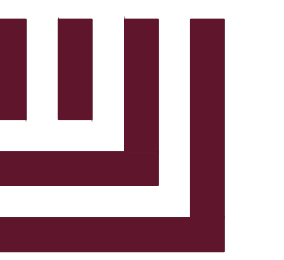


FRAZIER FARM PARK

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

V2 - CID-23-05



McADAMS

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 2905 Meridian Parkway
 Durham, NC 27713

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 fax 919. 361. 2269
 license number: C-0293, C-187

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CONTACT

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 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:	FIN: 1779083669, 1779263965, 1779190357
DISTURBED AREA:	±8.50 AC
FEMA REGULATIONS:	
WATERSHED(S):	NEUSE

1. ITEMS TO BE ADDED TO SITE DATA
 - PARKING DATA
 - IMPERVIOUS AREA PRE AND POST DEVELOPMENT

2. UPDATE SHEET INDEX TO CORRESPOND WITH SHEETS IN SET.

ADDITIONAL SHEETS NOT IN SET-REMOVE FROM SHEET INDEX IF NOT TO BE INCLUDED IN SUBMITTAL SET

- C2.04
- C3.04
- C6.03
- C6.04
- C6.05
- C6.10
- C6.12

3. PROVIDE WITH NEXT SUBMITTAL

4. UPDATE PROFILE STATIONING TO STATIONS ON PLAN AND PROFILE SHEETS.

SHEET INDEX

- C1.00 EXISTING CONDITIONS
- C1.01 EXISTING CONDITIONS
- C1.10 DEMOLITION PLAN

- C2.00 OVERALL SITE PLAN
- C2.01 SITE PLAN 'AREA A'
- C2.02 SITE PLAN 'AREA B'
- C2.03 SITE PLAN 'AREA C'
- C2.04 SITE PLAN 'AREA D'

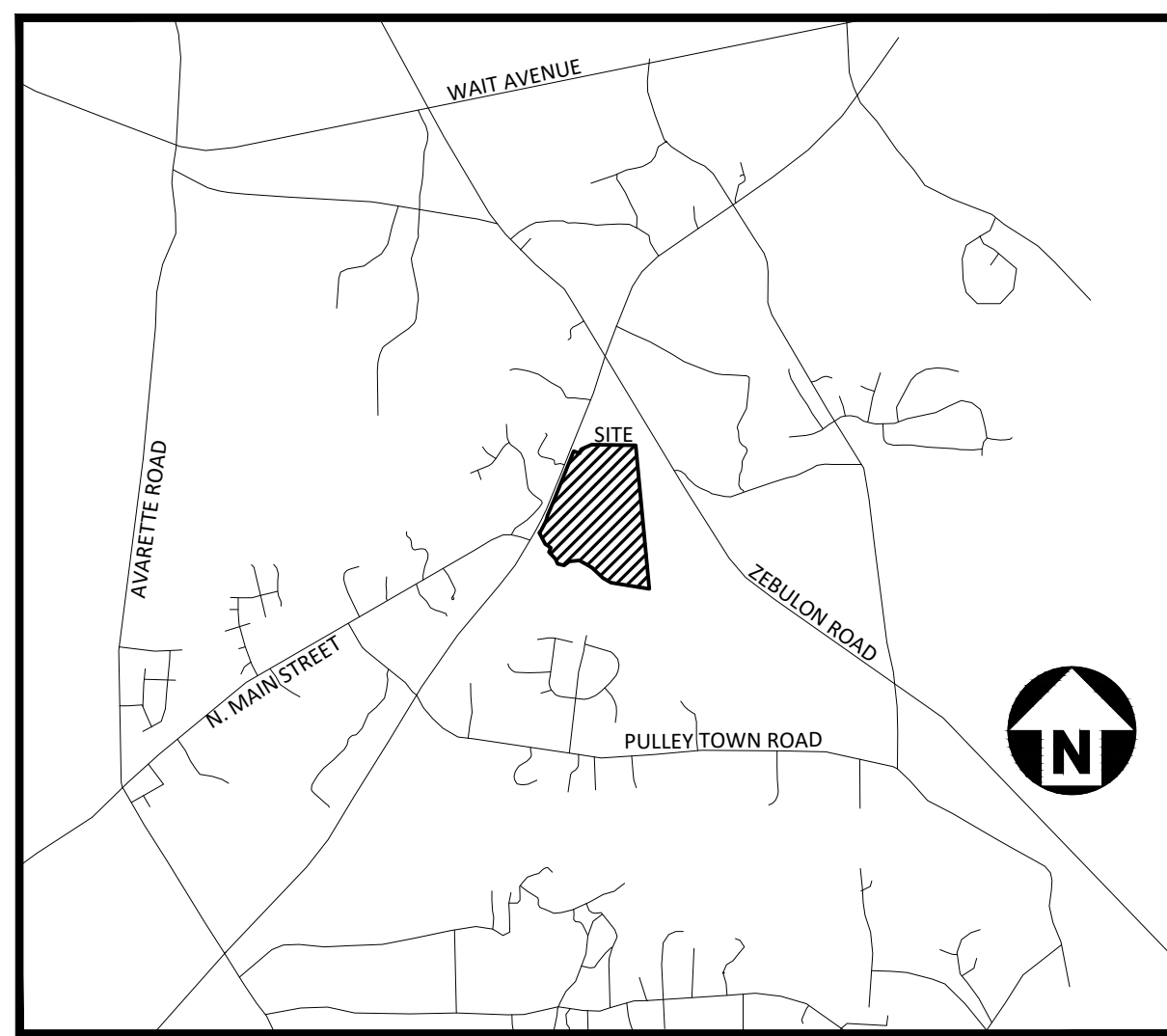
- C3.00 OVERALL GRADING & DRAINAGE PLAN
- C3.01 GRADING & DRAINAGE PLAN: 'AREA A'
- C3.02 GRADING & DRAINAGE PLAN: 'AREA B'
- C3.03 GRADING & DRAINAGE PLAN: 'AREA C'
- C3.04 GRADING & DRAINAGE PLAN: 'AREA D'

- C5.00 PLAN AND PROFILE STREET "A", STA. 10+00 THRU STA. 22+00
- C5.01 PLAN AND PROFILE STREET "B", STA. 10+00 THRU STA. 16+35

- C6.00 EROSION CONTROL NOTES
- C6.01 OVERALL EROSION CONTROL PLAN
- C6.02 EROSION CONTROL PLAN: 'AREA A'
- C6.03 EROSION CONTROL PLAN: 'AREA B'
- C6.04 EROSION CONTROL PLAN: 'AREA C'
- C6.05 EROSION CONTROL PLAN: 'AREA D'
- C6.10 EROSION CONTROL DETAILS
- C6.11 EROSION CONTROL DETAILS
- C6.12 EROSION CONTROL DETAILS

- C7.00 LOUISBURG RD WIDENING PLAN
- C7.01 LOUISBURG RD WIDENING CROSS SECTIONS
- C7.02 LOUISBURG RD WIDENING CROSS SECTIONS
- C7.03 LOUISBURG RD WIDENING CROSS SECTIONS

- C8.00 SITE DETAILS
- C8.01 SITE DETAILS
- C8.02 STORM DRAINAGE & UTILITY DETAILS
- C8.03 STORM DRAINAGE & UTILITY DETAILS



VICINITY MAP
 N.T.S.

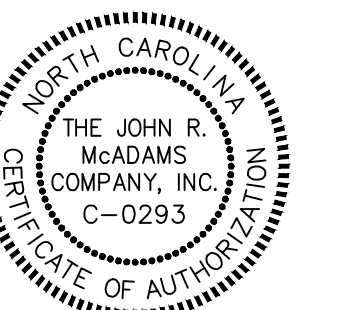


5. WILL NEED TO ADD WAKE COUNTY EROSION CONTROL/STORMWATER AND FLOODPLAIN APPROVAL BLOCK

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.

GENERAL NOTES:

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



REVISIONS

NO.	DATE	TRC RESUBMITTAL
1	08.01.2023	

CONSTRUCTION DRAWINGS FOR:

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

CID-23-05

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



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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-DM1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=100'
DATE 08.01.2023

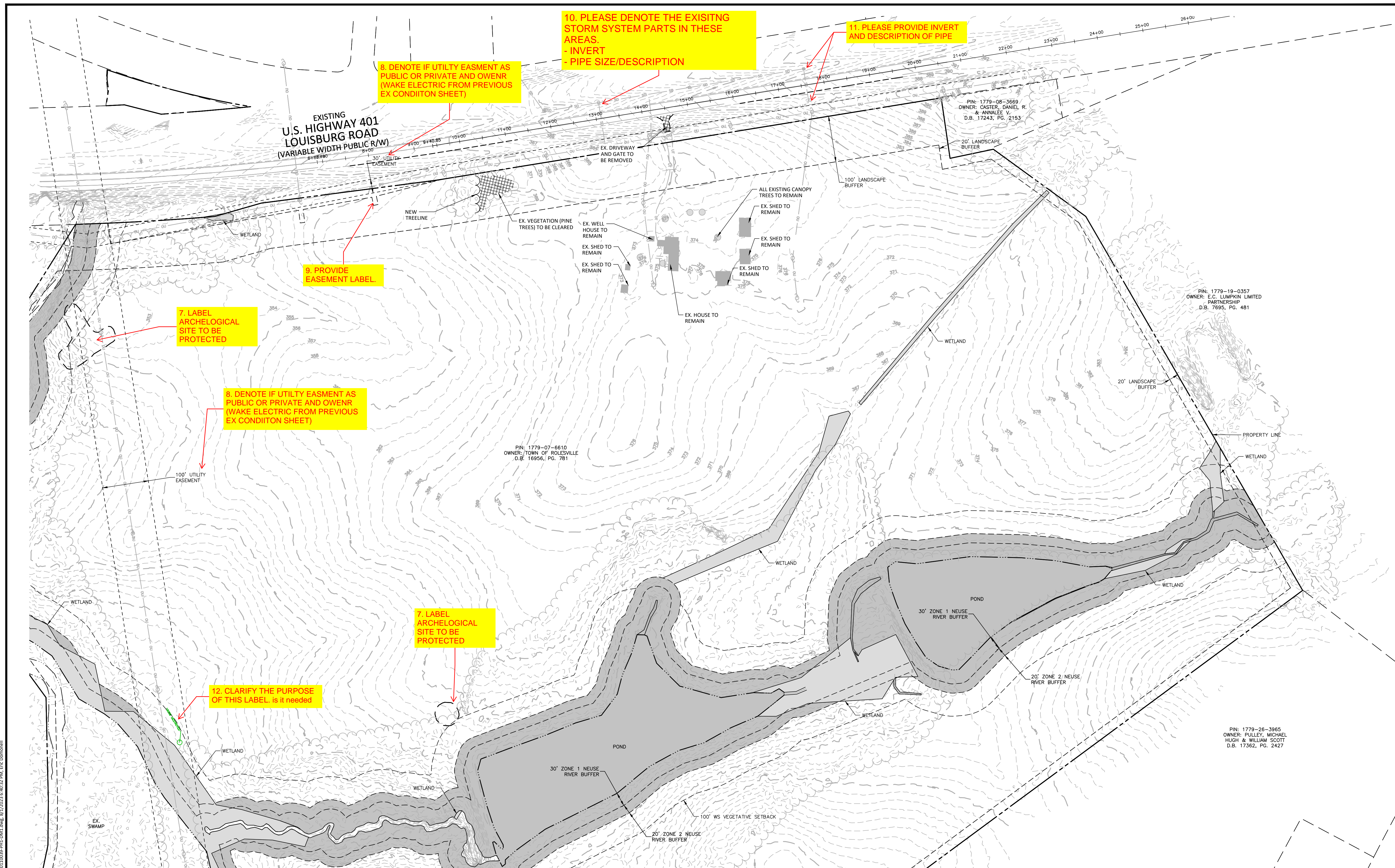
SHEET

OVERALL DEMOLITION PLAN

C1.10

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



8. DENOTE IF UTILITY EASEMENT AS PUBLIC OR PRIVATE AND OWENR (WAKE ELECTRIC FROM PREVIOUS EX CONDIITON SHEET)

10. PLEASE DENOTE THE EXISTING STORM SYSTEM PARTS IN THESE AREAS.
- INVERT
- PIPE SIZE/DESCRIPTION

11. PLEASE PROVIDE INVERT AND DESCRIPTION OF PIPE

7. LABEL ARCHEOLOGICAL SITE TO BE PROTECTED

9. PROVIDE EASEMENT LABEL.

8. DENOTE IF UTILITY EASEMENT AS PUBLIC OR PRIVATE AND OWENR (WAKE ELECTRIC FROM PREVIOUS EX CONDIITON SHEET)

7. LABEL ARCHEOLOGICAL SITE TO BE PROTECTED

12. CLARIFY THE PURPOSE OF THIS LABEL. is it needed

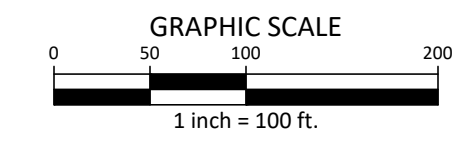
6. EXISTING CONDITION SHEET C1.00 AND C1.01 SHOULD BE INCLUDED IN SET.

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

DEMOLITION LEGEND

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

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



M:\Projects\ROL\2020110039-Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-DM1.dwg, 8/17/2023 6:40:32 PM, EIC Domarell



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



REVISIONS

NO. DATE

PLAN INFORMATION

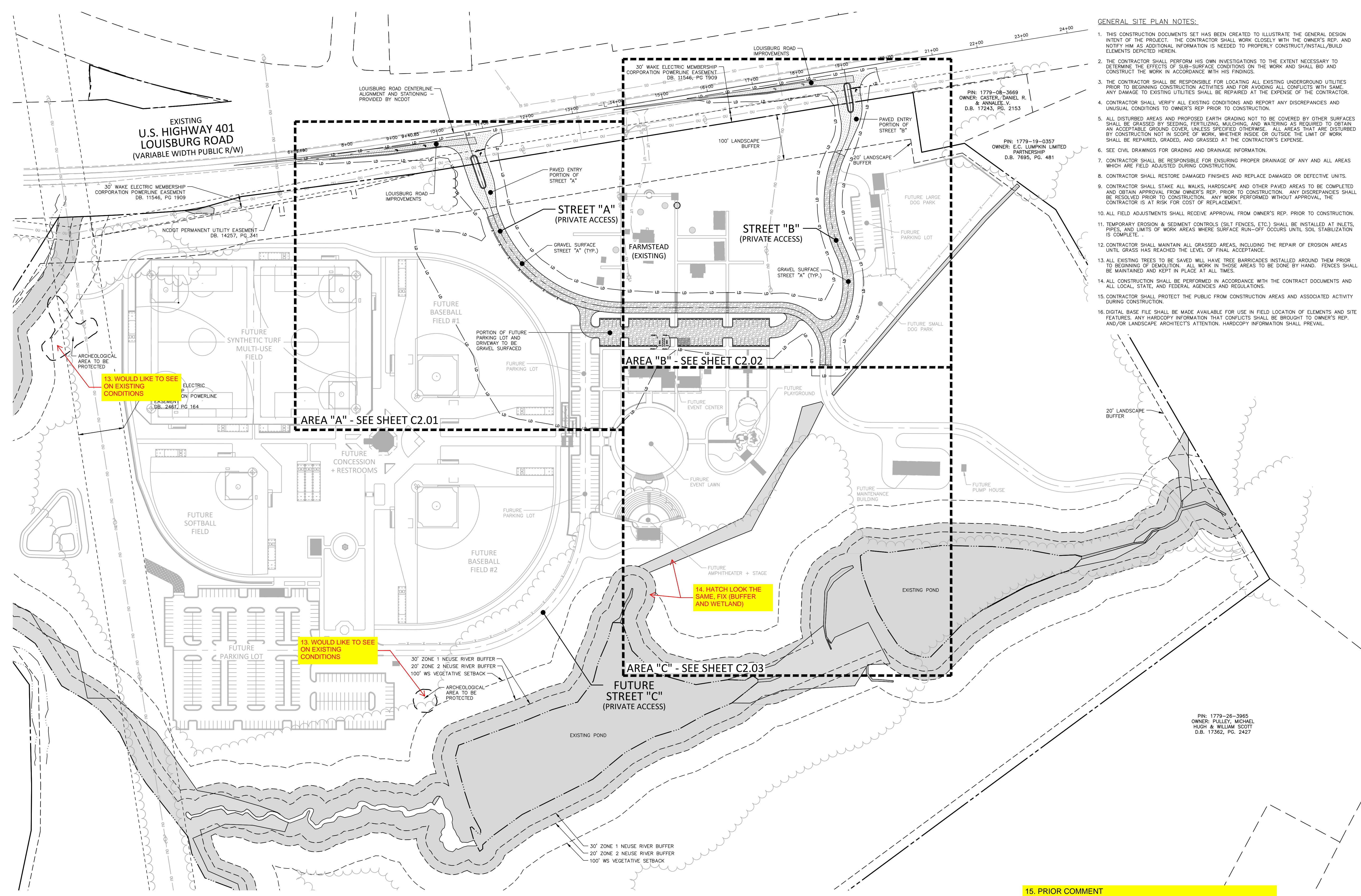
PROJECT NO. 202011039
FILENAME 2020110039-PH1-OAS1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=100'
DATE 08.01.2023

SHEET

OVERALL
SITE PLAN
C2.00

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.
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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.



13. WOULD LIKE TO SEE ON EXISTING CONDITIONS

AREA "A" - SEE SHEET C2.01

AREA "B" - SEE SHEET C2.02

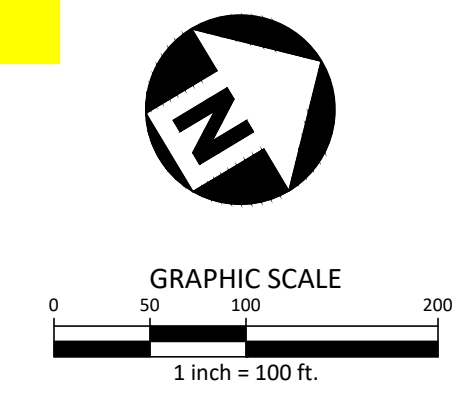
14. HATCH LOOK THE SAME, FIX (BUFFER AND WETLAND)

AREA "C" - SEE SHEET C2.03

13. WOULD LIKE TO SEE ON EXISTING CONDITIONS

15. PRIOR COMMENT - WILL PARKING TO BE ALLOWED ON STREETS OR DRIVES IN FUTURE (SHOW STREET WIDTH AND REVISION SECTION). GRADING AND STORM CULVERTS TO BE REVISED

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



CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

M:\Projects\WOL\2020110039 Frazier Farm PH1A\04-Production\Engineering\Phase1A\CID\2020110039-PH1-OAS1.dwg, 8/17/2023 6:00:41 PM, Eric Domorell



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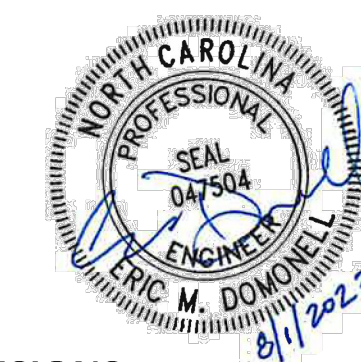
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PHONE: 919.554.6582

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



REVISIONS

NO. DATE

PLAN INFORMATION

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

SHEET

SITE PLAN: AREA 'A'

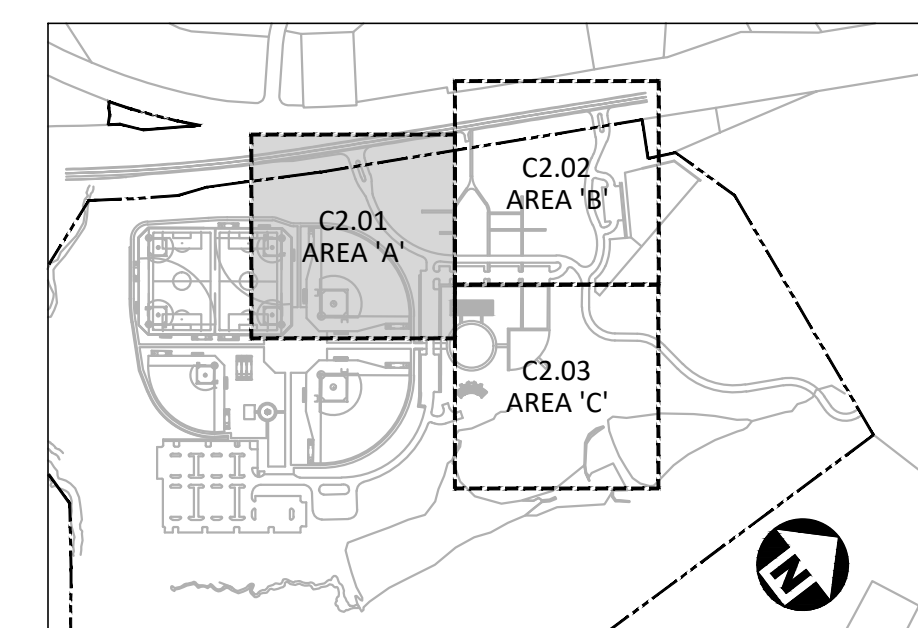
C2.01

SITE LEGEND

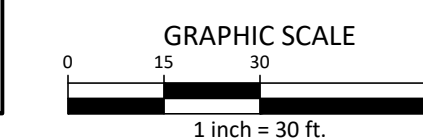
	SIGNAGE
	YARD LIGHTS
	LIGHT POLE
	POWER POLE
	TRAFFIC DIRECTIONAL ARROW
	ACCESSIBLE PARKING STALL
	VAN ACCESSIBLE PARKING STALL
	PARKING SPACE COUNT
	ACCESSIBLE RAMPS
	ACCESSIBLE ROUTE
	PHASE LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	LOT LINE
	EASEMENT LINE
	CENTERLINE
	HEAVY DUTY ASPHALT PAVEMENT
	ABC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

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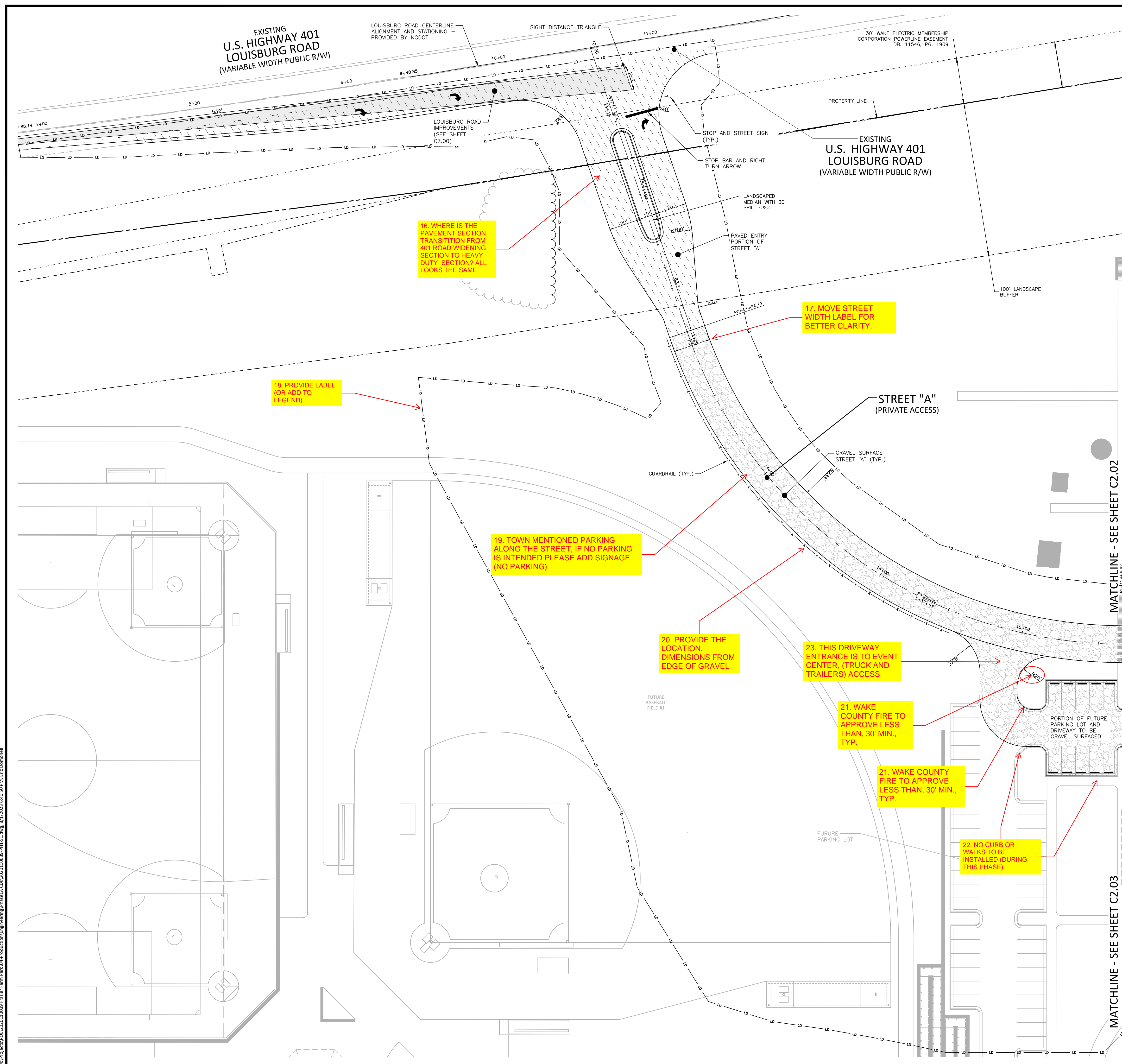
INDEX MAP
N.T.S.



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

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



16. WHERE IS THE PAVEMENT SECTION TRANSITION FROM 401 ROAD WIDENING SECTION TO HEAVY DUTY SECTION? ALL LOOKS THE SAME

17. MOVE STREET WIDTH LABEL FOR BETTER CLARITY.

18. PROVIDE LABEL (OR ADD TO LEGEND)

19. TOWN MENTIONED PARKING ALONG THE STREET, IF NO PARKING IS INTENDED PLEASE ADD SIGNAGE (NO PARKING)

20. PROVIDE THE LOCATION, DIMENSIONS FROM EDGE OF GRAVEL

23. THIS DRIVEWAY ENTRANCE IS TO EVENT CENTER, (TRUCK AND TRAILERS) ACCESS

21. WAKE COUNTY FIRE TO APPROVE LESS THAN, 30' MIN., TYP.

21. WAKE COUNTY FIRE TO APPROVE LESS THAN, 30' MIN., TYP.

22. NO CURB OR WALKS TO BE INSTALLED (DURING THIS PHASE)

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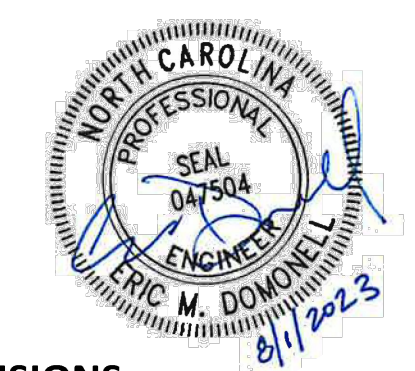
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**FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
PHASE 1A
11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA**



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 'B'

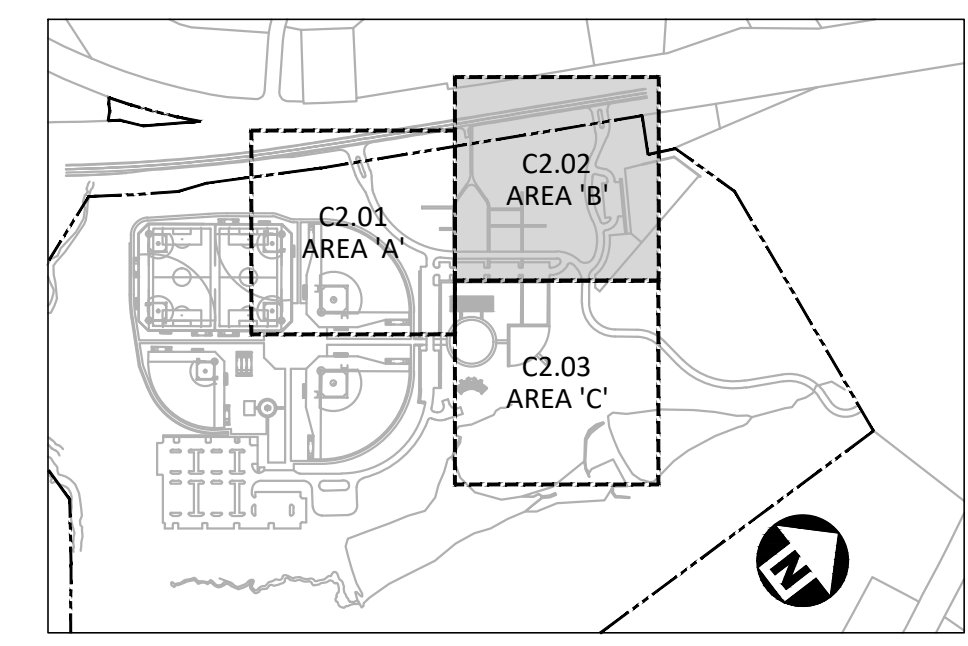
C2.02

SITE LEGEND

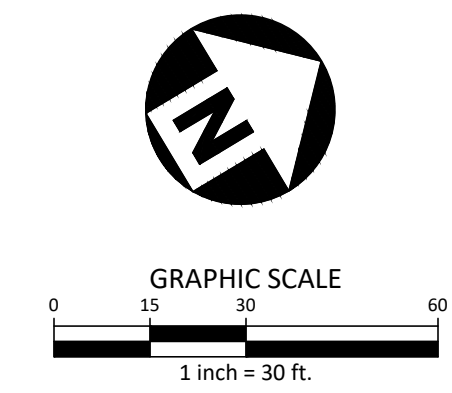
- SIGNAGE
- YARD LIGHTS
- LIGHT POLE
- POWER POLE
- TRAFFIC DIRECTIONAL ARROW
- ACCESSIBLE PARKING STALL
- VAN ACCESSIBLE PARKING STALL
- PARKING SPACE COUNT
- ACCESSIBLE RAMPS
- ACCESSIBLE ROUTE
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- PROPERTY LINE
- RIGHT-OF-WAY LINE
- LOT LINE
- EASEMENT LINE
- CENTERLINE
- HEAVY DUTY ASPHALT PAVEMENT
- ABC TRAVEL SURFACE TO BE ASPHALT PAVEMENT 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.
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6. SEE CIVIL DRAWINGS FOR GRADING AND DRAINAGE INFORMATION.
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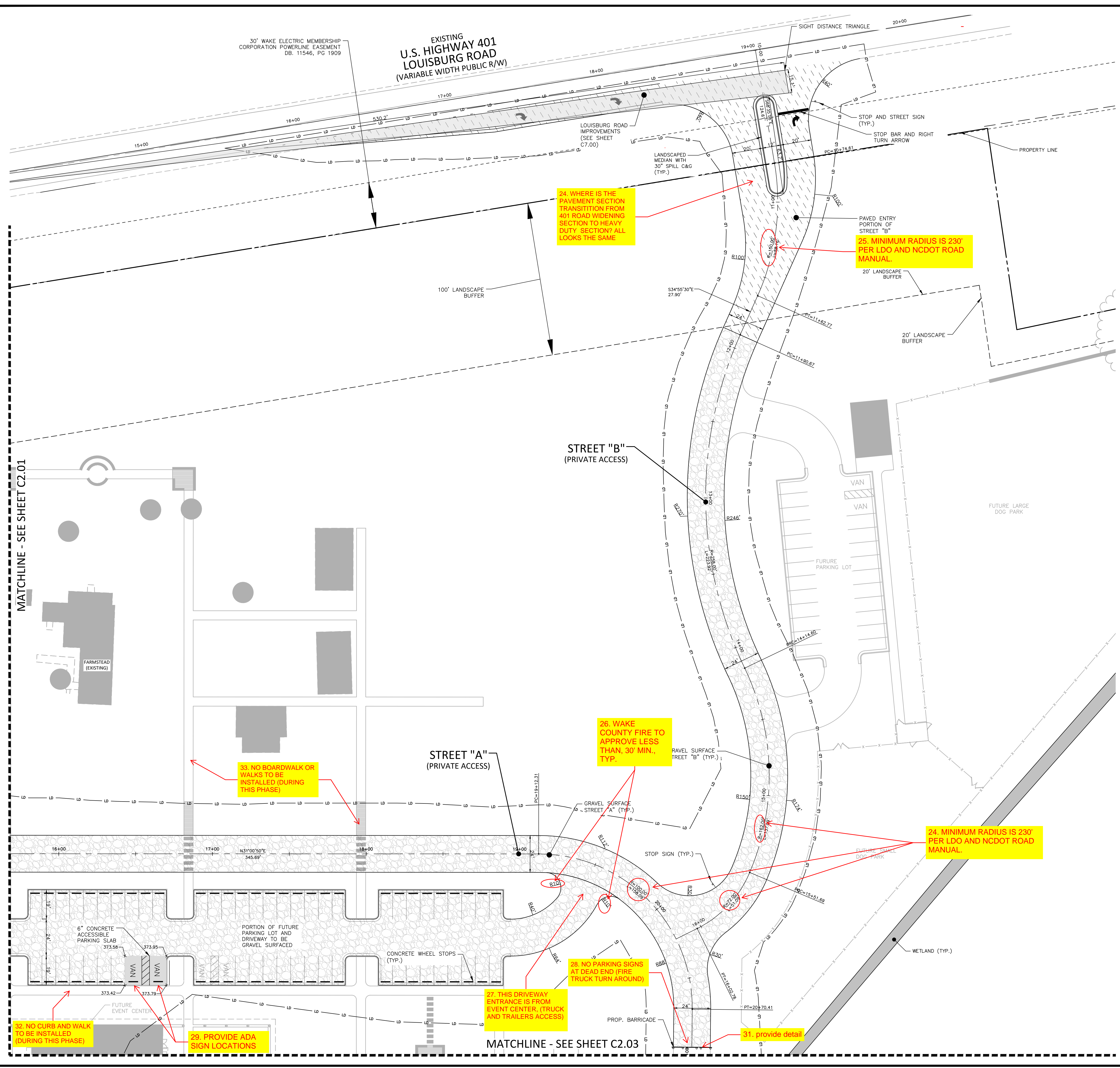
INDEX MAP
N.T.S.



