

FRAZIER FARM PARK

V2 - CID-23-05

11624 LOUISBURG ROAD
 ROLESVILLE, NORTH CAROLINA, 27282
90% CONSTRUCTION DRAWINGS
PHASE 1A
 PROJECT NUMBER: 2020110039
 DATE: AUGUST 1, 2023



MCADAMS
 The John R. McAdams Company, Inc.
 2905 Meridian Parkway
 Durham, NC 27713
 phone 919. 361. 5000
 fax 919. 361. 2269
 license number: C-0293, C-187
 www.mcadamsco.com

CONTACT

ERIC DOMONELL
 domonell@mcadamsco.com
 PHONE: 919. 287. 0765

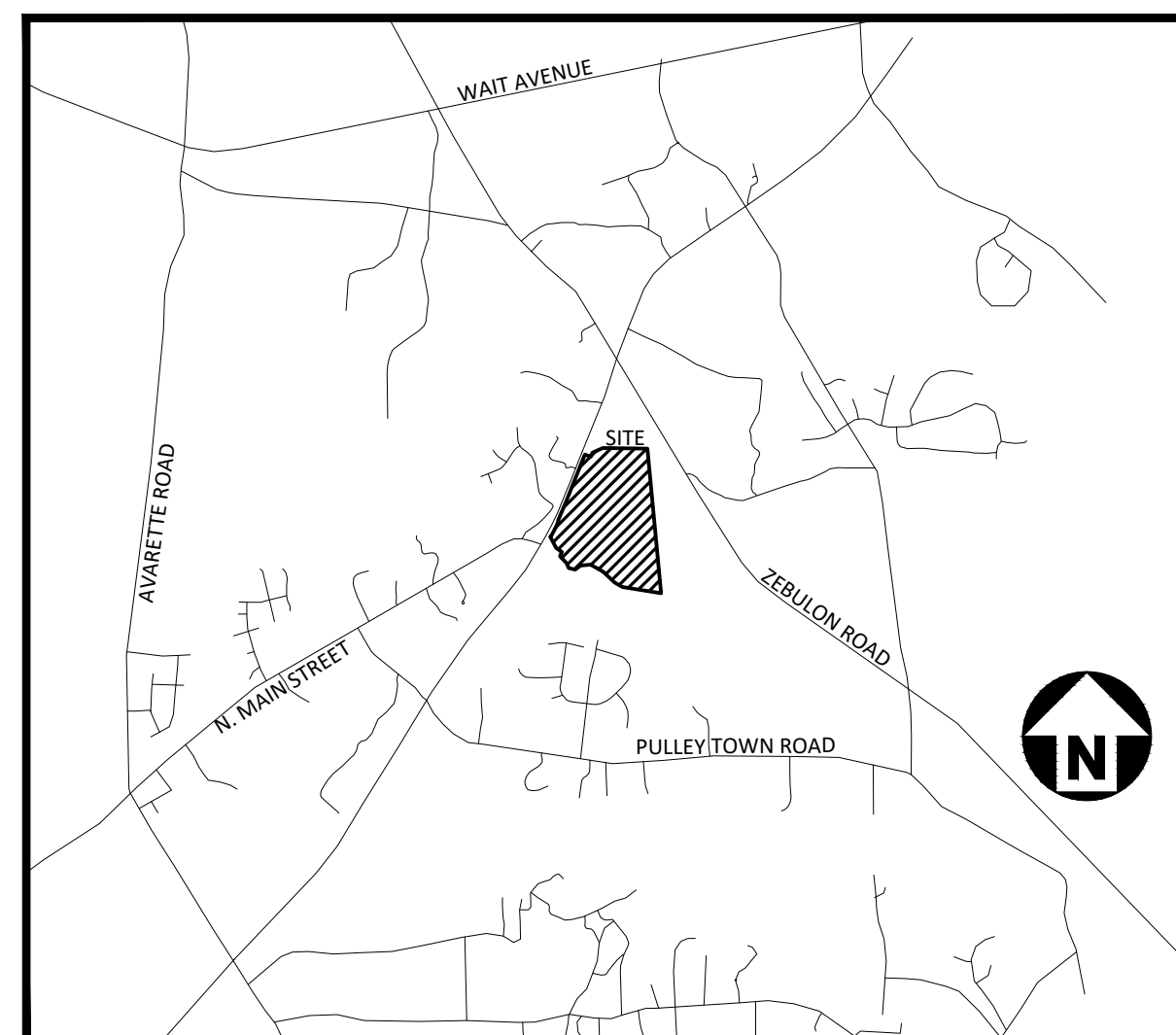
CLIENT

TOWN OF ROLESVILLE
 502 SOUTHTOWN CIRCLE
 ROLESVILLE, NORTH CAROLINA 27571
 PHONE: 919. 554. 6582

PROJECT DIRECTORY

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 COTTER@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:	PARKS AND NATURAL RESOURCES (PNR)
PROPOSED ZONING:	PARKS AND NATURAL RESOURCES (PNR)
CURRENT LAND USE:	PUBLIC RECREATION FACILITY
PROPOSED LAND USE:	PUBLIC RECREATION FACILITY
ADJOINING PROPERTY OWNERS:	PIN: 179083669, 1779263965, 1779190357
DISTURBED AREA:	±8.50 AC
FEMA REGULATIONS:	
WATERSHED(S):	NEUSE



VICINITY MAP
 N.T.S.



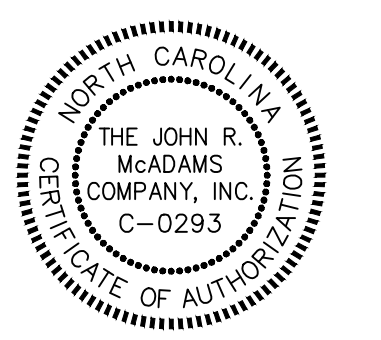
CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES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

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C1.01	EXISTING CONDITIONS
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C2.02	SITE PLAN 'AREA B'
C2.03	SITE PLAN 'AREA C'
C2.04	SITE PLAN 'AREA D'
C3.00	OVERALL GRADING & DRAINAGE PLAN
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C6.00	EROSION CONTROL NOTES
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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.



REVISIONS

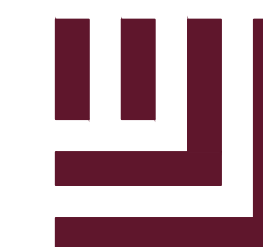
NO.	DATE	DESCRIPTION
1	08.01.2023	TRC RESUBMITTAL

CONSTRUCTION DRAWINGS FOR:

FRAZIER FARM PARK
 PHASE 1A
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 ROLESVILLE, NC 27282
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PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



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ROLESVILLE, NORTH CAROLINA



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NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039
FILENAME 2020110039-PH1-DM1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=100'
DATE 08.01.2023

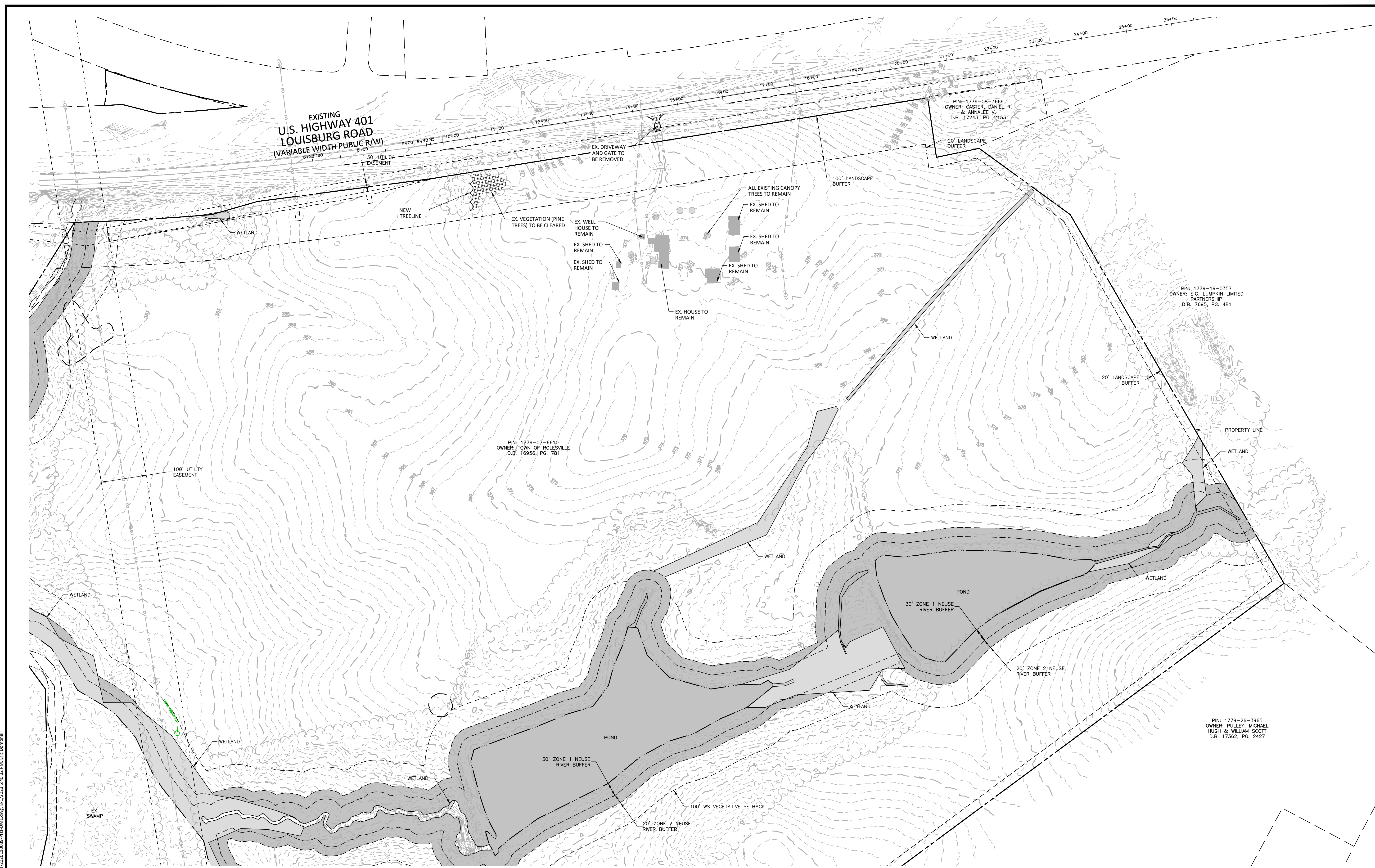
SHEET

OVERALL DEMOLITION PLAN

C1.10

CID-23-5


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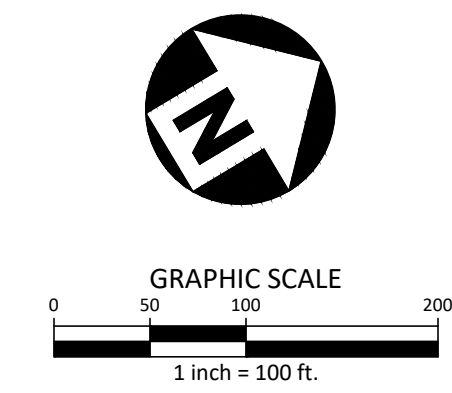
DEMOLITION NOTES

1. 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.
2. THE CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL EXISTING UTILITIES ON SITE PRIOR TO DEMOLITION.
3. THE CONTRACTOR SHALL PERFORM DEMOLITION ACTIVITIES AS NOTED AND SHOWN ON THESE PLANS AND SPECIFICATIONS AND AS DIRECTED BY THE OWNER.
4. 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.
5. 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.
6. 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.
7. 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.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES TO REMAIN IN PLACE.
9. ALL EXISTING ITEMS TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE SOLE EXPENSE OF THE CONTRACTOR.
10. CONTRACTOR TO FLAG ALL TREES SLATED FOR REMOVAL AND SEEK APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO DEMOLISHING.

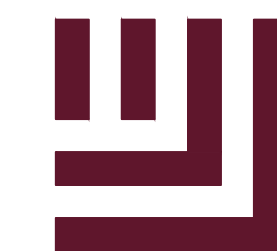
DEMOLITION LEGEND

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

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M:\Projects\10039\Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-DM1.dwg, 8/1/2023 6:40:32 PM, EIC Domorell



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NO. DATE

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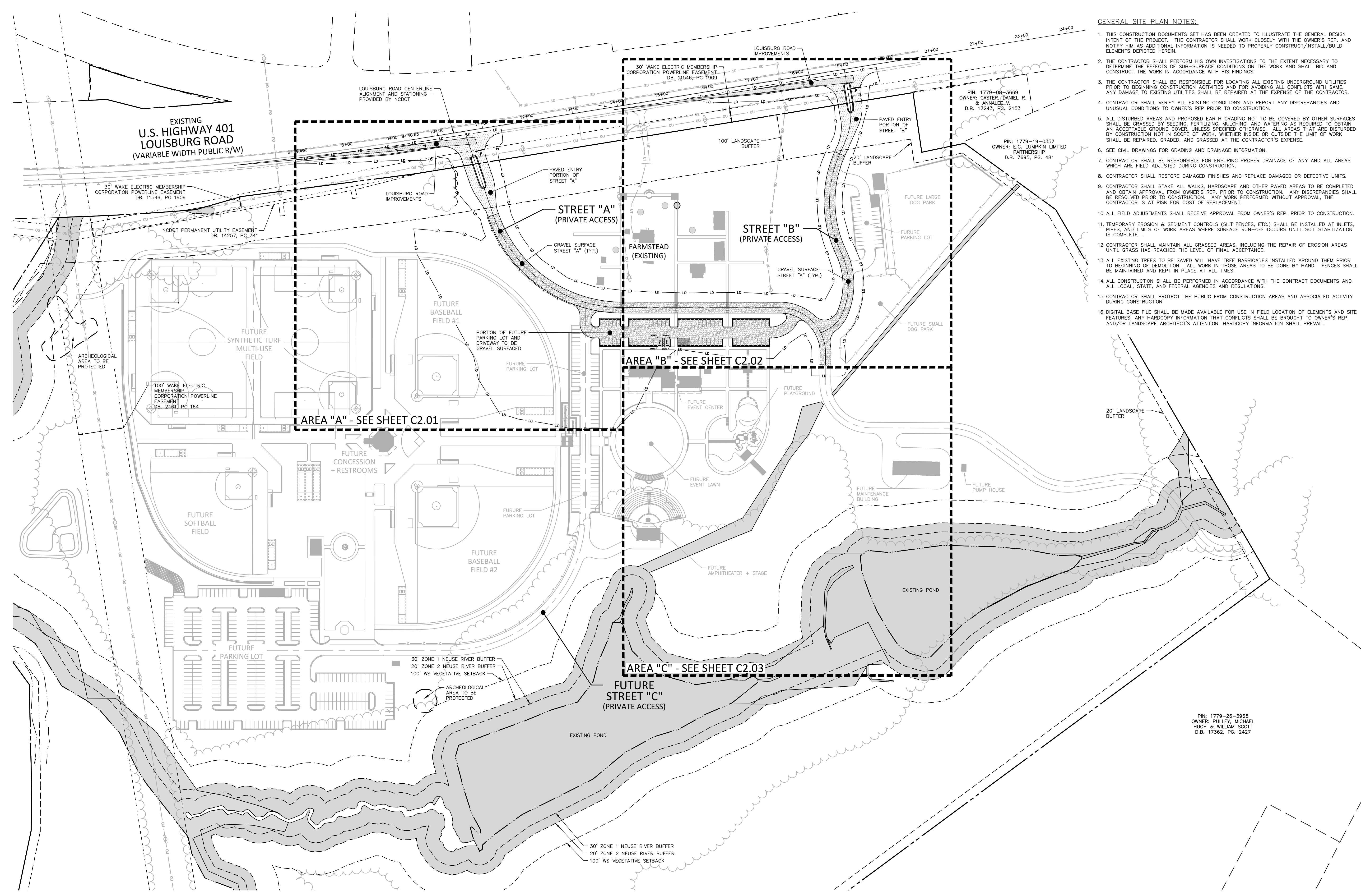
SHEET

OVERALL
SITE PLAN
C2.00

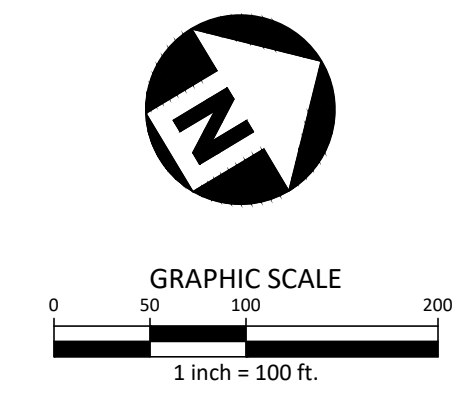
CID-23-5

GENERAL SITE PLAN NOTES:

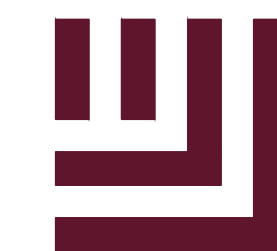
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2. THE CONTRACTOR SHALL PERFORM HIS OWN INVESTIGATIONS TO THE EXTENT NECESSARY TO DETERMINE THE EFFECTS OF SUB-SURFACE CONDITIONS ON THE WORK AND SHALL BID AND CONSTRUCT THE WORK IN ACCORDANCE WITH HIS FINDINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE 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.
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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.



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



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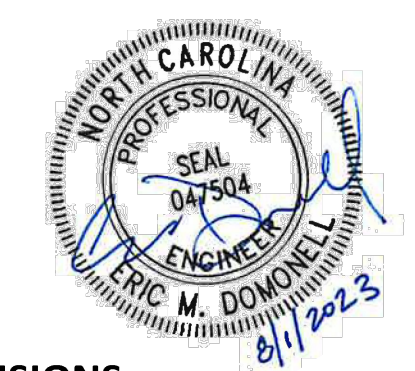
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**FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
PHASE 1A
11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA**



REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039
FILENAME 2020110039-PH1-S1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=30'
DATE 08.01.2023

SITE PLAN: AREA 'A'

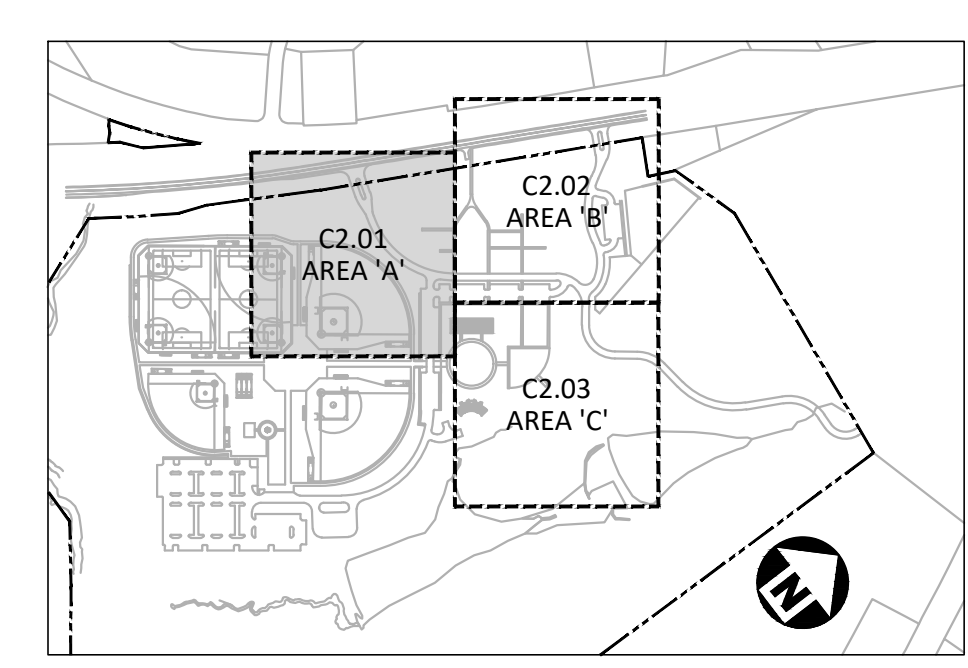
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SITE LEGEND

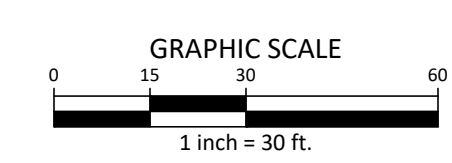
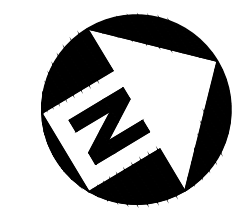
	SIGNAGE
	YARD LIGHTS
	LIGHT POLE
	POWER POLE
	TRAFFIC DIRECTIONAL ARROW
	ACCESSIBLE PARKING STALL
	VAN ACCESSIBLE PARKING STALL
	PARKING SPACE COUNT
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	PROPERTY LINE
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	LOT LINE
	EASEMENT LINE
	CENTERLINE
	HEAVY DUTY ASPHALT PAVEMENT
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GENERAL SITE PLAN NOTES:

- 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.
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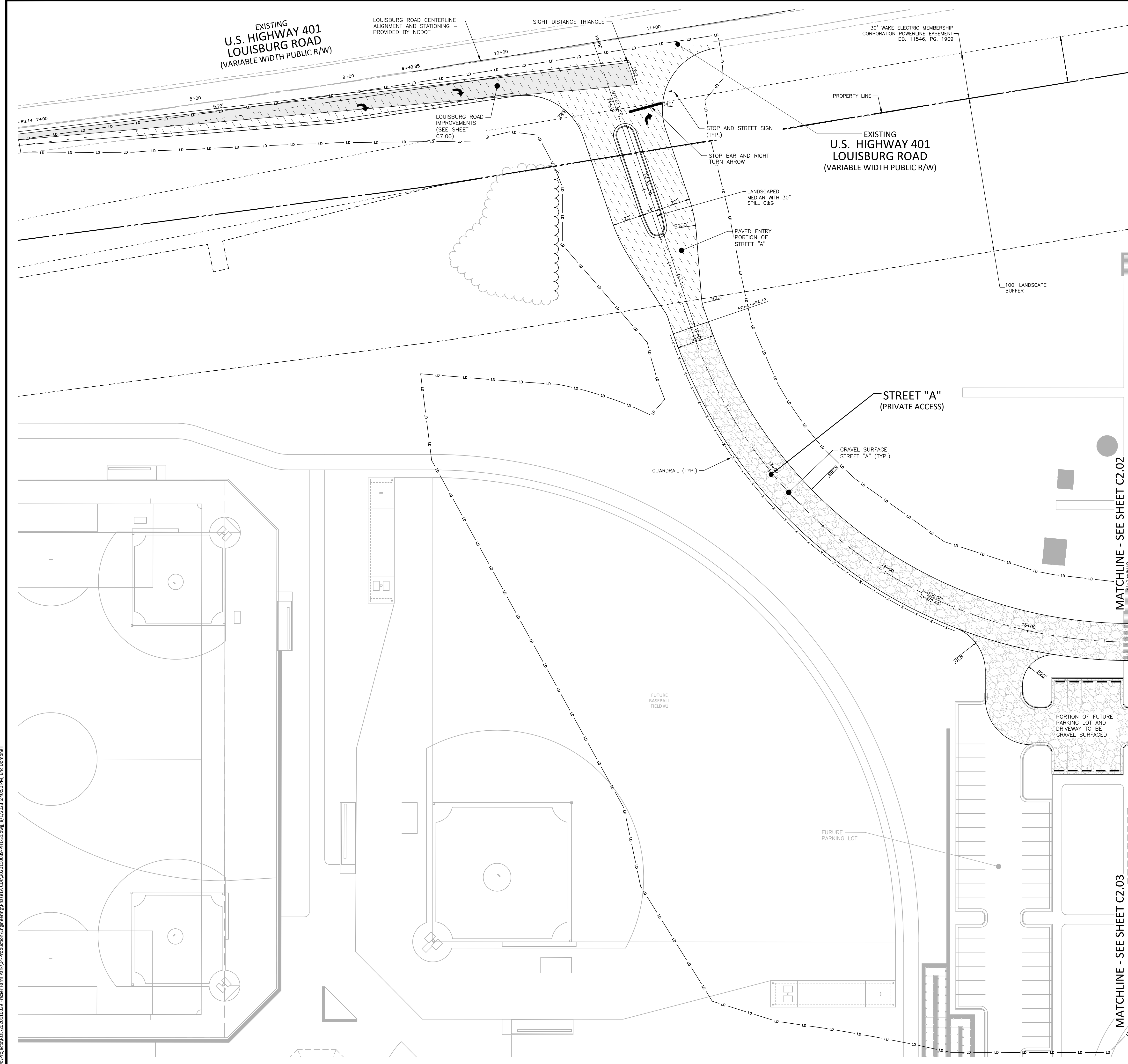
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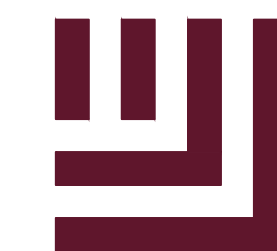
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M:\Projects\WOL\2020110039 Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-S1.dwg, 8/1/2023 6:01:30 PM, Eric Domorell



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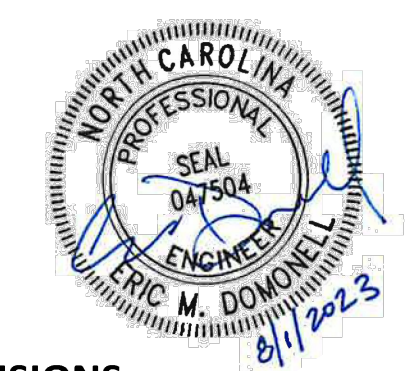
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SITE PLAN: AREA 'B'

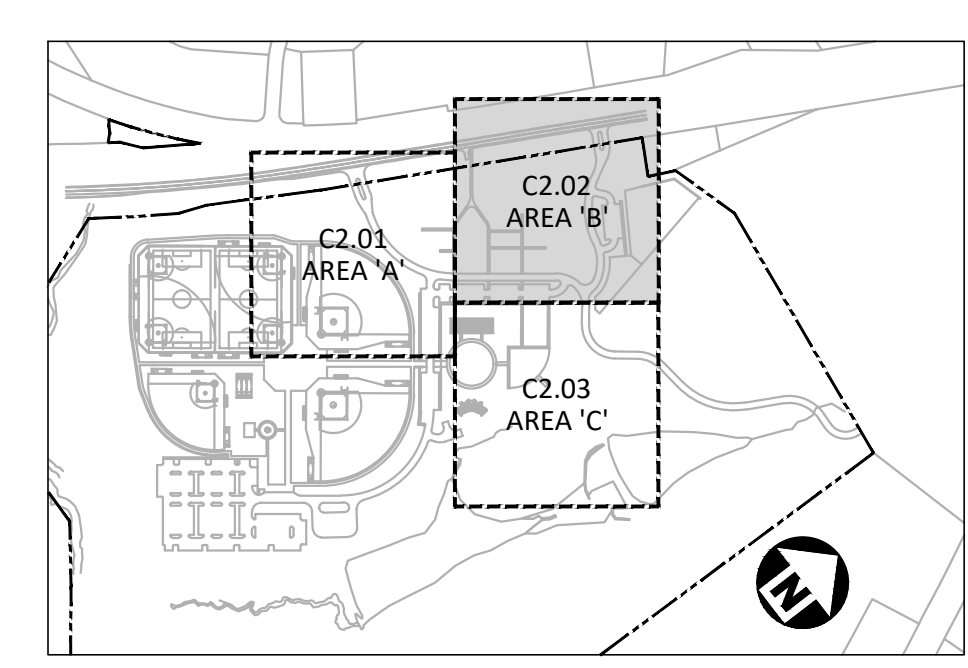
C2.02

SITE LEGEND

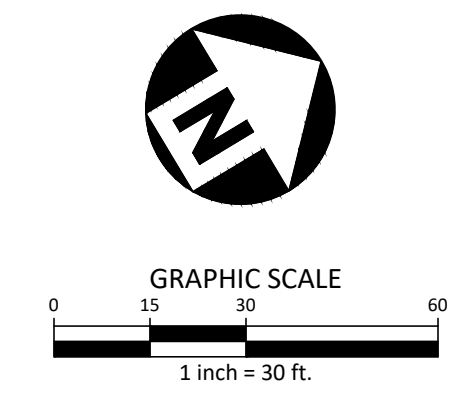
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9. CONTRACTOR SHALL STAKE ALL WALKS, HARDSCAPE AND OTHER PAVED AREAS TO BE COMPLETED AND OBTAIN APPROVAL FROM OWNER'S REP. PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE RESOLVED PRIOR TO CONSTRUCTION. ANY WORK PERFORMED WITHOUT APPROVAL, THE CONTRACTOR IS AT RISK FOR COST OF REPLACEMENT.
10. ALL FIELD ADJUSTMENTS SHALL RECEIVE APPROVAL FROM OWNER'S REP. PRIOR TO CONSTRUCTION.
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 HARD COPY INFORMATION THAT CONFLICTS SHALL BE BROUGHT TO OWNER'S REP. AND/OR LANDSCAPE ARCHITECT'S ATTENTION. HARD COPY INFORMATION SHALL PREVAIL.



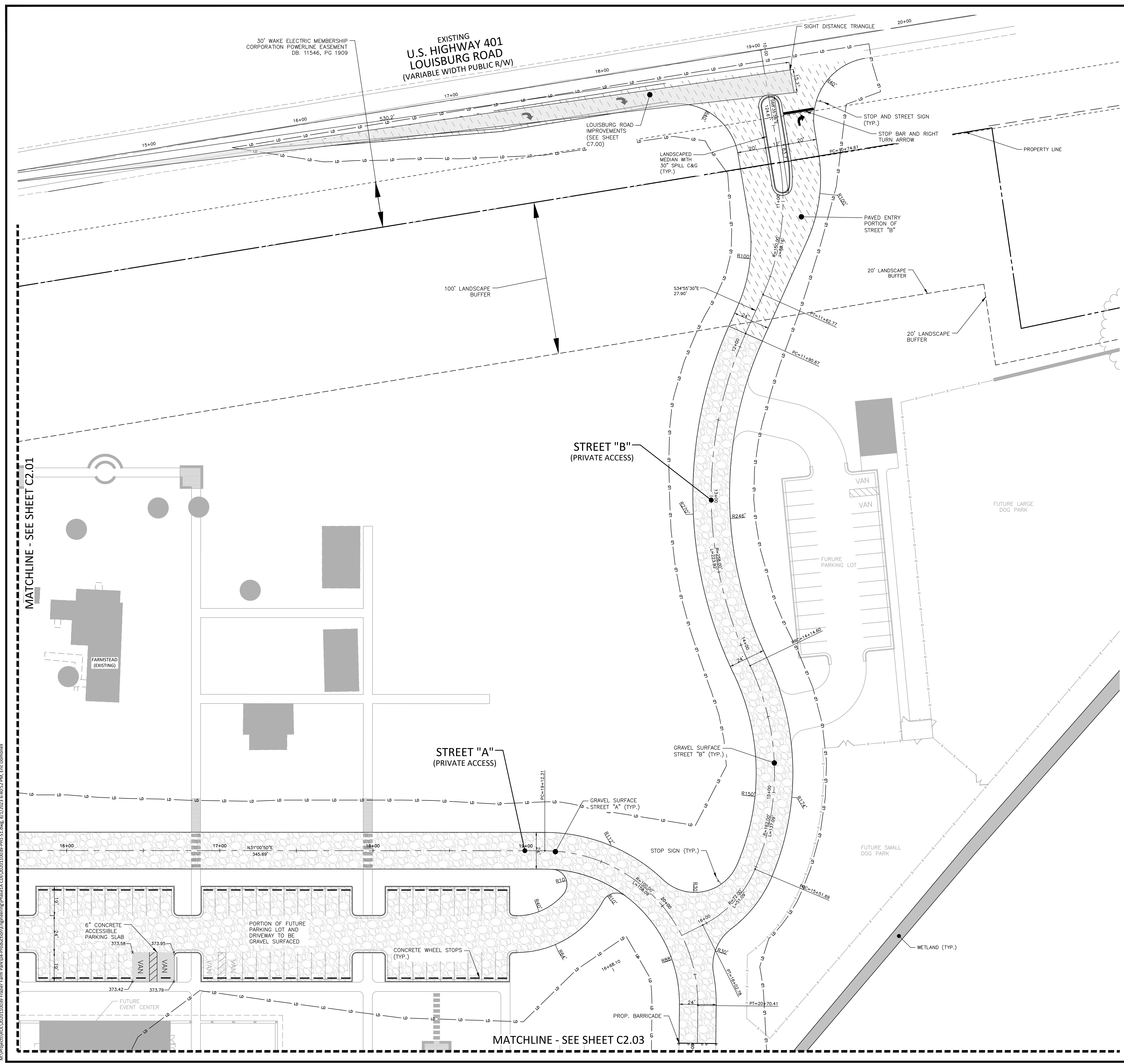
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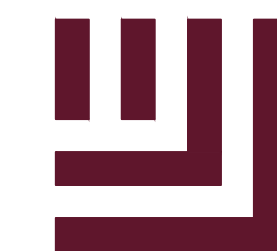
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CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



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Durham, NC 27713

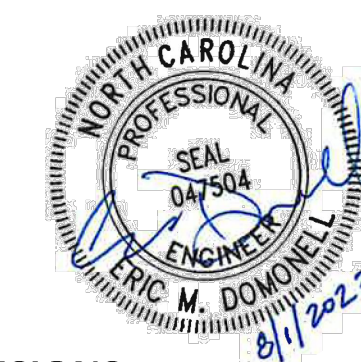
phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293

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-S1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=30'
DATE 08.01.2023

SHEET

SITE PLAN: AREA 'C'

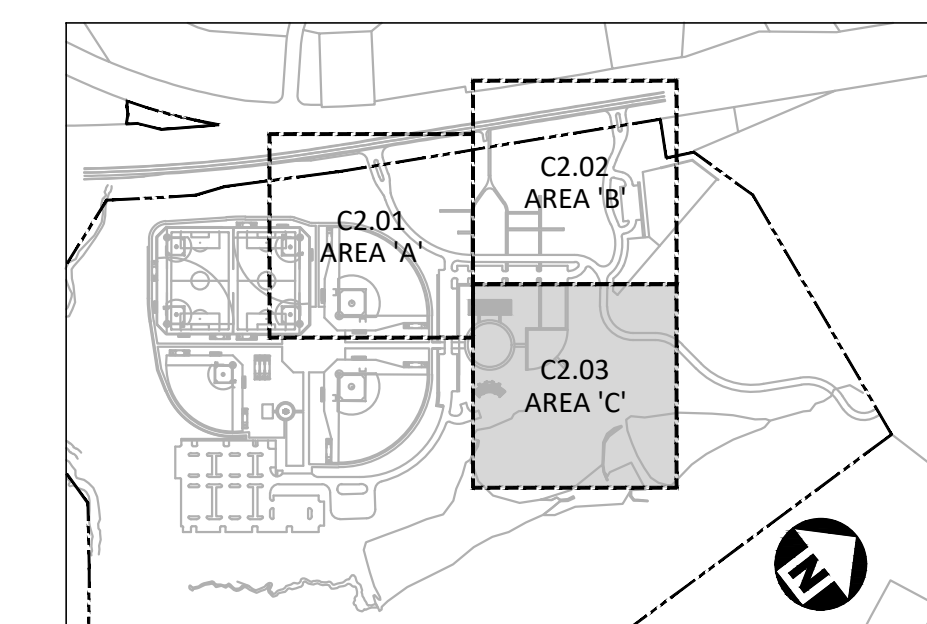
C2.03

SITE LEGEND

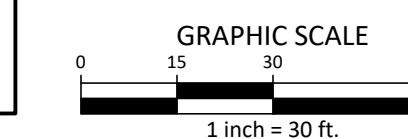
	SIGNAGE
	YARD LIGHTS
	LIGHT POLE
	POWER POLE
	TRAFFIC DIRECTIONAL ARROW
	ACCESSIBLE PARKING STALL
	VAN ACCESSIBLE PARKING STALL
	PARKING SPACE COUNT
	ACCESSIBLE RAMPS
	ACCESSIBLE ROUTE
	PHASE LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	LOT LINE
	EASEMENT LINE
	CENTERLINE
	HEAVY DUTY ASPHALT PAVEMENT
	ABC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

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.
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INDEX MAP
N.T.S.



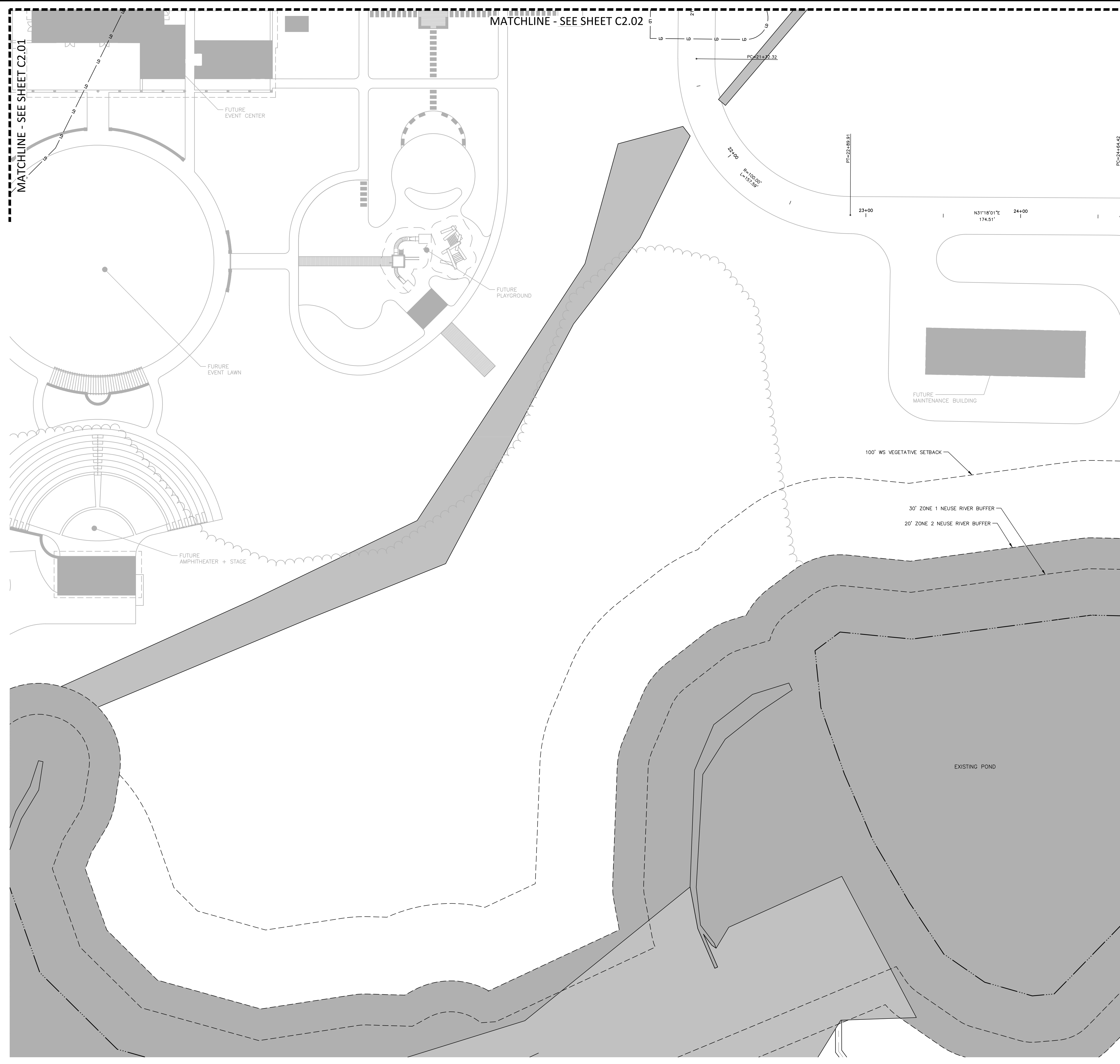
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CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

MATCHLINE - SEE SHEET C2.02

MATCHLINE - SEE SHEET C2.01



M:\Projects\WOL\2020110039 Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-S1.dwg, 8/1/2023 6:01:57 PM, Eric Domorell



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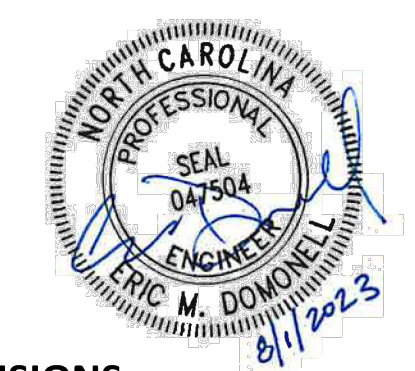
phone 919.361.5000
fax 919.361.2269
license number: C-0293

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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. 2020110039
FILENAME 2020110039-PH1-0A61
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=100'
DATE 08.01.2023

SHEET

OVERALL GRADING & DRAINAGE PLAN

C3.00

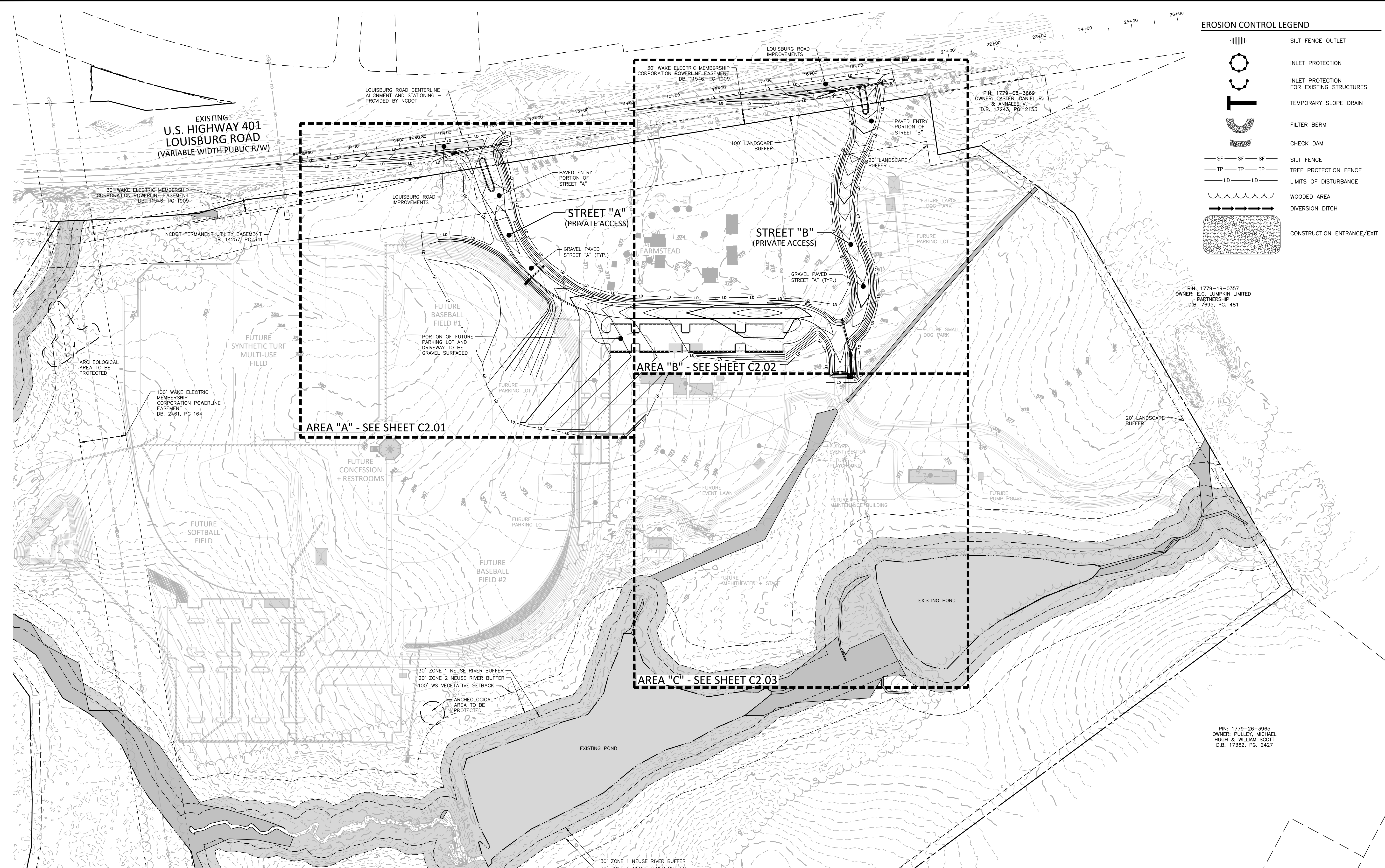
CID-23-5

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-DRAIN
- 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 1.0% MIN. SLOPE 3' MIN. COVER PVC SCHEDULE 40 IN TRAFFIC AREAS
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- WOODED AREA
- MAJOR CONTOUR
- MINOR CONTOUR
- EXISTING MINOR CONTOUR
- EASEMENT LINE

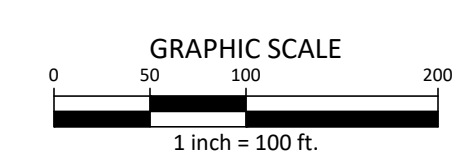
GRADING NOTES

- 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.
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- CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4849) 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.

STORM DRAINAGE NOTES:

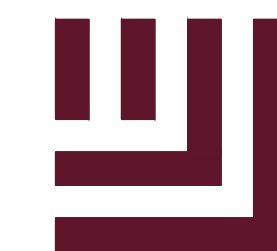
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- ALL STORM DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF ROLESVILLE STANDARDS.
- ALL CONCRETE SHALL MEET A MINIMUM 3000 PSI COMPRESSIVE STRENGTH.
- ALL PIPE JOINTS SHALL BE MADE WITH PREFORMED JOINT SEALER, WHICH CONFORMS TO AASHTO SPECIFICATION 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.

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



PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

M:\Projects\NC\2020110039-Frazier Farm Park\04-Production\Engineering\Phase1A_CID\2020110039-PH1-0A61.dwg, 8/1/2023 6:41:10 PM, Eric Domorell



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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-G1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=30'
DATE 08.01.2023

SHEET

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

C3.01

CID-23-5

GRADING LEGEND

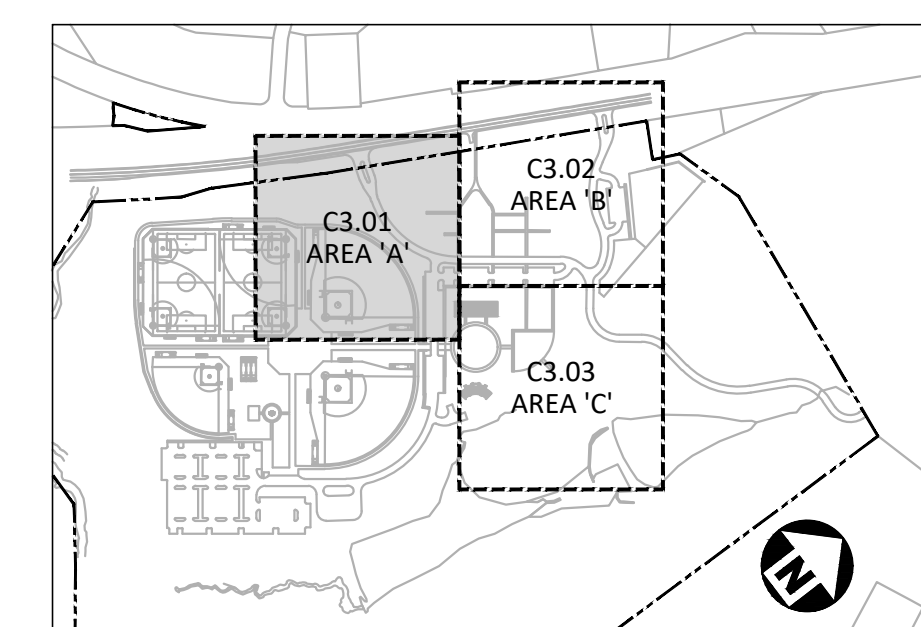
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	ENDWALL SECTION
	CATCH BASIN
	DROP INLET
	JUNCTION BOX
	DRAINAGE FLOW ARROW
	TOP & BOTTOM CURB ELEVATIONS
	SPOT ELEVATION
	STORM DRAINAGE
	TREE PROTECTION FENCE
	LIMITS OF DISTURBANCE
	WOODED AREA
	MAJOR CONTOUR
	MINOR CONTOUR
	EXISTING MAJOR CONTOUR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

GRADING NOTES

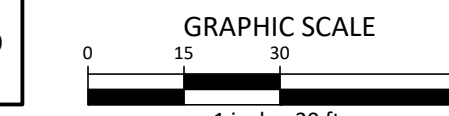
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- CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- A PRE-CONSTRUCTION CONFERENCE WILL BE HELD PRIOR TO ANY LAND DISTURBING ACTIVITY. AS DEEMED NECESSARY, THE OWNER, ENGINEER, CONTRACTOR, AND REPRESENTATIVES FROM NCDOT WILL BE INVITED TO ATTEND THE MEETING. FOR NCDOT 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.

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.

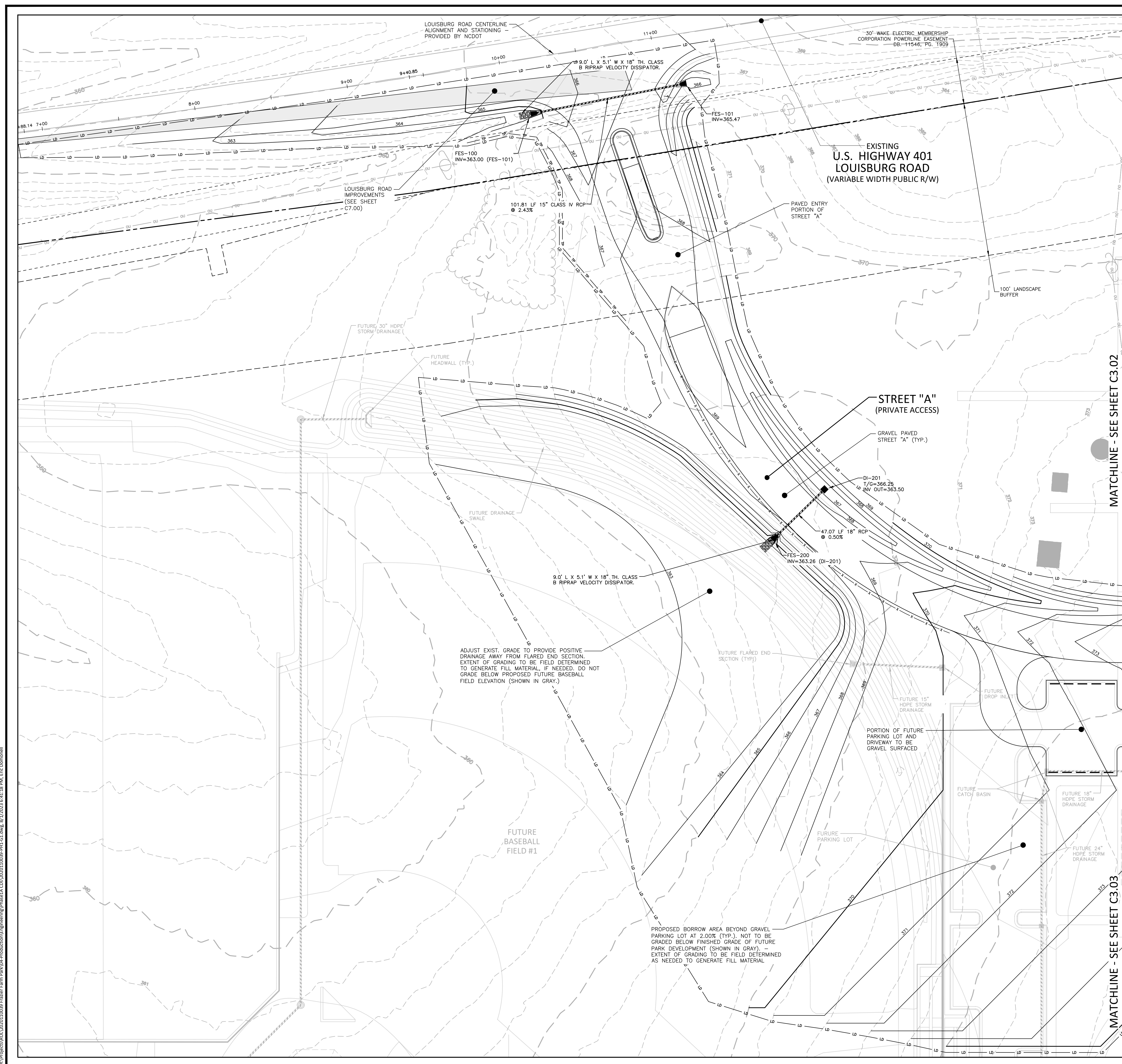


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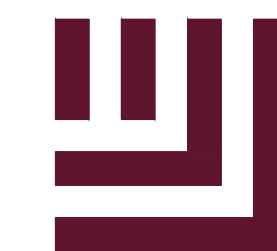


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PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



M:\Projects\WOL\2020110039 Frazier Farm PH1-G1-Production\Engineering\Phase1A\CD\2020110039-PH1-G1.dwg, 8/17/2023 6:41:38 PM, Eric Donohell



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REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039
FILENAME 2020110039-PH1-G1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=30'
DATE 08.01.2023

SHEET

GRADING & DRAINAGE
PLAN: AREA 'B'

C3.02

CID-23-5

GRADING LEGEND

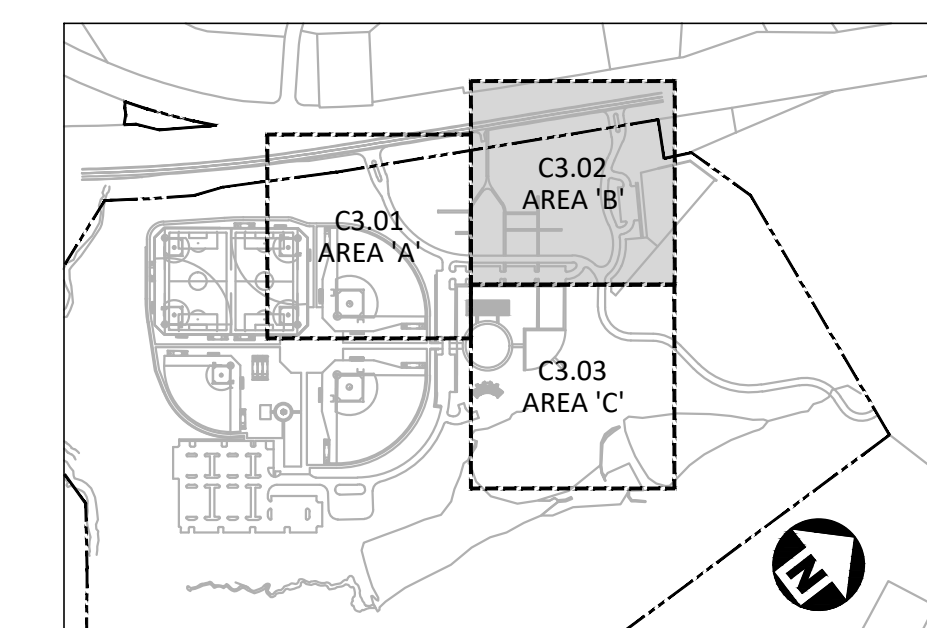
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	ENDWALL SECTION
	CATCH BASIN
	DROP INLET
	JUNCTION BOX
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	TREE PROTECTION FENCE
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	WOODED AREA
	MAJOR CONTOUR
	MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EASEMENT LINE
	ACCESSIBLE PARKING AREA (2% MAX. SLOPE IN ALL DIRECTIONS)

GRADING NOTES

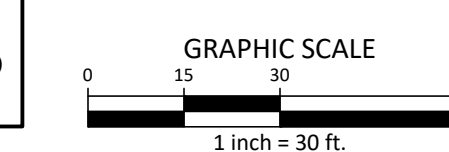
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- A PRE-CONSTRUCTION CONFERENCE WILL BE HELD PRIOR TO ANY LAND DISTURBING ACTIVITY. AS DEEMED NECESSARY, THE OWNER, ENGINEER, CONTRACTOR, AND REPRESENTATIVES FROM NCDEQ WILL BE INVITED TO ATTEND THE MEETING. FOR NCDEQ REPRESENTATIVES, CONTACT DIVISION 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.

STORM DRAINAGE NOTES:

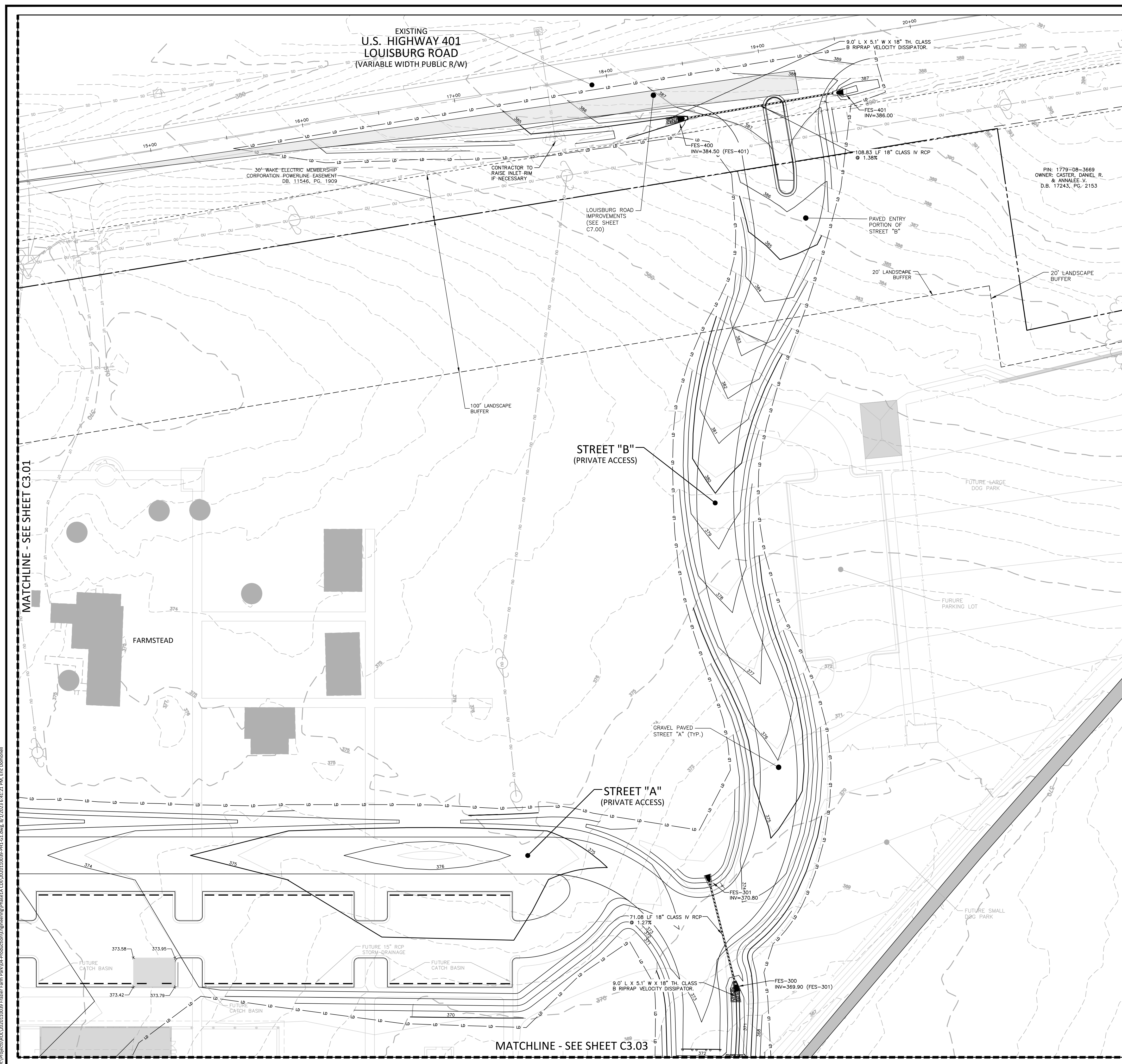
- ALL STORM DRAINAGE PIPES SHOWN SHALL BE CORRUGATED HDPE UNLESS NOTED OTHERWISE. CONTRACTOR TO COORDINATE WITH THE GEOTECH TO VERIFY TYPE OF BEDDING REQUIRED BASED ON SOIL CONDITIONS.
- ALL STORM DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF ROLESVILLE STANDARDS.
- ALL CONCRETE SHALL MEET 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.



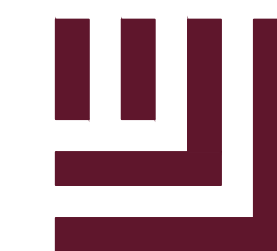
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN OF ROLESVILLE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS



MATCHLINE - SEE SHEET C3.01

MATCHLINE - SEE SHEET C3.03

M:\Projects\WOL\2020110039 Frazier Farm PH1A\04-Production\Engineering\Phase1A_CD\2020110039-PH1-G1.dwg, 8/1/2023 8:41:21 PM, Eric Domorell



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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-G1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=30'
DATE 08.01.2023

SHEET

GRADING & DRAINAGE
PLAN: AREA 'C'

C3.03

CID-23-5

GRADING LEGEND

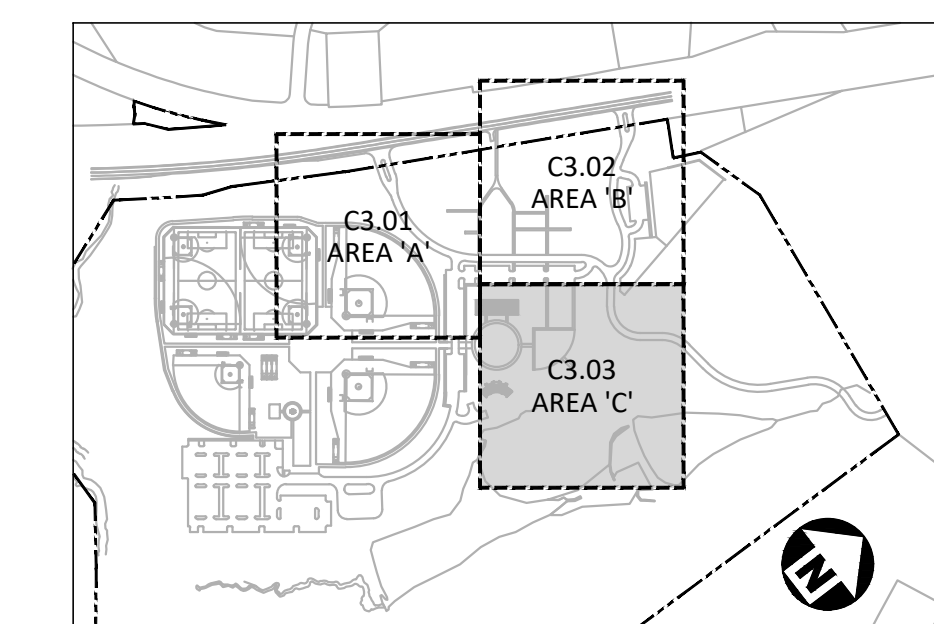
	FLARED END SECTION
	ENDWALL SECTION
	CATCH BASIN
	DROP INLET
	JUNCTION BOX
	DRAINAGE FLOW ARROW
	TOP & BOTTOM CURB ELEVATIONS
	SPOT ELEVATION
	STORM DRAINAGE
	TREE PROTECTION FENCE
	LIMITS OF DISTURBANCE
	WOODED AREA
	MAJOR CONTOUR
	MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EASEMENT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

GRADING NOTES

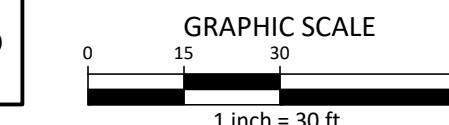
1. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. FOR NECESSARY PLAN OR GRADE CHANGES, NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR 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.
4. A PRE-CONSTRUCTION CONFERENCE WILL BE HELD PRIOR TO ANY LAND DISTURBING ACTIVITY. AS DEEMED NECESSARY, THE OWNER, ENGINEER, CONTRACTOR, AND REPRESENTATIVES FROM NCDOT WILL BE INVITED TO ATTEND THE MEETING. FOR NCDOT REPRESENTATIVES, CONTACT DIVISION OF LAND QUALITY AT (910) 433-3300 PRIOR TO START OF CONSTRUCTION.
5. 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.
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7. 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:

1. 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.
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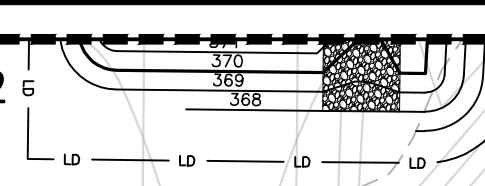


INDEX MAP
N.T.S.



