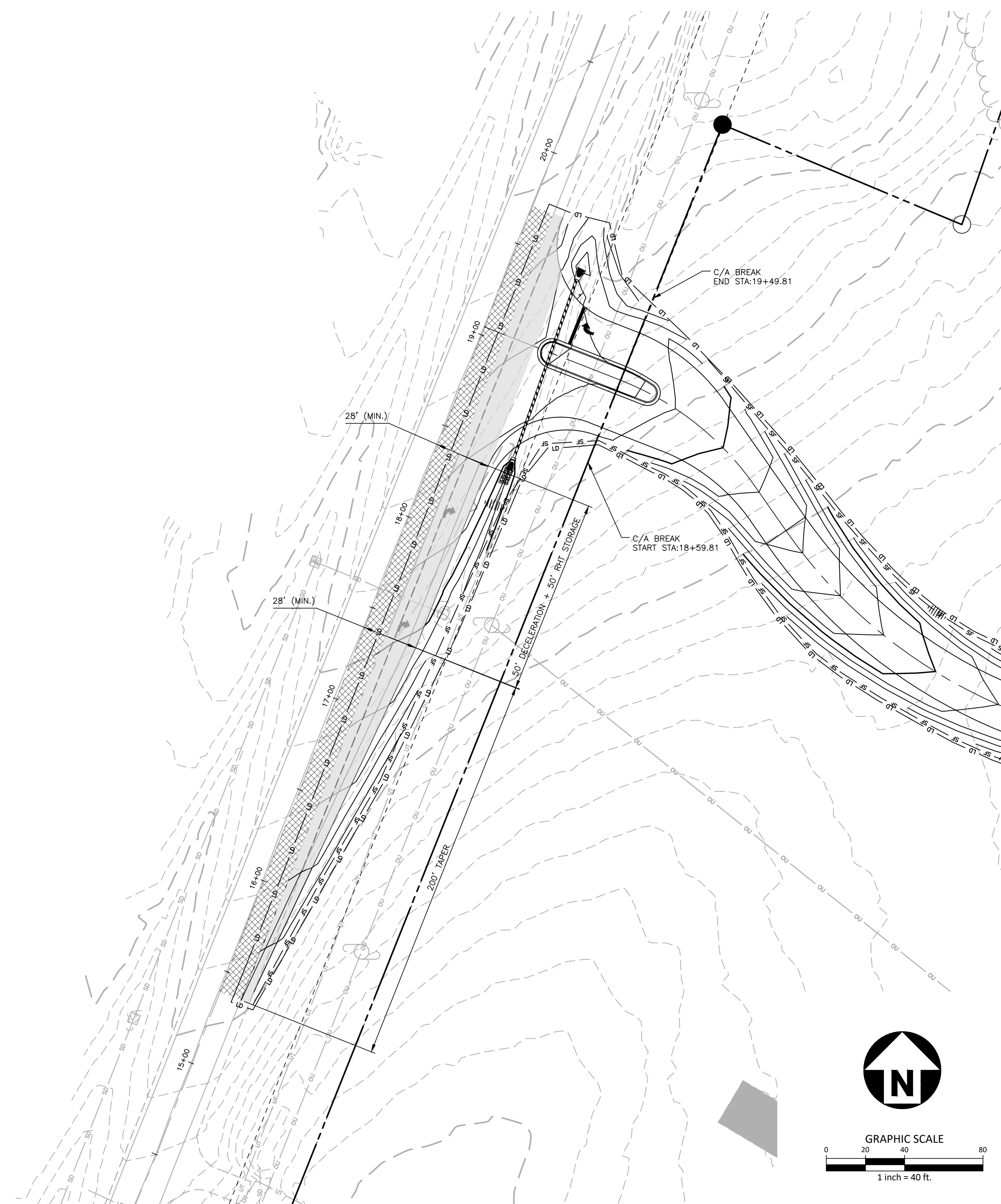
**SHEET**

**LOUISBURG RD  
WIDENING PLAN**

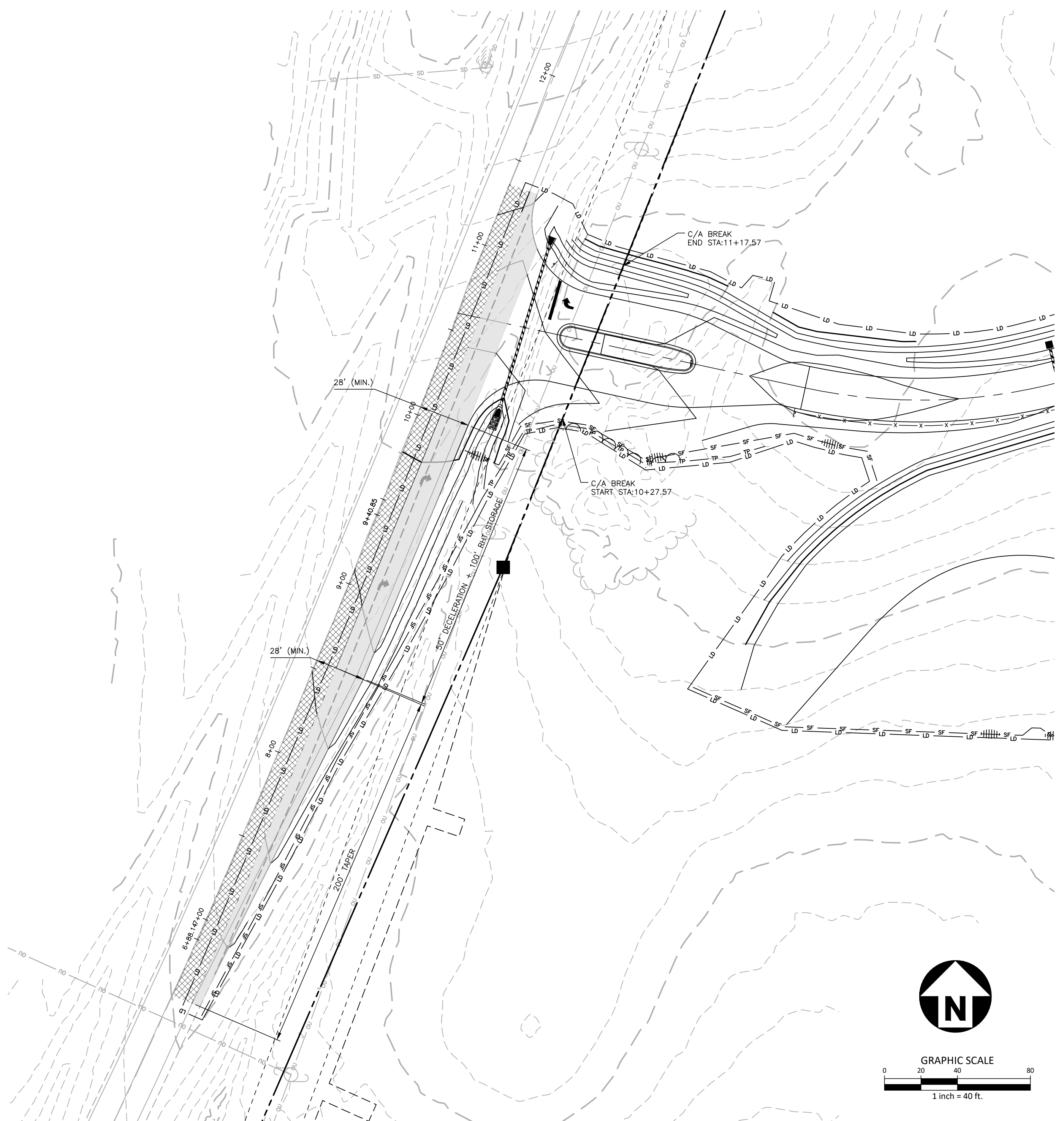
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CID-23-5

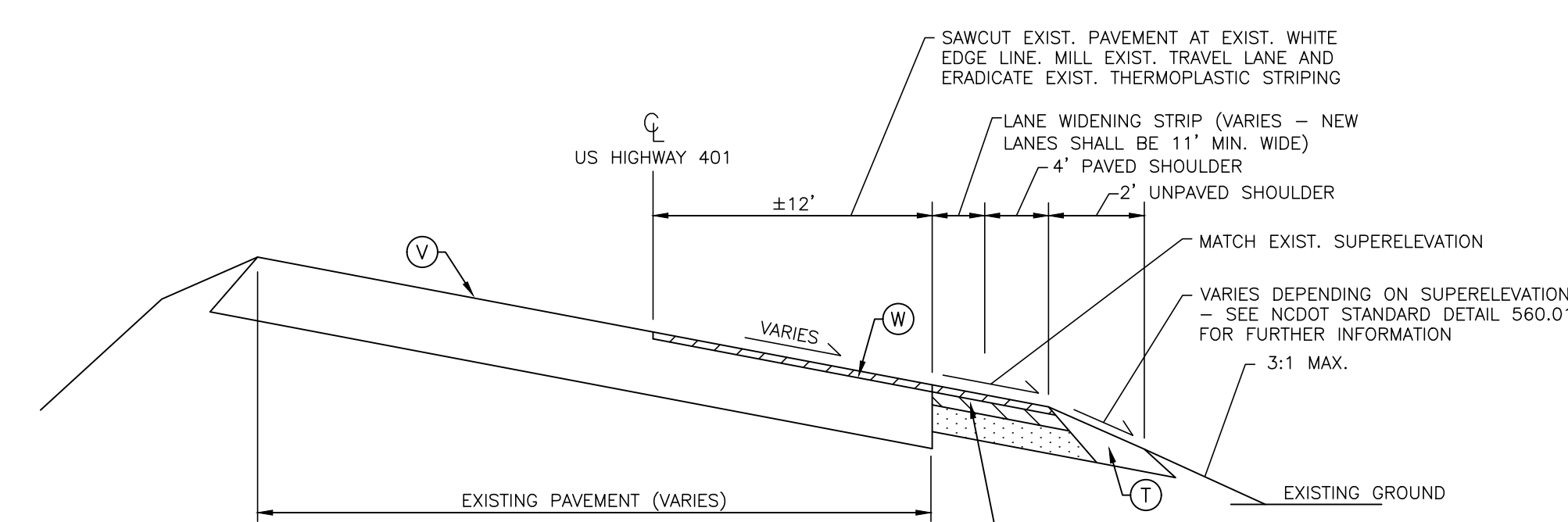
PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



**PARK ENTRANCE "B"**



**PARK ENTRANCE "A"**



**TYPICAL SECTION NO. 1  
US HIGHWAY 401 / LOUISBURG RD  
STA. 6+88 TO 11+36  
STA. 15+78 TO 19+71**

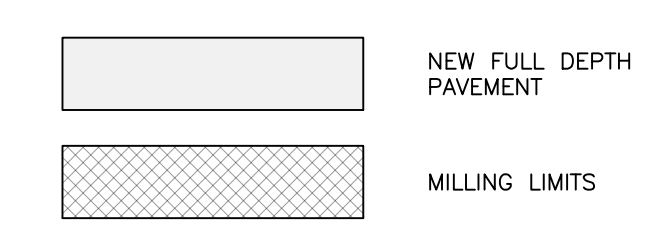
- Ⓢ SEE SHEET C8.00 FOR PAVEMENT SECTION
- Ⓣ COMPACTED EARTH
- Ⓦ WEDGING/OVERLAY (MIN. 1 1/2" S9.5C)
- Ⓥ EXISTING ROADWAY - SUPERELEVATION GRADE AND DIRECTION VARY

**PAVEMENT MARKING LEGEND**

LANE LINES/MARKINGS	ARROWS/CHARACTERS
T1 16" WHITE LINE, RAILROAD CROSSBAR	UA LEFT TURN ARROW
T2 24" WHITE STOPBAR	UB RIGHT TURN ARROW
T3 24" WHITE CROSSWALK LINE (HIGH VISIBILITY)	UC STRAIGHT ARROW
T4 4" WHITE RUMBLE STRIP	UD COMBINATION STRAIGHT/LEFT TURN ARROW
T5 4" YELLOW RUMBLE STRIP	UE COMBINATION STRAIGHT/RIGHT TURN ARROW
T6 6" WHITE EDGE LINE	UF COMBINATION LEFT/RIGHT ARROW
T7 6" YELLOW EDGE LINE	UG COMBINATION LEFT/STRAIGHT/RIGHT ARROW
T8 4" WHITE MINISKIP (2' - 6' SP.)	UH HANDICAP PARKING
T9 4" YELLOW MINISKIP (2' - 6' SP.)	UI ALPHANUMERIC CHARACTER
T10 12" WHITE MINISKIP (3' - 3' SP.) (ROUNDBOUTS ONLY)	UJ BICYCLE STRAIGHT ARROW
T11 6" WHITE MINISKIP (2' - 6' SP.)	UL BICYCLE CHARACTER
T12 6" YELLOW MINISKIP (2' - 6' SP.)	UM 12" YIELD LINE TRIANGLE
T13 8" WHITE MINISKIP (3' - 9' SP.)	UN 24" YIELD LINE TRIANGLE
T14 12" WHITE MINISKIP (3' - 9' SP.)	UO BICYCLE LEFT ARROW
T15 6" YELLOW SINGLE CENTER	UP MERGE ARROW
T16 6" YELLOW DOUBLE CENTER	UQ RAMP ARROW SYMBOL
T17 8" WHITE MINISKIP (3' - 3' SP.) (ROUNDBOUTS ONLY)	UR SHARROW
TA 4" WHITE EDGE LINE	US BICYCLE LOOP DETECTOR
TB 4" YELLOW EDGE LINE	UT U-TURN ARROW
TC 4" WHITE SKIP (10' - 30' SP.)	UU FISH-HOOK STRAIGHT ARROW
TD 4" WHITE MINISKIP (3' - 9' SP.)	UV FISH-HOOK STRAIGHT/LEFT ARROW
TE 4" WHITE SOLID LANE LINE	UW FISH-HOOK STRAIGHT/RIGHT ARROW
TF 4" YELLOW SKIP (10' - 30' SP.)	UX FISH-HOOK LEFT/RIGHT ARROW
TH 4" YELLOW SINGLE CENTER	UY FISH-HOOK LEFT/STRAIGHT/RIGHT ARROW
TI 4" YELLOW DOUBLE CENTER	UZ FISH-HOOK W/CIRCLE STRAIGHT ARROW
TJ 6" WHITE SKIP (10' - 30' SP.)	WA FISH-HOOK W/CIRCLE LEFT ARROW
TK 6" WHITE MINISKIP (3' - 9' SP.)	WB FISH-HOOK W/CIRCLE STRAIGHT/LEFT ARROW
TL 6" WHITE SOLID LANE LINE	WC FISH-HOOK W/CIRCLE LEFT/STRAIGHT/RIGHT ARROW
TM 6" YELLOW SKIP (10' - 30' SP.)	
TN 8" WHITE GORELINE	
TO 8" WHITE DIAGONAL	
TP 8" YELLOW DIAGONAL	
TQ 8" WHITE CROSSWALK LINE	
TR 8" WHITE SOLID LANE LINE	
TS 12" WHITE GORELINE	
TT 12" WHITE SOLID LANE LINE	
TU 12" WHITE DIAGONAL (45MPH OR GREATER)	
TV 12" YELLOW DIAGONAL (45MPH OR GREATER)	

NOTE:  
ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND ARE TO BE PLACED PER NCDOT STANDARDS (REFERENCE NCDOT DETAILS (1205.01-1205.12)

**ROAD WIDENING LEGEND**



M:\Projects\WOL\2020110039 Frazier Farm PH1A\04-Production\Engineering\Phase1A\CID\2020110039-PH1-RW1.dwg, 2/12/2024 8:10:57 PM, Eric Domonell





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**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-RW3  
CHECKED BY EMD  
DRAWN BY SME  
SCALE 1"=40'  
DATE 02.01.2024