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

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



24. WHERE IS THE PAVEMENT SECTION TRANSITION FROM 401 ROAD WIDENING SECTION TO HEAVY DUTY SECTION? ALL LOOKS THE SAME

25. MINIMUM RADIUS IS 230' PER LDO AND NCDOT ROAD MANUAL.

STREET "B" (PRIVATE ACCESS)

STREET "A" (PRIVATE ACCESS)

26. WAKE COUNTY FIRE TO APPROVE LESS THAN 30' MIN., TYP.

33. NO BOARDWALK OR WALKS TO BE INSTALLED (DURING THIS PHASE)

24. MINIMUM RADIUS IS 230' PER LDO AND NCDOT ROAD MANUAL.

28. NO PARKING SIGNS AT DEAD END (FIRE TRUCK TURN AROUND)

27. THIS DRIVEWAY ENTRANCE IS FROM EVENT CENTER, (TRUCK AND TRAILERS ACCESS)

31. provide detail

32. NO CURB AND WALK TO BE INSTALLED (DURING THIS PHASE)

29. PROVIDE ADA SIGN LOCATIONS

MATCHLINE - SEE SHEET C2.03

MATCHLINE - SEE SHEET C2.01

M:\Projects\WOL\2020110039 Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-S1.dwg, 8/1/2023 6:01:52 PM, Eric Domorell



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2905 Meridian Parkway
Durham, NC 27713

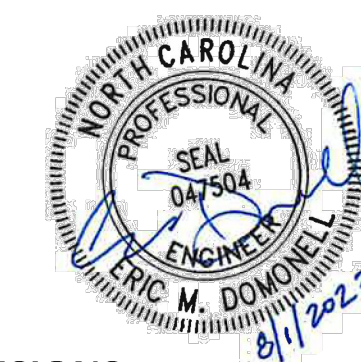
phone 919.361.5000
fax 919.361.2269
license number: C-0293

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'

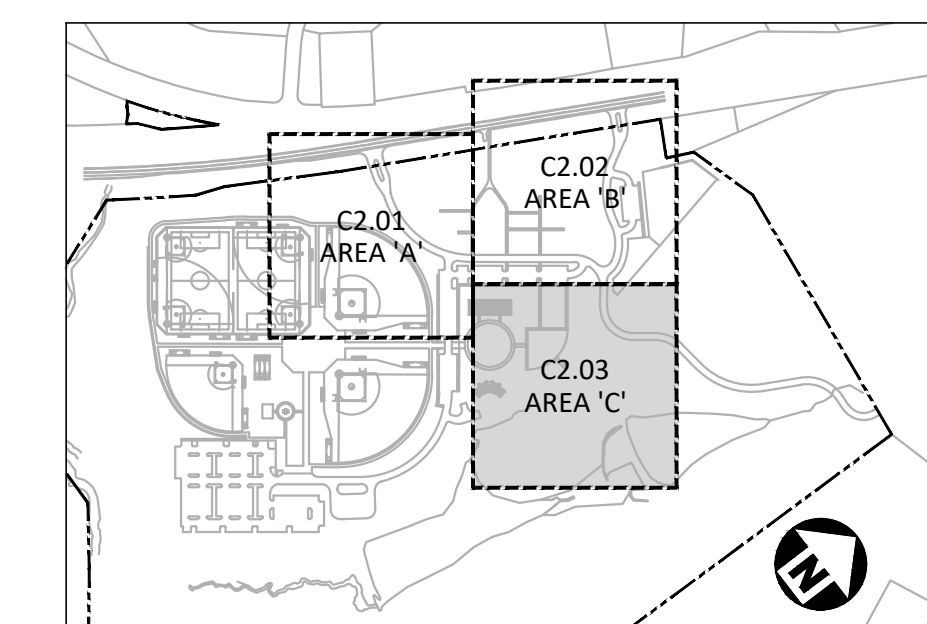
C2.03

SITE LEGEND

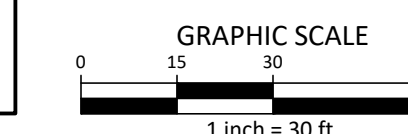
	SIGNAGE
	YARD LIGHTS
	LIGHT POLE
	POWER POLE
	TRAFFIC DIRECTIONAL ARROW
	ACCESSIBLE PARKING STALL
	VAN ACCESSIBLE PARKING STALL
	PARKING SPACE COUNT
	ACCESSIBLE RAMPS
	ACCESSIBLE ROUTE
	PHASE LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	LOT LINE
	EASEMENT LINE
	CENTERLINE
	HEAVY DUTY ASPHALT PAVEMENT
	ABC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

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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

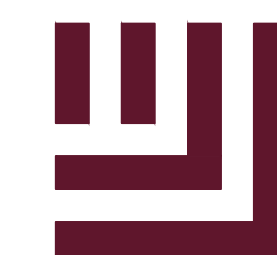
35. MINIMUM RADIUS IS 230' PER LDO AND NCDOT ROAD MANUAL.

34. CLARIFY WHETHER THIS IS ALL FUTURE CONSTRUCTION SPECIFICALLY ALIGNMENT. PROVIDE CL ALIGNMENT TO GO WITH STATIONS

36. LABEL WETLAND (HATCH LOOKS SAME AS BUFFER)

MATCHLINE - SEE SHEET C2.01

M:\Projects\WOL\2020110039 Frazier Farm Park\04-Production\Engineering\Phase1A_CD\2020110039-PH1-S1.dwg, 8/1/2023 6:01:57 PM, Eric Domorell



McADAMS

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Durham, NC 27713

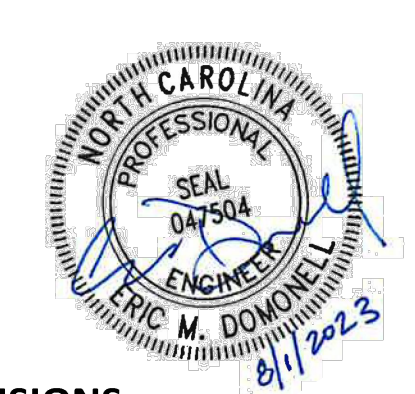
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license number: C-0293

www.mcadamsco.com

CLIENT

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PHONE: 919.554.6582

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



REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 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

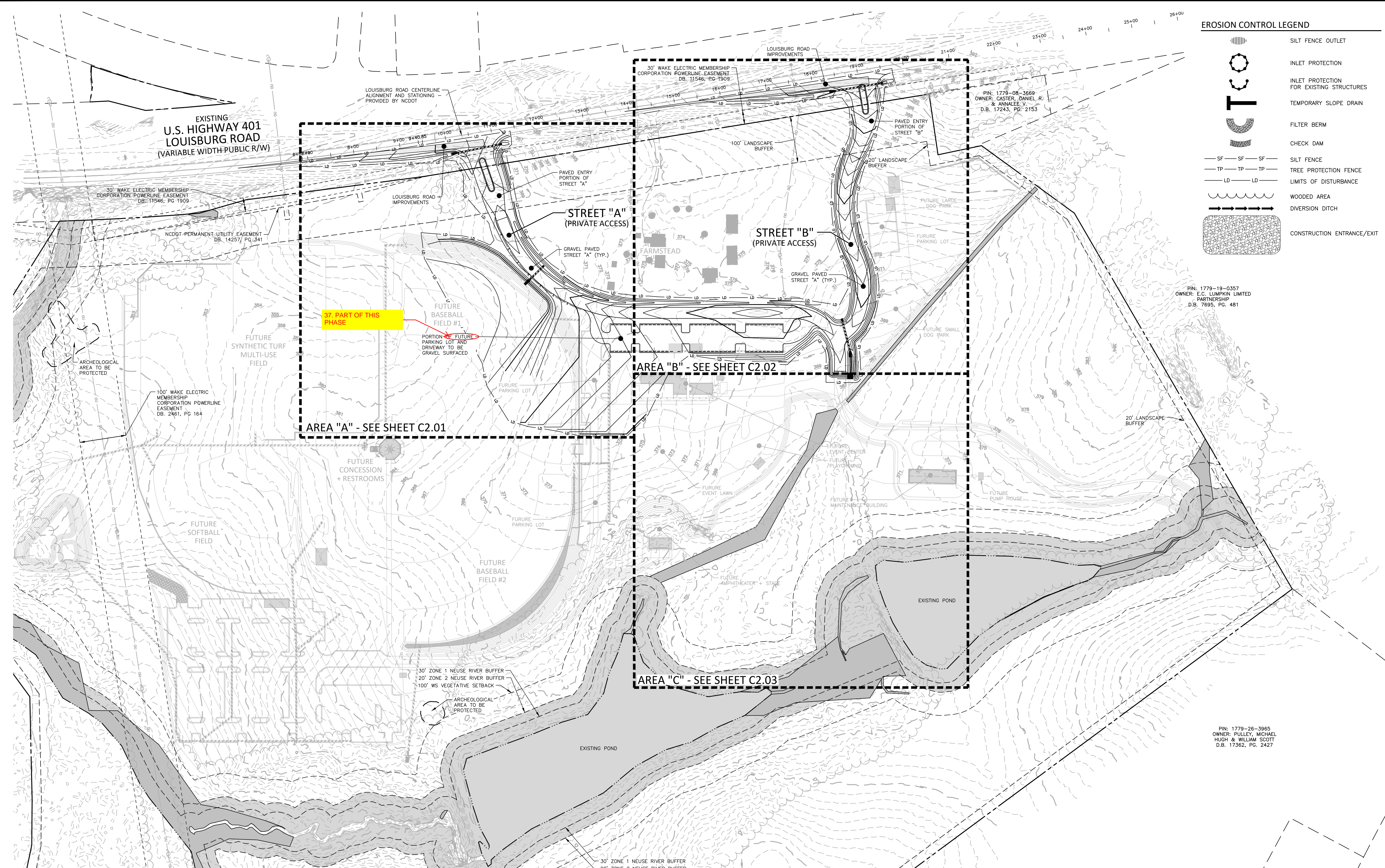
CID-23-5

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 | + 250.60 | SPOT ELEVATION |
| | ENDWALL SECTION | | STORM DRAINAGE |
| | CATCH BASIN | | STORM SERVICE LINE |
| | DROP INLET | | ROOF DRAIN, 8" ADS NON-PERFORATED TUBING OR EQUAL 1.0% MIN. SLOPE 3' MIN. COVER PVC SCHEDULE 40 IN TRAFFIC AREAS |
| | STORM SERVICE INLET | | TREE PROTECTION FENCE |
| | STORM SERVICE ROOF-RAIN | | LIMITS OF DISTURBANCE |
| | JUNCTION BOX | | WOODED AREA |
| | DRAINAGE FLOW ARROW | | MAJOR CONTOUR |
| | LINE BREAK SYMBOL | | MINOR CONTOUR |
| | TOP & BOTTOM CURB ELEVATIONS | 250 | EXISTING MAJOR CONTOUR |
| | TOP OF WALL ELEVATION | 252 | EXISTING MINOR CONTOUR |
| | BOTTOM OF WALL ELEVATION | 250 | EASEMENT LINE |
| | BOTTOM OF WALL ELEVATION | 252 | |
- (NOTE: BOTTOM OF WALL IS GROUND ELEVATION NOT WALL FOUNDATION)

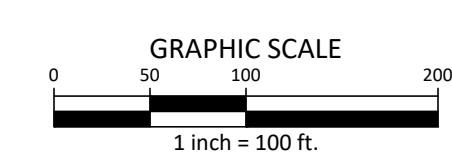
GRADING NOTES

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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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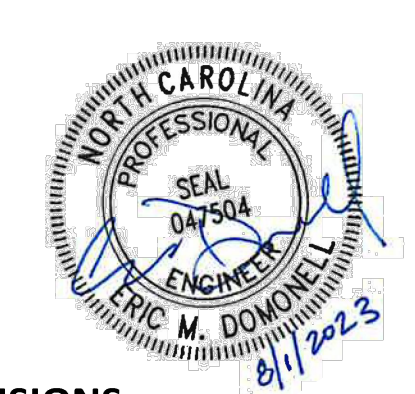
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PHASE 1A
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ROLESVILLE, NORTH CAROLINA



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

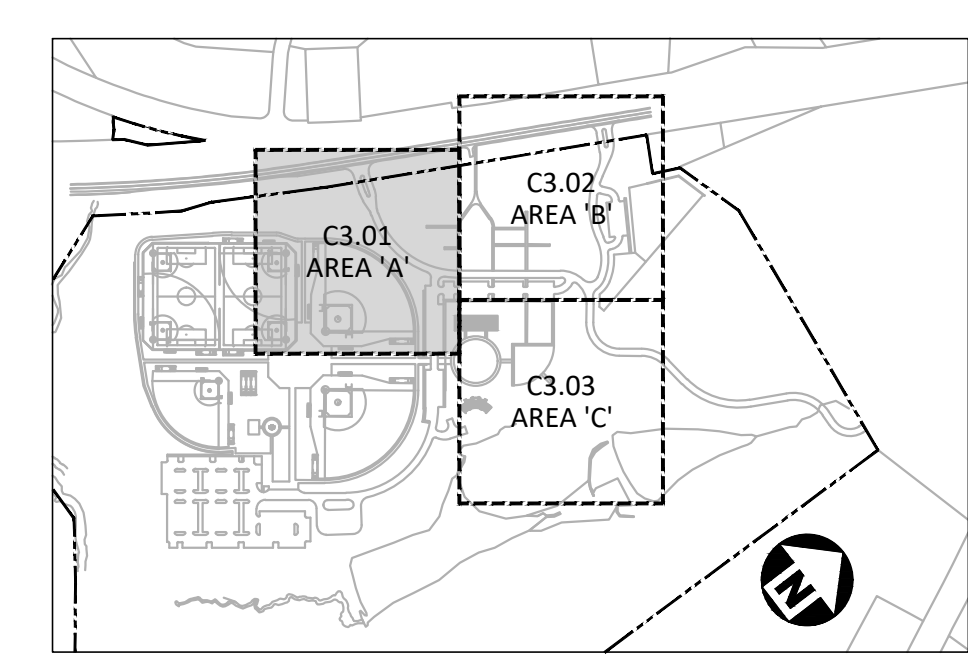
- FLARED END SECTION
- ENDWALL SECTION
- CATCH BASIN
- DROP INLET
- JUNCTION BOX
- DRAINAGE FLOW ARROW
- TOP & BOTTOM CURB ELEVATIONS
- SPOT ELEVATION
- STORM DRAINAGE
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- WOODED AREA
- MAJOR CONTOUR
- MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR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

GRADING NOTES

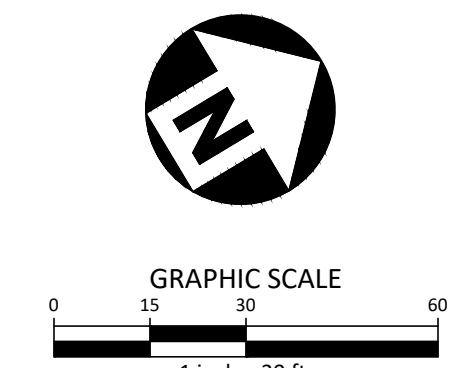
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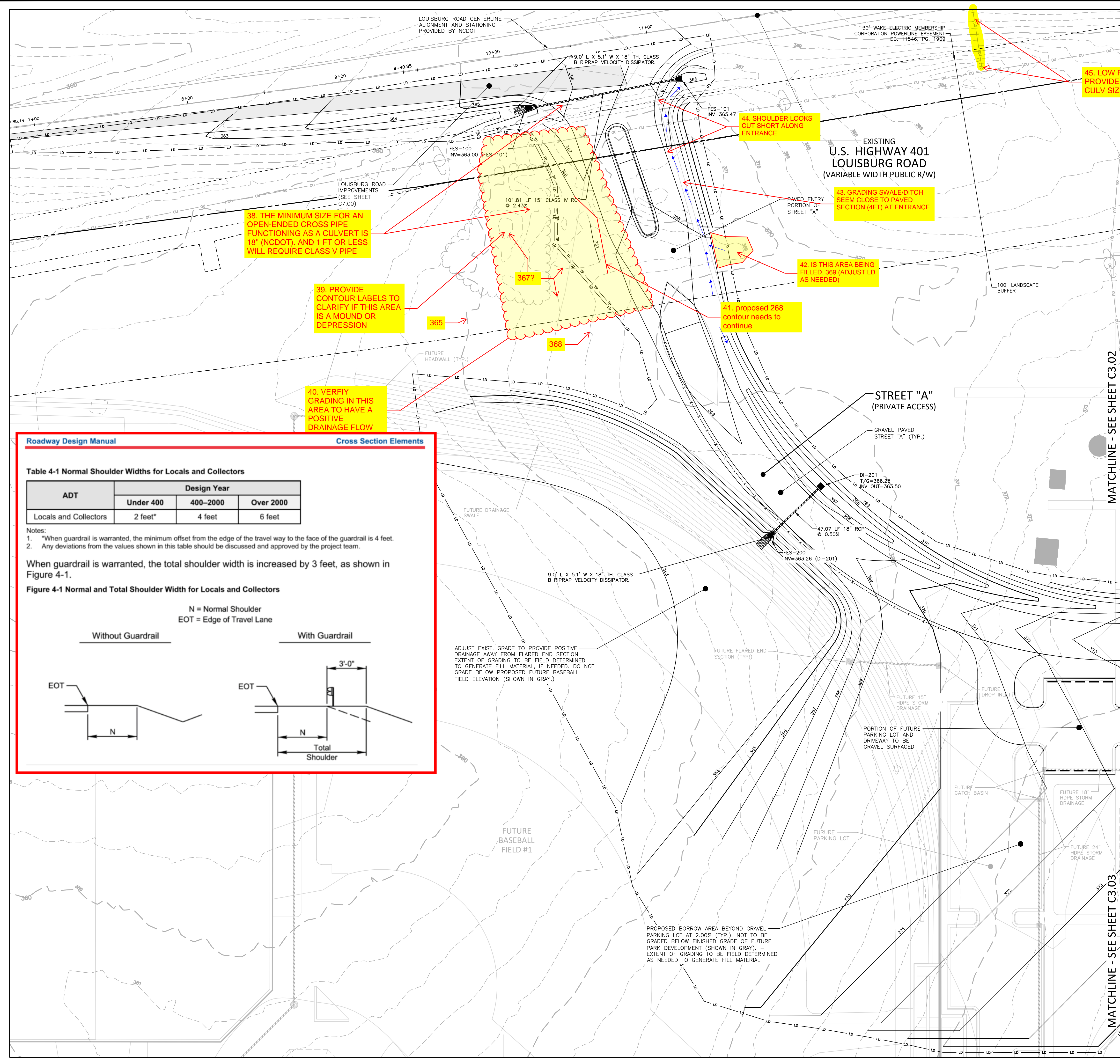
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INDEX MAP
N.T.S.



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



38. THE MINIMUM SIZE FOR AN OPEN-ENDED CROSS PIPE FUNCTIONING AS A CULVERT IS 18" (NCDOT), AND 1 FT OR LESS WILL REQUIRE CLASS V PIPE

39. PROVIDE CONTOUR LABELS TO CLARIFY IF THIS AREA IS A MOUND OR DEPRESSION

40. VERIFY GRADING IN THIS AREA TO HAVE A POSITIVE DRAINAGE FLOW

44. SHOULDER LOOKS CUT SHORT ALONG ENTRANCE

43. GRADING SWALE/DITCH SEEM CLOSE TO PAVED SECTION (4FT) AT ENTRANCE

42. IS THIS AREA BEING FILLED, 369 (ADJUST LD AS NEEDED)

41. proposed 268 contour needs to continue

45. LOW POINT. PROVIDE EXISTING CULV SIZE AND IE

Roadway Design Manual **Cross Section Elements**

Table 4-1 Normal Shoulder Widths for Locals and Collectors

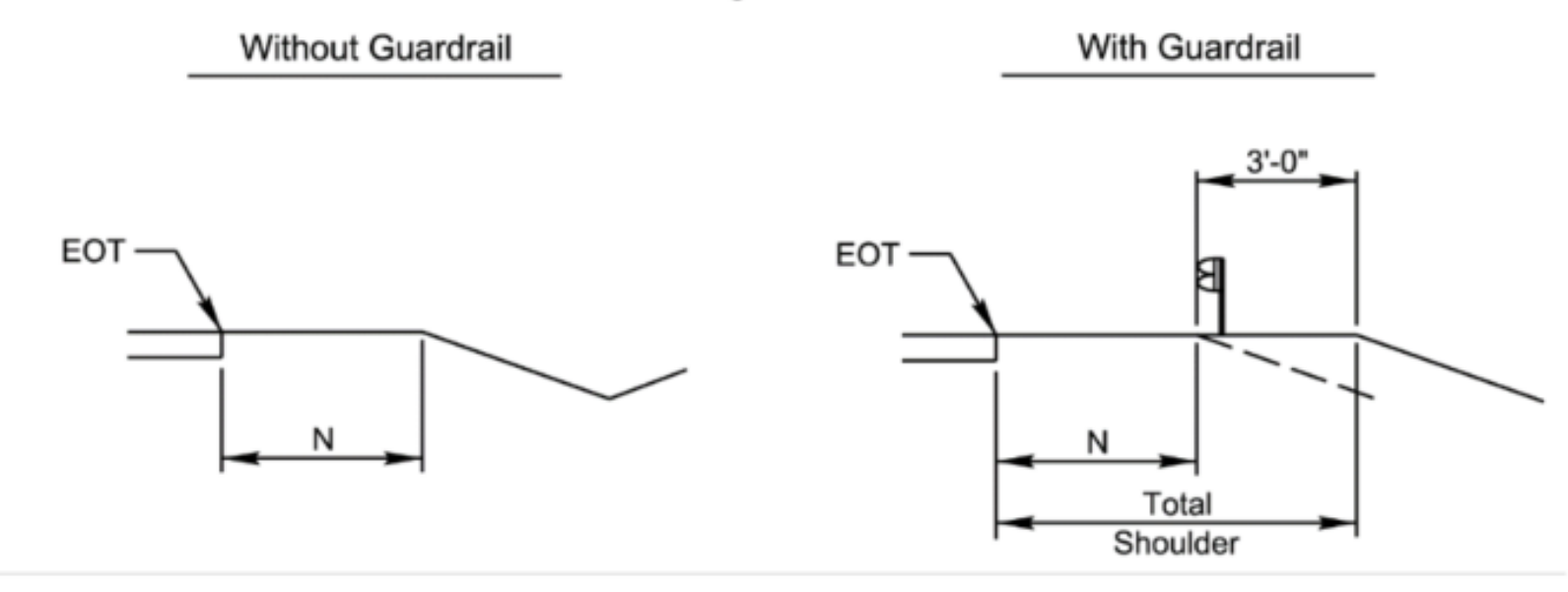
ADT	Design Year		
	Under 400	400-2000	Over 2000
Locals and Collectors	2 feet*	4 feet	6 feet

- Notes:
- *When guardrail is warranted, the minimum offset from the edge of the travel way to the face of the guardrail is 4 feet.
 - Any deviations from the values shown in this table should be discussed and approved by the project team.

When guardrail is warranted, the total shoulder width is increased by 3 feet, as shown in Figure 4-1.

Figure 4-1 Normal and Total Shoulder Width for Locals and Collectors

N = Normal Shoulder
EOT = Edge of Travel Lane



ADJUST EXIST. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM FLARED END SECTION. EXTENT OF GRADING TO BE FIELD DETERMINED TO GENERATE FILL MATERIAL. IF NEEDED, DO NOT GRADE BELOW PROPOSED FUTURE BASEBALL FIELD ELEVATION (SHOWN IN GRAY.)

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.

M:\Projects\WOL\2020110039 Frazier Farm PH1A\04-Production\Engineering\Phase1A_CD\2020110039-PH1-G1.dwg, 8/1/2023 6:41:38 PM, Eric Dowdell



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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 'B'

C3.02

GRADING LEGEND

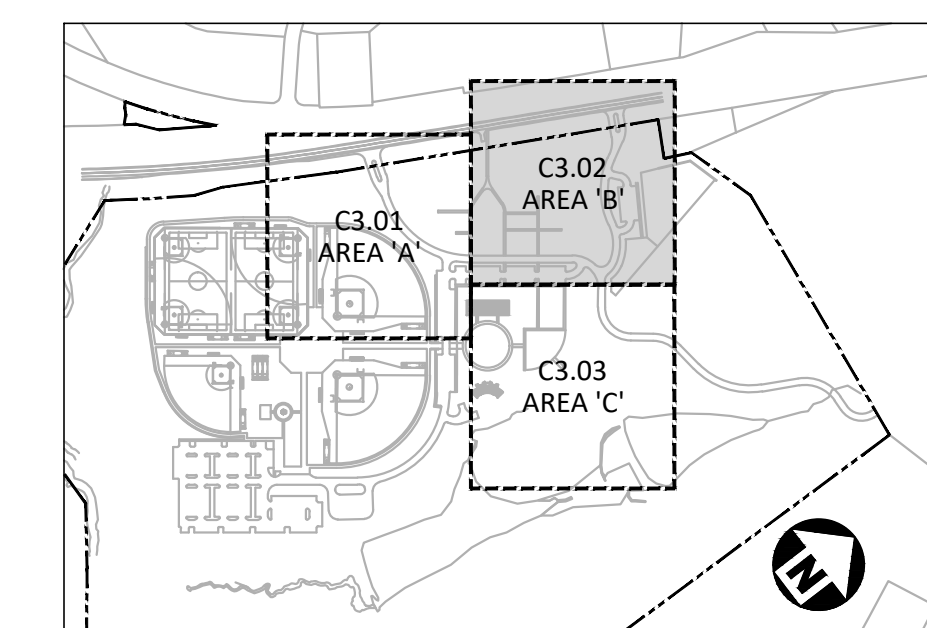
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	ENDWALL SECTION
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	DROP INLET
	JUNCTION BOX
	DRAINAGE FLOW ARROW
	TOP & BOTTOM CURB ELEVATIONS
	SPOT ELEVATION
	STORM DRAINAGE
	TREE PROTECTION FENCE
	LIMITS OF DISTURBANCE
	WOODED AREA
	MAJOR CONTOUR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

GRADING NOTES

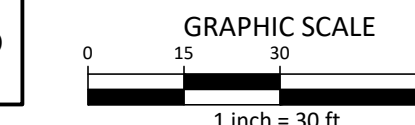
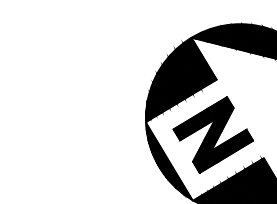
- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. FOR NECESSARY PLAN OR GRADE CHANGES, NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- 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.
- 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 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.
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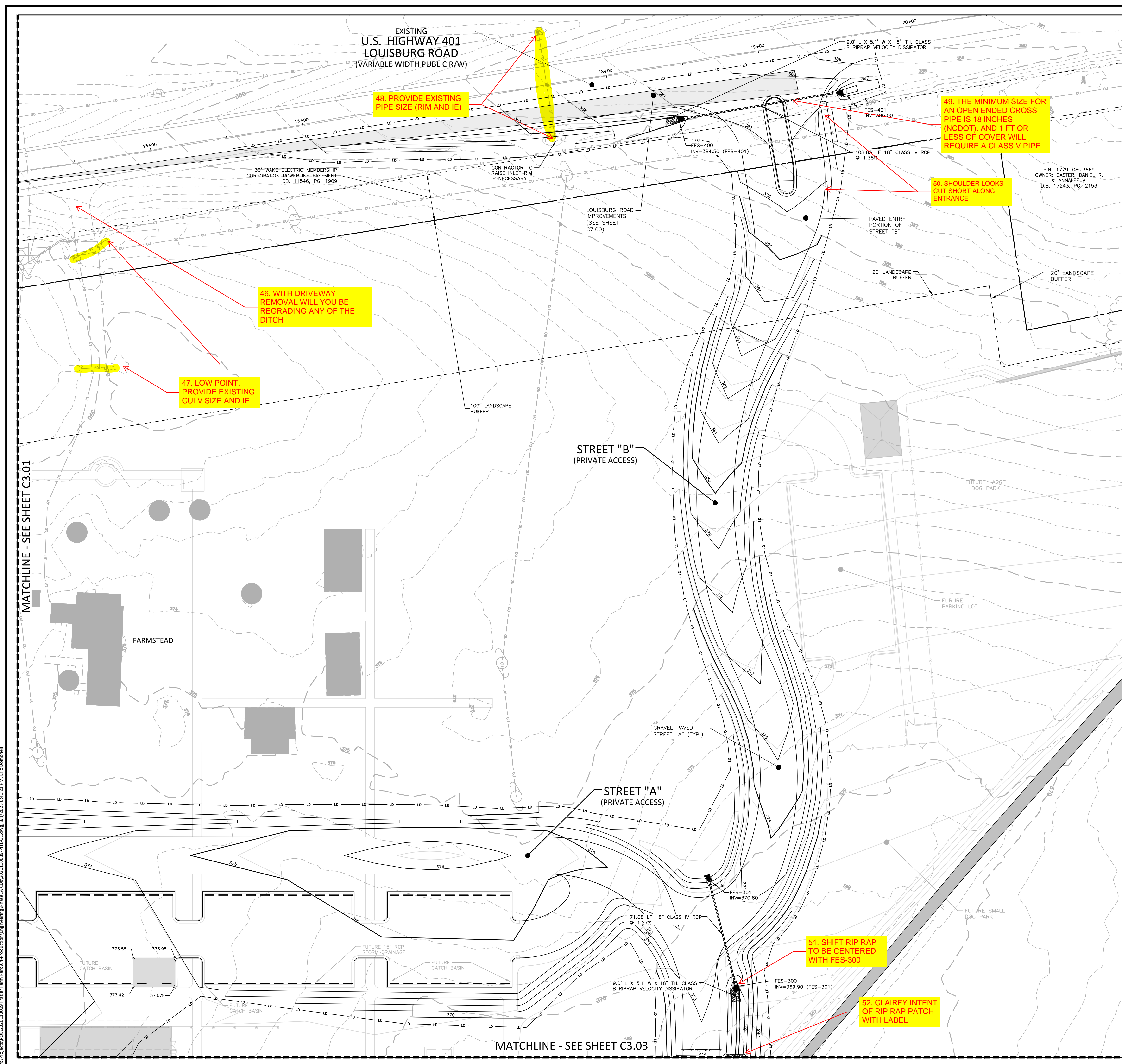
INDEX MAP
N.T.S.



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

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



EXISTING
U.S. HIGHWAY 401
LOUISBURG ROAD
(VARIABLE WIDTH PUBLIC R/W)

48. PROVIDE EXISTING
PIPE SIZE (RIM AND IE)

49. THE MINIMUM SIZE FOR
AN OPEN ENDED CROSS
PIPE IS 18 INCHES
(NCDOT), AND 1 FT OR
LESS OF COVER WILL
REQUIRE A CLASS V PIPE

50. SHOULDER LOOKS
CUT SHORT ALONG
ENTRANCE

46. WITH DRIVEWAY
REMOVAL WILL YOU BE
REGRADE ANY OF THE
DITCH

47. LOW POINT.
PROVIDE EXISTING
CULV SIZE AND IE

STREET "B"
(PRIVATE ACCESS)

STREET "A"
(PRIVATE ACCESS)

51. SHIFT RIP RAP
TO BE CENTERED
WITH FES-300

52. CLARIFY INTENT
OF RIP RAP PATCH
WITH LABEL

MATCHLINE - SEE SHEET C3.01

MATCHLINE - SEE SHEET C3.03

M:\Projects\WOL\2020110039 Frazier Farm PHA\04-Production\Engineering\Phase1A_CD\2020110039-PH1-G1.dwg, 8/1/2023 6:41:21 PM, Eric Domorell



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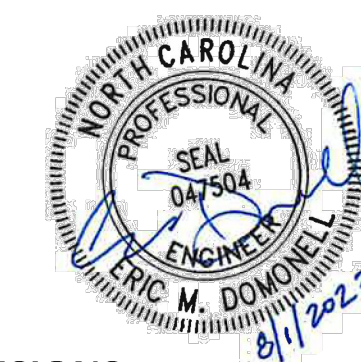
phone 919. 361. 5000
fax 919. 361. 2269
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PHONE: 919.554.6582

**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 'C'**

C3.03

CID-23-5

GRADING LEGEND

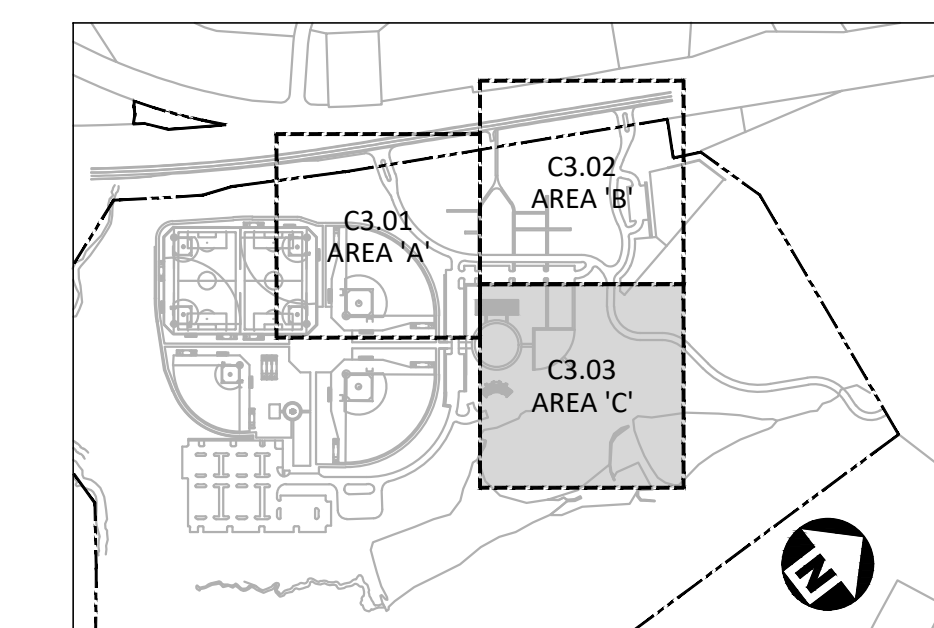
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	JUNCTION BOX
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	TOP & BOTTOM CURB ELEVATIONS
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	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EASEMENT LINE
	ACCESSIBLE PARKING AREA (2% MAX. SLOPE IN ALL DIRECTIONS)

GRADING NOTES

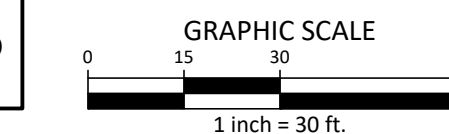
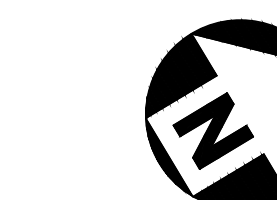
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INDEX MAP
N.T.S.



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PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

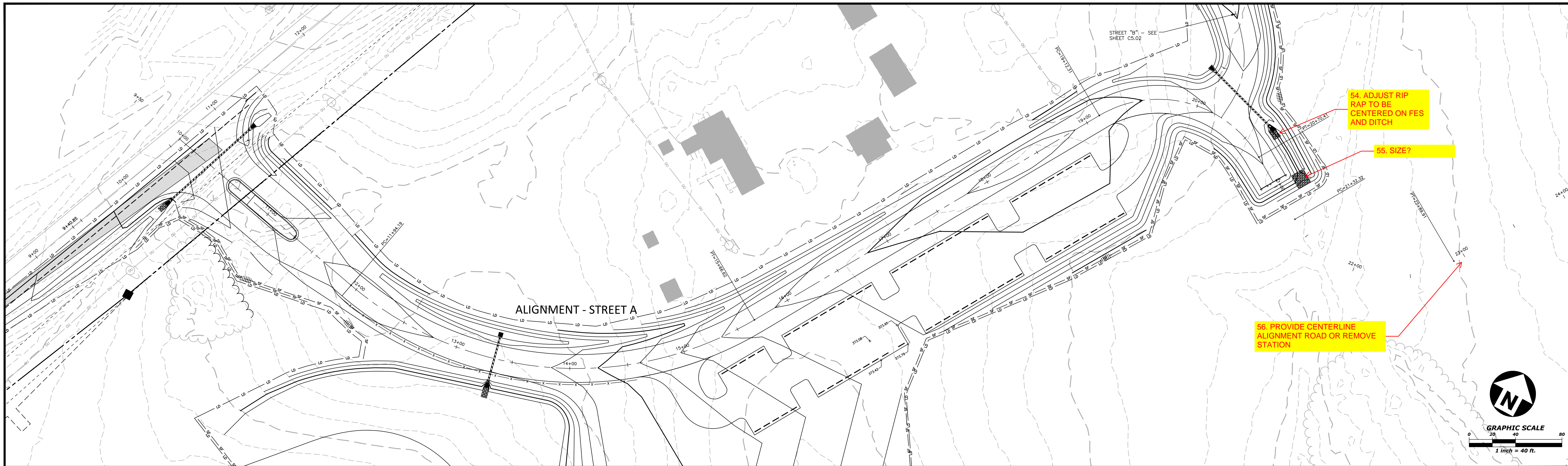
MATCHLINE - SEE SHEET C3.02

53. CLARIFY OR CALLOUT THIS RIP RAP PATCH

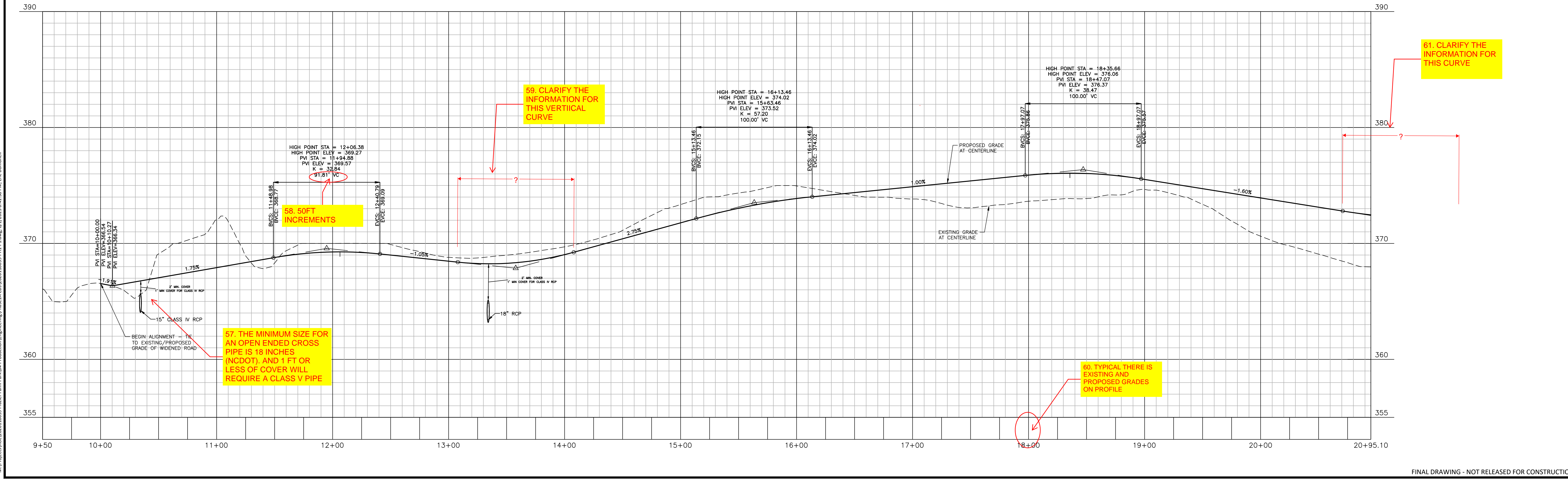
PROPOSED BORROW AREA BEYOND GRAVEL PARKING LOT AT 2.00% (TYP.), NOT TO BE GRADED BELOW FINISHED GRADE OF FUTURE PARK DEVELOPMENT (SHOWN IN GRAY). EXTENT OF GRADING TO BE FIELD DETERMINED AS NEEDED TO GENERATE FILL MATERIAL

MATCHLINE - SEE SHEET C3.01

M:\Projects\WOL_2020110039 Frazier Farm Park\04-Production\Engineering\Phase1A\CID\2020110039-PH1-G1.dwg, 8/1/2023 6:41:27 PM, Eric Domorell



ALIGNMENT - STREET A



FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

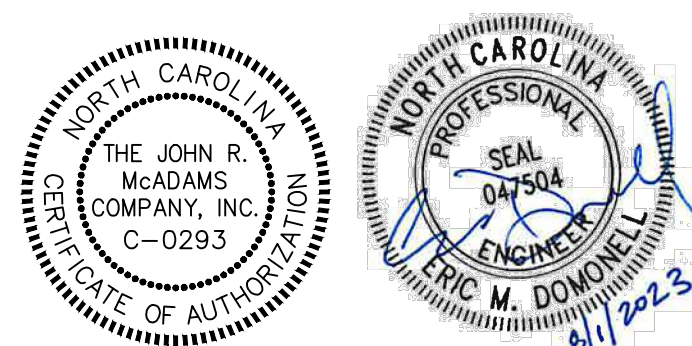


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502 SOUTHTOWN CIRCLE
ROLESVILLE, NC 27571
PHONE: 919. 554. 6582

REVISIONS

NO.	DATE

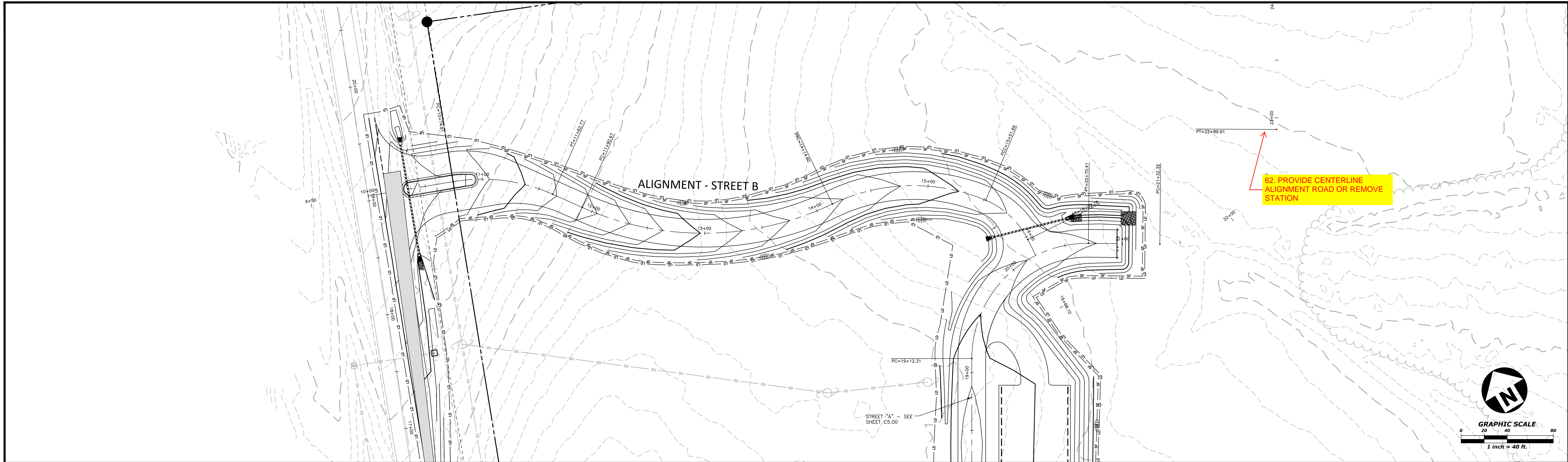


FRAZIER FARM PARK
CONSTRUCTION DRAWINGS - PHASE 1A
11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA

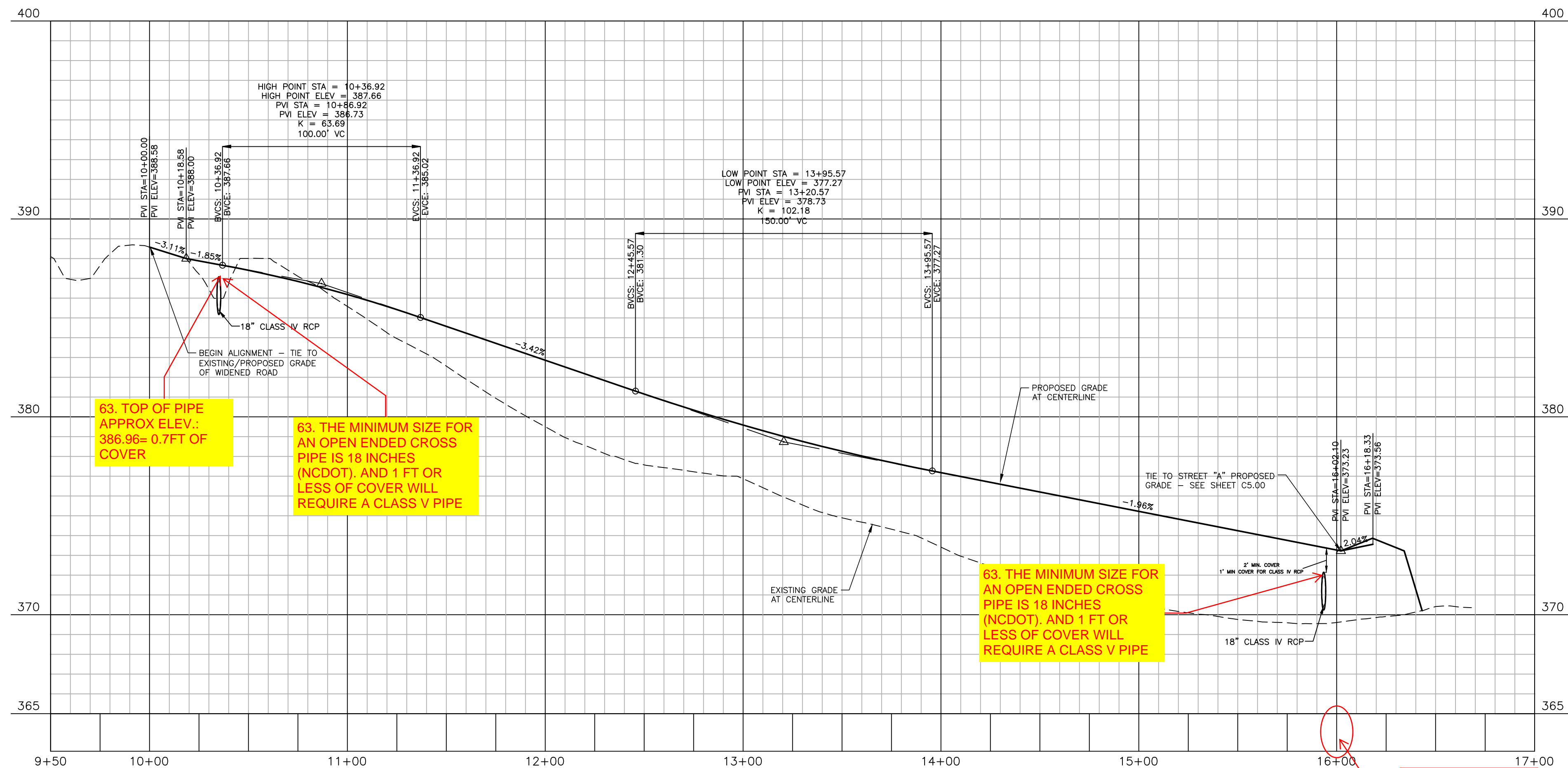
PLAN INFORMATION

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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



M:\Projects\B0110039\Frazer Farm\PH1-Production\Engineering\Phase1A\CD\202110039-PH1-1.dwg, 8/1/2023 6:41:39 AM, LFC Domonell

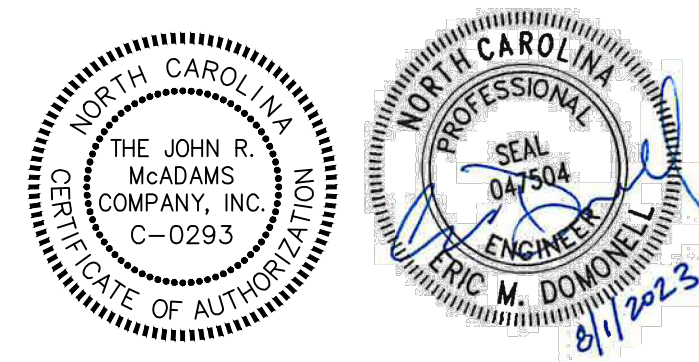
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION



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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)**

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

NOTES:

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

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

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

(AS SHOWN ON SURVEY)

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

BY-PASS PUMPING NOTES:

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

TRAFFIC CONTROL:

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

TEMPORARY SKIMMER BASIN SPECIFICATIONS:

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

CONSTRUCTION SEQUENCE - STAGE 1

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

CONSTRUCTION SEQUENCE - STAGE 2

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

EROSION CONTROL NOTES:

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

STOCKPILE NOTES

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

TEMPORARY SEEDING SCHEDULE

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

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

SEEDING DATE	SEEDING MIXTURE	APPLICATION RATE
AUG 25 - OCT (BEST)	TALL FESCUE RYE (GRAIN) GERMAN MILLET	200 LBS/AC 50 LBS/AC 50 LBS/AC
FEB - APR 15 (POSSIBLE)	TALL FESCUE RYE (GRAIN) GERMAN MILLET	200 LBS/AC 50 LBS/AC 50 LBS/AC

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

MULCH
APPLY 4000 LB/AC STRAW. ANCHOR STRAW BY 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:

- REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL IN THE LOCATIONS OF TEMPORARY DIVERSIONS PRIOR TO CONSTRUCTION OF DIVERSION CHANNELS AND/OR RIDGES.
- ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS. SEE TEMPORARY DIVERSION SURVEY DESIGN SUMMARY TABLE.
- ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
- PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
- VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THAN 30 WORKING DAYS.
- MAINTENANCE - INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

SEEDBED PREPARATION

AREAS TO BE SEED 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

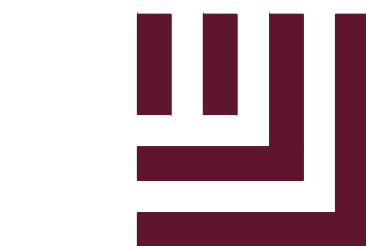
SITE AREA DESCRIPTION	STABILIZE WITHIN THIS CALENDAR DAYS AFTER CEASING LAND DISTURBANCE	TIMEFRAME VARIATIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7	NONE
HIGH QUALITY WATER (HWQ) ZONES	7	NONE
SLOPES STEEPER THAN 3:1	7	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14-DAYS ARE ALLOWED
SLOPES 3:1 TO 4:1	14	7-DAYS FOR PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND HOW ZONES
AREAS WITH SLOPES FLATTER THAN 4:1	14	10-DAYS FOR FALLS LAKE WATERSHED 7-DAYS FOR PERMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND HOW ZONES 10-DAYS FOR FALLS LAKE WATERSHED UNLESS THERE IS ZERO SLOPE

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

CONTRACTOR'S MAINTENANCE PLAN:

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

64. BASIN REMOVAL SEQUENCE



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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-EC1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=100'
DATE 08.01.2023

SHEET

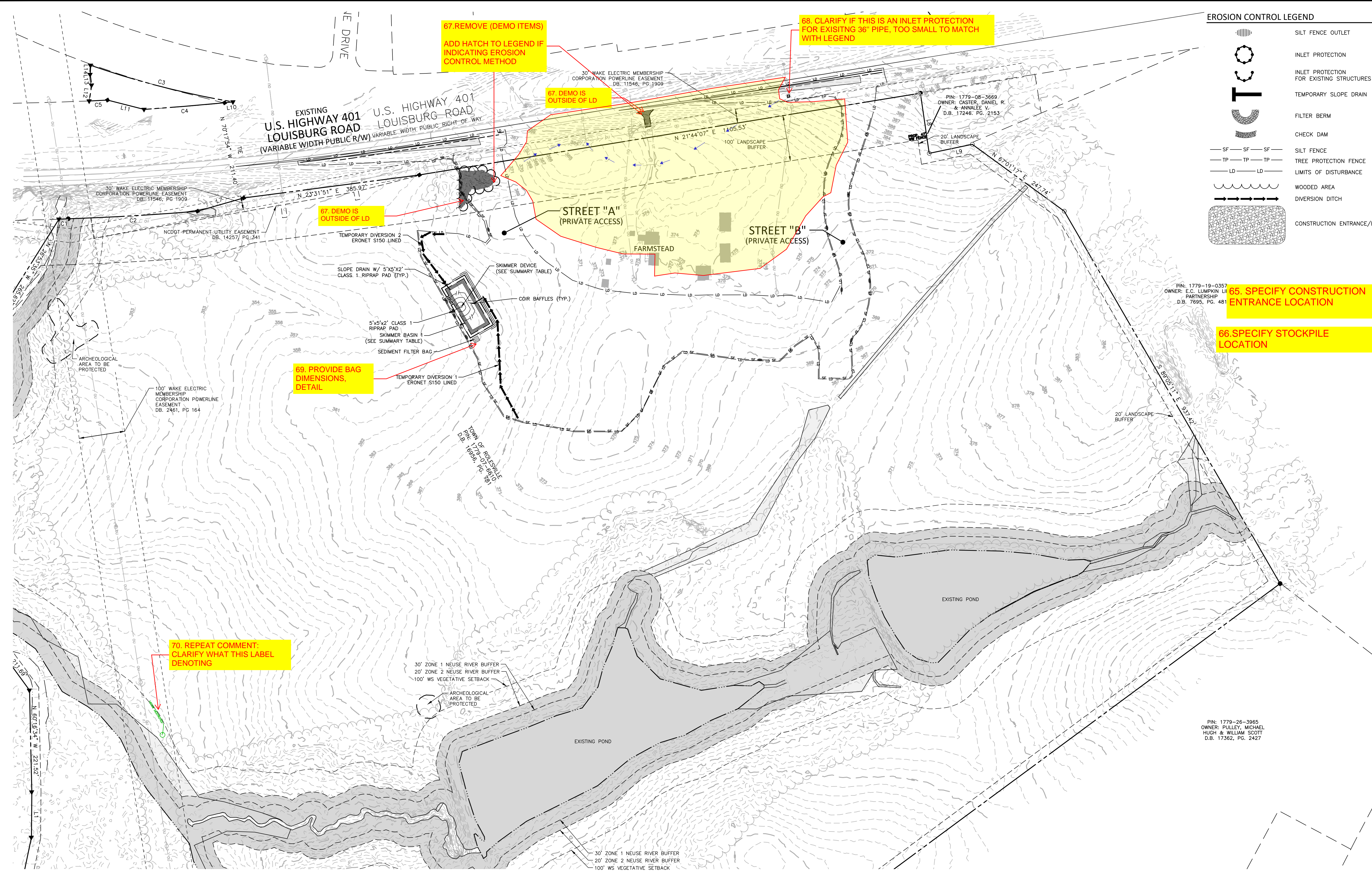
OVERALL EROSION CONTROL PLAN-STAGE I

C6.01

CID-23-5

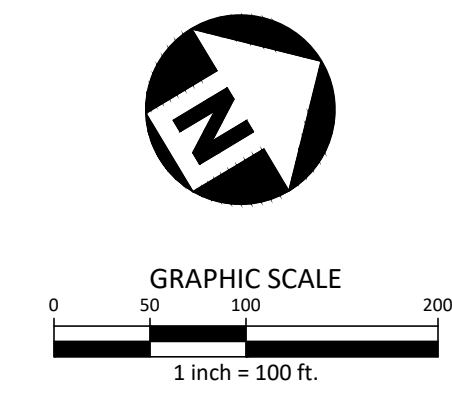
EROSION CONTROL LEGEND

- SILT FENCE OUTLET
- INLET PROTECTION FOR EXISTING STRUCTURES
- 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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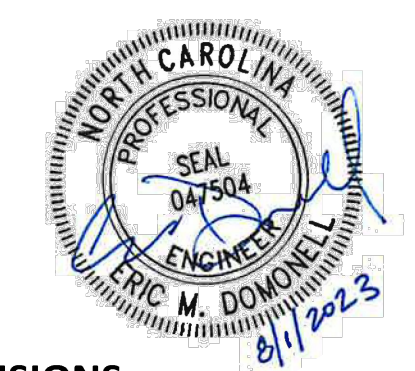
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ROLESVILLE, NORTH CAROLINA



REVISIONS

NO.	DATE

PLAN INFORMATION

PROJECT NO.	202011039
FILENAME	2020110039-PH1-EC2
CHECKED BY	EMD
DRAWN BY	SME
SCALE	1"=100'
DATE	08.01.2023

SHEET

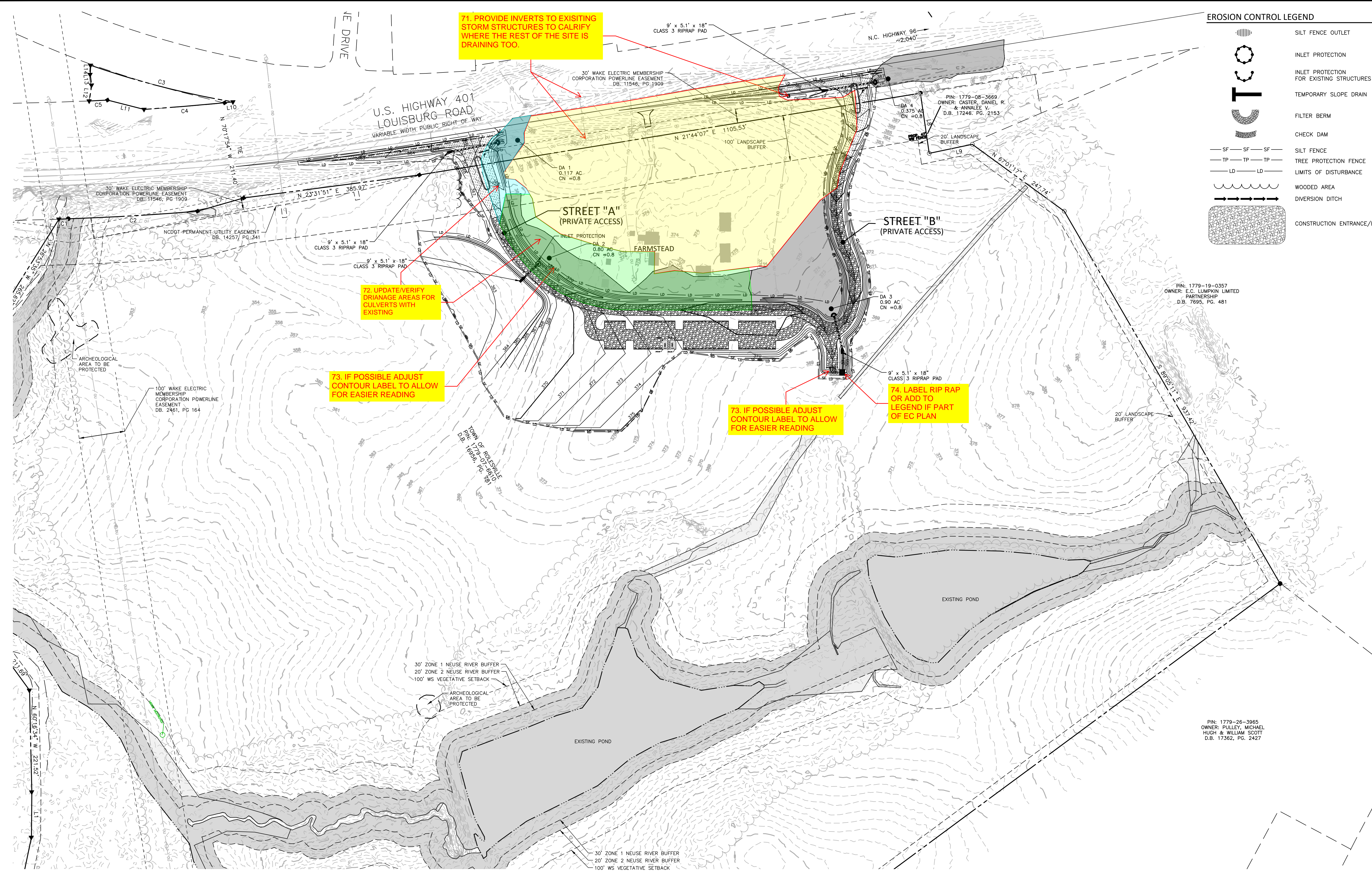
OVERALL EROSION CONTROL PLAN-STAGE II

C6.02

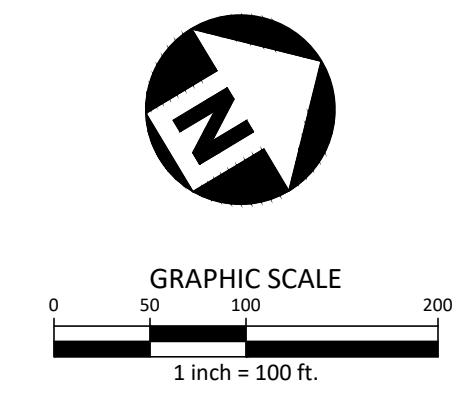
CID-23-5

EROSION CONTROL LEGEND

- SILT FENCE OUTLET
- INLET PROTECTION
- 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



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



PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039
FILENAME 2020110039-PH1-ECN3
CHECKED BY EMD
DRAWN BY SME
SCALE N/A
DATE 08.01.2023

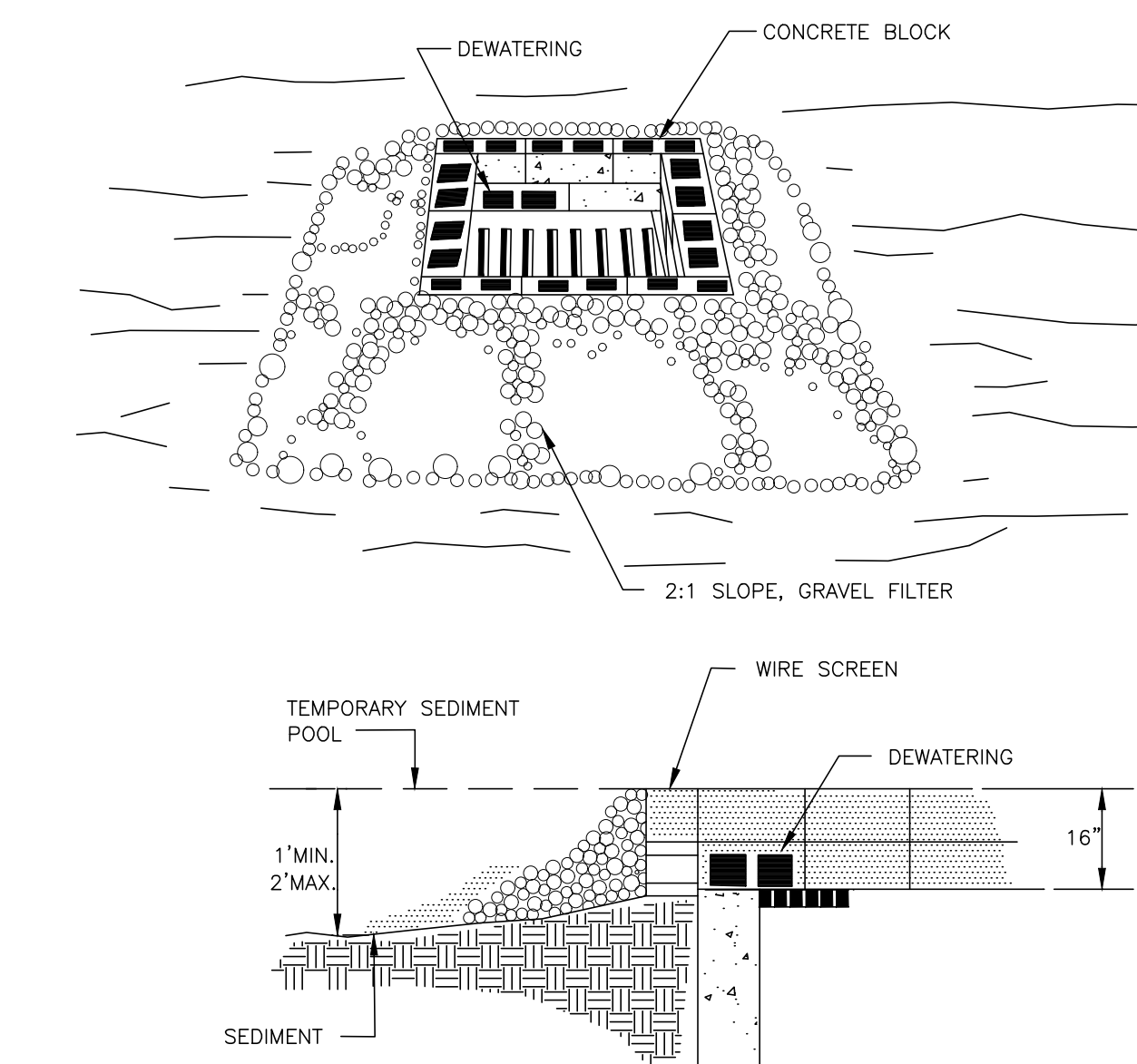
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EROSION CONTROL
DETAILS

C6.11

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

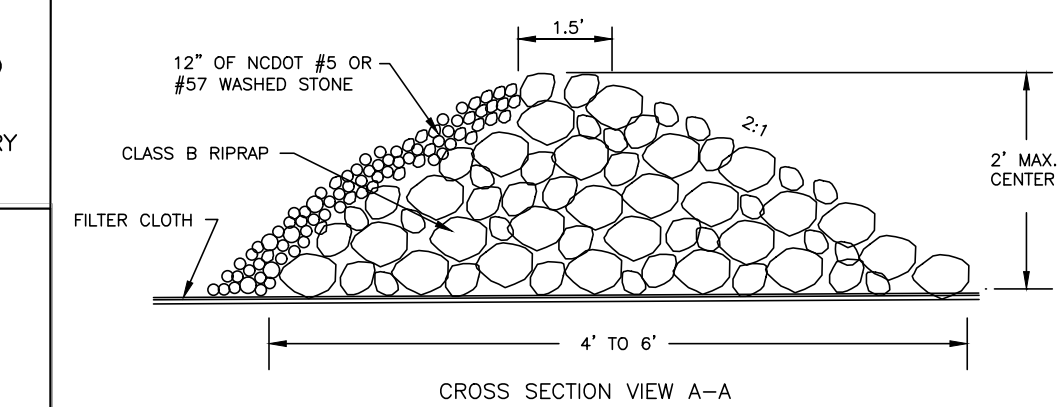
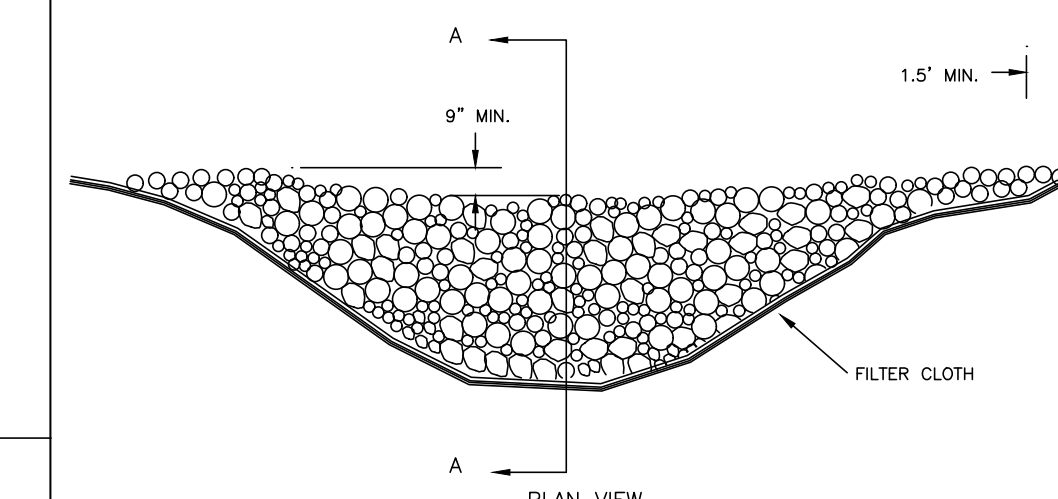
PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



CONSTRUCTION SPECIFICATIONS

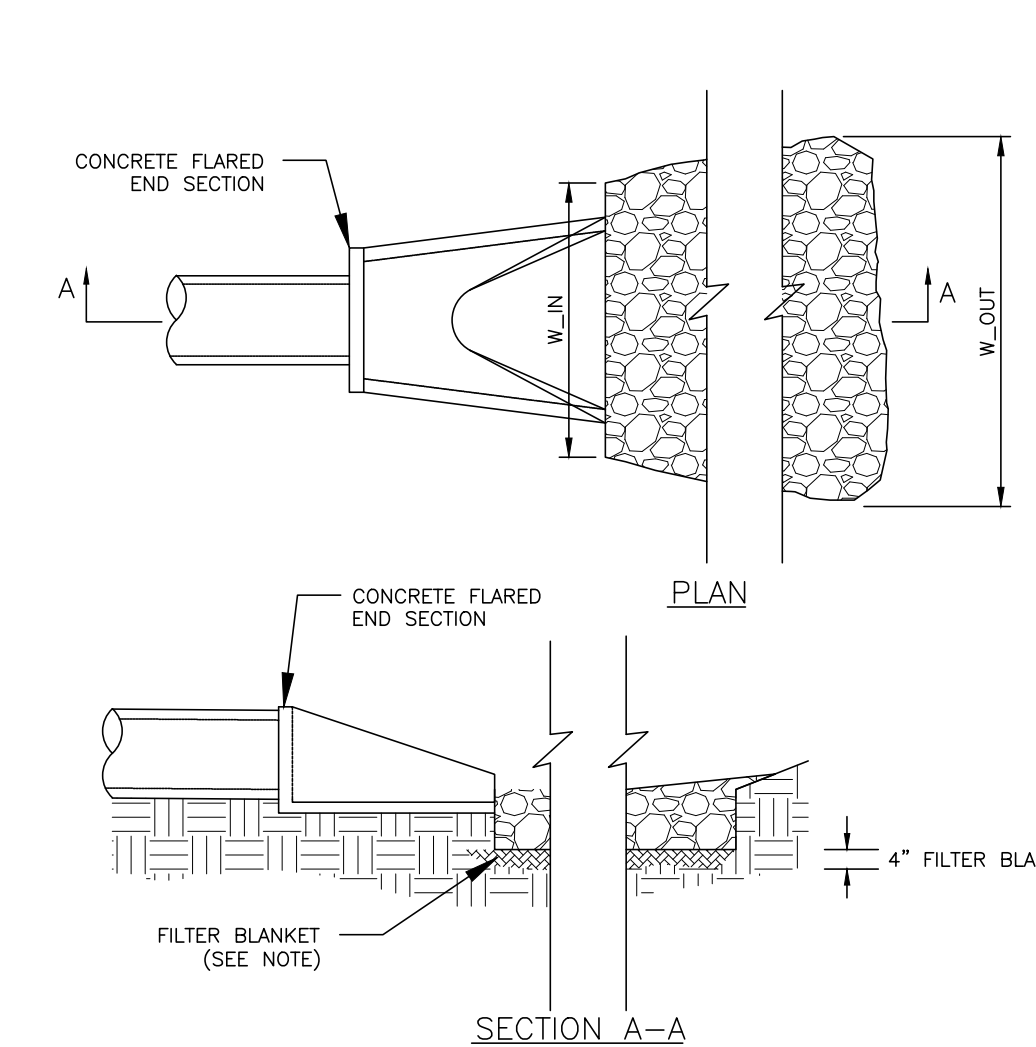
- 1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE ON THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCH BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF THE BLOCK AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS 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



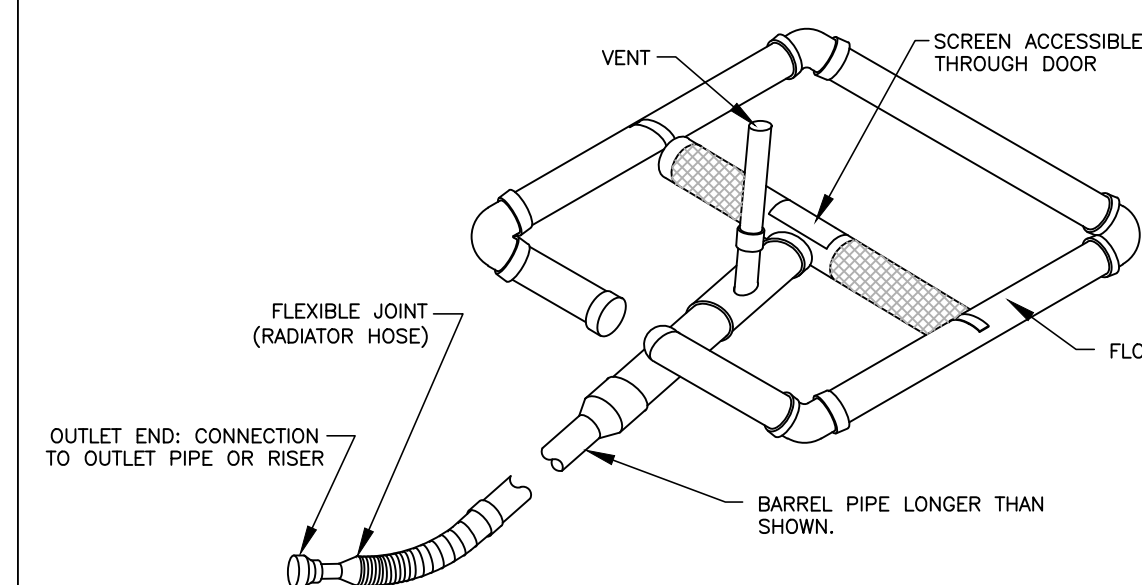
NOTES

- 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.

RIP RAP 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:

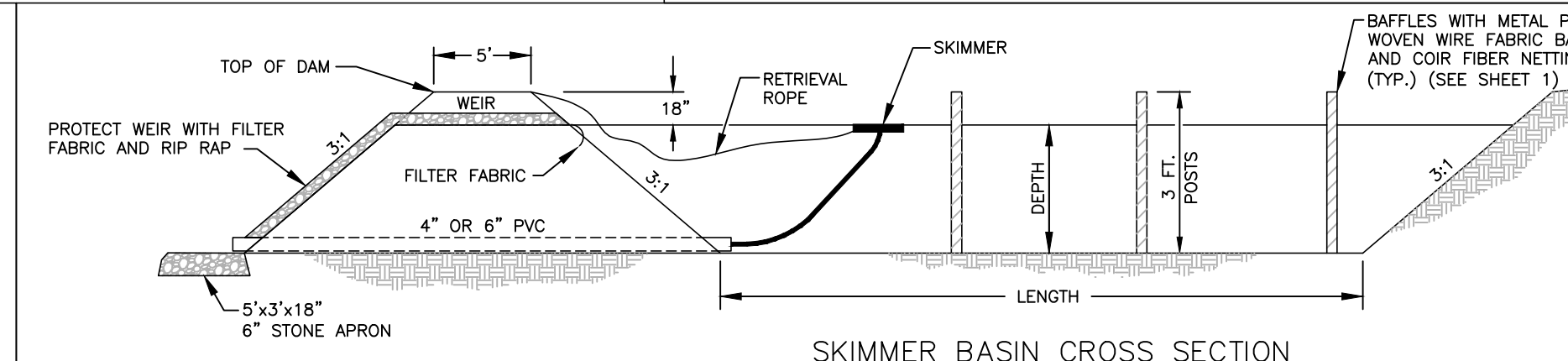
IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY A FEW SERKS ON THE ROPE TO MAKE THE SKIMMER BOB UP AND DOWN WILL DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK PULL THE SKIMMER OVER TO THE SIDE (IT'S EASIER TO DO WHEN THE BASIN PARTIALLY FULL) AND REMOVE THE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

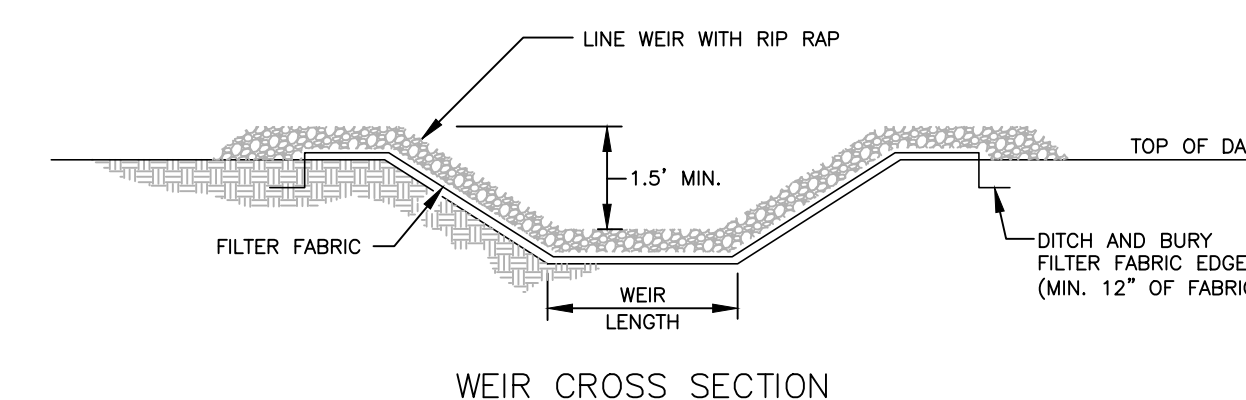
CLOGGED BARREL OR PIPE THROUGH THE DAM. IF THE SKIMMER IS CLOGGED DESPITE REMOVING DEBRIS AND IT APPEARS THAT EITHER THE BARREL BETWEEN THE ORIFICE AND THE FLEXIBLE JOINT OR THE PIPE THROUGH THE DAM IS CLOGGED TAKE THE FOLLOWING STEPS TO CLEAR THE BLOCKAGE (SEDIMENT WILL SOMETIMES ACCUMULATE IN THE PIPE).

- *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

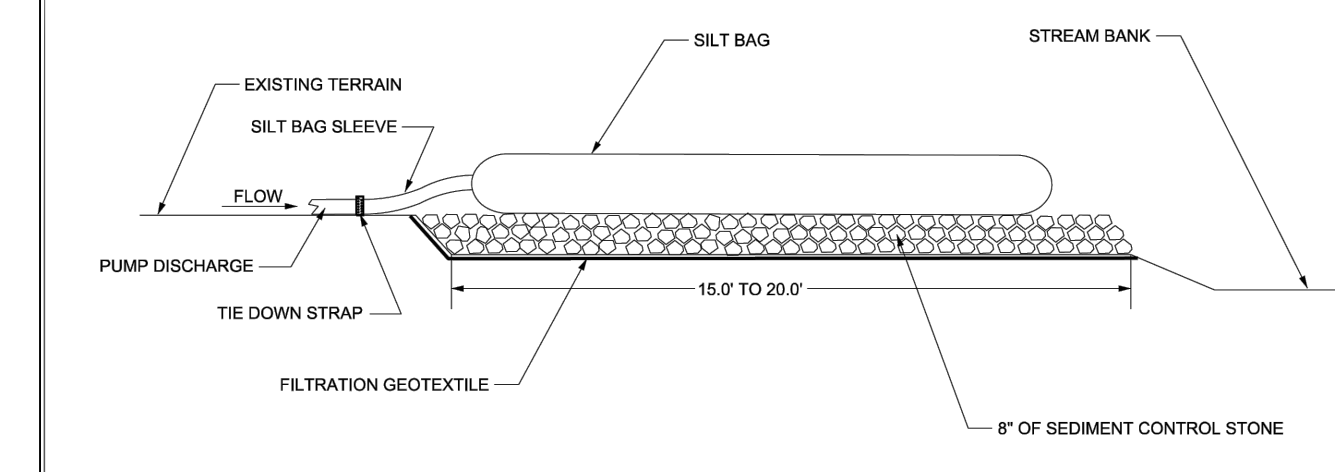
STANDARD TEMPORARY SKIMMER BASIN

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.

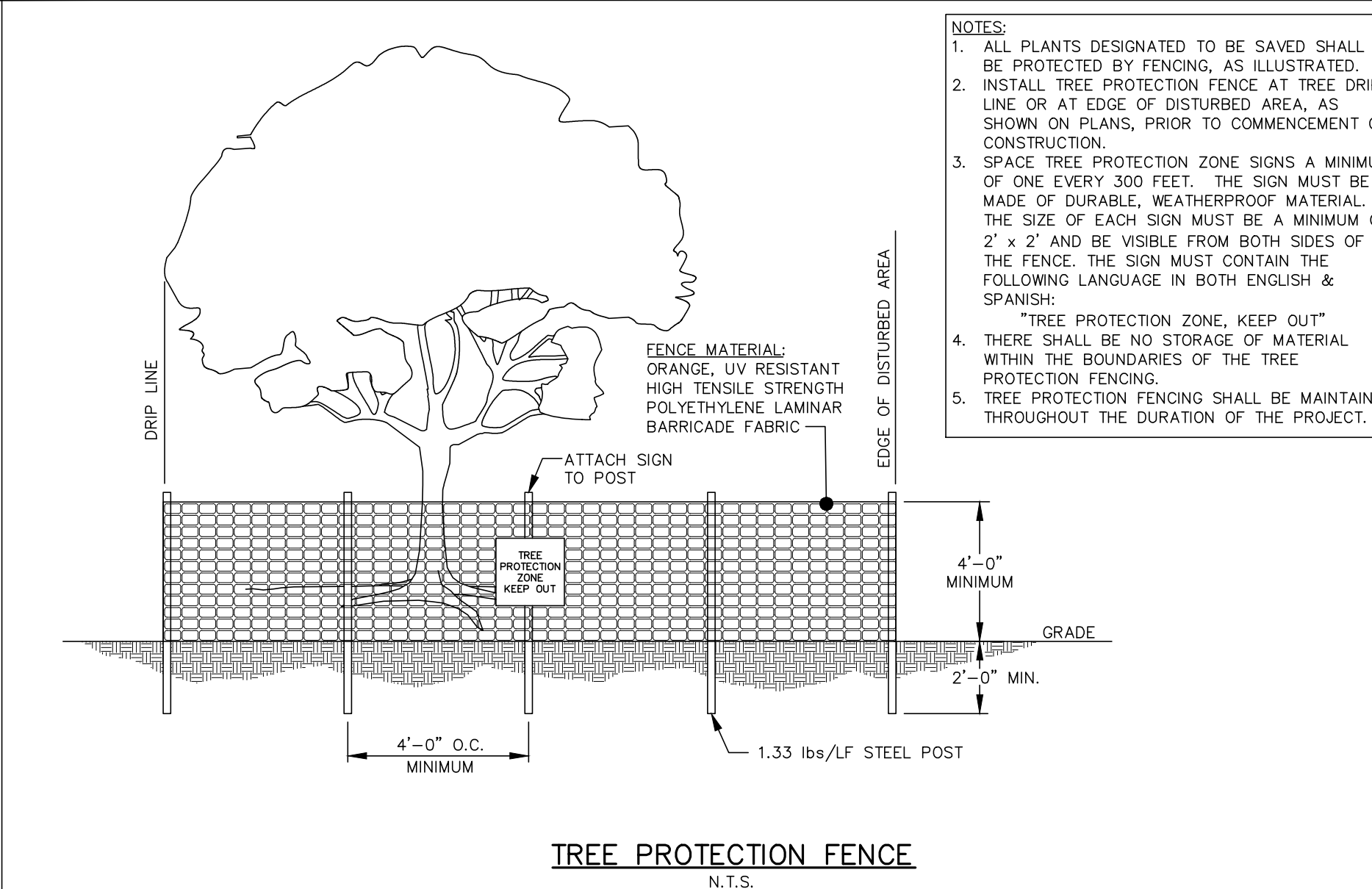
- 4. THE SIZE AND NUMBER OF SILT BAGS SHOULD BE BASED ON THE DEWATERING PUMP AND MANUFACTURER RECOMMENDATIONS.
- 5. TIGHTLY SECURE THE PUMP DISCHARGE TO THE SILT BAG SLEEVE WITH A STRAP OR SHOCK DEVICE TO PREVENT WATER TREATMENT FROM LEAKING WITHOUT TREATMENT.

- 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

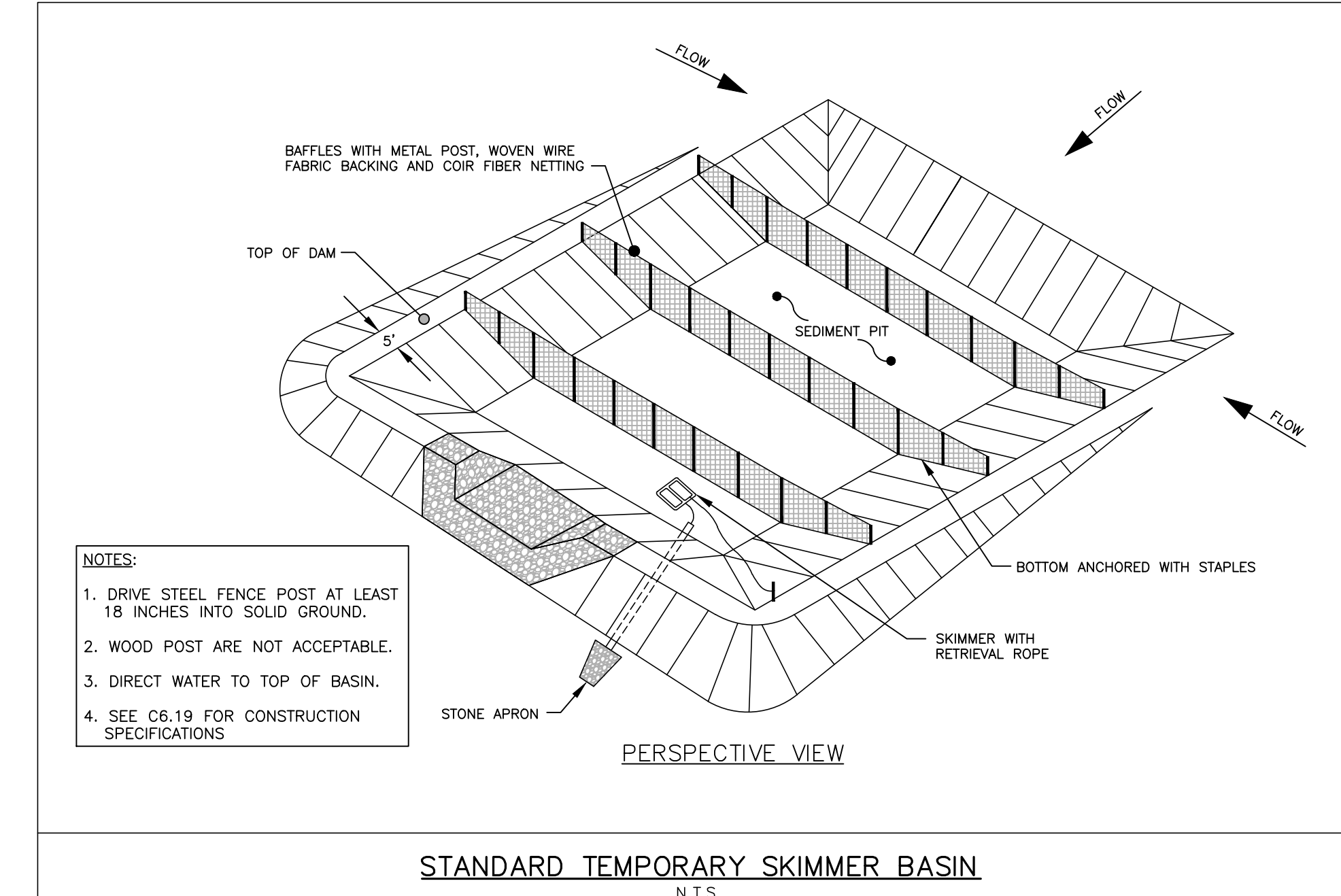


TREE PROTECTION FENCE N.T.S.

- 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.

75. DETAILS NEEDED FROM WAKE COUNTY DETAIL LIST
- SILT FENCE DETAIL
- CONSTRUCTION ENTRANCE
- FILTER BERM DETAIL
- COIR BAFFLE
- SILT FENCE OUTLET
- DIVERSION DITCH
- SLOPE DRAIN
- CHECK DAM
- PIPE OUTLET TO FLAT AREA

76. ADDITIONALLY, ENSURE ALL DETAILS ARE FROM WAKE COUNTY DETAIL LIST



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 PH1A\04-Production\Engineering\Phase1A_CD\2020110039-PH1-ECN3.dwg, 8/17/2023, 6:42:07 PM, Eric Domorell



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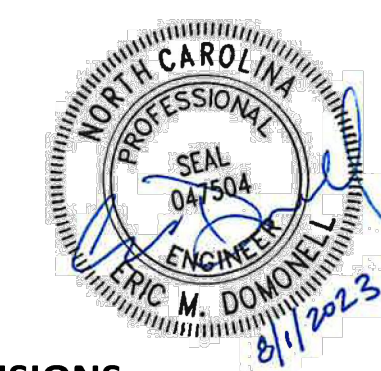
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FRAZIER FARM PARK
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ROLESVILLE, NORTH CAROLINA



REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039
FILENAME 2020110039-PH1-RW1
CHECKED BY EMD
DRAWN BY SME
SCALE 1"=40'
DATE 08.01.2023

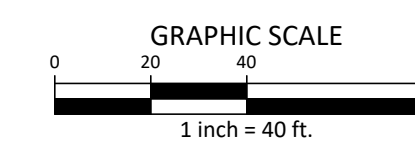
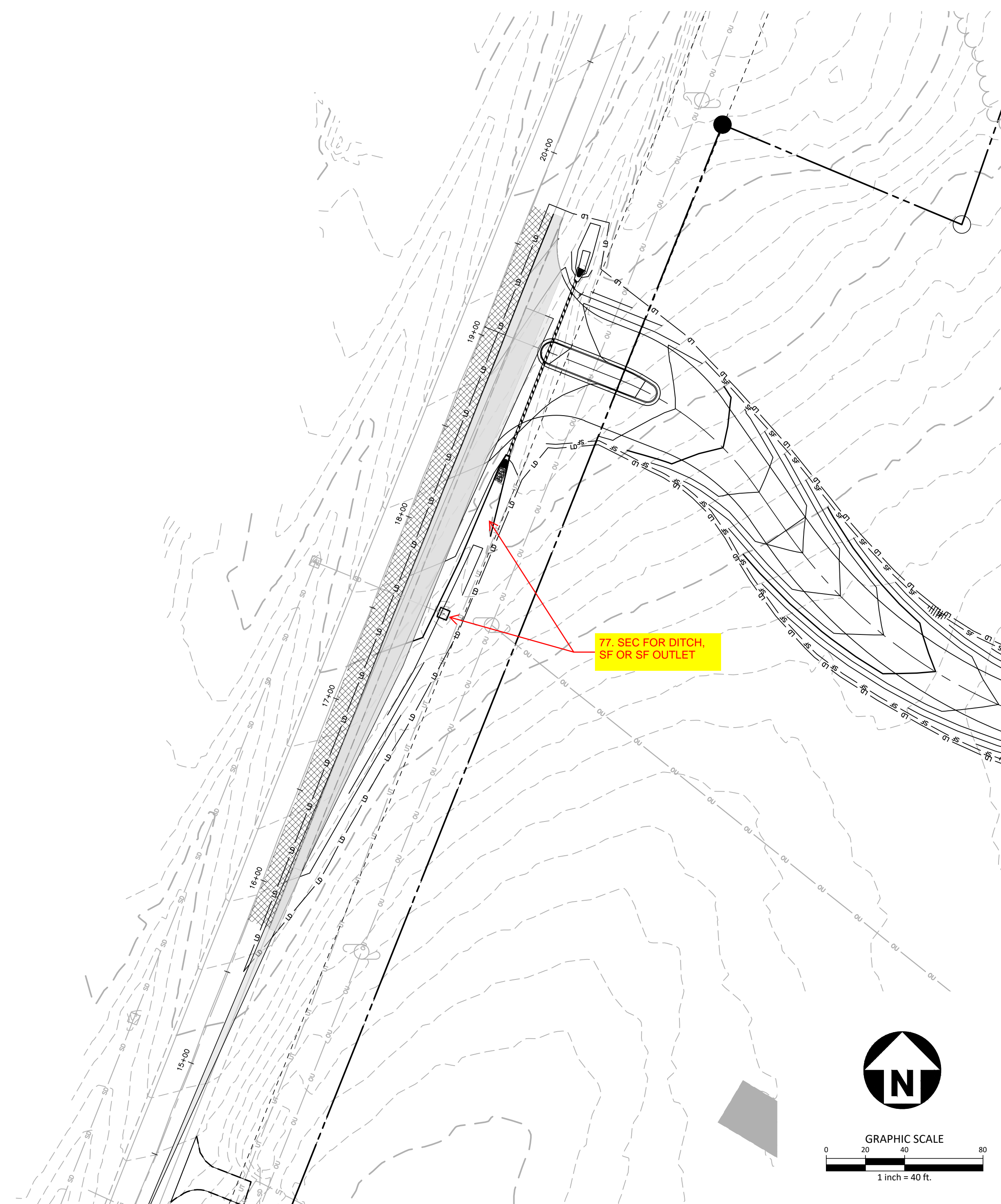
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**LOUISBURG RD
WIDENING PLAN**

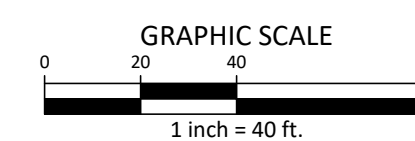
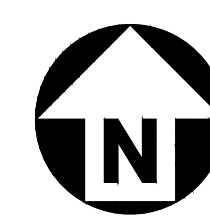
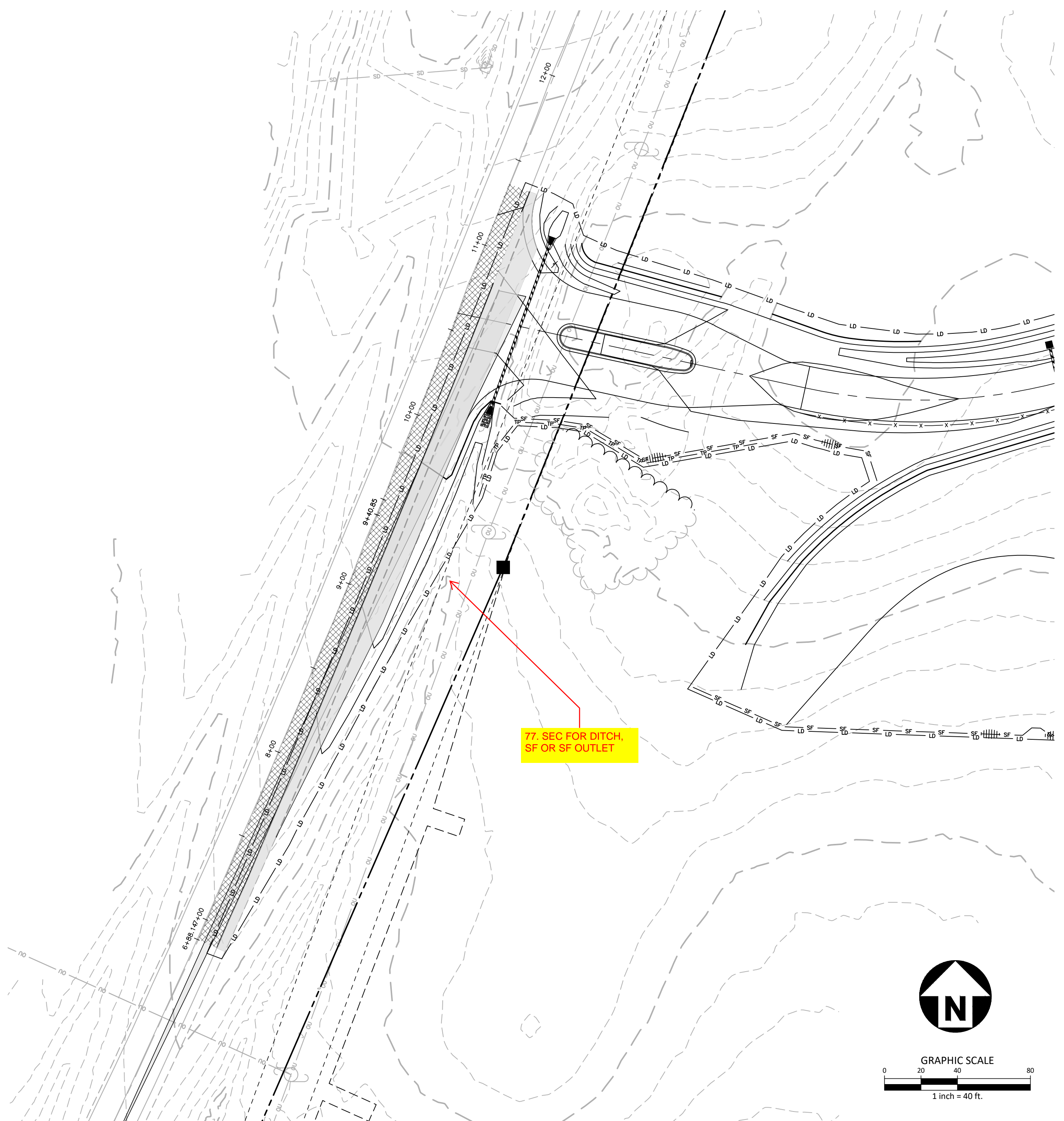
C7.00

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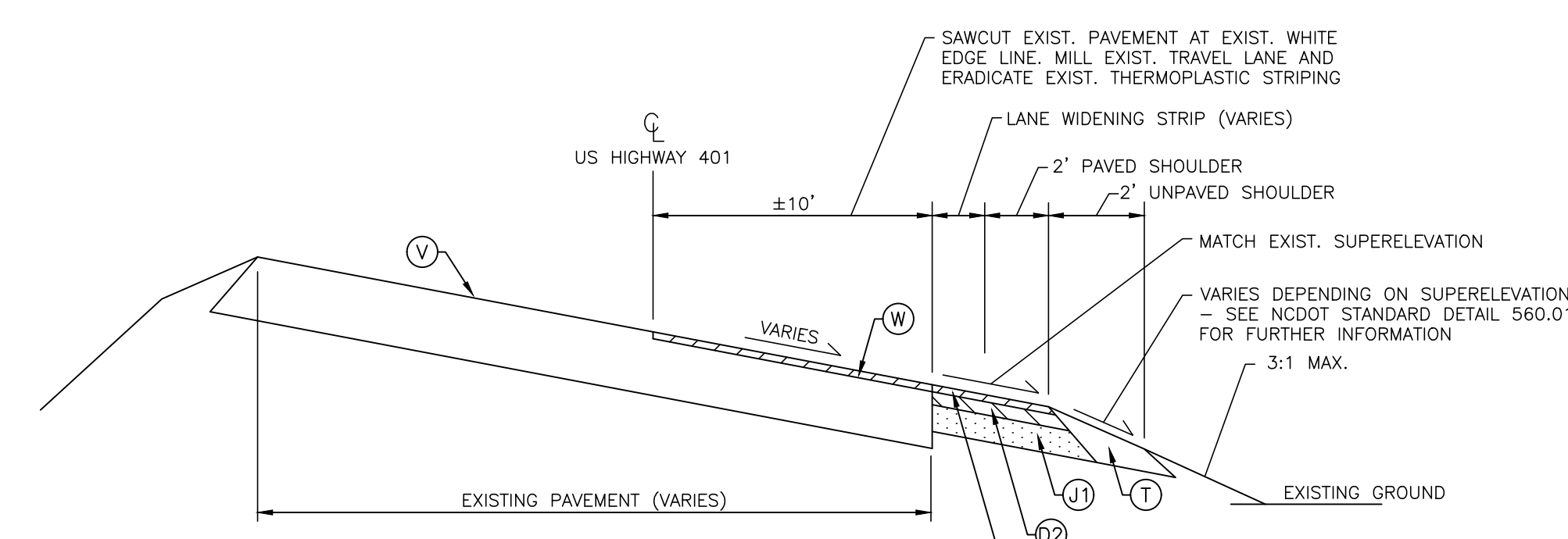
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PARK ENTRANCE "B"



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 EDGELINE
 - T7 6" YELLOW EDGELINE
 - T8 4" WHITE MINISKIP (2' - 6' SP.)
 - T9 4" YELLOW MINISKIP (2' - 6' SP.)
 - T10 12" WHITE MINISKIP (3' - 3' SP.) (ROUNDBABOUTS 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.) (ROUNDBABOUTS ONLY)
 - TA 4" WHITE EDGELINE
 - TB 4" YELLOW EDGELINE
 - 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)

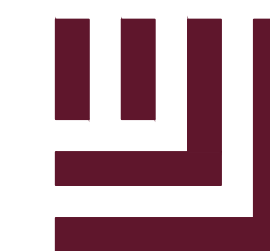
- ARROWS/CHARACTERS**
- UA LEFT TURN ARROW
 - UB RIGHT TURN ARROW
 - UC STRAIGHT ARROW
 - UD COMBINATION STRAIGHT/LEFT TURN ARROW
 - UE COMBINATION STRAIGHT/RIGHT TURN ARROW
 - UF COMBINATION LEFT/RIGHT ARROW
 - UG COMBINATION LEFT/STRAIGHT/RIGHT ARROW
 - UH HANDICAP PARKING
 - UI ALPHANUMERIC CHARACTER
 - 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
 - VC 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)

M:\Projects\WOL\2020110039 Frazier Farm PH1A\04-Production\Engineering\Phase1A\CAD\2020110039-PH1-RW1.dwg, 8/17/2023 6:42:15 PM, Eric Domorell



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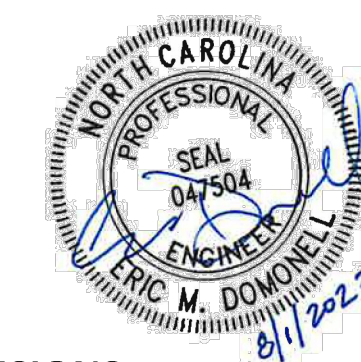
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FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
PHASE 1A
11624 LOUISBURG ROAD
ROLESVILLE, NORTH CAROLINA



REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 202011039
FILENAME 202011039-PH1-RW2
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DATE 08.01.2023

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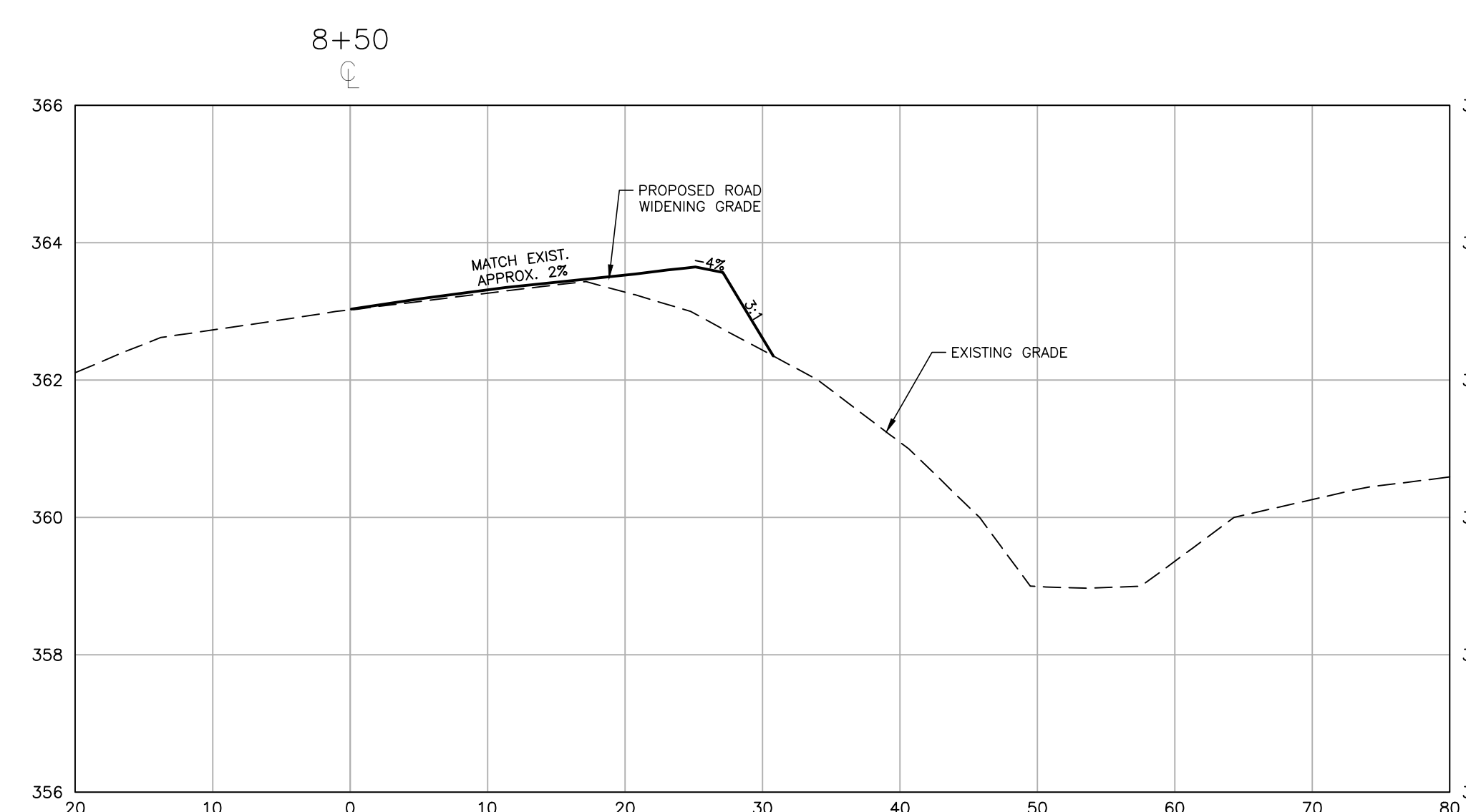
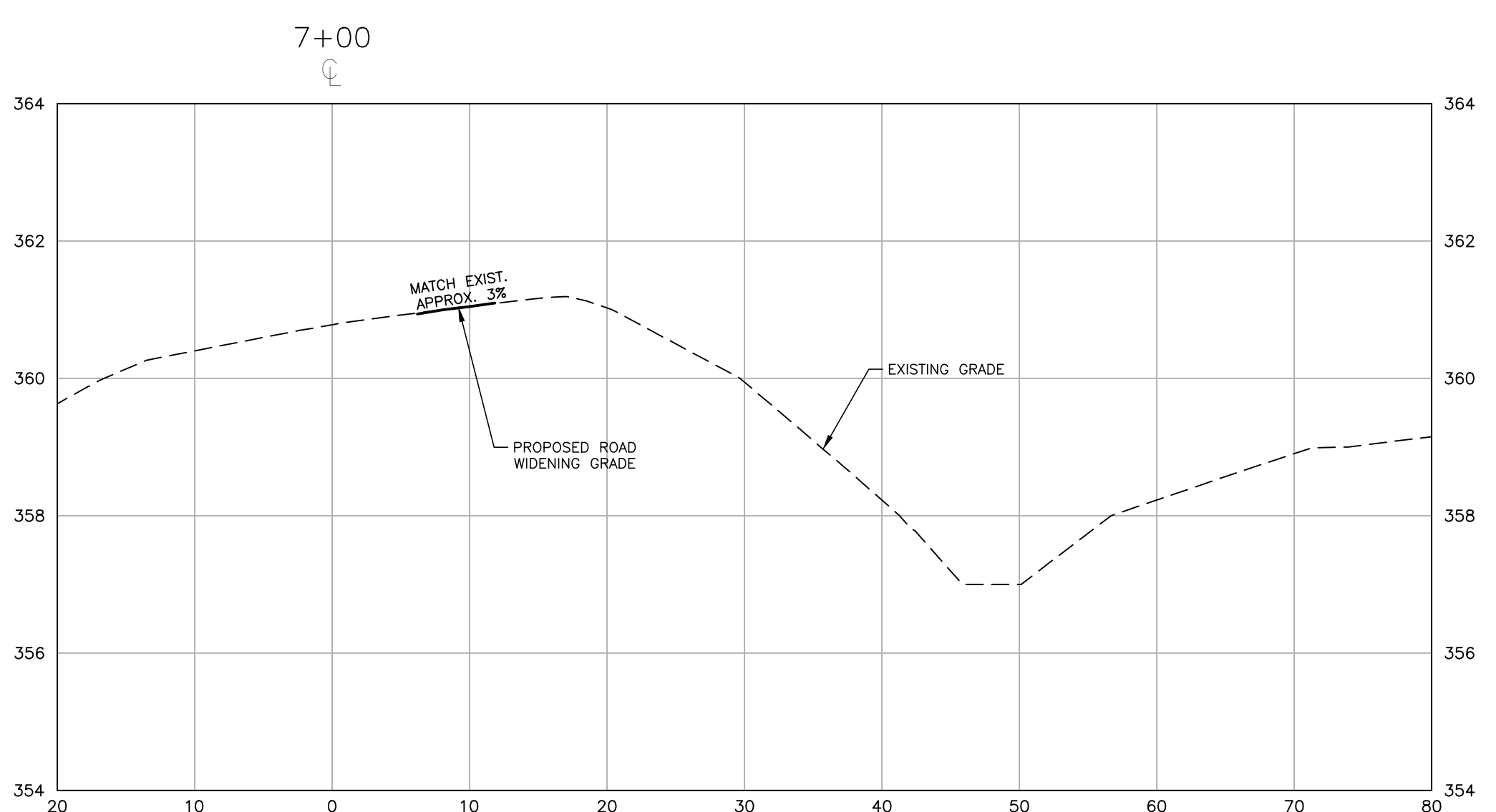
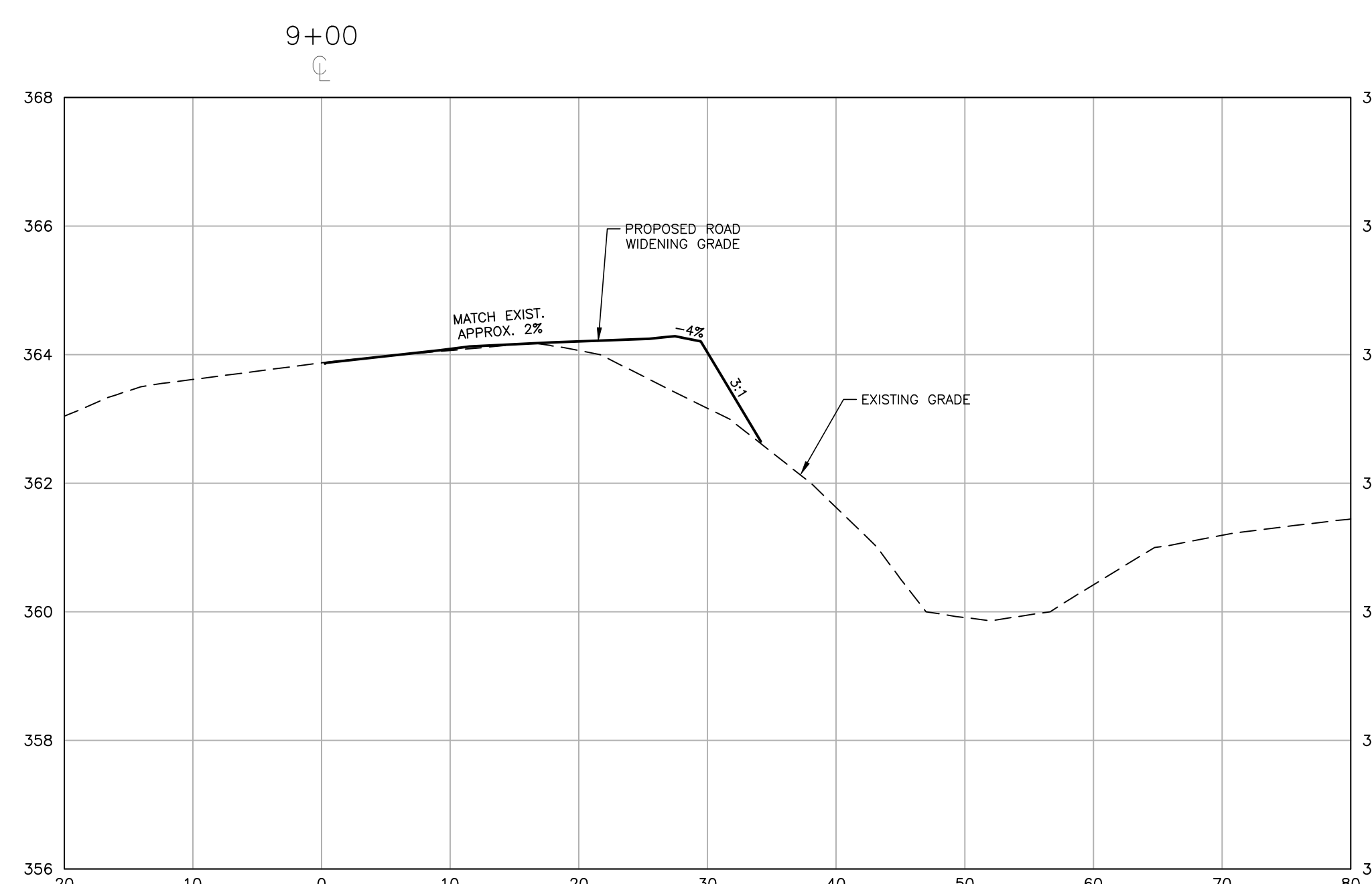
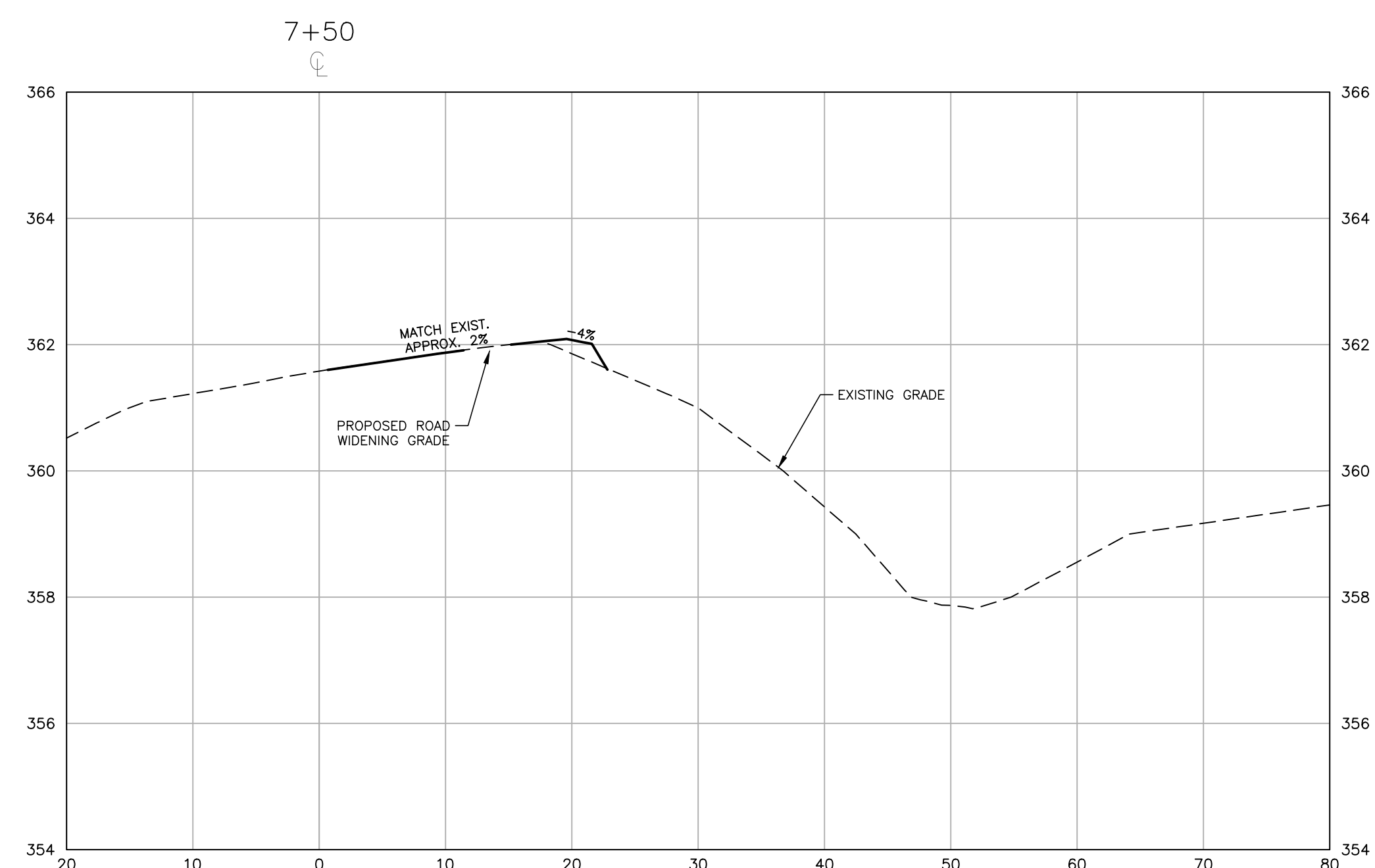
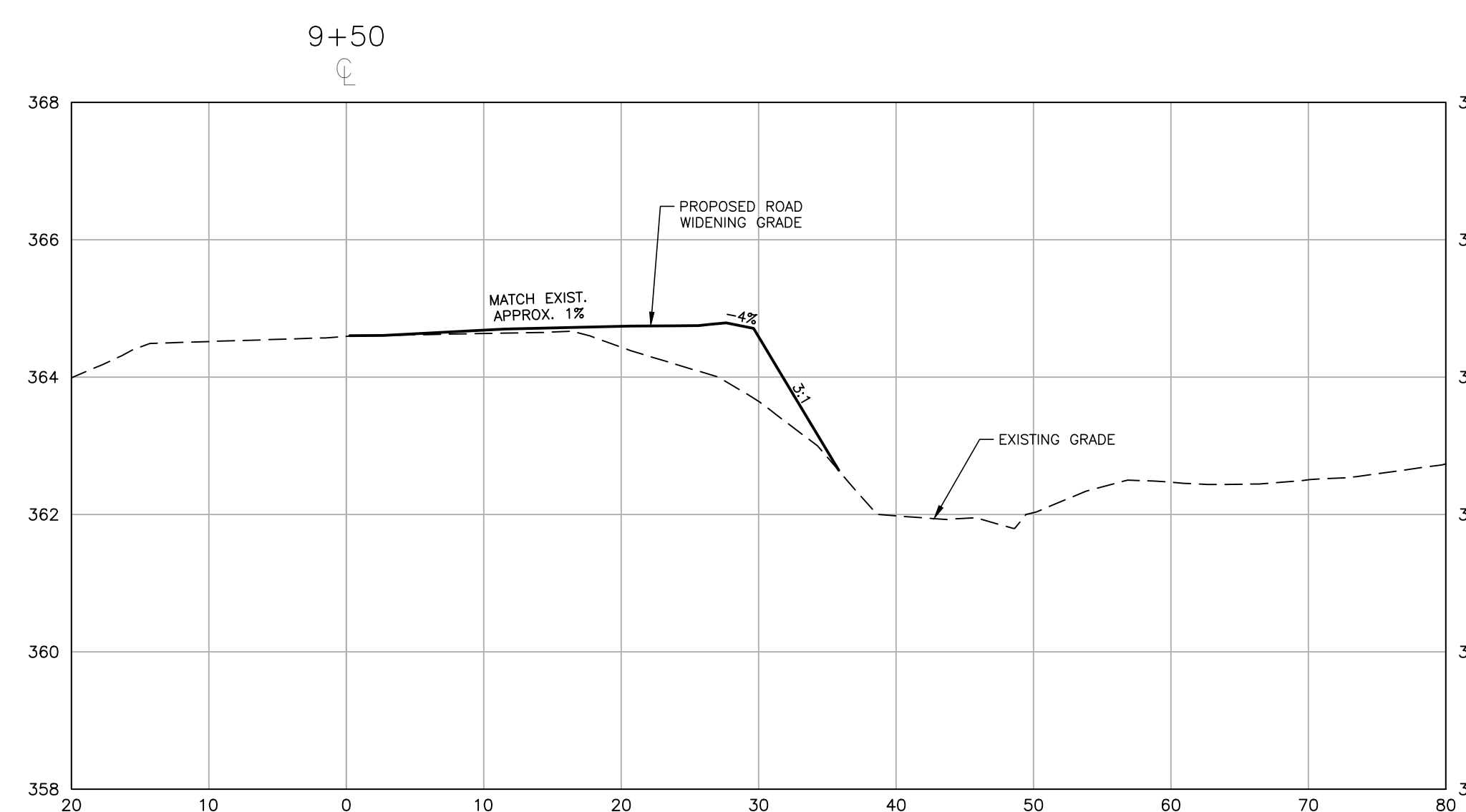
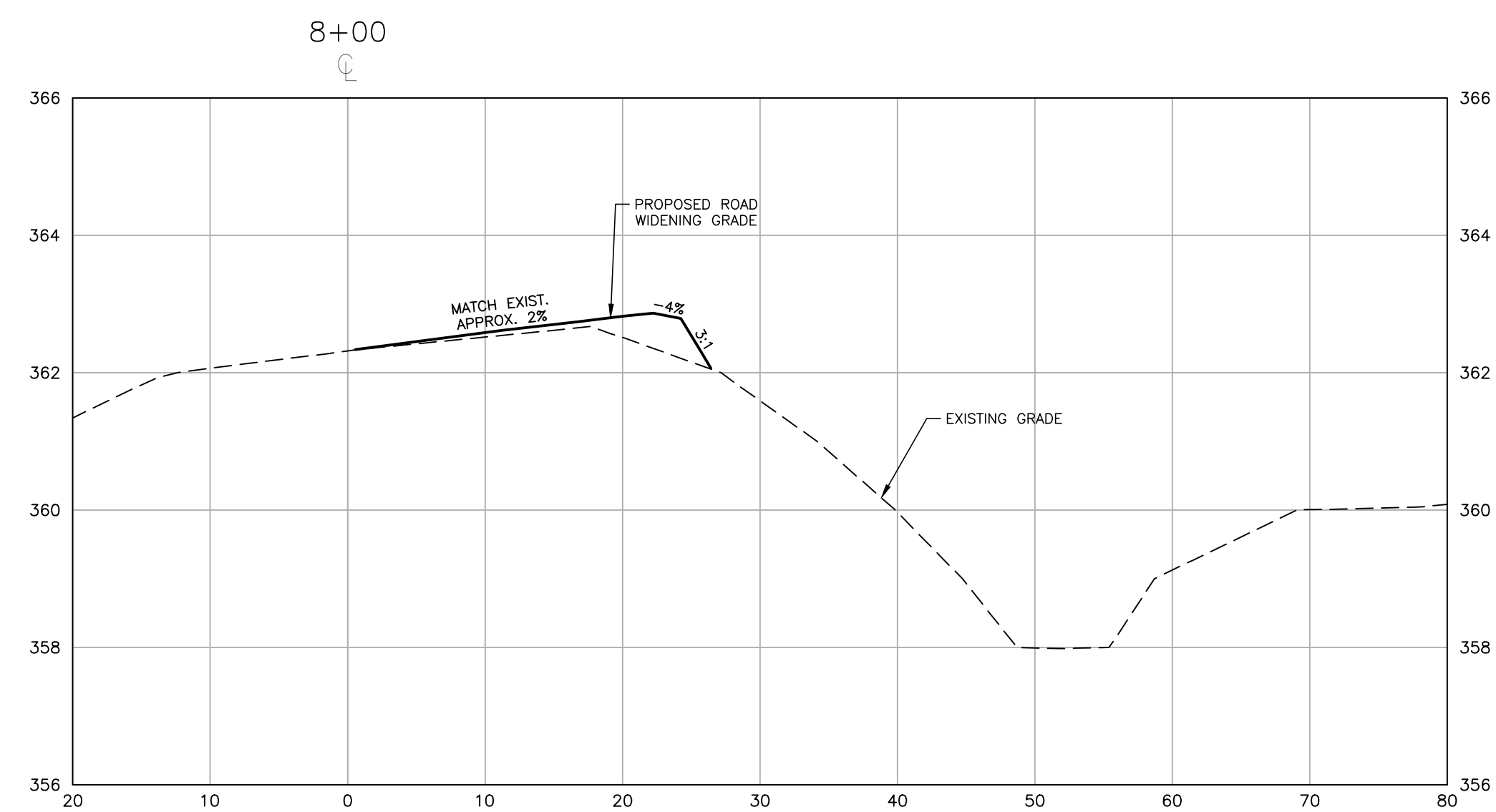
**LOUISBURG RD
WIDENING
CROSS SECTIONS**

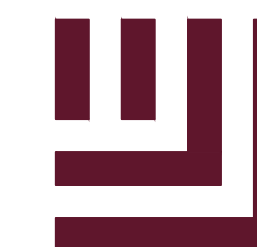
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FRAZIER FARM PARK
CONSTRUCTION DRAWINGS
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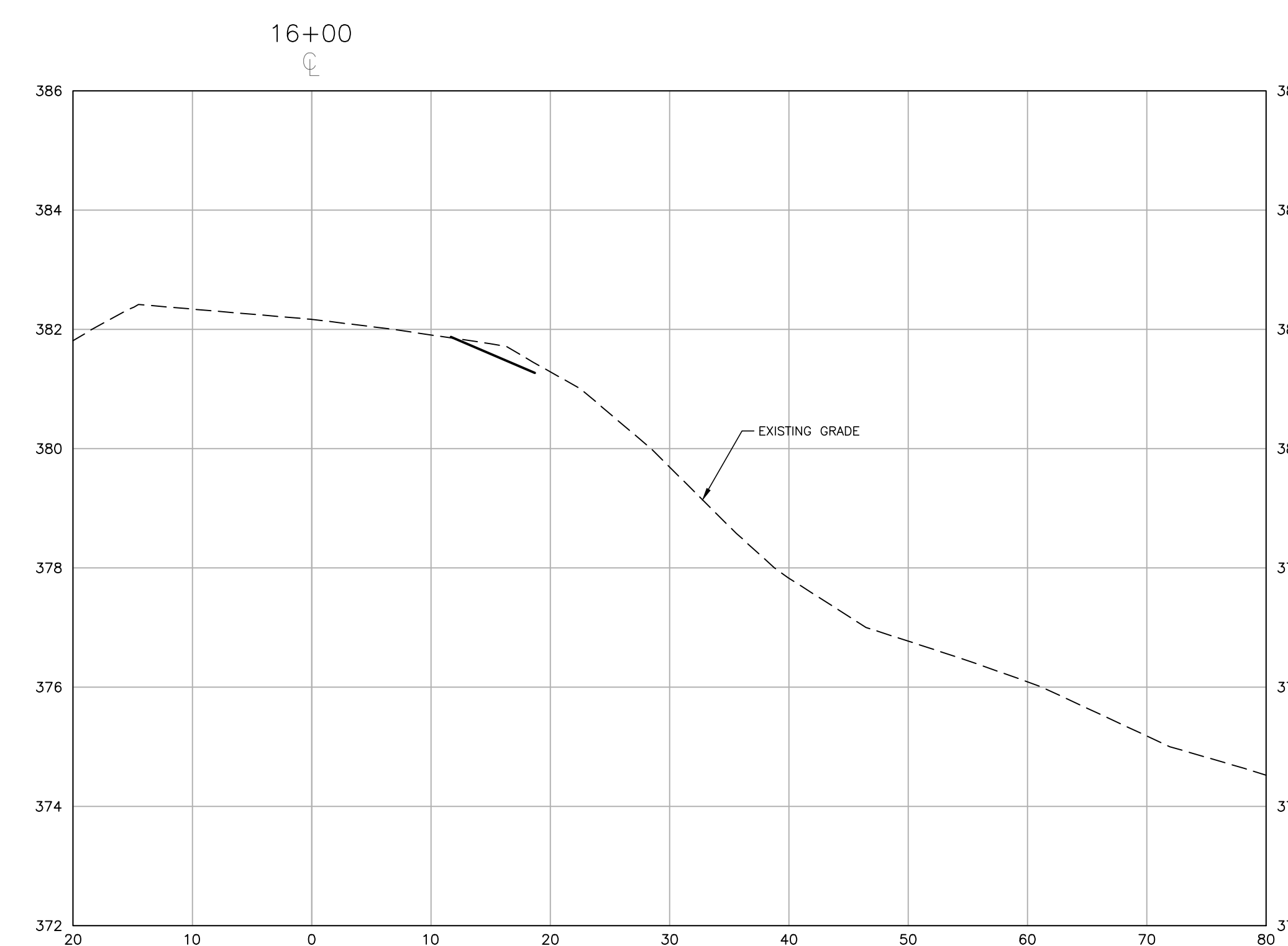
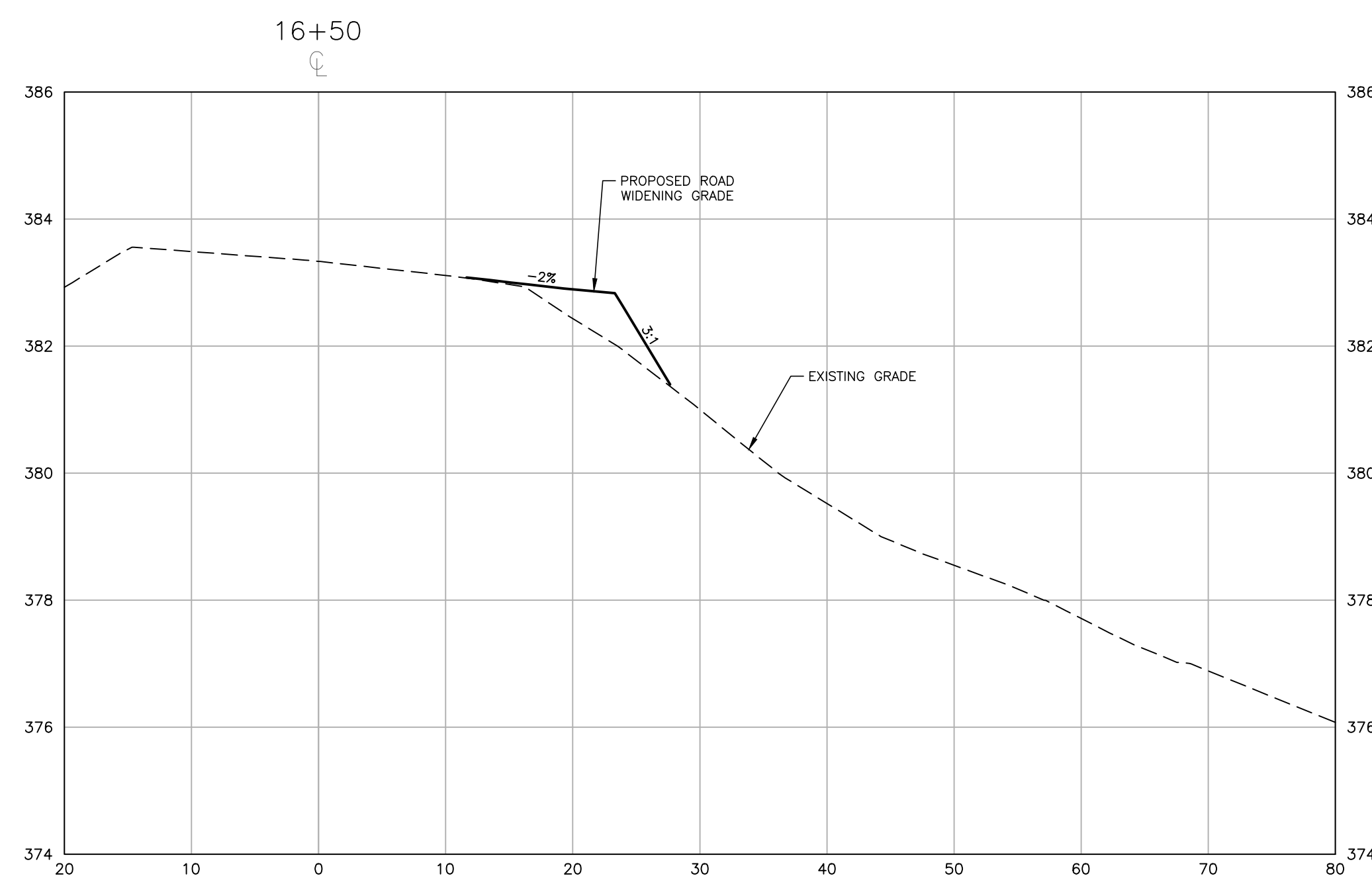
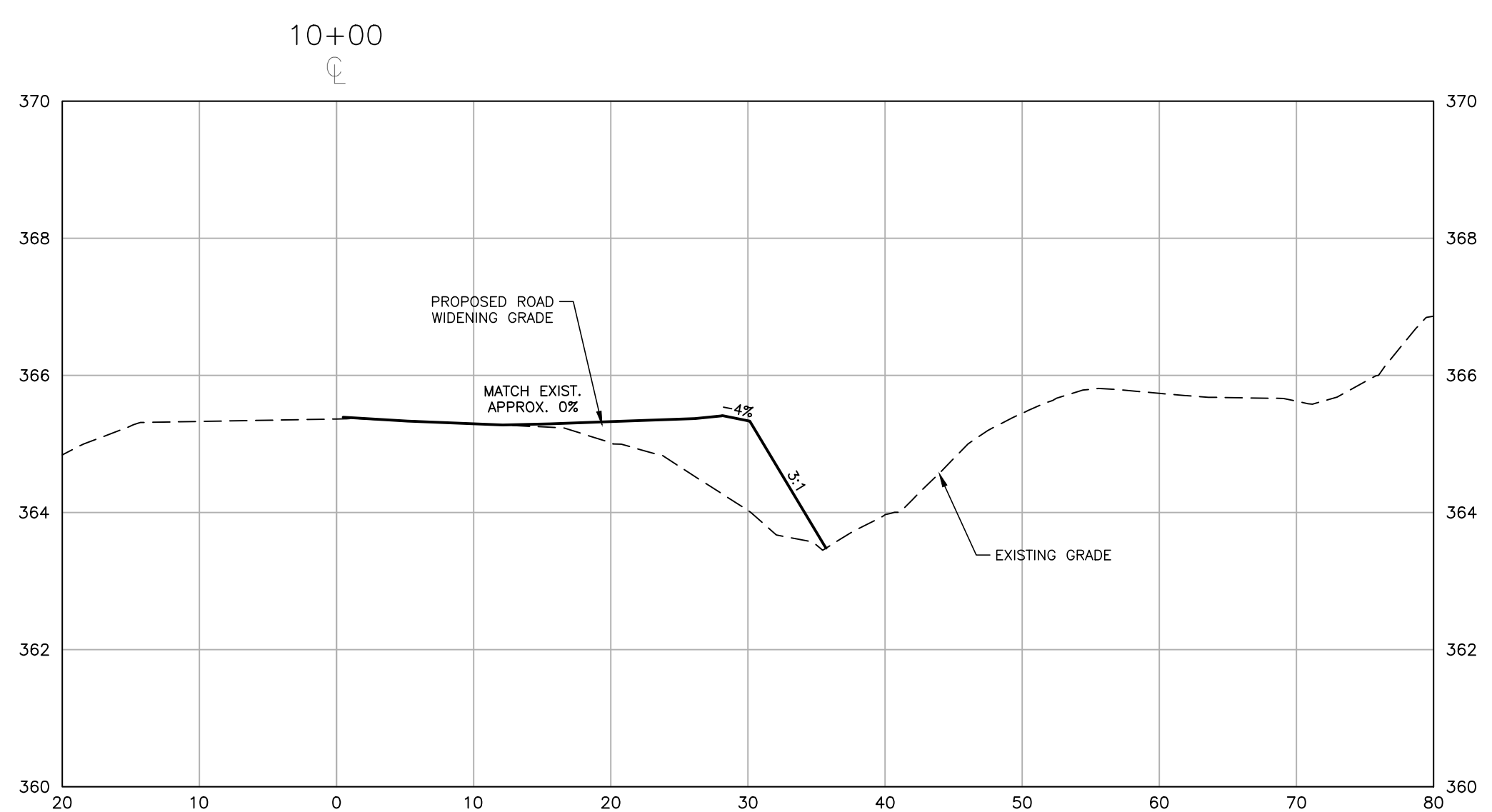
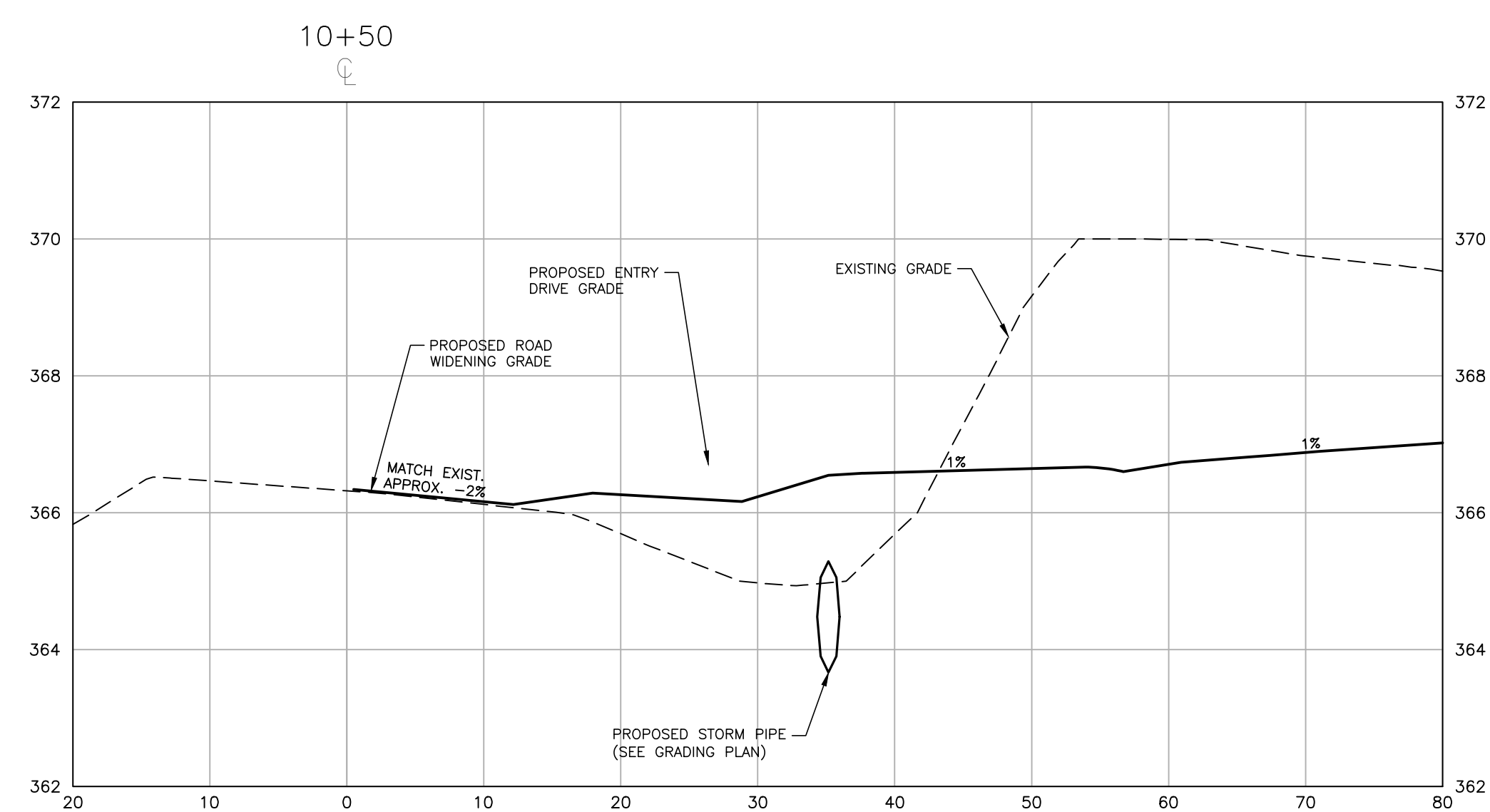
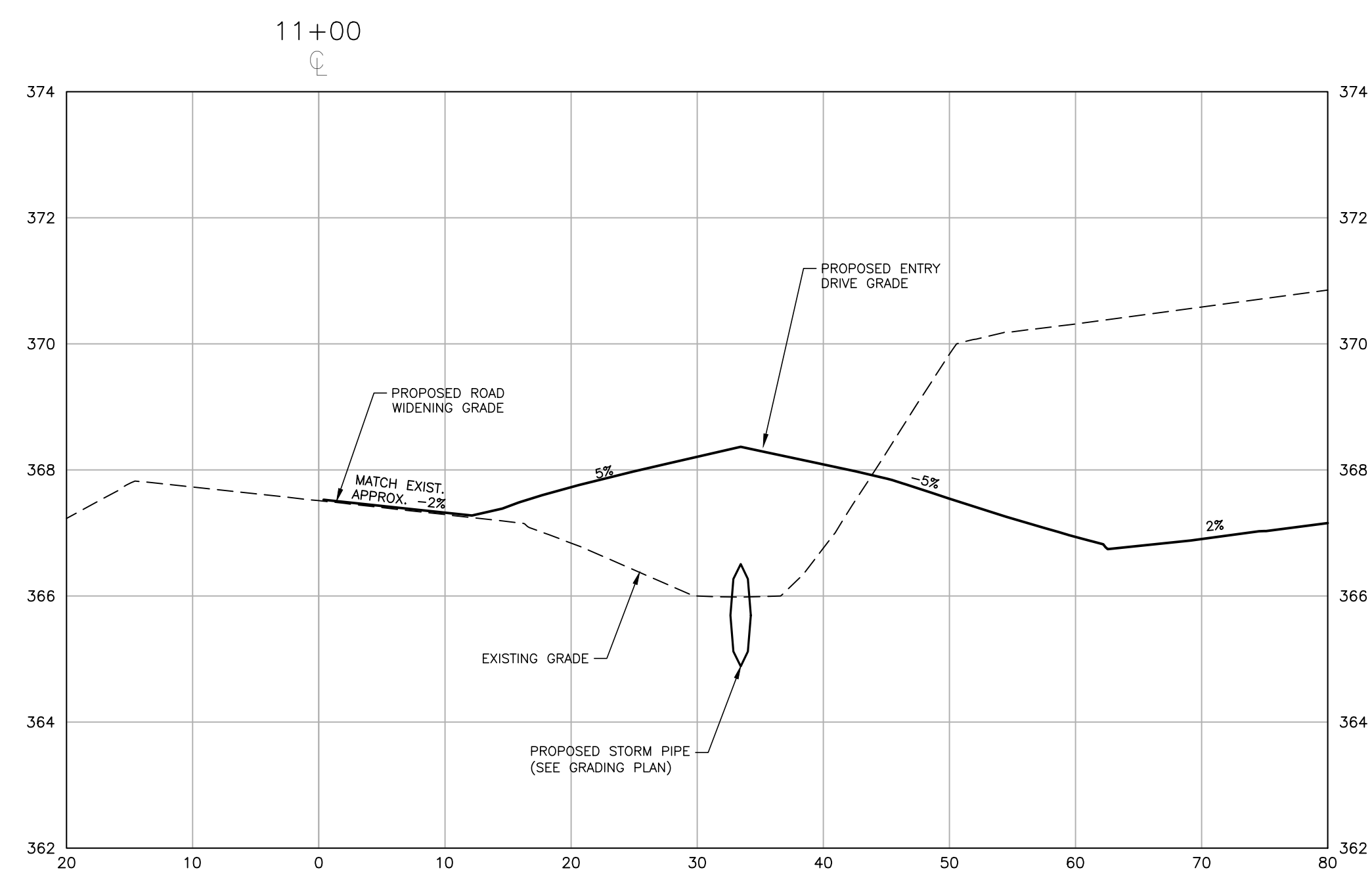
PLAN INFORMATION

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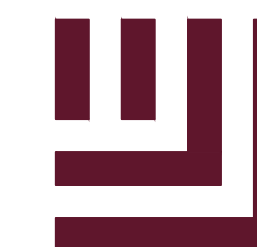
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**LOUISBURG RD
WIDENING
CROSS SECTIONS**

C7.02



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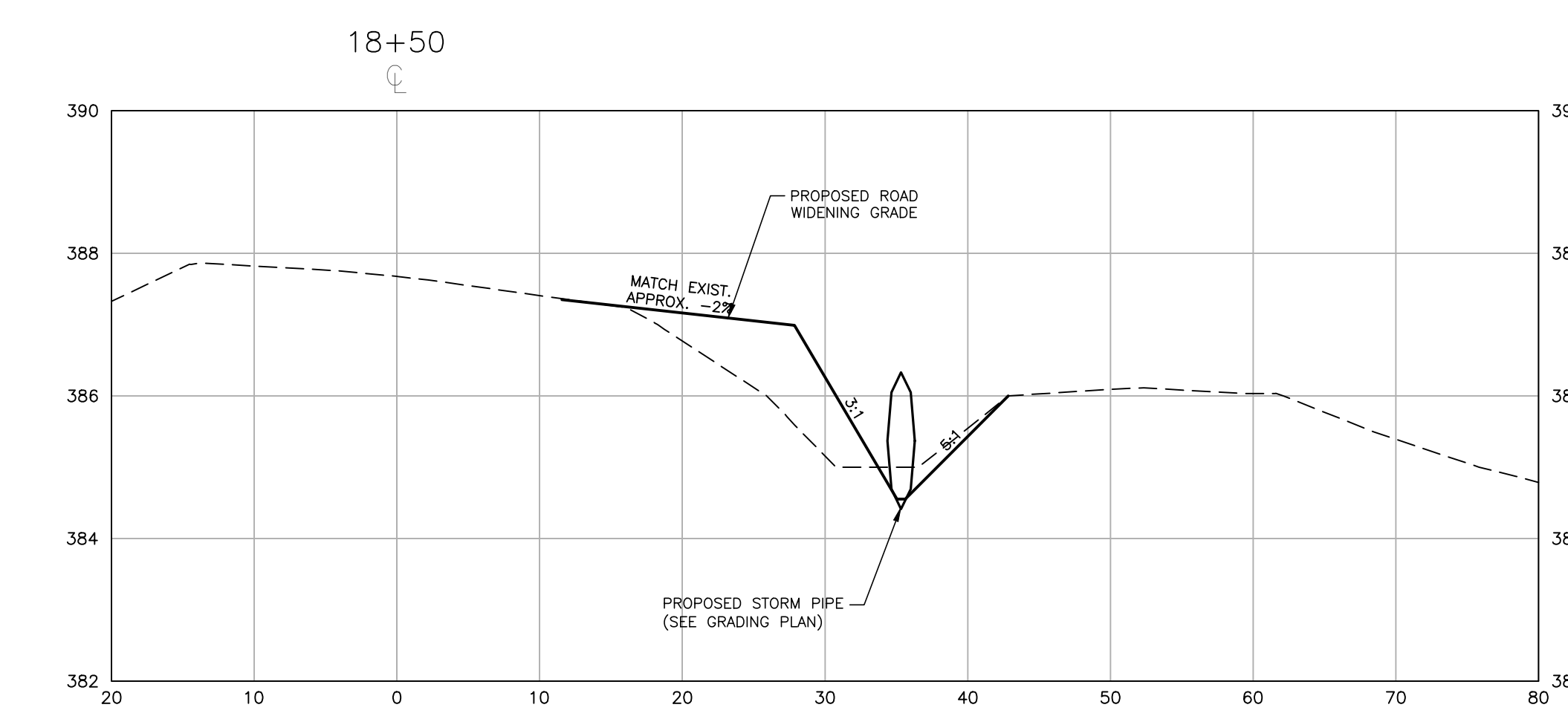
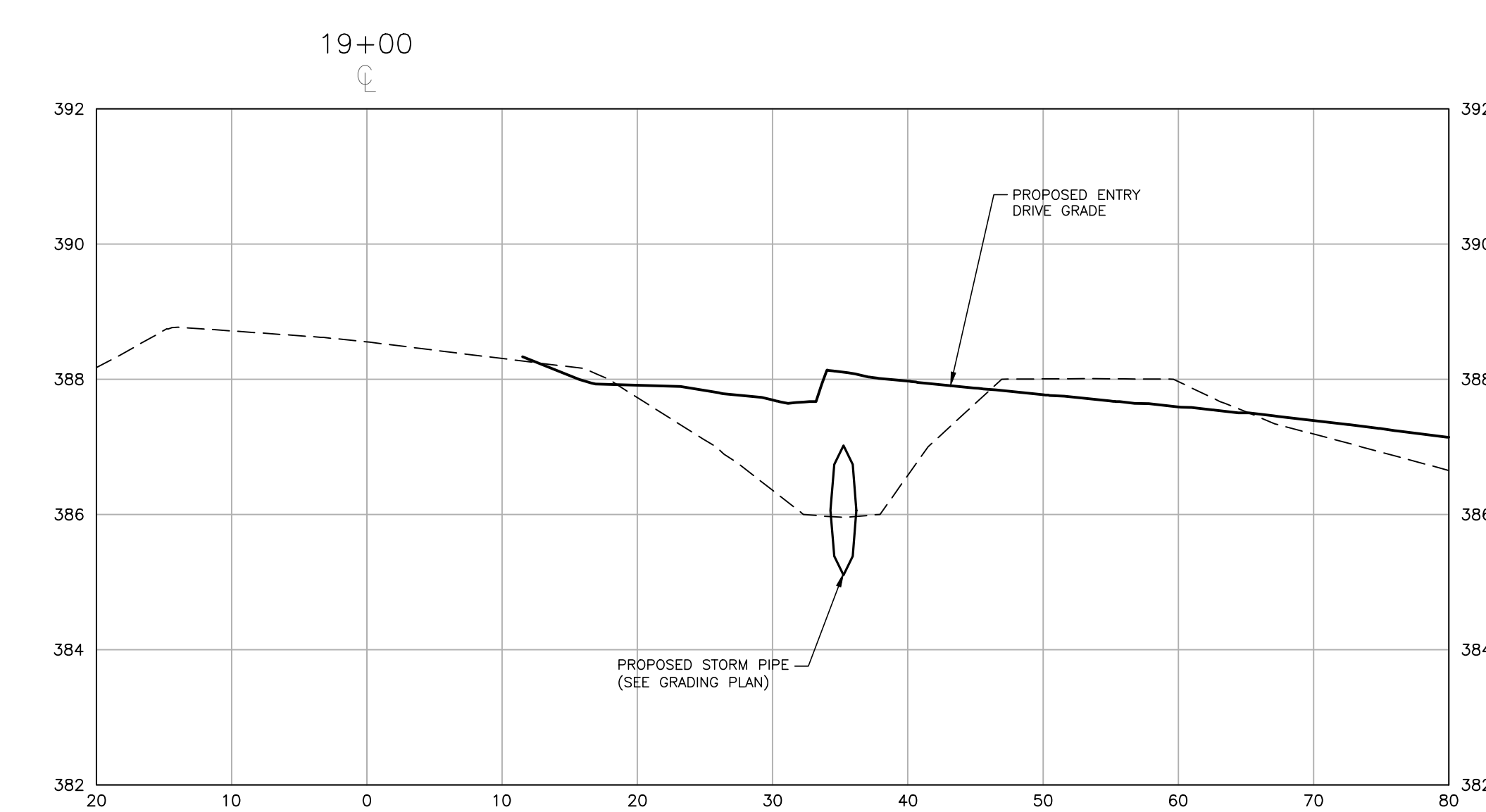
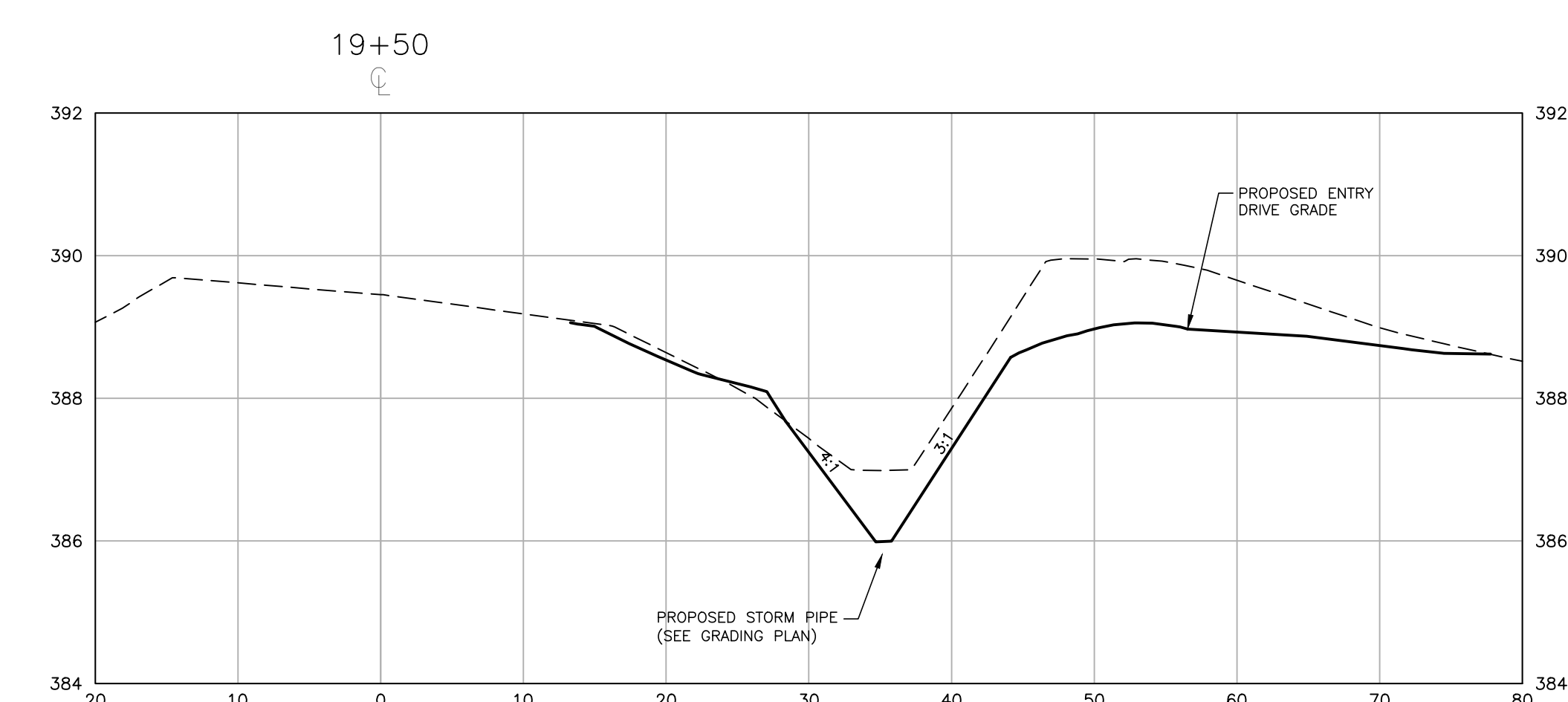
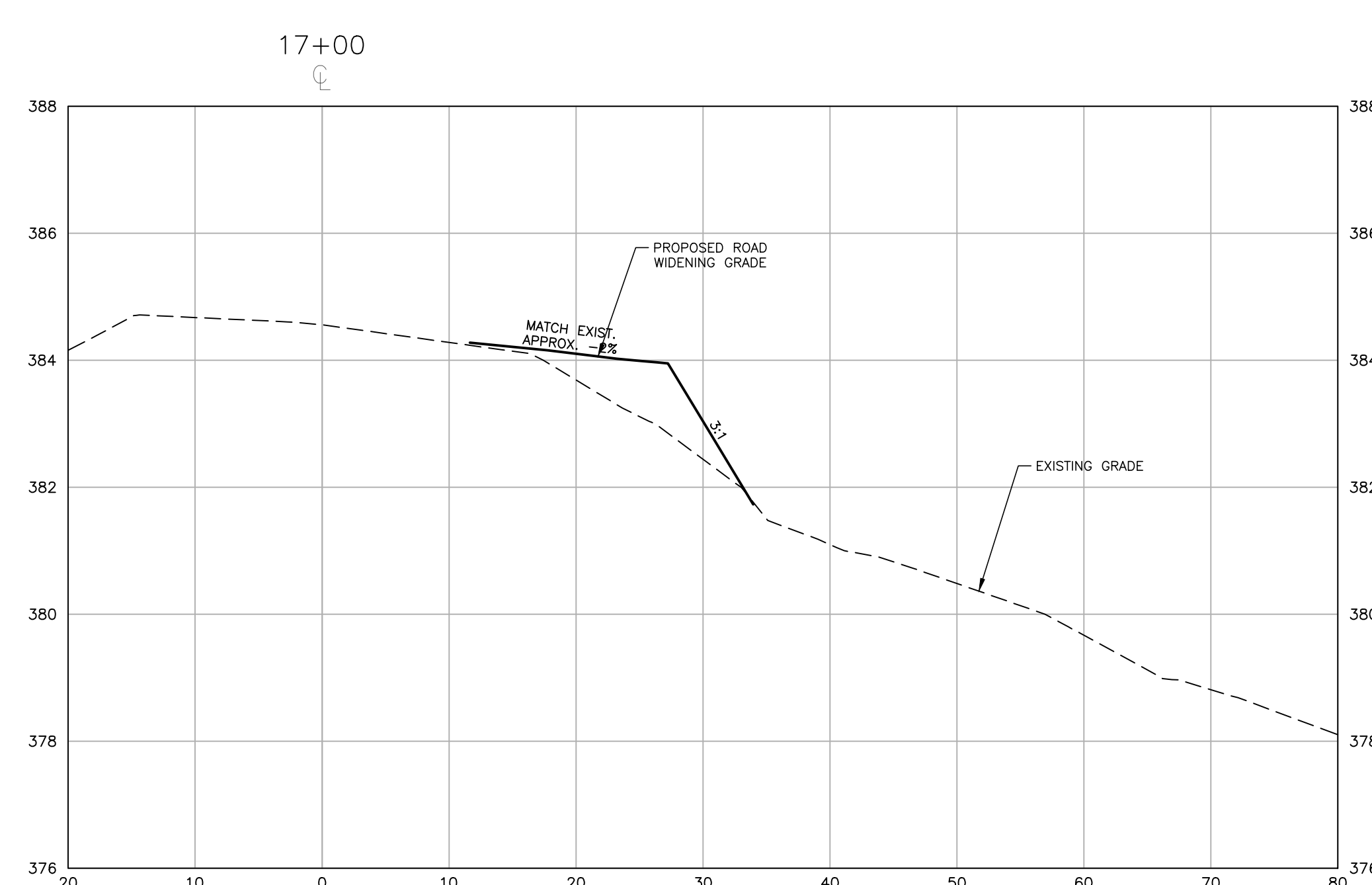
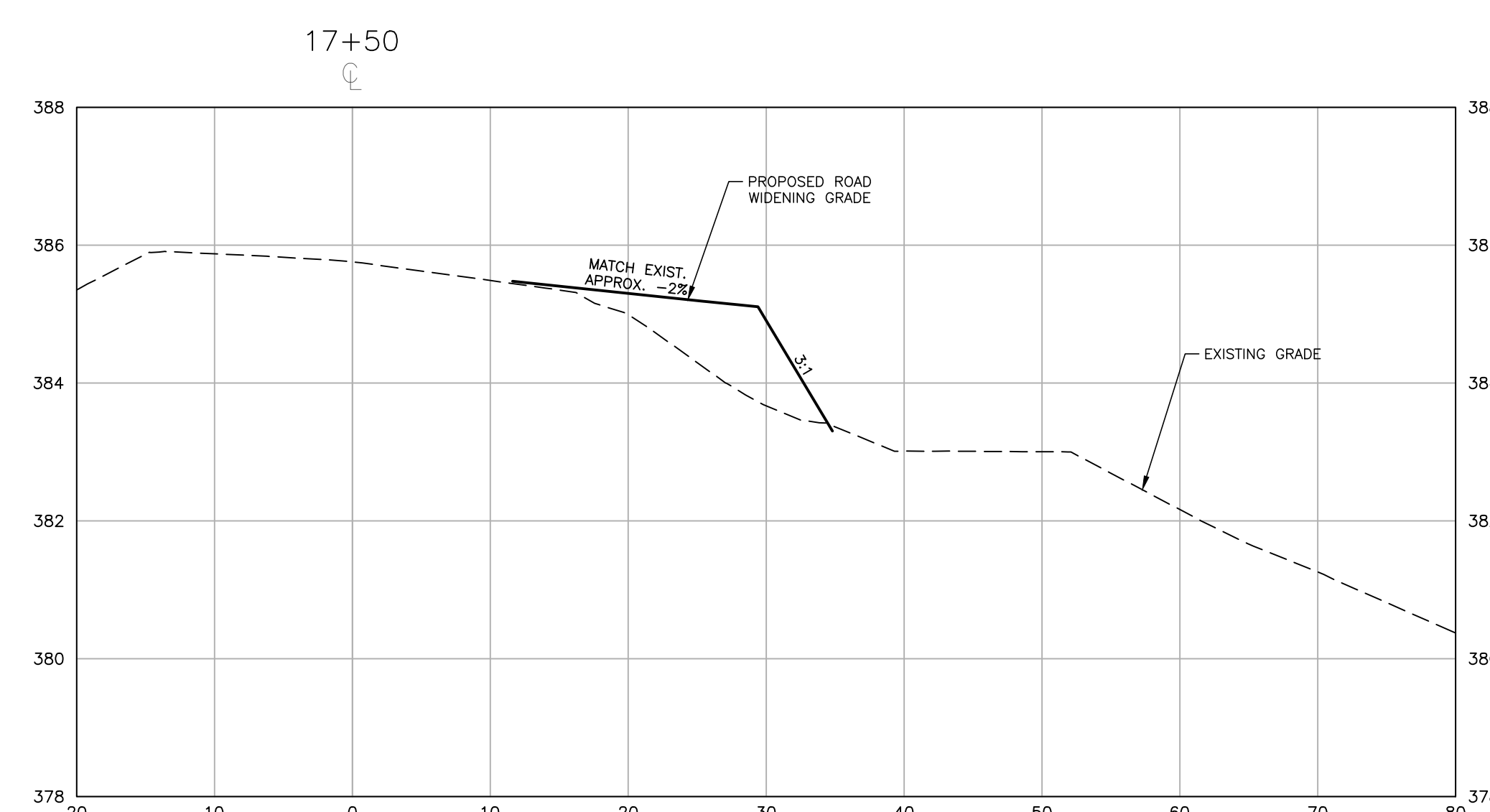
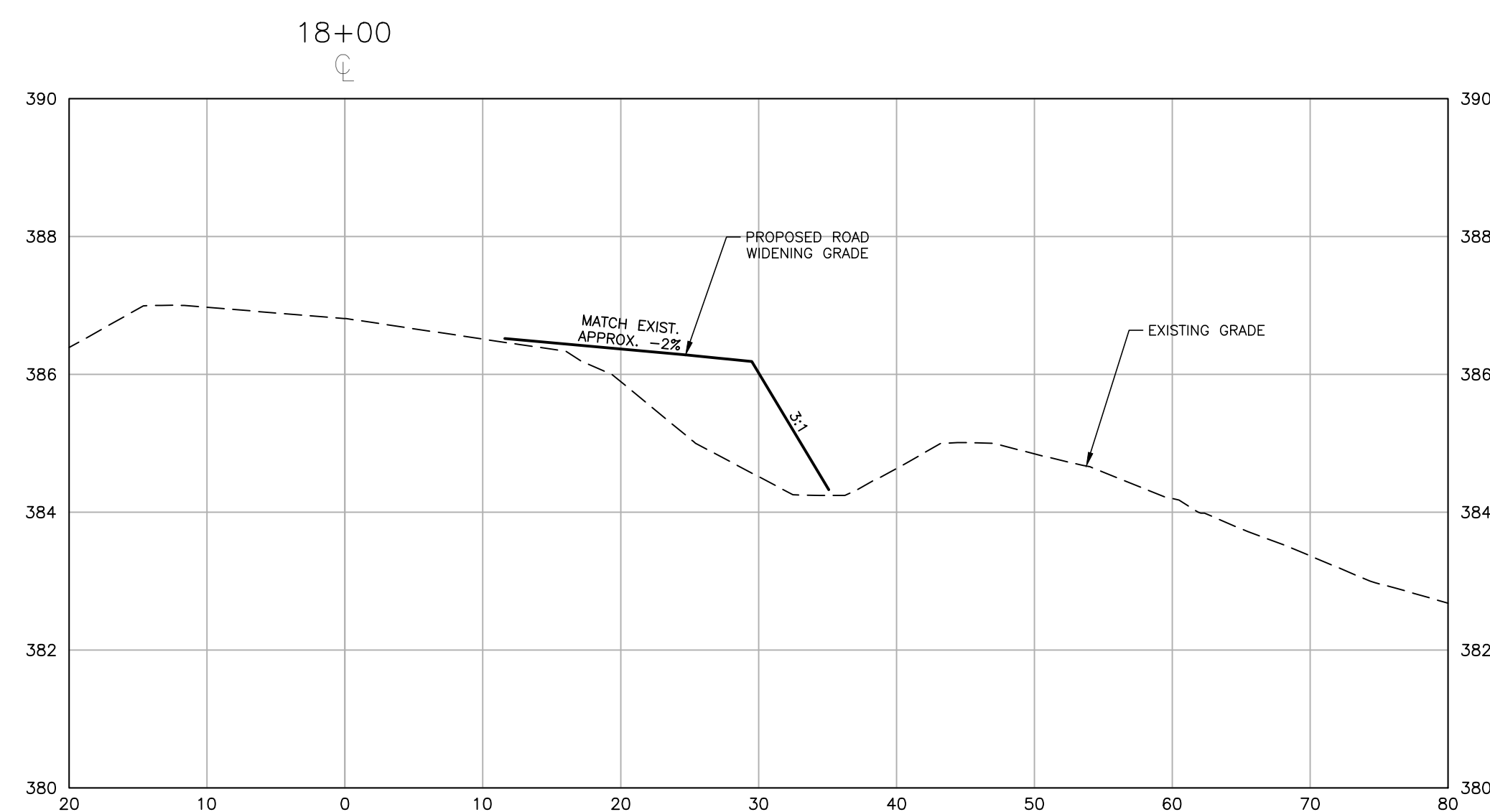
**LOUISBURG RD
WIDENING
CROSS SECTIONS**

C7.03

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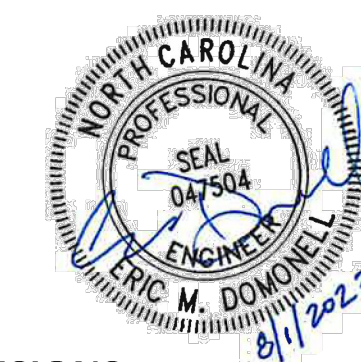
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DATE 08.01.2023

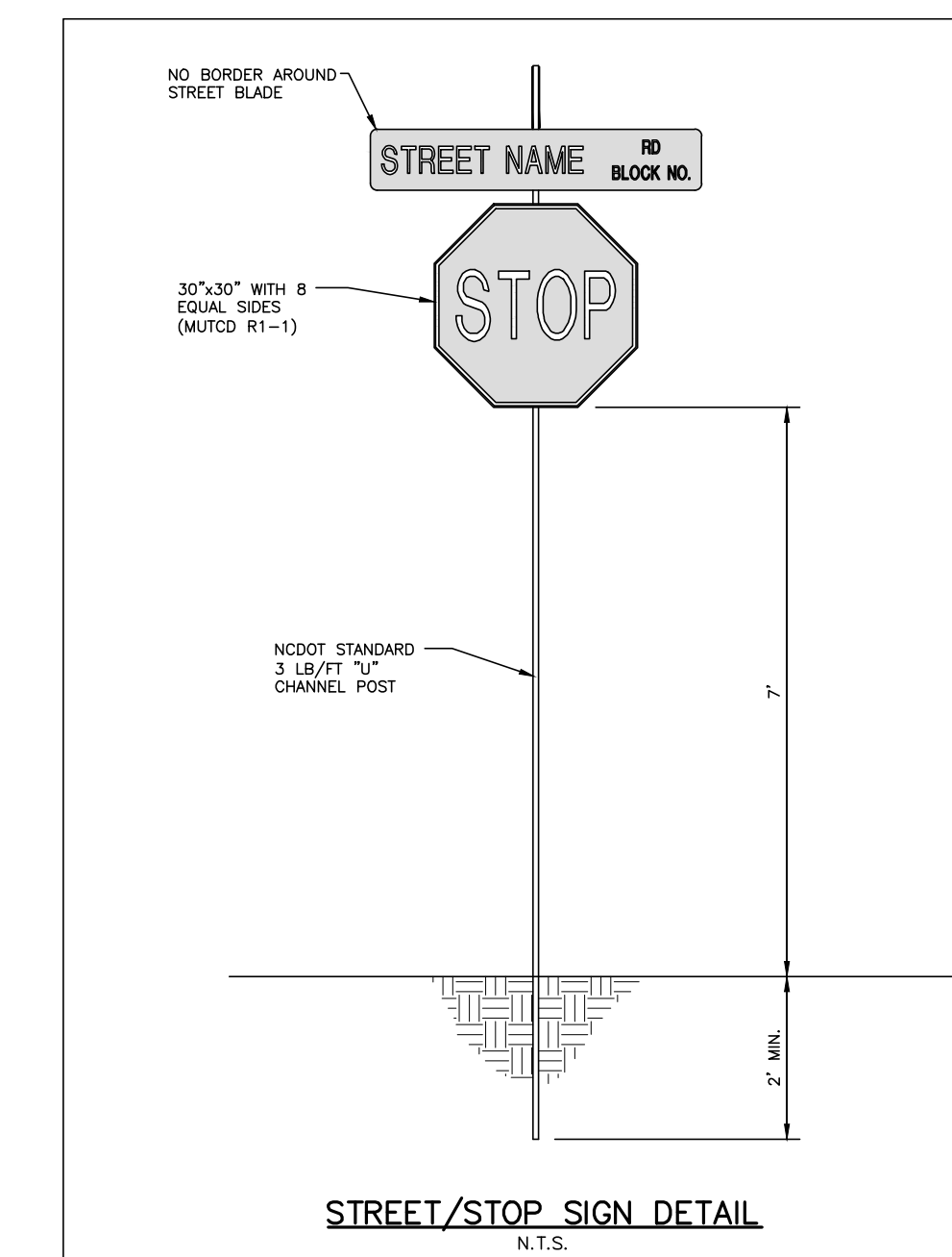
SHEET

SITE DETAILS

C8.00

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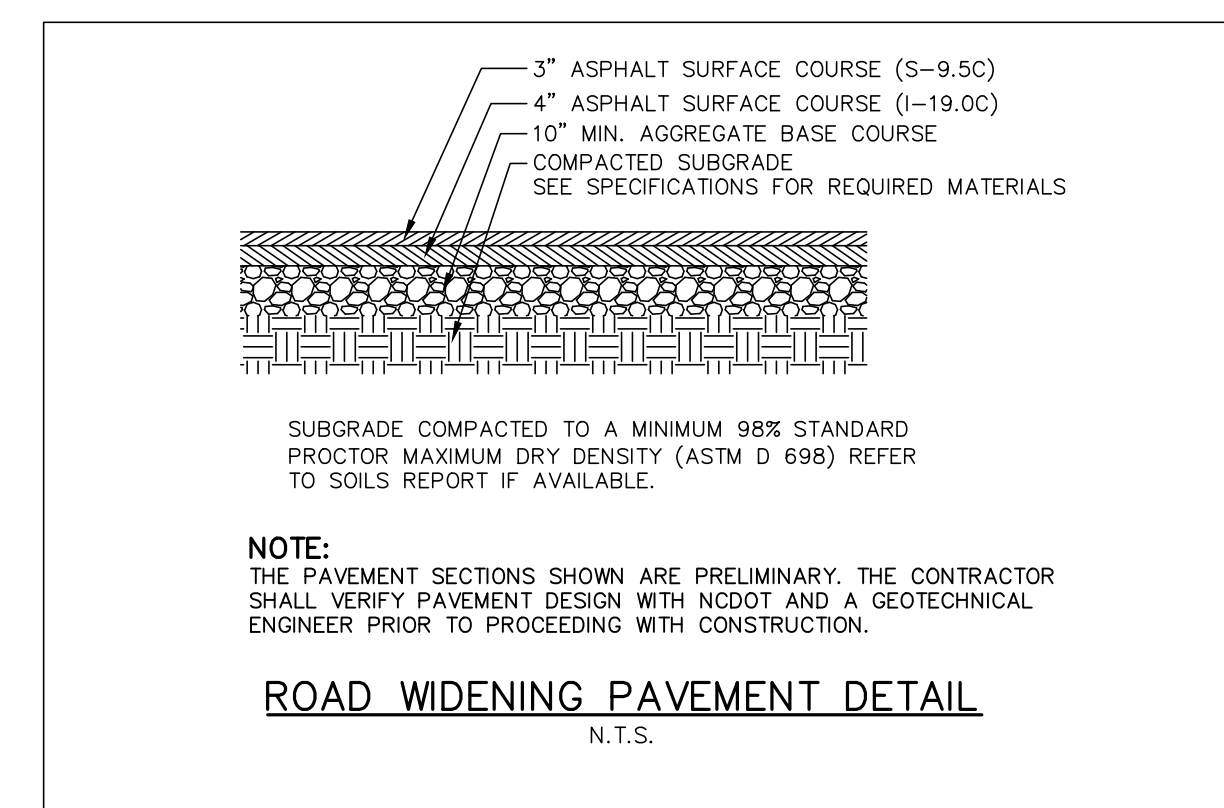
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03 STOP AND STREET SIGN DETAIL

SCALE: N.T.S.

78. IF SIGN TO BE USED AS SPECIFIED IN DETAIL PLEASE SHOW ON SITE PLAN



02 US-401 PAVEMENT SECTION

SCALE: N.T.S.

Roadway Design Manual Cross Section Elements

Table 4-1 Normal Shoulder Widths for Locals and Collectors

ADT	Design Year		
	Under 400	400-2000	Over 2000
Locals and Collectors	2 feet*	4 feet	6 feet

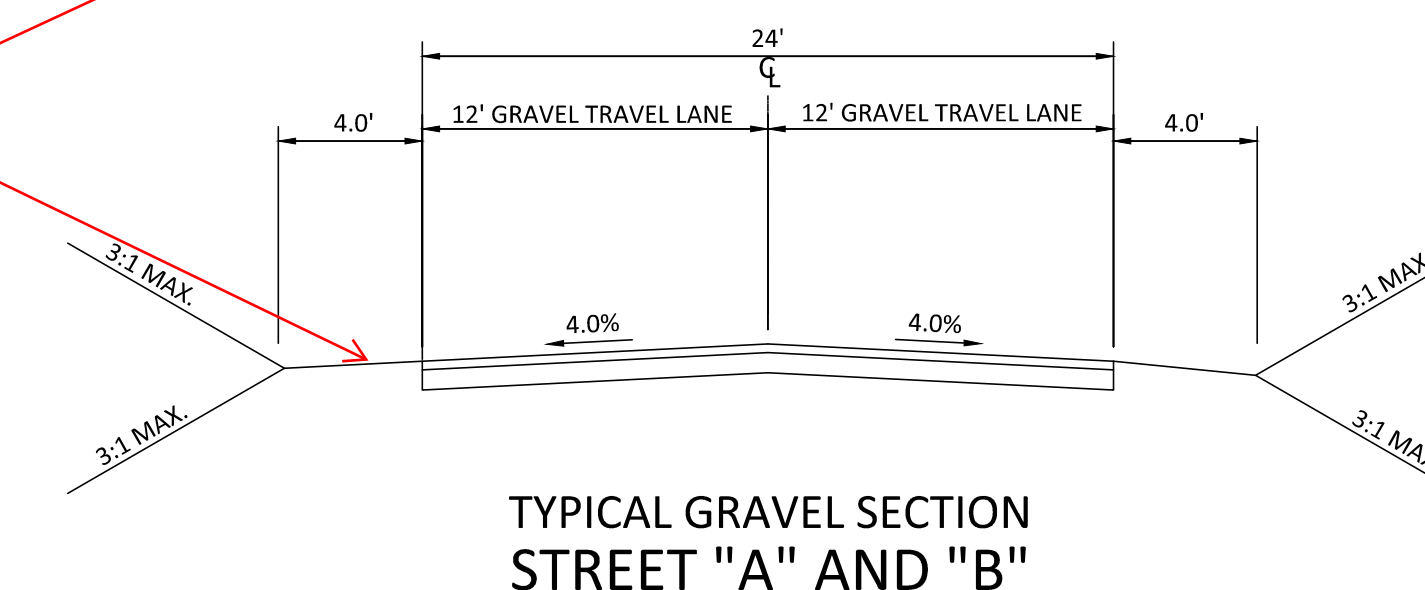
Notes:
1. *When guardrail is warranted, the minimum offset from the edge of the travel way to the face of the guardrail is 4 feet.
2. Any deviations from the values shown in this table should be discussed and approved by the project team.

When guardrail is warranted, the total shoulder width is increased by 3 feet, as shown in Figure 4-1.

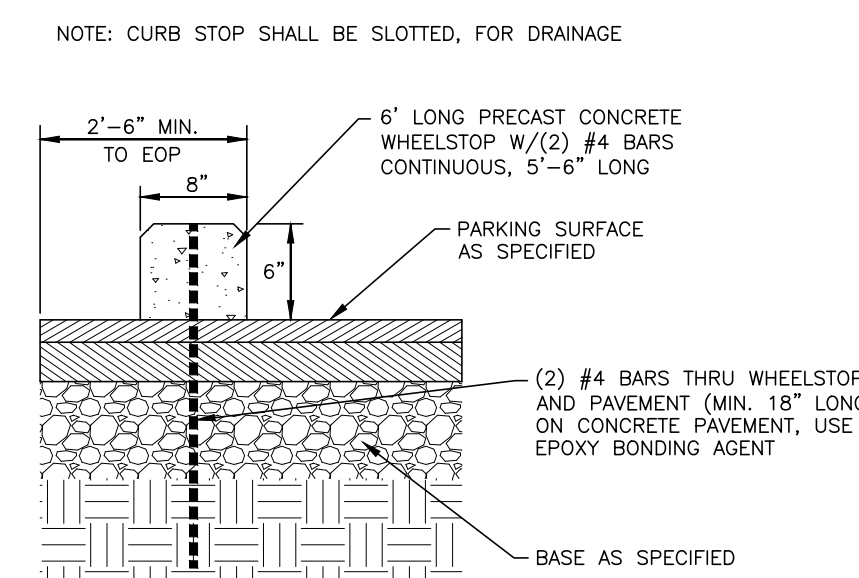
Figure 4-1 Normal and Total Shoulder Width for Locals and Collectors

N = Normal Shoulder
EOT = Edge of Travel Lane

80. SHOW GUARDRAIL OFFSET LOCATION PROPOSED
SHOW ADDITIONAL WIDTH FOR PARKING, PARALLEL. THIS WILL NEED TO BE PART OF ROAD SECTION (THIS MIGHT BE ABLE TO BE HANDLED IN MULTIPLE SECTIONS) AND ID WHERE

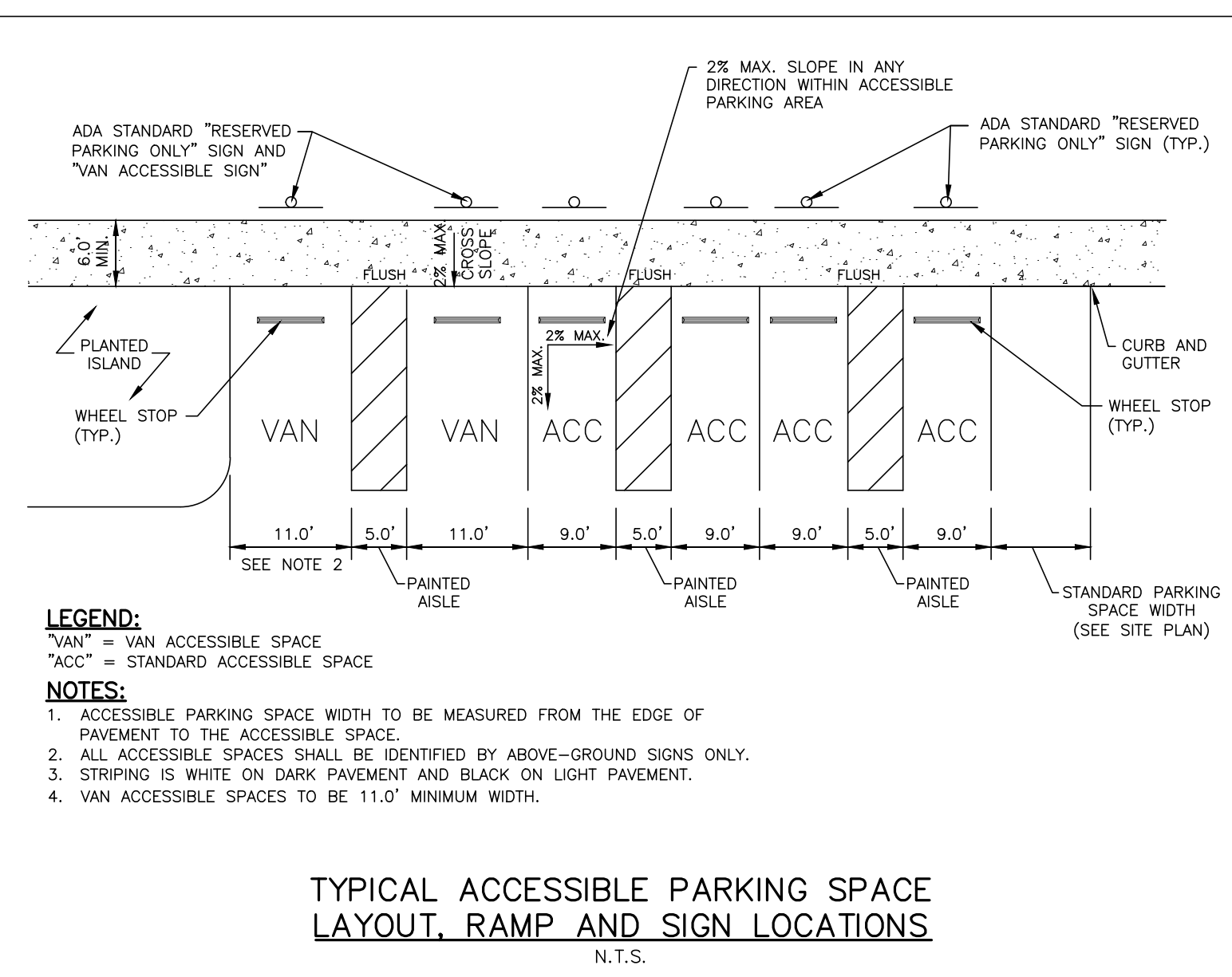


TYPICAL GRAVEL SECTION STREET "A" AND "B"



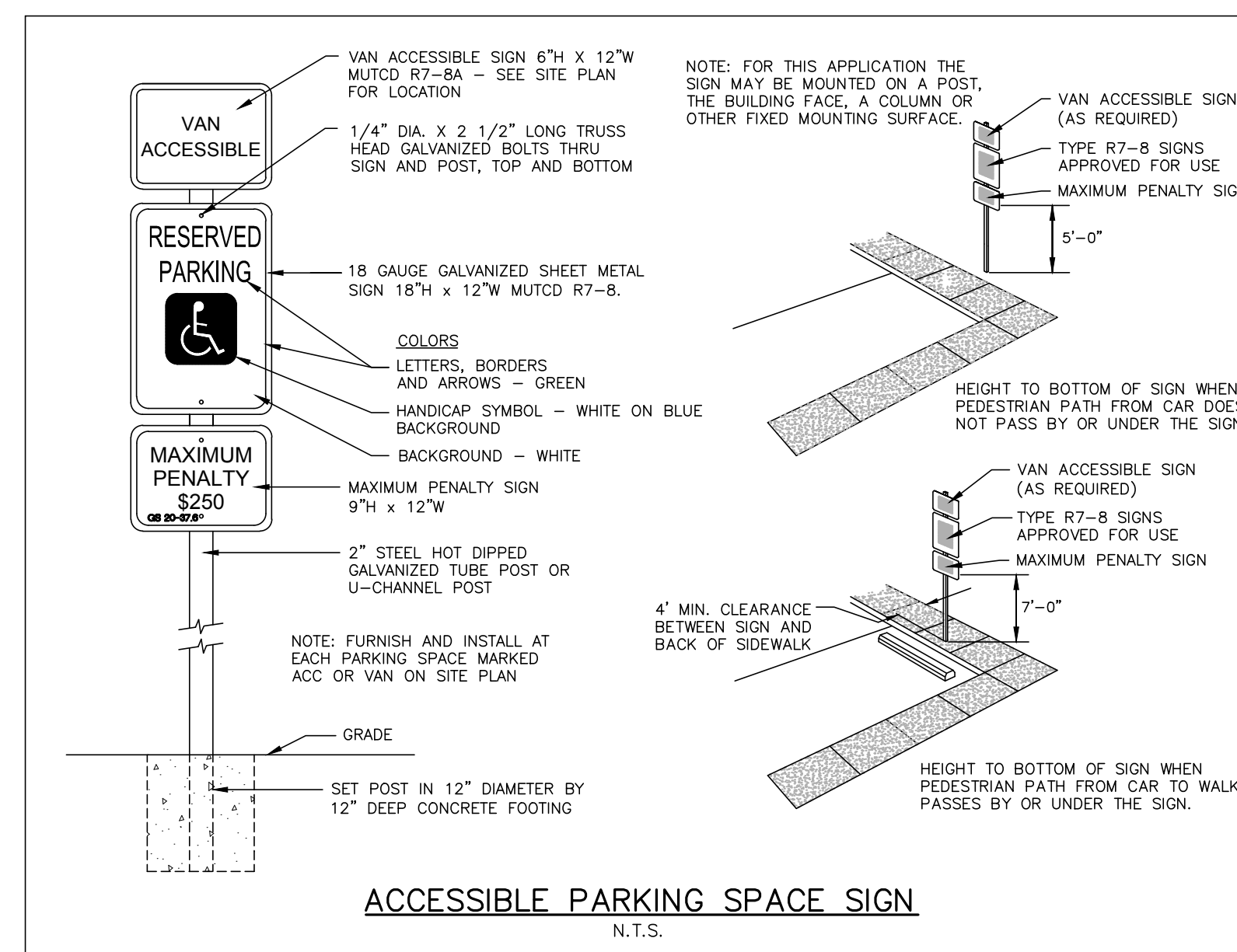
01 CONCRETE WHEEL STOP

SCALE: 1"=1'-0"



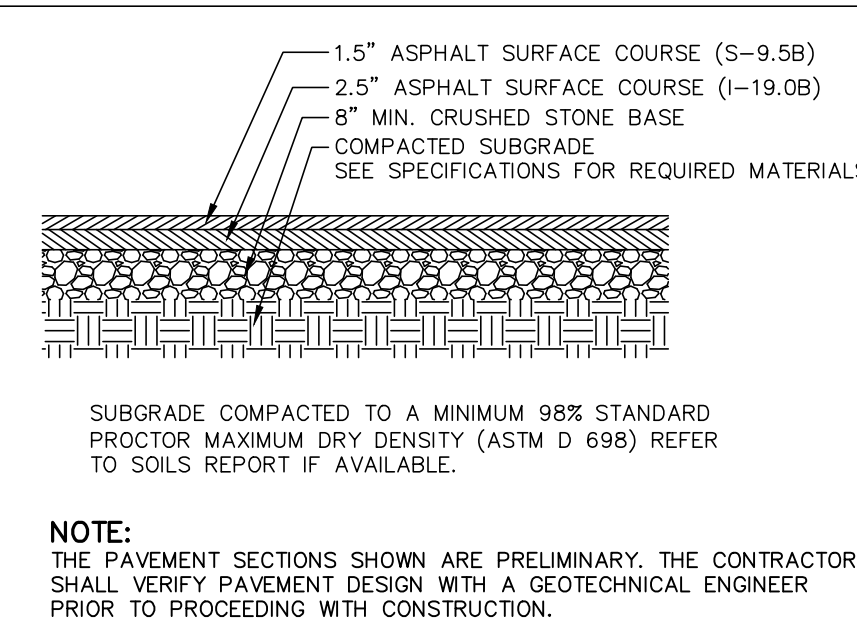
04 ACCESSIBLE PARKING AND STRIPING DETAIL

SCALE: N.T.S.



05 ACCESSIBLE PARKING SPACE SIGN

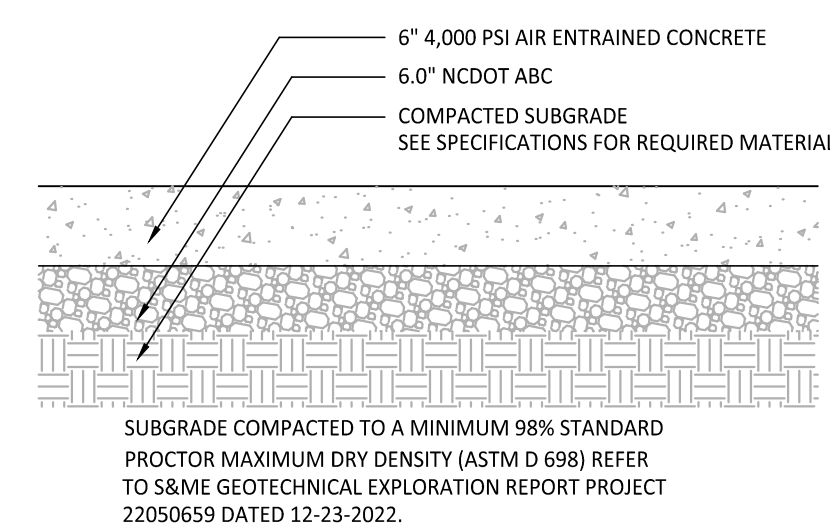
SCALE: N.T.S.



ON-SITE ASPHALT HEAVY DUTY TRAFFIC PAVEMENT DETAIL N.T.S.

07 ON-SITE HEAVY-DUTY ASPHALT PAVEMENT DETAIL

SCALE: N.T.S.



08 ON-SITE HEAVY-DUTY CONCRETE PAVEMENT DETAIL

SCALE: N.T.S.

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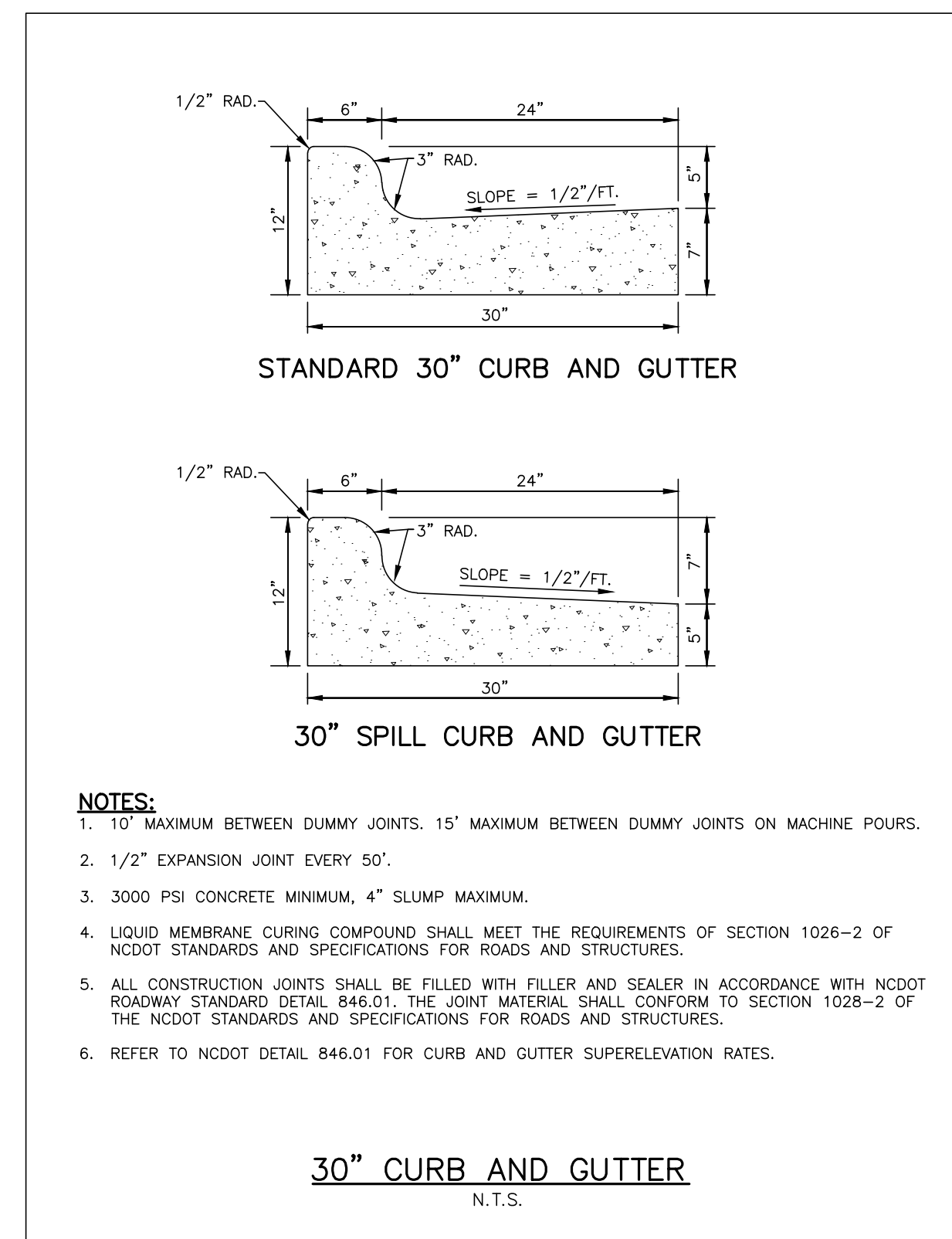
SHEET

SITE DETAILS

C8.01

CID-23-5

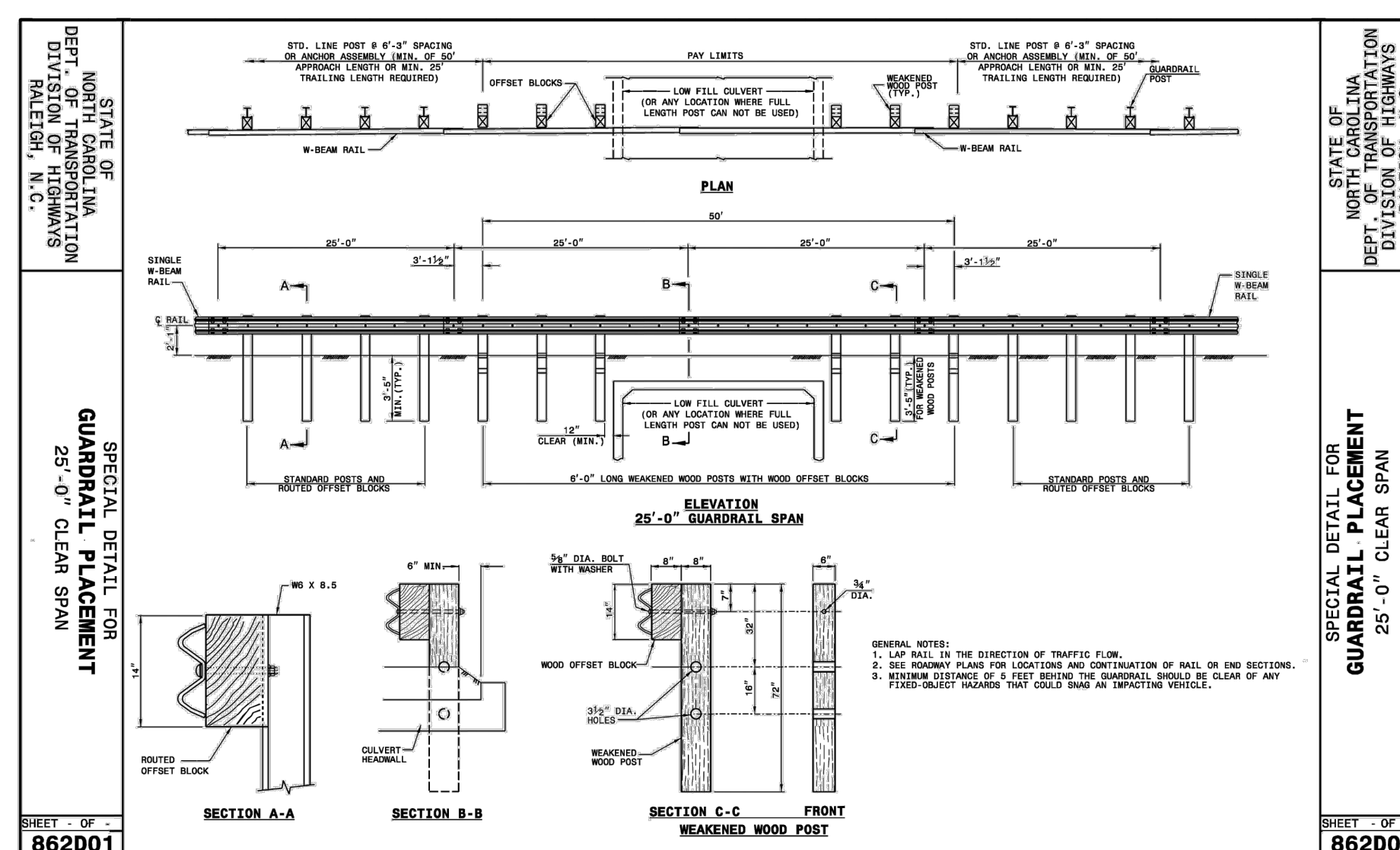
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09 STANDARD 30" CURB AND GUTTER DETAILS
SCALE: N.T.S.

10
SCALE: N.T.S.

11
SCALE: N.T.S.



12 NCDOT GUARDRAIL
SCALE: N.T.S.

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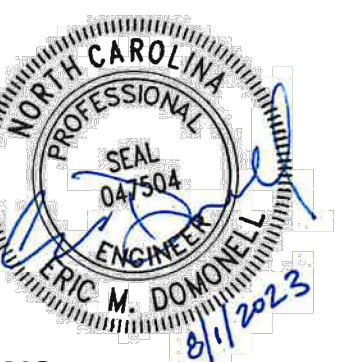
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STORM DRAINAGE &
UTILITY DETAILS

C8.02

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

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

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

DETAIL SHOWING METHOD OF RISER CONSTRUCTION

SHEET 1 OF 2
838.80

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

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

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

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

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

SHEET 1 OF 2
838.80

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

ROADWAY STANDARD DRAWING FOR BRICK CATCH BASIN 12" THRU 54" PIPE

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

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

SHEET 1 OF 2
840.01

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

ROADWAY STANDARD DRAWING FOR BRICK CATCH BASIN 12" THRU 54" PIPE

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

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

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

SHEET 2 OF 2
840.01

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

ROADWAY STANDARD DRAWING FOR CONCRETE BRIDGE APPROACH DROP INLET 12" THRU 24" PIPE

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

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE DROP INLET										
PIPE DIA.	SPAN		HEIGHT	HEIGHT	CUBIC YARDS OF CONCRETE IN BOX		DEDUCTIONS FOR ONE PIPE		R.C.	
	A	B			TOTAL	NET	G.S.			
12"	3'-8"	2'-0"	2'-6"	1'-6"	0.259	0.247	0.597	0.856	0.020	0.032
15"	3'-8"	2'-0"	2'-6"	1'-9"	0.259	0.247	0.659	0.919	0.033	0.038
18"	3'-8"	2'-0"	3'-0"	2'-0"	0.259	0.247	0.720	0.979	0.033	0.049
24"	3'-8"	2'-0"	3'-6"	2'-6"	0.259	0.247	0.855	1.124	0.059	0.089

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

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.

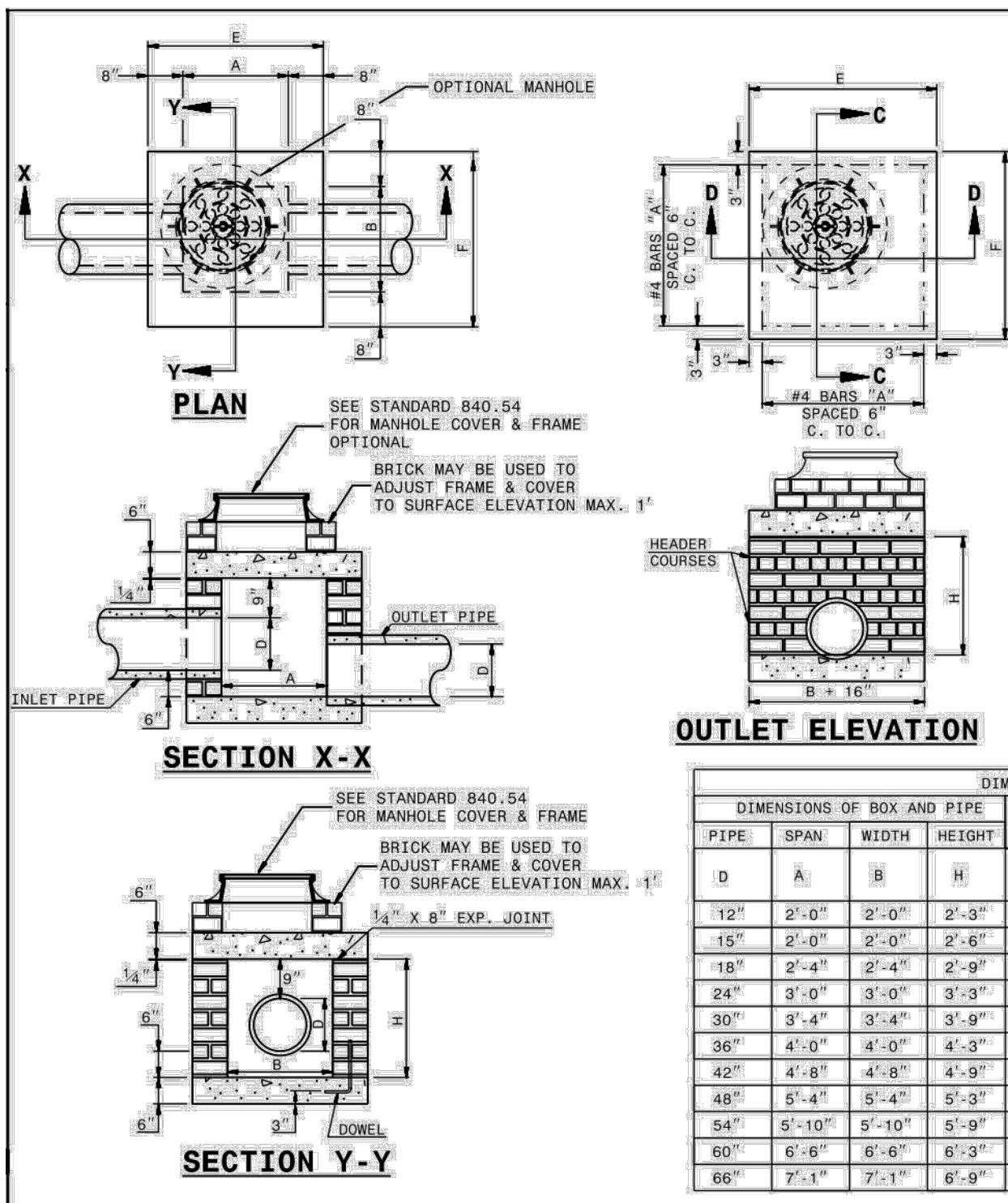
SECTION A-A

SECTION B-B

SECTION A-A

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 11.5" 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.

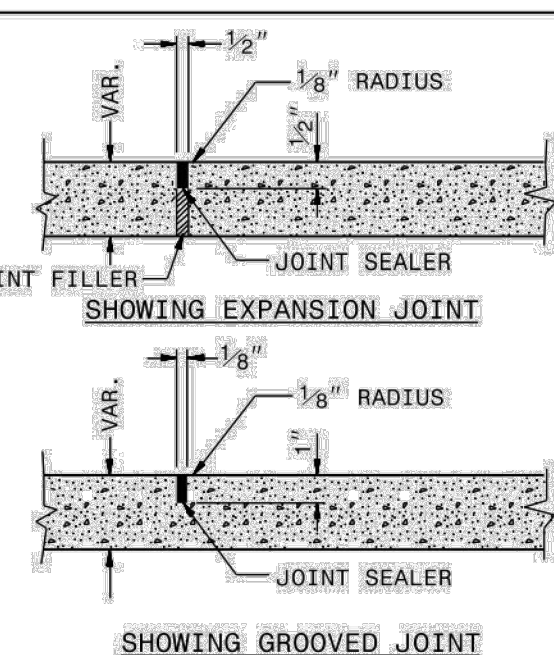
DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES

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'-2"	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
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 DIVISION OF HIGHWAYS
 RALEIGH, N. C.

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

SHEET 1 OF 1
 840.32



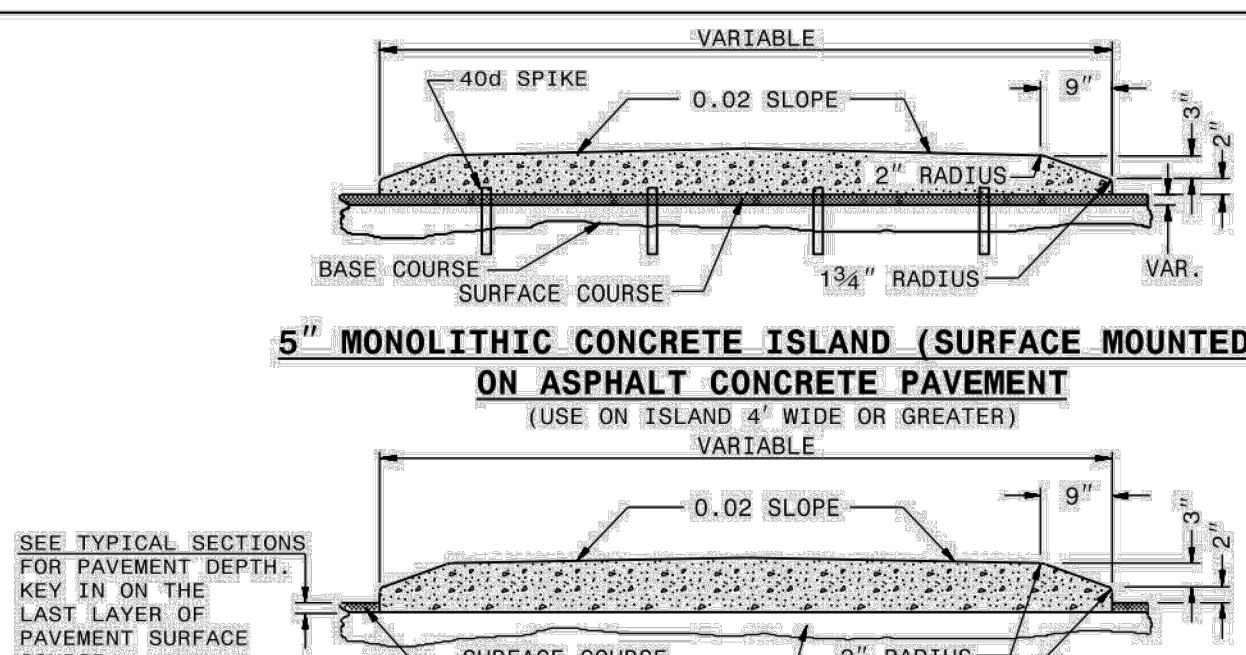
PARTIAL LONGITUDINAL SECTIONS OF PAVED ISLANDS

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

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

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

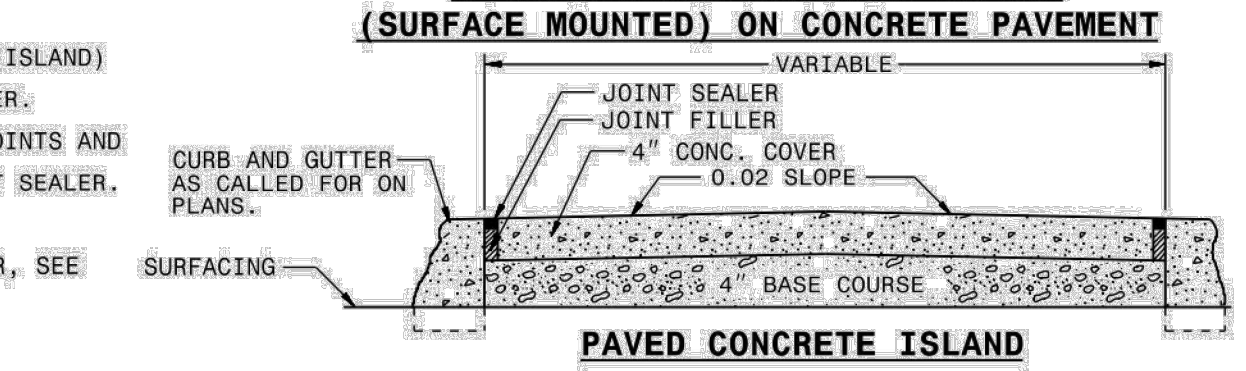
FOR JOINTS IN THE CURB AND/OR CURB AND GUTTER, SEE STANDARD NO. 846.01



5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED) ON ASPHALT CONCRETE PAVEMENT

5" MONOLITHIC CONCRETE ISLAND (KEYED IN) ON ASPHALT CONCRETE PAVEMENT

5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED) ON CONCRETE PAVEMENT

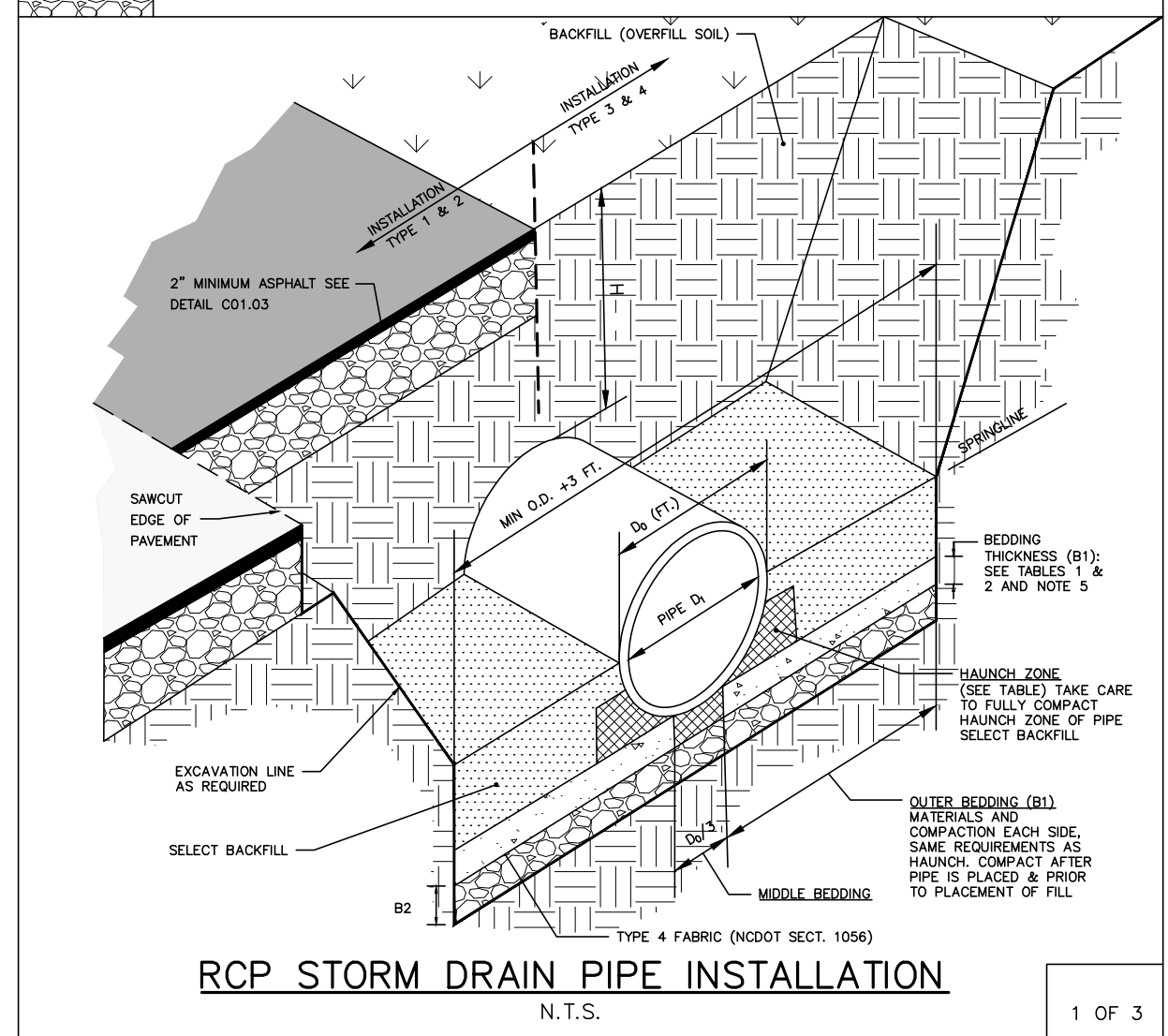
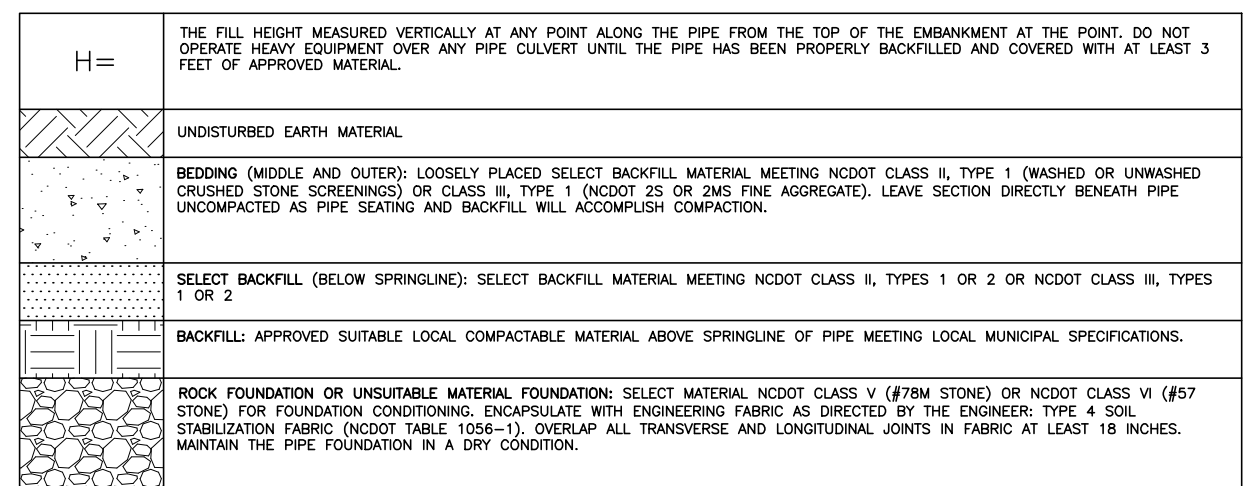


PAVED CONCRETE ISLAND

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

ROADWAY STANDARD DRAWING FOR
 CONCRETE ISLANDS

SHEET 1 OF 1
 852.01



RCP STORM DRAIN PIPE INSTALLATION

1 OF 3

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

SIDD	USCS	NCDOT/AASHTO
GRAVELLY SAND (CATEGORY I)	SW, SP, OW, GP	-NCDOT CLASS II-TYPE 1 (CRUSHED STONE SCREENINGS), LL<30; PI<6 -NCDOT CLASS III, TYPE 1 (2S OR 2M), LL<30; PI<6
SANDY SILT (CATEGORY II)	GM, SM, ALSO GC, SC WITH LESS THAN 20% PASSING #200 SIEVE	-NCDOT 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) -NCDOT 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	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	PAVED AREAS WITH GREATER THAN 2" BURY
TYPE 3	B1 = 5/8" (6" MIN. FOUNDATION, F/FT OF 1/2" MIN/24" MAX)	90% CATEGORY I	90% CATEGORY I OR 90% CATEGORY II	IN 5" W/ 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 90% CATEGORY III	NO COMPACTION REQUIRED, EXCEPT IF CATEGORY II, USE 90% CATEGORY III	NATURAL AREAS

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

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

STORM DRAIN PIPE INSTALLATION

2 OF 3

FILL HEIGHT TABLE²

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

FILL HEIGHT TABLE BASE ON:
 1. Y_s = 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.

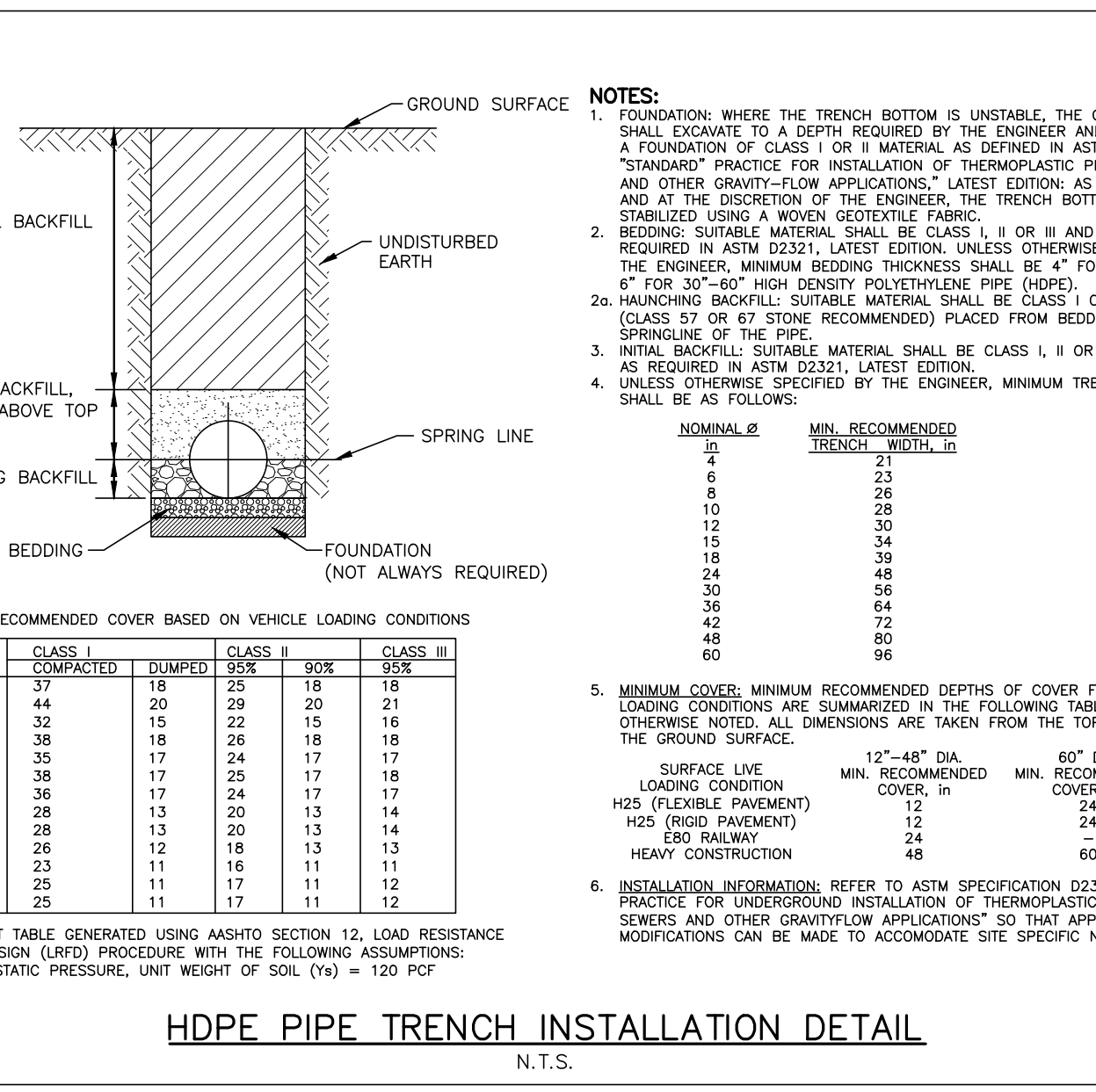
² FILL HEIGHT TABLES, THE PORTION EXCEPTED HERE, WAS DEVELOPED BY THE AMERICAN CONCRETE PIPE ASSOCIATION (ACPA) USING THE INDIRECT DESIGN METHOD IN ACCORDANCE WITH SECTION 12.10.4.3 OF THE ASHTO LRFD BRIDGE DESIGN SPECIFICATION, 4TH, 2007 WITH 2008 INTERIM.

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

81. SEE NCDOT PIPE SELECTION TABLE



HDPE PIPE TRENCH INSTALLATION DETAIL

N.T.S.

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.
 "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.
 2. 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).
 3. HAUNCHING BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II MATERIAL (CLASS 57 OR 67 STONE RECOMMENDED) PLACED FROM BEDDING TO THE SPRINGLINE OF THE PIPE.
 4. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
 5. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

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

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

PIPE DIA.	CLASS I	CLASS II	CLASS III
4"	37	15	25
6"	44	20	29
8"	52	25	33
10"	58	28	37
12"	65	32	41
15"	75	37	47
18"	84	42	53
24"	102	51	64
30"	120	60	75
36"	138	70	86
42"	156	80	97
48"	174	90	108
60"	210	108	130

7. SURFACE LOADS: MIN. RECOMMENDED COVER, IN

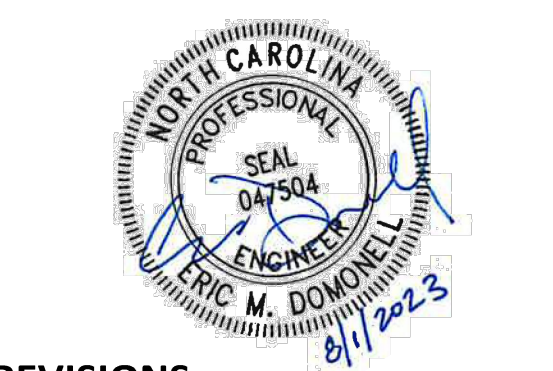
LOADING CONDITION	H25 (FLEXIBLE PAVEMENT)	H25 (RIGID PAVEMENT)	LR6 (RAILWAY)	HEAVY CONSTRUCTION
MIN. DIA.	12	14	24	60
MIN. COVER, IN	12	14	24	60

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.

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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-PH1-01
 CHECKED BY EMD
 DRAWN BY SME
 SCALE N/A
 DATE 08.01.2023

SHEET

STORM DRAINAGE & UTILITY DETAILS
C8.03

CID-23-5

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION