

Highroads Drive

Rogers Road

Pine Lake Drive

Captone Drive

Wood Lake Drive

Trellis Lane

Counselors Drive

SITE

SCALE 1"=500'



DEVELOPER
TRAVIS MANNING
AMH NC DEVELOPMENT, LP
16905 NORTHCROSS DRIVE
SUITE 200
HUNTERSVILLE, NC 28078
704-650-1936
TMANNING@AH4R.COM

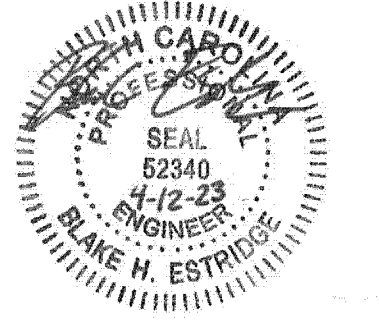
CIVIL ENGINEER:
BLAKE H. ESTRIDGE, PE
AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
8008 CORPORATE CENTER DRIVE
SUITE 110
CHARLOTTE, NC 28226
704-375-2438
BESTRIDGE@AMERICAN-EA.COM

SURVEYOR:
CHRISTOPHER FAULK, PLS
METROLINA LAND SURVEYING, INC.
8521 CROWN CRESCENT CT.
CHARLOTTE, NC 28227
704-741-1700

C1.0	COVER SHEET	07/26/2022
C2.0	EXISTING CONDITIONS	07/26/2022
C3.0	OVERALL SITE PLAN	07/26/2022
C3.1	SITE PLAN	07/26/2022
C3.2	SITE PLAN	07/26/2022
C3.3	SIGHT DISTANCE PLAN & PROFILE ROGERS ROAD	07/26/2022
C3.4	SIGNAGE & TRAFFIC MOVEMENT PLAN	12/05/2022
C4.0	OVERALL GRADING PLAN	07/26/2022
C4.1	GRADING PLAN	07/26/2022
C4.2	GRADING PLAN	07/26/2022
C4.3	DRAINAGE AREA MAP	07/26/2022
C5.0	STORM DRAIN PROFILES	07/26/2022
C5.1	STORM DRAIN PROFILES	07/26/2022
C5.2	STORM DRAIN PROFILES	07/26/2022
C5.3	STORM DRAIN PROFILES	07/26/2022
C5.4	BMP 1 PLAN	07/26/2022
C5.5	BMP 2 PLAN	07/26/2022
C5.6	BMP 3 PLAN	07/26/2022
C6.0	PLAN & PROFILE - WILLIAMS POND ROAD	07/26/2022
C6.1	PLAN & PROFILE - WILLIAMS POND ROAD	07/26/2022
C6.2	PLAN & PROFILE - TRADERS CAMP TRAIL	07/26/2022
C6.3	PLAN - ROGERS ROAD	09/16/2022
C6.4	TYPICAL SECTIONS - ROGERS ROAD	09/16/2022
C6.4A	TYPICAL SECTIONS	01/12/2023
C6.5	SIGNING & MARKING PLAN - ROGERS ROAD	09/16/2022
C6.6	CROSS SECTIONS	09/16/2022
C6.7	CROSS SECTIONS	09/16/2022
C6.8	CROSS SECTIONS	09/16/2022
C6.9	CROSS SECTIONS	09/16/2022
C6.10	TRAFFIC MAINTENANCE DETAILS	01/12/2023
C6.11	ROAD DETAILS	01/12/2023
C7.0	OVERALL EROSION CONTROL PLAN - PHASE 1	07/26/2022
C7.1	EROSION CONTROL PLAN - PHASE 1	07/26/2022
C7.2	EROSION CONTROL PLAN - PHASE 1	07/26/2022
C7.3	OVERALL EROSION CONTROL PLAN - PHASE 2	07/26/2022
C7.4	EROSION CONTROL PLAN - PHASE 2	07/26/2022
C7.5	EROSION CONTROL PLAN - PHASE 2	07/26/2022
C7.6	OVERALL EROSION CONTROL PLAN - PHASE 3	07/26/2022
C7.7	EROSION CONTROL PLAN - PHASE 3	07/26/2022
C7.8	EROSION CONTROL PLAN - PHASE 3	07/26/2022
C7.9	NGC01 DETAIL SHEETS	07/26/2022
C8.0	OVERALL UTILITY PLAN	07/26/2022
C8.1	SANITARY SEWER PLAN & PROFILE	07/26/2022
C8.2	SANITARY SEWER PLAN & PROFILE	07/26/2022
C8.3	SANITARY SEWER PLAN & PROFILE	07/26/2022
C9.0	OVERALL LANDSCAPE PLAN	07/26/2022
C9.1	LANDSCAPE PLAN	07/26/2022
C9.2	LANDSCAPE PLAN	07/26/2022
C9.3	PLANTING NOTES AND DETAILS	07/26/2022
C10.0	SITE DETAILS	07/26/2022
C10.1	SITE DETAILS	07/26/2022
C10.2	SITE DETAILS	07/26/2022
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C10.11	SITE DETAILS	07/26/2022
C10.12	SITE DETAILS	07/26/2022
----	PHOTOMETRIC PLAN	10/06/2022

REVISION
DATE

C.0	COVER SHEET	07/26/2022	04/12/2023
C.1	EXISTING CONDITIONS	07/26/2022	04/12/2023
C.3.0	OVERALL SITE PLAN	07/26/2022	04/12/2023
C.3.1	SITE PLAN	07/26/2022	04/12/2023
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----	PHOTOMETRIC PLAN	10/06/2022	-/-/-/-

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STIPULATION FOR REUSE

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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER:	C220009
CHECKED BY:	BHE
DRAWN BY:	BHE
DATE:	07/26/2022
SHEET TITLE:	

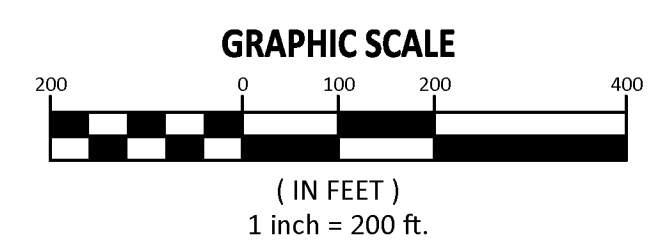
COVER SHEET

SHEET NO.: **C1-0**



NOTE

1.) CONTRACTOR TO MAINTAIN RECORD DRAWINGS OF ALL CHANGES THROUGHOUT CONSTRUCTION. AFTER PROJECT COMPLETION THESE DRAWINGS SHALL BE TURNED OVER TO THE OWNER'S REPRESENTATIVE.

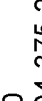
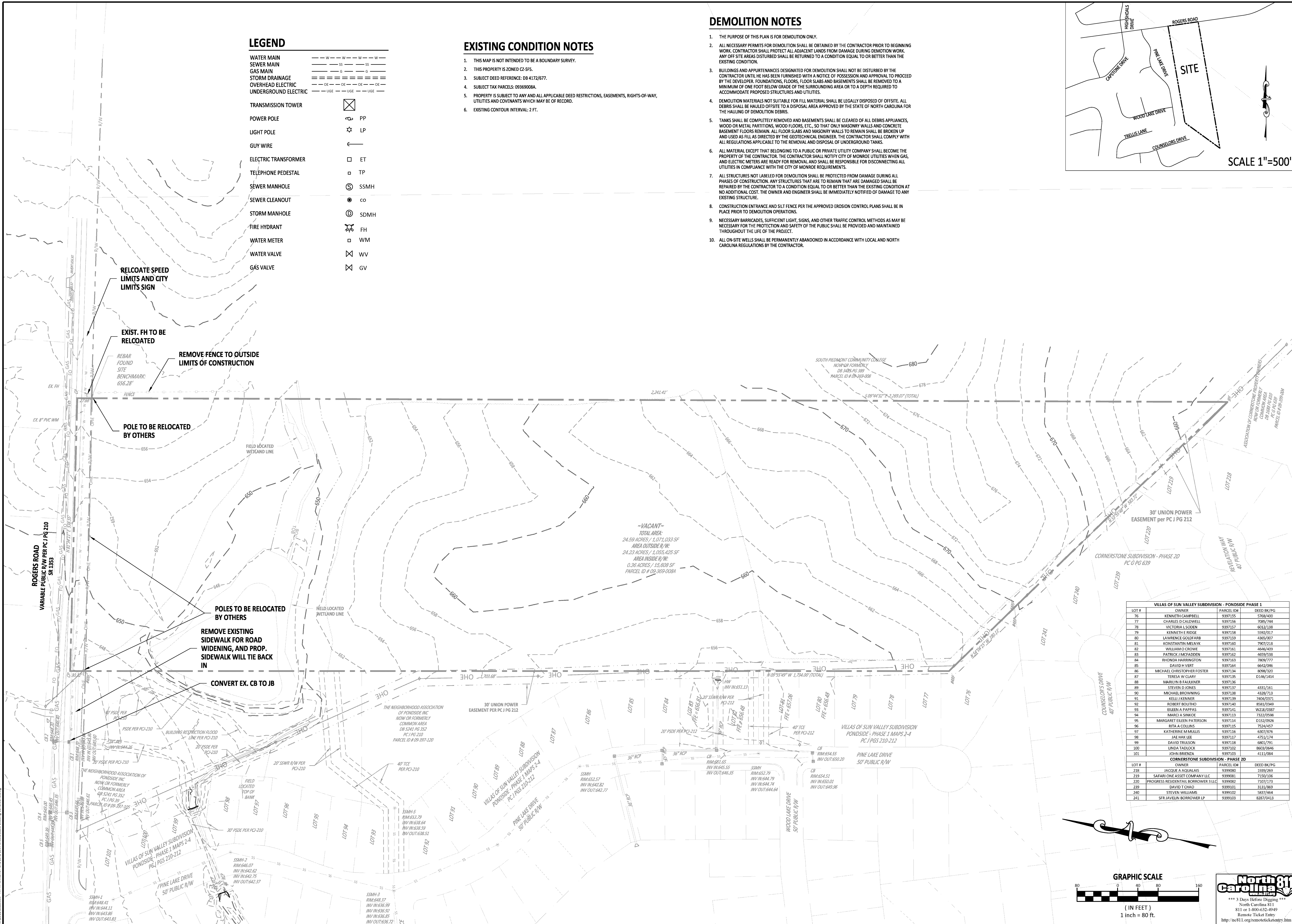
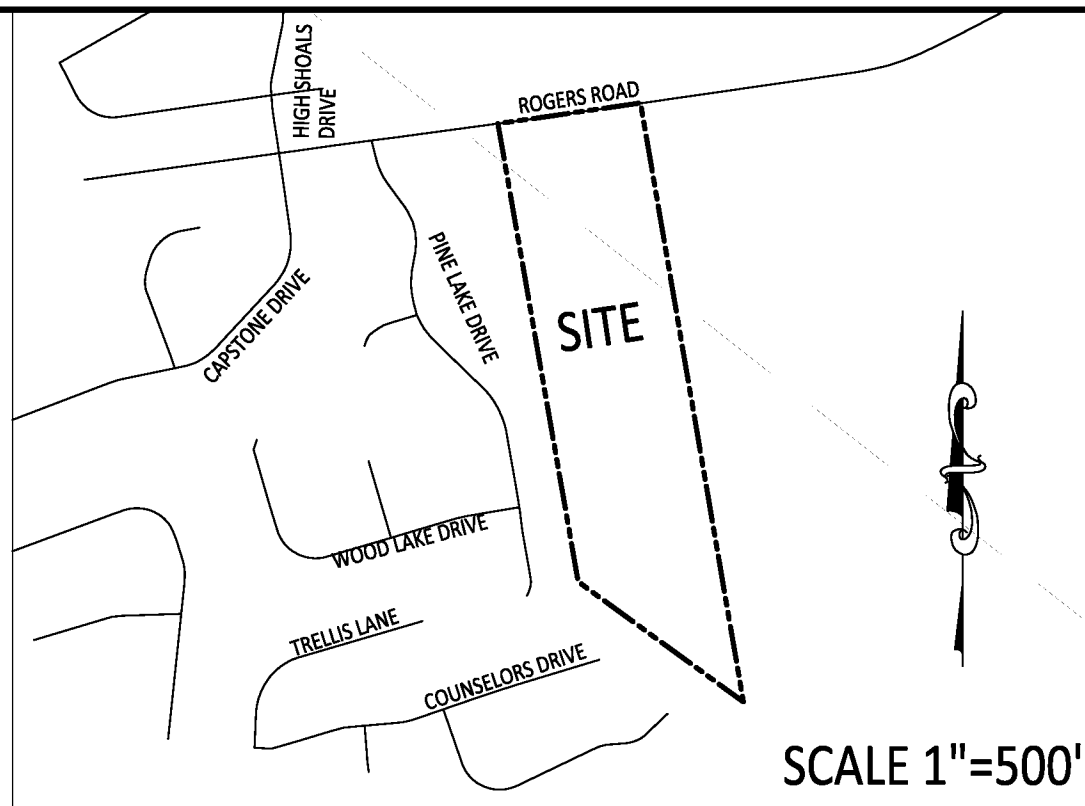


1 inch = 200 ft.

WATER MAIN	— W —	— W —	— W —	— W —
SEWER MAIN	— SS —	— SS —	— SS —	— SS —
GAS MAIN	— G —	— G —	— G —	— G —
STORM DRAINAGE	=====	=====	=====	=====
OVERHEAD ELECTRIC	— OE —	— OE —	— OE —	— OE —
UNDERGROUND ELECTRIC	— UGE —	— UGE —	— UGE —	— UGE —
TRANSMISSION TOWER				
POWER POLE		PP		
LIGHT POLE		LP		
GUY WIRE				
ELECTRIC TRANSFORMER		ET		
TELEPHONE PEDESTAL		TP		
SEWER MANHOLE		SSMH		
SEWER CLEANOUT		co		
STORM MANHOLE		SDMH		
FIRE HYDRANT		FH		
WATER METER		WM		
WATER VALVE		WV		
GAS VALVE		GV		

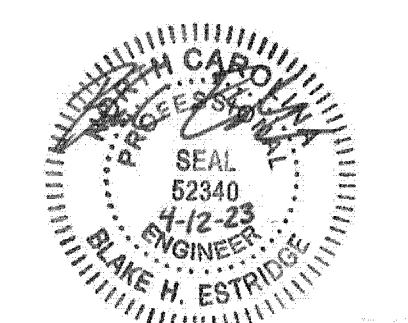
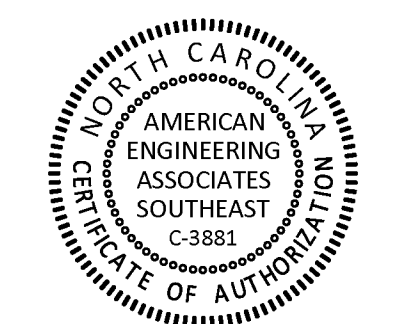
1. THIS MAP IS NOT INTENDED TO BE A BOUNDARY SURVEY.
2. THIS PROPERTY IS ZONED CZ-SF5.
3. SUBJECT DEED REFERENCE: DB 4172/677.
4. SUBJECT TAX PARCELS: 09369008A.
5. PROPERTY IS SUBJECT TO ANY AND ALL APPLICABLE DEED RESTRICTIONS, EASEMENTS, RIGHTS-OF-WAY, UTILITIES AND COVENANTS WHICH MAY BE OF RECORD.
6. EXISTING CONTOUR INTERVAL: 2 FT.

2. THE PURPOSE OF THIS PLAN IS FOR DEMOLITION ONLY.
3. ALL NECESSARY PERMITS FOR DEMOLITION SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO BEGINNING WORK. CONTRACTOR SHALL PROTECT ALL ADJACENT LANDS FROM DAMAGE DURING DEMOLITION WORK. ANY OFF-SITE AREAS DISTURBED SHALL BE RETURNED TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITION.
4. BUILDINGS AND APPURTENANCES DESIGNATED FOR DEMOLITION SHALL NOT BE DISTURBED BY THE CONTRACTOR UNTIL HE HAS BEEN FURNISHED WITH A NOTICE OF POSSESSION AND APPROVAL TO PROCEED BY THE DEVELOPER, FOUNDATIONS, FLOORS, FLOOR SLABS AND BASEMENTS SHALL BE REMOVED TO A MINIMUM OF ONE FOOT BELOW GRADE OF THE SURROUNDING AREA OR TO A DEPTH REQUIRED TO ACCOMMODATE PROPOSED STRUCTURAL UTILITIES.
5. DEMOLITION MATERIALS NOT SUITABLE FOR FILL MATERIAL SHALL BE LEGALLY DISPOSED OF OFF-SITE. ALL DEBRIS SHALL BE HAULED OFFSITE TO A DISPOSAL AREA APPROVED BY THE STATE OF NORTH CAROLINA FOR THE HAULING OF DEMOLITION DEBRIS.
6. TANKS SHALL BE COMPLETELY REMOVED AND BASEMENTS SHALL BE CLEARED OF ALL DEBRIS APPLIANCES, WOOD OR METAL PARTIANS, WOOD FLOORS, ETC., SO THAT ONLY MASONRY WALLS AND CONCRETE FOUNDATIONS REMAIN. ALL EXISTING CONCRETE FOUNDATION WALLS TO REMAIN SHALL BE BROKEN UP, AND USED AS FILL DIRECTED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL COMPLY WITH ALL REGULATIONS APPLICABLE TO THE REMOVAL AND DISPOSAL OF UNDERGROUND TANKS.
7. ALL MATERIAL EXCEPT THAT BELONGING TO A PUBLIC OR PRIVATE UTILITY COMPANY SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY CITY OF MONROE UTILITIES WHEN GAS, WATER OR SEWER LINES ARE TO BE REMOVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTING ALL UTILITIES IN COMPLIANCE WITH THE CITY OF MONROE REQUIREMENTS.
8. ALL STRUCTURES NOT LABELED FOR DEMOLITION SHALL BE PROTECTED FROM DAMAGE DURING ALL PHASES OF CONSTRUCTION. ANY STRUCTURES THAT ARE TO REMAIN THAT ARE DAMAGED SHALL BE REBUILT BY THE CONTRACTOR TO THE SAME CONDITION AS OR BETTER THAN THE EXISTING CONDITION AT NO ADDITIONAL COST. THE OWNER AND ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF DAMAGE TO ANY EXISTING STRUCTURE.
9. CONSTRUCTION ENTRANCE AND SILT FENCE PER THE APPROVED EROSION CONTROL PLANS SHALL BE IN PLACE PRIOR TO DEMOLITION OPERATIONS.
10. NECESSARY BARRICADES, SUFFICIENT LIGHT, SIGNS, AND OTHER TRAFFIC CONTROL METHODS AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT.
11. ALL ON-SITE WELLS SHALL BE PERMANENTLY ABANDONED IN ACCORDANCE WITH LOCAL AND NORTH CAROLINA REGULATIONS BY THE CONTRACTOR.



AMERICAN
Engineering

American Engineering Associates - Southeast, P.A.
8008 Corporate Center Drive, Suite 110
Charlotte, NC 28226
704-375-2438

[illegible]

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Williams Pond

Loggers Road, Union County
Indian Trail, NC 28110

JOB NUMBER:	C220009
CHECKED BY:	BHE
DRAWN BY:	BHE
DATE:	07/26/2022
SHEET TITLE:	

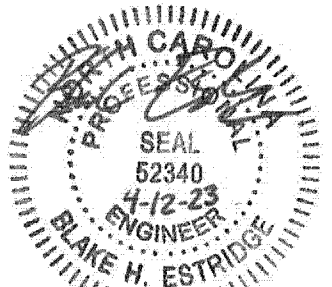
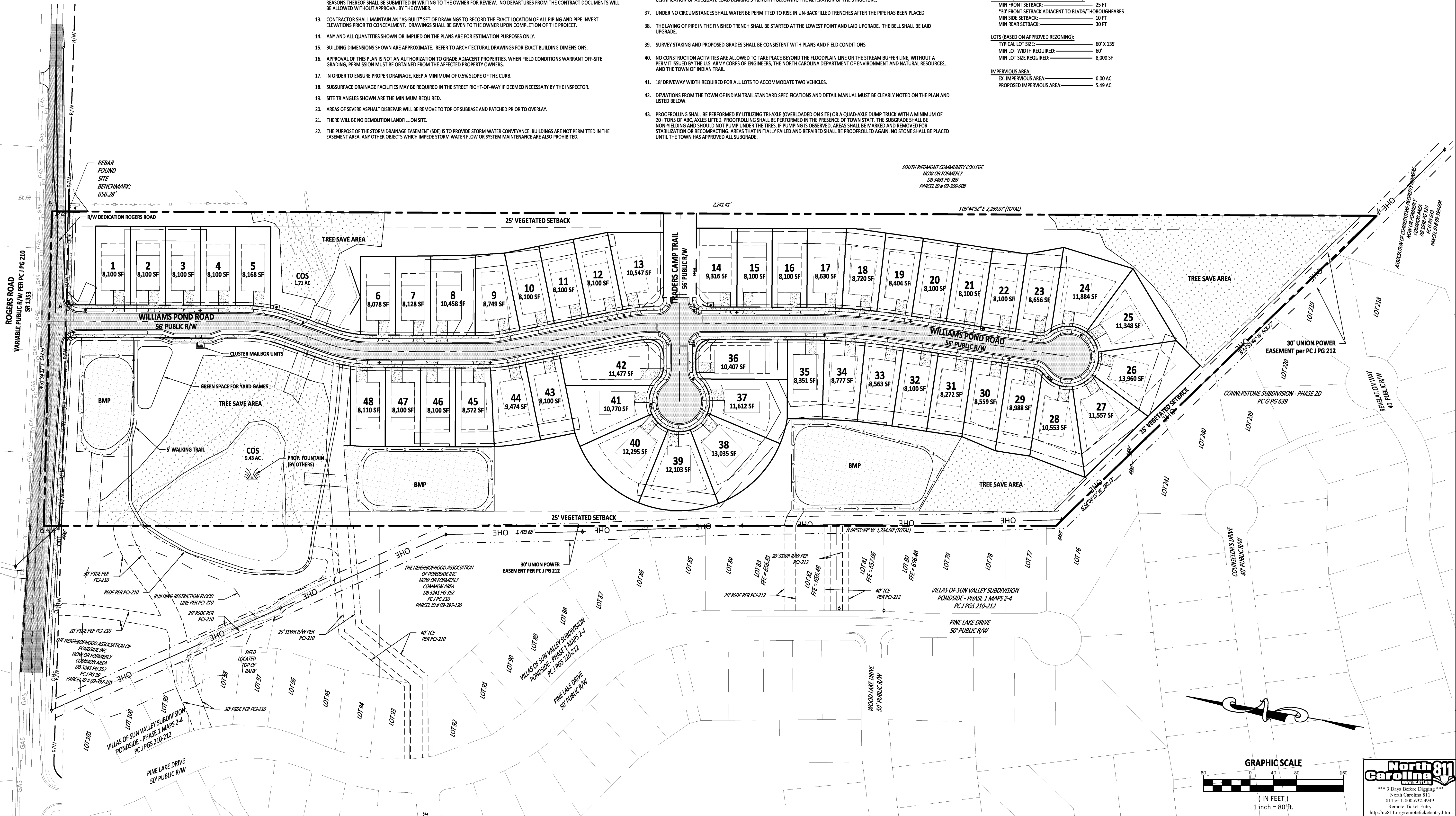
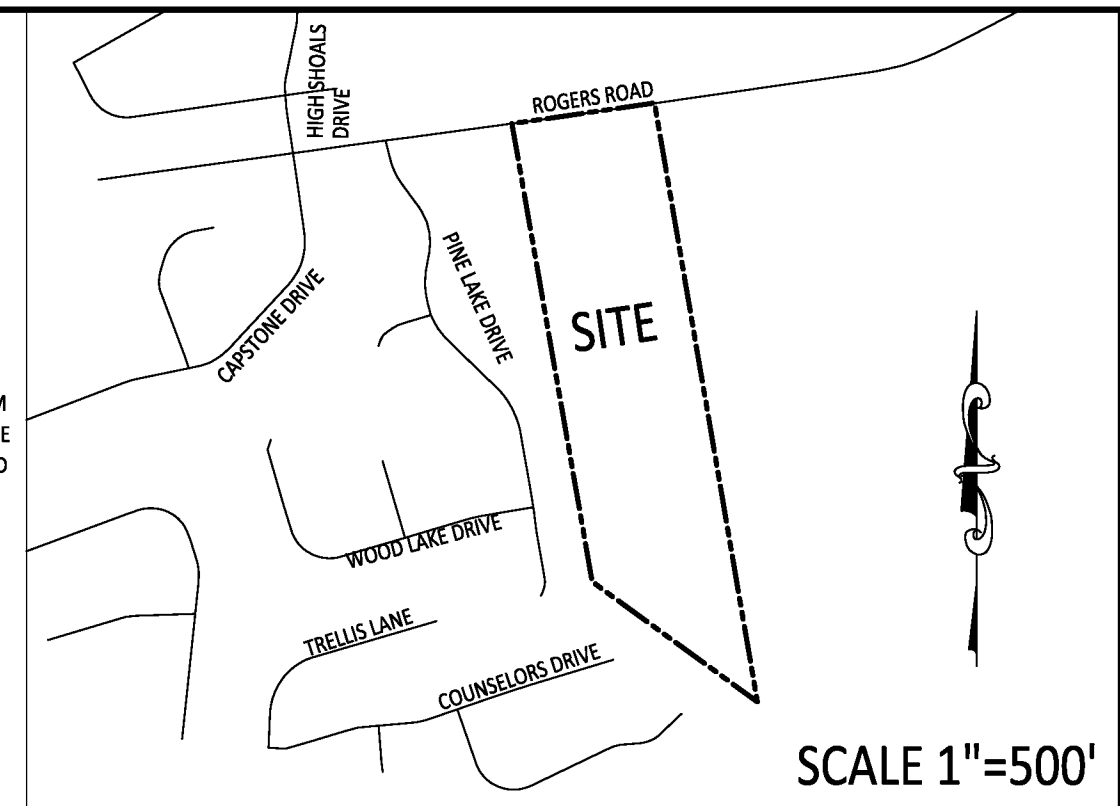
EXISTING CONDITIONS

SHEET NO.: **C2.0**

	SIDEWALKS
	TREE SAVE
	ASPHALT PAVEMENT
DI	DROP INLET
CB	CATCH BASIN
RCP	REINFORCED CONCRETE PIPE
FES	FLARED END SECTION
SSRW	SANITARY SEWER RIGHT OF WAY
SDE	PUBLIC STORM DRAIN EASEMENT
	PROPERTY LINE
	ADJACENT PROPERTY LINE
	EASEMENT LINE
SS SS	EX. GRAVITY SEWER
	EX. UNDERGROUND TELEPHONE LINE
	EX. GAS LINE
	EX. UNDERGROUND ELECTRIC LINE
OE OE OE OE	EX. OVERHEAD ELECTRIC
W	EX. WATER LINE
550	PROP. MAJOR CONTOUR
548	PROP. MINOR CONTOUR
550	EX. MAJOR CONTOUR
548	EX. MINOR CONTOUR

1. BEFORE YOU DIG, STOP. CALL THE NC ONE-CALL CENTER AT 1-800-632-4949. IT'S THE LAW.
2. EXISTING UTILITIES ARE SHOWN FROM THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE AND OTHER UTILITIES BEFORE STARTING CONSTRUCTION. NOTIFY UTILITY LOCATION COMPANY (ONE CALL @ 1-800-632-4949) OR INDIVIDUAL UTILITY OWNERS FOR UNDERGROUND LOCATIONS AT LEAST 48 HOURS IN ADVANCE.
3. THE CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, RIGHT-OF-WAYS AND UTILITIES, PUBLIC OR PRIVATE, BEFORE WORKING IN THESE AREAS.
4. THE CONTRACTOR SHALL PUT IN PLACE SUCH TEMPORARY EROSION CONTROL MEASURES AS INDICATED ON THE PLANS. THESE MEASURES SHALL BE INSPECTED AND EVALUATED DURING CONSTRUCTION OPERATION FOR THEIR EFFECTIVENESS IN PREVENTING EROSION MATERIAL AND SEDIMENT FROM DISCHARGING FROM THE WORK AREA. IF REQUIRED, AND AS DIRECTED BY THE CITY INSPECTOR, ADDITIONAL TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTITUTED AND INSTALLED.
5. ALL CONSTRUCTION WITHIN THE TOWN OF INDIAN TRAIL SHALL BE COMPLETED IN ACCORDANCE WITH TOWN OF INDIAN TRAIL STANDARDS.
6. PROTECT ALL PROPERTY MONUMENTS AND PINS. MONUMENTS AND PINS THAT WILL BE DISTURBED DURING CONSTRUCTION SHALL BE REFERENCED AND REPLACED BY A LICENSED LAND SURVEYOR.
7. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SUCH THAT WORKMEN AND THE PUBLIC WILL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
8. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AND/OR MATERIAL DUE TO CONSTRUCTION OPERATIONS. ALL GUTTER SURFACES, UTILITY POLES, CURBWAYS, DITCHES, CURB OR OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATIONS.
10. THE CONTRACTOR SHALL REMOVE DEBRIS FROM EXISTING CATCH BASIN AND CLEAN OUT EXISTING DRAIN PIPES. REPAIR AND REPLACE EXISTING CATCH BASIN FRAME & GRATE AS NEEDED.
11. ALL STRIPING AND DIRECTIONAL ARROWS TO BE PAINTED REFLECTIVE WHITE, TWO COATS.
12. ALL PAVING SHALL CONFORM WITH PAVING DETAIL ON SHEET C10.1.
13. IF DEPARTURES FROM THE DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE SUBMITTED IN WRITING TO THE OWNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS WILL BE ALLOWED WITHOUT APPROVAL BY THE OWNER.
14. THE CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING AND PIPE INVERT ELEVATIONS PRIOR TO CONCRETE. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT.
15. ANY AND ALL QUANTITIES SHOWN OR IMPLIED ON THE PLANS ARE FOR ESTIMATION PURPOSES ONLY.
16. BUILDING DIMENSIONS SHOWN ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS.
17. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS.
18. IN ORDER TO ENSURE PROPER DRAINAGE, KEEP A MINIMUM OF 0.5% SLOPE OF THE CURB.
19. SUBSURFACE DRAINAGE FACILITIES MAY BE REQUIRED IN THE STREET RIGHT-OF-WAY IF DEEMED NECESSARY BY THE INSPECTOR.
20. SITE TRIANGLES SHOWN ARE THE MINIMUM REQUIRED.
21. AREAS OF SEVERE ASPHALT DISREPAIR WILL BE REMOVED TO TOP OF SUBBASE AND PATCHED PRIOR TO OVERLAY.
22. THERE WILL BE NO DEMOLITION LANDFILL ON SITE.
23. THE PURPOSE OF THE STORM DRAINAGE EASEMENT (SDE) IS TO PROVIDE STORM WATER CONVEYANCE. BUILDINGS ARE NOT PERMITTED IN THE EASEMENT AREA. ANY OTHER OBJECTS WHICH IMPEDE STORM WATER FLOW OR SYSTEM MAINTENANCE ARE ALSO PROHIBITED.

ZONING:	CZ-SFS (PER WILLIAMS POND APPROVED REZONING DATE 01/07/2021)
ADDRESS:	ROGERS ROAD
PARCEL ID #:	INDIAN TRAIL, NC 28110
DEED BOOK / PAGE:	0936008A
TOTAL SITE AREA:	DB 4172/677
R/W DEDICATION ROGERS ROAD:	24.59 AC
NET SITE AREA:	0.36 AC
PROPOSED DENSITY:	24.23 AC
	1.98 DU/AC - DENSITY HAS CHANGED FROM 1.98 DU/AC (REZONING CONDITION #7) DUE TO R/W DEDICATION ALONG ROGERS ROAD
PROPOSED LOT:	48 LOTS
PROPOSED TOTAL AREA IN LOTS:	10.35 AC
PROPOSED TOTAL AREA IN R/W:	2.85 AC
PROPOSED COMMON OPEN SPACE:	11.04 AC (45.6%)
DISTURBED AREA:	16 AC
<u>PROPOSED TREE SAVE:</u>	
TOTAL SITE AREA:	24.59 AC
R/W DEDICATION ROGERS ROAD:	0.36 AC
EX. UNION POWER EASEMENT:	0.56 AC
EX. POND:	0.61 AC
NET SITE AREA:	23.06 AC
REQUIRED TREE SAVE:	3.46 AC (15.0%)
PROPOSED TREE SAVE:	3.59 AC (15.6%)
<u>LINEAR FEET OF STREET:</u>	
WILLIAMS FOND ROAD:	3.725 FT
TRADERS CAMP LANE:	1265 FT
<u>SETBACKS (BASED ON APPROVED REZONING):</u>	
MIN FRONT SETBACK:	25 FT
+33% FROM SETBACK ADJACENT TO BLVD/HIGHWAYS/FARMS	
MIN SIDE SETBACK:	10 FT
MIN REAR SETBACK:	30 FT
<u>LOTS (BASED ON APPROVED REZONING):</u>	
TYPICAL LOT SIZE:	60' X 135'
MIN LOT WIDTH REQUIRED:	60'
MIN LOT SIZE REQUIRED:	8,000 SF
<u>IMPERVIOUS AREA:</u>	
EX. IMPERVIOUS AREA:	0.00 AC
PROPOSED IMPERVIOUS AREA:	5.49 AC

[illegible]

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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

3 NUMBER:	C220
CHECKED BY:	
AWN BY:	
TE:	07/26/2
EET TITLE:	

OVERALL SITE PLAN

FET NO.: _____

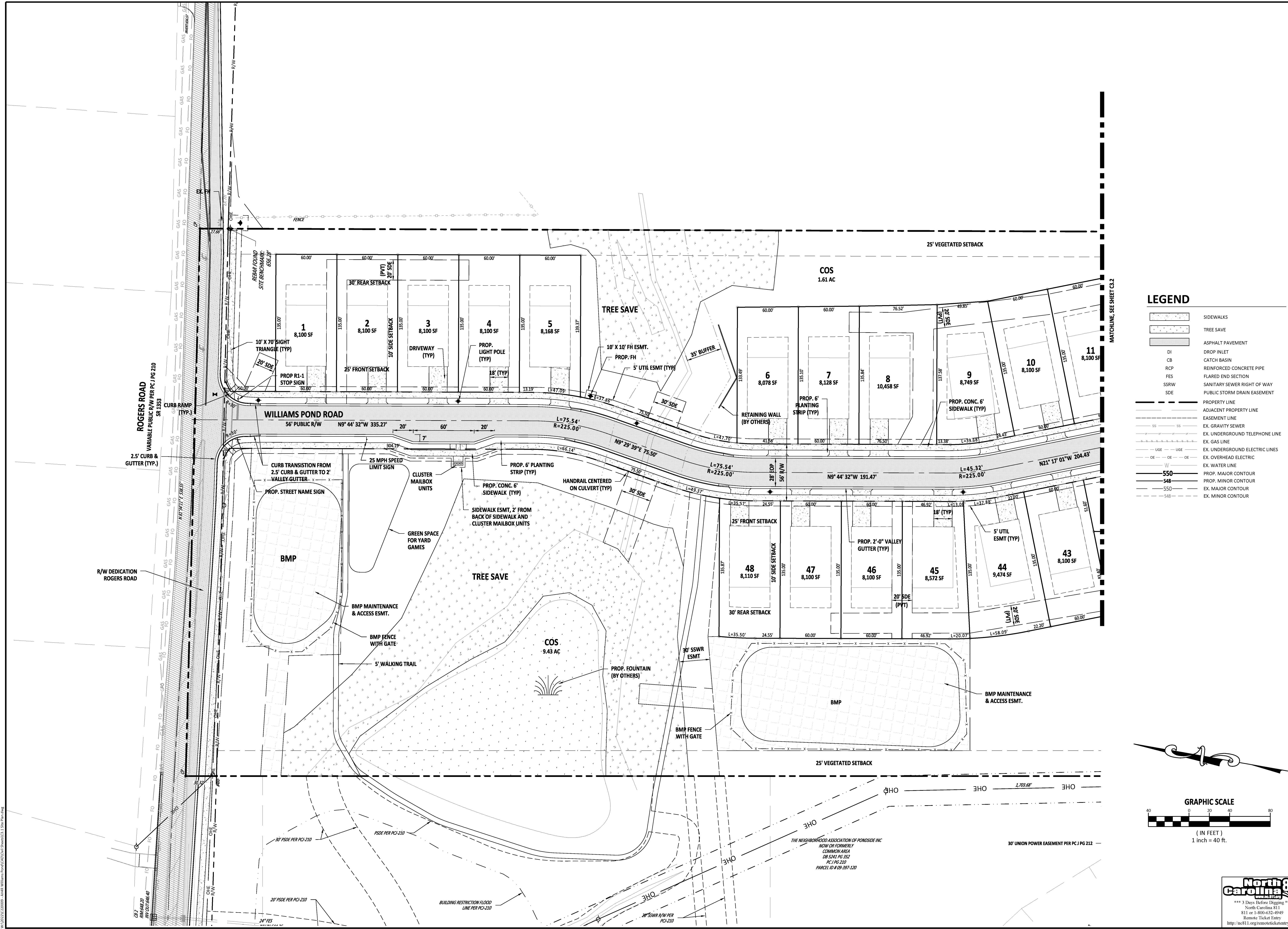
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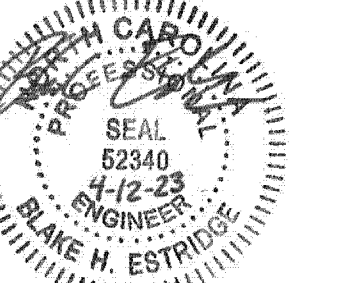
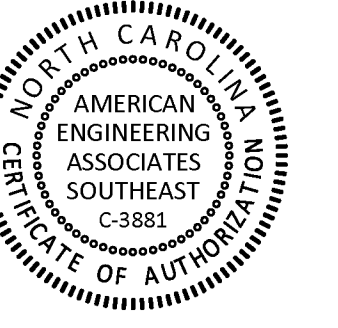
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JOB NUMBER:	C220009
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DATE:	07/26/2022
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SHEET NO.: **C3.1**



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Rogers Road, Union County
Indian Trail, NC 28110

SITE PLAN

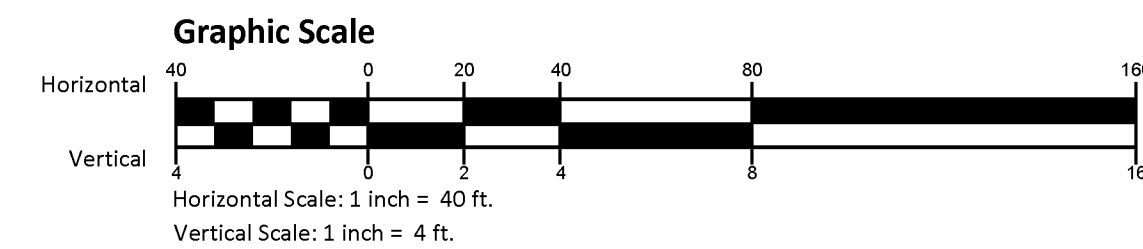
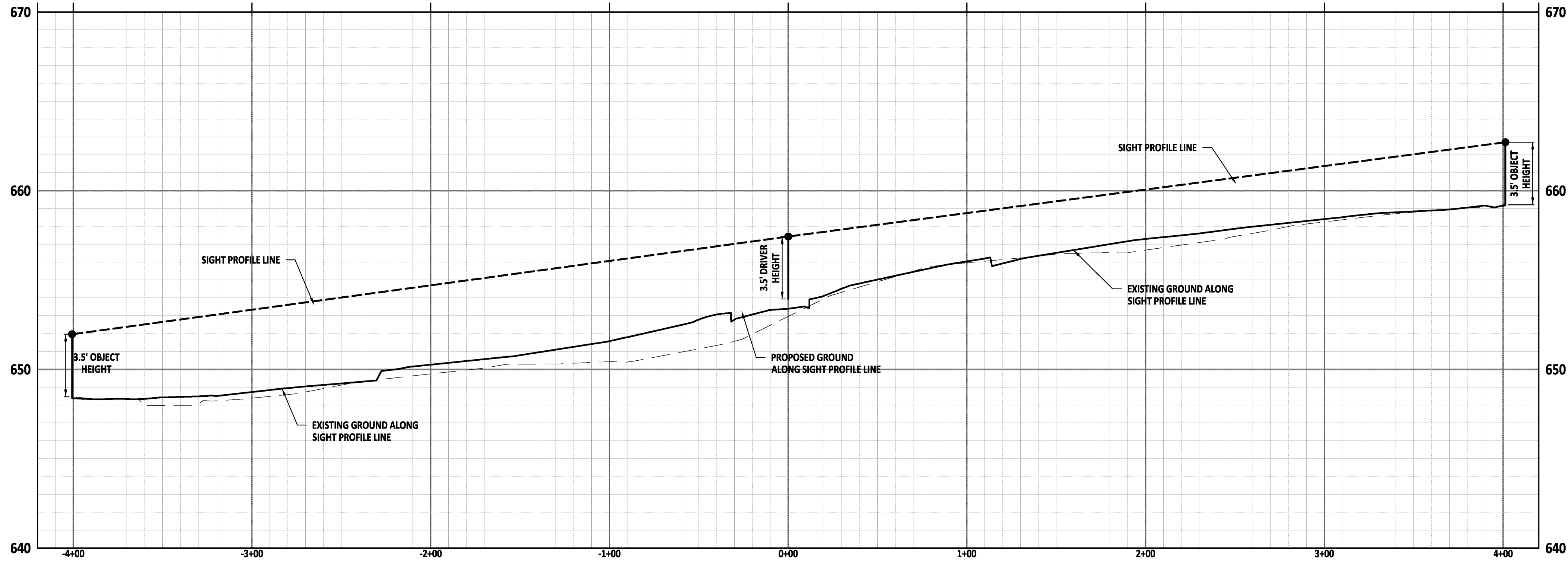
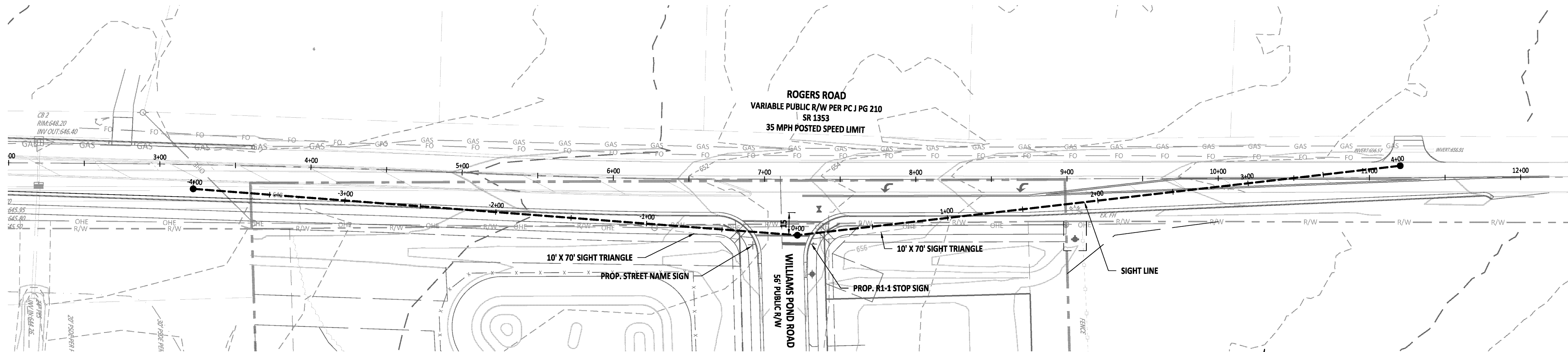
SHEET NO.: _____



W:\2022\220009 - A448 Williams Pond\CAD\Civil Sheets\C3.3 Sight Distance Plan & Profile Rogers Road.dwg

GENERAL NOTES

1. OWNER IS RESPONSIBLE TO REMOVE EXISTING TREES/OBSTRUCTIONS LOCATED WITHIN SIGHT LINE. PERMISSION FROM ADJACENT PROPERTY OWNER IS REQUIRED PRIOR TO TREE/OBSTRUCTIONS REMOVAL FROM ADJACENT PROPERTY. IF TREES ARE ONLY TRIMMED AND NOT FULLY REMOVED AN EASEMENT WILL BE REQUIRED IN ORDER TO MAINTAIN CLEAR SIGHT DISTANCE.



NO. DATE REVISION:

STIPULATION FOR REUSE

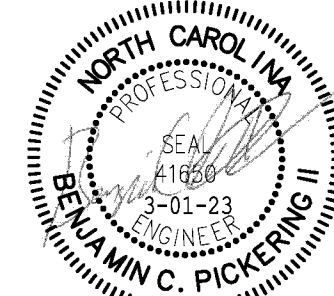
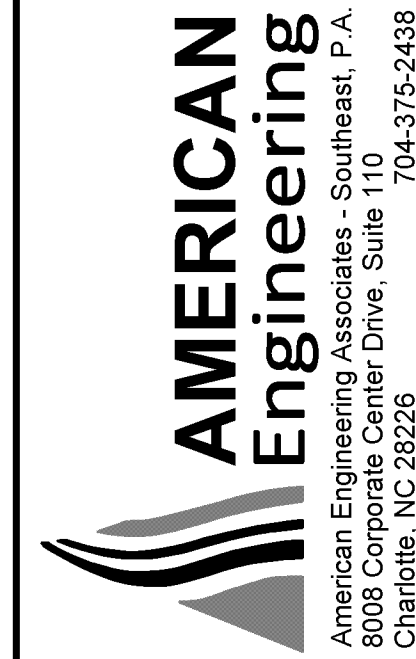
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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C220009
CHECKED BY: BCP
DRAWN BY: KBR
DATE: 9/16/2022

SHEET TITLE:
**SIGHT
DISTANCE PLAN
& PROFILE
ROGERS ROAD**

SHEET NO.:
C3.3



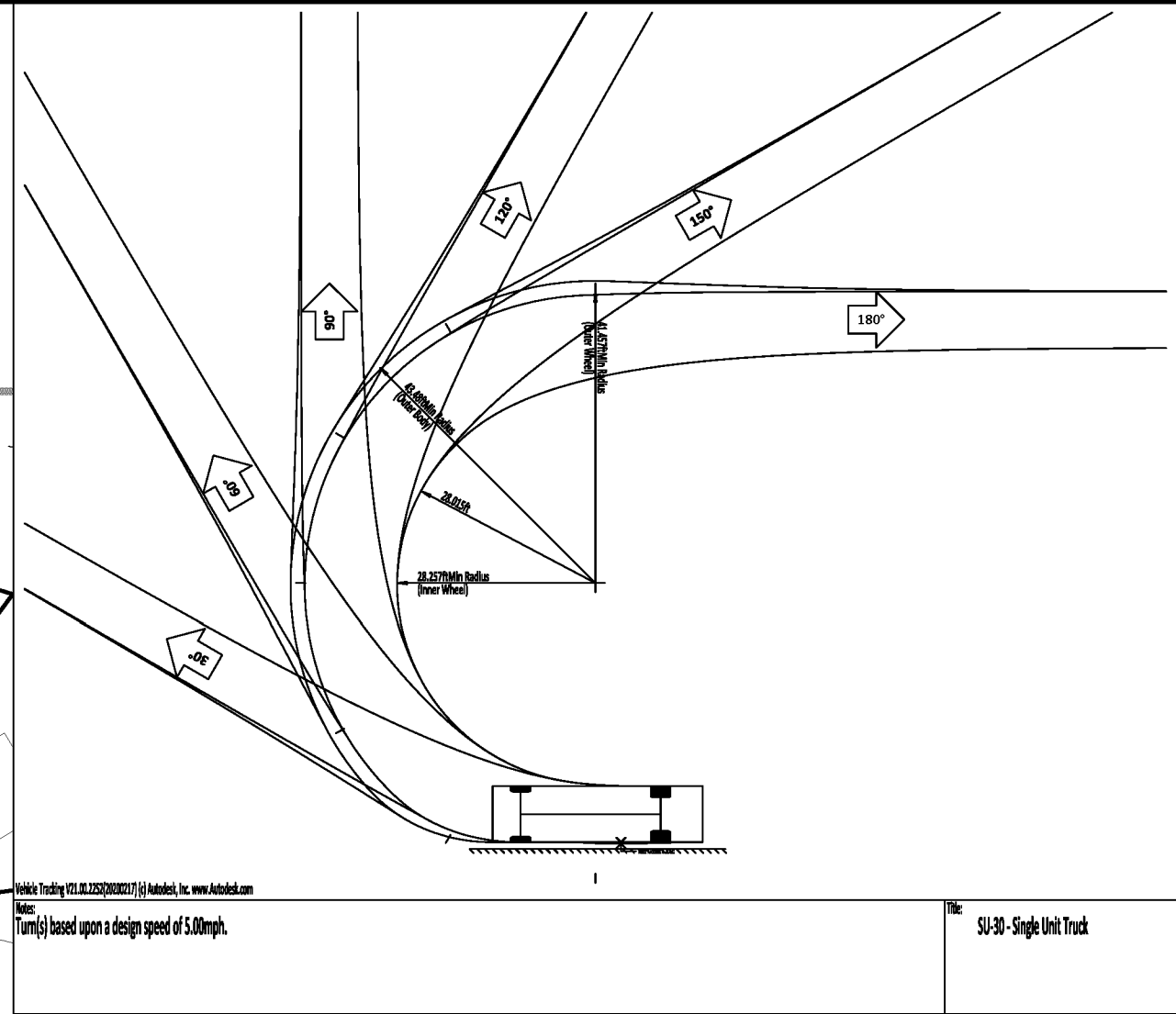
W:\2022\220009 - A448 Williams Pond\CAD\Civil Sheets\C3.4 Signage & Traffic Movement Plan.dwg

ROGERS ROAD
VARIABLE PUBLIC R/W PER PC J Pg 210
SR 1353

WILLIAMS POND ROAD
56' PUBLIC R/W

TRADERS CAMP TRAIL
56' PUBLIC R/W

WILLIAMS POND ROAD
56' PUBLIC R/W



GRAPHIC SCALE
(IN FEET)
1 inch = 80 ft.

North Carolina 811
www.nc811.org
*** 3 Days Before Digging ***
North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
http://nc811.org/remoteticketentry.htm

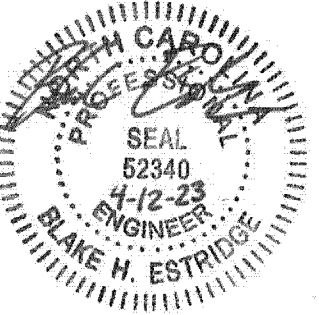
Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C220009
CHECKED BY: BHE
DRAWN BY: BHE
DATE: 07/26/2022
SHEET TITLE:
SIGNAGE & TRAFFIC MOVEMENT PLAN
SHEET NO.: **C3.4**

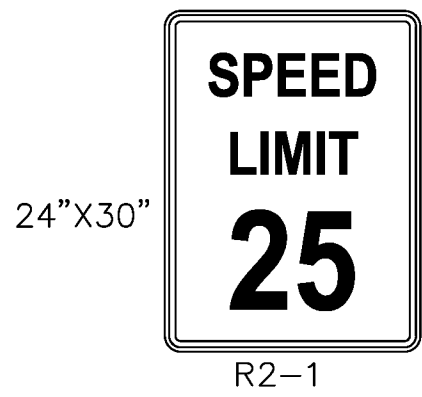
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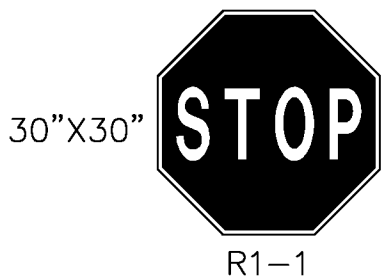


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NOTE:
SIGN AND POST SHALL BE PER MUTCD (LATEST EDITION)

SPEED LIMIT SIGN DETAIL
N.T.S.



NOTE:
SIGN AND POST SHALL BE PER MUTCD (LATEST EDITION)

STOP SIGN DETAIL
N.T.S.

GRAPHIC SCALE
(IN FEET)
1 inch = 80 ft.

SOUTH PIEDMONT COMMUNITY COLLEGE
NOW OR FORMERLY
200 JAMES PG 389
PARCEL ID # 09-369-008

REFLECTIVE TEMPORARY BARRICADE
SEE DETAIL T_14.01 (SHEET C10.5)

R1-1 STOP SIGN
SEE DETAIL THIS SHEET

R1-1 STOP SIGN
24" STOP BAR

R1-1 STOP SIGN
SEE DETAIL THIS SHEET
STREET NAME SIGN
SEE DETAIL SHEET C10.0

R1-1 STOP SIGN
SEE DETAIL THIS SHEET

WILLIAMS POND ROAD
56' PUBLIC R/W

STREET NAME SIGN
SEE DETAIL SHEET C10.0

25 MPH SPEED LIMIT SIGN
SEE DETAIL THIS SHEET

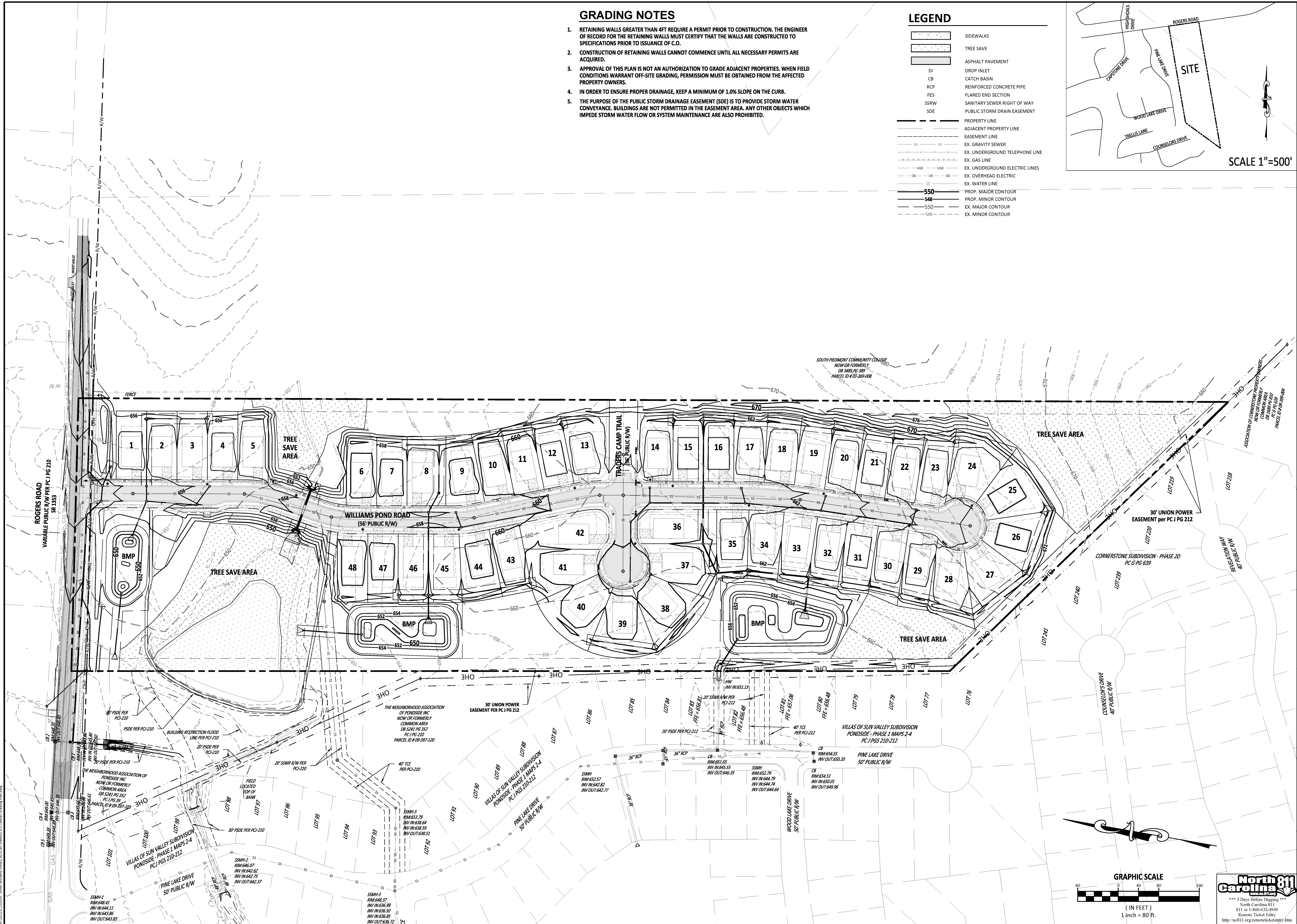
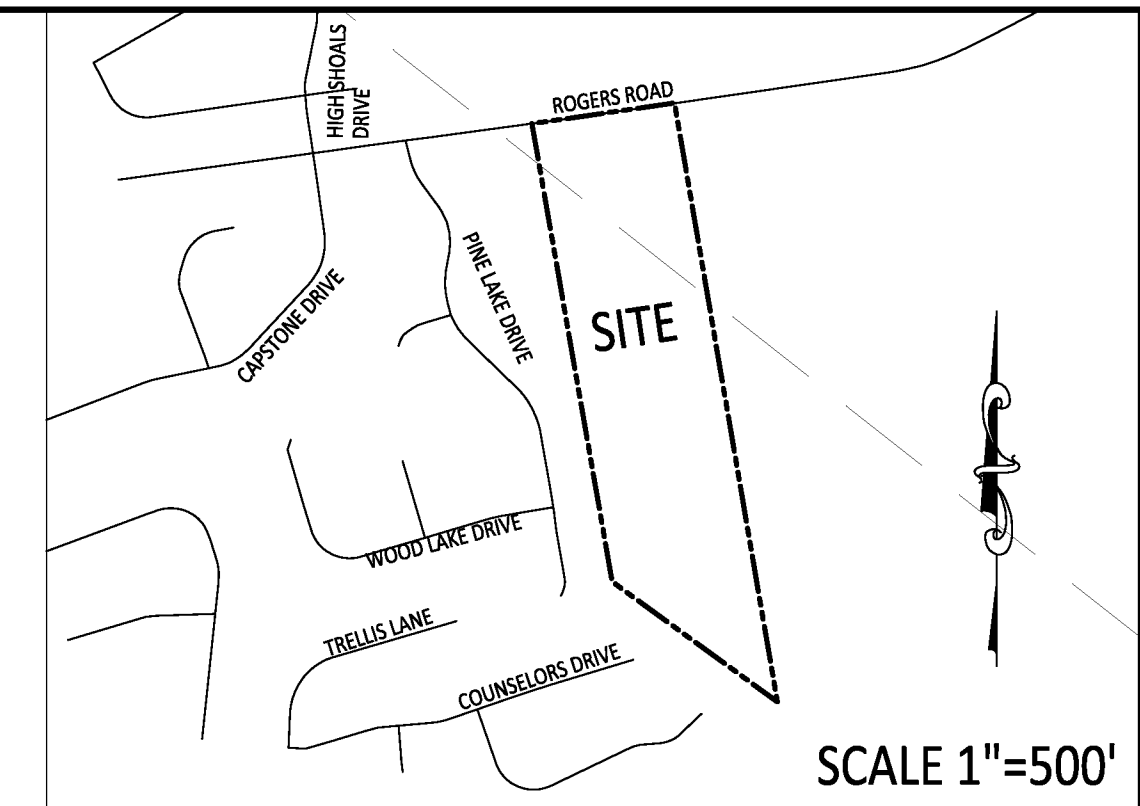
ROGERS ROAD
VARIABLE PUBLIC R/W PER PC J Pg 210
SR 1353

GRAPHIC SCALE

(IN FEET)
1 inch = 80 ft.

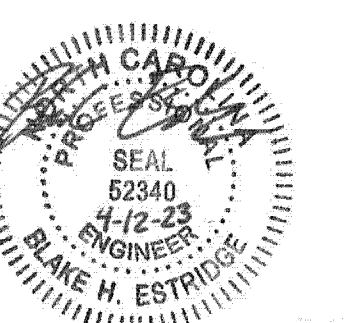
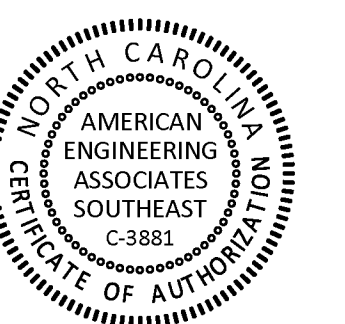
1. RETAINING WALLS GREATER THAN 4FT REQUIRE A PERMIT PRIOR TO CONSTRUCTION. THE ENGINEER OF RECORD FOR THE RETAINING WALLS MUST CERTIFY THAT THE WALLS ARE CONSTRUCTED TO SPECIFICATIONS PRIOR TO ISSUANCE OF C.O.
2. CONSTRUCTION OF RETAINING WALLS CANNOT COMMENCE UNTIL ALL NECESSARY PERMITS ARE ACQUIRED.
3. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS.
4. IN ORDER TO ENSURE PROPER DRAINAGE, KEEP A MINIMUM OF 1.0% SLOPE ON THE CURB.
5. THE PURPOSE OF THE PUBLIC STORM DRAINAGE EASEMENT (SDE) IS TO PROVIDE STORM WATER CONVEYANCE. BUILDINGS ARE NOT PERMITTED IN THE EASEMENT AREA. ANY OTHER OBJECTS WHICH IMPEDE STORM WATER FLOW OR SYSTEM MAINTENANCE ARE ALSO PROHIBITED.

	SIDEWALKS
	TREE SAVE
	ASPHALT PAVEMENT
DI	DROP INLET
CB	CATCH BASIN
RCP	REINFORCED CONCRETE PIPE
FSW	FLARED END SECTION
SSRW	SANITARY SEWER RIGHT OF WAY
SDE	PUBLIC STORM DRAIN EASEMENT
	PROPERTY LINE
	ADJACENT PROPERTY LINE
	EASEMENT LINE
SS	EX. GRAVITY SEWER
— OF —	EX. UNDERGROUND TELEPHONE LINE
G. G. G. G. G. G. G. G. G. G.	EX. GAS LINE
— USE —	EX. UNDERGROUND ELECTRIC LINE
— OE —	EX. OVERHEAD ELECTRIC
W	EX. WATER LINE
550	PROP. MAJOR CONTOUR
548	PROP. MINOR CONTOUR
550	EX. MAJOR CONTOUR
— 548 —	EX. MINOR CONTOUR



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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

NUMBER:	C220009
BOOKED BY:	BHE
PRINTED BY:	BHE
DATE:	07/26/2022
REPORT TITLE:	

OVERALL GRADING PLAN

T NO.: **C4.0**

[illegible]

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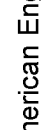
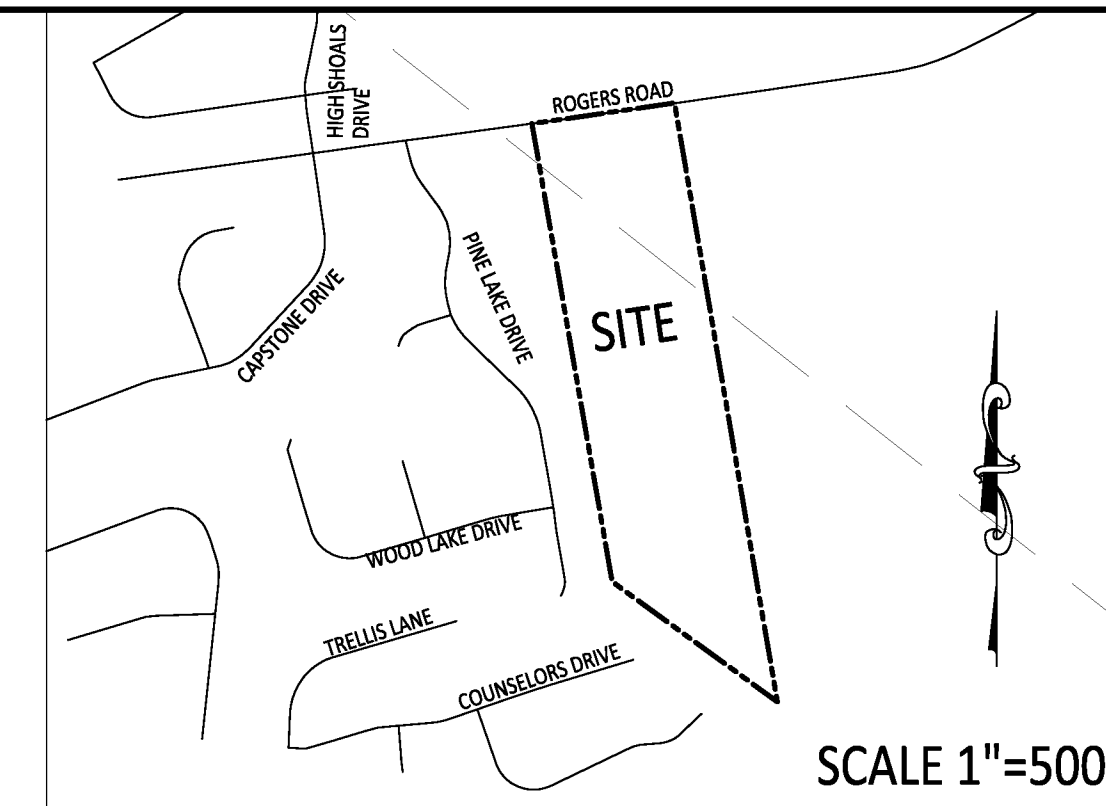
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Indian Trail, NC 28110

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DATE:	07/26/2022
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GRADING PLAN

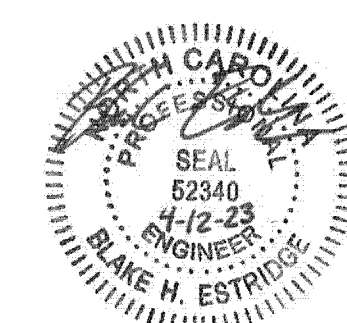
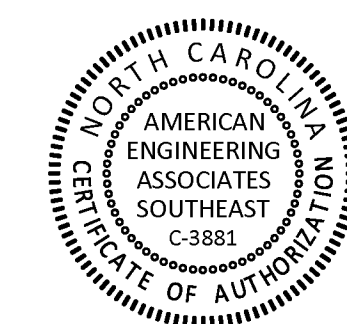
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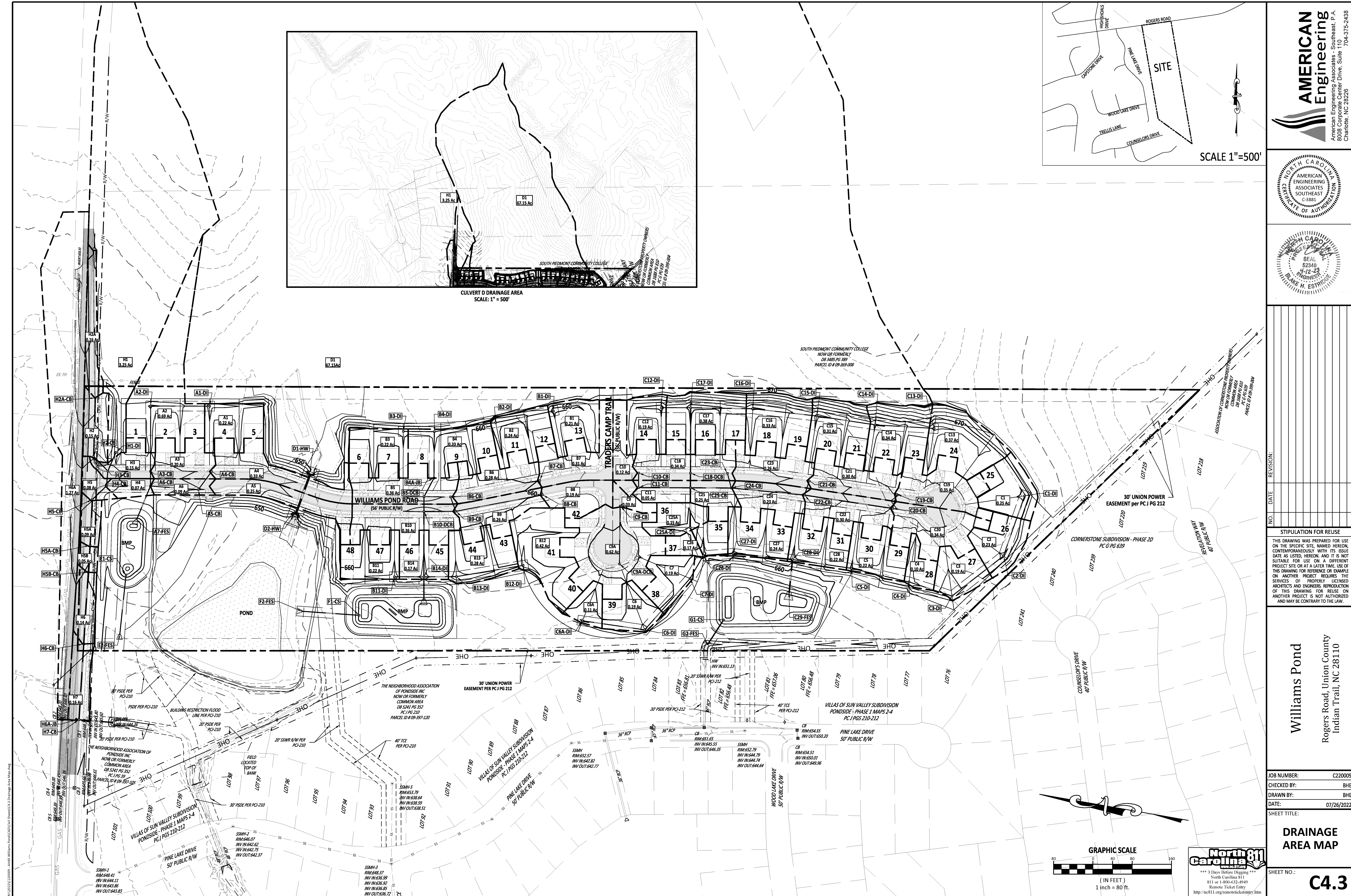
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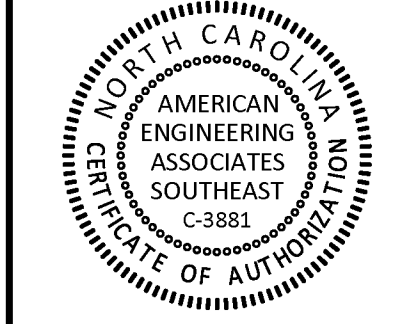
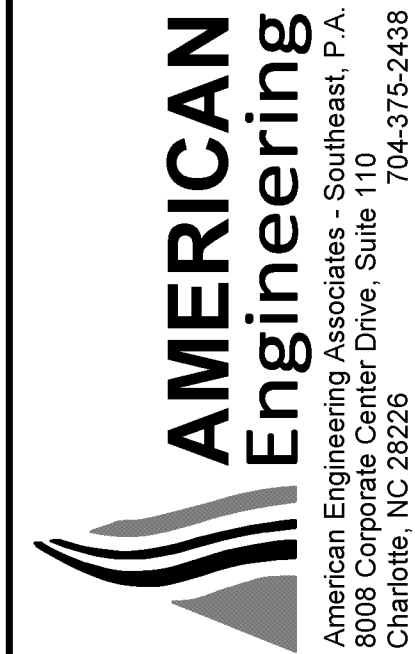
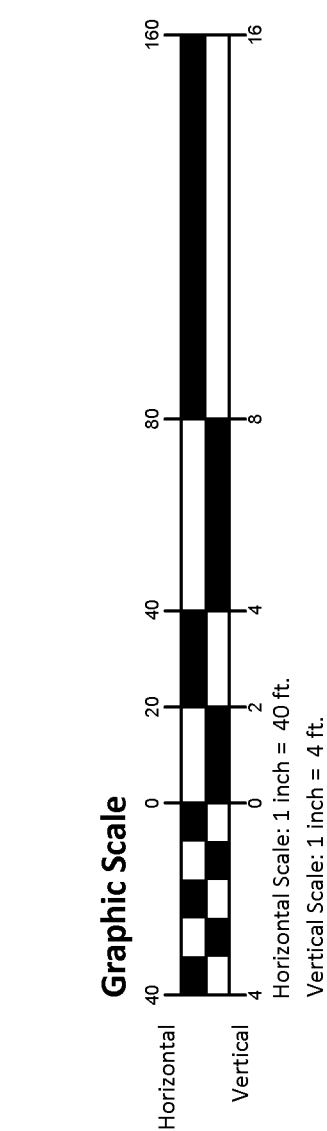
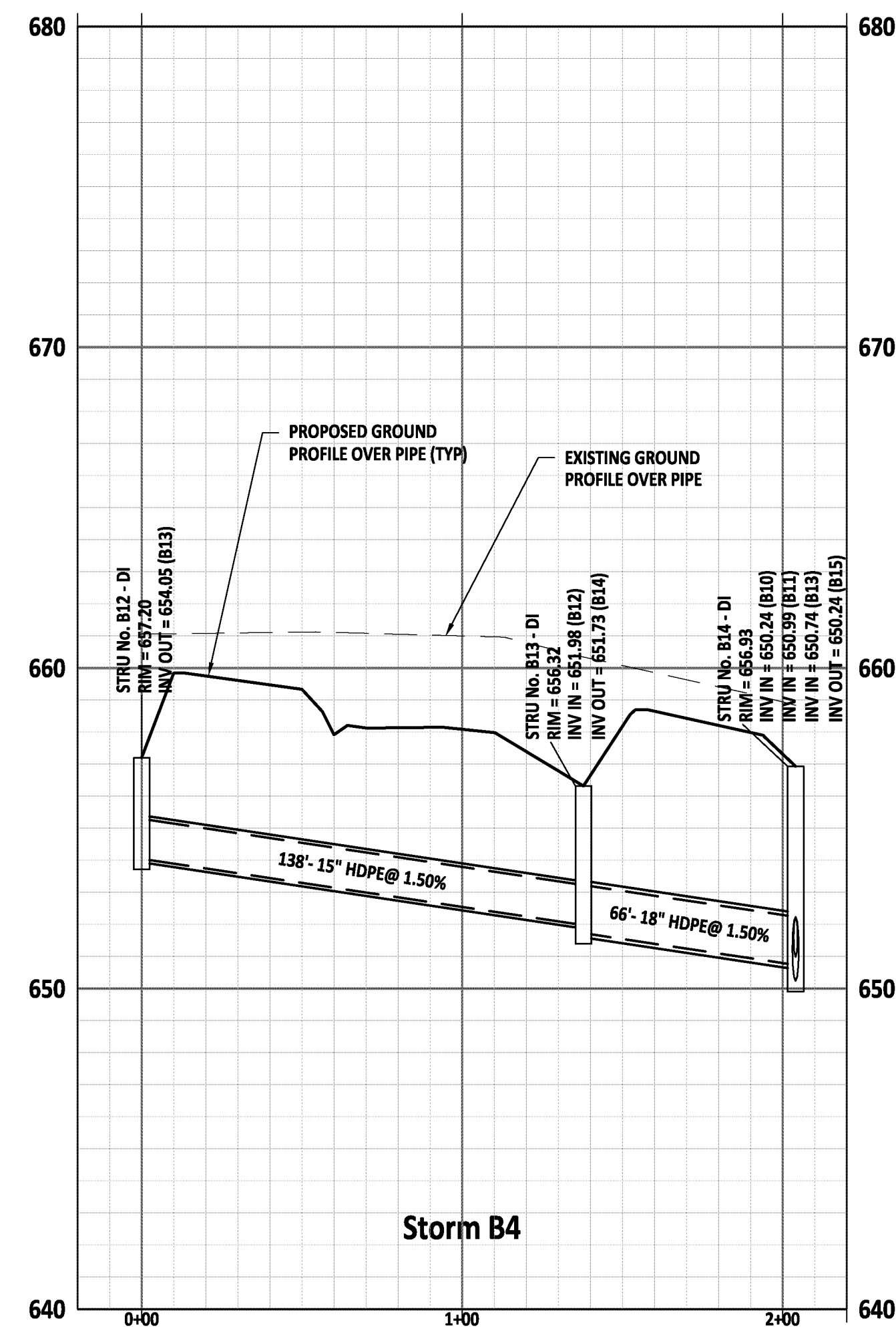
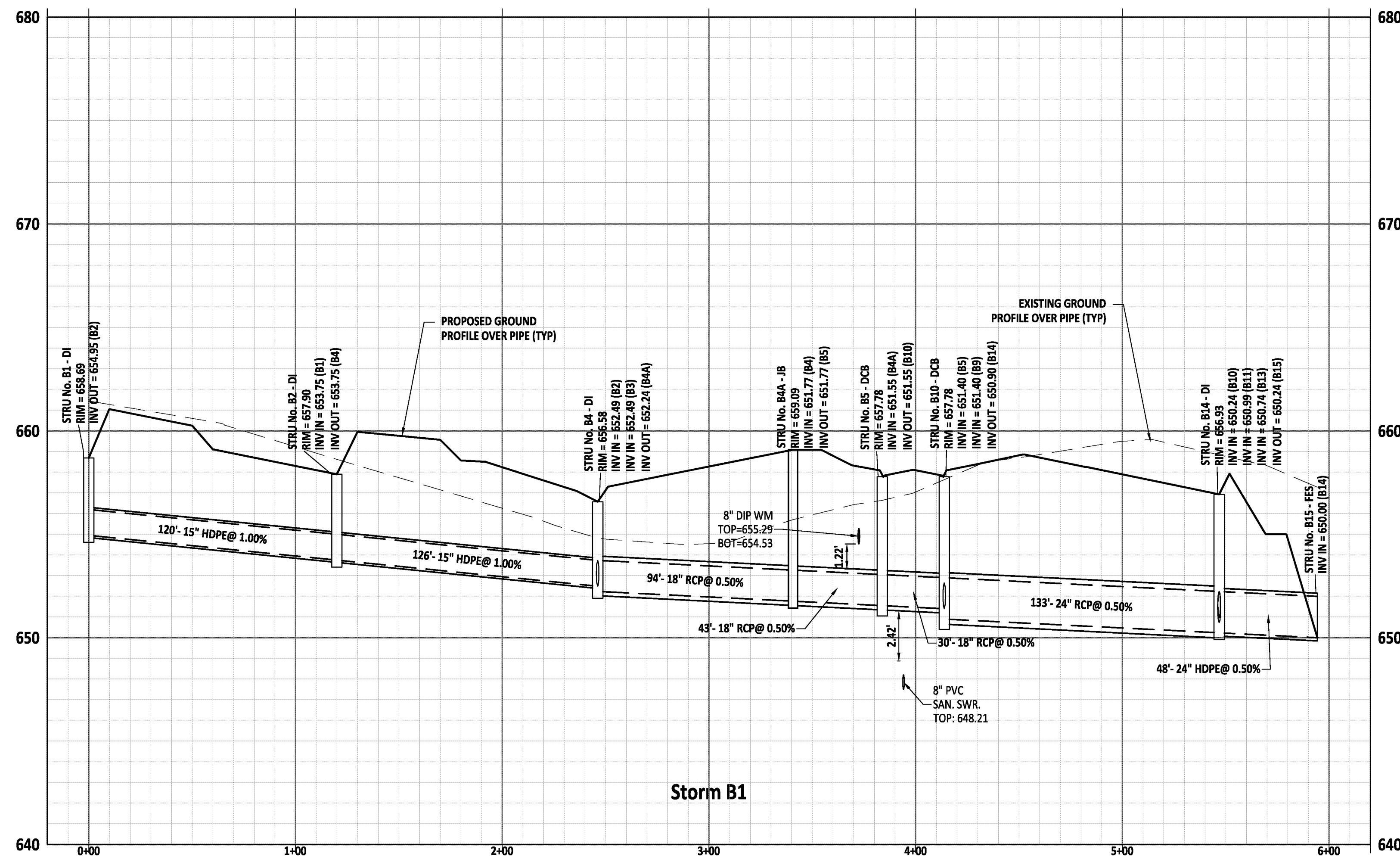
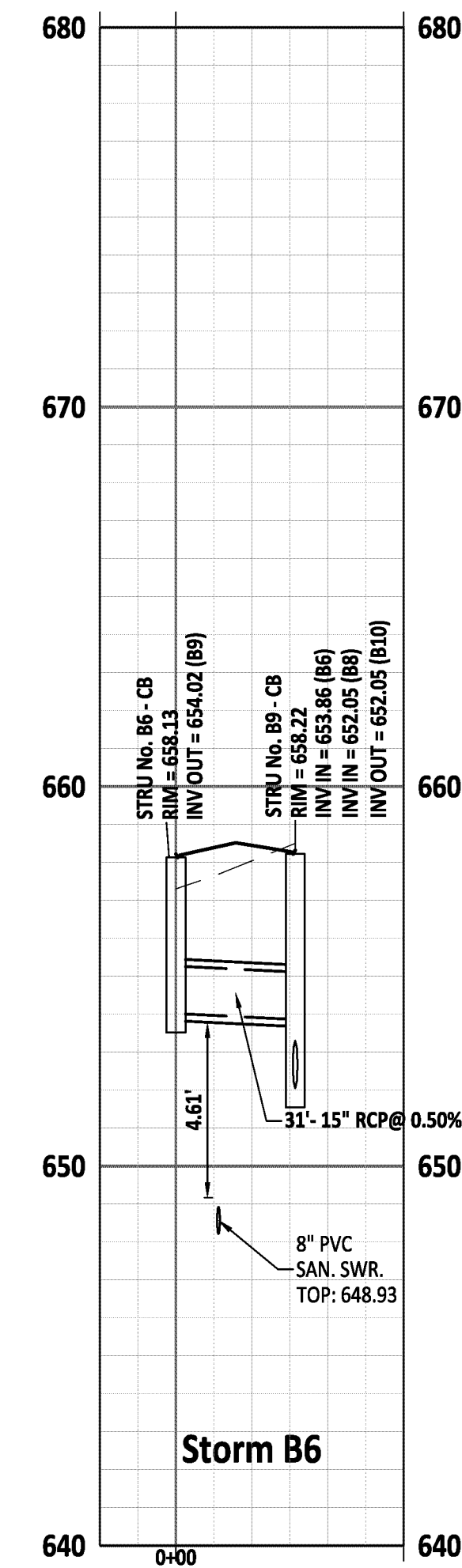
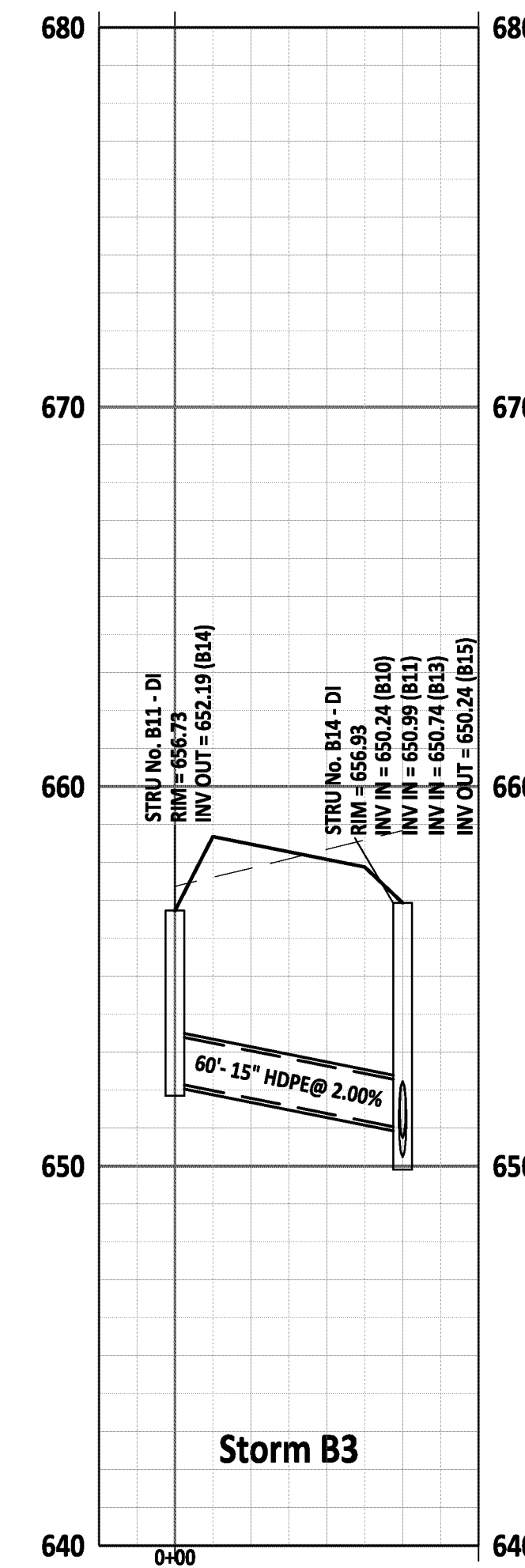
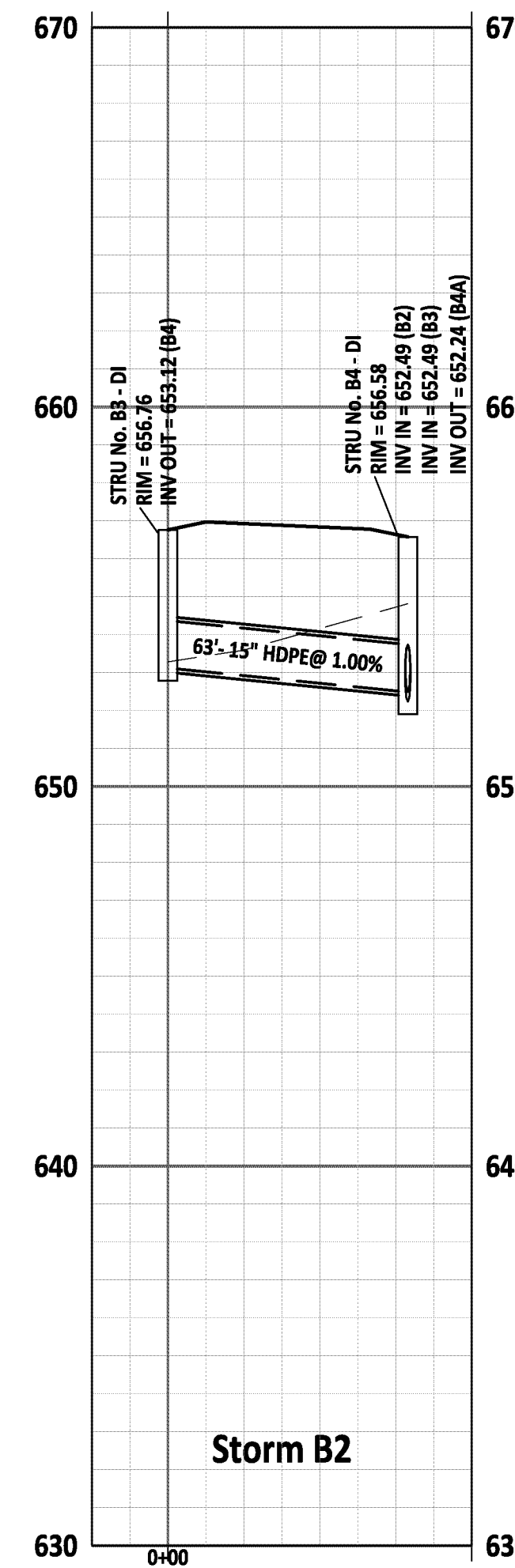
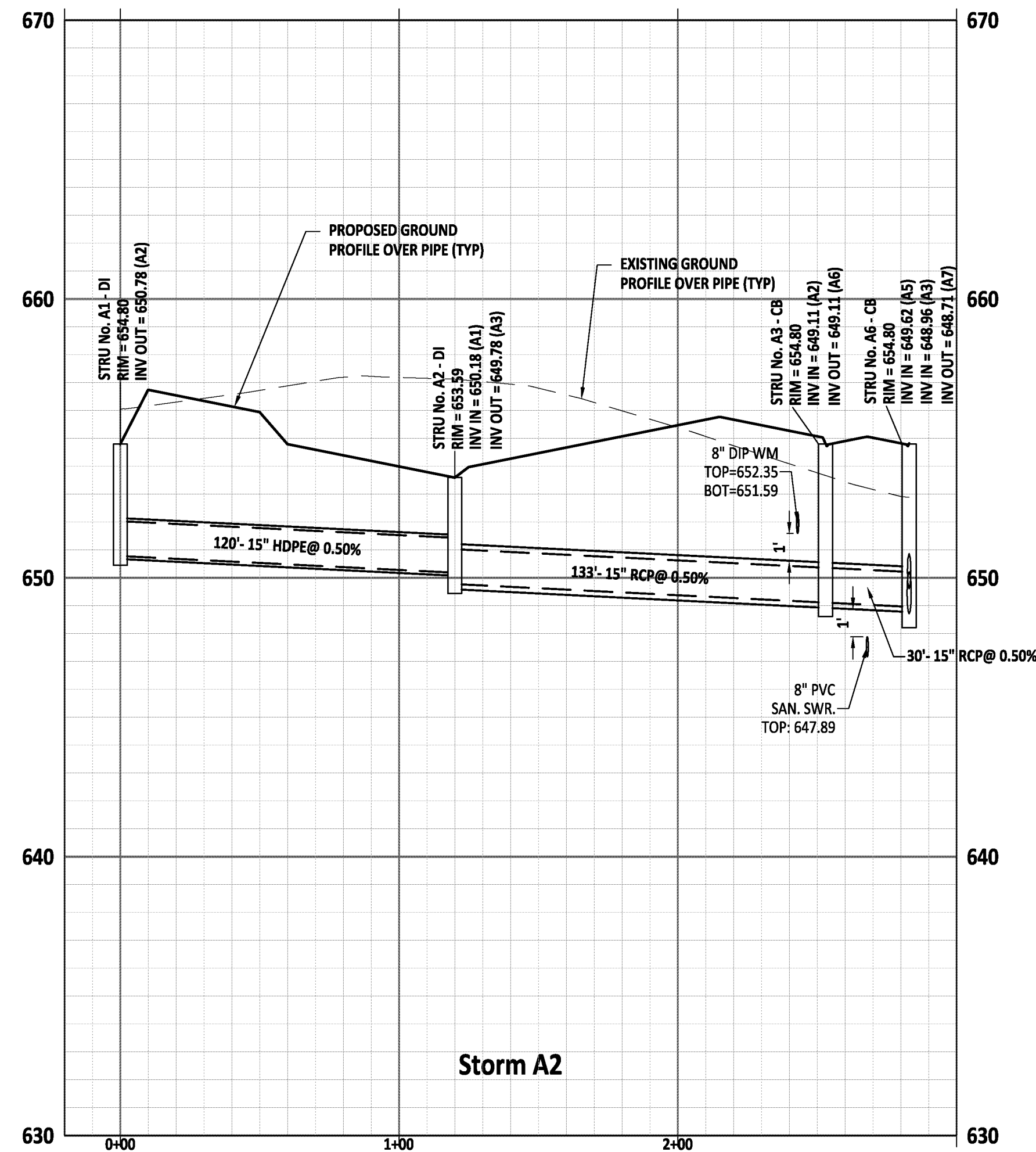
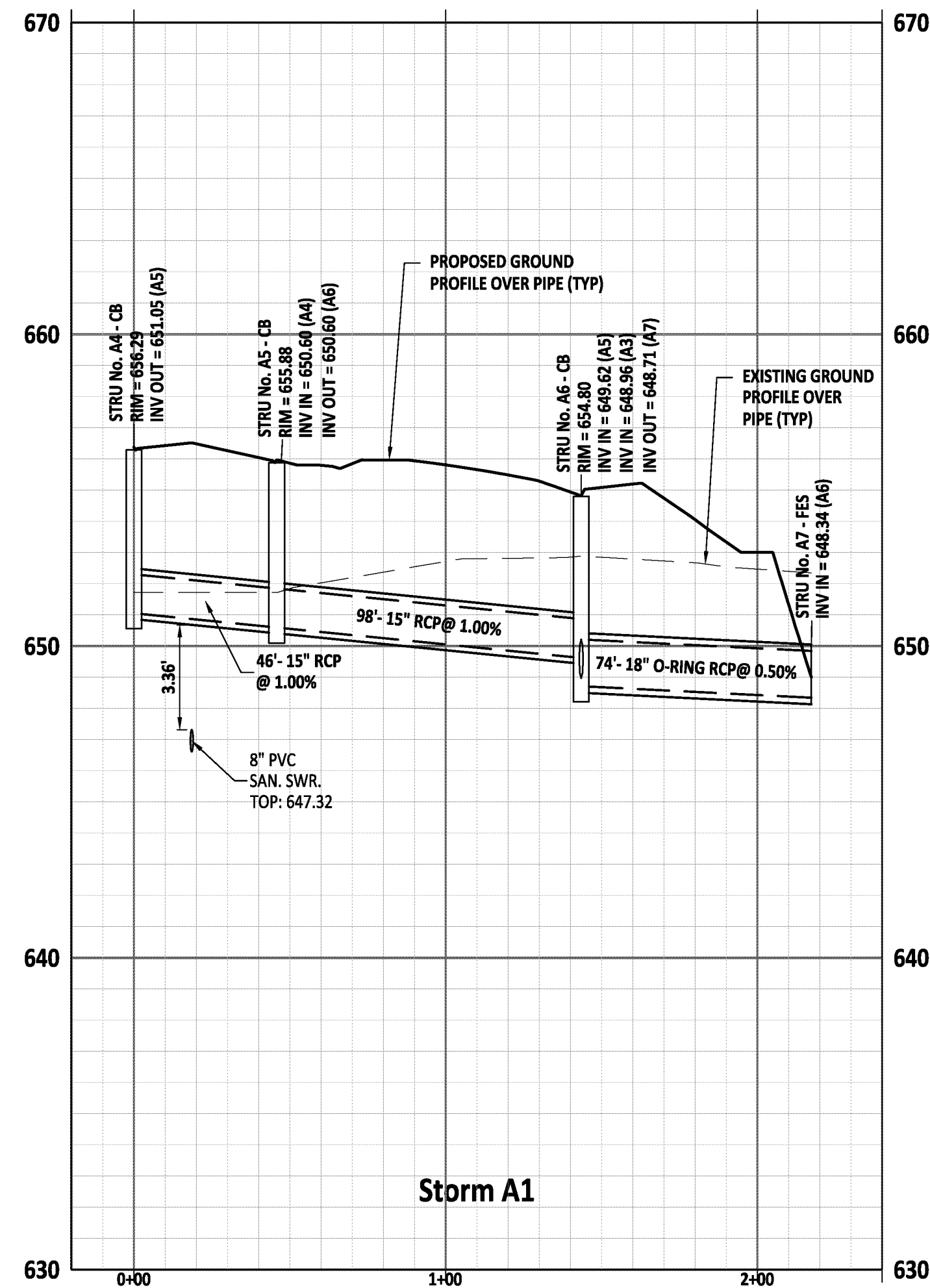
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Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER:	C220009
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DATE:	07/26/2022
SHEET TITLE:	

DRAINAGE AREA MAP

SHEET NO.: **C4.3**



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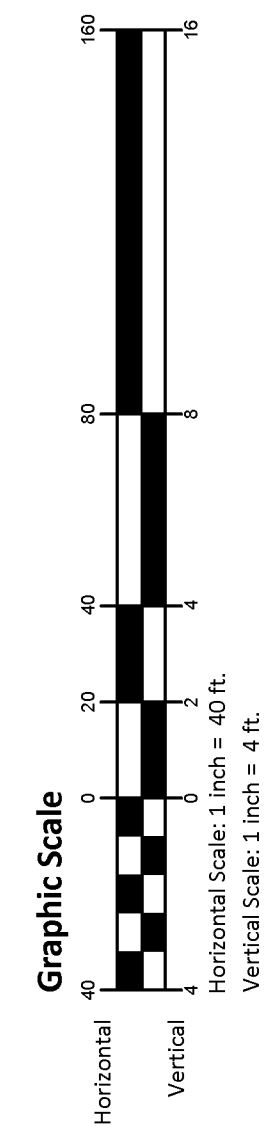
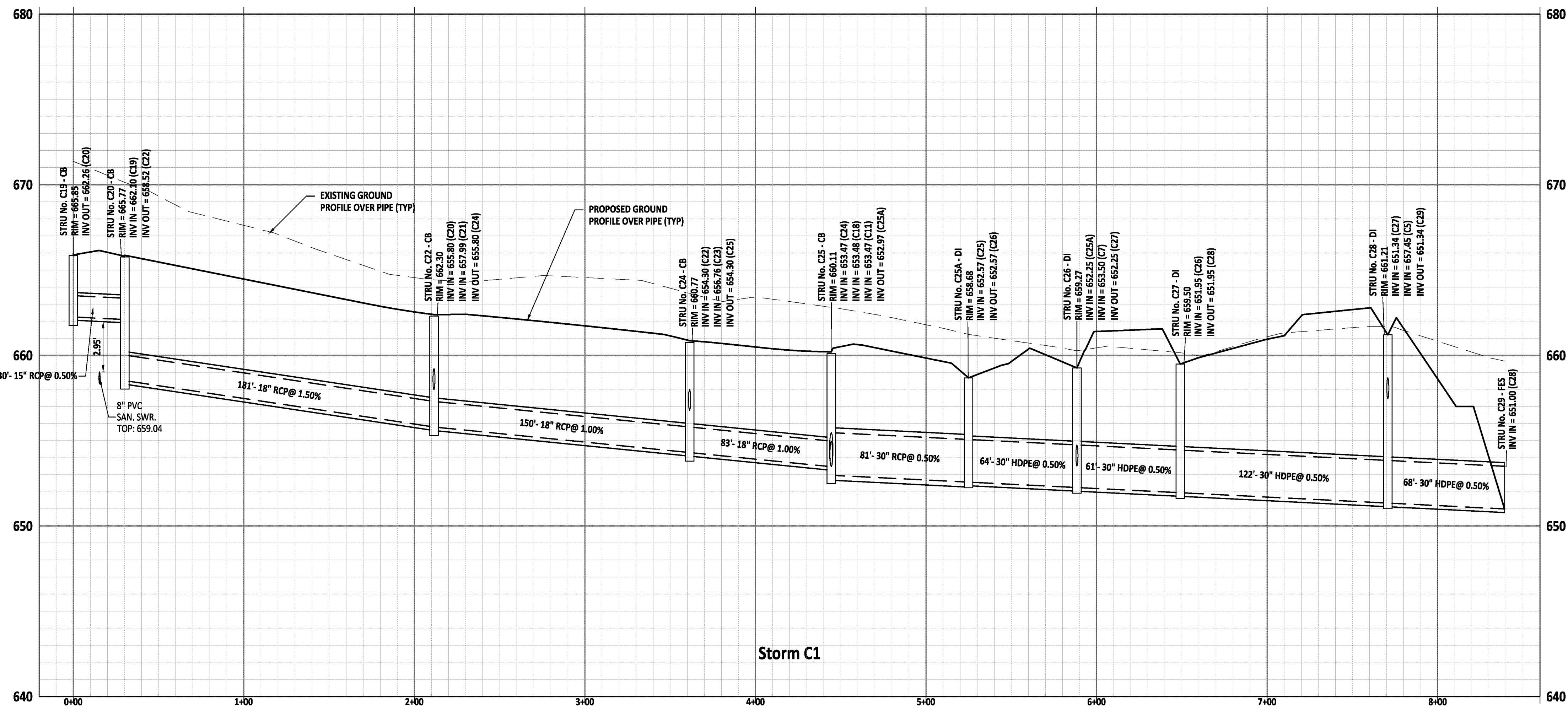
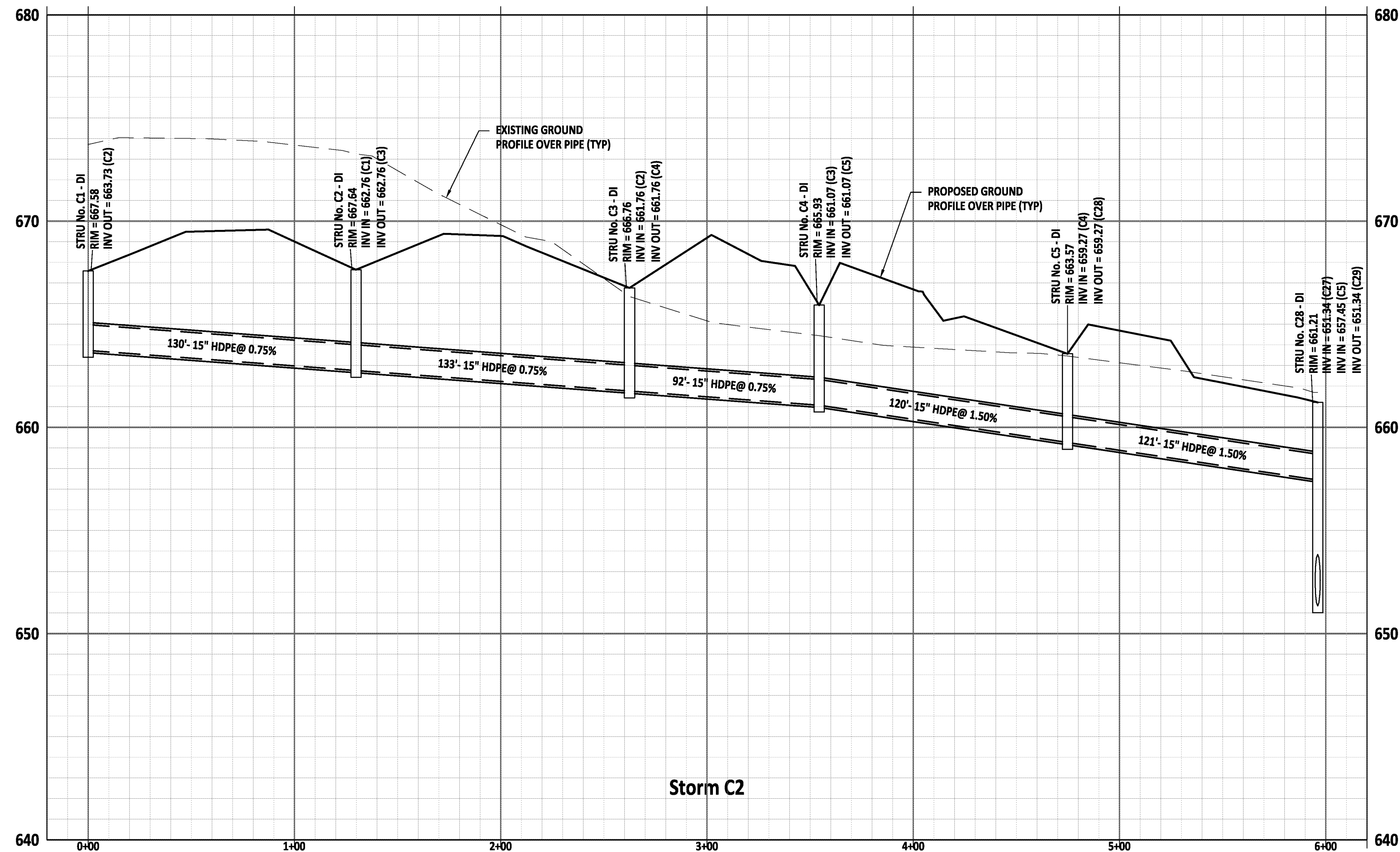
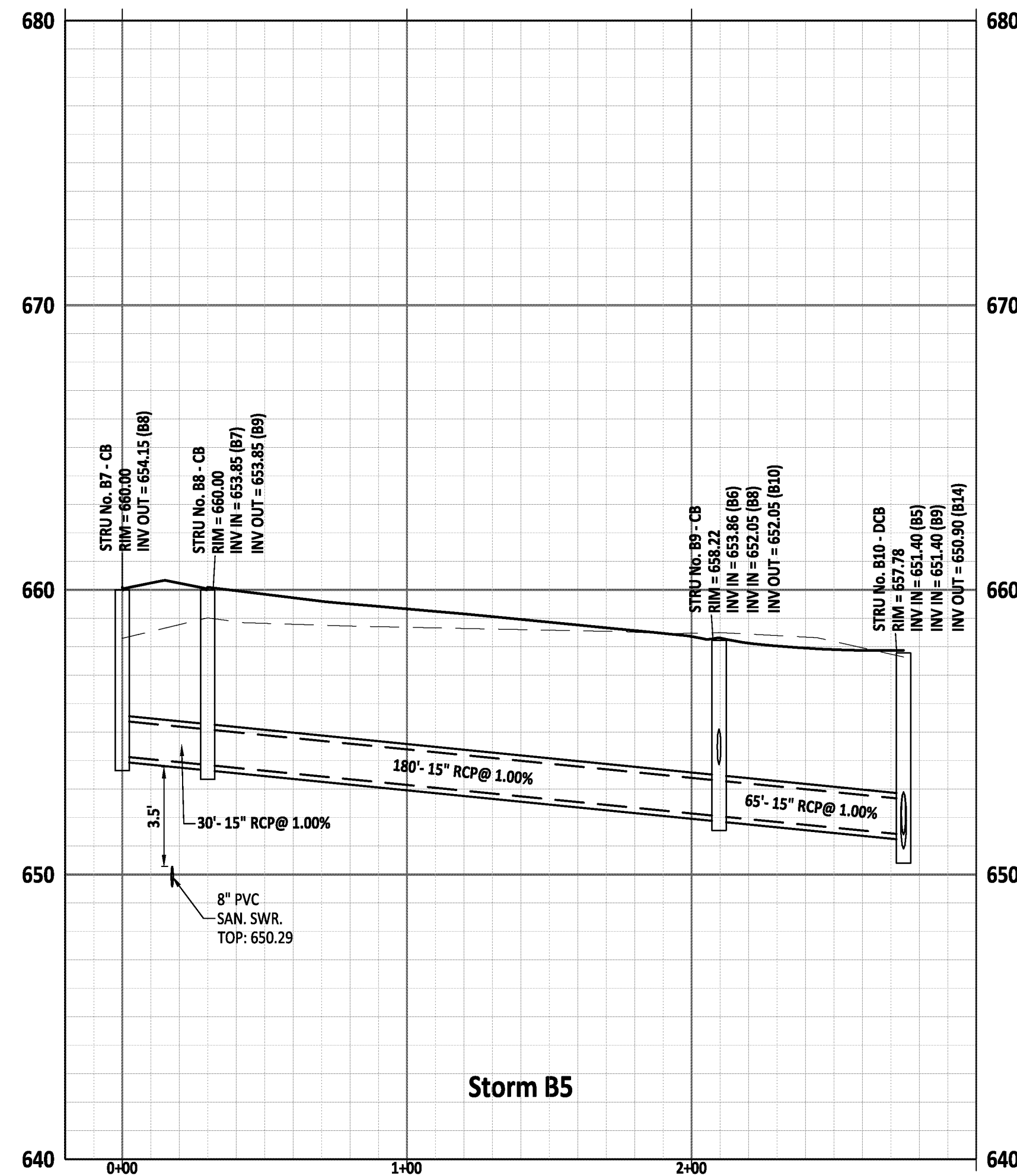
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Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER:	C22000
CHECKED BY:	BH
DRAWN BY:	BH
DATE:	07/26/202
SHEET TITLE:	

STORM DRAIN PROFILES

SHEET NO.: **C5.0**

[illegible]

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Indian Trail, NC 28110

JOB NUMBER:	C22000
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DATE:	07/26/202

SHEET TITLE:

Figure 1

STORM DRAIN

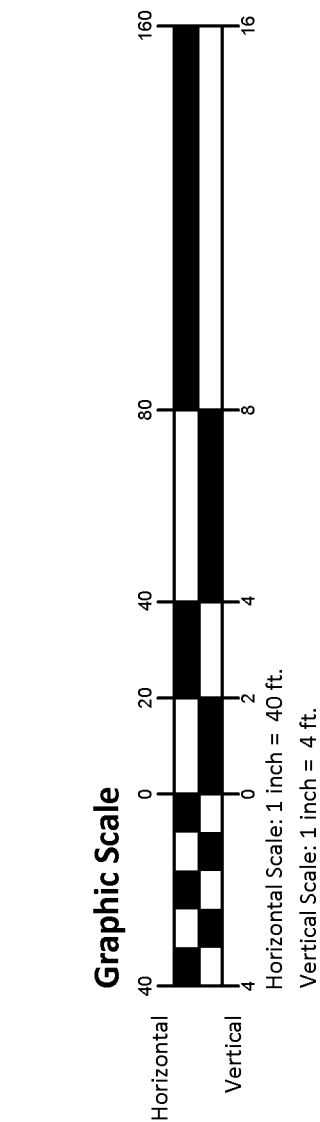
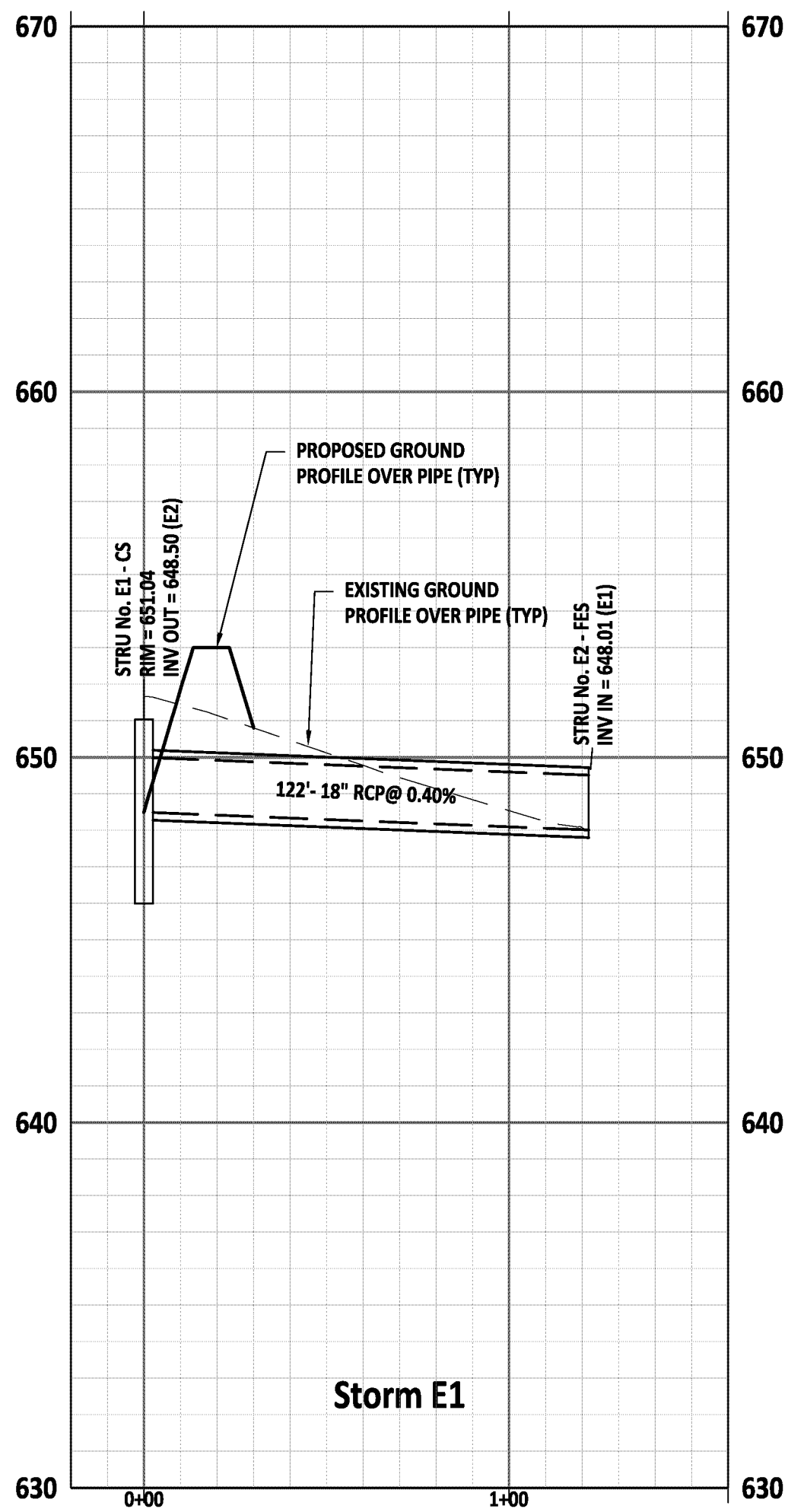
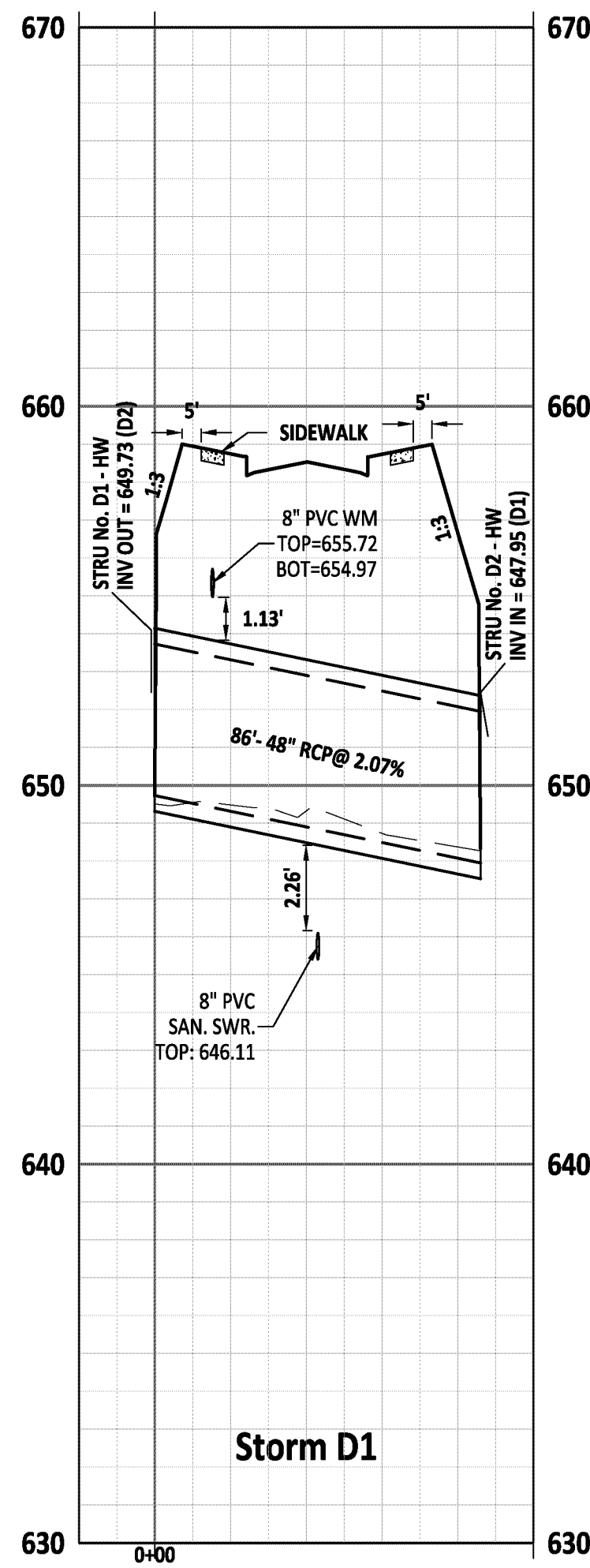
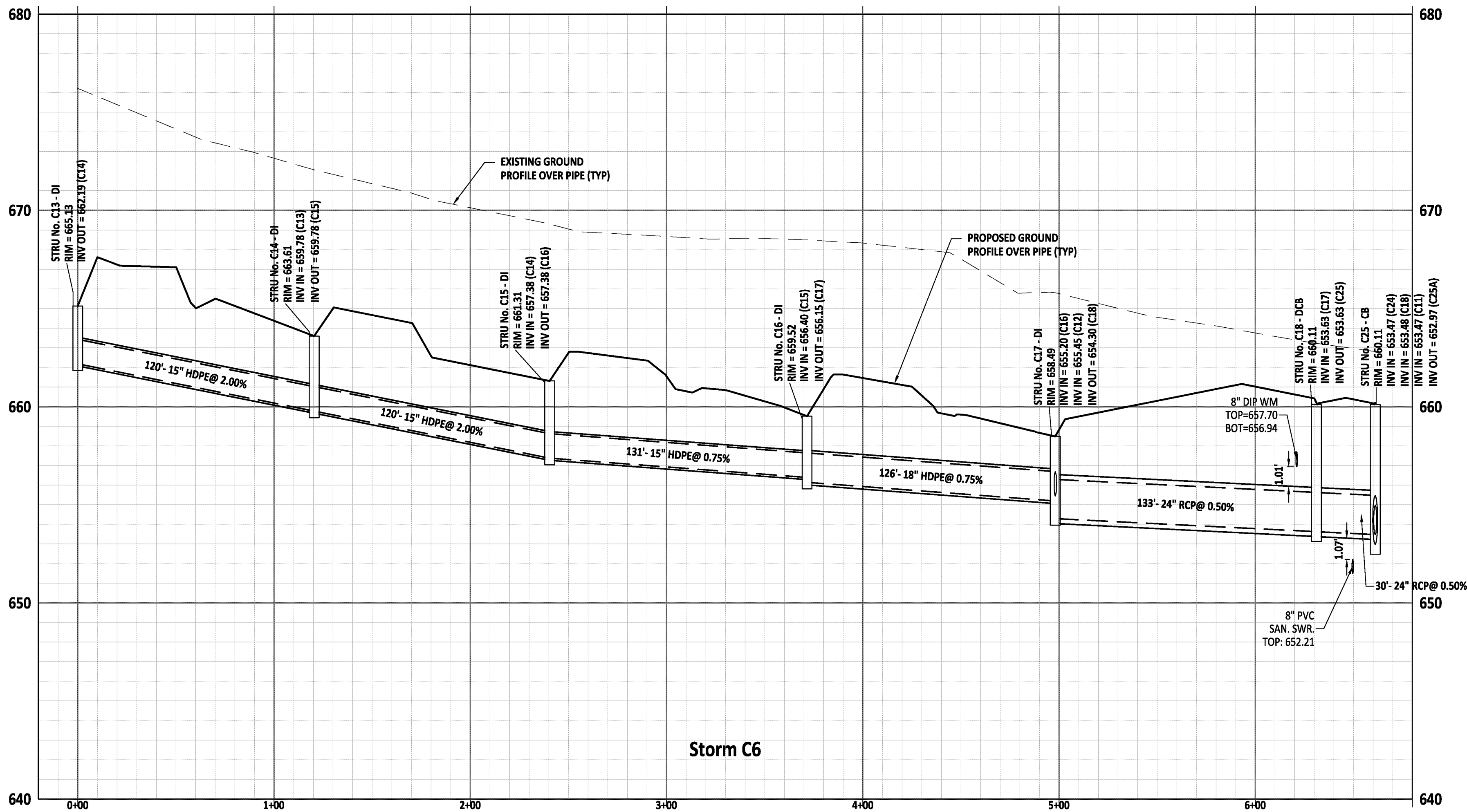
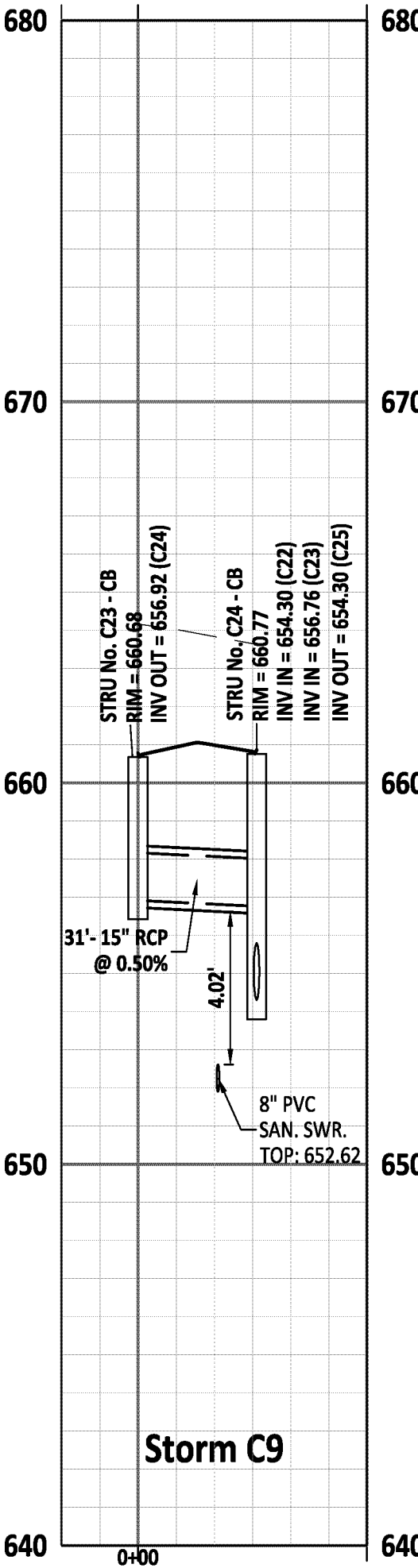
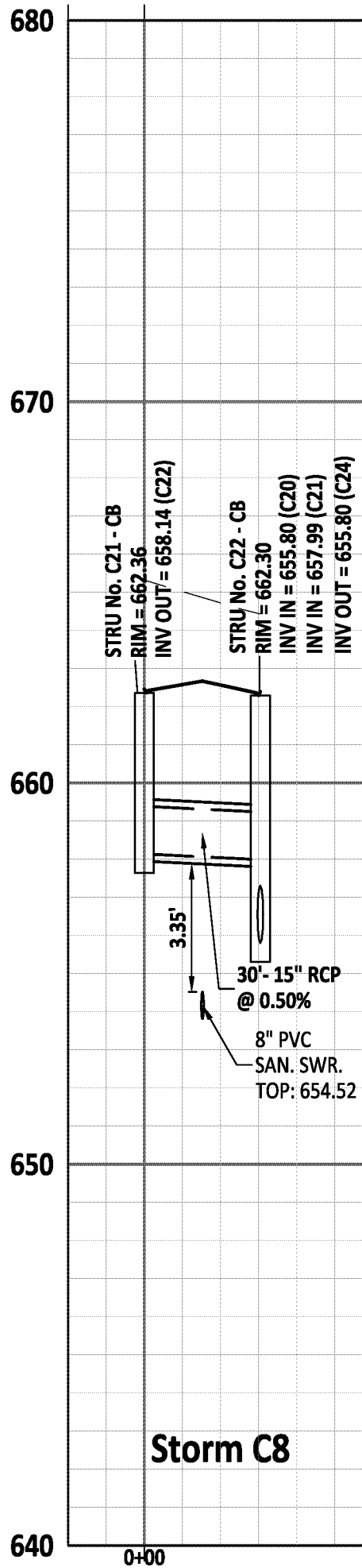
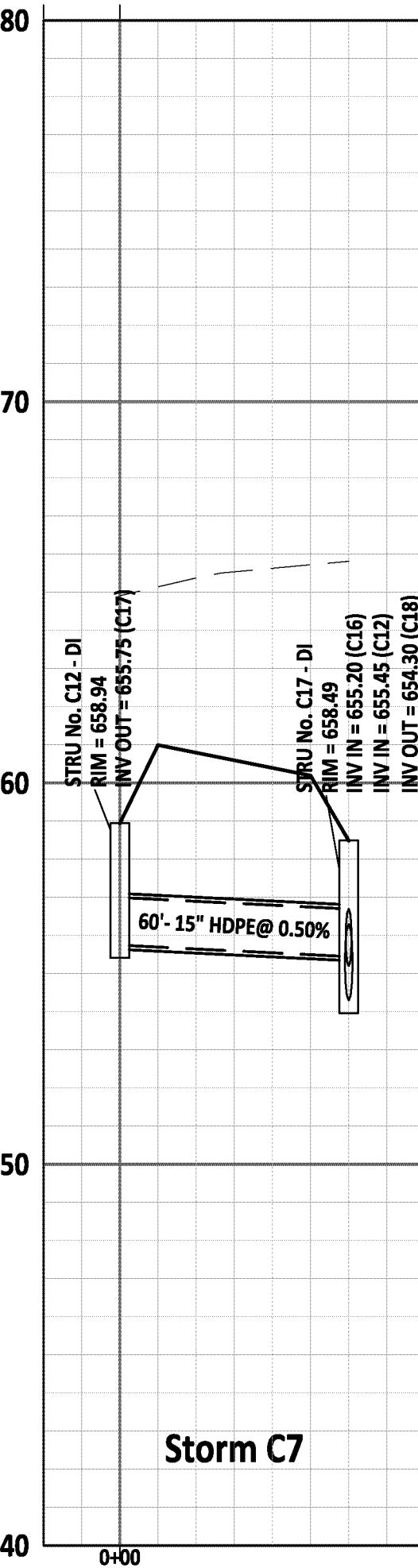
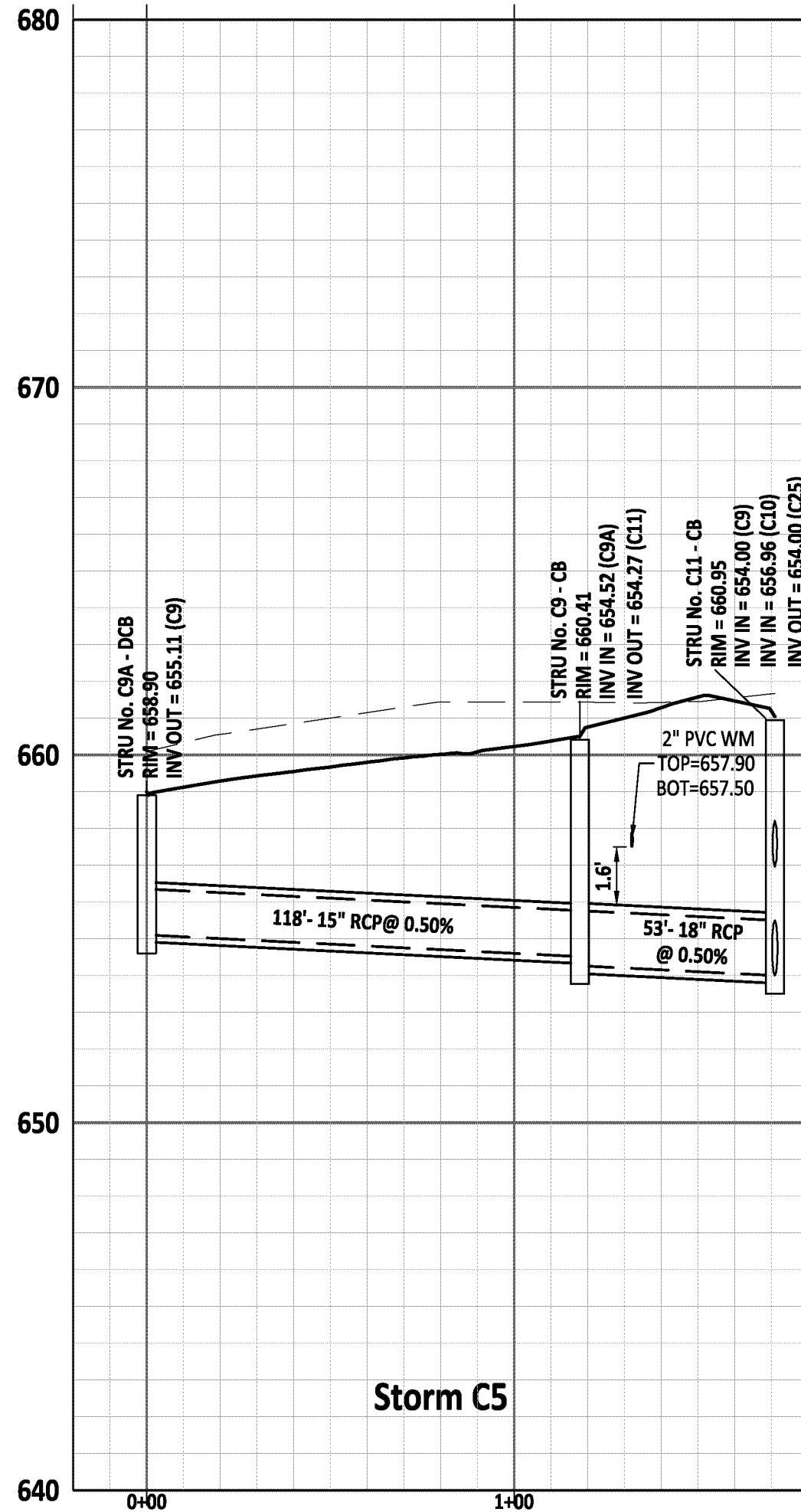
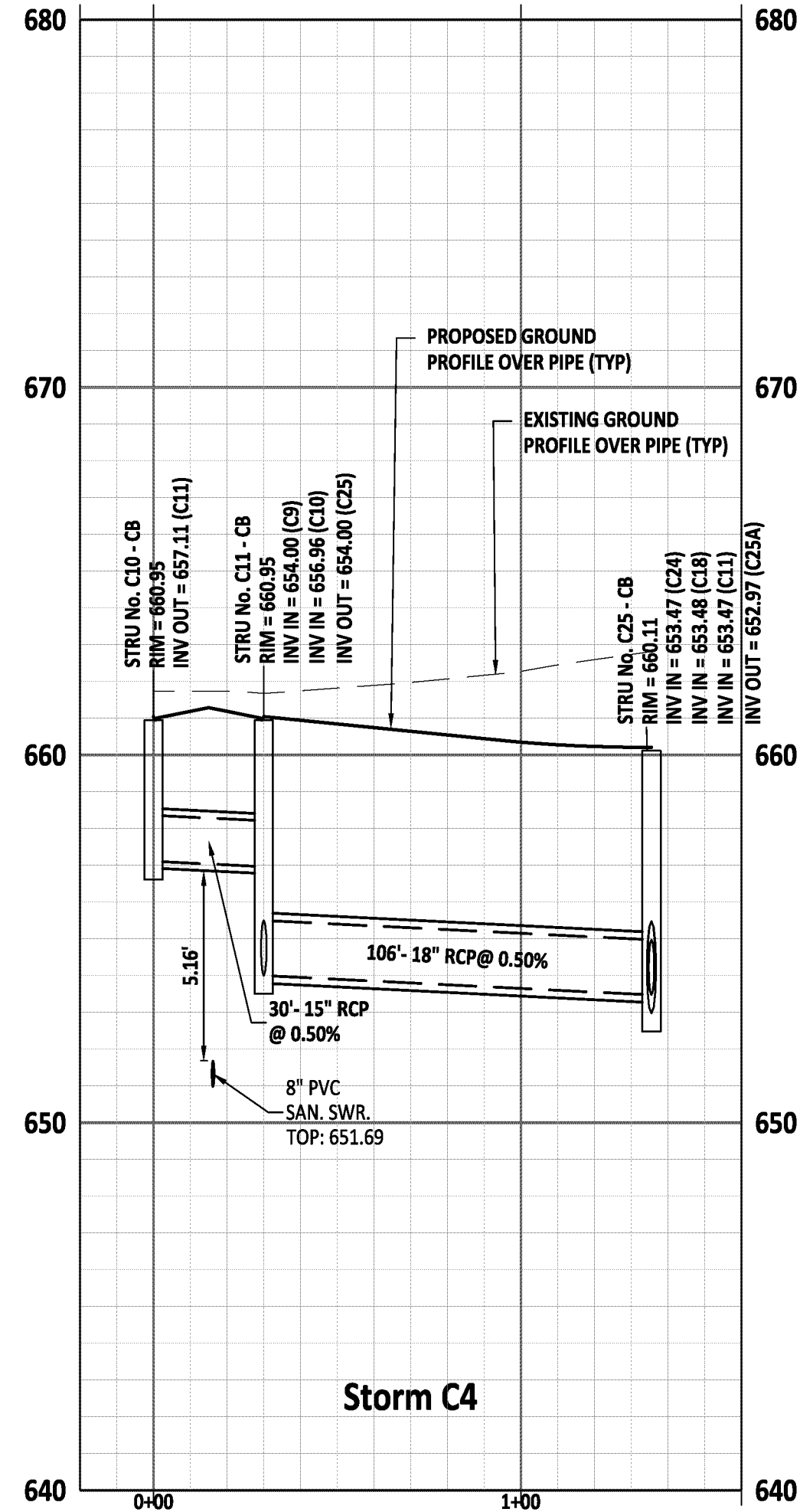
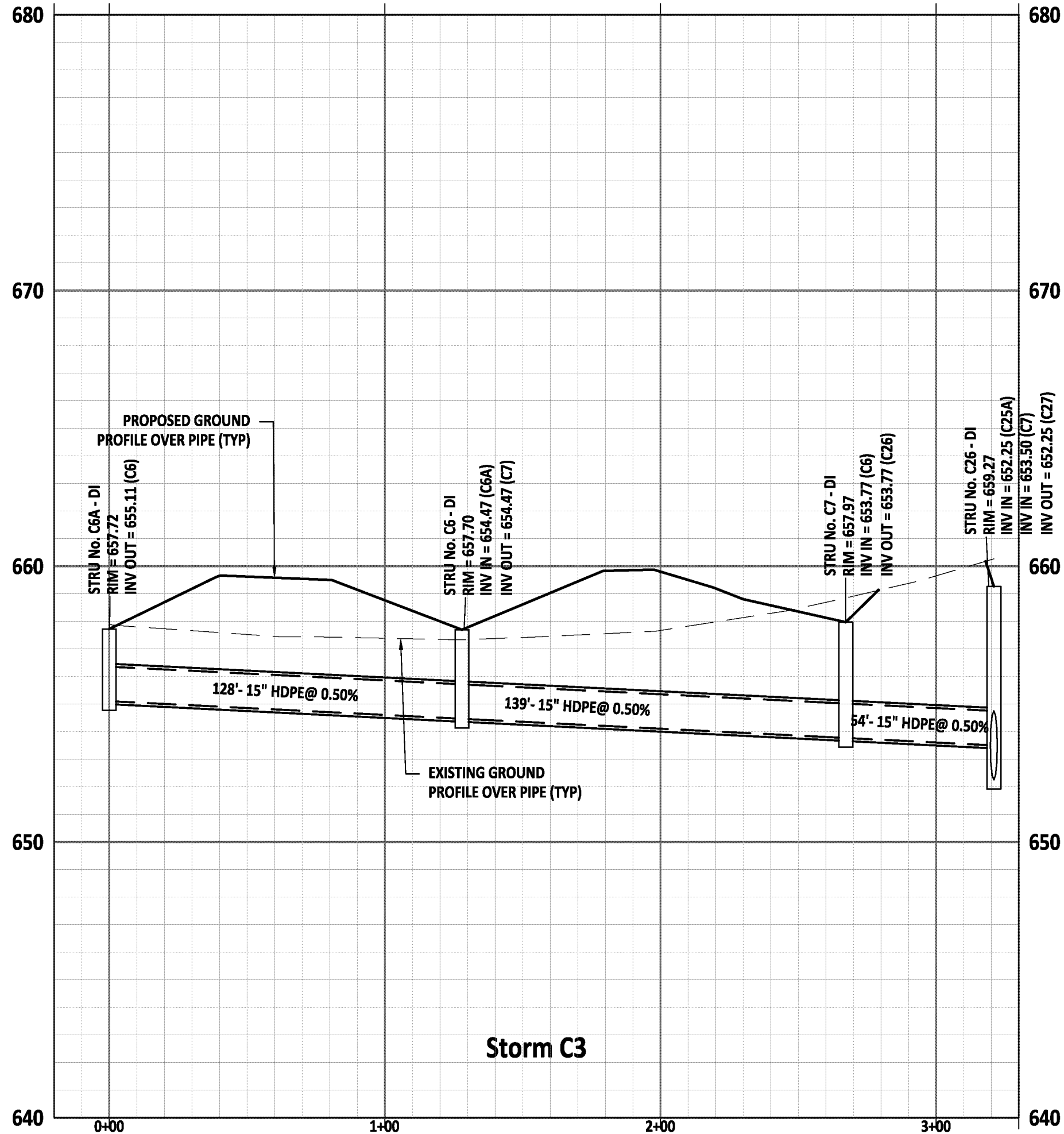
STORM DRAIN REVIEW

PROFILES

[illegible]

C5.1

W:\2022\220009 - A448 Williams Pond\CAD\Civil Sheets\C5.2 Storm Drain Profiles.dwg



NO.	DATE	REVISION:

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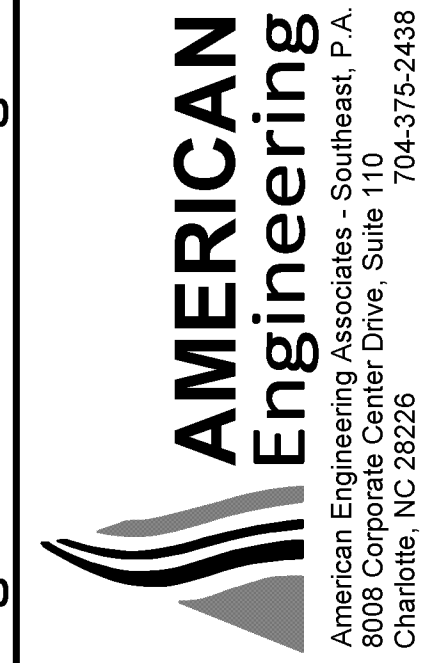
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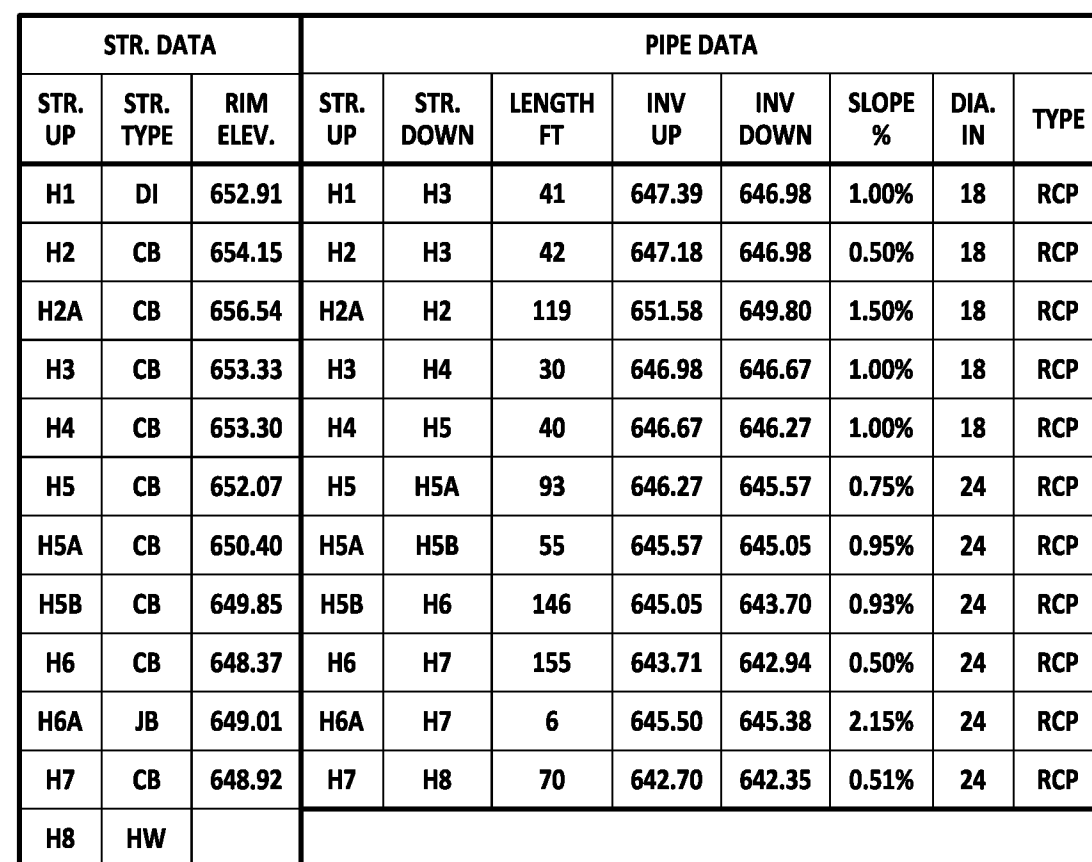
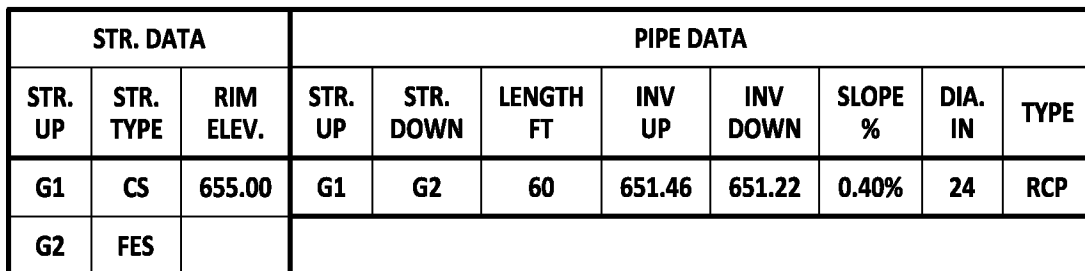
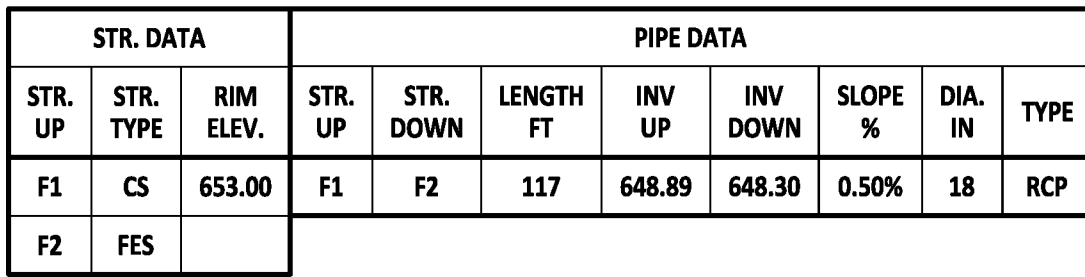
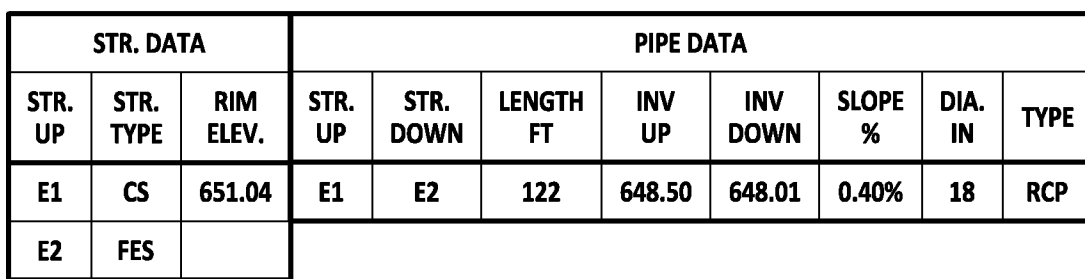
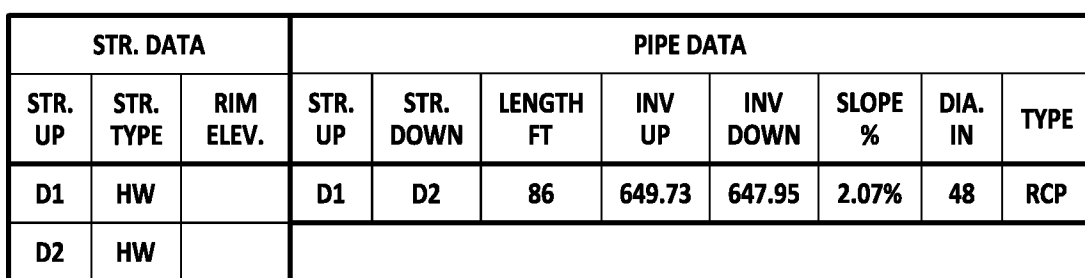
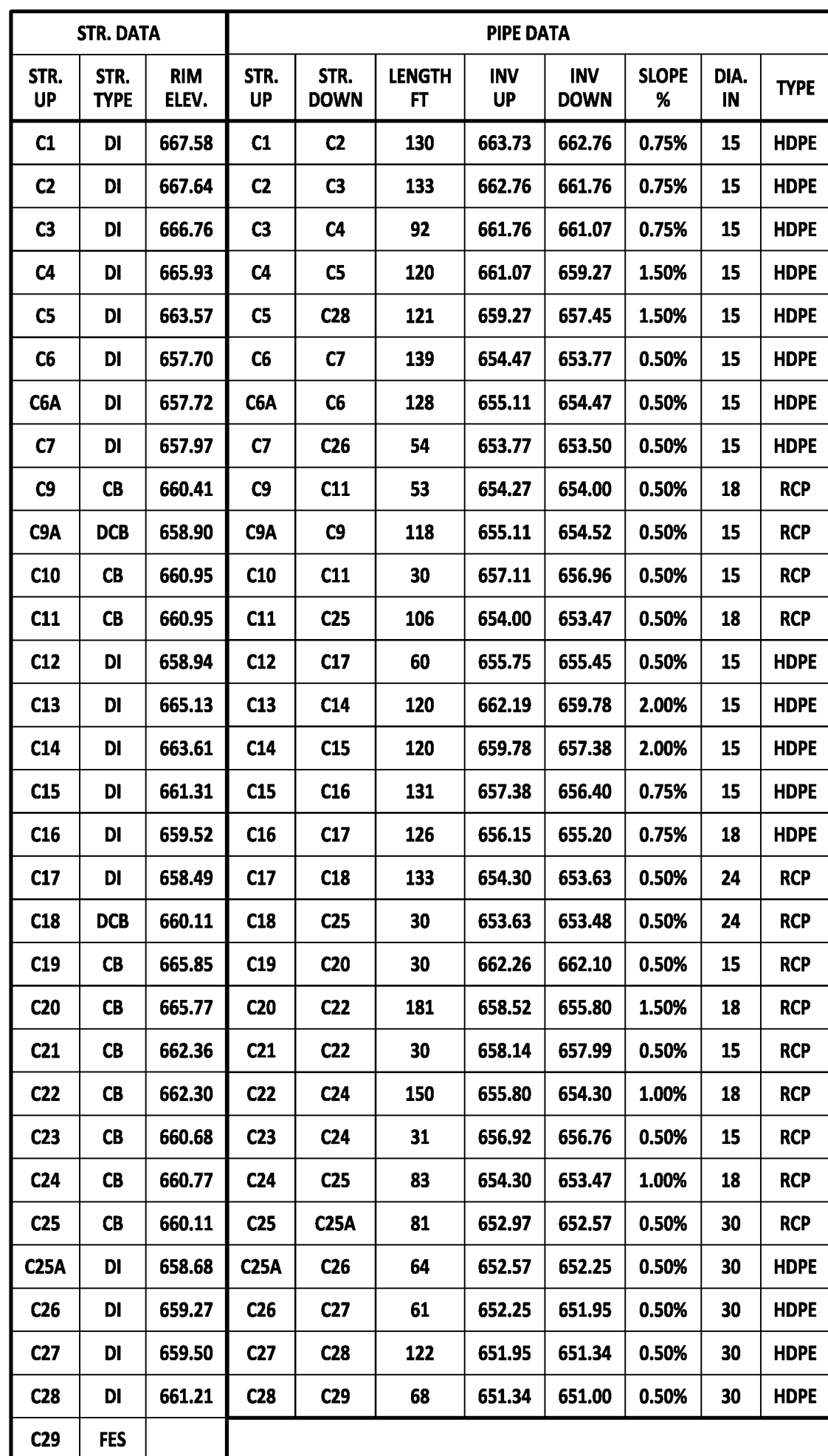
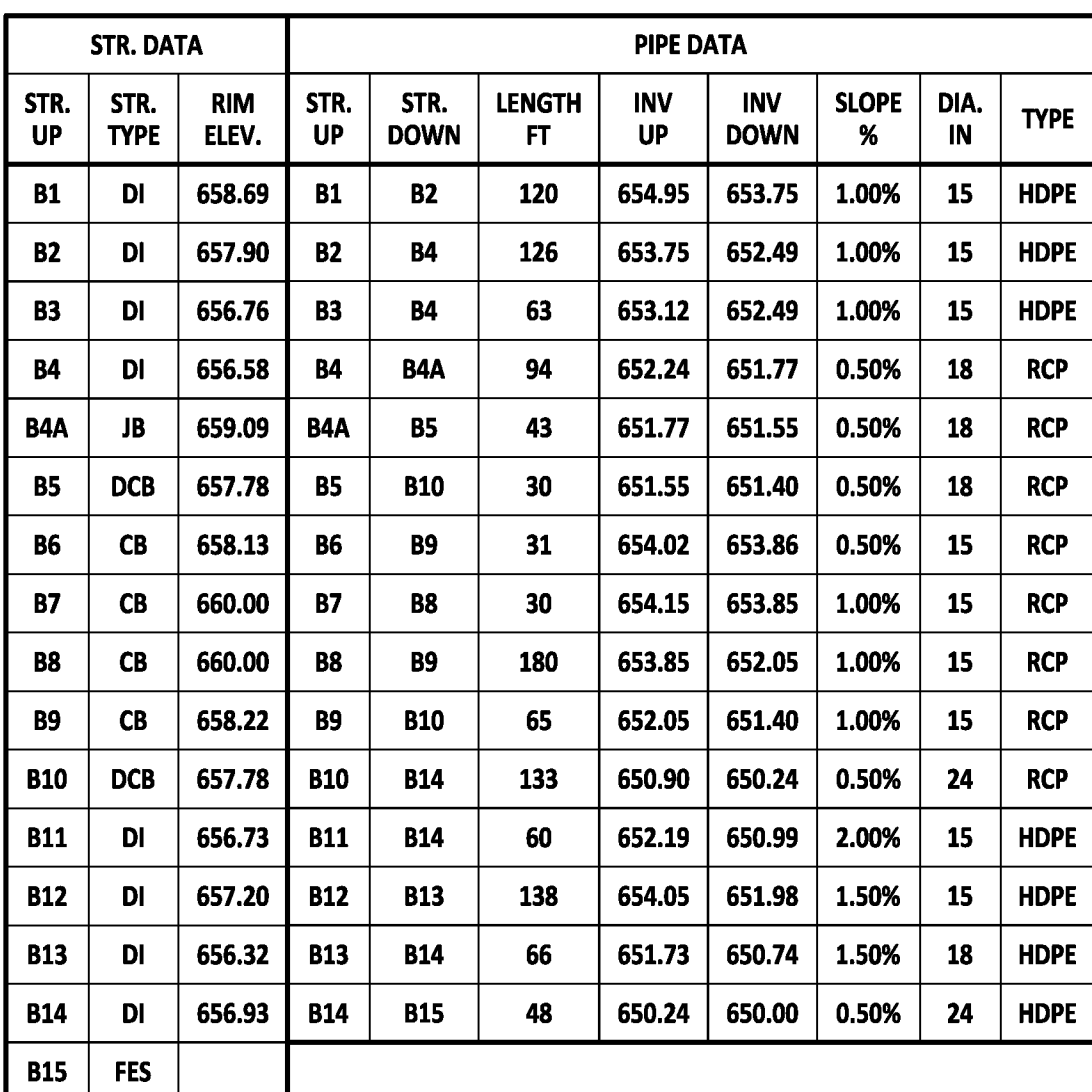
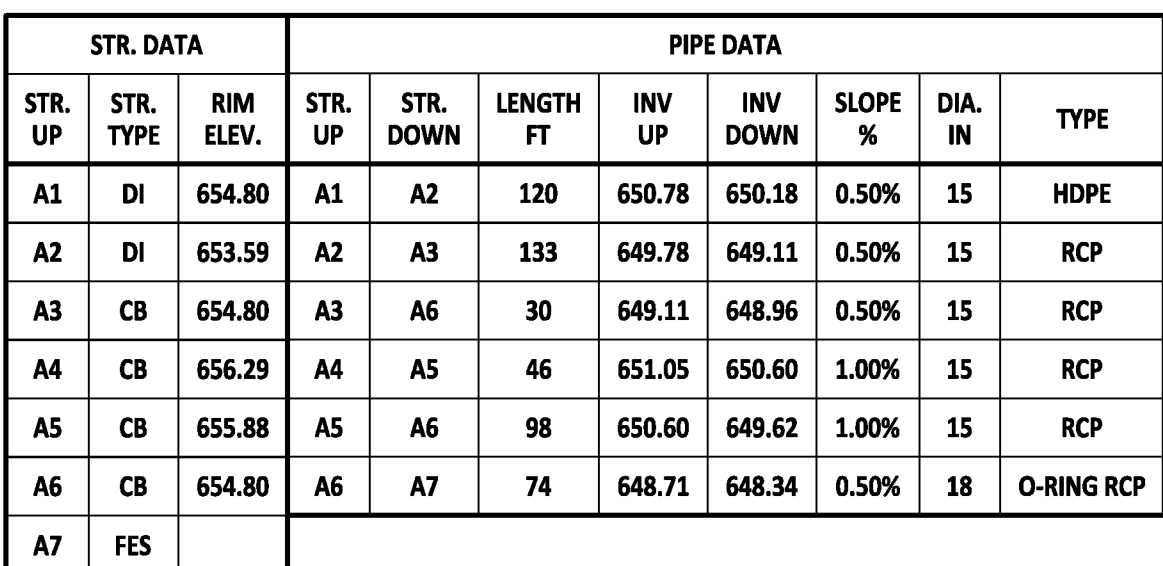
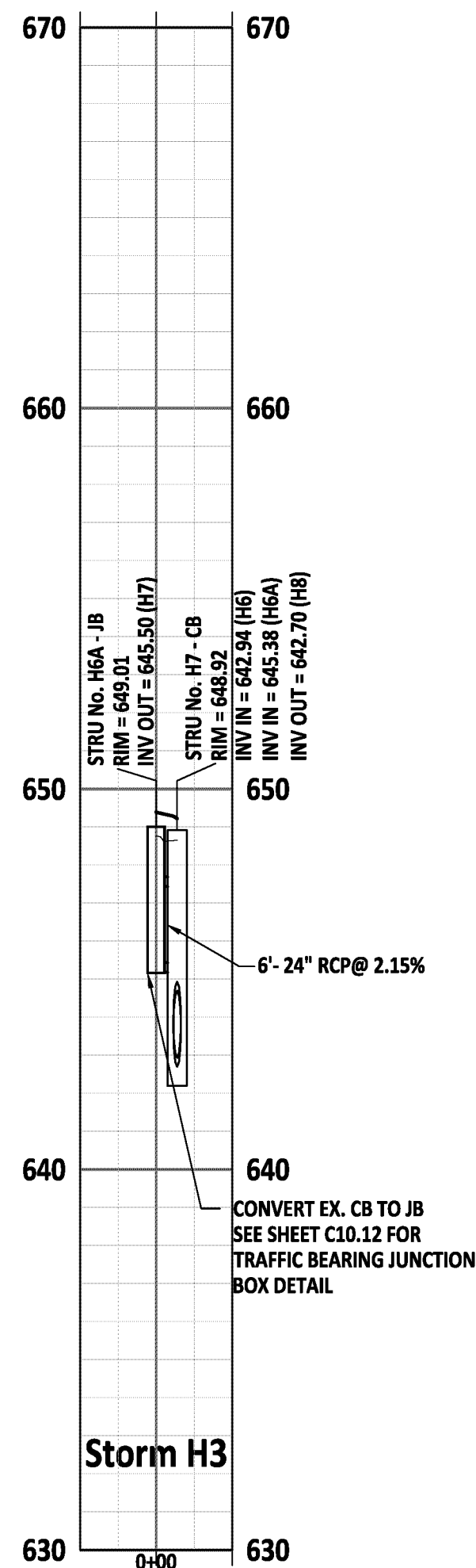
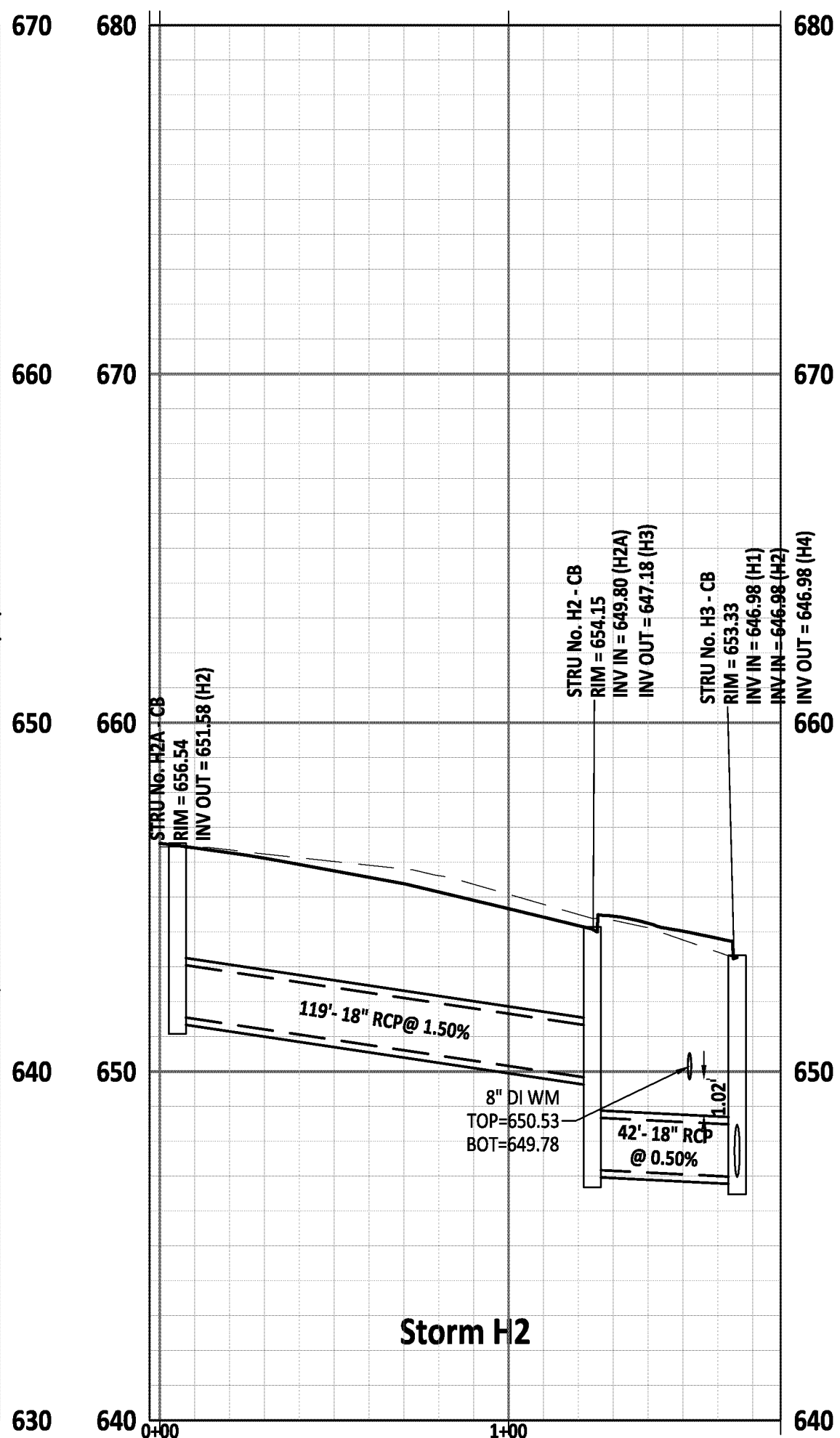
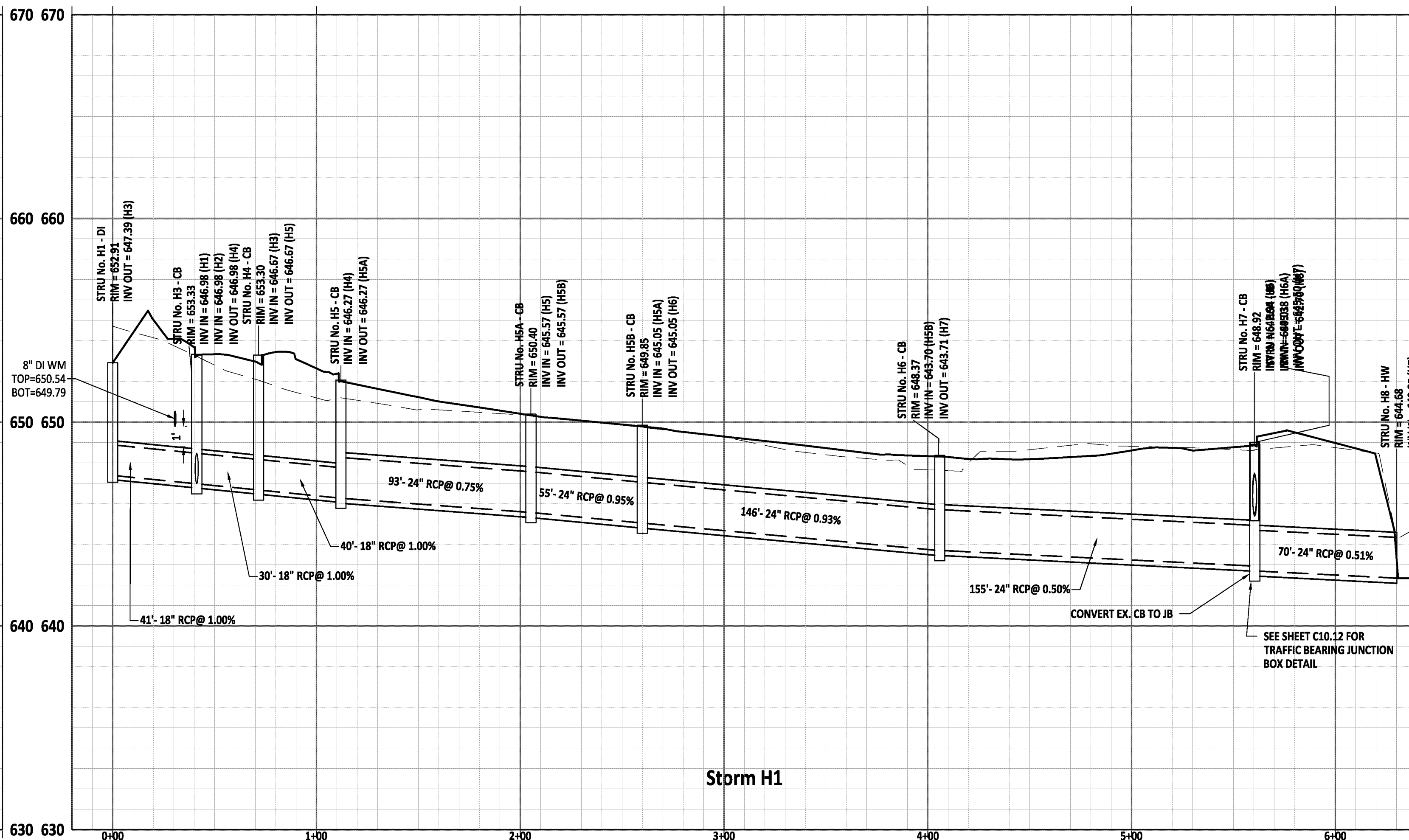
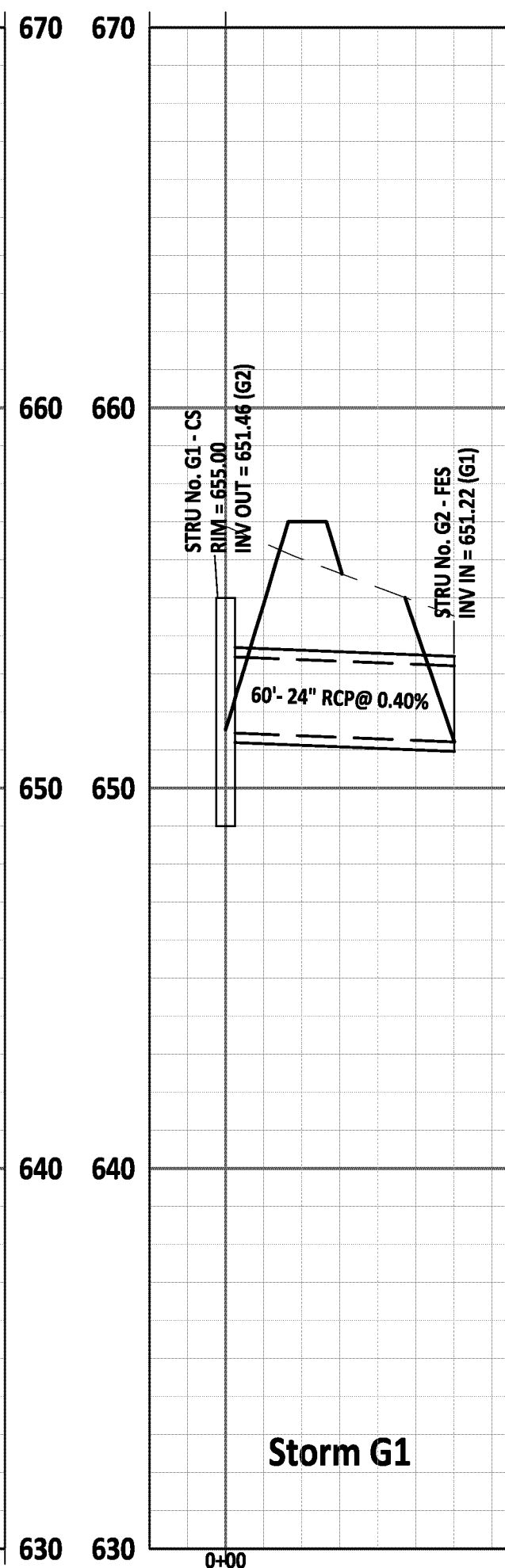
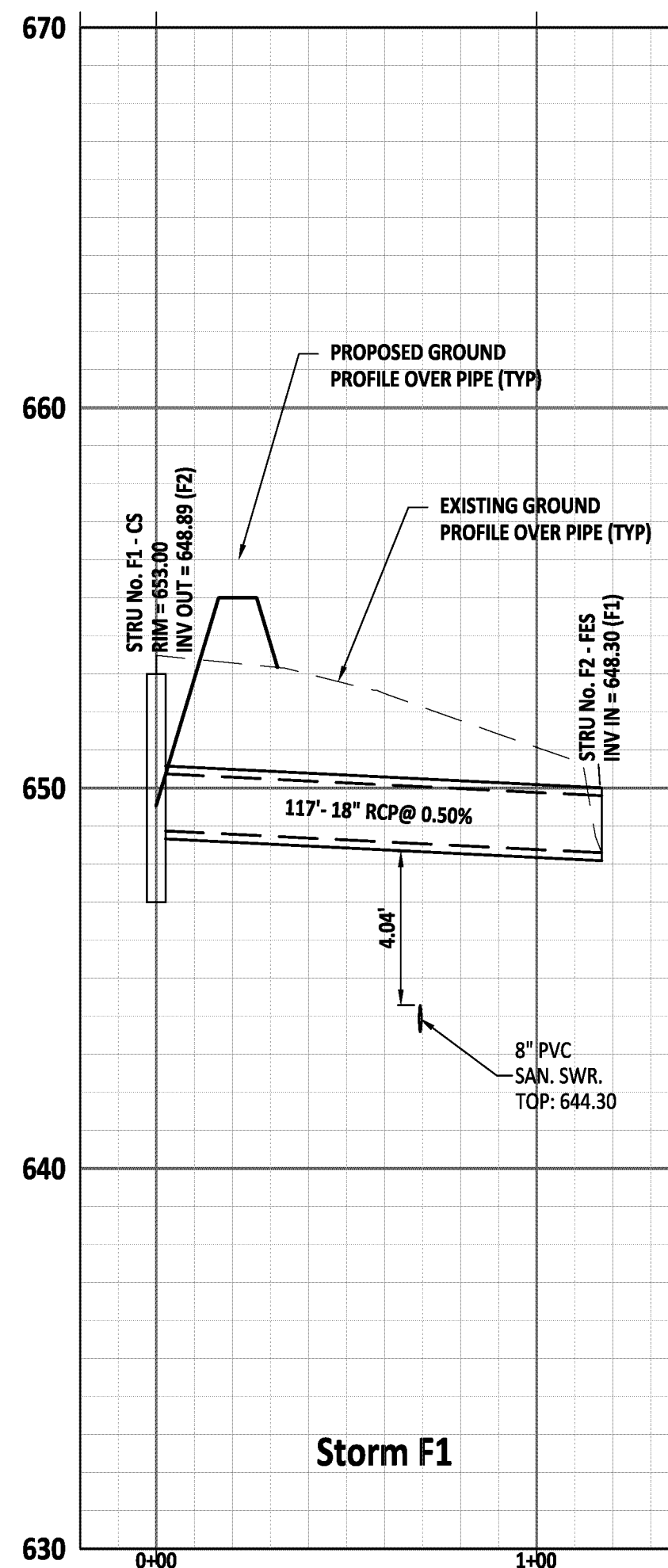
Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C220009
CHECKED BY: BHE
DRAWN BY: BHE
DATE: 07/26/2022

SHEET TITLE:
**STORM DRAIN
PROFILES**

SHEET NO.:
C5.2





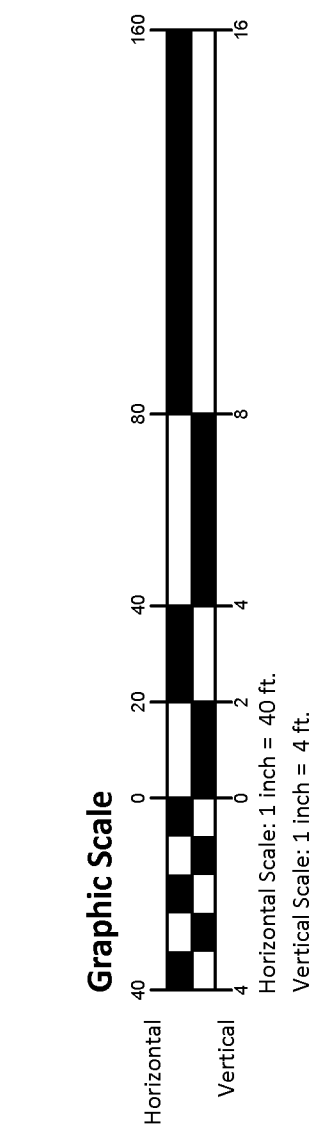
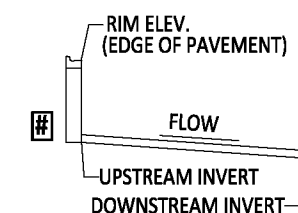
ABBREVIATIONS:

CB	=	CATCH BASIN PER NCDOT STD. DRAWING NO. 840.02 - SHEET C10.10
DCB	=	DOUBLE CATCH BASIN
DI	=	DROP INLET PER NCDOT STD. DRAWING NO. 840.14 - SHEET C10.11
JB	=	JUNCTION BOX PER NCDOT STD DRAWING NO. 840.34 - SHEET C10.12
FES	=	FLARED END SECTION PER DETAIL SHEET C10.10
CS	=	OUTLET CONTROL STRUCTURE PER DETAIL
HW	=	HEADWALL PER NCDOT STD. DRAWING NO. 838.80 - SHEET C10.10
RCP	=	REINFORCED CONCRETE PIPE (CLASS II UNLESS OTHERWISE NOTED)

* CONTRACTOR HAS THE OPTION TO BID RCP IN PLACE OF HDPE
 ** ALL RCP IS TO BE CLASS III UNLESS OTHERWISE NOTED

FOR CATCH BASINS RIM ELEVATION REFERS TO THE EDGE OF PAVEMENT.

FOR OPEN THROAT CATCH BASINS RIM ELEVATION REFERS TO THE INVERT
 OF THE THROAT OPENING.





SCALE: 1"=10'



1. SEE CONCRETE BARREL AND RISER SPECIFICATIONS (THIS SHEET)
2. ALL SOIL UNDERLYING AND ADJACENT TO RISER AND FOOTING TO BE COMPACTED TO 98% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR) UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER.
3. WATERTIGHT RUBBER BOOTS TO MEET THE ASTM C923-84 STANDARD SPECIFICATIONS FOR RESILIENT CONNECTORS BETWEEN REINFORCED CONCRETE MANHOLE STRUCTURES AND PIPES.

CONCRETE ANTI-SEEP COLLAR DETAIL
NOT TO SCALE



SHALLOW ZONE (0"-9" BELOW NORMAL POOL)		1,741	SQ. FT.	
HERBACEOUS PLANTS (50 / 200 SQ. FT.)		436	HERBACEOUS PLANTS	
COMMON NAME	BOTANICAL NAME	SIZE	SPACING	QTY.
VIRGINIA IRIS	Iris Virginia	4" POT	24" O.C.	109
YELLOW CANNA	Canna Flaccida	4" POT	24" O.C.	109
GOLDEN CLUB	Orontium Aquaticum	4" POT	24" O.C.	109
SQUARESTEM SPIKERUSH	Eleocharis Quadrangulata	4" POT	24" O.C.	109

INUNDATION ZONE (0"-15" ABOVE NORMAL POOL)		1,420	SQ. FT.	
(8 SHRUBS / 200 SQ. FT.)		57	SHRUBS	
COMMON NAME	BOTANICAL NAME	SIZE	SPACING	QTY.
INKBERRY HOLLY	Ilex Glabra	1 GAL.	36" O.C.	29
ARROWWOOD VIBURNUM	Viburnum Dentatum	1 GAL.	36" O.C.	28

WETLAND AREAS | BMP #1 - STORMWATER WETLAND

TOTAL SURFACE AREA OF WETLAND (AT 649.00) = 4,103 SQ. FT

INUNDATION ZONE = 1,420 SQ. FT. [34.6% OF WETLAND]

SHALLOW WATER ZONE = 1,741 SQ. FT. [42.4% OF WETLAND]

NON-FOREBAY DEEP POOLS = 468 SQ. FT. [11.4% OF WETLAND

ENTRANCE/FOREBAY = 474 SQ. FT. [11.6% OF WETLAND]



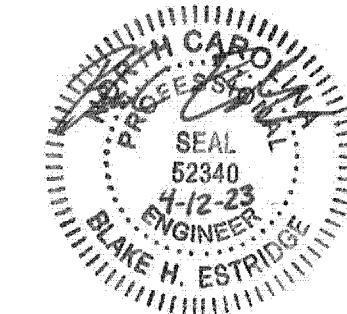
MAINTENANCE SCHEDULE

1. IMMEDIATELY FOLLOWING CONSTRUCTION OF THE STORMWATER WETLAND, CONDUCT BI-WEEKLY INSPECTIONS OF WATER WETLAND PLANTS BI-WEEKLY UNTIL VEGETATION BECOMES ESTABLISHED (COMMONLY SIX WEEKS).
2. BEFORE AND IMMEDIATELY AFTER PLANT INSTALLATION, MONITOR WATER LEVEL AND ADJUST TO ENSURE THAT PLANTS ARE COMPLETELY SUBMERGED.
3. NO PORTION OF THE STORMWATER WETLAND WILL BE FERTILIZED AFTER THE FIRST ANNUAL FERTILIZATION THAT IS REQUIRED TO ESTABLISH THE WETLAND PLANTS.
4. THE WETLAND SHALL BE MAINTAINED TO PREVENT SEDIMENT FROM ENTERING THE SEDIMENT LAGOON TO THE WETLAND. INSPECT THE EMBANKMENT BY A DAM SAFETY EXPERT AT LEAST ONCE ANNUALLY. ANY PROBLEMS THAT ARE FOUND SHALL BE REPAIRED IMMEDIATELY.
5. THE STORMWATER WETLAND IS ESTABLISHED, INSPECT IT MONTHLY AND WITHIN 24 HOURS AFTER EVERY STORM EVENT GREATER THAN 1.0 INCHES (OR 1.5" IF IN A COASTAL COUNTY).
6. KEEP A MAINTENANCE RECORD IN A LOG IN A KNOWN SET LOCATION. ANY DEFICIENCIES NOTED IN AN INSPECTION WILL BE REPAIRED IMMEDIATELY. ANY DEFICIENCIES NOTED IN AN INSPECTION WILL AFFECT THE INTEGRITY OF STRUCTURES, SAFETY OF THE PUBLIC, AND THE POLLUTANT REMOVAL EFFICIENCY OF THE SCWM.



**AMERICAN
Engineering**

American Engineering Associates - Southeast, P.A.
6008 Corporate Center Drive, Suite 110
Charlotte, NC 28226
704-375-2438

[illegible]

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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C22000

CHECKED BY: BH

DRAWN BY: BH

DATE: 07/26/2023

SHEET TITLE:

BMP 1 PLAN

SHEET NO :

C5.4





1. SEE CONCRETE BARREL AND RISER SPECIFICATIONS (THIS SHEET)
2. ALL SOIL UNDERLYING AND ADJACENT TO RISER AND FOOTING TO BE COMPACTED TO 98% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR) UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER.
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CONCRETE ANTI-SEEP COLLAR DETAIL
NOT TO SCALE



NOT TO SCALE



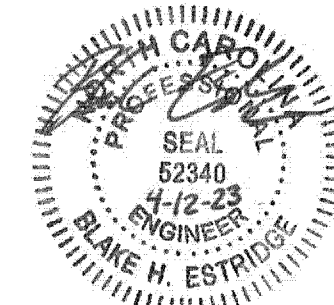
The diagram illustrates the vertical structure of a wetland. It consists of three stacked rectangular boxes. The top box is filled with a wavy, interlocking pattern and is labeled 'DEEP POOL' to its right. The middle box is empty and contains two small, dark, irregular shapes near the bottom center, labeled 'SHALLOW WATER ZONE' to its right. The bottom box is filled with a pattern of small, horizontal, dashed lines and is labeled 'INUNDATION ZONE' to its right.



SCALE: 1" = 10'

WETLAND NOTES:

1. MAXIMUM INUNDATION ZONE PONDING OF 15" FOR DESIGN VOLUME.
2. BMP SIDE SLOPES TO BE SODDED.
3. GAMBUSIA FISH TO BE INSTALLED IN THE DEEP POOLS AFTER THE EROSION CONTROL AND PLANT INSTALLATION PHASE.

[illegible]

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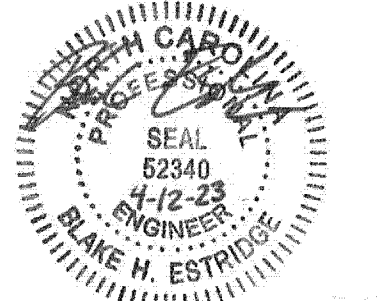
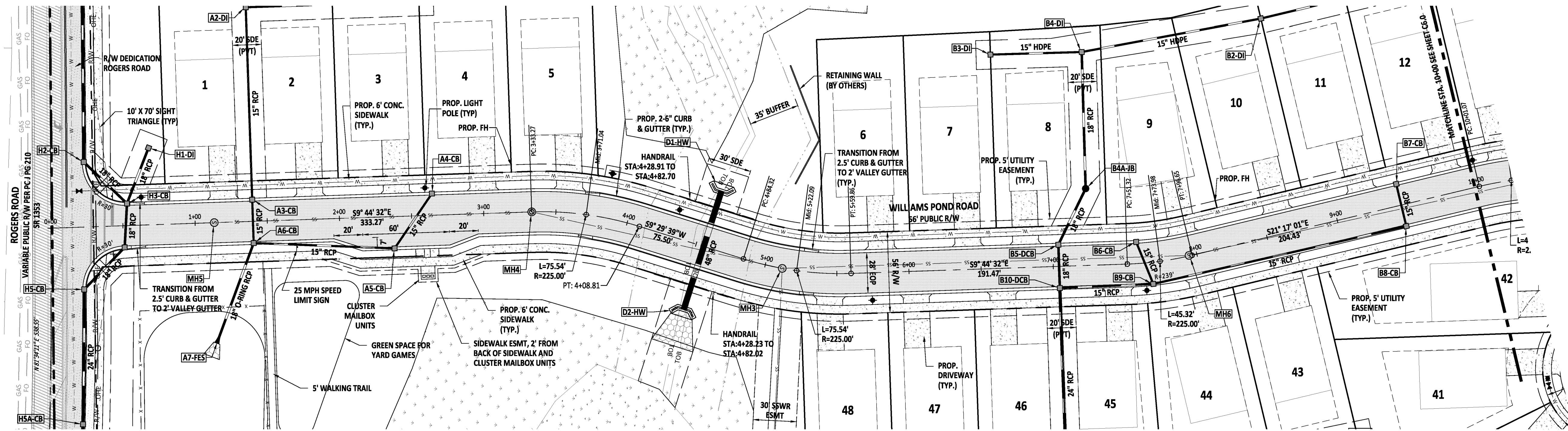
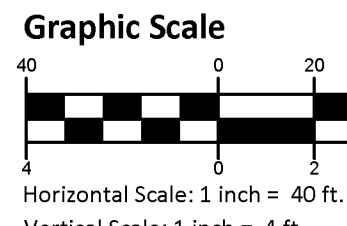
Williams Pond

Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER:	C220009
CHECKED BY:	BHE
DRAWN BY:	BHE
DATE:	07/26/2022
SHEET TITLE:	

BMP 2 PLAN

SHEET NO.: **C5.5**

[illegible]

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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER:	C220009
CHECKED BY:	BHE
DRAWN BY:	BHE
DATE:	07/26/2022
SHEET TITLE:	
PLAN & PROFILE - WILLIAMS POND ROAD	
SHEET NO.:	C6.0

North Carolina 811
www.nc811.org

*** 3 Days Before Digging ***

North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
<http://nc811.org/remoteticketentry.htm>

NO. DATE REVISION:

STIPULATION FOR REUSE

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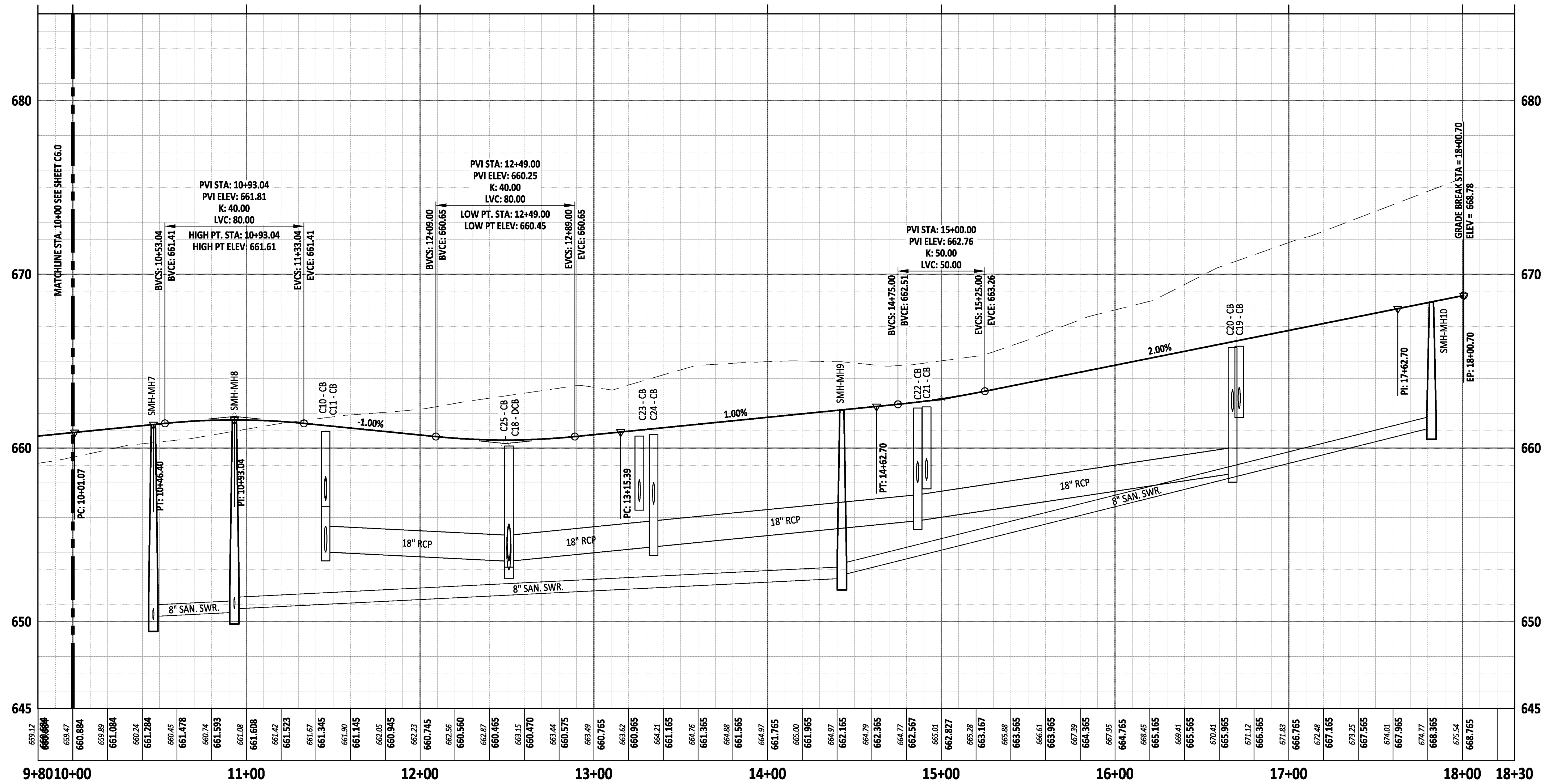
Williams Pond

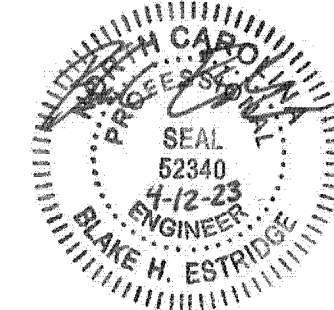
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C220009
CHECKED BY: BHE
DRAWN BY: BHE
DATE: 07/26/2022
SHEET TITLE:
**PLAN & PROFILE
- WILLIAMS
POND ROAD**

SHEET NO.:

C6.1



[illegible]

STIPULATION FOR REUSE

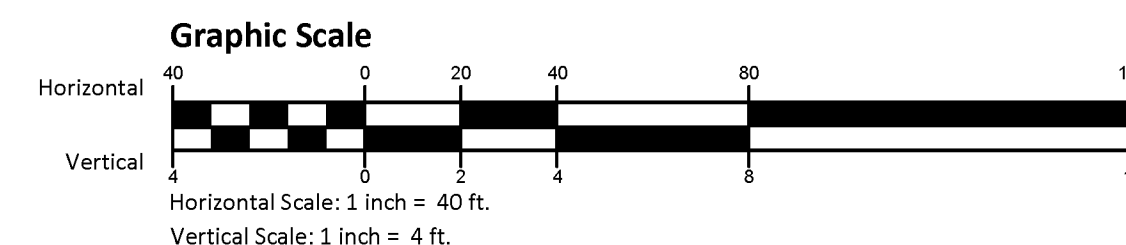
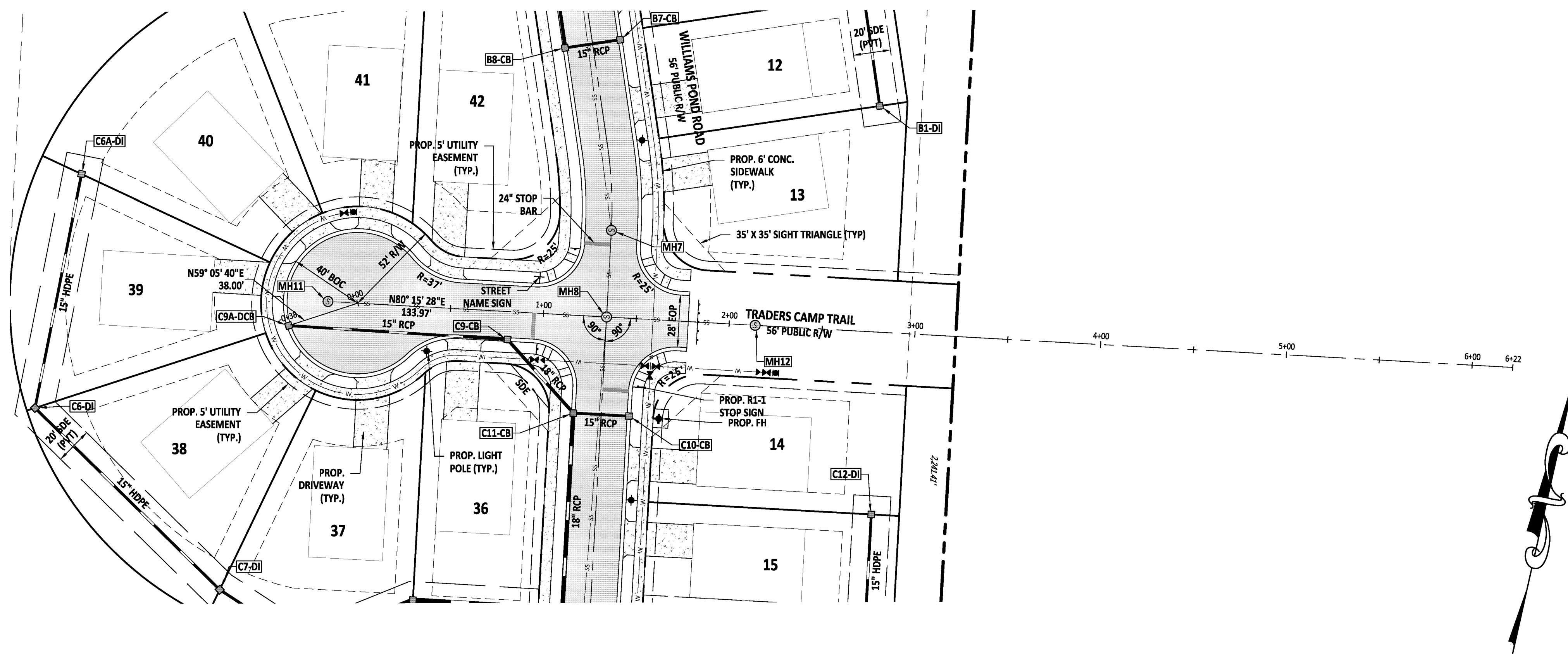
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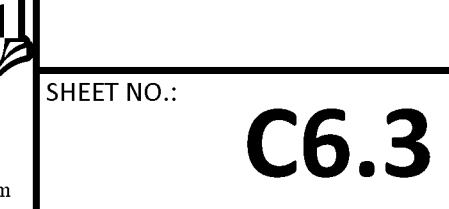
Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER:	C22000
CHECKED BY:	BH
DRAWN BY:	BH
DATE:	07/26/202

PLAN & PROFILE - TRADERS CAMP TRAIL

SHEET NO.: **C6.2**



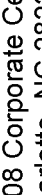




NOTES:
*** CROWN SHIFTS AROUND 5.5' FROM PROPOSED CENTERLINE TO EXISTING CROWN FROM STA. 1+08.06 TO STA. 2+03.77**



NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



**AMERICAN
Engineering**

American Engineering Associates - Southeast, P.A.
8008 Corporate Center Drive, Suite 110
Charlotte, NC 28226
704-375-2438

[illegible]

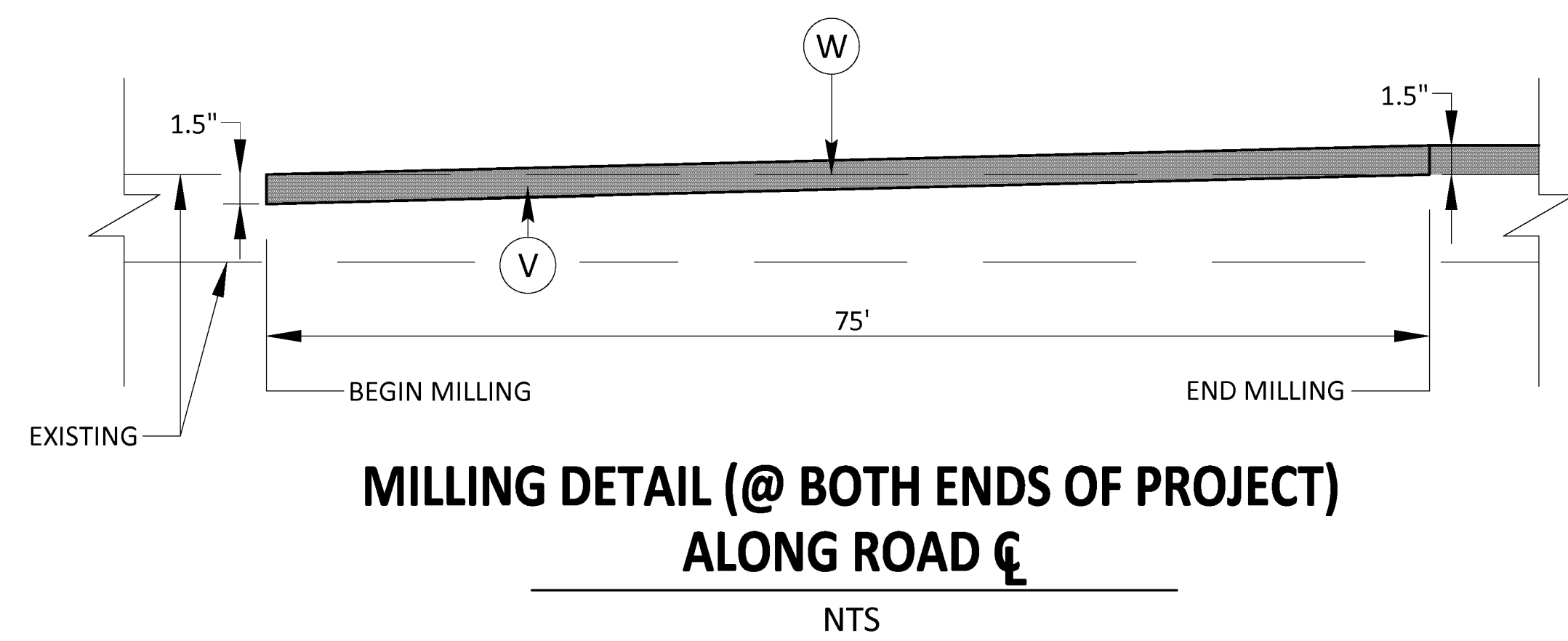
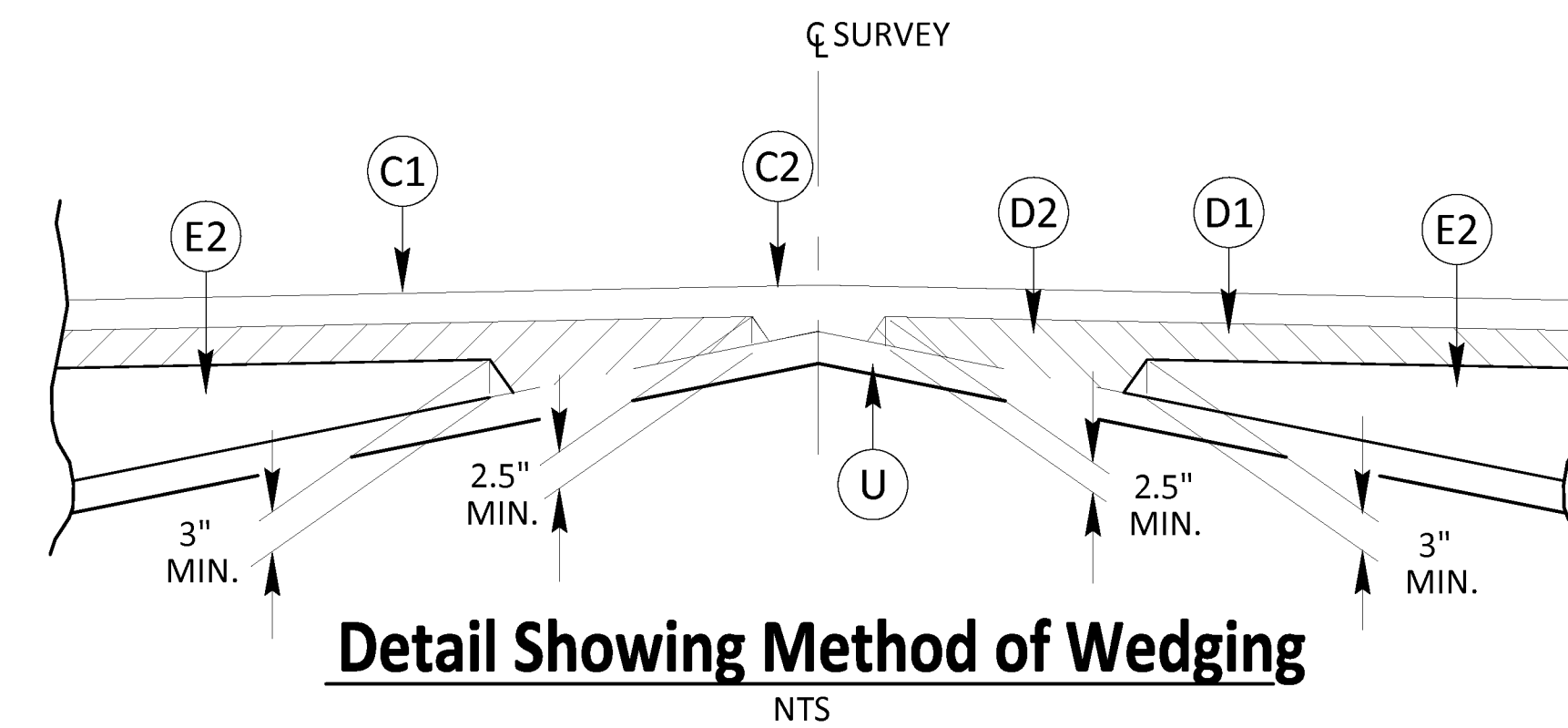
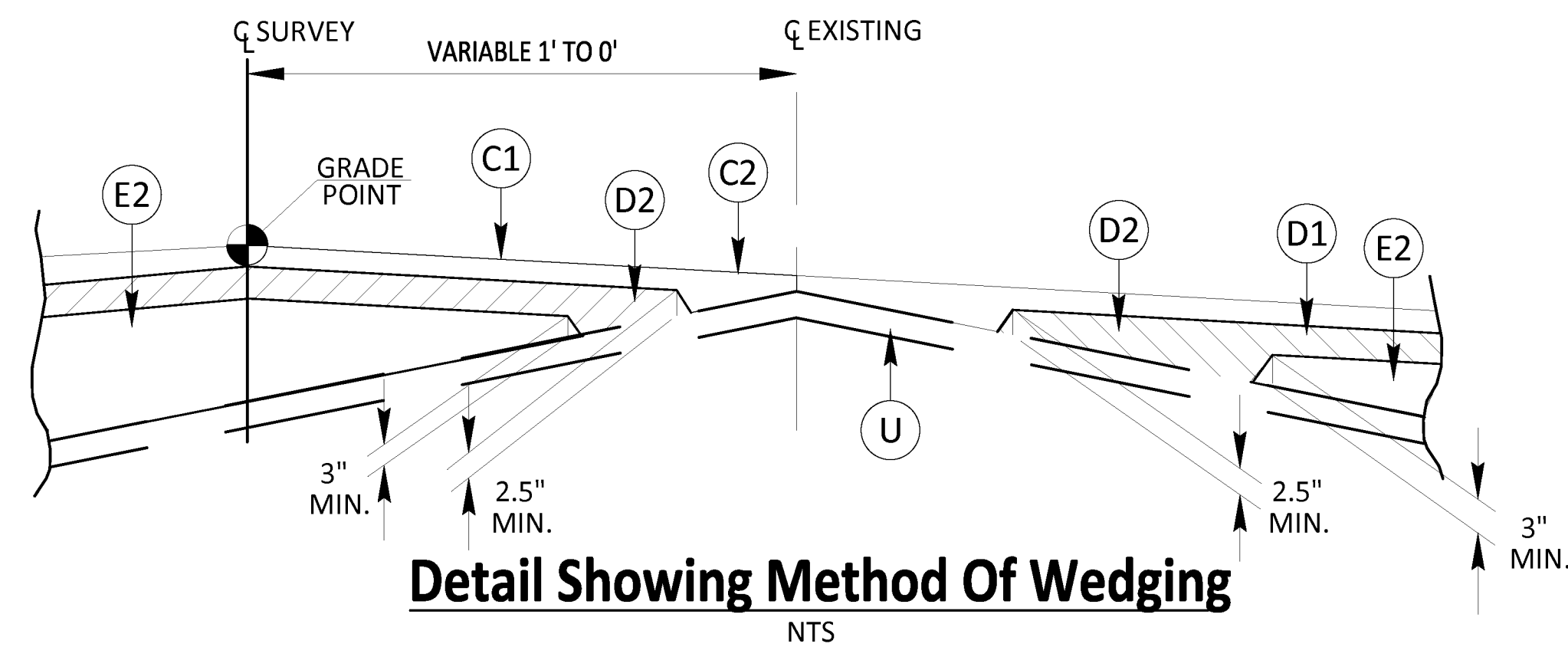
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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

B NUMBER:	C220009
CHECKED BY:	BCP
DRAWN BY:	KBR
DATE:	9/16/2022
SHEET TITLE:	

TYPICAL SECTIONS - ROGERS ROAD

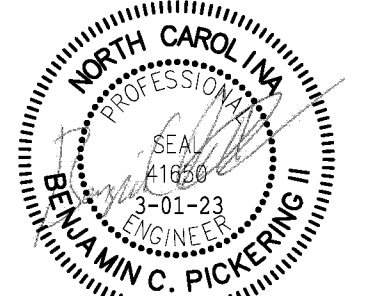
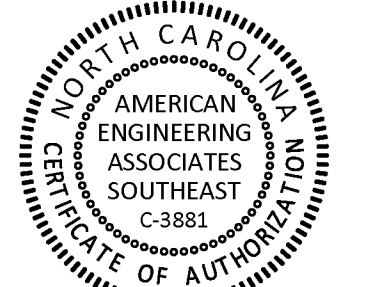
SHEET NO.: **C6.4**



PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH
E1	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH
R1	2'-6" CONCRETE CURB & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT, 1 1/2" DEPTH
W	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

FDPS = FULL DEPTH PAVED SHOULDER

[illegible]

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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

BOOK NUMBER:	C220009
CHECKED BY:	BCP
LOANED BY:	KBR
DATE:	9/16/2022
SHEET TITLE:	

TYPICAL SECTIONS

SHEET NO.:

C6.4A



W:\2022\220009 - A448 Williams Pond\CAD\Civil Sheets\03.5 Signing & Marking Plan - Rogers Road.dwg

NOW OR FORMERLY
MARY M DAVENPORT & JOSEPH JOHN SIRICO
DB 5648 PG 749
PARCEL ID # 09-396-011B

NOW OR FORMERLY
MARY M DAVENPORT & JOSEPH JOHN SIRICO
PARCEL ID # 09-396-011B

NOW OR FORMERLY
JOSEPH J SIRICO & MARY M DAVENPORT
DB 28110 PG 0476
PARCEL ID # 09-366-018E

NOW OR FORMERLY
SUNVALLEY BUSINESS PARK
LIMITED PARTNERSHIP
DB 6521 PG 844
PARCEL ID # 09-366-018D

NOW OR FORMERLY
SUNVALLEY BUSINESS PARK
LIMITED PARTNERSHIP
DB 6522 PG 137
PARCEL ID # 09-366-018C

NOW OR FORMERLY
SUNVALLEY BUSINESS PARK
LIMITED PARTNERSHIP
DB 1146 PG 459
PARCEL ID # 09-366-019B

NOW OR FORMERLY
RM ENTERPRISE INC
DB 1534 PG 221
PARCEL ID # 09-366-018A

STA. 1+08.06
BEGIN (T1, T4, T13)
MEET AND MATCH EXISTING
PAVEMENT AND STRIPING

STA. 6+91.16
END (T13)

STA. 7+24.97
BEGIN (T2, T13)

STA. 8+74.97
END (T2)
BEGIN (T1, T4)

STA. 9+74.97
END (T4)

STA. 11+73.97
END (T1, T13)
MEET AND MATCH
EXISTING PAVEMENT
AND STRIPING

ROGERS ROAD (SR-1353)

WILLIAMS
POND ROAD

NOW OR FORMERLY
JOHN BRIENZA & ROSEMARY BRIENZA
DB 11357 PG 4111
PARCEL ID# 09-397-103

NOW OR FORMERLY
THE NEIGHBORHOOD ASSOCIATION OF POND SIDE, INC
DB 5241 PG 352
PC J PG 39
PARCEL ID # 09-397-105

NOW OR FORMERLY
THE NEIGHBORHOOD ASSOCIATION OF POND SIDE, INC
DB 5241 PG 352
PARCEL ID # 09-397-120

NOW OR FORMERLY
OPENDOOR PROPERTY TRUST I
DB 8486 PG 0371
PARCEL ID# 09-397-102

NOW OR FORMERLY
TEW INVESTMENTS
DB 28211 PG 677
PARCEL ID # 09-369-008A

NOW OR FORMERLY
SOUTH PIEDMONT COMMUNITY COLLEGE
DB 3485 PG 389
PARCEL ID # 09-369-008

POSTED SPEED = 35 MPH

DESIGN SPEED = 40 MPH

SHIFT W = 33.2' - 22' = 11.2 FT

A = $WS^2/60 \rightarrow (11.2) * 40^2/60 = 299$ FT
 $A_g = 199$ FT

LEFT TURN STORAGE = 100 FT BASED ON EMAIL WITH NCDOT ON AUGUST 5, 2022

LEFT TURN TAPER T = 100 FT

LEFT TURN DECELERATION D = 150 FT

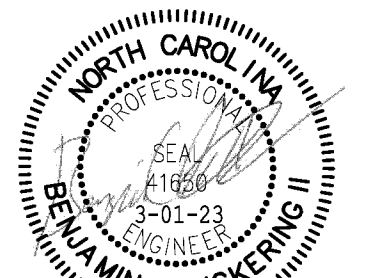
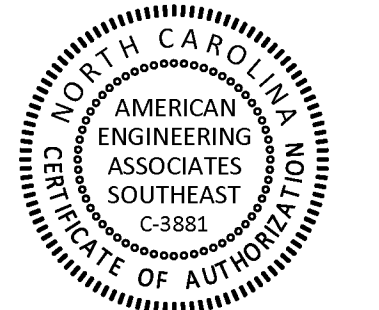
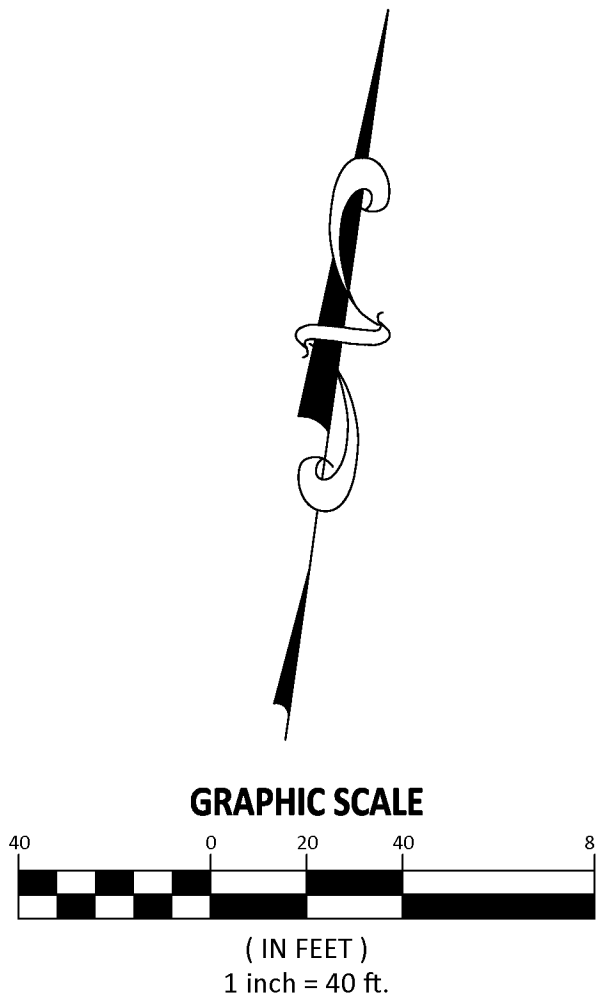
THERMOPLASTIC PAVEMENT MARKING LINES

T1 - THERMOPLASTIC (4", 90 MIL)	WHITE EDGE LINE
T2 - THERMOPLASTIC (4", 90 MIL)	WHITE SOLID LANE LINE
T4 - THERMOPLASTIC (4", 90 MIL)	3 FT. - 9 FT./SP WHITE MINISKIP
T13 - THERMOPLASTIC (4", 90 MIL)	YELLOW DOUBLE CENTER
T42 - THERMOPLASTIC (8", 90 MIL)	YELLOW DIAGONAL
T46 - THERMOPLASTIC (8", 90 MIL)	WHITE CROSSWALK LINE
T61 - THERMOPLASTIC (24", 90 MIL)	WHITE STOP BAR

PAVEMENT MARKING SYMBOLS

T70 - THERMOPLASTIC (90 MIL) LEFT TURN ARROW

NOTE: PAVEMENT MARKINGS PER NCDOT STANDARDS.



NO.

DATE

REVISION:

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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C220009

CHECKED BY: BCP

DRAWN BY: KBR

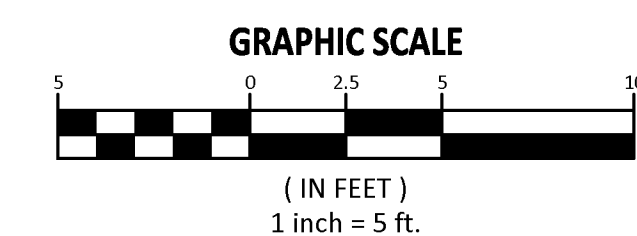
DATE: 9/16/2022

SHEET TITLE:

**SIGNING &
MARKING PLAN
- ROGERS ROAD**

SHEET NO.:

C6.5



North Carolina 811
www.nc.811.org
*** 3 Days Before Digging ***
North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
<http://nc811.org/remoteticketentry.htm>

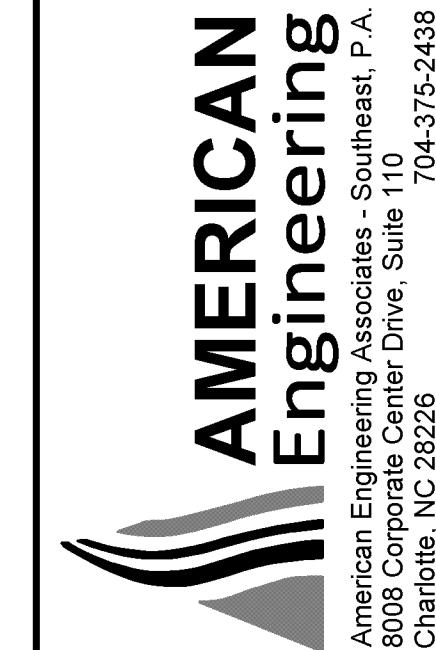
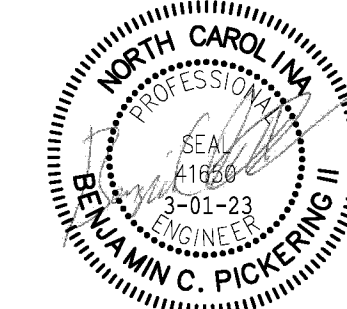
SHEET NO.: **C6.6**

JOB NUMBER:	C220009
CHECKED BY:	BCP
DRAWN BY:	KBR
DATE:	9/16/2022
SHEET TITLE:	

Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

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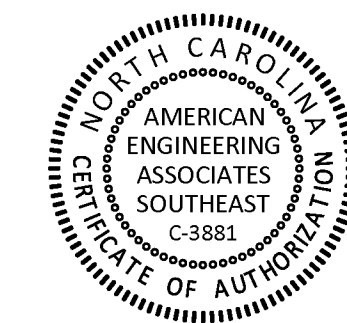
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SHEET NO.: **C6.7**

CROSS SECTIONS

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IOR NUMBER: C220000

CHECKED BY: _____ RCB

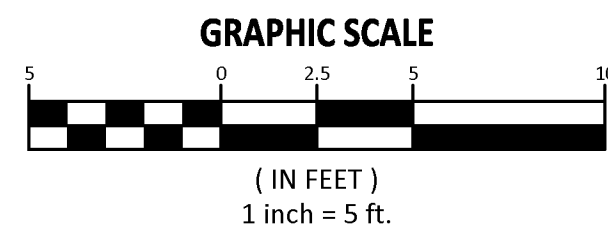
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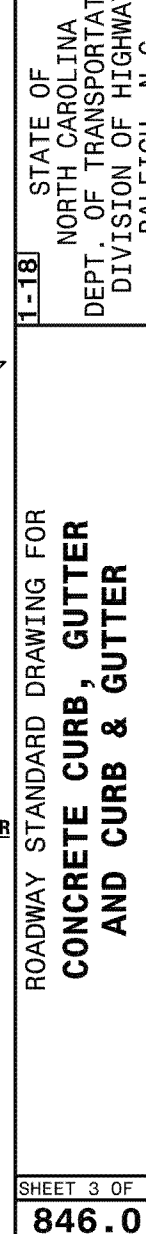
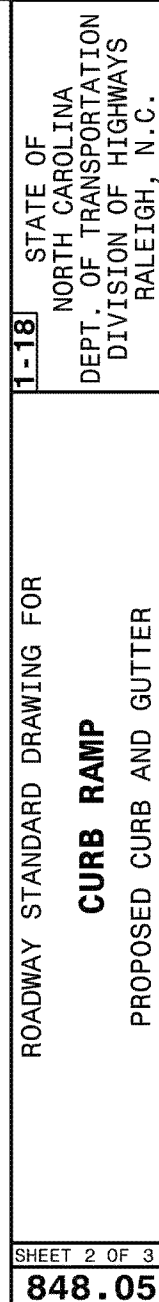
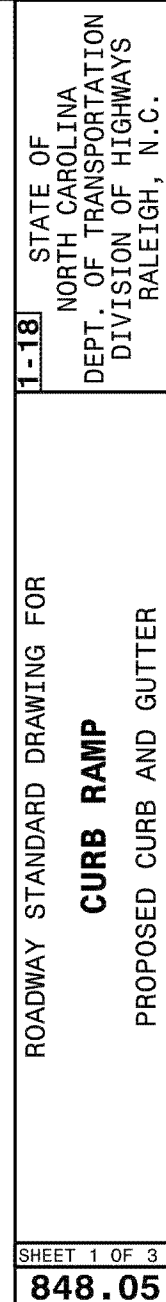
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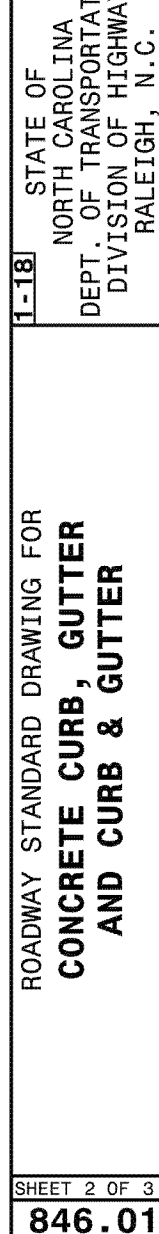
CROSS SECTIONS

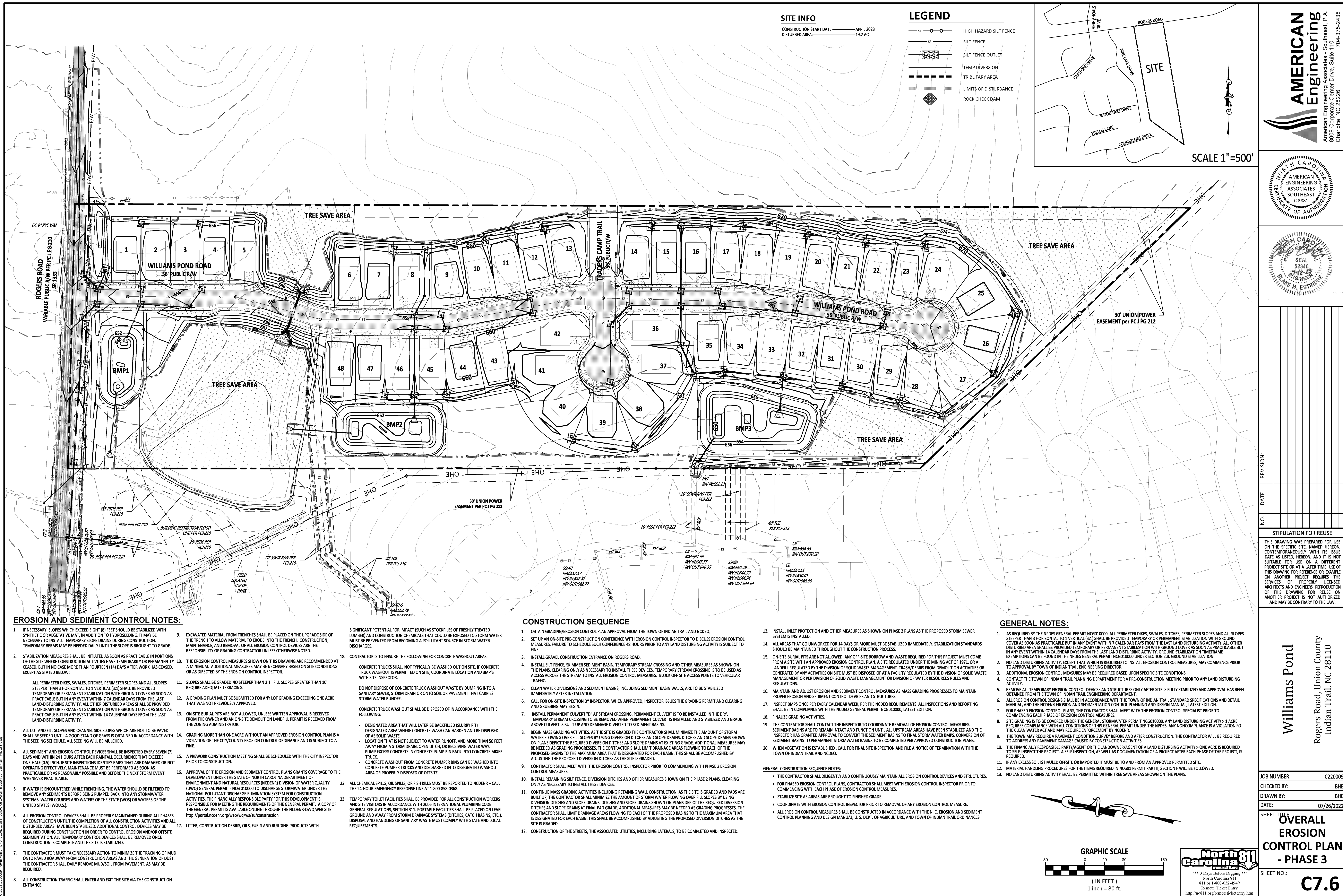
SHEET NO.: 668





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|--|-------------------------------|---|
| ROADWAY STANDARD DRAWING FOR
CURB RAMPS
NOTES | 1-18 | STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAY
RALEIGH, N.C. |
| | SHEET 3 OF 3
848.05 | |





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

SECTION E: GROUND STABILIZATION

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

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

GROUND STABILIZATION SPECIFICATION

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

Temporary Stabilization	Permanent Stabilization
- Temporary grass seed covered with straw or other mulches and tackifiers - Hydroseeding - Rollled erosion control products with or without temporary grass seed - Appropriately applied straw or other mulch - Plastic sheeting	- Permanent grass seed covered with straw or other mulches and tackifiers - Geotextile fabrics such as permanent soil reinforcement matting - Hydroseeding - Shrubs or other permanent plantings covered with mulch - Uniform and evenly distributed ground cover sufficient to restrain erosion - Structural methods such as concrete, asphalt or retaining walls - Rollled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

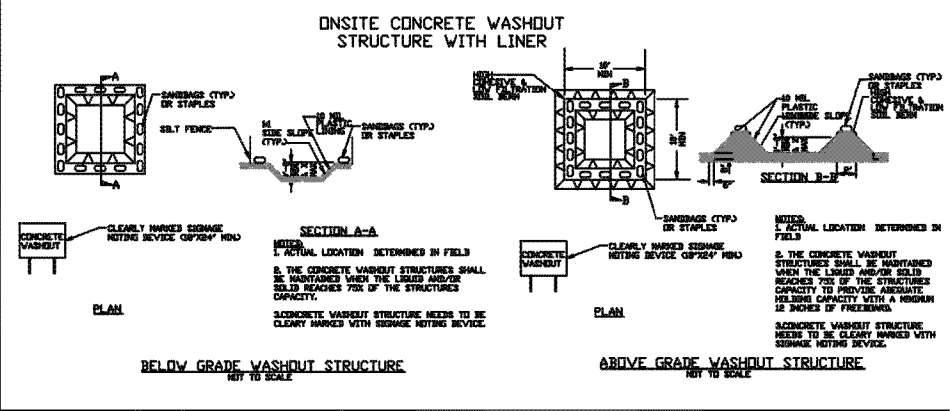
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled,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

PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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



CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

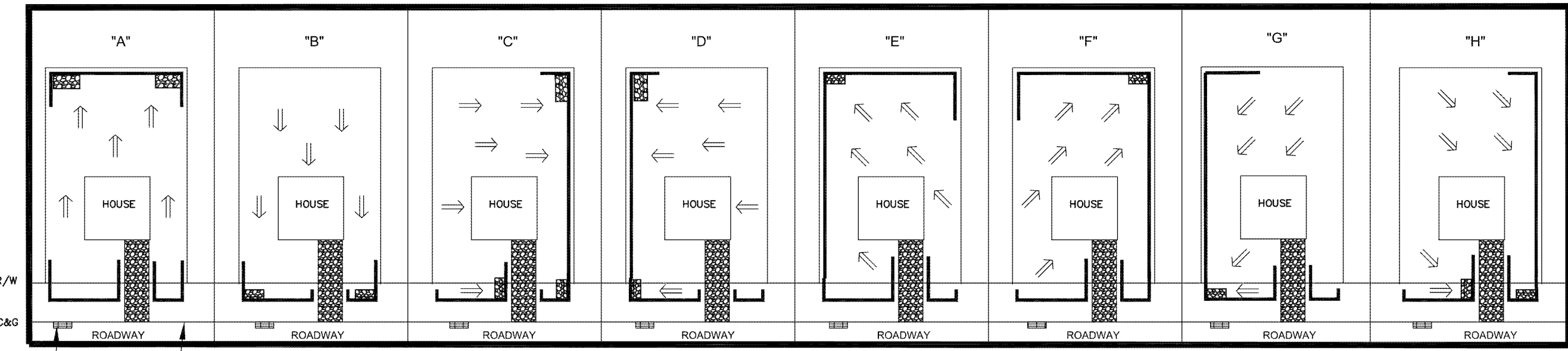
- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store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

HAZARDOUS AND TOXIC WASTE

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

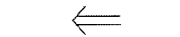
Date:

NOTE: DETAIL FOR REFERENCE ONLY. HOME BUILDER TO PROVIDE INDIVIDUAL LOT DEVELOPMENT PLAN.



LEGEND

FLOW DIRECTION



SILT FENCE



WADDLE/ SILT SOCKS



SILT FENCE OUTLET



CONSTRUCTION ENTRANCE



CURB INLET



Notes:

- If needed, Tree Protection fencing should be installed along the buffer zone, wetland boundary and/or around protected trees, providing a radius of at least 1.25 feet for each inch of trunk diameter.
- Install Silt Fence on the low elevation sides of each lot. Install Silt Fence outlets shown on schematic/diagram and field adjusted, if necessary, for placement at low points. If lots are contiguous and have different land owners or builders, each lot should have individual Silt Fences.
- Install required Silt Fence within 10 feet of property line to ensure there is no conflict with septic system. It is the responsibility of the builder to ensure the installation of sediment control measures does not impact the septic system and repair area(s).
- At least one Construction Entrance/Exit is to be installed per lot.
- Waste bins and other areas dedicated for managing building material waste shall be at least 50 feet away from storm drain inlets or drainage ditches unless it can be shown that no other alternative exists. If this separation cannot be achieved, these areas must be contained behind Silt Fence.
- Inlets downstream of disturbances should be protected; streets should be swept when sediment from the construction activity is present.
- Details for Silt Fence, Silt Fence Outlets, Construction Entrances and other measures are provided on additional sheets. Erosion and sediment control details are not drawn to scale.

TYPICAL INDIVIDUAL LOT LAYOUT WITH CURB AND GUTTER



NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

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

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

PART II, SECTION 6, ITEM (4) DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

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

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

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&S Plan Documentation

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

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

2. Additional Documentation to be Kept on Site

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

- This General Permit as well as the Certificate of Coverage, after it is received.

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

3. Documentation to be Retained for Three Years

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

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

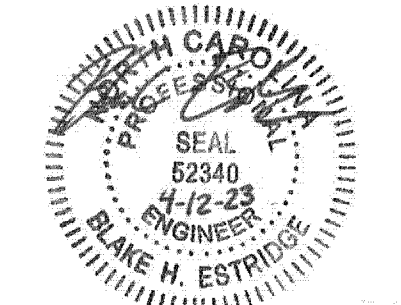
Permittees shall report the following occurrences:

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

2. Reporting Timeframes and Other Requirements

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

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	- Within 24 hours, an oral or electronic notification. - Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	- Within 24 hours, an oral or electronic notification. - Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(h)(7)]	- Within 24 hours, an oral or electronic notification. - Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. [40 CFR 122.41(h)(8)]. - Division staff may waive the requirement for a written report on a case-by-case basis.



STIPULATION FOR REUSE

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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C220009
CHECKED BY: BHE
DRAWN BY: BHE
DATE: 07/26/2022
SHEET TITLE:

NCG01 DETAIL SHEETS

SHEET NO.: **C7.9**



*** 3 Days Before Digging ***
North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
http://nc811.org/remoteticketentry.htm

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE UNION COUNTY STANDARD WATER AND SEWER SPECIFICATIONS, LATEST REVISION.
2. ALL MATERIALS INCORPORATED INTO THE WORK SHALL CONFORM TO THE UNION COUNTY STANDARD WATER AND SEWER SPECIFICATIONS AND DETAILS, LATEST REVISION.
3. UTILITY COMPANIES MUST BE NOTIFIED A MINIMUM OF 72 HOURS IN ADVANCE OF ANY CALL. ONE-CALL @ 811 OR 1-800-4-A-PROFESSIONAL.
4. UNDERGROUND UTILITIES SHOWN ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR IS CAUTIONED THAT THESE LOCATIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES SHOWN ON THE CONTRACT PLANS. THE CONTRACTOR IS RESPONSIBLE TO PERFORM ALL WORK CAREFULLY AND PROTECT EXISTING UTILITIES FROM DAMAGE.
5. THE CONTRACTOR SHALL CONSTRUCT TEST PITS AT ALL UTILITY CROSSINGS TO VERIFY THE LOCATION AND ELEVATIONS OF UTILITIES PRIOR TO ANY WORK BEFORE COMMENCING CONSTRUCTION.
6. WHENEVER IT IS NECESSARY FOR A SEWER MAIN TO CROSS UNDER A WATER MAIN WITHIN THE PROJECT LOCATION, THE CONTRACTOR SHALL PROVIDE A PROTECTIVE STRUCTURE OF DUCTILE IRON PIPE FOR A DISTANCE OF 10'-FEET ON EACH SIDE OF THE POINT OF CROSSING USE OF A SINGLE PIECE OF PIPE, UNLESS AN EXCEPTION IS SPECIFIED ON THE WATER MAIN CONTRACT. THE STRUCTURE SHALL BE CONSTRUCTED REPRESENTING THE SEWER MAIN CROSS OVER A WATER MAIN, BOTH THE WATER MAIN CONTRACTOR AND THE SEWER MAIN CONTRACTOR SHALL PROVIDE A MINIMUM OF 20'-FEET INSTALLED SO BOTH JOINTS WILL BE EQUIVALENT FROM THE UTILITY.
7. ALL WORK SITE AND EQUIPMENT SHALL BE SECURED AT THE END OF EACH DAY AND AT OTHER TIMES WHEN CONSTRUCTION PERSONNEL ARE NOT ON SITE. EQUIPMENT SHALL BE PLACED IN LINEAR FASHION ALONG THE EDGE OF THE VEHICLE TRAVEL AREA. ALL TRUCKS AND GENERATORS SHALL BE PLACED IN THE TRUCK AND GENERATOR LANE. EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED THROUGHOUT THE PROJECT SITE AT ALL TIMES. ACCESS FOR LOCAL TRAFFIC SHALL BE AFFORDED TO THE RESIDENTS AND THE COLLECTION OF TRAFFIC SHALL BE MAINTAINED AND SCHOOL BUS TRAFFIC IS TO BE PROVIDED. EQUIPMENT SHALL BE LOCKED AND INCAPABLE OF OPERATION.
8. ALL OTHER EMPLOYEES ARE COMPANY EMPLOYEES UNLESS APPROVED BY UNION COUNTY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO OPERATE LINE WORK.

8" PVC WATER MAIN	1,592 LF
2" PVC WATER MAIN	660 LF
3/4" DOMESTIC WATER METER	48 EA
3/4" IRRIGATION METER	49 EA
FIRE HYDRANT	2 EA

4' DIAMETER SANITARY SEWER MANHOLE	11 EA
8" PVC SANITARY SEWER MAIN	2,447 LF
4" DIAMETER PVC CLEANOUT	48 EA

REFER TO UNION COUNTY SPECIFICATIONS, UNION COUNTY WATER & SEWER EXTENSION POLICY AND UNION COUNTY WATER & SEWER EXTENSION ORDINANCE

• WATER AND SEWER TAPS, MATERIALS AND INSTALLATION TO BE BY THE DEVELOPER

• ENGINEER TO CERTIFY THAT DESIGN HAS BEEN VERIFIED BY GROUND SURVEY

• A UNION COUNTY WATER'S UTILITY RIGHT-OF-WAY SHALL EXIST ON ALL SANITARY SEWER LATERALS, WATER METERS, AND FIRE HYDRANTS. THE UTILITY RIGHT-OF-WAY TO BE LOCATED 5 FEET ALL SIDES FROM THE CLEANOUT, WATER METER, OR FIRE HYDRANT TO THE PUBLIC ROAD RIGHT-OF-WAY

• THE PROPERTY OWNER SHALL NOT CONSTRUCT OR PERMIT CONSTRUCTION OR PLACEMENT OF ANY TYPE STRUCTURE, PLANT TREES, OR MAKE USE OF THE EASEMENT

• ANY DAMAGE THAT MAY OCCUR TO EXISTING UTILITIES, STORMWATER, OR ROADWAY, OR IMPEDIMENT OF UNION COUNTY WATER EASEMENT AND INTERFERENCE/EGRESS

• ANY CHANGES MADE TO THE PLANS FOR OTHER DISCIPLINES (STORM WATER, EROSION, TREES, LANDSCAPING, ETC.) MUST BE SHOWN AND IDENTIFIED BY REVISION NUMBER AND REASON FOR FAILURE TO BE APPROVED BY THE ENGINEER OF THIS PROJECT

• DESIGN ENGINEER SHALL CONFIRM THAT WATER AND SEWER MAINS, WELL AND SERVICE LINES, METER BOXES, FIRE HYDRANTS AND LATERALS WILL NOT BE IN CONFLICT WITH ANY PROPOSED UTILITY INSTALLATION, LANDSCAPING AND/OR DRIVEWAYS. ANY CONFLICTS MUST BE AT THE DEVELOPER'S RISK TO IDENTIFY, DISCUSS, AND RESOLVE AND COULD RESULT IN DELAY OF WATER METERS BEING SET.

• ONLY UFW PERSONNEL WILL OPERATE THE ACTIVE VALVES WHICH INCLUDED THE TAPPING VALVE

• FIRE HYDRANT PLACEMENT (FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 6 FEET FROM CURB AND GUTTER SIDINGS AND BACK OF PITCH IN ROADWAY SIDINGS) SHALL HAVE A CLEAR SPACE OF 5 FEET FROM ANY PERMANENT STRUCTURES

• METERS WILL NOT BE SET IF WATER METER BOXES, SEWER CLEAN-OUTS, VALVE BOXES OR OBSTACLES/INTERFERENCE ARE DAMAGED OR IMPROPERLY POSITIONED

• 2" GATE VALVES SHALL BE AWWA C515 COMPLIANT

• 2" GATE VALVES SHALL BE NSF 61 COMPLIANT

• 3" OR LARGER GATE VALVES SHALL BE AWWA C500 AND C509 COMPLIANT

• AIR RELEASE VALVES SHALL BE AWWA C314 COMPLIANT

• VERIFICATION HAS BEEN MADE BY AMERICAN ENGINEERING THAT EACH LOT IS CAPABLE OF HAVING GRAVITY SEWER SERVICE TO THE CENTER OF THE LOT AT THE FRONT SETBACK

ALL PROPOSED SEWER CONNECTIONS TO THE EXISTING SEWER SYSTEM BY STRADDLE MANHOLE SHALL NOT CUT INTO THE EXISTING SEWER PIPE UNTIL THE PROPOSED SEWER LINE HAS BEEN ACCEPTED BY UOW. ALSO, ALL CORRE CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE AT THE EXISTING MANHOLE. THE PROPOSED SEWER LINE AT THE 1ST PROPOSED MH UPSTREAM OF THE TE IN POINT. THE SEWER PUG SHALL NOT BE REMOVED UNTIL THE PROPOSED SEWER LINE HAS BEEN ACCEPTED BY UOW. IF PUG IS REMOVED PREMATURELY OR EXISTING PIPE IS DAMAGED THE CONTRACTOR MAY BE LIABLE FOR CLEANING ALL DOWNSIDE SEWER MAINS AND UOW DISCRETION

• THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND ACCESS WITHIN WHICH VEHICLES AND PERSONNEL CAN ENTER AND EXIT THE PROJECT ENTERING THE EXCAVATION OR OTHER PARTS OF THE WORK AND KEEP ALL EXCAVATIONS DURING SUCH TIME AS PIPE LAYING AND GRADING IS COMPLETED AND STRUCTURES TO BE BUILT THERE ARE COMPLETED. NO WATER SHALL BE ALLOWED TO RISE ABOVE THE TOP OF THE BACKFILL TRENCH OR TO FLOOD THE EXCAVATION. THE CONTRACTOR SHALL UNTIL THE CONCRETE OR MORTAR HAS SET (MINIMUM 24 HOURS). ALL WATER PUMPED OR DRAINED FROM THE WORK SHALL BE DISPOSED OF IN SUCH A MANNER AS TO PREVENT POLLUTION AND EROSION OF THE EXCAVATION

• IF WELL AND/OR SEPTIC SYSTEMS ARE ENCOUNTERED, THEN CONTACT DAVE FINLEY (704.283.3879) WITH ENVIRONMENTAL HEALTH FOR THEIR SEQUENCE OF EVENTS AND OTHER PERTINENT INFORMATION

• CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE WALKING TRAIL AND WILL NOT BE RESPONSIBLE FOR REPAIRS OF THE WALKING TRAIL DUE TO MAINTENANCE OF THE SEWER LINE

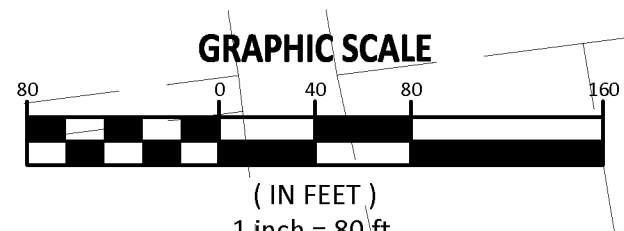
• THE CONTRACTOR SHALL CONTACT UNION COUNTY WATER PERSONNEL AFTER MATERIALS HAVE BEEN APPROVED BY THE UNION COUNTY WATER AND 14 DAYS BEFORE BEGINNING CONSTRUCTION TO SCHEDULE A PRECONSTRUCTION MEETING. PLEASE REACH OUT TO THE DILLON AT LEE.DILLON@UNIONCOUNTYNC.GOV TO SCHEDULE THE MEETING

• ANY WORK OR TEST PERFORMED WITHOUT NOTIFICATION AND CONTACT WITH FIELD INSPECTORS SHALL BE REPEATED AT THE CONTRACTOR'S RISK

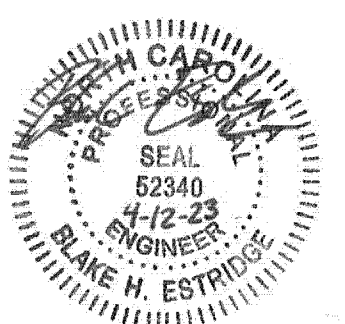
		SIDEWALKS	
RCP	REINFORCED CONCRETE PIPE		
SSW/ESMT	SANITARY SEWER EASEMENT		
SDE	STORM DRAIN EASEMENT		
	EX. CATCH BASIN & PIPE		
	EX. STORM DRAIN & PIPE		
	PROPERTY LINE		
	RIGHT OF WAY LINE		
	ADJACENT PROPERTY LINE		
	EASEMENT LINE		
SS	EX. GRAVITY SEWER		
UT	EX. UNDERGROUND TELEPHONE LINE		
G	EX. GAS LINE		
UGE	EX. UNDERGROUND ELECTRIC LINES		
OE	EX. OVERHEAD ELECTRIC		
W	EX. WATER LINE		
PROP.	PROP. WATER LINE		
SS	PROP. SANITARY SEWER		
	PROP. SANITARY SEWER LATERAL		
	PROP. FIRE HYDRANT		
	PROP. GATE VALVE		
	PROP. BLOW OFF		
	PROP. DUAL WATER & IRRIGATION METER		
	TREE SAVE AREA		

Map showing the location of the proposed site relative to surrounding roads. The site is a rectangular area outlined with a dashed line, labeled "SITE". It is bounded by Rogers Road to the north, High Shoals Drive to the west, and Pine Lake Drive to the east. Other roads shown include Oakstone Drive, Wood Lake Drive, Trellis Lane, and Counselors Drive. A north arrow is located to the right of the site, and a scale bar indicates 1"=1 mile.

11/11/88



North Carolina 811
www.nc.811.org
*** 3 Days Before Digging ***
North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
<http://nc811.org/remoteticketentry.htm>



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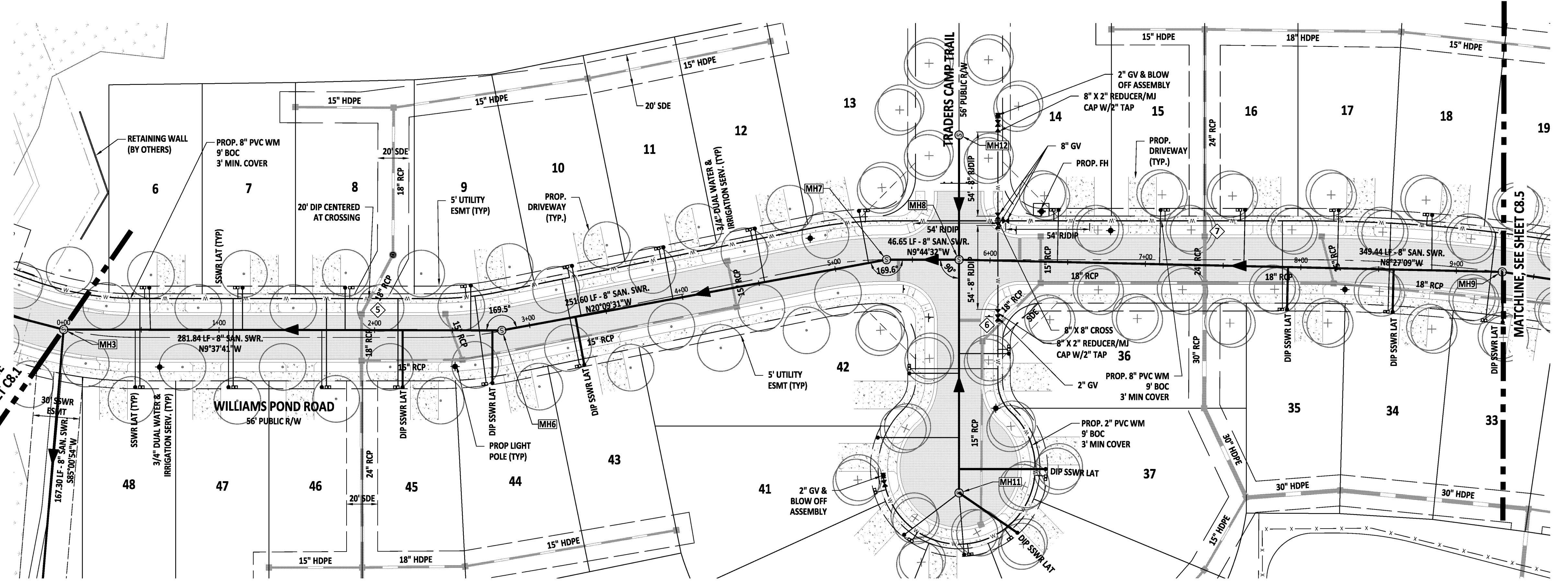
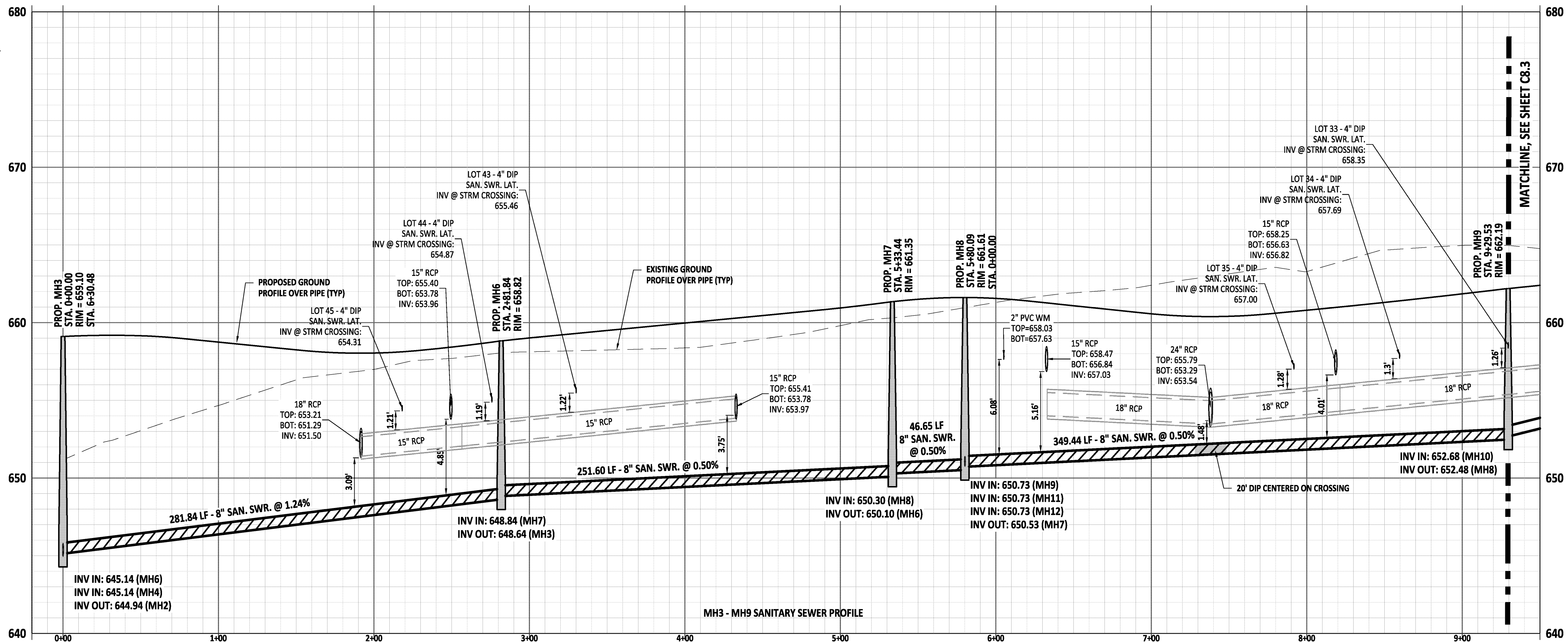
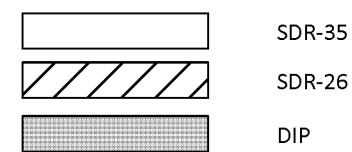
Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

ISS NUMBER:	C2200
CHECKED BY:	B
AWN BY:	B
DATE:	07/26/20
SHEET TITLE:	

**OVERALL
UTILITY PLAN**

EET NO.: **C8.0**

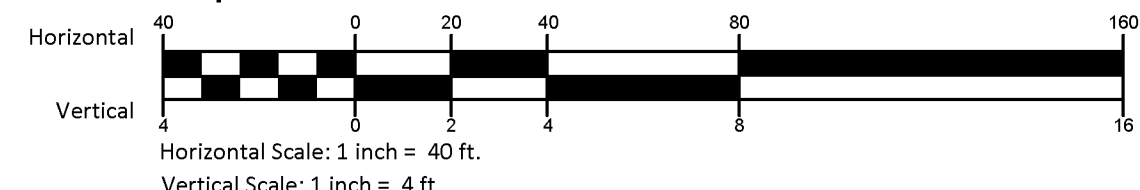
PIPE MATERIAL LEGEND



UTILITY CROSSING DATA:

5	FINISH GRADE: TOP OF 18" RCP STORM: BOTTOM 8" DIP WM: CLEARANCE:	EL 658.28 EL 653.31 EL 654.53 1.22'
6	FINISH GRADE: TOP OF 18" RCP STORM: BOTTOM 2" PVC WM: CLEARANCE:	EL 661.06 EL 655.90 EL 657.50 1.60'
7	FINISH GRADE: TOP OF 24" RCP STORM: BOTTOM 8" DIP WM: CLEARANCE:	EL 660.61 EL 655.93 EL 656.94 1.01'

Graphic Scale



NO. DATE REVISION:

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Williams Pond

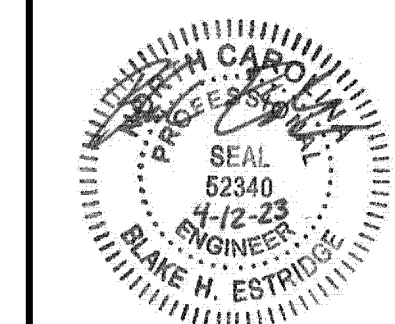
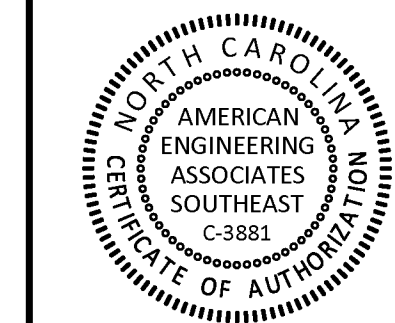
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C220009
CHECKED BY: BHE
DRAWN BY: BHE
DATE: 07/26/2022

SHEET TITLE:
**SANITARY
SEWER PLAN &
PROFILE**

SHEET NO.:

C8.2



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JOB NUMBER: C220009

CHECKED BY: BHE

DRAWN BY: BHE

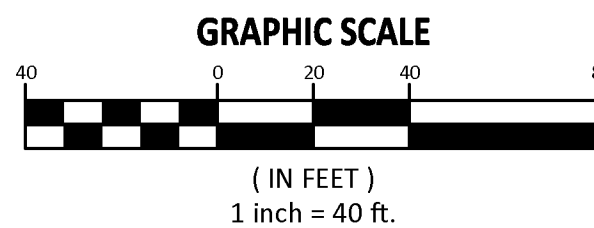
DATE: 07/26/2022

SHEET TITLE:

LANDSCAPE PLAN

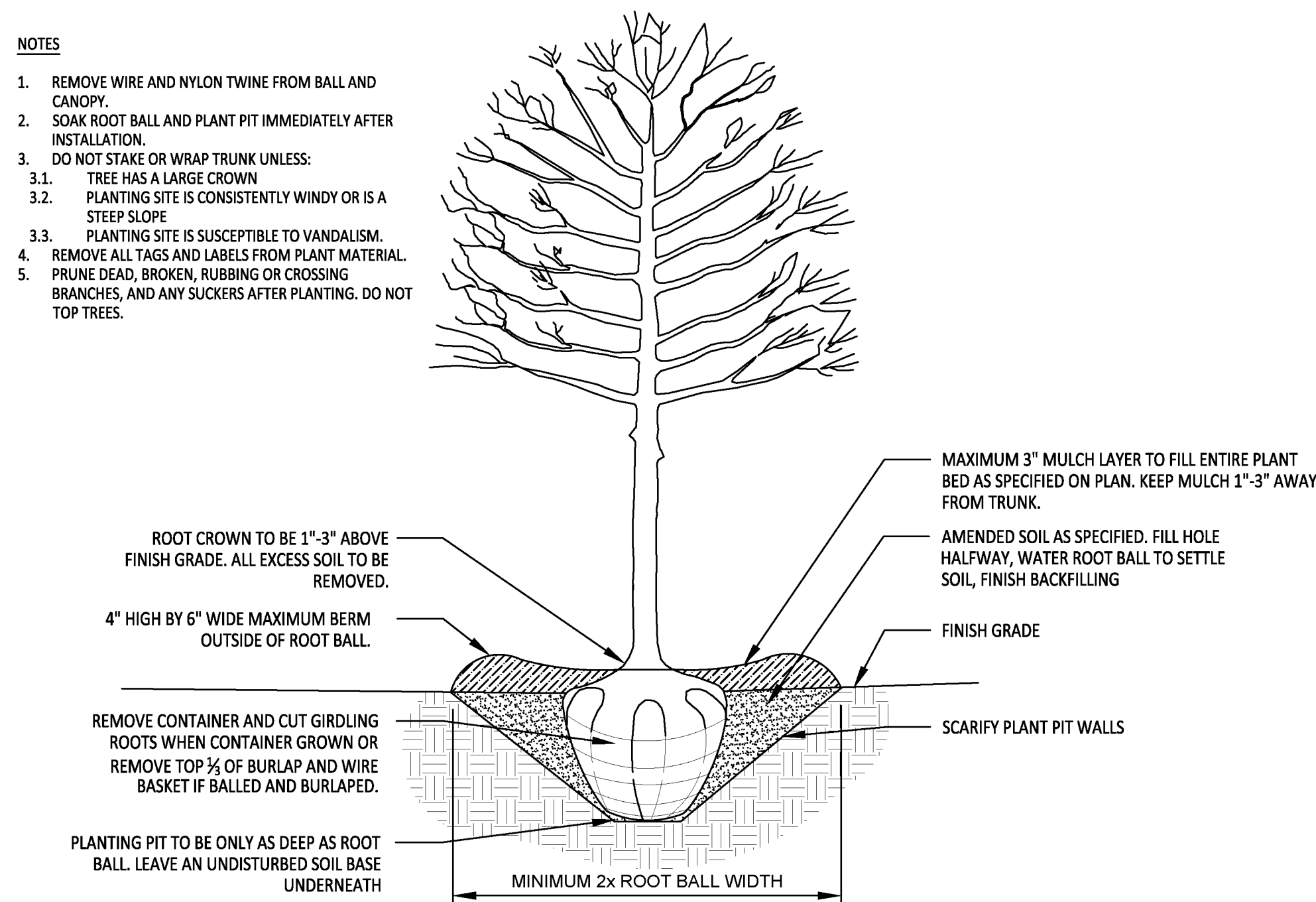
SHEET NO.:

C9.1



NOTES

1. REMOVE WIRE AND NYLON TWINE FROM BALL AND CANOPY.
2. SOAK ROOT BALL AND PLANT PIT IMMEDIATELY AFTER INSTALLATION.
3. DO NOT STAKE OR WRAP TRUNK UNLESS:
 - 3.1. TREE HAS A LARGE CROWN
 - 3.2. PLANTING SITE IS CONSISTENTLY WINDY OR IS A STEEP SLOPE
 - 3.3. PLANTING SITE IS SUSCEPTIBLE TO VANDALISM.
4. REMOVE ALL TAGS AND LABELS FROM PLANT MATERIAL.
5. PRUNE DEAD, BROKEN, RUBBING OR CROSSING BRANCHES, AND ANY SUCKERS AFTER PLANTING. DO NOT TOP TREES.



ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004)					
FOR EXAMPLE:	CALIPER	HEIGHT (RANGE)	MAX. HEIGHT	MIN. ROOT BALL DIA.	MIN. ROOT BALL DEPTH
2"	12'-14'	16'	24'		16"
3"	14'-16'	18'	32"		21"

(FOR SINGLE AND MULTI-STEM TREES)

NOT TO SCALE

KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	COMMENTS
		TREES				
	68	Acer rubrum	Red Maple	2.5" caliper	B & B	Minimum 2.5" caliper and 8' in height at planting
	17	Lagerstroemia indica	Crape Myrtle	2.5" caliper	B & B	Minimum 2.5" caliper and 8' in height at planting
	43	Liriodendron tulipifera	Tulip Poplar	2.5" caliper	B & B	Minimum 2.5" caliper and 8' in height at planting
	6	Magnolia grandiflora	Southern Magnolia	2.5" caliper	B & B	Minimum 2.5" caliper and 8' in height at planting; 60' mature height
	44	Quercus phellos	Willow Oak	2.5" caliper	B & B	Minimum 2.5" caliper and 8' in height at planting
	64	Ulmus chinensis Allee™	Allee Elm	2.5" caliper	B & B	Minimum 2.5" caliper and 8' in height at planting
		SHRUBS				
	94	Abelia x grandiflora	Glossy Abelia	24" minimum	Cont.	4' on center, grows to a maximum height of 6'
	58	Ilex crenata	Japanese Holly	24" minimum	Cont.	4' on center, grows to a maximum height of 10'

BUFFER YARD REQUIREMENTS

REQUIRED: A MIX OF CANOPY TREES 30' ON CENTER

PROVIDED: A MIX OF CANOPY TREES 30' ON CENTER

STREET TREE REQUIREMENTS:

REQUIRED: A MIX OF CANOPY TREES 30' ON CENTER

PROVIDED: A MIX OF CANOPY TREES 30' ON CENTER

ROGERS ROAD STREETSCAPE PROVIDED TO MEET AGREED UPON CONDITIONS OF REZONING

PLANT INSTALLATION & MAINTENANCE NOTES:

1. ALL LANDSCAPING SHALL BE OF NURSERY STOCK QUALITY AND SHALL BE INSTALLED IN A SOUND, WORKMANLIKE MANNER AND ACCORDING TO ACCEPTED GOOD PLANTING PROCEDURES.
2. ALL LANDSCAPING SHALL BE ADAPTABLE TO CLIMATIC CONDITIONS OF THE AREA.
3. LARGE TREES SHOULD NOT BE PLANTED WITHIN EASEMENTS AND A MINIMUM OF 6' FROM UTILITY LINES, UNLESS OTHERWISE SPECIFIED BY REVIEWING AGENCY. SHRUBS MAY BE PLANTED IN EASEMENTS, BUT A MINIMUM OF 3' FROM UTILITY LINES, UNLESS OTHERWISE SPECIFIED BY REVIEWING AGENCY.
4. ALL LANDSCAPING SHALL BE MAINTAINED IN GOOD CONDITION.
5. ALL LANDSCAPING SHALL AT ALL TIMES PRESENT A HEALTHY, NEAT, CLEAN, ORDERLY, DISEASE-FREE AND PEST-FREE APPEARANCE.
6. ALL LANDSCAPING SOIL AND FILL SHALL BE FREE FROM WEEDS, REFUSE, AND DEBRIS AT ALL TIMES.
7. EXCESS SOIL SHALL BE DISPOSED OF IN A LEGAL MANNER.
8. ANY DEAD PLANT MATERIAL OR MATERIAL THAT FAILS TO SHOW HEALTHY GROWTH MUST BE REMOVED WITHIN 30 DAYS.
9. REPLACEMENT OF REMOVED PLANT MATERIAL MUST TAKE PLACE WITHIN 90 DAYS OF REMOVAL OR NOTIFICATION BY THE CITY, WHICHEVER OCCURS FIRST.
10. ANY REPLACEMENT PLANT MATERIAL MUST MEET THE SIZE AND OTHER CHARACTERISTICS OF NEWLY PLANTED MATERIAL.
11. IF USING STAKES AND GUYS SUCH SUPPORTS SHALL BE DESIGNED SO AS TO PROTECT TREES AND SHRUBS FROM INJURY. TREES AND SHRUBS SHALL BE FASTENED TO THE SUPPORT WITH AN ACCEPTABLE COMMERCIAL TREE TIE OF PLASTIC OR HOSE-COVERED WIRE. AFTER THE WARRANTY PERIOD HAS ENDED, STAKES AND GUYS SHALL BE REMOVED.
12. CONTRACTOR IS RESPONSIBLE TO CONTACT MISS UTILITIES (811) 48 HOURS PRIOR TO COMMENCEMENT OF WORK. CONTACT LANDSCAPE ARCHITECT IF FIELD CONFLICTS/DISCREPANCIES ARISE.
13. CONTRACTOR RESPONSIBLE TO VERIFY PLANT COUNTS. PLANTING PLAN SHALL GOVERN IN THE CASE OF A CONFLICT.
14. ALL PLANTS SHALL MEET OR EXCEED STANDARDS AS DETERMINED BY THE AMERICAN STANDARD OF NURSERY STOCK.
15. CONTRACTOR SHALL WARRANTY ALL PLANTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
16. WHEN POSSIBLE, PLANTING SHALL BE INSTALLED BETWEEN SEPTEMBER 1 - JUNE 30TH AND IN FAVORABLE WEATHER CONDITIONS. WHEN PLANTING MUST BE PERFORMED OUTSIDE OF SPECIFIED DATES, PLANTS MUST BE WATERED ON A REGULAR BASIS TO ENSURE VIABILITY.
17. PLANT VARIETIES, SIZES AND LAYOUT SHALL CONFORM ACCURATELY TO THE LANDSCAPE PLAN. CONTACT LANDSCAPE ARCHITECT FOR FIELD CONFLICTS.
18. DISTURBED AREAS SHALL BE SEEDED ACCORDING TO THE NOTES FOUND ON THIS PAGE.
19. PLANT SUBSTITUTIONS SHALL BE BROUGHT TO THE ATTENTION OF AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
20. MULCH USED ON-SITE SHALL BE OF A NON-DYED, NATURAL HARDWOOD VARIETY TO BE INSTALLED AT A MAXIMUM DEPTH OF 3", MINIMUM DEPTH OF 2".

TOPSOIL / PLANTING MIX MINIMUM REQUIREMENTS:

1. TOPSOIL/PLANTING MIX SHOULD BE NATURAL, FERTILE, AGRICULTURAL SOIL CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH. IT SHOULD BE UNIFORM COMPOSITION THROUGHOUT, WITH ADMIXTURE OF SUBSOIL. IT SHOULD BE FREE OF STONES, LUMPS, LIVE PLANTS AND THEIR ROOTS, STICKS AND OTHER EXTRANEAS MATTER. TOPSOIL SHOULD NOT BE USED WHILE IN A FROZEN OR MUDDY CONDITION.
2. TOPSOIL/PLANTING MIX SHALL HAVE AN ACIDITY RANGE OF PH 5.5-7.0 AND THE FOLLOWING COMPOSITION:

CLAY (RED CLAY, WELL PULVERIZED)	MINIMUM 10%; MAXIMUM 35%
COMPOST*/ORGANIC	MINIMUM 5%; MAXIMUM 10%
SILT	MINIMUM 30%; MAXIMUM 50%
COARSE SAND (FREE OF ROCKS, 0.5 TO 1.0 MM F)	MINIMUM 30%; MAXIMUM 45%
3. ORGANIC MATERIAL SUCH AS SAWDUST OR LEAF MOLD THAT HAS COMPLETED THE DECOMPOSITION PROCESS
4. RECOMMENDATIONS:
5. ALL PLANTING AREAS SHOULD BE TESTED FOR PROPER DRAINAGE. DRAINAGE SHOULD BE CORRECTED AS NECESSARY TO INSURE PROPER TREE GROWTH AND SURVIVAL. THE FOLLOWING LEVEL OF NUTRIENT ELEMENTS IS RECOMMENDED FOR PROPER GROWTH:

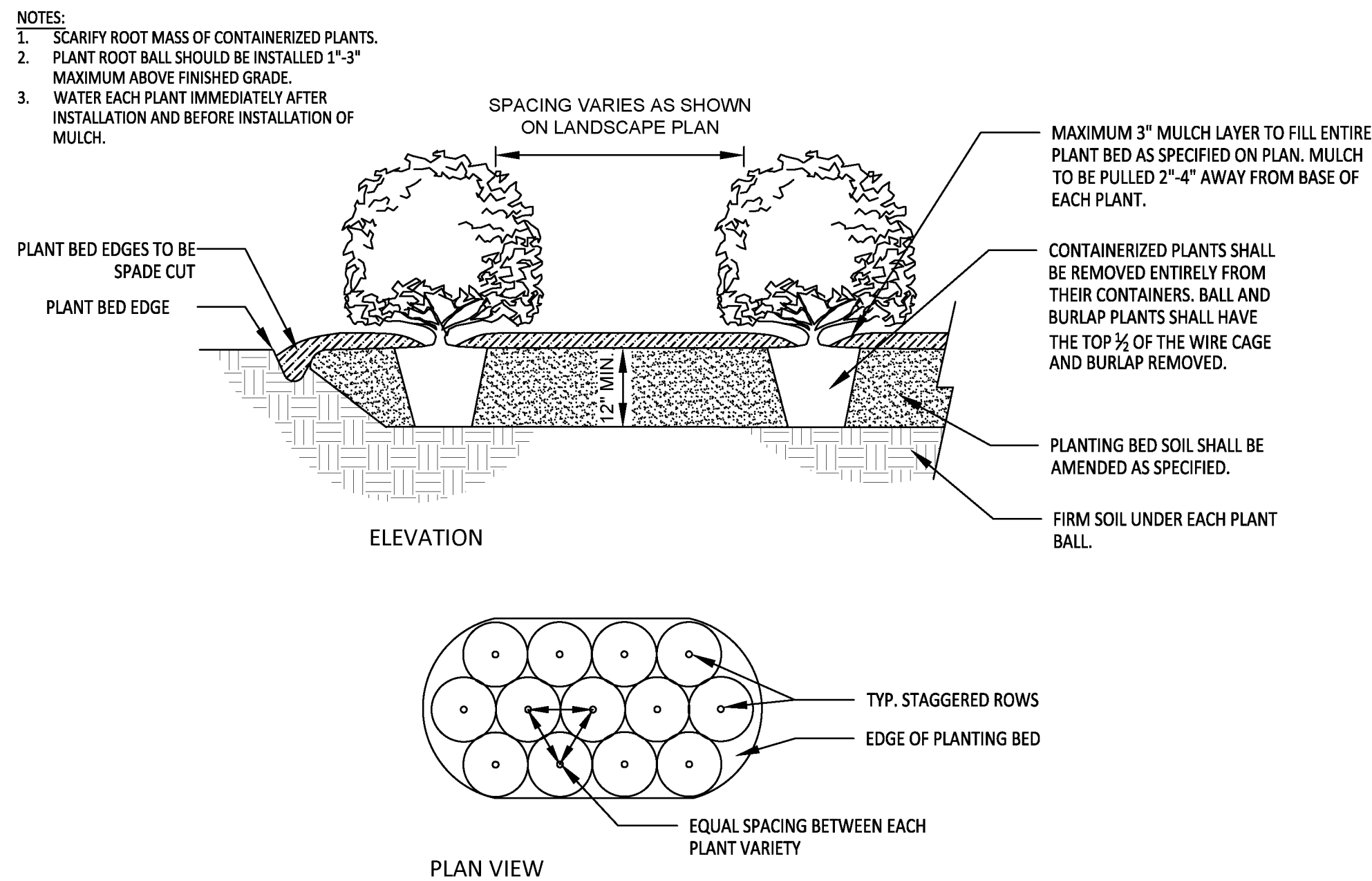
CALCIUM	55 - 80%
MAGNESIUM	10 - 30%
POTASSIUM	5 - 8%

SEEDING SCHEDULE FOR LAWNS & SLOPES (MAXIMUM 3:1):

<u>DATE</u>	<u>TYPE</u>	<u>PLANTING RATE</u>
AUG 15 - NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1 - MAR 1	TALL FESCUE AND ABRUZZI RYE	300 LBS/ACRE OR ANNUAL RYE
MAR 1 - APR 15	TALL FESCUE OR HARD FESCUE	300 LBS/ACRE
MAR 1 - JUL 15	HULLED COMMON BERMUDA GRASS OR HYBRID BERMUDA GRASS OR CENTIPEDE GRASS OR ZOYSIA GRASS OR ST. AUGUSTINE GRASS	200 LBS/ACRE
APR 15 - JUN 30	BAHIA GRASS	25 LBS/ACRE
JUL 1 - AUG 15	TALL FESCUE AND *** BROWNTOP MILLET *** OR SORGHUM-SUDAN HYBRIDS	120 LBS/ACRE 35 LBS/ACRE 30 LBS/ACRE

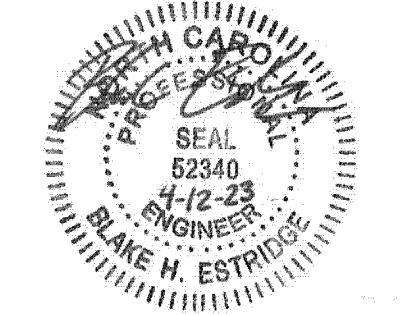
NOT TO SCALE

NOT TO SCALE



**AMERICAN
Engineering**

American Engineering Associates - Southeast, P.A.
8008 Corporate Center Drive, Suite 110
Charlotte, NC 28226
704-375-2438

[illegible]

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Williams Pond
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Indian Trail, NC 28110

JOB NUMBER:	C220009
CHECKED BY:	BHE
DRAWN BY:	BHE
DATE:	07/26/2022

PLANTING NOTES AND DETAILS

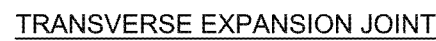
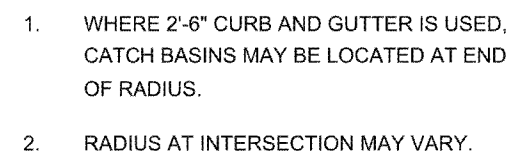
SHEET NO.:

C9.3





* TRANSITION FROM 2'-6" STANDARD CURB TO VALLEY CURB
AT A DRAINAGE INLET ONLY.



1. CONTRACTION JOINTS SHALL BE SPACED AT 10-FOOT INTERVALS. FOR VALLEY GUTTER, A 15-FOOT SPACING MAY BE USED WHEN A MACHINE IS USED.
2. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING.
3. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1 1/2" SHALL BE OBTAINED.
4. EXPANSION JOINTS SHALL BE SPACED AT 10-FOOT INTERVALS, AND ADJACENT TO ALL RIGID OBJECTS. JOINTS SHALL MATCH LOCATIONS WITH JOINTS IN ADJUTING STRUCTURES.
5. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 P.S.I. IN 28 DAYS.
6. CURB SHALL BE DERESSED AT INTERSECTIONS TO PROVIDE FOR FUTURE ACCESSIBLE RAMPS.



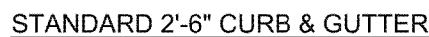
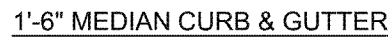
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	Revision Date
	02/2021
	Detail #
	T_11.01



REVISIONS	Scale
	Not To Scale
	Revision Date
	02/2021
	Detail #
	T_13.01



REVISIONS	Scale
	Not To Scale
	Revision Date
	02/2021
	Detail #
	T_4.02



1. VERTICAL CURBS SHALL BE IN ACCORDANCE WITH NCDOT STD. 846.0



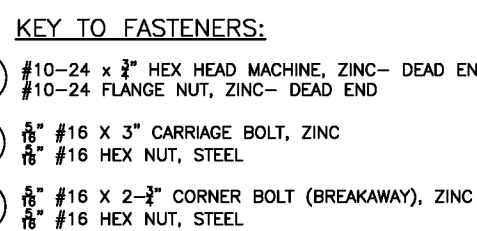
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	Revision Date
	02/2021
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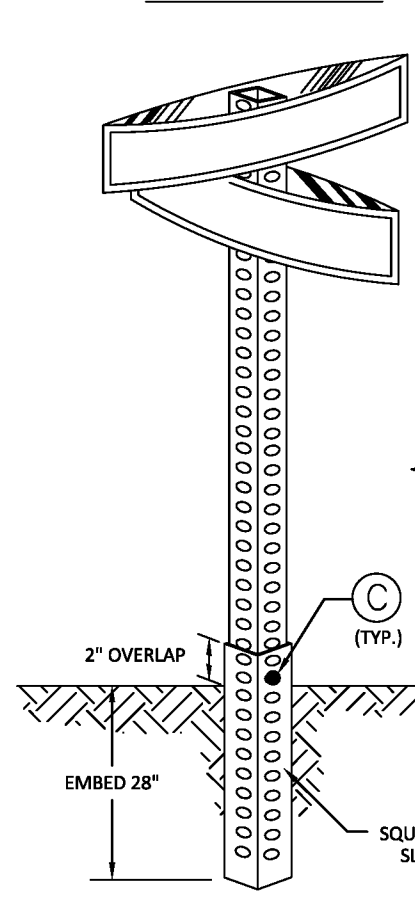
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	Revision Date
	02/2021
	Detail #
	T_16.08



REVISIONS	Scale
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	Revision Date
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	Detail #
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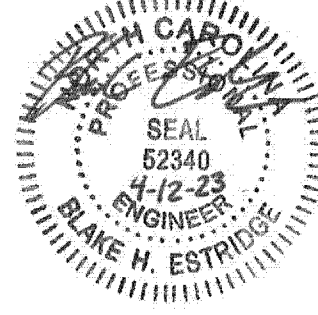
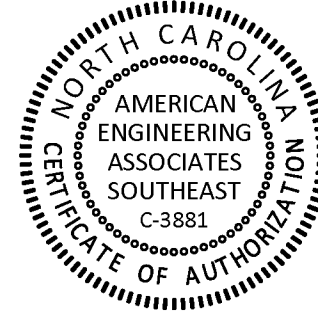


1. POST SHALL BE 14-GAUGE GALVANIZED STEEL, QUIK-PUNCH, $\frac{1}{8}$ " HOLES, 1" ON CENTER, ALIGNED ON ALL SIDES, AND 2" SQUARE, 10 FEET IN LENGTH.
2. THE SLEEVE SHALL BE 12-GAUGE GALVANIZED STEEL, $\frac{7}{8}$ " HOLES, 1" ON CENTER, ALIGNED ON ALL SIDES, AND 2.25" SQUARE, 30" IN LENGTH.
3. ALL STREET NAME SIGNS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.

[illegible]

AMERICAN
Engineering

American Engineering Associates - Southeast, P.A.
8008 Corporate Center Drive, Suite 110
Charlotte, NC 28226
704-375-2438

[illegible]

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Williams Pond

Rogers Road, Union County
Indian Trail, NC 28110

Indian Trail, NC 28110

JOB NUMBER: C220009

CHECKED BY: BHE

DRAWN BY: BHE

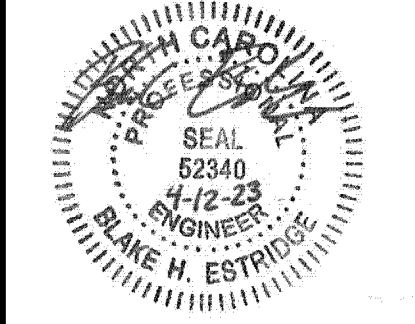
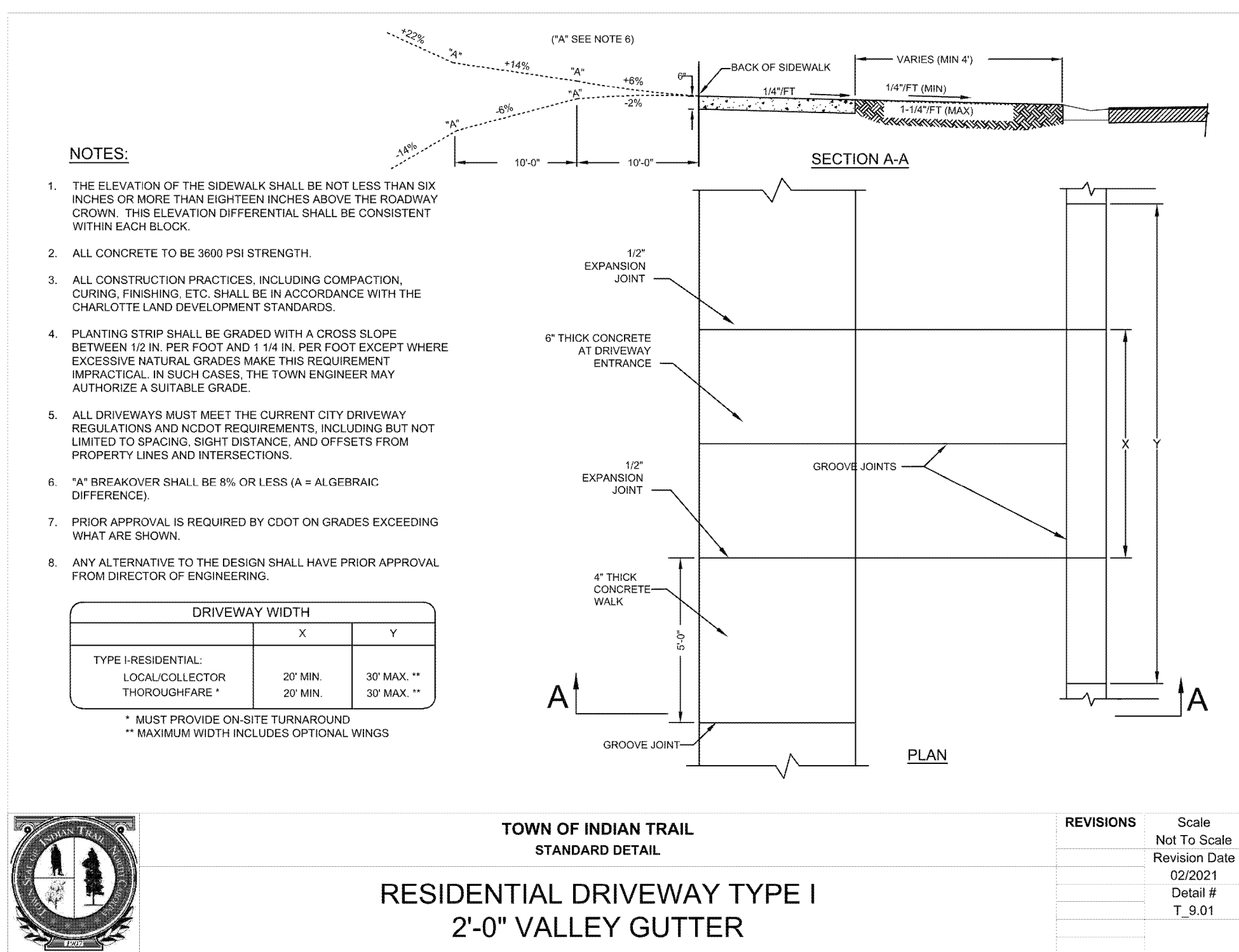
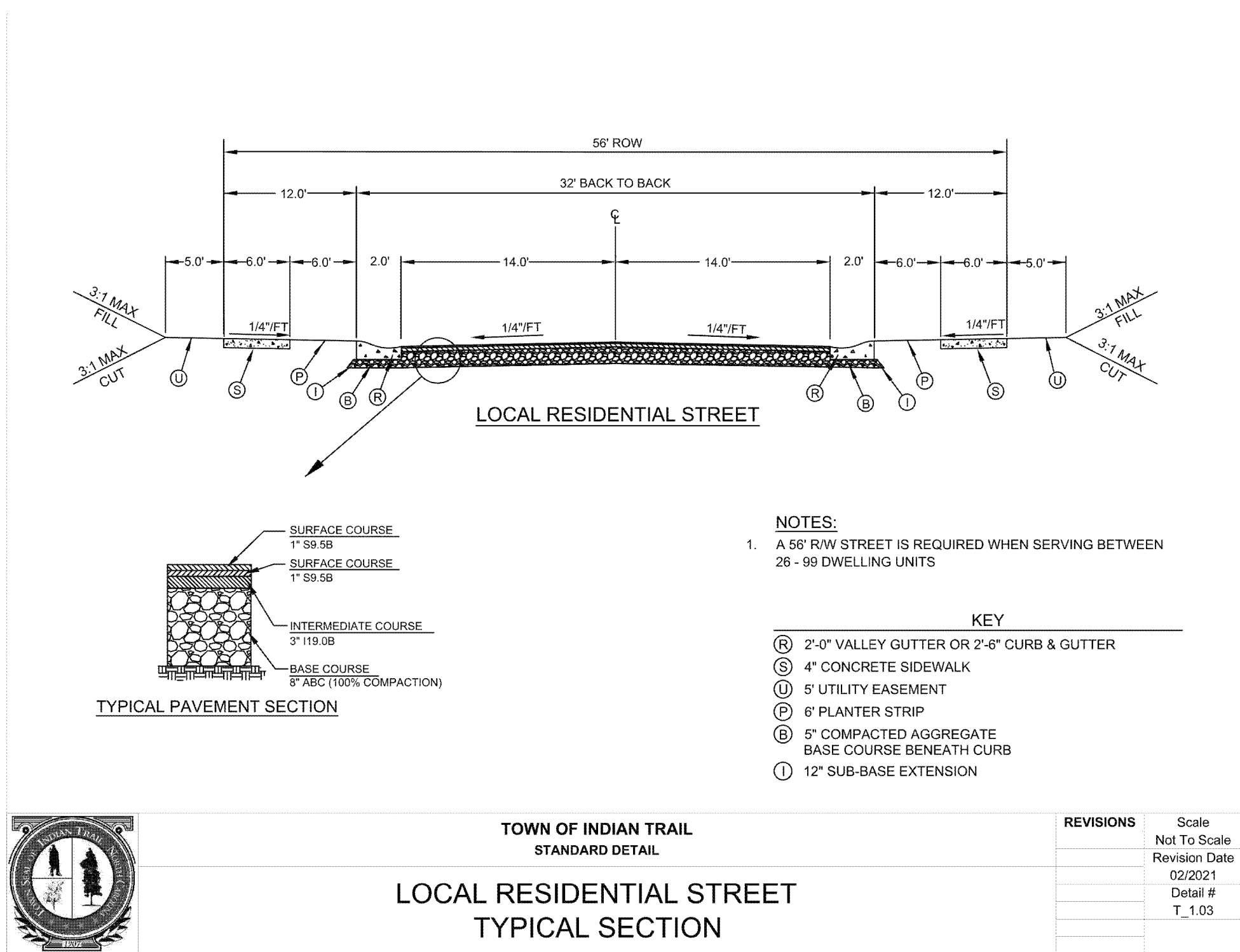
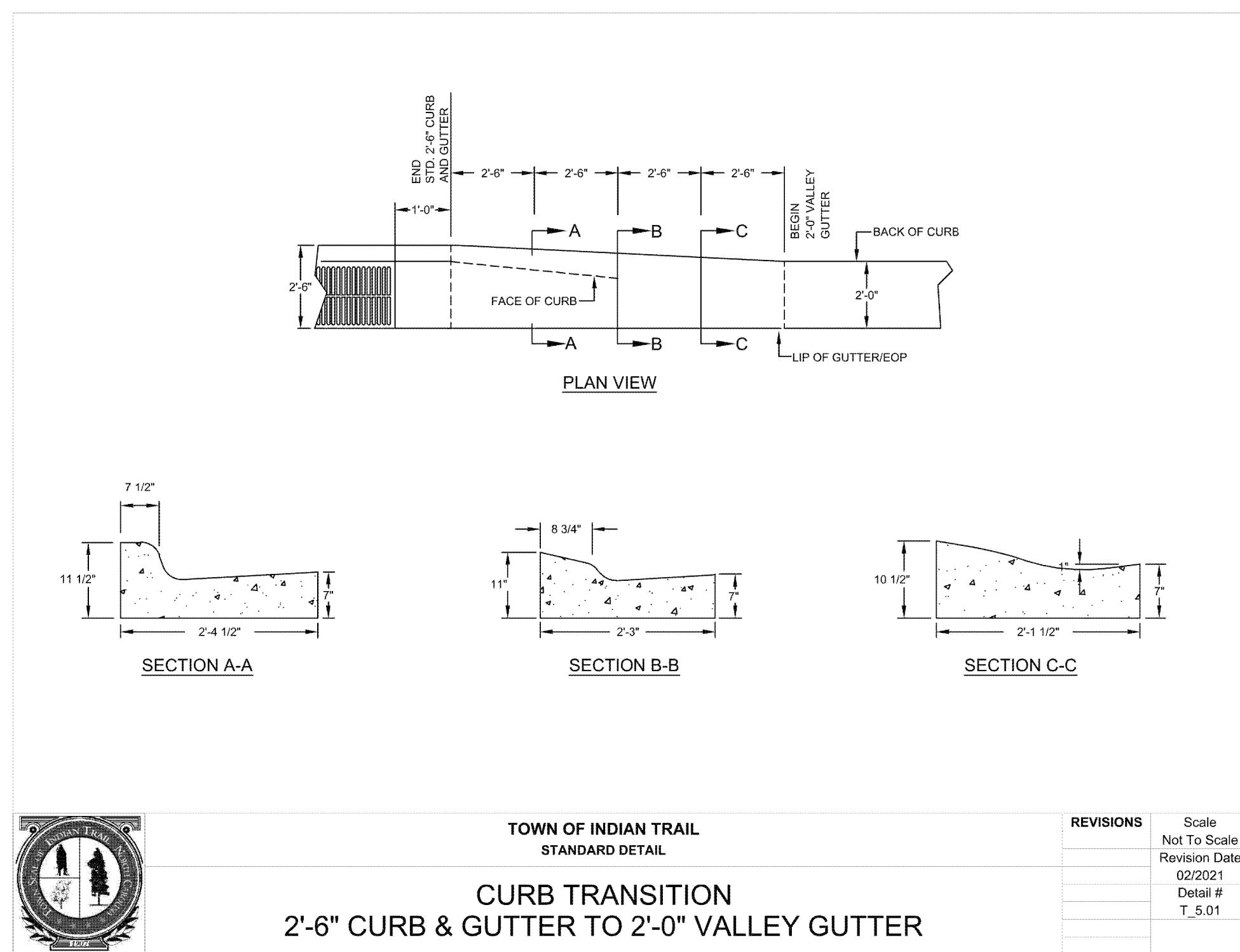
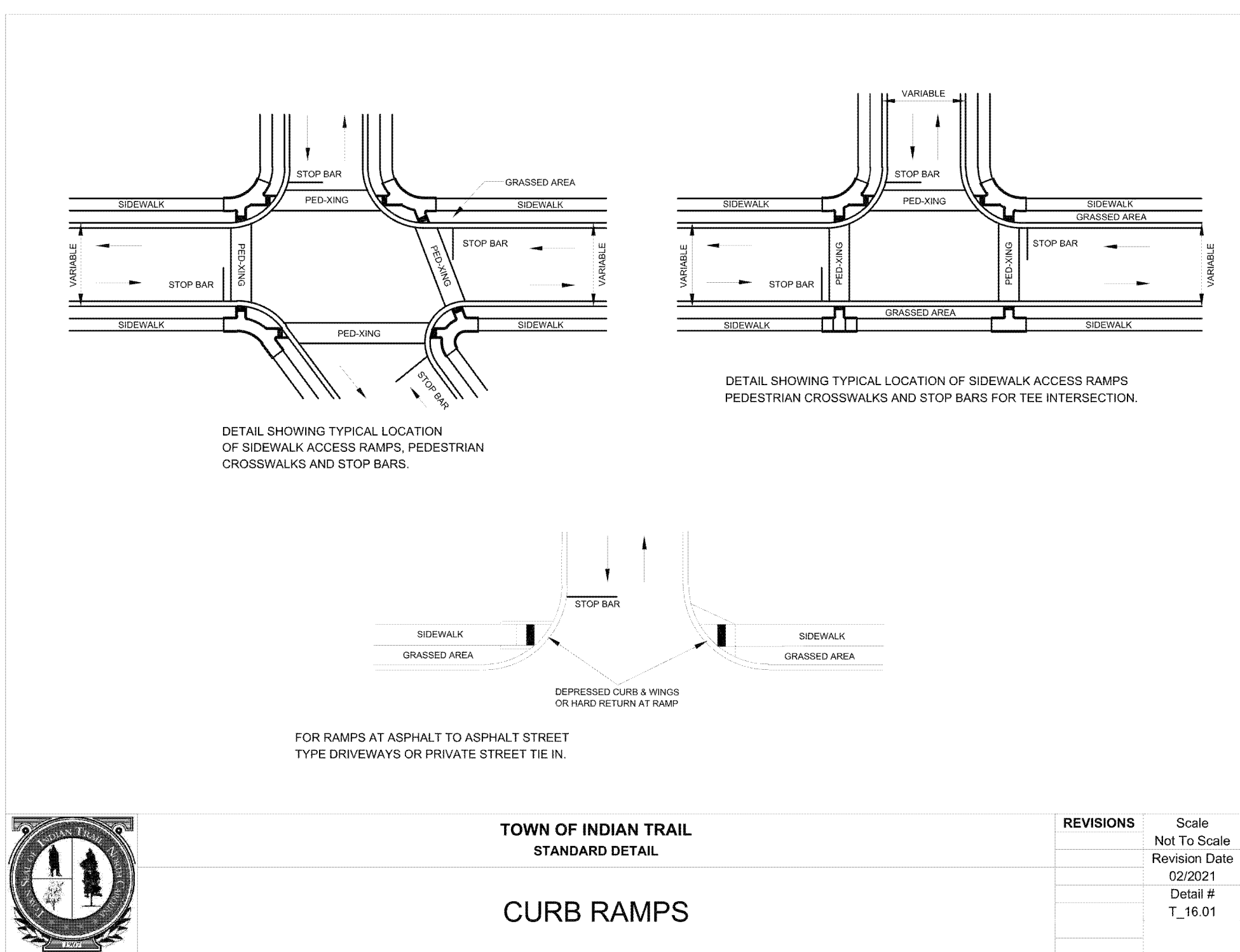
DATE: 07/26/2022

SHEET TITLE:

SITE DETAILS

SHEET NO.

C10.0



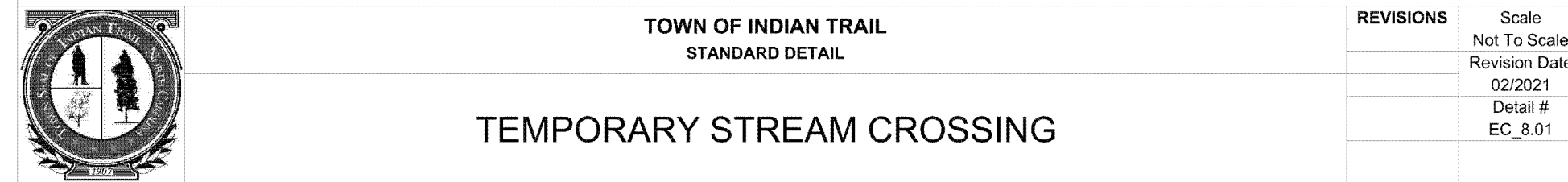
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JOB NUMBER:	C220009
CHECKED BY:	BHE
DRAWN BY:	BHE
DATE:	07/26/2022
SHEET TITLE:	

SHEET NO.: **C10.1**





Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Soil amendments

Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Referitize if growth is not fully adequate. Reseed, referitize and mulch immediately following erosion or other damage.

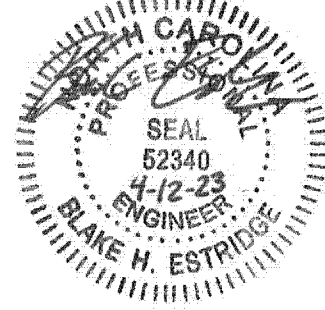
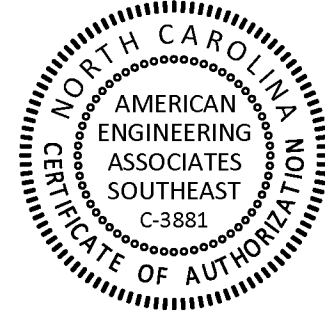
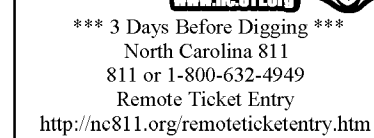
Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) Jespedeza in late February or early March.

[illegible]

STIPULATION FOR REUSE

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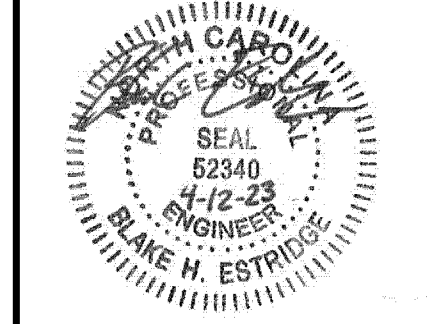
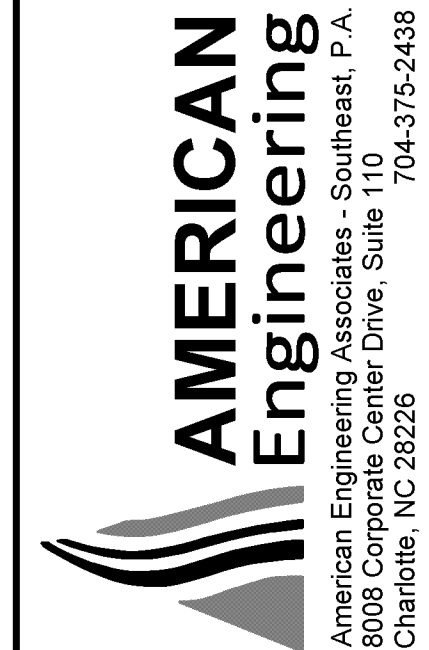
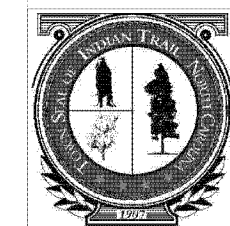
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DATE:	07/26/2022
SHEET TITLE:	

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SITE DETAILS

SHEET NO.:

C10.3

[illegible]

STIPULATION FOR REUSE

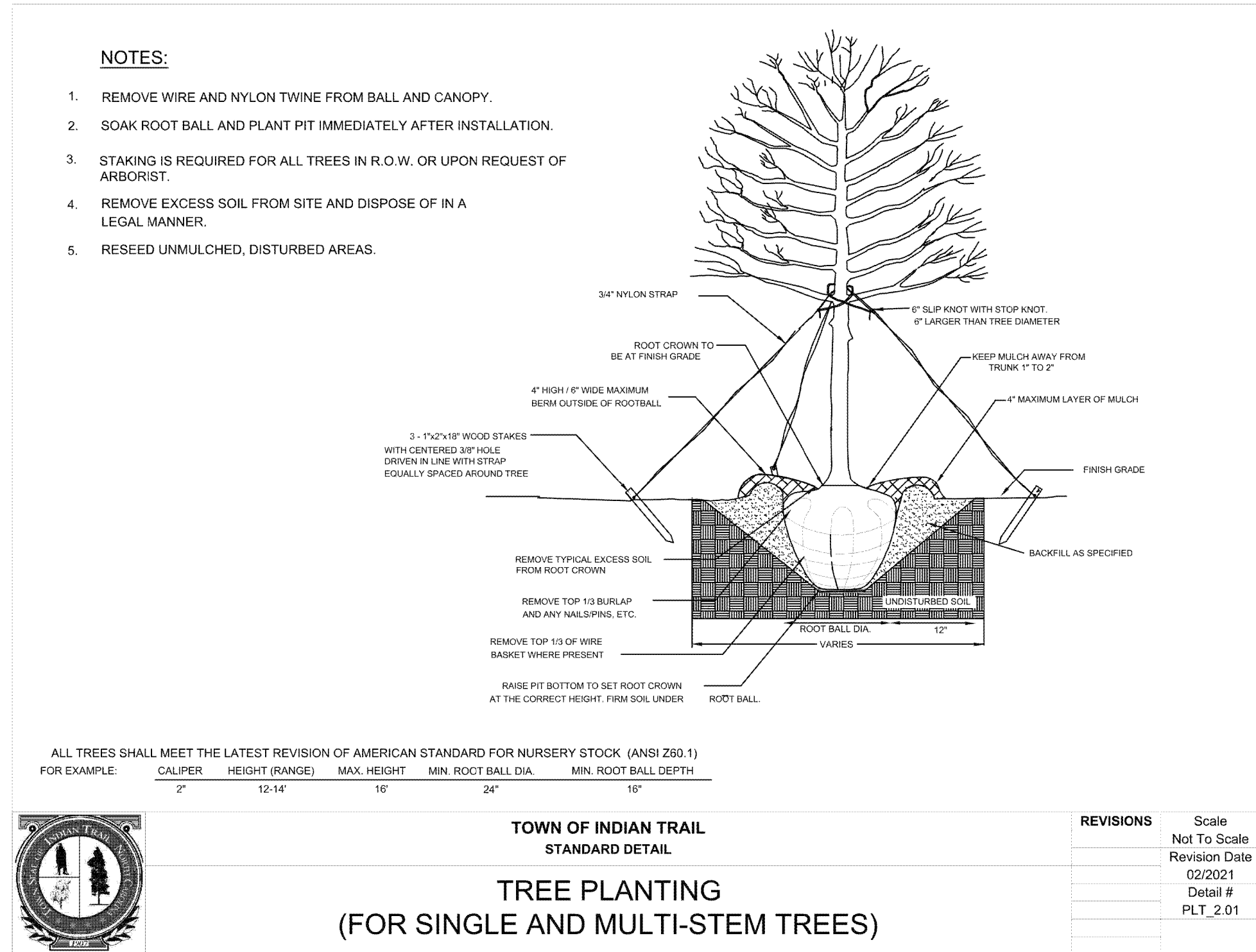
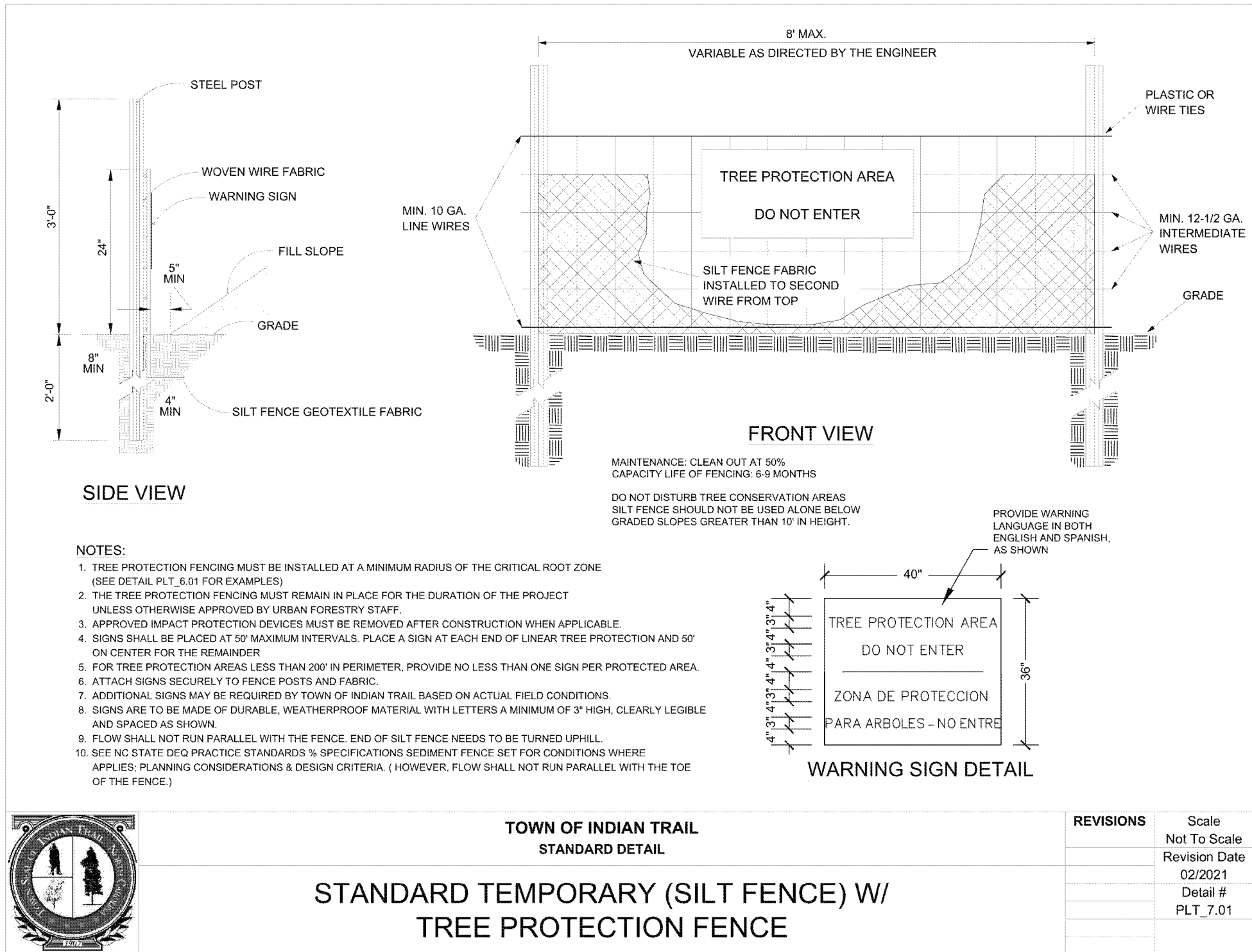
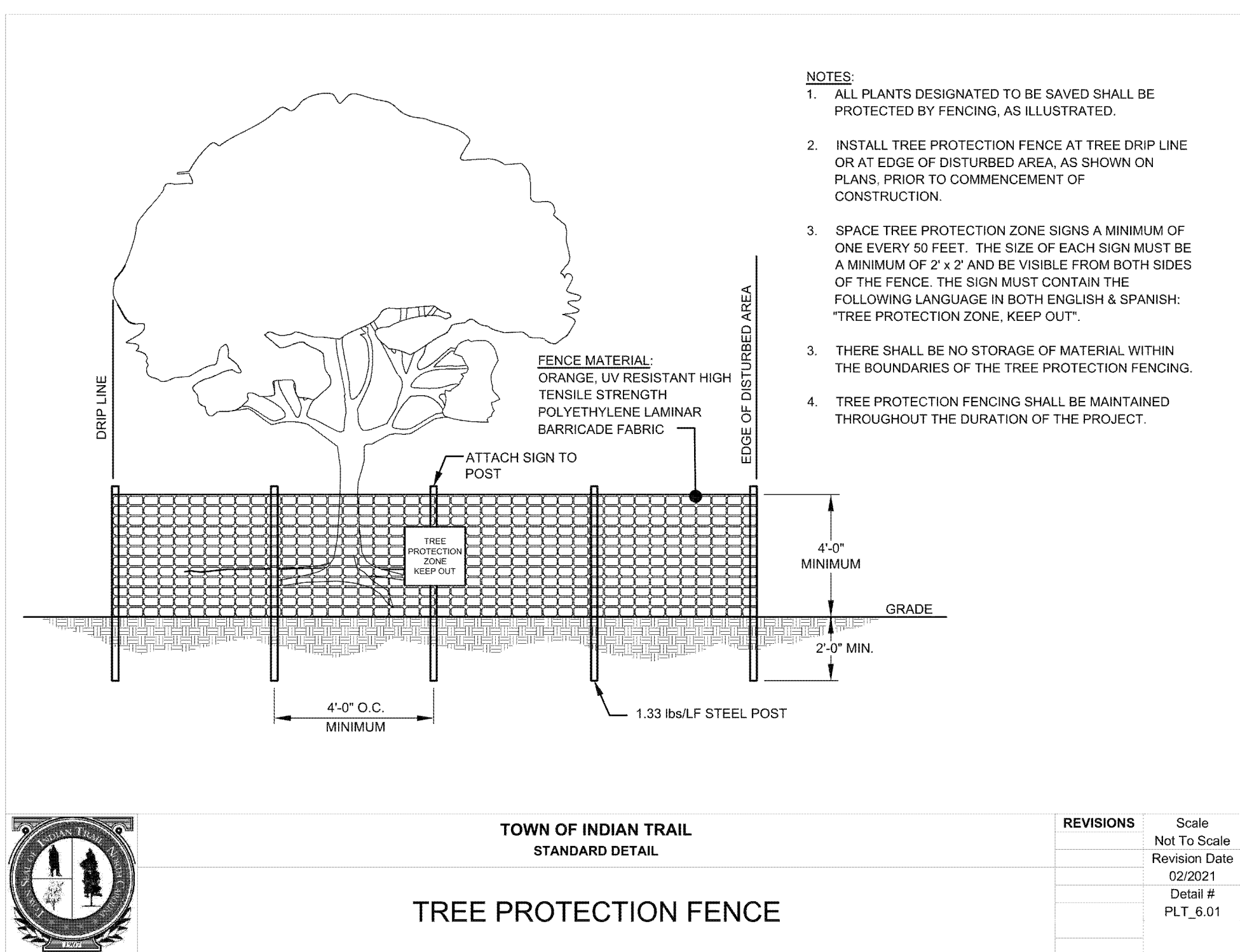
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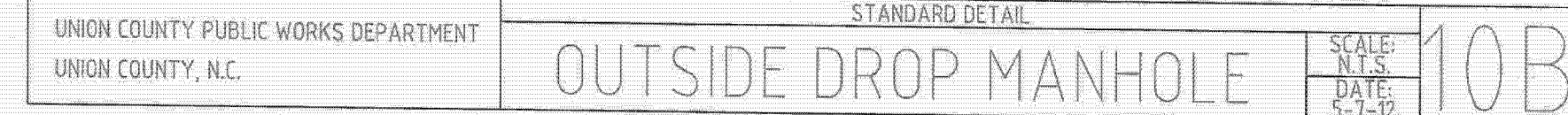
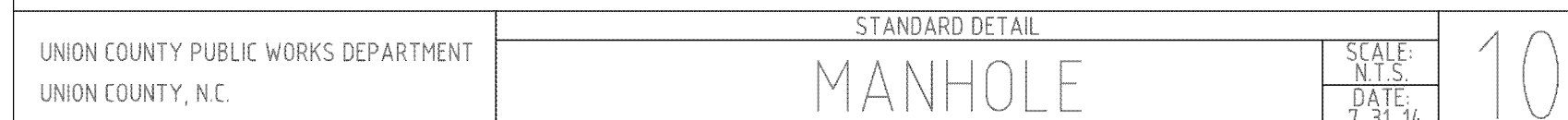
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DATE:	07/26/2022
SHEET TITLE:	

SITE DETAILS

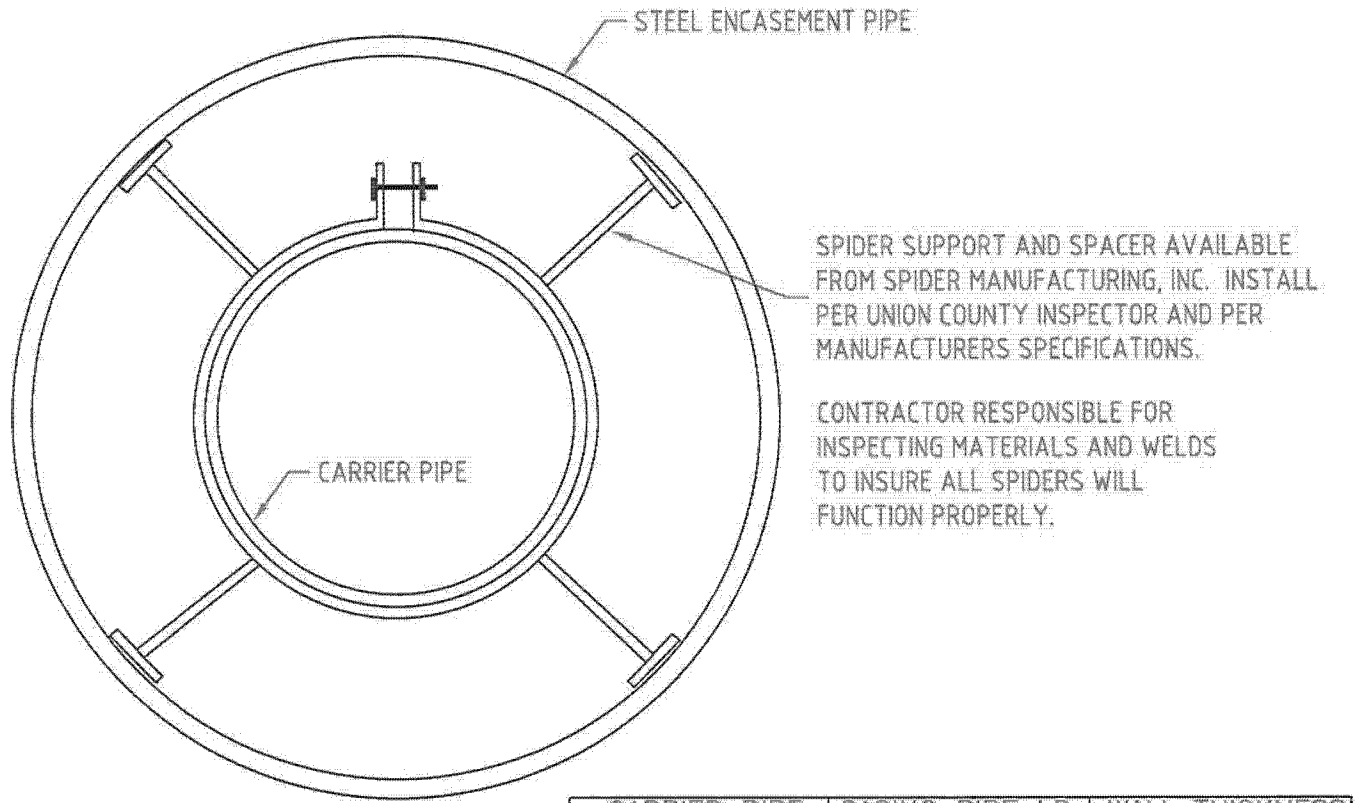
SHEET NO.: **C10.5**



SHEET NO.: **C10.6**



W:\2022\220009 - A448 Williams Pond\CAD\Civil Sheets\C10.8 Site Details.dwg



NOTES:

1. NO PIPE SHALL BE SUPPORTED BY BELL.
2. END SECTIONS LESS THAN 4' MAY BE UNSUPPORTED.
3. WALL THICKNESS AS PER TABLE UNLESS OTHERWISE SHOWN ON PLAN.
4. MASONRY SEAL AT ENDS -- 2" x 4" WEEP HOLE AT LOW END
5. ALL PRESSURE PIPES TO HAVE TRACING WIRE IN ALL CASING BORES.

CARRIER PIPE	CASING PIPE I.D.	WALL THICKNESS
4"	8"	0.188"
6"	12"	0.188"
8"	16"	0.250"
10"	16"	0.250"
12"	20"	0.281"
16"	24"	0.344"
24"	30"	0.406"
30"	42"	0.500"
36"	48"	0.500"

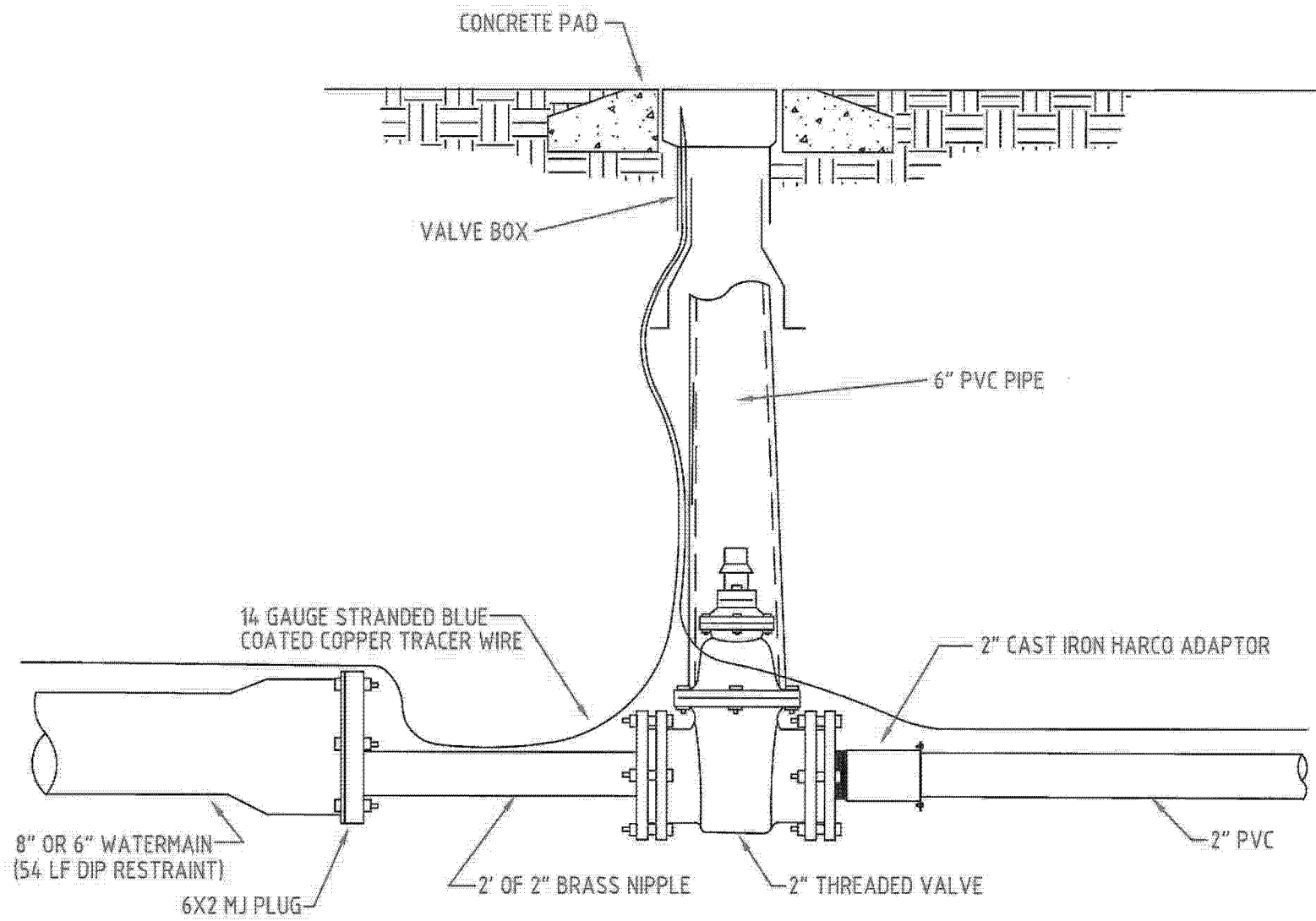
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

PIPE ENCASEMENT

SCALE:
N.T.S.
DATE:
11-17-06

14



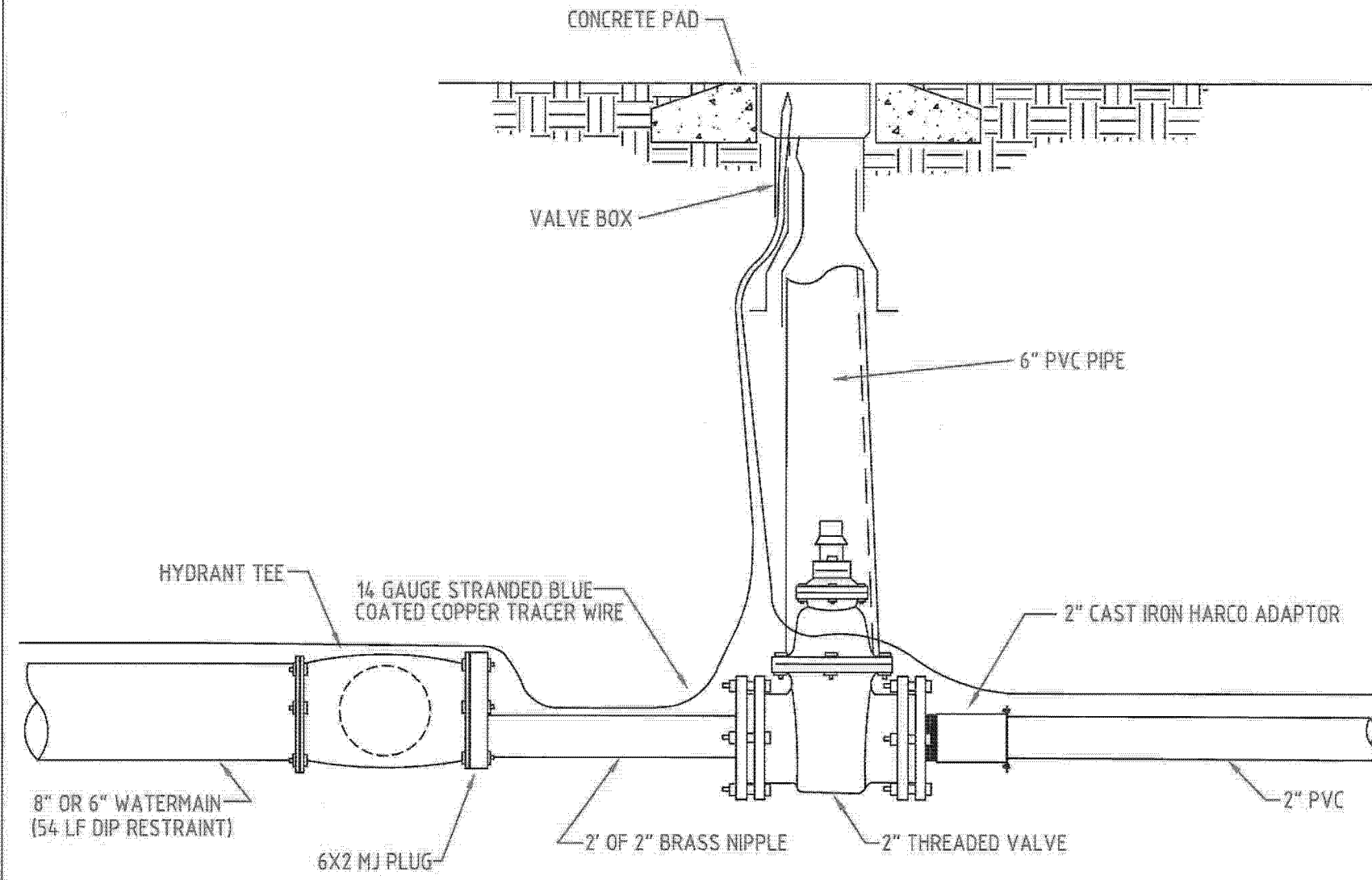
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

8" OR 6" X 2" REDUCER

SCALE:
N.T.S.
DATE:
10-4-11

7



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

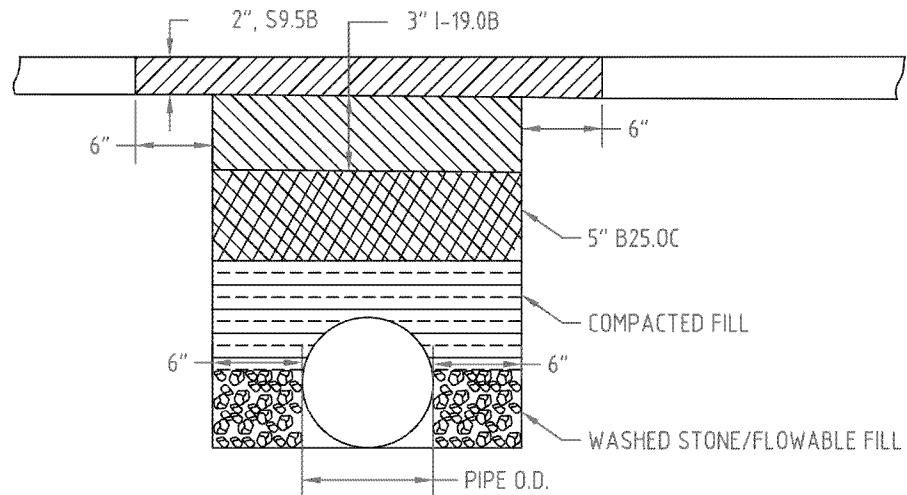
STANDARD DETAIL

HYDRANT TEE X 2" REDUCER

SCALE:
N.T.S.
DATE:
10-4-11

7A

NOTE:
FOR CONCRETE PAVEMENT SUBSTITUTE 3500 PSI
CONCRETE TO MATCH EXISTING THICKNESS FOR
1-2 ASPHALT 4" ABC STONE FOR H BASE.



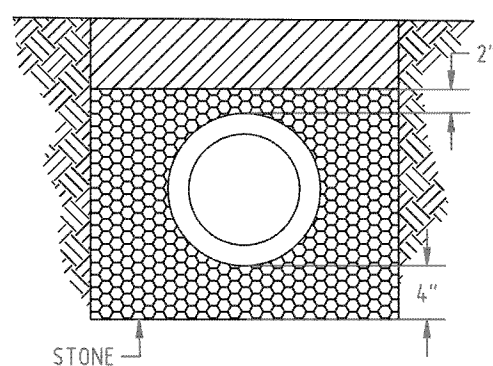
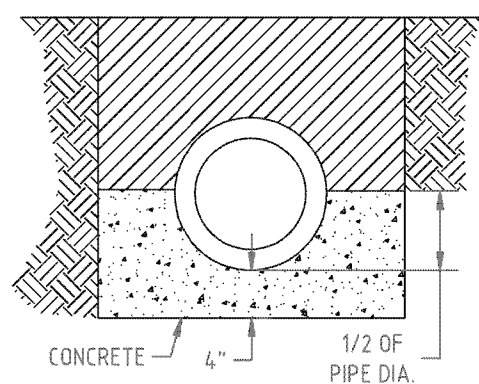
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

PAVEMENT REPLACEMENT

SCALE:
N.T.S.
DATE:
11-7-16

15



NOTES:
ALL CONCRETE = 3000 PSI
ALL STONE = N.C.D.O.T. NO. 67

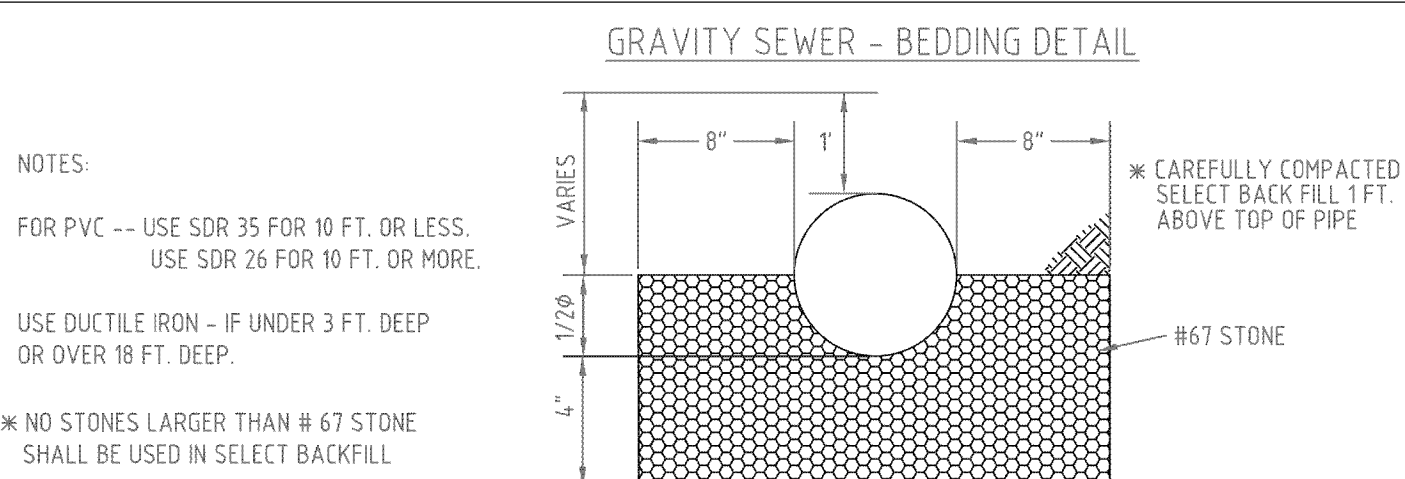
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STANDARD DETAIL

PIPE BEDDING

SCALE:
N.T.S.
DATE:
11-17-06

8

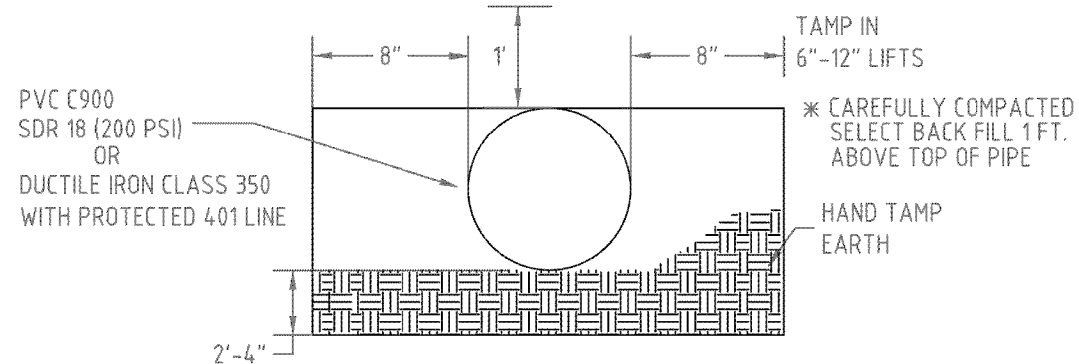


NOTES:
FOR PVC -- USE SDR 35 FOR 10 FT. OR LESS,
USE SDR 26 FOR 10 FT. OR MORE.
USE DUCTILE IRON - IF UNDER 3 FT. DEEP
OR OVER 10 FT. DEEP.
* NO STONES LARGER THAN # 67 STONE
SHALL BE USED IN SELECT BACKFILL

* CAREFULLY COMPACTED
SELECT BACK FILL 1 FT.
ABOVE TOP OF PIPE

#67 STONE

CLASS C



PVC C900
SDR 18 (200 PSI)
OR
DUCTILE IRON CLASS 350
WITH PROTECTED 401 LINE

* CAREFULLY COMPACTED
SELECT BACK FILL 1 FT.
ABOVE TOP OF PIPE

FORCE MAIN

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UNION COUNTY, N.C.

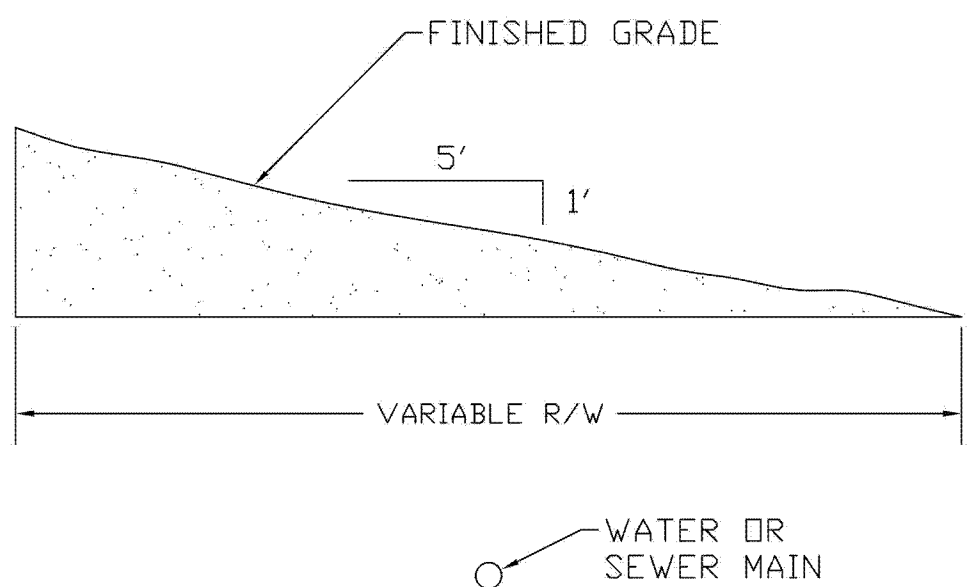
STANDARD DETAIL

SEWER BEDDING

SCALE:
N.T.S.
DATE:
12-16-13

8A

- NOTE:
1. MAXIMUM GROUND SLOPE OF 5' TO 1' IN ANY DIRECTION INSIDE WATER/SEWER EASEMENTS.
 2. SLOPE GREATER THAN 5' TO 1' MUST HAVE PRIOR APPROVAL FROM UNION COUNTY PUBLIC WORKS.



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

MAXIMUM SLOPE ACROSS WATER/SEWER EASEMENT
5:1 SLOPE

SCALE:
N.T.S.
DATE:
03/02/18

32

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ENGINEERING
ASSOCIATES
SOUTHEAST
C-3881
STATE OF NORTH CAROLINA
OFFICE OF AUTORIZATION

STATE OF NORTH CAROLINA
SEAL
62340
4-12-23
ENGINEER
BLAKE H. ESTRIDGE

NO. DATE REVISION:

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Williams Pond
Rogers Road, Union County
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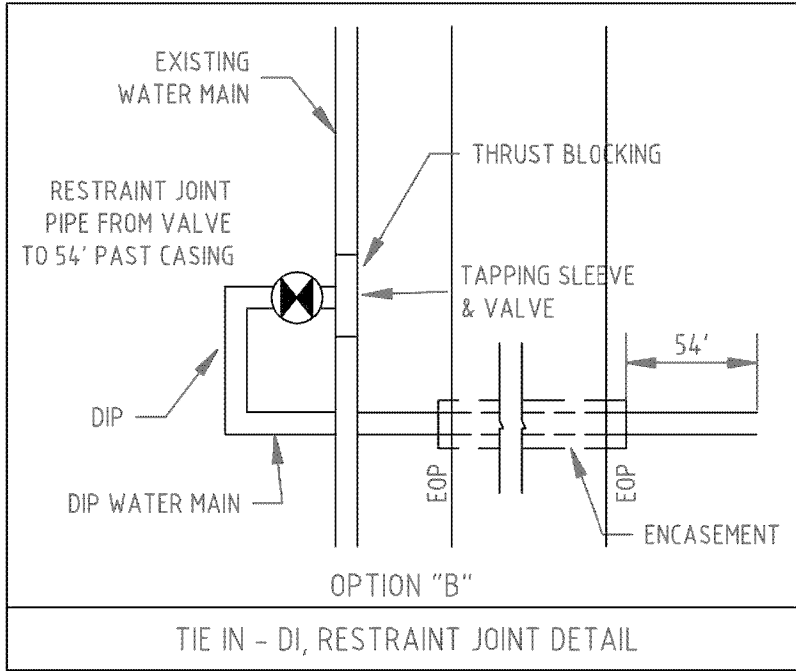
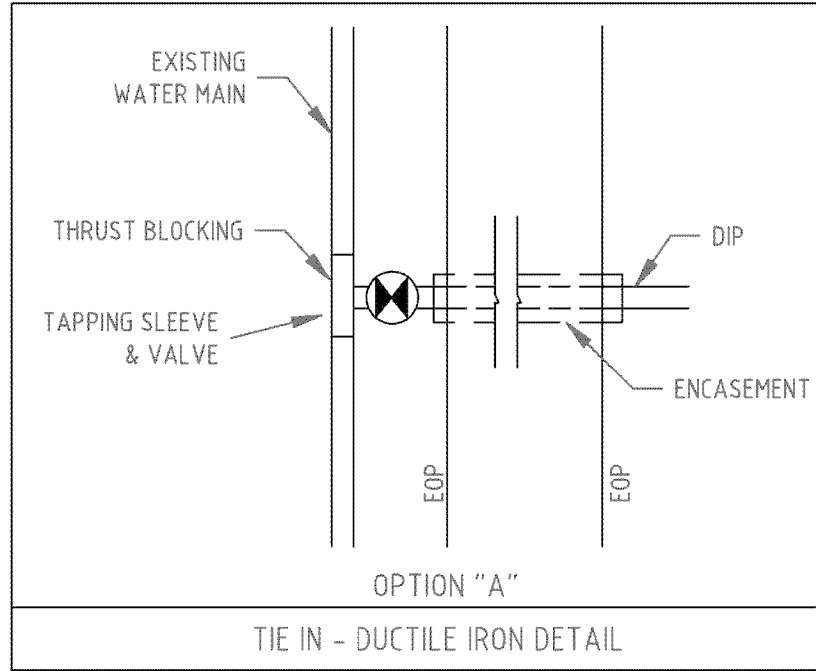
SHEET TITLE:

SITE DETAILS

SHEET NO.:

C10.8

North Carolina 811
www.nc811.org
*** 3 Days Before Digging ***
North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
http://nc811.org/remoteticketentry.htm



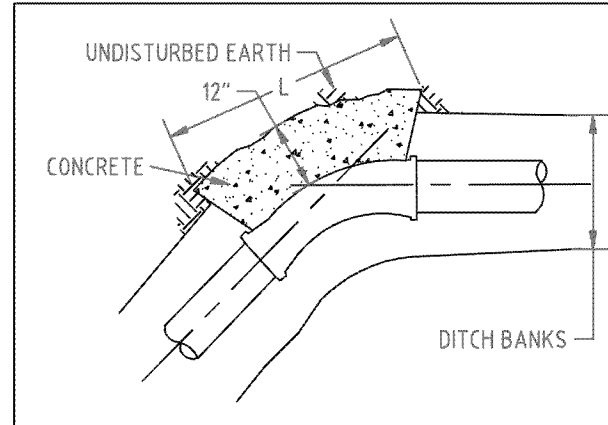
NOTE:
OPTION "A" OR "B" WILL BE REQUIRED, DEPENDING ON
THE AMOUNT OF SPACE AVAILABLE, TO BE FIELD VERIFIED

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

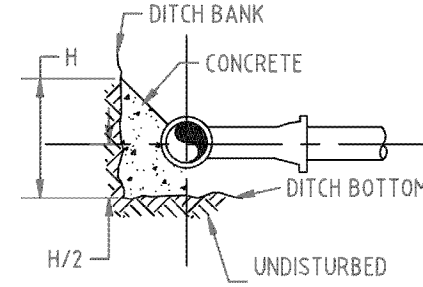
STANDARD DETAIL
TAPPING SLEEVE

SCALE:
N.T.S.
DATE:
11-17-06

18



PLAN 45° BENDS
ALSO 90°, 22 1/2°, 11 1/2°



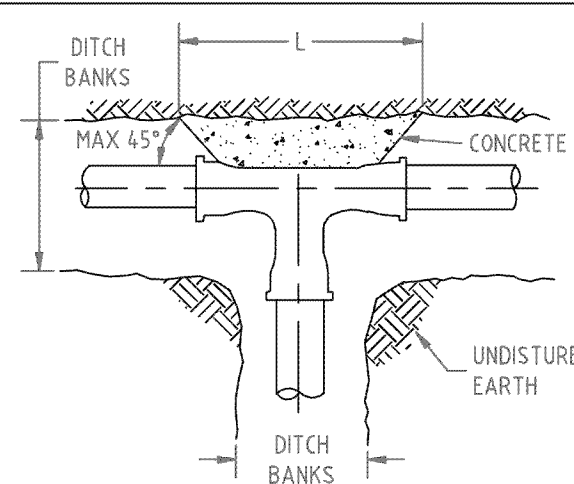
ELEVATION AT FITTINGS

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
THRUST BLOCK

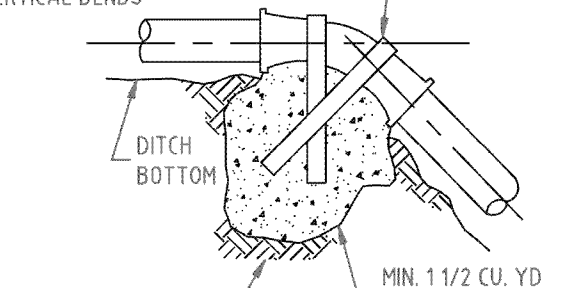
SCALE:
N.T.S.
DATE:
11-17-06

16



PLAN TEE

CONTRACTOR SHALL USE TIE RODS TO
SECURE VERTICAL BENDS



VERTICAL BEND

ANCHORAGE SCHEDULE												
PIPE SIZE	11 1/4" BEND		22 1/2" BEND		45° BEND		90° BEND		TEE		TEST PRESSURE	
	L	H	L	H	L	H	L	H	L	H	(P.S.I.)	
6"	13"	10"	2'3"	1'0"	2'6"	1'6"	2'9"	1'6"	2'0"	1'6"	200	
	16"	13"	2'3"	1'6"	3'0"	1'6"	4'0"	1'6"	3'0"	1'6"	300	
8"	16"	16"	2'6"	1'9"	3'0"	2'0"	3'9"	2'0"	2'6"	2'0"	200	
	2'0"	16"	3'0"	2'0"	3'9"	2'3"	4'6"	2'6"	3'6"	2'3"	300	
12"	2'6"	19"	4'0"	2'3"	4'3"	3'0"	5'0"	3'3"	4'0"	3'0"	200	
	3'6"	2'0"	5'3"	2'6"	6'0"	3'3"	7'0"	3'6"	5'0"	3'6"	300	
14"	3'0"	10"	4'0"	3'0"	4'6"	3'9"	6'0"	3'9"	4'6"	3'6"	200	
	4'0"	2'6"	5'3"	3'6"	6'0"	4'3"	6'6"	5'0"	5'0"	5'0"	300	
16"	3'0"	2'9"	4'6"	3'6"	5'0"	4'6"	7'0"	4'3"	5'0"	4'0"	200	
	4'0"	3'0"	6'3"	3'9"	6'5"	5'3"	8'0"	5'3"	7'6"	4'0"	300	

THRUST BLOCK DIMENSIONS BASED ON SOIL BEARING CAPACITY
OF 2000 P.S.F. AND A WATER TEST PRESSURE OF 150 P.S.I. SIZES OF THRUST
BLOCKS MAY BE REVISED BY THE ENGINEER WHERE BEARING CAPACITY
OF SOIL VARIES.

PROVIDE TAR PAPER JOINT BETWEEN CONCRETE THRUST BLOCK AND
PORTION OF PIPE BEING ANCHORED.

ALL CONCRETE THRUST BLOCKS SHALL BE 2500 P.S.I. CONCRETE.

MAXIMUM VERTICAL DEFLECTION SHALL BE 22 1/2".

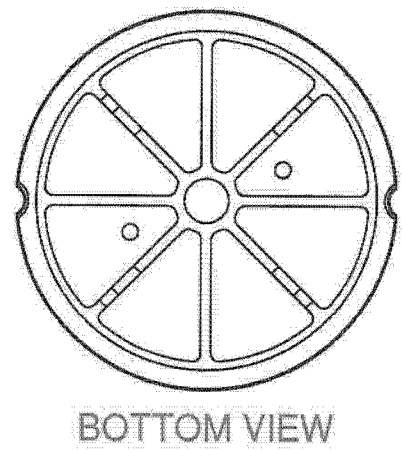
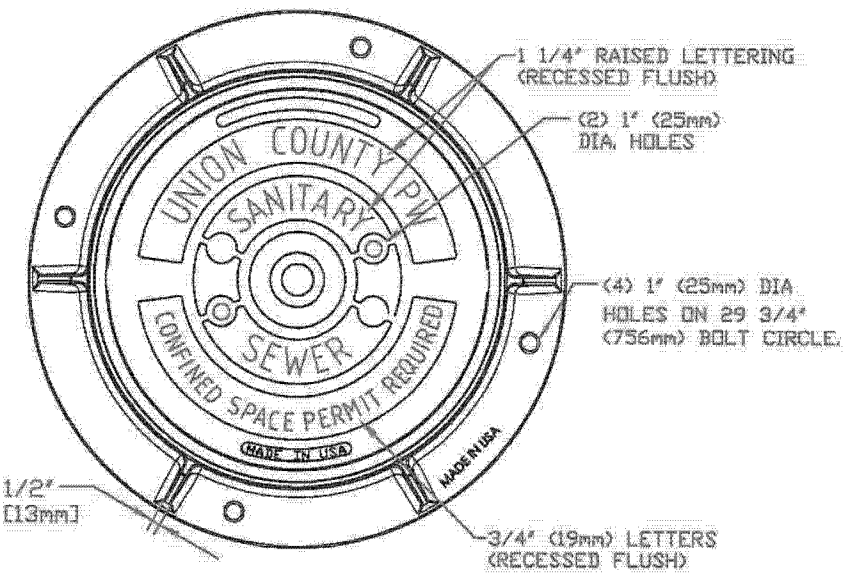
JOINTS SHALL REMAIN FREE OF CONCRETE FOR INSPECTION, REPAIR OR
REPLACEMENT OF JOINTS.

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

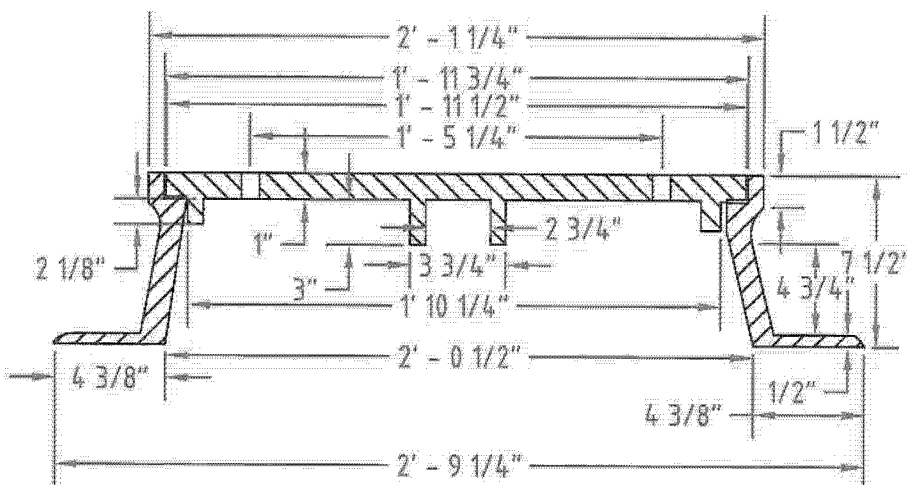
STANDARD DETAIL
THRUST BLOCK SPECIFICATIONS

SCALE:
N/A
DATE:
11-17-06

17



- NOTES:
- ALL CASTINGS TO BE FREE FROM SAND HOLES. NO PLUGGING ALLOWED.
 - MACHINE ALL CONTACT SURFACES BETWEEN RING AND COVER.
 - PROVIDE TWO VENT HOLES IN COVER, 1" DIA. TAPERED TO 1-1/8" ON REVERSE SIDE.
 - MINIMUM WEIGHTS: COVER - 120 LBS. RING - 190 LBS.
 - ALL MANHOLE RINGS OUT OF ROAD RIGHT OF WAY SHALL BE BOLTED INTO MANHOLE WITH 5/8" DIAMETER KWIK BOLT STUD ANCHOR SYSTEM. HILTI BRAND OR APPROVED EQUAL.



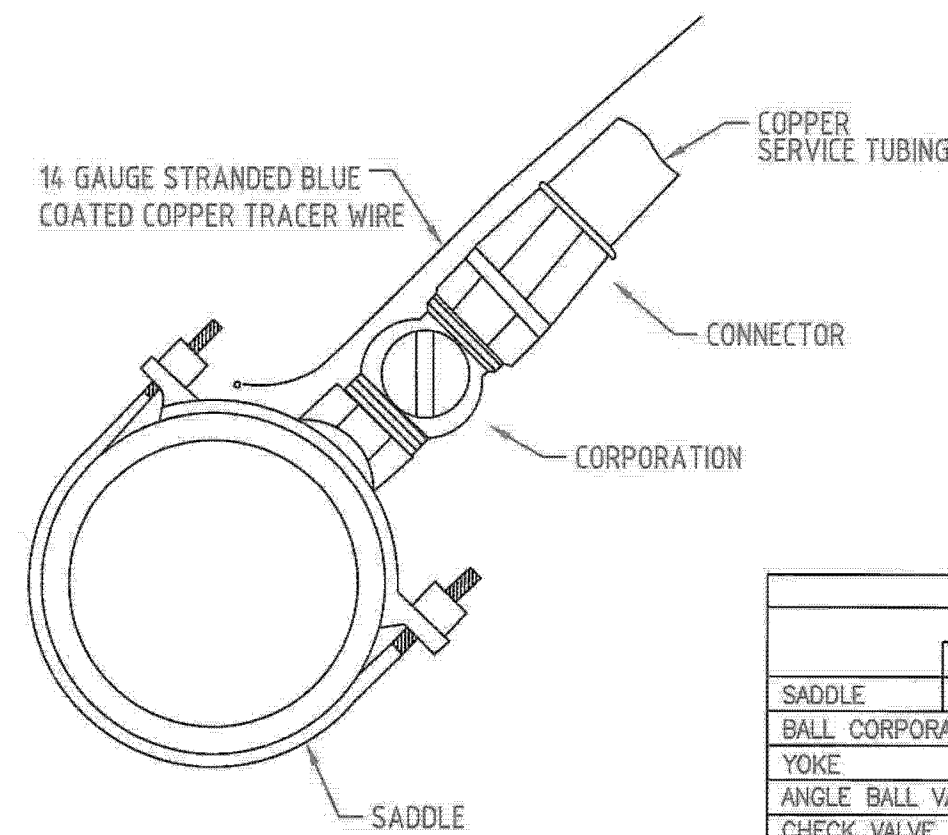
(U.S. FOUNDRY - 669, VULCAN - 1384 OR EQUAL)

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
RING & COVER

SCALE:
N.T.S.
DATE:
9-9-11

9



APPROVED SERVICE HARDWARE		
	MUELLER	FORD
SADDLE	H-13420	S70
UP TO 8"	SEE NOTE	FC 101
BALL CORPORATION	B-25008	FB10006
YOKE	H-5020	Y 502
ANGLE BALL VALVE	B-24273	BA94-323WG
CHECK VALVE	H-14247-A	HHS81-323
CONNECTORS	COPPER	STYLE 110
EXPANSION CONNECTION		GRIP JOINT
		EC 23

NOTE:
ROMAC 101N SHALL REPLACE MUELLER FOR PIPE
DIAMETER UP TO 8"

SMITH BLAIR 317, FORD FC 202 OR ROMAC 202N SHALL
REPLACE MUELLER FOR PIPE DIA. 12" AND UP

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

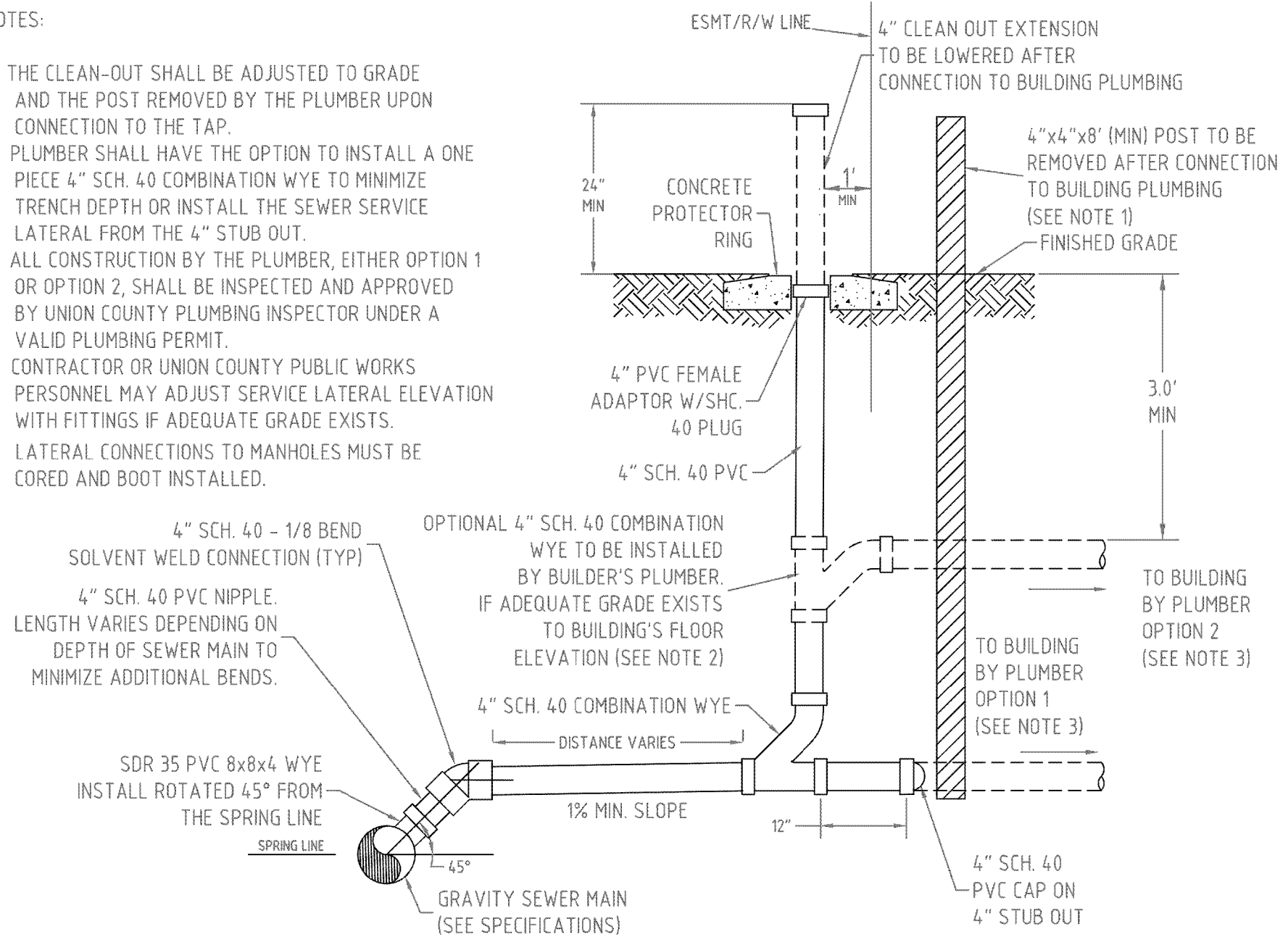
STANDARD DETAIL
SERVICE CONNECTION

SCALE:
N.T.S.
DATE:
10-4-11

5

NOTES:

- THE CLEAN-OUT SHALL BE ADJUSTED TO GRADE AND THE POST REMOVED BY THE PLUMBER UPON CONNECTION TO THE TAP.
- PLUMBER SHALL HAVE THE OPTION TO INSTALL A ONE PIECE 4" SCH. 40 COMBINATION WYE TO MINIMIZE TRENCH DEPTH OR INSTALL THE SEWER SERVICE LATERAL FROM THE 4" STUB OUT.
- ALL CONSTRUCTION BY THE PLUMBER, EITHER OPTION 1 OR OPTION 2, SHALL BE INSPECTED AND APPROVED BY UNION COUNTY PLUMBING INSPECTOR UNDER A VALID PLUMBING PERMIT.
- CONTRACTOR OR UNION COUNTY PUBLIC WORKS PERSONNEL MAY ADJUST SERVICE LATERAL ELEVATION WITH FITTINGS IF ADEQUATE GRADE EXISTS.
- LATERAL CONNECTIONS TO MANHOLES MUST BE CORED AND BOOT INSTALLED.



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
SEWER LATERAL

SCALE:
N.T.S.
DATE:
2/19-14

11

NO. DATE REVISION:

STIPULATION FOR REUSE

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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER: C220009
CHECKED BY: BHE
DRAWN BY: BHE
DATE: 07/26/2022
SHEET TITLE:

SITE DETAILS

SHEET NO.:
C10.9

SHEET 1 OF 2
840.03

SHEET 2 OF 2
840.03

SHEET 1 OF 1
840.14

SHEET 1 OF 1
840.16

SHEET 1 OF 2
840.45

SHEET 2 OF 2
840.45

[illegible]

STIPULATION FOR REUSE

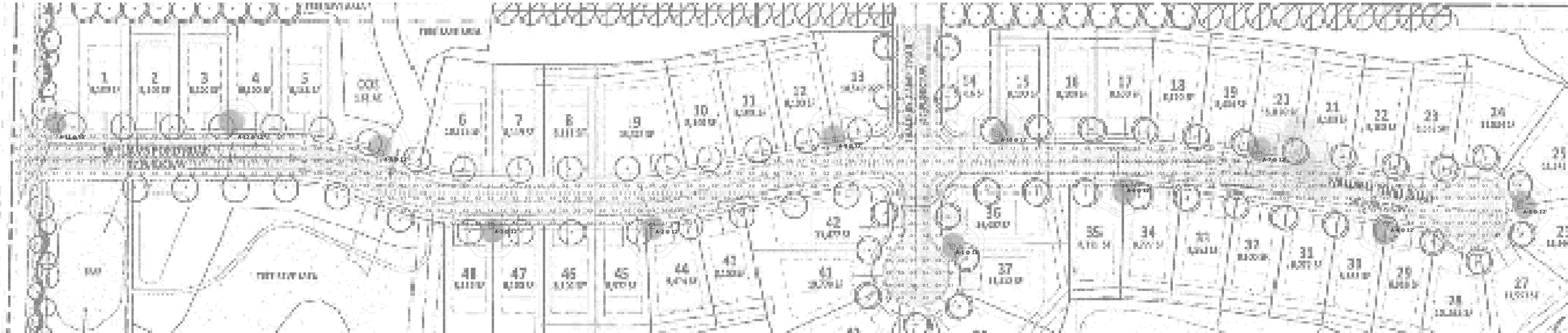
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Williams Pond
Rogers Road, Union County
Indian Trail, NC 28110

JOB NUMBER:	C22000
CHECKED BY:	BH
DRAWN BY:	BH
DATE:	07/26/202
SHEET TITLE:	

SITE DETAILS

SHEET NO.: **C10.11**



Plan View
Scale - 1" = 60ft

Note

Background Image Disclaimer
Please note this design utilizes an image format or converted image such as a PDF or JPEG formats for the background shown. These types of formats can vary in accuracy and possibly resulting in deficiencies of actual readings in the field. Acuity Brands strongly suggest the use of Auto Cad formats for all design request.

Note

1. Readings shown are based on a total LLF of as shown at grade. Data references the extrapolated performance projections in a 25c ambient based on 10,000 hrs of LED testing (per IESNA LM-80-08 and projected per IESNA TM-21-11).
2. Please refer to the "luminaire locations" table for mounting heights.
3. Product information can be obtained at www.AcuityBrands.com

Luminaire Locations						
Location						
No.	Label	X	Y	Z	MH	Tilt
1	A	1135.00	-74.20	12.00	12.00	0.00
2	A	772.70	-49.40	12.00	12.00	0.00
3	A	578.70	-49.20	12.00	12.00	0.00
4	A	1658.80	-46.50	12.00	12.00	0.00
5	A	1819.50	-25.20	12.00	12.00	0.00
6	A	1340.90	1.00	12.00	12.00	0.00
7	A	1504.80	38.00	12.00	12.00	0.00
8	A	444.70	38.70	12.00	12.00	0.00
9	A	993.40	54.50	12.00	12.00	0.00
10	A	1189.20	61.50	12.00	12.00	0.00
11	A	53.50	64.60	12.00	12.00	0.00
12	A	268.60	64.60	12.00	12.00	0.00

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
ROADWAY CALCULATIONS	+	0.3 fc	2.7 fc	0.0 fc	N/A	N/A

Schedule										
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A	12	American Electric Lighting	247L P50 XX RS 40K AY	247L American Revolution, P50, RS, 4000K, Acrylic Lens	1	247L_P50_XX_RS_40K_AY.ies	6668	0.91	65.3409

Note

Acuity Brands Lighting Inc. This document contains confidential and proprietary information of Acuity Brands Lighting. This document may only be used by or for the benefit of Acuity Brands Lighting's representatives and Customers.

This application design is not a professional engineering drawing and the design, including reported data and calculated results, is provided for informational purposes only,without any warranty as to accuracy, completeness, safety or otherwise. The design is the result of calculations made using Visual lighting application software, photometric/radiometric data measured in a labratory, and certian computational and modeling assumptions.

Far-field photometric/radiometric data may have been used to perform one or more calculations. Photometric/radiometric data is typically collected under far-field measurement conditions;far-field data is generally not representative of near-field geometric conditions. When using the far-field photometric/radiometric data, the Visual software applies certian generalizing assuptions to approximate near-field performance.. These assumptions may result in significant inaccuracies in individual calculated luminous and/or radiant power quantities in areas where a source is in close proximity to a particular surface or point.

The modeling of radiant flux exchange used in the Visual software requires a uniform exitance across each reflecting surface. The Visual software approximates the uniform surface exitance condition by adaptively subdividing surfaces with non-uniform exitance into subsurfaces with sufficiently uniform exitance gradient. Practical restrictions, due to computer hardware limitations, may prevent the subdivision procedure from subdividing surfaces with high exitance gradients into subsurfaces with sufficiently uniform exitance gradients, introducing potential discretization error into the calculated values.

Calculations performed by Visual softwarw assume that all reflected flux is reflected in a perfectly diffuse(Lambertian) and spectrally uniform manner across the spectral range being analyzed. If actual reflectance characteristics differ from these assumptions, observed luminous and/or radiant power quantities may differ from the predicted quantities.

As a result of the computational limitations and simplifying modeling assumptions described above,and/or variations in actual product performance from tested product samples, the accuracy of calculated outut values identifying expected radiometric quantities and any resulting derived radiation dose calculation may be adversely affected.

In addition, the accuracy of the application design may be adversely affected if information about the physical space provided to Acuity Brands Lighting is incomplete, inaccurate, outdated or not in the required format (including but not limited to floor plans, space layout, reflected ceiling plans, physical structures, electrical design or specifications) if incorrect assumptions are made because of because such are not appropriate for the space. Furthermore, actual actual field performance may differ from performance calculated using laboratory measurement as a result of miscalculations related to deficiencies in the information provided about the physical space, degregation factors in the end-user enviroment(including, but not limited to, voltage variation and dirt accumulation), or other possible variations in field conditions. Finally, lamp lumen depriication and/or depriication in lamp radiant intensity may result in performance over time that differs performance calculated using a new lamp. Light loss factors may have been used in the application design to estimate such depreciation, but flaws in these estimates may also result in performance over time that differ from the calculated performance.

It is the obligation of the end-user to consult with appropriately qualified Profesional Engineer (s) to determine whether this application design meets the applicable requirements for performance,code compliance, safety,suitability and effectiveness for use in a particular application. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this design.