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

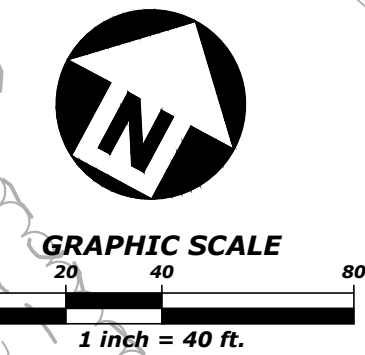
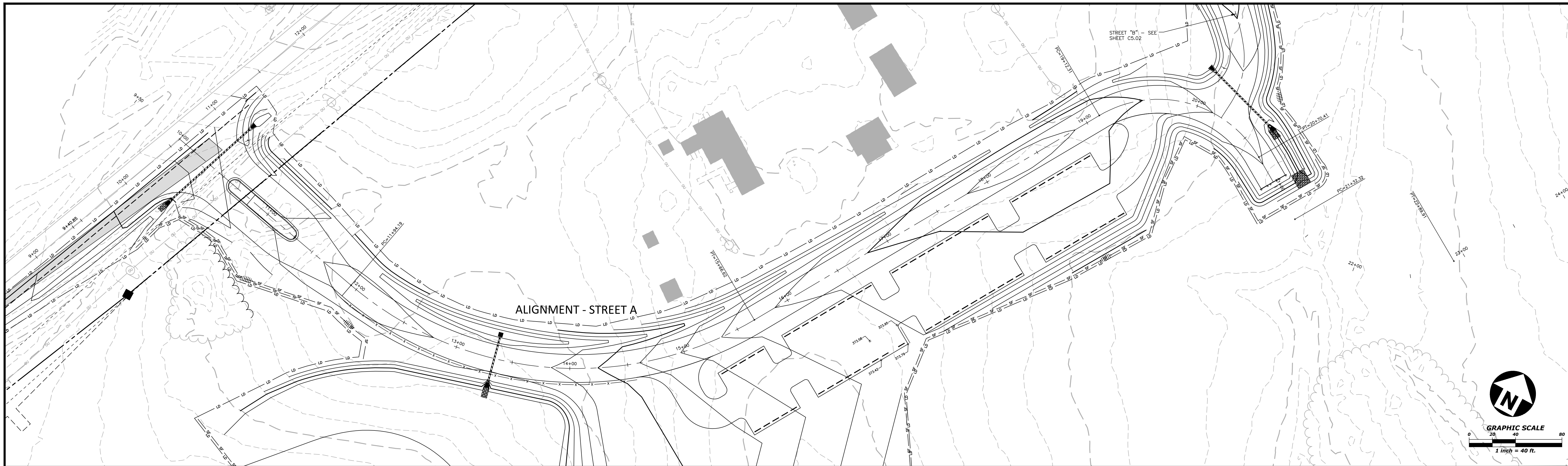
MATCHLINE - SEE SHEET C3.02



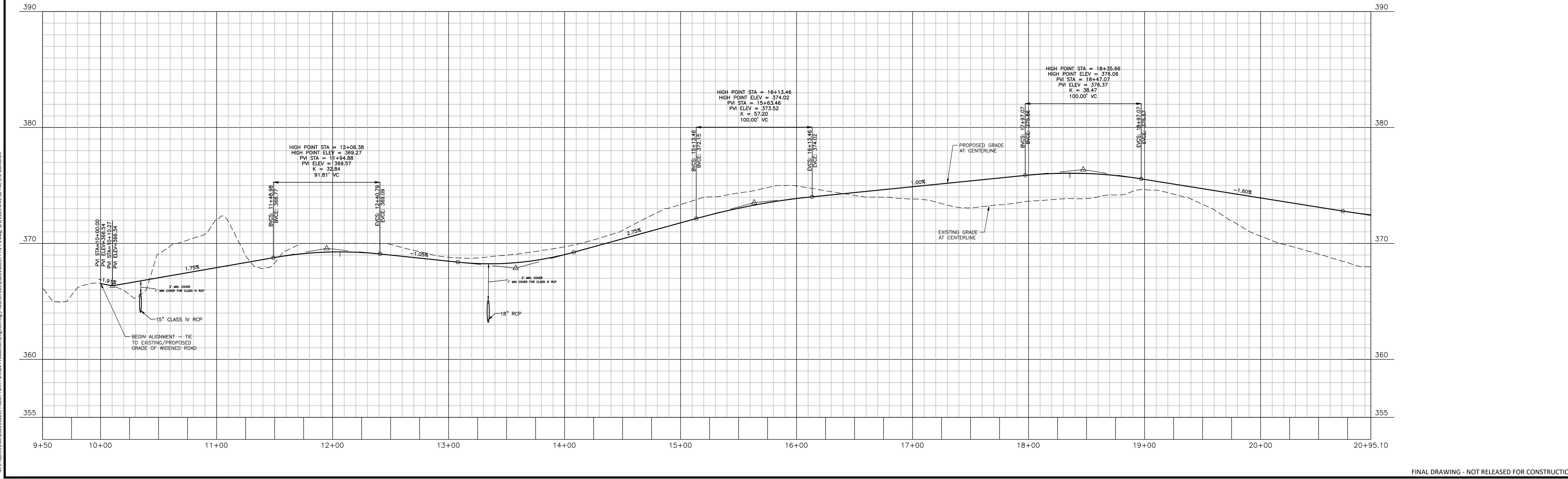
PROPOSED BORROW AREA BEYOND GRAVEL PARKING LOT AT 2.00% (TYP.), NOT TO BE GRADED BELOW FINISHED GRADE OF FUTURE PARK DEVELOPMENT (SHOWN IN GRAY). - EXTENT OF GRADING TO BE FIELD DETERMINED AS NEEDED TO GENERATE FILL MATERIAL

MATCHLINE - SEE SHEET C3.01

M:\Projects\WOL_2020110039_Frazier Farm PH1-G1-Production\Engineering\Phase1A_CD\2020110039-PH1-G1.dwg, 8/1/2023 6:41:27 PM, Eric Domorell



ALIGNMENT - STREET A



M:\Projects\BOL10039\Frazier Farm Park\Production\Engineering\Phase1A_C5.00\2020110039-PH1-P1.dwg, 8/1/2023 6:41:38 PM, Eric Domonelli

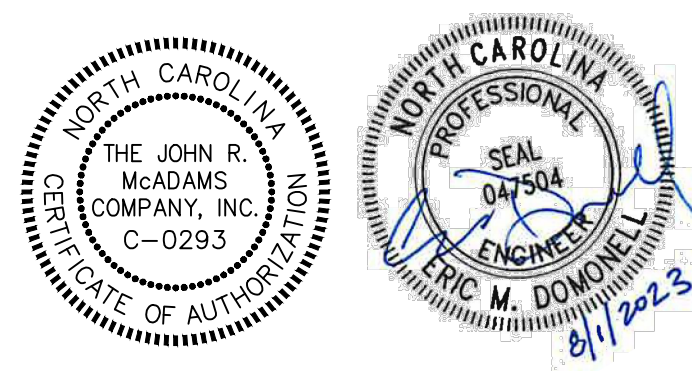
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION



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 502 SOUTHTOWN CIRCLE
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REVISIONS
 NO. DATE

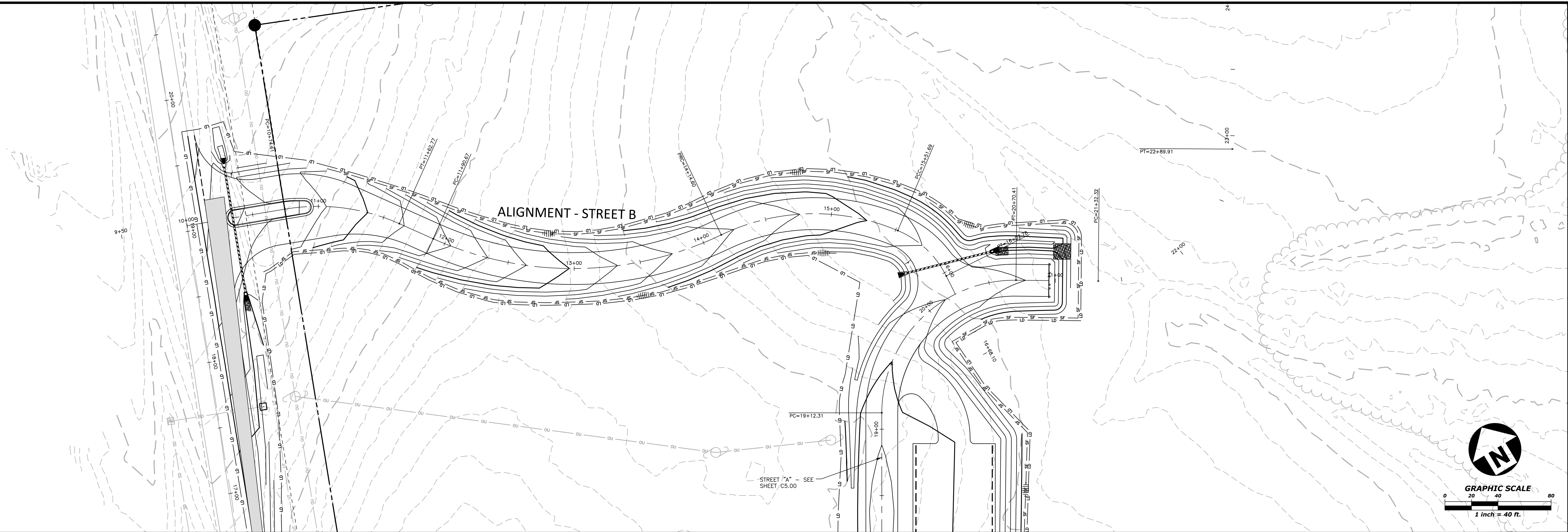


FRAZIER FARM PARK
CONSTRUCTION DRAWINGS - PHASE 1A
11624 LOUISBURG ROAD
 ROLESVILLE, NORTH CAROLINA

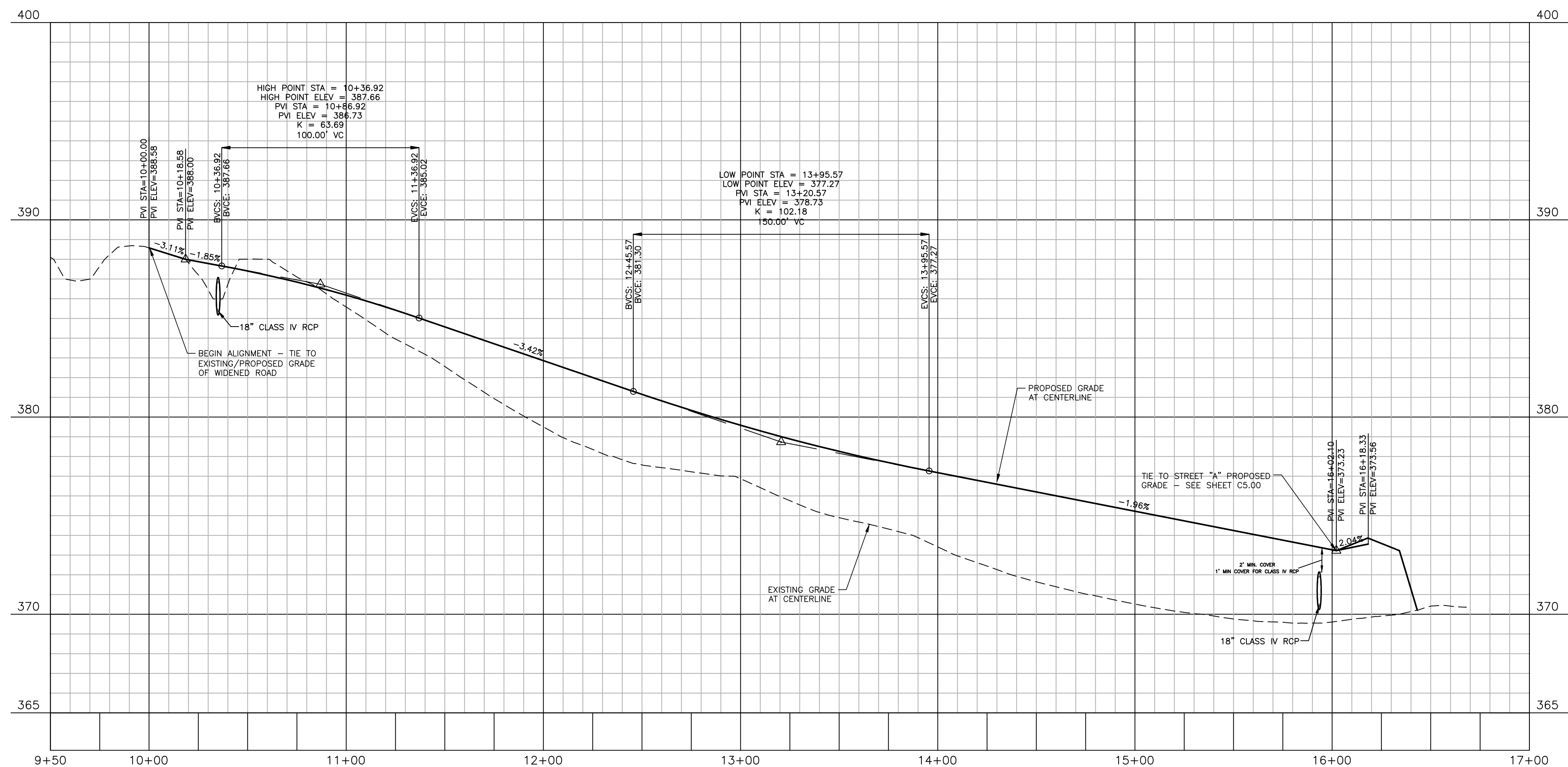
PLAN INFORMATION
 PROJECT NO. 2020110039
 FILENAME 2020110039-PH1-P1
 CHECKED BY EMD
 DRAWN BY SME
 SCALE H:1"=40' / V:1"=4'
 DATE 07.31.2023

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

C5.00



ALIGNMENT - STREET B



FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

M:\Projects\B0110039\Frazer Farm\Phase1A\Production\Engineering\Phase1A_C5.01\202110039-PH1-P1.dwg, 8/1/2023 6:41:39 PM, Lic: Domonell



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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	07.31.2023

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

C5.01

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

- 1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)
- 2. UTILITY SEPARATION REQUIREMENTS:
a. A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER...
b. WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'...
c. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN...
d. 5' 0" MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES...
e. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS...
f. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- 3. 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.
- 4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT...
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
6. 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...
7. INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT...
8. INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. 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.
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDMQU, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
11. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
12. 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...
13. 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...

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:

- 1. 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.
- 2. 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...
3. SHARP THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SETTLEMENT PIT UNDER THE SKIMMER OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR TIMBER.
4. PLACE THE BARREL (TYPICALLY 4-INCH SCHEDULE 40 PVC PIPE) ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL...
5. PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT...
6. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURER'S INSTRUCTIONS, OR AS DESIGNED.
7. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE...
8. EARTHEN SPILLWAYS - INSTALL THE SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT POSSIBLE...
9. INLETS - DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION...
10. EROSION CONTROL - CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED...
11. INSTALL POROUS BAFFLES AS SPECIFIED IN PRACTICE 6.65, POROUS BAFFLES.
12. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT...

TRAFFIC CONTROL:

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

TEMPORARY SKIMMER BASIN SPECIFICATIONS:

- 1. 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...
2. ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER, AND OTHER OBJECTIONABLE MATERIAL...
3. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SETTLEMENT PIT UNDER THE SKIMMER OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR TIMBER.
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11. INSTALL POROUS BAFFLES AS SPECIFIED IN PRACTICE 6.65, POROUS BAFFLES.
12. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT...

CONSTRUCTION SEQUENCE - STAGE 1

- 1. REQUEST PRE-CONSTRUCTION MEETING WITH DEMLR RALEIGH REGIONAL OFFICE AT LEAST 72 HOURS PRIOR TO COMMENCING THE PROJECT...
2. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES...
3. INSTALL TREE PROTECTION FENCE AT FINAL LOCATIONS SHOWN. CALL NCDOT TO INSPECT TREE PROTECTION FENCE...
4. ATTEND PRE-CONSTRUCTION MEETING WITH NCDCEQ EROSION CONTROL INSPECTOR.
5. OBTAIN GRADING PERMIT.
6. INSTALL CONSTRUCTION ENTRANCE, SILT FENCE WITH OUTLETS, AND TEMPORARY STREAM CROSSING AS SHOWN ON THIS EROSION CONTROL PLAN STAGE 1...
7. INSTALL ALL REMAINING PERIMETER EROSION CONTROL MEASURES AS SHOWN TO PREVENT EROSION AND SEDIMENTATION...
8. OBTAIN CERTIFICATE OF COMPLIANCE THROUGH ON-SITE INSPECTION BY NCDCEQ EROSION CONTROL INSPECTOR.
9. PROCEED WITH CLEARING OF SITE.
10. 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...
11. CLEAN SEDIMENT BASINS WHEN ONE-HALF FULL.
12. ALL AREAS AND SLOPES DISTURBED DURING CONSTRUCTION AND EXPOSED SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 14 CALENDAR DAYS...
13. MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
14. WITH APPROVAL FROM NCDCEQ EROSION CONTROL INSPECTOR MOVE TO EROSION CONTROL PLAN STAGE 2.

CONSTRUCTION SEQUENCE - STAGE 2

- 1. PROCEED WITH GRADING/BUILDING CONSTRUCTION.
2. INSTALL STORM DRAINAGE SYSTEM AND DIVERT FLOW TO INLETS WITH EXCAVATED INLET PROTECTION.
3. DRAIN AND REDUCE THE SEDIMENT BASIN UTILIZING THE SEDIMENT FILTER BAG WHICH WILL BE CONTINUOUSLY MONITORED DURING OPERATION...
4. CLEAN SEDIMENT BASIN WHEN ONE-HALF FULL.
5. ALL EROSION AND SEDIMENTATION CONTROL PRACTICES SHALL BE CHECKED BY CONTRACTOR FOR STABILITY AND OPERATION...
6. ALL AREAS AND SLOPES DISTURBED DURING CONSTRUCTION AND EXPOSED SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 14 CALENDAR DAYS...
7. CONTINUE INSTALLATION OF PAVEMENT, CURB AND GUTTER.
8. ALL EROSION AND SEDIMENTATION CONTROL PRACTICES SHALL BE CHECKED BY CONTRACTOR FOR STABILITY AND OPERATION...
9. ALL AREAS AND SLOPES DISTURBED DURING CONSTRUCTION AND EXPOSED SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING WITHIN 14 CALENDAR DAYS...
10. PERIMETER MEASURES MUST BE LEFT IN PLACE UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED...
11. REQUEST FINAL APPROVAL BY NCDCEQ EROSION CONTROL INSPECTOR.
12. FILL IN EXCAVATED STORAGE AREAS AND DEWATER USING SEDIMENT FILTER BAGS...
13. WHEN THE PROJECT IS COMPLETE, THE PERMITTEE SHALL CONTACT DEMLR TO CLOSE OUT THE E&SC PLAN.

EROSION CONTROL NOTES:

- 1. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE...
2. REQUIRED TREE PROTECTION FENCING SHALL BE INSTALLED AND INSPECTED AND A PRE-CONSTRUCTION CONFERENCE SCHEDULED...
3. GRADING PERMIT WILL NOT BE ISSUED UNTIL NCDCEQ HAS RECEIVED NOTIFICATION FROM THE ECOSYSTEM ENHANCEMENT PROGRAM...
4. SEDIMENT/EROSION CONTROL DEVICES MUST BE CHECKED AFTER EACH STORM EVENT...
5. IN ADDITION TO THE REQUIREMENT DURING CONSTRUCTION FOR THE INSPECTION OF EROSION CONTROL DEVICES...
6. A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
7. CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GRADING CONTRACTOR...
8. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE...
9. NO DEBRIS SHALL BE TRACKED ONTO ANY EXISTING PAVED AREAS OR PUBLIC RIGHT OF WAY...
10. DURING THE CONSTRUCTION PHASE, ADDITIONAL EROSION AND SEDIMENT CONTROLS MAY BE REQUIRED...
11. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE STRIPPING OF TOPSOIL...
12. A CONSTRUCTION SEQUENCE HAS BEEN PROVIDED. INSTALLATION OF ALL PROPOSED SEDIMENTATION & EROSION CONTROL MEASURES...
13. CUT AND FILL SLOPE THAT IS TWO TO ONE (2:1) OR GREATER SHALL BE STABILIZED WITH PERMANENT SLOPE RETENTION DEVICES...
14. PROVIDE INLET PROTECTION AROUND ALL SITE STORM INLETS...
15. CONSTRUCTION TO VERIFY SILT FENCE OUTLET PLACEMENT AT LOW POINTS...
16. TEMPORARY DIVERSIONS SHALL BE MAINTAINED DAILY BY CONTRACTOR...
17. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED...
18. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S)...
19. CONSTRUCTION ENTRANCES MUST BE MODIFIED TO ACHIEVE ADA COMPLIANCE...
20. THE STREETS IN FRONT OF THE PROJECT AREA WILL BE KEPT CLEAN AT ALL TIMES...
21. THE PROJECT MAY REQUIRE A PRE-CONSTRUCTION CONFERENCE BEFORE THE GRADING PERMIT IS ISSUED.
22. THE SKIMMER AND SEDIMENT BASIN OUTLET PIPE MUST BE ON SITE BEFORE THE GRADING PERMIT IS ISSUED.
23. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED...
24. THE TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREAS...

STOCKPILE NOTES

- DESIGN CRITERIA
A. STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
B. STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
C. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
D. OFF-SITE SPILL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY UDO AND STATE REGULATIONS...
E. SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS...
F. IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE...
G. THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE IS REQUIRED.
H. ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE...
I. STOCKPILE MUST HAVE SILT FENCE WRAPPED AROUND THE LOW SIDE(S) AND A SILT FENCE OUTLET AT ALL LOW POINTS.

TEMPORARY SEEDING SCHEDULE

Table with 3 columns: SEEDING DATE, SEEDING MIXTURE, APPLICATION RATE. Rows include JAN 1 - MAY 1 and MAY 1 - AUG 15.

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 TACKLING 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

Table with 3 columns: SEEDING DATE, SEEDING MIXTURE, APPLICATION RATE. Rows include AUG 25 - OCT (BEST) and FEB - APR 15 (POSSIBLE).

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 TACKLING 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:

- 1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL IN THE LOCATIONS OF TEMPORARY DIVERSIONS...
2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS...
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION...
6. MAINTENANCE - INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL...

SEEDBED PREPARATION

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

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

REQUIRED GROUND STABILIZATION TIMEFRAMES

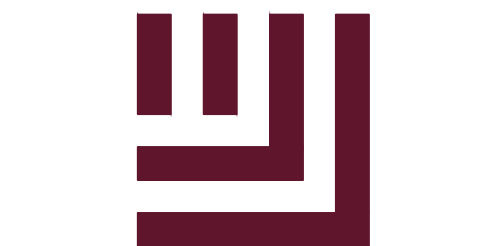
Table with 3 columns: SITE AREA DESCRIPTION, STABILIZE WITHIN THIS MANY CALENDAR DAYS AFTER CEASING LAND DISTURBANCE, TIMEFRAME VARIATIONS. Rows include PERIMETER DIKES, SLOPES STEEPER THAN 3:1, SLOPES 3:1 TO 4:1, AREAS WITH SLOPES FLATTER THAN 4:1.

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:

- 1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL...
2. SEDIMENT BASINS SHALL BE INSPECTED REGULARLY DURING LAND DISTURBING ACTIVITIES...
3. SEDIMENT FENCES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND AFTER EACH RUNOFF PRODUCING RAINFALL...
4. DIVERSION DITCHES MUST REMAIN IN PLACE UNTIL PROJECT IS STABILIZED.
5. EROSION CONTROL DURING SITE CONSTRUCTION WILL BE ACCOMPLISHED BY USE OF SILT FENCING AND SILT FENCE OUTLETS...



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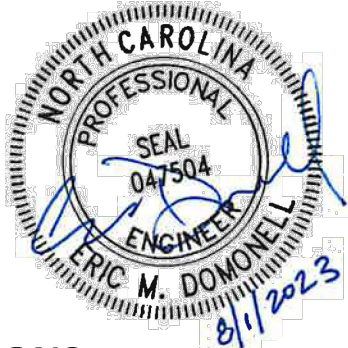
license number: C-0293

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FRAZIER FARM PARK
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PHASE 1A
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ROLESVILLE, NORTH CAROLINA



REVISIONS

NO. DATE

PLAN INFORMATION

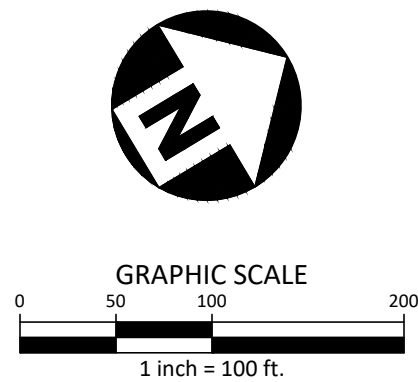
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FILENAME 2020110039-PH1-ECN1
CHECKED BY EMD
DRAWN BY SME
SCALE N/A
DATE 08.01.2023

SHEET

EROSION CONTROL NOTES

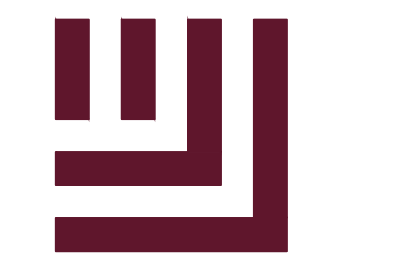
C6.00

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CID-23-5

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REVISIONS

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PLAN INFORMATION

PROJECT NO. 202011039
FILENAME 2020110039-PH1-EC1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=100'
DATE 08.01.2023

SHEET

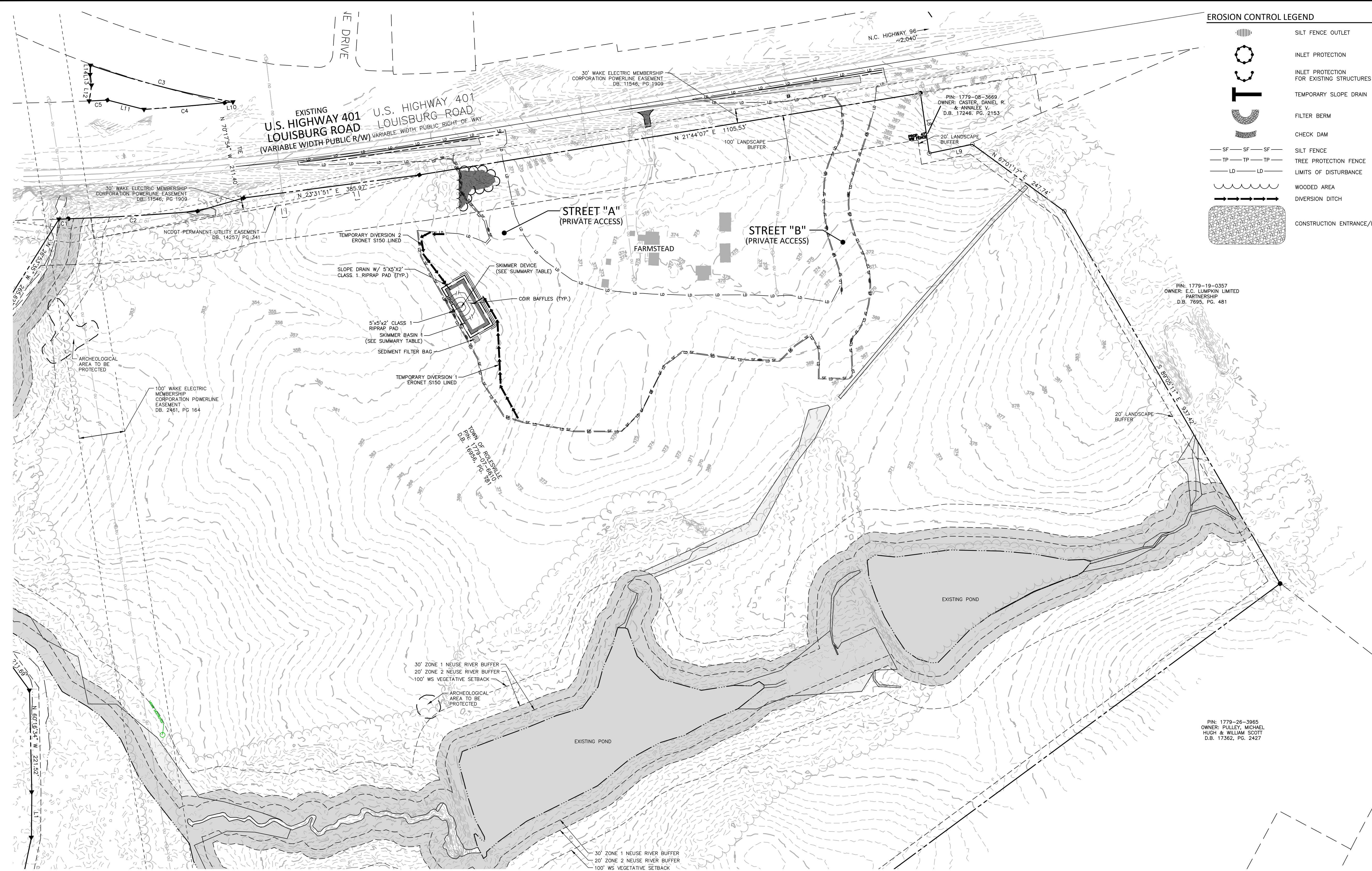
OVERALL EROSION CONTROL PLAN-STAGE I

C6.01

CID-23-5

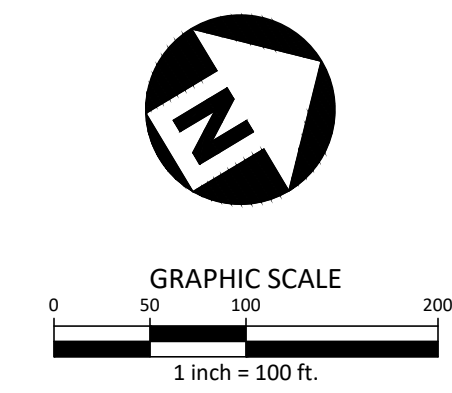
EROSION CONTROL LEGEND

- 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



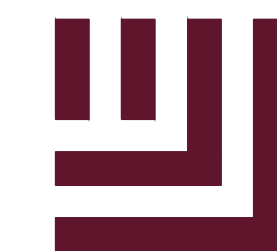
SEDIMENT BASIN SUMMARY TABLE				
ID	BOTTOM LENGTH X WIDTH	SPILLWAY LENGTH	SKIMMER AND ORIFICE SIZE	SIDESLOPES
SB-1	100' X 45'	15'	2" SKIMMER W/ 1.4" ORIFICE	2:1

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



PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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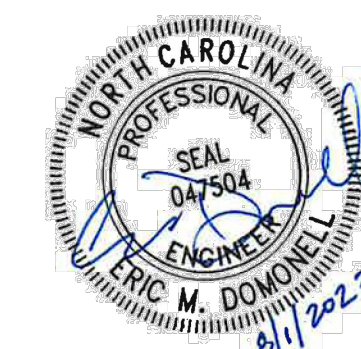
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PLAN INFORMATION

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FILENAME 2020110039-PH1-EC2
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SCALE 1"=100'
DATE 08.01.2023

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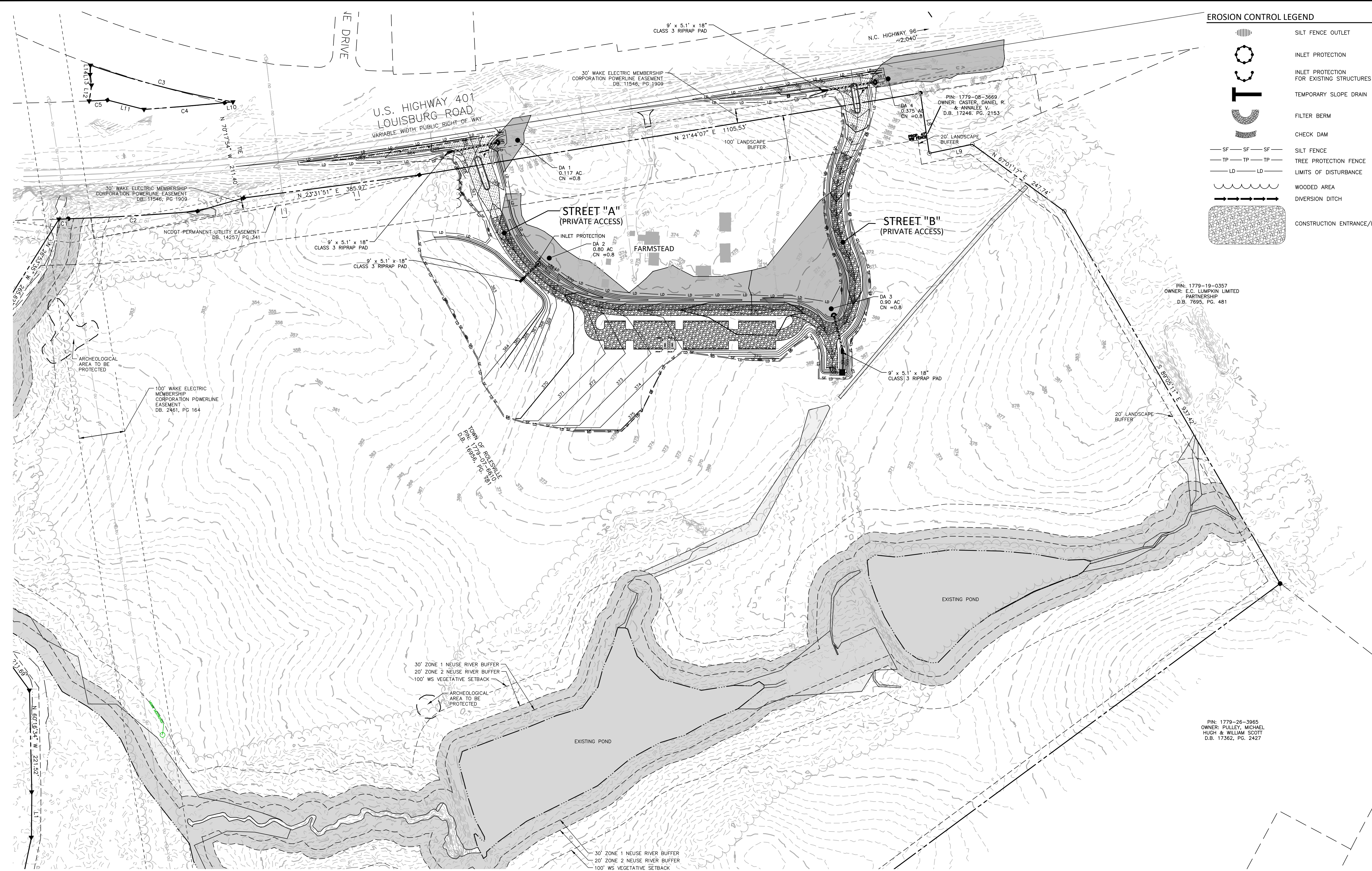
OVERALL EROSION CONTROL PLAN-STAGE II

C6.02

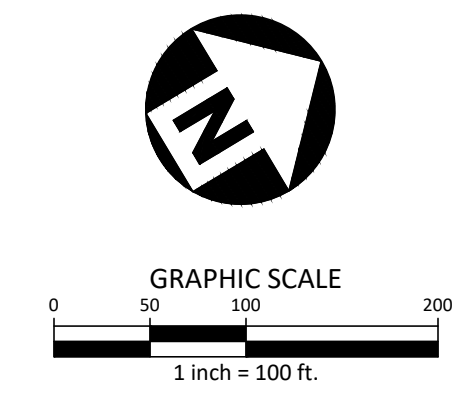
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EROSION CONTROL LEGEND

- 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

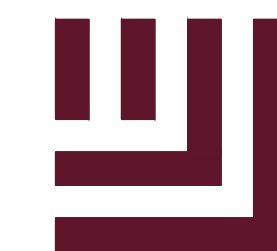


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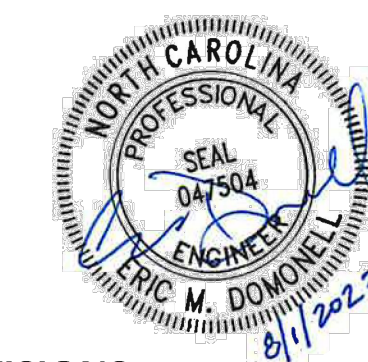
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PROJECT NO. 202011039
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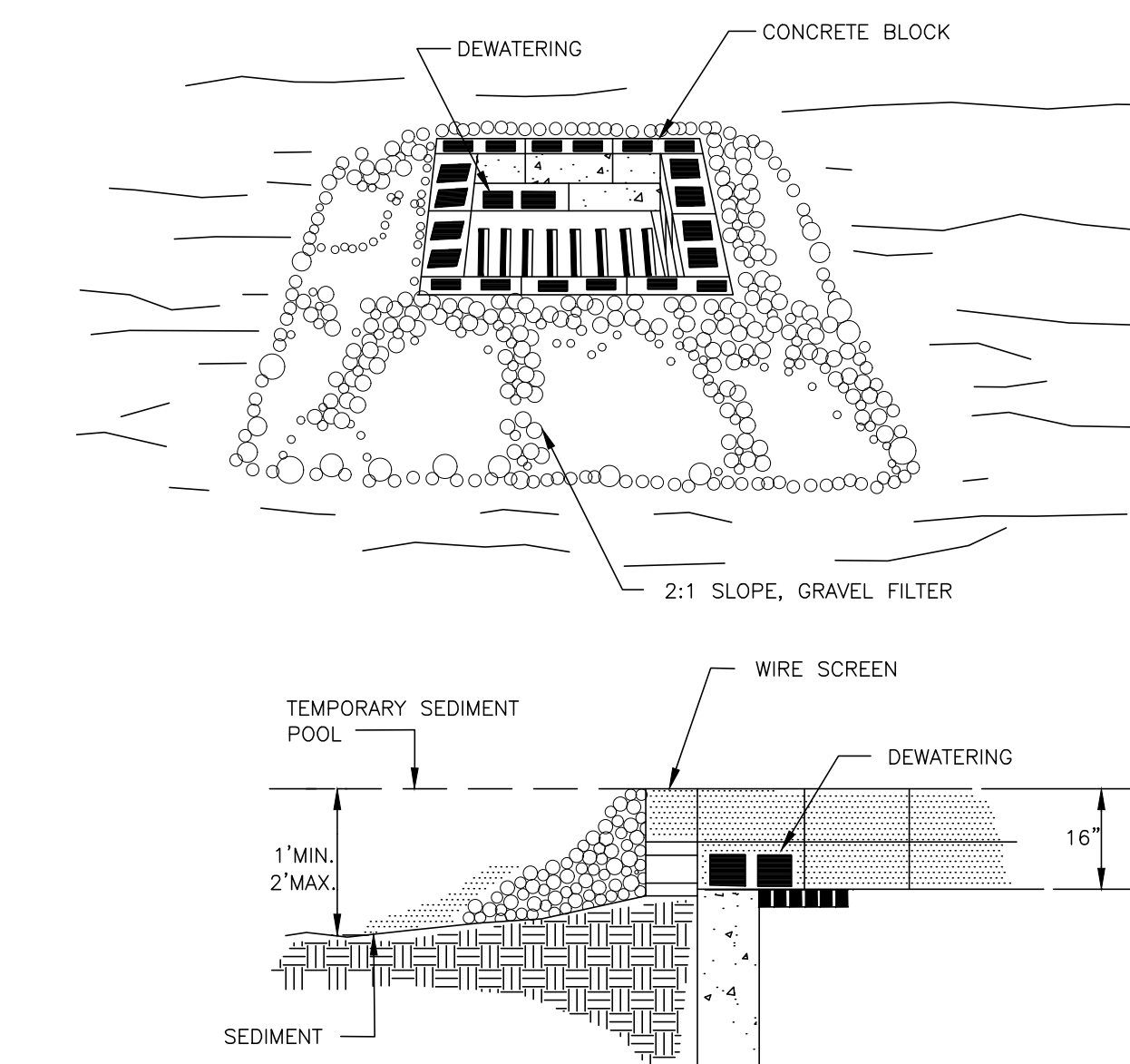
SHEET

EROSION CONTROL
DETAILS

C6.11

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

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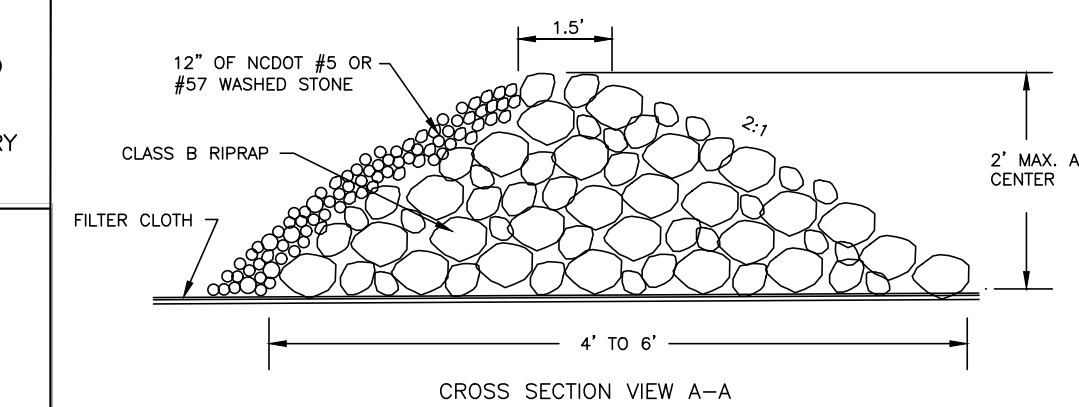
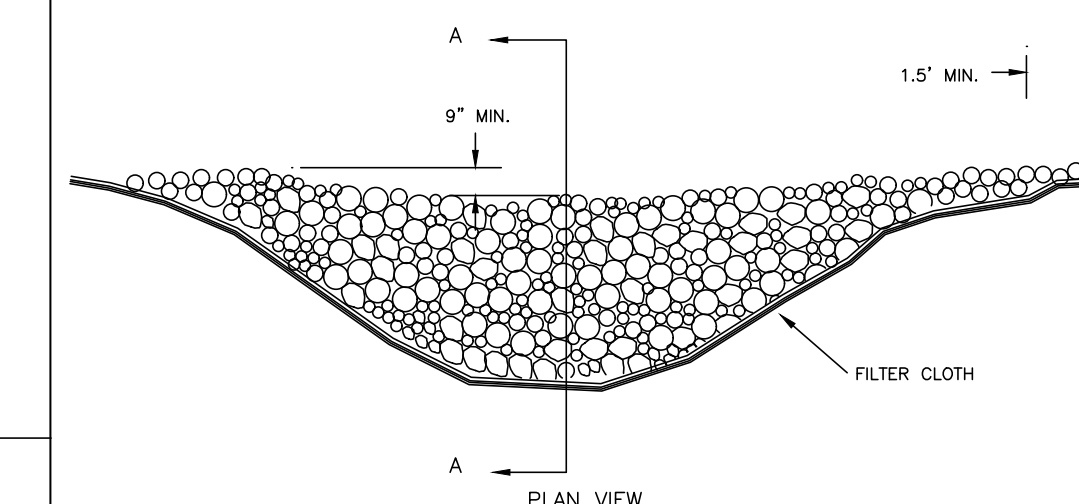


CONSTRUCTION SPECIFICATIONS

- 1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE ON THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCH BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF THE BLOCK 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 OPENING OVER ALL BLOCK OPENING 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

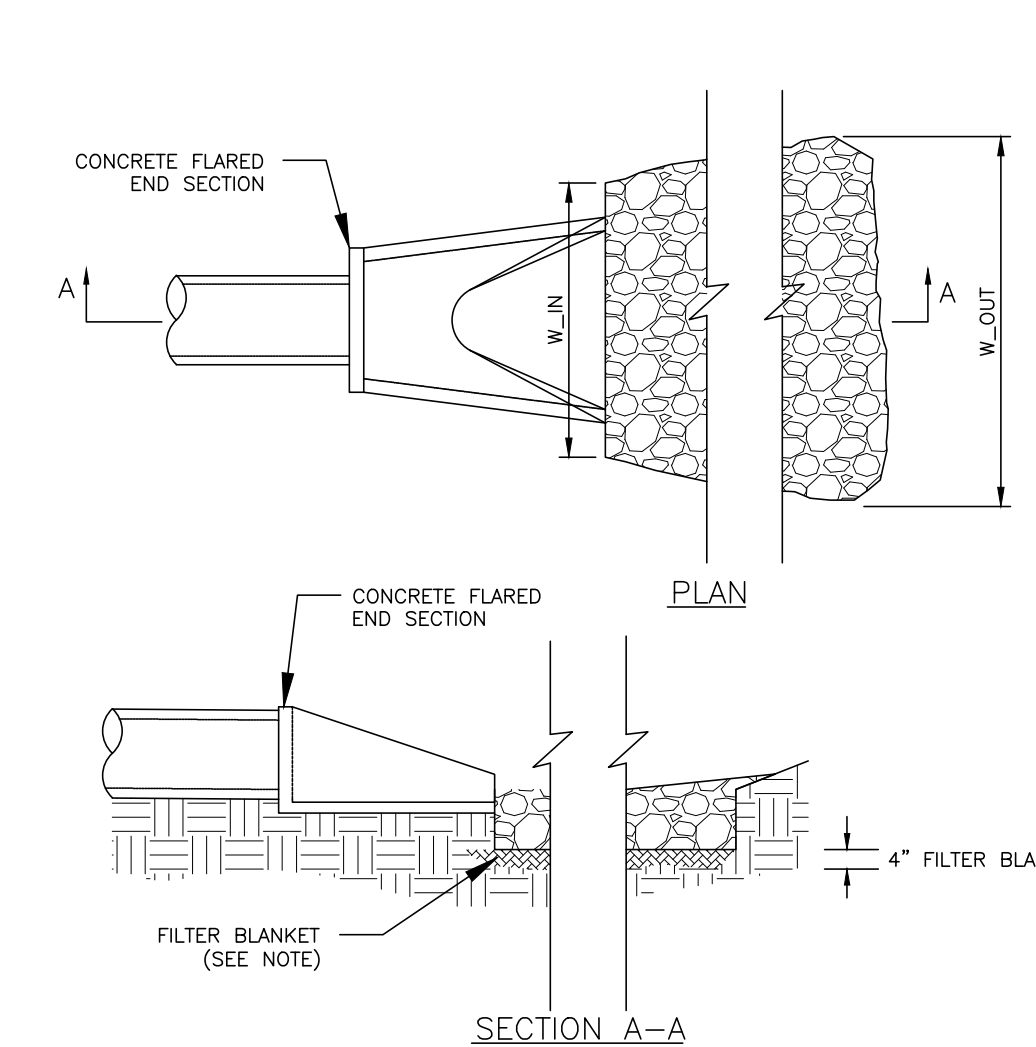
BLOCK AND GRAVEL DROP INLET PROTECTION

N.T.S.



Stone should be placed over the channel banks to keep water from cutting around the dam.

Stone Check dam



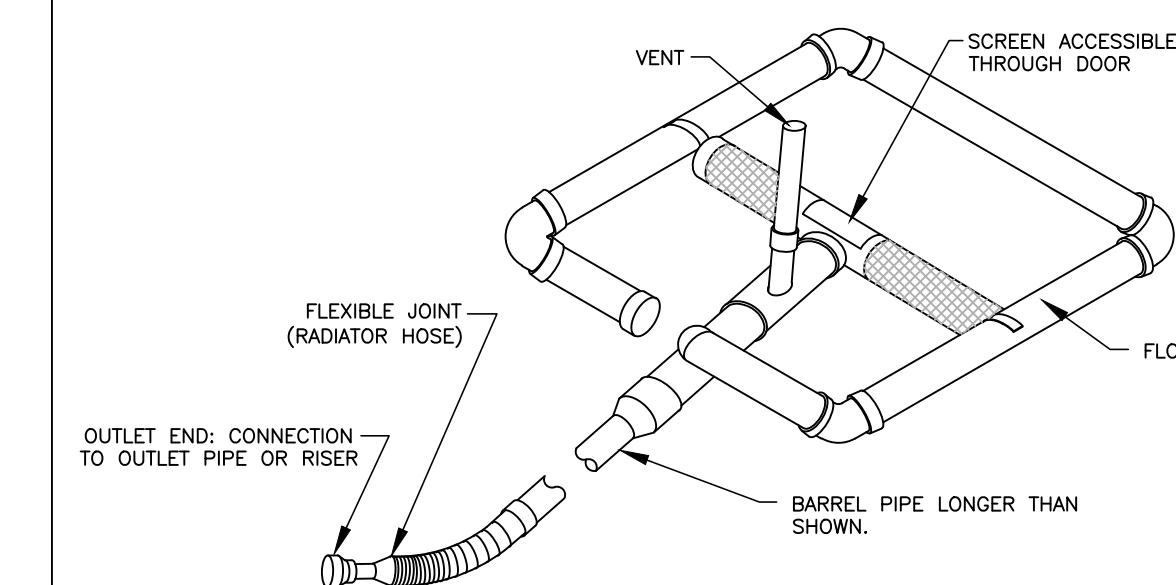
- 1. A FILTER BLANKET IS TO BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION. THE FILTER BLANKET WILL CONSIST OF A MINIMUM 4" THICK LAYER OF STONE (NCDOT #57) UNDERLAIN WITH MIRAFI FILTER WEAVE 700 OR ENGINEER APPROVED EQUIVALENT.
- 2. INSPECT VELOCITY DISSIPATOR WEEKLY AND AFTER EVERY 1/2 INCH OR GREATER RAINFALL TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLOOSED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

RIPRAP MAINTENANCE

INSPECT CHANNELS AT REGULAR INTERVALS AS WELL AS AFTER MAJOR RAINS, AND MAKE REPAIRS PROMPTLY. GIVE SPECIAL ATTENTION TO THE OUTLET AND INLET SECTIONS AND OTHER POINTS WHERE CONCENTRATED FLOW ENTERS. CAREFULLY CHECK STABILITY AT ROAD CROSSINGS, AND LOOK FOR INDICATIONS OF PIPING, SCOUR HOLES, OR BANK FAILURES. MAKE REPAIRS IMMEDIATELY. MAINTAIN ALL VEGETATION ADJACENT TO THE CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT THE AREA FROM EROSION AND SCOUR DURING OUT-OF-BANK FLOW.

FLARED END SECTION VELOCITY DISSIPATOR

N.T.S.



MAINTENANCE:

IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY A FEW SERKS ON THE ROPE TO MAKE THE SKIMMER BOB UP AND DOWN WILL DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK PULL THE SKIMMER OVER TO THE SIDE (IT'S EASIER TO DO WHEN THE BASIN PARTIALLY FULL) AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.

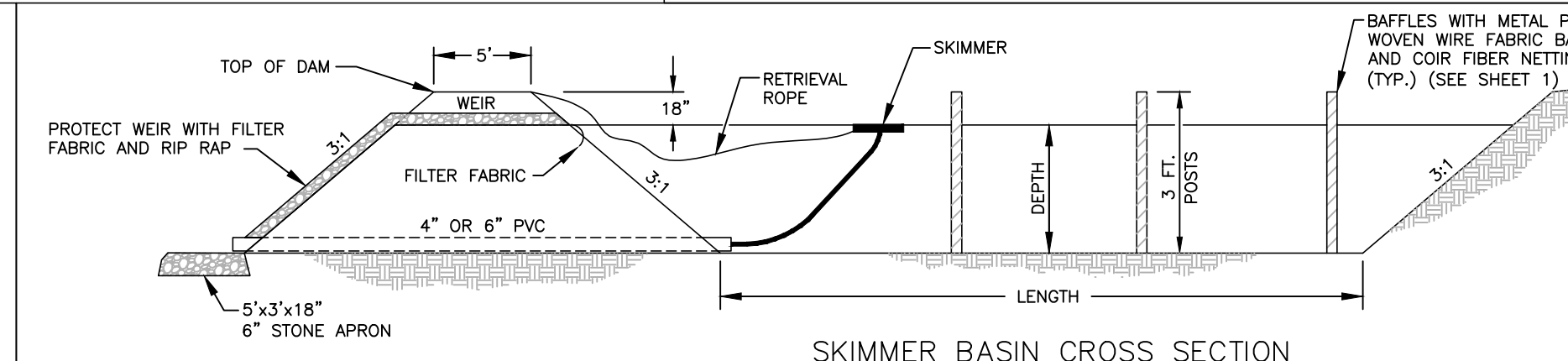
SEDIMENT UNDER THE SKIMMER: IF SEDIMENT ACCUMULATES TO THE POINT THE SKIMMER CANNOT SETTLE LOW ENOUGH TO DRAIN THE ENTIRE BASIN BULL THE SKIMMER OVER TO ONE SIDE AND EXCAVATE THE SEDIMENT WITH A BACKHOE.

CLOGGED BARREL OR PIPE THROUGH THE DAM: IF THE SKIMMER IS CLOGGED DESPITE REMOVING DEBRIS AND IT APPEARS THAT EITHER THE BARREL BETWEEN THE ORIFICE AND THE FLEXIBLE JOINT OR THE PIPE THROUGH THE DAM IS CLOGGED, TAKE THE FOLLOWING STEPS TO CLEAR THE BLOCKAGE (SEDIMENT WILL SOMETIMES ACCUMULATE IN THE PIPE).

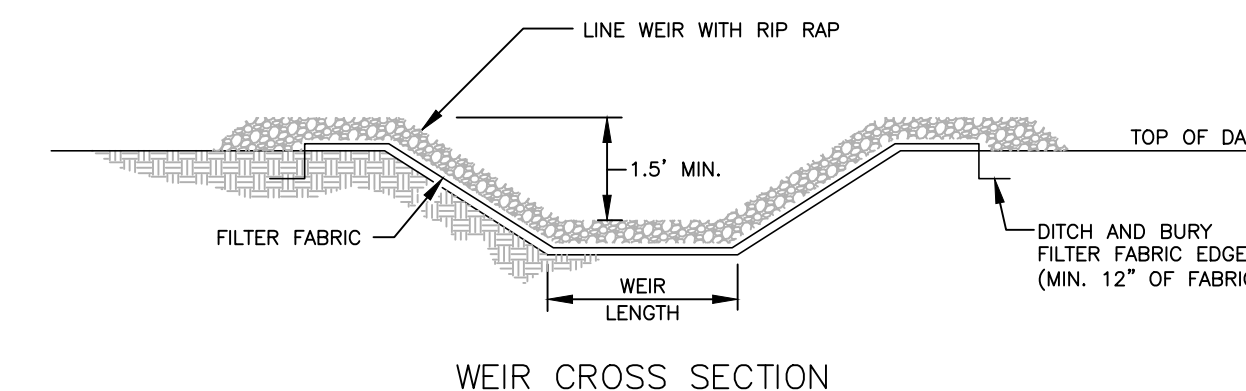
- * PULL THE SKIMMER OVER TO THE SIDE.
- * REMOVE THE PIN AND OPEN THE DOOR TO ACCESS THE ORIFICE.
- * REMOVE THE ORIFICE PLUG OR CAP.
- * RAISE THE INLET AS HIGH AS PRACTICAL.
- * FILL THE BARREL WITH WATER (USE A BUCKET AND FUNNEL OR A PUMP) TO REMOVE THE CLOG USING THE WATER AND PRESSURE.
- * AFTER THE OBSTRUCTION IS REMOVED CONTINUE POURING WATER INTO THE BARREL TO FLUSH OUT ACCUMULATED DEBRIS AND SEDIMENT TO PREVENT FUTURE CLOGGING.
- * A PLUMBERS SNAKE CAN BE USED BUT FLUSHING OUT THE SEDIMENT AND DEBRIS IS RECOMMENDED FIRST.

SKIMMER DETAIL

N.T.S.



SKIMMER BASIN CROSS SECTION



WEIR CROSS SECTION

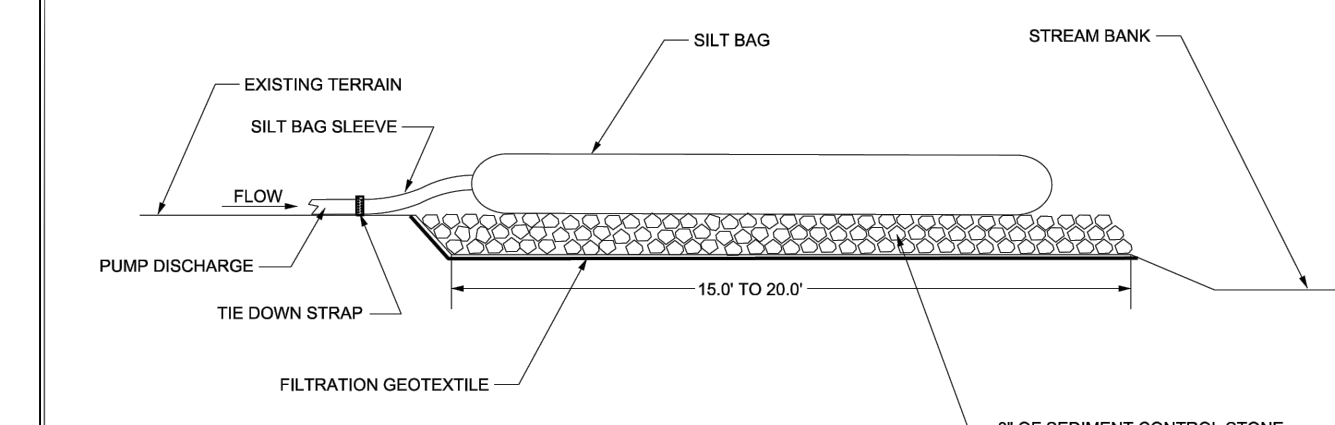
STANDARD TEMPORARY SKIMMER BASIN

N.T.S.

SEDIMENT BASIN MAINTENANCE

INSPECT TEMPORARY SEDIMENT BASIN AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT CONTROLS.

CHECK THE EMBANKMENT, SPILLWAY, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREAS.



- 1. USE NO. 5 OR NO. 87 STONE FOR SEDIMENT CONTROL STONE.
- 2. PROVIDE STABILIZED OUTLET TO STREAM BANK.

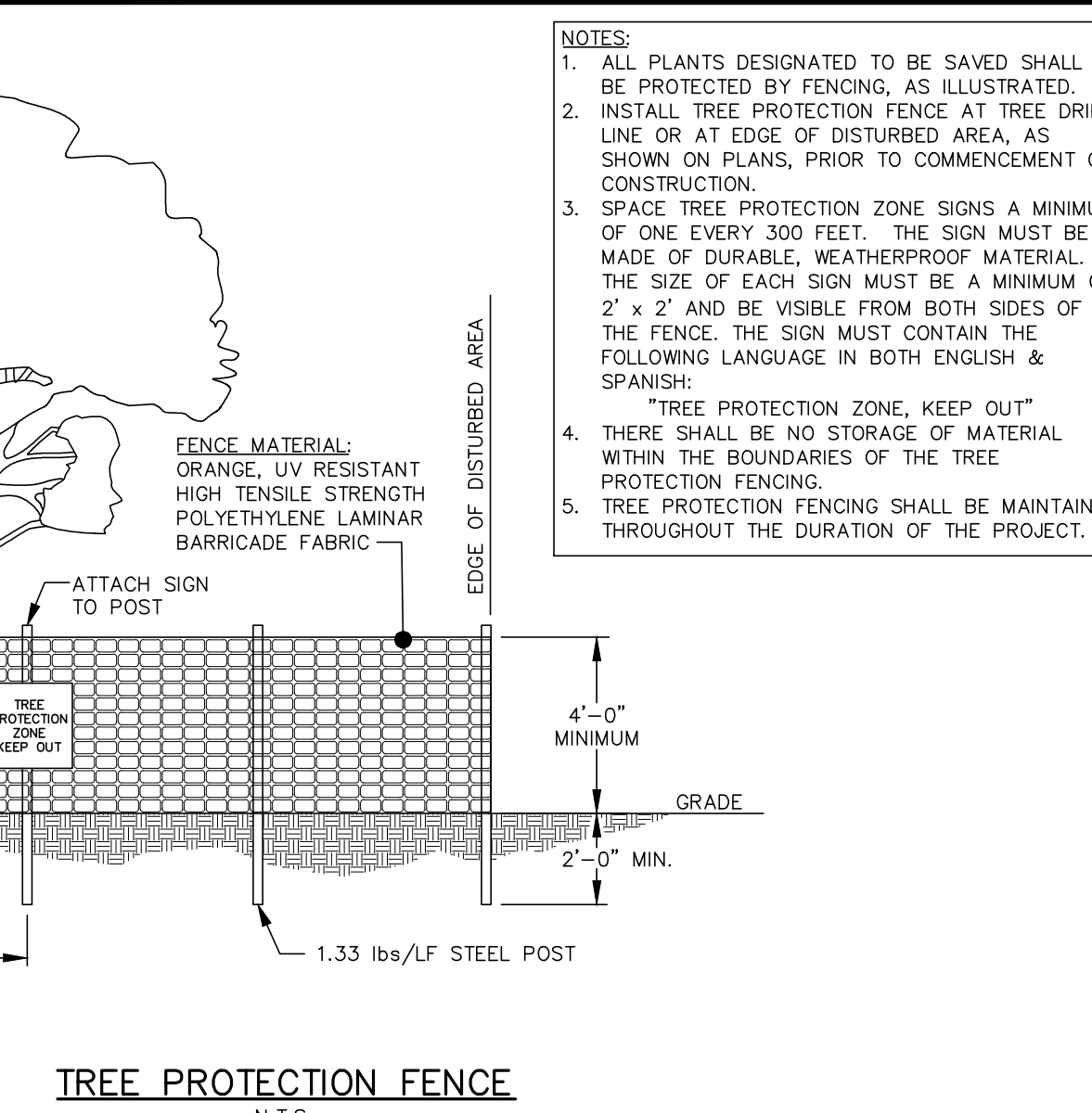
- 4. THE SIZE AND NUMBER OF SILT BAGS SHOULD BE BASED ON THE DEWATERING PUMP AND MANUFACTURER RECOMMENDATIONS.
- 5. TIGHTLY SECURE THE PUMP DISCHARGE TO THE SILT BAG SLEEVE WITH A STRAP OR SHOCK DEVICE TO PREVENT WATER TREATMENT FROM LEAKING WITHOUT TREATMENT.

- 6. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE SILT BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE THE PUMP RATE.

- 7. REPLACE THE SILT BAG WHEN ONE HALF (1/2) FULL OF SEDIMENT.

- 8. SILT BAG DEVICE MUST BE 2' SOFT FROM THE TOP OF THE STREAM BANK AND WATER MUST BE DISCHARGED IN A DIFFUSE MANNER.

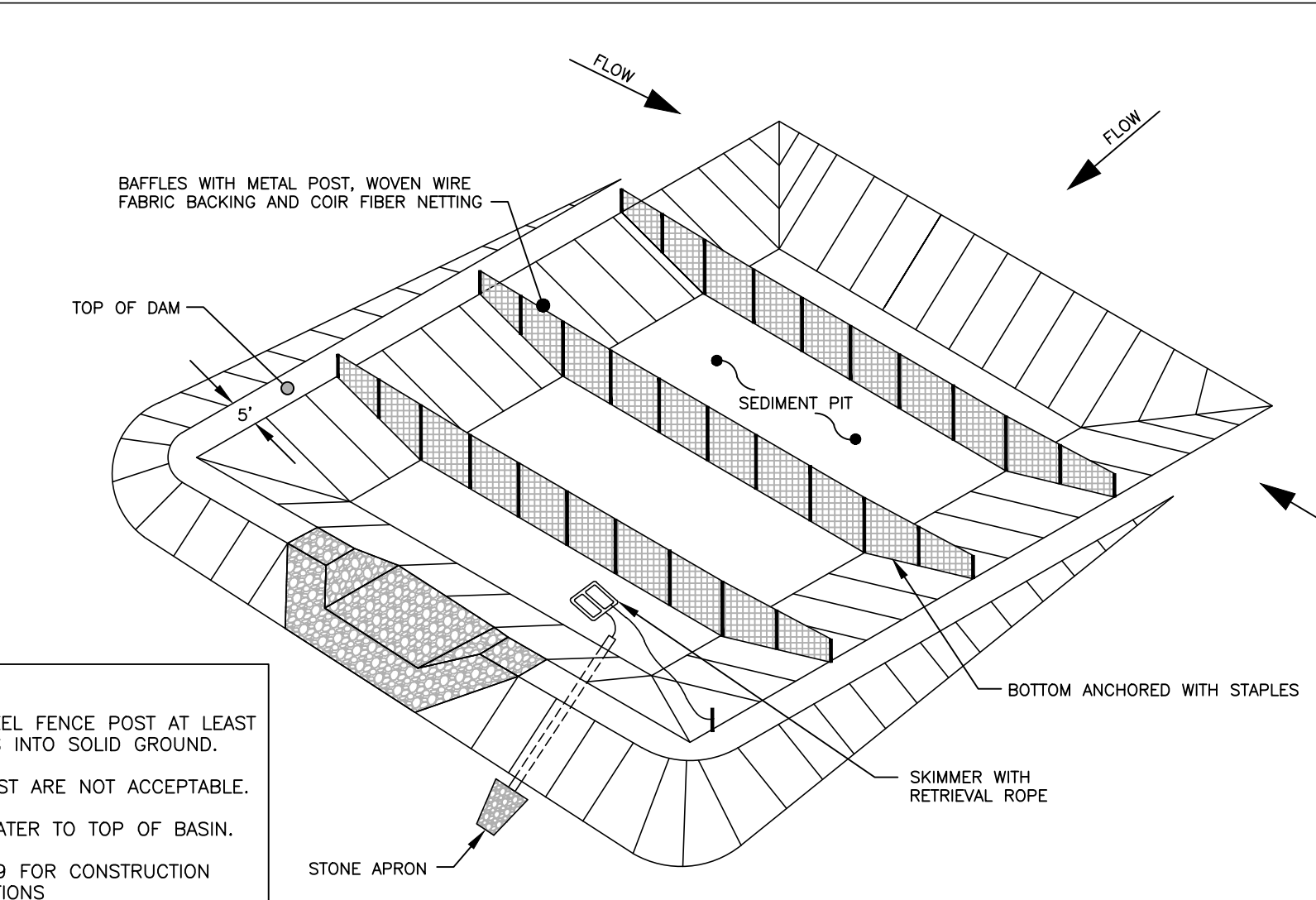
SEDIMENT FILTER BAG



TREE PROTECTION FENCE

N.T.S.

- 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"
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.

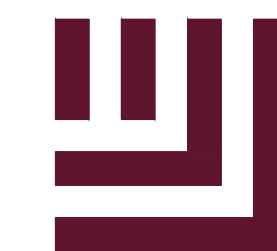


STANDARD TEMPORARY SKIMMER BASIN

N.T.S.

- 1. DRIVE STEEL FENCE POST AT LEAST 18 INCHES INTO SOLID GROUND.
- 2. WOOD POST ARE NOT ACCEPTABLE.
- 3. DIRECT WATER TO TOP OF BASIN.
- 4. SEE C6.19 FOR CONSTRUCTION SPECIFICATIONS

M:\Projects\WOL\2020110039 Frazier Farm PH1\04-Production\Engineering\Phase1A\CID-2315\2020110039-PH1-ECN3.dwg, 8/17/2023 6:42:07 PM, Eric Domorell



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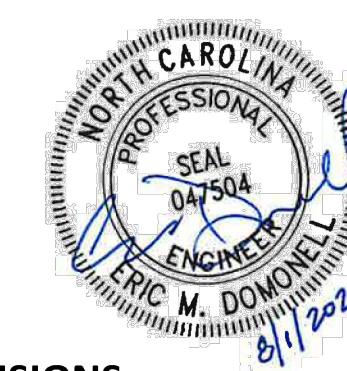
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FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
PHASE 1A
11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA



REVISIONS

NO. DATE

PLAN INFORMATION

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CHECKED BY EMD
DRAWN BY SME
SCALE 1"=40'
DATE 08.01.2023

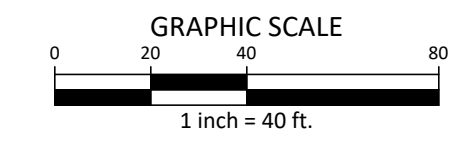
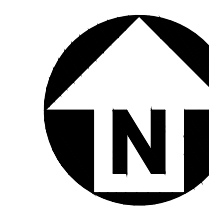
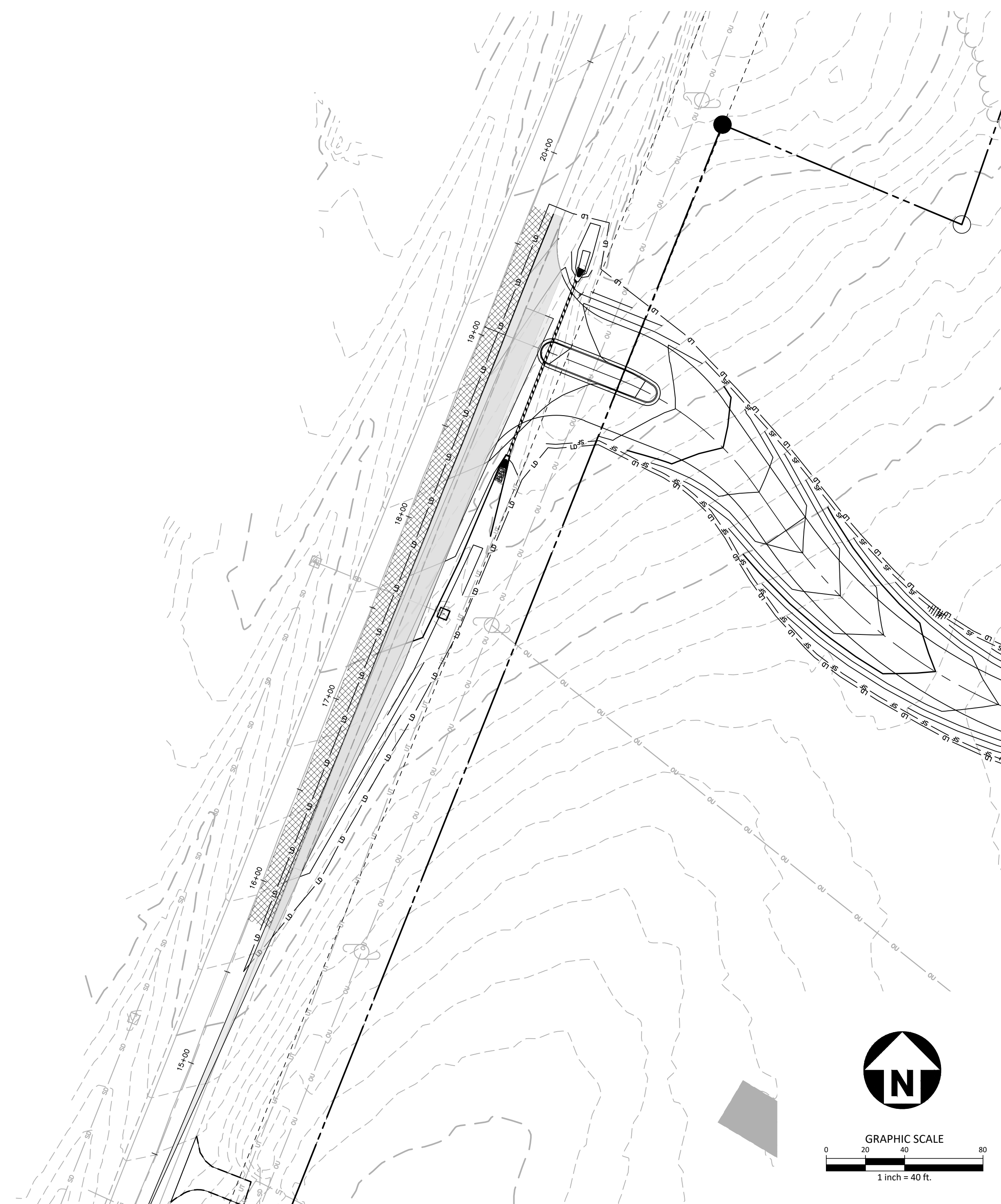
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**LOUISBURG RD
WIDENING PLAN**

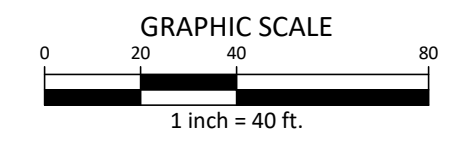
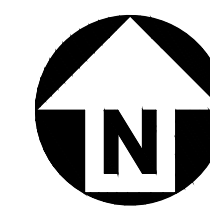
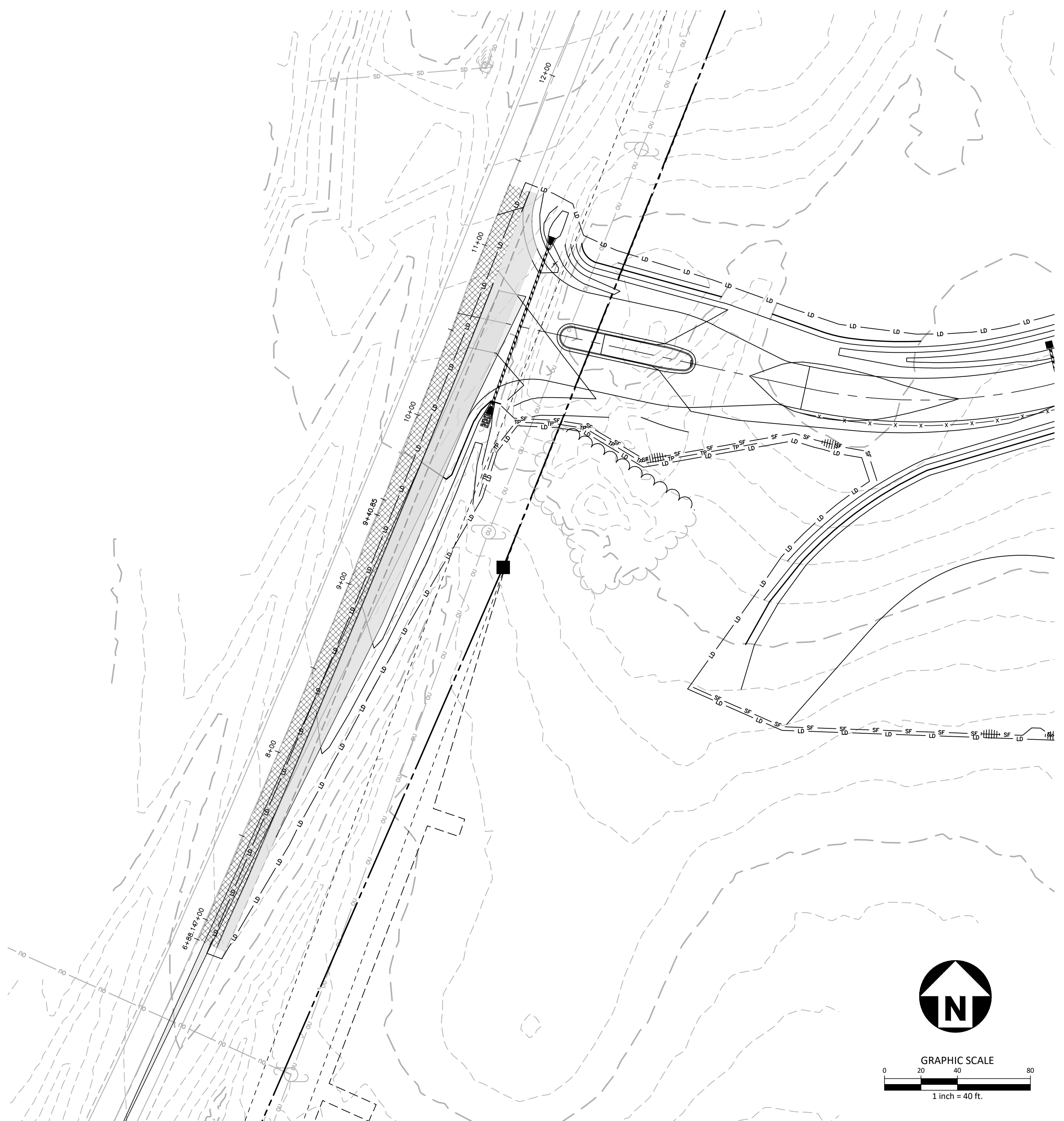
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CID-23-5

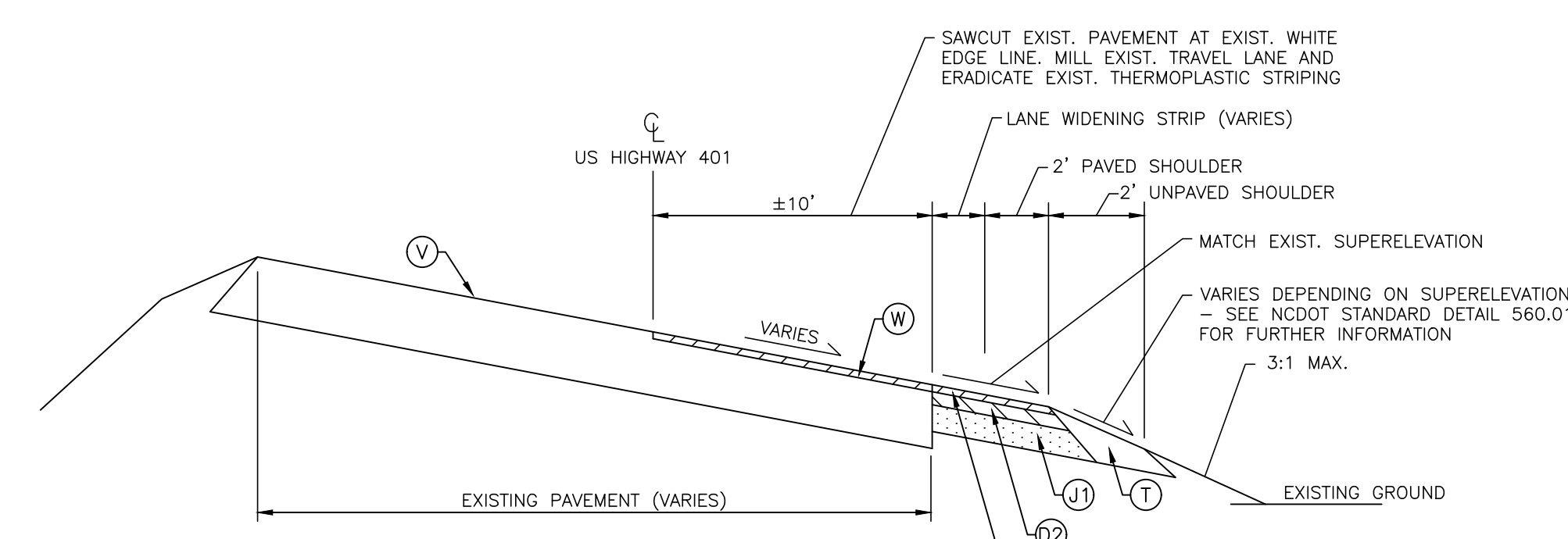
PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



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**

- Ⓢ 1.5" S9.5C
- Ⓣ 3" I19.0C
- Ⓟ 5.5" B25.0C
- Ⓣ COMPACTED EARTH
- Ⓜ WEDGING/OVERLAY (MIN. 1 1/2" S9.5C)
- Ⓥ EXISTING ROADWAY - SUPERELEVATION GRADE AND DIRECTION VARY

PAVEMENT MARKING LEGEND

- LANE LINES/MARKINGS**
- T1 16" WHITE LINE, RAILROAD CROSSBAR
 - T2 24" WHITE STOPBAR
 - T3 24" WHITE CROSSWALK LINE (HIGH VISIBILITY)
 - T4 4" WHITE RUMBLE STRIP
 - T5 4" YELLOW RUMBLE STRIP
 - T6 6" WHITE EDGE LINE
 - T7 6" YELLOW EDGE LINE
 - T8 4" WHITE MINISKIP (2' - 6' SP.)
 - T9 4" YELLOW MINISKIP (2' - 6' SP.)
 - T10 12" WHITE MINISKIP (3' - 3' SP.) (ROUNDBOUTS ONLY)
 - T11 6" WHITE MINISKIP (2' - 6' SP.)
 - T12 6" YELLOW MINISKIP (2' - 6' SP.)
 - T13 8" WHITE MINISKIP (3' - 9' SP.)
 - T14 12" WHITE MINISKIP (3' - 9' SP.)
 - T15 6" YELLOW SINGLE CENTER
 - T16 6" YELLOW DOUBLE CENTER
 - T17 8" WHITE MINISKIP (3' - 3' SP.) (ROUNDBOUTS ONLY)
 - TA 4" WHITE EDGE LINE
 - TB 4" YELLOW EDGE LINE
 - TC 4" WHITE SKIP (10' - 30' SP.)
 - TD 4" WHITE MINISKIP (3' - 9' SP.)
 - TE 4" WHITE SOLID LANE LINE
 - TF 4" YELLOW SKIP (10' - 30' SP.)
 - TH 4" YELLOW SINGLE CENTER
 - TI 4" YELLOW DOUBLE CENTER
 - TJ 6" WHITE SKIP (10' - 30' SP.)
 - TK 6" WHITE MINISKIP (3' - 9' SP.)
 - TL 6" WHITE SOLID LANE LINE
 - 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)

- ARROWS/CHARACTERS**
- UA LEFT TURN ARROW
 - UB RIGHT TURN ARROW
 - UC STRAIGHT ARROW
 - UD COMBINATION STRAIGHT/LEFT TURN ARROW
 - UE COMBINATION STRAIGHT/RIGHT TURN ARROW
 - UF COMBINATION LEFT/RIGHT ARROW
 - UG COMBINATION LEFT/STRAIGHT/RIGHT ARROW
 - UH HANDICAP PARKING
 - UI ALPHANUMERIC CHARACTER
 - UJ BICYCLE SYMBOL
 - UK BICYCLE STRAIGHT ARROW
 - UL BICYCLE CHARACTER
 - UM 12" YIELD LINE TRIANGLE
 - UN 24" YIELD LINE TRIANGLE
 - UO BICYCLE LEFT ARROW
 - UP MERGE ARROW
 - UQ RAMP ARROW SYMBOL
 - UR SHARROW
 - US BICYCLE LOOP DETECTOR
 - UT U-TURN ARROW
 - UU FISH-HOOK STRAIGHT ARROW
 - UV FISH-HOOK STRAIGHT/LEFT ARROW
 - UW FISH-HOOK STRAIGHT/RIGHT ARROW
 - UX FISH-HOOK LEFT/RIGHT ARROW
 - UY FISH-HOOK LEFT/STRAIGHT/RIGHT ARROW
 - UZ FISH-HOOK W/CIRCLE STRAIGHT ARROW
 - VA FISH-HOOK W/CIRCLE LEFT ARROW
 - VB FISH-HOOK W/CIRCLE STRAIGHT/LEFT ARROW
 - WC FISH-HOOK W/CIRCLE LEFT/STRAIGHT/RIGHT ARROW

ROAD WIDENING LEGEND

- NEW FULL DEPTH PAVEMENT
- MILLING LIMITS

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

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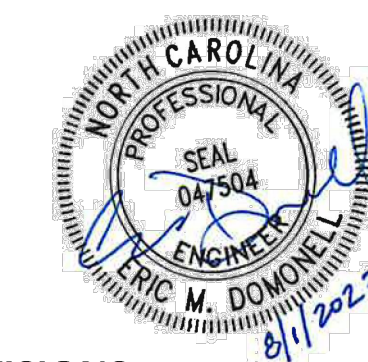
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FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
PHASE 1A
11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA



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 08.01.2023

SHEET

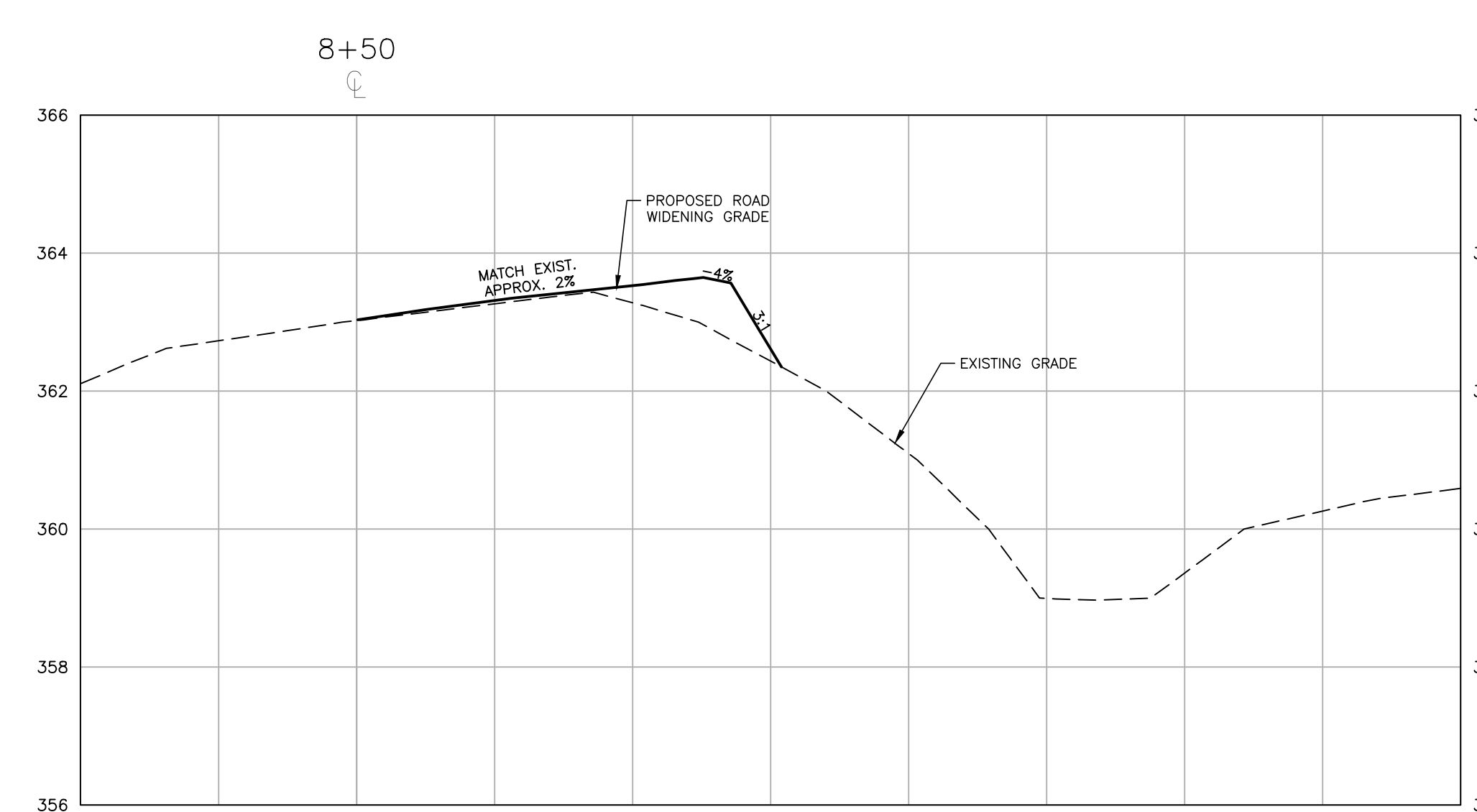
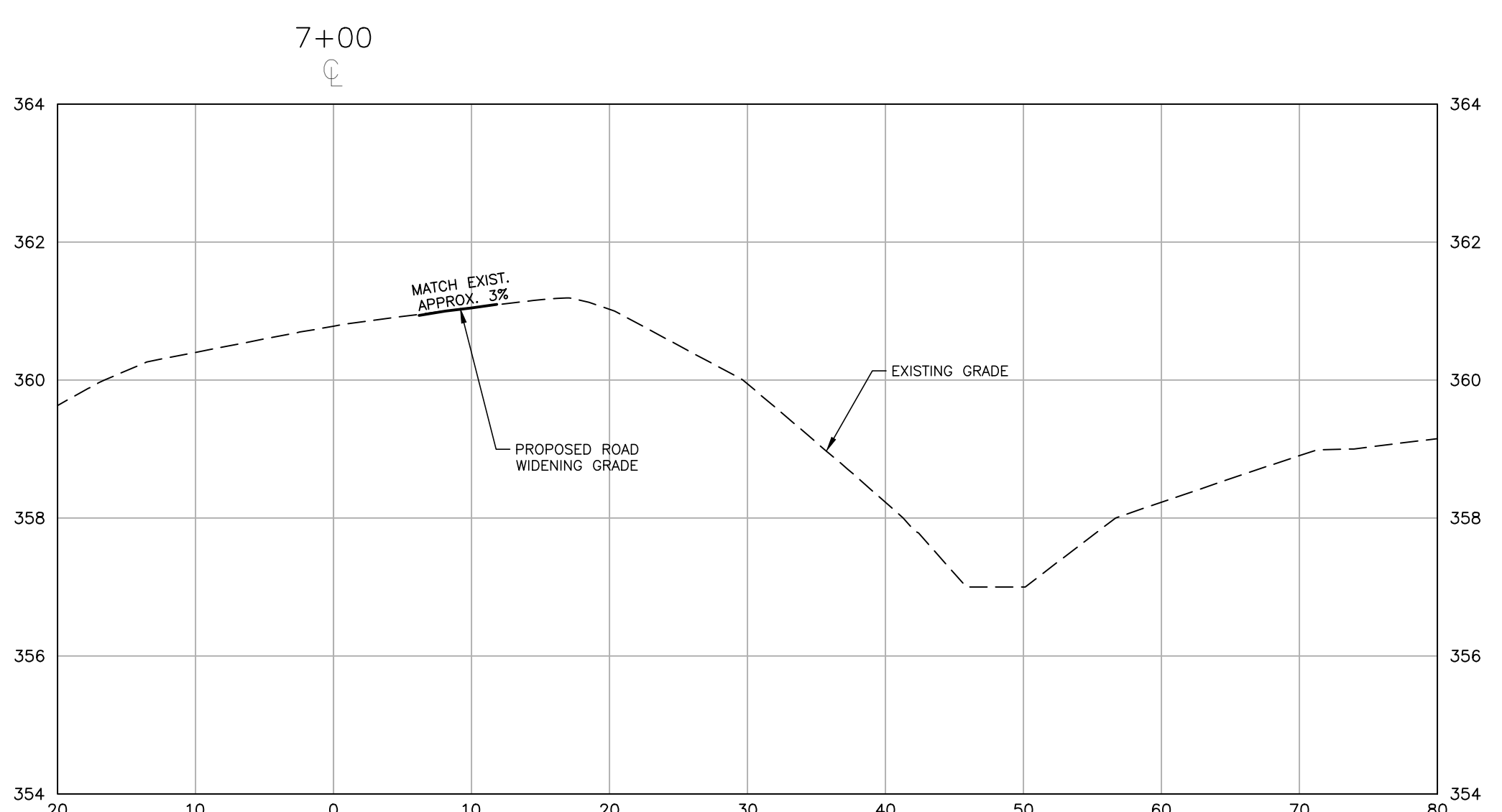
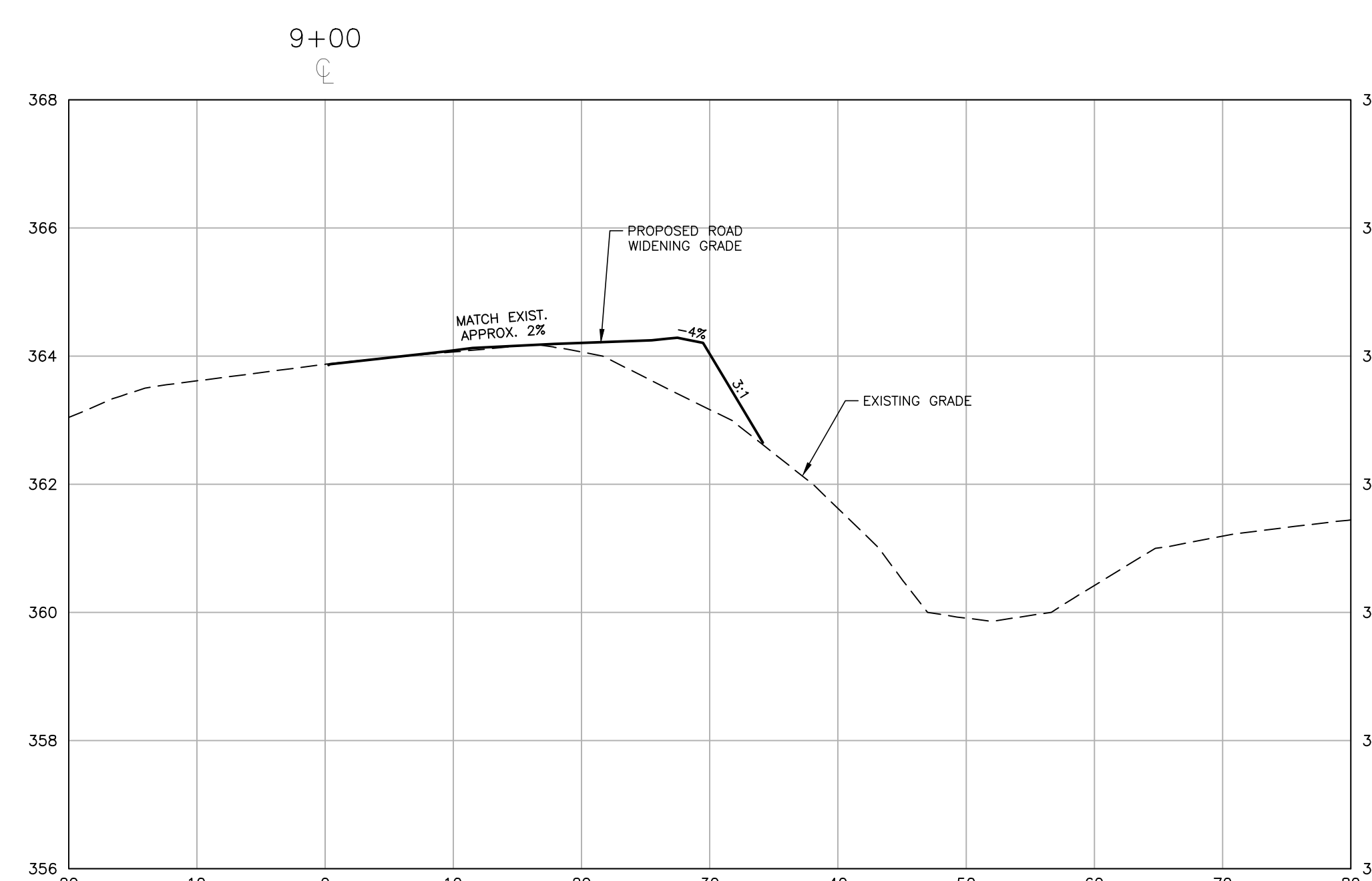
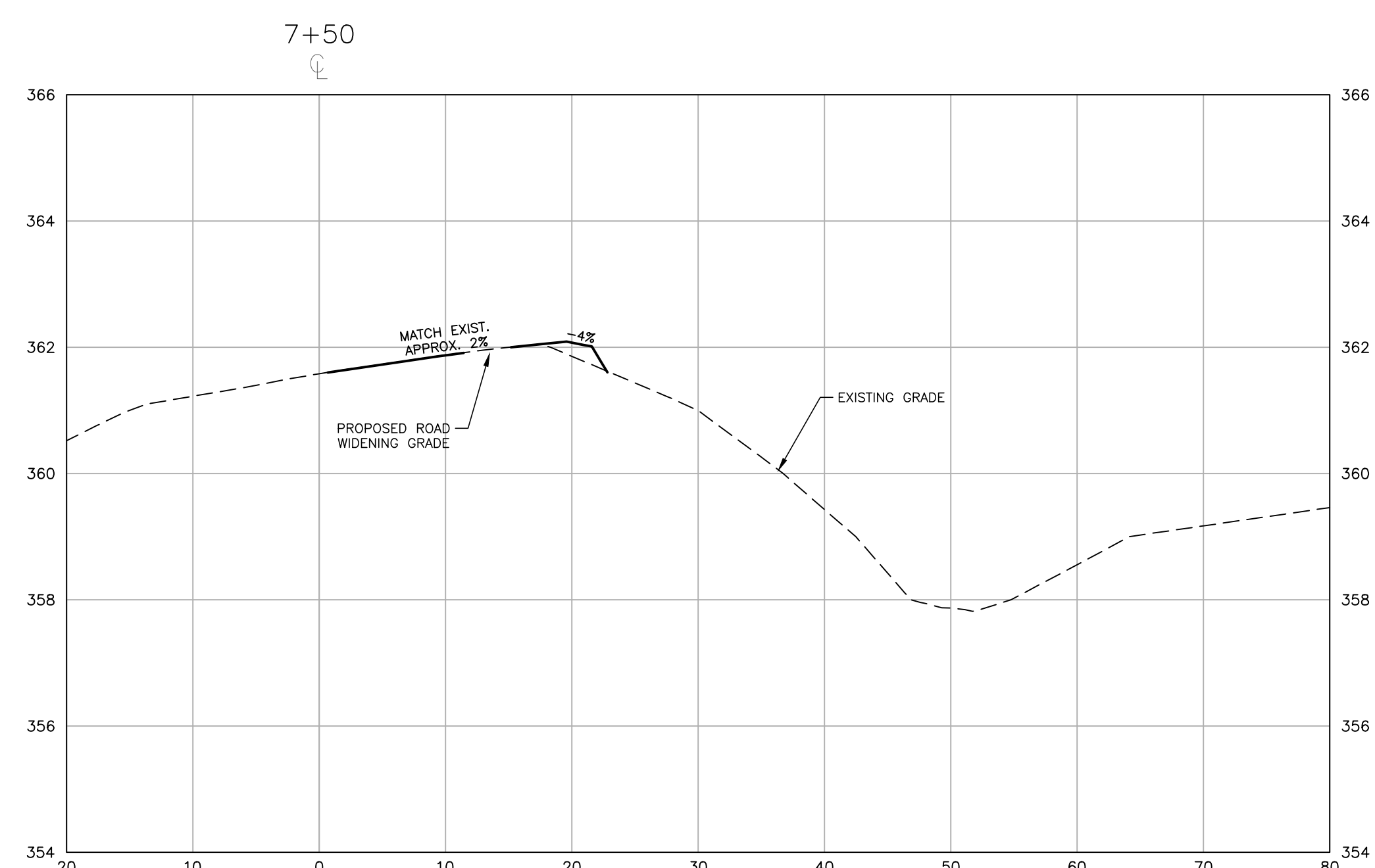
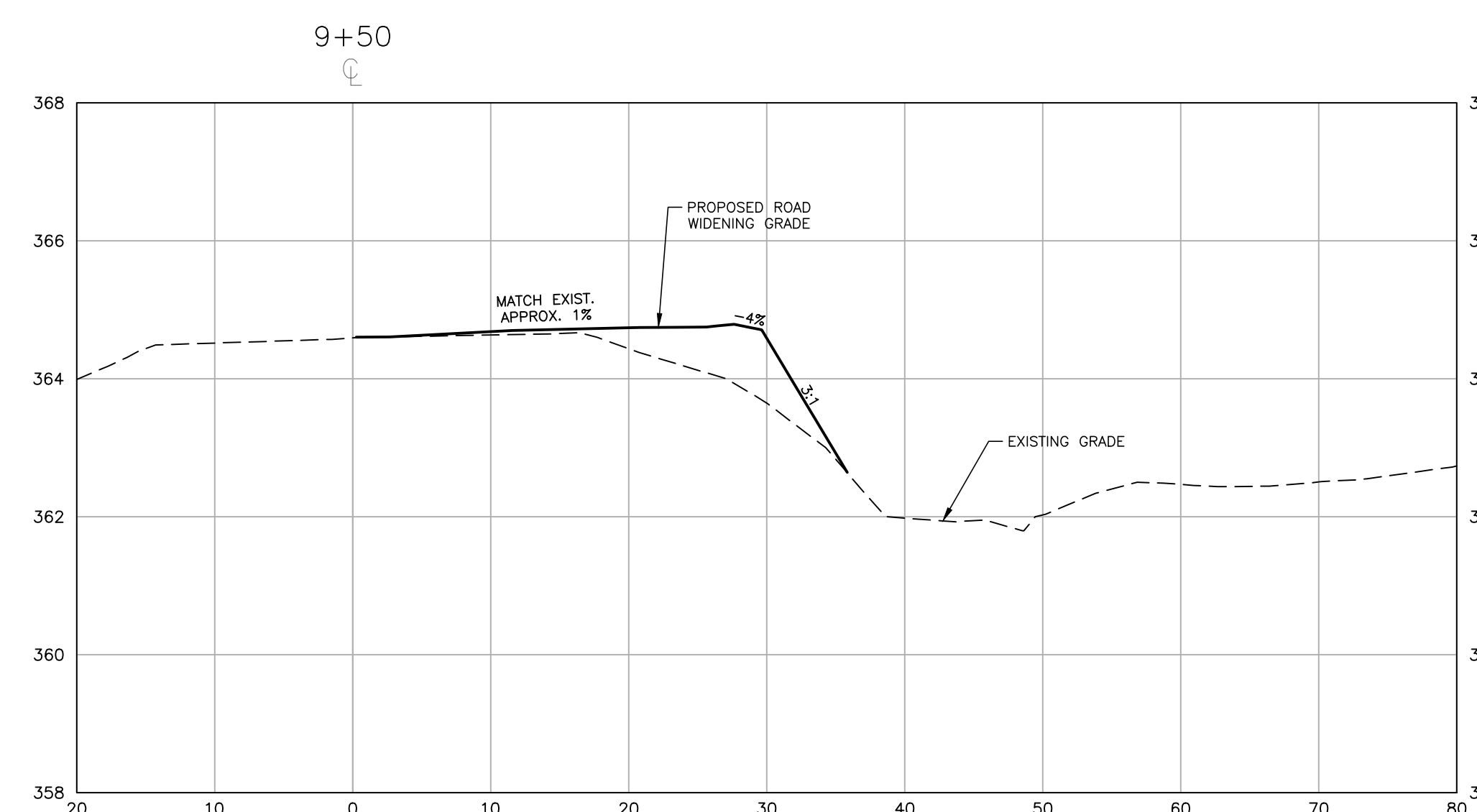
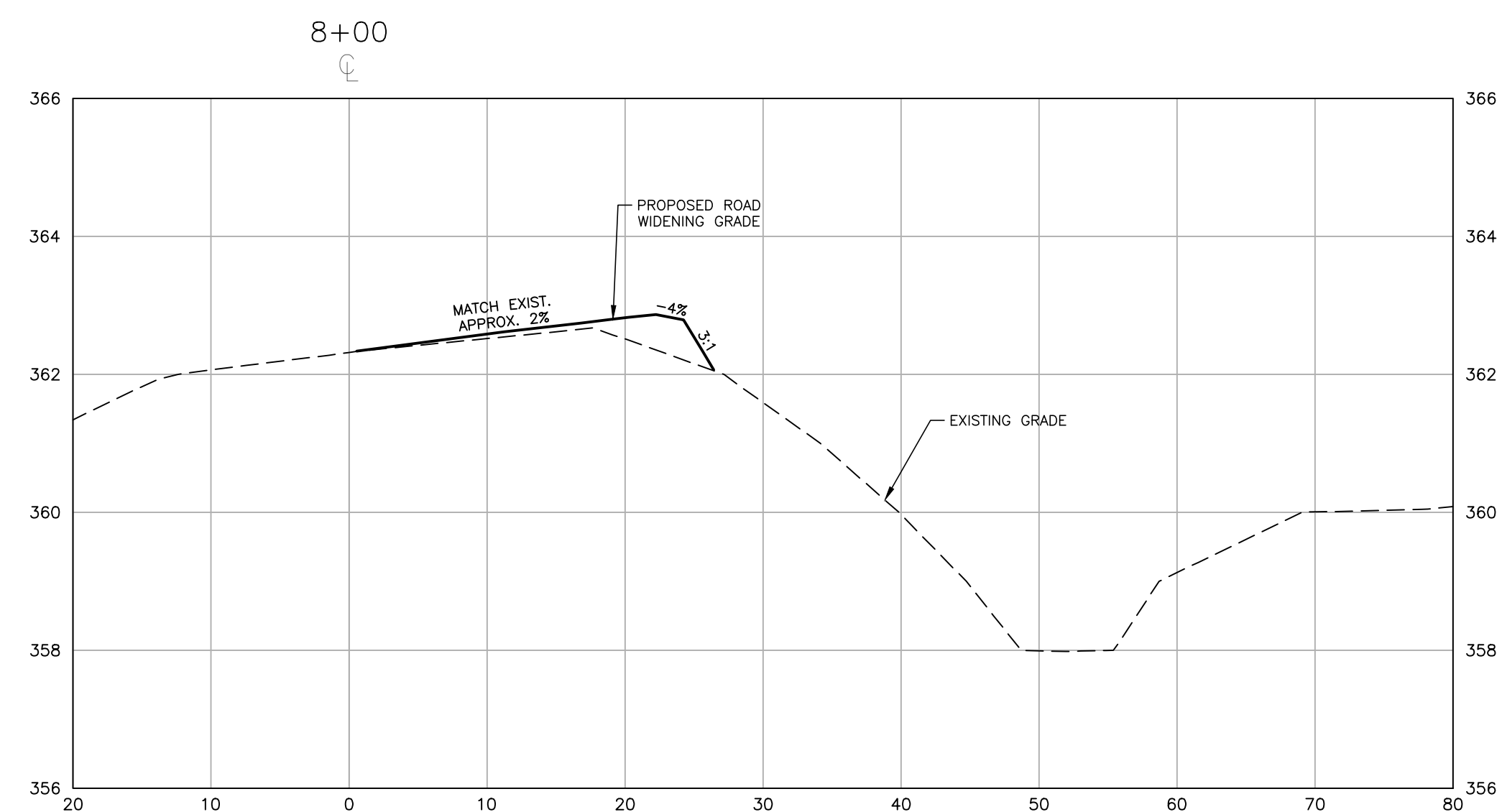
LOUISBURG RD
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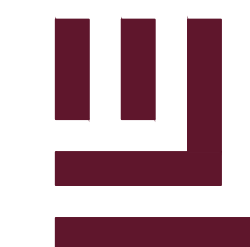
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CID-23-5

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FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
PHASE 1A
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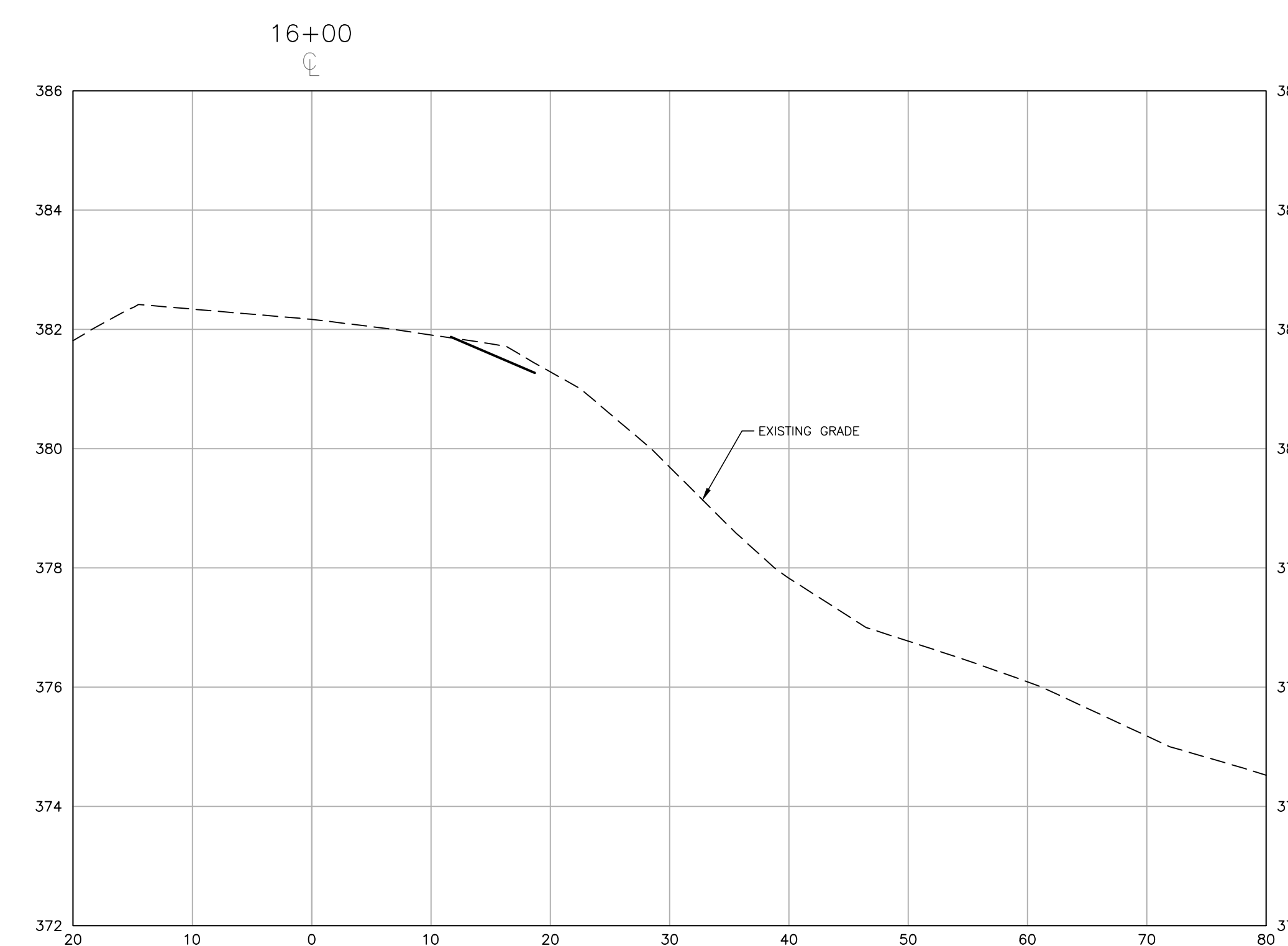
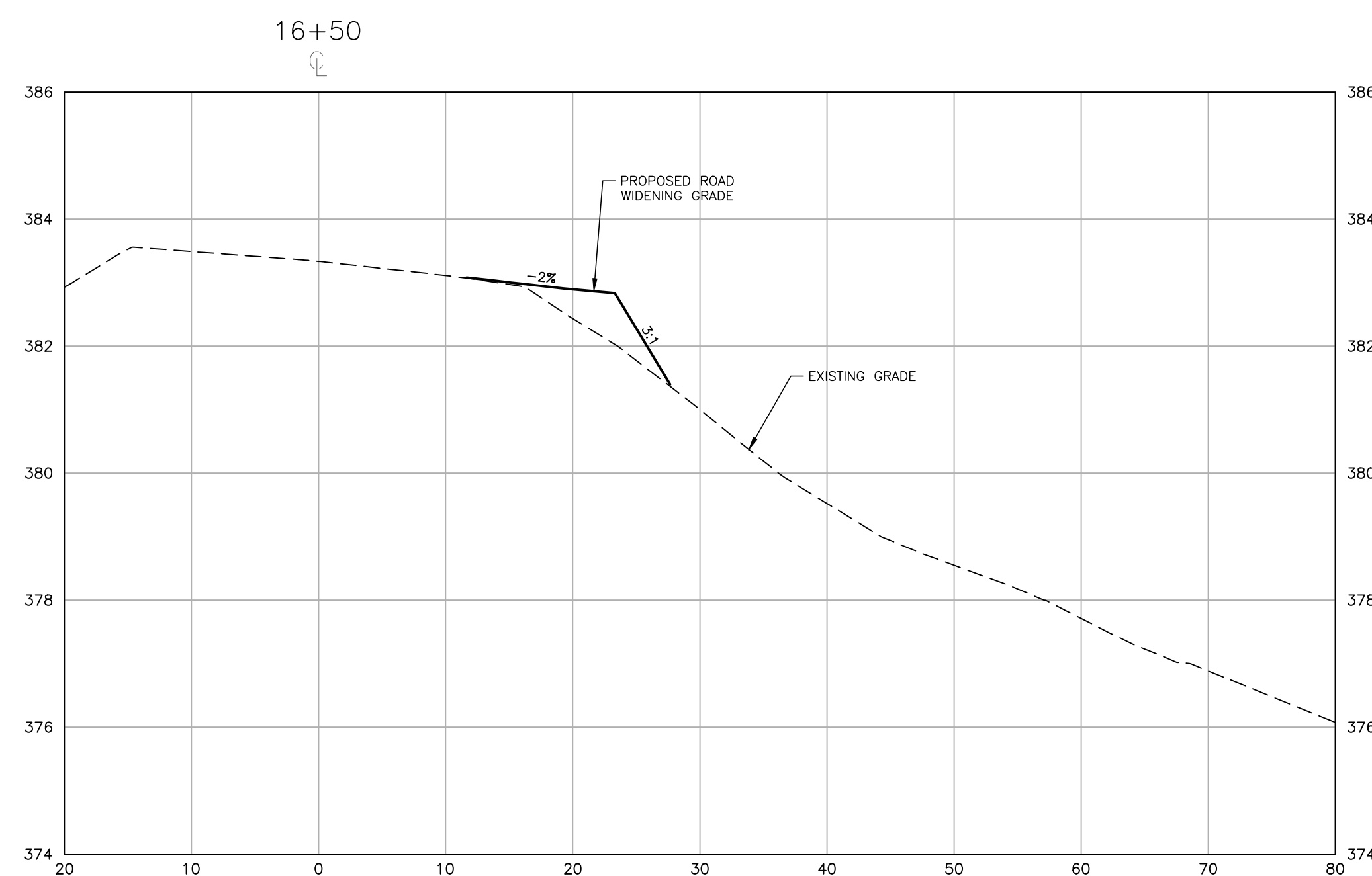
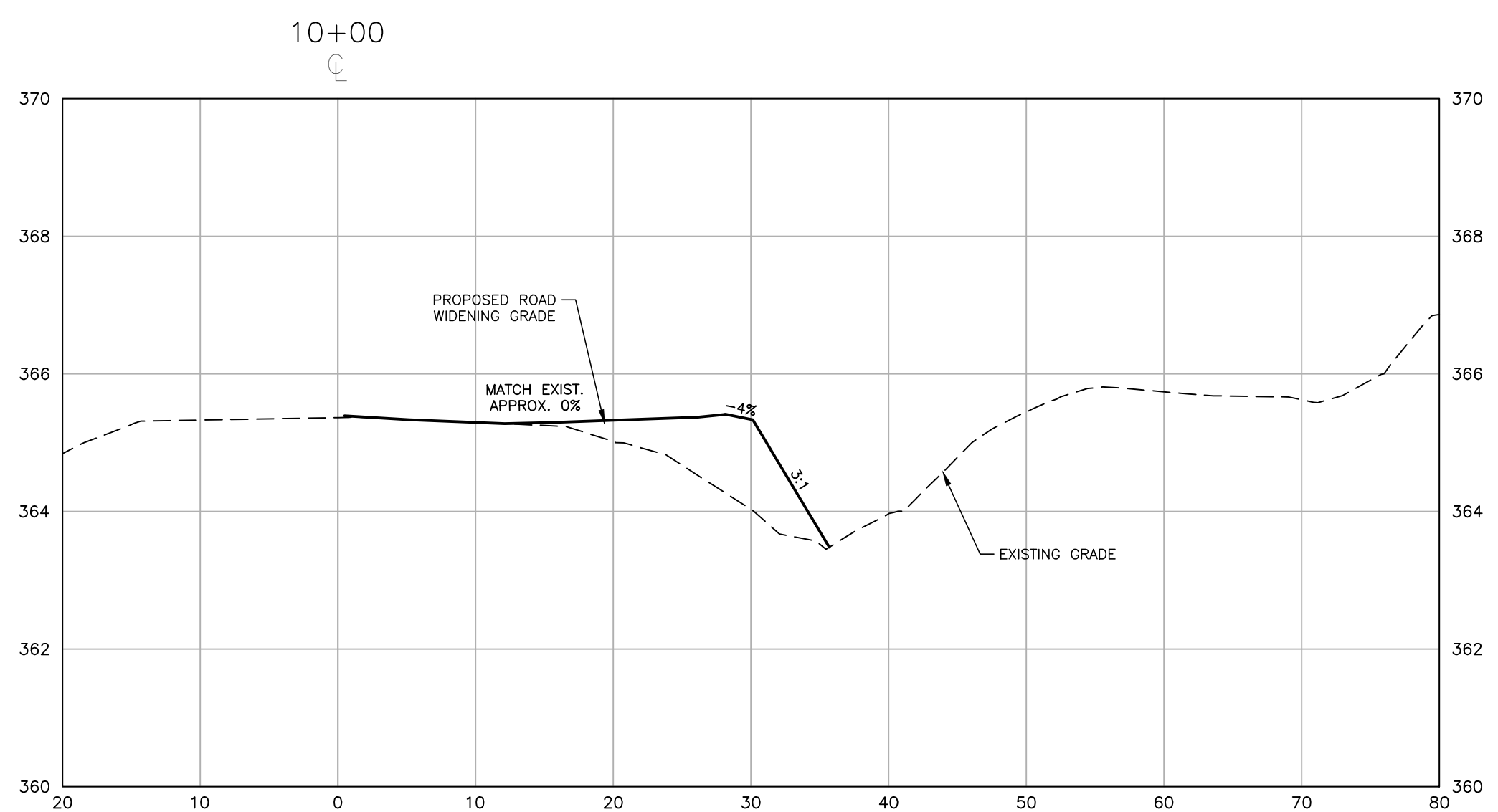
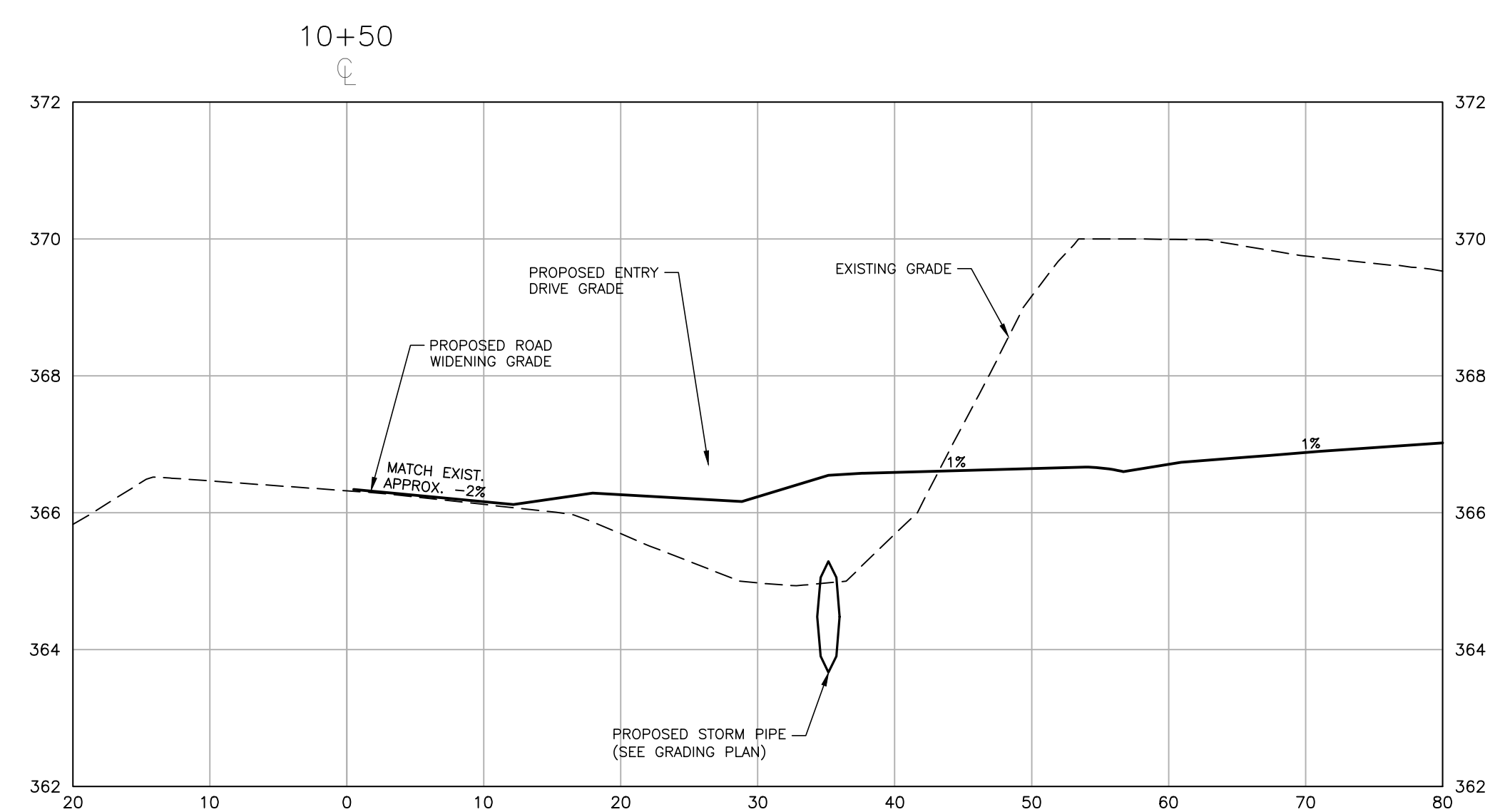
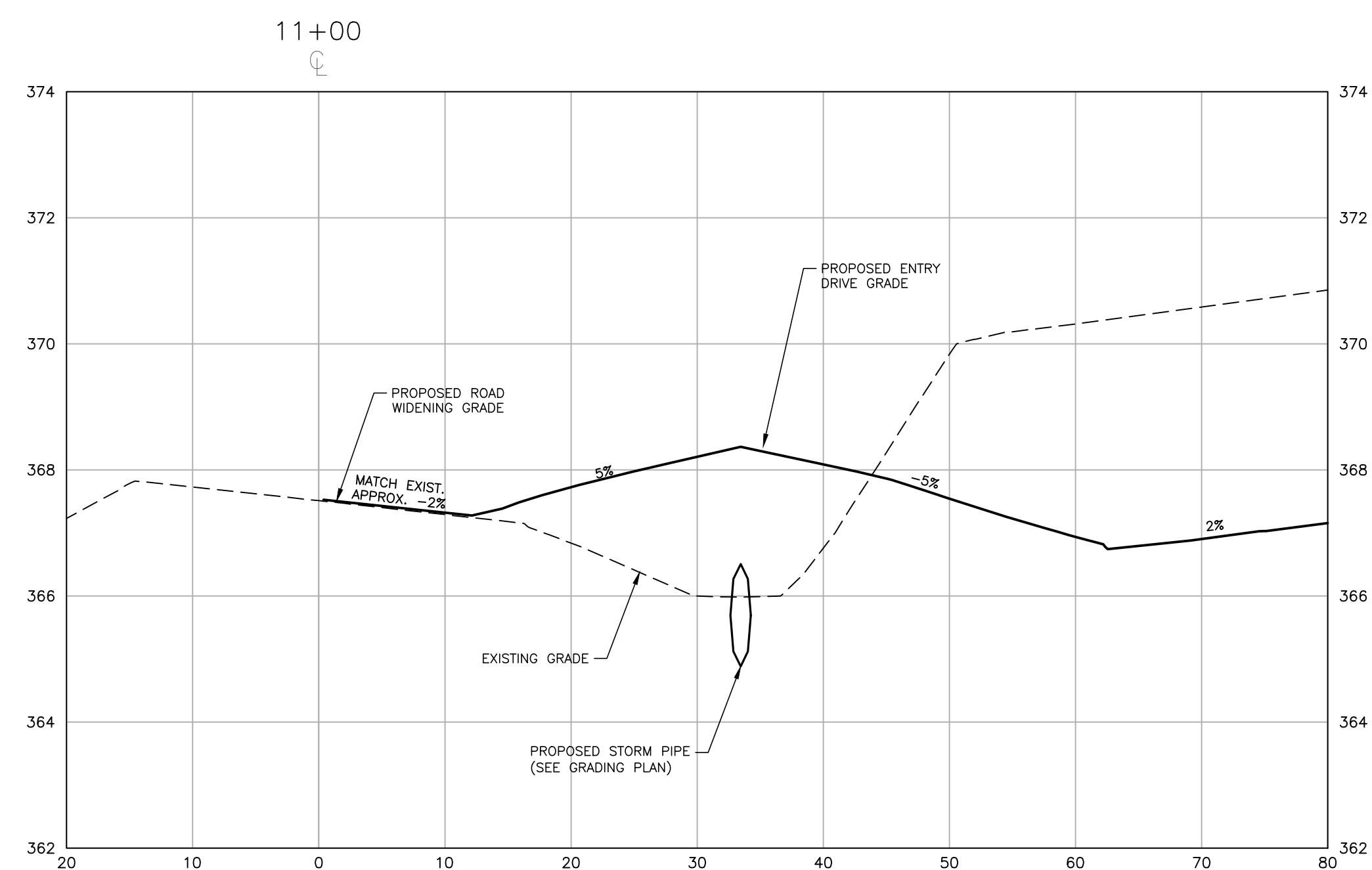
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DATE 08.01.2023

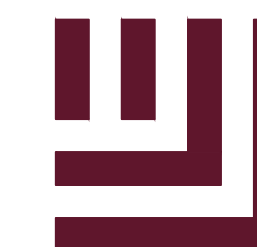
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**LOUISBURG RD
WIDENING
CROSS SECTIONS**

C7.02



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11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA



REVISIONS

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PLAN INFORMATION

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DATE 08.01.2023

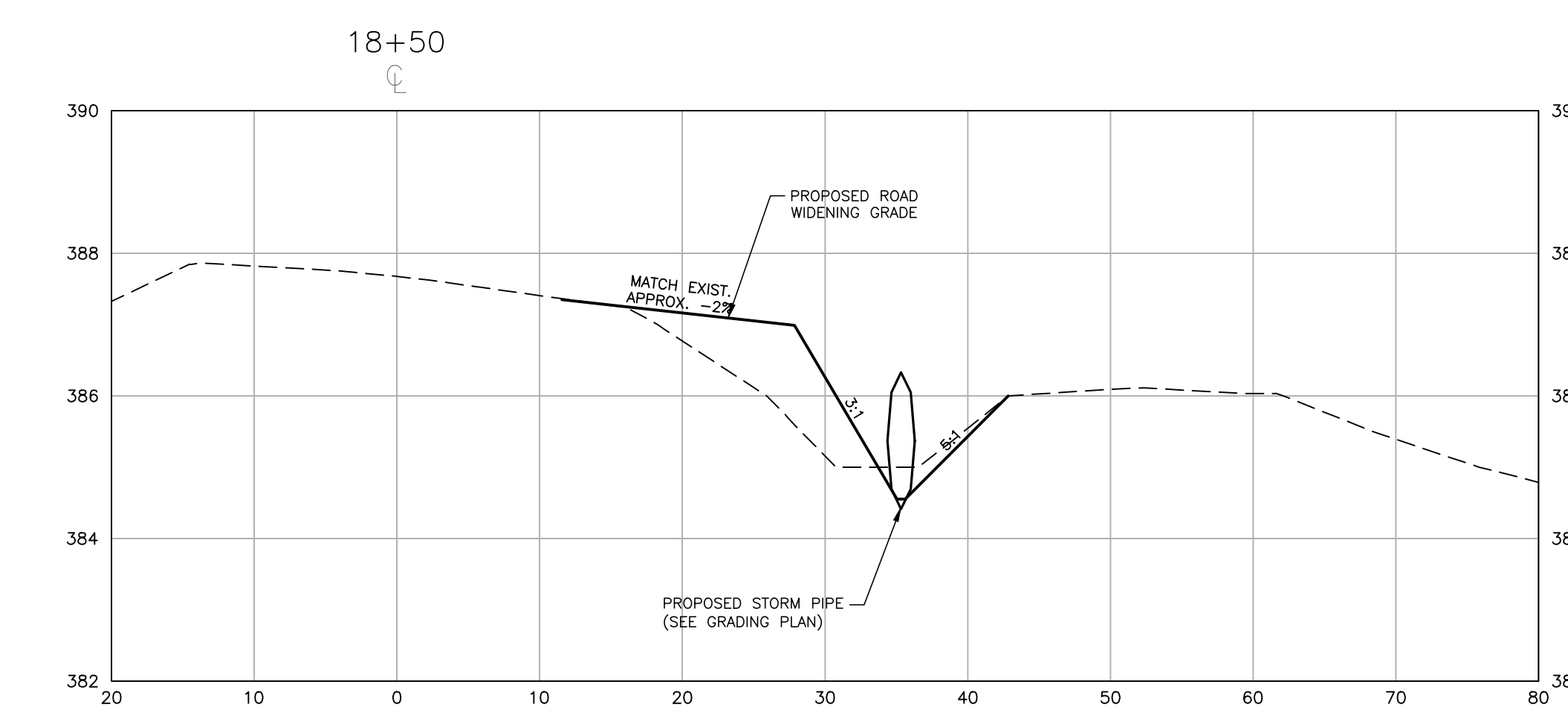
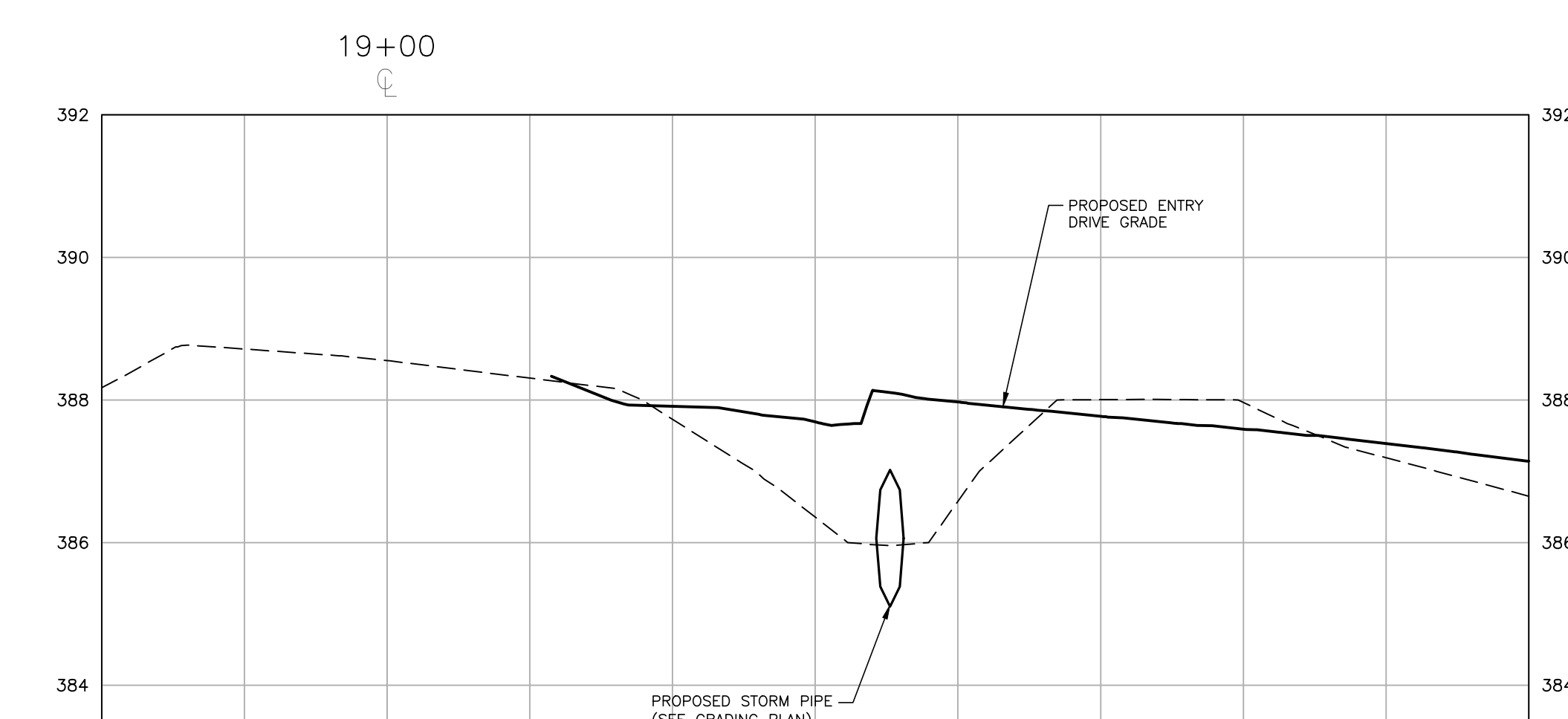
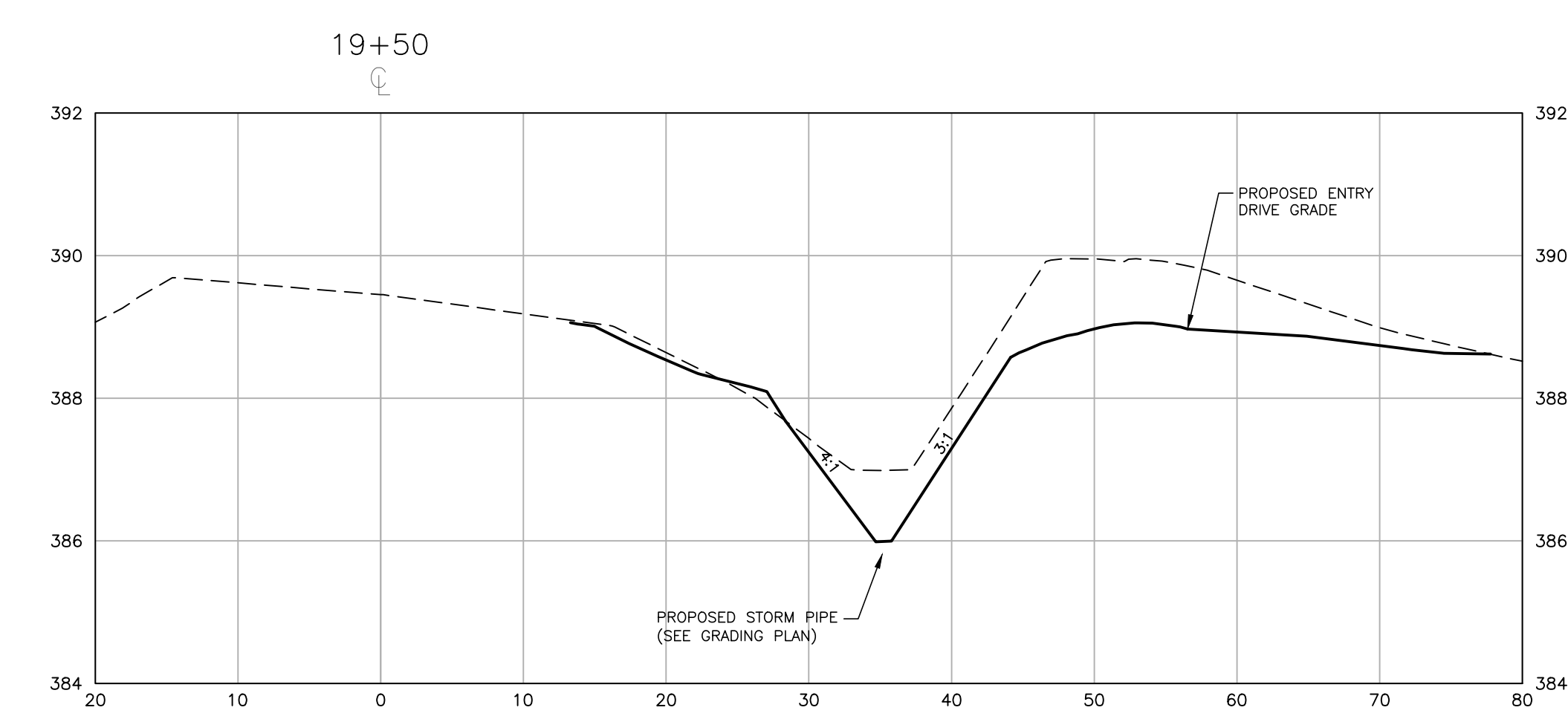
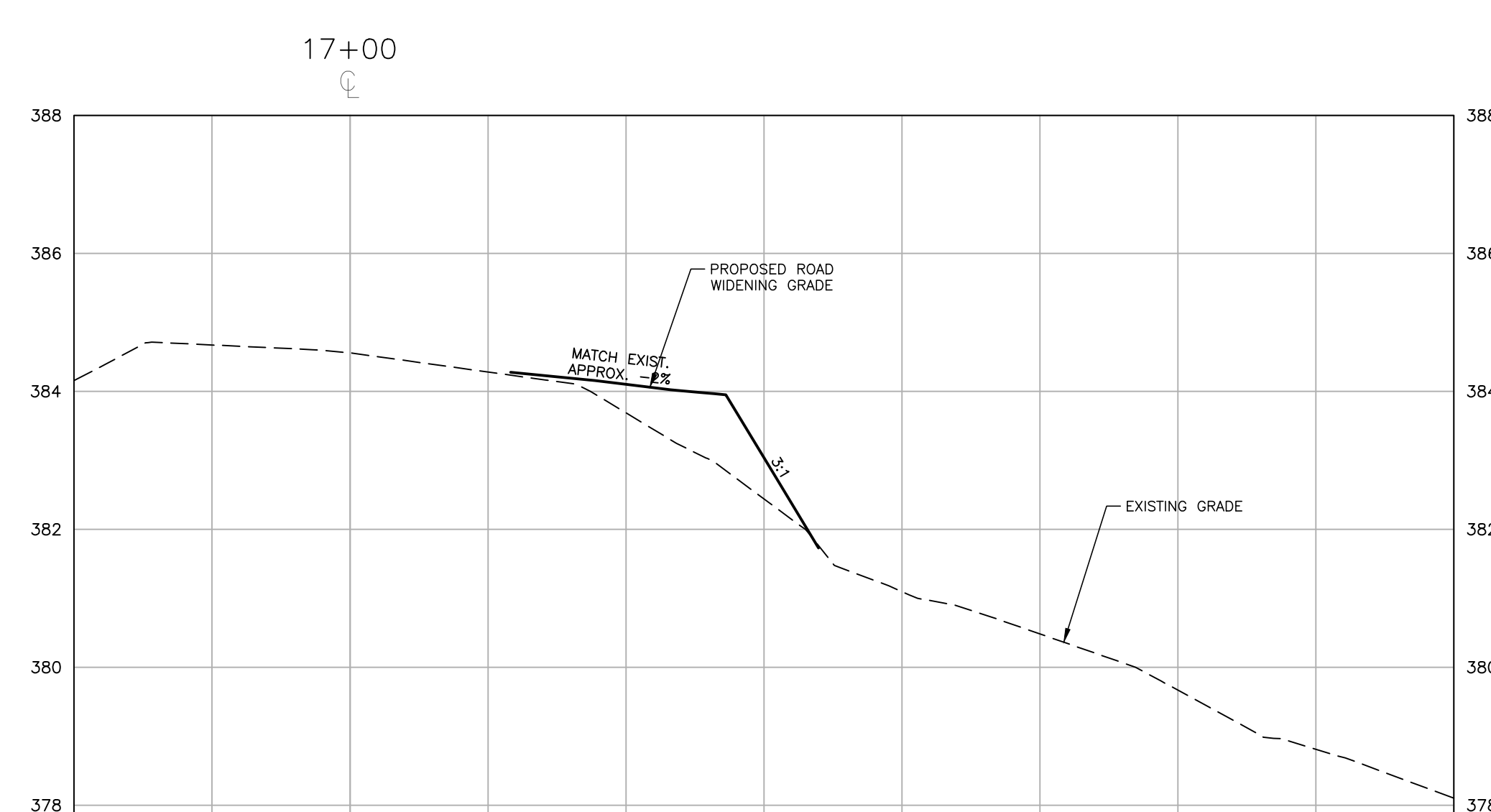
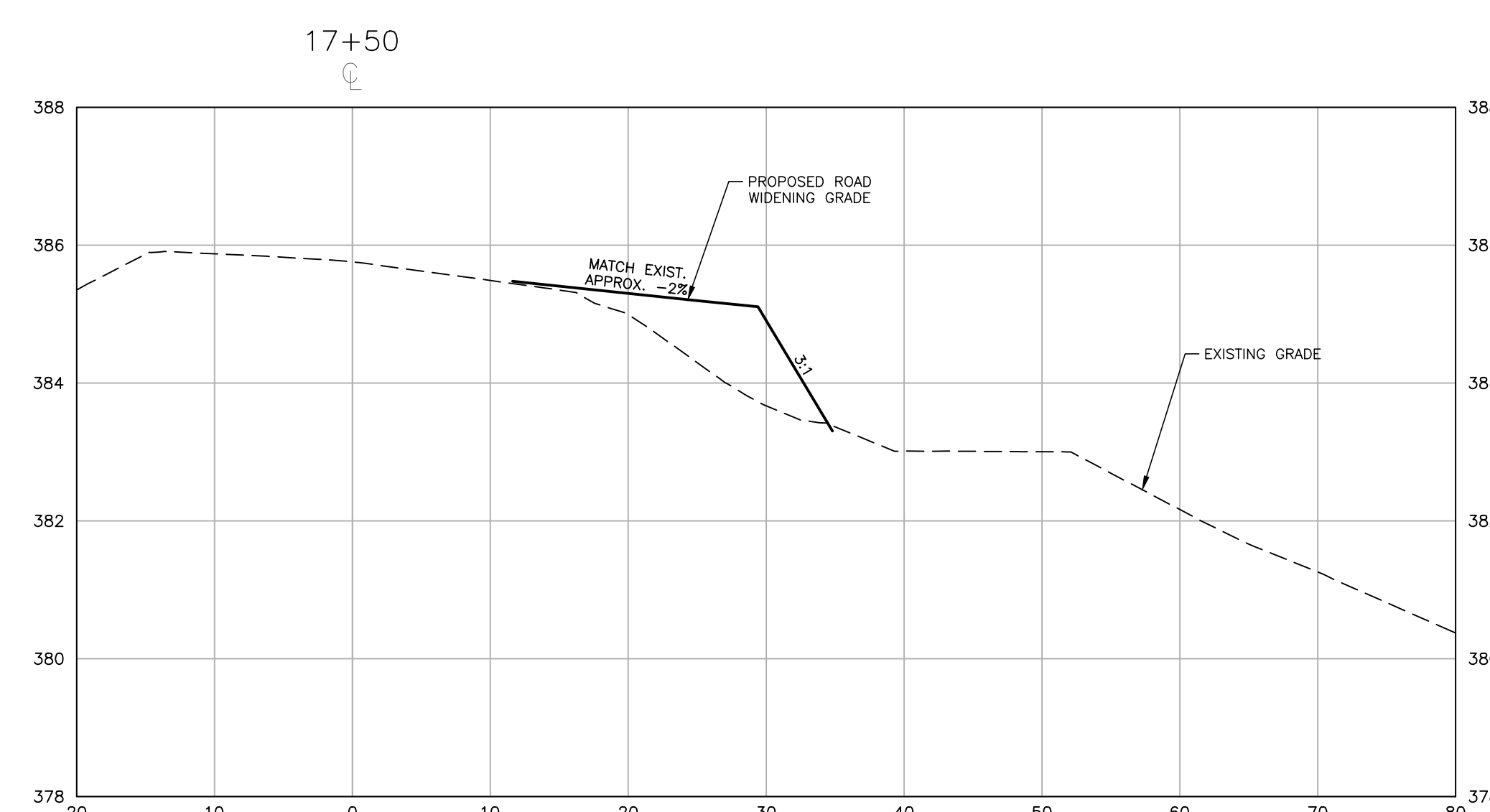
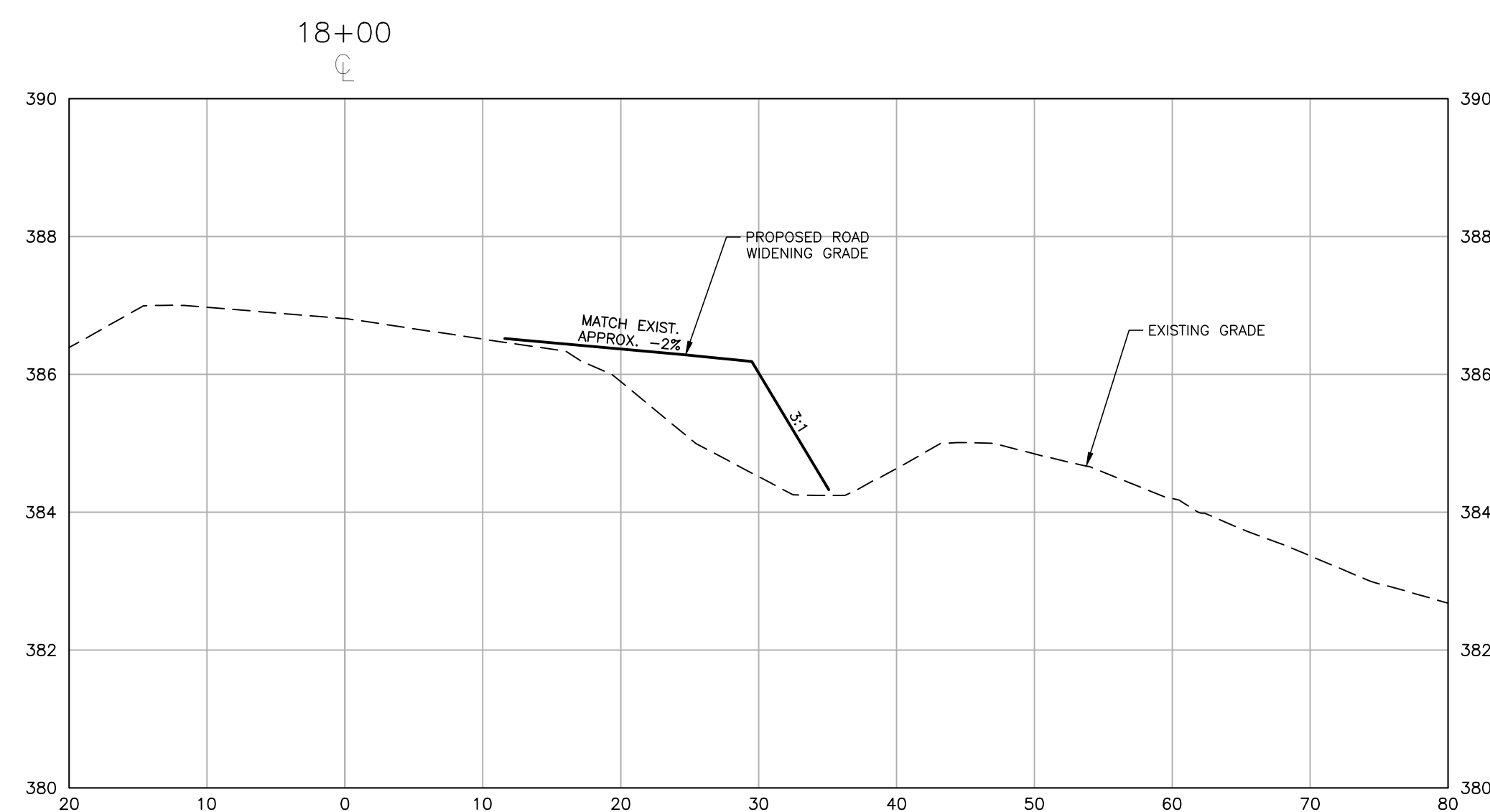
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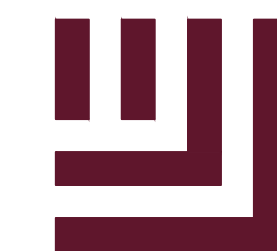
**LOUISBURG RD
WIDENING
CROSS SECTIONS
C7.03**

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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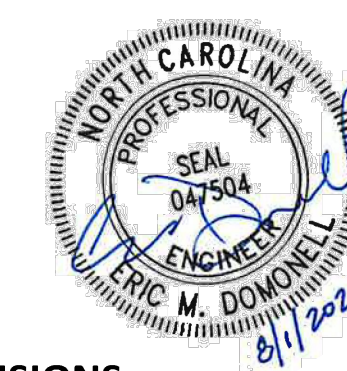
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FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
PHASE 1A
11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA



REVISIONS

NO. DATE

PLAN INFORMATION

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SCALE N/A
DATE 08.01.2023

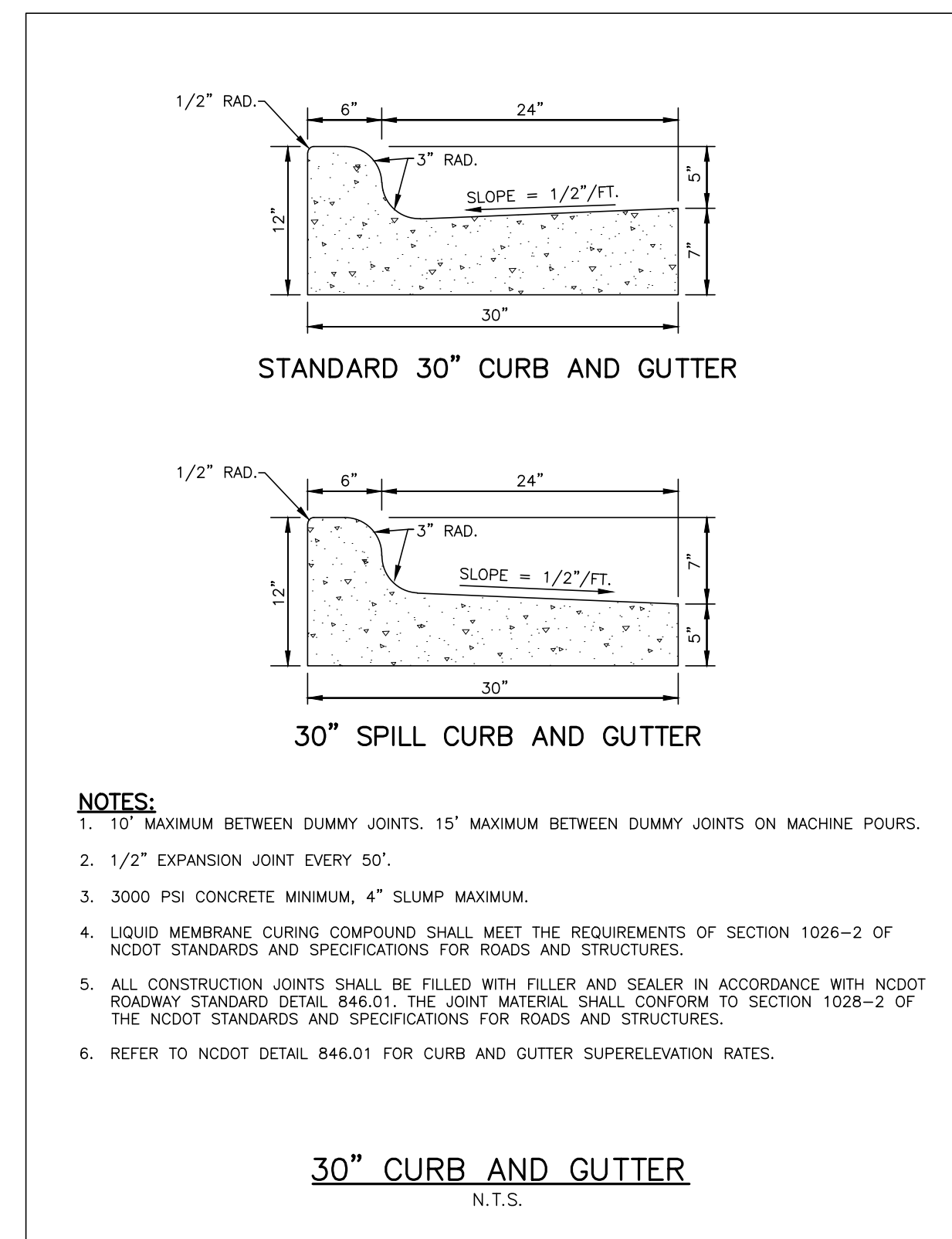
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SITE DETAILS

C8.01

CID-23-5

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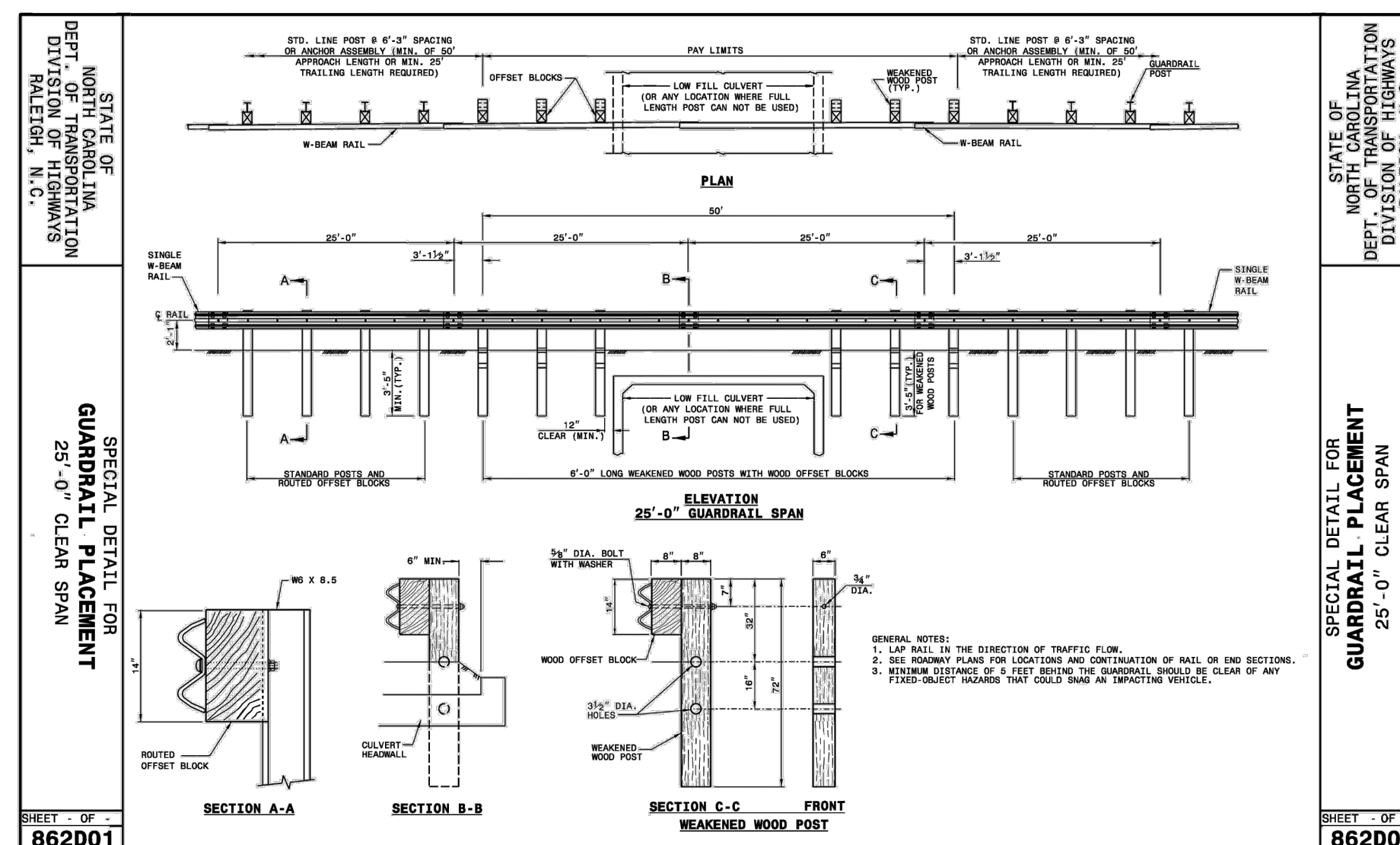
NOTES:

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.

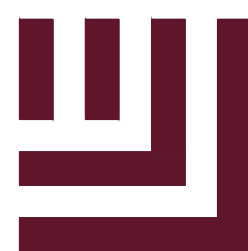
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SCALE: N.T.S.

11
SCALE: N.T.S.



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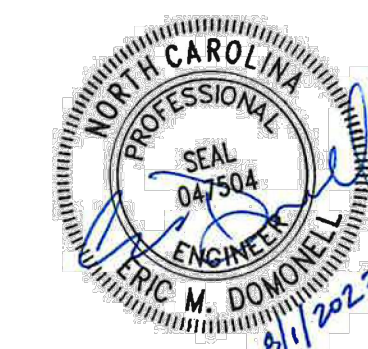
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FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
PHASE 1A
11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA



REVISIONS

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PLAN INFORMATION

PROJECT NO. 202011039
FILENAME 2020110039-PH1-D1
CHECKED BY EMD
DRAWN BY SME
SCALE N/A
DATE 08.01.2023

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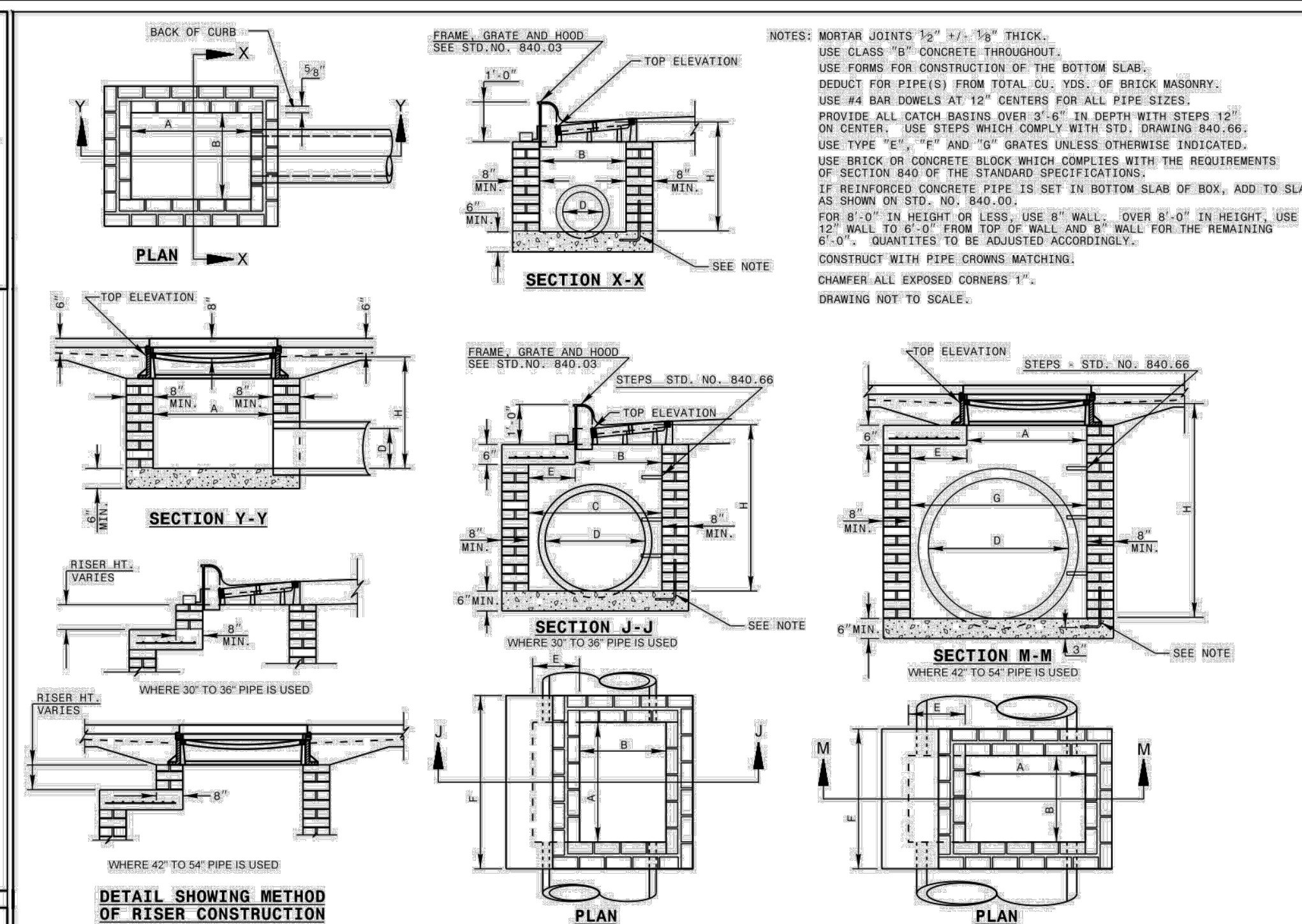
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UTILITY DETAILS

C8.02

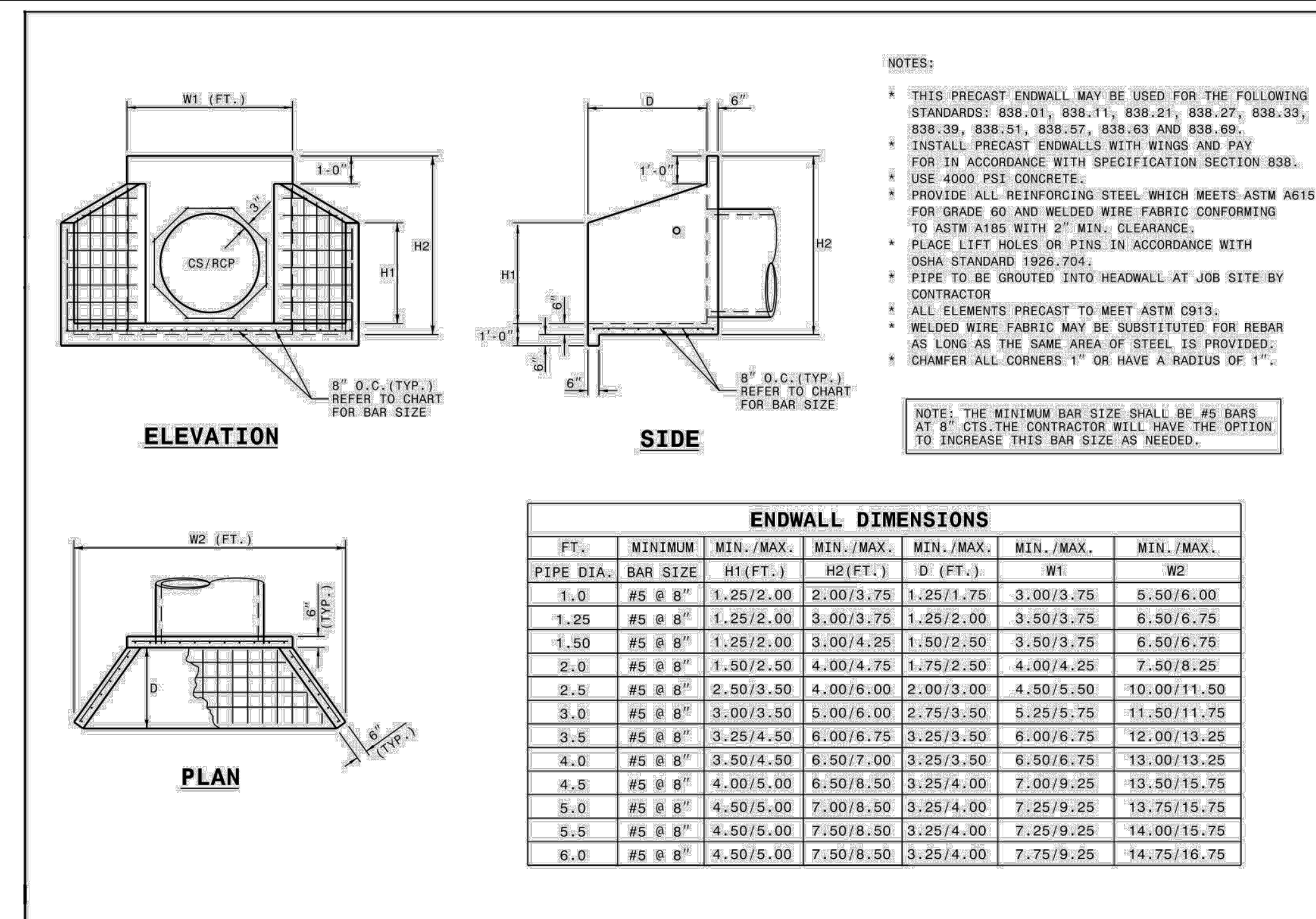
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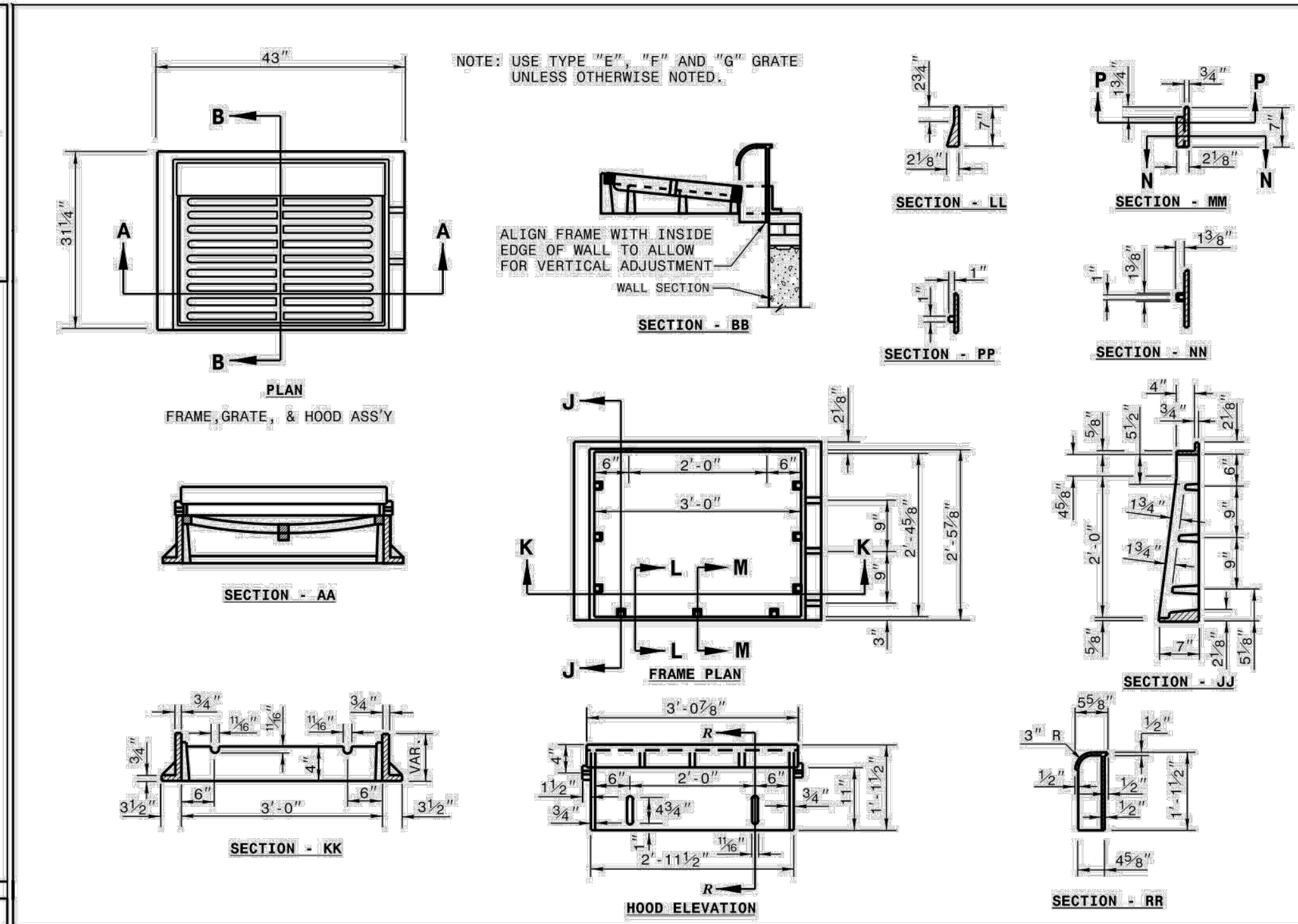
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ROADWAY STANDARD DRAWING FOR BRICK CATCH BASIN 12" THRU 54" PIPE
SHEET 1 OF 2 840.01



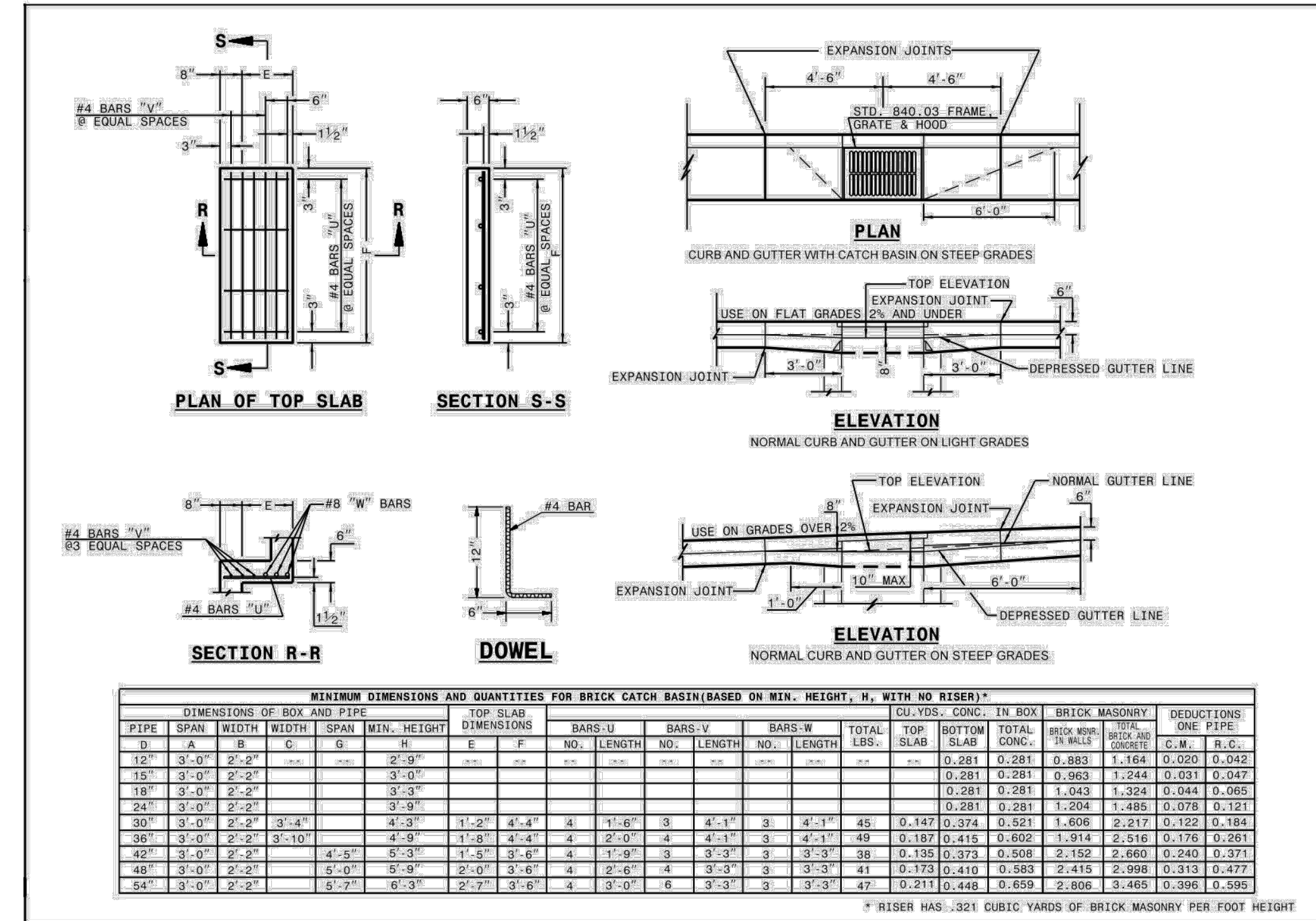
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ROADWAY STANDARD DRAWING FOR PRECAST CONCRETE ENDWALL FOR SINGLE 12" THRU 72" PIPE - 90° SKEW
SHEET 1 OF 1 838.80



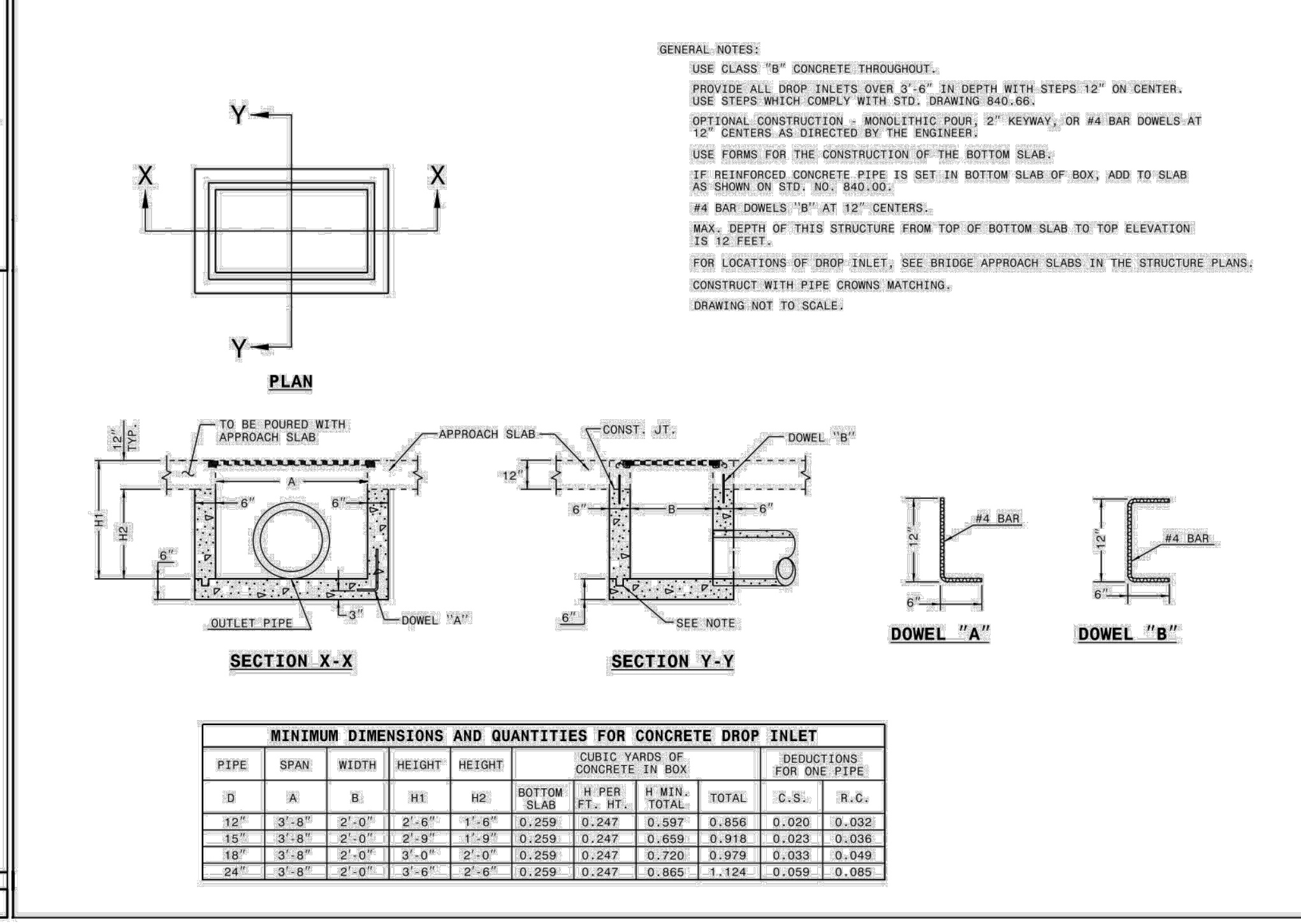
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN
SHEET 1 OF 2 840.03



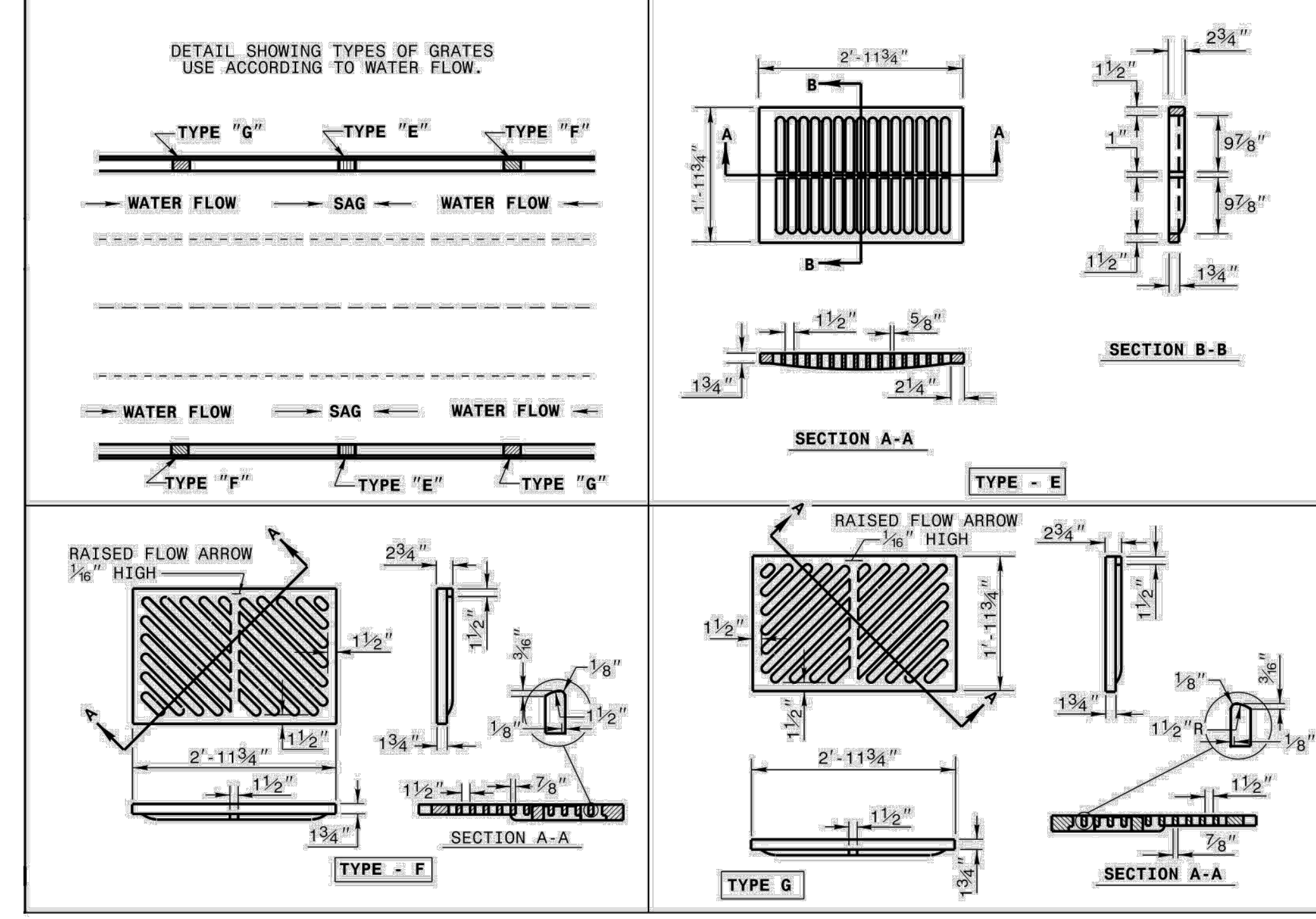
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ROADWAY STANDARD DRAWING FOR BRICK CATCH BASIN 12" THRU 54" PIPE
SHEET 2 OF 2 840.01



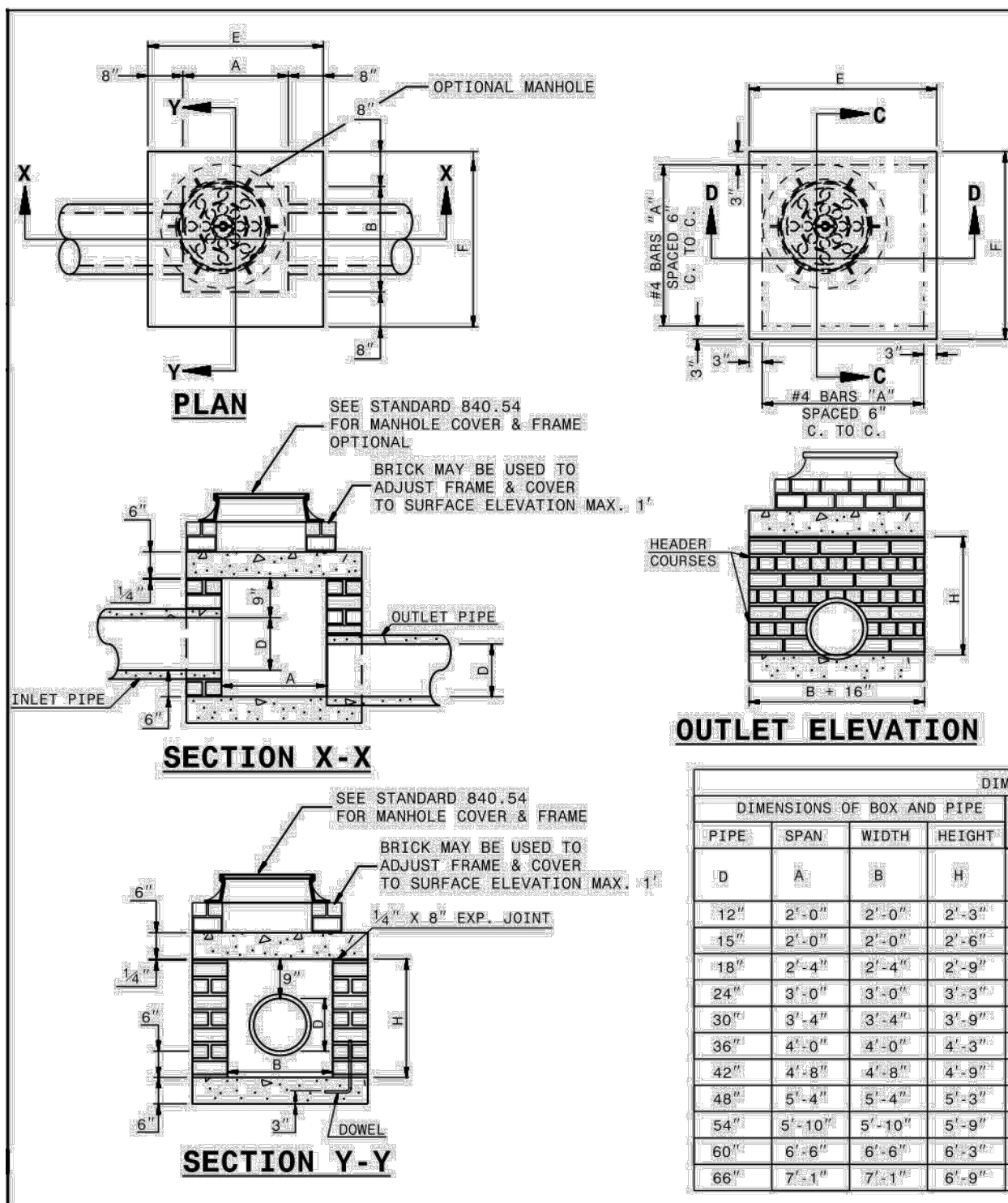
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ROADWAY STANDARD DRAWING FOR CONCRETE BRIDGE APPROACH DROP INLET 12" THRU 24" PIPE
SHEET 1 OF 1 840.13



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN
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.
 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 11" 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.

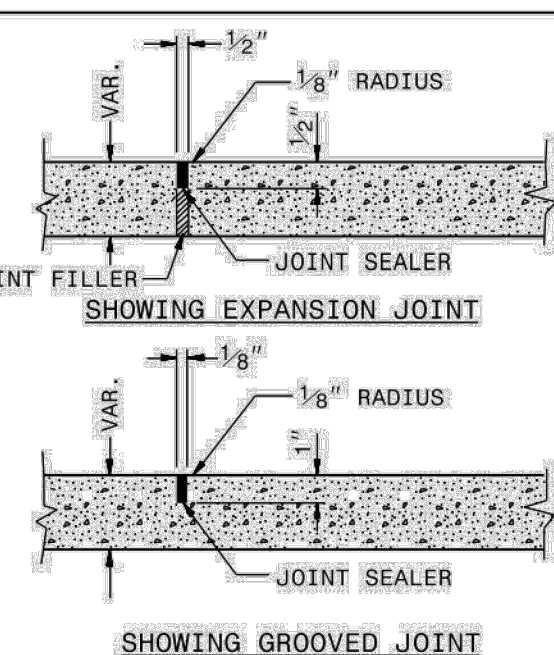
DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES

PIPE DIMENSIONS	SPAN	WIDTH	HEIGHT	REINFORCEMENT BARS		TOP SLAB DIMENSIONS		CUBIC YARDS		DEDUCTIONS FOR ONE PIPE (CU. YDS.)	
				NO.	LENGTH	E	F	TOP & BOTTOM CU. YD.	CONC.	BRICK MASONRY	C.S.
12"	2'-0"	2'-0"	2'-3"	12	3'-1"	3'-4"	3'-4"	0.412	0.591	0.263	0.020
15"	2'-0"	2'-0"	2'-6"	12	3'-1"	3'-4"	3'-4"	0.412	0.591	0.263	0.031
18"	2'-4"	2'-4"	2'-9"	14	3'-5"	3'-8"	3'-8"	0.488	0.614	0.296	0.044
24"	3'-0"	3'-0"	3'-3"	16	4'-1"	4'-4"	4'-4"	0.595	1.176	0.362	0.078
30"	3'-4"	3'-4"	3'-9"	16	4'-5"	4'-8"	4'-8"	0.607	1.461	0.358	0.122
36"	4'-0"	4'-0"	4'-3"	20	5'-1"	5'-4"	5'-4"	1.053	1.959	0.461	0.176
42"	4'-8"	4'-8"	4'-9"	22	5'-9"	6'-0"	6'-0"	1.333	2.503	0.527	0.240
48"	5'-4"	5'-4"	5'-3"	26	6'-5"	6'-8"	6'-8"	1.646	2.940	0.560	0.313
54"	5'-10"	5'-10"	5'-9"	28	6'-11"	7'-2"	7'-2"	1.902	3.502	0.609	0.396
60"	6'-6"	6'-6"	6'-3"	30	7'-7"	7'-10"	7'-10"	2.272	4.113	0.658	0.489
66"	7'-1"	7'-1"	6'-9"	32	8'-2"	8'-5"	8'-5"	2.624	4.778	0.708	0.591

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



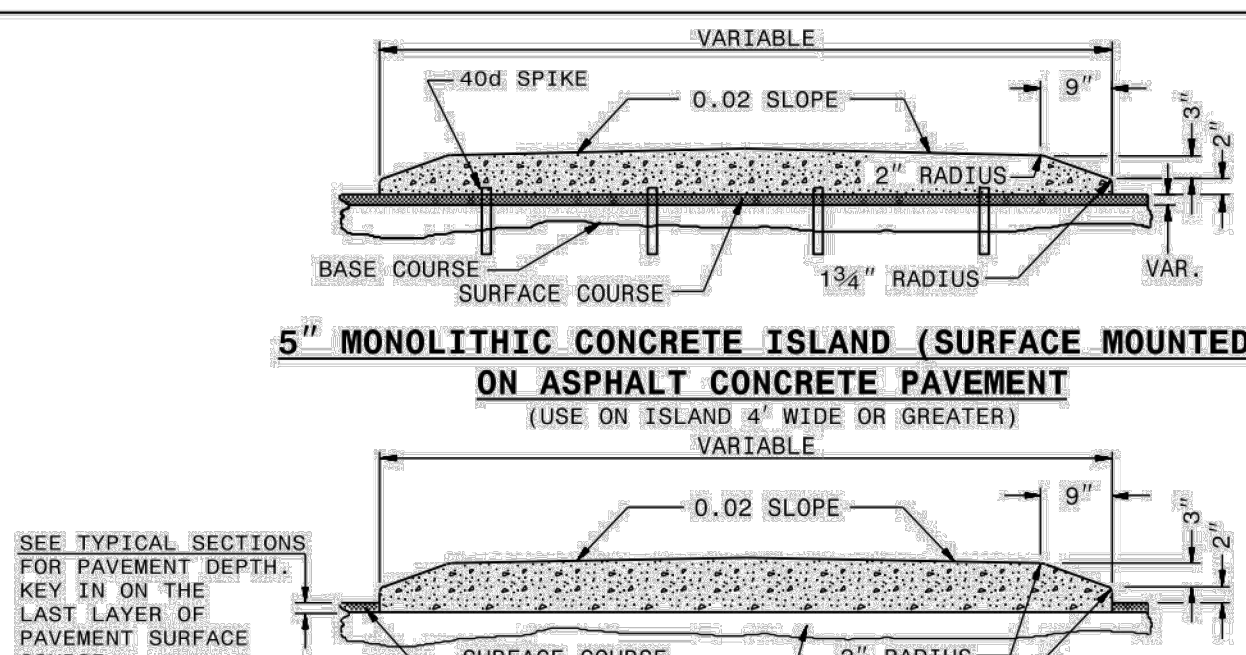
PARTIAL LONGITUDINAL SECTIONS OF PAVED ISLANDS

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

FILL HEIGHT TABLE*

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

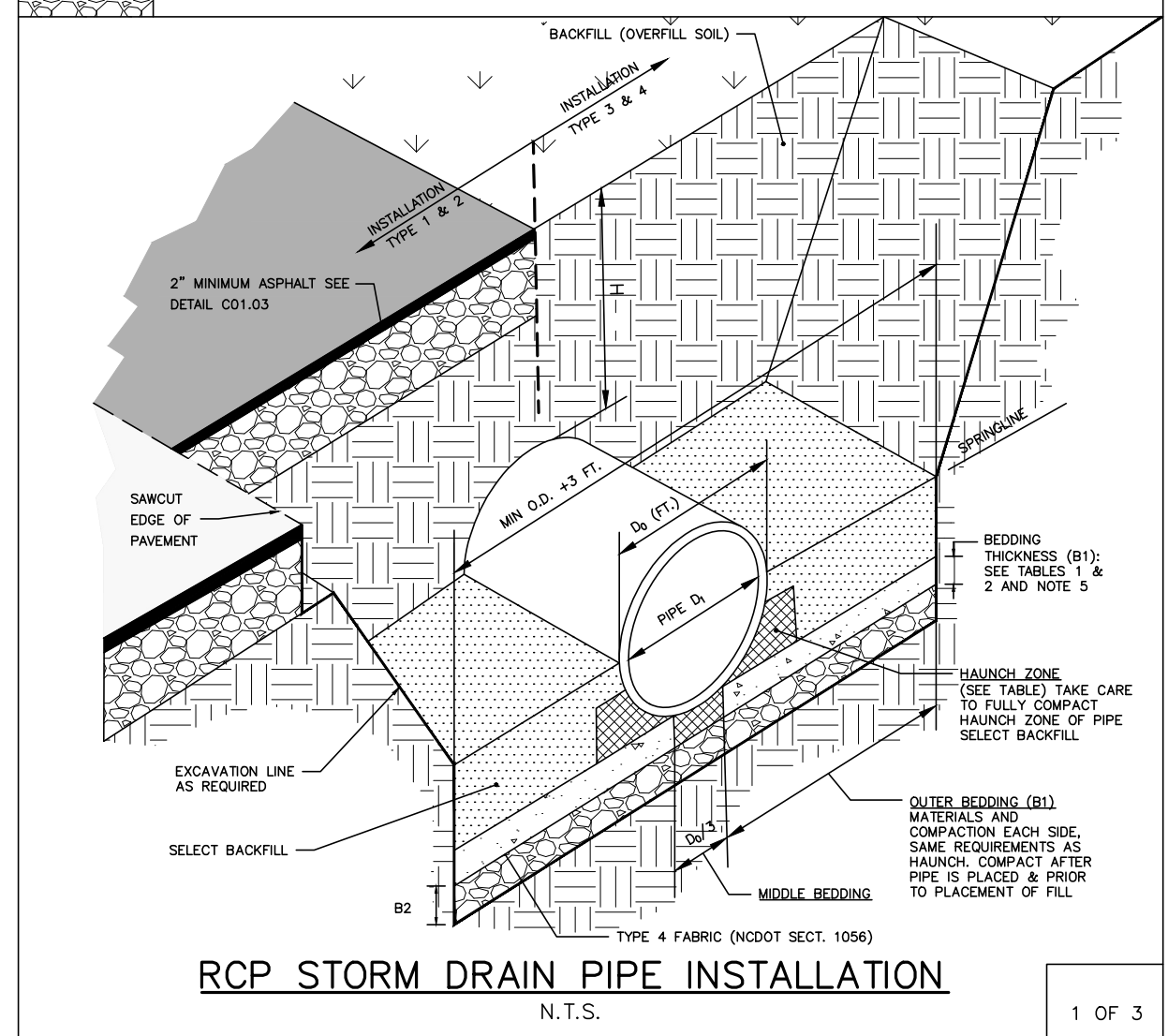


TABLE 1
 EQUIVALENT USCS¹ AND AASHTO SOIL CLASSIFICATION FOR SID² SOIL DESIGNATIONS

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 2M), 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 2M) 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	90% CATEGORY I	90% CATEGORY I OR 85% CATEGORY II	PAVED AREAS WITH 2" OR LESS BURY
TYPE 2	B1 = 5/8" (6" MIN) FOUNDATION, F/FT OF 1/2" MIN/24" MAX	90% CATEGORY I	85% CATEGORY I OR 80% CATEGORY II	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 85% CATEGORY III	85% CATEGORY I OR 80% CATEGORY II	IN 50% OUTSIDE OF PAVEMENT
TYPE 4	B1 = 5/8" (6" MIN) FOUNDATION, F/FT OF 1/2" MIN/24" MAX	NO COMPACTION REQUIRED, EXCEPT IF CATEGORY II, USE 85% CATEGORY III	85% 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 1/2 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*

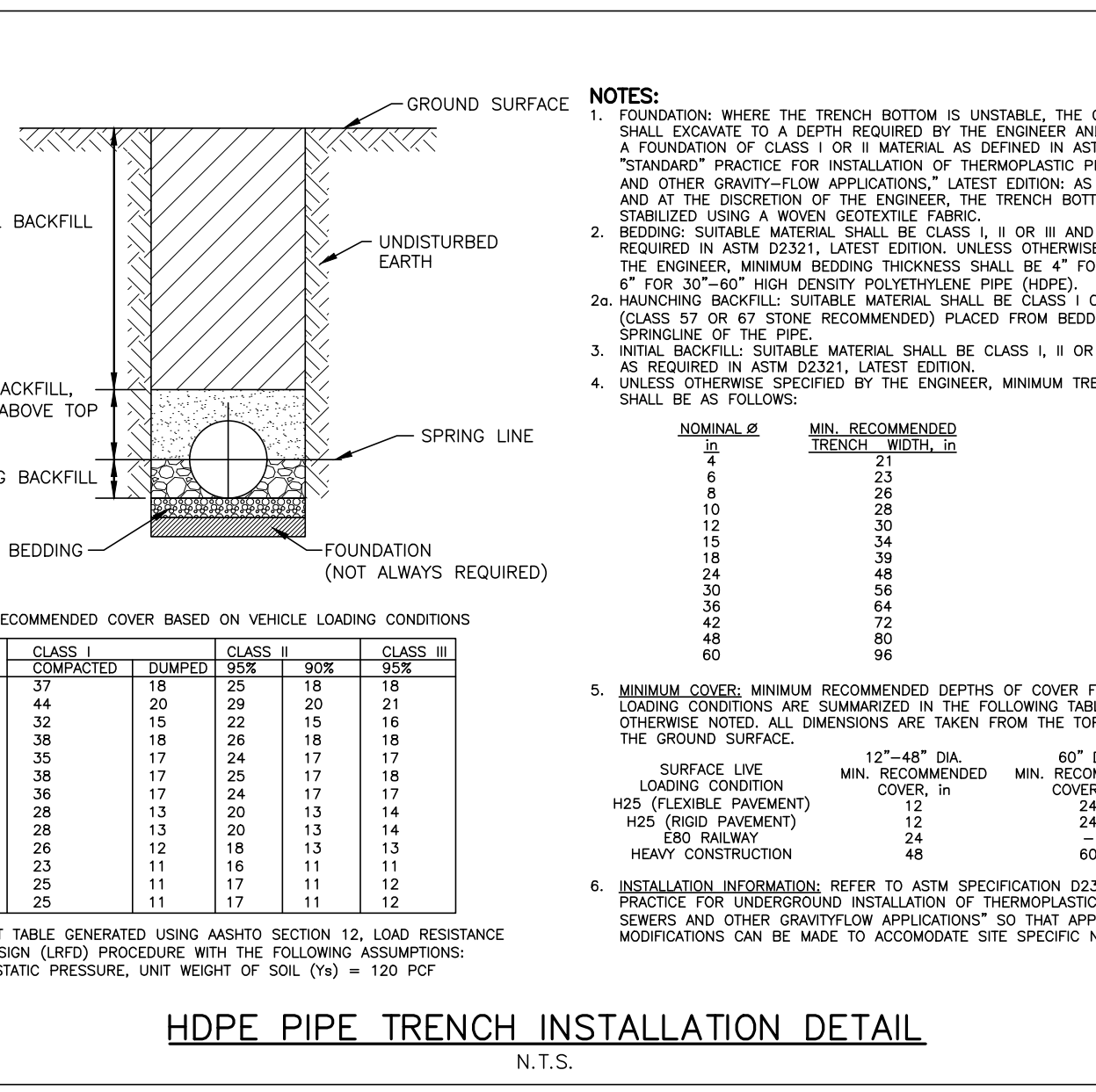
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18	2 MIN, 12 MAX	1 MIN, 20 MAX	3 MIN, 7 MAX	1 MIN, 13 MAX
24	1 MIN, 12 MAX	1 MIN, 20 MAX	2 MIN, 8 MAX	1 MIN, 13 MAX
30	1 MIN, 12 MAX	1 MIN, 20 MAX	1 MIN, 8 MAX	1 MIN, 13 MAX
36	1 MIN, 12 MAX	1 MIN, 20 MAX	1 MIN, 8 MAX	1 MIN, 13 MAX
42	1 MIN, 12 MAX	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.

* FILL HEIGHT TABLES, THE PORTION EXCEPTED HERE, WAS DEVELOPED BY THE AMERICAN CONCRETE PIPE ASSOCIATION (ACPA) USING THE INDIRECT DESIGN METHOD IN ACCORDANCE WITH SECTION 12.10.4.3 OF THE ASHTO LRFD BRIDGE DESIGN SPECIFICATION, 4TH, 2007 WITH 2008 INTERIM.

NOTES:
 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.

STORM DRAIN PIPE INSTALLATION
 3 OF 3



MINIMUM COVER 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"	15	25	18	18
6"	20	29	20	21
8"	22	32	22	23
10"	25	35	25	26
12"	28	38	28	29
15"	32	42	32	33
18"	36	46	36	37
24"	42	54	42	44
30"	48	62	48	50
36"	54	70	54	56
42"	60	78	60	62
48"	66	86	66	68
60"	81	102	81	83

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 DETAILED IN ASTM D2321.
 2. "STANDARD" PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS LATEST EDITION AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOOD GEOTEXTILE.
 3. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III 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).
 4. 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.
 5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
 6. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

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

7. 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.

SURFACE TYPE	MIN. RECOMMENDED COVER, IN	MIN. RECOMMENDED COVER, IN	MIN. RECOMMENDED COVER, IN
H25 (FLEXIBLE PAVEMENT)	12	14	24
H25 (RIGID PAVEMENT)	12	24	24
URD (RAILWAY)	12	24	24
HEAVY CONSTRUCTION	12	24	60

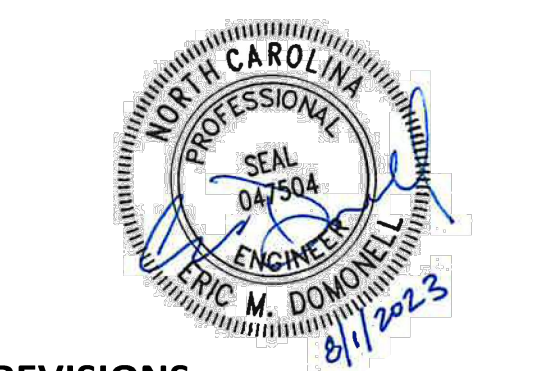
8. INSTALLATION INFORMATION: REFER TO ASTM SPECIFICATION D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS" SO THAT APPROPRIATE MODIFICATIONS CAN BE MADE TO ACCOMMODATE SITE SPECIFIC NEEDS.

HDPE PIPE TRENCH INSTALLATION DETAIL
 N.T.S.

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



REVISIONS

NO.	DATE

PLAN INFORMATION

PROJECT NO. 202011039
 FILENAME 2020110039-PH1-01
 CHECKED BY EMD
 DRAWN BY SME
 SCALE N/A
 DATE 08.01.2023

SHEET
STORM DRAINAGE & UTILITY DETAILS
C8.03