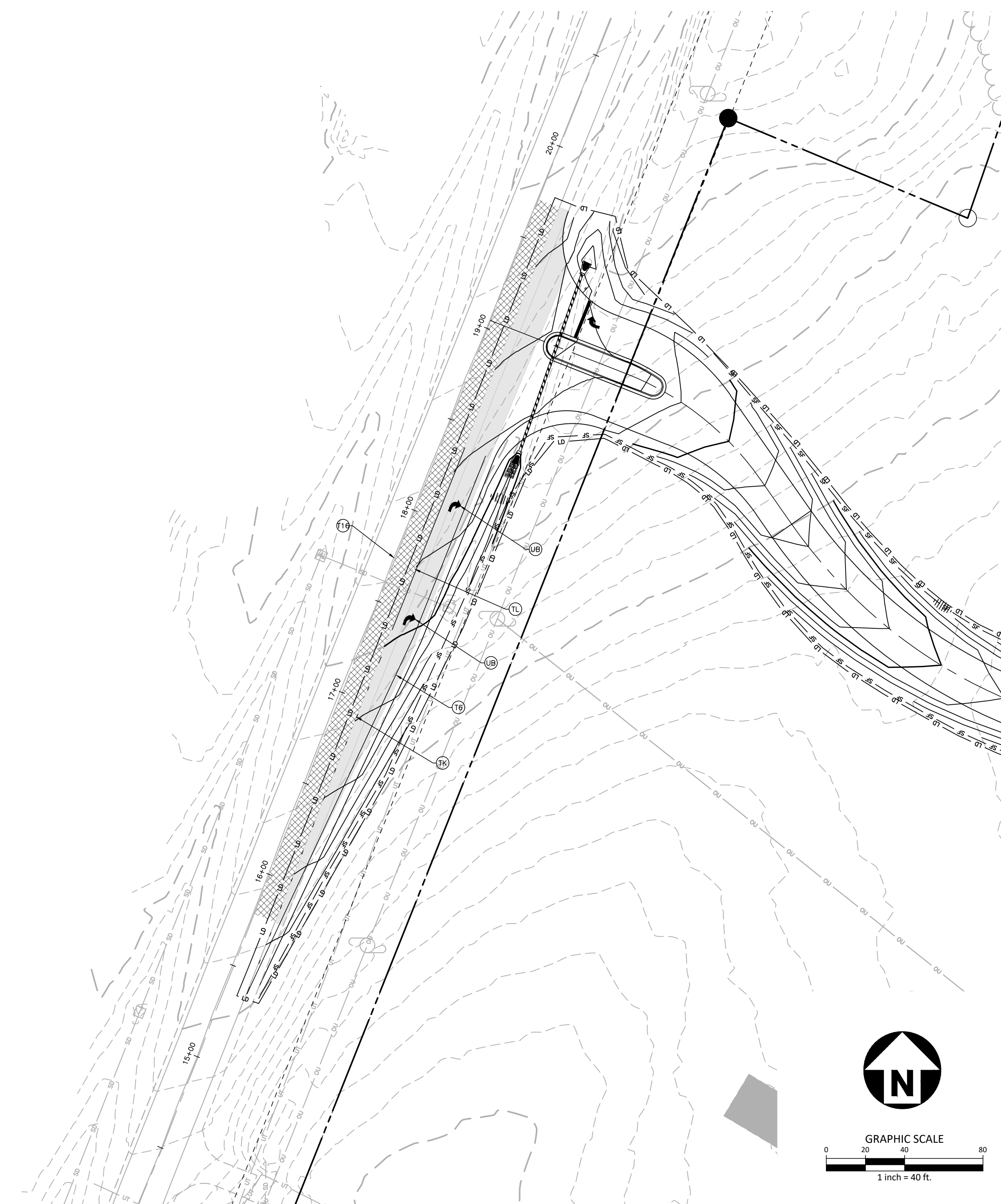
**SHEET**

**LOUISBURG RD  
STRIPING PLAN**

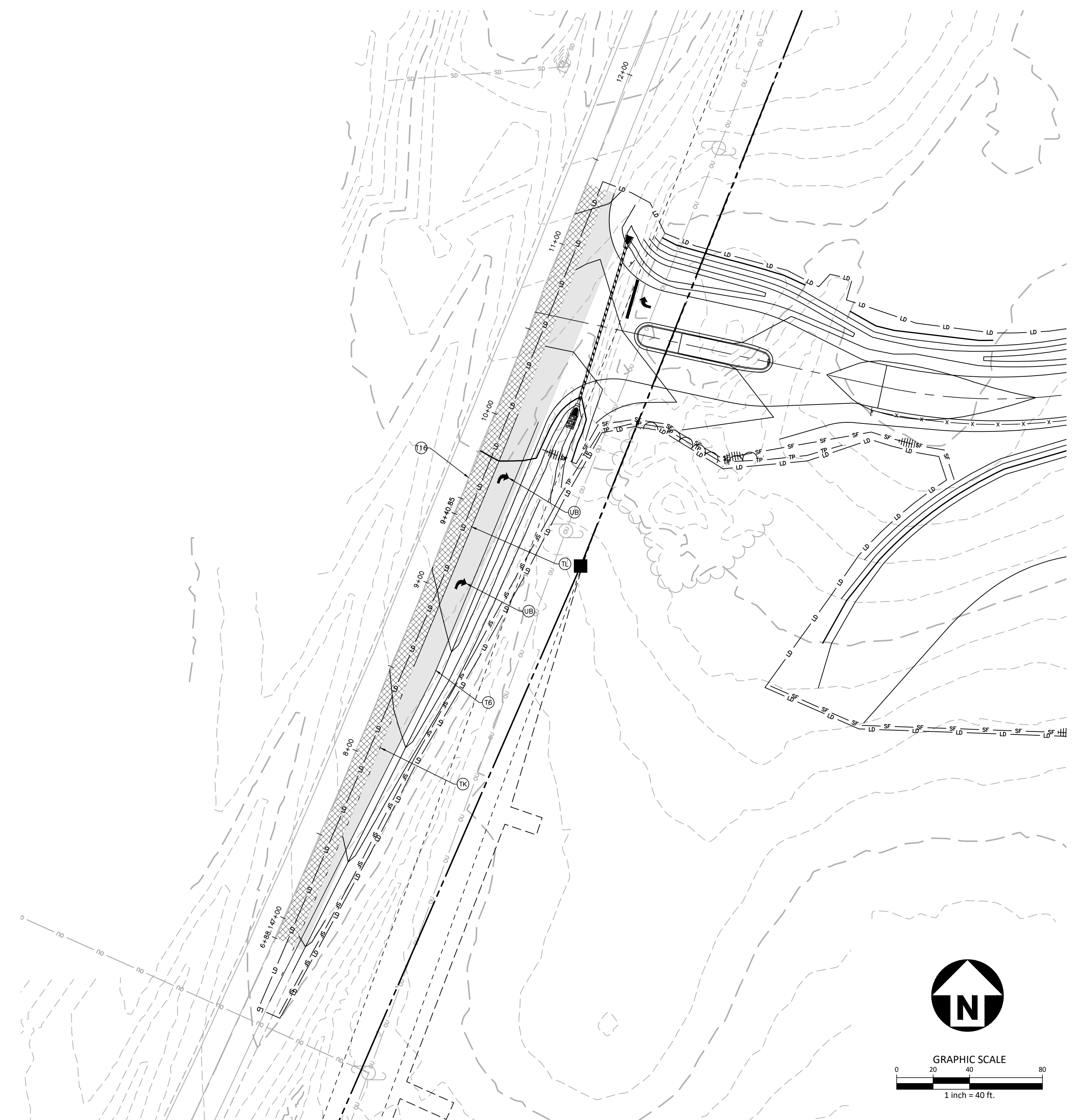
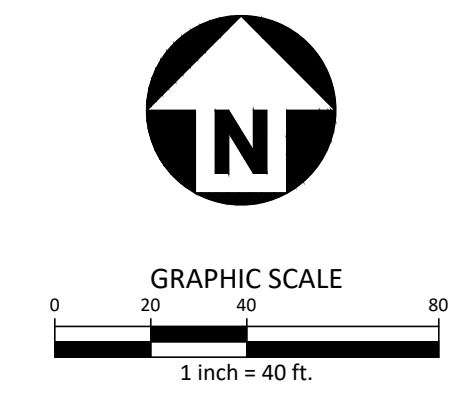
**C7.01**

CID-23-5

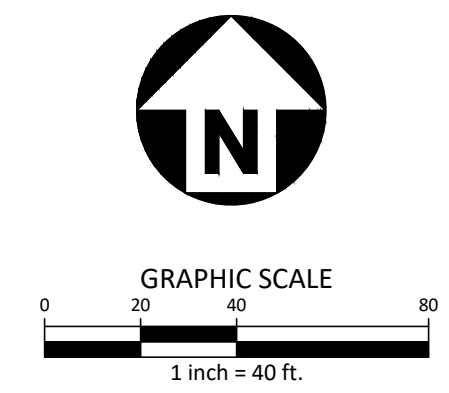
PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



**PARK ENTRANCE "B"**



**PARK ENTRANCE "A"**



**PAVEMENT MARKING LEGEND**

LANE LINES/MARKINGS	ARROWS/CHARACTERS
T1 16" WHITE LINE, RAILROAD CROSSBAR	UA LEFT TURN ARROW
T2 24" WHITE STOPBAR	UB RIGHT TURN ARROW
T3 24" WHITE CROSSWALK LINE (HIGH VISIBILITY)	UC STRAIGHT ARROW
T4 4" WHITE RUMBLE STRIP	UD COMBINATION STRAIGHT/LEFT TURN ARROW
T5 4" YELLOW RUMBLE STRIP	UE COMBINATION STRAIGHT/RIGHT TURN ARROW
T6 6" WHITE EDGE LINE	UF COMBINATION LEFT/RIGHT ARROW
T7 6" YELLOW EDGE LINE	UG COMBINATION LEFT/STRAIGHT/RIGHT ARROW
T8 4" WHITE MINISKIP (2' - 6' SP.)	UH HANDICAP PARKING
T9 4" YELLOW MINISKIP (2' - 6' SP.)	UI ALPHANUMERIC CHARACTER
T10 12" WHITE MINISKIP (3' - 3' SP.) (ROUNDBOUTS ONLY)	UJ BICYCLE SYMBOL
T11 6" WHITE MINISKIP (2' - 6' SP.)	UK BICYCLE STRAIGHT ARROW
T12 6" YELLOW MINISKIP (2' - 6' SP.)	UL BICYCLE CHARACTER
T13 8" WHITE MINISKIP (3' - 9' SP.)	UM 12" YIELD LINE TRIANGLE
T14 12" WHITE MINISKIP (3' - 9' SP.)	UN 24" YIELD LINE TRIANGLE
T15 6" YELLOW SINGLE CENTER	UO BICYCLE LEFT ARROW
T16 6" YELLOW DOUBLE CENTER	UP MERGE ARROW
T17 8" WHITE MINISKIP (3' - 3' SP.) (ROUNDBOUTS ONLY)	UQ RAMP ARROW SYMBOL
TA 4" WHITE EDGE LINE	UR SHARROW
TB 4" YELLOW EDGE LINE	US BICYCLE LOOP DETECTOR
TC 4" WHITE SKIP (10' - 30' SP.)	UT U-TURN ARROW
TD 4" WHITE MINISKIP (3' - 9' SP.)	UU FISH-HOOK STRAIGHT ARROW
TE 4" WHITE SOLID LANE LINE	UV FISH-HOOK STRAIGHT/LEFT ARROW
TF 4" YELLOW SKIP (10' - 30' SP.)	UW FISH-HOOK STRAIGHT/RIGHT ARROW
TH 4" YELLOW SINGLE CENTER	UX FISH-HOOK LEFT/RIGHT ARROW
TI 4" YELLOW DOUBLE CENTER	UY FISH-HOOK LEFT/STRAIGHT/RIGHT ARROW
TJ 6" WHITE SKIP (10' - 30' SP.)	UZ FISH-HOOK W/CIRCLE STRAIGHT ARROW
TK 6" WHITE MINISKIP (3' - 9' SP.)	WA FISH-HOOK W/CIRCLE LEFT ARROW
TL 6" WHITE SOLID LANE LINE	WB FISH-HOOK W/CIRCLE STRAIGHT/LEFT ARROW
TM 6" YELLOW SKIP (10' - 30' SP.)	WC FISH-HOOK W/CIRCLE LEFT/STRAIGHT/RIGHT ARROW
TN 8" WHITE GORELINE	
TO 8" WHITE DIAGONAL	
TP 8" YELLOW DIAGONAL	
TQ 8" WHITE CROSSWALK LINE	
TR 8" WHITE SOLID LANE LINE	
TS 12" WHITE GORELINE	
TT 12" WHITE SOLID LANE LINE	
TU 12" WHITE DIAGONAL (45MPH OR GREATER)	
TV 12" YELLOW DIAGONAL (45MPH OR GREATER)	

NOTE:  
ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC  
AND ARE TO BE PLACED PER NCDOT STANDARDS  
(REFERENCE NCDOT DETAILS (1205.01-1205.12)

M:\Projects\WOL\2020110039 Frazier Farm PH1A\04-Production\Engineering\Phase1A\CAD\2020110039-PH1-RW3.dwg, 2/17/2024 8:11:01 PM, Eric Domonell





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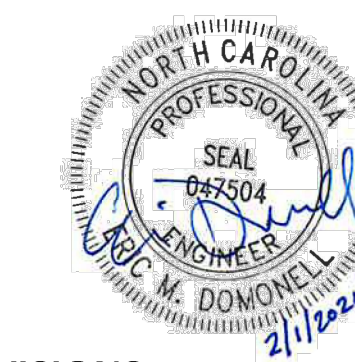
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**FRAZIER FARM PARK  
CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA**



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 202011039-PH1-RW2  
CHECKED BY EMD  
DRAWN BY SME  
SCALE H:1"=10' / V:1"=2'  
DATE 02.01.2024

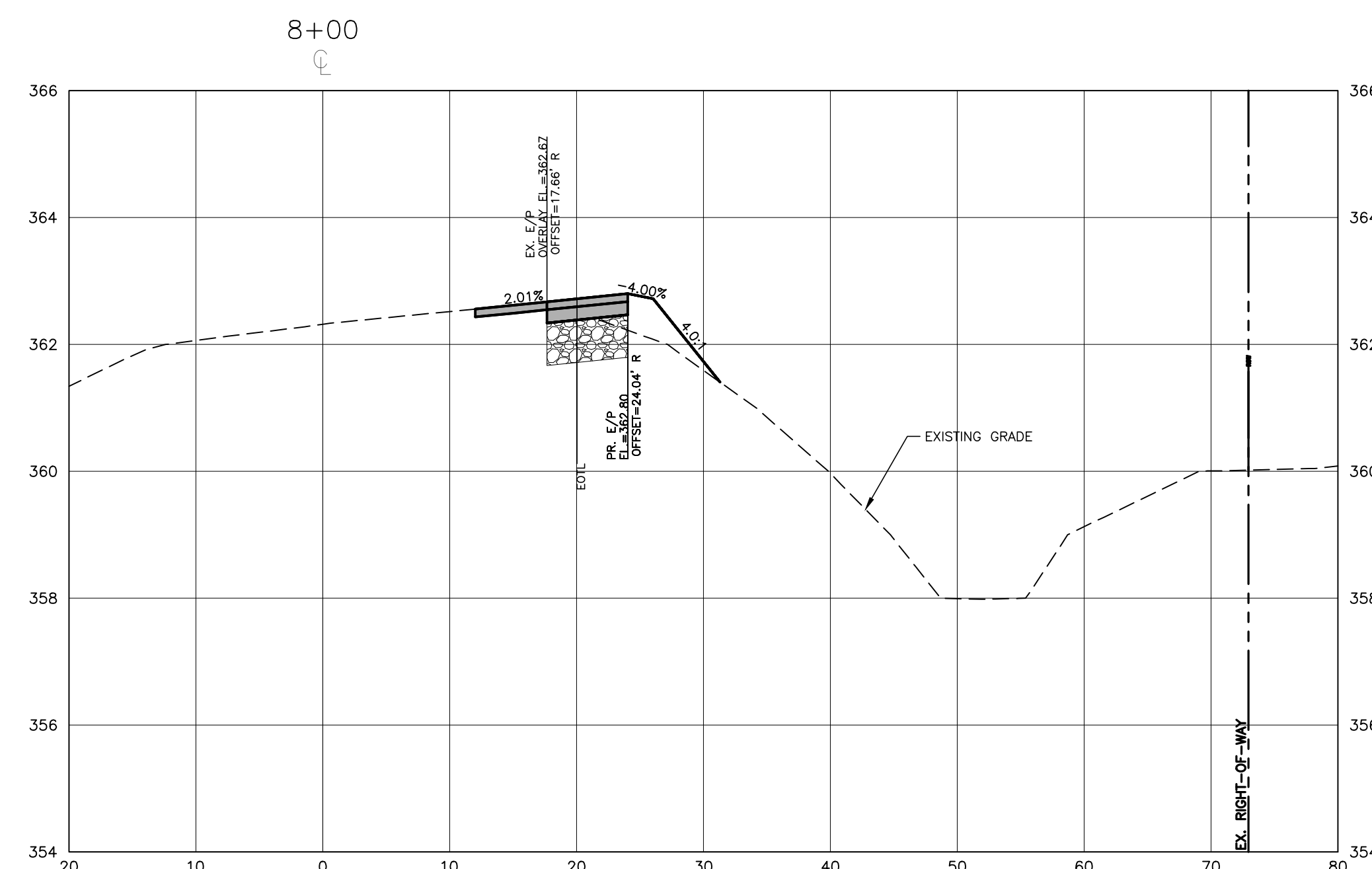
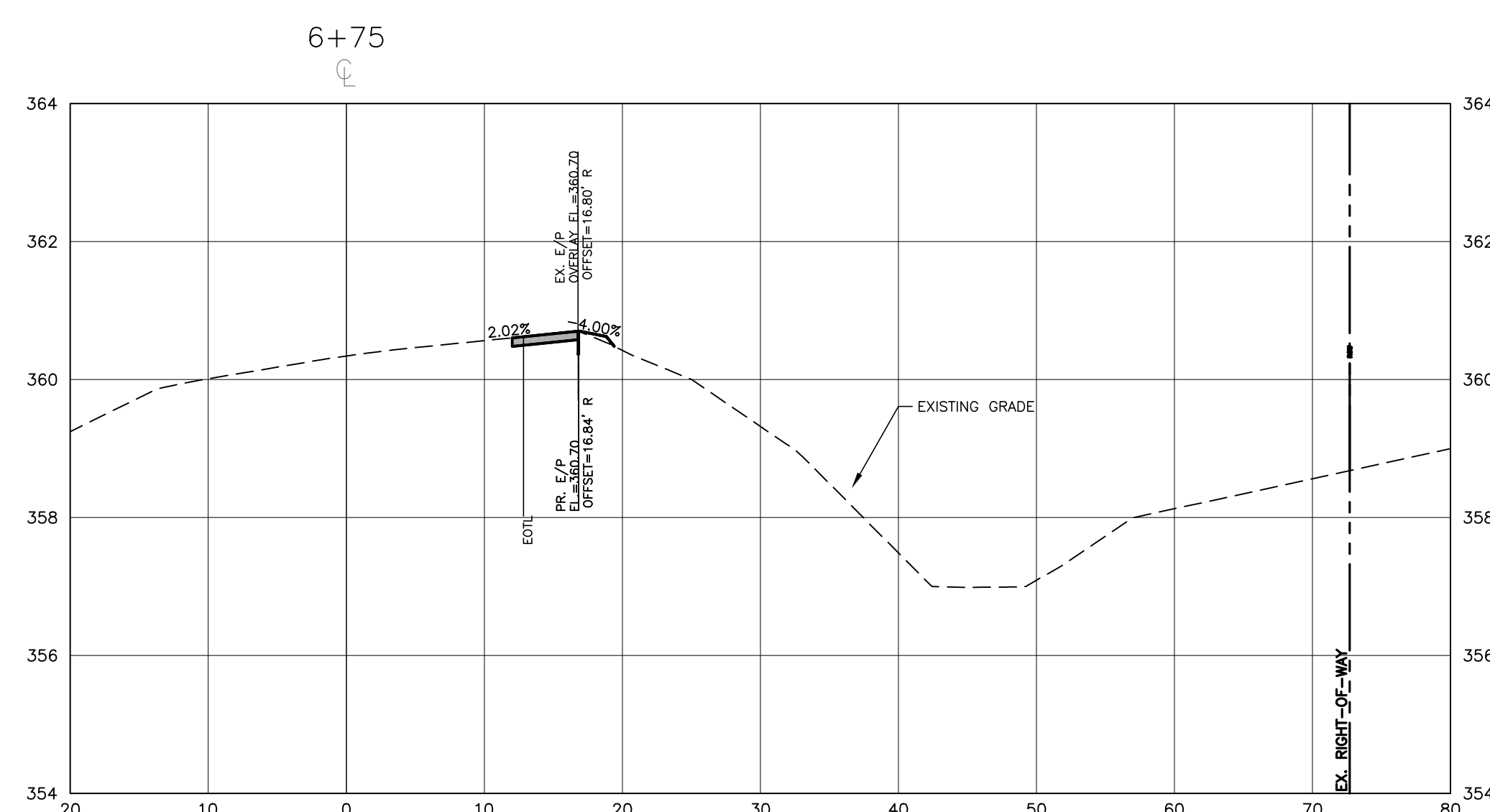
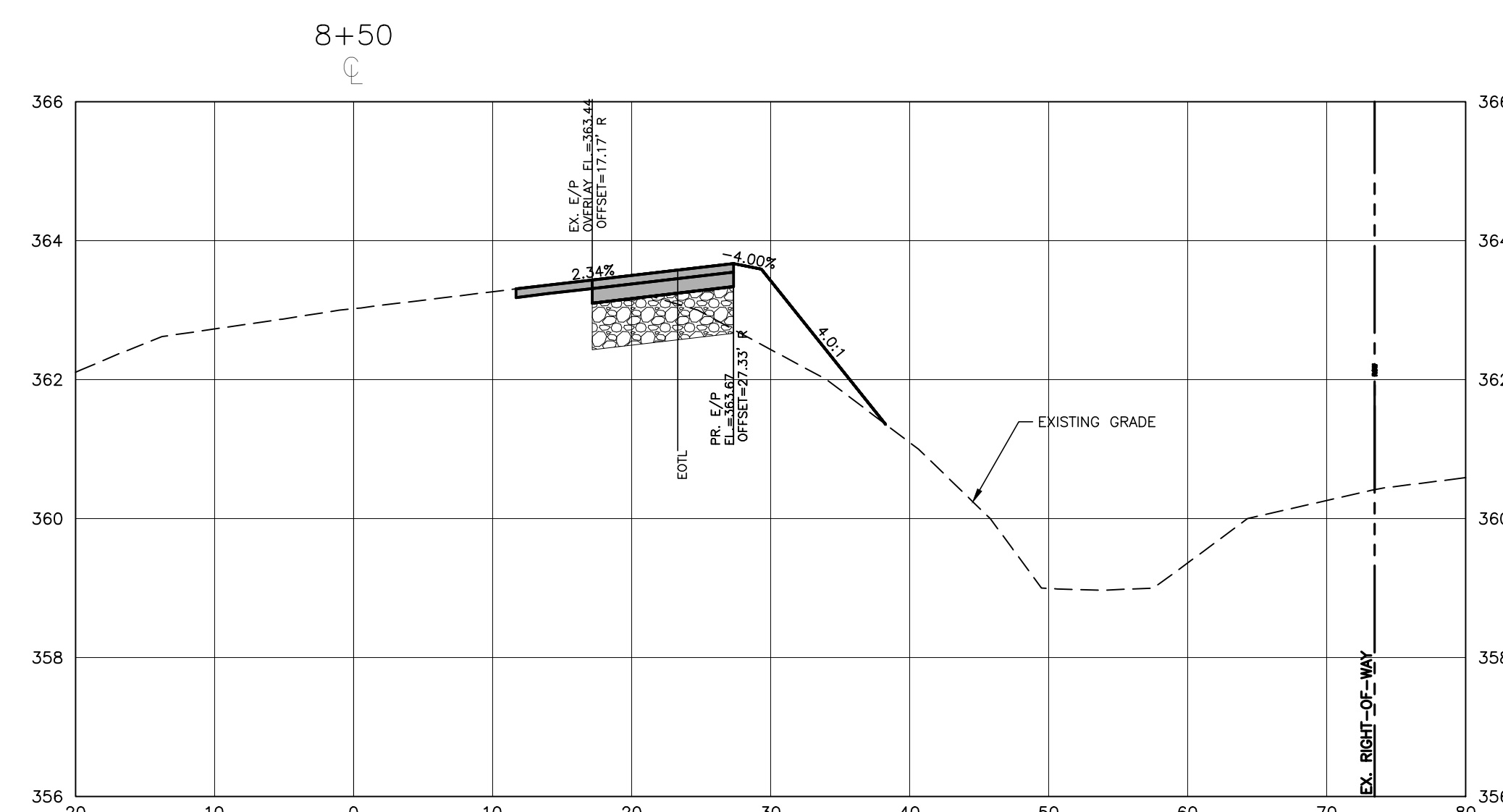
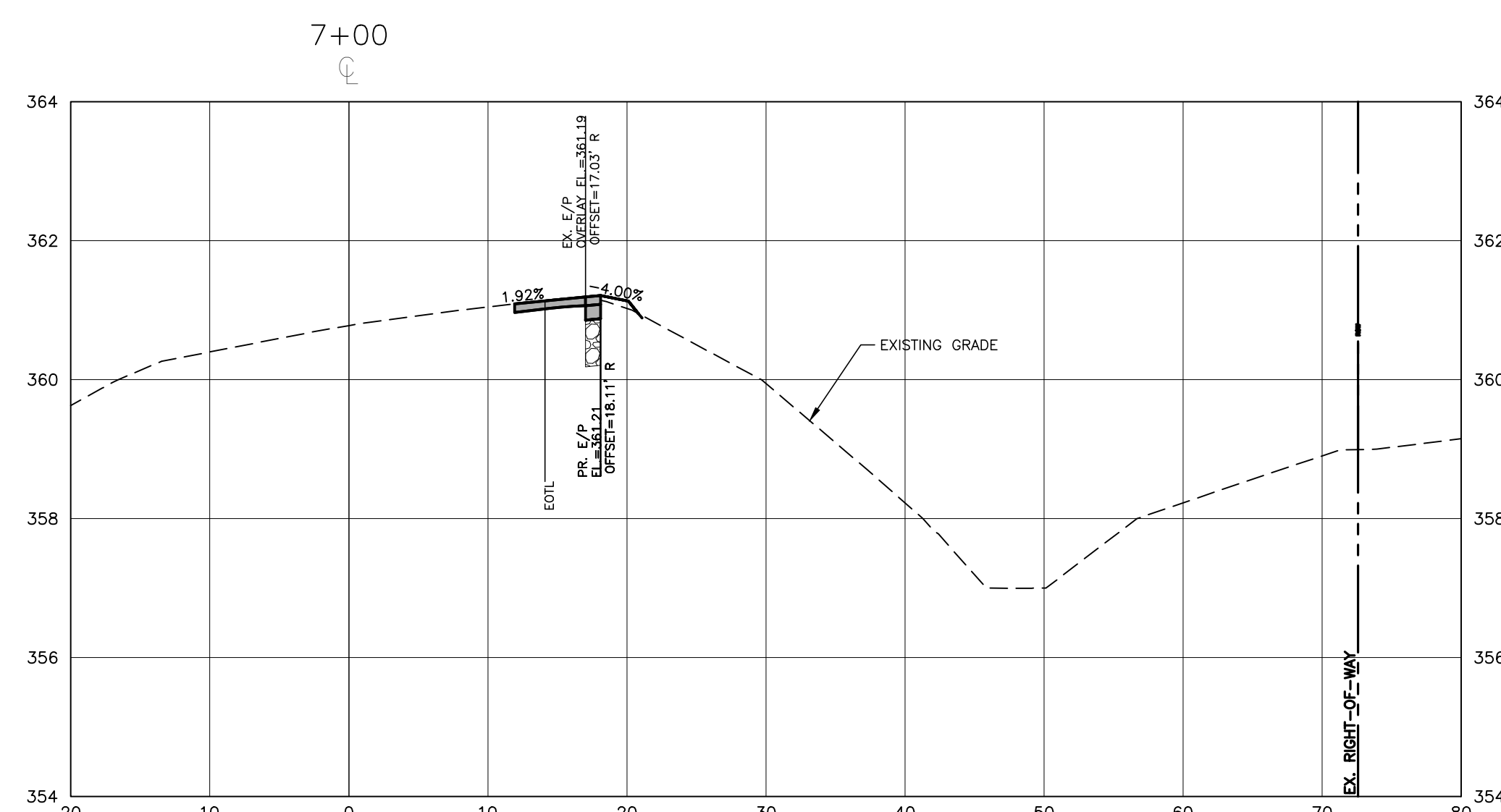
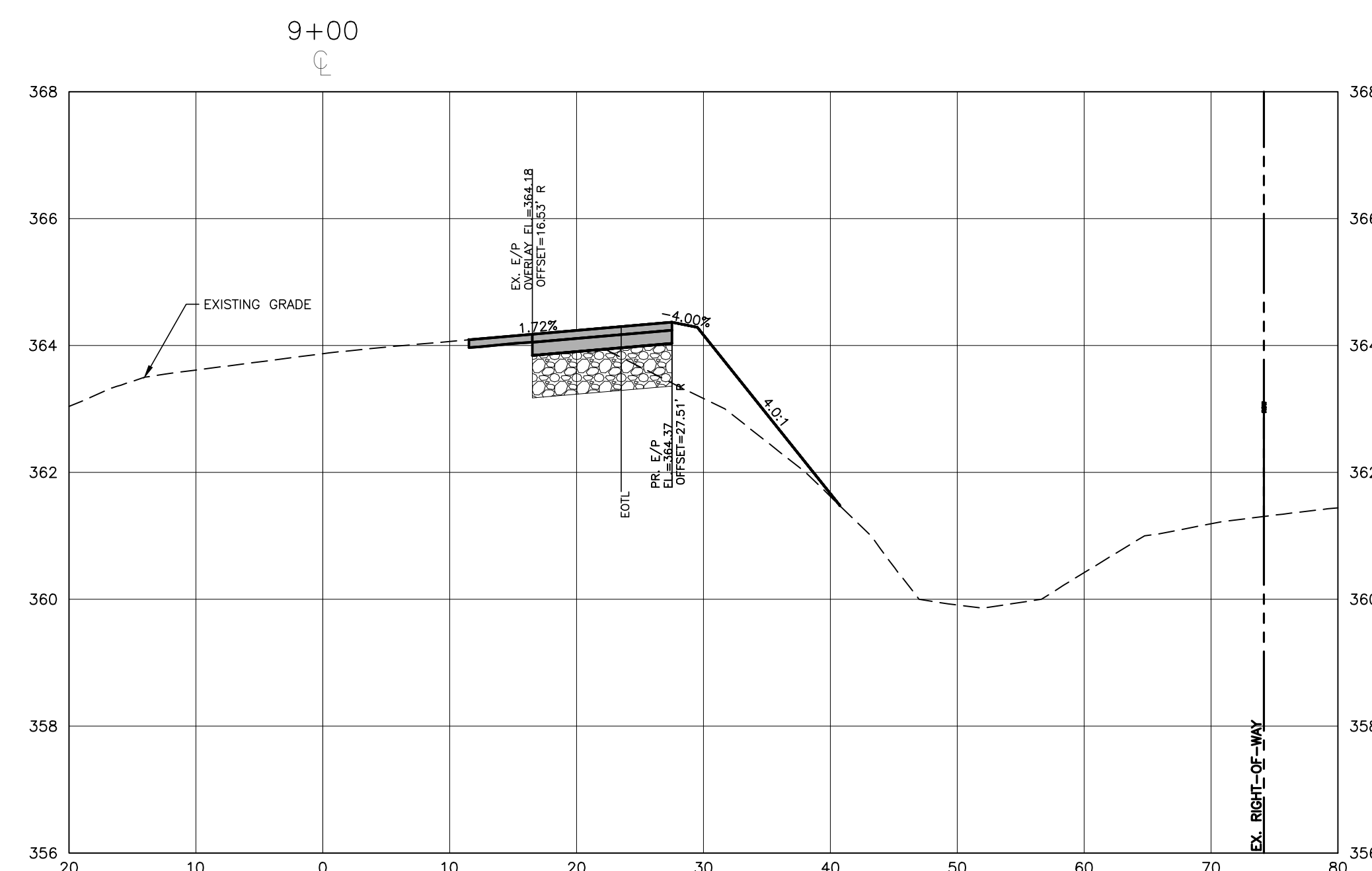
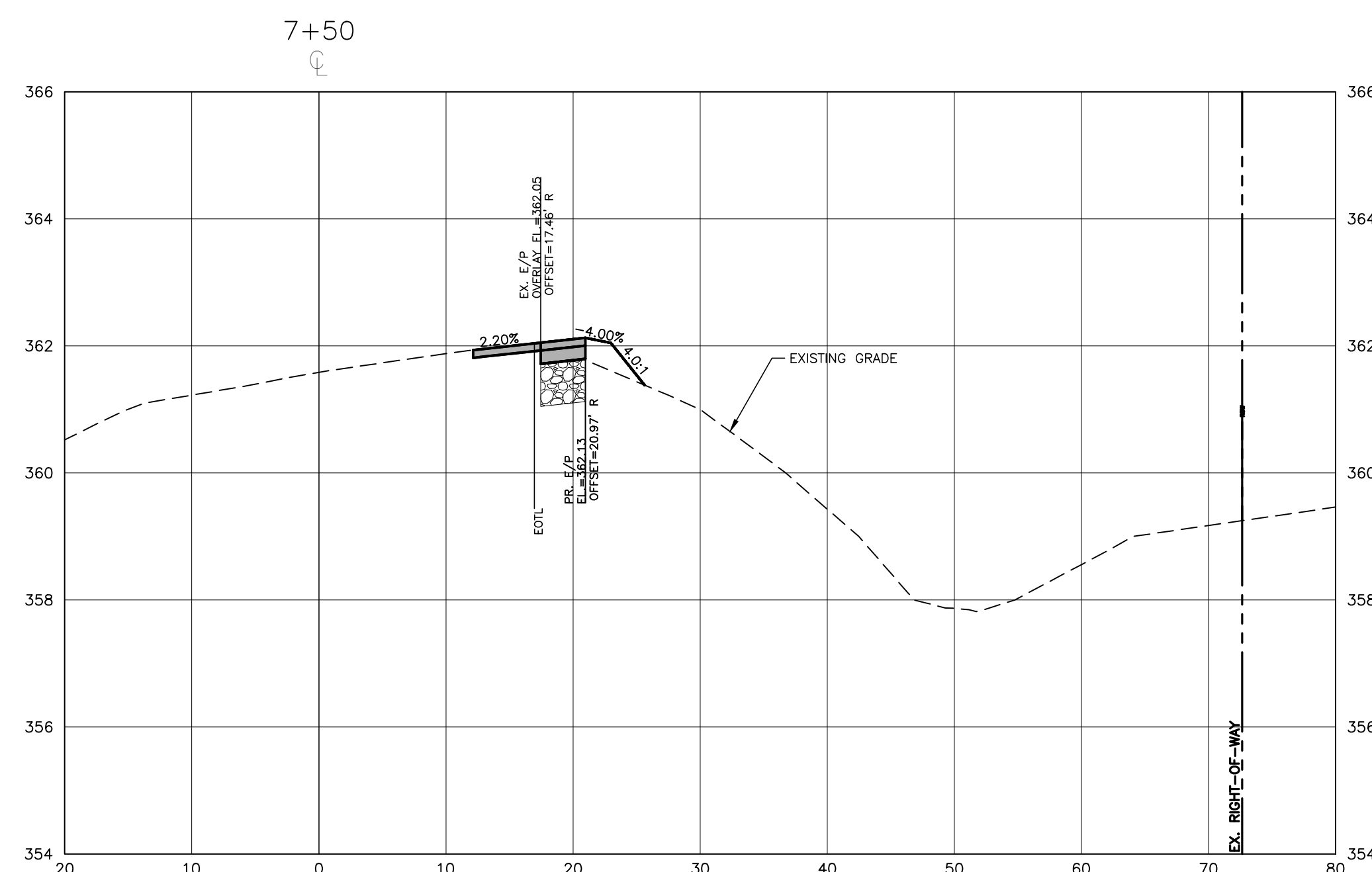
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**LOUISBURG RD  
WIDENING  
CROSS SECTIONS**

**C7.10**

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



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**REVISIONS**

NO. DATE

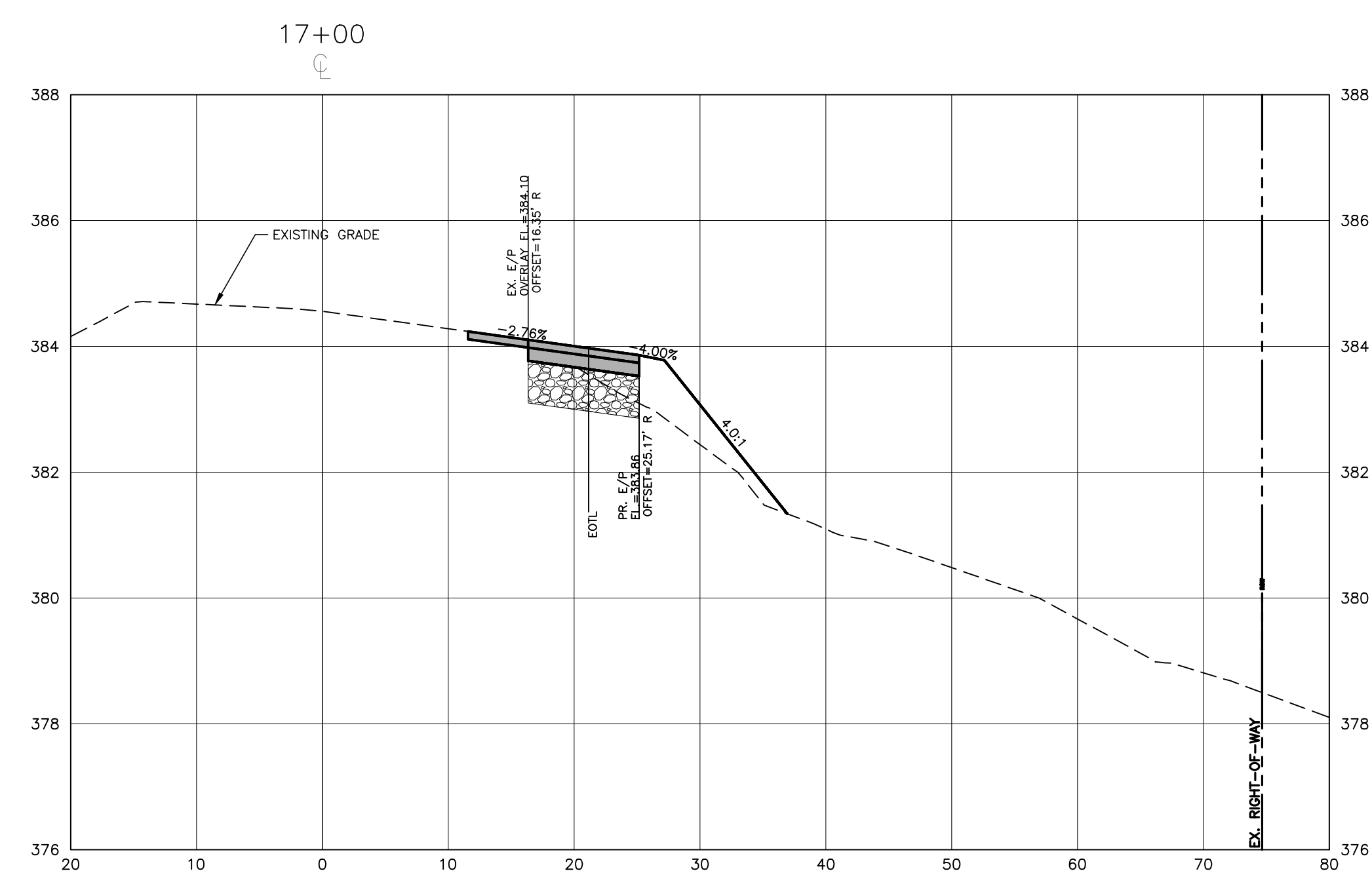
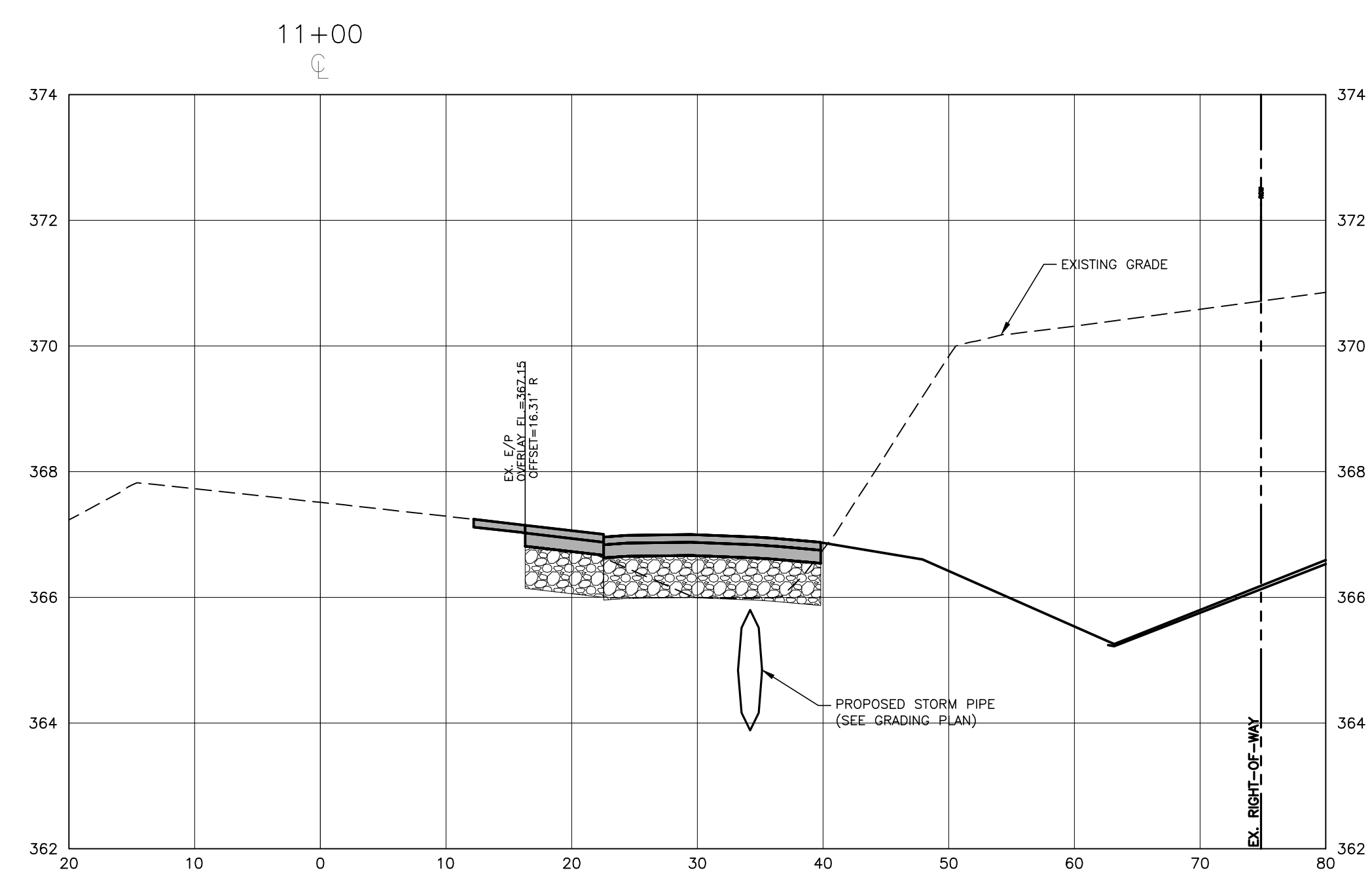
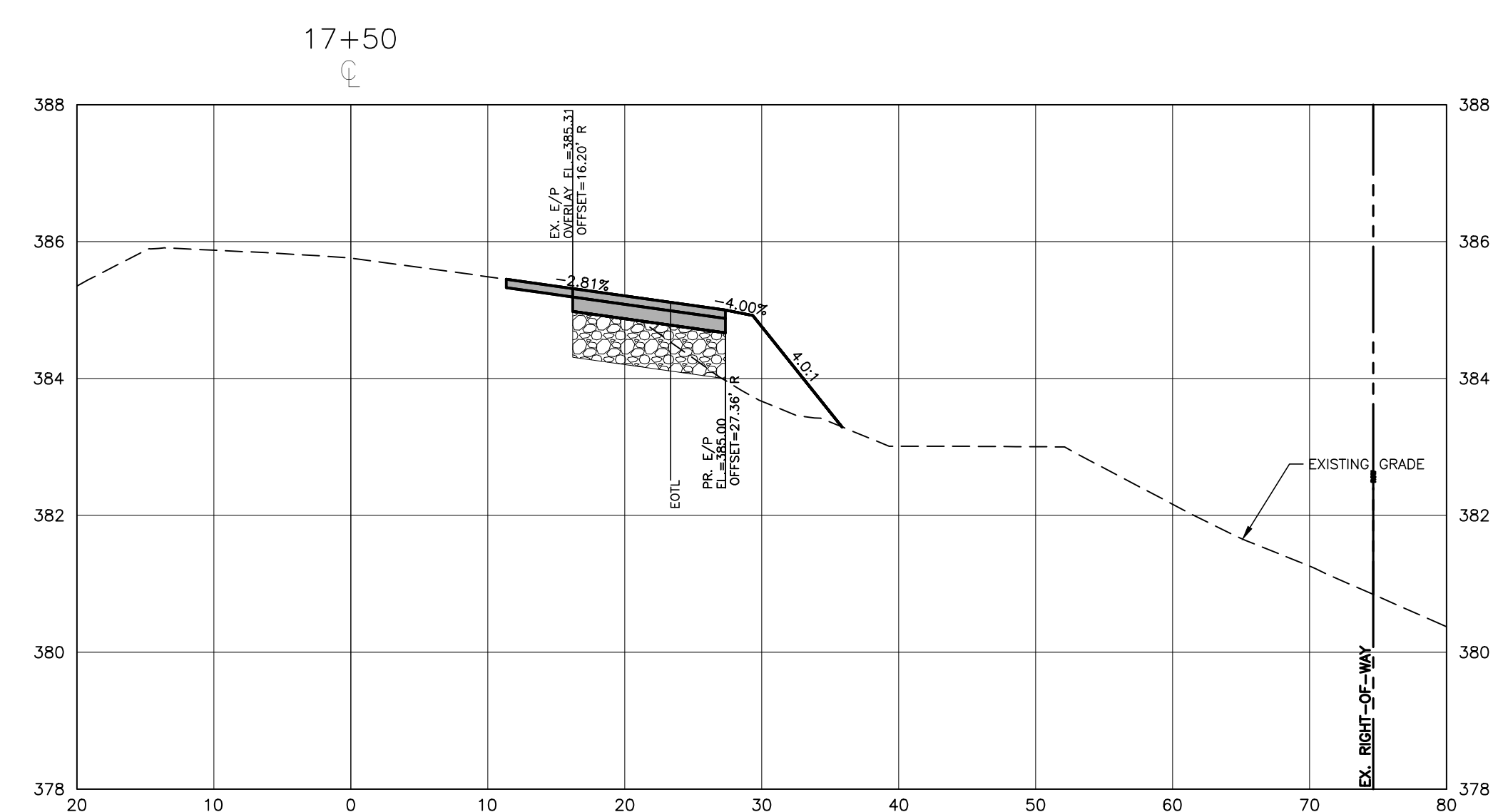
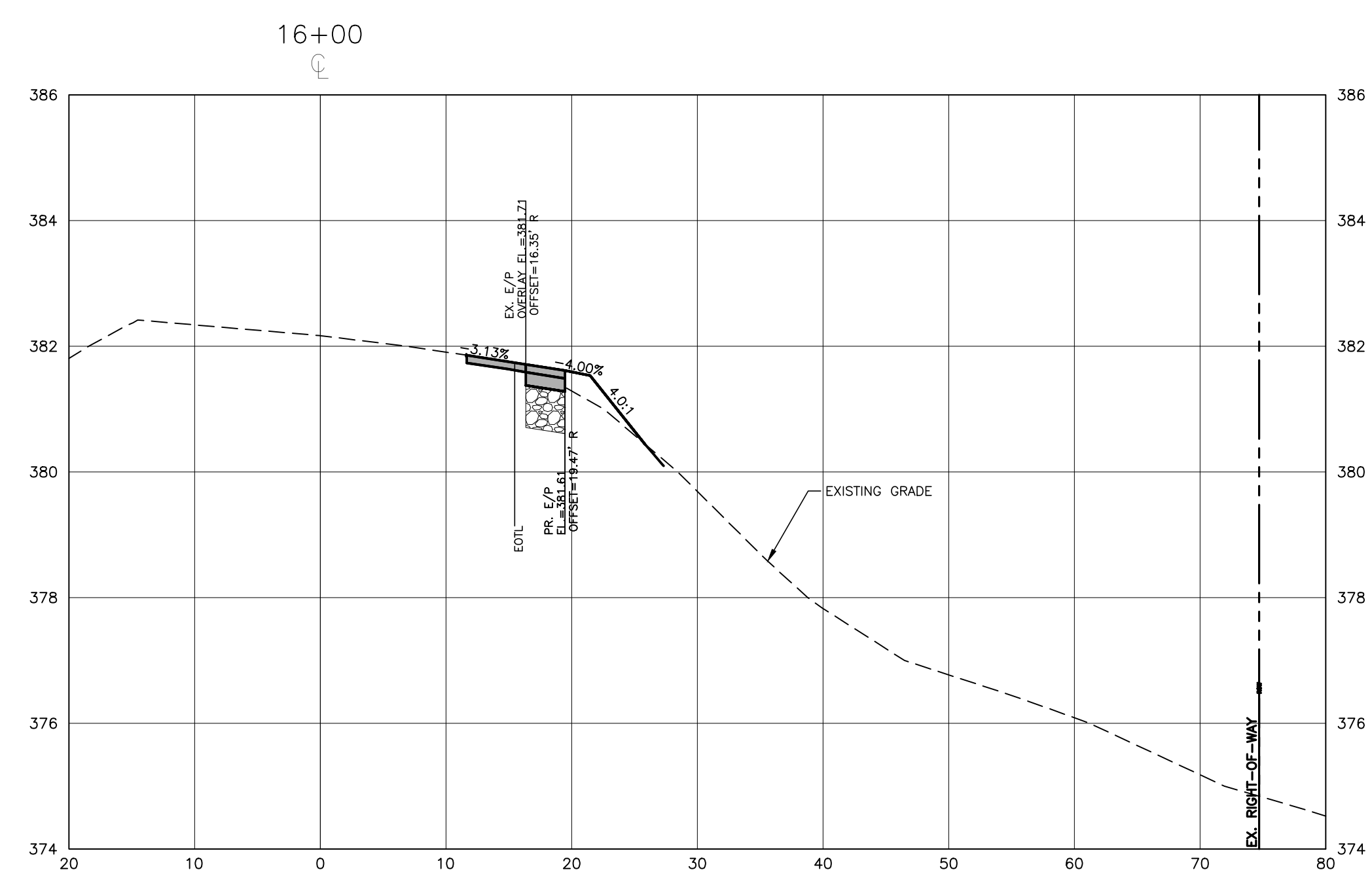
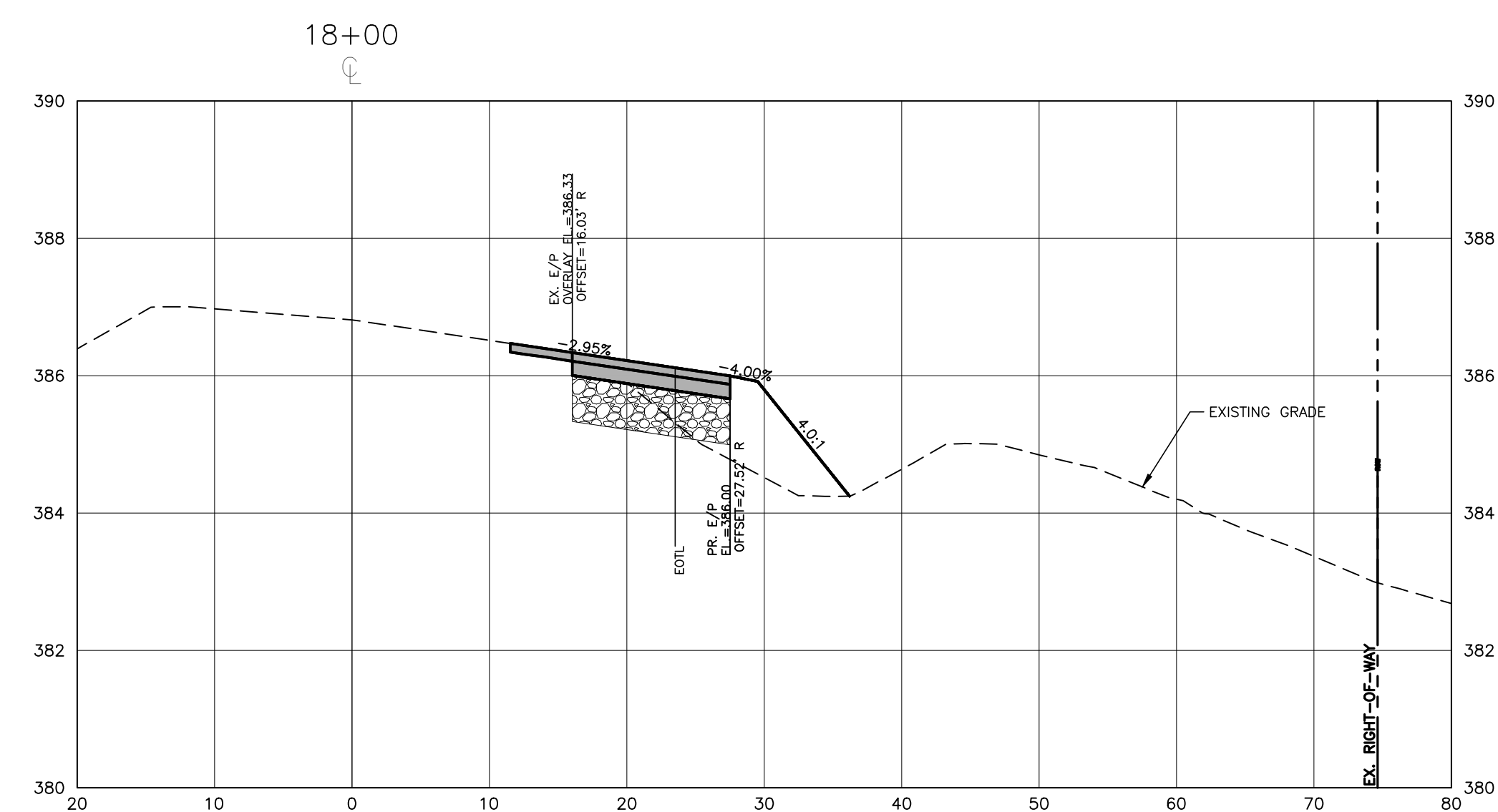
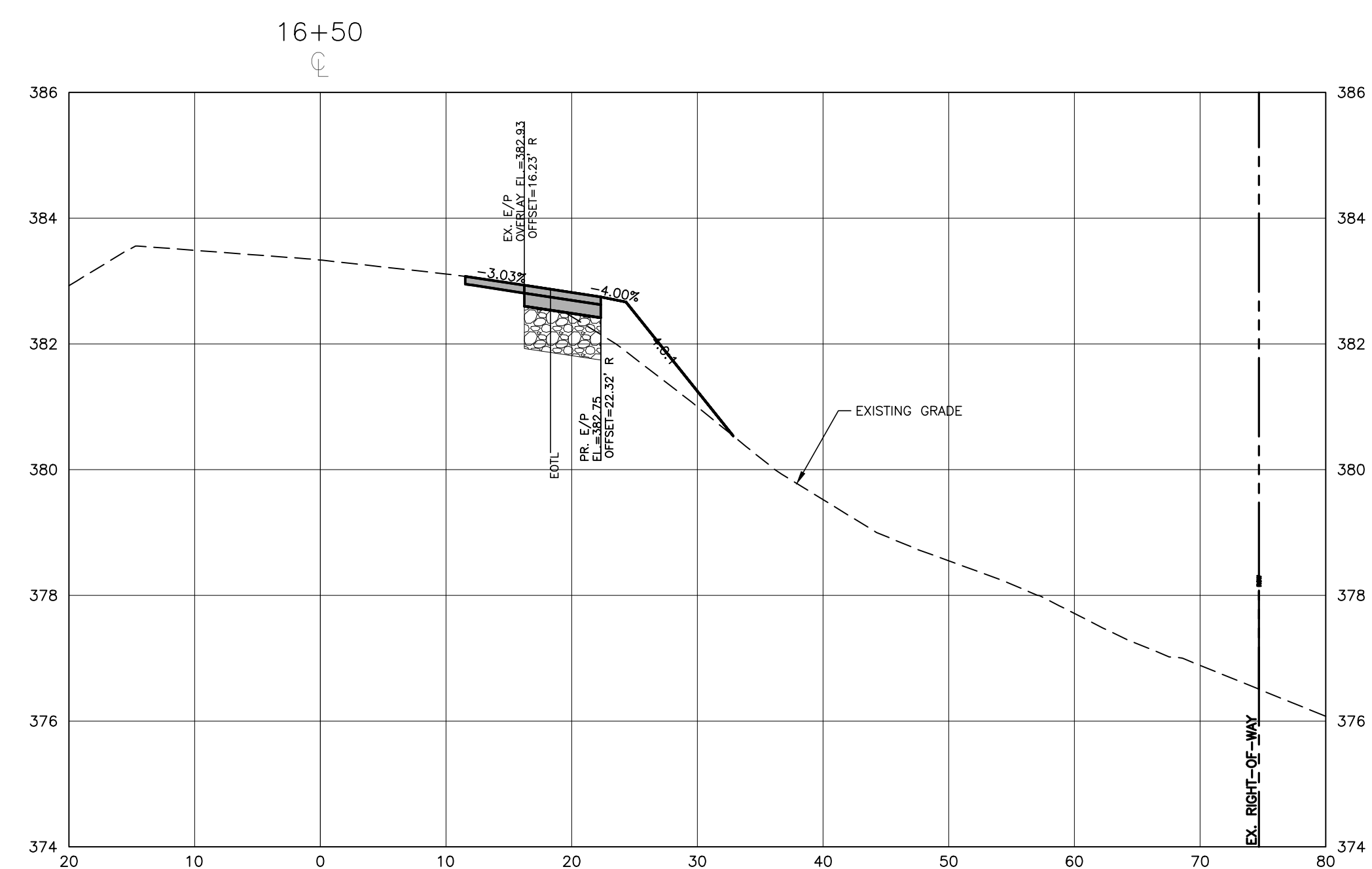
**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 202011039-PH1-RW2  
CHECKED BY EMD  
DRAWN BY SME  
SCALE H:1"=10' / V:1"=2'  
DATE 02.01.2024

**SHEET**

**LOUISBURG RD  
WIDENING  
CROSS SECTIONS**

**C7.11**



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CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA



**REVISIONS**

NO. DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-D1  
CHECKED BY EMD  
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SCALE N/A  
DATE 02.01.2024

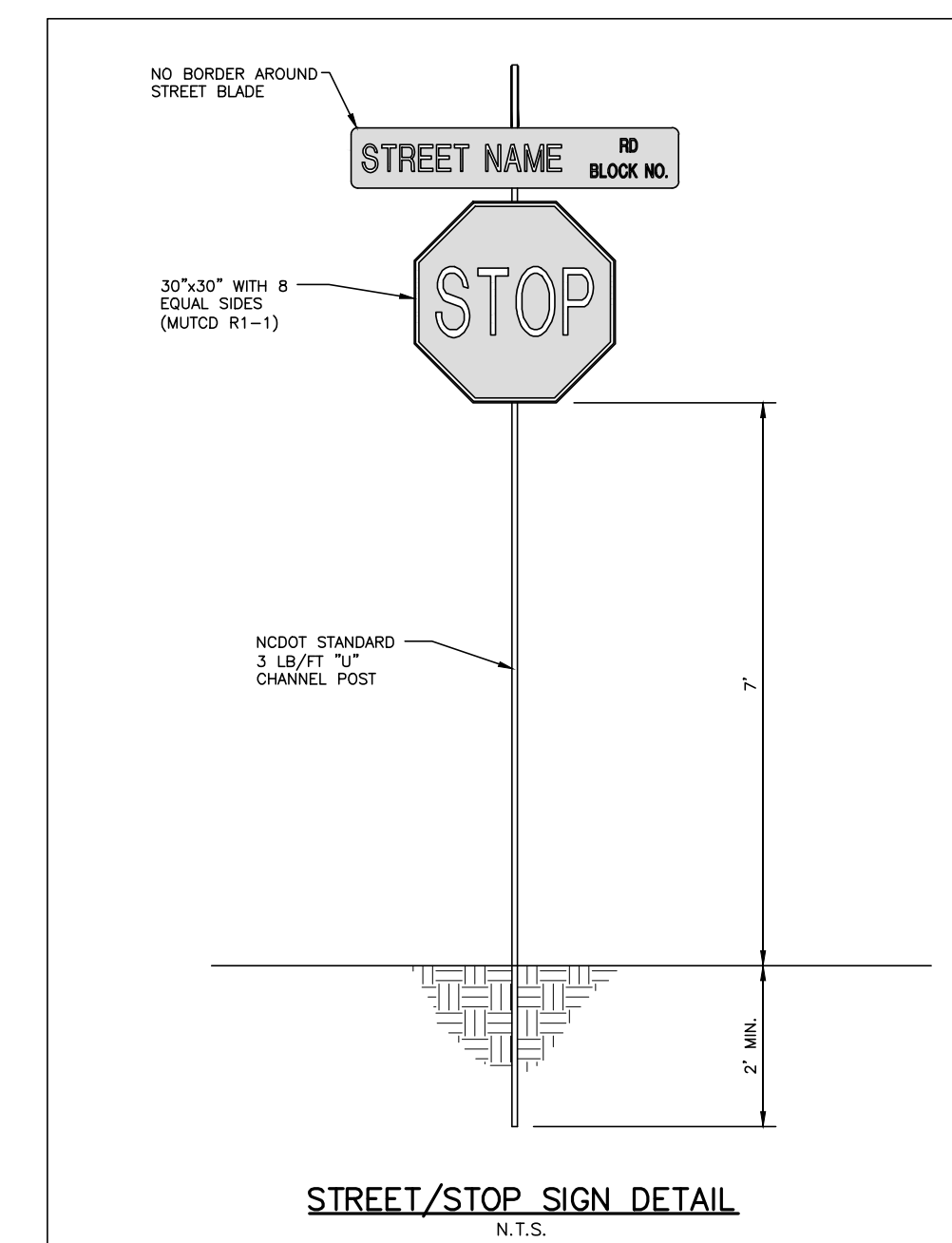
**SHEET**

**SITE DETAILS**

**C8.00**

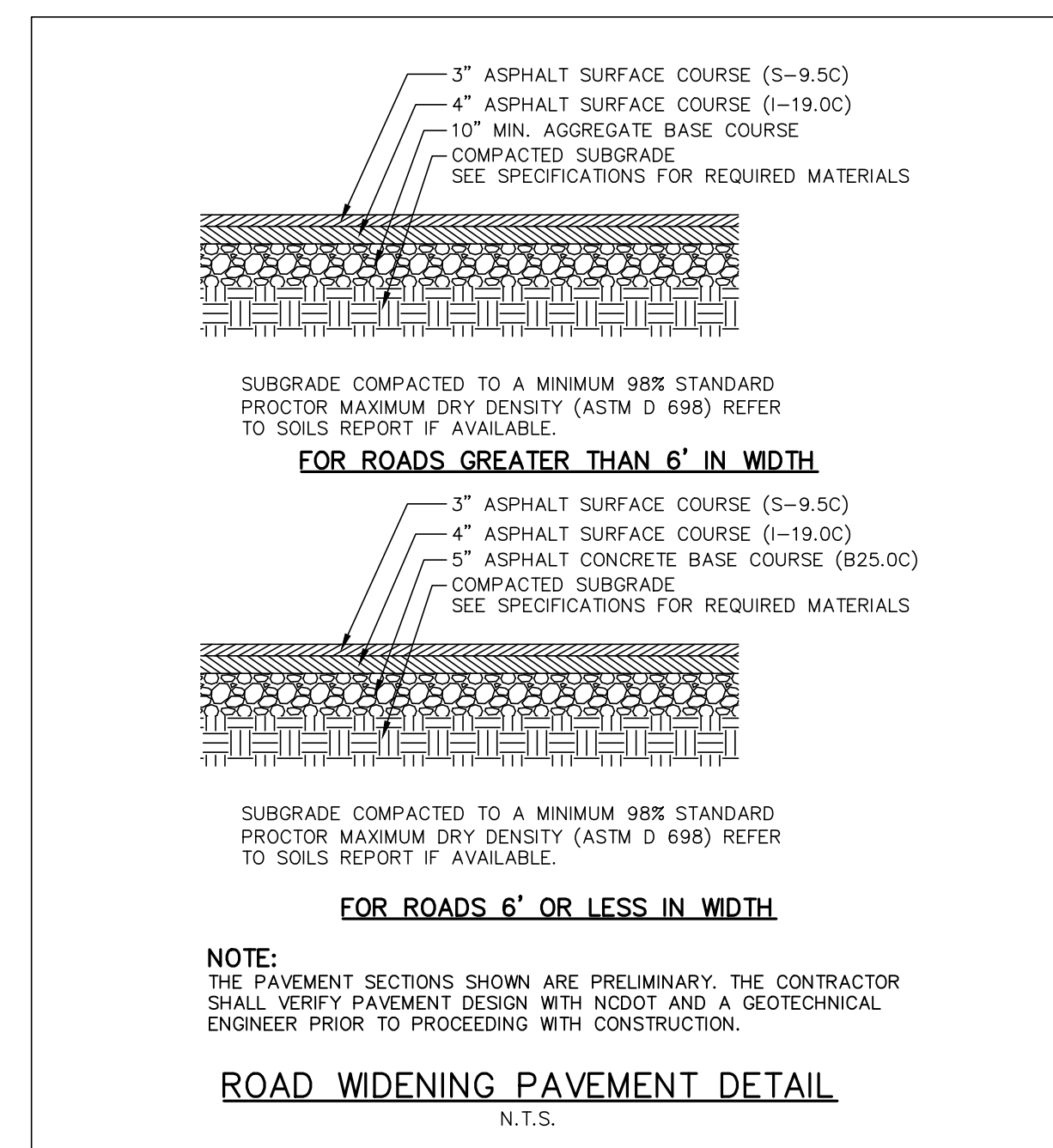
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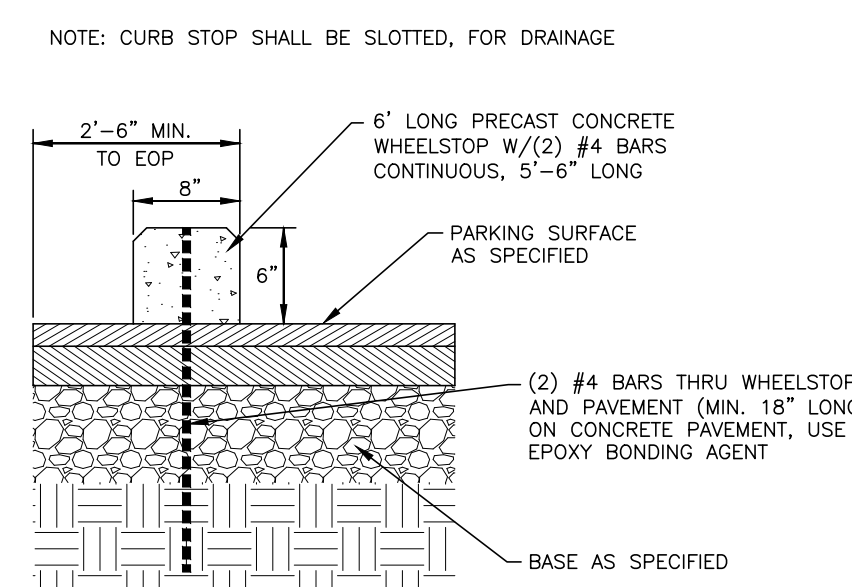
**03 STOP AND STREET SIGN DETAIL**

SCALE: N.T.S.



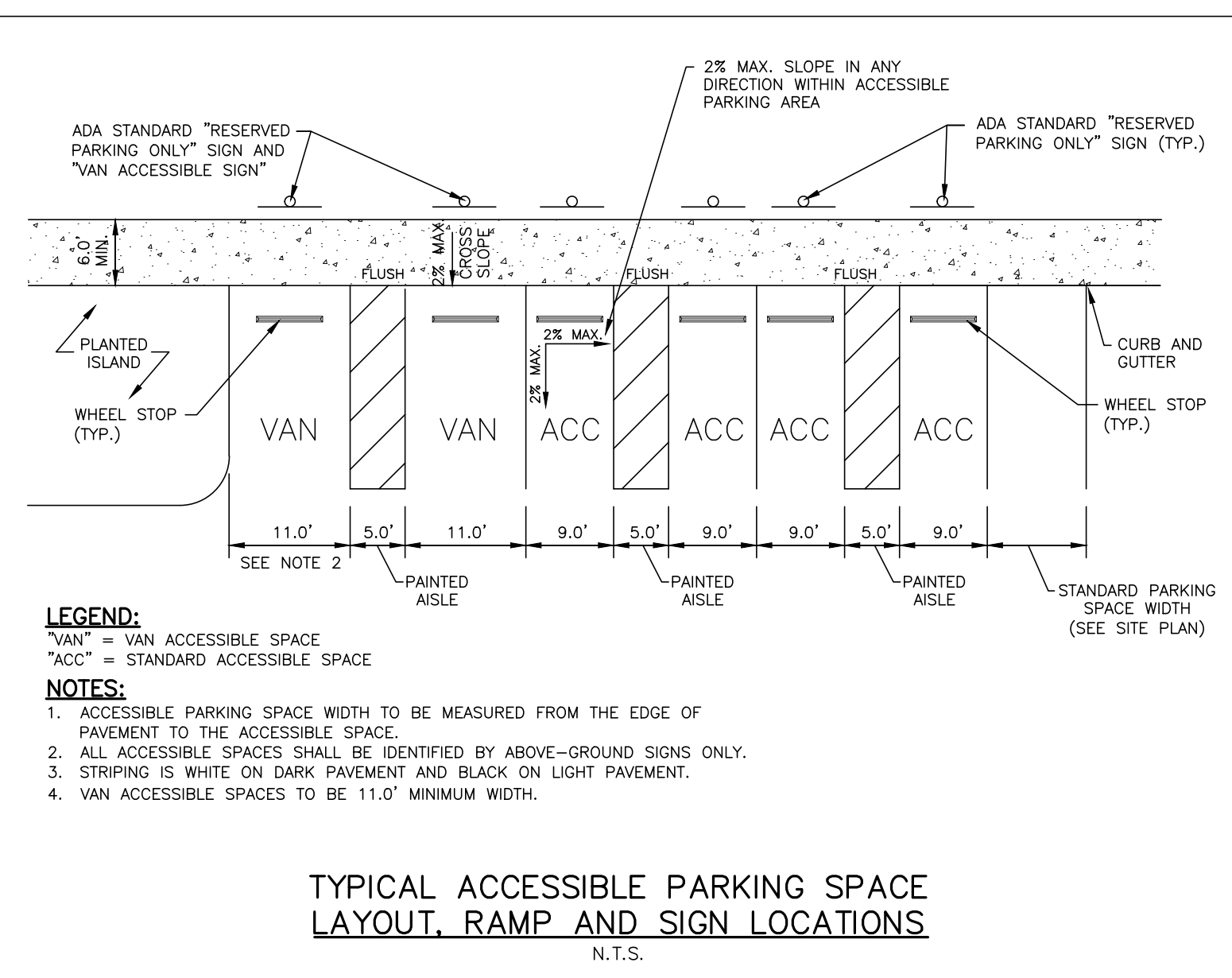
**02 US-401 PAVEMENT SECTION**

SCALE: N.T.S.



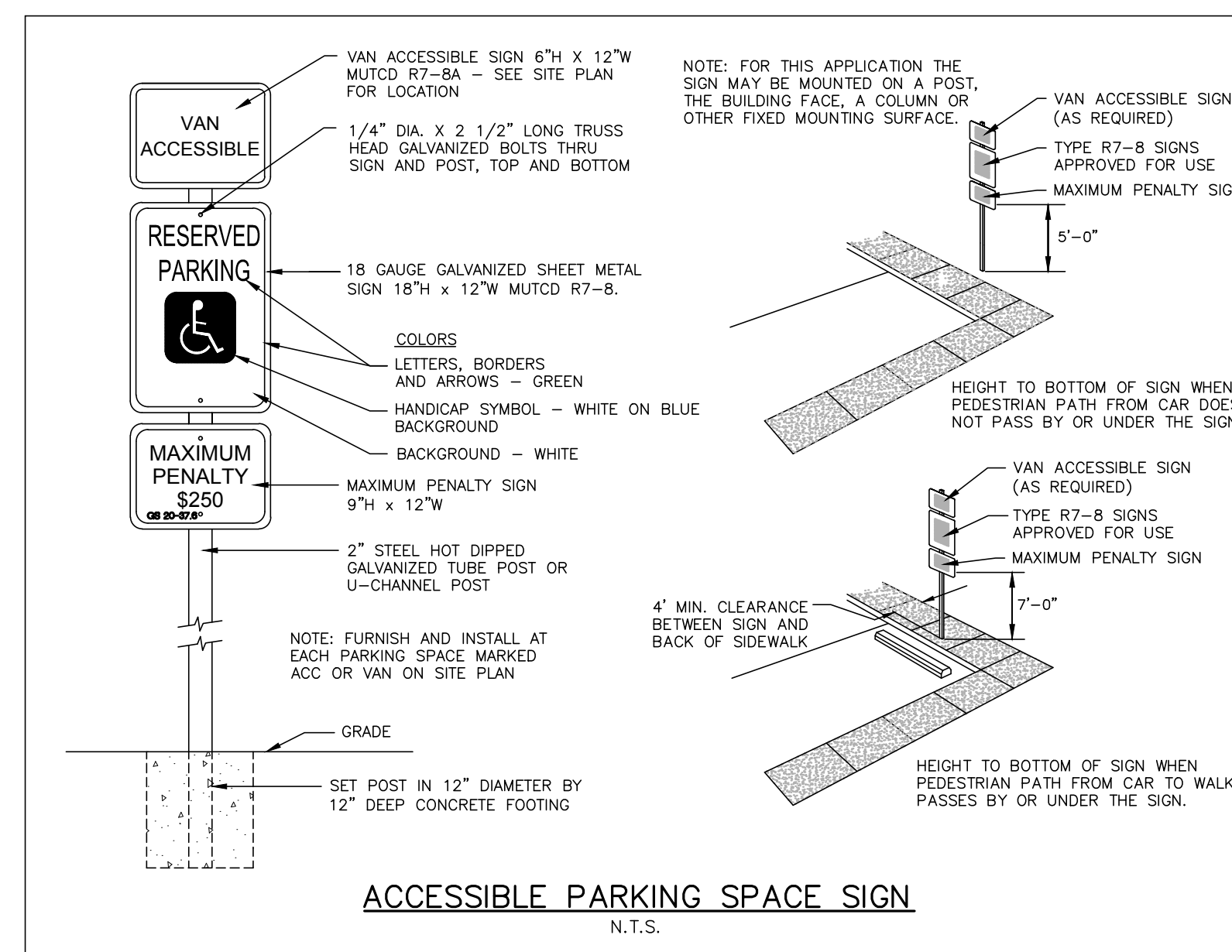
**01 CONCRETE WHEEL STOP**

SCALE: 1"=1'-0"



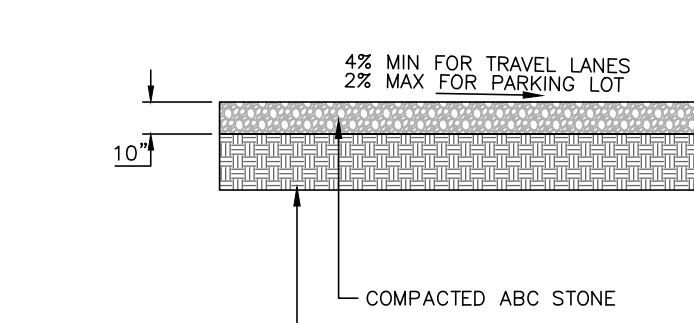
**04 ACCESSIBLE PARKING AND STRIPING DETAIL**

SCALE: N.T.S.



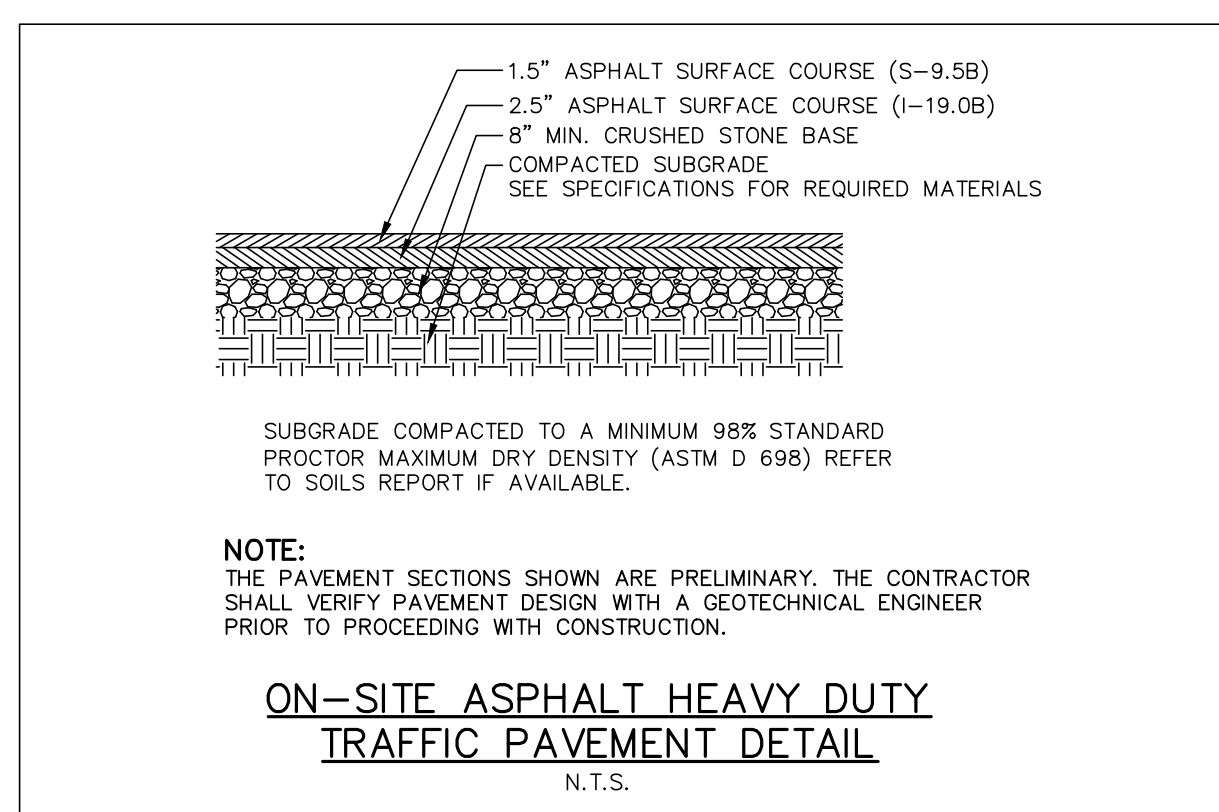
**05 ACCESSIBLE PARKING SPACE SIGN**

SCALE: N.T.S.



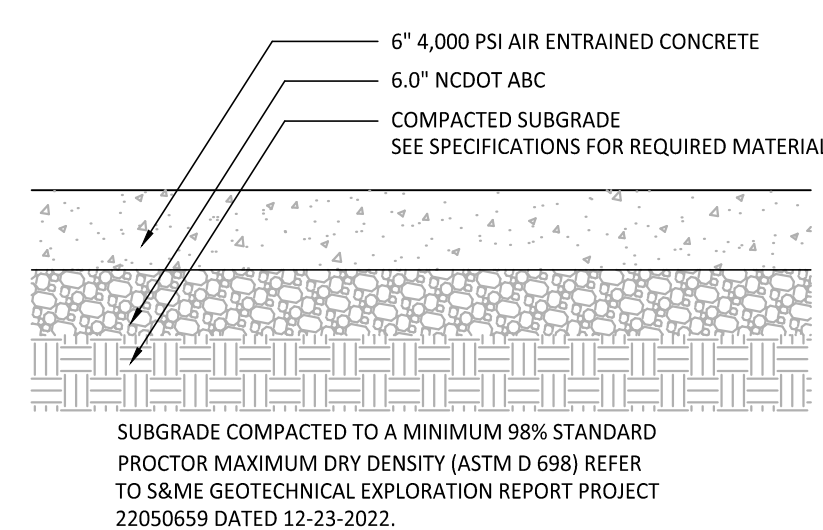
**06 GRAVEL DRIVE AND PARKING LOT**

SCALE: N.T.S.



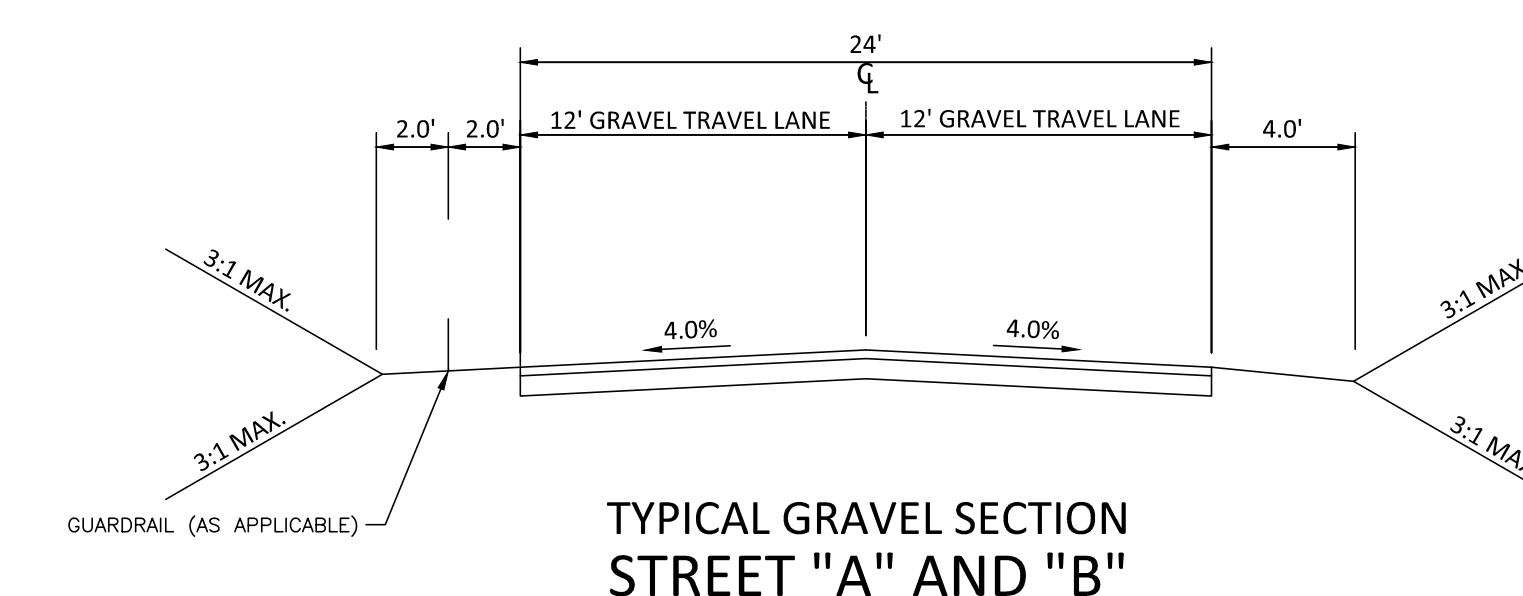
**07 ON-SITE HEAVY-DUTY ASPHALT PAVEMENT DETAIL**

SCALE: N.T.S.



**08 ON-SITE HEAVY-DUTY CONCRETE PAVEMENT DETAIL**

SCALE: N.T.S.



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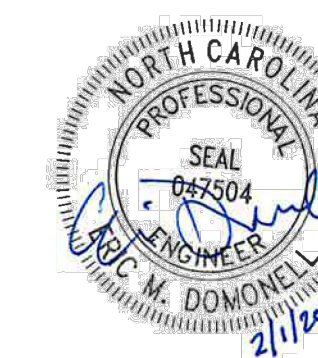
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FRAZIER FARM PARK  
CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA



REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-D1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE N/A  
DATE 02.01.2024

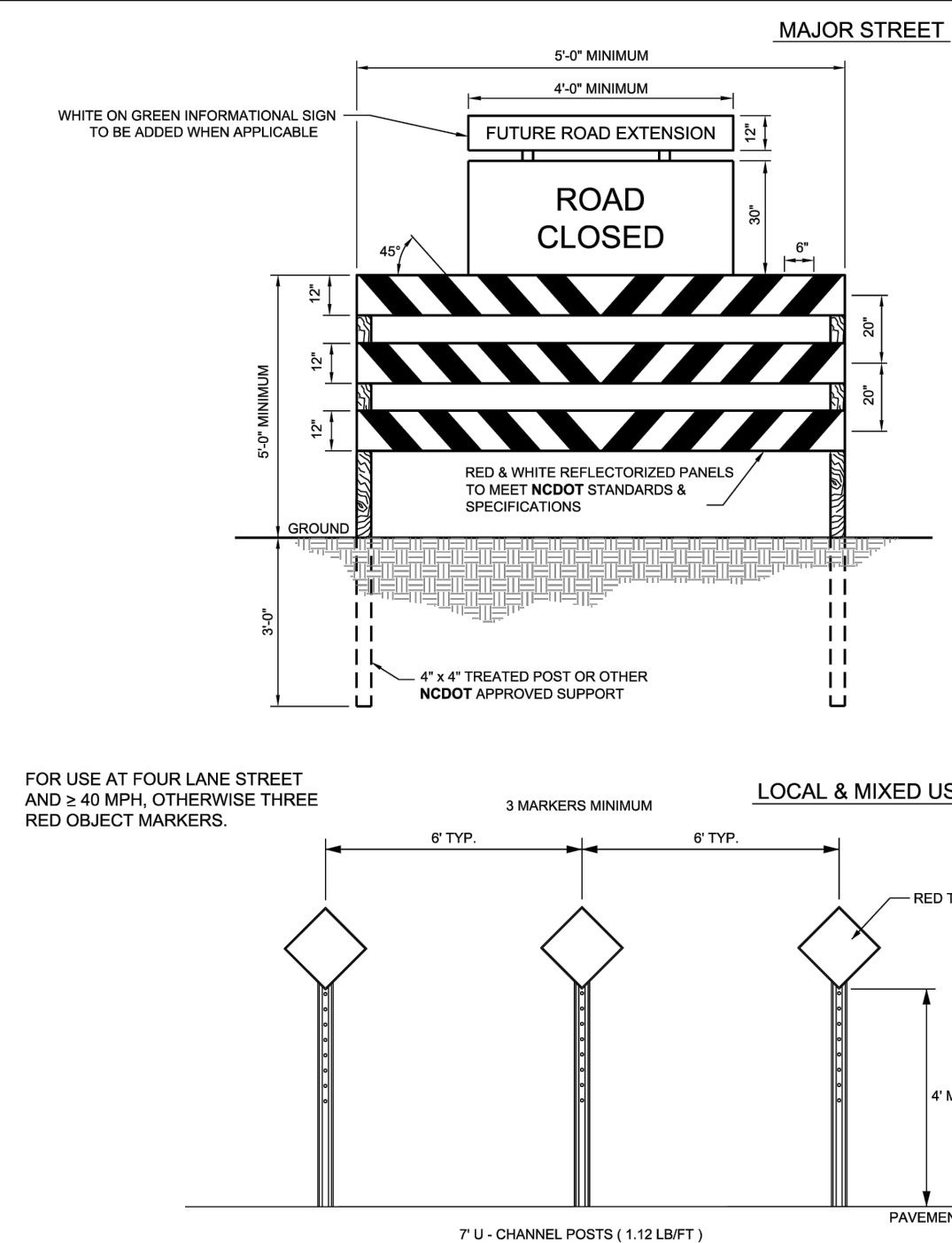
SHEET

SITE DETAILS

C8.01

CID-23-5

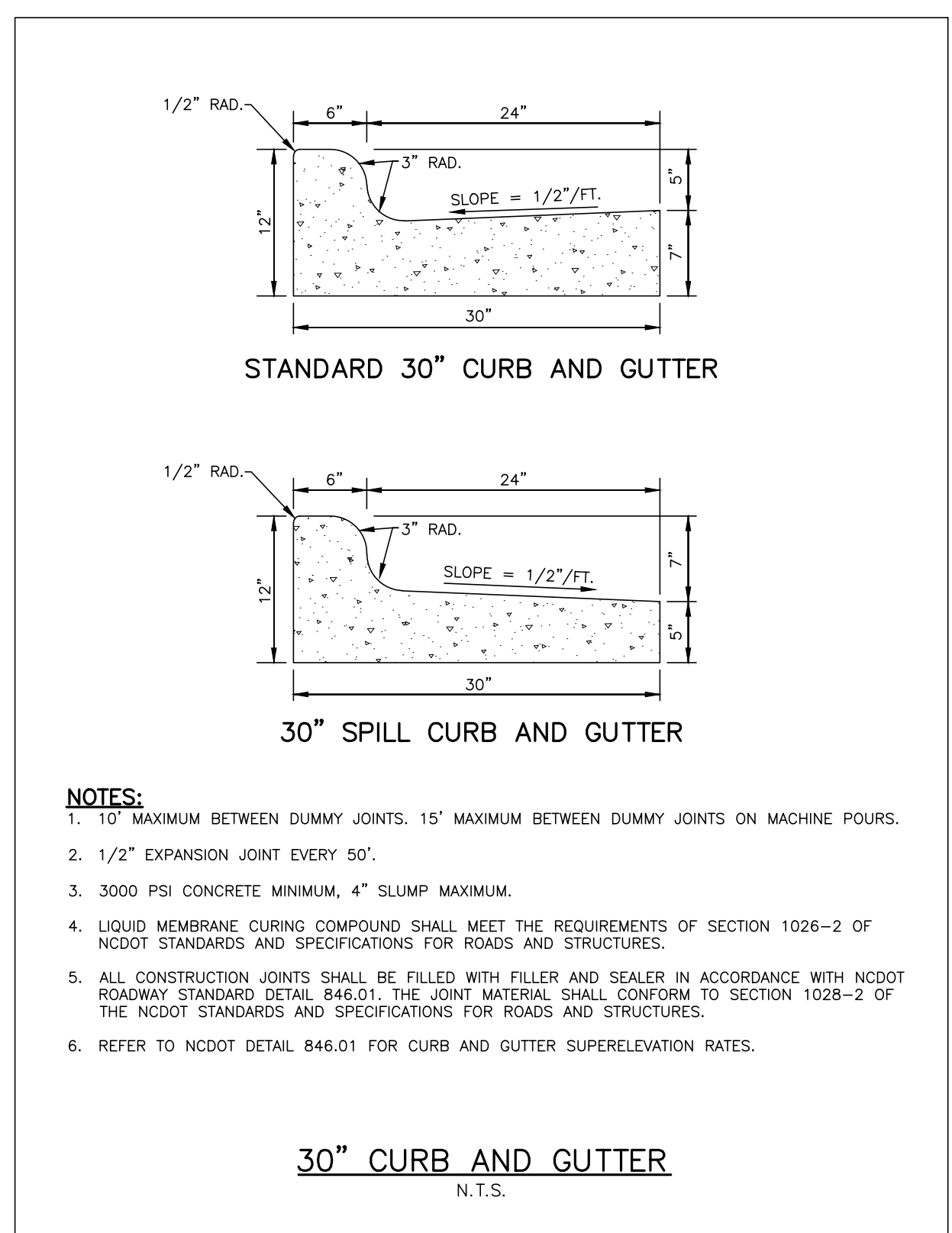
PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



- NOTES:
1. BARRICADE(S) TO BE ERECTED ACROSS ENTIRE ROADWAY INCLUDING CURB & GUTTER.
2. ADVANCE WARNING SIGN W14-1 (DEAD END) SHALL BE PLACED JUST AFTER LAST INTERSECTING STREET.
3. MARKINGS FOR BARRICADE RAIS SHALL BE REFLECTIVE AND ALTERNATE RED & WHITE STRIPS.
4. 'ROAD CLOSED' SIGN SHALL MEET SPECIFICATIONS OF M.U.T.C.D. R11-2 AND BE REQUIRED ATOP EACH BARRICADE USED.
5. CALL 811 FOR UNDERGROUND UTILITY LOCATE PRIOR TO INSTALLATION.

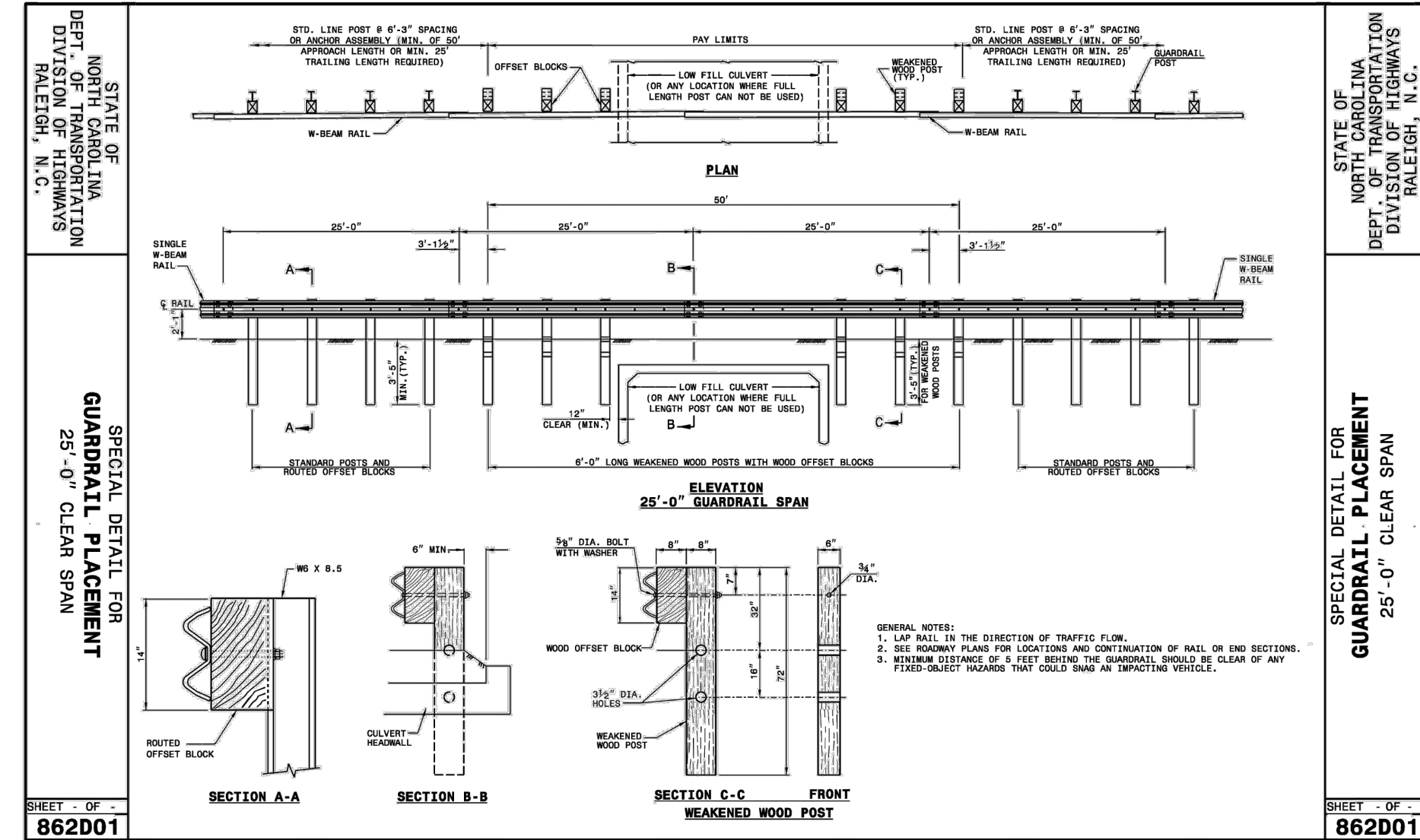
10 TEMPORARY BARRICADE FOR DEAD END ROAD SCALE: N.T.S.

11 SCALE: N.T.S.



- NOTES:
1. 10' MAXIMUM BETWEEN DUMMY JOINTS. 15' MAXIMUM BETWEEN DUMMY JOINTS ON MACHINE POURS.
2. 1/2" EXPANSION JOINT EVERY 50'.
3. 3000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.
4. LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1026-2 OF NCDOT STANDARDS AND SPECIFICATIONS FOR ROADS AND STRUCTURES.
5. ALL CONSTRUCTION JOINTS SHALL BE FILLED WITH FILLER AND SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01. THE JOINT MATERIAL SHALL CONFORM TO SECTION 1026-2 OF THE NCDOT STANDARDS AND SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. REFER TO NCDOT DETAIL 846.01 FOR CURB AND GUTTER SUPERELEVATION RATES.

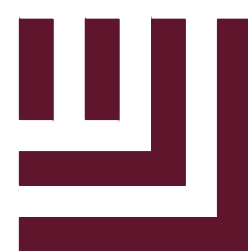
09 STANDARD 30" CURB AND GUTTER DETAILS SCALE: N.T.S.



12 NCDOT GUARDRAIL SCALE: N.T.S.

M:\Projects\WOL\2020110039 Frazier Farm PH1A\04-Production\Engineering\Phase1A\CID\2020110039-PH1-D1.dwg, 2/1/2024, 8:11:27 PM, Eric Domonell





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FRAZIER FARM PARK  
CONSTRUCTION DRAWINGS  
PHASE 1A  
11624 LOUISBURG ROAD  
ROLESVILLE, NORTH CAROLINA



REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039  
FILENAME 2020110039-PH1-D1  
CHECKED BY EMD  
DRAWN BY SME  
SCALE N/A  
DATE 02.01.2024

SHEET

STORM DRAINAGE &  
UTILITY DETAILS

C8.02

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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

ROADWAY STANDARD DRAWING FOR PRECAST CONCRETE ENDWALL FOR SINGLE 12" THRU 72" PIPE - 90° SKEW

NOTES: MORTAR JOINTS 1/2" 1/2" THICK. USE CLASS "B" CONCRETE THROUGHOUT. USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB. DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY. USE #4 BAR DOWELS AT 12" CENTERS FOR ALL PIPE SIZES. PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66; USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED. USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS. IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00. FOR 6" TO 24" HEIGHT OR LESS, USE 3" WALL. OVER 6" TO 24" HEIGHT, USE 12" WALL TO 6'-0" FROM TOP OF WALL AND 8" WALL FOR THE REMAINING 6'-0". QUANTITIES TO BE ADJUSTED ACCORDINGLY. CONSTRUCT WITH PIPE CROWNS MATCHING. CHAMFER ALL EXPOSED CORNERS 1". DRAWING NOT TO SCALE.

DETAIL SHOWING METHOD OF RISER CONSTRUCTION

SHEET 1 OF 2  
838.80

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

ROADWAY STANDARD DRAWING FOR PRECAST CONCRETE ENDWALL FOR SINGLE 12" THRU 72" PIPE - 90° SKEW

NOTES: THIS PRECAST ENDWALL MAY BE USED FOR THE FOLLOWING STANDARDS: 838.01, 838.11, 838.21, 838.27, 838.33, 838.39, 838.51, 838.57, 838.63 AND 838.69. INSTALL PRECAST ENDWALLS WITH RINGS AND PAY FOR IN ACCORDANCE WITH SPECIFICATION SECTION 838. USE 4000 PSI CONCRETE. PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WELDED WIRE FABRIC CONFORMING TO ASTM A185 WITH 2" MIN. CLEARANCE. PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704. PIPE TO BE GROUTED INTO HEADWALL AT JOB SITE BY CONTRACTOR. ALL ELEMENTS PRECAST TO MEET ASTM C913. WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED. CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

NOTE: THE MINIMUM BAR SIZE SHALL BE #5 BARS AT 8" CTS. THE CONTRACTOR WILL HAVE THE OPTION TO INCREASE THIS BAR SIZE AS NEEDED.

ENDWALL DIMENSIONS							
PIPE DIA.	BAR SIZE	H1 (FT.)	H2 (FT.)	D (FT.)	W1	W2	
1.0	#5 @ 8"	1.25/2.00	2.00/3.75	1.25/1.75	3.00/3.75	5.50/6.00	
1.25	#5 @ 8"	1.25/2.00	3.00/3.75	1.25/2.00	3.50/3.75	6.50/6.75	
1.50	#5 @ 8"	1.25/2.00	3.00/4.25	1.50/2.50	3.50/3.75	6.50/6.75	
2.0	#5 @ 8"	1.50/2.50	4.00/4.75	1.75/2.50	4.00/4.25	7.50/8.25	
2.5	#5 @ 8"	2.50/3.50	4.00/6.00	2.00/3.00	4.50/5.50	10.00/11.50	
3.0	#5 @ 8"	3.00/3.50	5.00/6.00	2.75/3.50	5.25/5.75	11.50/11.75	
3.5	#5 @ 8"	3.25/4.50	6.00/6.75	3.25/3.50	6.00/6.75	12.00/13.25	
4.0	#5 @ 8"	3.50/4.50	6.50/7.00	3.25/3.50	6.50/6.75	13.00/13.25	
4.5	#5 @ 8"	4.00/5.00	6.50/8.50	3.25/4.00	7.00/9.25	13.50/15.75	
5.0	#5 @ 8"	4.50/5.00	7.00/8.50	3.25/4.00	7.25/9.25	13.75/15.75	
5.5	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.25/9.25	14.00/15.75	
6.0	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.75/9.25	14.75/16.75	

SHEET 1 OF 2  
838.80

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

ROADWAY STANDARD DRAWING FOR BRICK CATCH BASIN

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.

ALIGN FRAME WITH INSIDE EDGE OF WALL TO ALLOW FOR VERTICAL ADJUSTMENT.

WALL SECTION

SECTION - AA

SECTION - BB

SECTION - LL

SECTION - MM

SECTION - NN

SECTION - PP

SECTION - RR

SECTION - JJ

HOOD ELEVATION

SHEET 1 OF 2  
840.01

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

ROADWAY STANDARD DRAWING FOR BRICK CATCH BASIN

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.

ALIGN FRAME WITH INSIDE EDGE OF WALL TO ALLOW FOR VERTICAL ADJUSTMENT.

WALL SECTION

SECTION - AA

SECTION - BB

SECTION - LL

SECTION - MM

SECTION - NN

SECTION - PP

SECTION - RR

SECTION - JJ

HOOD ELEVATION

SHEET 2 OF 2  
840.01

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

ROADWAY STANDARD DRAWING FOR BRICK CATCH BASIN

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

PIPE DIA.	DIMENSIONS OF BOX AND PIPE		TOP SLAB DIMENSIONS		CU. YDS. CONC. IN BOX			BRICK MASONRY		DEDUCTIONS ONE PIPE	
	SPAN	WIDTH	SPAN	MIN. HEIGHT	TOTAL	TOP	BOTTOM	REIN. WITH	BOX		
12"	3'-0"	2'-2"	3'-0"	2'-9"	0.281	0.281	0.883	1.164	0.520	0.042	
15"	3'-0"	2'-2"	3'-0"	3'-0"	0.281	0.281	0.963	1.244	0.531	0.047	
18"	3'-0"	2'-2"	3'-0"	3'-3"	0.281	0.281	1.043	1.324	0.544	0.060	
24"	3'-0"	2'-2"	3'-0"	3'-9"	0.281	0.281	1.201	1.488	0.578	0.121	
30"	3'-0"	2'-2"	3'-4"	4'-3"	0.147	0.374	0.521	1.606	2.217	0.152	0.184
36"	3'-0"	2'-2"	3'-10"	4'-9"	0.187	0.415	0.602	1.914	2.516	0.176	0.261
42"	3'-0"	2'-2"	4'-5"	5'-5"	0.193	0.373	0.608	2.152	2.660	0.240	0.371
48"	3'-0"	2'-2"	5'-0"	6'-0"	0.173	0.410	0.583	2.410	2.998	0.313	0.477
54"	3'-0"	2'-2"	5'-7"	6'-3"	0.211	0.448	0.659	2.806	3.465	0.396	0.595

\* RISER HAS .321 CUBIC YARDS OF BRICK MASONRY PER FOOT HEIGHT

SHEET 2 OF 2  
840.01

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

ROADWAY STANDARD DRAWING FOR CONCRETE BRIDGE APPROACH DROP INLET

GENERAL NOTES:  
USE CLASS "B" CONCRETE THROUGHOUT.  
PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.  
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.  
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.  
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.  
#4 BAR DOWELS "B" AT 12" CENTERS.  
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.  
FOR LOCATIONS OF DROP INLET, SEE BRIDGE APPROACH SLABS IN THE STRUCTURE PLANS. CONSTRUCT WITH PIPE CROWNS MATCHING.  
DRAWING NOT TO SCALE.

SECTION X-X

SECTION Y-Y

DOWEL "A"

DOWEL "B"

SHEET 1 OF 1  
840.13

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

ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD

SECTION A-A

SECTION B-B

TYPE - E

TYPE - F

TYPE - G

SHEET 2 OF 2  
840.03

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

ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.

TYPE "G"

TYPE "E"

TYPE "F"

WATER FLOW

SAG

WATER FLOW

TYPE "F"

TYPE "E"

TYPE "G"

RAISED FLOW ARROW 1/8" HIGH

SECTION A-A

SECTION A-A

SECTION A-A

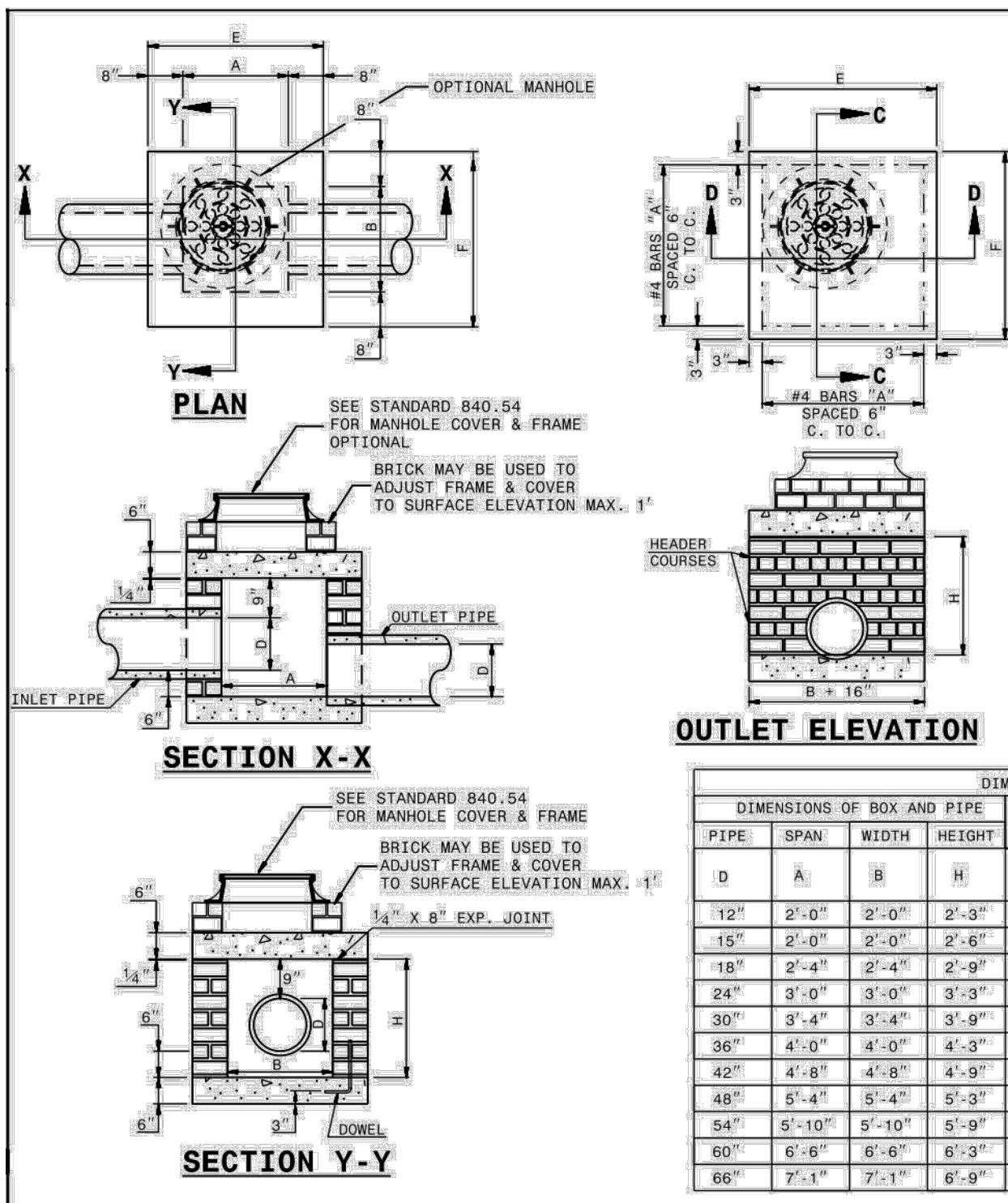
TYPE - F

TYPE - G

SHEET 2 OF 2  
840.03

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**GENERAL NOTES:**  
 CHAMFER ALL EXPOSED CORNERS 1".  
 USE CLASS "B" CONCRETE THROUGHOUT.  
 USE #4 BAR DOWELS AT 12" CENTERS.  
 MORTAR JOINTS 1/2" x 1/2" THICK.  
 CONCAVE TOO ALL EXPOSED JOINTS.  
 USE FORMS TO CONSTRUCT THE BOTTOM SLAB.  
 JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICK.  
 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 DIMENSIONS AND QUANTITIES ACCORDINGLY.  
 IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.  
 PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.  
 ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE 12" DIAMETER BARS SHORTENED AROUND OPENING IN TOP SLAB. ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.  
 MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 18 FEET.

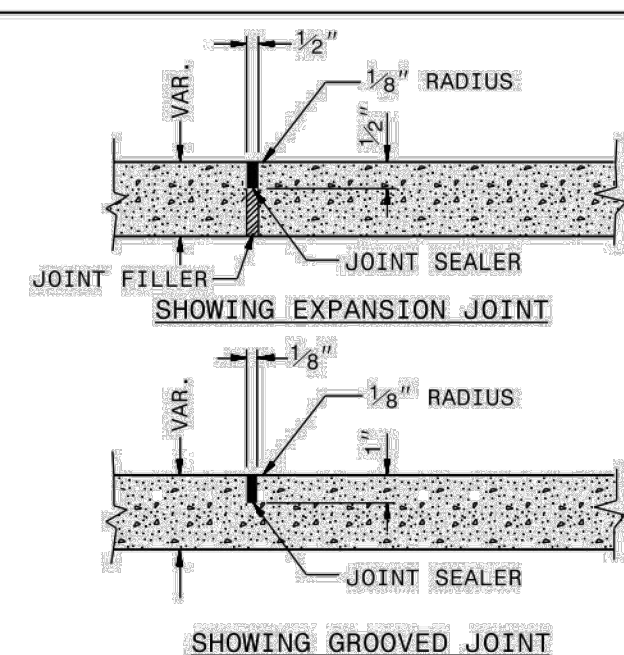
**DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES**

PIPE DIMENSIONS	DIMENSIONS OF BOX AND PIPE			REINFORCEMENT BARS	TOP SLAB DIMENSIONS			CUBIC YARDS			DEDUCTIONS FOR ONE PIPE (CU. YDS.)		
	D	A	B		H	NO.	LENGTH	E	F	TOP & BOTTOM CU. YD.	CONC.	BRICK MASONRY	C.S.
12"	2'-0"	2'-0"	2'-0"	2'-3"	12	3'-1"	3'-4"	3'-4"	0.412	0.591	0.263	0.020	0.032
15"	2'-0"	2'-0"	2'-6"	2'-6"	12	3'-1"	3'-4"	3'-4"	0.412	0.597	0.263	0.031	0.047
18"	2'-4"	2'-4"	2'-9"	2'-9"	14	3'-5"	3'-8"	3'-8"	0.488	0.614	0.296	0.044	0.062
24"	3'-0"	3'-0"	3'-3"	3'-3"	16	4'-1"	4'-4"	4'-4"	0.655	1.176	0.362	0.078	0.113
30"	3'-4"	3'-4"	3'-9"	3'-9"	16	4'-5"	4'-8"	4'-8"	0.807	1.481	0.358	0.122	0.170
36"	4'-0"	4'-0"	4'-3"	4'-3"	20	5'-1"	5'-4"	5'-4"	1.053	1.959	0.461	0.176	0.238
42"	4'-6"	4'-6"	4'-9"	4'-9"	22	5'-9"	6'-0"	6'-0"	1.333	2.503	0.527	0.240	0.323
48"	5'-4"	5'-4"	5'-9"	5'-9"	26	6'-5"	6'-8"	6'-8"	1.646	2.940	0.560	0.313	0.422
54"	5'-10"	5'-10"	5'-9"	5'-9"	28	6'-11"	7'-2"	7'-2"	1.902	3.502	0.609	0.396	0.535
60"	6'-6"	6'-6"	6'-9"	6'-9"	30	7'-7"	7'-10"	7'-10"	2.272	4.113	0.658	0.489	0.660
66"	7'-1"	7'-1"	6'-9"	6'-9"	32	8'-2"	8'-5"	8'-5"	2.624	4.778	0.708	0.591	0.798

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

ROADWAY STANDARD DRAWING FOR  
 BRICK JUNCTION BOX  
 (WITH OPTIONAL MANHOLE)  
 12" THRU 66" PIPE

SHEET 1 OF 1  
 840.32



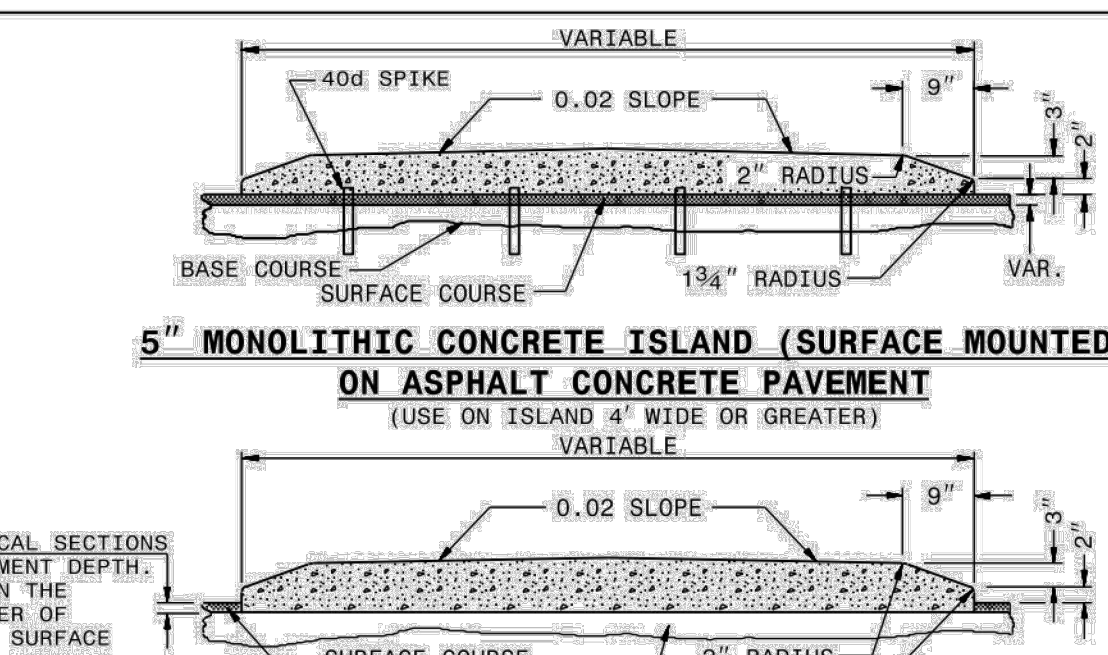
**PARTIAL LONGITUDINAL SECTIONS OF PAVED ISLANDS**

**NOTE:**  
 WHEN MONOLITHIC CONCRETE ISLAND IS ON TOP OF SURFACE COURSE, DRIVE 40d SPIKES INTO SURFACE UNDER MONOLITHIC CONCRETE ISLAND. STAGGER SPIKES ON 2' CENTERS EACH WAY.

IN THE CONCRETE PAVEMENT (ISLAND) AND CONCRETE ISLAND (MONOLITHIC) PLACE 1/2" EXPANSION JOINTS AT 30' INTERVALS AND GROOVED JOINTS 1" DEEP AT 10' INTERVALS BETWEEN EXPANSION JOINTS.

LINE UP THE JOINTS IN THE CONCRETE PAVEMENT (ISLAND) WITH THE JOINTS IN THE CURB OR CURB AND GUTTER. FILL AND SEAL THE TOP 1/2" OF THE EXPANSION JOINTS AND THE ENTIRE DEPTH OF GROOVED JOINTS WITH JOINT SEALER.

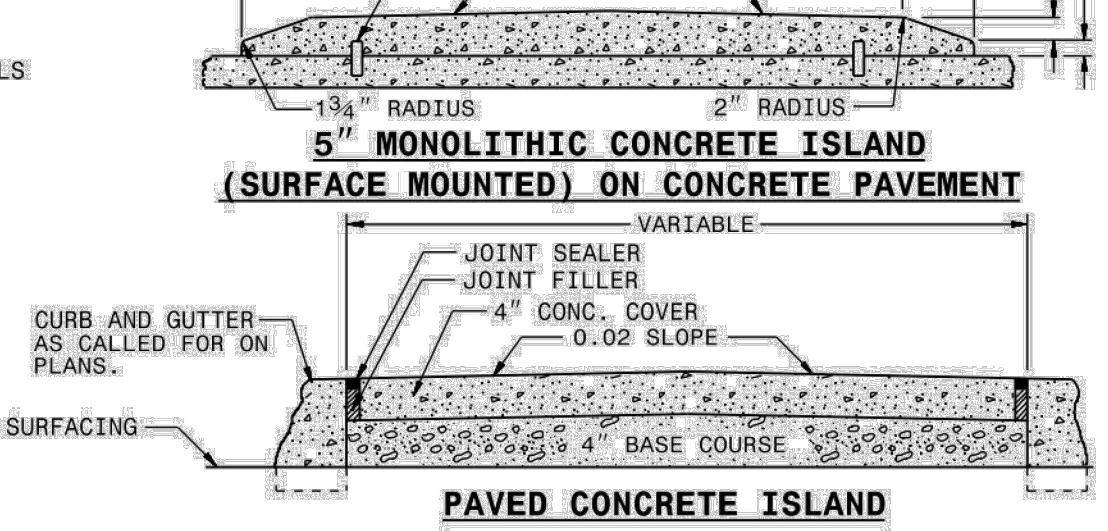
FOR JOINTS IN THE CURB AND/OR CURB AND GUTTER, SEE STANDARD NO. 846.01



**5' MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED) ON ASPHALT CONCRETE PAVEMENT**

**5' MONOLITHIC CONCRETE ISLAND (KEYED IN) ON ASPHALT CONCRETE PAVEMENT**

**5' MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED) ON CONCRETE PAVEMENT**

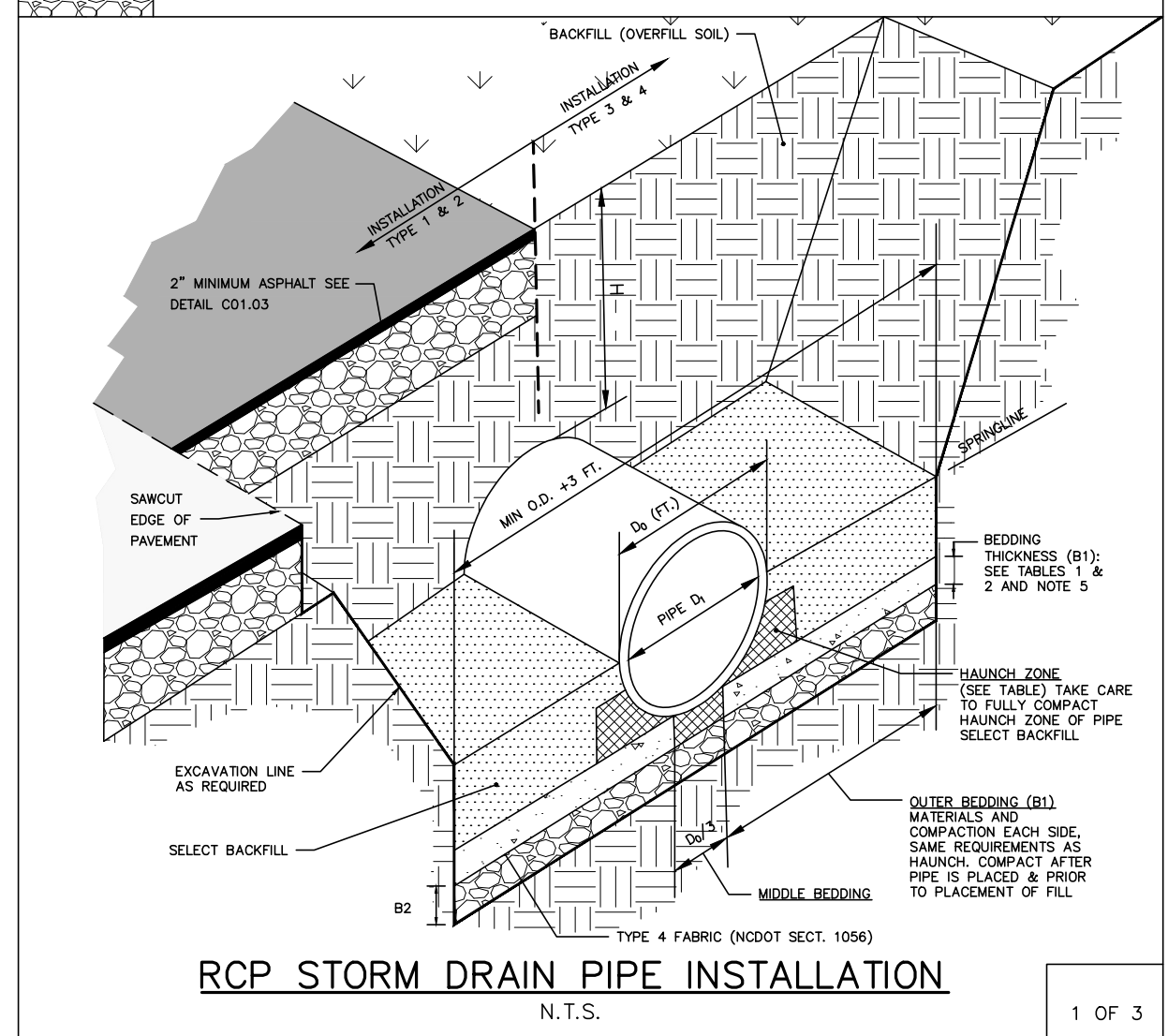
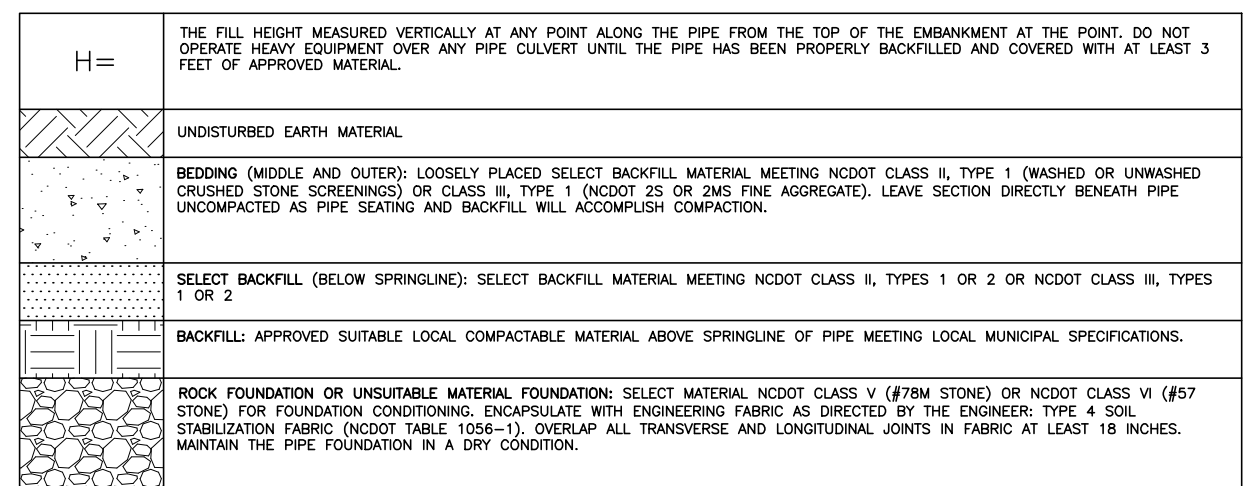


**PAVED CONCRETE ISLAND**

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

ROADWAY STANDARD DRAWING FOR  
 CONCRETE ISLANDS

SHEET 1 OF 1  
 852.01



**RCP STORM DRAIN PIPE INSTALLATION**

1 OF 3

**TABLE 1**  
 EQUIVALENT USCS<sup>1</sup> AND AASHTO SOIL CLASSIFICATION FOR SID<sup>2</sup> SOIL DESIGNATIONS

SIDD	USCS	NCDDOT/AASHTO
GRAVELLY SAND (CATEGORY I)	SW, SP, OW, GP	-NCDDOT CLASS II-TYPE I (CRUSHED STONE SCREENINGS), LL<30; PI<6 -NCDDOT CLASS III, TYPE I (2S OR 2M5), LL<30; PI<6
SANDY SILT (CATEGORY II)	GM, SM, ALSO GC, SC WITH LESS THAN 20% PASSING #200 SIEVE	-NCDDOT CLASS II-TYPE 2 (CRUSHED STONE SCREENINGS) AND CLASS II, TYPE 2 (ASHTO M145 FOR A-2-4 WITH MAX PI OF 6, A-4-W/ MAX 40% PASSING #200 SIEVE AND A MAX PI OF 6) -NCDDOT CLASS III, TYPE 1 (2S OR 2M5) OR CLASS II, TYPE 2 (ASHTO M145 FOR SOIL CLASSIFICATION A-1 OR A-3)
SILT CLAY (CATEGORY III)	CL, ML, GC, SC	AS, AE

**TABLE 2**  
 STANDARD INSTALLATIONS SOILS AND MINIMUM COMPACTION REQUIREMENTS

INSTALLATION TYPE	BEDDING THICKNESS	OUTER BEDDING (B1) SIDE S	HAUNCH ZONE & SELECT BACKFILL AREA (% COMPACTION/CATEGORY)	LOCATION
TYPE 1	B1 = 5/8" (6" MIN) FOUNDATION, F/FT OF 1/2" MIN/24" MAX	95% CATEGORY I	95% CATEGORY I	PAVED AREAS WITH 2" OR LESS BURY
TYPE 2	B1 = 5/8" (6" MIN) FOUNDATION, F/FT OF 1/2" MIN/24" MAX	95% CATEGORY I	95% CATEGORY I	PAVED AREAS WITH GREATER THAN 2" BURY
TYPE 3	B1 = 5/8" (6" MIN) FOUNDATION, F/FT OF 1/2" MIN/24" MAX	NO COMPACTION REQUIRED, EXCEPT IF CATEGORY II, USE 95% CATEGORY III	95% CATEGORY I	NATURAL AREAS
TYPE 4	B1 = 5/8" (6" MIN) FOUNDATION, F/FT OF 1/2" MIN/24" MAX	NO COMPACTION REQUIRED, EXCEPT IF CATEGORY II, USE 95% CATEGORY III	95% CATEGORY I	NATURAL AREAS

**NOTES:**  
 1. COMPACTION AND SOIL SYMBOLS - I.E. "95% CATEGORY I" - REFERS TO CATEGORY I SOIL MATERIAL WITH MINIMUM STANDARD PROCTOR COMPACTION OF 95%.  
 2. SOIL IN THE OUTER BEDDING, HAUNCH, AND LOWER SIDE ZONES, EXCEPT UNDER THE MIDDLE 1' OF THE PIPE, SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE MAJORITY OF THE SOIL IN THE OVERFILL (BACKFILL) ZONE.  
 3. FOR TRENCHES, THE TOP ELEVATION SHALL BE NO LOWER THAN 0.1H BELOW FINISHED GRADE OR, FOR ROADWAYS, ITS TOP SHALL BE NO LOWER THAN AN ELEVATION OF 1-FOOT BELOW THE BOTTOM OF THE PAVEMENT BASE MATERIAL.  
 4. FOR TRENCHES, THE WIDTH SHALL BE WIDER THAN SHOWN IF REQUIRED FOR ADEQUATE SPACE TO ATTAIN THE SPECIFIED COMPACTION IN THE HAUNCH AND BEDDING ZONES.  
 5. COMPACT OUTER BEDDING AFTER PIPE IS PLACED AND PRIOR TO PLACEMENT OF SELECT FILL. MIDDLE BEDDING IS UNCOMPACTED.  
 6. OVERFILL (BACKFILL) SOILS TO BE PLACED PER STANDARD SPECIFICATION 02700 STORM DRAINAGE FOR THE APPLICABLE BACKFILL TYPE AND BURY LIMITATIONS.  
 7. THESE TWO TABLES WERE MODIFIED TO GENERALLY CONFORM TO THE NCDDOT STANDARDS AS SHOWN IN DETAIL 300.01 RIGID PIPE IN TRENCH CONDITION.

**REFERENCE SOURCES:**  
 1. AMERICAN CONCRETE PIPE ASSOCIATION DESIGN STANDARDS  
 2. 2012 NCDDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES AND NCDDOT STANDARD DETAILS 300.01 FOR RIGID PIPE, TRENCH CONDITIONS.

**STORM DRAIN PIPE INSTALLATION**

2 OF 3

**FILL HEIGHT TABLE<sup>2</sup>**

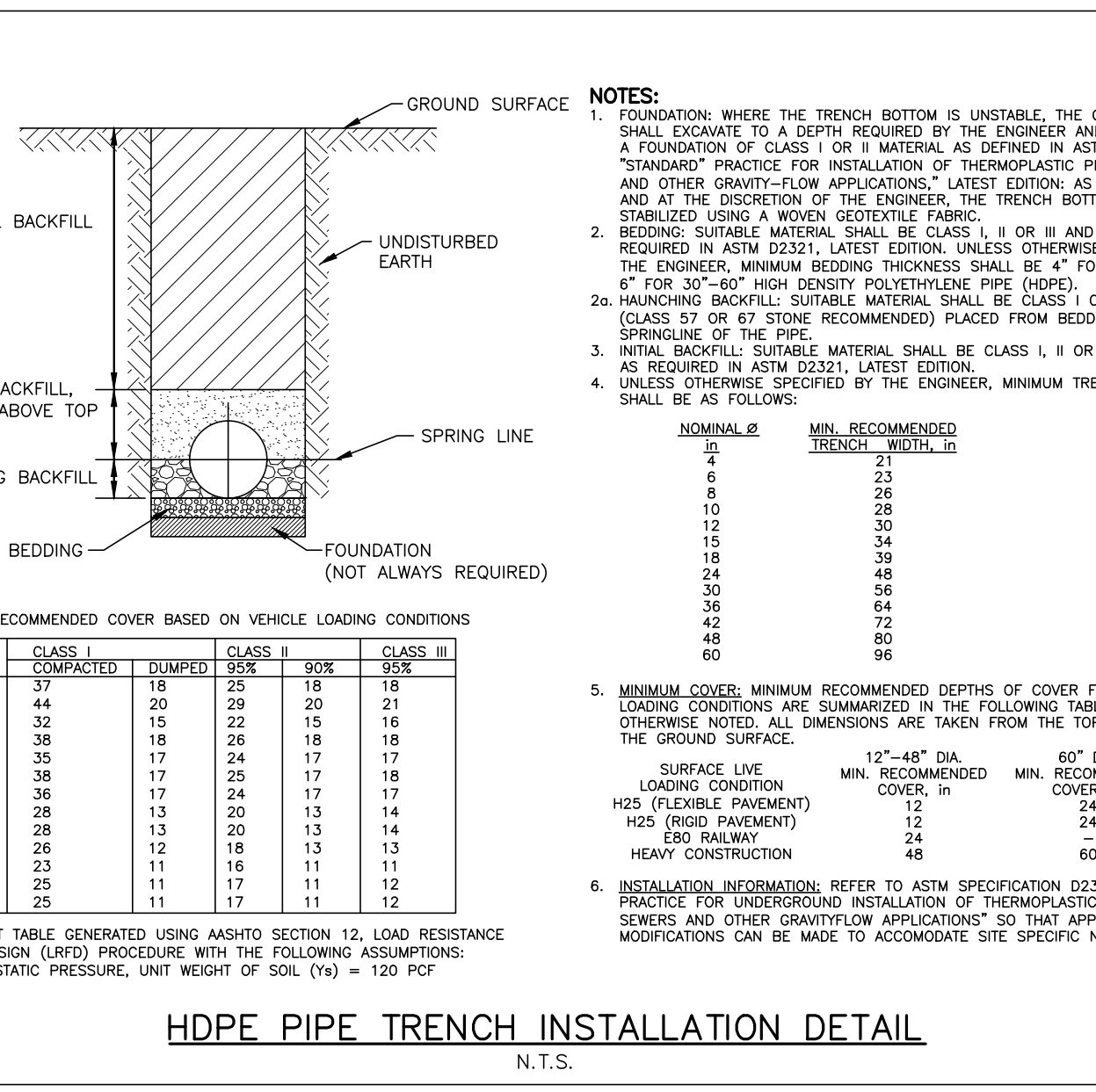
INSIDE PIPE DIAMETER DI (INCHES)	TYPE 3 (BEDDING) INSTALLATION (0.01 INCH CRACK)		TYPE 4 (BEDDING) INSTALLATION (0.01 INCH CRACK)	
	CLASS III PIPE MAXIMUM BURY H (FEET)	CLASS IV PIPE MAXIMUM BURY H (FEET)	CLASS III PIPE MAXIMUM BURY H (FEET)	CLASS IV PIPE MAXIMUM BURY H (FEET)
12	2 MIN, 12 MAX	1 MIN, 20 MAX	3 MIN, 7 MAX	2 MIN, 12 MAX
18	2 MIN, 12 MAX	1 MIN, 20 MAX	3 MIN, 7 MAX	1 MIN, 13 MAX
24	1 MIN, 12 MAX	1 MIN, 20 MAX	2 MIN, 8 MAX	1 MIN, 13 MAX
30	1 MIN, 12 MAX	1 MIN, 20 MAX	1 MIN, 8 MAX	1 MIN, 13 MAX
36	1 MIN, 12 MAX	1 MIN, 20 MAX	1 MIN, 8 MAX	1 MIN, 13 MAX
42	1 MIN, 12 MAX	1 MIN, 20 MAX	1 MIN, 8 MAX	1 MIN, 13 MAX
48	1 MIN, 12 MAX	1 MIN, 19 MAX	1 MIN, 8 MAX	1 MIN, 13 MAX
54	1 MIN, 12 MAX	1 MIN, 19 MAX	1 MIN, 8 MAX	1 MIN, 13 MAX
60	1 MIN, 12 MAX	1 MIN, 19 MAX	1 MIN, 8 MAX	1 MIN, 13 MAX
72	1 MIN, 11 MAX	1 MIN, 19 MAX	1 MIN, 7 MAX	1 MIN, 13 MAX

**FILL HEIGHT TABLE BASE ON:**  
 1. Ys = 120 PCF (BACKFILL LOAD)  
 2. ASHTO HL-93 LIVE LOAD  
 3. POSITIVE PROJECTING EMBANKMENT CONDITION (THIS GIVES CONSERVATIVE RESULTS IN COMPARISON TO TRENCH CONDITIONS)  
 4. PIPE = REINFORCED CONCRETE PIPE MEETING ASTM C76 (ASHTO M170), WALL C THICKNESS  
 5. CONCRETE PIPE SHOULD BE INSTALLED IN ACCORDANCE WITH ASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS SECTION 27 OR ASTM C1479.

**NOTE:**  
 1. GREATER BURY DEPTHS THAN THOSE SHOWN ABOVE ARE ACHIEVABLE BY EITHER USING TYPE 1 OR 2 INSTALLATION, USING CLASS V PIPE, CONTROLLING BACKFILL TYPE, CALCULATING DEPTH USING A TRENCH CONDITION, OR BY SPECIAL DESIGN. SEE ALSO DESIGN DATA 9 PUBLISHED BY THE ACPA FOR DESIGN METHODOLOGY.  
 2. IN LIEU OF CALCULATING BURY DEPTH FOR OTHER CONDITIONS, FIRST SEE "LRFD FILL HEIGHT TABLES FOR CONCRETE PIPE", LAST REVISED JULY 2009 OR LATER, PREPARED BY THE ACPA FOR OTHER BURY DEPTH POSSIBILITIES.  
 3. SEE NCDDOT PIPE SELECTION TABLE

**STORM DRAIN PIPE INSTALLATION**

3 OF 3



**HDPE PIPE TRENCH INSTALLATION DETAIL**

**NOTES:**  
 1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL, AS DETAILLED IN ASTM D2321.  
 2. BEDDING: SUITABLE MATERIAL SHALL BE CLASS II, III OR IV AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" FOR 12"-24" AND 6" FOR 30"-60" HIGH DENSITY POLYETHYLENE PIPE (HDPE).  
 3. HAUNCHING BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II MATERIAL (CLASS 57 OR 67 STONE RECOMMENDED) PLACED FROM BEDDING TO THE SPRINGLINE OF THE PIPE.  
 4. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.  
 5. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

NOMINAL ID	MIN. RECOMMENDED TRENCH WIDTH, IN
21	21
24	24
27	27
30	30
36	36
42	42
48	48
60	60

6. MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOAD CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE, UNLESS OTHERWISE NOTED. ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

PIPE DIA.	CLASS I	CLASS II	CLASS III	CLASS IV
4"	37	15	25	18
6"	44	20	29	20
8"	52	15	22	15
10"	38	18	26	18
12"	35	17	24	17
15"	38	17	25	17
18"	36	17	24	17
24"	28	13	20	14
30"	28	13	20	14
36"	28	13	20	14
42"	23	11	16	11
48"	25	11	17	11
60"	25	11	17	11

7. SURFACE LIVE LOADS: MIN. RECOMMENDED COVER, IN

LOADING CONDITION	MIN. RECOMMENDED COVER, IN	MIN. RECOMMENDED COVER, IN
H25 (FLEXIBLE PAVEMENT)	12	24
H25 (RIGID PAVEMENT)	12	24
H20 (RAILWAY)	18	24
HEAVY CONSTRUCTION	48	60

8. INSTALLATION INFORMATION: REFER TO ASTM SPECIFICATION D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITYFLOW APPLICATIONS" SO THAT APPROPRIATE MODIFICATIONS CAN BE MADE TO ACCOMMODATE SITE SPECIFIC NEEDS.

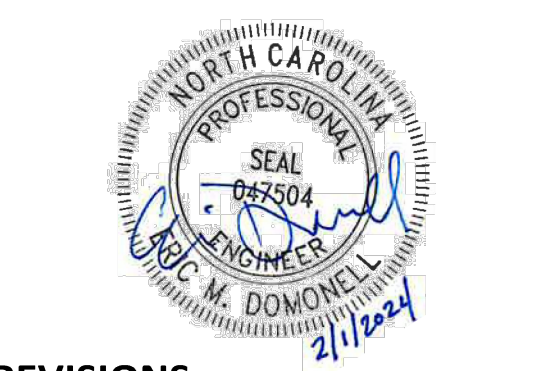
**HDPE PIPE TRENCH INSTALLATION DETAIL**

N.T.S.

**McADAMS**  
 The John R. McAdams Company, Inc.  
 2905 Meridian Parkway  
 Durham, NC 27713  
 phone 919. 361. 5000  
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 www.mcadamsco.com

**CLIENT**  
 NAME: TOWN OF ROLESVILLE  
 ADDRESS: 502 SOUTHTOWN CIRCLE  
 ADDRESS: ROLESVILLE NC 27571  
 PHONE: 919.554.6582

**FRAZIER FARM PARK**  
 CONSTRUCTION DRAWINGS  
 PHASE 1A  
 11624 LOUISBURG ROAD  
 ROLESVILLE, NORTH CAROLINA



**REVISIONS**

NO.	DATE

**PLAN INFORMATION**

PROJECT NO. 202011039  
 FILENAME 2020110039-PH1-01  
 CHECKED BY EMD  
 DRAWN BY SME  
 SCALE N/A  
 DATE 02.01.2024

**SHEET**

**STORM DRAINAGE & UTILITY DETAILS**  
**C8.03**

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION