

PERMIT DOCUMENTS

FOR

NORTH WOODS AT LAKE AVONDALE

REV #	DATE	DESCRIPTION	REQUESTED BY
	08/10/21	CITY OF AVONDALE ESTATES 3RD SUBMITTAL	CGAE
	07/30/21	CITY OF AVONDALE ESTATES 2ND SUBMITTAL	CGAE
	07/20/21	GSWCC 2ND SUBMITTAL	GSWCC
	04/16/21	CITY OF AVONDALE ESTATES 1ST SUBMITTAL	CGAE

NORTH WOODS AT LAKE AVONDALE
LONG #0870-0030 PERMIT DOCUMENTS

SHEET NUMBER	SHEET TITLE
C-0.0	COVER
C-0.1	GENERAL NOTES & LEGEND
C-1.0	EXISTING CONDITIONS
C-1.1	EXISTING CONDITIONS
C-2.0	DEMOLITION PLAN
C-2.1	DEMOLITION PLAN
C-3.0	SITE PLAN
C-3.1	SITE PLAN
C-4.0	GRADING & DRAINAGE PLAN
C-4.1	GRADING & DRAINAGE PLAN
C-6.0	PROFILES
C-6.1	SWALE SECTIONS
C-7.0	EROSION & SEDIMENT CONTROL NOTES
C-7.1	EROSION & SEDIMENT CONTROL NOTES
C-7.2	EROSION & SEDIMENT CONTROL PLAN - PHASE I
C-7.3	EROSION & SEDIMENT CONTROL PLAN - PHASE I
C-7.4	EROSION & SEDIMENT CONTROL PLAN - PHASE II
C-7.5	EROSION & SEDIMENT CONTROL PLAN - PHASE II
C-7.6	EROSION & SEDIMENT CONTROL PLAN - PHASE III
C-7.7	EROSION & SEDIMENT CONTROL PLAN - PHASE III
C-8.0	EROSION & SEDIMENT CONTROL DETAILS
C-8.1	EROSION & SEDIMENT CONTROL DETAILS
C-8.2	EROSION & SEDIMENT CONTROL DETAILS
C-8.3	EROSION & SEDIMENT CONTROL DETAILS
C-8.4	EROSION & SEDIMENT CONTROL DETAILS
C-8.5	EROSION & SEDIMENT CONTROL DETAILS
C-8.6	EROSION & SEDIMENT CONTROL DETAILS
C-9.0	CONSTRUCTION DETAILS
C-9.1	CONSTRUCTION DETAILS
C-9.2	CONSTRUCTION DETAILS
LP100	PLANTING PLAN
LP101	PLANTING PLAN ENLARGEMENTS
LP102	PLANTING PLAN ENLARGEMENTS
LP501	PLANTING DETAILS
LP502	PLANTING DETAILS
LP503	PLANTING NOTES
LV100	TREE SURVEY
LV101	TREE SURVEY DATA
LD200	TREE PRESERVATION AND REPLACEMENT PLAN
LD201	TREE REPLACEMENT PLAN
LH501	HARDSCAPE DETAILS
LH502	RAIN GARDEN DETAILS
LH503	OVERLOOK CONSTRUCTION DETAILS
LH504	OVERLOOK CONSTRUCTION DETAILS



LOCATION MAP
1" = 600'

STREET ADDRESS: 100 BERKELEY ROAD
LAND LOT 232, 15 DISTRICT
DEKALB COUNTY, GA
TAX PARCEL I.D. #15 232 09 003



CIVIL ENGINEER

LONG
ENGINEERING

2550 HERITAGE CT. TEL 770.951.2495
SUITE 250 FAX 770.951.2496
ATLANTA, GA 30339 www.longeng.com

LEI PROJECT NO. 0870-0030

ALL EROSION AND SEDIMENTATION CONTROLS AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO GRADING.

PRIOR TO LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL SCHEDULE A PRE- CONSTRUCTION MEETING WITH THE AREA EROSION CONTROL INSPECTOR.

ISSUE DATE: 09/03/2021

ZONING: OS-R

SCOPE OF WORK:
CONSTRUCTION ACTIVITY CONSISTS OF GREEN INFRASTRUCTURE IMPROVEMENTS AND STORMWATER MITIGATION PRACTICES WITHIN THE NORTH WOODS AREA NEAR LAKE AVONDALE. REHABILITATION OF HEAVILY ERODED AREAS AND TRAIL IMPROVEMENTS ARE ALSO INCLUDED AS PART OF PROJECT SCOPE.

OWNER/DEVELOPER
CITY OF AVONDALE ESTATES (SHANNON POWELL)
21 NORTH AVONDALE PLAZA
AVONDALE ESTATES, GA 30002
404-294-5400

24-HOUR EMERGENCY CONTACT
CAROLYN RADER
678-576-2857

ISSUED FOR CONSTRUCTION

FLOODPLAIN LEGEND

- 500-YEAR FLOODPLAIN LIMITS (FEMA)
- 100-YEAR FLOODPLAIN LIMITS (FEMA)
- FLOODWAY LIMITS (FEMA)
- WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

NOTE:
ALL CONSTRUCTION TO BE PERFORMED ON PROPERTY OWNED BY THE CITY OF AVONDALE ESTATES.

REV #	DATE	DESCRIPTION	REQUESTED BY
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07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	GWCC
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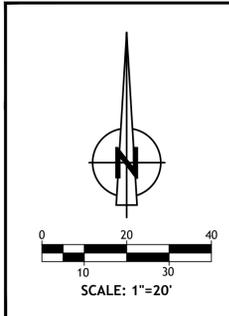
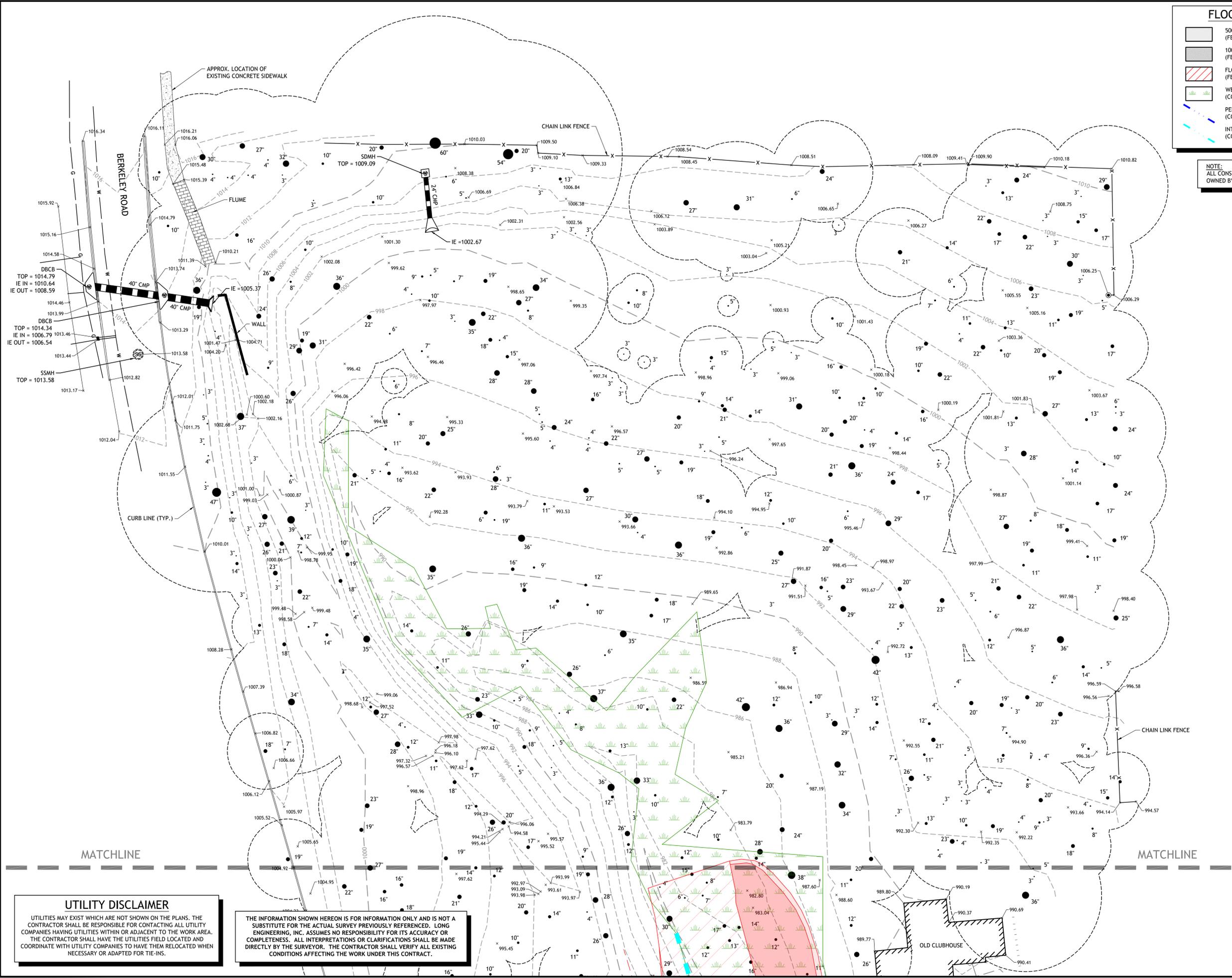


2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com

NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
EXISTING CONDITIONS
LL 232



ISSUED FOR CONSTRUCTION
SHEET **C-1.0**



UTILITY DISCLAIMER
UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH UTILITY COMPANIES TO HAVE THEM RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.

THE INFORMATION SHOWN HEREON IS FOR INFORMATION ONLY AND IS NOT A SUBSTITUTE FOR THE ACTUAL SURVEY PREVIOUSLY REFERENCED. LONG ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY OR COMPLETENESS. ALL INTERPRETATIONS OR CLARIFICATIONS SHALL BE MADE DIRECTLY BY THE SURVEYOR. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AFFECTING THE WORK UNDER THIS CONTRACT.

MATCHLINE

MATCHLINE

FLOODPLAIN LEGEND

-  500-YEAR FLOODPLAIN LIMITS (FEMA)
-  100-YEAR FLOODPLAIN LIMITS (FEMA)
-  FLOODWAY LIMITS (FEMA)
-  WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
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NOTE:
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MATCHLINE

MATCHLINE

BERKELEY ROAD

CHAIN LINK FENCE

OLD CLUBHOUSE

APPROXIMATE LOCATION OF EXISTING DIRT TRAIL

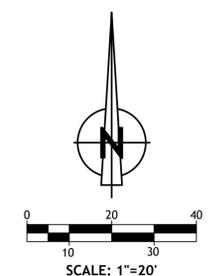
APPROXIMATE LOCATION OF THE EXISTING AGGREGATE TRAIL

APPROXIMATE LOCATION OF THE EXISTING AGGREGATE TRAIL

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2550 HERITAGE COURT, STE 250
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www.longeng.com

NORTH WOODS AT LAKE AVONDALE
 100 BERKELEY ROAD
 AVONDALE ESTATES, DEKALB COUNTY, GA
EXISTING CONDITIONS
 DISTRICT 15
 LL 232



9/3/2021
ENGINEER
AUDREY T. PINKNEY

DESIGN QC: ATP
CADD QC: ATP
DESIGNED BY: DGL
DRAWN BY: NJS

ISSUED FOR CONSTRUCTION

SHEET
C-1.1

LONG #0870-0030

FLOODPLAIN LEGEND			
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2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com

DEMOLITION LEGEND	
	PAVEMENTS, CURBS, SIDEWALKS AND WALLS TO BE REMOVED
	BUILDING TO BE REMOVED, SEE ARCHITECTURAL FOR EXACT LIMITS OF BUILDING DEMOLITION
	UTILITY STRUCTURES AND LINES TO BE REMOVED
	TREE TO BE REMOVED

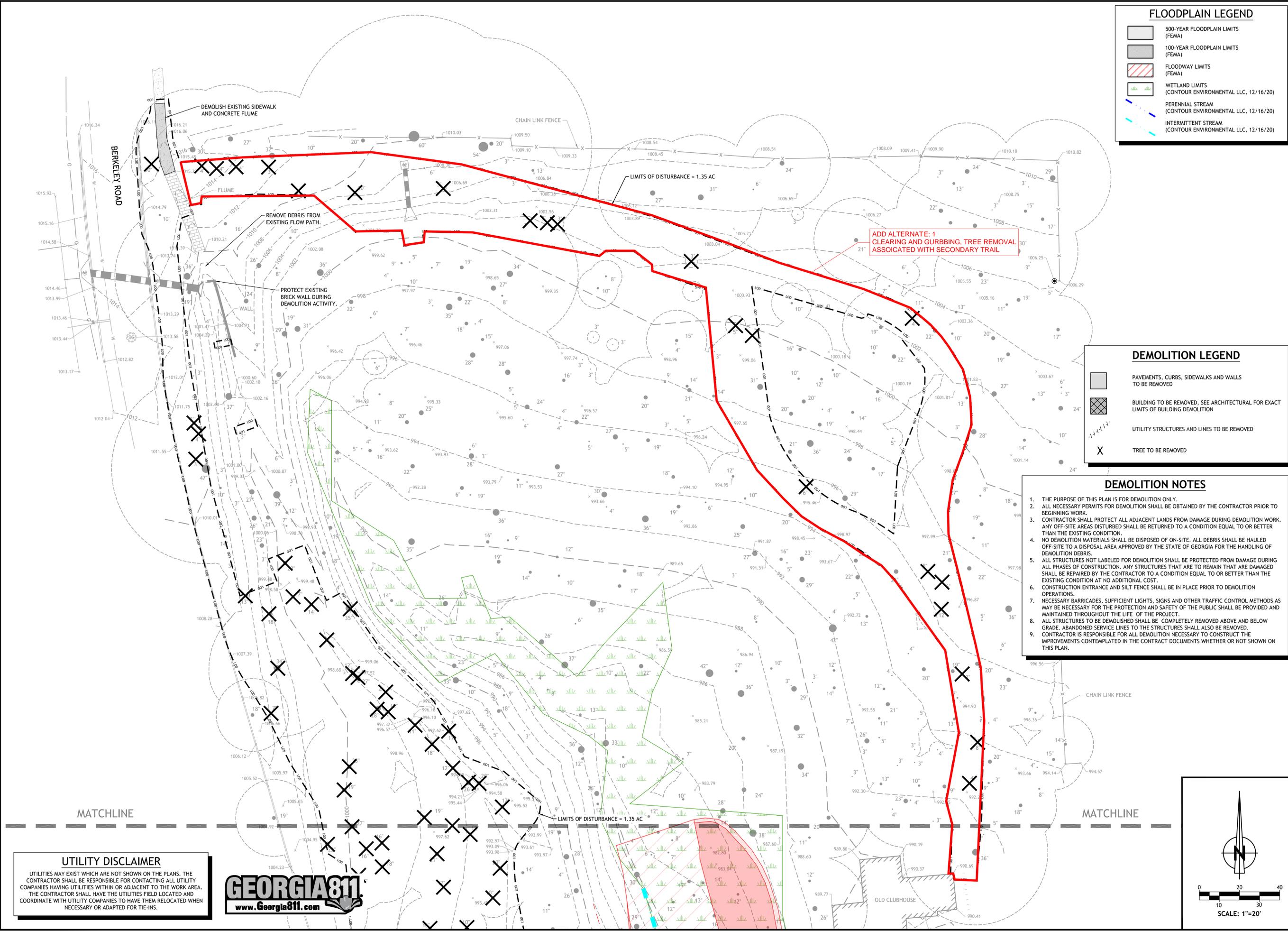
- DEMOLITION NOTES**
1. THE PURPOSE OF THIS PLAN IS FOR DEMOLITION ONLY.
 2. ALL NECESSARY PERMITS FOR DEMOLITION SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO BEGINNING WORK.
 3. CONTRACTOR SHALL PROTECT ALL ADJACENT LANDS FROM DAMAGE DURING DEMOLITION WORK. ANY OFF-SITE AREAS DISTURBED SHALL BE RETURNED TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITION.
 4. NO DEMOLITION MATERIALS SHALL BE DISPOSED OF ON-SITE. ALL DEBRIS SHALL BE HAULED OFF-SITE TO A DISPOSAL AREA APPROVED BY THE STATE OF GEORGIA FOR THE HANDLING OF DEMOLITION DEBRIS.
 5. 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 REPAIRED BY THE CONTRACTOR TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITION AT NO ADDITIONAL COST.
 6. CONSTRUCTION ENTRANCE AND SILT FENCE SHALL BE IN PLACE PRIOR TO DEMOLITION OPERATIONS.
 7. NECESSARY BARRICADES, SUFFICIENT LIGHTS, 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.
 8. ALL STRUCTURES TO BE DEMOLISHED SHALL BE COMPLETELY REMOVED ABOVE AND BELOW GRADE. ABANDONED SERVICE LINES TO THE STRUCTURES SHALL ALSO BE REMOVED.
 9. CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION NECESSARY TO CONSTRUCT THE IMPROVEMENTS CONTEMPLATED IN THE CONTRACT DOCUMENTS WHETHER OR NOT SHOWN ON THIS PLAN.

NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
LL 232
DEMOLITION PLAN

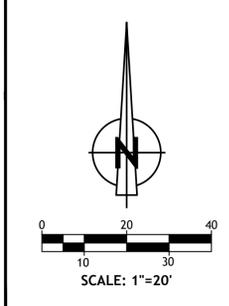
ISSUED FOR CONSTRUCTION

DATE: 09/03/2021
DESIGN QC: ATP
CAD QC: DGL
DESIGNED BY: DGL
DRAWN BY: NLS

SHEET C-2.0



UTILITY DISCLAIMER
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FLOODPLAIN LEGEND

-  500-YEAR FLOODPLAIN LIMITS (FEMA)
-  100-YEAR FLOODPLAIN LIMITS (FEMA)
-  FLOODWAY LIMITS (FEMA)
-  WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
-  PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
-  INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

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DEMOLITION LEGEND

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-  BUILDING TO BE REMOVED, SEE ARCHITECTURAL FOR EXACT LIMITS OF BUILDING DEMOLITION
-  UTILITY STRUCTURES AND LINES TO BE REMOVED
-  TREE TO BE REMOVED

REVISIONS			
NO.	DATE	DESCRIPTION	REQUESTED BY

2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com



NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
DEMOLITION PLAN
LL 232

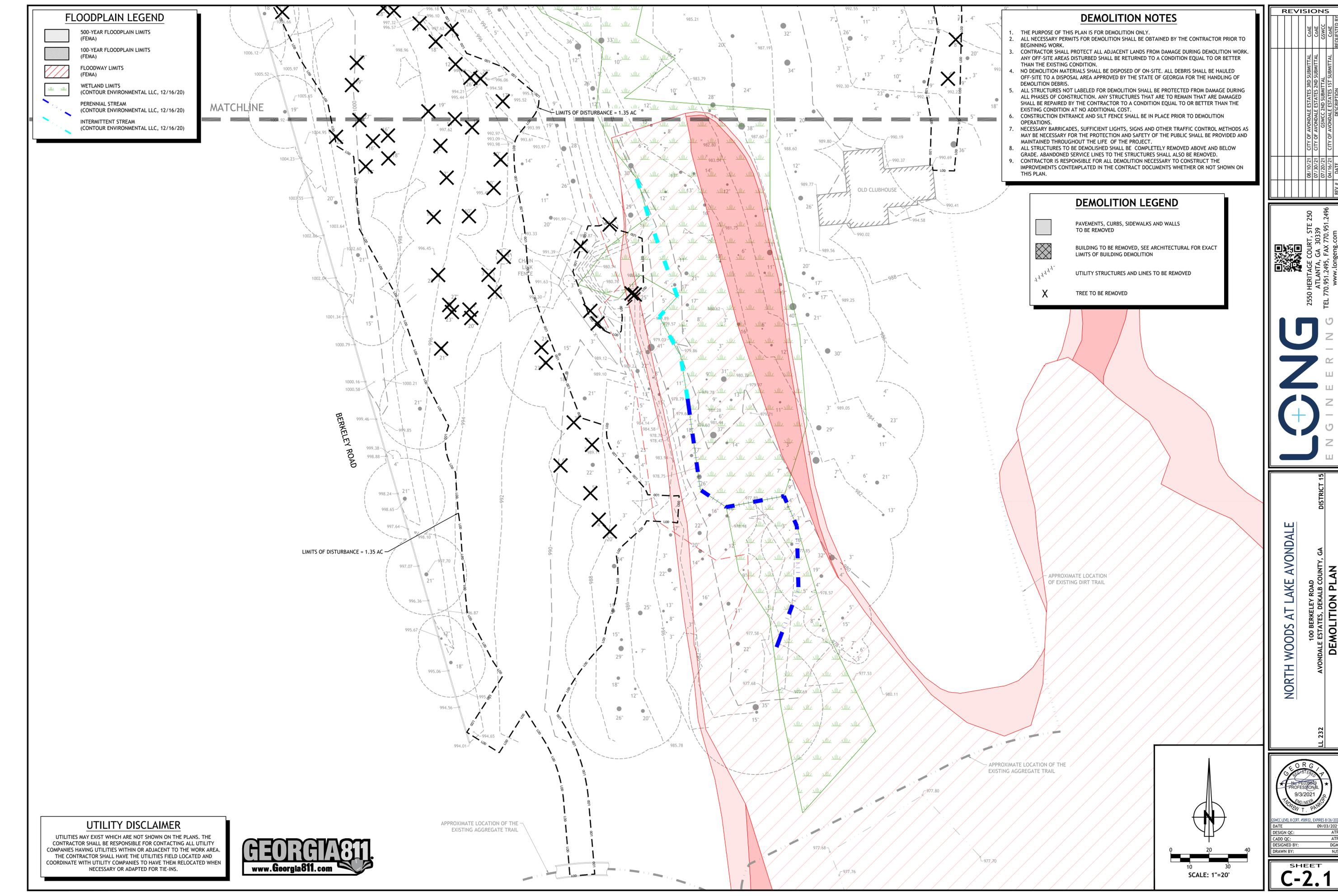
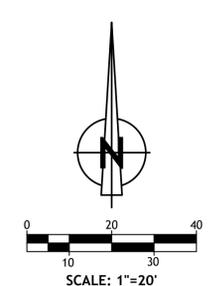


DESIGN QC: ATP
CADD QC: ATP
DESIGNED BY: DGL
DRAWN BY: NLS

SHEET
C-2.1

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LONG #0870-0030
ISSUED FOR CONSTRUCTION

PAVING LEGEND

- STANDARD DUTY ASPHALT PAVING
- COMPACTED AGGREGATE TRAIL
- CONCRETE PAVING
- WOOD DECKING

FLOODPLAIN LEGEND

- 500-YEAR FLOODPLAIN LIMITS (FEMA)
- 100-YEAR FLOODPLAIN LIMITS (FEMA)
- FLOODWAY LIMITS (FEMA)
- WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

SITE DATA NOTES

PROJECT ADDRESS: 100 BERKELEY ROAD
AVONDALE ESTATES, GA 30002

OWNER: CITY OF AVONDALE ESTATES (SHANNON POWELL)
21 NORTH AVONDALE PLAZA
AVONDALE ESTATES, GA 30002
404-294-5400

ENGINEER: LONG ENGINEERING, LLC
2550 HERITAGE COURT
SUITE 250
ATLANTA, GEORGIA 30339
770-951-2495

CONTACT PERSON: CAROLYN RADER, 678-576-2857

ZONING: OS-R

THE APPROXIMATE SITE AREA IS 13.36 ACRES.
THE APPROXIMATE DISTURBED AREA IS 1.35 ACRES.

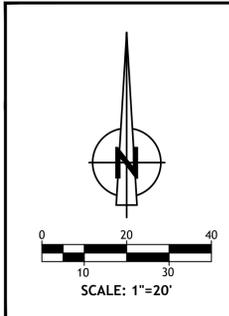
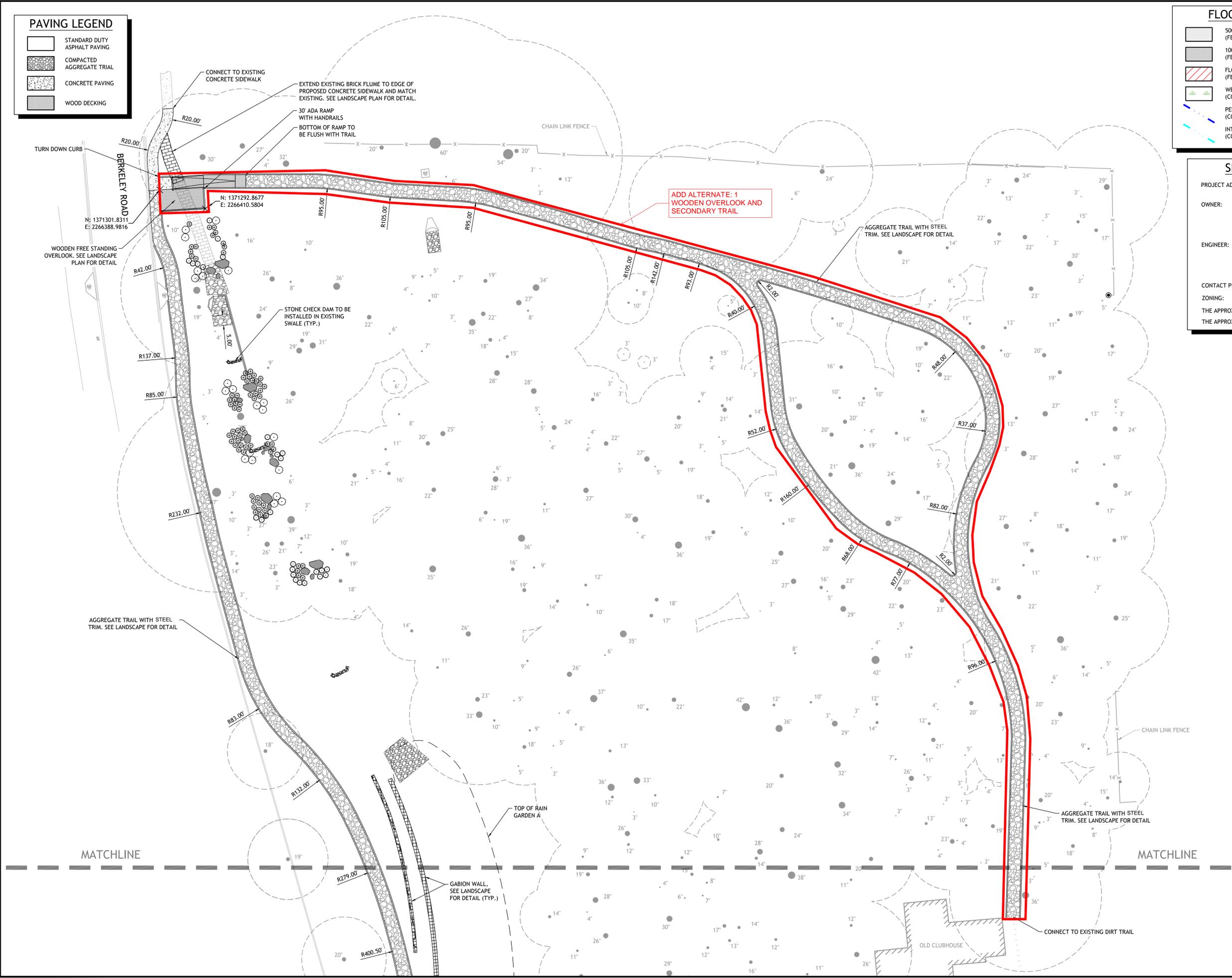
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NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
SITE PLAN

GEORGIA PROFESSIONAL ENGINEER
AUDREN T. PARKINS
9/3/2021
DATE: 09/03/2021
DESIGN QC: ATP
CADD QC: ATP
DESIGNED BY: DGH
DRAWN BY: NJS

ISSUED FOR CONSTRUCTION



LONG #0870-0030

SHEET
C-3.0



SITE DATA NOTES

PROJECT ADDRESS: 100 BERKELEY ROAD
AVONDALE ESTATES, GA 30002

OWNER: CITY OF AVONDALE ESTATES
(SHANNON POWELL)
21 NORTH AVONDALE PLAZA
AVONDALE ESTATES, GA 30002
404-294-5400

ENGINEER: LONG ENGINEERING, LLC
2550 HERITAGE COURT
SUITE 250
ATLANTA, GEORGIA 30339
770-951-2495

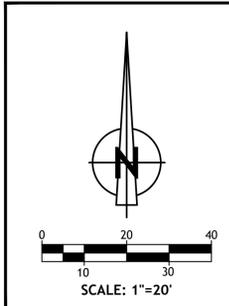
CONTACT PERSON: CAROLYN RADER, 678-576-2857

ZONING: OS-R

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PAVING LEGEND

	STANDARD DUTY ASPHALT PAVING
	COMPACTED AGGREGATE TRIAL
	CONCRETE PAVING
	WOOD DECKING



REVISIONS

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NORTH WOODS AT LAKE AVONDALE

100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA

SITE PLAN

DISTRICT 15

LL 232

DATE: 09/03/2021

DESIGN QC: ATP

CADD QC: DGH

DESIGNED BY: NJS

DRAWN BY: NJS

SHEET C-3.1

ISSUED FOR CONSTRUCTION

LONG #0870-0030

FLOODPLAIN LEGEND

- 500-YEAR FLOODPLAIN LIMITS (FEMA)
- 100-YEAR FLOODPLAIN LIMITS (FEMA)
- FLOODWAY LIMITS (FEMA)
- AREA TO BE STABILIZED PER LANDSCAPE PLANTING
- WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

TREE PROTECTION LEGEND

- ROOT BRIDGING AND HAND EXCAVATION ONLY. NO HEAVY MACHINERY TO DRIVE OVER EXPOSED ROOTS AND NO STORAGE OF MATERIALS WITHIN AREA. SEE LANDSCAPE FOR DETAILS.

REV #	DATE	DESCRIPTION	BY	CHKD
01	08/10/21	CITY OF AVONDALE ESTATES 3RD SUBMITTAL		
02	07/30/21	CITY OF AVONDALE ESTATES 2ND SUBMITTAL		
03	04/14/21	CITY OF AVONDALE ESTATES 1ST SUBMITTAL		

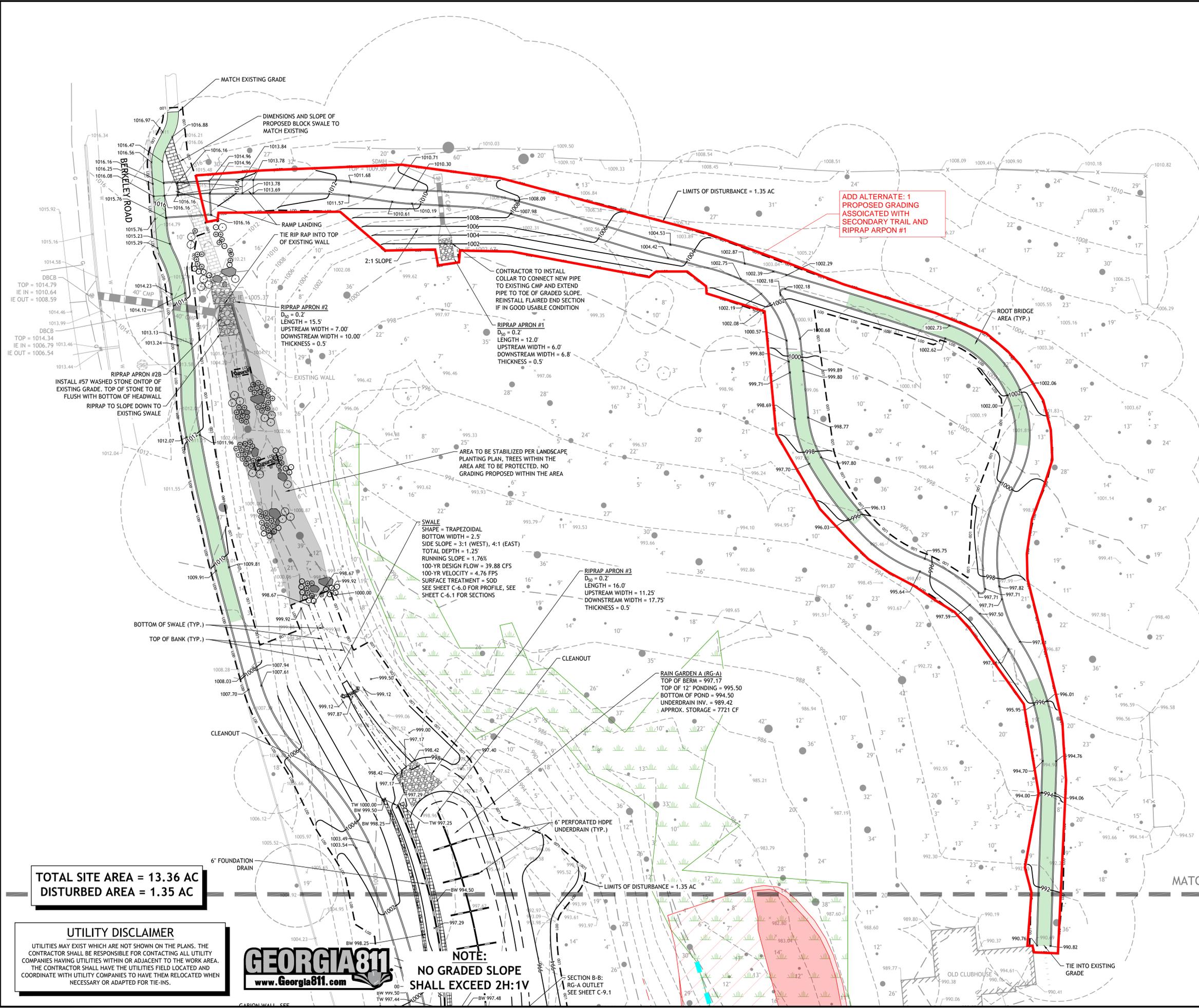
2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
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NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
GRADING & DRAINAGE PLAN
LL 232

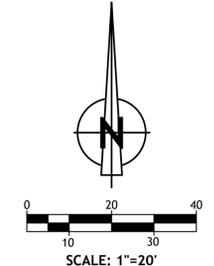
ISSUED FOR CONSTRUCTION

DATE: 09/03/2021
DESIGN QC: ATP
CADD QC: DGL
DESIGNED BY: DGL
DRAWN BY: NLS

SHEET C-4.0



TOTAL SITE AREA = 13.36 AC
DISTURBED AREA = 1.35 AC

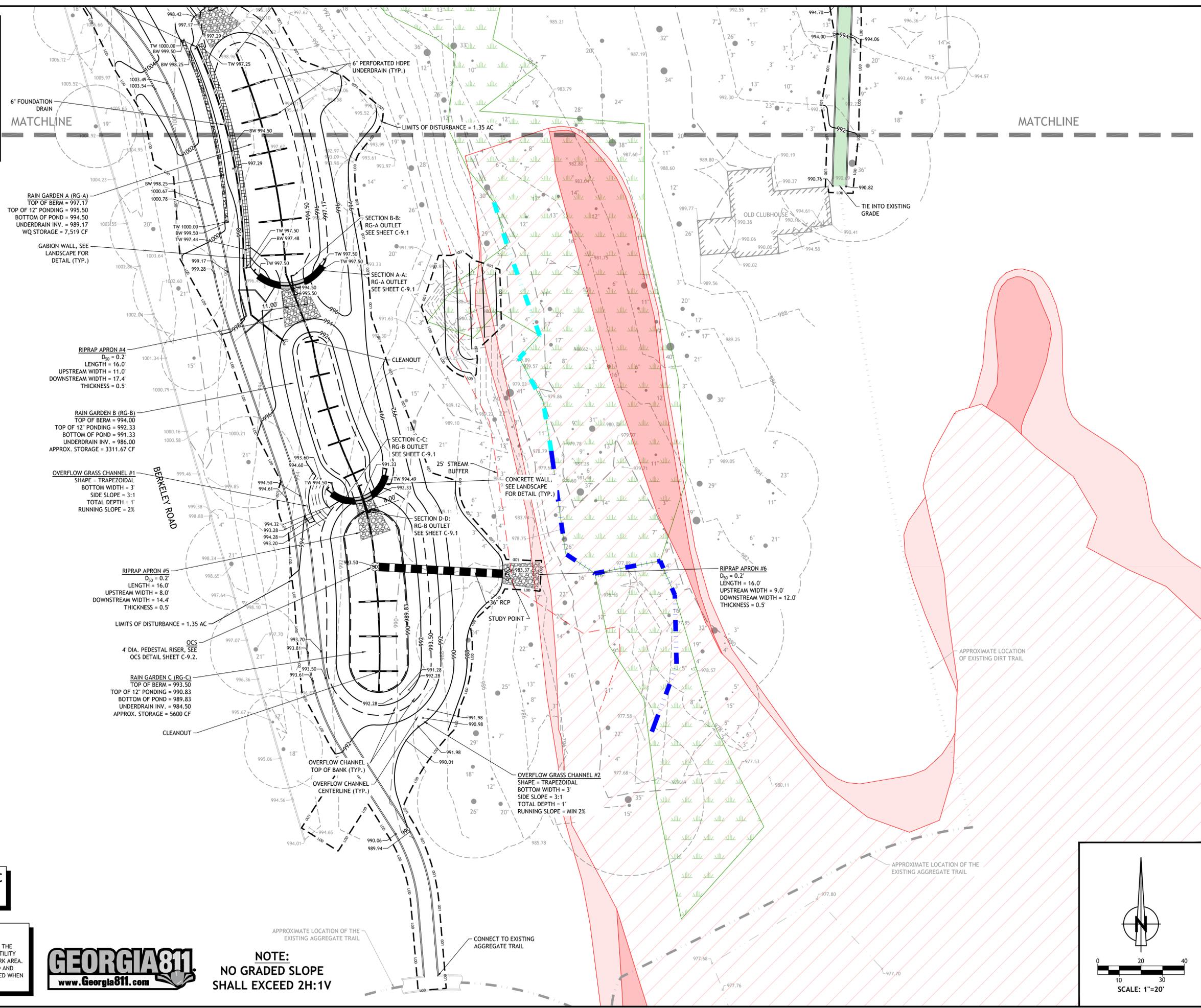


FLOODPLAIN LEGEND

-  500-YEAR FLOODPLAIN LIMITS (FEMA)
-  100-YEAR FLOODPLAIN LIMITS (FEMA)
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-  INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

TREE PROTECTION LEGEND

-  ROOT BRIDGING AND HAND EXCAVATION ONLY. NO HEAVY MACHINERY TO DRIVE OVER EXPOSED ROOTS AND NO STORAGE OF MATERIALS WITHIN AREA. SEE LANDSCAPE FOR DETAILS.



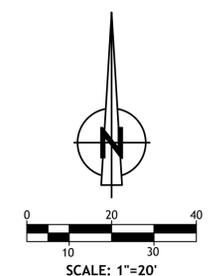
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DISTURBED AREA = 1.35 AC

UTILITY DISCLAIMER

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NOTE:
NO GRADED SLOPE
SHALL EXCEED 2H:1V



REV #	DATE	DESCRIPTION	REQUESTED BY

2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com



NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
GRADING & DRAINAGE PLAN
DISTRICT 15

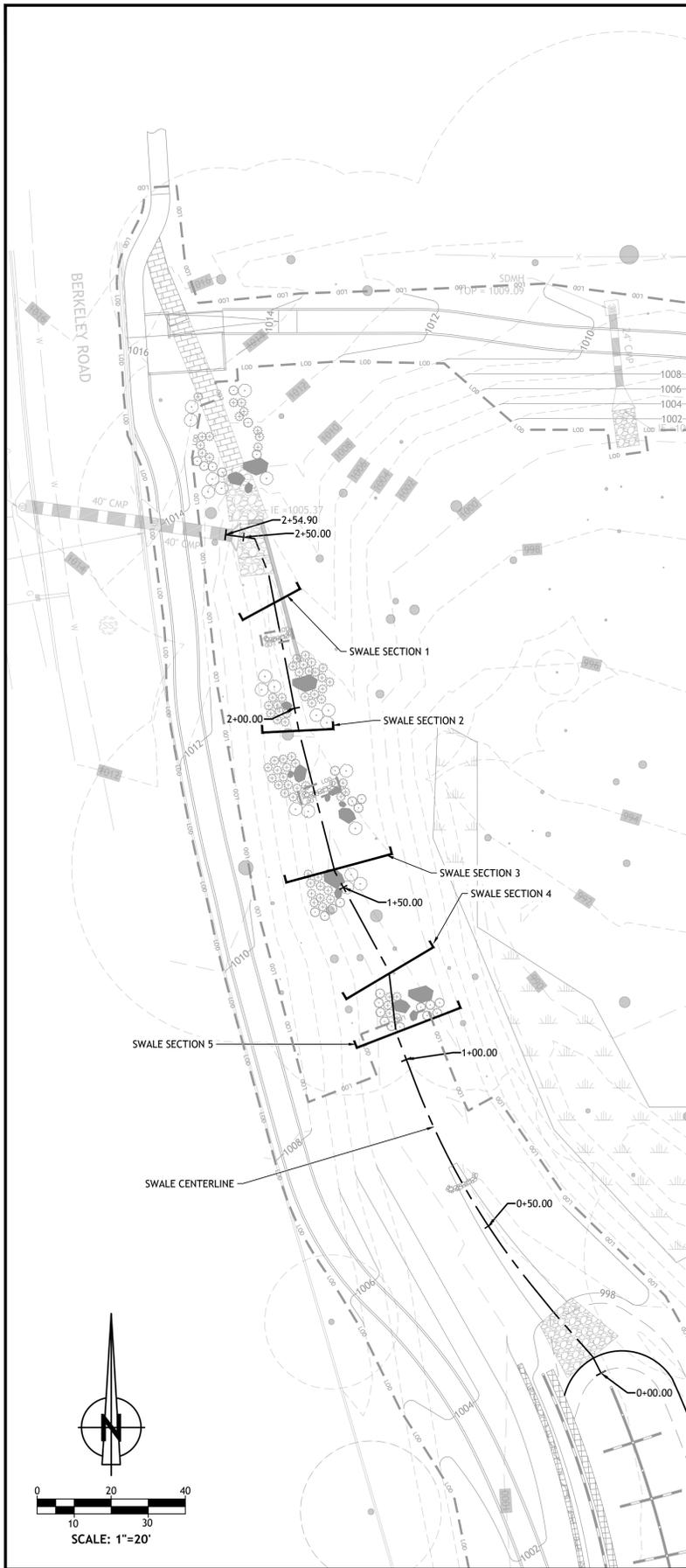
LL 232



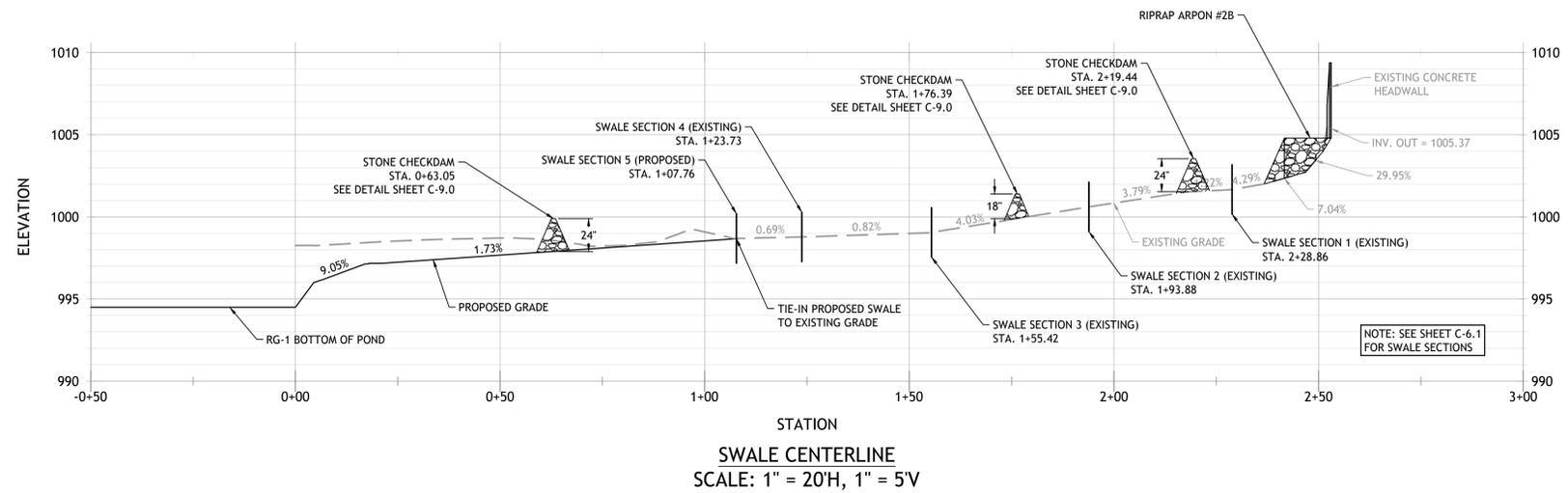
DATE: 09/03/2021
DESIGN QC: ATP
CADD QC: ATP
DESIGNED BY: DGL
DRAWN BY: NLS

SHEET C-4.1

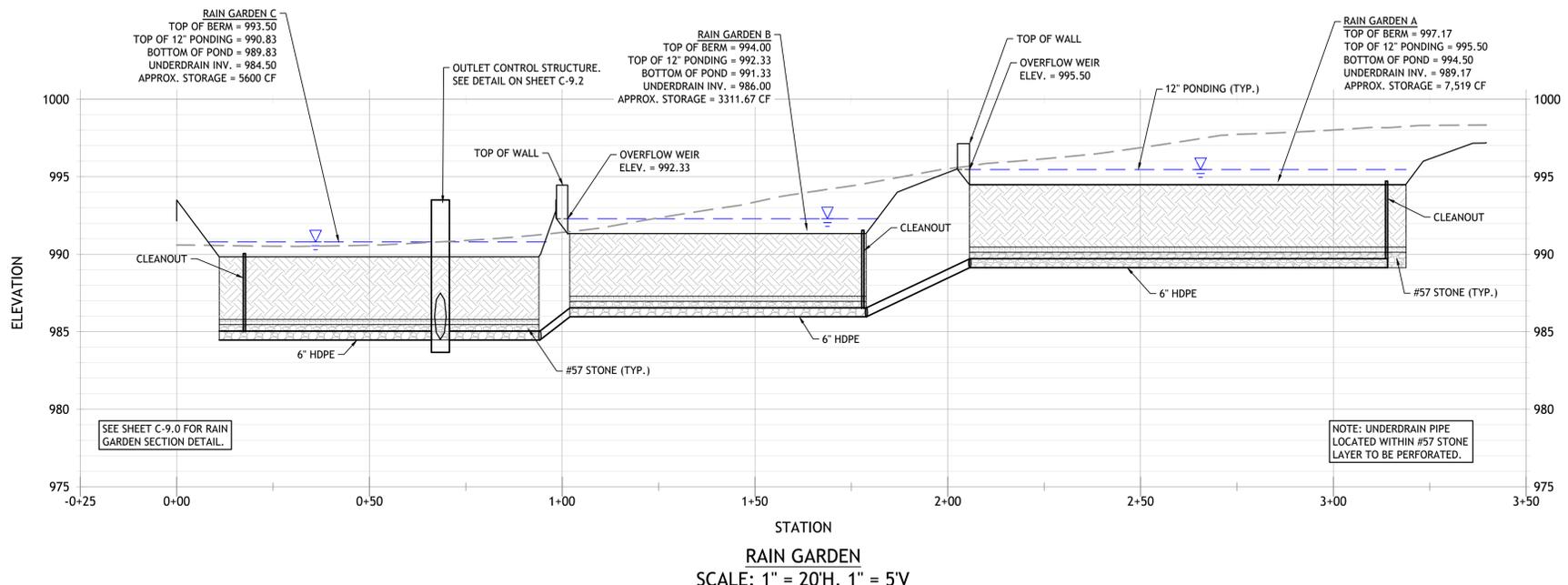
ISSUED FOR CONSTRUCTION LONG #0870-0030



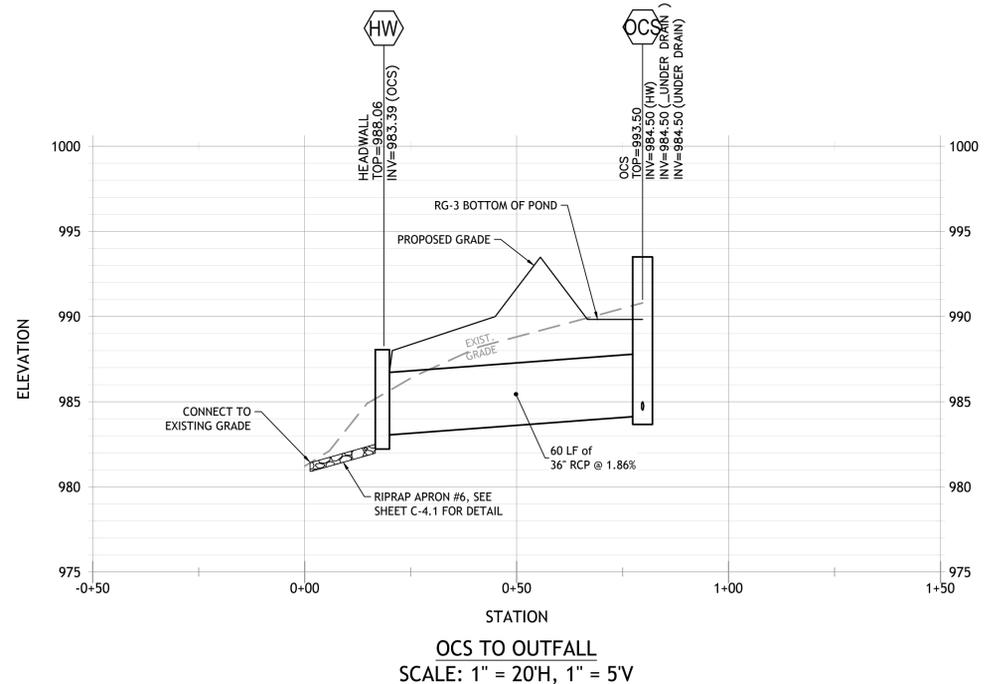
SWALE CENTERLINE: PLAN VIEW



SWALE CENTERLINE
SCALE: 1" = 20'H, 1" = 5'V



RAIN GARDEN
SCALE: 1" = 20'H, 1" = 5'V



OCS TO OUTFALL
SCALE: 1" = 20'H, 1" = 5'V

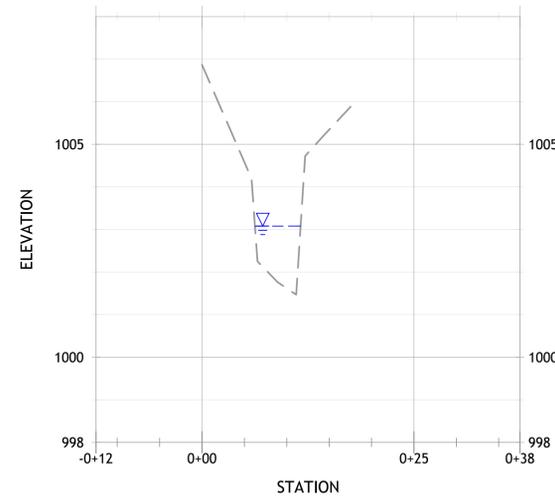
REV #	DATE	DESCRIPTION	REQUESTED BY
06/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL	GNCC
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	GNCC
08/14/21		LONG ENGINEERING 1ST SUBMITTAL	GNCC

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ATLANTA, GA 30339
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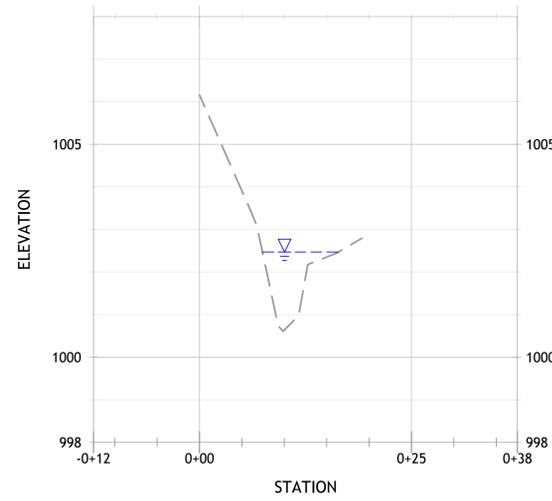
NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
LL 232
PROFILES

GEORGIA PROFESSIONAL ENGINEER
AUDREN T. PARKINS
9/3/2021
DATE: 09/03/2021
DESIGN QC: ATP
CADD QC: DGH
DESIGNED BY: NJS
DRAWN BY: NJS

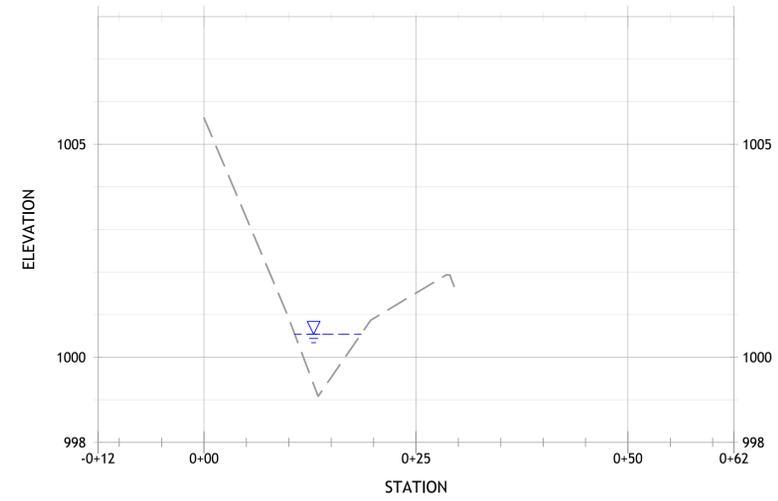
ISSUED FOR CONSTRUCTION



SWALE SECTION 1 (EXISTING)
SCALE: 1" = 10'H, 1" = 2'V

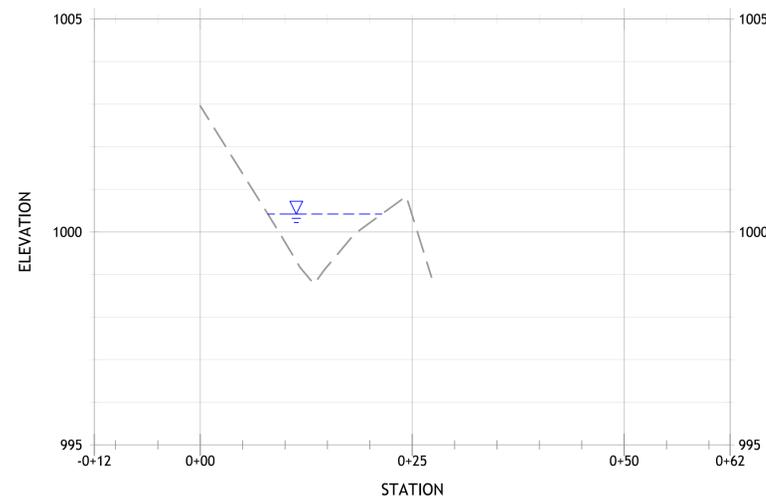


SWALE SECTION 2 (EXISTING)
SCALE: 1" = 10'H, 1" = 2'V

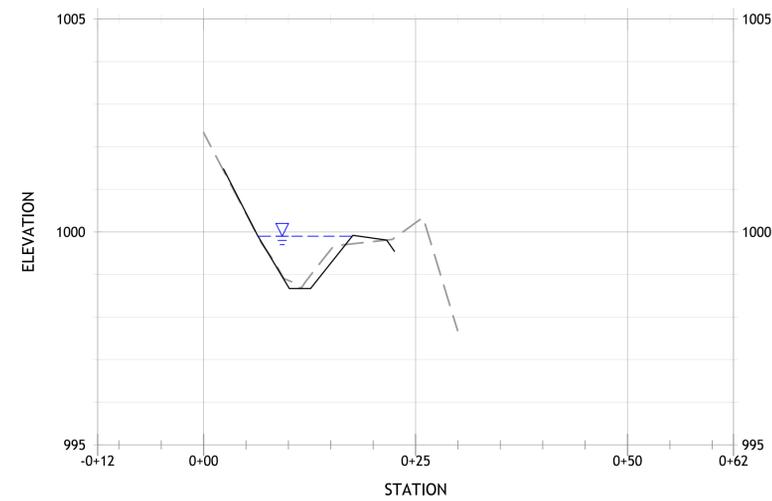


SWALE SECTION 3 (EXISTING)
SCALE: 1" = 10'H, 1" = 2'V

SWALE SECTION	100-YR ELEVATION	100-YR VELOCITY
SECTION 1 (EXIST.)	1003.08	6.39
SECTION 2 (EXIST.)	1002.47	5.53
SECTION 3 (EXIST.)	1000.54	6.98
SECTION 4 (EXIST.)	1000.42	3.50
SECTION 5 (PROP.)	999.90	4.76



SWALE SECTION 4 (EXISTING)
SCALE: 1" = 10'H, 1" = 2'V



SWALE SECTION 5 (PROPOSED)
SCALE: 1" = 10'H, 1" = 2'V

REV #	DATE	DESCRIPTION	REQUESTED BY
06/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL	GOAE
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	GOAE
09/14/21		CITY OF AVONDALE ESTATES 1ST SUBMITTAL	GOAE



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NORTH WOODS AT LAKE AVONDALE
 100 BERKELEY ROAD
 AVONDALE ESTATES, DEKALB COUNTY, GA
 SWALE SECTIONS
 DISTRICT 15
 LL 232



 DATE: 09/03/2021
 DESIGN QC: ATP
 CADD QC: ATP
 DESIGNED BY: DGAEL
 DRAWN BY: NJS

PRODUCT SPECIFIC PRACTICES

- CONCRETE TRUCKS: CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASHOUT OR DISCHARGE SURPLUS CONCRETE DRUM WASH ON SITE. WASH AREAS, IF CONSTRUCTED, WILL CONSIST OF AN ENCLOSED WASTE COLLECTION AREA THAT WILL CONTAIN THE CONCRETE WASH UNTIL IT HARDENS.
PAINTS: ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM OR SURFACE WATERS BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND FEDERAL, STATE AND LOCAL REGULATIONS.
PETROLEUM PRODUCTS: ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY PETROLEUM TO BE STORED IN TANKS WILL BE SURROUNDED BY AN EARTHEN BERM AS A SECONDARY PROTECTIVE MEASURE...

NPDES PROFESSIONAL CERTIFICATION

I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED...

GENERAL NOTES

- THE EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHALL BE SIGNED IN ACCORDANCE WITH PART IV., AND BE RETAINED ON THE SITE (OR, IF NOT POSSIBLE, AT A READILY ACCESSIBLE LOCATION) WHICH GENERATES THE STORM WATER DISCHARGE IN ACCORDANCE WITH PART IV.F. OF THIS PERMIT.
THE PRIMARY PERMITTEE SHALL MAKE PLANS AVAILABLE UPON REQUEST TO THE EPD; TO DESIGNATED OFFICIALS OF THE LOCAL GOVERNMENT REVIEWING SOIL EROSION AND SEDIMENT CONTROL PLANS, GRADING PLANS, OR STORM WATER MANAGEMENT PLANS; OR IN THE CASE OF A STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY WHICH DISCHARGES THROUGH A MUNICIPAL SEWER SYSTEM...

THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WITHIN 7 DAYS AFTER INSTALLATION.

EROSION CONTROL & DRAINAGE NOTES

- NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES...

24-HOUR EMERGENCY CONTACT: CAROLYN RADER 678-576-2857

SITE VISIT CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION.

Table with columns: REVISIONS, CODE, DATE, DESCRIPTION. Includes rows for City of Avondale Estates and Submittal dates.

LONG ENGINEERING logo and contact information: 2550 HERITAGE COURT, STE 250 ATLANTA, GA 30339. TEL 770.951.7495. FAX 770.951.7496. www.longeng.com

NORTH WOODS AT LAKE AVONDALE DISTRICT 15 AVONDALE ESTATES, DEKALB COUNTY, GA EROSION & SEDIMENT CONTROL NOTES LL 232

Professional Engineer Seal for Andrew T. Pankopp, No. 58932, State of Georgia, expires 9/26/2023.

SHEET C-7.0 1" = 500'

DESCRIPTION OF THE CONSTRUCTION ACTIVITY

- CONSTRUCTION ACTIVITY CONSISTS OF GREEN INFRASTRUCTURE IMPROVEMENTS AND STORMWATER MITIGATION PRACTICES WITHIN THE NORTH WOODS AREA NEAR LAKE AVONDALE. REHABILITATION OF HEAVILY ERODED AREAS AND TRAIL IMPROVEMENTS ARE ALSO INCLUDED AS PART OF PROJECT SCOPE.
RECEIVING WATER (WARM WATER & FISHERIES STREAM): COBBS CREEK
STREAM STATUS: NON-SUPPORTING - CATEGORY 4A CAUSE: FC, BIO F SOURCE: UR
TMDL COMPLETED FC 2002 (REVISED 2007). TMDL COMPLETED BIO F 2007.



LOCATION MAP 1" = 500'

1

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST. Table with columns: Item #, Description, Status (Y/N), and Date. Includes items 1 through 27 covering various erosion control and sediment management practices.

Effective January 1, 2021

LONG #0870-0030

ISSUED FOR CONSTRUCTION

REV #	DATE	DESCRIPTION	DESIGNED BY	CHECKED BY	DATE
05/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL			
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL			
09/14/21		CITY OF AVONDALE ESTATES 1ST SUBMITTAL			

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NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
LL 232
EROSION & SEDIMENT CONTROL PLAN - PHASE I

ISSUED FOR CONSTRUCTION
SHEET C-7.2

- ### APPENDIX 1 ADDITIONAL MEASURES:
- A LARGE SIGN (MINIMUM 4 FEET X 8 FEET) MUST BE POSTED ON SITE BY THE ACTUAL START DATE OF CONSTRUCTION. THE SIGN MUST BE VISIBLE FROM A PUBLIC ROADWAY. THE SIGN MUST IDENTIFY THE FOLLOWING: (1) CONSTRUCTION SITE, (2) THE PERMITTEE(S), (3) THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S), AND (4) THE PERMITTEE-HOSTED WEBSITE WHERE THE PLAN CAN BE VIEWED MUST BE PROVIDED ON THE SUBMITTED NOI. THE SIGN MUST REMAIN ON SITE AND THE PLAN MUST BE AVAILABLE ON THE PROVIDED WEBSITE UNTIL A NOT HAS BEEN SUBMITTED.
 - TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24 HOUR PERIOD.
 - USE OF MULCH FILTER BERMS BETWEEN DOUBLE ROW SENSITIVE SILT FENCE.
 - USE FLOCCULANTS OR COAGULANTS AND/OR MULCH TO STABILIZE AREAS LEFT UNDISTURBED FOR MORE THAN SEVEN (7) CALENDAR DAYS IN ACCORDANCE WITH SECTION III.D.1. OF THE NPDES PERMIT.

FLOODPLAIN LEGEND

- 500-YEAR FLOODPLAIN LIMITS (FEMA)
- 100-YEAR FLOODPLAIN LIMITS (FEMA)
- FLOODWAY LIMITS (FEMA)
- WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

- ### EROSION CONTROL NOTES
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION & SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
 - EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED MEASURES DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
 - ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
 - EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY, AFTER EACH RAIN AND BE REPAIRED BY THE GENERAL CONTRACTOR.
 - THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION.
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 - MAINTAIN CONSTRUCTION EXITS TO PREVENT TRACKING OF MUD INTO THE PUBLIC RIGHT-OF-WAY.
 - FAILURE TO MAINTAIN EROSION CONTROL MEASURES COULD RESULT IN FINES AND/OR JAIL TIME.
 - ADDITIONAL EROSION & SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTOR.
 - ALL GRADED SLOPES 3:1 OR GREATER MUST BE HYDROSEEDDED AND COVERED WITH GDOT APPROVED WHEAT OR WOOD FIBER MATTING. IF NOT HYDROSEEDDED, GDOT APPROVED MATTING THAT HAS BEEN IMPREGNATED WITH SEED AND FERTILIZER MUST BE USED. ALL SLOPES MUST BE PROPERLY PROTECTED UNTIL A PERMANENT VEGETATIVE STAND IS ESTABLISHED.
 - SILT FENCE SHALL MEET THE REQUIREMENTS OF SECTIONS 171 TEMPORARY SILT FENCE OF THE GEORGIA STANDARD SPECIFICATIONS, LATEST ADDITION AND BE WIRE REINFORCED.
 - ADDITIONAL EROSION CONTROL MEASURES AS DEEMED BY JURISDICTIONAL INSPECTORS SHALL BE IMPLEMENTED IN A TIMELY FASHION.
 - GDOT TYPE "C" SILT FENCE MUST BE INSTALLED WHERE SILT FENCING IS REQUIRED AND A DOUBLE ROW MUST BE INSTALLED BETWEEN THE LAND DISTURBING ACTIVITY AND WATERS OF THE STATE.
 - ALL BMPs TO REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS WELL ESTABLISHED.
 - SEE SHEETS C-8.0 THRU C-8.6 FOR EROSION CONTROL DETAILS.
 - THERE ARE WATERS OF THE STATE ON OR WITHIN 200 FEET OF PROJECT AREA.
 - SOIL SERIES FOR ENTIRE DISTURBED AREA = PUE, CUC
 - TOTAL SITE AREA = 13.36 AC. DISTURBED AREA = 1.35 AC.
 - APPROXIMATE EARTHWORK QUANTITIES:
CUT 1,121 CY
FILL 1,340 CY
THESE QUANTITIES ARE APPROXIMATE AND SHOWN FOR PERMIT PURPOSES ONLY AND SHOULD NOT BE USED FOR BIDDING PURPOSES.
 - OWNER: CITY OF AVONDALE ESTATES (SHANNON POWELL)
21 NORTH AVONDALE PLAZA
AVONDALE ESTATES, GA 30002
404-294-5400
SPOWELL@AVONDALEESTATES.ORG

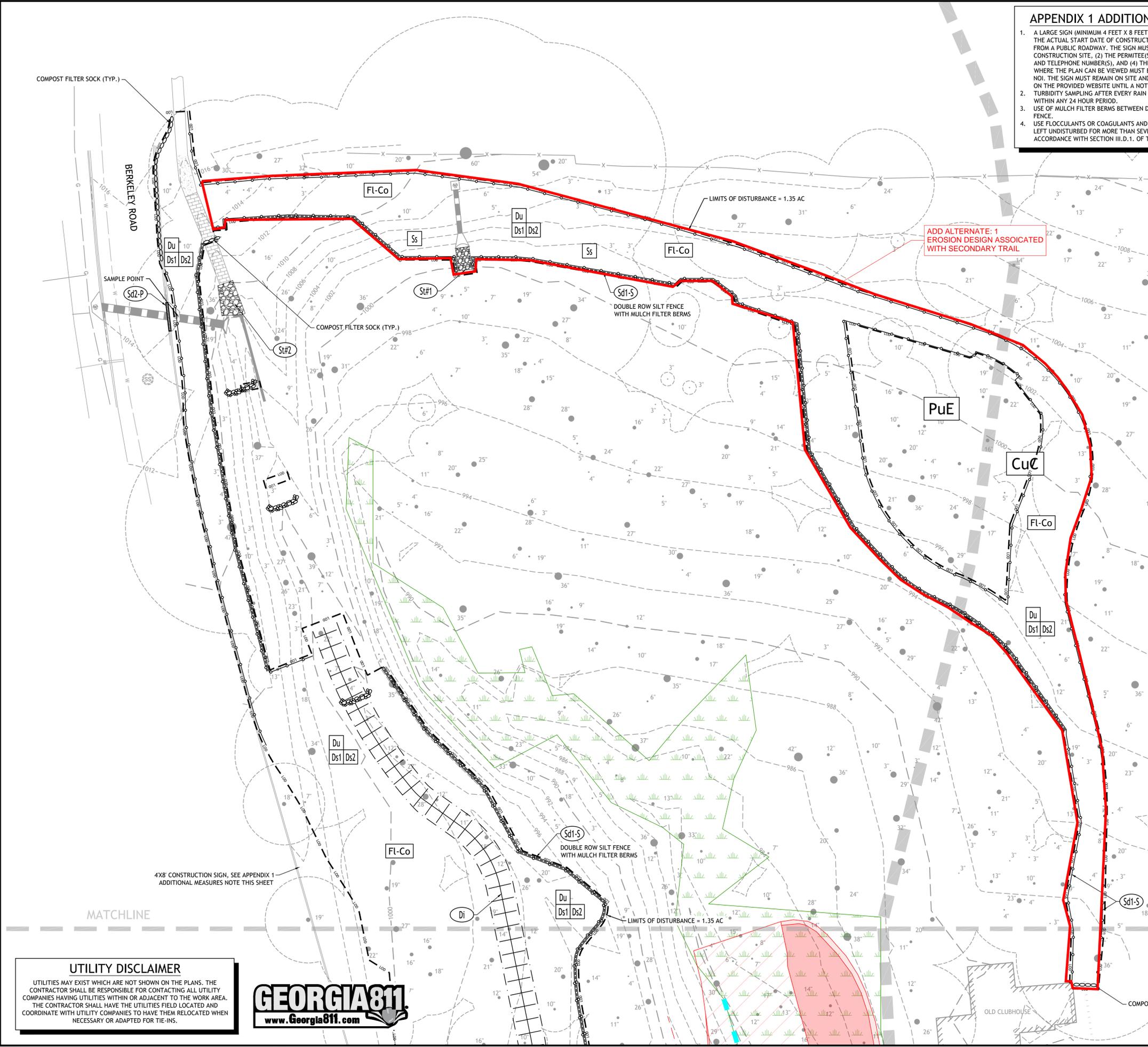
SEDIMENT STORAGE - INITIAL PHASE

REQUIRED:
(67 CY/AC)*(1.31 AC) = 87.8 CY

PROPOSED:
SILT FENCE STORAGE:
LENGTH OF FENCE (L) = 1,363 FT
HEIGHT OF FENCE (H) = 2.5 FT
STORAGE AREA PER LF (A) = 2.34 SQFT
STORAGE PROVIDED = L*A
= (1,363 FT)*(2.34 SQFT) = 3189 CFT
(3189 CFT)/(CY/27 CFT) = 1118 CY

TEMPORARY SEDIMENT POND SD3:
STORAGE PROVIDED (A) = 911 CY

TOTAL STORAGE PROVIDED = 2,029 CY



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www.Georgia811.com

4'X8' CONSTRUCTION SIGN, SEE APPENDIX 1 ADDITIONAL MEASURES NOTE THIS SHEET

ADD ALTERNATE: 1 EROSION DESIGN ASSOCIATED WITH SECONDARY TRAIL

REV #	DATE	DESCRIPTION	REQUESTED BY
05/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL	CSWCC
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	CSWCC
04/14/21		CITY OF AVONDALE ESTATES 1ST SUBMITTAL	CSWCC

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NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
EROSION & SEDIMENT CONTROL PLAN - PHASE I
LL 232

ISSUED FOR CONSTRUCTION

DATE: 09/03/2021
DESIGN QC: ATP
CADD QC: DGR
DESIGNED BY: NJS
DRAWN BY: NJS

SHEET
C-7.3

- APPENDIX 1 ADDITIONAL MEASURES:**
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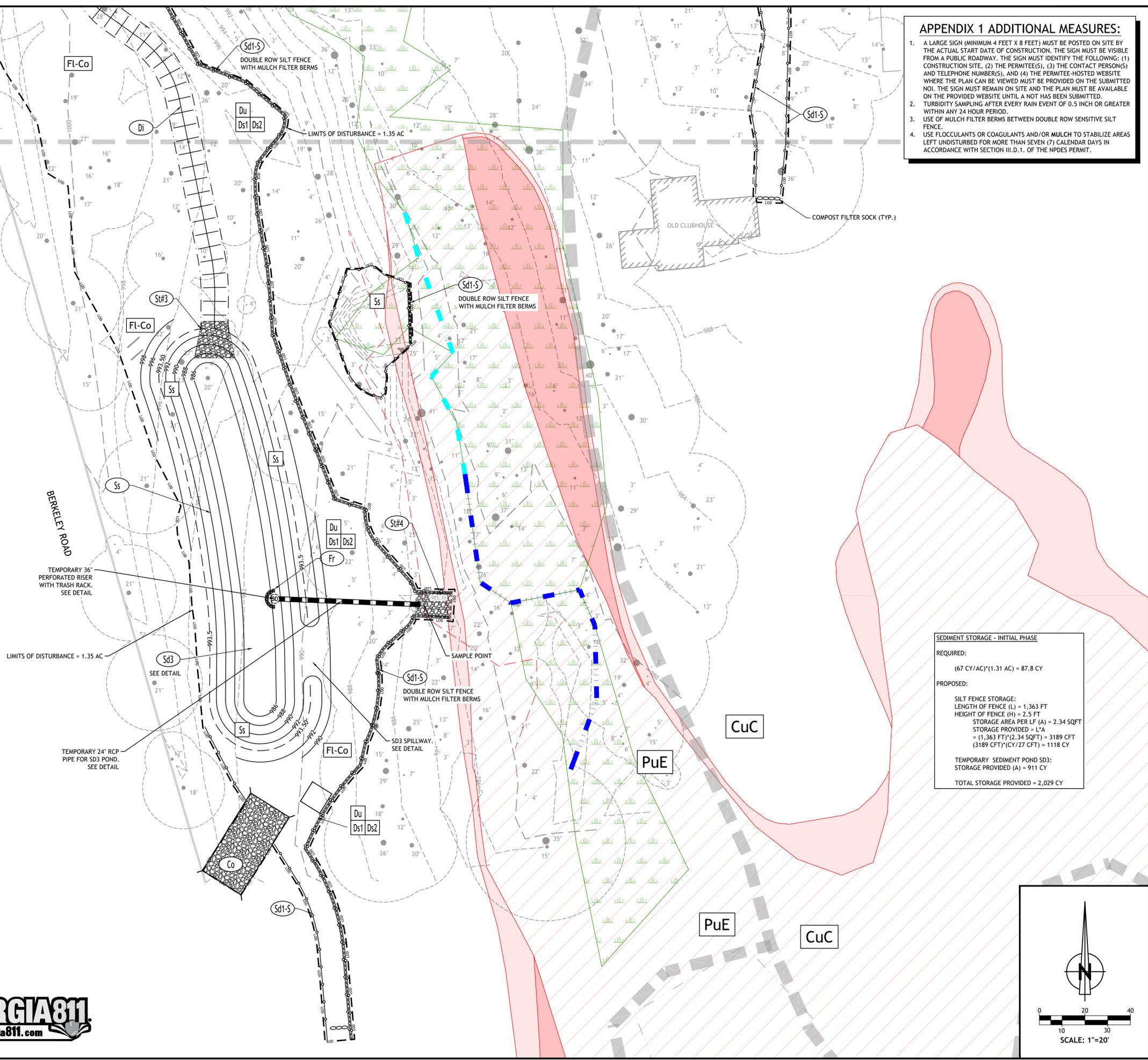
FLOODPLAIN LEGEND

- 500-YEAR FLOODPLAIN LIMITS (FEMA)
- 100-YEAR FLOODPLAIN LIMITS (FEMA)
- FLOODWAY LIMITS (FEMA)
- WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

- EROSION CONTROL NOTES**
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 - THERE ARE WATERS OF THE STATE ON OR WITHIN 200 FEET OF PROJECT AREA.
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 - TOTAL SITE AREA = 13.36 AC. DISTURBED AREA = 1.35 AC.
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CUT 1,121 CY
FILL 1,340 CY
THESE QUANTITIES ARE APPROXIMATE AND SHOWN FOR PERMIT PURPOSES ONLY AND SHOULD NOT BE USED FOR BIDDING PURPOSES.
 - OWNER: CITY OF AVONDALE ESTATES (SHANNON POWELL)
21 NORTH AVONDALE PLAZA
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SEDIMENT STORAGE - INITIAL PHASE

REQUIRED:
(67 CY/AC)*(1.31 AC) = 87.8 CY

PROPOSED:

SILT FENCE STORAGE:
LENGTH OF FENCE (L) = 1,363 FT
HEIGHT OF FENCE (H) = 2.5 FT
STORAGE AREA PER LF (A) = 2.34 SQFT
STORAGE PROVIDED = L*A
= (1,363 FT)*(2.34 SQFT) = 3189 CFT
(3189 CFT)/(CY/27 CFT) = 1118 CY

TEMPORARY SEDIMENT POND SD3:
STORAGE PROVIDED (A) = 911 CY

TOTAL STORAGE PROVIDED = 2,029 CY

REV #	DATE	DESCRIPTION	REQUESTED BY
02/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL	GWCC
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	GWCC
08/16/21		GWCC REVIEW COMMENTS	GWCC
09/14/21		CITY OF AVONDALE ESTATES 1ST SUBMITTAL	GWCC

2550 HERITAGE COURT, STE 250
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NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
EROSION & SEDIMENT CONTROL PLAN - PHASE II
LL 232



ISSUED FOR CONSTRUCTION

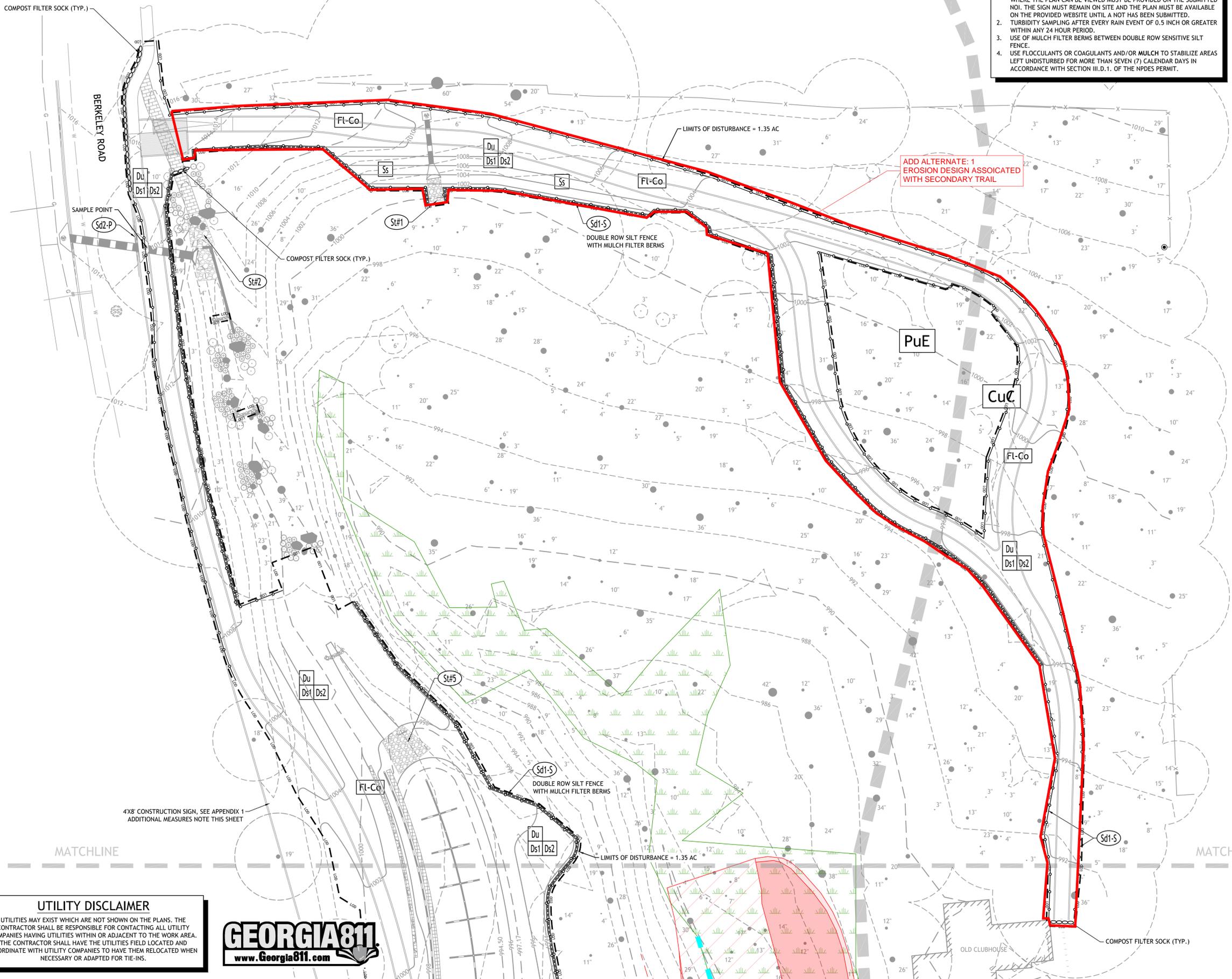
SHEET
C-7.4

FLOODPLAIN LEGEND

-  500-YEAR FLOODPLAIN LIMITS (FEMA)
-  100-YEAR FLOODPLAIN LIMITS (FEMA)
-  FLOODWAY LIMITS (FEMA)
-  WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
-  PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
-  INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

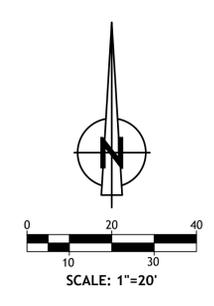
APPENDIX 1 ADDITIONAL MEASURES:

- A LARGE SIGN (MINIMUM 4 FEET X 8 FEET) MUST BE POSTED ON SITE BY THE ACTUAL START DATE OF CONSTRUCTION. THE SIGN MUST BE VISIBLE FROM A PUBLIC ROADWAY. THE SIGN MUST IDENTIFY THE FOLLOWING: (1) CONSTRUCTION SITE, (2) THE PERMITEE(S), (3) THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S), AND (4) THE PERMITEE-HOSTED WEBSITE WHERE THE PLAN CAN BE VIEWED MUST BE PROVIDED ON THE SUBMITTED NOI. THE SIGN MUST REMAIN ON SITE AND THE PLAN MUST BE AVAILABLE ON THE PROVIDED WEBSITE UNTIL A NOT HAS BEEN SUBMITTED.
- TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24 HOUR PERIOD.
- USE OF MULCH FILTER BERMS BETWEEN DOUBLE ROW SENSITIVE SILT FENCE.
- USE FLOCCULANTS OR COAGULANTS AND/OR MULCH TO STABILIZE AREAS LEFT UNDISTURBED FOR MORE THAN SEVEN (7) CALENDAR DAYS IN ACCORDANCE WITH SECTION III.D.1. OF THE NPDES PERMIT.



ADD ALTERNATE: 1
EROSION DESIGN ASSOCIATED
WITH SECONDARY TRAIL

UTILITY DISCLAIMER
UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH UTILITY COMPANIES TO HAVE THEM RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.



MATCHLINE

4'X8' CONSTRUCTION SIGN, SEE APPENDIX 1
ADDITIONAL MEASURES NOTE THIS SHEET

LIMITS OF DISTURBANCE = 1.35 AC



4'x8' CONSTRUCTION SIGN, SEE APPENDIX 1
ADDITIONAL MEASURES NOTE THIS SHEET

MATCHLINE

Sd1-S
DOUBLE ROW SILT FENCE
WITH MULCH FILTER BERMS

LIMITS OF DISTURBANCE = 1.35 AC

COMPOST FILTER SOCK (TYP.)

APPENDIX 1 ADDITIONAL MEASURES:

1. A LARGE SIGN (MINIMUM 4 FEET X 8 FEET) MUST BE POSTED ON SITE BY THE ACTUAL START DATE OF CONSTRUCTION. THE SIGN MUST BE VISIBLE FROM A PUBLIC ROADWAY. THE SIGN MUST IDENTIFY THE FOLLOWING: (1) CONSTRUCTION SITE, (2) THE PERMITEE(S), (3) THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S), AND (4) THE PERMITEE-HOSTED WEBSITE WHERE THE PLAN CAN BE VIEWED MUST BE PROVIDED ON THE SUBMITTED NOI. THE SIGN MUST REMAIN ON SITE AND THE PLAN MUST BE AVAILABLE ON THE PROVIDED WEBSITE UNTIL A NOT HAS BEEN SUBMITTED. TURBIDITY SAMPLING AFTER EVERY RAIN EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24 HOUR PERIOD.
2. USE OF MULCH FILTER BERMS BETWEEN DOUBLE ROW SENSITIVE SILT FENCE.
3. USE FLOCCULANTS OR COAGULANTS AND/OR MULCH TO STABILIZE AREAS LEFT UNDISTURBED FOR MORE THAN SEVEN (7) CALENDAR DAYS IN ACCORDANCE WITH SECTION III.D.1. OF THE NPDES PERMIT.

FLOODPLAIN LEGEND

- 500-YEAR FLOODPLAIN LIMITS (FEMA)
- 100-YEAR FLOODPLAIN LIMITS (FEMA)
- FLOODWAY LIMITS (FEMA)
- WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
- INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

BERKELEY ROAD

LIMITS OF DISTURBANCE = 1.35 AC

SAMPLE POINT

Sd1-S
DOUBLE ROW SILT FENCE
WITH MULCH FILTER BERMS

APPROXIMATE LOCATION
OF EXISTING DIRT TRAIL

UTILITY DISCLAIMER

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APPROXIMATE LOCATION OF THE
EXISTING AGGREGATE TRAIL

REVISIONS			
REV #	DATE	DESCRIPTION	REQUESTED BY
06/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL	GOE
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	GOE
08/16/21		CONTRACTOR'S COMMENTS	GOE
09/14/21		CITY OF AVONDALE ESTATES 1ST SUBMITTAL	GOE

NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
EROSION & SEDIMENT CONTROL PLAN - PHASE II

DESIGN QC: [Signature]
DATE: 09/03/2021
SCALE: 1"=20'

SHEET
C-7.5

ISSUED FOR CONSTRUCTION

LONG #0870-0030

FLOODPLAIN LEGEND			
	500-YEAR FLOODPLAIN LIMITS (FEMA)		
	100-YEAR FLOODPLAIN LIMITS (FEMA)		
	FLOODWAY LIMITS (FEMA)		
	WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)		
	PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)		
	INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)		

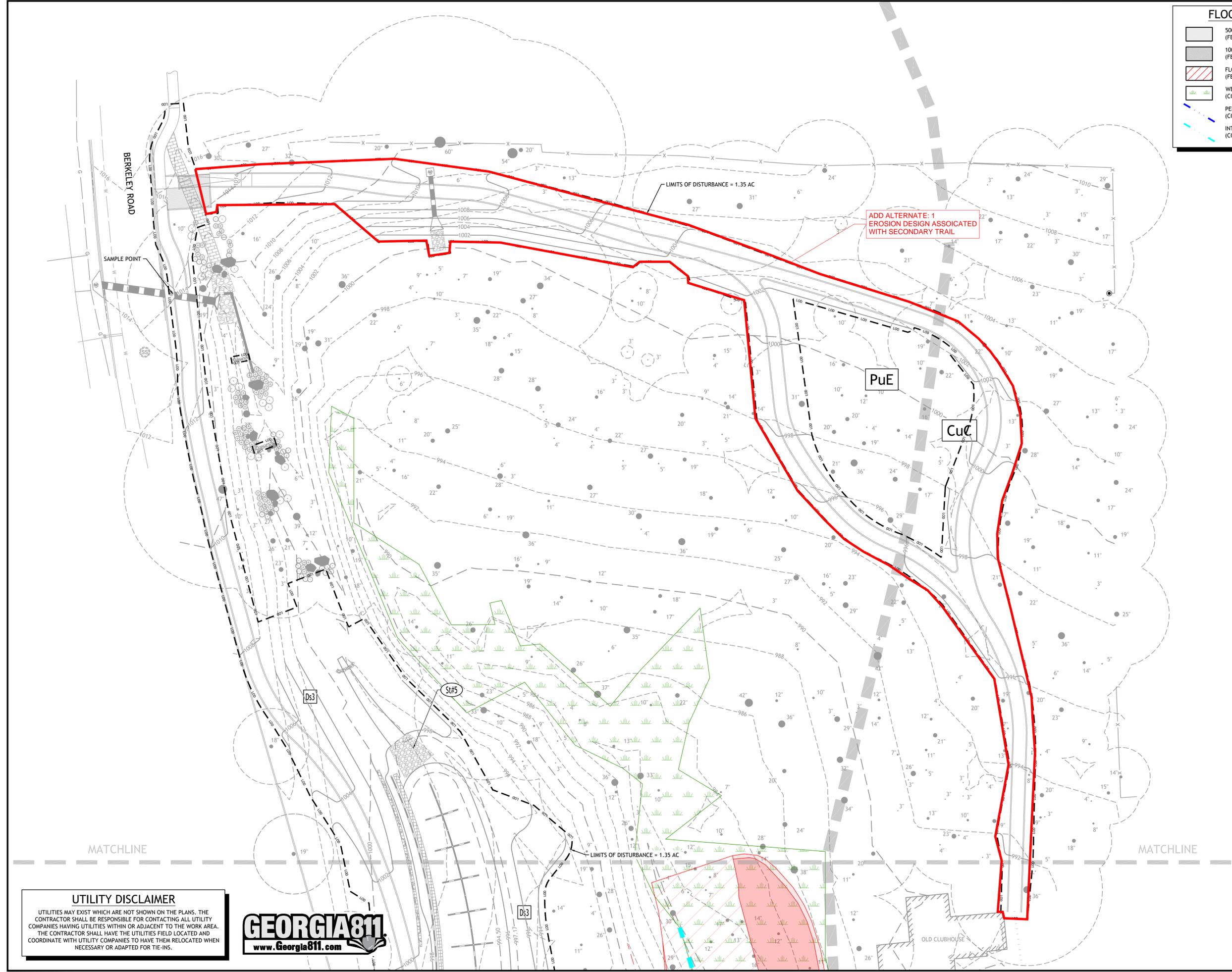
REVISIONS			
REV #	DATE	DESCRIPTION	REQUESTED BY
01	08/10/21	CITY OF AVONDALE ESTATES 3RD SUBMITTAL	GWCC
02	07/30/21	CITY OF AVONDALE ESTATES 2ND SUBMITTAL	GWCC
03	04/14/21	AVONDALE ESTATES 1ST SUBMITTAL	GWCC

2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
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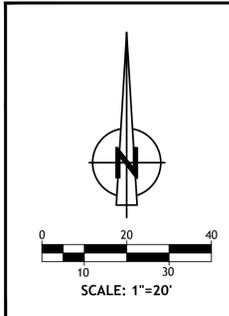
NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
EROSION & SEDIMENT CONTROL PLAN - PHASE III
LL 232

ISSUED FOR CONSTRUCTION

SHEET
C-7.6



UTILITY DISCLAIMER
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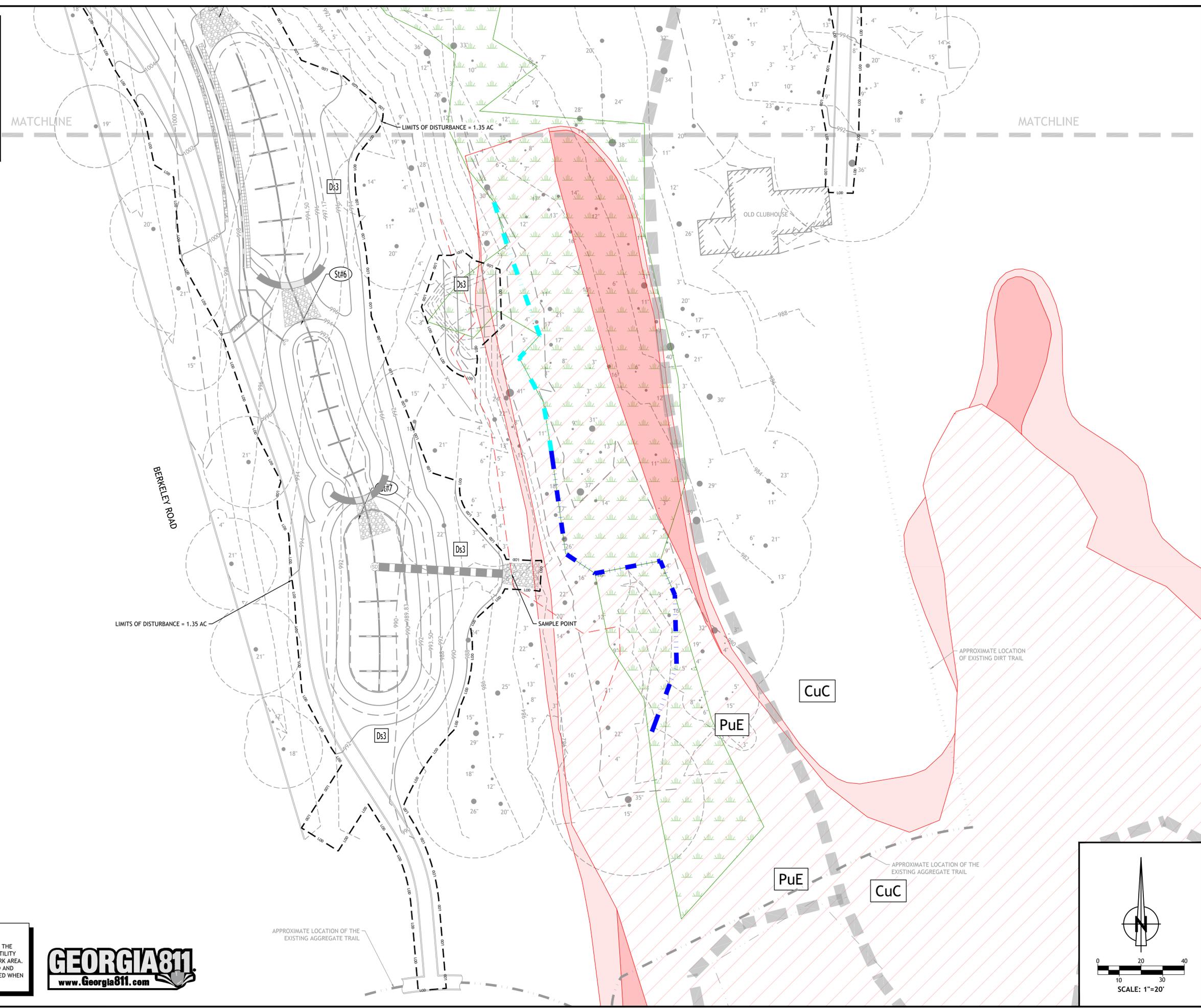


FLOODPLAIN LEGEND

-  500-YEAR FLOODPLAIN LIMITS (FEMA)
-  100-YEAR FLOODPLAIN LIMITS (FEMA)
-  FLOODWAY LIMITS (FEMA)
-  WETLAND LIMITS (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
-  PERENNIAL STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)
-  INTERMITTENT STREAM (CONTOUR ENVIRONMENTAL LLC, 12/16/20)

MATCHLINE

MATCHLINE



LIMITS OF DISTURBANCE = 1.35 AC

LIMITS OF DISTURBANCE = 1.35 AC

SAMPLE POINT

APPROXIMATE LOCATION OF EXISTING DIRT TRAIL

APPROXIMATE LOCATION OF THE EXISTING AGGREGATE TRAIL

CuC

PuE

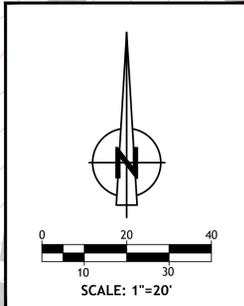
PuE

CuC

APPROXIMATE LOCATION OF THE EXISTING AGGREGATE TRAIL

UTILITY DISCLAIMER

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REVISIONS			
REV #	DATE	DESCRIPTION	REQUESTED BY
02/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL	GNCC
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	GNCC
04/12/21		AVONDALE ESTATES 1ST SUBMITTAL	GNCC

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NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
EROSION & SEDIMENT CONTROL PLAN - PHASE III

ISSUED FOR CONSTRUCTION

DESIGN QC: ATP
CADD QC: DGB
DESIGNED BY: NJS
DRAWN BY: NJS

DATE: 09/03/2021

ESWCC LEVEL II CERT. #0903, EXPIRES 8/26/2023

SHEET C-7.7

LONG #0870-0030

Disturbed Area Stabilization (With Permanent Vegetation)

D53

DEFINITION

The planting of perennial vegetation such as trees, shrubs, vines, grasses, or legumes on exposed areas for final permanent stabilization. Permanent perennial vegetation shall be used to achieve final stabilization.

PURPOSE

- To protect the soil surface from erosion
- To reduce damage from sediment and runoff to down-stream areas
- To improve wildlife habitat and visual resources
- To improve aesthetics

REQUIREMENT FOR REGULATORY COMPLIANCE

This practice shall be applied immediately to rough graded areas that will be undisturbed for longer than six months. This practice or sodding shall be applied immediately to all areas at final grade. Final Stabilization means that all soil disturbing activities at the site have been completed, and that for unpaired areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by the GA EPD for waste disposal, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped according to the Plan (uniformly covered with landscaping materials in planned landscaped areas), or equivalent permanent stabilization measures.

Permanent vegetation shall consist of, planted trees, shrubs, perennial vines, or a crop of perennial vegetation appropriate for the region, such that within the growing season a 70% coverage by permanent vegetation shall be achieved. Final stabilization applies to each phase of construction. For linear construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use. Until this standard is satisfied and permanent control measures and facilities are operational, interim stabilization measures and temporary erosion and sedimentation control measures shall not be removed.

CONDITIONS

Permanent perennial vegetation is used to provide a protective cover for exposed areas including cuts, fills, dams, and other denuded areas.

PLANNING CONSIDERATIONS

- Use conventional planting methods where possible.
- When mixed plantings are done during marginal planting periods, companion crops shall be used.
- No-ill planting is effective when planting is done following a summer or winter annual cover crop. *Sericea Lespedeza* planted no-ill stands of ryegrass is an excellent procedure.
- Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete foundations and other structures. Refer to Specification **De4-Disturbed Area Stabilization (With Sodding)**.
- Irrigation should be used when the soil is dry or when summer plantings are done.
- Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.
- Mowing should not be performed during the quill nesting season (May to September).
- Wildlife plantings should be included in critical area plantings.

Wildlife Plantings

Continuously available plants beneficial to wildlife species include the following:

Maat Bearing Trees

Beech, Black Cherry, Blackgum, Chestnut, Chickadee, Hackberry, Hickory, Honey Locust, Native Oak, Persimmon, Sawtooth Oak and Sweetgum.

All trees that produce nuts or fruits are favored by many game species. Hickory provides nuts used mainly by squirrels and bear.

Shrubs and Small Trees

Bayberry, Bicolor *Lespedeza*, Crabapple, Dogwood, Huckleberry or Native Blueberry, Mountain Laurel, Native Holly, Red Cedar, Red Mulberry, Sumac, Wax Myrtle, Wild Plum and Blackberry.

Plant in patches without tall trees to develop stable shrub communities. All produce fruits used by many kinds of wildlife, except for *Lespedeza* which produces seeds used by quail and songbirds.

Grasses, Legumes, Vines and Temporary Cover

Bahia grass, Bermudagrass, Grass-Legume mixtures, Partridge Pea, Annual *Lespedeza*, Orchardgrass (for mountains), Browntop Millet (for temporary cover), and Native grasses.

Provides herbaceous cover in clearings for a game bird brood-rearing habitat. Appropriate legumes such as vetches, clovers, and *Lespedeza* may be mixed with grass, but they die out after a few years.

CONSTRUCTION SPECIFICATIONS

Grading and Shaping
Grading and shaping may not be required where hydraulic seeding and fertilizing equipment is to be used. Vertical banks shall be sloped to enable plant establishment.

When conventional seeding and fertilizing are to be done, grade and shape where feasible and practical so that equipment can be used safely and efficiently during seedbed preparation, seeding, mulching and maintenance of the vegetation.

Concentrations of water that will cause excessive

soil erosion shall be diverted to a safe outlet. Diversions and other treatment practices shall conform with the appropriate standards and specifications.

Lime and Fertilizer Rates and Analysis

Agricultural lime is required at the rate of one to two tons per acre unless soil tests indicate otherwise. Graded areas require lime application. If lime is applied within six months of planting permanent perennial vegetation, additional lime is not required. Agricultural lime shall be within the specifications of the Georgia Department of Agriculture.

Lime spread by conventional equipment shall be "ground limestone." Ground limestone is calcitic or dolomitic limestone ground so that 90 percent of the material will pass through a 10-mesh sieve, not less than 50 percent will pass through a 50-mesh sieve and not less than 25 percent will pass through a 100-mesh sieve.

Fast-acting lime spread by hydraulic seeding equipment shall be "finely ground limestone" spanning from the 180 micron size to the 5 micron size. Finely ground limestone is calcitic or dolomitic limestone ground so that 95 percent of the material will pass through a 100-mesh sieve.

It is desirable to use dolomitic limestone in the South Hills, Southern Crowsfoot Plain and Atlantic Coast Flatwoods MLRAs. (See Figures 6-4.1)

Agricultural lime is generally not required where only trees are planted.

Initial fertilization, nitrogen, topdressing, and maintenance fertilizer requirements for each species or combination of species are listed in Table 6-5.1.

Lime and Fertilizer Application

When hydraulic seeding equipment is used, the initial fertilizer shall be mixed with seed, inoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The inoculant, if needed, shall be mixed with the seed prior to being placed into the hydraulic seeder. The slurry mixture will be agitated during application to keep the ingredients thoroughly mixed. The mixture will be spread uniformly over the area within one hour after being placed in the

SPECIES	BROADCAST RATE 1/1 PLS/2 PER ACRE	RESOURCE AREA	PLANTING DATES												REMARKS		
			F	M	A	M	J	J	A	S	O	N	D	F			
BAMA, RHINOGLA (Popalium rotundum)		P															160,000 SEED PER POUND. LOW GROWING. SOO FORMING. SLOW TO ESTABLISH. PLANT WITH A COMMON BERBERIS, BAMA, OR TALL FESCUE. PATTERNS AND LAWS. MIX WITH SERICEA LESPEDEZA OR WINTERING LOVEGRASS.
ALONE OR W/ TEMPORARY COVER WITH OTHER PERENNIALS	40 LBS. 1.4 LBS. 0.7 LBS.	C															
BAMA, WILSONIUM (Popalium rotundum)		M/L															160,000 SEED PER POUND. LOW GROWING. SOO FORMING. SLOW TO ESTABLISH. PLANT WITH A COMMON BERBERIS, BAMA, OR TALL FESCUE. PATTERNS AND LAWS. MIX WITH SERICEA LESPEDEZA OR WINTERING LOVEGRASS.
ALONE OR W/ TEMPORARY COVER WITH OTHER PERENNIALS	40 LBS. 1.4 LBS. 0.7 LBS.	P															
BERBERIS, COMMON (Cyanodon dactylon)		P															1,782,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOO FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
ALONE WITH OTHER PERENNIALS	10 LBS. 0.2 LBS. 0.1 LBS.	C															
BERBERIS, COMMON (Cyanodon dactylon) UNPAVED SEED NO TYPICAL COVER WITH OTHER PERENNIALS	10 LBS. 0.2 LBS. 0.1 LBS.	P															PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERBERIS, SPREAD (Cyanodon dactylon)		M/L															CUBIC FOOT CONTAINS APPROXIMATELY 450 SPRIGS. A BURL, CONTAINS 1.25 CUBIC FEET OF APPROXIMATELY 500 SPRIGS.
COASTAL, COMMON, OR TIF 44	40 C.F., 0.9 C.F. 500 PLUGS 7 x 7	P															SAME AS ABOVE.
COASTAL, COMMON, OR TIF 44		C															SOUTH COASTAL PLAIN ONLY.
TIF 78		C															
CENTPEDE (Eriochloa optundens)		P															BROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE ADJACENT TO CONC. AND IN CONCENTRATED FLOW AREAS. IRRIGATION NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT IN PASTURES, WATERWAYS AS FAR NORTH AS ATHENS AND ATLANTA.
BLOCK SOO ONLY		C															
CROWN VETCH (Coronilla varia)		M/L															100,000 SEED PER POUND. SENSE GROWTH. USE TO FILL IN OPEN SPACES. USE IN OPEN SPACES TO LATE FALL. MIX W/ 30 LBS. OF TALL FESCUE OR 10 LBS. OF TIF. INOCULATE SEED WITH SERICEA LESPEDEZA. USE FROM NORTH ATLANTA AND NORTHWARD.
WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS. 0.3 LBS.	P															
FESCUE, TALL (Festuca arvensis)		M/L															207,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. NOT FOR BROUGHTLY SOILS. MIX WITH PERENNIAL LEGUMES OR CROTONS. APPLY TOPDRESSING IN SPRING FOLLOWING TALL FESCUE OR WINTER ANNUALS. DO NOT MIX WITH SERICEA LESPEDEZA. SLOW TO DEVELOP SOO STANDS. INOCULATE WITH W/ SERICEA LESPEDEZA.
ALONE WITH OTHER PERENNIALS	50 LBS. 1.1 LBS. 30 LBS. 0.7 LBS.	C															
LESPEDeza (Amorpha virginica)		M/L															300,000 SEED PER POUND. HEIGHT OF GROWTH IS 18 TO 24 INCHES. ADVANTAGE IN OPEN AREAS. SPREADING THE GROWTH. NEW GROWTH HAS BROWN COLORATION. MIX BY WEEDING.
UNSCARPED	40 LBS. 1.4 LBS. 0.7 LBS.	C															100,000 SEED PER POUND. HEAD OF GROWTH IS 18 TO 24 INCHES. ADVANTAGE IN OPEN AREAS. SPREADING THE GROWTH. NEW GROWTH HAS BROWN COLORATION. MIX BY WEEDING. USE FROM NORTH ATLANTA AND NORTHWARD.
UNSCARPED	75 LBS. 1.7 LBS.	P															

SPECIES	BROADCAST RATE 1/1 PLS/2 PER ACRE	RESOURCE AREA	PLANTING DATES												REMARKS		
			F	M	A	M	J	J	A	S	O	N	D	F			
LESPEDeza, SERICEA (Lespedeza cuneata)		M/L															350,000 SEED PER POUND. WEEDY ADAPTED. LOW MAINTENANCE. MIX WITH WEEDING LOVEGRASS. COMMON BERBERIS, BAMA, OR TALL FESCUE. TAKES 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON ROADWAYS. INOCULATE SEED W/ EL INOCULANT.
UNSCARPED	40 LBS. 1.4 LBS.	C															
UNSCARPED	75 LBS. 1.7 LBS.	M/L															MIX WITH TALL FESCUE OR WINTER ANNUALS.
SEED-BEARING HAY	3 TONS 138 LBS.	P															CUT WHEN SEED IS MATURE, BUT BEFORE IT MATTERS. ADD TALL FESCUE OR WINTER ANNUALS.
LESPEDeza, SHRUB (Lespedeza bicolor)		M/L															PROVIDE WILDLIFE FOOD AND COVER.
PLANTS	3 x 7	C															
LOVEGRASS, WEAVING (Eriopogon horridus)		M/L															500,000 SEED PER POUND. QUICK COVER. BROUGHT TOLERANT. GROWS WELL WITH SERICEA LESPEDEZA ON ROADWAYS.
ALONE WITH OTHER PERENNIALS	4 LBS. 0.1 LBS. 2 LBS. 0.05 LBS.	C															
MARENGUE (Panicum horridum)		M/L															FOR VERY WET SITES. MIX CLOG CHANNELS. DO SPRIG FROM LOCAL SOURCES. USE ALONG RIVER BORDERS AND SHOULDER.
SPRIGS	2 x 3 SPACING	ALL															
WITH OTHER PERENNIALS		P															
PANDEMOUS, ATLANTIC (Cystium peruvianum)		P															GROWS WELL ON COASTAL SAND HILLS, BOMB AREA, AND GRAVEL PITS. PROVIDES WINTER COVER FOR WILDLIFE. MIX WITH SERICEA LESPEDEZA EXCEPT ON SAND HILLS.
REED CANARY GRASS (Phalaris intermedia)		M/L															GROWS SIMILAR TO TALL FESCUE.
ALONE WITH OTHER PERENNIALS	10 LBS. 1.1 LBS. 30 LBS. 0.7 LBS.	C															
SUNFLOWER, AZTEC (Helianthus scaberrimus)		M/L															227,000 SEED PER POUND. MIX WITH WEEDING LOVEGRASS OR OTHER LOW GROWING GRASSES OR LEGUMES.
ALONE WITH OTHER PERENNIALS	10 LBS. 0.2 LBS.	C															

SOLID LINES INDICATE OPTIMUM DATES, DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.

NOTES:

- PERMANENT GRASSING SHALL BE APPLIED TO GRADED AREAS THAT WILL BE UNDISTURBED FOR MORE THAN 6 MONTHS.
- APPLY TO ALL AREAS IMMEDIATELY AFTER THEY HAVE REACHED FINAL GRADE.
- APPLY AGRICULTURAL LIME AT A RATE OF 1-2 TONS PER ACRE UNLESS SOIL TESTS INDICATE OTHERWISE.
- RYE GRASS SHALL NOT BE USED IN ANY SEEDING MIXTURE CONTAINING PERENNIAL SPECIES DUE TO ITS ABILITY TO OUT-COMPETE DESIRED SPECIES CHOSEN FOR PERMANENT PERENNIAL COVER.
- FOR HYDRAULIC SEEDING, MIX SEED, FERTILIZER AND WOOD CELLULOSE OR WOOD PULP FIBER WITH WATER AND APPLY IN SLURRY UNIFORMLY OVER THE TREATED AREA. APPLY WITHIN 1 HOUR OF MIXING. MULCH IS TO BE APPLIED AT A RATE OF 400 LBS. PER ACRE.
- FOR CONVENTIONAL SEEDING USE A CULTIPACKER-SEEDER, DRILL, ROTARY SEEDER, OTHER MECHANICAL SEEDER OR HAND SEED UNIFORMLY OVER THE TREATED AREA. LIGHTLY COVER THE SEED WITH 1/2" TO 3/4" OF SOIL. PROVIDE TEMPORARY MULCHING WITHIN 24 HOURS OF SPREADING SEED. MULCH SHALL COVER 75% OF THE SOIL SURFACE.

D53 PERMANENT GRASSING

49

REFER TO THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA FOR FURTHER DETAILS AND SPECIFICATIONS.

SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/ 2/ 30
COOL SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ - -
GROUND COVERS	FIRST SECOND MAINTENANCE	10-10-10 10-10-10 10-10-10	1300 lbs./ac. 3/ 1100 lbs./ac. 3/	- - -
PINE SEEDLINGS	FIRST	20-10-5	ONE 21-GRAM PELLET PER SEEDLING PLACED IN THE CLOSING HOLE	-
SHRUB LESPEDEZA	FIRST MAINTENANCE	0-10-10 0-10-10	700 lbs./ac. 700 lbs./ac. 4/	-
TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/ 6/ 50-100 lbs./ac. 2/ 30 lbs./ac.
WARM SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50 lbs./ac. 6/

- Apply in spring following seeding.
- Apply in split applications when high rates are used.
- Apply in 3 split applications.
- Apply when plants are pruned.
- Apply to grass species only.
- Apply when plants grow to a height of 2 to 4 inches.

MAINTENANCE REQUIREMENTS:

PROVIDE REGULAR INSPECTIONS AND AFTER EACH RAINFALL EVENT AND REGRASS AREAS THAT ARE BARE OR HAVE ERODED. EXCLUDE TRAFFIC ON GRASSED AREAS UNTIL GRASS IS ESTABLISHED. MOW AS REQUIRED.

hydroseeder.

Finely ground limestone can be applied in the mulch slurry or in combination with the top dressing.

When conventional planting is to be done, lime and fertilizer shall be applied uniformly in one of the following ways:

- Apply before land preparation so that it will be mixed with the soil during seedbed preparation.
- Mix with the soil used to fill the holes, distribute in furrows.
- Broadcast after steep surfaces are scarified, plowed or trenched.
- A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seeding.

Plant Selection
Refer to Tables 6-4.1, 6-5.2, 6-5.3 and 6-5.4 for approved species. Species not listed shall be approved by the State Resource Conservationist of the Natural Resources Conservation Service before they are used.

Plants shall be selected on the basis of species characteristics, site and soil conditions, planned use and maintenance of the area; time of year of planting, method of planting; and the needs and desires of the land user.

Some perennial species are easily established and can be planted alone. Examples of these are Common Bermuda, Tall Fescue, and Weeping Lovegrass.

Other perennials, such as Bahia Grass and *Sericea Lespedeza*, are slow to become established and should be planted with another perennial species. The additional species will provide quick cover and ample soil protection until the target perennial species become established. For example, Common sodding combinations are 1) Weeping Lovegrass with *Sericea Lespedeza* (scarified) and 2) Tall Fescue with *Sericea Lespedeza* (unscarified).

Plant selection may also include annual companion crops. Annual companion crops should be used only when the perennial species are not planted during their optimum planting period. A common

mixture is Brown Top Millet with Common Bermuda in mid-summer. Care should be taken in selecting companion crop species and seeding rates because annual crops will compete with perennial species for water, nutrients, and growing space. A high seeding rate of the companion crop may prevent the establishment of perennial species.

Ryegrass shall not be used in any seeding mixtures containing perennial species chosen for permanent perennial cover.

Seed Quality
The term "pure live seed" is used to express the quality of seed and is not shown on the label. Pure live seed, PLS, is expressed as a percentage of the seeds that are pure and will germinate. Information on percent germination and purity can be found on seed tags. PLS is determined by multiplying the percent of pure seed with the percent of germination; i.e.,

(PLS = % germination x % purity)

EXAMPLE:
Common Bermuda seed
70% germination, 80% purity
PLS = 70% germination x 80% purity
PLS = 56%

The percent of PLS helps you determine the amount of seed you need. If the seeding rate is 10 pounds PLS and the bulk seed is 56% PLS, the bulk seeding rate is:

10 lbs. PLS/acre = 17.9 lbs/acre
56% PLS

You would need to plant 17.9 lbs/acre to provide 10 lbs/acre of pure live seed.

Seedbed Preparation
Seedbed preparation may not be required where hydraulic seeding and fertilizing equipment is to be used (but is strongly recommended for any seeding process, when possible). When conventional seeding is to be used, seedbed preparation will be done as follows:

Broadcast plantings

- Tillage, at a minimum, shall adequately

loosen the soil to a depth of 4 to 6 inches; alleviate compaction; incorporate lime and fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw or hay mulch if a disk is to be used.

- Tillage may be done with any suitable equipment.
- Tillage should be done on the contour where feasible.
- On slopes too steep for the safe operation of tillage equipment, the soil surface shall be pitted or trenched across the slope with appropriate hand tools to provide two places 6 to 8 inches apart in which seed may lodge and germinate. Hydraulic seeding may also be used.

Individual Plants

- Where individual plants are to be set, the soil shall be prepared by excavating holes, opening furrows, or dibble planting.
- For nursery stock plants, holes shall be large enough to accommodate roots without crowding.
- Where pine seedlings are to be planted, subsoil under the row 36 inches deep on the contour four to six months prior to planting. Subsoiling should be done when the soil is dry, preferably in August or September.

Inoculants
All legume seed shall be inoculated with appropriate nitrogen-fixing bacteria. The inoculant shall be a pure culture prepared specifically for the seed species and used within the dates on the container.

A mixing medium recommended by the manufacturer shall be used to bond the inoculant to the seed. For conventional seeding, use twice the amount of inoculant recommended by the manufacturer. For hydraulic seeding, four times the amount of inoculant recommended by the manufacturer shall be used.

Mulching
Mulch is required for all permanent vegetation applications. Mulch applied to seeded areas shall achieve 75% to a slurry soil cover. When selecting a mulch, design professionals should consider the mulch's functional longevity, vegeta-

the same day inoculated. No inoculated seed shall remain in the hydroseeder longer than one hour.

Planting Hydraulic Seeding
Mix the seed (inoculated if needed), fertilizer, and wood cellulose or wood cellulose or wood pulp fiber mulch and applied in a slurry. The slurry and apply in a slurry uniformly over the area to be treated. Apply within one hour after the mixture is made.

Conventional Seeding
Seeding will be done on a freshly prepared and firmed seedbed. For broadcast planting, use a cultipacker-seeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed tightly with 1/8 to 1/4 inch of soil for small seed and 1/2 to 1 inch for large seed when using a cultipacker or other suitable equipment.

No-Till Seeding
No-till seeding is permissible into annual cover crops when planting is done following maturity of the cover crop or if the temporary cover stand is sparse enough to allow adequate growth of the permanent (perennial) species. No-till seeding shall be done with appropriate no-till seeding equipment. The seed must be uniformly distributed and planted at the proper depth.

Individual Plants
Shrubs, vines and sprigs may be planted with appropriate planters or hand tools. Pine trees shall be planted manually in the subsoil furrow. Each plant shall be set in a manner that will avoid crowding the roots.

Nursery stock plants shall be planted at the same depth or slightly deeper than they grew at the nursery. The tips of vines and sprigs must be at or slightly above the ground surface.

Where individual holes are dug, fertilizer shall be placed in the bottom of the hole, two inches of soil shall be added and the plant shall be set in the hole.

ton establishment enhancement, and erosion control effectiveness. Select the mulching material from the following and apply as indicated:

- Dry straw or dry hay of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2 1/2 tons per acre.
- Wood cellulose mulch or wood pulp fiber shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
- One thousand pounds of wood cellulose or wood pulp fiber, which includes a tackifier, shall be used with hydraulic seeding on slopes 3:1 or steeper.
- Sericea Lespedeza* hay containing mature seed shall be applied at a rate of three tons per acre.
- Pine straw or pine bark shall be applied at a thickness of 3 inches for bedding purposes. Other suitable materials in sufficient quantity may be used where ornamentals or other ground covers are planted. This is not appropriate for seeded areas.
- When using temporary erosion control blankets or block sod, mulch is not required.
- Bituminous treated roving may be applied on planted areas, slopes, in ditches or dry waterways to prevent erosion. Bituminous treated roving shall be applied within 24 hours after an area has been planted. Application rates and materials must meet Georgia Department of Transportation specifications.

Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to allow visual metering and aid in uniform application during seeding.

Applying Mulch
Straw or hay mulch will be spread uniformly within 24 hours after seeding and/or plant-

ing. The mulch may be spread by blower-type control effectiveness. Select the mulching material by hand. Mulch shall be applied to cover 75% of the soil surface.

Wood cellulose or wood pulp mulch shall be applied uniformly with hydraulic seeding equipment.

Anchoring Mulch
Anchor straw or hay mulch immediately after application by one of the following methods:

- Hay and straw mulch shall be pressed into the soil immediately after the mulch is spread. A special "pucker disk" or disk harrow with the disks set straight may be used. The disks may be smooth or serrated and should be 20 inches or more in diameter and

Inlet Sediment Trap Sd2



DEFINITION
A temporary protective device formed at or around an inlet to a storm drain to trap sediment.

PURPOSE
To prevent sediment from entering a storm drainage system prior to permanent stabilization of the disturbed area draining to the inlet.

CONDITIONS
All storm drain drop inlets that receive runoff from disturbed areas.

PERFORMANCE EVALUATION
Inlet sediment trap approval is based on efficiency of both soil retention and seepage, as specified by the GSWCC. Complete test procedures may be found on the website www.gswcc.org/georgia.gov.

DESIGN CRITERIA
Through testing there are two different categories (high retention and high flow) supported. In areas where BMPs are being used on paved surfaces, or safety is a concern, the potentially negative effects of ponding should be taken into account. In such cases, a high flow BMP is preferred.

On unpaved areas where ponding will not cause a safety hazard, high retention shall be taken into account. If high retention is not used in this situation a rationale shall be given on the plan and an unpaved application should apply.

On unpaved areas inlet sediment traps shall meet 90% soil retention efficiency with a mini-

mum seepage efficiency of 65%.

On paved areas or areas where a safety hazard is a sediment traps shall meet 75% soil retention efficiency with a minimum seepage of 85%.
Sediment traps must be self-draining unless they are otherwise protected in an approved fashion that will not present a safety hazard. The drainage area entering the inlet sediment trap shall be no greater than one acre.

If runoff may bypass the protected inlet, a temporary dike should be constructed on the down slope side of the structure. Also, a stone filter ring may be used on the up slope side of the inlet to slow runoff and filter larger soil particles. Refer to Fr-Stone Filter Ring.

CONSTRUCTION SPECIFICATIONS
Excavated Inlet Sediment Trap
An excavation may be created around the inlet sediment trap to provide additional sediment storage. The trap shall be sized to provide a minimum storage capacity calculated at the rate of 67 cubic yards per acre of drainage area. A minimum depth of 1.5 feet for sediment storage should be provided. Side slopes shall not be steeper than 2:1.

Sediment traps may be constructed on natural ground surface, on an excavated surface, or on machine compacted fill, provided they have a non-erodible outlet.

Filter Fabric with Supporting Frame Sd2-F
This method of inlet protection is applicable where the inlet drains a relatively flat area (slope no greater than 5%) and shall not apply to inlets receiving concentrated flows, such as in street or highway medians. As shown in Figure 6-28-1, silt fence material with wire reinforcement and supported by steel posts should be used. The stakes shall be spaced evenly around the perimeter of the inlet at a maximum of 3 feet apart, and securely driven into the ground, approximately 18 inches deep. The fabric shall be 36 inches tall and entrenched 12 inches and backfilled with crushed stone or compacted soil. Fabric and wire shall be securely fastened to the posts, and

structure, it should be a minimum of 8 to 10 feet from the retrofit.

Stone Size
When utilized at inlets with diameters less than 12 inches, the filter ring shall be constructed of stone no smaller than 3-5 inches (15 - 30 lbs.).
When utilized at pipes with diameters greater than 12 inches, the filter ring shall be constructed of stone no smaller than 10-15 inches (50 - 100 lbs.).
The larger stone can be faced with smaller filter stone on the upstream side for added sediment filtering capabilities. However, the smaller filter stone is more prone to clogging, requiring higher maintenance.

Height
The filter ring shall be constructed at a height no less than two feet from grade.

CONSTRUCTION SPECIFICATIONS
Mechanical or hand placement of stone shall be required to uniformly surround the structure to be supplemented. Refer to Appendix C for rock riprap specifications.

PURPOSE
The filter ring shall be used in conjunction with other sediment control measures, except where other practices defined in this Manual are not appropriate (such as inlets to concrete flumes). They can be installed at or around devices such as inlet sediment traps, temporary down drain inlets, and detention pond retrofits to provide additional sediment filtering capacity.

DESIGN CRITERIA
Formal design is not required. The following standards shall be used:

Location
The filter ring shall surround all sides of the structure receiving runoff from disturbed areas. It should be placed a minimum of four feet from the structure. The ring is not intended to substantially impound water, causing flooding or damage to adjacent areas.

The filter ring may also be placed below storm drains discharging into detention ponds, creating a centralized area, or "forebay", for sediment accumulation. This provides for easier, more localized clean-out of the pond. If utilized above a retrofit

structure, it should be a minimum of 8 to 10 feet from the retrofit.

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The larger stone can be faced with smaller filter stone on the upstream side for added sediment filtering capabilities. However, the smaller filter stone is more prone to clogging, requiring higher maintenance.

Height
The filter ring shall be constructed at a height no less than two feet from grade.

CONSTRUCTION SPECIFICATIONS
Mechanical or hand placement of stone shall be required to uniformly surround the structure to be supplemented. Refer to Appendix C for rock riprap specifications.

PURPOSE
The filter ring shall be used in conjunction with other sediment control measures, except where other practices defined in this Manual are not appropriate (such as inlets to concrete flumes). They can be installed at or around devices such as inlet sediment traps, temporary down drain inlets, and detention pond retrofits to provide additional sediment filtering capacity.

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structure, it should be a minimum of 8 to 10 feet from the retrofit.

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The larger stone can be faced with smaller filter stone on the upstream side for added sediment filtering capabilities. However, the smaller filter stone is more prone to clogging, requiring higher maintenance.

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The filter ring shall be constructed at a height no less than two feet from grade.

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The filter ring may also be placed below storm drains discharging into detention ponds, creating a centralized area, or "forebay", for sediment accumulation. This provides for easier, more localized clean-out of the pond. If utilized above a retrofit

fabric ends must be overlapped a minimum of 18 inches or wrapped together around a post to provide a continuous fabric barrier around the inlet.

Baffle Box Sd2-B
For inlets receiving runoff with a higher volume or velocity, a baffle box inlet sediment trap should be used. As shown in Figure 6-28-2, the baffle box shall be constructed of 2" x 4" boards spaced a maximum of 1 inch apart or of plywood with weep holes 2 inches in diameter. The weep holes shall be placed approximately 6 inches on center vertically and horizontally. Gravel shall be placed outside the box, all around the inlet, to a depth of 2 to 4 inches. The entire box is wrapped in filter fabric that shall be entrenched 12 inches and backfilled.

Block and Gravel Drop Inlet Protection Sd2-Bg
This method of inlet protection is applicable where heavy flows are expected and where an overflow capacity is necessary to prevent excessive ponding around the structure. As shown in Figure 6-28-3, one block is placed on each side of the structure on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. The bottom row of blocks is placed against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, lateral support may be given to subsequent rows by placing 2" x 4" wood studs through block openings. Hardwood cloth or comparable wire mesh with 1/2 inch openings shall be fitted over all block openings to hold gravel in place. Clean gravel should be placed 2 inches below the top of the block on a 2:1 slope or flatter and smoothed to an even grade. DOT #57 washed stone is recommended.

Gravel Drop Inlet Protection Sd2-G
This method of inlet protection is applicable where heavy concentrated flows are expected. As shown in Figure 6-28-4, stone and gravel are used to trap sediment. The slope toward the inlet shall be no steeper than 3:1. A minimum 1 foot

Filter Fabric with Supporting Frame Sd2-F
This method of inlet protection is applicable where the inlet drains a relatively flat area (slope no greater than 5%) and shall not apply to inlets receiving concentrated flows, such as in street or highway medians. As shown in Figure 6-28-1, silt fence material with wire reinforcement and supported by steel posts should be used. The stakes shall be spaced evenly around the perimeter of the inlet at a maximum of 3 feet apart, and securely driven into the ground, approximately 18 inches deep. The fabric shall be 36 inches tall and entrenched 12 inches and backfilled with crushed stone or compacted soil. Fabric and wire shall be securely fastened to the posts, and

structure, it should be a minimum of 8 to 10 feet from the retrofit.

Stone Size
When utilized at inlets with diameters less than 12 inches, the filter ring shall be constructed of stone no smaller than 3-5 inches (15 - 30 lbs.).
When utilized at pipes with diameters greater than 12 inches, the filter ring shall be constructed of stone no smaller than 10-15 inches (50 - 100 lbs.).
The larger stone can be faced with smaller filter stone on the upstream side for added sediment filtering capabilities. However, the smaller filter stone is more prone to clogging, requiring higher maintenance.

Height
The filter ring shall be constructed at a height no less than two feet from grade.

CONSTRUCTION SPECIFICATIONS
Mechanical or hand placement of stone shall be required to uniformly surround the structure to be supplemented. Refer to Appendix C for rock riprap specifications.

PURPOSE
The filter ring shall be used in conjunction with other sediment control measures, except where other practices defined in this Manual are not appropriate (such as inlets to concrete flumes). They can be installed at or around devices such as inlet sediment traps, temporary down drain inlets, and detention pond retrofits to provide additional sediment filtering capacity.

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Formal design is not required. The following standards shall be used:

Location
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The filter ring may also be placed below storm drains discharging into detention ponds, creating a centralized area, or "forebay", for sediment accumulation. This provides for easier, more localized clean-out of the pond. If utilized above a retrofit

structure, it should be a minimum of 8 to 10 feet from the retrofit.

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The larger stone can be faced with smaller filter stone on the upstream side for added sediment filtering capabilities. However, the smaller filter stone is more prone to clogging, requiring higher maintenance.

Height
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PURPOSE
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The filter ring may also be placed below storm drains discharging into detention ponds, creating a centralized area, or "forebay", for sediment accumulation. This provides for easier, more localized clean-out of the pond. If utilized above a retrofit

wide level stone area shall be left between the structure and around the inlet to prevent gravel from entering the inlet. On the slope toward the inlet, stone 3 inches in diameter and larger should be used. On the slope away from the inlet, 1/2 to 3/4 inch gravel #57 washed stone should be used at a minimum thickness of 1 foot.

Sod Inlet Protection Sd2-S
This method of inlet protection is applicable only at the time of permanent seeding, to protect the inlet from sediment and mulch material until permanent vegetation has become established. As shown in Figure 6-28-5, the sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure. Sod strips shall be staggered so that adjacent strip ends are not aligned.

Curb Inlet Protection Sd2-P
Once pavement has been installed, a curb inlet filter shall be installed on inlets receiving runoff from disturbed areas. This method of inlet protection shall be removed if a safety hazard is created.

One method of curb inlet protection uses "pigs-in-a-blanket"- 8-inch concrete blocks wrapped in filter fabric. See Figure 6-28-6. Another method uses gravel bags constructed by wrapping DOT #57 stone with filter fabric, wire, plastic mesh, or equivalent material.
A gap of approximately 4 inches shall be left between the inlet filter and the inlet to allow for overflow and prevent hazardous ponding in the roadway. Proper installation and maintenance are crucial due to possible ponding in the roadway, resulting in a hazardous condition. Several other methods are available to prevent the entry of sediment into storm drain inlets.

Figure 6-28-7 shows one of these alternative methods.

MAINTENANCE
The trap shall be inspected daily and after each rain, and repairs made as needed. Sediment shall be removed when the sediment has accumulated to one-half the height of the trap.

Sediment shall be removed from curb inlet protection immediately. For excavated inlet sediment traps, sediment shall be removed when one-half of the sediment storage capacity has been lost to sediment accumulation. Sod inlet protection shall be maintained as specified in Ds4 - Disturbed Area Stabilization (With Sodding).

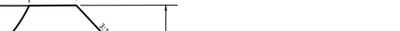
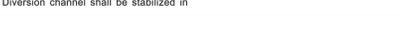
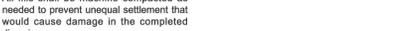
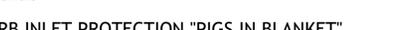
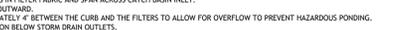
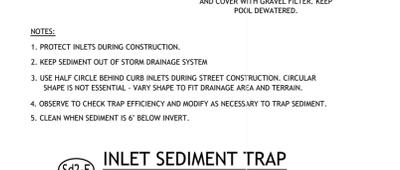
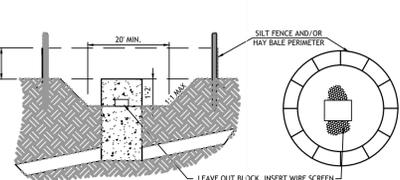
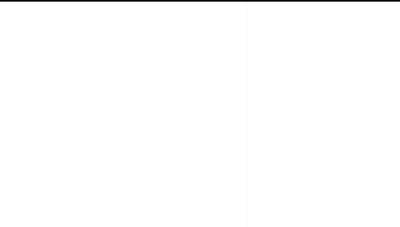
When the contributing drainage area has been permanently stabilized, all materials and any sediment shall be removed, and either salvaged or disposed of properly. The disturbed area shall be brought to proper grade, then smoothed and compacted. Appropriately stabilize all disturbed areas around the inlet.

Once pavement has been installed, a curb inlet filter shall be installed on inlets receiving runoff from disturbed areas. This method of inlet protection shall be removed if a safety hazard is created.

One method of curb inlet protection uses "pigs-in-a-blanket"- 8-inch concrete blocks wrapped in filter fabric. See Figure 6-28.6. Another method uses gravel bags constructed by wrapping DOT #57 stone with filter fabric, wire, plastic mesh, or equivalent material.
A gap of approximately 4 inches shall be left between the inlet filter and the inlet to allow for overflow and prevent hazardous ponding in the roadway. Proper installation and maintenance are crucial due to possible ponding in the roadway, resulting in a hazardous condition. Several other methods are available to prevent the entry of sediment into storm drain inlets.

Figure 6-28-7 shows one of these alternative methods.

MAINTENANCE
The trap shall be inspected daily and after each rain, and repairs made as needed. Sediment shall be removed when the sediment has accumulated to one-half the height of the trap.



Storm Drain Outlet Protection **St**



DEFINITION
Paved and/or riprapped channel sections, placed below storm drain outlets.

PURPOSE
To reduce velocity of flow before entering receiving channels below storm drain outlets.

CONDITIONS
This standard applies to all storm drain outlets, road culverts, paved channel outlets, etc., discharging into natural or constructed channels. Analysis and/or treatment will extend from the end of the conduit, channel or structure to the point of entry into an existing stream or publicly maintained drainage system.

DESIGN CRITERIA
Structurally lined aprons at the outlets of pipes and paved channel sections shall be designed according to the following criteria:

Capacity
Peak stormflow from the 25-year, 24-hour frequency storm or the storm specified in Title 12-7-1 of the Official Code of Georgia Annotated or the design discharge of the water conveyance structure, whichever is greater.

Tailwater Depth
The depth of tailwater immediately below the pipe outlet must be determined for the design capacity of the pipe. Manning's Equation may be used to determine tailwater depth. If the tailwater depth is less than half the diameter of the outlet pipe, it shall be classified as a Minimum Tailwater Condition. If the tailwater depth is greater than half the pipe diameter, it shall be classified as a

Maximum Tailwater Condition. Pipes which outlet onto flat areas with no defined channel may be assumed to have a Minimum Tailwater Condition.

Apron Length and Thickness
The apron length and d_{50} stone median size, shall be determined from the curves according to tailwater conditions:
Minimum Tailwater- Use Figure 6-34.1
Maximum Tailwater- Use Figure 6-34.2
Maximum Stone Size = $1.5 \times d_{50}$
Apron Thickness = $1.5 \times d_{max}$

Apron Width
If the pipe discharges directly into a well-defined channel, the apron shall extend across the channel bottom and up the channel banks to an elevation one foot above the maximum tailwater depth or to the top of the bank (whichever is less). If the pipe discharges onto a flat area with no defined channel, the width of the apron shall be determined as follows:

- The upstream end of the apron, adjacent to the pipe, shall have a width three times the diameter of the outlet pipe.
- For a Minimum Tailwater Condition, the downstream end of the apron shall have a width equal to the pipe diameter plus the length of the apron. Refer to Figure 6-34.1.
- For a Maximum Tailwater Condition, the downstream end of the apron shall have a width equal to the pipe diameter plus the length of the apron. Refer to Figure 6-34.2.

Bottom Grade
The apron shall be constructed with no slope along its length (0.0% grade). The invert elevation of the downstream end of the apron shall be equal to the elevation of the invert of the receiving channel. There shall be no overfall at the end of the apron.

Side Slopes
If the pipe discharges into a well-defined channel, the side slopes of the channel shall not be steeper than 2:1.

Alignment
The apron shall be located so that there are no bends in the horizontal alignment.

Geotextile
Geotextiles should be used as a separator between the graded stone, the soil base, and the abutments. The geotextile will prevent the migration of soil particles from the subgrade into the graded stone. The geotextile shall be specified in accordance with AASHTO M288-96 Section 7.5, *Permanent Erosion Control Recommendations*. The geotextile should be placed immediately adjacent to the subgrade without any voids.

Materials
The apron may be lined with riprap, grouted riprap, or concrete. The median sized stone for riprap, d_{50} , shall be determined from the curves, Figures 6-34.1 and 6-34.2, according to the tailwater condition. The gradation, quality and placement of riprap shall conform to Appendix C.

Refer to Figure 6-34.4, for alternative structures to achieving energy dissipation at an outlet. For information regarding the selection and design of these alternative energy dissipators, refer to:

FHWA Standard (REF. *Hydraulic Design of Erosion Dissipators for Culverts and Channels*, HEC No. 14, FHWA, Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

CONSTRUCTION SPECIFICATIONS
1. Ensure that the subgrade for the filter and riprap follows the required lines and grades shown in the plan. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.

2. The riprap and gravel filter must conform to the specified grading limits shown on the plans.

3. Geotextile must meet design requirements and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece of filter fabric over the damaged area. All connecting joints should overlap a

minimum of 1 ft. If the damage is extensive, replace the entire filter fabric.

4. Riprap may be placed by equipment, but take care to avoid damaging the filter.

5. The minimum thickness of the riprap should be 1.5 times the maximum stone diameter.

6. Construct the apron on zero grade with no overfall at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.

7. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed to fit site conditions, place it in the upper section of the apron.

8. Immediately after construction, stabilize all disturbed areas with vegetation.

9. Stone quality - Select stone for riprap from field stone or quarry stone. The stone should be hard, angular, and highly weather-resistant. The specific gravity of the individual stones should be at least 2.5.

10. Filter - Install a filter to prevent soil movement through the openings in the riprap. The filter should consist of a graded gravel layer or a synthetic filter cloth. See Appendix C, p. C-1.

MAINTENANCE
Inspect riprap outlet structures after heavy rains to see if any erosion around or below the riprap has taken place or if stones have been dislodged. Immediately make all needed repairs to prevent further damage.

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Sediment Barrier **Sd1**



DEFINITION
Sediment Barriers are temporary structures made up of a porous material typically supported by steel or wood posts. Types of sediment barriers may include silt fence, brush piles, much berms, compost filter socks or other filtering material.

PURPOSE
To minimize and prevent sediment carried by sheet flow from leaving the site and entering natural drainage ways or storm drainage systems by slowing storm water runoff and causing the deposition and/or filtration of sediment at the structure. The barriers retain the soil on the disturbed land until the activities disturbing the land are completed and vegetation is established.

CONDITIONS
Barriers should be installed where runoff can be stored behind the barrier without damaging the submerged area behind the barrier or the structure itself. Sediment barriers shall not be installed across streams, ditches, waterways, or other concentrated flow areas.

PERFORMANCE EVALUATION
For a product or practice to be approved as a sediment barrier, that product or practice must have a documented P-factor no greater than 0.045 for non-sensitive areas or a P-factor no greater than 0.030 for sensitive areas, as specified by GSWCC. For complete test procedures and approved products list please visit www.gswcc.org/georgia.gov.

DESIGN CRITERIA
Sediment barriers are designed to retain sediment transported by sheet flow from disturbed areas. It is important for the design professional to take into account the profile of the product for use on the site.

All sediment barriers shall meet the required P-factor performance level. Supporting information on testing can be found at www.gswcc.org/georgia.gov, under, Documents.

Sediment Barriers should also provide a riprap splash pad or other outlet protection device for any point where flow may overtop the sediment barrier. Ensure that the maximum height of the barrier at a protected, reinforced outlet does not exceed 1 foot and that the support spacing does not exceed 4 feet.

Where all runoff is to be stored behind the sediment barrier (where no storm water disposal system is present), maximum continuous slope length behind a sediment barrier shall not exceed those shown in Table 6-27.1. For longer slope lengths, slope interrupters must be used. The drainage area shall not exceed ¼ acre for every 100 feet of sediment barrier.

Table 6-27.1 Criteria for Sediment Barrier

Land Slope Percent	Maximum Slope Length Above Fence Feet
< 2	100
2 to 5	75
5 to 10	50
10 to 20	25
>20*	15

*In areas where the slope is greater than 20%, a flat area length of 10 feet between the toe of slope to the barrier should be provided.

Placement
When using a sediment barrier the Design Professional must determine Type NS or Type S. Sensitive areas can be defined as any area that needs additional protection, these areas include but are not limited to, state waters, wetlands, or any area the design professional designates as sensitive.

When using multiple types of sediment barrier:

Temporary sediment barriers shall be installed according to the following specifications as shown on the plans or as directed by the design professional.

For installation of the barriers, See Figures 6-27.1, 6-27.2, 6-27.3 and 6-27.4, respectively. It is important to remember that not all sediment barriers need to be trenched into the ground but most taller sediment barriers do.

Post installation shall start at the center of a low point (if applicable) with the remaining posts spaced no greater than 6 feet apart for Type NS sediment barriers and no greater than 4 feet apart for Type S sediment barriers. For post size requirements, see Table 6-27.2. Fasteners for wood posts are listed in Table 6-27.3.

Static Slicing Method
The static slicing machine pulls a narrow blade through the ground to create a slit 12" deep, and simultaneously inserts the silt fence fabric into this slit behind the blade. The blade is designed to slightly disrupt soil upward next to the slit and to minimize horizontal compaction, thereby creating an optimum condition for compacting the soil vertically on both sides of the fabric. Compaction is achieved by rolling a tractor wheel along both sides of the slit in the ground 2 to 4 times to achieve nearly the same or greater compaction as the original undisturbed soil. This vertical compaction reduces the air spaces between soil particles, which minimizes infiltration. Without this compaction infiltration can saturate the soil, and water may find a pathway under the fence. When a silt fence is holding back several tons of accumulated water and sediment, it needs to be supported by posts that are driven 18 inches into the soil. Driving in the posts and attaching the fabric to them completes the installation.

MAINTENANCE
Sediment barriers shall be removed once it has accumulated to one-half the original height of the barrier. This is extremely important when selecting BMPs with a lower profile.

Sediment barriers shall be replaced whenever they have deteriorated to such an extent that the effectiveness of the product is reduced (approximately six months) or the height of the product is not maintaining 80% of its properly installed height.

Temporary sediment barriers shall remain in place until disturbed areas have been permanently stabilized. All sediment accumulated at the barrier shall be removed and properly disposed of before the barrier is removed.

TO BE SHOWN ON THE EROSION SEDIMENT AND POLLUTION CONTROL PLAN
When a SEDIMENT BARRIER is used, show the product height in inches for each barrier being used on site.

Maintenance Requirements:
SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-THIRD THE ORIGINAL HEIGHT OF THE BARRIER. FILTER FABRIC SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY SIX MONTHS). TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.

Trenching Method
Trenching machines have been used for over twenty-five years to dig a trench for burying part of the filter fabric underground. Usually the trench is about 2'-6" wide with a 6" excavation. Post setting and fabric installation often precede compaction, which makes effective compaction more difficult to achieve. EPA supported an independent technology evaluation (ASCE 2001), which compared three progressively better variations of the trenching method with static slicing method. The static slicing method performed better than two lower performance levels of the trenching method, and was as good as or better than the trenching method's highest performance level. The best trenching method typically required nearly triple the time and effort to achieve results comparable to the static slicing method.

Along all state waters and other sensitive areas, two rows of Type S sediment barriers shall be used. The two rows Type S should be placed a minimum of 36 inches apart.

MAINTENANCE
Sediment barriers shall be removed once it has accumulated to one-half the original height of the barrier. This is extremely important when selecting BMPs with a lower profile.

Sediment barriers shall be replaced whenever they have deteriorated to such an extent that the effectiveness of the product is reduced (approximately six months) or the height of the product is not maintaining 80% of its properly installed height.

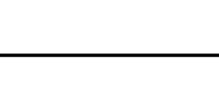
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ers on a site in a single run the barriers must be overlapped 18 inches or as specified by design professional. See Figure 6-27.5

CONSTRUCTION SPECIFICATIONS
Type NS Sediment Barrier **Sd1-NS**

Non-sensitive areas
Sediment barriers being used as Type NS shall have a support spacing of no greater than 4 feet on center, with each driven into the ground a minimum of 18 inches. Type NS sediment barriers shall have a P-factor no greater than 0.045.

Type S Sediment Barrier **Sd1-S**

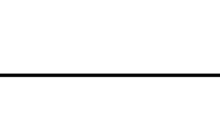
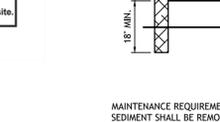
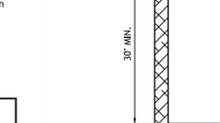
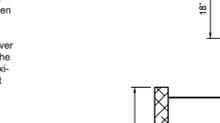
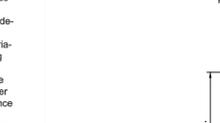
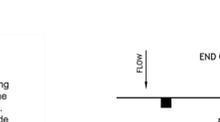
Sensitive areas
Sediment barriers being used as Type S shall have a support spacing of no greater than 4 feet on center, with each driven into the ground 18 inches. Type S sediment barriers shall have a P-factor no greater than 0.030.

Filter Media Sock Specifications
Compost filter media used for sediment barrier filter material shall be weed free and derived from a well-decomposed source of organic matter. The compost shall be produced using an aerobic composting process meeting CFR 503 regulations including time and temperature data. The compost shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products will not be accepted. Test methods for the items below should follow US Composting Council Test Methods for the Examination of Composting and Compost guidelines for laboratory procedures:

A. PH - 5.0-8.0 in accordance with TMECC 04.11-A, "Electrometric pH Determinations for Compost"

B. Particle size - 99% passing a 2 inch (50mm) sieve and a maximum of 1% passing a 3/8 inch (9.5mm) sieve, in accordance with TMECC 02.02-B, "Sample Sieving for Aggregate Size Classification" (Note: In the field, product commonly is between 1/2 in. [12.5mm] and 2 inches [50mm] particle size.)

Installation
Sediment barriers should be installed along the contour.



C. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.

D. Material shall be relatively free (<1% by dry weight) of inert or foreign man made materials.

E. Sock containment system for compost filter media shall be a photodegradable or biodegradable knitted mesh material with 1/8 in. to 3/8 in., openings.

Brush Barrier **Sd1-BB**
(Only during timber clearing operations)
Brush obtained from clearing and grubbing operations may be piled in a row along the perimeter of disturbance at the time of clearing and grubbing. Brush barriers should not be used in developed areas or locations where aesthetics are a concern.

Brush should be wind-rowed on the contour as nearly as possible and may require compaction. Construction equipment may be utilized to satisfy this requirement.

The minimum base width of the brush barrier shall be 5 feet and should be no wider 10 feet. The height of the brush barrier should be between 3 and 5 feet tall.

A brush barrier is a good tool to use in developing pasture in an agricultural situation to prevent sediment from leaving the site until the pasture is stabilized.

If greater filtering capacity is required, a commercially available sediment barrier may be placed on the side of the brush barrier receiving the sediment-laden runoff. The lower edge of the fabric must be buried in a 6-inch deep trench immediately uphill from the barrier. The upper edge of the fabric must be secured to the brush barrier. Edges of adjacent fabric pieces must overlap each other. See Figure 6-27.5.

Installation
Sediment barriers should be installed along the contour.

TYPE FENCE
TENSILE STRENGTH (lbs. MIN.) (ASTM D-4632) WARP-260 FILL-180
ELONGATION (% MAX.) (ASTM D-4632) 40
AOS (APPARENT OPENING SIZE) (MAX. SIEVE SIZE) (ASTM D 4751) #30
FLOW RATE (GAL./MIN./SQ.FT) (GDT-87) 70
ULTRAVIOLET STABILITY (ASTM D-4632 AFTER 300 HOURS WEATHERING IN ACCORDANCE WITH ASTM D-4535) 80
BURSTING STRENGTH (PSI MIN.) (ASTM D-3786 DIAPHRAGM BURSTING STRENGTH TESTER) 175
MINIMUM FABRIC WIDTH (INCHES) 36

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ELONGATION (% MAX.) (ASTM D-4632) 40
AOS (APPARENT OPENING SIZE) (MAX. SIEVE SIZE) (ASTM D 4751) #30
FLOW RATE (GAL./MIN./SQ.FT) (GDT-87) 70
ULTRAVIOLET STABILITY (ASTM D-4632 AFTER 300 HOURS WEATHERING IN ACCORDANCE WITH ASTM D-4535) 80
BURSTING STRENGTH (PSI MIN.) (ASTM D-3786 DIAPHRAGM BURSTING STRENGTH TESTER) 175
MINIMUM FABRIC WIDTH (INCHES) 36

C. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.

D. Material shall be relatively free (<1% by dry weight) of inert or foreign man made materials.

E. Sock containment system for compost filter media shall be a photodegradable or biodegradable knitted mesh material with 1/8 in. to 3/8 in., openings.

Brush Barrier **Sd1-BB**
(Only during timber clearing operations)
Brush obtained from clearing and grubbing operations may be piled in a row along the perimeter of disturbance at the time of clearing and grubbing. Brush barriers should not be used in developed areas or locations where aesthetics are a concern.

Brush should be wind-rowed on the contour as nearly as possible and may require compaction. Construction equipment may be utilized to satisfy this requirement.

The minimum base width of the brush barrier shall be 5 feet and should be no wider 10 feet. The height of the brush barrier should be between 3 and 5 feet tall.

A brush barrier is a good tool to use in developing pasture in an agricultural situation to prevent sediment from leaving the site until the pasture is stabilized.

If greater filtering capacity is required, a commercially available sediment barrier may be placed on the side of the brush barrier receiving the sediment-laden runoff. The lower edge of the fabric must be buried in a 6-inch deep trench immediately uphill from the barrier. The upper edge of the fabric must be secured to the brush barrier. Edges of adjacent fabric pieces must overlap each other. See Figure 6-27.5.

Installation
Sediment barriers should be installed along the contour.

TYPE FENCE
TENSILE STRENGTH (lbs. MIN.) (ASTM D-4632) WARP-260 FILL-180
ELONGATION (% MAX.) (ASTM D-4632) 40
AOS (APPARENT OPENING SIZE) (MAX. SIEVE SIZE) (ASTM D 4751) #30
FLOW RATE (GAL./MIN./SQ.FT) (GDT-87) 70
ULTRAVIOLET STABILITY (ASTM D-4632 AFTER 300 HOURS WEATHERING IN ACCORDANCE WITH ASTM D-4535) 80
BURSTING STRENGTH (PSI MIN.) (ASTM D-3786 DIAPHRAGM BURSTING STRENGTH TESTER) 175
MINIMUM FABRIC WIDTH (INCHES) 36

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FLOW RATE (GAL./MIN./SQ.FT) (GDT-87) 70
ULTRAVIOLET STABILITY (ASTM D-4632 AFTER 300 HOURS WEATHERING IN ACCORDANCE WITH ASTM D-4535) 80
BURSTING STRENGTH (PSI MIN.) (ASTM D-3786 DIAPHRAGM BURSTING STRENGTH TESTER) 175
MINIMUM FABRIC WIDTH (INCHES) 36

TYPE FENCE</

Temporary Sediment Basin



DEFINITION
A basin created by the construction of a barrier or dam across a concentrated flow area, or by excavating a basin, or by a combination of both. A sediment basin typically consists of a dam, a pipe outlet, and an emergency spillway. The size of the structure will depend upon the location, size of the drainage area, soil type, and rainfall pattern.

PURPOSE
To detain runoff waters and trap sediment from erodible areas in order to protect properties and drainage ways below the installation from damage by excessive sedimentation and debris. The water is temporarily stored and the bulk of the sediment carried by the water drops out and is retained in the basin while the water is automatically released.

CONDITIONS
This practice applies to critical areas where physical site conditions, construction schedules, or other restrictions preclude the installation or establishment of erosion control practices to satisfactorily reduce runoff, erosion, and sedimentation. The structure may be used in combination with other practices and should remain in effect until the sediment-producing area is permanently stabilized.

This standard applies to the installation of temporary (to be removed within 18 months) sediment basins on sites where: (1) failure of the structure would result in loss of life or interruption of use or service of public utilities, and (2) the drainage area does not exceed 150 acres.

DESIGN CRITERIA Compliance With Laws and Regulations
Design and construction shall comply with state and local laws, ordinances, rules and regulations. Basins shall be constructed according to the approved erosion and sediment control plan unless modified by the design professional.

Location
Sediment basins shall never be placed in live streams. They should be located so that storm drains discharge into the basin. The sediment basin should be located to obtain the maximum storage benefit from the terrain and for ease of clean-out of the trapped sediment. It should be located to minimize interference with construction activities and construction of utilities.

Volume
The sediment storage volume of the basin, as measured to the elevation of the crest of the principal spillway, shall be at least 67 cubic yards per acre for the disturbed area draining into the basin (67 cubic yards is equivalent to 1/2 inch of sediment per acre of drainage area). The entire drainage basin area should be used for this computation, rather than the disturbed area alone, to help ensure adequate trapping efficiency. Sediment shall be removed from the basin when approximately one-third of the storage volume has been lost to sediment accumulation. This volume shall be marked on the riser or by setting a marked post near the riser.

Surface Area
Studies (Barfield and Clar, 1985) indicate that the following relationship between surface area and peak inflow rate gives a trapping efficiency from greater than 75% for clay loam to 95% for loamy sandy soils.

$$A = 0.01q$$

Where A is basin surface area in acres and q is peak inflow rate in cfs. Area is measured at the crest of the principal spillway riser. The minimum peak inflow rate is determined from a 2-year, 24-hour storm.

Shape
It is recommended that the designer of a sediment basin incorporate features to maximize detention time within the basin. Suggested methods

of accomplishing this objective are:

- Length to width ratio greater than 2:1, where length is the distance between the inlet and outlet.
- A wedge shape with the inlet located at the narrow end.
- Installation of baffles or diversions.

Procedure for Determining or Altering Sediment Basin Shape

As specified in the Standards and Specification, the pool area at the elevation of crest of the principal spillway shall have a length to width ratio of at least 2:1. The purpose of this requirement is to minimize the "short-circuiting" effect of the sediment-laden inflow to the riser and thereby increasing the effectiveness of the sediment basin. The purpose of this procedure is to prescribe the parameters, procedures and methods of determining and modifying the shape of the basin.

The length of the flow path (L) is the distance from the point of inflow to the riser (outflow point). The point of inflow is the point that the stream enters the normal pool (pool level at the riser crest elevation). The pool area (A) is the area of the normal pool. The effective width (We) is equal to the Area (A) divided by the length (L). The length to width ratio (L/W) is found by the equation:

$$L/W = LW/We \text{ where } We = A/L$$

In the event there is more than one inflow point, any inflow point that conveys more than 30 percent of the total peak inflow rate shall meet the length-width ratio criteria.

The required basin shape may be obtained by proper site selection, by excavation, or by constructing a baffle in the basin. The purpose of the baffle is to increase the effective flow length from the inflow point to the riser. Baffles shall be placed mid-way between the inflow point and the riser. The baffle length shall be as required to provide the minimum 2:1 length-width ratio. The effective length (Le) shall be the shortest distance the water must flow from the inflow point around the end of the baffle to the outflow point. Then:

$$L/W = Le/W_e \text{ where } We = A/Le$$

Three examples are shown on the following pages. Note that for the special cases in Example C the water is allowed to go around both ends of the baffle and the effective length, $Le = L1a + L1b + L2a + L2b$. Otherwise, the length-width ratio computations are the same as shown above. This special case procedure for computing Le is allowable only when the two flow paths are equal, i.e., when $L1 = L2$. A baffle detail is also shown. For examples of sediment basin baffles, refer to Figure 6-29.2.

The dimensions necessary to obtain the required basin volume and surface area shall be clearly shown on the plans to facilitate plan review, construction and inspection.

Spillways
Runoff may be computed by the method outlined in Appendix A. Other approved equivalent methods may be used. Runoff computations shall be based upon the worst soil-cover conditions expected to prevail in the contributing drainage area during the anticipated effective life of the structure. The combined capacities of the principal and emergency spillway shall be sufficient to pass the peak rate of runoff from a 25-year, 24-hour frequency storm. Even if the principal spillway is designed to convey the peak rate of runoff from a 25-year, 24-hour storm, an emergency spillway shall be present.

- Principal spillway** - A spillway consisting of a vertical pipe or box type riser joined (water-tight connection) to a pipe that shall extend through the embankment and an outlet beyond the downstream toe of the fill shall be used. See Figure 6-29.3. The metal gauge thickness shall comply with DOT or NRCS specifications. The discharge shall be based on a 2-year, 24-hour storm for the total drainage area without causing flow through the emergency spillway. The appropriate disturbed soil cover condition shall be used. The minimum size of the pipe shall be 8 inches in diameter. Principal spillway capacities may be determined from Table 6-29.1. Weir flow discharge above the crest of the riser may be determined from Table 6-29.2. Principal spillway pipe, riser pipe, and trash rack proportions are shown in Figure 6-29.2.

c. Crest elevation - The crest elevation of the riser shall be a minimum of one foot

below the elevation of the control section of the emergency spillway.

b. Watertight barrel assembly - The riser and all pipe connections shall be completely water tight except for the inlet opening at the top or diversion openings, and shall not have any other holes, rips or perforations.

c. Dewatering the basin - Retention time within the basin is an important factor in effective sediment retention. The method used to dewater the sediment basin may be selected from the following two methods:

Perforated Riser Pipe - The perforated riser pipe is the conventional method for dewatering a sediment basin. The lower half of the riser is perforated with 1/2-inch holes spaced approximately 3-inches apart. It is covered with two feet of 3 to 4 inch stone.

Skimmer Outlet - The skimmer-type dewatering device operates at the surface of the ponded water and will not withdraw sediment from the submerged volume of the basin. As compared to conventional perforated risers, skimmers discharge a 45 percent less mass of sediment. However, skimmers are mechanically more complex and will require frequent inspection and maintenance in order to operate as designed. Refer to specification SK-Floating Surface Skimmer.

d. Trash rack and anti-vortex device - A trash rack and anti-vortex device shall be securely installed on top of the riser and may be the type as shown in Figure 6-29.4.

e. Base - The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. A concrete base 18" thick with the riser embedded 9-inches in the base is recommended. Computations shall be made to design a base that will prevent flotation. See Figure 6-29.5 and Table 6-29.3 for details.

f. Anti-Seep Collars - One anti-seep collar shall be installed around the pipe, near the center of the dam, when any of the following conditions exist:

- The settled height of the dam is greater

- than 15 feet.
- The conduit is smooth pipe larger than 6" in diameter.
- The conduit is corrugated metal pipe larger than 12" in diameter.

Use an anti-seep collar with an 18-inch projection for heads (H) less than or equal to 10 feet and a 24-inch projection for heads (H) greater than 10 feet. The anti-seep collar and its connection shall be watertight.

g. Outlet - An outlet shall be provided, including a means of conveying the discharge in an erosion-free manner to an existing stable area. Where discharge occurs at the property line, drainage easements will be obtained in accordance with local ordinances. Adequate notes and references will be shown on the erosion and sediment control plan. Protection against scour at the discharge end of the pipe spillway shall be provided. Measures may include excavated plunge pools, riprap, impact basins, revetments, or other approved methods. Refer to specification St - Storm Drain Outlet Protection.

h. For typical features of a temporary sediment basin, see Figure 6-29.1.

2. Emergency Spillway - The entire flow area of the emergency spillway shall be constructed in undisturbed ground (not fill). The emergency spillway cross-section shall be trapezoidal with a minimum bottom width of eight feet. This spillway channel shall have a straight control section of at least 20 feet in length and a straight outlet section for a minimum distance equal to 25 feet. See Figure 6-29.6.

a. Capacity - The minimum capacity of the emergency spillway shall be that required to pass the peak rate of runoff from the 25-year, 24-hour frequency storm, less any reduction due to flow in the principal spillway. The appropriate disturbed soil cover condition shall be used. Emergency spillway dimensions may be determined by using the method described in this section. Refer to Table 6-29.4 and Figure 6-29.8.

- 6-29.6. Velocities** - The velocity of flow in the exit channel shall not exceed 5 feet per second for vegetated channels. For channels with erosion protection other than vegetation, velocities shall be within the non-erosive range for the type of protection used. Vegetation, riprap, asphalt or concrete shall be provided to prevent erosion. Refer to specification Ch - Channel Stabilization.
- Freeboards** - Freeboard is the difference between the design high water elevation in the emergency spillway and the top of the settled embankment. The freeboard shall be at least one foot.

Entrance of Runoff Into Basin
Points of entrance of surface runoff into excavated sediment basins shall be protected to prevent erosion and sediment generation. Dikes, swales, or other water control devices, shall be installed as necessary to direct runoff into the basin. Points of runoff entry shall be located as far away from the riser as possible, to maximize travel time. Refer to St - Storm Drain Outlet Protection.

CONSTRUCTION SPECIFICATIONS
Site Preparation
Areas under the embankment and under structural works shall be cleared, grubbed, and stripped of top-soil. All trees, vegetation, roots and other objectionable materials shall be removed and disposed of by approved methods. In order to facilitate clean-out or restoration, the pool area (measured at the top of the pipe spillway) will be cleared of all trash and trees.

Cut-off Trench
A cut-off trench will be excavated along the center-line of earth fill embankments. The minimum depth shall be 2 feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be 4 feet, but wide enough to permit operation of compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be the same as those for the embankment. The trench shall be drained during the backfilling and compaction operations.

Embankment
The fill material shall be taken from approved areas shown on the plans. It shall be clean mineral soil free of roots, woody vegetation, oversized stones, rocks or other objectionable material. Relatively pervious materials such as sand or gravel (Unified Soil Classes GW, GP, SW & SP) shall be placed in the downstream section of the embankment. Areas on which fills are to be placed shall be scarified prior to placement of fill. The fill material shall contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Fill material shall be placed in six-inch to eight-inch thick continuous layers over the entire length of the fill. Compaction shall be obtained by rapping and hauling the construction equipment over the fill so that the entire surface of the fill is traversed by at least one wheel or track tread of the equipment or by the use of a compactor. The embankment shall be constructed to an elevation 5 percent higher than the design height to allow for settlement.

Principal Spillway
The riser shall be securely attached to the pipe or pipe stub by welding the full circumference making a watertight structural connection. The pipe stub must be attached to the riser at the same percent (angle) of grade as the outlet conduit. The connection between the riser and the riser base shall be watertight. All connections between pipe sections must be achieved by approved watertight barrel assemblies. The pipe and riser shall be placed on a firm, smooth foundation of impervious soil as the embankment is constructed. Breaching the embankment is unacceptable. Previous materials such as sand, gravel, or crushed stone shall not be used as backfill around the pipe or anti-seep collar. The fill material around the pipe spillway shall be placed in four inch layers and compacted under and around the pipe to at least the same density as the adjacent embankment. Care must be taken not to raise the pipe from firm contact with its foundation when compacting under the pipe haunches. A minimum depth of two feet of hand compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment.

Emergency Spillway
The emergency spillway shall be installed in undisturbed ground. The achievement of planned elevations, grades, design width, entrance and exit channel slopes are critical to the successful operation of the emergency spillway and must be constructed within a tolerance of 0.2 feet. If the emergency spillway requires erosion protection other than vegetation, the lining shall not compromise the capacity of the emergency spillway, e.g. the emergency spillway shall be over-excavated so that the lining will be flush with the slope surface.

Vegetative Treatment
Stabilize the embankment and all other disturbed areas in accordance with the appropriate permanent vegetative measure, Ds3, immediately following construction. In no case shall the embankment remain unvegetated for more than seven (7) days. Refer to specifications Ds2 Disturbed Area Stabilization (Temporary Seeding), Ds3 Disturbed Area Stabilization (Permanent Vegetation) and Ds4 - Disturbed Area Stabilization (With Sodding) respectively.

Erosion and Pollution Control
Construction operations will be carried out in such a manner that erosion and water pollution will be minimized. State and local law concerning pollution abatement shall be complied with.

Safety
State and local requirements shall be met concerning warning and signs warning the public of hazards of soft sediment and floodwater.

MAINTENANCE
Repair all damages caused by soil erosion or construction equipment at or before the end of each working day.

Sediment shall be removed from the basin when it reaches the specified distance below the top of the riser. Sediment shall not enter adjacent streams or drainageways during sediment removal or disposal. The sediment shall not be deposited downstream from the embankment, adjacent to a stream or floodplain.

FINAL DISPOSAL
When temporary structures have served their intended purpose and the contributing drainage

BASIC COMPONENTS OF TEMPORARY SEDIMENT BASIN

Figure 6-29.1

TYPICAL TRASH RACK

Figure 6-29.4

CONCRETE RISER BASE DETAIL

Figure 6-29.5

CONCRETE VOLUME REQUIRED TO PREVENT FLOTATION OF RISER

Riser Pipe Diameter (in)	Bouoyant Force (lbs / V.F. of Riser Height) ¹	Volume of Concrete per Vertical Foot of Riser Height (c.f. / V. F.) Needed to Prevent Flotation ²
12	49.0	0.69
18	110.3	1.54
21	150.1	2.10
24	196.0	2.75
30	306.3	4.29
36	441.1	6.18
48	784.1	10.98
54	992.4	13.90
60	1225.2	17.16

EXAMPLE: Find the volume of concrete required to stabilize a 24 inch diameter riser 10 feet high.
VOL. = (2.75 cu./V.F.) (10 feet) = 27.5 cu. ft. = 1 cu. yd.

Figure 6-29.3

EXCAVATED EARTH SPILLWAY - PLAN VIEW

Figure 6-29.6

PROFILE ALONG CENTERLINE

Figure 6-29.8

TEMPORARY SEDIMENT BASIN

CROSS-SECTIONAL DETAIL

Figure 6-29.7

CROSS-SECTIONAL DETAIL OF EMERGENCY SPILLWAY

PROFILE ALONG CENTERLINE

Figure 6-29.8

REVISED BY	DATE	DESCRIPTION
ATP	03/10/21	CITY OF AVONDALE ESTATES 3RD SUBMITTAL
ATP	07/30/21	CITY OF AVONDALE ESTATES 2ND SUBMITTAL
DGA	04/14/21	CITY OF AVONDALE ESTATES 1ST SUBMITTAL

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NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
LL 232
EROSION & SEDIMENT CONTROL DETAILS

REGISTERED PROFESSIONAL ENGINEER
ADREN T. PARKINS
9/3/2021
DATE: 09/03/2021
DESIGN QC: ATP
CADD QC: ATP
DESIGNED BY: DGA
DRAWN BY: NLS

ISSUED FOR CONSTRUCTION

SHEET
C-8.4

Construction Exit Co



DEFINITION
A stone stabilized pad located at any point where traffic will be leaving a construction site to a public right-of-way, street, alley, sidewalk or parking area or any other area where there is a transition from bare soil to a paved area.

PURPOSE
To reduce or eliminate the transport of mud from the construction area onto public rights-of-way by motor vehicles or by runoff.

CONDITIONS
This practice is applied at appropriate points of construction egress. Geotextile underliners are required to stabilize and support the pad aggregates.

DESIGN CRITERIA
Formal design is not required. The following standards shall be used:

Aggregate Size
Stone will be in accordance with National Stone Association R-2 (1.5 to 3.5 inch stone).

Pad Thickness
The gravel pad shall have a minimum thickness of 6 inches.

Pad Width
At a minimum, the width should equal full width of all points of vehicular egress, but not less than 20 feet wide.

Pad Length
The gravel pad shall have a minimum length

of 50 feet. When the construction is less than 50' from the paved access, the length shall be from the edge of existing pavement to the permitted building being constructed.

Washing
If the action of the vehicle traveling over the gravel pad does not sufficiently remove the mud, the tires should be washed prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with crushed stone and provisions that intercept the sediment-laden runoff and direct it into an approved sediment trap or sediment basin.

Location
The exit shall be located or protected to prevent sediment from leaving the site.

CONSTRUCTION SPECIFICATIONS
It is recommended that the egress area be excavated to a depth of 3 inches and be cleared of all vegetation and roots.

Diversion Ridge
On sites where the grade toward the paved area is greater than 2%, a diversion ridge 6 to 8 inches high with 3:1 side slopes shall be constructed across the foundation approximately 15 feet above the road.

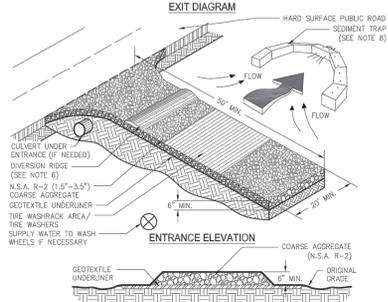
Geotextile
The geotextile underliner must be placed the full length and width of the entrance. Geotextile selection shall be based on AASHTO M288-98 specification.

- For subgrades with a CBR greater than or equal to 3 or shear strength greater than 90 kPa, geotextile must meet requirements of section AASHTO M288-96 Section 7.3, Separation Requirements.
- For subgrades with a CBR between 1 and 3 or shear strength between 30 and 90 kPa, geotextile must meet requirements of section AASHTO M288-96 Section 7.4, Stabilization Requirements.

MAINTENANCE
The exit shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 1.5-3.5 inch stone, as conditions demand, and repair and/or cleanup of any structures to trap sediment. All materials spilled,

dropped, washed, or tracked from vehicles or site onto roadways or into storm drains must be removed immediately.

CRUSHED STONE CONSTRUCTION EXIT



- NOTES:**
- AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
 - REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
 - AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
 - GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
 - PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
 - A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
 - INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
 - IF WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTAINING DEVICE).
 - WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVES MUD AND DIRT.
 - MAINTAIN AREA IN A MANNER THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Figure 6-14.1

Slope Stabilization Ss



DEFINITION
A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.

PURPOSE
To provide a cover layer that stabilizes the soil and acts as a rain drop impact dissipater while providing a microclimate which protects young vegetation and promotes its establishment. If using slope stabilization to reinforce channels, please refer to specification, Ch-Channel Stabilization.

CONDITIONS
Slope stabilization can be applied to flat areas or slopes where the erosion hazard is high and slope protection is needed during the establishment of vegetation.

PERFORMANCE EVALUATION
For a product or practice to be approved as slope stabilization, that product or practice must have a documented C-factor of 0.090, as specified by GSWCC. For complete test procedures and approved products list please visit www.gswcc.ga.gov.

PLANNING CONSIDERATIONS
Care must be taken to choose the type of slope stabilization product which is most appropriate for the specific needs of a project. Two general types of slope stabilization products are discussed within this specification.

Roller Erosion Control Products (RECP)
A natural fiber blanket with single or double

photodegradable or biodegradable nets.

Hydraulic Erosion Control Products (HECP)
HECP shall utilize straw, cotton, wood or other natural based fibers held together by a soil binding agent which works to stabilize soil particles. Paper mulch should not be used for erosion control.

CRITERIA
Roller Erosion Control Products (RECPs) and Hydraulic Erosion Control Products (HECPs) shall conform to manufacturer's guidelines for application

*Products shall have a maximum C-factor (ASTM D6459) for the following slope grade:
Slope (H:V) C-Factor (max.)
3:1 or greater 0.090

Materials - HECP
Hydraulic erosion control products shall be prepackaged from the manufacturer. Field mixing of performance enhancing additives will not be allowed. Fibrous components should be all natural or biodegradable.

Products shall be determined to be non-toxic in accordance with EPA-821-R-02-012.

Materials - RECP
Blankets shall be nontoxic to vegetation, seed, or wildlife. Products shall be determined to be non-toxic in accordance with EPA-821-R-02-012. At minimum, the plastic or biodegradable netting shall be stitched to the fibrous matrix to maximize strength and provide for ease of handling.

RECPs are categorized as follows:

- Short-Term** (functional longevity 12 mo.)
 - Photodegradable
Straw blankets with a top and bottom side photo degradable net. The maximum size of the mesh shall be openings of 1/2" X 1/2". The blanket

should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.35" and minimum density should be 0.5 lbs per square yard.

- Biodegradable**
Straw blanket with a top and bottom side biodegradable jute net. The top side net shall consist of machine direction strands that are twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh shall be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.5 lbs per square yard.

b. Extended-Term (functional longevity 24 mo.)

- Photodegradable
Blankets that consist of 70% straw and 30% coconut with a top and bottom side photodegradable net. The top net should have ultraviolet additives to delay breakdown. The maximum size of the mesh shall be openings of 0.65" X 0.65". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.35" and minimum density should be 0.6 lbs per square yard.

- Biodegradable
Blankets that consist of 70% straw and 30% coconut with a top and bottom side biodegradable jute net. The top side net shall consist of machine direction strands that are twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh shall be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.5 lbs per square yard.

c. Long-Term (functional longevity 36 mo.)

- Photodegradable
Blankets that consist of 100% coconut with a top and bottom side photodegradable net. Each net should have ultraviolet additives to delay

breakdown. The maximum size of the mesh shall be openings of 0.65" X 0.65". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.3" and minimum density should be 0.5 lbs per square yard.

- Biodegradable**
Blankets that consist of 100% coconut with a top and bottom side biodegradable jute net. The top side net shall consist of machine direction strands that are twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh shall be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.5 lbs per square yard.

NOTES
It is the intention of this section to allow interchangeable use of RECPs and HECPs for erosion protection on slopes. The project engineer should select the type of erosion control product that best fits the need of the particular site.

Site Preparation
After the site has been shaped and graded to the approved design, prepare a friable seedbed relatively free from clods and rocks more than one inch in diameter, and any foreign material that will prevent contact of the soil stabilization mat with the soil surface. Surface must be smooth to ensure proper contact of blankets or matting to the soil surface. If necessary, redirect any runoff from the ditch or slope during installation.

MAINTENANCE
All erosion control blankets and matting should be inspected periodically following installation, particularly after rainstorms to check for erosion and undermining. Any dislocation or failure should be repaired immediately. If washouts or breakage occurs, reinstall the material after repairing damage to the slope or ditch. Continue to monitor these areas until they become permanently stabilized.

TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

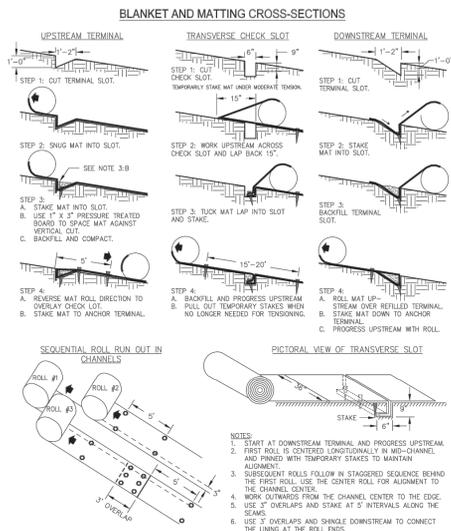


Figure 6-10.1 - Typical Installation Guidelines for Matting and Blankets

REVISIONS		DATE	DESCRIPTION	REQUESTED BY
06/10/21	CITY OF AVONDALE ESTATES 3RD SUBMITTAL			
07/30/21	CITY OF AVONDALE ESTATES 2ND SUBMITTAL			
08/16/21	CITY OF AVONDALE ESTATES 1ST SUBMITTAL			

2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.7495 FAX 770.951.7496
www.longeng.com



NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
EROSION & SEDIMENT CONTROL DETAILS
LL 232

GEORGIA REGISTERED PROFESSIONAL ENGINEER
9/3/2021
ANDREW T. PANKOFF

GSWCC LEVEL II CERT. #8903, EXPIRES 8/26/2023
DATE: 09/03/2021
DESIGN QC: ATP
CADD QC: ATP
DESIGNED BY: DGM
DRAWN BY: NLS

ISSUED FOR CONSTRUCTION LONG #0870-0030

REV #	DATE	DESCRIPTION	REQUESTED BY
06/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL	
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	
09/14/21		CITY OF AVONDALE ESTATES 1ST SUBMITTAL	

2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com



CONSTRUCTION DETAILS

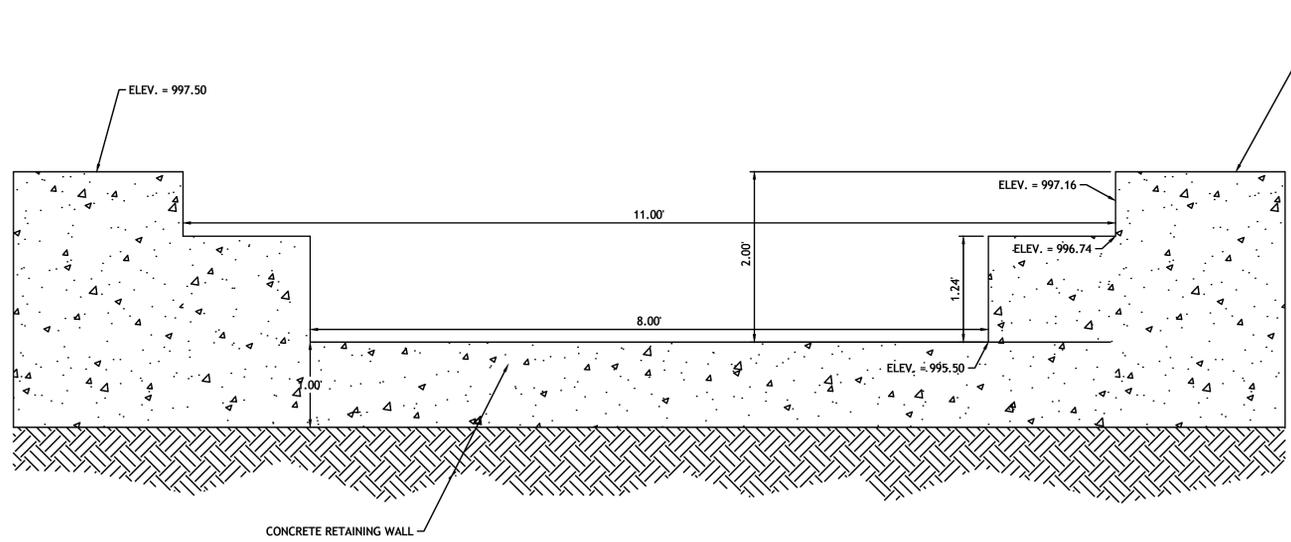
NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15
LL 232



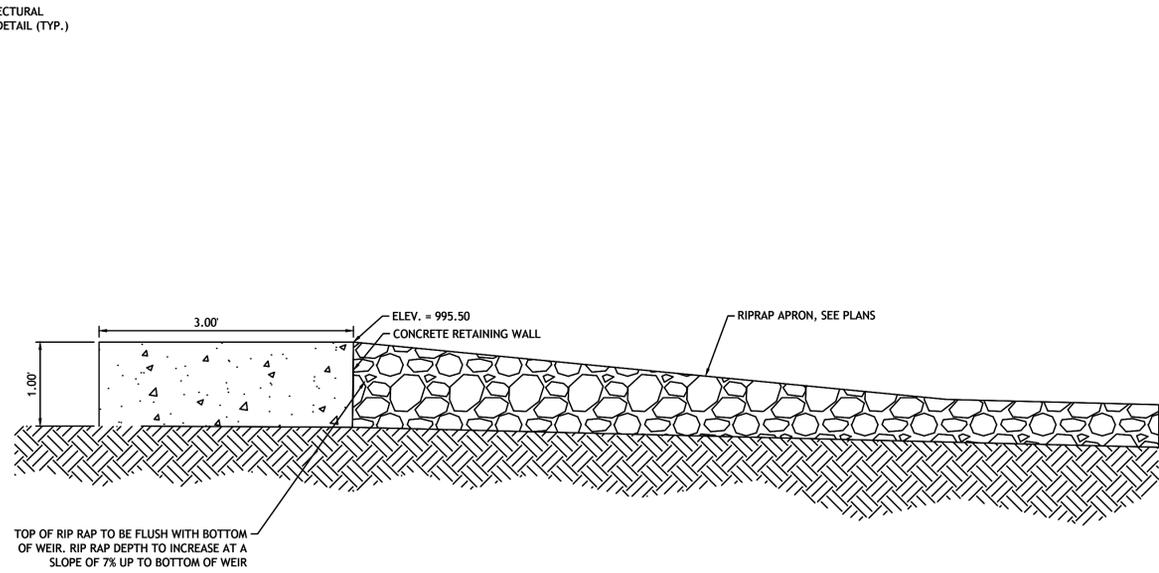
ISSUED FOR CONSTRUCTION

SHEET
C-9.1

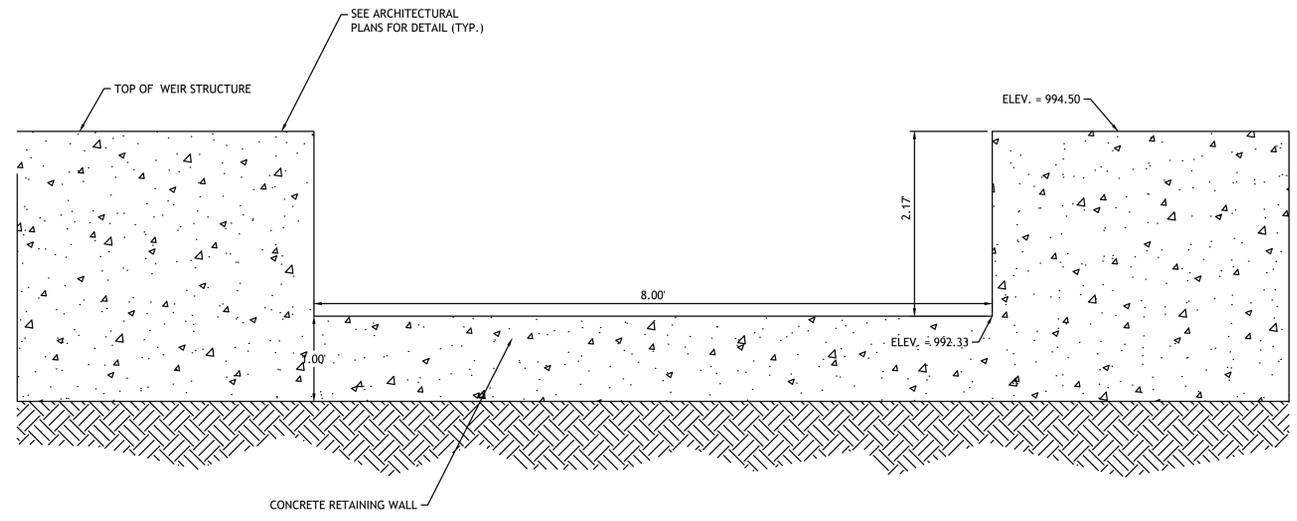
LONG #0870-0030



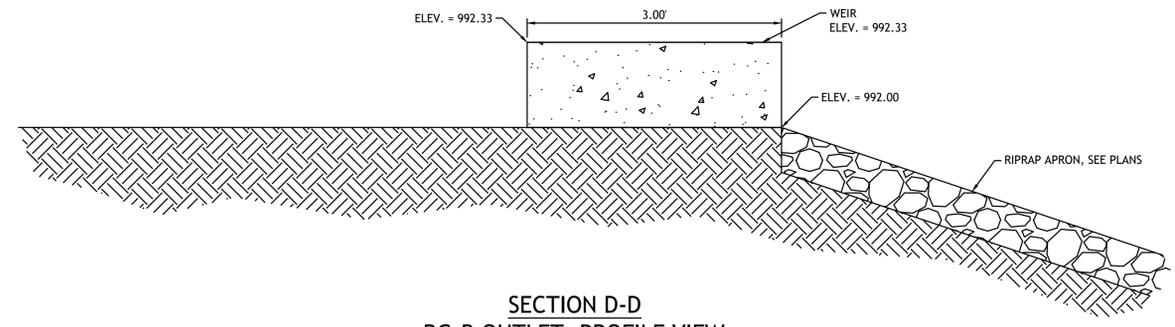
SECTION A-A
RG-A OUTLET: SECTION VIEW
SCALE 1" = 1'



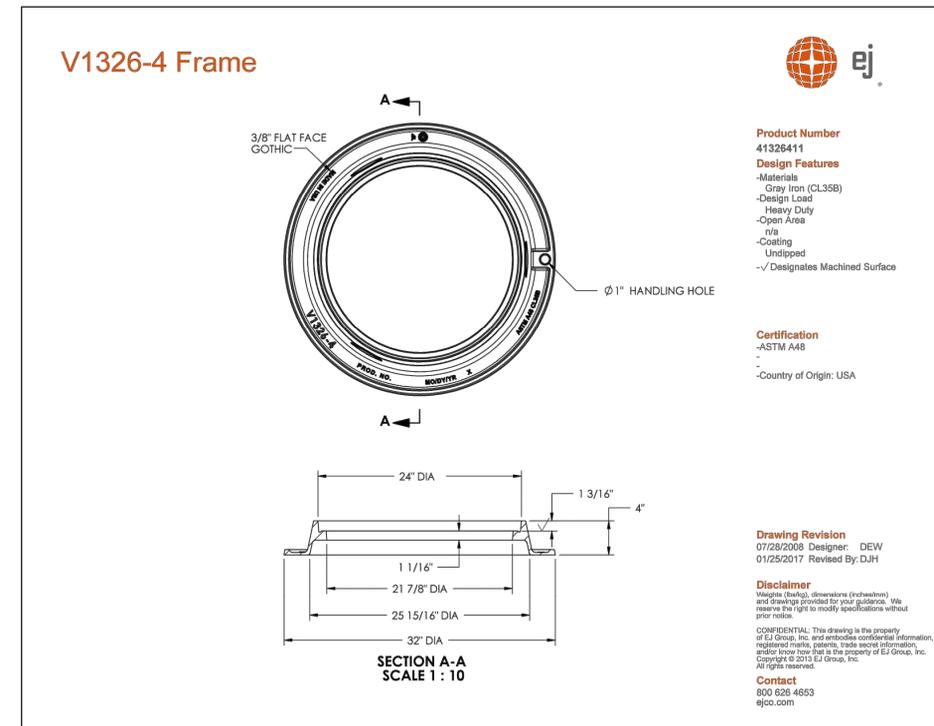
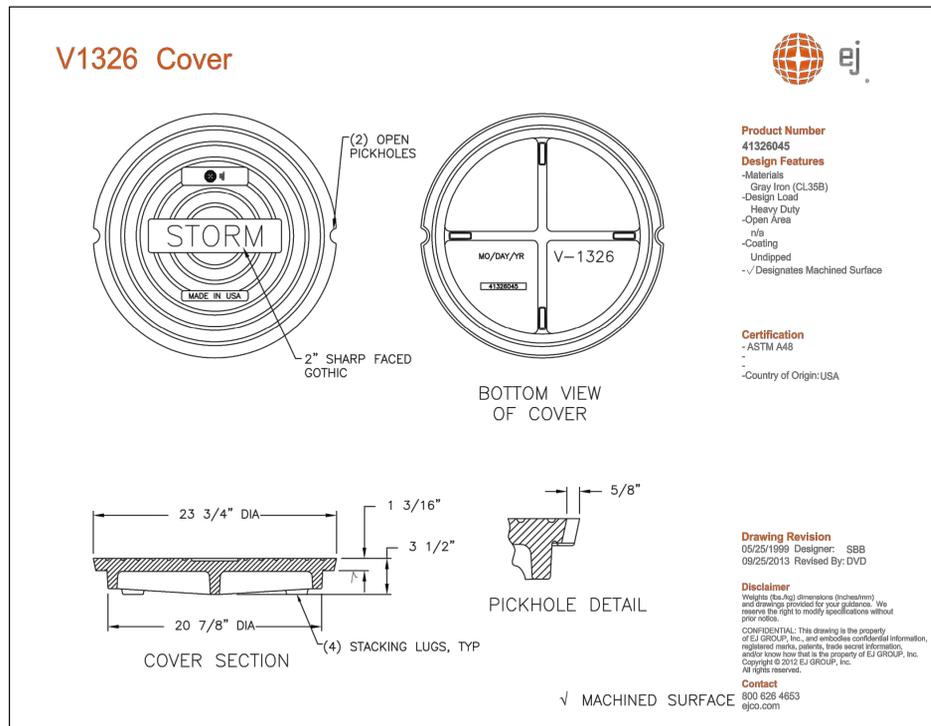
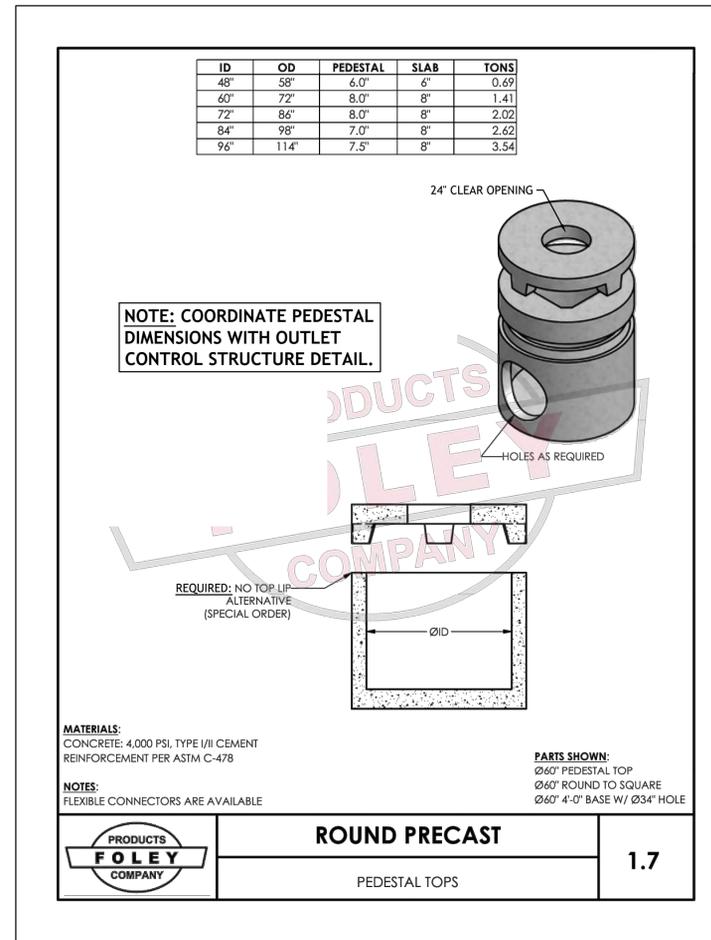
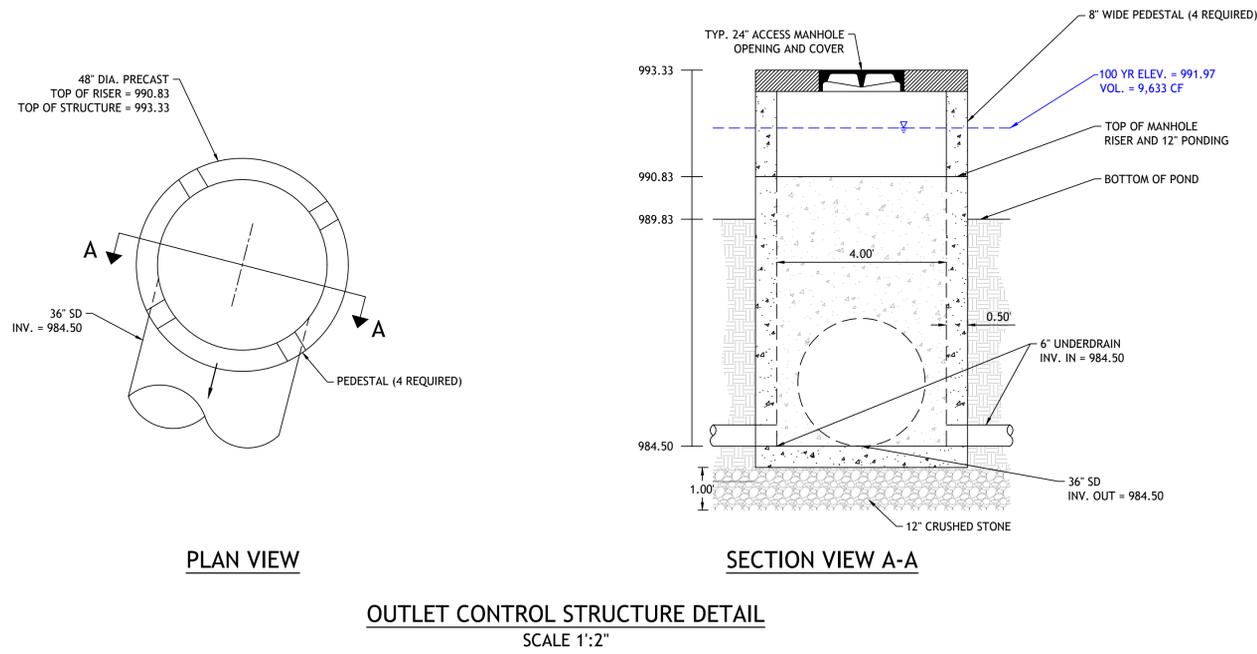
SECTION B-B
RG-A OUTLET: PROFILE VIEW
SCALE 1" = 1'



SECTION C-C
RG-B OUTLET: SECTION VIEW
SCALE 1" = 1'



SECTION D-D
RG-B OUTLET: PROFILE VIEW
SCALE 1" = 1'



REV #	DATE	DESCRIPTION	REQUESTED BY
05/10/21		CITY OF AVONDALE ESTATES 3RD SUBMITTAL	GAJE
07/30/21		CITY OF AVONDALE ESTATES 2ND SUBMITTAL	GAJE
04/14/21		CITY OF AVONDALE ESTATES 1ST SUBMITTAL	GAJE

2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.Longeng.com

LONG ENGINEERING

NORTH WOODS AT LAKE AVONDALE
100 BERKELEY ROAD
AVONDALE ESTATES, DEKALB COUNTY, GA
DISTRICT 15

CONSTRUCTION DETAILS

LL 232

GEORGIA REGISTERED PROFESSIONAL ENGINEER
9/3/2021
ANDREW T. PARKINS

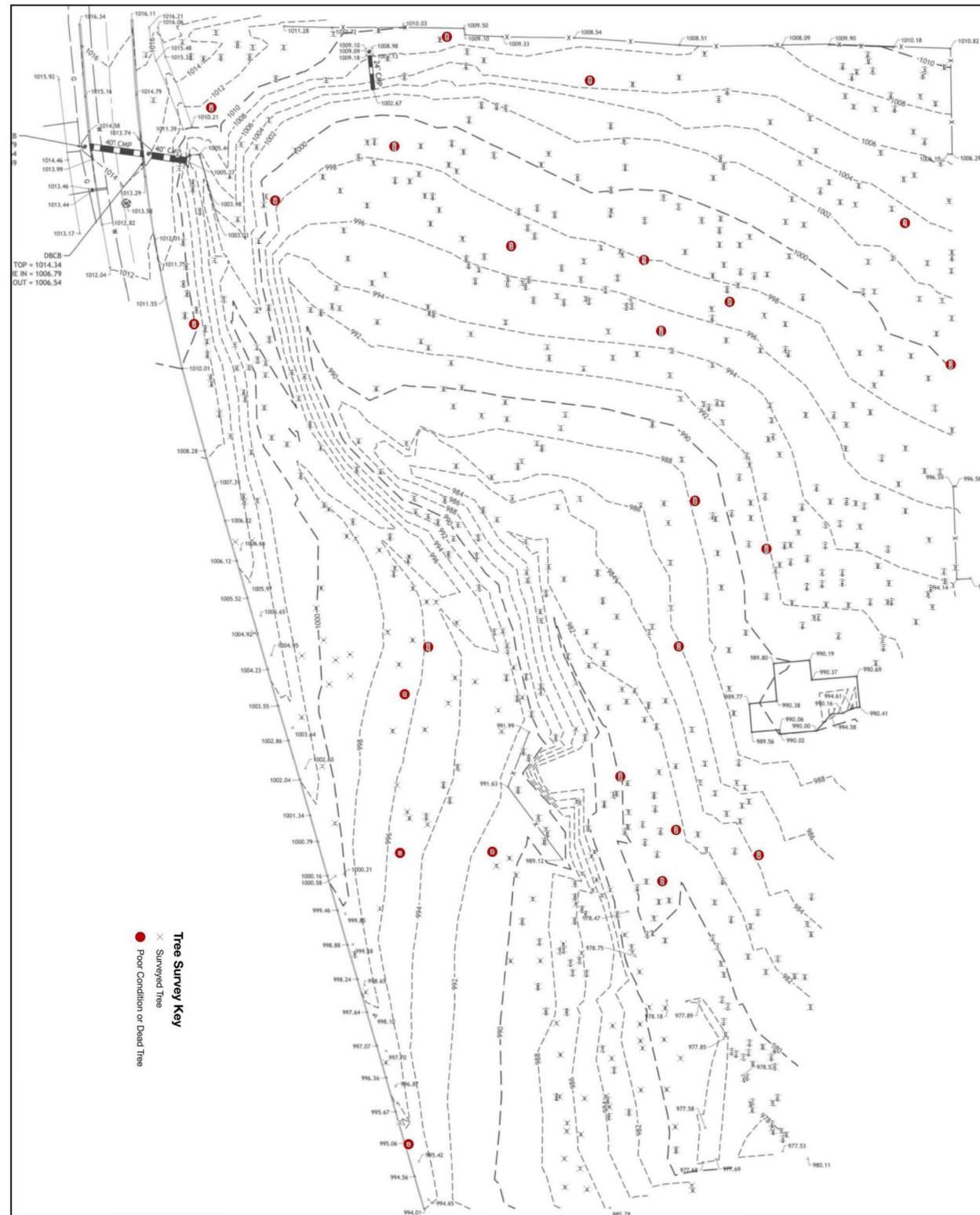
ESWCC LEVEL II CERT. #5893, EXPIRES 8/26/2023
DATE: 09/03/2021

DESIGN QC: ATP
CADD QC: ATP
DESIGNED BY: DGH
DRAWN BY: NJS

SHEET
C-9.2

ISSUED FOR CONSTRUCTION

LONG #0870-0030



Lake Avondale Stormwater Project -
Tree Survey - 2"± Trees - 2.4.2021



MATERIAL KEYNOTES

SHEET SPECIFIC NOTES

KEY PLAN: N.T.S.

KEY PLAN



PROJECT NORTH

SEAL

**LORD
AECK
SARGENT**

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REVISION:

SHEET TITLE
TREE SURVEY

JOB NAME
NORTHWOODS AT AVONDALE ESTATES

ISSUE DATE
04/16/2021

JOB NO.
11426-00

DWG. NO.

LV100



LOCATION
100 Dunwoody Road
Avondale Estates, Georgia 30002

FOR CONSTRUCTION

Table with columns: Survey Number, DBH, Species, Common Name, Condition, Notes. Contains tree survey data for various species like Acer rubrum, Pinus taeda, Liriodendron tulipifera, etc.

Table with columns: Survey Number, DBH, Species, Common Name, Condition, Notes. Continuation of tree survey data.

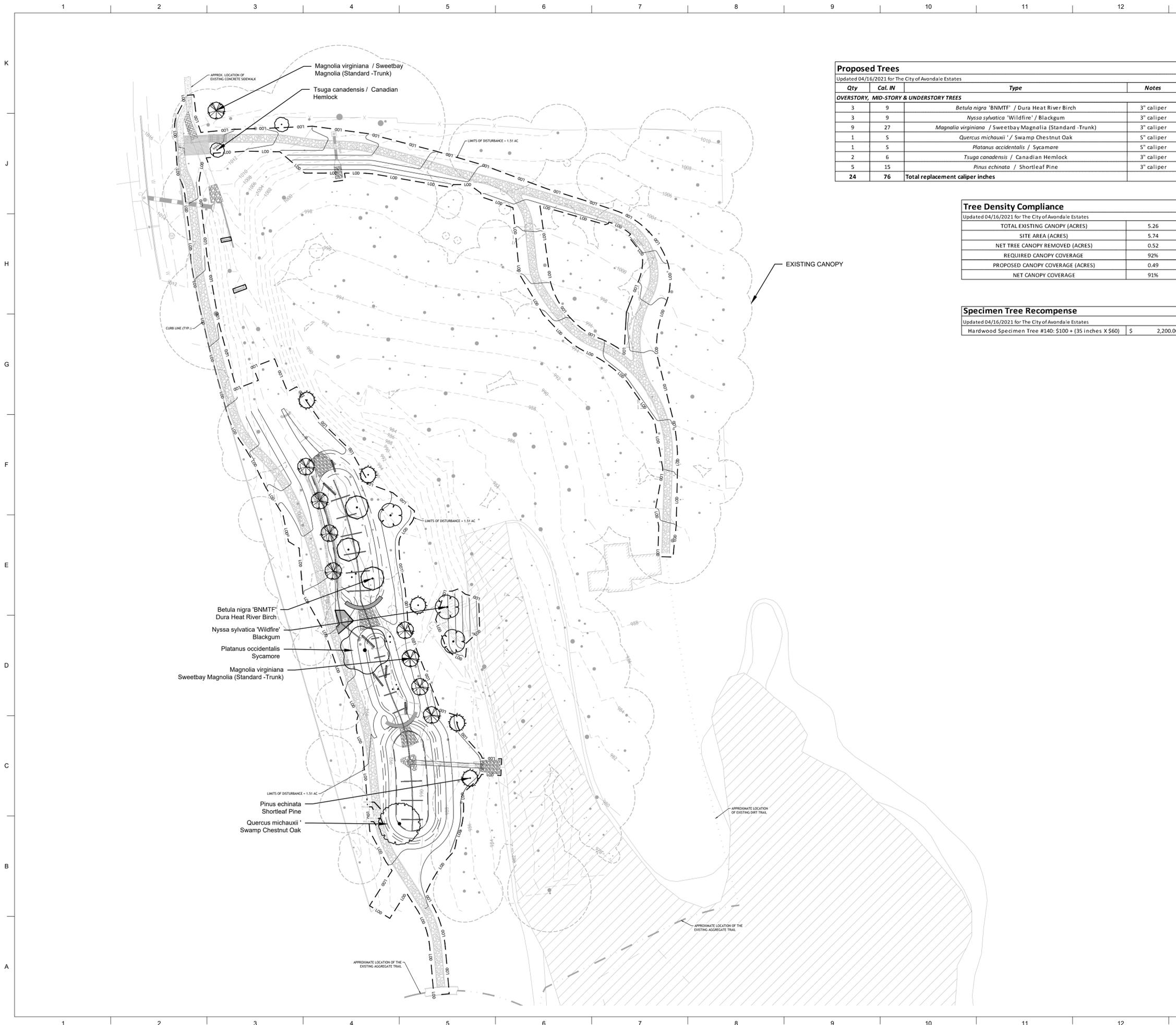
Table with columns: Survey Number, DBH, Species, Common Name, Condition, Notes. Continuation of tree survey data.

Table with columns: Survey Number, DBH, Species, Common Name, Condition, Notes. Continuation of tree survey data.

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Table with columns: Survey Number, DBH, Species, Common Name, Condition, Notes. Continuation of tree survey data.

Vertical text on the right side of the page: LORD AECK SARGENT, TREE SURVEY DATA, NORTHWOODS AT AVONDALE ESTATES, FOR CONSTRUCTION, LV101, and other project information.



Proposed Trees			
Updated 04/16/2021 for The City of Avondale Estates			
Qty	Cal. IN	Type	Notes
OVERSTORY, MID-STORY & UNDERSTORY TREES			
3	9	Betula nigra 'BNMTF' / Dura Heat River Birch	3" caliper
3	9	Nyssa sylvatica 'Wildfire' / Blackgum	3" caliper
9	27	Magnolia virginiana / Sweetbay Magnolia (Standard -Trunk)	3" caliper
1	5	Quercus michauxii / Swamp Chestnut Oak	5" caliper
1	5	Platanus occidentalis / Sycamore	5" caliper
2	6	Tsuga canadensis / Canadian Hemlock	3" caliper
5	15	Pinus echinata / Shortleaf Pine	3" caliper
24	76	Total replacement caliper inches	

Tree Density Compliance	
Updated 04/16/2021 for The City of Avondale Estates	
TOTAL EXISTING CANOPY (ACRES)	5.26
SITE AREA (ACRES)	5.74
NET TREE CANOPY REMOVED (ACRES)	0.52
REQUIRED CANOPY COVERAGE	92%
PROPOSED CANOPY COVERAGE (ACRES)	0.49
NET CANOPY COVERAGE	91%

Specimen Tree Recompense	
Updated 04/16/2021 for The City of Avondale Estates	
Hardwood Specimen Tree #140: \$100 + (35 inches X \$60)	\$ 2,200.00

MATERIAL KEYNOTES

SHEET SPECIFIC NOTES

TREE PLANTING NOTES:
NEWLY PLANTED TREES MUST:

- NEW TREES MUST BE A MINIMUM 3-INCH CALIPER AT TIME OF PLANTING
- NEW TREES MUST MEET OR EXCEED THE STANDARDS OF ANSI Z60.1 STANDARDS FOR NURSERY STOCK
- NEW TREES MUST MEET OR EXCEED MINIMUM TREE SPACING STANDARDS SPECIFIED IN SECTION 5-404(c)(8) OF THE AVONDALE ESTATES TREE ORDINANCE.
- NEW TREES MUST CONFORM TO PLANTING METHODS SHOWN IN CITY OF AVONDALE ADMINISTRATIVE GUIDELINES AND STANDARD DETAILS FOR THE TREE PRESERVATION ORDINANCE, CURRENT ANSI A300 STANDARDS FOR TREE CARE OPERATIONS, AND ANSI Z133 SAFETY STANDARDS.
- NEW TREES MUST BE A PERMITTED TREE SPECIES IDENTIFIED BY THE CITY ON A LIST OR APPROVED IN WRITING BY THE CITY TREE OFFICIAL.
- SEE LP502 FOR TREE PLANTING DETAILS
- SEE LP503 FOR ADDITIONAL TREE PLANTING NOTES

KEY PLAN: N.T.S.

KEY PLAN: N.T.S.

KEY PLAN

SEAL

PROJECT NORTH

ISSUE DATE
04/16/2021

JOB NO.
11426-00

DWG. NO.
LD201

GEORGIA REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT
No. 140105
T. LAWRENCE PATRICK, CLERK

LORD AECK SARGENT

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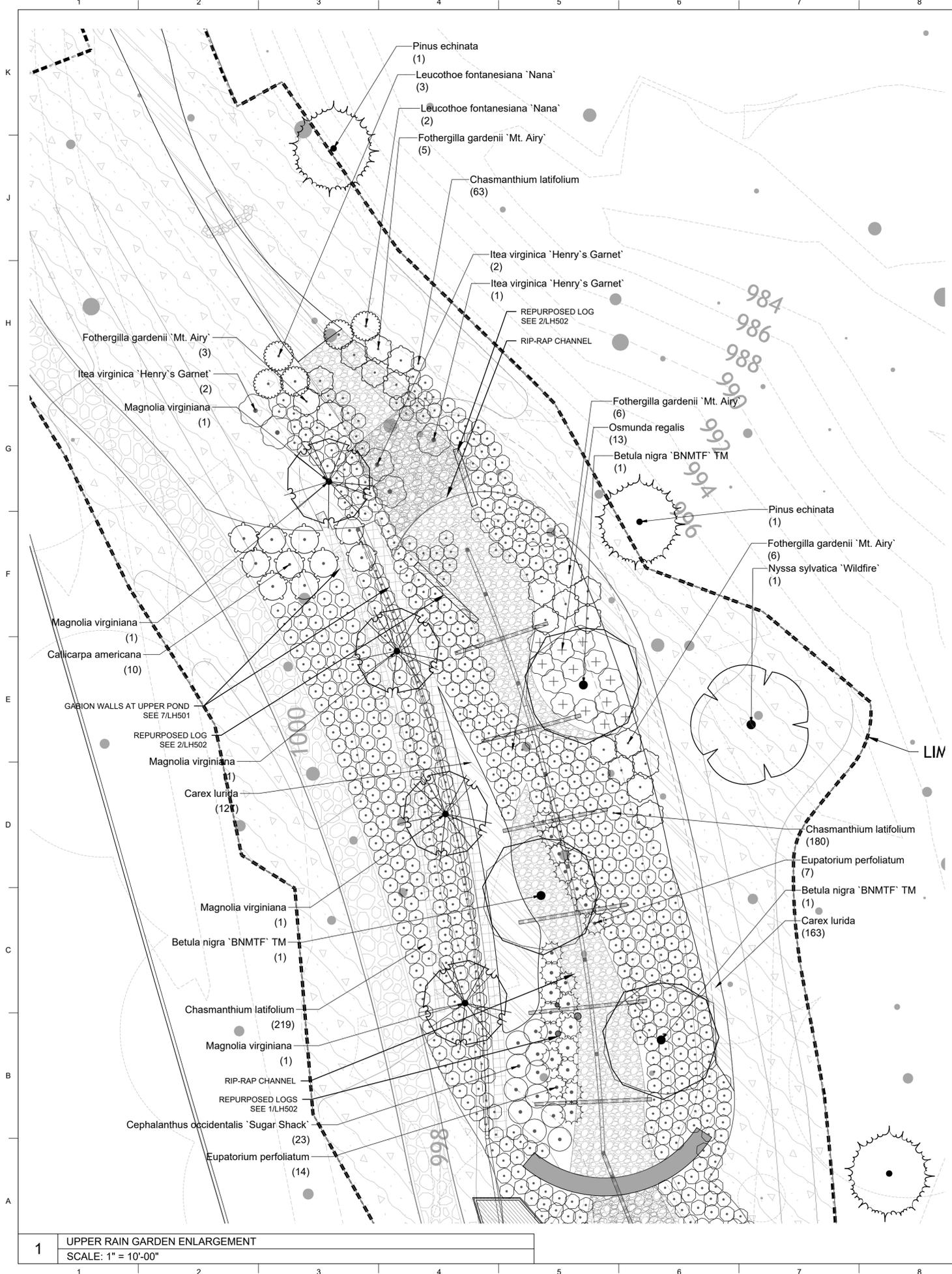
SHEET TITLE
TREE REPLACEMENT PLAN

JOB NAME
NORTHWOODS AT AVONDALE ESTATES

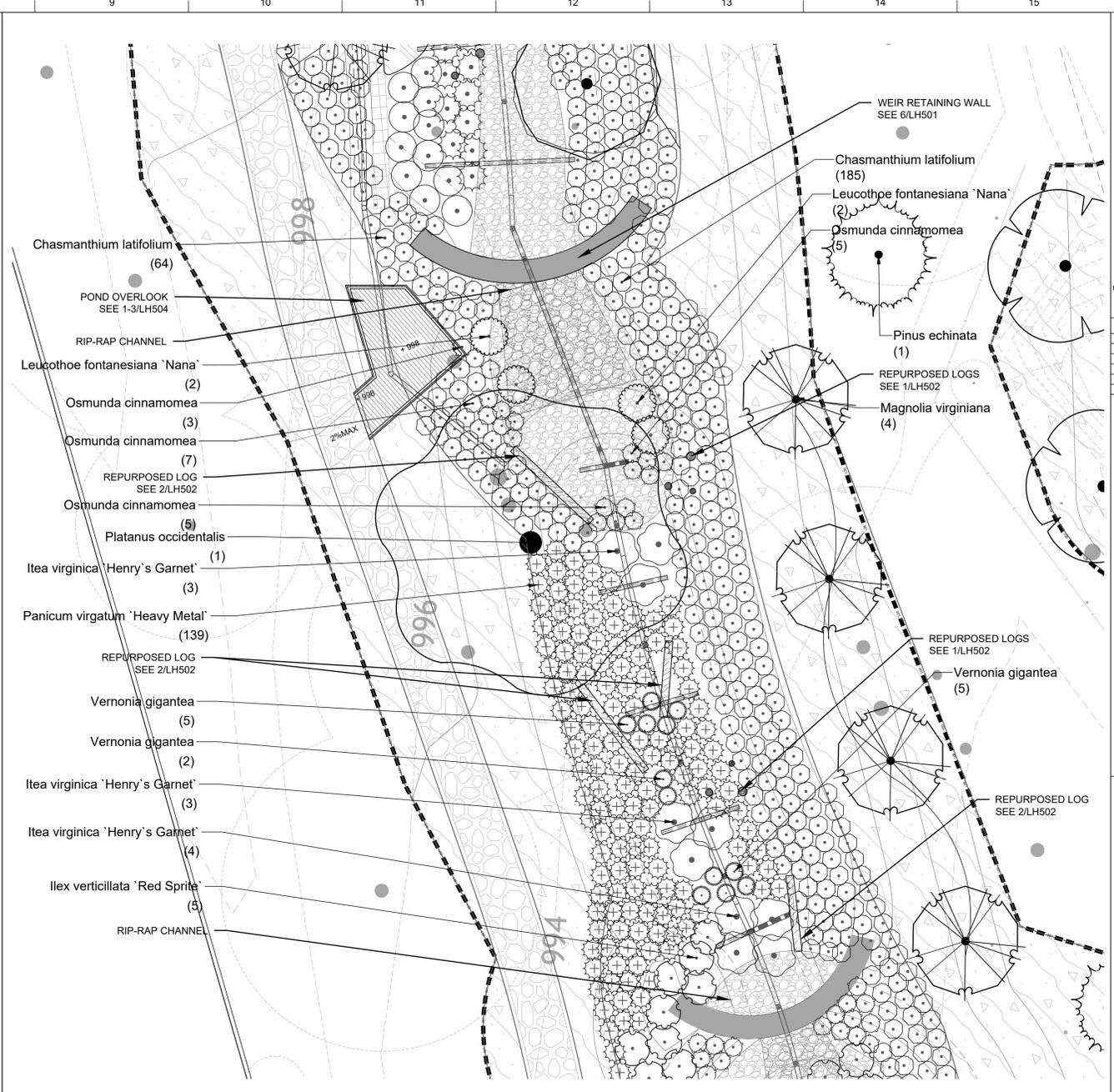
LOCATION
100 Middlebury Road
Avondale Estates, Georgia 30002

SCALE (IN/FT)
0 10 20 40 80 180

FOR CONSTRUCTION



1 UPPER RAIN GARDEN ENLARGEMENT
SCALE: 1" = 10'-00"



2 MIDDLE RAIN GARDEN ENLARGEMENT
SCALE: 1" = 10'-00"

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REVISION:

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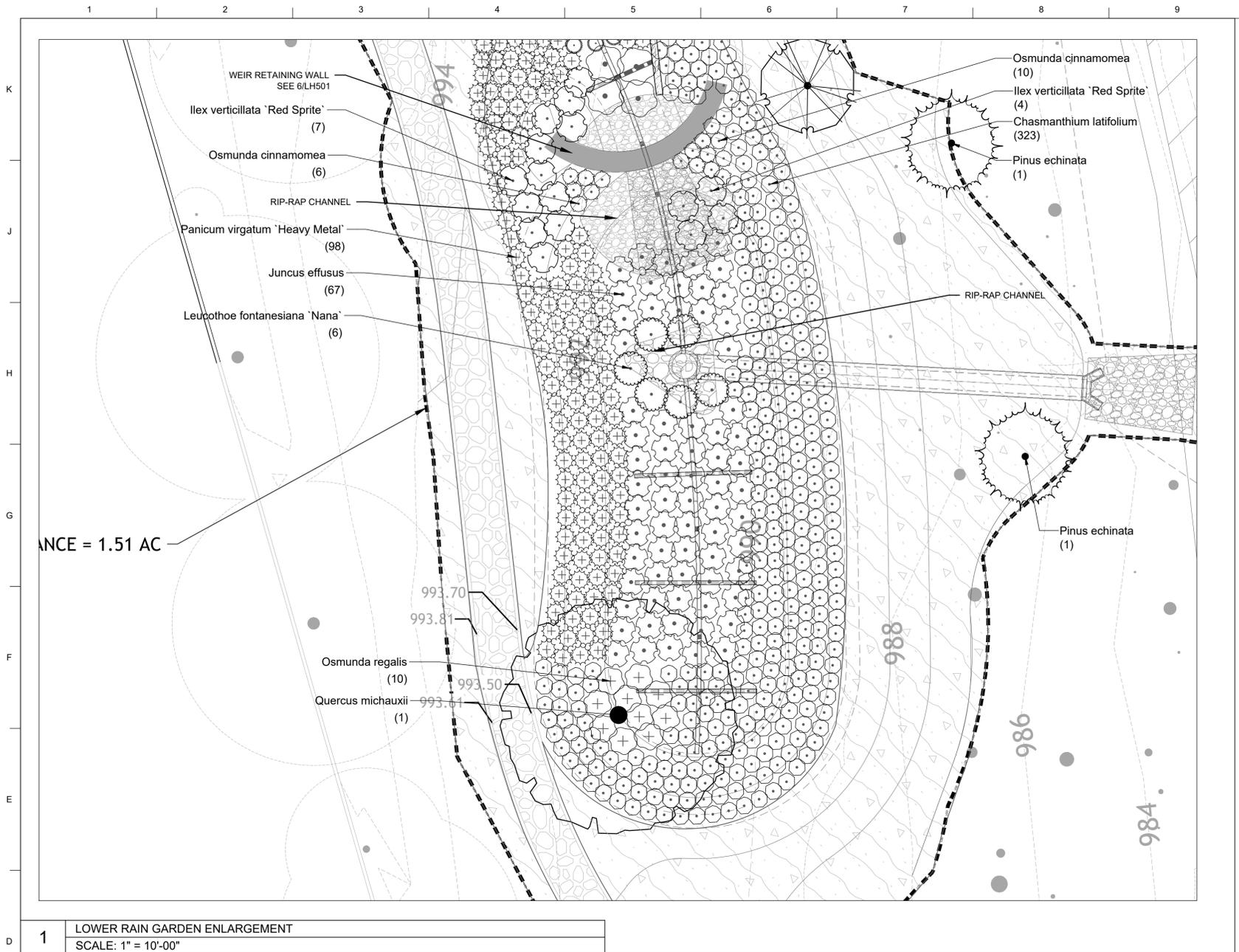
SCALE (IN FT): 0 10 20

JOB NAME: **NORTHWOODS AT AVONDALE ESTATES**

LOCATION: 300 Peachtree Road, Avondale Estates, Georgia 30002

KEY PLAN 	SEAL
	ISSUE DATE: 04/16/2021
JOB NO: 11426-00	
DWG. NO: LP101	

FOR CONSTRUCTION



1 LOWER RAIN GARDEN ENLARGEMENT
SCALE: 1" = 10'-00"

REVISION:

SHEET TITLE
PLANTING PLAN ENLARGEMENTS

SCALE (IN G.)
0 10 20 FT

JOB NAME
NORTHWOODS AT AVONDALE ESTATES

LOCATION
100 Dunwoody Road
Avondale Estates, Georgia 30002

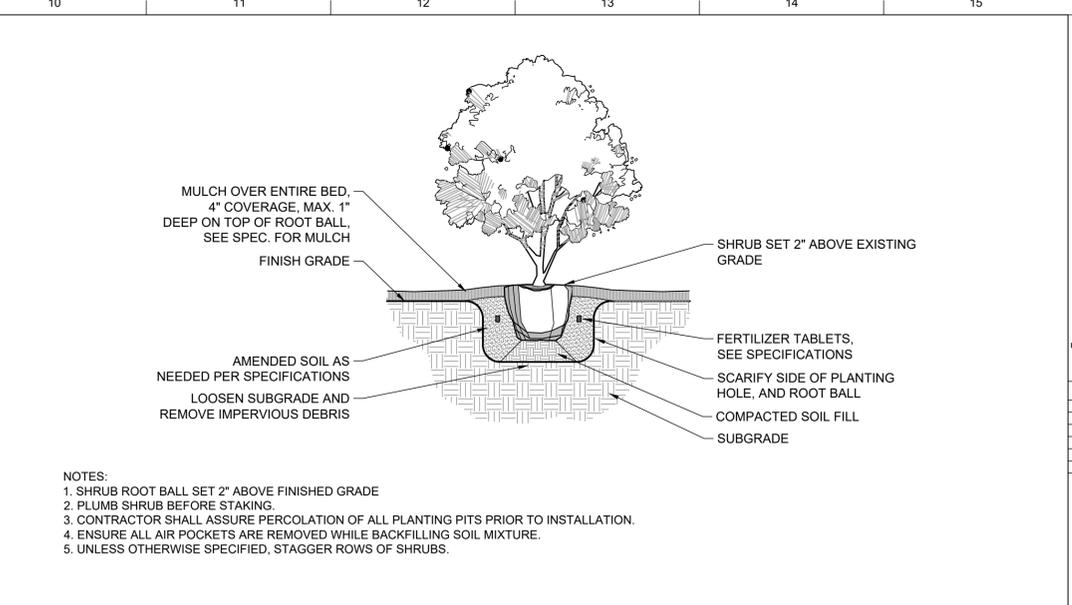
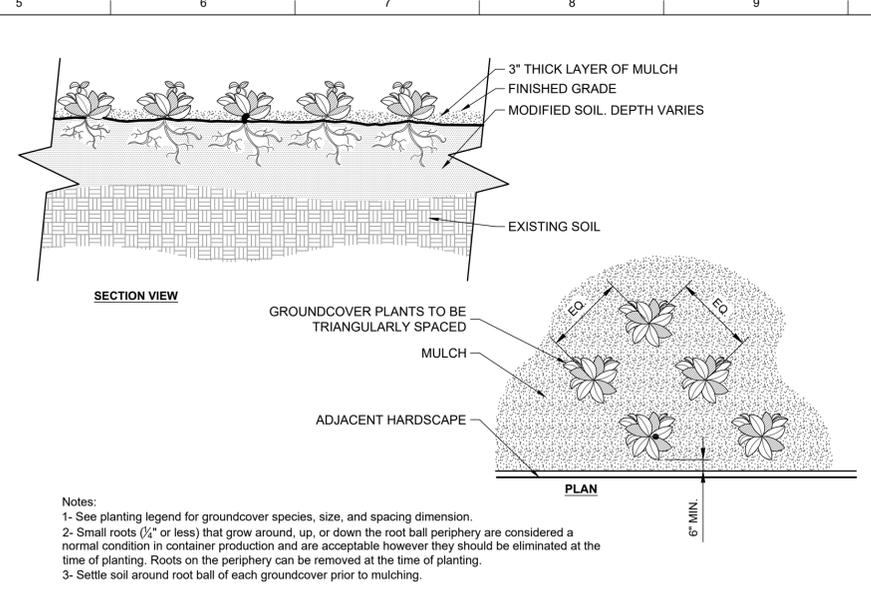
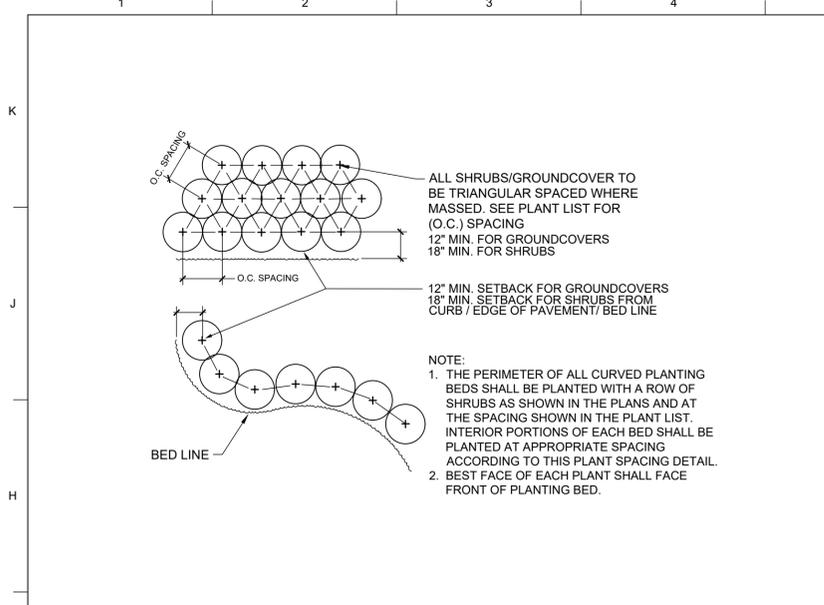
ISSUE DATE
04/16/2021

JOB NO.
11426-00

DWG. NO.
LP102



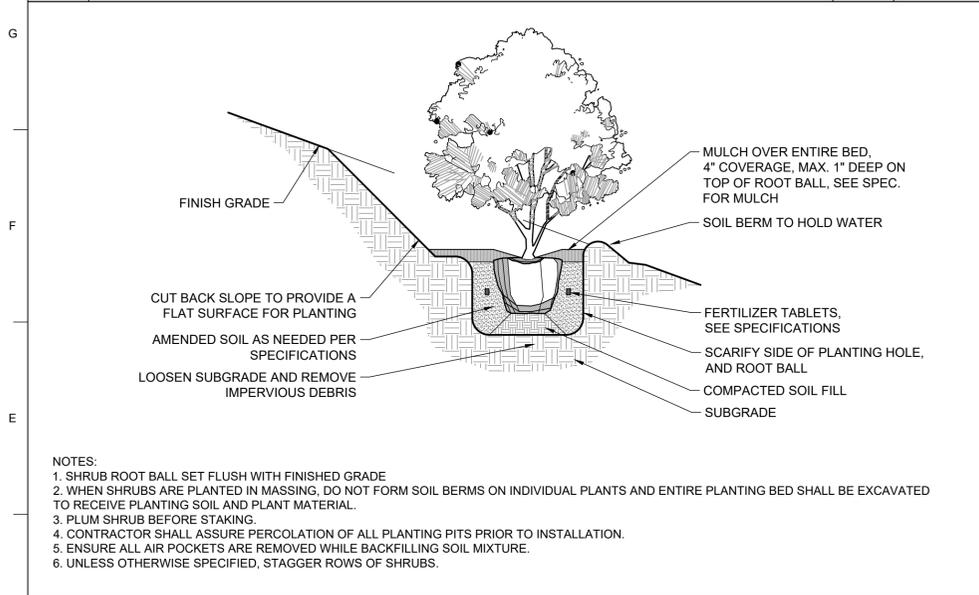
FOR CONSTRUCTION



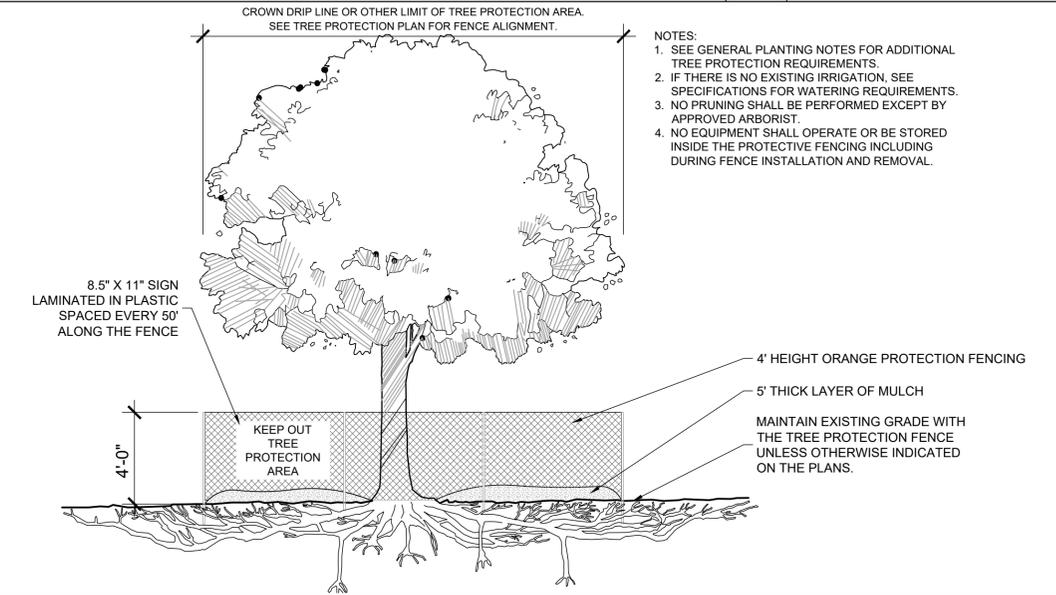
1 PLANT SPACING
SCALE: 3/4" = 1'-00"

2 GROUNDCOVER PLANTING
SCALE: 3/4" = 1'-00"

3 SHRUB PLANTING
SCALE: 3/4" = 1'-00"



4 SHRUB PLANTING ON SLOPE
SCALE: 3/4" = 1'-00"



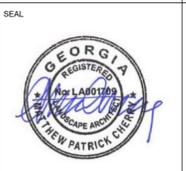
5 TREE PROTECTION FENCING
SCALE: 3/4" = 1'-00"

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REVISION:

SHEET TITLE
PLANTING DETAILS
SCALE (IN G.)

JOB NAME
NORTHWOODS AT AVONDALE ESTATES
LOCATION
100 Dunwoody Road
Avondale Estates, Georgia 30002



ISSUE DATE
04/16/2021
JOB NO.
11426-00
DWG. NO.
LP501

FOR CONSTRUCTION

GENERAL PLANTING NOTES

- CONTRACTOR TO CAREFULLY EXAMINE THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS BEFORE SUBMITTING BID PROPOSAL OR COMMENCING WORK.
- DAMAGE TO EXISTING UTILITIES OR SITE IMPROVEMENTS CAUSED BY THE CONTRACTOR ARE THE FULL RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR'S BASE BID TO INCLUDE ALL MATERIALS, LABOR, PERMITS, EQUIPMENT, TOOLS, INSURANCE, ETC. TO PERFORM THE WORK AS DESCRIBED IN THE CONTRACT DOCUMENTS.
- CONTRACTOR TO COMPLETE WORK WITHIN SCHEDULE ESTABLISHED BY OWNER.
- CONTRACTOR TO PROVIDE ONE YEAR WARRANTY FOR ALL MATERIAL FROM DATE OF SUBSTANTIAL COMPLETION.
- PROVIDE UNIT PRICE FOR ALL MATERIALS (INSTALLED COST) LISTED ON THE PLANT SCHEDULE.
- CONTRACTOR TO PROVIDE INTERIM MAINTENANCE (WATERING, PRUNING, FERTILIZING, GUYING, MOWING, TRIMMING, ADEQUATE DRAINAGE OF PONDING AREAS, EDGING, WEEDING, MULCHING, APPLICATION OF INSECTICIDES/HERBICIDES, AND GENERAL LANDSCAPE CLEAN-UP) UNTIL SUBSTANTIAL COMPLETION NOTICE IS PROVIDED BY THE OWNER OR LANDSCAPE ARCHITECT.
- PERFORM WORK IN COMPLIANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK AND PROVIDE FOR PERMITS REQUIRED BY LOCAL AUTHORITIES.
- TOPSOIL SHALL BE NATURAL, FERTILE, FRIABLE, SANDY CLAY LOAM CAPABLE OF SUSTAINING PLANT GROWTH, FREE OF STONES, STUMPS, ETC.
- FOR ALL TURF LAWN AREAS SPREAD 2-3" OF TOPSOIL INTO EXISTING SOIL TO A DEPTH OF 6" BELOW FINISH GRADE. HAND RAKE FINISHED GRADES TO PROVIDE EVEN CONTOURS.
- ALL PLANTED MATERIAL SHALL BE EQUIVALENT IN QUALITY TO SPECIMEN GRADE OR BETTER, AS NOTED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, LATEST EDITION. ALL TREES OF LESSER QUALITY SHALL BE REJECTED BY THE CITY ARBORIST.
- PLANT MATERIAL TO BE FREE OF DISEASE, INSECT PESTS, EGGS, OR LARVAE. DAMAGED PLANT MATERIAL SHALL BE REJECTED.
- MULCH TO BE CLEAN, FRESH, NEW, RED, LONG-NEEDLE PINE STRAW, 2 INCHES DEEP.
- TEST PLANT BEDS AND PLANT PITS FOR ADEQUATE DRAINAGE. WORK SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER. HARDPAN OR MOISTURE BARRIERS SHALL BE BROKEN, OR DRAIN PIPES TO BE INSTALLED TO PROVIDE PROPER DRAINAGE OF PLANT AREAS. PLANT PITS SHALL BE EXCAVATED TO THE BOTTOM OF THE PIT. FILL EACH PLANT PIT WITH WATER AND OBSERVE THE PIT FOR 2 HOURS. IF THE WATER HAS NOT DISSIPATED BY 50% WITHIN 2 HOURS, NOTIFY THE LANDSCAPE ARCHITECT OF SUCH IN WRITING BEFORE INSTALLING PLANTS IN THE QUESTIONABLE AREA(S). OTHERWISE CONTRACTOR SHALL BE HELD LIABLE FOR THE LIVABILITY OF THE PLANT. IN HARDPAN CONDITIONS WHERE WATER DOES NOT DRAIN WITHIN 2 HOURS, INSTALL DRAIN PIPES AS PER TREE PLANTING IN COMPACTED SOIL AREA DETAIL.
- TREES SHALL BE INSTALLED 2-3" ABOVE FINISH GRADE IN HARDPAN AREAS UNLESS OTHERWISE DIRECTED TO PROVIDE DRAINAGE
- PLANT BEDS SHALL BE NEATLY EDGED USING A 3" WIDE BY 6" WIDE DEEP TRENCH. PROVIDE 2/1 SIDE SLOPE BEHIND TRENCH EDGE.
- GROUND COVER, SHRUB MASS BEDS SHALL BE CULTIVATED TO A DEPTH OF 12 INCHES BELOW GRADE TO BREAK THROUGH COMPACTED OR HARDPAN SOIL. REMOVE ALL STONES, ROOTS, AND INFERIOR MATERIAL. ADD SPECIFIED SOIL AMENDMENTS AND FERTILIZER. ELEVATE ENTIRE BED 6 INCHES ABOVE ORIGINAL GRADE. RAKE TO A CONSISTENT SMOOTH SURFACE. INSTALL PLANTS, EDGE BED AREA, MULCH AND WATER THOROUGHLY.
- SET ALL PLANTS PLUMB AND TURNED SO THAT THE MOST ATTRACTIVE SIDE IS VIEWED.
- PLANTS SHALL BE MEASURED TO THEIR MAIN STRUCTURE, NOT TIP TO TIP OF BRANCHES.

- REMOVE TOP ONE-THIRD BURLAP OF B & B WRAPPING. REMOVE ALL BINDING. IF ROOTBALL IS WRAPPED IN NON-BIODEGRADABLE BURLAP, REMOVE ENTIRE WRAP AFTER PLACED IN PIT.
- TREE PIT AND SHRUB PIT TO BE TWICE THE SIZE OF THE ROOT MASS. FILL WITH PLANT MIX. SEE DETAILS.
- BROKEN ROOT BALLS FOR TREES SHALL BE REJECTED.
- ANY PLANT MATERIALS SHIPPED TO SITE IN UNCOVERED VEHICLES/ TRAILER SHALL BE REJECTED REGARDLESS OF SEASON.
- SPACE SHRUBS AND GROUND COVER EVENLY AND IN STRAIGHT ROWS.
- ALL TREE SCARS OVER 1 -1/2" SHALL BE REJECTED AND TREE TO BE REPLACED.
- ALL SHRUBS TO BE DENSE AND FULL. ALL TREES TO HAVE A SYMMETRICAL GROWTH HABIT (360 DEGREES) UNLESS UNCHARACTERISTIC TO PLANT TYPE.
- SCARIFY ROOT MASS OF SHRUBS AND GROUND COVER BEFORE INSTALLING.
- REMOVE ALL EXCESS GROWTH OF TREES AND SHRUBS AS DIRECTED BY LANDSCAPE ARCHITECT. DO NOT CUT CENTRAL LEADER.
- LAYOUT ALL PLANT MATERIAL ACCORDING TO LANDSCAPE DRAWINGS. STAKE LOCATIONS OF NEW PLANT MATERIALS BEFORE EXCAVATING PLANT PITS FOR REVIEW IN FIELD WITH LANDSCAPE ARCHITECT. RECEIVE APPROVAL OF ALL LAYOUTS BEFORE INSTALLATION. ADJUSTMENTS TO THE LAYOUT SHALL BE MADE BY THE LANDSCAPE ARCHITECT. LANDSCAPE CONTRACTOR TO MAKE ADJUSTMENTS TO LAYOUT AT NO ADDITIONAL COST TO THE OWNER. LANDSCAPE CONTRACTOR RESPONSIBLE FOR ADJUSTMENT OF LAYOUT IN ORDER TO AVOID UTILITIES. NOTIFY LANDSCAPE ARCHITECT OF CONTEMPLATED ADJUSTMENTS TO THE LAYOUT AND RECEIVE APPROVAL BEFORE COMMENCING.
- GENERAL CONTRACTOR TO PROVIDE GRADES TO TWO-TENTHS (.20+) OF A FOOT OF PROPOSED FINISH GRADES.
- ALL SHRUBS SHALL BE DENSE AND WELL-BRANCHED FROM BOTTOM TO TOP AND ALL SIDES. "LEGGY" SHRUBS WILL BE REJECTED BY L.A.
- OWNER OR LANDSCAPE ARCHITECTURE SHALL REVIEW PROJECT AT COMPLETION OF INSTALLATION FOR SUBSTANTIAL COMPLETION. FINAL COMPLETION SHALL BE GIVEN AT THE END OF THE WARRANTY PERIOD IF ALL ITEMS ARE COMPLETED TO THE OWNER'S SATISFACTION. CONTRACTOR SHALL BE NOTIFIED IN WRITING OF SUBSTANTIAL AND FINAL COMPLETION DATES.
- SEE CIVIL DRAWINGS FOR FURTHER INFORMATION REGARDING: EROSION SEDIMENT CONTROL INFORMATION, LOCATIONS OF EXISTING AND PROPOSED STRUCTURES, CUT AND FILL AREAS, AND RETENTION AREAS, LIMITS OF CONSTRUCTION, LOCATIONS OF EXISTING AND PROPOSED UTILITIES OR EASEMENTS.
- PROVIDE "QUALITY GRADE" PLANTS OF STRAIGHT SPECIES UNLESS INDICATED OTHERWISE ON PLANT SCHEDULE.
- PROVIDE SLOPES IN PLANTING AREAS AS INDICATED ON GRADING PLANS.
- COORDINATE LOCATIONS OF NEW PLANTINGS WITH UTILITIES.
- PROVIDE THE QUANTITY OF EACH PLANT INDICATED ON THE PLANTING PLAN IF THOSE QUANTITIES DO NOT AGREE WITH THE QUANTITIES SHOWN IN THE PLANT SCHEDULE.
- PLANT BETWEEN STONES IN RAINGARDENS WHERE POSSIBLE.
- IF FINE GRADING IN PLANTING BEDS IS COMPLETED OUTSIDE OF THE ACCEPTABLE PLANTING WINDOW FOR LIVE PLANTS, APPLY A COVER CROP TO THE PLANTING BEDS THAT WILL LATER RECEIVE HERBACEOUS PERENNIAL PLANTS AND PINE STRAW MULCH (SEE SPECIFICATION SECTION 32 9200). INSTALL LIVE PLANTS AND PINE STRAW MULCH THROUGH COVER CROP ONCE APPROPRIATE PLANTING WINDOW OCCURS.
- TOP SOIL DEPTH FOR ALL PLANTED AREAS TO BE 6" UNLESS OTHERWISE SPECIFIED. TOP SOIL DEPTH FOR ALL TREE PLANTING AREAS TO BE A MINIMUM OF 18" WITHIN THE 6" DIAMETER TREE CIRCLE UNLESS OTHERWISE SPECIFIED.

TREE SELECTION & APPROVAL REQUIREMENTS (PRIOR TO ORDERING):

- ALL NEW TREES, SHRUBS AND GROUND COVER PLANTINGS SHALL MEET OR EXCEED THE MINIMUM SIZE REQUIREMENTS AS STATED ON PLANT SCHEDULE(S).
- LANDSCAPE CONTRACTOR SHALL PROVIDE LIST OF PROPOSED PLANT MATERIALS, SIZES, SPECIES, ALTERNATES (IF ANY) AND PLANT SOURCE (NURSERY AND/OR TREE FARM) LOCATIONS ALONG WITH DIGITAL COLOR PHOTOS OF SELECTED MATERIALS TO LANDSCAPE ARCHITECT AND OWNER PRIOR TO ORDERING ANY PLANT MATERIALS.
- THE LANDSCAPE ARCHITECT AND OWNER RESERVE THE RIGHT TO INSPECT AND REJECT TREES AND PLANTS AT ANY TIME. LANDSCAPE ARCHITECT WILL DECIDE FINAL APPROVAL OF ALL PLANT MATERIAL DELIVERED TO PROJECT SITE.

TREE UNLOADING, HANDLING AND STAGING REQUIREMENTS (PRIOR TO INSTALLATION):

- STAGING YARD - STAGING AREA AND SYSTEMS SHOULD BE PREPARED IN ADVANCE TO ADEQUATELY HOLD TREES ABOVE GROUND FOR OPTIMUM TREE HEALTH PRIOR TO PLANTING. MANY TIMES, EVEN WITH THE BEST PLANNING AND COORDINATION, TREES CANNOT BE PLANTED WHEN THEY ARE DELIVERED DUE TO CONSTRUCTION STAGING CONDITIONS.
- HANDLING - USE EXTREME CAUTION WHEN HANDLING TREES. USE A STRAP OR CHAIN CRADLE (ADEQUATE FOR WEIGHT AND SIDE OF TREE AND ROOTBALL) ATTACHED TO THE ROOT BALL TO UNLOAD AND MOVE TREES. STRAPPING AND WIRE BASKETS CAN BREAK OR LOOSEN. NEVER MOVE, LIFT OR HANDLE BY ATTACHING TO OR BY PUTTING PRESSURE ON THE TREE TRUNK. BE VERY CAREFUL NOT TO DAMAGE OR SCAR TRUNKS AND BRANCHES.
- UNLOADING - PRIOR TO UNLOADING, PROPER MOISTURE SHOULD BE MAINTAINED IN ROOT BALLS. TRUCKS SHOULD BE STAGED IN THE SHADE PRIOR TO UNLOADING. UNLOADING TIME SHOULD BE NO MORE THAN TWO HOURS PER TRUCK.
- STAND TREES UP - IMMEDIATELY AFTER UNLOADING (NO MORE THAN ONE HOUR AFTER UNLOADING), STAND TREES UP USING WEIGHTS OR CMU BLOCKS ON 4 SIDES OF ROOT BALL. THIS WILL REDUCE RISK OF SUN SCALD. PROPERLY STAGED TREES ARE STANDING, UNTIED AND SPACED. DO NOT LEAN TRUNKS AGAINST FENCING OR OTHER ELEMENTS DURING STORAGE.
- TRUNK PROTECTORS - REMOVE CARDBOARD TRUNK PROTECTOR WITHIN 48 HOURS OF TREES BEING STOOD UPRIGHT TO REDUCE RISK OF LATER DAMAGED TO BARK AND TRUNK.
- MOISTURE - MONITOR MOISTURE IN THE ROOT BALL BY PROBING WITH A SOIL PROBE AND MANAGE SUPPLEMENTAL IRRIGATION ACCORDINGLY. BE CAREFUL NOT TO OVER OR UNDER-IRRIGATE.
- COLD - DURING COLD WEATHER PERIODS, ROOT BALLS MUST BE PROTECTED FROM FREEZING TEMPERATURES.

TREE PLANTING REQUIREMENTS:

- SITE PREPARATION - ENSURE THAT ALL ROUGH GRADING, FINE GRADING AND HARDSCAPE INSTALLATION ARE COMPLETE BEFORE PLANTING OCCURS. BEFORE PLANTING, REMOVE ANY PLASTIC WRAP AND ANY CIRCLING ROOTS FROM TREE ROOT BALL. HANDLE TREE ONLY BY ROOT BALL AND BE CERTAIN YOUR EQUIPMENT - INCLUDING STRAP AND CHAIN CRADLES - ARE RATED FOR THE WEIGHT YOU ARE LIFTING.
- PLANTING HOLE WIDTH - EXCAVATE PLANTING HOLE AT LEAST TWO TIMES THE DIAMETER OF ROOT BALL. ROOT BALL MUST BE SET ON COMPACTED FOUNDATION AND SHOULD NOT SETTLE WHEN SATURATED WITH WATER.
- PLANTING HOLE DEPTH - EXCAVATE PLANTING HOLE NO DEEPER THAN 2" SHALLOWER THAN THE ROOTBALL DEPTH. IF A HOLE IS OVEREXCAVATED, USE SIZE 57 GRAVEL STONE PLACED IN BOTTOM OF HOLE, BEGINNING AT UNDISTURBED SOIL, AND FILL UP TO LEVEL WHERE BOTTOM OF ROOTBALL SHOULD REST. DO NOT PLACE SOIL BACK IN AN OVER-EXCAVATED HOLE.
- EQUIPMENT - USE MACHINERY SUCH AS TREEHANDLER WITH SIDE-TILT CARRIAGE FORKS (BRANDS SUCH AS LULL OR JLG) RATED TO HANDLE WEIGHTS OF ROOTBALLS AND TREES TO SET ROOT BALLS IN PLANTING PITS. FORKS SHOULD ALWAYS

BE CAREFULLY POSITIONED ABOVE ROOTBALL TO LIFT ROOTBALL BY STRAPPING ON TOP OF THE ROOT BALL WITH FOUR PICK-UP POINTS FOR EVEN WEIGHT DISTRIBUTION. PRIOR TO SETTING ROOTBALL IN PLANTING PIT, FORKS SHOULD BE ADJUSTED SO THAT TREE IS PLUMB. PLACE ROOTBALL AT A LEVEL WHERE THE TRUNK FLARE WILL BE 2" ABOVE SURROUNDING FINISHED GRADE AFTER SETTLING.

STRAIGHT AND PLUMB - MAINTAIN TREE WITH FORKS IN A STRAIGHT & PLUMB POSITION WHILE BACKFILLING AND WATERING.

BACKFILL/WATER - BACKFILL AND TAMP IN 6" LIFTS UNTIL 1/2 COMPLETE. SATURATE PLANTING HOLE WITH WATER. AFTER 1/2 BACKFILL, WATERING AND THE TREE IS PLUMB, ADD BACKFILL TO JUST BELOW TOP HORIZONTAL RING OF THE WIRE BASKET AND COMPLETELY SATURATE PLANTING HOLE WITH WATER. ADJUST ROOT BALL (IF NECESSARY) BY ADJUSTING FORKS UNTIL TREE IS STRAIGHT AND PLUMB, BACKFILL IS SETTLED AND ROOTBALL IS STABLE.

REMOVE FORKS - AFTER ITEMS A-H ARE COMPLETE AND TREE IS STRAIGHT AND PLUMB WITH ROOTBALL STABLE AND AT PROPER DEPTH, GENTLY REMOVE FORKS AND ALSO REMOVE SYNTHETIC STRAP, CARDBOARD PACKAGING (IF ANY), TOP PORTION OF WIRE BASKET DOWN TO AND INCLUDING FIRST HORIZONTAL RING AND BURLAP FROM TOP PORTION OF ROOTBALL.

BACKFILL/WATER - COMPLETE BACKFILL AND THOROUGHLY SATURATE WITH WATER. REPEAT THIS STEP IF NECESSARY TO MAKE CERTAIN THAT AIR POCKETS DO NOT EXIST IN THE BACKFILL.

STAKING - IMMEDIATELY AFTER BACKFILL HAS SETTLED AND TREE IS STRAIGHT AND PLUMB, STAKE TREE AT MIN. 3 LOCATIONS ALONG GROUND (SEE PLANTING DETAILS) TO PROVIDE STABILITY UNTIL ROOT SYSTEM IS THOROUGHLY ESTABLISHED IN THE BACKFILL. CHECK STAKING AS NEEDED THROUGHOUT MAINTENANCE PERIOD TO MAKE SURE TRUNK DAMAGE DOES NOT OCCUR. CHECK TO CONFIRM THAT TREE AND ROOTBALL ARE STABLE BEFORE REMOVING STAKING.

STRAIGHTENING - IF FOR ANY REASON TREES NEED STRAIGHTENING, TREES CAN BE STRAIGHTENED BY CAREFULLY DIGGING OUT ALL BACKFILL AND ROOT BALL, ATTACHING SEATBELT STRAP TO THE WIRE BASKET AND LIFTING. NEVER PULL, PUSH OR PUT PRESSURE ON THE TRUNK. IF TREE ROOTS ARE SIGNIFICANTLY ESTABLISHED IN THE BACKFILL, IT IS BEST FOR TREE HEALTH TO WAIT UNTIL DORMANCY TO STRAIGHTEN TREES (SINCE ROOTS OUTSIDE OF ORIGINAL ROOTBALL WILL BE CUT).

RAIN GARDEN REQUIREMENTS:

- INSTALLATION SHOULD OCCUR AFTER THE CONTRIBUTING DRAINAGE AREAS TO THE RAIN GARDEN HAVE BEEN STABILIZED. IF THIS IS NOT FEASIBLE, STORMWATER FLOW SHALL BE DIVERTED AROUND THE RAIN GARDEN. PROTECT AREA WITH TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES. IF SEDIMENT ACCUMULATES IT MUST BE REMOVED
- INSTALLATION OF ENGINEERED SOILS MUST BE COMPLETED IN A MANNER THAT WILL ENSURE PRESERVATION OF THE INFILTRATIVE CAPACITY OF THE UNDERLYING SOILS. THE MOISTURE CONTENT OF THE SOIL SHALL BE LOW ENOUGH TO PREVENT CLUMPING AND COMPACTION DURING PLACEMENT.
- TO PREVENT COMPACTION WITH THE LIMITS OF THE BASINS, ONLY HAND LABORERS, SMALL EXCAVATION HOES WITH WIDE TRACKS, LIGHT EQUIPMENT WITH TURF TIES, MARCH EQUIPMENT OR WIDE TRACK LOADERS MAY BE USED. NO HEAVY EQUIPMENT SHALL BE USED WITHIN THE PERIMETER OF THE RAIN GARDEN BEFORE, DURING, OR AFTER THE PLACEMENT OF THE BIORETENTION SOIL MIX. GROUND PRESSURE SHOULD NOT EXCEED 7 PSI.
- SOIL SURFACES SHALL BE SACRIFICED TO AERATE AND REDUCE SOIL COMPACTION. SOIL SHALL BE PLACED IN 6" LOOSE DEPTH LIFTS AND LIGHTLY HAND-TAMPED OR COMPACTED WITH A WATER-FILLED LANDSCAPE ROLLER TO REDUCE POTENTIAL FOR EXCESSIVE SETTLEMENT. NO OTHER MECHANICAL EQUIPMENT SHALL BE USED TO COMPACT THE ENGINEERED SOIL OR UNDERLYING SOILS.
- LOOSEN SUBGRADE SOILS THAT HAVE BEEN COMPACTED OR SMEARED BY RANKING, DISKING, OR TILLING TO A MINIMUM OF 6" IN DEPTH. SUBSOILS SHALL

BE SACRIFICED (NOT COMPACTED) PRIOR TO PLACEMENT OF CLEAN-WASHED AGGREGATE SUBBASE.

UNIFORMLY GRADE BIORETENTION SOIL MIX TO ACHIEVE SMOOTH SURFACE. DO NOT OVER-WORK OR EXCESSIVELY COMPACT SOIL MIX. GRADE TO CROSS SECTIONS, THICKNESS, AND ELEVATIONS INDICATED ON PLANS.

EXCAVATE IN DRY CONDITIONS AS OFTEN AS PRACTICABLE.

REVISION:

SHEET TITLE
PLANTING NOTES

JOB NAME
NORTHWOODS AT AVONDALE ESTATES

ISSUE DATE
04/16/2021

JOB NO.
11426-00

DWG. NO.

LP503

SCALE (IN CH)

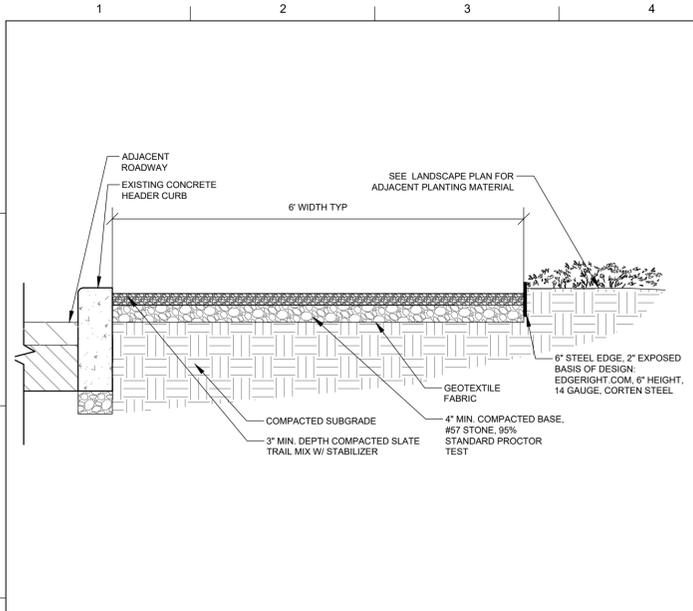
LOCATION
1000 Embassy Road
Avondale Estates, Georgia 30002



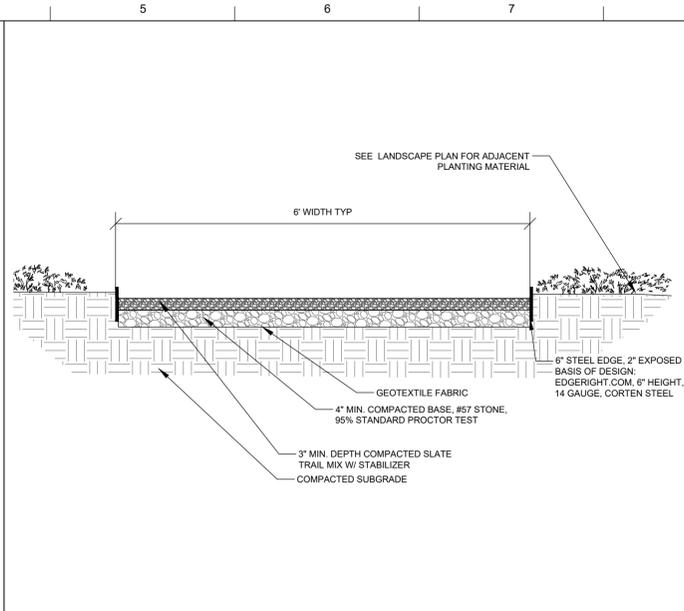
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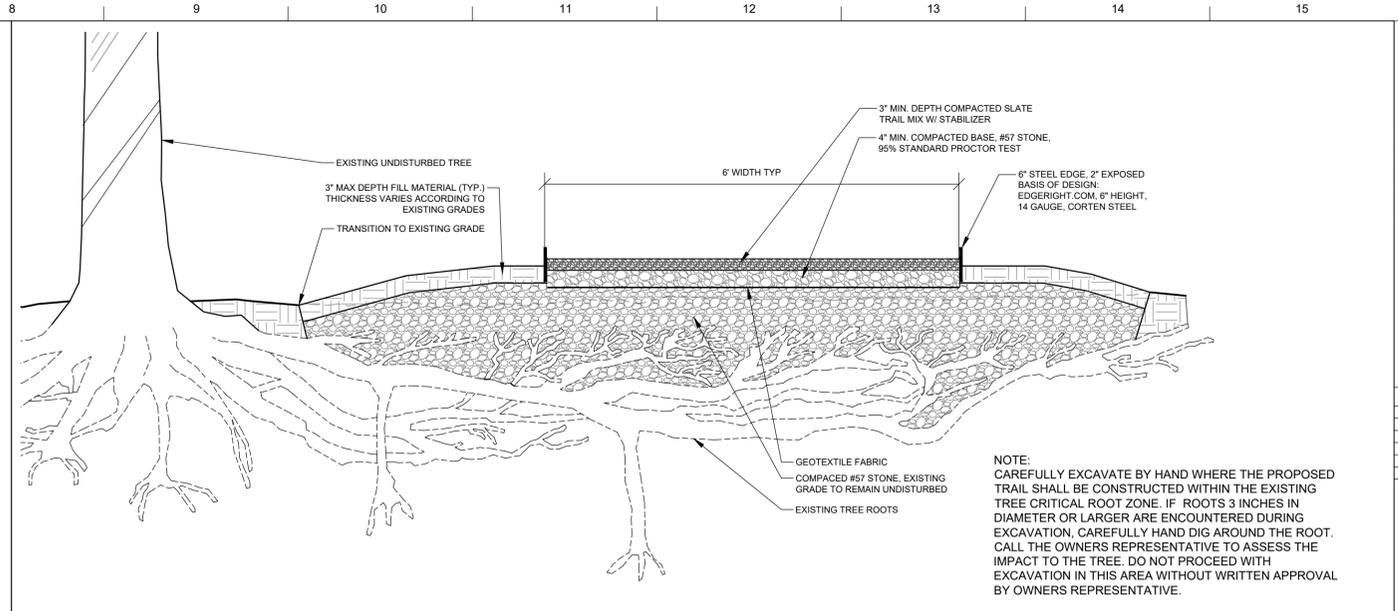
FOR CONSTRUCTION



1 TRAIL SECTION AT CURB
SCALE: 3/4" = 1'-00"



2 TRAIL SECTION WITH GRANITE RUBBLE EDGE
SCALE: 3/4" = 1'-00"

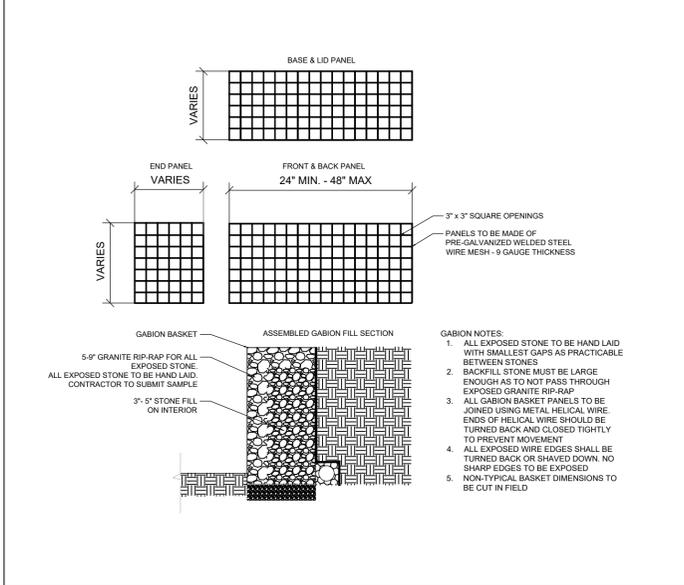


3 ROOT BRIDGING TRAIL SECTION
SCALE: 3/4" = 1'-00"

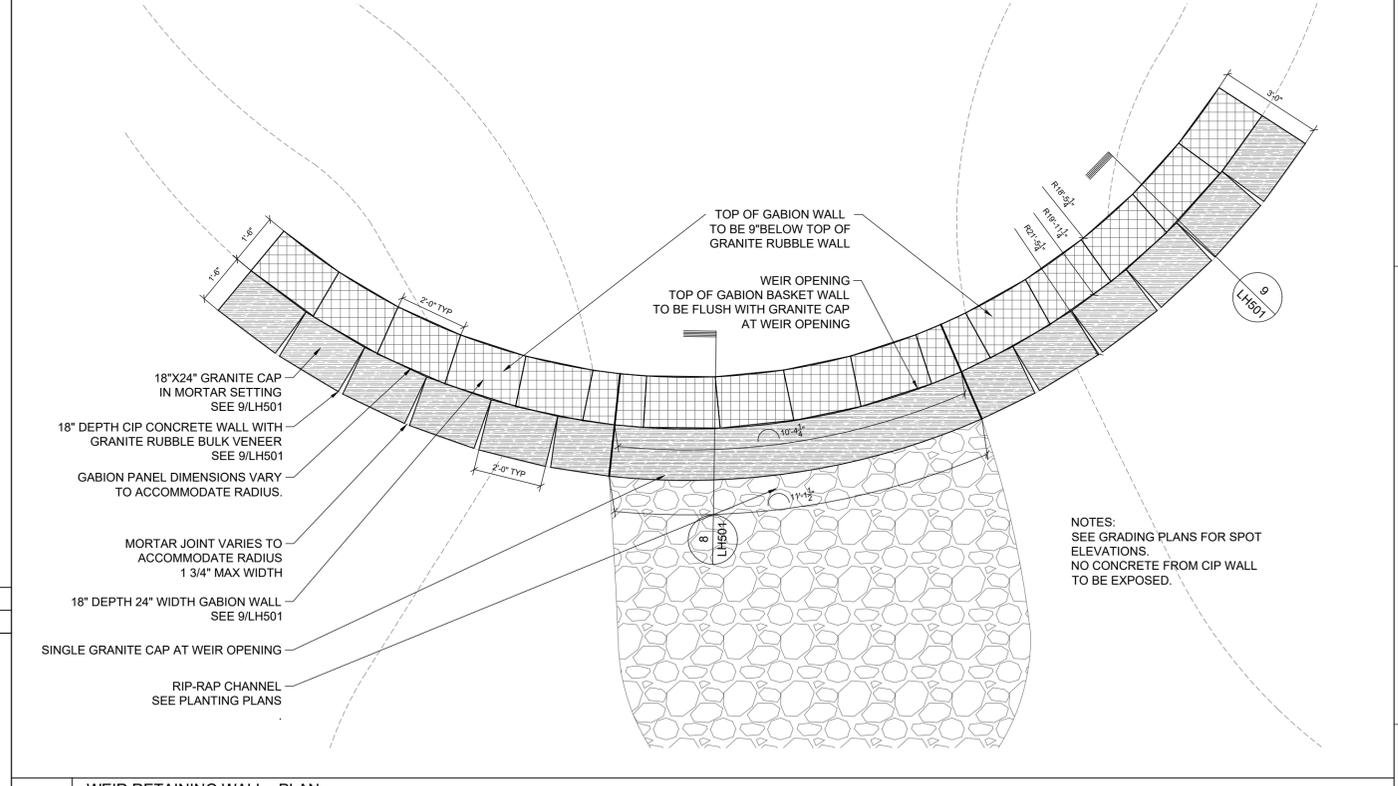
NOTE:
CAREFULLY EXCAVATE BY HAND WHERE THE PROPOSED TRAIL SHALL BE CONSTRUCTED WITHIN THE EXISTING TREE CRITICAL ROOT ZONE. IF ROOTS 3 INCHES IN DIAMETER OR LARGER ARE ENCOUNTERED DURING EXCAVATION, CAREFULLY HAND DIG AROUND THE ROOT. CALL THE OWNERS REPRESENTATIVE TO ASSESS THE IMPACT TO THE TREE. DO NOT PROCEED WITH EXCAVATION IN THIS AREA WITHOUT WRITTEN APPROVAL BY OWNERS REPRESENTATIVE.



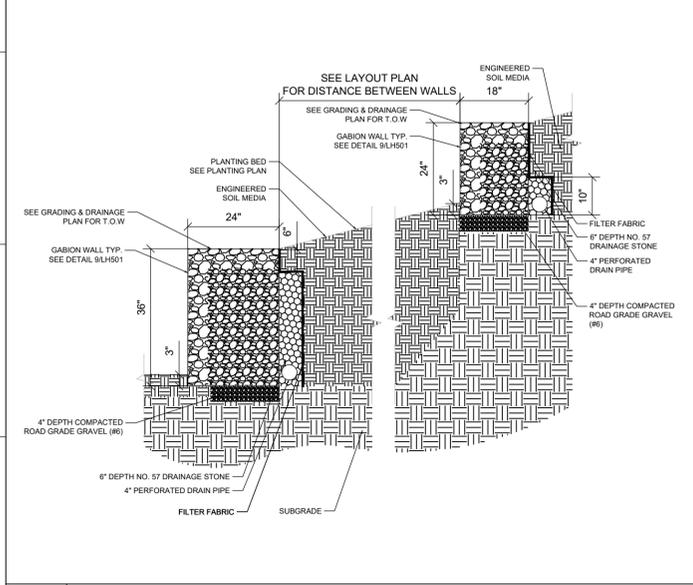
4 NOT USED
SCALE: 3/4" = 1'-00"



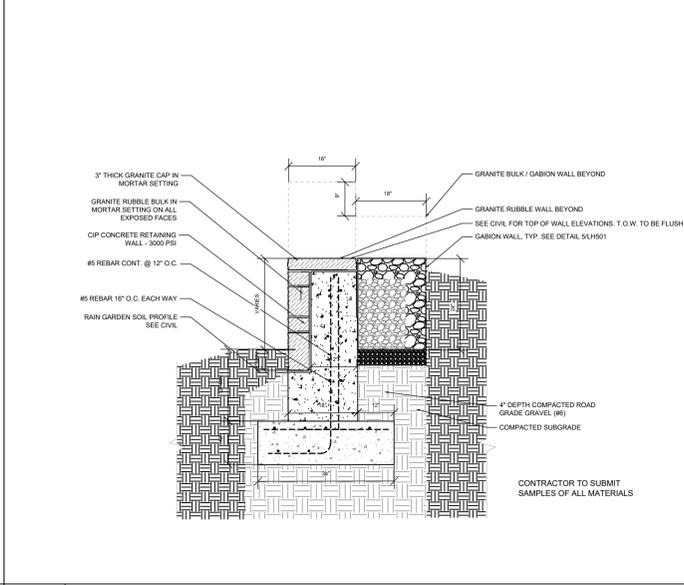
5 RAIN GARDEN GABION WALL TYP.
SCALE: 1/2" = 1'-00"



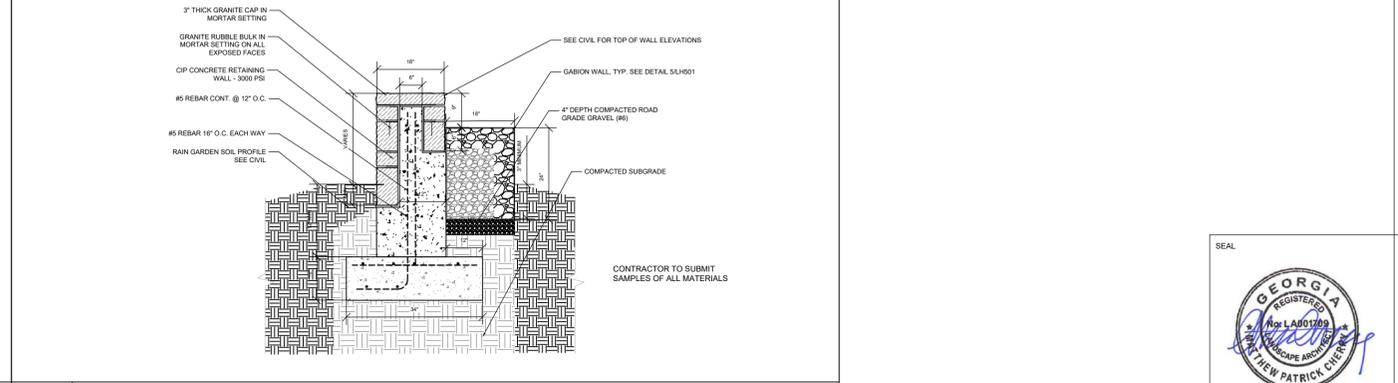
6 WEIR RETAINING WALL - PLAN
SCALE: 1/4" = 1'-00"



7 GABION WALLS AT UPPER POND
SCALE: 1/2" = 1'-00"



8 WEIR RETAINING WALL OPENING - SECTION
SCALE: 1/2" = 1'-00"



9 WEIR RETAINING WALL - SECTION
SCALE: 1/2" = 1'-00"

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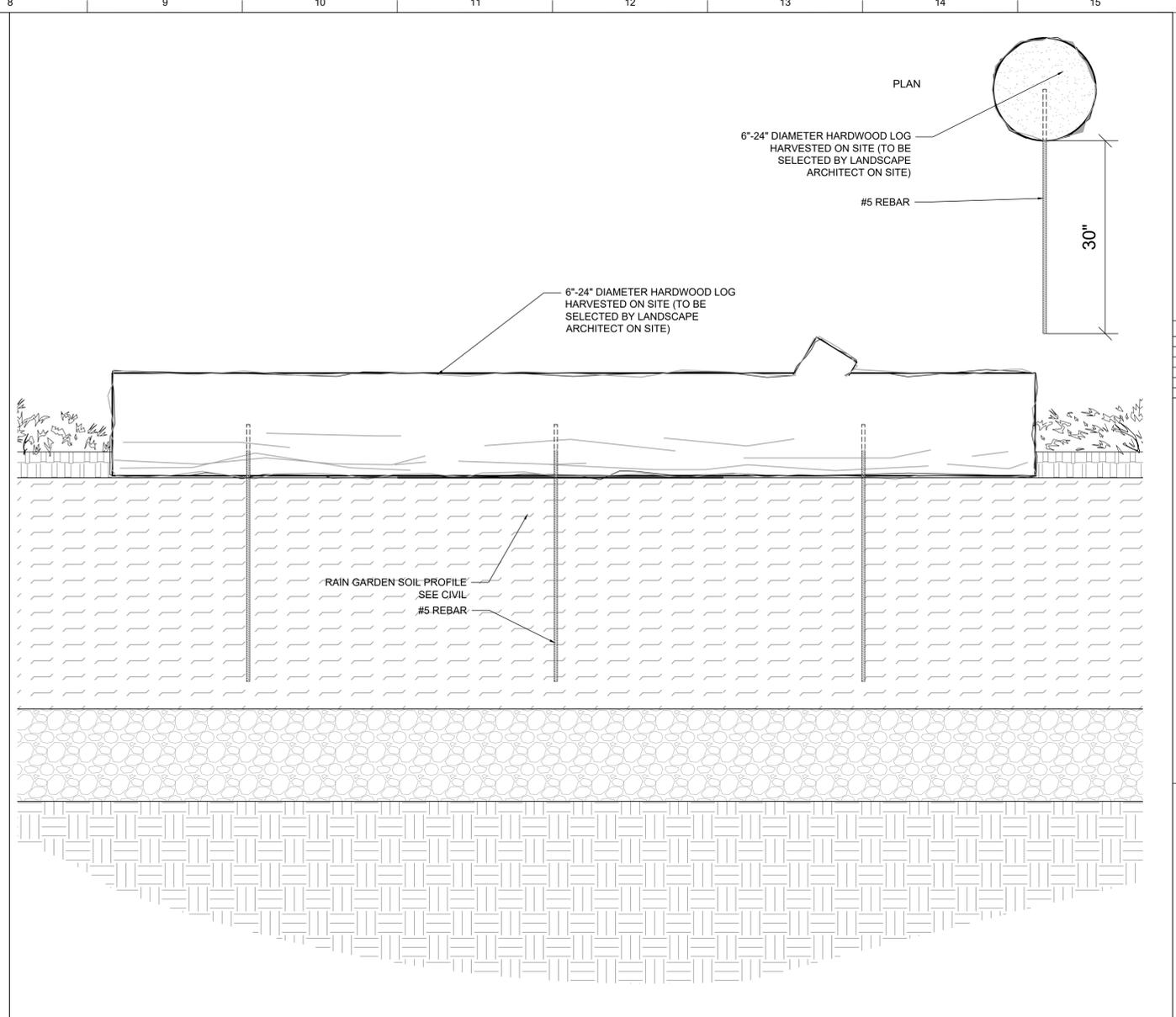
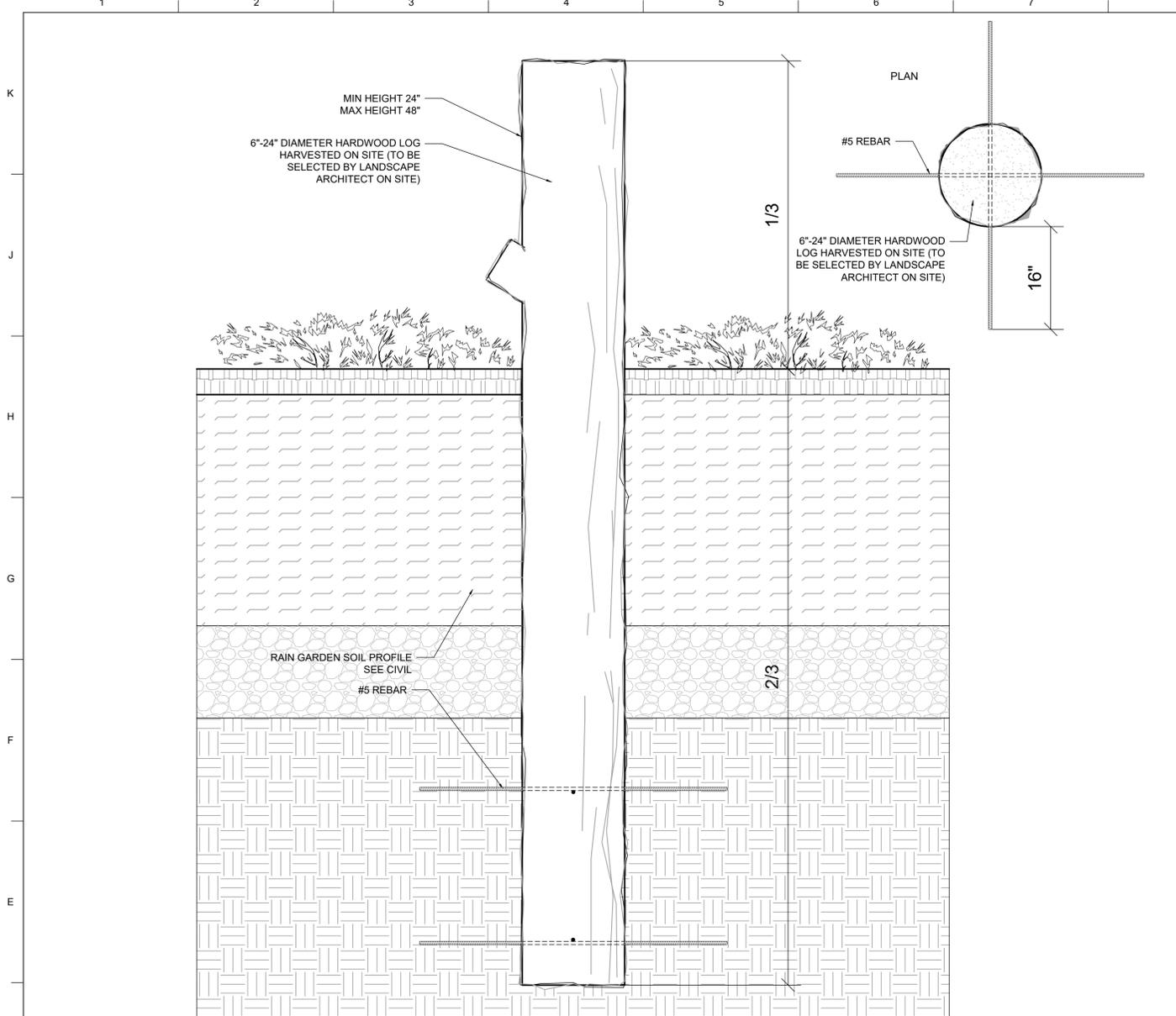
SHEET TITLE
HARDSCAPE DETAILS
SCALE (IN Q.)

JOB NAME
NORTHWOODS AT AVONDALE ESTATES
LOCATION
100 Middleby Road
Avondale Estates, GA 30002



ISSUE DATE
04/16/2021
JOB NO.
11426-00
DWG. NO.
LH501

FOR CONSTRUCTION



1 REPURPOSED LOG - VERTICAL
SCALE: 1" = 1'-00"

2 REPURPOSED LOG - HORIZONTAL
SCALE: 1" = 1'-00"

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REVISION:

SHEET TITLE
RAIN GARDEN DETAILS

SCALE (IN G.)

JOB NAME
NORTHWOODS AT AVONDALE ESTATES

LOCATION
100 Dunwoody Road
Avondale Estates, GA 30002

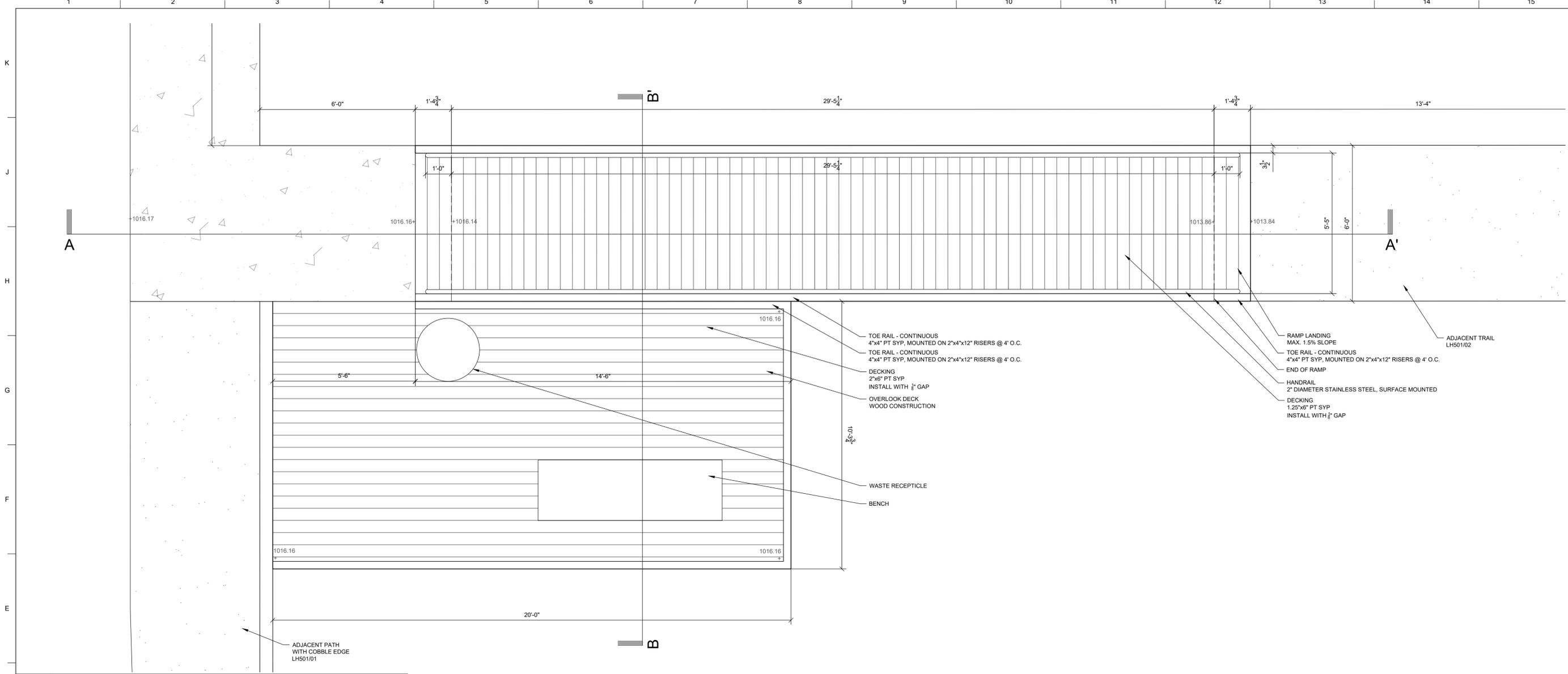


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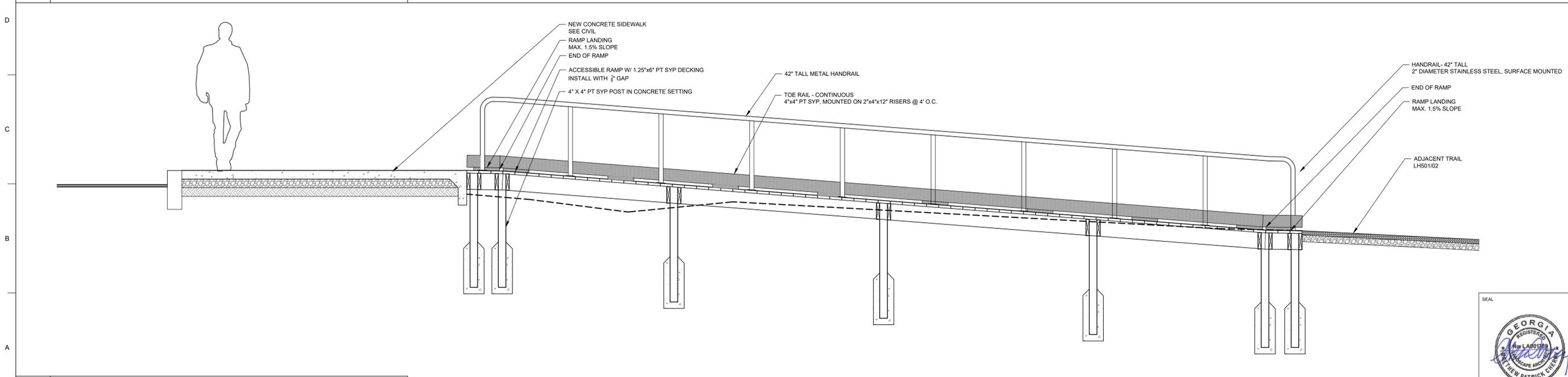
JOB NO.
11426-00

DWG. NO.
LH502

FOR CONSTRUCTION



1 OVERLOOK ENLARGEMENT
SCALE: 1/2" = 1'-00"



2 OVERLOOK SECTION A-A'
SCALE: 1/2" = 1'-00"

SHEET TITLE
OVERLOOK CONSTRUCTION DETAILS

JOB NAME
NORTHWOODS AT AVONDALE ESTATES

ISSUE DATE
04/16/2021

JOB NO.
11426-00

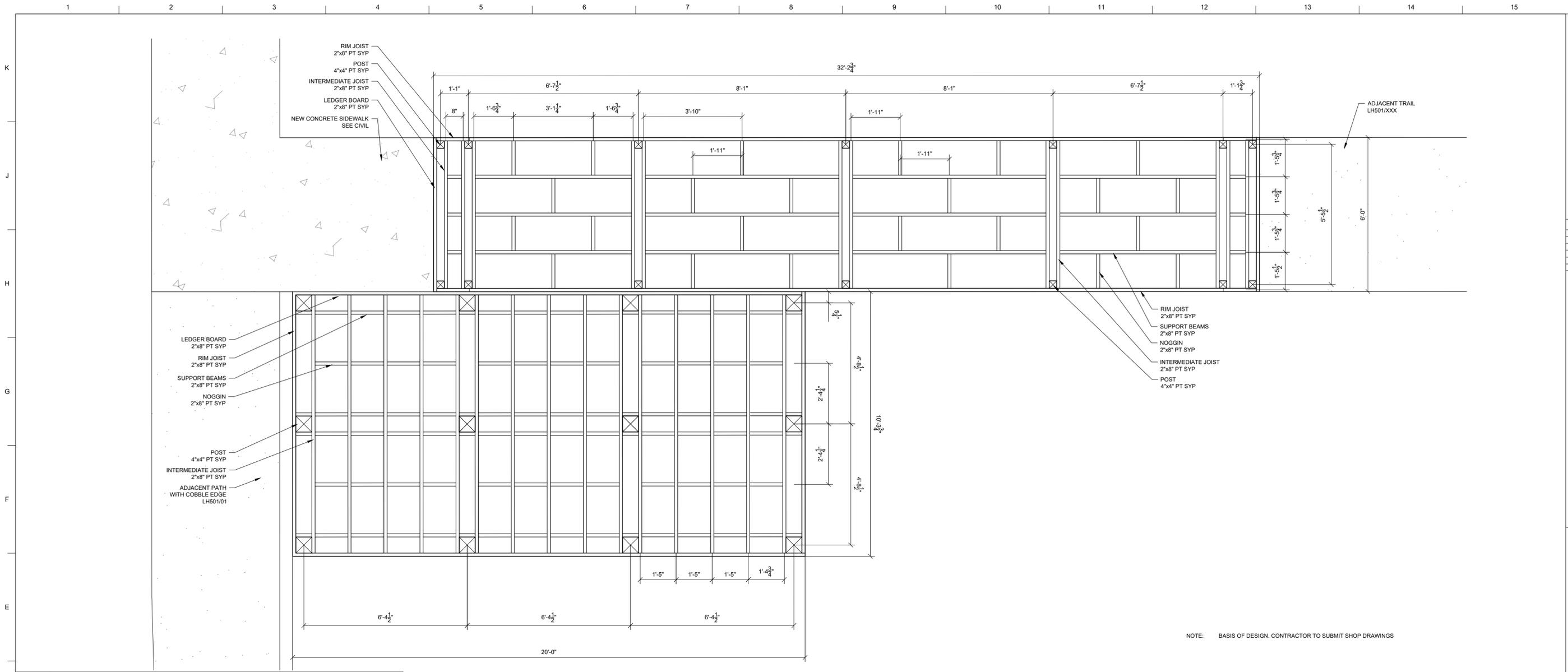
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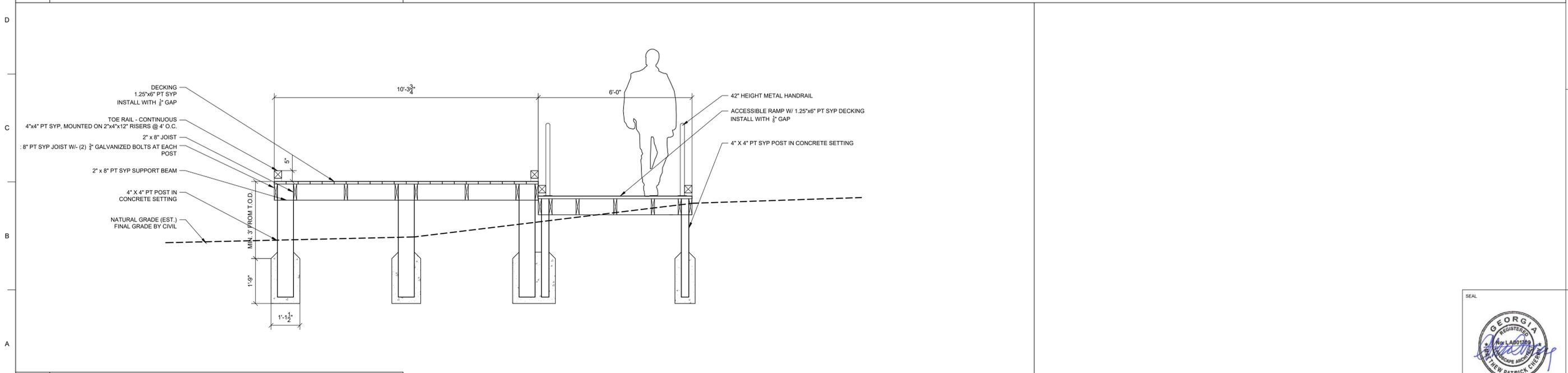
LOCATION
100 Dunwoody Road
Avondale Estates, GA 30002



FOR CONSTRUCTION



1 OVERLOOK FRAMING PLAN
SCALE: 1/2" = 1'-00"



2 OVERLOOK SECTION B-B'
SCALE: 1/2" = 1'-00"

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OVERLOOK CONSTRUCTION DETAILS

JOB NAME
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ISSUE DATE
04/16/2021

SCALE (IN G.)

LOCATION
100 Embassy Road
Avondale Estates, GA 30002

JOB NO.
11426-00

DWG. NO.
LH504



NOTE: BASIS OF DESIGN. CONTRACTOR TO SUBMIT SHOP DRAWINGS

FOR CONSTRUCTION

