ALL CONSTRUCTION OF UTILITIES TO BE SCHEDULED AND APPROVED BY THE OWNER PRIOR TO ANY DISRUPTION OF THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EROSION AND

TAKEN TO PROTECT DOWNSTREAM AND OFF-SITE LAND FROM EROSION AND SEDIMENT DAMAGE DUE TO GRADING OPERATIONS. APPROVED EROSION AND SEDIMENT CONTROL MEASURES SHALI BE INSTALLED PRIOR TO ANY CLEARING, GRADING OR OTHER LAND DISTURBANCE ACTIVITY AND SHALL BE MAINTAINED IN ACCORDANCE TO CURRENT EDITION OF THE MANUAL OF EROSION

SEDIMENT CONTROL AND ALL REASONABLE MEASURES SHALL BE

AND SEDIMENT CONTROL IN GEORGIA. WHERE NECESSARY, THE CONTRACTOR SHALL PROVIDE SHORING OR OTHER APPROVED METHOD IN ORDER TO MAKE THE WORK

AREA STABLE AND SAFE. ALL WORK PERFORMED BY THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY

THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ACCESS

FOR ALL EMERGENCY VEHICLES AT ALL TIMES. TOPS OF ALL EXISTING STRUCTURES THAT ARE TO REMAIN WITHIN THE AREA REQUIRING RE-GRADING SHALL BE RAISED OR LOWEREI AS REQUIRED TO MEET NEW GRADES. PRIOR TO ANY ADJUSTMENT THE CONTRACTOR IS TO COORDINATE SUCH WORK WITH THE

10. ALL SURFACE AREAS TO HAVE POSITIVE DRAINAGE AT THE CONCLUSION OF THE CONTRACT

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION WORK. MATERIALS SHALL BE REMOVED FROM THE SITE AS SOON AS POSSIBLE AND SHALL NOT BE ALLOWED TO ACCUMULATE. CONTRACTOR SHALL BE RESPONSIBLE FOR HAULING OFF AND DISPOSING OF ANY DEBRIS TO AN APPROVED STATE LICENSED

12. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND INTO STORM STRUCTURES.

13. CONTRACTOR TO MAINTAIN ALL STORM DRAINAGE STRUCTURES DURING THE COURSE OF CONSTRUCTION

THE CONTRACTOR IS TO VERIFY ALL LOCATIONS AND/OR TYPES OF UTILITIES NEAR THE PROJECT LIMITS BEFORE CONSTRUCTION BEGINS. ANY DAMAGE CAUSED BY THE CONTRACTOR'S PERSONNEL OR EQUIPMENT TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR TO OWNERS SPECIFICATIONS. SUCH DAMAGE SHALL BE THE CONTRACTORS EXPENSE TO PAY FOR ALL MATERIALS, LABOR AND NECESSARY

15. CONTRACTOR SHALL ACQUIRE ALL PERMITS NECESSARY FOR THE CONSTRUCTION OF THIS PROJECT.

A SEPARATE BUILDING PERMIT SHALL BE OBTAINED FOR ALL RETAINING WALLS GREATER THAN 4 FEET IN HEIGHT AND ALL RETAINING WALLS USED AS A DAM PRIOR TO CONSTRUCTION OF

17. LAND DISTURBANCE TO BE LIMITED TO THOSE AREAS NEEDED FOR PROPOSED WORK.

18. ALL BUFFERS AND TREE SAVE AREAS SHALL BE CLEARLY IDENTIFIED WITH FLAGGING AND/OR FENCING PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE.

19. NOTIFY THE CITY OF BROOKHAVEN INSPECTOR 24 HOURS BEFORE BEGINNING OF EVERY PHASE OF CONSTRUCTION.

CITY OF BROOKHAVEN FOR ANY LAND DISTURBING ACTIVITIES WITHIN WETLAND AREAS. IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER TO CONTACT THE APPROPRIATE REGULATORY AGENCY FOR APPROVAL OF ANY WETLAND AREA DISTURBANCE.

APPROVAL OF THESE PLANS DOES NOT CONSTITUTE APPROVAL BY

WETLAND CERTIFICATION: THE DESIGN PROFESSIONAL, WHOSE SEAL APPEARS HEREON, CERTIFIES THE FOLLOWING:

a. THE NATIONAL WETLAND INVENTORY DO NOT INDICATE SENSITIVE AREAS WITHIN THE PROJECT AREA.

A LETTER OF "NO PERMIT NEEDED" HAS BEEN ISSUED BY THE ARMY CORPS OF ENGINEERS FOR THIS PROJECT.

### AREA TABLE

3,630,024 SQ.FT. OR 83.3339 AC. 1,602,679 SQ.FT. OR 36.7924 AC.

TOTAL AREA 5,232,703 SQ.FT. OR 120.1263 AC.

### OWNER/PRIMARY PERMITEE:

CONTACT: CHRISTIAN SIGMAN, CITY MANAGER CITY OF BROOKHAVEN 4362 PEACHTREE ROAD NE BROOKHAVEN, GEORGIA 30319 PHONE: (404) 637-0513

CHRISTIAN.SIGMAN@BROOKHAVENGA.GOV

24-HOUR CONTACT:

CONTACT: LEE CROY, PARKS MANAGER CITY OF BROOKHAVEN PHONE: 678 576 9846

EMAIL:LEE.CROY@BROOKHAVENGA.GOV

LEAD DESIGN PROFESSIONAL

**CONTACT: GE GRACE ZHANG, RLA CLARK PATTERSON LEE** 3011 SUTTON GATE DRIVE, SUITE 130 SUWANEE, GEORGIA 30024

OFFICE: (770) 831-9000 EMAIL: GZHANG@CPLTEAM.COM



1396 BELLS FERRY ROAD MARIETTA. GEORGIA 30066 PHONE NO. (770) 421-1927





2) The amount of land cleared during construction must be kept to a minimum;

issued by the City of Brookhaven for this project;

Sedimentation Control Unit, NonPoint Source Program, at (404) 651-8550.

cc: John Arthur Ernst, Jr., Mayor, City of Brookhaven

ENVIRONMENTAL PROTECTION DIVISION

RE: Request for Variance under Provisions O.C.G.A. 12-7-6(b)(15)

City of Brookhaven - Murphey Candler Park - South Trail

(1551 West Nancy Creek Drive NE, Brookhaven, GA 30319)

Törren Hoyord, CE, WPIT, Corblu Ecology Group, LLC

Richard W. Whiteside, PhD, CWB, CSE, Corblu Ecology

Christian Sigman, City Manager, City of Brookhaven Mick Smith, EPD Mountain District - Atlanta

Ben Ruzowicz, Georgia Soil and Water Conservation Commission

3) All disturbed areas must be seeded, fertilized and mulched as soon as the final grade is

4) A double row of Georgia DOT type "C" silt fence or an approved high performance silt fence must be installed between the land disturbing activities and State waters where appropriate;

5) Buffer variance conditions must be incorporated into any Land Disturbing Activity Permit

6) This project must be conducted in strict adherence to the approved erosion and sedimentation

7) In accordance with the EPD Buffer Mitigation Guidance document, the City of Brookhaven

The granting of this approval does not relieve you of any obligation or responsibility for complying

If you have questions concerning this letter, please contact Frank M. Carubba, Erosion and

Richard E. Dunn, Director

2 Martin Luther King, Jr. Drive

Atlanta, Georgia 30334

404-656-4713

JUN 1 6 2020

The Georgia Environmental Protection Division's Watershed Protection Branch has reviewed your

stream buffer variance application for the subject project. The review was conducted to consider the

potential impacts of the proposed project's encroachment on State waters within the context of the Georgia

Erosion and Sedimentation Act. This review, and the variance granted herein, is limited to only the

request(s) in the stream buffer variance application for permission to conduct land-disturbing activities

within 25-foot areas located immediately adjacent to the banks of State waters where vegetation has been

wrested by normal stream flow or wave action. To the extent there is a request in the buffer variance

application to conduct land-disturbing activities within 25-foot areas located immediately adjacent to State

waters where there is no vegetation that has been wrested by normal stream flow or wave action, such

25-foot buffer adjacent to State waters as delineated in your application dated April 1, 2020 and the revised

Erosion, Sedimentation and Pollution Control Plans dated May 8, 2020. Buffer impacts authorized by

this variance must be completed within five years of the date of this approval letter. If the approved

buffer impacts cannot be completed prior to the expiration date, a time extension must be requested in

writing at least 90 calendar days prior to the expiration date with justifiable cause demonstrated.

properly protected until a permanent vegetative stand is established;

OWNER: CITY OF BROOKHAVEN

ADDRESS: 1551 WEST NANCY CREEK DRIVE

Authorization for the above referenced project is subject to the following conditions:

25' STATE BUFFER VARIANCE APPROVAL LETTER

Pursuant to DNR Rule 391-3-7-.05(2)(f), authorization is hereby granted to encroach within the

1) All graded slopes 3:1 or greater must be hydroseeded and covered with Georgia DOT approved

wood fiber matting or coconut fiber matting. If not hydroseeded, Georgia DOT approved

matting that has been incorporated with seed and fertilizer must be used. All slopes must be

request has not been considered, and is not included as a part of the variance granted herein.

with the provisions of any other law or regulations of any federal, local or additional State authority, nor

does it obligate any of the aforementioned to permit this project if they do not concur with its concept of

development/control. As a delegated "Issuing Authority," the City of Brookhaven is expected to ensure

that the stream buffer variance requirements are met for this project and is empowered to be more

control plan and any Land Disturbing Activity Permit issued by the City of Brookhaven; and

will purchase 268 stream mitigation credits from an approved mitigation bank located within

the primary service area of the proposed project. Stream mitigation credits must be purchased

at least 14 days prior to any land disturbance on site and the sale receipts verifying the transactions must be forwarded to the EPD by return receipt certified mail or similar service.

achieved. Also, these disturbed areas must be protected until permanent vegetation is

Mr. Mark Cain

Clark Patterson Lee (CPL)

restrictive in this regard.

File: BV-044-20-06

Mr. Mark Cain

Dear Mr. Cain:

Clark Patterson Lee (CPL)

Suwannee, GA 30024

3011 Sutton Gate Drive, Suite 130

Brookhaven, DeKalb County

SITE DATA:

2016 SURVEY & 2019 UPDATED TREE SURVEY

TERRAMARK LAND SURVEYING, INC.

PARCEL: 1833101005

ZONING: R-100

ACREAGE: 120.1263 ACRES

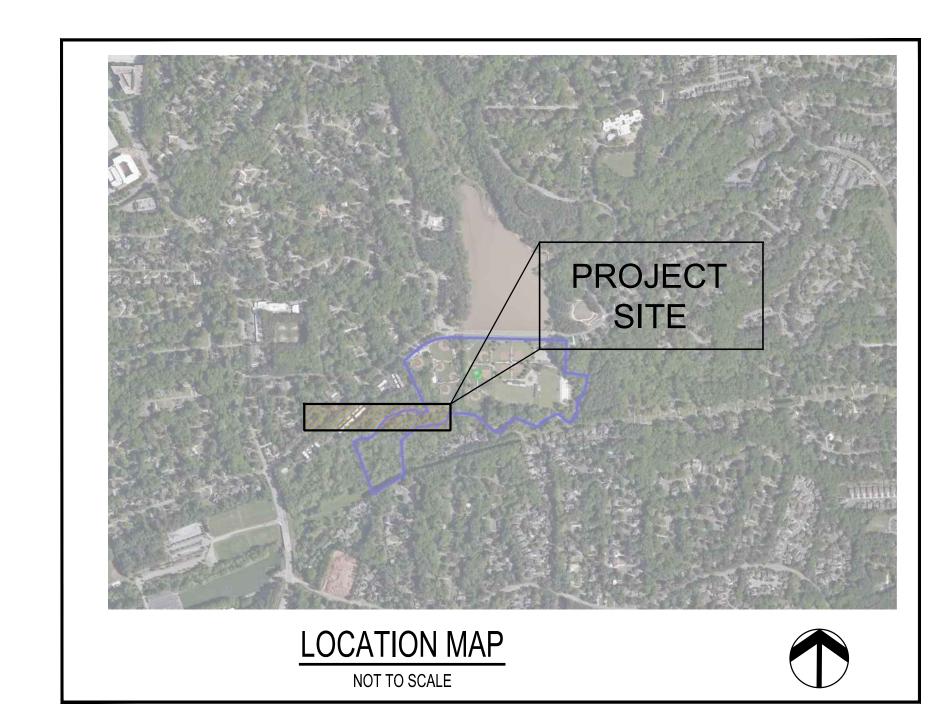
TRACT 2 TOTAL AREA: 36.79 AC

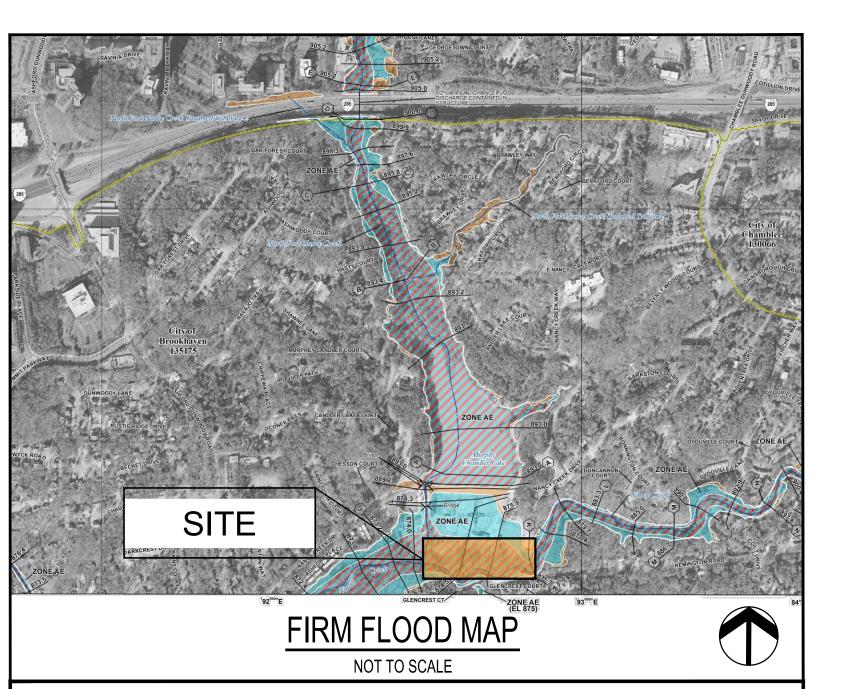
TOTAL DISTURBED AREA: .0.57 AC

# CITY OF BROOKHAVEN MURPHY CANDLER PARK SOUTH TRAIL



# DEKALB COUNTY, GEORGIA





**FLOOD NOTE** 

ACCORDING TO THE "FIRM" (FLOOD INSURANCE RATE MAP) OF DEKALB COUNTY. GEORGIA (PANEL NUMBER 13089C0012K), DATED AUGUST 15, 2019; A PORTION OF THIS PROPERTY LIES WITHIN A SPECIAL FLOOD HAZARD AREA.

### 25' BUFFER VARIANCE NOTES:

A GEORGIA EPD APPLICATION FOR A 25-FOOT VEGETATIVE BUFFER ENCROACHMENT HAS BEEN SUBMITTED FOR THIS PROJECT AND ANY CONDITIONS ARE PENDING UNTIL APPROVAL HAS BEEN GRANTED.

The City of Brookhaven does not certify the accuracy of these drawings. In approving these drawings and specifications, the City has relied upon the accuracy of the information and representations furnished herein by the engineer, or architect, and/or applicant. The City of Brookhaven assumes no liability or responsibility for the accuracy of the representations provided.

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSIO

Jeffrey W Mueller

### DO NOT BEGIN CONSTRUCTION

with the City Land Development Inspector. Call 404/637-0500 to schedule.

### SURVEY NOTES

A TRIMBLE "S" SERIES TOTAL STATION WAS USED TO OBTAIN ANGULAR MEASUREMENTS AND DISTANCE MEASUREMENTS.

A TRIMBLE R-10 DUAL FREQUENCY GPS UNIT WAS USED FOR ESTABLISHING CONTROL. A NETWORK ADJUSTED RTK SURVEY WAS PERFORMED AND ADJUSTED BY RELATIVE POSITIONAL ACCURACY.

TRACT 1 HAS BEEN CALCULATED FOR CLOSURE AND IS ACCURATE WITHIN ONE FOOT IN 697,879 FEET.

TRACT 2 HAS BEEN CALCULATED FOR CLOSURE AND IS ACCURATE WITHIN ONE FOOT IN 239,751 FEET.

THE FIELD DATA UPON WHICH THIS SURVEY IS BASED HAD A CLOSURE OF ONE FOOT IN 31.741 FEET AND AN ANGULAR ERROR OF 1" PER ANGLE POINT AND WAS ADJUSTED USING THE COMPASS RULE.

THE BEARINGS SHOWN ON THIS SURVEY ARE COMPUTED ANGLES BASED ON A GRID BEARING BASE (GA WEST ZONE) NAD83.

OF THIS SURVEY ARE IN U.S. SURVEY FEET.

CONTOURS ARE SHOWN AT ONE FOOT INTERVALS. ELEVATIONS ARE BASED ON RTK

FIELD WORK FOR THIS PROPERTY WAS COMPLETED ON AUGUST 17, 2016

DISCLAIMERS:

INFORMATION REGARDING SIZE, LOCATION, AND SPECIES OF EXISTING TREES IS SHOWN HEREON. THERE IS NO CERTAINTY OF THE SIZE AND SPECIES OF THE SAID TREES WITHOUT VERIFICATION FROM THE DESIGNATED ARBORIST BY THE LOCAL REGULATORY AUTHORITY. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, HIS CONTRACTORS, AND/OR HIS AGENTS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION SHOWN HEREON EXCEPT BY APPROVAL OF

THIS SURVEY MAY NOT REPRESENT OFFSITE PAINT STRIPING TO THE ACCURACY REQUIRED FOR LANE DESIGN. TERRAMARK LOCATES THE EDGE OF PAVING AND CRITICAL POINTS TO REFLECT ACCURATE TOPOGRAPHIC DATA ONLY. ACCURACY OF PAINT LOCATIONS SHOULD BE VERIFIED WITH SURVEYOR PRIOR TO USING THIS SURVEY FOR DESIGN.

LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES IS SHOWN HEREON. THERE IS NO CERTAINTY TO THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING SHOWN HEREON MAY BE INACCURATE AND UTILITIES AND STRUCTURES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION SHOWN HEREON AS TO SUCH UNDERGROUND

UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THE PIPE INFORMATION SHOWN HEREON.

REVIEW BY LOCAL JURISDICTION OFFICIALS. IT IS THE RESPONSIBILITY OF THE LOCAL AUTHORITY TO DETERMINE SPECIFIC WATER CLASSIFICATION. THEREFORE TERRAMARK LAND SURVEYING ACCEPTS NO RESPONSIBILITY IN THE IDENTIFICATION OF SAID WATERS OR BUFFERS IDENTIFIED OR NOT IDENTIFIED HEREON.

AND TO THE WATER OF CREEKS AND BRANCHES CROSSING OR ADJOINING SUBJECT PROPERTY AND THE NATURAL FLOW THEREOF, FREE FROM DIMINUTION OR POLLUTION.

ENTITY NAMED HEREON. THIS SURVEY DOES NOT EXTEND TO ANY UNNAMED PERSON. PERSONS OR ENTITY WITHOUT THE EXPRESS CERTIFICATION BY THE SURVEYOR NAMING SAID PERSON, PERSONS OR ENTITY.

### TITLE NOTES

ACCORDING TO THE "FIRM" (FLOOD INSURANCE RATE MAP) OF DEKALB COUNTY, GEORGIA (PANEL NUMBERS 13089C0012J & 13089C0014J), DATED MAY 16, 2013; A PORTION OF THIS PROPERTY LIES WITHIN A SPECIAL FLOOD HAZARD AREA. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT, WHICH COULD REVEAL ENCUMBRANCES NOT SHOWN ON THIS SURVEY. SUBJECT PROPERTY HAS ACCESS TO THE PUBLIC RIGHT OF WAY OF WEST NANCY CREEK DRIVE, CANDLER LAKE WEST & CANDLER LAKE

### REFERENCE MATERIAL

SHEET INDEX

SHEET TITLE

SHEET

C4.5B

C7.5A

C5.5

C0.5 COVER SHEET

C4.5A | LAYOUT PLAN

C8.5A | SITE DETAILS

C8.5B1 | SITE DETAILS - BRIDGE

C8.5B2 | SITE DETAILS - BRIDGE

C8.5C1 | SITE DETAILS - BRIDGE

C8.5C2 | SITE DETAILS - BRIDGE

C8.5D | SITE DETAILS - BRIDGE SPECS

C1.5 | EXISTING CONDITIONS

C2.5 CONSTRUCTION ITEMS

STAKING PLAN

**GRADING PLAN** 

C3.5 DEMO AND TREE PROTECTION PLAN

EROSION CONTROL NOTES, PLAN AND DETAILS

**EROSION CONTROL NOTES, PLAN AND DETAILS** 

EROSION CONTROL NOTES, PLAN AND DETAILS

EROSION CONTROL NOTES, PLAN AND DETAILS

C0.5A | KEY SHEET

PLAT FOR CANDLER LAKE ESTATES, UNIT ONE RECORDED IN PB. 45 PG. 14 AMONG THE LAND RECORDS OF DEKALB COUNTY

2. PLAT FOR ASHWOODY SUBDIVISION RECORDED IN PB. 45 PG. 35 AFORESAID RECORDS

3. PLAT FOR CANDLER LAKE VIEW SUBDIVISION RECORDED IN PB. 58 PG. 161 AFORESAID RECORDS

4. FINAL PLAT FOR ASHFQRD GLEN, UNIT 4 RECORDED IN PB. 84 PG. 29 AFORESAID RECORDS

. PLAT FOR FOX GLEN SUBDIVISION RECORDED IN PB. 46 PG. 87 AFORESAID RECORDS

CONDOMINIUM PLAT FOR ASHFORD LAKE CONDOMINIUM ASSOCIATION RECORDED IN PB. 6 PG. 9 AFORESAID RECORDS

. DEED FOR ASHFORD PLACE CONDOMINIUM ASSOCIATION RECORDED IN DB. 3529 PG. 379 AFORESAID RECORDS

### UTILITY PROVIDERS

10 PEACHTREE STREET NE ATLANTA, GA 30309 MARTIN MAREK

GEORGIA POWER COMPANY 823 JEFFERSON STREET ATLANTA, GA 30318 (404) 506-4569 **İKE ĆOLLINS** 

WATER

1580 ROADHAVEN DR. STONE MOUNTAIN, GA. 30083 **JEFÉ WOODS** (770) 724-1490

JDWOODS@DEKALBCOUNTYGA.GOV

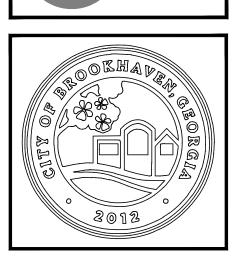
DENNIS RAINEY CENTURYLINK

ZAYO FIBER SOLUTIONS LOUSVILL, CO 80027 (678) 666-2493

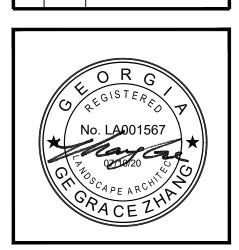
THE UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON LOCATION OF

UTILISURVEY, LLC 154 GRANT ROAD FAYETTEVILLE, GA. 30215 PHONE: 404-312-6912

THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA. EITHER IN- SERVICE OR ABANDONED. UNDERGROUND UTILITIES NOT OBSERVED OR LOCATED UTILIZING THIS TECHNIQUE MAY EXIST ON THIS SITE BUT ARE NOT SHOWN, AND MAY BE FOUND UPON EXCAVATION. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED



DRAWINGS SCHEDUL 05/05 | State Buffer Comments - Sout 05/05 LDP - Natural Play Area 05/07 LDP - South Trail - Rev # 07/10 I DP - Pool Parking





## COMMUNICATION

208 S. AKARD ST.

**DALLAS, TX 75202** 

(210) 821-4105

**ANGELO HINES** (770) 784-3972

(770) 559-6879

SANDRA ANDREWS

LEVEL 3 COMMUNICATIONS, INC.

1025 ELDORADO BOULEVARD

BROOMFIELD, CO 80021

(877) 366-8344 EXT. 3

COMCAST

ATLANTA GAS LIGHT COMPANY AGL (404) 584-4126

DEKALB COUNTY WATER VERIZON / MCI AND SEWER DEPARTMENT 2400 N GLENVILLE RICHARDSON, TX 75082 (478) 471-1042

> 100 CENTURYLINK DRIVE MONROE, LA 71203 (888) 723-8010

400 CENTENNIAL PKWY, SUITE 200 NIC FLORES

### UTILITY NOTES

ATTENTION: HANS WONNEBERGER

THE UNDERGROUND UTILITIES (EXCEPT THE LOCATION OF EXISTING DRAINAGE. SEWER, AND IRRIGATION UTILITIES AS WELL AS UNDERGROUND STORAGE TANKS) WERE LOCATED BY UTILISURVEY, LLC, UTILIZING RADIO FREQUENCY TECHNIQUE AND IN ACCORDANCE TO LEVEL "B" UTILITY LOCATION CRITERIA. THIS TECHNIQUE IS CAPABLE OF LOCATING METALLIC UTILITIES AND TRACER WIRES. ANY NON- METALLIC UTILITIES (WITHOUT TRACER WIRE) ARE NOT LOCATED.

ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.

INFORMATION REGARDING MATERIAL AND SIZE OF UTILITIES IS BASED ON RECORDS ACQUIRED FROM THE UTILITY OWNERS.

DRAWN CHECKED

 $\mathbf{\Omega}$ 

SCALE

SHEET TITLE **COVER** SHEET

PROJECT NUMBER

15092.00 C0.5

Permit # LDP20-00008

DRAWING NUMBER

### 1-800-282-7411 Know what's below. Call before you dig.

FAX. NO. (770) 421-0552 WWW.TERRAMARK.COM C. O. A.# LSF000810

CERTIFICATION NUMBER \_\_\_\_\_0000015136 ISSUED: 08/18/2018 EXPIRES: 08/18/2021

Level II Certified Design Professional before the on-site pre-construction meeting

ALL HORIZONTAL DISTANCES SHOWN ARE GROUND DISTANCES. MEASURING UNITS

GLOBAL POSITIONING SYSTEMS OBSERVATION AND ARE RELATIVE TO NAVD 88 DATUM

INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER, AND THE LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND STRUCTURES HIS CONTRACTORS, AND/OR HIS AGENTS SHALL HEREBY DISTINCTLY UNDERSTAND

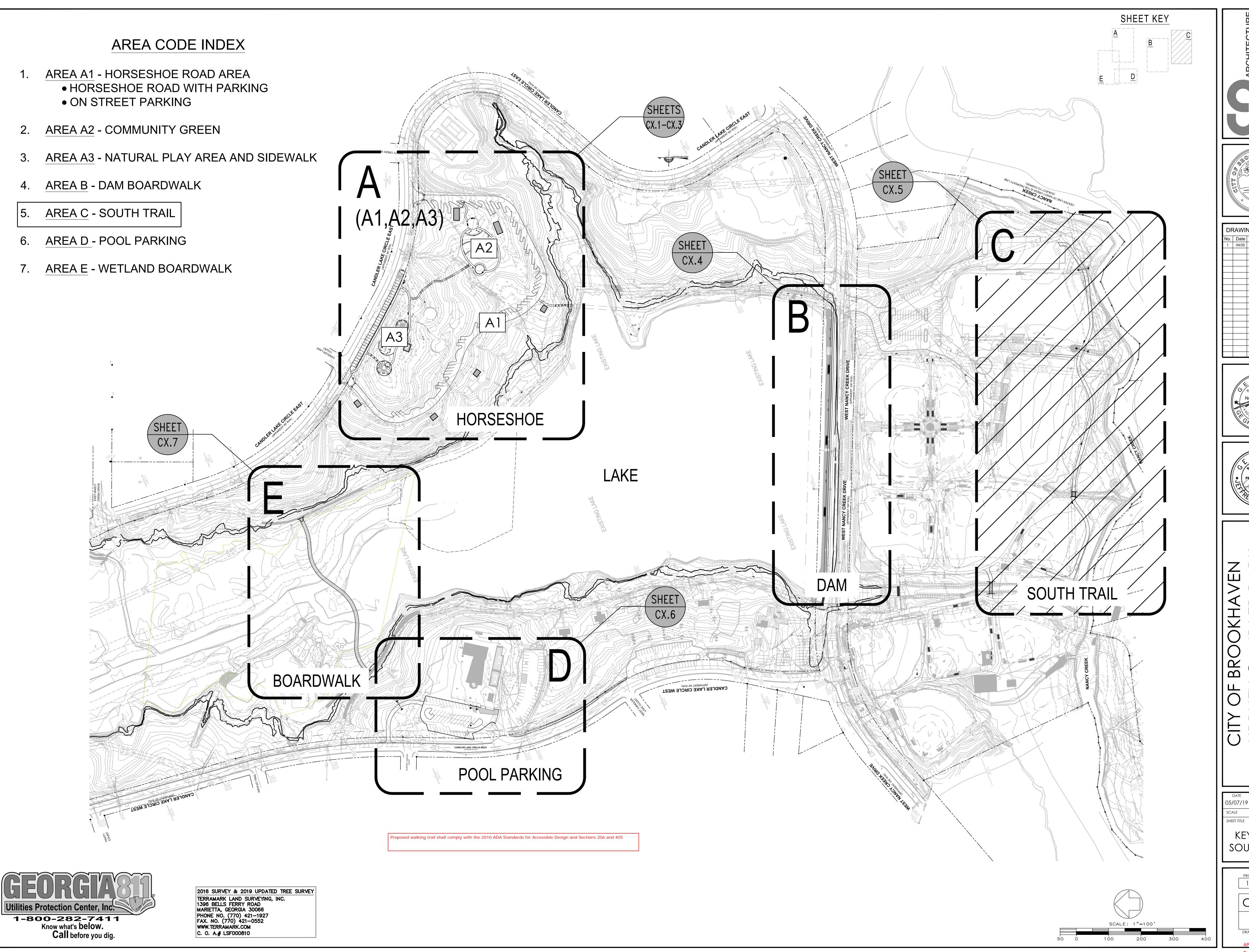
INFORMATION REGARDING STORM SEWER AND SANITARY SEWER AS SHOWN HEREON. IS BASED ON OBSERVATIONS TAKEN BY TERRAMARK EMPLOYEES AT THE GROUND ELEVATION OF THE EXISTING STRUCTURE. TERRAMARK EMPLOYEES ARE NOT AUTHORIZED TO ENTER A CONFINED SPACE SUCH AS A STRUCTURE THEREFORE, THERE IS NO CERTAINTY OF THE PIPE SIZES AND PIPE MATERIAL THAT ARE SHOWN ON THIS SURVEY. EXCAVATION BY A CERTIFIED CONTRACTOR IS THE ONLY WAY TO VERIFY PIPE SIZE AND MATERIAL. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, HIS CONTRACTORS, AND/OR HIS AGENTS SHALL HEREBY DISTINCTLY

STATE WATERS AND BUFFERS AS SHOWN OR NOT SHOWN HEREON ARE SUBJECT TO

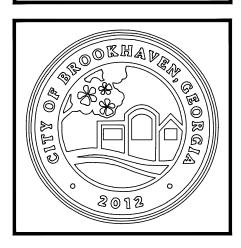
PROPERTY IS SUBJECT TO RIGHTS OF UPPER AND LOWER RIPARIAN OWNERS IN

THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON, PERSONS OF

TERRAMARK LAND SURVEYING, INC. DOES NOT WARRANT THE EXISTENCE OR NON -EXISTENCE OF ANY WETLANDS OR HAZARDOUS WASTE IN THE SURVEY



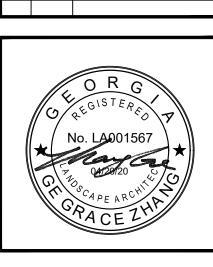


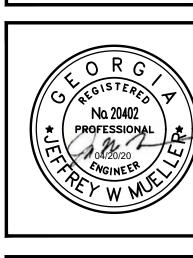


RAWINGS SCHEDULE

Date Description

04/20 LDP Submittal





TY OF BROOKHAVEN
RPHEY CANDLER PARK
S1 W. NANCY CREEK DRIVE NE

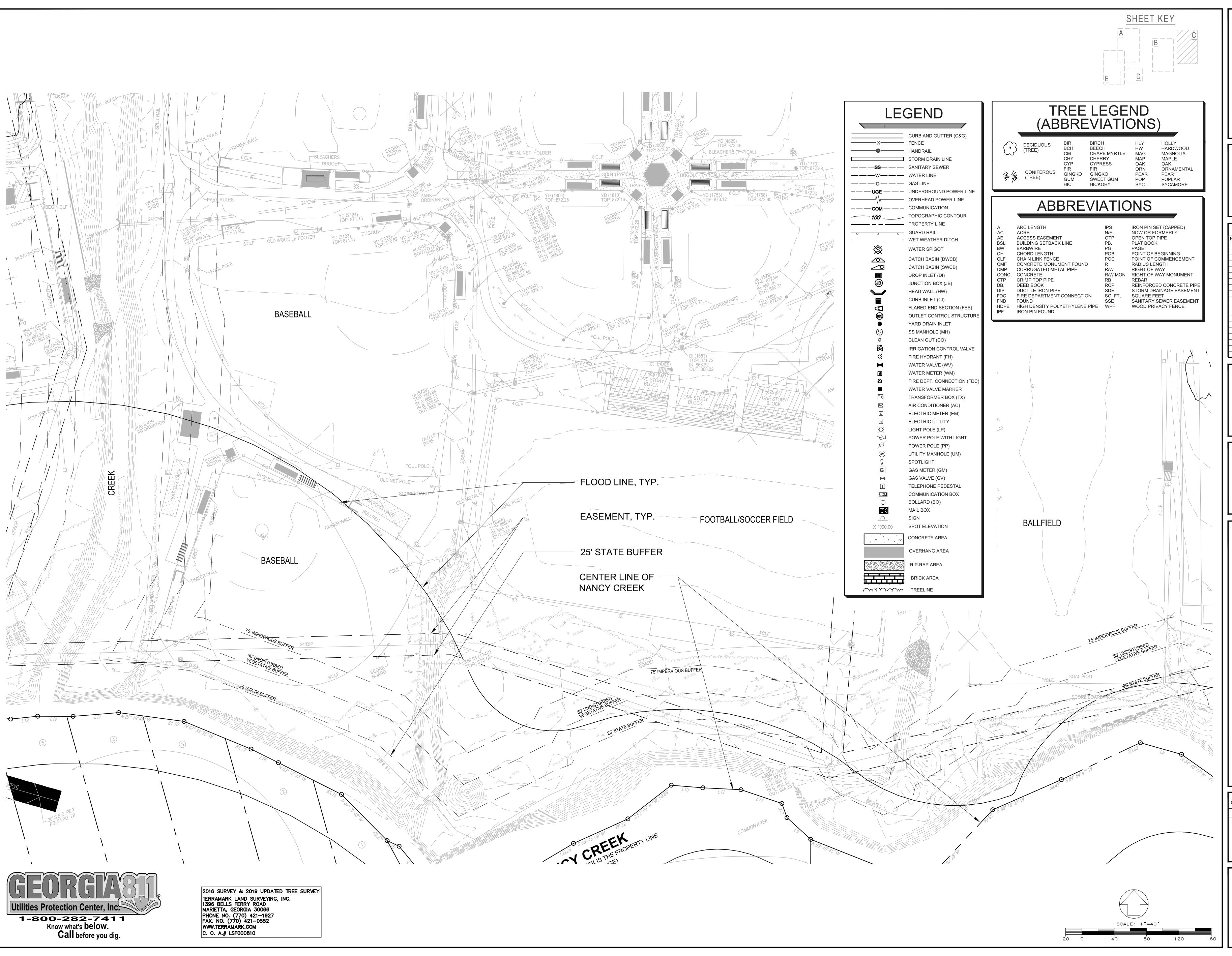
DATE DRAWN CHECKED 05/07/19 BM GZ

SCALE

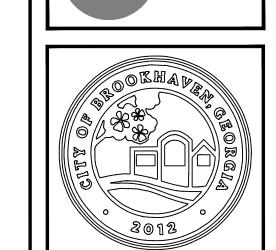
KEY SHEET SOUTH TRAIL

15092.00 C0.5A

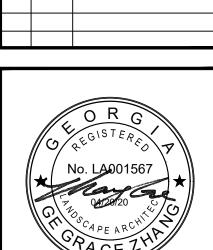
APPROVED PLAN 09/29
Permit # LDP20-00008



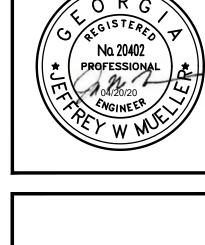




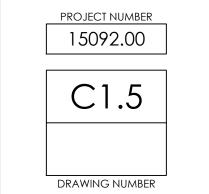
| /// |       | 2012          |
|-----|-------|---------------|
|     |       |               |
| ϽF  | RAWII | NGS SCHEDULE  |
| ο.  | Date  | Description   |
|     | 04/20 | LDP Submittal |
|     |       |               |
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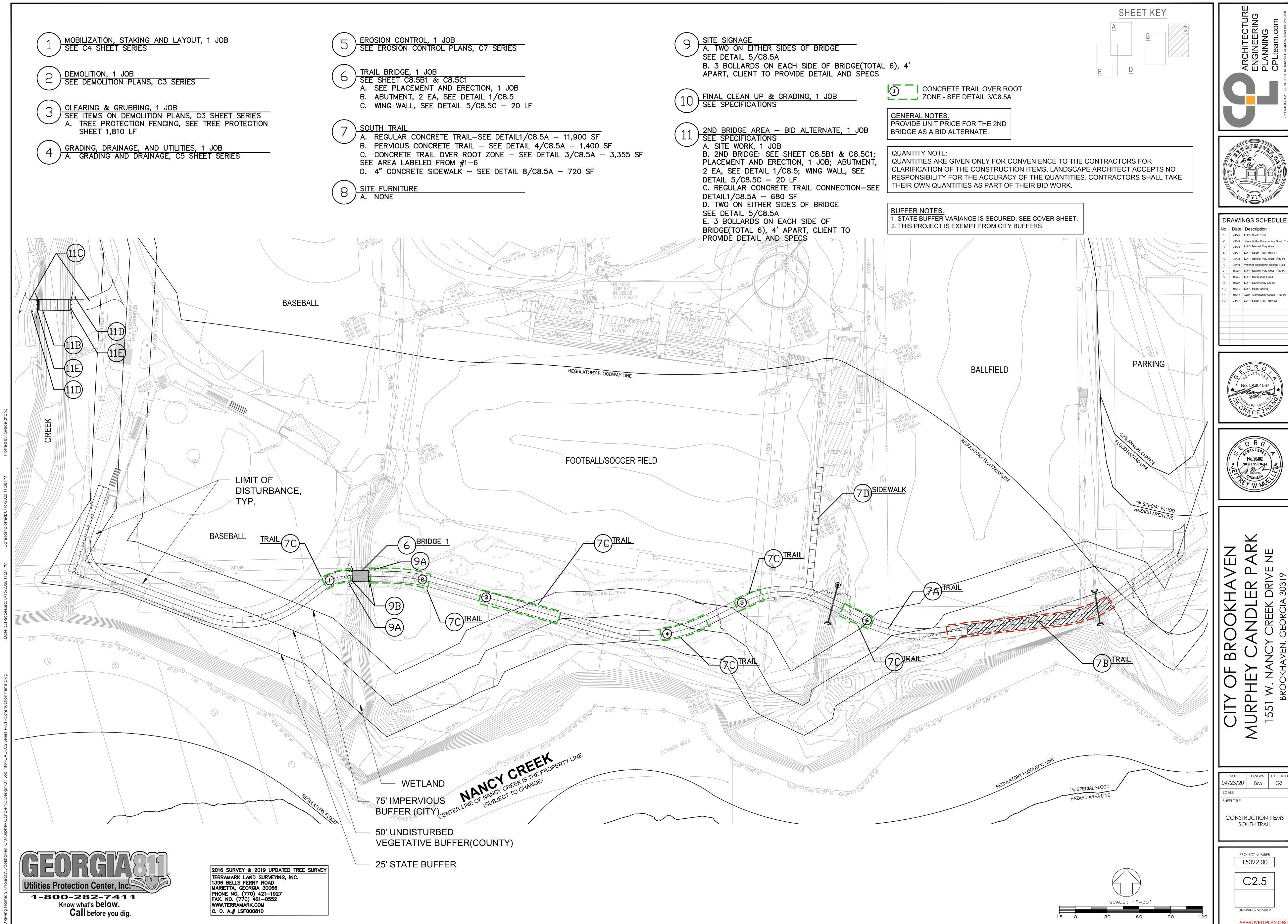


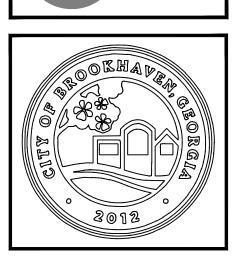




SCALE SHEET TITLE EXISTING CONDITIONS -AREA C (SOUTH TRAIL)





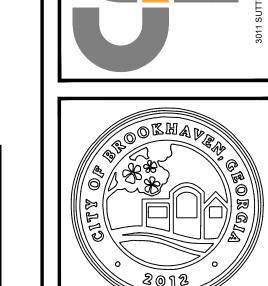




Permit # LDP20-00008

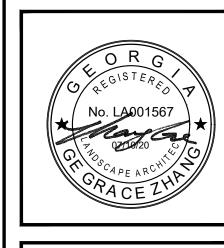
Call before you dig.

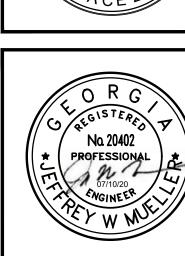
C. O. A.# LSF000810



|   |       | 2012                                |
|---|-------|-------------------------------------|
| F | RAWII | NGS SCHEDULE                        |
|   | Date  | Description                         |
|   | 04/20 | LDP - South Trail                   |
|   | 05/05 | State Buffer Comments - South Trail |
|   | 05/05 | LDP - Natural Play Area             |
|   | 05/07 | LDP - South Trail - Rev #1          |
|   | 05/28 | LDP - Natural Play Area - Rev #1    |
|   | 06/18 | Wetland Boardwalk Design-Build      |
| _ |       |                                     |

| 4  | 05/07 | LDP - South Trail - Rev #1       |
|----|-------|----------------------------------|
| 5  | 05/28 | LDP - Natural Play Area - Rev #1 |
| 6  | 06/18 | Wetland Boardwalk Design-Build   |
| 7  | 06/28 | LDP - Natural Play Area - Rev #2 |
| 8  | 06/30 | LDP - Horseshoe Road             |
| 9  | 07/07 | LDP - Community Green            |
| 10 | 07/10 | LDP - Pool Parking               |
| 11 | 08/17 | LDP - Community Green - Rev #1   |
| 12 | 08/17 | LDP - South Trail - Rev #2       |
|    |       |                                  |
|    |       |                                  |
|    |       |                                  |
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04/23/20 BM GZ SCALE

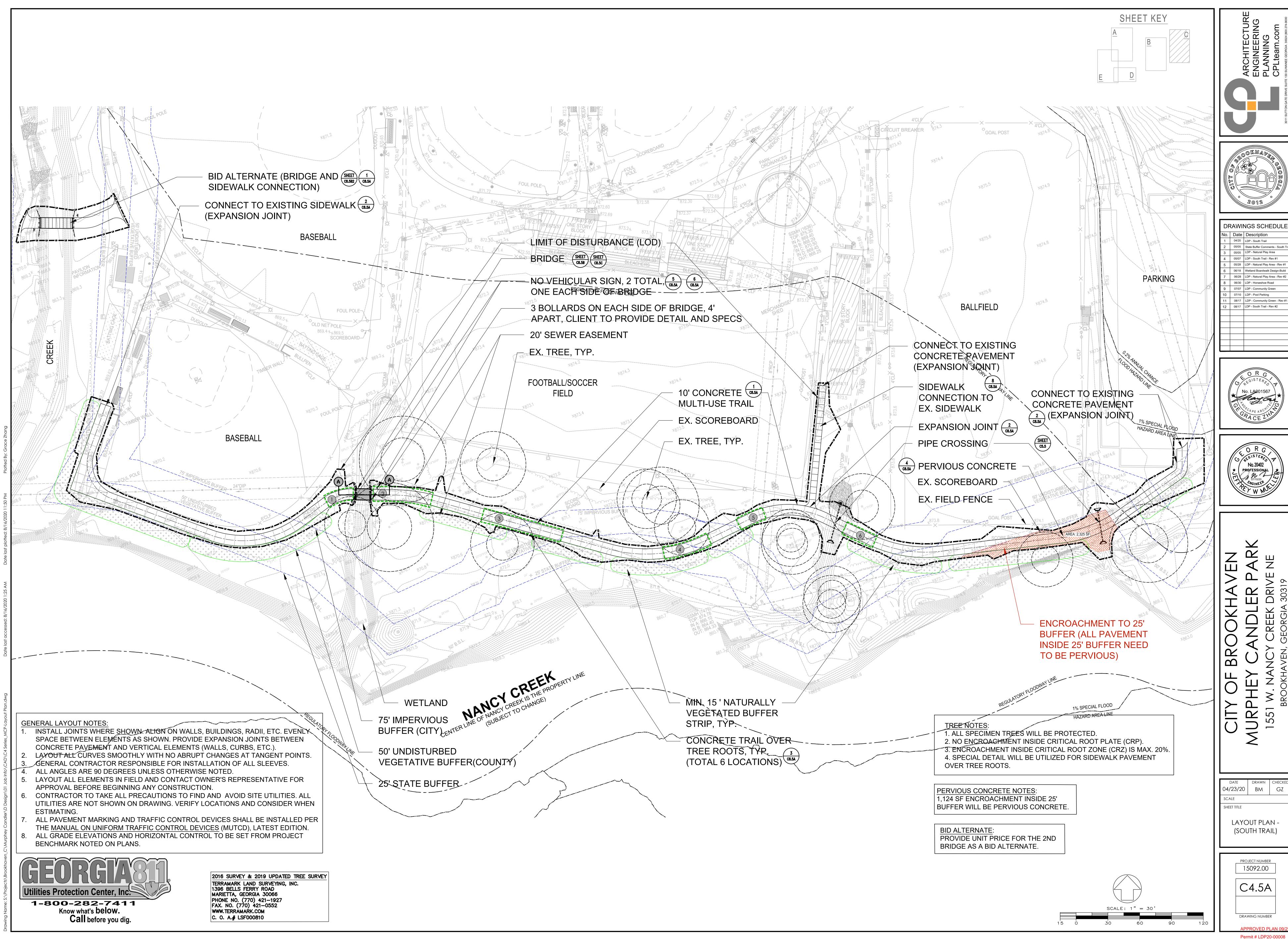
SHEET TITLE DEMO & TREE PROTECTION PLAN -(SOUTH TRAIL)

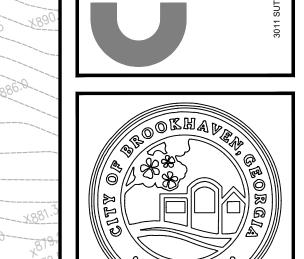
PROJECT NUMBER 15092.00

Permit # LDP20-00008

DRAWING NUMBER

60

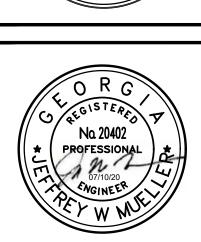




| 1  | O TILLY | 2012                                |
|----|---------|-------------------------------------|
| )F | RAWII   | NGS SCHEDULE                        |
| ). | Date    | Description                         |
|    | 04/20   | LDP - South Trail                   |
|    | 05/05   | State Buffer Comments - South Trail |
|    |         |                                     |

| 04/20 | LDP - South Trail                   |
|-------|-------------------------------------|
| 05/05 | State Buffer Comments - South Trail |
| 05/05 | LDP - Natural Play Area             |
| 05/07 | LDP - South Trail - Rev #1          |
| 05/28 | LDP - Natural Play Area - Rev #1    |
| 06/18 | Wetland Boardwalk Design-Build      |
| 06/28 | LDP - Natural Play Area - Rev #2    |
| 06/30 | LDP - Horseshoe Road                |
| 07/07 | LDP - Community Green               |
| 07/10 | LDP - Pool Parking                  |
| 08/17 | LDP - Community Green - Rev #1      |
| 08/17 | LDP - South Trail - Rev #2          |
|       |                                     |
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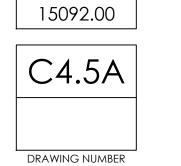




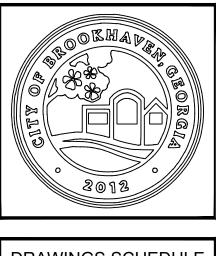




LAYOUT PLAN (SOUTH TRAIL)





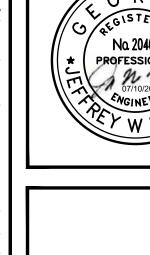


| DF  | DRAWINGS SCHEDULE |                                   |  |  |  |  |  |  |
|-----|-------------------|-----------------------------------|--|--|--|--|--|--|
| No. | Date              | Description                       |  |  |  |  |  |  |
| 1   | 04/20             | LDP - South Trail                 |  |  |  |  |  |  |
| 2   | 05/05             | State Buffer Comments - South Tra |  |  |  |  |  |  |
| 3   | 05/05             | LDP - Natural Play Area           |  |  |  |  |  |  |
| 4   | 05/07             | LDP - South Trail - Rev #1        |  |  |  |  |  |  |
| 5   | 05/28             | LDP - Natural Play Area - Rev #1  |  |  |  |  |  |  |
| 6   | 06/18             | Wetland Boardwalk Design-Build    |  |  |  |  |  |  |
| 7   | 06/28             | LDP - Natural Play Area - Rev #2  |  |  |  |  |  |  |
| 8   | 06/30             | LDP - Horseshoe Road              |  |  |  |  |  |  |
| 9   | 07/07             | LDP - Community Green             |  |  |  |  |  |  |
| 10  | 07/10             | LDP - Pool Parking                |  |  |  |  |  |  |
| 11  | 08/17             | LDP - Community Green - Rev #1    |  |  |  |  |  |  |
| 12  | 08/17             | LDP - South Trail - Rev #2        |  |  |  |  |  |  |
|     |                   |                                   |  |  |  |  |  |  |
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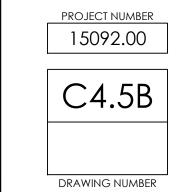






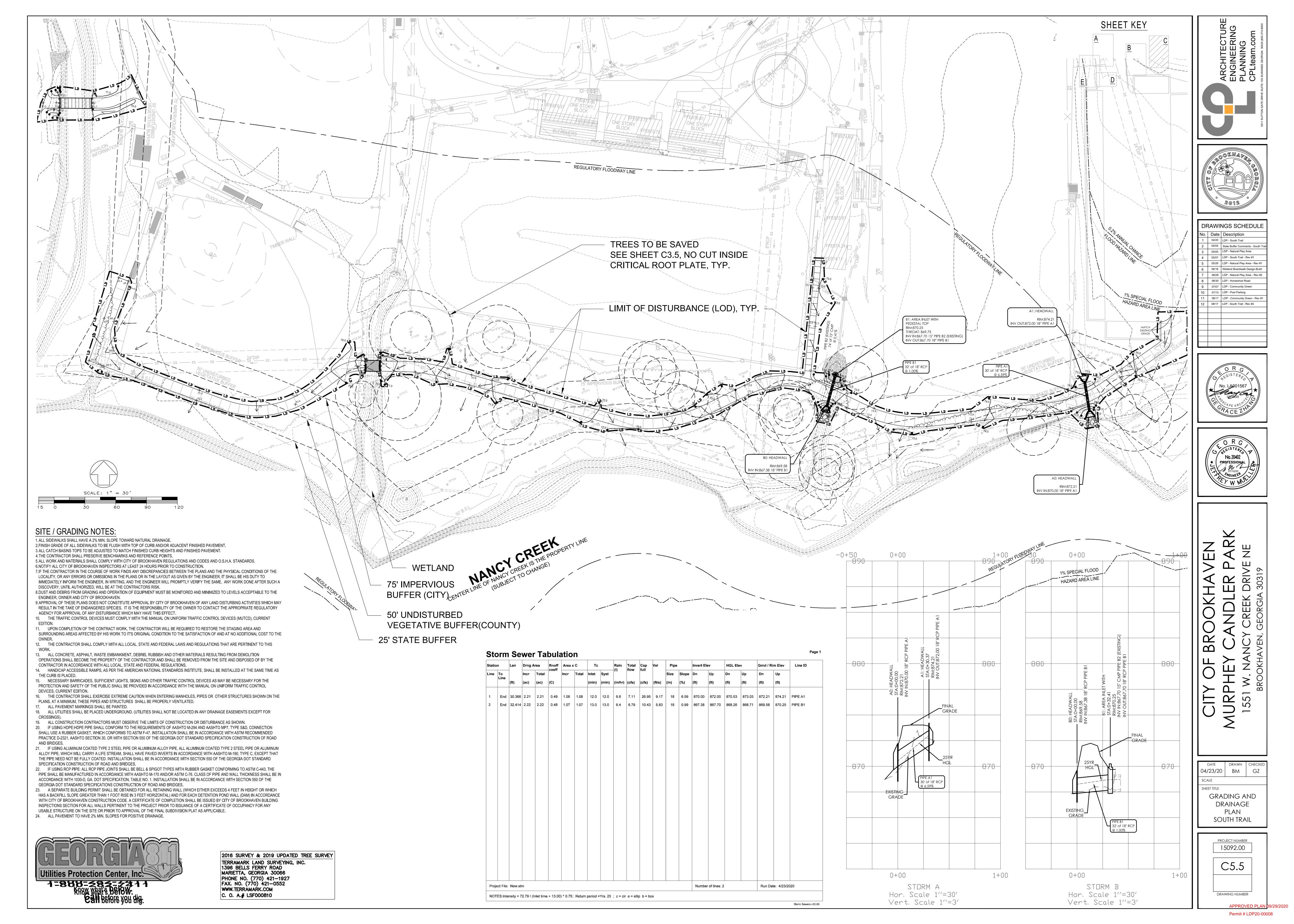
DATE DRAWN CHECKED 04/23/20 BM GZ

SHEET TITLE STAKING PLAN -(SOUTH TRAIL)



SCALE: 1" = 30'

60



### CHECKLIST # 2

JEFFREY W. MUELLER GSWCC LEVEL II CERT # 0000015136

### CHECKLIST # 3

NOT APPLICABLE - LIMITS OF DISTURBANCE < 50 ACRES

CHECKLIST # 4

24 HOUR LOCAL CONTACT LEE CROY - CITY OF BROOKHAVEN 4362 PEACHTREE ROAD BROOKHAVEN, GA 30319

LEE.CROY@BROOKHAVENGA.GOV PH: (678) 576 9846

CHECKLIST # 5

BROOKHAVEN, GA 30319 PH: (404) 637-0513 CHRISTIAN.SIGMAN@BROOKHAVENGA.GOV

### CHECKLIST # 6

CITY OF BROOKHAVEN

4362 PEACHTREE ROAD

DISTURBED AREA: 0.64 ACRES

### CHECKLIST # 7

33.907375°N

### -84.322089°W

CHECKLIST # 8 REFERENCE TITLE BLOCK ALL SHEETS

### CHECKLIST # 9

NATURE OF THE CONSTRUCTION ACTIVITY: CONSTRUCTION OF CONCRETE WALKWAY, BRIDGE AND ASSOCIATED STORMWATER

### CHECKLIST # 10

CHECKLIST # 11

**INFRASTRUCTURE** 

**REFERENCE COVER SHEET 7.5B** 

RECEIVING WATERS: NANCY CREEK, A WARM WATER, IMPAIRED

### CHECKLIST # 12

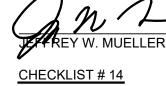
SITE VISIT CERTIFICATION:

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 SUPERVISION.

### CHECKLIST # 13 **CERTIFICATION:**

"I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST EROSION AND SEDIMENT CONTROL IN

MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR 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, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALL(S) AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001."



THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITH IN 7 DAYS AFTER INSTALLATION.

THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN, EXCEPT WHEN THE PRIMARY PERMITTEE HAS REQUESTED IN WRITING AND EPD HAS AGREED TO AN ALTERNATE DESIGN PROFESSIONAL, TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WHICH THE DESIGN PROFESSIONAL DESIGNED WITHIN SEVEN (7) DAYS AFTER INSTALLATION. THE DESIGN PROFESSIONAL SHALL DETERMINE IF THESE BMPS HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PRIMARY PERMITEE WITHIN SEVEN (7) DAYS AND THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED. DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

INSPECT THE INSTALLATION OF INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN SEVEN (7) DAYS

DATE OF INSPECTION

THE ES&PC PLAN.

I CERTIFY THE SITE WAS IN COMPLIANCE WITH THE ES&PC PLAN ON THE DATE OF INSPECTION.

### GSWCC LEVEL II DESIGN PROFESSIONAL #

INSPECTION REVEALED THE FOLLOWING DISCREPANCIES FROM

THESE DOCUMENTS MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.





### CHECKLIST # 15

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 COASTAL MARSHLAND BUFFER AS MEASURED FROM JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND

(I). EXCEPT AS PROVIDED IN PART IV. (III). BELOW, NO CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED WITHIN A 25 FOOT BUFFER ALONG THE BANKS OF ALL STATE WATERS, AS MEASURED HORIZONTALLY FROM THE POINT WHERE VEGETATION HAS BEEN WRESTED BY NORMAL STREAM FLOW OR WAVE ACTION, EXCEPT WHERE THE DIRECTOR HAS DETERMINED TO ALLOW A VARIANCE THAT IS AT LEAST AS PROTECTIVE OF NATURAL RESOURCES AND THE ENVIRONMENT IN ACCORDANCE WITH THE PROVISIONS OF O.C.G.A. 12-7-6, OR WHERE A DRAINAGE STRUCTURE OR A ROADWAY DRAINAGE STRUCTURE MUST BE CONSTRUCTED, PROVIDED THAT ADEQUATE EROSION CONTROL MEASURES ARE INCORPORATED IN THE PROJECT PLANS AND SPECIFICATIONS AND ARE IMPLEMENTED, OR ALONG ANY EPHEMERAL STREAM, OR WHERE BULKHEADS AND SEAWALLS MUST BE CONSTRUCTED TO PREVENT THE EROSION OF THE SHORELINE ON LAKE OCONEE AND LAKE SINCLAIR. THE BUFFER SHALL NOT APPLY TO THE FOLLOWING ACTIVITIES PROVIDED THAT ADEQUATE EROSION CONTROL MEASURES ARE INCORPORATED INTO THE PROJECT PLANS AND SPECIFICATIONS ARE IMPLEMENTED:

(1) PUBLIC DRINKING WATER SYSTEM RESERVOIRS, 2) STREAM CROSSINGS FOR WATER AND SEWER LINES, PROVIDED THAT THE STREAM CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER, AND NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN

THE BUFFER. (3) BUFFER CROSSING FOR FENCES, PROVIDED THAT THE CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER, AND NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER, AND

(4) STREAM CROSSINGS FOR AERIAL UTILITY LINES, PROVIDED THAT: (A) THE NEW UTILITY LINE RIGHT-OF-WAY WIDTH DOES NOT EXCEED 100 LINEAR FEET, (B) UTILITY LINES ARE ROUTED AND CONSTRUCTED SO AS TO MINIMIZE THE NUMBER OF STREAM CROSSINGS AND DISTURBANCES TO THE BUFFER, (C) ONLY TREES AND TREE DEBRIS ARE REMOVED FROM WITHIN THE BUFFER RESULTING IN ONLY MINOR SOIL EROSION (I.E., DISTURBANCE TO UNDERLYING VEGETATION IS MINIMIZED), AND (D) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER. THE PLAN SHALL INCLUDE A DESCRIPTION OF THE STREAM CROSSINGS WITH DETAILS OF THE BUFFER DISTURBANCE INCLUDING AREA AND LENGTH OF BUFFER DISTURBANCE, ESTIMATED LENGTH OF TIME OF BUFFER

DISTURBANCE, AND JUSTIFICATION. (II). NO CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED WITHIN A 50 FOOT BUFFER, AS MEASURED HORIZONTALLY FROM THE POINT WHERE VEGETATION HAS BEEN WRESTED BY NORMAL STREAM FLOW OR WAVE ACTION, ALONG THE BANKS OF ANY STATE WATERS CLASSIFIED AS 'TROUT STREAMS' EXCEPT WHEN APPROVAL IS GRANTED BY THE DIRECTOR FOR ALTERNATE BUFFER REQUIREMENTS IN ACCORDANCE WITH THE PROVISIONS OF O.C.G.A. 12-7-6, OR WHERE A ROADWAY DRAINAGE STRUCTURE MUST BE CONSTRUCTED; PROVIDED, HOWEVER, THAT SMALL SPRINGS AND STREAMS CLASSIFIED AS 'TROUT STREAMS' WHICH DISCHARGE AN AVERAGE ANNUAL FLOW OF 25 GALLONS PER MINUTE OR LESS SHALL HAVE A 25 FOOT BUFFER OR THEY MAY BE PIPED, AT THE DISCRETION OF THE PERMITTEE, PURSUANT TO THE TERMS OF A RULE PROVIDING FOR A GENERAL VARIANCE PROMULGATED BY THE BOARD OF NATURAL RESOURCES INCLUDING NOTIFICATION OF SUCH TO EPD AND THE LOCAL ISSUING AUTHORITY OF THE LOCATION AND EXTENT OF THE PIPING AND PRESCRIBED METHODOLOGY FOR MINIMIZING THE IMPACT OF SUCH PIPING AND FOR MEASURING THE VOLUME OF WATER DISCHARGED BY THE STREAM. ANY SUCH PIPE MUST STOP SHORT OF THE DOWNSTREAM PERMITTEE'S PROPERTY, AND THE PERMITTEE MUST COMPLY WITH THE BUFFER REQUIREMENT FOR ANY ADJACENT TROUT STREAMS. THE BUFFER SHALL NOT APPLY TO THE FOLLOWING ACTIVITIES PROVIDED THAT ADEQUATE EROSION CONTROL MEASURES ARE INCORPORATED INTO THE PROJECT PLANS AND SPECIFICATIONS ARE IMPLEMENTED:

(1) PUBLIC DRINKING WATER SYSTEM RESERVOIRS, (2) STREAM CROSSINGS FOR WATER AND SEWER LINES, PROVIDED THAT THE STREAM CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER, AND NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN

THE BUFFER, (3) BUFFER CROSSING FOR FENCES, PROVIDED THAT THE CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER, AND NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER,

(4) STREAM CROSSINGS FOR AERIAL UTILITY LINES, PROVIDED THAT: (A) THE NEW UTILITY LINE RIGHT-OF-WAY WIDTH DOES NOT EXCEED 100 LINEAR FEET, (B) UTILITY LINES ARE ROUTED AND CONSTRUCTED SO AS TO MINIMIZE THE NUMBER OF STREAM CROSSINGS AND DISTURBANCES TO THE BUFFER, (C) ONLY TREES AND TREE DEBRIS ARE REMOVED FROM WITHIN THE BUFFER RESULTING IN ONLY MINOR SOIL EROSION (I.E., DISTURBANCE TO UNDERLYING VEGETATION IS MINIMIZED), AND (D) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER. THE PLAN SHALL INCLUDE A DESCRIPTION OF THE STREAM CROSSINGS WITH DETAILS OF THE BUFFER DISTURBANCE INCLUDING AREA AND LENGTH OF BUFFER DISTURBANCE, ESTIMATED LENGTH OF TIME OF BUFFER DISTURBANCE, AND JUSTIFICATION.

### CHECKLIST # 16

STREAM BUFFERS WILL BE IMPACTED AND A BUFFER VARIANCE WILL BE REQUIRED.

### CHECKLIST # 17

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** 

### CHECKLIST # 18

WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404

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.

### CHECKLIST # 20

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

2016 SURVEY & 2019 UPDATED TREE SURVEY TERRAMARK LAND SURVEYING, INC. 1396 BELLS FERRY ROAD MARIETTA, GEORGIA 30066 PHONE NO. (770) 421-1927 FAX. NO. (770) 421-0552 WWW.TERRAMARK.COM C. O. A.# LSF000810

### CHECKLIST # 21

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING

THE FOLLOWING "CHECKED" ADDITIONAL ERO BMP'S ARE TO BE USED PER PART III, C, IF THE STATEMENT ABOVE IDENTIFIES

ANY IMPAIRED STREAMS WITHIN 1 MILE OF THE PROJECT SITE:

THE SITE IS WITHIN 1 MILE OF AN IMPAIRED STREAM.

D. A LARGE SIGN (MIN. 4 FEET X 8 FEET) MUST BE POSTED ON THE 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 UNTIL A N.O.T. HAS BEEN SUBMITTED.

F. CONDUCT TURBIDITY SAMPLING AFTER EVERY RAIN **EVENT OF 0.5 INCH OR GREATER WITHIN ANY 24 HOUR PERIOD,** RECOGNIZING THE EXCEPTIONS SPECIFIED IN PART IV.D.6.d. OF THE NPDES PERMIT.

### P. CONDUCT SOIL TESTS TO IDENTIFY AND TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.

U. CONDUCT INSPECTIONS DURING THE INTERMEDIATE GRADING AND DRAINAGE BMP PHASE AND DURING THE FINAL BMP PHASE OF THE PROJECT BY THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN IN ACCORDANCE WITH SECTION IV.A.G OF THE PERMIT.

### CHECKLIST # 23

THE TMDL PLAN FOR THE NANCY CREEK WATERSHED HAS BEEN CREATED. THE CITY OF BROOKHAVEN HAS PREPARED AND IMPLEMENTED THE NANCY CREEK WATERSHED IMPROVEMENT PLAN WITH THE GOAL OF REDUCING FECAL COLIFORM LEVELS AND SEDIMENT LOADING. THIS PROJECT WILL INCLUDE THE RESTORATION OF STREAM BUFFERS BY LIMITING THE AMOUNT OF TURFGRASS INSTALLED AND RE-INTRODUCING NATIVE VEGETATION IN THE RIPARIAN BUFFER. ADDITIONAL PROJECTS ARE PLANNED AS PART OF THE NANCY CREEK WATERSHED IMPROVEMENT PLAN TO INTRODUCE BIORETENTION AREAS, ENHANCED SWALES AND OTHER GREEN BMPS.

TRUCK WASH-DOWN FACILITY

USE FOR THE CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS, AND REAR OF VEHICLES. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED. THE CONTRACTOR SHALL EXCAVATE A PIT OUTSIDE OF STATE WATER BUFFERS, AT LEAST 25 FEET FROM ANY STORM DRAIN AND OUTSIDE OF THE TRAVEL WAY, INCLUDING SHOULDERS, FOR A WASH/PIT AREA. THE PIT SHALL BE LARGE ENOUGH TO STORE ALL WASH-DOWN WATER WITHOUT OVERTOPPING THE PIT. IMMEDIATELY AFTER THE WASH-DOWN OPERATIONS ARE COMPLETED AND AFTER THE WASH-DOWN WATER HAS SOAKED INTO THE GROUND, THE PIT SHALL BE FILLED IN. AND THE GROUND ABOVE SHALL BE GRADED TO MATCH THE ELEVATION OF THE SURROUNDING AREAS SMOOTHED OUT. ALTERNATE WASH DOWN PLANS MUST BE APPROVED BY THE PROJECT ENGINEER. WASH-DOWN PLANS DESCRIBE PROCEDURES THAT PREVENT WASH DOWN WATER FROM ENTERING STREAMS AND RIVERS. NEVER DISPOSE OF WASH-DOWN WATER DOWN A STORM DRAIN. ESTABLISH A WASH-DOWN WATER PIT LOCATION THAT INCLUDES THE FOLLOWING: (1) THE PIT IS LOCATED AWAY FROM A STORM DRAIN, STREAM OR RIVER, (2) THE PIT IS ACCESSIBLE TO THE VEHICLE BEING USED FOR WASH-DOWN, (3) THE PIT HAS ENOUGH VOLUME FOR WASH-DOWN WATER, AND (4) MAKE SURE YOU HAVE PERMISSION TO USE THE AREA FOR WASH-DOWN. ON SOME SITES, YOU MAY NOT HAVE PERMISSION OR ACCESS TO A LOCATION WHICH ALLOWS FOR A WASH-DOWN PIT. IN THOSE CASES, THE CONTRACTOR MAY HAVE TO WASH-DOWN INTO A WHEELBARROW OR OTHER CONTAINER AND CARRY THE CONTAINER FOR TRANSPORT TO A PROPER DISPOSAL SITE. FOR ADDITIONAL INFORMATION, REFER TO THE GEORGIA SMALL BUSINESS ENVIRONMENTAL ASSISTANCE PROGRAM'S "A GUIDE FOR READY MIX CHUTE/HOPPER WASH-DOWN".

### CHECKLIST # 25

SPILL CLEANUP AND CONTROL PRACTICES

LOCAL, STATE, AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.

SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON

DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802 and 1-202-426-2675.

FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL

RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802 and 1-202-426-2675. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE. (THIS INCLUDES CAPACITIES OF EQUIP.) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

CHECKLIST # 26

THE INCREASE OF IMPERVIOUS SURFACES IS UNDER 5,000 S.F. AND NO WATER QUALITY OR STORMWATER MANAGEMENT BMPS ARE PROPOSED.

### CHECKLIST #27

CONTRACTOR IS REQUIRED TO COVER ALL BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE WITH HEAVY GAUGE PLASTIC TARPS AT ALL TIMES WHEN NOT IN USE. CONTRACTOR SHALL LIMIT AMOUNT OF BUILDING MATERIALS AND BUILDING PRODUCTS TO THE MINIMAL AMOUNT NECESSARY FOR EACH PHASE OF CONSTRUCTION.

### CHECKLIST # 28

PRACTICES TO BE USED TO REDUCE POLLUTANTS IN STORM WATER DISCHARGE:

### PRODUCT SPECIFIC PRACTICES:

PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATERS, NATURAL DRAINS, AND STORM WATER DRAINAGE INLETS. IN ADDITION. TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS, AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

PAINTS/FINISHES/SOLVENTS - ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING - NO CONCRETE TRUCKS WILL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONSITE.

FERTILIZER/HERBICIDES - THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED

BUILDING MATERIALS - NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ONSITE. ALI SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

### CHECKLIST # 29

SEE SHEET 7.5B FOR ACTIVITIES SCHEDULE

### **INSPECTIONS**

A. PRIMARY PERMITTEE.

(1). EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT; (B) ALL LOCATIONS AT THE PRIMARY PERMITEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

(2). MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.

(3). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION, OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THE PERMITTEE MUST COMPLY WITH PART IV.D.4.A.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

(4). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION HAS BEEN SUBMITTED) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).

(5). BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.

(6). A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E. INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.A.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION SITE THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION. SEDIMENTATION AND POLLUTION CONTROL PLAN AND THIS PERMIT. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

D. SAMPLING FREQUENCY.

(1). THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORMWATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN IN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.

(2). HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT). OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORMWATER DISCHARGE.

(3). SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING EVENTS:

(A), FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL. THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORMWATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL

CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION;

(B). IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORMWATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION, WHICHEVER COMES FIRST;

(C). AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPs IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS\* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPs ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;

(D). WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV .D.4.A.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B), OR (C) ABOVE; AND

(E). EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (C) ABOVE.

\*NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK.

### E. REPORTING.

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C. BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORMWATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2 SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

2. ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION. A. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS; B. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS; C. THE DATE(S) ANALYSES WERE PERFORMED;

D. THE TIME(S) ANALYSES WERE INITIATED; E. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES; F. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS G. THE RESULTS OF SUCH ANALYSES. INCLUDING THE BENCH

SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS; H. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND I. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED PER THE PLAN.

3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT THE DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

F. RETENTION OF RECORDS.

1. THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH

A. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD; B. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT C. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART

IV.A.5. OF THIS PERMIT D. A COPY OF ALL SAMPLING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT E. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.A. OF THIS PERMIT; F. A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND G. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE

WITH PART IV.D.4.A.(2). OF THIS PERMIT.

2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS. RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

### CHECKLIST # 33

B. SAMPLE TYPE. ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD. 1. SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO

2. SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.

COLLECTING THE SAMPLES.

CONTAMINATION. 4. MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED

3. LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR

PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES.

THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID

SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN

TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE

REFERENCE PLAN CHECKLIST ON 7.5B FOR DIRECTION. MAXIMUM ALLOWABLE INCREASE 25 NTU.

CHECKLIST # 35

REFERENCE PLAN CHECKLIST AND MAP ON 7.5B FOR DIRECTION.

NARRATIVE OF EROSION/SEDIMENT CONTROL PRACTICES:

INITIAL PHASE: SITE PREPARATION. THIS STAGE RELATES TO ALL ACTIVITIES PRIOR TO

THREE SUB-STAGES, ACCORDING TO THE FOLLOWING ORDER: A. INSTALLATION OF TEMPORARY SILT FENCES, FILTER SOCKS, AND INLET PROTECTION AS SHOWN ON PLANS. SILT FENCES SHALL SPECIALLY BE USED AS PREVENTIVE FILTERS TO

CONSTRUCTION ACTIVITIES AND SHALL BE COMPLETED INTO

PROTECT EXISTING PONDS, LAKES AND STREAMS. THEY MUST BE APPLIED UPSTREAM OF PONDS/LAKES AND DOWNSTREAM OF CONSTRUCTION. B. ACCESS STABILIZATION: CONSTRUCTION EXITS SHALL PROVIDE STABLE ACCESS TO SITES. THEY MUST BE CHECKED DAILY AND REPAIRED AS NEEDED. THEY MUST BE REMOVED

AFTER CONSTRUCTION AND RESTORED TO PRE-EXISTING CONDITIONS. C . CLEARING AND GRUBBING OPERATIONS: DURING THIS SUB-STAGE, ALL EXPOSED AREAS MUST BE COVERED WITH TEMPORARY MULCH. THE MULCH SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN FOURTEEN DAYS OF DISTURBANCE AND THEY WILL BE MAINTAINED SO THAT AT LEAST NINETY PERCENT OF THE SOIL SURFACE IS COVERED. THE MATERIALS WILL BE APPLIED UNIFORMLY AND ANCHORED IMMEDIATELY AFTER APPLICATION. MULCH CAN BE USED AS A SINGLE EROSION CONTROL DEVICE FOR UP TO SIX MONTHS. TEMPORARY SEEDING, AN ALTERNATIVE TO MULCH, CAN BE USED ON ROUGH GRADED AREAS THAT WILL BE EXPOSED FOR LESS THAN SIX MONTHS. IF THE AREA IS EXPECTED TO BE UNDISTURBED FOR LONGER THAN SIX MONTHS, PERMANENT VEGETATIVE COVER SHALL BE USED. TEMPORARY SEEDING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN FOURTEEN DAYS OF DISTURBANCE. PLANT SPECIES THAT WILL GERMINATE QUICKLY AND PROVIDE AMPLE PROTECTIVE COVER FOR THAT AREA AND SEASON OF THE YEAR SHALL BE SELECTED. IN MOST CASES. TEMPORARY VEGETATION CAN BE ESTABLISHED WITHOUT MULCH EXCEPT ON STEEP SLOPES AND IN CONCENTRATED FLOW AREAS. SEEDING MUST BE APPLIED

INTERMEDIATE PHASE: INTERMEDIATE AND FINAL CONSTRUCTION ACTIVITIES.

ACCORDING TO THE PURE LIVE SEED (PLS) RATES.

DURING THIS STAGE, GRADING OPERATIONS TAKE PLACE. APPROVED TEMPORARY AND PERMANENT VEGETATIVE AND STRUCTURAL BMPS MUST BE APPLIED AS SHOWN ON PLANS. ON AREAS WHERE TEMPORARY VEGETATIVE BMPS HAVE TO BE APPLIED, ALL BMPS MENTIONED FOR CLEARING AND GRUBBING SHALL APPLY. PERMANENT VEGETATIVE BMPS (SODDING, MATTING AND BLANKETS) MUST BE LAID AND ANCHORED APPROPRIATELY (START AT TOP OF SLOPE AND WORK DOWN)

PERMANENT VEGETATIVE BMPS SHALL BE APPLIED IMMEDIATELY TO ROUGH GRADED AREAS THAT WILL BE UNDISTURBED FOR LONGER THAN SIX MONTHS. THIS PRACTICE OR SODDING SHALL ALSO BE APPLIED IMMEDIATELY TO ALL AREAS AT FINAL GRADE. LOW MAINTENANCE AND NATIVE PLANT SPECIES APPROPRIATE FOR THE REGION SHALL BE PLANTED, ESTABLISHED, AND MAINTAINED SO THAT AT LEAST SEVENTY PERCENT OF THE SOIL IS COVERED WITH PERENNIAL VEGETATION FOR LONG-TERM EROSION CONTROL. FOR ADEQUATE PLANT GROWTH, THE SOIL MUST HAVE PROPER PH AND AMPLE PLANT FOOD. SUITABLE AND ANCHORED MULCH IS REQUIRED FOR ALL SITES PLANTED WITH PERMANENT VEGETATION, EXCEPT WHERE EROSION CONTROL BLANKETS OR BLACK SOD ARE USED. ALL INSTALLED MATS AND BLANKETS MUST BE INSPECTED PERIODICALLY AFTER STORM EVENTS UNTIL THE AREAS BECOME PERMANENTLY STABILIZED WITH VEGETATION. ANY DISLOCATION OR FAILURE SHALL BE

THE TEMPORARY AND PERMANENT STRUCTURAL BMPS ARE SHOWN ON PLANS. TO PROVIDE EROSION CONTROL AT POINT OF CONCENTRATED FLOW AND HIGH FLOW VELOCITIES, ROCK FILTER DAM AND STONE DUMPED RIP RAP SHALL BE USED. SEDIMENT BARRIER MUST BE INSTALLED ALONG CONTOURS WITH ENDS POINTING UPHILL EXCEPT IN WATERWAYS OR AREAS OF CONCENTRATED FLOW. TEMPORARY SEDIMENT BARRIER MUST BE PLACED AROUND STORM DRAIN INLETS THAT RECEIVE RUNOFF FROM DISTURB AREAS EXCEPT WHERE VEHICULAR TRAFFIC WILL BE AFFECTED.

CHECK-DAMS (OR DITCH-CHECKS) MUST BE PLACED IN SMALL OPEN CHANNELS (DITCH), NOT IN LIVE STREAMS. SEED AND MULCH AREA BENEATH THE CHECK-DAM AFTER ITS REMOVAL STORM DRAIN OUTLET PROTECTION, SHALL BE PLACED AT THE DOWNDRAIN OUTLET. PERMANENT DOWNDRAIN STRUCTURES SHALL SAFELY CONVEY THE 25-YR. 24-HR STORM AND MAY BE CONSTRUCTED OF CONCRETE, PIPE, PRE-FABRICATED SECTIONAL CONDUIT OR OTHER ADEQUATE MATERIALS APPROVED BY GDOT STANDARDS AND SPECS.

### FINAL PHASE

REPAIRED IMMEDIATELY.

ALL PERMANENT, POST-CONSTRUCTION BMPS ARE SHOWN IN THE CONSTRUCTION PLANS AND IN THE ESPCP PLAN. THE POST-CONSTRUCTION BMPS FOR THIS PROJECT INCLUDE GRASSING, RIP-RAP AT PIPE OUTLETS FOR VELOCITY DISSIPATION AND OUTLET STABILIZATION. THE POST-CONSTRUCTION BMPS WILL PROVIDE PERMANENT STABILIZATION OF THE SITE AND PREVENT ACCELERATED TRANSPORTATION OF SEDIMENT AND POLLUTANTS INTO RECEIVING WATERS.

SEDIMENT SHALL NOT BE WASHED INTO INLETS. IT SHALL BE REMOVED FROM THE SEDIMENT TRAPS AND DISPOSED OF AND STABILIZED SO THAT IT WILL NOT ENTER THE INLETS AGAIN. MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN FOURTEEN DAYS OF LAND DISTURBANCE. ALL DISTURBED AREAS LEFT MULCHED AFTER THIRTY DAYS SHALL BE STABILIZED WITH PERMANENT

MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

SEDIMENT AND EROSION CONTROL MEASURES SHOULD BE

CHECKED AFTER EACH RAIN EVENT. EACH DEVICE IS TO BE

MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS

THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL

ALL SIDEWAL SHOULDERS SHOULD BE GRASSED AS SOON AS FINAL GRADE IS ACHIEVED BEHIND CURBS.

REACHED ONE HALF THE CAPACITY OF THE DEVICE.

SHEET KEY 11/2/2

ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.

EROSION CONTROL MEASURES MUST BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE AS DIRECTED BY THE ONSITE INSPECTOR OR THE DESIGN PROFESSIONAL.

### CHECKLIST # 37

REFERENCE ALL PLAN SHEETS

### CHECKLIST # 38

SEE SHEET 7.5C

CHECKLIST # 39

NOT APPLICABLE

CHECKLIST # 40 NO ALTERNATIVE BMP WILL BE USED.

CHECKLIST # 41 SEE SHEET 7.5C

CHECKLIST # 42 SEE SHEET 7.5C

CHECKLIST # 43

SEE SHEET 7.5C CHECKLIST # 44

HYDROLOGY STUDY SUBMITTED.

A MEASURABLE INCREASE IN RUNOFF IS NOT ANTICIPATED DUE TO THE NATURE OF THIS PROJECT. IMPROVEMENTS THROUGHOUT THE PARK WILL INCLUDE WATER QUALITY AND TSS REDUCTION METHODS MEETING CURRENT STATE AND LOCAL STORMWATER STANDARDS.

SEE CHART ON 7.5B WHICH HAS THE STORM DRAIN OUTLET

### PROTECTION LOCATIONS, DISCHARGES & VELOCITIES.

SEE SOIL SERIES CHART SHEET 7.5B

CHECKLIST # 47

CHECKLIST # 48

### SEE SHEET 7.5C

CHECKLIST # 49 SEDIMENT STORAGE WILL BE ACCOMPLISHED THROUGH THE USE OF EXCAVATED INLET TRAPS AND DOUBLE ROW SILT FENCE. SEDIMENT TRAPS HAVE BEEN DESIGNED TO PROVIDE

134 CUBIC YARDS PER DISTURBED AREA.

CHECKLIST # 50

### CHECKLIST # 51

CHECKLIST # 52

REFERENCE PLAN SHEET 7.50

LEE CROY

CITY OF BROOKHAVEN

4362 PEACHTREE ROAD

BROOKHAVEN, GA 30319

CELL: (678) 576 9846

GSWCC COMMUNICATION COMMUNICAT

Jeffrey W Mueller

Level II Certified Design Professional

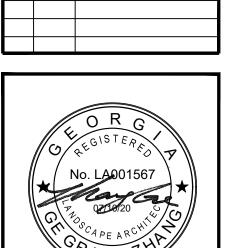
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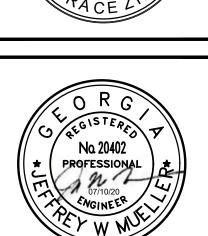
REFERENCE SHEETS 7.5D-7.5G

REFERENCE PLAN SHEET 7.50

# OKHAD

DRAWINGS SCHEDULE No. | Date | Descriptior 04/20 LDP - South Trail 05/05 State Buffer Comments - South 05/05 LDP - Natural Play Area 05/07 LDP - South Trail - Rev #1 05/28 LDP - Natural Play Area - Rev 06/28 LDP - Natural Play Area - Rev # 06/30 LDP - Horseshoe Road 9 07/07 LDP - Community Green 07/10 LDP - Pool Parking 08/17 LDP - Community Green - Rev 08/17 LDP - South Trail - Rev #2





24-HR EMERGENCY CONTACT:

C7.5A

DRAWING NUMBER

**ESCP NOTES I** (SOUTH TRAIL)

Permit # LDP20-00008

PROJECT NUMBER 15092.00

04/23/20 BM SHEET TITLE

**7.5A** Y 6 Note total and disturbed acreage of the project or phase under construction.

**7.5A** Y 9 Description of the nature of construction activity.

variances and permits."

7.5A Y

(A copy of the written approval by EPD must be attached to the plan for the Plan to be reviewed.)

7.5A Y 4 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.

7.5A 7 Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees.

**7.5A** 8 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.

7.5B Y 10 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.

7.5A 13 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate

7.5A 14 Clearly note the statement that "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."

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

7 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on

THE ES&PC PLAN MUST INCLUDE AT LEAST FOUR (4) OF THE FOLLOWING BMPS FOR THOSE AREAS OF

THE SITE WHICH DISCHARGE TO A IMPAIRED STREAM SEGMENT AND FOR SITES WHICH EPD HAS

APPROVED IN WRITING A REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME.

a. During construction activities, double the width of the 25 foot undisturbed vegetated buffer along all

classified as "trout streams" requiring a buffer. During construction activities, EPD will not grant

construction. The sign must be visible from a public roadway. The sign must identify the following: ) 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

b. Increase all temporary sediment basins and retrofitted storm water management basins to provide

sediment storage of at least 3600 cubic feet (134 cubic yards) per acre drained.

c. Use baffles in all temporary sediment basins and retrofitted storm water management basins to at

e. Use flocculants or coagulants and/or mulch to stabilize areas left disturbed for more than seven (7)

calendar days in accordance with Section III. D.1. of the NPDES Permit.

**7.5C** Y f. Conduct turbidity sampling after every rain event of 0.5 inch or greater within any 24 hour period,

i. Limit the amount of disturbed area at any one time to no greater than 25 acres or 50% of the total

j. Use "Dirt II" techniques available on the EPD website to model and manage construction storm water runoff (including sheet flow). All calculations must be included on the Plan.

k. Add appropriate organic soil amendments (e.g., compost) and conduct pre- and post-construction

I. Use mulch filter berms, in addition to a silt fence, on the site perimeter wherever construction storm

m. Use appropriate erosion control slope stabilization instead of concrete in all construction storm

n. Use flocculants or coagulants under a passive dosing method (e.g., flocculant blocks) within

o. Install sod for a minimum 20 foot width (in lieu of seeding) after final grade has been achieved,

APPROXIMATE ACTIVITY SCHEDULE

**7.50** p. Conduct soil tests to identify and to implement site-specific fertilizer needs.

water ditches and storm drainages designed for a 25 year, 24 hour rainfall event.

along the site perimeter wherever storm water (including sheet flow) may be discharged.

ttps://epd.georgia.gov/erosion-and-sedimentation)

planned site, whichever is less. All calculations must be included on the Plan.

g. Comply with the applicable end-of-pipe turbidity effluent limit, without the "BMP defense" as

provided for in O.C.G.A. 12-7-6 (a)(1).

stabilization of the construction site.

or areas of concentrated flow.

ANTICIPATED START DATE: JUNE 2020
ANTICIPATED COMPLETION DATE: SEPTEMBER 202

DESCRIPTION DIMENT CONTROL-TREE PROTE

Utilities Protection Center, Inc.

1-800-282-7411

Know what's below.

Call before you dig.

recognizing the exceptions specified in Section IV.D.6.d. of the NPDES Permits.

h. Reduce the total planned site disturbance to less than 50% impervious surfaces (excluding any State-mandated buffer areas from such calculations). All calculations must be included on the Plan.

soil sampling to a depth of six (6) inches to document improved levels of soil carbon after final

water (including sheet flow) may be discharged. Mulch filter berms cannot be placed in waterways

onstruction storm water ditches and storm drainages that feed into temporary sediment basins and

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 1

least double the conventional flow path length to the outlet structure.

7.5C Y d. A large sign (minimum 4 feet x 8 feet) must be posted on site by the actual start date of

and comprehensive system of BMPs and sampling to meet permit requirements as stated on Part IV page 19 of the permit. \*

5 Provide the name, address, email address, and phone number of primary permittee.

7.5A 11 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes,

7.5A 15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot

7.5A Y 16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.

BMPs with a hydraulic component must be certified by the design professional." \*

The four items chosen must be appropriate for the site conditions.

variances to any such buffers that are increased in width.

7.5A 12 Design professional's certification statement and signature that the site was visited prior to development of the

residential areas, wetlands, marshlands, etc. which may be affected.

ES&PC Plan as stated on Part IV page 19 of the permit.

in accordance with Part IV.A.5 page 25 of the permit. \*

storm water is discharged. \* . Apply the appropriate compost blankets (minimum depth 1.5 inches) to protect soil surfaces until vegetation is established during the final stabilization phase of the construction activity. s. Use alternative BMPs whose performance has been documented to be superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). (If using this item please refer to the Alternative BMP guidance document found at www.gaswcc.georgia.gov)

7.5A Y 18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as **7.5C** Y 37 Graphic scale and North arrow. authorized by a Section 404 permit." \* 7.5C Y 38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following: 7.5A 19 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of Ground Slope Contour Intervals, ft. erosion and sediment control measures and practices prior to land disturbing activities." Rolling 2 - 8% 1 or 2 7.5A 20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the Steep 8% + 2.5 or 10 approved Plan does not provide for effective erosion control, additional erosion and sediment control measures 39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to shall be implemented to control or treat the sediment source." conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil 7.5A 21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at stabilized with mulch or temporary seeding." www.gaswcc.org. 7.5A 22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile N/A 40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply for Erosion & Sediment Control in Georgia 2016 Edition. \* with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those 7.5C Y 41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional areas of the site which discharge to the Impaired Stream Segment. \* buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact. 23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in **7.50** 42 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site. Item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan. \* **7.5C** Y 43 Delineation and acreage of contributing drainage basins on the project site. 7.5A 24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout 44 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions. \* of the drum at the construction site is prohibited. \* N/A 45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are **7.5A** 25 Provide BMPs for the remediation of all petroleum spills and leaks. **7.5A** 26 Description of the measures that will be installed during the construction process to control pollutants in storm **7.5B** 46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without water that will occur after construction operations have been completed. \* erosion. Identify/Delineate all storm water discharge points. 7.5A Poscription of practices to provide cover for building materials and building products on site. \* **7.5C** Y 47 Soil series for the project site and their delineation. 7.5A 28 Description of the practices that will be used to reduce the pollutants in storm water discharges. \* **7.5C** 48 The limits of disturbance for each phase of construction. **7.5C** Y 29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major 7.5C 49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment excavation activities, utility activities, temporary and final stabilization). storage volume must be in place prior to and during all land disturbance activities until final stabilization of the 7.5A 30 Provide complete requirements of inspections and record keeping by the primary permittee. \* site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a 31 Provide complete requirements of sampling frequency and reporting of sampling results. \* sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must 7.5A 32 Provide complete details for retention of records as per Part IV.F. of the permit. \* also be given. Worksheets from the Manual included for structural BMPs and all calculations used by the 7.5A Y 33 Description of analytical methods to be used to collect and analyze the samples from each location. \* storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water 2.5B 34 Appendix B rationale for NTU values at all outfall sampling points where applicable. \* from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, 7.5C 35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which a written justification explaining this decision must be included in the Plan. 7.5C Y 50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for 7.5A Y 36 A description of appropriate controls and measures that will be implemented at the construction site including: Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter 7.5C Y 51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine forth in the Manual for Erosion and Sediment Control in Georgia. all of the BMPs into a single phase. \* 7.5C Y 52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia. \* If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the \* checklist items would be N/A. Effective January 1, 2020 q. Certified personnel for primary permittees shall conduct inspections at least twice every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater in accordance with Section IV.D.4.a.(3)(a) – (c); secondary permittees, Section IV.D.4.b.(3)(a) – (c); and tertiary permittees Section IV.D.4.c.(3)(a) – (c) \*

### **MONITORING CHART:**

### Conduct Turbidity and Total Suspended Solids (TSS) Sampling after every rain event of 0.5 inches or greater within any 24 hour period, recognizing the exceptions specified in Part IV.D.6.d of the NPDES Permit GAR 100001. Representative Sampling is not used on this project.

Effective January 1, 2020

t. Limit the total planned site disturbance to less than 15% impervious surfaces (excluding any state

7.5C Y u. Conduct inspections during the intermediate grading and drainage BMP phase and during the final

v. Install Post Construction BMPs (e.g., runoff reduction BMPs) which remove 80% TSS as outlined in

Certified personnel for primary permittees shall conduct inspections at least once every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or

Section IV.A.5 of the permit.

tringent design manual.

\* This requirement is different for infrastructure projects:

greater in accordance with Section IV.D.4.a.(3)(a) - (c) of the permit.

mandated buffer areas from such calculations). All calculations must be included in the Plan.

BMP phase of the project by the design professional who prepared the Plan in accordance with

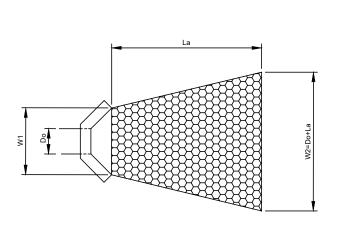
fluct inspections during the intermediate grading and drainage BMP phase and during the final BMP phase.

he Georgia Stormwater Management Manual known as the Blue Book or an equivalent or more

| Monitoring<br>Site | Primary or<br>Alternate<br>Site | Location Description    | Name of<br>Receiving Water | Applicable<br>construction<br>Phase |                 | Drainage Area<br>for Receiving<br>Water (SQ MI) |      | Warm or<br>Cold Water<br>Stream | Appendix B<br>NTU value<br>(Outfall<br>Monitoring | Allowable NTU<br>increase (for<br>Receiving Water) |
|--------------------|---------------------------------|-------------------------|----------------------------|-------------------------------------|-----------------|---|------|---------------------------------|---|--|
| 1                  | Primary                         | Sample Location #1 & #2 | Nancy Creek                | All                                 | Receiving Water | 19.3  | 0.57 | Warm                            | NA  | 25   |
|                    |                                 |                         |                            |                                     |                 |   |      |                                 |   |  |

LÄT: `33.907347 SAMPLING POINT #2 (DOWNSTREAM)
LAT: 33.907152
LONG: -84.325523 NANCY CREEK

STORM DRAIN OUTLET PROTECTION:



MINIMUM CONDITION (<0.5Do)

Condition Depth Depth (D)\* | 18" | 9.12 | 10' | 4.5' | 11.5' | 5.5 | 0.30" | 0.5" | min. (<0.5Do) | 0.2' | 18" | 18" | 8.85 | 10' | 4.5' | 11.5' | 5.4 | 0.30" | 0.5" | min. (<0.5Do) | 0.3' | 18"

SHEET KE

-RIP-RAP APRON SHALL EXTEND AT MINIMUM TO WIDTH OF HEADWALL WINGS.

\*MINIMUM APRON THICKNESS SHALL BE 18" \*\*DEFINITIONS: d50 - AVERAGE STONE DIAMETER

dmax - maximum stone diameter D - STONE DEPTH W1 - WIDTH AT HEADWALL W2 - DOWNSTREAM WIDTH

**VEL - VELOCITY** Tw - TAILWATER Do - DIAMETER OF PIPE

### SOILS CHART:

|       | SOILS CHART |   |      |  |  |  |  |
|-------|-------------|---|------|--|--|--|--|
| Label | Rating      | Description   | 1    |  |  |  |  |
| CeC   | В           | Cecil Sandy Ioam, 6-10% slopes                        | 0.4  |  |  |  |  |
| MdE   | В           | Madison sandy loam, 15-30% slopes                     | 0.2  |  |  |  |  |
| PfD   | В           | Pacolet sandy loam, 10-15% slopes                     | 1.8  |  |  |  |  |
| PfE   | В           | Pacolet sandy loam, 15-30% slopes                     | 0.6  |  |  |  |  |
| Tf    | А           | Toccoa sandy loam, $0-2\%$ slopes, frequently flooded | 7.4  |  |  |  |  |
| Ud    |             | Urban Land  | 20.3 |  |  |  |  |

### STRUCTURAL PRACTICES

|      | 0 1                                | 1100101  | V (L I          | TOTOLO   |
|------|------------------------------------|----------|-----------------|--|
| CODE | PRACTICE                           | DETAIL   | MAP<br>SYMBOL   | DESCRIPTION  |
|      |                                    |          |                 |  |
| Co   | CONSTRUCTION<br>EXIT               |          | (),ARE)         | A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.                  |
| Sd1) | SEDIMENT<br>BARRIER                |          | (INDICATE TYPE) | A barrier to prevent sediment from leaving<br>the construction site. It may be sandbags,<br>bales of straw or hay, brush, logs and poles<br>or a silt fence. |
| Sd2  | INLET<br>SEDIMENT<br>TRAP          | 11:11:1  | (LABEL)         | A temporary protective device formed at or around an inlet to a storm drain to trap sediment.  |
| St   | STORMDRAIN<br>OUTLET<br>PROTECTION |          | (S1)            | A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.                            |
|      |                                    | <u> </u> |                 | · · · · · · · · · · · · · · · · · · ·  |

### VEGETATIVE PRACTICES

| CODE | PRACTICE  | DETAIL                                  | MAP<br>SYMBQL | DESCRIPTION  |
|------|---|---|---------------|--|
| Bf   | BUFFER ZONE   |   | Bf (LABEL)    | Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams. |
| Ds1  | DISTURBED AREA<br>STABILIZATION (WITH<br>MULCHING ONLY) |   | Ds1           | Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding cover.                              |
| Ds3  | DISTURBED AREA<br>STABILIZATION (WITH<br>PERM SEEDING)  | 100 00 00 00 00 00 00 00 00 00 00 00 00 | Ds3           | Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.  |
| Du   | DUST CONTROL ON<br>DISTURBED AREAS                      |   | Du            | Controlling surface and air movement of dust on construction site, roadways and similar sites.   |

24-HR EMERGENCY CONTACT:

LEE CROY CITY OF BROOKHAVEN 4362 PEACHTREE ROAD BROOKHAVEN, GA 30319

CELL: (678) 576 9846



| 100UED: 08/18/2018 | 100'HAED: 08/18/2021

Level II Certified Design Professional

15092.00 C7.5B DRAWING NUMBER

DRAWINGS SCHEDUL

2 05/05 State Buffer Comments - South 3 05/05 LDP - Natural Play Area

05/28 LDP - Natural Play Area - Rev #

06/28 LDP - Natural Play Area - Rev #2

08/17 LDP - Community Green - Rev #

08/17 LDP - South Trail - Rev #2

06/18 Wetland Boardwalk Design-Buil

06/30 LDP - Horseshoe Road

9 07/07 LDP - Community Green

0 07/10 LDP - Pool Parking

4 05/07 LDP - South Trail - Rev #1

No. Date Description

04/20 LDP - South Trail

**ESCP NOTES II** (SOUTH TRAIL)

Permit # LDP20-00008

2016 SURVEY & 2019 UPDATED TREE SURVEY

TERRAMARK LAND SURVEYING, INC. 1396 BELLS FERRY ROAD

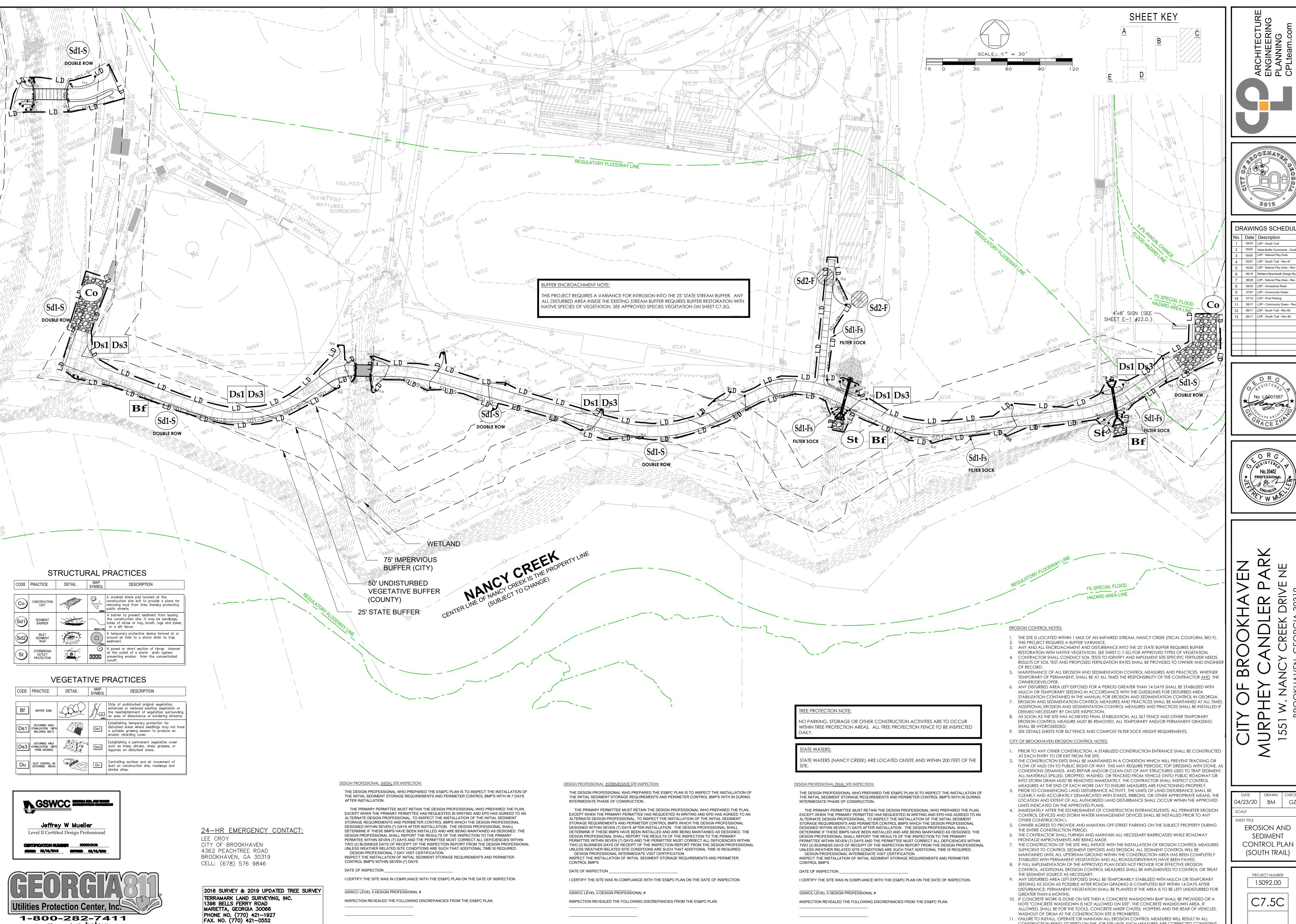
MARIETTA, GEORGIA 30066

WWW.TERRAMARK.COM

C. O. A.# LSF000810

PHONE NO. (770) 421-1927 FAX. NO. (770) 421-0552

### SAMPLING POINT MAP



THESE DOCUMENTS MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL

NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

THESE DOCUMENTS MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK

SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

Know what's below.

Call before you dig.

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C. O. A.# LSF000810

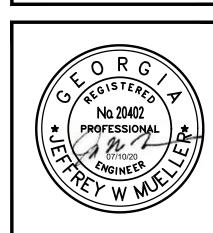
THESE DOCUMENTS MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK

SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.



|   | DF  | RAWII | NGS SCHEDULE                        |
|---|-----|-------|-------------------------------------|
| I | No. | Date  | Description                         |
| I | 1   | 04/20 | LDP - South Trail                   |
| l | 2   | 05/05 | State Buffer Comments - South Trail |
|   | 3   | 05/05 | LDP - Natural Play Area             |
|   | 4   | 05/07 | LDP - South Trail - Rev #1          |
|   | 5   | 05/28 | LDP - Natural Play Area - Rev #1    |
|   | 6   | 06/18 | Wetland Boardwalk Design-Build      |
|   | 7   | 06/28 | LDP - Natural Play Area - Rev #2    |
|   | 8   | 06/30 | LDP - Horseshoe Road                |
|   | 9   | 07/07 | LDP - Community Green               |
|   | 10  | 07/10 | LDP - Pool Parking                  |
|   | 11  | 08/17 | LDP - Community Green - Rev #1      |
|   | 12  | 08/17 | LDP - South Trail - Rev #2          |
|   | 13  | 09/17 | LDP - South Trail - Rev #3          |
|   |     |       |                                     |
|   |     |       |                                     |
|   |     |       |                                     |
| Ĺ |     |       |                                     |
| ı |     |       |                                     |







11. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED CONSISTENT WITH THE CITY OF BROOKHAVE EROSION CONTROL ORDINANCE. 12. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE

WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.

15092.00 DRAWING NUMBER

Permit # LDP20-00008

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.

To reduce or eliminate the transport of mud from the construction area onto public rights-ofway 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 aggre-

**DESIGN CRITERIA** 

of 6 inches.

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

At a minimum, the width should equal full width of all points of vehicular egress, but not

less than 20 feet wide. The gravel pad shall have a minimum length

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 must be stapled, tied or otherwise fastened to the brush barrier. Edges of adjacent fabric pieces must overlap each other. See Figure 6-27.5.

Sediment barriers should be installed along the contour. Temporary sediment barriers shall be installed

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 C 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

Tree Protection

construction activity.

to urban-type uses.

tree health declines.

GSWCC 2016 Edition

**CONSTRUCTION ACTIVITIES** 

**PURPOSE** 

To protect desirable trees from injury during

To ensure the survival of desirable trees

ment control, watershed protection, landscape

beautification, dust and pollution control, noise

reduction, shade and other environmental ben-

Trees can be damaged or killed by a wide

such as broken branches or torn bark deplete

insects, or for diseases such as Oak Wilt.

the tree's resources and provide entry points for

The worst damage, however, often remains

hidden underground. Roots are one of the most

nutrient and water uptake, energy storage and

anchoring the plant. It is critical that you protect

Soil compaction is the leading killer of urban

trees. Tree roots need loose soil to grow, obtain

oxygen, and absorb water and nutrients. Stock-

piled building materials, heavy machinery, and

Lacking good soil aeration, roots suffocate and

Requirement for Regulatory Compliance

Many cities and counties in Georgia have

vital parts of a tree. They are responsible for

roots that lie in the path of construction.

variety of construction activities. Obvious injuries

efits while the land is being converted from forest

where they will be effective for erosion and sedi-

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

> tree protection specifications written in their local ordinances. In some areas a permit is needed o remove trees with a specified diameter. It is important for property owners and design professionals to contact the local government to obtain

> > DESIGN CRITERIA No formal design is required. However, in planning, a number of criteria must be consid-

nformation regarding tree ordinances BEFORE

ES&PC plans are designed. Failure to do so

could result in heavy fines or delay in construc-

Tree Protection Zones: 1. Measure the diameter of the tree trunk in inches at 4.5 feet from the ground. This is called the Diameter Breast Height or DBH. 2. Multiply this value by 1.5. This result is the radius of the root protection zone in feet. This is also considered the critical rooting

Once the size of the area is determined, consider fencing materials. Orange tree save fencing or black silt fencing are commonly used.

These materials are easy to install but they often get knocked down or removed when it is inconvenient to go around the tree save area. In some cases more permanent materials, such as chain link fencing, may be required. Whatever fencing material is used, it must be maintained hroughout the construction process.

Tree Protection Zone Fencing: Tree protection zone fencing may be one of

1. For areas of large remnant forest to be protected use 4 feet high orange plastic fabric fencing stapled in three locations to treated wood 2x4 stakes. Set stakes 6 feet on center. Rebar is not to be used for stakes. Figure 6-38.1

2. For single family homes use a treated wood fencing as shown on detail. It may have orange fabric attached to it.

3. For all other developments use 6 feet high 6-225

MAINTENANCE of 50 feet. When the construction is less than 50' The exit shall be maintained in a condition that from the paved access, the length shall be from the edge of existing pavement to the permitted 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

building being constructed. demand, and repair and/or cleanout of any structures to trap sediment. All materials spilled, If the action of the vehicle traveling over the gravel pad does not sufficiently remove the mud, he 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-

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

laden runoff and direct it into an approved sedi-

ment trap or sediment basin.

It is recommended that the egress area be excavated to a depth of 3 inches and be cleared of all vegetation and roots. On sites where the grade toward the paved

CONSTRUCTION SPECIFICATIONS

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.

The geotextile underliner must be placed the full length and width of the entrance. Geotextile selection shall be based on AASHTO M288-06

1. 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 M288-06 Section 7.3, Separation Requirements.

2. For subgrades with a CBR between 1 and 3 or sheer strength between 30 and 90 kPa, geotextile must meet requirements of section AASHTO M288-06 Section 8, Geotextile Property Requirements for Subsurface Drainage, Separation, Stabilization, and Permanent Erosion Control (Geotextile Property Requirements)..

posts and attaching the fabric to them completes

GSWCC 2016 Edition

soil. This vertical compaction reduces the air A brush barrier is a good tool to use in developing pasture in an agricultural situation to prevent spaces between soil particles, which minimizes infiltration. Without this compaction infiltration sediment from leaving the site until the pasture is 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

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 make effective compaction nore difficult to achieve. EPA supported an independent technology evaluation (ASCE 2001), according to the following specifications as which compared three progressively better variashown on the plans or as directed by the design tions of the trenching method with static slicing method. The static slicing method performed better than two lower performance levels of the

> quired 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 of Type S should

be placed a minimum of 36 inches apart.

renching method, and was as good as or better

than the trenching method's highest performance

level. The best trenching method typically re-

Sediment shall be removed once it has accumulated to one-half the original height of

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

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, SEDIMENTATION, AND POLLUTION CONTROL PLAN

When a SEDIMENT BARRIER is used, show the product height in inches for each barrier being used on site. GSWCC 2016 Edition

> chain link fencing attached to galvanized metal post as shown on detail. Figure

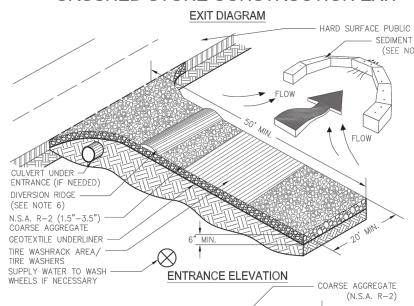
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For more information about standards for adequate tree protection, refer to guidance by the American National Standard (ANSI) or the International Society of Arboriculture.

CRUSHED STONE CONSTRUCTION EXIT

dropped, washed, or tracked from vehicles or

site onto roadways or into storm drains must be



1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE. 3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6". 4. GRAVEL PAD SHALL HAVE A MINIMUM IHIGKNESS OF 6.

5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.

6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.

7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.

8. WHEN 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 CONTROL DEVICE). 9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF ESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL <u>SUITABLE</u> FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT. 10. MAINTAIN AREA IN A WAY 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.

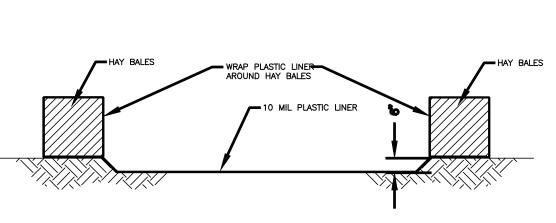
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ASCE 2001. Environmental Technology Verification Report for Installation of Silt Fence Using the Tommy Static Slicing Method, CERF Report #40565. Washington, DC: American Society of Civil Engineers. www.epa.gov/etv/pubs/08\_vs\_tommy.pdf

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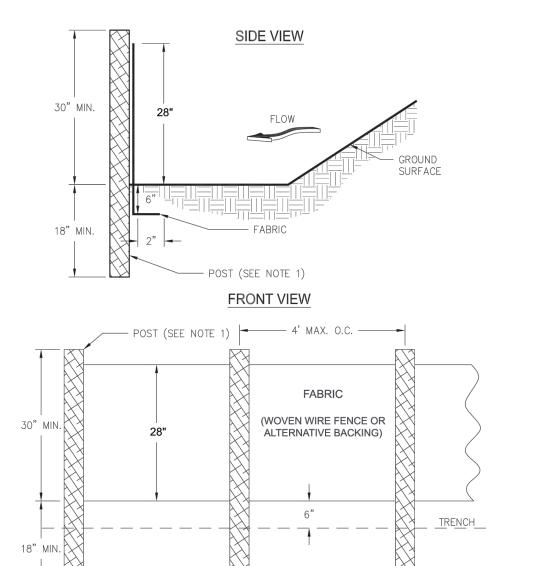
U.S. Environmental Protection Agency 2007. Developing Your Stormwater Pollution Prevention Plan, EPA 833-R-06-004. Washington: EPA. Available from EPA hardcopy 800-490-9198 or www.epa.gov/npdes/





CONCRETE WASHOUT DETAIL

SILT FENCE - SENSITIVE



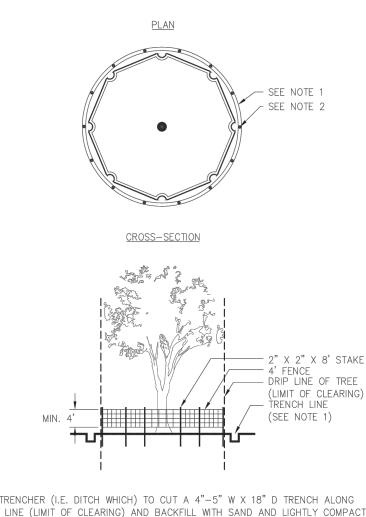
AND POLLUTION CONTROL PLAN.

1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, 2. HEIGHT (\*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION

Figure 6-27.2 GSWCC 2016 Edition

"SNOW" FENCE

TREE PROTECTION

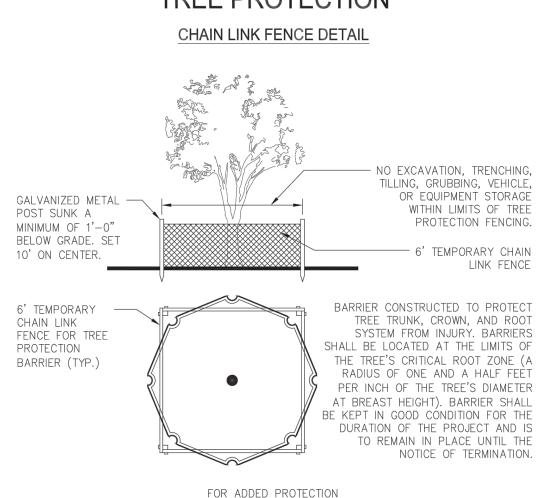


1. USE TRENCHER (I.E. DITCH WHICH) TO CUT A 4"-5" W X 18" D TRENCH ALONG DRIP LINE (LIMIT OF CLEARING) AND BACKFILL WITH SAND AND LIGHTLY COMPACT. 2. SPACE STAKES AT INTERVALS SUFFICIENT TO MAINTAIN ALL FENCING OUT OF DRIP LINE OR AS SHOWN BY ENGINEER (SET STAKES NO GREATER THAN 6 FEET ON CENTER-REBAR IS NOT TO BE USED FOR STAKES). 3. MAINTAIN FENCE BY REPAIRING AND/OR REPLACING DAMAGED FENCE. DO NOT 4. DO NOT STORE OR STACK MATERIALS, EQUIPMENT, OR VEHICLES WITHIN FENCED 5. FENCE SHALL BE ORANGE VINYL "SNOW FENCE" 4' HIGH MINIMUM.

6-227

Figure 6-38.1 6-226 GSWCC 2016 Edition

\*HEIGHT IS TO BE SHOWN ON THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN



FOR ADDED PROTECTION -PROVIDE 4" DEEP ORGANIC MULCH OVER ANY UNPROTECTED ROOT ZONE.

Figure 6-38.2 GSWCC 2016 Edition

6-228

Sensitive Areas\* ( Sd1-S ) Sediment barriers being used as Type S shall have a support spacing of no greater than 4 feet

\*As of January 1 2016, in the existing Georgia Department of Transportation Qualified Products list #36 (QPL- 36), Type A, B, or C will fall under sensitive and non-sensitive applications. Type C will be classified as sensitive and Type A and **B** as non-sensitive. Refer to Appendix A-2 and the Equivalent BMP List.

PRACTICE CLASSIFICATIONS For silt fence Type A, B, or C, refer to Table 6-27.4.

Type A Silt Fence This 36-inch wide filter fabric shall be used on developments where the life of the project is great than or equal to six months. Type A is classified as non-sensitive application.

slopes exceed a vertical height of 10 feet. Type

Soft wood

Steel

Type B Silt Fence In areas where the slope is greater than 20%, Though only 22-inches wide, this filter fabric a flat area length of 10 feet between the toe of allows the same flow rate as Type A silt fence. slope to the barrier should be provided. Type B silt fence shall be limited to use on minor projects, such as residential home sites or small commercial developments where permanent The type of sediment barrier depends on stabilization will be achieved in less than six whether the area is sensitive or nonsensitive. months. Type B is classified as non-sensitive

Sensitive areas can be defined as any area that application. needs additional protection, these areas include but are not limited to, state waters, wetlands, or Type C Silt Fence any area the design professional designates as When using multiple types of sediment barriers on a site in a single run, the barriers must be overlapped 18 inches or as specified by design flows or velocities are particularly high or where

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

Where all runoff is to be stored behind the

system is present), maximum continuous slope

length behind a sediment barrier shall not ex-

ceed 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

Table 6-27.1 Criteria for Sediment Barrier

Maximum Slope

Length Above Fence

Feet

----- FILTER SOCK 12" DIAMETER

AREA TO BE PROTECTED

DISTURBED (WORK) AREA

AREA TO BE PROTECTED

every 100 feet of sediment barrier.

Percent

2 to 5

5 to 10

10 to 20

professional. See Figure 6-27.5

**EROSION AND SEDIMENT CONTROL** 

TYPE B COMPOST FILTER SOCK

CROSS-SECTION

sediment barrier (where no storm water disposal

not exceed 4 feet.

Sediment Barrier

Sediment Barriers are temporary structures

made up of a porous material typically supported

by steel or wood posts. Types of sediment bar-

riers may include silt fence, brush piles, mulch

berms, compost filter socks or other filtering

To minimize and prevent sediment carried

by sheet flow from leaving the site and entering

natural drainage ways or storm drainage sys-

tems by slowing storm water runoff and causing

the deposition and/or filtration of sediment at the

structure. The barriers retain the soil on the dis-

turbed land until the activities disturbing the land

Barriers should be installed where runoff can

are completed and vegetation is established.

be stored behind the barrier without damaging

structure itself. Sediment barriers shall not be

installed across streams, ditches, waterways, or

Sediment barriers are designed to retain sedi-

ment transported by sheet flow from disturbed

areas. It is important for the design professional

to take into account the profile of the product for

(WORK) AREA 30" MIN.

NOTE: FILTER SOCK 12" DIAMETER

CONDITIONS AND AT LEAST 18" DIA

(SEE EQUIVALENT LIST)

EXISTING CONTOURS

WOODEN STAKES

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(2' O.C. FOR TYPE NS)

the submerged area behind the barrier or the

other concentrated flow areas.

**DESIGN CRITERIA** 

use on the site.

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DEFINITION

CONDITIONS

C is classified as sensitive application. CONSTRUCTION SPECIFICATIONS Filter Media Sock Specifications Non-sensitive Areas \* (Sd1-NS) Compost filter media used for sediment barrier filler material shall be weed free and derived Sediment barriers being used as Type NS shall from a well-decomposed source of organic mathave a support spacing of no greater than 6 feet ter. Filter Media Sock is classified as a Type on center, with each being driven into the ground B. non-sensitive application. The compost a minimum of 18 inches. shall be produced using an aerobic composting GSWCC 2016 Edition

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 without applicable water on center, with each being driven into the ground quality test results. Test methods for the items a minimum of 18 inches.

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

B. Particle size – 99% passing a 2 inch (50mm) sieve and a maximum of 40% passing a 3/8 inche (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 in./50 mm in particle size.)

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 manmade materials E. Sock containment system for compost filter media shall be a photodegradable or biode gradable knitted mesh material and should have 1/8 in. to 3/8 in., openings.

Brush Barrier ( Sd1-BB (Only during timber clearing operations) Type C fence is 36-inches wide with wire rein-Brush obtained from clearing and grubbing forcement or equivalent. The wire reinforcement operations may be piled in a row along the peis necessary because this fabric allows almost rimeter of disturbance at the time of clearing and three times the flow rate as Type A silt fence. grubbing. Brush barriers should not be used in Type C silt fence shall be used where runoff developed areas or locations where aesthetics

> 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.

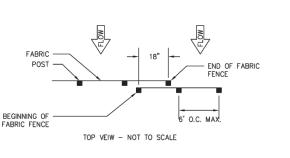
The minimum base width of the brush barrier shall be 5 feet and should be no wider 10 feet. The height of the brush barrier should be between 3 and 5 feet tall.

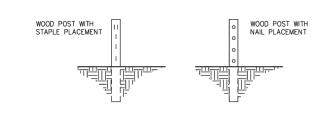
are a concern.

**Table 6-27.3 Fasteners for Wood Posts** 3"dia or 2x4 1.5" x1.5" 1.15lb./ft. min Gauge | Length | Heads | 1.15-1.25 lb./ 2"x2" Note: Filter Fabric may also be attached to the post by wire, cords, and pockets.

FASTENERS FOR SILT FENCES

OVERLAP AT FABRIC ENDS





NOTES:

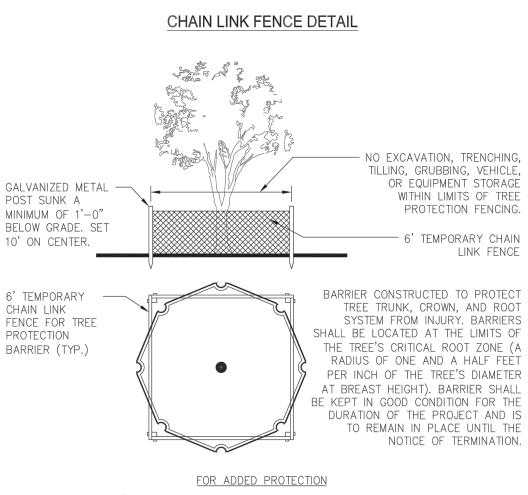
1. THE FABRIC AND WIRE SHOULD BE SECURELY FASTENED TO POSTS AND FABRIC ENDS
MUST BE OVERLAPPED A MINIMUM OF 18" OR WRAPPED TOGETHER AROUND A POST TO
PROVIDE A CONTINUOUS FABRIC BARRIER.

FRONT VIEWS - NOT TO SCALE

6-145

Figure 6-27.5 GSWCC 2016 Edition

TREE PROTECTION

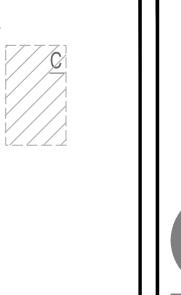


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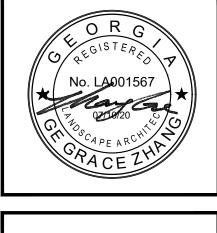
2016 SURVEY & 2019 UPDATED TREE SURVEY TERRAMARK LAND SURVEYING. INC. 1396 BELLS FERRY ROAD MARIETTA, GEORGIA 30066 PHONE NO. (770) 421-1927 FAX. NO. (770) 421-0552 WWW.TERRAMARK.COM C. O. A.# LSF000810

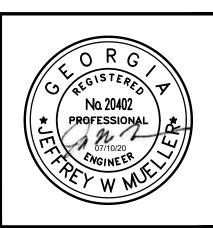
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| No. | Date  | Description                      |
|-----|-------|----------------------------------|
| 1   | 04/20 | LDP - South Trail                |
| 2   | 05/05 | State Buffer Comments - South Tr |
| 3   | 05/05 | LDP - Natural Play Area          |
| 4   | 05/07 | LDP - South Trail - Rev #1       |
| 5   | 05/28 | LDP - Natural Play Area - Rev #1 |
| 6   | 06/18 | Wetland Boardwalk Design-Build   |
| 7   | 06/28 | LDP - Natural Play Area - Rev #2 |
| 8   | 06/30 | LDP - Horseshoe Road             |
| 9   | 07/07 | LDP - Community Green            |
| 10  | 07/10 | LDP - Pool Parking               |
| 11  | 08/17 | LDP - Community Green - Rev #1   |
| 12  | 08/17 | LDP - South Trail - Rev #2       |
|     |       |                                  |
|     |       |                                  |
|     |       |                                  |
|     |       |                                  |
|     |       |                                  |
|     |       |                                  |
|     |       |                                  |





| DATE        | DRAWN | CHECKED |  |  |
|-------------|-------|---------|--|--|
| 04/23/20    | ВМ    | GZ      |  |  |
| SCALE       |       |         |  |  |
| SHEET TITLE |       |         |  |  |
| EROSION     |       |         |  |  |

CONTROL DETAILS I

PROJECT NUMBER 15092.00

Permit # LDP20-00008

DRAWING NUMBER

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

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

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Storm Drain Outlet



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

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

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:

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

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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.

filter ring may be used on the up slope side of

the inlet to slow runoff and filter larger soil par-

ticles. Refer to Fr-Stone Filter Ring.

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 ( Sd2 -F ) Supporting Frame

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 Type S silt fence supported by steel posts should be used. The stakes shall be spaced evenly around the perimeter of the inlet 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 fabric ends must be overlapped a minimum of 18 inches or wrapped together around a post to provide a continuous fabric bar-

rier around the inlet. ( 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

assumed to have a Minimum Tailwater Condition. Apron Length and Thickness The apron length and d<sub>50</sub>, 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 x d<sub>50</sub> Apron Thickness =  $1.5 \times dmax$ 

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:

a. The upstream end of the apron, adjacent to diameter of the outlet pipe.

No. 14, FHWA, Available from the Superintendent b. For a Minimum Tailwater Condition, the of Documents, U.S. Government Printing Office, downstream end of the apron shall have a Washington, D.C. 20402. width equal to the pipe diameter plus the length of the apron. Refer to Figure 6-34.1. CONSTRUCTION SPECIFICATIONS c. For a Maximum Tailwater Condition, the

length of the apron. Refer to Figure 6-34.2.

Side Slope

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

in Type C filter fabric that shall be entrenched 12 inches and backfilled.

**Block and Gravel** Sd2 -Bg) Drop Inlet Protection 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. Hardware 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 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. ( Sd2-S ) Sod Inlet Protection

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

The apron shall be located so that there are

Geotextile Property Requirements. The geotex-

tile should be placed immediately adjacent to the

The apron may be lined with riprap, grouted

riprap, or concrete. The median sized stone for

riprap, d<sub>50</sub>, shall be determined from the curves,

ment of riprap shall conform to Appendix C.

Figures 6-34.1 and 6-34.2, according to the tail-

water condition. The gradation, quality and place-

Refer to Figure 6-34.4, for alternative structures

to achieving energy dissipation at an outlet. For

information regarding the selection and design of

FHWA Standard (REF. Hydraulic Design of En-

1. Ensure that the subgrade for the filter and

riprap follows the required lines and grades

shown in the plan. Compact any fill required

rounding undisturbed material. Low areas in

the subgrade on undisturbed soil may also

be filled by increasing the riprap thickness.

the specified grading limits shown on the

2. The riprap and gravel filter must conform to

3. Geotextile must meet design requirements

and be properly protected from punching or

tearing during installation. Repair any dam-

age by removing the riprap and placing an-

other piece of filter fabric over the damaged

area. All connecting joints should overlap a

Nutrient Removal

Buffer Width in Feet

Figure 6-1.1 - Range of Minimum Width for Meeting Specific Buffer Objectives

(Palone and Todd, draft)

Streambanks Stabilization and Aquatic Food Web

Water Temperature Moderation

watershed area and slope.

4. Native and non-invasive plant species should

Streambank Stabilization (Using Permanent

Vegetation). Vegetated stream buffers on steep

slopes may need to be wider to effectively filter

overland flow. Corridors subject to intense flooding

may require additional streambank stabilization

manent Vegetation). Standard permanent ero-

in the subgrade to the density of the sur-

ergy Dissipators for Culverts and Channels; HEC

these alternative energy dissipators, refer to:

no bends in the horizontal alignment.

subgrade without any voids.

Maximum Tailwater Condition. Pipes that outlet onto flat areas with no defined channel may be

> 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 M288-06 Section 8,

the pipe, shall have a width three times the

down stream end shall have a width equal to the pipe diameter plus 0.4 times the

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

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

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 in-

Figure 6-28.7 shows one of these alternative

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).

Sediment shall not be washed into the inlet. It shall be removed from the sediment trap, disposed of and stabilized so that it will not enter the inlet again.

When the contributing drainage area has been permanently stabilized, all materials and any sediment shall be removed, and either GSWCC 2016 Edition

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.

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

7. Ensure that the apron is properly aligned with

disturbed areas with vegetation. Stone quality - Select stone for riprap from field stone or quarry stone. The stone should be hard, angular, and highly weather-resis-

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.

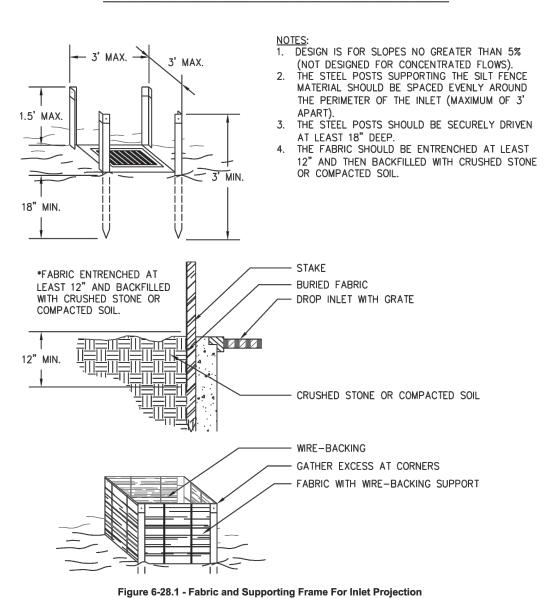
tant. The specific gravity of the individual

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.

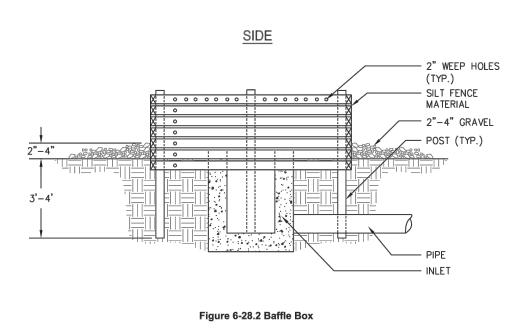
salvaged or disposed of properly. The disturbed area shall be brought to proper grade, then smoothed and compacted. Appropriately stabilize all disturbed areas around the inlet.

FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

STEEL FRAME AND TYPE C SILT FENCE INSTALLATION

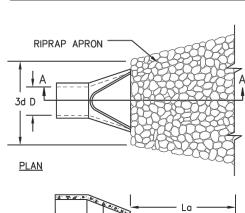


— INLET SILT FENCE MATERIAL ATTACHED ----- INTERIOR BRACING \_\_ 2X4 OR 4X4 POSTS



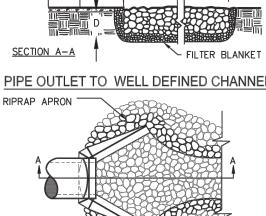
RIPRAP OUTLET PROTECTION

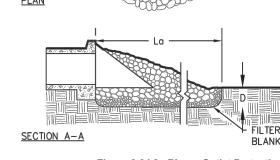
PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL



1. La IS THE LENGTH OF THE RIPRAP 2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESSTHAN 6". IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LES 4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

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6-210

Figure 6-34.3 - Riprap Outlet Protection (Modified From Va SWCC)

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6-17

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Figure 6-34.1 - Design of Outlet Protection From a Round Pipe Flowing Full, Minimum Tailwater Condition (Tw < 0.5 Diameter)

Curves may not be extrapolated.

Discharge (ft<sup>3</sup>/sec)

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A strip of undisturbed, original vegetation, enhanced or restored existing vegetation or the re-establishment of vegetation surrounding an area of disturbance or bordering streams, ponds, wetlands, lakes and coastal waters.

To provide a buffer zone serving one or more of the following purposes: Reduce storm runoff velocities

 Act as screen for "visual pollution" Reduce construction noise Improve aesthetics on the disturbed land

 Filtering and infiltrating runoff Cooling rivers and streams by creating shade provide food and cover for wildlife and aquatic organisms

 Flood protection Protect channel banks from scour and

erosion

CONDITIONS A natural strip of vegetation should be preserved and, if needed, supplemented to form the buffer zone. There are two types of buffer zones.

**General Buffers** A strip of undisturbed, original land surrounding the disturbed site. It can be useful not only

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achieve desired goals. /egetated Stream Buffers Buffers bordering streams are critical due to the invaluable protection of streams from sedimentation. Stream buffers are also useful in

cooling rivers and providing food and cover for wildlife. Refer to the minimum requirements in Act 599 (O.C.G.A. 1-7-1, et. seq.) and Chapters 16 and 18 of the NRCS Engineering Field Hand-

(With Permanent Vegetation). DESIGN SPECIFICATIONS

Important design factors such as slope, hydrology, width and structure shall be considered. While Georgia's Environmental Protection Division enforces minimum stream buffer requirements, expanding the stream buffer width is always encouraged. If any land-disturbing activity, including exempt and non-exempt practices, occurs within the GA EPD mandated stream buffers, cut and fills within the buffer shall be stabilized with appropriate matting or blanket.

General Buffers A width should be selected to permit the zone to serve the purpose(s) as listed above. Supplemental plantings may be used to increase the effectiveness of the buffer zone.

Vegetated Stream Buffers The structure of vegetated stream buffers should be considered to determine if the bufgoals. The size of the stream as well as the topography of the area must be considered to feet or greater can protect waters from excess wider vegetative buffer.

fer must be enhanced to achieve the necessary determine the appropriate width of the vegetated stream buffer. A vegetated stream buffer of 50 sedimentation. The buffer should be increased 2 feet in width for every 1% slope (measured alon a line perpendicular to the stream bank). Surface water pollution can be reduced with a 100 foot or

to filter and infiltrate runoff, but also to act as a screen for "visual pollution" and reduce construction noise. General buffers may be enhanced to

In most cases, the buffer zone will be incorporated into the permanent vegetative cover. Refer to specification Ds3 - Disturbed Area Stabilization

A general multipurpose riparian buffer consists 3. The width should be proportional to the of three zones. 1. Zone 1 The first 20 feet nearest the stream 2. Zone 2 The next 10 feet should consist of 3. Zone 3 The following 20 feet should be com-

> prised of grasses. This general multipurpose design contains trees and shrubs that help to stabilize stream banks and grasses that spread and reduce the flow from adjacent areas as well as increase settling and infiltration. See Tables 6-1.1 and 6-1.2 for suggested plant species.

> > If the ideal vegetated buffer width cannot be achieved; narrower buffers can still be used to obtain the goals concerning forest structure and riparian habitat. If this is the case, several design principles should be considered:

> > > 6-16

managed forest.

Sheet flow should be encouraged at the edge

under-story and canopy species.

The structure of the buffer should consist of

should consist of trees spaced 6-10 feet

PLANTING TECHNIQUES Plantings for buffer re-establishment and enhancement can consist of bare root seedlings, plants, and balled and burlapped plants. Refer to Tables 6-1.1 and 6-1.2, and Wildlife Plantings in Ds3 - Disturbed Area Stabilization (With Perin denuded areas for quick stabilization. Refer to specification Ds3 - Disturbed Area Stabilization (With Permanent Vegetation). Availability, cost, associated risk, equipment, planting procedures, and planting density must be considered when choosing planting types. Soil preparation and maintenance are essential

sion control grasses and legumes may be used

TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

The flow characteristics of the pipe at full flow including pipe diameter, flow rate (cfs), velocity (fps), and tail

The dimensions of the apron including length (La), width at the headwall (W<sub>4</sub>), downstream width (W<sub>2</sub>),

average stone diameter (d50), and stone depth (D) designed in accordance with Figures 6-34.1 and 6-34.2

for the establishment of planted vegetation. Soil fertility, weed control, herbaceous cover, as well as additional associated products may be required.

Areas closest to the stream should be maintained with minimal impact. During periods of drought as well as during

OPERATIONS AND MAINTENANCE

buffer areas planted for enhancement. Weeds can be removed by hand or with careful spraying.

If appropriate vegetation is chosen, it is un-

likely that fertilizer will be necessary.

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the initial year, watering may be necessary in all

It is imperative that the structure of the 5. Density must be considered to determine vegetated stream buffer be maintained. If the if the existing buffer must be enhanced to buffer has been planted, it is suggested that the achieve the necessary goals. Vegetation area be monitored to determine if plant material must be dense enough to filter sediment must be replaced. See Tables 6-1.1 and 6-1.2 and provide detrital nutrients for aquatic for suggested plant species. Provisions for the protection of new plantings from destruction or damage from beavers shall be incorporated into Streambank stabilization techniques may be required if steep slopes and hydrologic patterns deem it necessary. Refer to specification Sb -

> USDA Natural Resources Conservation Service Georgia Forestry Commission

\* BLAZING STAR - LIATRIS GRAMINIFOLIA

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APPROVED GROUNDCOVERS IN BUFFER ZONE: \* LADY FERN - ATHYRIUM FILIX-FEMINA

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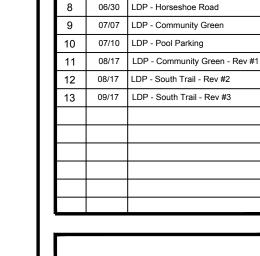
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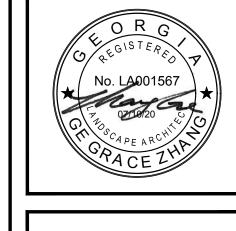
04/23/20 BM SCALE SHEET TITLE

> PROJECT NUMBER 15092.00

> > Permit # LDP20-00008

DRAWINGS SCHEDULE No. | Date | Description 04/20 LDP - South Trail 05/05 State Buffer Comments - South 05/05 LDP - Natural Play Area 4 05/07 LDP - South Trail - Rev #1 05/28 LDP - Natural Play Area - Rev # 06/18 Wetland Boardwalk Design-Build 7 06/28 LDP - Natural Play Area - Rev #2 06/30 LDP - Horseshoe Road



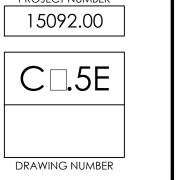


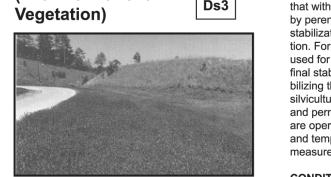




EROSION CONTROL

DETAILS II





### 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. 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 unpaved 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.

4" to 6"

3" to 5"

4" to 6"

Irrigation will be applied at a rate that will not

Topdressing will be applied on all temporary

and permanent (perennial) species planted alone

or in mixtures with other species. Recommended

Second year fertilizer rates and maintenance

Apply one ton of agricultural lime every 4 to

6 years or as indicated by soil tests. Soil tests

can be conducted to determine more accurate

Mow Sericea Lespedeza only after frost to

ensure that the seeds are mature. Mow between

Bermudagrass, Bahiagrass and Tall Fescue may

be mowed as desired. Maintain at least 6 inches

of top growth under any use and management

Moderate use of top growth is beneficial after es-

Exclude traffic until the plants are well estab-

mowing should not take place between May and

lished. Because of the quail nesting season,

rates of application are listed in Table 6-5.1.

Second Year and Maintenance Fertilization

fertilizer rates are listed in Table 6-5.1.

Lime Maintenance Application

requirements, if desired.

Use and Management

November and March.

tablishment.

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Grain straw

Pine needles

Wood waste

Grass Hay

cause runoff.

that within the growing season a 70% coverage by perennial 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

Permanent vegetation shall consist of, planted

trees, shrubs, perennial vines; or a crop of peren-

nial vegetation appropriate for the region, such

provide a protective cover for exposed areas including cuts, fills, dams, and other denuded

### PLANNING CONSIDERATIONS

- 1. Use conventional planting methods where 2. When mixed plantings are done during marginal planting periods, companion crops shall
- 3. No-till planting is effective when planting is done following a summer or winter annual cover crop. Sericea lespedeza planted no-till

6-35

- into stands of rye is an excellent procedure. 4. Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete flumes and other struc-
- tures. Refer to Specification **Ds4-Disturbed** Area Stabilization (With Sodding). 5. Irrigation should be used when the soil is dry or when summer plantings are done.
- 6. Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.
- 7. Mowing should not be performed during the quail nesting season (May to September). 8. Wildlife plantings should be included in critical area plantings.

Wildlife Plantings Commercially available plants beneficial to wildlife species include the following:

Mast Bearing Trees Beech, Black Cherry, Blackgum, Chestnut, Chinkapin, Hackberry, Hickory, Honey Locust, Native Oak, Persimmon, Sawtooth Oak and

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

Grasses, Legumes, Vines and Temporary Cover Bahiagrass, Bermudagrass, Grass-Legume mixtures, Partridge Pea, Annual Lespedeza, Orchardgrass (for mountains), Browntop Millet (for

that produces seeds used by quail and songbirds.

temporary cover), and Native grapes. Provides herbaceous cover in clearings for a game bird brood-rearing habitat. Appropriate legumes such as vetches, clovers, and lespedezas

may be mixed with grass, but they may die out after a few years. CONSTRUCTION SPECIFICATIONS Grading and Shaping

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

Grading and shaping may not be required

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

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.

the specifications of the Georgia Department of

Fast-acting lime spread by hydraulic seeding equipment should 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 Sand Hills, Southern Coastal Plain and Atlantic Coast Flatwoods MLRAs. (See Figure 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

Lime and Fertilizer Application When hydraulic seeding equipment is used, the initial fertilizer shall be mixed with seed, innoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The innoculant, 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

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ute in furrows.

seedling.

before they are used.

desires of the land user.

Lovegrass.

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Plant Selection

pitted or trenched.

2. Mix with the soil used to fill the holes, distrib-

3. Broadcast after steep surfaces are scarified,

4. A fertilizer pellet shall be placed at root depth

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

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

Some perennial species are easily established

and can be planted alone. Examples of these are

Common Bermuda, Tall Fescue, and Weeping

Other perennials, such as Bahia Grass and Seri-

cea Lespedeza, are slow to become established

cies. The additional species will provide quick cover

and ample soil protection until the target perennial

species become established. For example, Com-

rass with Sericea Lespedeza (scarified) and 2) Tall

Plant selection may also include annual compan-

ion crops. Annual companion crops should be used

during their optimum planting period. A common

only when the perennial species are not planted

mon seeding combinations are 1) Weeping Loveg-

Fescue with Sericea Lespedeza (unscarified).

and should be planted with another perennial spe-

in the closing hole beside each pine tree

mixture is Brown Top Millet with Common Bermuda in mid-summer. Care should be taken in select-Finely ground limestone can be applied in the ing companion crop species and seeding rates mulch slurry or in combination with the top dressing. because annual crops will compete with perennial species for water, nutrients, and growing space. When conventional planting is to be done, lime A high seeding rate of the companion crop may and fertilizer shall be applied uniformly in one of

the following ways: Ryegrass shall not be used in any seeding mixtures containing perennial species due to its Apply before land preparation so that it will be ability to out-compete desired species chosen mixed with the soil during seedbed preparafor 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

prevent the establishment of perennial species.

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

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 1. Tillage, at a minimum, shall adequately

loosen the soil to a depth of 4 to 6 inches; the same day inoculated. No inoculated seed shall alleviate compaction; incorporate lime and remain in the hydroseeder longer than one hour. fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw

Hydraulic Seeding Mix the seed (innoculated if needed), fertilizer, and wood cellulose or wood pulp fiber mulch with water 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 culti-packer-seeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed lightly 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 equip-

No-Till Seeding 1. Where individual plants are to be set, the No-till seeding is permissible into annual covsoil shall be prepared by excavating holes, er 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 2. For nursery stock plants, holes shall be the permanent (perennial) species. No-till seedlarge enough to accommodate roots without ing shall be done with appropriate no-till seeding equipment. The seed must be uniformly distributed and planted at the proper depth.

subsoil under the row 36 inches deep on the 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.

Mulch is required for all permanent vegetation applications. Mulch applied to seeded areas shall achieve 75% to 100% soil cover. When selecting a mulch, design professionals should consider the mulch's functional longevity, vegeta-

Big Leaf

Periwinkle

Cherokee

St. Johnswort

Waterer Spirea

tion establishment enhancement, and erosion ing. The mulch may be spread by blower-type control effectiveness. Select the mulching matespreading equipment, other spreading equipment or by hand. Mulch shall be applied to cover 75%

rial from the following and apply as indicated: of the soil surface. 1. Dry straw or dry hay of good quality and free of weed seeds can be used. Dry straw shall Wood cellulose or wood fiber mulch shall be apbe applied at the rate of 2 tons per acre. Dry plied uniformly with hydraulic seeding equipment. hay shall be applied at a rate of 2 1/2 tons

Anchoring Mulch Anchor straw or hay mulch immediately after 2. Wood cellulose mulch or wood pulp fiber application by one of the following methods: shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. 1. Hay and straw mulch shall be pressed Dry straw or dry hav shall be applied (at the into the soil immediately after the mulch is

wood pulp fiber, which includes a tackifier, shall be used with hydraulic seeding on slopes 3/4:1 or steeper.

3. One thousand pounds of wood cellulose or

rate indicated above) after hydraulic seeding.

4. Sericea Lespedeza hay containing mature seed shall be applied at a rate of three tons

5. 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. 6. When using temporary erosion control blankets or block sod, mulch is not required. 7. Bituminous treated roving may be applied on planted areas, slopes, in ditches or dry water-

ways 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

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

Common Name Scientific Name Mature Height Plant Spacing Comments

12-15 in.

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Liriope spicata

Vinca major

Memoria Rose Rosa weuchuriana

Hypericum calycen

APPROVED GROUNDCOVERS IN BUFFER ZONE:

\* LADY FERN - ATHYRIUM FILIX-FEMINA

\* BLAZING STAR - LIATRIS GRAMINIFOLIA

DRAWINGS SCHEDULE No. | Date | Description 04/20 LDP - South Trail 05/05 State Buffer Comments - South 05/05 LDP - Natural Play Area 4 05/07 LDP - South Trail - Rev #1 05/28 LDP - Natural Play Area - Rev #

3. Rye or wheat can be included with Fall and Winter plantings to stabilize the mulch. They shall be applied at a rate of one-quarter to one-half bushel per acre.

spread. A special "packer disk" or disk har-

should be 20 inches or more in diameter and

8 to 12 inches apart. The edges of the disks

shall be dull enough to press the mulch into

the ground without cutting it, leaving much

of it in an erect position. Mulch shall not be

Synthetic tackifiers, binders or hydraulic

mulch specifically designed to tack straw,

shall be applied in conjunction with or im-

mediately after the mulch is spread. Syn-

according to manufacturer's specifications.

All tackifiers, binders or hydraulic mulch

specifically designed to tack straw should be

verified nontoxic through EPA 2021.0 testing.

thetic tackifiers shall be mixed and applied

plowed into the soil.

Refer to Tackifiers-Tac

row with the disks set straight may be used.

The disks may be smooth or serrated and

4. Plastic mesh or netting with mesh no larger than one inch by one inch may be needed to anchor straw or hay mulch on unstable soils and concentrated flow areas. These materials shall be installed and anchored according to manufacturer's specifications.

Spreads by runners.

Lilac flowers in spring.

Rampant grower. Not

for restricted spaces.

Semi-shade.

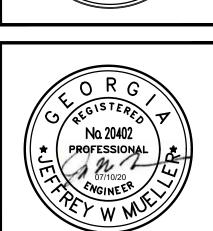
Semi-shade

State flower.

Semi-shade

Rampant grower.

**Bedding Material** Mulch is used as a bedding material to conserve moisture and control weeds in nurseries. ornamental beds, around shrubs, and on bare



6 06/18 Wetland Boardwalk Design-Build

7 06/28 LDP - Natural Play Area - Rev #2

08/17 LDP - Community Green - Rev

8 06/30 LDP - Horseshoe Road

9 07/07 LDP - Community Green

12 08/17 LDP - South Trail - Rev #2

10 07/10 LDP - Pool Parking



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Table 6-5.1. Fertilizer Requirements

|  | ANALYSIS OR                    |                                |  |   |  |
|--|--------------------------------|--------------------------------|--|---|--|
| TYPE OF SPECIES                            | YEAR                           | EQUIVALENT                     | RATE   | TOP DRESSING  |  |
|  |                                | N-P-K                          |  | RATE  |  |
| 1. Cool season                             | First                          | 6-12-12                        | 1500 lbs./ac.  | 50-100 lbs./ac. 1/2/                                      |  |
| grasses                                    | Second                         | 6-12-12                        | 1000 lbs./ac.  |   |  |
| 9  | Maintenance                    | 10-10-10                       | 400 lbs./ac.   | 30  |  |
| 2. Cool season                             | First                          | 6-12-12                        | 1500 lbs./ac.  | 0-50 lbs./ac. 1/  |  |
| grasses and                                | Second                         | 0-10-10                        | 1000 lbs./ac.  |   |  |
| legumes                                    | Maintenance                    | 0-10-10                        | 400 lbs./ac.   |   |  |
| 3. Ground covers                           | First                          | 10-10-10                       | 1300 lbs./ac. 3/   | _   |  |
|  | Second                         | 10-10-10                       | 1300 lbs./ac. 3/   |   |  |
|  | Maintenance                    | 10-10-10                       | 1100 lbs./ac.  | _   |  |
| 4. Pine seedlings                          | First                          | 20-10-5                        | one 21-gram pellet<br>per seedling placed<br>in the closing hole | _   |  |
| 5. Shrub Lespedeza                         | First<br>Maintenance           | 0-10-10<br>0-10-10             | 700 lbs./ac.<br>700 lbs./ac. 4/                                  | _   |  |
| Temporary     cover crops     seeded alone | First                          | 10-10-10                       | 500 lbs./ac.   | 30 lbs./ac. 5/  |  |
| 7. Warm season grasses                     | First<br>Second<br>Maintenance | 6-12-12<br>6-12-12<br>10-10-10 | 1500 lbs./ac.<br>800 lbs./ac.<br>400 lbs./ac.                    | 50-100 lbs./ac. 2/6/<br>50-100 lbs./ac. 2/<br>30 lbs./ac. |  |
| Warm season<br>grasses and<br>legumes      | First<br>Second<br>Maintenance | 6-12-12<br>0-10-10<br>0-10-10  | 1500 lbs./ac.<br>1000 lbs./ac.<br>400 lbs./ac.                   | 50 lbs./ac./6/  |  |

1/ Apply in spring following seeding. 3/ Apply in 3 split applications. 4/ Apply when plants are pruned.

2/ Apply in split applications when high rates are used.

5/ Apply to grass species only. 6/ Apply when plants grow to a height of 2 to 4 inches.

**Durable Shrubs and Ground Covers for Permanent Cover** nd covers include a wide range of low-growing plants planted together in considerable numbers to cover arge areas of the landscape. Ground covers grow slower than grasses. Weeds are likely to compete, establish new loots before hot weather. Scientific Name Mature Height Plant Spacing Common N Also a prostrate form semi-shade, Semievergreen. Carolina Yellow Jessamine Native to Georgia. Carpet Blue Ajuga reptans partial shade. Blue or white flowers. White flowers, red dammeri fruit. Sun. Evergreen. White flowers, red Ground Cover Cotoneaster Cotoneaster salicifoluis 'Reper fruit. Sun. Evergreen. Cotoneaster horizontalis Red in fall, Vine. Virginia Creeper Deciduous. Native to Daylily Many flower colors Full sun. Very hardy. English Ivy Shade only, Climbs, Compacta x crenata Holly 'Compacta' llex cornuta 'Rotunda' llex burfordii 'Nana' Very durable, sun rf Yaupon llex vomitoria 'Nana' semi-shade.

ly the first year. Maintenance is needed to insure survival. These ground covers will not be used unless proper maintenance is planned. Maintain mulch at three-inch thickness until plants provide adequate cover. Fall planting is encouraged because the need for constant watering is reduced and plants have time to Vine. Yellow, trumpetlike flowers. Hardy, one of best vines. Evergreen. Needs good drainage, CC 2016 Edition

Table 6-5.3.

Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cove Common Name Scientific Name Mature Height Plant Spacing 'Repandens' 2-3 ft. Excellent for slopes Andorra Juniperus Juniper horizontalis 1-2 ft. Andorra More compact than Compacta Juniper pacta' Blue Chip Juniperus 8-10 in. Juniper horizontalis 'Blue Chip' Blue Rug Juniperus Very low. Sun. Juniper horizontalis One of the best, Parsons Juniperus davurica good winter cover. (Squamata Parsoni) 6-8 ft. Needs room. Juniperus Juniper chinensis Prince of 8-10 in. Juniperu Feathery appearance. Wales Juniper Sargent Full sun. Needs good Juniper drainage. Good winter Shore Juniper Juniperus conferta 5 ft. erald Sea or Blue 8-10 in. Liriope muscari

or hay mulch if a disk is to be used.

2. Tillage may be done with any suitable

3. Tillage should be done on the contour where

4. 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

opening furrows, or dibble planting.

3. Where pine seedlings are to be planted,

contour four to six months prior to planting.

dry, preferably in August or September.

All legume seed shall be inoculated with ap-

propriate nitrogen-fixing bacteria. The innoculant

shall be a pure culture prepared specifically for

A mixing medium recommended by the manu-

facturer shall be used to bond the innoculant to

the seed. For conventional seeding, use twice

manufacturer. For hydraulic seeding, four times

All inoculated seed shall be protected from the

sun and high temperatures and shall be planted

the amount of innoculant recommended by the

the amount of innoculant recommended by the

the seed species and used within the dates on

Subsoiling should be done when the soil is

Individual Plants

the container.

manufacturer shall be used.

Utilities Protection Center, Inc

2016 SURVEY & 2019 UPDATED TREE SURVEY TERRAMARK LAND SURVEYING, INC. 1396 BELLS FERRY ROAD MARIETTA, GEORGIA 30066 PHONE NO. (770) 421-1927 FAX. NO. (770) 421-0552 WWW.TERRAMARK.COM C. O. A.# LSF000810

04/23/20 SCALE SHEET TITLE **EROSION** 

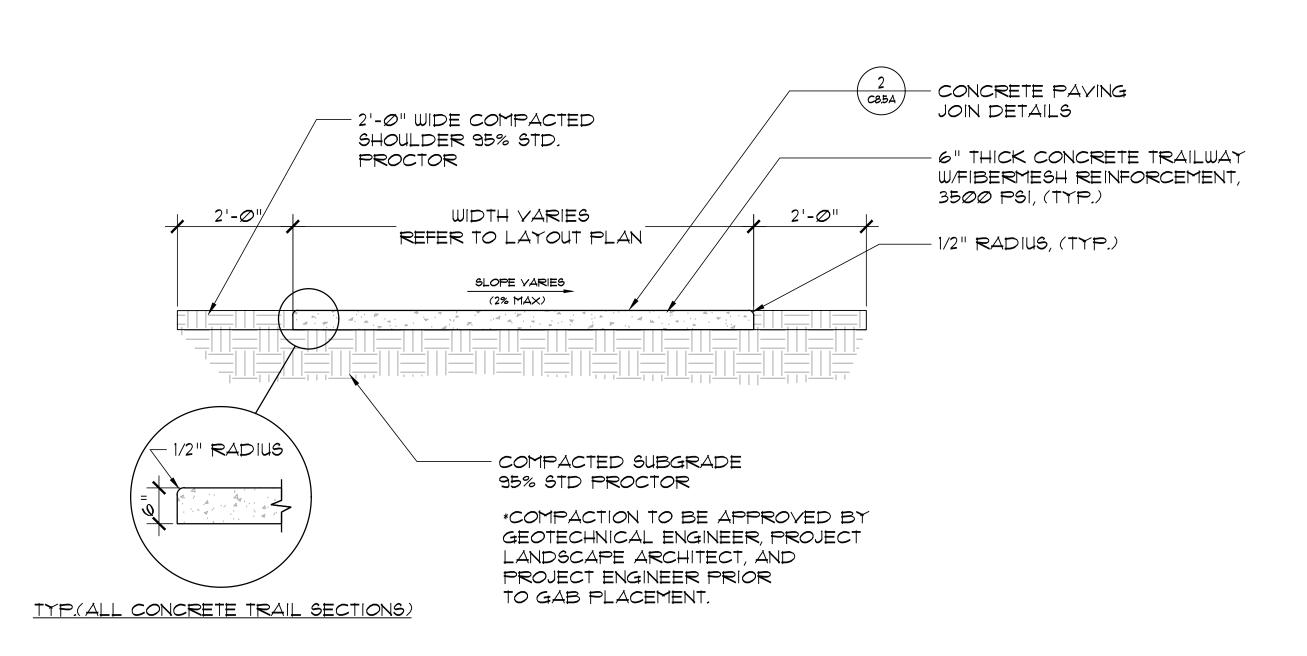
> CONTROL DETAILS III

PROJECT NUMBER 15092.00

Permit # LDP20-00008

DRAWING NUMBER

1=888=283=7211 know what's Below. Call before you dig:



SOME AREAS MAY CONTAIN EXCEPTIONALLY WEAK SUBGRADE MATERIALS WHICH WILL REQUIRE ADDITIONAL SOIL STABILIZATION MEASURES PER DIRECTION OF GEOTECHNICAL CONSULTANT, AND SUBJECT TO APPROVAL OF LANDSCAPE ARCHITECT AND PROJECT ENGINEER.

CONCRETE TRAIL TO BE SCORED IN SQUARES EQUAL TO TRAIL WIDTH FOR PLACEMENT OF CONTROL JOINTS BUT NOT TO EXCEED 10'

SPACING BETWEEN JOINTS.

PLACE EXPANSION JOINTS ALONG THE CONCRETE TRAIL AT REGULAR INTERVALS NOT MORE THAN 30' APART AS WELL AS BETWEEN ALL RIGID FIXED OBJECTS AND THE NEW CONCRETE TRAIL.

THE CONTRACTOR SHALL INSURE THAT THE CONCRETE TRAIL SECTION DOES NOT EXCEED THE 2% MAXIMUM CROSS-SLOPE CRITERIA (ADA REQUIREMENT). IF EXISTING GRADES IN THE FIELD DICTATE A STEEPER CROSS-SLOPE, THEN THE LOWER SIDE OF TRAIL SECTION SHALL MATCH EXISTING GRADE, AND THE COMPACTED SUBGRADE SHOULDERS SHALL BE TRANSITIONED (3:1 MAX.) TO MAINTAIN THE 2% MAX. CROSS-SLOPE REQUIREMENT ACROSS TRAIL SECTION.

CONCRETE TRAIL - TYP 1"=1'-0"

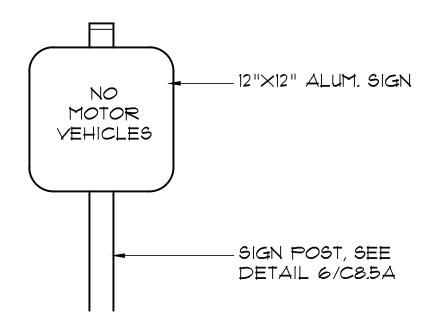
> WHERE SIDEWALK PASSES CLOSE TO A TREE, AS DEFINED BY THE TREE ORDINANCE, CONTRACTOR SHALL "FLOAT" THE SIDEWALK ABOVE THE LEVEL OF EXISTING GRADE IN ORDER TO AVOID DAMAGE TO THE ROOTS. CONTRACTOR SHALL COORDINATE SUCH SPECIAL CONSTRUCTION IN THE FIELD WITH THE LANDSCAPE ARCHITECT OR OWNER REPRESENTATIVE.

—EXISTING GRADE` -UNDISTURBED SOIL -BACKFILL AT EDGE OF SIDEWALK WITH TOPSOIL± HAND-TAMP FIRMY AT SIDEWALK

MIN. 3" G.A.B. OVER UNDISTURBED EXISTING GRADE, OR DEPTH SUFFICIENT TO COVER SURFACE TREE ROOTS ABOVE GRADE (SURFACE ROOTS)

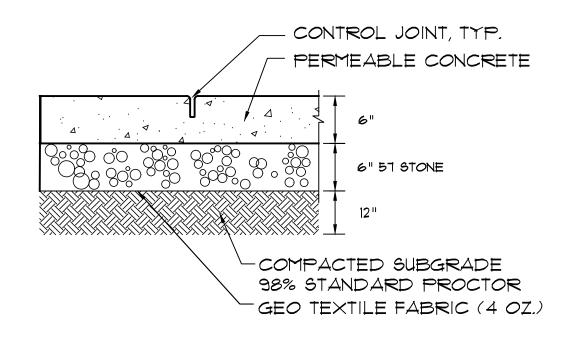
CONCRETE TRAIL OVER TREE ROOTS

NTS

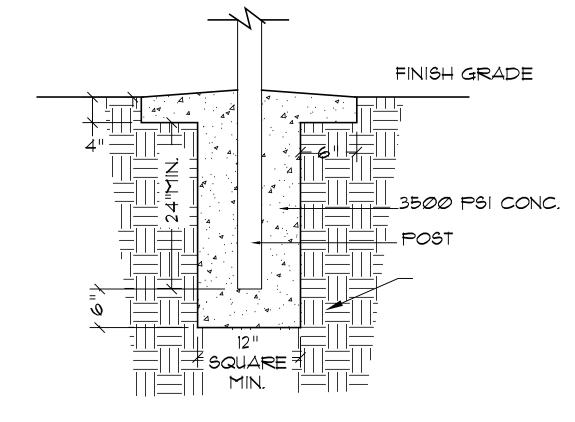


SIGN HEIGHT: 5' FROM BOTTOM OF SIGN TO FINISH GRADE

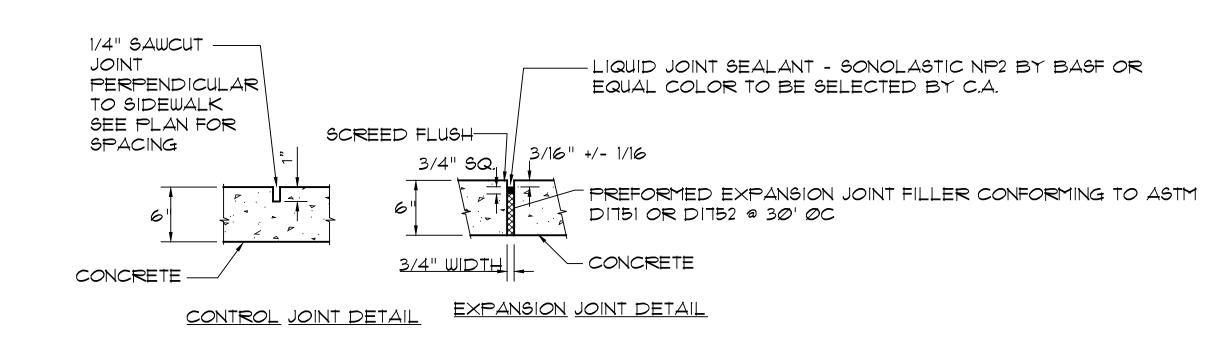
MOTOR VEHICLES SIGN



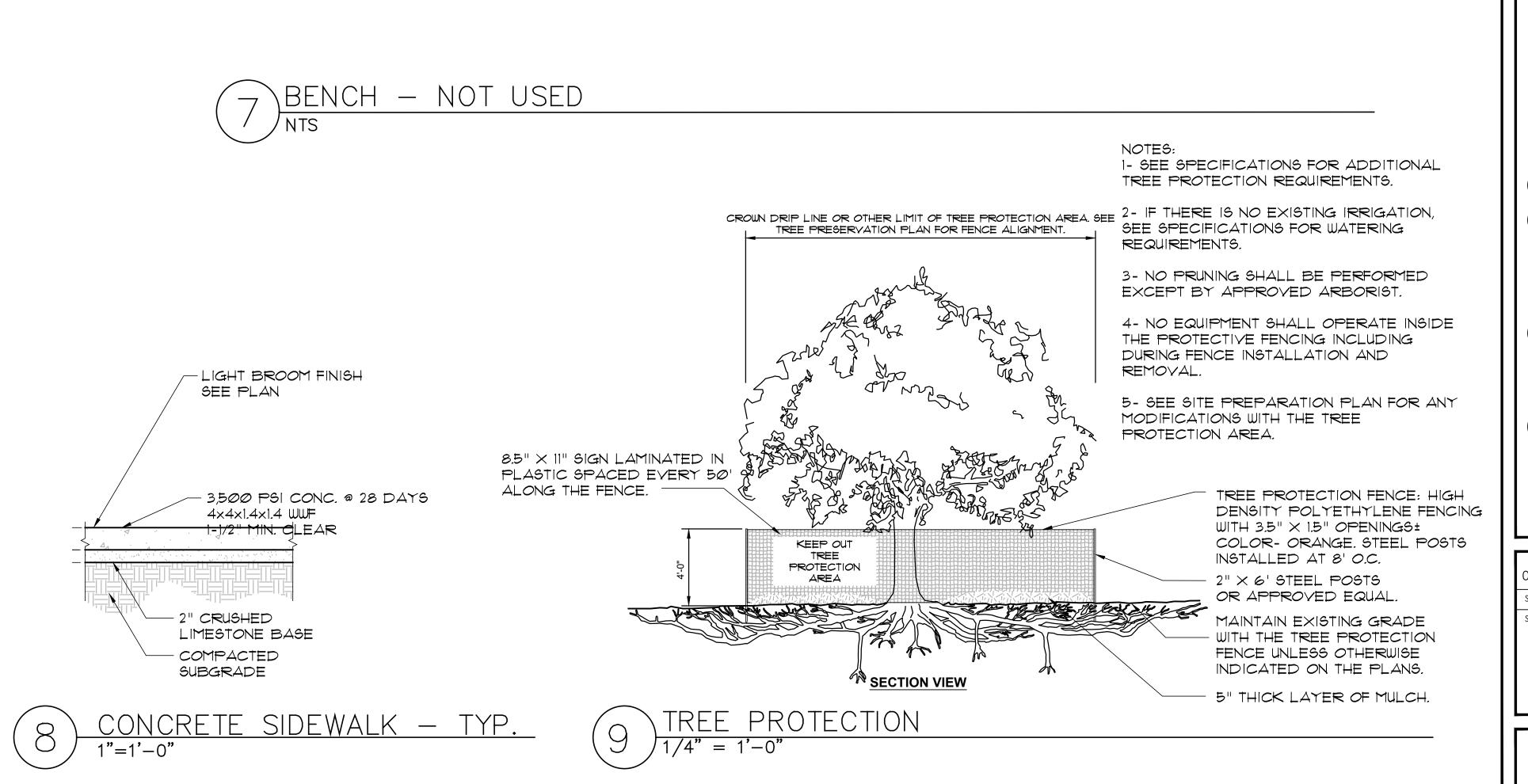
PERVIOUS CONCRETE TRAIL



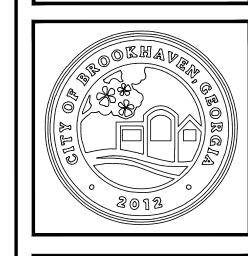
POST FOOTING



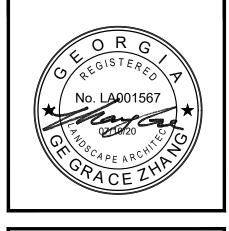
TYPICAL CONCRETE JOINT DETAILS



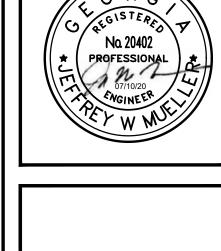




| DF  | DRAWINGS SCHEDULE |                                     |  |  |
|-----|-------------------|-------------------------------------|--|--|
| No. | Date              | Description                         |  |  |
| 1   | 04/20             | LDP - South Trail                   |  |  |
| 2   | 05/05             | State Buffer Comments - South Trail |  |  |
| 3   | 05/05             | LDP - Natural Play Area             |  |  |
| 4   | 05/07             | LDP - South Trail - Rev #1          |  |  |
| 5   | 05/28             | LDP - Natural Play Area - Rev #1    |  |  |
| 6   | 06/18             | Wetland Boardwalk Design-Build      |  |  |
| 7   | 06/28             | LDP - Natural Play Area - Rev #2    |  |  |
| 8   | 06/30             | LDP - Horseshoe Road                |  |  |
| 9   | 07/07             | LDP - Community Green               |  |  |
| 10  | 07/10             | LDP - Pool Parking                  |  |  |
| 11  | 08/17             | LDP - Community Green - Rev #1      |  |  |
| 12  | 08/17             | LDP - South Trail - Rev #2          |  |  |
|     |                   |                                     |  |  |
|     |                   |                                     |  |  |
|     |                   |                                     |  |  |
|     |                   |                                     |  |  |
|     |                   |                                     |  |  |
|     |                   |                                     |  |  |







BRO

04/23/20 BM GZ SCALE SHEET TITLE SITE DETAILS **SOUTH TRAIL** 

> PROJECT NUMBER 15092.00 C8.5A DRAWING NUMBER

**Anchor Locations** Estimated Average Total Truss Height Inside Clear Width

Total Length Coefficient of Expansion Design Temperature Range

Design Live Load Design Wind Pressure (70% opacity assumed)

Design Overturning Wind Pressure

Est. Min. Expansion Range

Expansion/Contraction

<u>Unfactored</u> - Dead Load (DC+DW) <u>Unfactored</u> - Ped. Live Load (PLu) <u>Unfactored</u> - Vehicle Live Load (LLv)\* <u>Unfactored</u> - Horizontal Wind (WSp) <u>Unfactored</u> - Overturning Wind (WSo) <u>Strength I - Ped.</u> [(DC+DW)(1.25) + (PLu)(1.75)] Strength I - Vehicle [(DC+DW)(1.25) + (LLv)(1.75)] Strength III - [(DC+DW)(1.25) + (WSp)(1.4)+(WSo)(1.4)]

|   | 0.28            | in              |                 |                 |                 |                 |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| ľ | R1 <sub>z</sub> | R1 <sub>y</sub> | R1 <sub>x</sub> | R2 <sub>z</sub> | R2 <sub>y</sub> | R2 <sub>x</sub> |
| Ì |                 | 440             |                 |                 | 440             |                 |
| ĺ |                 | 3,375           |                 |                 | 3,375           |                 |
| I |                 | 0               |                 |                 | 0               |                 |
| I | 727             | -436            |                 | 727             | 436             |                 |
| ľ |                 | -1,256          |                 |                 | -419            |                 |
| ĺ |                 | 6,456           |                 |                 | 6,456           |                 |
|   |                 | 550             |                 |                 | 550             |                 |
| ĺ | 1,018           | -1,820          |                 | 1,018           | 574             |                 |
| ľ |                 |                 | 0               |                 |                 | 0               |

Est.Dead Load (DC+DV

Est. Max Vehicle Load (LL

Est. Overturning Wind (WSo)

Est. Live Load (PLu

Est. Wind Load (WSp)

1,759

13,500

2,908

3,350

Assumes symmetrically distributed loading. Values given are for one bridge side.

6.0

10.0

15.0

0.000013

120

90

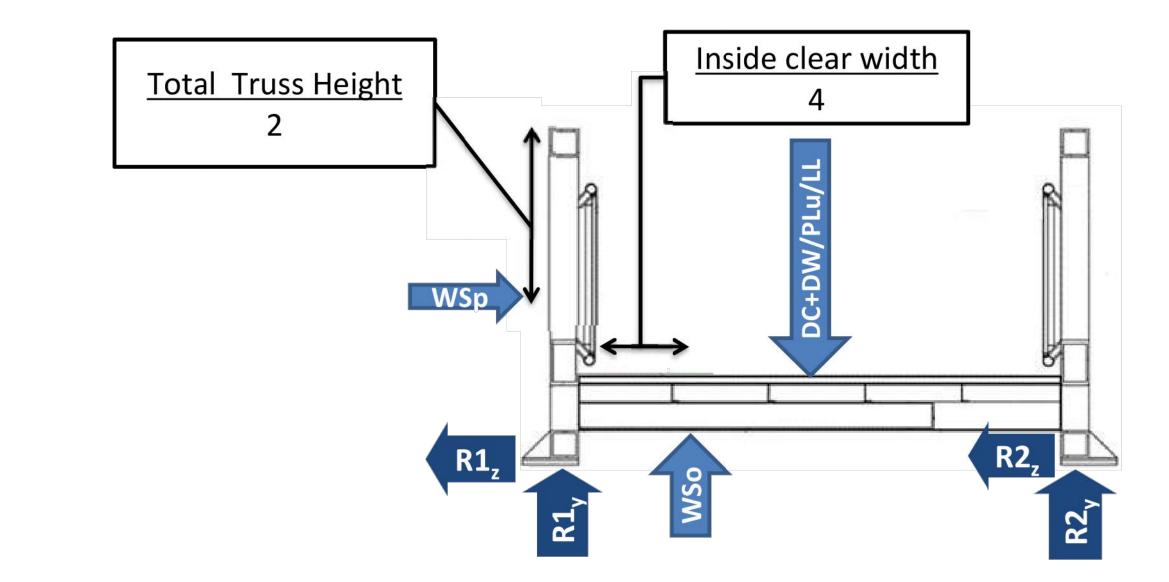
32

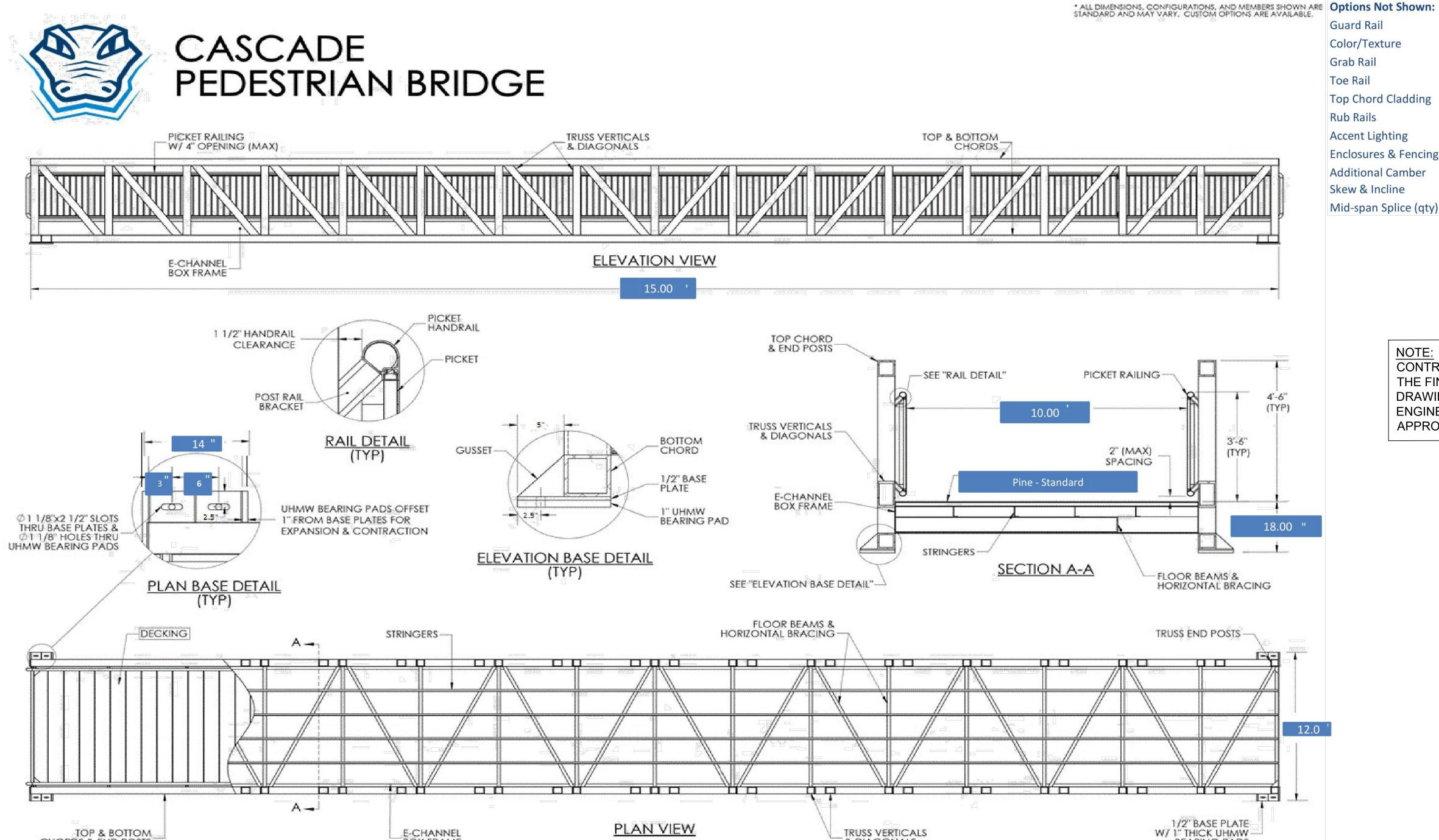
20

\*Assumes vehicle load acting on 2 anchor locations

TOP & BOTTOM

CHORDS & END POSTS





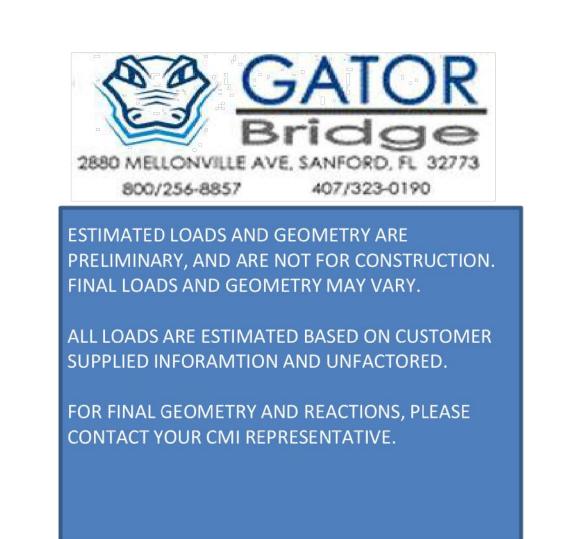
TRUSS VERTICALS

& DIAGONALS

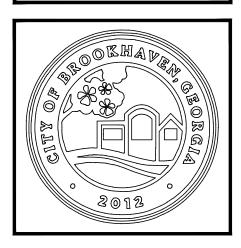
BEARING PADS

42" Combination **Guard Rail** Color/Texture Mill Finish Aluminum **Grab Rail** Toe Rail Top Chord Cladding **Rub Rails** Accent Lighting **Enclosures & Fencing Additional Camber** Skew & Incline Mid-span Splice (qty)

> CONTRACTOR SHALL CONTACT GATOR BRIDGE TO DEVELOP THE FINAL SHOP DRAWINGS FOR PROPOSED BRIDGE DRAWINGS SHALL BE STAMPED BY PROFESSIONAL ENGINEER IN GEORGIA. SHOP DRAWINGS SUBMITTED FOR APPROVAL PRIOR TO ORDERING THE BRIDGE.







| D  | RAWII | NGS SCHEDULE                      |  |  |
|----|-------|-----------------------------------|--|--|
| No | Date  | Description                       |  |  |
| 1  | 04/20 | LDP - South Trail                 |  |  |
| 2  | 05/05 | State Buffer Comments - South Tra |  |  |
| 3  | 05/05 | LDP - Natural Play Area           |  |  |
| 4  | 05/07 | LDP - South Trail - Rev #1        |  |  |
| 5  | 05/28 | LDP - Natural Play Area - Rev #1  |  |  |
| 6  | 06/18 | Wetland Boardwalk Design-Build    |  |  |
| 7  | 06/28 | LDP - Natural Play Area - Rev #2  |  |  |
| 8  | 06/30 | LDP - Horseshoe Road              |  |  |
| 9  | 07/07 | LDP - Community Green             |  |  |
| 10 | 07/10 | LDP - Pool Parking                |  |  |
| 11 | 08/17 | LDP - Community Green - Rev #1    |  |  |
| 12 | 08/17 | LDP - South Trail - Rev #2        |  |  |
|    |       |                                   |  |  |
|    |       |                                   |  |  |
|    |       |                                   |  |  |
|    |       |                                   |  |  |

BRO

| DATE          | DRAWN | CHECKED |  |  |  |
|---------------|-------|---------|--|--|--|
| 4/23/20 BM GZ |       |         |  |  |  |
| CALE          |       |         |  |  |  |
| HEET TITLE    |       |         |  |  |  |
| SITE DETAILS  |       |         |  |  |  |

SOUTH TRAIL BRIDGE

15092.00 C8.5B1

DRAWING NUMBER

E-CHANNEL BOX FRAME

| chor Locations                          | 4     |
|---|-------|
| mated Average Total Truss Height        | 6.    |
| de Clear Width                          | 10    |
| al Length                               | 30    |
| efficient of Expansion                  | 0.000 |
| ign Temperature Range                   | 12    |
| ign Live Load                           | 90    |
| ign Wind Pressure (70% opacity assumed) | 32    |
| ign Overturning Wind Pressure           | 20    |
|   |       |

| 3,811           | Est.Dead Load (DC+DW)       |
|-----------------|-----------------------------|
| <b>0</b>        | Est. Max Vehicle Load (LLv) |
| <b>7,000</b> lb | Est. Live Load (PLu)        |
| <b>5,897</b> lb | Est. Wind Load (WSp)        |
| <b>6,800</b> Ib | Est. Overturning Wind (WSo) |

| Est. Min. Expansion Range | 0.5 |
|---------------------------|-----|
|                           | R1  |

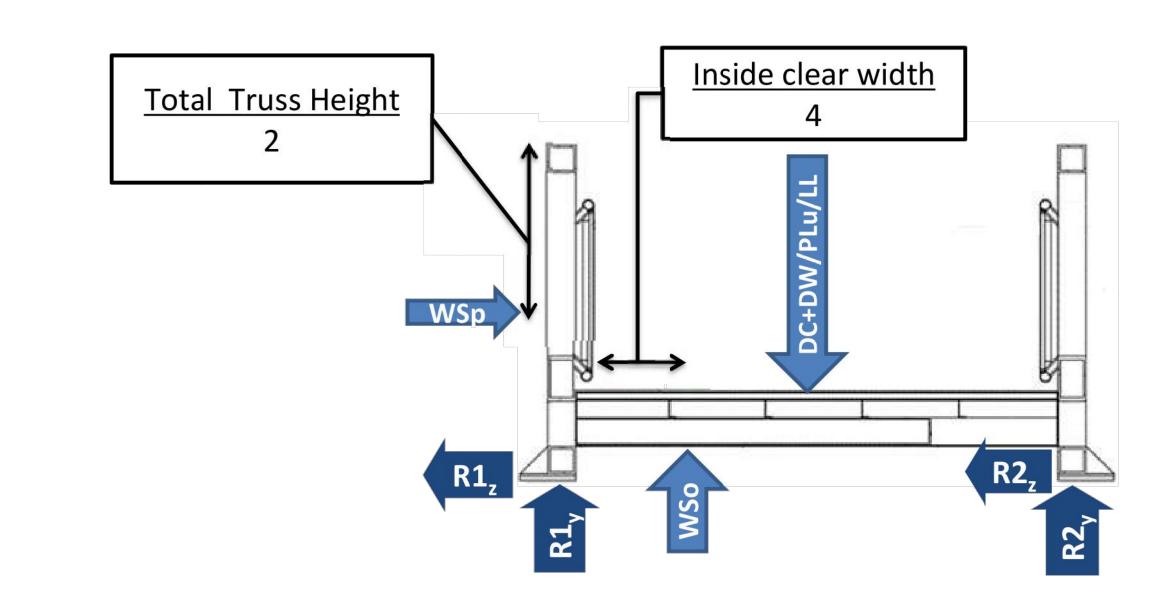
| <u>Unfactored</u> - Dead Load (DC+DW)                  |
|--|
| <u>Unfactored</u> - Ped. Live Load (PLu)               |
| <u>Unfactored</u> - Vehicle Live Load (LLv)*           |
| <u>Unfactored</u> - Horizontal Wind (WSp)              |
| <u>Unfactored</u> - Overturning Wind (WSo)             |
| Strength I - Ped. [(DC+DW)(1.25) + (PLu)(1.75)]        |
| Strength I - Vehicle [(DC+DW)(1.25) + (LLv)(1.75)]     |
| Strength III - [(DC+DW)(1.25) + (WSp)(1.4)+(WSo)(1.4)] |
|  |
|  |

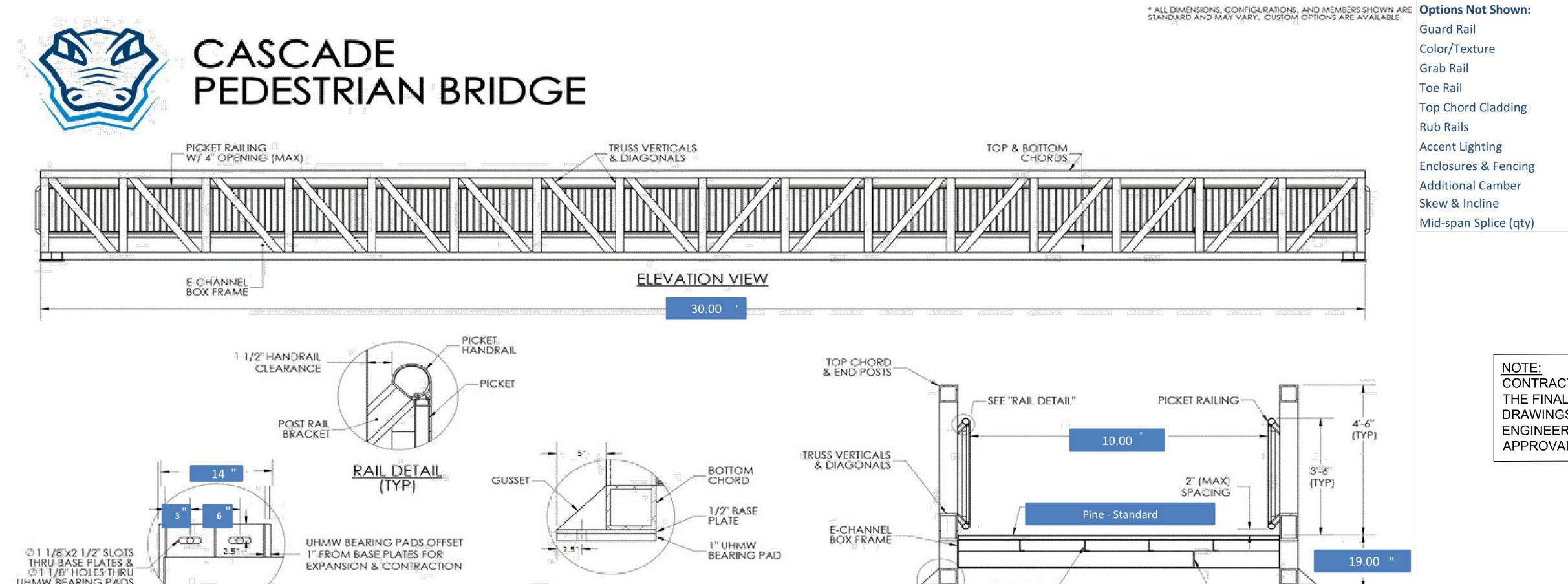
Expansion/Contraction

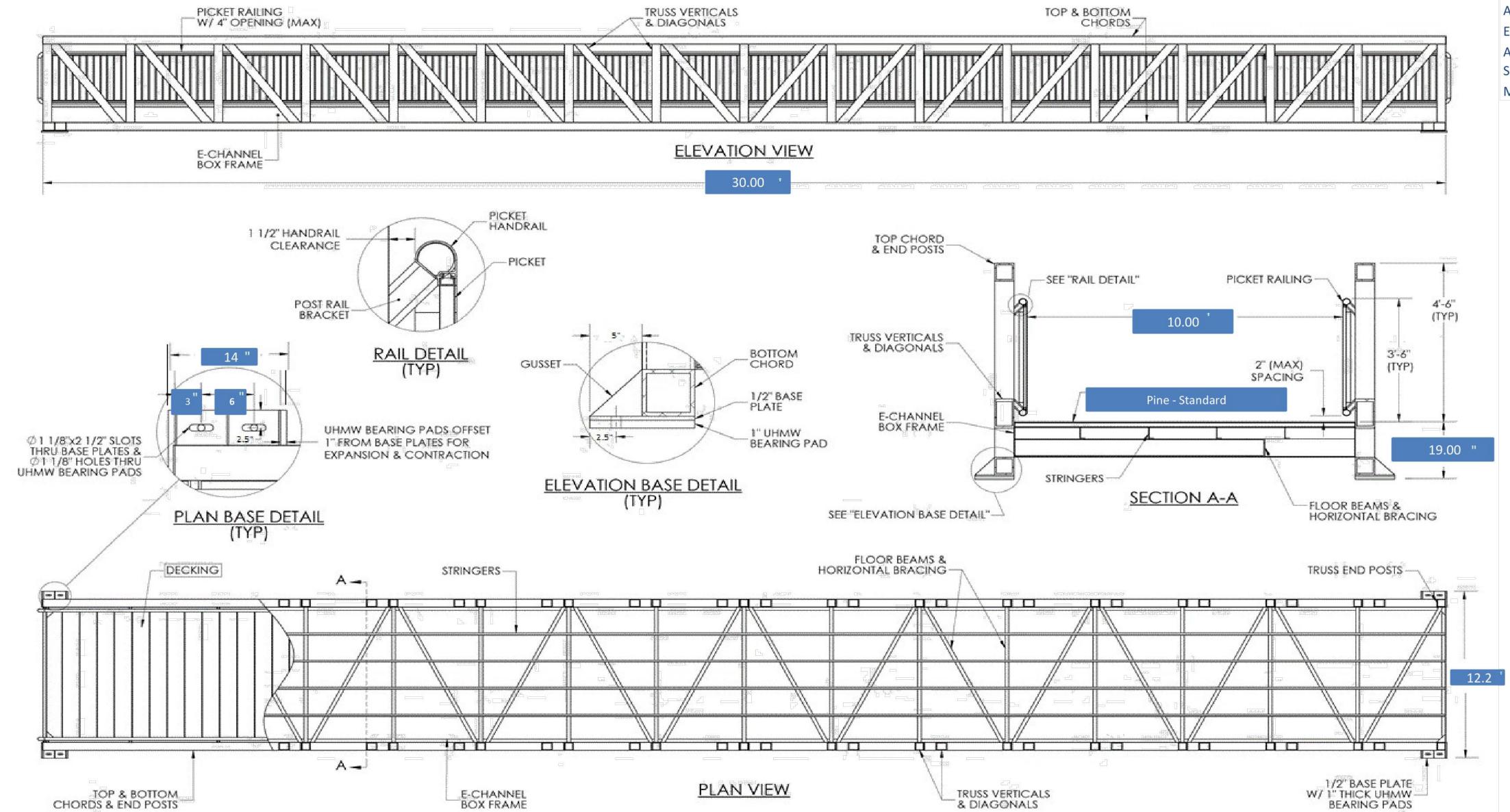
| R1 <sub>z</sub> | R1 <sub>y</sub> | R1 <sub>x</sub> | R2 <sub>z</sub> | R2 <sub>y</sub> | R2 <sub>x</sub> |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | 953             | -               |                 | 953             |                 |
|                 | 6,750           | -               |                 | 6,750           |                 |
|                 | 0               | -               |                 | 0               |                 |
| 1,474           | -897            | 1               | 1,474           | 897             |                 |
|                 | -2,550          | -               |                 | -850            |                 |
|                 | 13,003          | -               |                 | 13,003          |                 |
|                 | 1,191           | 1               |                 | 1,191           |                 |
| 2,064           | -3,635          |                 | 2,064           | 1,256           |                 |
|                 |                 | •               |                 |                 |                 |

Assumes symmetrically distributed loading. Values given are for one bridge side.

\*Assumes vehicle load acting on 2 anchor locations







Mill Finish Aluminum

42" Combination

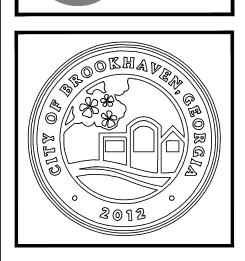
CONTRACTOR SHALL CONTACT GATOR BRIDGE TO DEVELOP THE FINAL SHOP DRAWINGS FOR PROPOSED BRIDGE DRAWINGS SHALL BE STAMPED BY PROFESSIONAL ENGINEER IN GEORGIA. SHOP DRAWINGS SUBMITTED FOR APPROVAL PRIOR TO ORDERING THE BRIDGE.



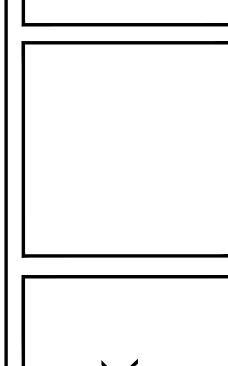
ESTIMATED LOADS AND GEOMETRY ARE PRELIMINARY, AND ARE NOT FOR CONSTRUCTION. FINAL LOADS AND GEOMETRY MAY VARY.

ALL LOADS ARE ESTIMATED BASED ON CUSTOMER SUPPLIED INFORAMTION AND UNFACTORED.

FOR FINAL GEOMETRY AND REACTIONS, PLEASE CONTACT YOUR CMI REPRESENTATIVE.

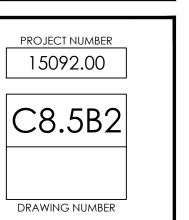


| DRAWINGS SCHEDULE |       |                                     |
|-------------------|-------|-------------------------------------|
| No.               | Date  | Description                         |
| 1                 | 04/20 | LDP - South Trail                   |
| 2                 | 05/05 | State Buffer Comments - South Trail |
| 3                 | 05/05 | LDP - Natural Play Area             |
| 4                 | 05/07 | LDP - South Trail - Rev #1          |
| 5                 | 05/28 | LDP - Natural Play Area - Rev #1    |
| 6                 | 06/18 | Wetland Boardwalk Design-Build      |
| 7                 | 06/28 | LDP - Natural Play Area - Rev #2    |
| 8                 | 06/30 | LDP - Horseshoe Road                |
| 9                 | 07/07 | LDP - Community Green               |
| 10                | 07/10 | LDP - Pool Parking                  |
| 11                | 08/17 | LDP - Community Green - Rev #1      |
| 12                | 08/17 | LDP - South Trail - Rev #2          |
|                   |       |                                     |
|                   |       |                                     |
| ·                 |       |                                     |
|                   |       |                                     |



BRO

| DATE                                  | DRAWN | CHECKED |  |  |
|---------------------------------------|-------|---------|--|--|
| 04/23/20                              | ВМ    | GZ      |  |  |
| SCALE                                 |       |         |  |  |
| SHEET TITLE                           |       |         |  |  |
| SITE DETAILS<br>SOUTH TRAIL<br>BRIDGE |       |         |  |  |

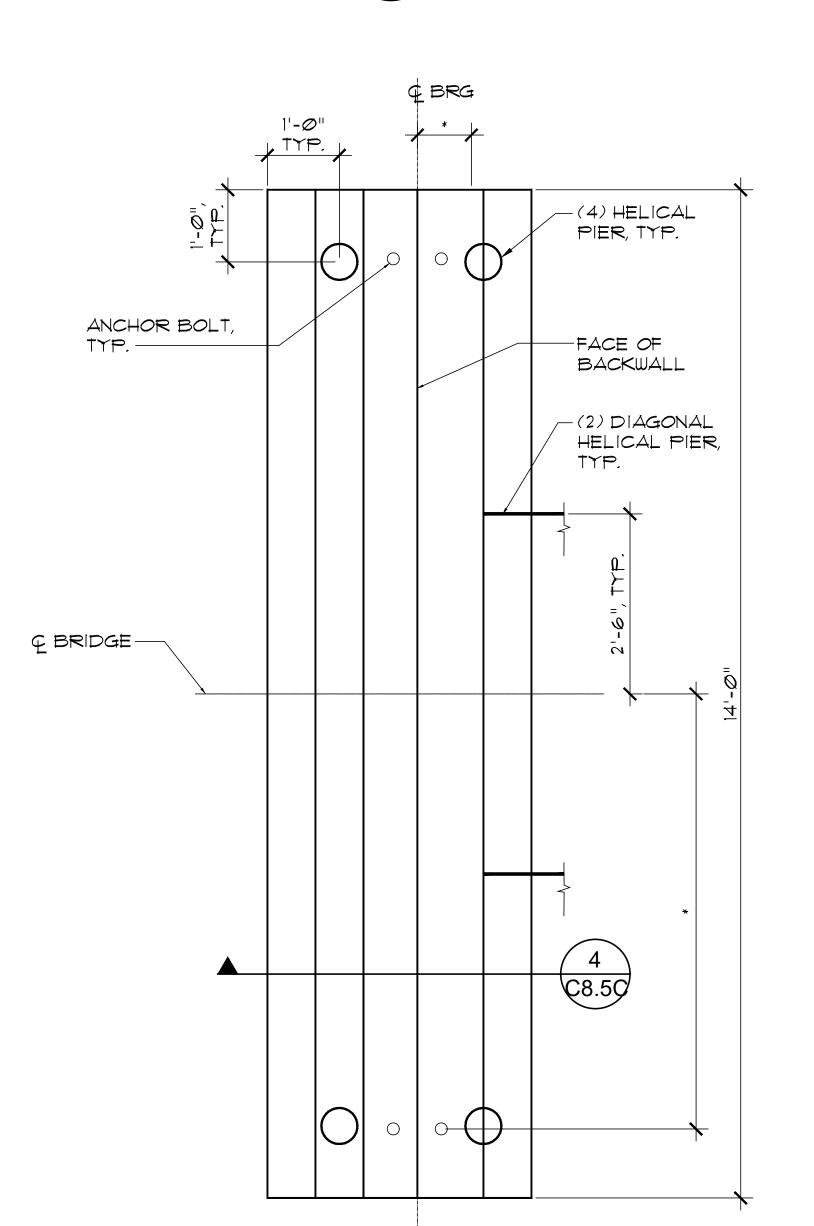


NOTE: WING WALL LOCATION TO BE ADJUSTED IN THE FIELD PER EXISTING GRADE AND PROTECT EXISTING TREES.

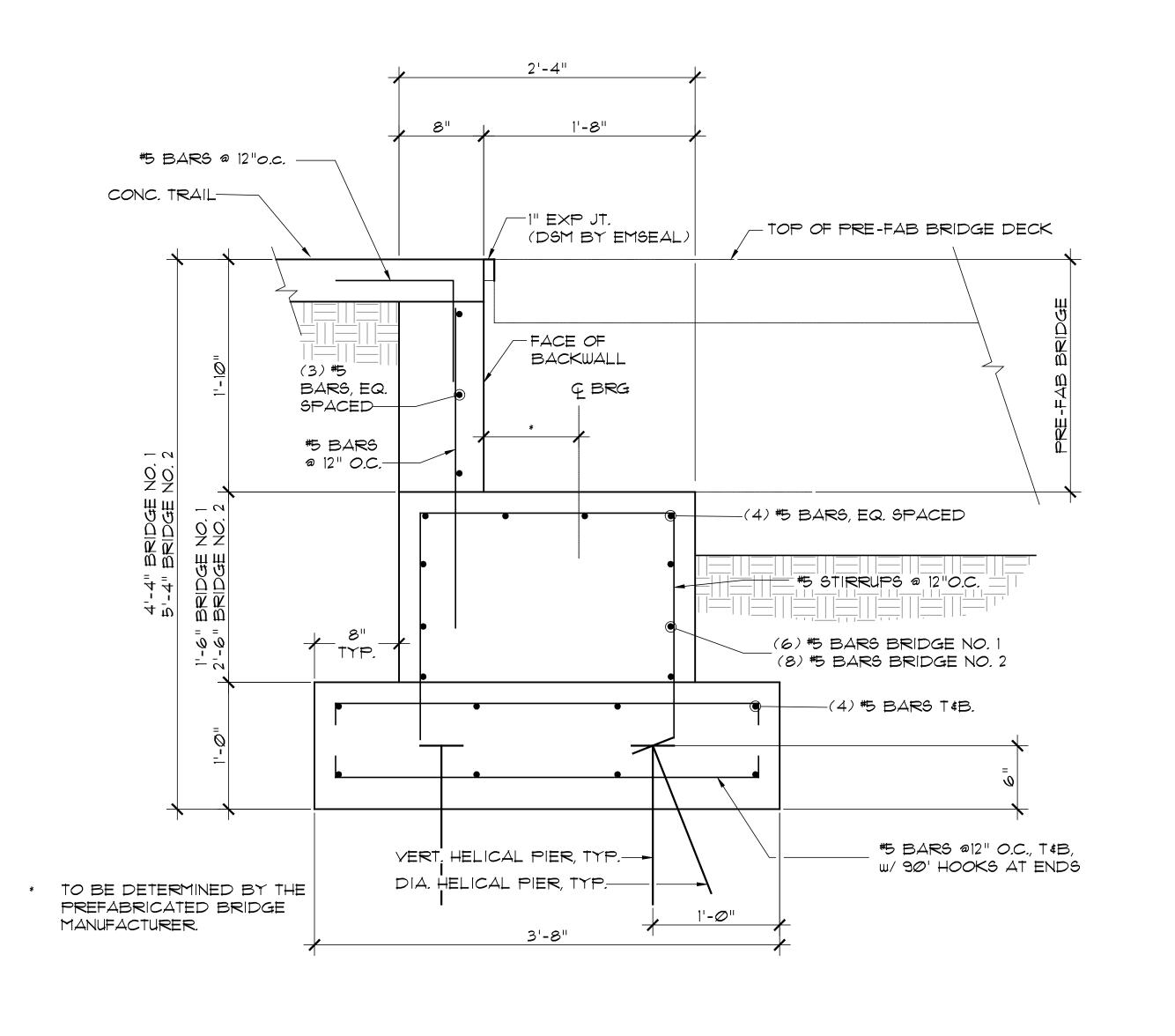
SEE PLAN — FACE OF BACKWALL, TYP. -EDGE OF PRE-FAB BRIDGE (10'-0" x 15'-0") - ABUTMENT, TYP. -WOODEN WINGWALLS, TYP, SEE DETAIL 5, C8.5C

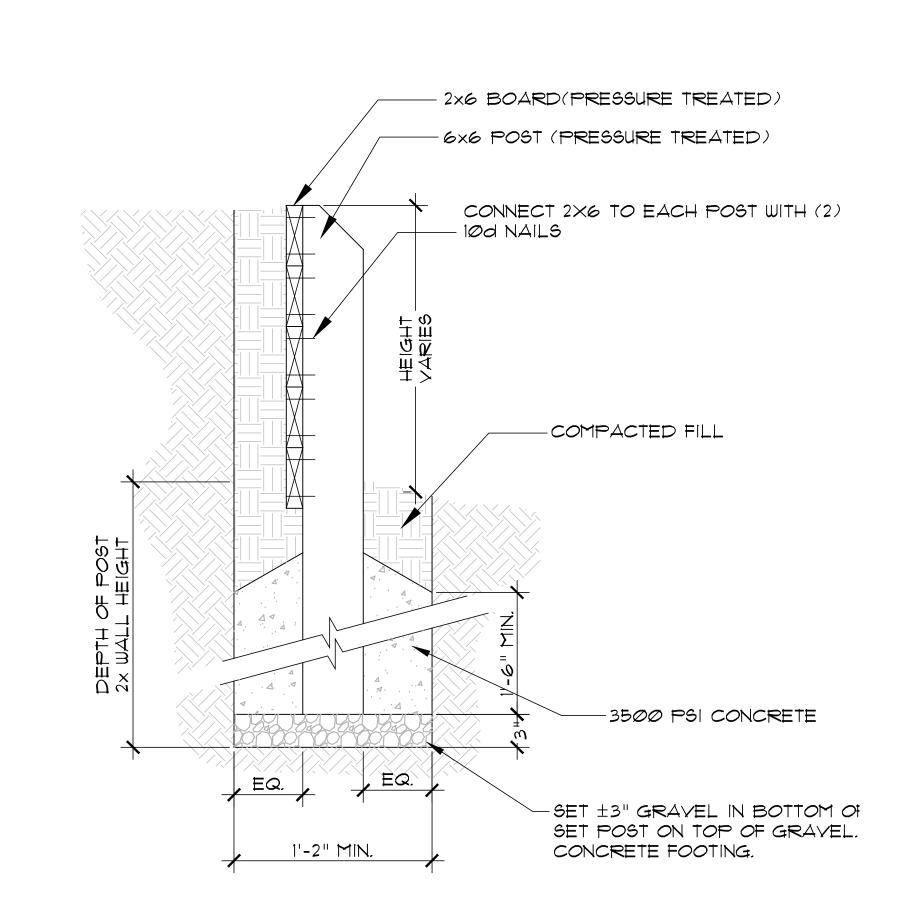
PLAN VIEW SCALE: 1/4"=1'-0"

FOOTBRIDGE SCALE: NTS



ABUTMENT PLAN
SCALE: 3/4"=1'-0"





SCALE: 1-1/2"=1'-0"

BRIDGE ABUMENT scale: 1 1/2"=1'-0"

NOTE: SEE FOOTBRIDGE PLANS ON C5.5 FOR GRADES AND ELEVATIONS.



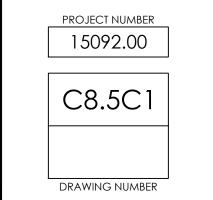
| 2012              |       |                                     |  |  |  |
|-------------------|-------|-------------------------------------|--|--|--|
| DRAWINGS SCHEDULE |       |                                     |  |  |  |
| No.               | Date  | Description                         |  |  |  |
| 1                 | 04/20 | LDP - South Trail                   |  |  |  |
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| 3                 | 05/05 | LDP - Natural Play Area             |  |  |  |
| 4                 | 05/07 | LDP - South Trail - Rev #1          |  |  |  |
| 5                 | 05/28 | LDP - Natural Play Area - Rev #1    |  |  |  |
| 6                 | 06/18 | Wetland Boardwalk Design-Build      |  |  |  |
| 7                 | 06/28 | LDP - Natural Play Area - Rev #2    |  |  |  |
| 8                 | 06/30 | LDP - Horseshoe Road                |  |  |  |
| 9                 | 07/07 | LDP - Community Green               |  |  |  |
| 10                | 07/10 | LDP - Pool Parking                  |  |  |  |
| 11                | 08/17 | LDP - Community Green - Rev #1      |  |  |  |
| 12                | 08/17 | LDP - South Trail - Rev #2          |  |  |  |
|                   |       |                                     |  |  |  |
|                   |       |                                     |  |  |  |
|                   |       |                                     |  |  |  |

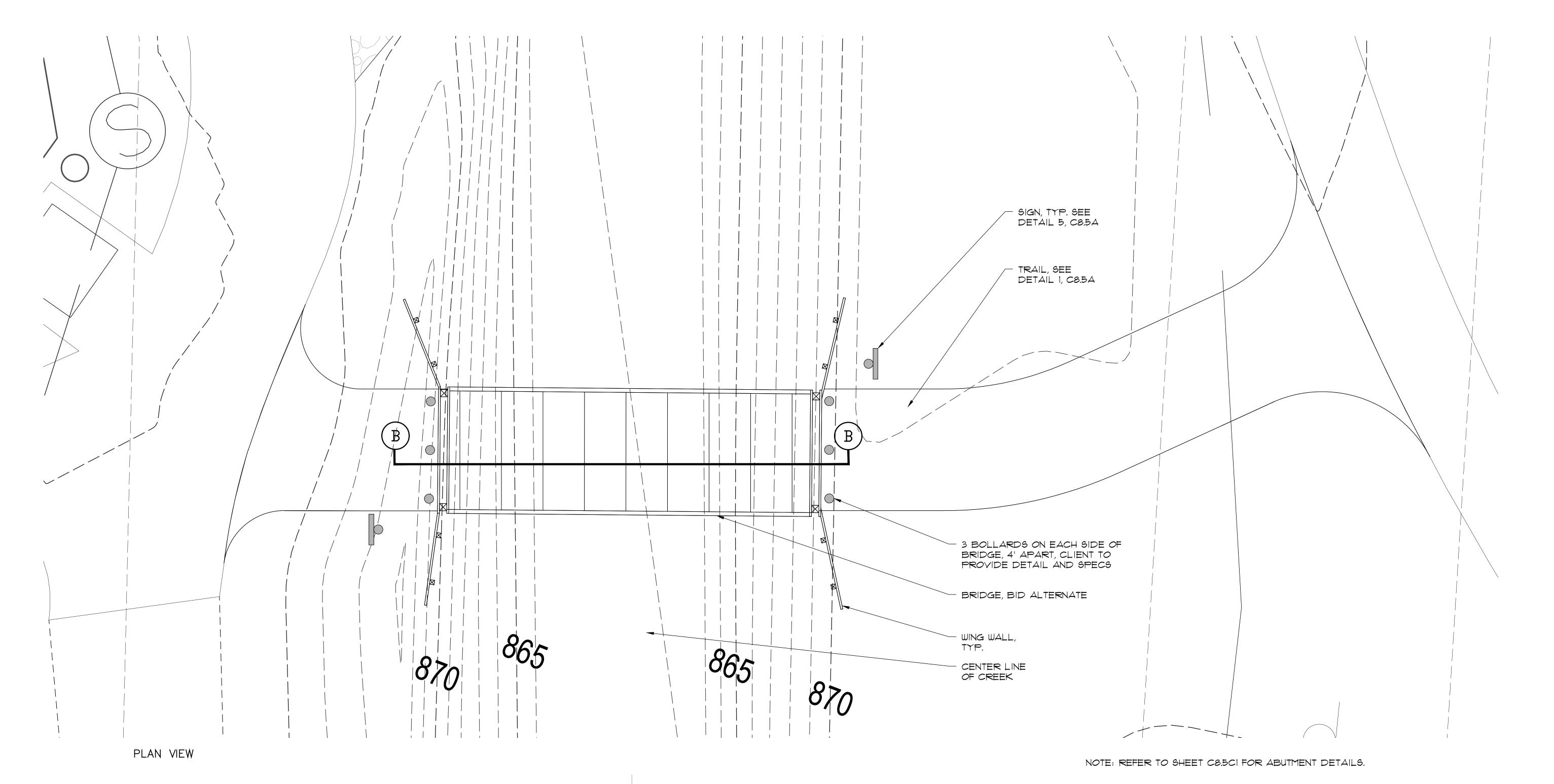


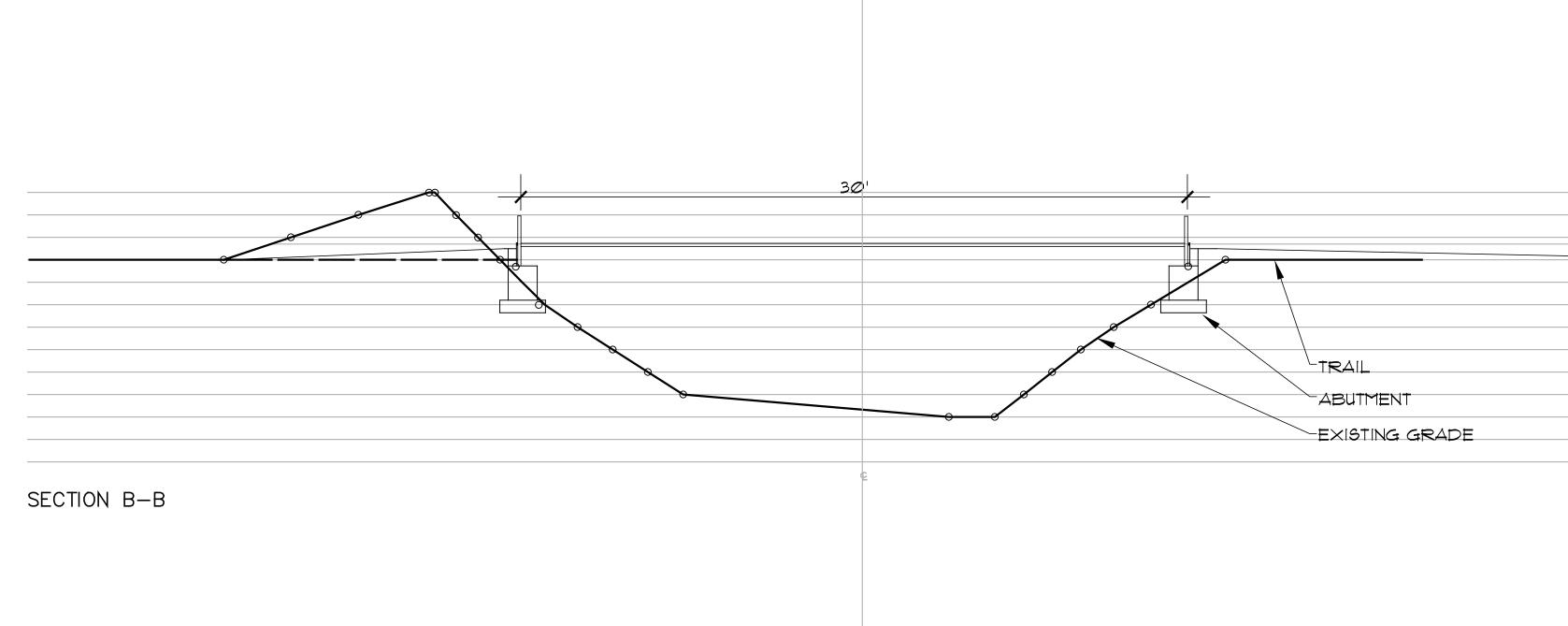


BROOKHA

DATE DRAWN CHECKED 04/23/20 BM GZ SCALE SHEET TITLE SITE DETAILS SOUTH TRAIL BRIDGE



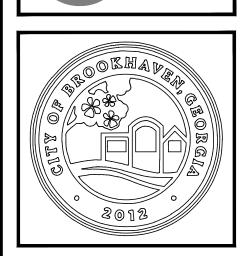




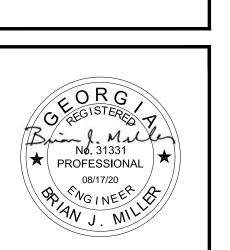
1 2ND FOOTBRIDGE — BID ALTERNATE scale: NTS

NOTE: SEE FOOTBRIDGE
PLANS ON C5.5 FOR GRADES
AND ELEVATIONS.

ARCHITECTUF ENGINEERING PLANNING CPLteam.com

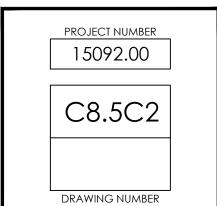


| DRAWINGS SCHEDULE    |       |                                     |  |  |
|----------------------|-------|-------------------------------------|--|--|
| No. Date Description |       |                                     |  |  |
| 1                    | 04/20 | LDP - South Trail                   |  |  |
| 2                    | 05/05 | State Buffer Comments - South Trail |  |  |
| 3                    | 05/05 | LDP - Natural Play Area             |  |  |
| 4                    | 05/07 | LDP - South Trail - Rev #1          |  |  |
| 5                    | 05/28 | LDP - Natural Play Area - Rev #1    |  |  |
| 6                    | 06/18 | Wetland Boardwalk Design-Build      |  |  |
| 7                    | 06/28 | LDP - Natural Play Area - Rev #2    |  |  |
| 8                    | 06/30 | LDP - Horseshoe Road                |  |  |
| 9                    | 07/07 | LDP - Community Green               |  |  |
| 10                   | 07/10 | LDP - Pool Parking                  |  |  |
| 11                   | 08/17 | LDP - Community Green - Rev #1      |  |  |
| 12                   | 08/17 | LDP - South Trail - Rev #2          |  |  |
|                      |       |                                     |  |  |
|                      |       |                                     |  |  |
|                      |       |                                     |  |  |





| DATE                                  | DRAWN | CHECKED |  |  |
|---------------------------------------|-------|---------|--|--|
| 04/23/20                              | ВМ    | GZ      |  |  |
| SCALE                                 |       |         |  |  |
| SHEET TITLE                           |       |         |  |  |
| SITE DETAILS<br>SOUTH TRAIL<br>BRIDGE |       |         |  |  |



2. WHERE A DETAIL, TYPICAL DETAIL, SECTION, TYPICAL SECTION OR PLAN NOTE IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL SIMILAR OR LIKE CONDITIONS UNLESS NOTED OTHERWISE.

3. ALL DESIGN, INCLUDING MATERIAL STRESSES AND METHODS OF CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE 2018 INTERNATIONAL BUILDING CODE WITH GEORGIA STATE AMENDMENTS, THE UNIFORM BUILDING CODE, OSHA AND GOVERNING AGENCIES HAVING JURISDICTION.

4. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS SHOWN ON THE DRAWINGS AND IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES PRIOR TO ORDERING OR FABRICATING MATERIALS OR OTHERWISE PROCEEDING WITH THE WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ORDER TO COMPLY WITH THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES REQUIRED TO EXECUTE AND COMPLETE ALL ITEMS OF WORK AS SHOWN OR INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN, INCLUDING INCIDENTAL ITEMS TO EFFECT A FINISHED AND COMPLETE JOB, EVEN THOUGH SUCH ITEMS ARE NOT SHOWN OR PARTICULARLY MENTIONED.

6. THE GENERAL CONTRACTOR SHALL USE CONSTRUCTION METHODS THAT ARE IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

7. CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR ADEQUATELY SHORING EXISTING CONSTRUCTION WHILE PERFORMING NEW WORK.

8. DIMENSIONS ARE NOT TO BE DERIVED BY SCALING THESE DRAWINGS. IF THERE ARE ANY QUESTIONS REGARDING DIMENSIONS, CONTACT THE ARCHITECT/ENGINEER FOR INFORMATION PRIOR TO SUBMITTING SHOP DRAWINGS.

9. THE CONTRACTOR SHALL COORDINATE ALL STRUCTURAL WORK WITH THE CIVIL DRAWINGS AND SPECIFICATIONS, AND WITH THE WORK OF ALL OTHER TRADES.

10. THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION ALL SITE APPURTENANCES DAMAGED UNDER THIS CONTRACT AT NO ADDITIONAL COST TO THE OWNER.

11. INFORMATION IN THESE STRUCTURAL NOTES IS A SELECTED SUMMARY OF REQUIREMENTS. REFER TO SPECIFICATIONS FOR AMPLIFICATIONS OF

12. WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE EQUALLY SPACED BETWEEN LOCATED MEMBERS.

13. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CONTRACTOR SHALL BE SOLEY RESPONSIBLE FOR CONSTRUCTION SAFETY.

### CAST-IN-PLACE CONCRETE NOTES

1. ALL CONCRETE WORK, CONSTRUCTION AND REINFORCING DETAILS SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE WITH GEORGIA STATE SUPPLEMENTS AND "THE SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS" (ACI-318).

2. ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS AND CONFORM TO THE REQUIREMENTS OF THE SCHEDULE BELOW, UNLESS NOTED OTHERWISE. SEE SPECIFICATIONS FOR MIX DESIGN REQUIREMENTS.

| LOCATION        | w/ C<br>RATIO      | SLUMP<br>(±1") | % AIR<br>(±1%) | MAXIMUM<br>AGGREGATE | MIN. STRENGTH<br>@ 28 DAYS |
|-----------------|--------------------|----------------|----------------|----------------------|----------------------------|
| RETAINING WALLS | .45                | 3.5"           | 5.5            | 1 1/2"               | 4,000 PSI                  |
| SITE CONCRETE   | SEE CIVIL DRAWINGS |                |                |                      |                            |

3. CONTRACTOR SHALL SUBMIT MIX DESIGNS PROPORTIONED BY A LICENSED TESTING LABORATORY.

4. OWNER TO PROVIDE ALL CONCRETE TESTING. MINIMUM OF FOUR (4) CYLINDERS PER EACH FIFTY (50) YARDS OR FRACTION THEREOF POURED IN ONE DAY. BREAK ONE AT 7 DAYS AND TWO AT 28 DAYS.

### **REINFORCING STEEL**

1. ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES" (ACI-315).

2. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.

3. LAP SPLICES AND EMBEDMENT LENGTHS SHALL CONFORM TO ACI 318.

4. PROVIDE CORNER BARS TO MATCH HORIZONTAL REINFORCING WHERE FOOTINGS, WALLS OR BEAMS MEET AT CORNERS OR INTERSECT. THIS ALSO INCLUDES INTERSECTIONS OF CONCRETE WITH MASONRY WORK.

5. PROVIDE SHOP DRAWINGS FOR REINFORCING INCLUDING ALL NECESSARY ACCESSORIES TO HOLD REINFORCING SECURELY IN PLACE.

6. CLEAR COVER CONCRETE PROTECTION FOR REINFORCING STEEL SHALL BE: A. 3" - CONCRETE CAST AGAINST EARTH.

B. 2" - FORMED SURFACES IN CONTACT WITH SOIL OR EXPOSED TO WEATHER.

### **FOUNDATIONS**

1. ALL FORMS AND REINFORCING STEEL IN PLACE SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE BEFORE ANY CONCRETE IS PLACED.

2. NO FOUNDATION SHALL BE PLACED IN WATER OR ON FROZEN GROUND.

3. IN GENERAL, THE BOTTOM OF FOOTINGS SHALL BE A MINIMUM OF 2'-0" BELOW GRADE.

4. CENTERLINE OF FOOTINGS, WALLS, GRADE BEAMS, COLUMNS, AND BEAMS SHALL COINCIDE, UNLESS OTHERWISE NOTED.

5. ALL EXTERIOR CONCRETE USED ABOVE GRADE SHALL HAVE AN AIR ENTRAINING AGENT.

6. RUB ALL SIGHT EXPOSED CONCRETE AFTER FORMS HAVE BEEN REMOVED.

7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".

8. ISOLATION JOINT - ASPHALT IMPREGNATED FILLER STRIP CONFORMING TO

ASTM D-944.

9. CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON THE JOB BEFORE COMMENCING WORK. EPOXY ANCHORS SHALL BE HIT HY-200 INJECTION ADHESIVE ANCHORS AS MANUFACTURED BY HILTI, INC., TULSA OK (800-879-8000).

### DESIGN CRITERIA NOTES

### 1. GENERAL BUILDING CODE

THE CONSTRUCTION DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE WITH GEORGIA STATE AMENDMENTS

### 2. DEAD AND LIVE LOADS

- A. THE DEAD LOADS ARE THE SELF WEIGHT OF MATERIALS OF CONSTRUCTION.
- B. THE UNIFORMLY DISTRIBUTED AND/OR CONCENTRATED LIVE LOADS USED IN THE DESIGN

OF THE BUILDING ARE BASED ON THE FOLLOWING INTENDED USE OR OCCUPANCIES:

a. PEDESTRIAN BRIDGES: 100 PSF

### 3. GEOTECHNICAL INFORMATION

THE STRUCTURE HAS BEEN DESIGNED BASED ON AN ASSUMED BEARING CAPACITY. THE SOIL BEARING CAPACITY AND CONSISTENCY SHALL BE VERIFIED FOR THE FOUNDATION LIMITS BY A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF GEORGIA. THE BOTTOM OF ALL FOOTINGS SHALL BE A MINIMUM OF 1'-6" BELOW FINISHED GRADE. A. ALLOWABLE BEARING: 1,500 PSF

### HELICAL PIER FOUNDATION NOTES

FOUNDATION SYSTEM.

1. A HELICAL PIER FOUNDATION CONTRACTOR SHALL BE EMPLOYED BY THE GENERAL CONTRACTOR TO DESIGN AND DETAIL THE HELICAL PIER FOUNDATION SYSTEM. THE HELICAL PIIER FOUNDATION SYSTEMS SHALL BE DESIGNED BASED ON THE FOLLOWING LOADING INFORMATION: A. VERTICAL HELICAL PIERS: 25.0 KIPS (SERVICE LOAD)

B. DIAGONAL HELICAL PIERS: 25.0 KIPS (SERVICE LOAD)

2. THE HELICAL PIER LAYOUT AND DETAILING DRAWINGS SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF GEORGIA.

3. THE HELICAL PIER FOUNDATION DRAWINGS SHALL INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

A. HELICAL PIER LAYOUT, INCLUDING PLAN DIMENSIONS AND ELEVATIONS. B. DESIGN AND DETAILING OF CAP PLATES THAT ARE EMBEDDED IN THE

CONCRETE FOUNDATIONS. C. THE DESIGN AND/OR SPECIFYING OF ALL CONNECTION HARDWARE (BOLTS, NUTS, PLATES, ANGLES, ETC.) USED IN THE HELICAL PIER

4. CONTRACTOR SHALL CONFIRM EXISTING GRADE ELEVATIONS AND

COORDINATE TOP OF FOOTING ELEVATIONS.

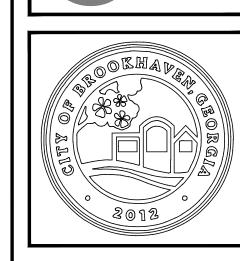
5. GEOTECHNICAL DATA GATHERED IN THE FIELD SHALL BE PROVIDED TO THE

HELICAL PIER FOUNDATION CONTRACTOR. 6. FOR BIDDING PURPOSES, ASSUME THE DEPTH OF ALL HELICAL PIERS IS 40 FT.

CONTRACTOR TO PROVIDE A UNIT PRICE FOR HELICAL PIERS (MATERIAL AND INSTALLATION) ON A PER FOOT BASIS. THE SPECIALTY ENGINEER RESPONSIBLE FOR THE DESIGN OF THE HELICAL PIERS WILL DETERMINE THE ACTUAL LENGTH TO DEVELOP THE CAPACITY LISTED IN NOTE 1.

### PRE-ENGINEERED PEDESTRIAN BRIDGE NOTES (DELEGATED DESIGN)

- 1. THE PRE-ENGINEERED PEDESTRIAN BRIDGES SHALL BE DESIGNED BY THE BRIDGE MANUFACTURER (BASIS OF DESIGN: GATOR BRIDGE) IN CONFORMANCE TO THE PROVISIONS OF THE 2018 INTERNATIONAL BUILDING CODE WITH GEORGIA STATE AMENDMENTS.
- 2. FOUNDATION DESIGNS ARE BASED ON REACTIONS PROVIDED BY GATOR BRIDGE. THE FOUNDATIONS SHALL NOT BE CONSTRUCTED UNTIL THE STRUCTURAL ENGINEER HAS REVIEWED AND APPROVED THE FINAL REACTIONS SUPPLIED BY THE BRIDGE MANUFACTURER.
- CONTRACTOR SHALL SUBMIT DRAWINGS AND PERTINENT DOCUMENTATION FROM THE BRIDGE MANUFACTURER BEARING THE SIGNATURE AND SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF GEORGIA. THE SUBMITTAL SHALL IDENTIFY AND INDICATE THE FOLLOWING:
- A. IDENTIFY PROJECT AND LIST LOADING AND OTHER DESIGN CRITERIA
- B. INCLUDE FABRICATION AND ERECTION DRAWINGS WHICH INDICATE IN DETAIL THE CONSTRUCTION OF THE STANDARD STRUCTURE USED OR AS MODIFIED T COMPLY WITH THE REQUIREMENTS OF THIS PROJECT.
- C. ALL CONNECTION DETAILS, OPENINGS, AND OTHER SPECIAL DETAILS, D. MAGNITUDE, LOCATION, AND DIRECTION OF BUILDING REACTIONS ON THE
- FOUNDATION UNDER ALL DESIGN CONDITIONS,
- E. CALCULATIONS SUPPORTING THE DESIGN OF STANDARD STRUCTURE, MODIFIED CONDITIONS AN RELATED COMPONENTS.
- 4. THE CONTRACTOR SHALL REVIEW THE BRIDGE MANUFACTURER'S SUBMITTAL FOR COMPLETENESS AND CONTENT PRIOR TO SUBMITTAL TO THE ENGINEER FOR REVIEW.



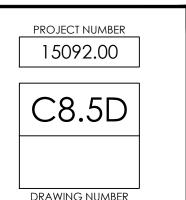
| DF  | DRAWINGS SCHEDULE |                                     |  |  |  |
|-----|-------------------|-------------------------------------|--|--|--|
| No. | Date              | Description                         |  |  |  |
| 1   | 04/20             | LDP - South Trail                   |  |  |  |
| 2   | 05/05             | State Buffer Comments - South Trail |  |  |  |
| 3   | 05/05             | LDP - Natural Play Area             |  |  |  |
| 4   | 05/07             | LDP - South Trail - Rev #1          |  |  |  |
| 5   | 05/28             | LDP - Natural Play Area - Rev #1    |  |  |  |
| 6   | 06/18             | Wetland Boardwalk Design-Build      |  |  |  |
| 7   | 06/28             | LDP - Natural Play Area - Rev #2    |  |  |  |
| 8   | 06/30             | LDP - Horseshoe Road                |  |  |  |
| 9   | 07/07             | LDP - Community Green               |  |  |  |
| 10  | 07/10             | LDP - Pool Parking                  |  |  |  |
| 11  | 08/17             | LDP - Community Green - Rev #1      |  |  |  |
| 12  | 08/17             | LDP - South Trail - Rev #2          |  |  |  |
|     |                   |                                     |  |  |  |
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|   | DATE        | DRAWN | CHECKE |  |  |  |
|   | 04/23/20    | ВМ    | GZ     |  |  |  |
|   | SCALE       |       |        |  |  |  |
|   | SHEET TITLE |       |        |  |  |  |
|   |             |       |        |  |  |  |
|   | STRUCTURAL  |       |        |  |  |  |

GENERAL NOTE



Permit # LDP20-00008