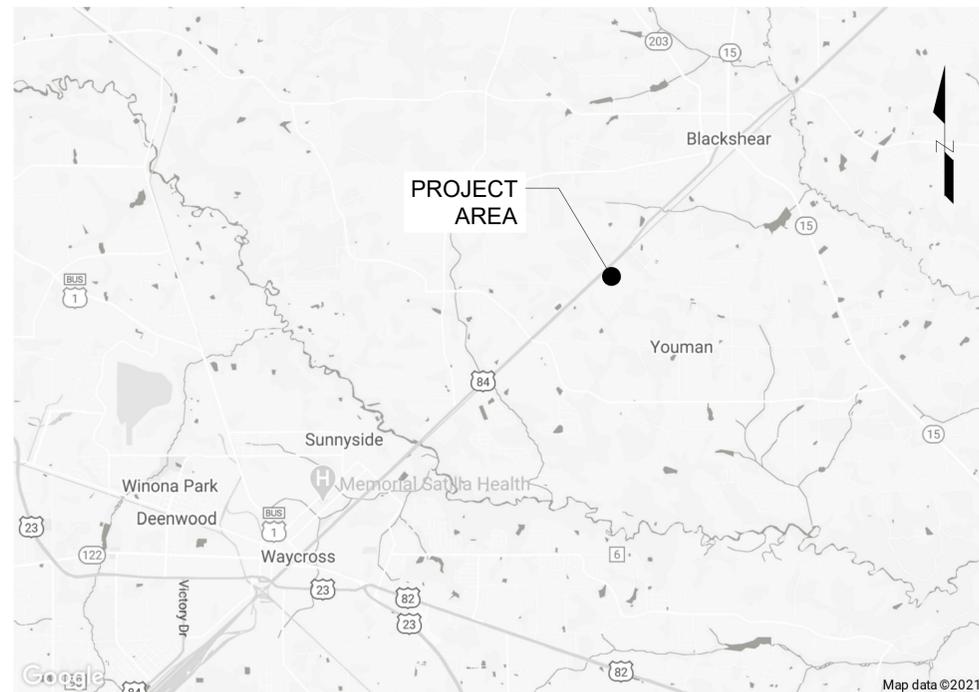


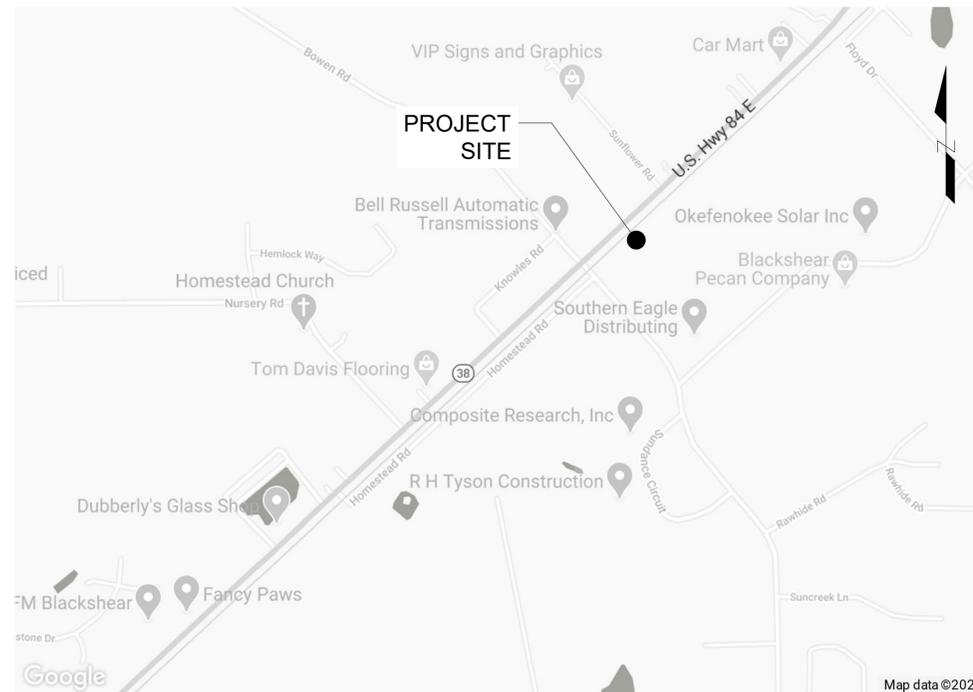


PIERCE COUNTY INDUSTRIAL PARK RAIL ACCESS

PROJECT NUMBER: 20-1019



LOCATION MAP
NOT TO SCALE



PROJECT ENTRANCE:
LAT: 31.163033
LONG: 82.163405

VICINITY MAP
NOT TO SCALE

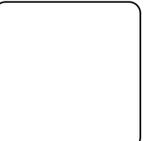
SHEET INDEX	
SHEET TITLE	SHEET ID
COVER SHEET	G001
GENERAL NOTES, LEGEND AND ABBREVIATIONS	G002
EXISTING CONDITIONS	V101
ESPC NOTES	EC001
ESPC NOTES	EC002
ESPC NOTES	EC003
ESPC NOTES	EC004
ESPC & ACCESS PLAN	EC101
ESPC DETAILS	EC501
ESPC DETAILS	EC502
PLAN & PROFILE	C101
PLAN & PROFILE	C102
DETAILS	C501

SOLICITATION NO.: 001
 CONTRACT NO.: 001
 ISSUE DATE: 4/19/21

MARK	DESCRIPTION	DATE

DESIGNED BY: JPB	CHECKED BY: MTF	ISSUE DATE: 4/19/21	SOLICITATION NO.: 001	CONTRACT NO.: 001	FILE NAME: 20-1019 G001-COVER.DWG
DESIGNED BY: JPB	CHECKED BY: MTF	ISSUE DATE: 4/19/21	SOLICITATION NO.: 001	CONTRACT NO.: 001	FILE NAME: 20-1019 G001-COVER.DWG
DESIGNED BY: JPB	CHECKED BY: MTF	ISSUE DATE: 4/19/21	SOLICITATION NO.: 001	CONTRACT NO.: 001	FILE NAME: 20-1019 G001-COVER.DWG

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 4 Cedar View Court, Savannah, Georgia 31410 | (912) 662-2014
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PIERCE COUNTY INDUSTRIAL PARK
 RAIL ACCESS
 COVER SHEET

SHEET ID
G001



PRELIMINARY
 NOT TO BE USED FOR CONSTRUCTION

GENERAL NOTES

- 1. NOTES BELOW ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES.
2. ALL WORK SHALL CONFORM WITH THESE DRAWINGS, THE PROJECT SPECIFICATIONS, AND ALL CURRENT APPLICABLE CODES WITH THEIR LATEST REVISIONS OF THE FOLLOWING REFERENCE DOCUMENTS:
- GEORGIA DEPARTMENT OF TRANSPORTATION (GDOT) ROAD AND BRIDGE SPECIFICATIONS
- MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA (GREEN BOOK)
- GEORGIA STORMWATER MANAGEMENT MANUAL VOLUMES 1, 2, & THE COASTAL STORMWATER SUPPLEMENT
- AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION'S 2020 MANUAL FOR RAILWAY ENGINEERING
- CSX STANDARD SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PRIVATE SIDETRACKS (2016)
3. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS AND LICENSES AND KEEP COPIES OF THE SAME ON SITE DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. ANY DISCREPANCIES FOUND SHALL BE CALLED TO THE ATTENTION OF THE OWNER AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
5. ALL INFORMATION SHOWN ON THESE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL REPORT IMMEDIATELY TO THE OWNER ANY CONDITIONS CONFLICTING WITH THE DRAWINGS. FIELD MODIFICATIONS TO THE DRAWINGS SHALL NOT BE MADE WITHOUT THE CONSENT OF THE OWNER.
6. THE CONTRACTOR SHALL, ON A DAILY BASIS, REMOVE DEBRIS FROM THE SITE. DISPOSAL OF ALL MATERIALS IS THE CONTRACTOR'S RESPONSIBILITY, EXCEPT AS OTHERWISE NOTED.
7. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE LOCAL AND STATE ENVIRONMENTAL PROTECTION STANDARDS, LAWS AND REGULATIONS.
8. ITEMS INDICATED TO BE REMOVED AND REINSTALLED SHALL BE REMOVED BY THE CONTRACTOR, STORED AND REINSTALLED WITHOUT DAMAGE. DAMAGED ITEMS SHALL BE REPLACED AT NO COST TO THE OWNER.
9. CONTRACTOR SHALL SUBMIT A WRITTEN CONSTRUCTION PHASING PLAN TO THE OWNER FOR THEIR APPROVAL PRIOR TO ANY ON SITE CONSTRUCTION ACTIVITY. DO NOT BLOCK ACCESS TO THE ADJACENT PROPERTIES DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER.
10. CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON THE PLANS WITH THE EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING DEMOLITION, FABRICATION, AND CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS.
11. THE CONTRACTOR SHALL KEEP AND MAINTAIN A SET OF PROJECT PLANS AND SPECIFICATIONS ON THE SITE AT ALL TIMES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, DRIVEWAYS, WALKS, CURBS, PAVEMENT MARKINGS, ETC. THAT MUST BE CUT OR REMOVED, OR THAT ARE DAMAGED DURING CONSTRUCTION.
13. CONTRACTOR SHALL STOP WORK AND NOTIFY ENGINEER IF ANYTHING OF HISTORIC OR ARCHEOLOGICAL SIGNIFICANCE IS ENCOUNTERED.
14. FOR SITE PLANS, SEE SHEETS C101, C102

COORDINATION

- 15. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH OWNER.
16. THE CONTRACTOR SHALL SUBMIT A SCHEDULE FOR CONSTRUCTION TO OWNER, IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
17. IMMEDIATELY PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL ARRANGE A MEETING WITH OWNER TO DISCUSS COORDINATION OF CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE SUBJECT TO AND COMPLY WITH COORDINATION REQUIREMENTS OF OWNER.
18. COORDINATE CONNECTION TO CSX MAINLINE WORK WITH OWNER.

CONSTRUCTION

- 19. SUBMITTALS ON MATERIALS FOR THIS PROJECT SHALL BE PROVIDED TO THE OWNER FOR APPROVAL PRIOR TO ORDERING AND BEGINNING CONSTRUCTION.
20. ALL CONSTRUCTION ACTIVITIES SHALL ONLY TAKE PLACE WITHIN CLEARING LIMITS, UNLESS OTHERWISE NOTED.
21. ALL CLEARING, GRUBBING, AND GRADING SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS AND STANDARDS.
22. EXISTING VEGETATION SURROUNDING THE CONSTRUCTION AREA SHALL REMAIN IN A NATURAL STATE. DAMAGES BY CONTRACTOR OUTSIDE THE PROJECT LIMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
23. THE CONTRACTOR SHALL STRIP TOPSOIL AND ANY ORGANIC LADEN SOIL AND STORE FOR USE IN BACKFILLING AND LANDSCAPING FOR SITE RESTORATION. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY EXCESS SOIL AFTER RESTORATION OF THE SITE.
24. WHEN MATERIALS WHICH ARE UNSUITABLE FOR FOUNDATIONS, SUBGRADES, OR PURPOSE OCCUR WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO EXCAVATE SUCH MATERIAL BELOW THE GRADE SHOWN ON THE PLANS. THE AREAS TO BE EXCAVATED SHALL BE BACKFILLED WITH APPROVED SUITABLE OR SELECT FILL MATERIAL.
25. ANY NECESSARY FILL SHALL BE PLACED IN 6" LIFTS. ALL FILL SHALL BE COMPACTED TO 95% MODIFIED STANDARD PROCTOR. SUBGRADE SHALL BE PROOF-ROLLED PER THE DIRECTION OF THE OWNER. AREAS WHICH RUT EXCESSIVELY SHALL BE UNDERCUT AND REPLACED WITH CONTROLLED FILL.
26. FINISHED SLOPES SHALL BE GRADED TO ENSURE POSITIVE DRAINAGE AWAY FROM ALL WORK AND TO EXISTING DITCHES.
27. CONTRACTOR SHALL REMAIN WITHIN PROJECT LIMITS DURING ALL CONSTRUCTION ACTIVITIES.

SURVEY NOTES

- 28. ALL ELEVATIONS SHOWN ON THE DRAWINGS ARE REFERENCED TO NAVD 88.
29. VERTICAL DATUM - ELEVATIONS SHOWN ARE IN FEET AND ARE BASED ON NAVD 88 DATUM.
30. HORIZONTAL DATUM - GEORGIA STATE PLANE COORDINATE SYSTEM, NAD 83.
31. THESE DRAWINGS ARE BASED ON:
- PIERCE COUNTY LIDAR PROVIDED BY THE OWNER.
32. HORIZONTAL & VERTICAL CONTROL POINTS WILL BE PROVIDED BY THE CONTRACTOR.
33. FOR EXISTING CONDITIONS PLAN, SEE SHEETS V101

DEMOLITION NOTES

- 34. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES TO REMAIN IN PLACE.
35. ALL MATERIALS REMOVED UNDER DEMOLITION, NOT TO BE RELOCATED OR TO BE TURNED OVER TO THE OWNER, SHALL BE REMOVED FROM THE SITE.

GEOTECHNICAL NOTES

- 36. A GEOTECHNICAL EXPLORATION HAS NOT BEEN PERFORMED ON THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRM THAT THE EXISTING SOILS ARE SUITABLE FOR THE PROPOSED CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES

- 37. THERE ARE NO WETLANDS WITHIN THE PROJECT LIMITS.
38. CONSTRUCTION ENTRANCE LOCATION:
a. LAT: 31.163066/LON: 82.163405
b. N: 463753.0314/E: 621973.3506.
39. PROJECT AREA IS 1.89 ACRES, LAND DISTURBED AREA IS 1.51 ACRES. THE PROJECT REQUIRES THE FOLLOWING PERMIT:
c. GAR 100002 - INFRASTRUCTURE CONSTRUCTION PROJECT OVER ONE ACRE OF DISTURBANCE.
40. FOR SOIL EROSION & SEDIMENTATION CONTROL NOTES, SEE SHEETS EC101-EC104
41. FOR SOIL EROSION & SEDIMENTATION CONTROL PLAN, SEE SHEETS EC101
42. FOR SOIL EROSION & SEDIMENTATION CONTROL DETAILS, SEE SHEETS EXS01-EC502

UTILITIES

- 43. PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF LOCATING ANY AND ALL UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST OR CROSS THROUGH THE AREA OF CONSTRUCTION WHETHER OR NOT THEY ARE SHOWN ON THESE PLANS. BEFORE DIGGING, TO AVOID THE UTILITIES, THE CONTRACTOR SHALL CALL THE "UTILITIES PROTECTION CENTER" AT 1-800-282-7411. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS SOLE EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
44. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE, NONEXISTENCE, SIZE, TYPE, LOCATION, ALIGNMENT OR DEPTH OF ANY OR ALL UNDERGROUND UTILITIES OR OTHER FACILITIES. WHERE SURFACE FEATURES (MANHOLES, CATCH BASINS, VALVES, ETC.) ARE UNAVAILABLE OR INCONCLUSIVE, INFORMATION SHOWN MAY BE FROM UTILITY OWNER'S RECORDS AND/OR ELECTRONIC LINE TRACING, THE RELIABILITY OF WHICH IS UNCERTAIN. THE CONTRACTOR SHALL PERFORM WHATEVER TEST EXCAVATION OR OTHER REINVESTIGATION AS NECESSARY TO VERIFY LOCATIONS AND CLEARANCES.
45. UNLESS OTHERWISE NOTED, UTILITIES ARE TO BE ADJUSTED BY THE RESPECTIVE OWNER.
46. GEORGIA STATE LAW MANDATES THE NOTIFICATION OF UTILITY OWNERS 48 HOURS IN ADVANCE OF EXCAVATION. FOR LOCATION OF UTILITIES CALL THE "UTILITY PROTECTION CENTER" AT 811 48 HOURS PRIOR TO LAND DISTURBANCE ACTIVITY.

LEGEND

Table with 3 columns: OBJECT, EXISTING, PROPOSED. Includes symbols for PROJECT LIMITS, PROPERTY LINE, RIGHT-OF-WAY, MINOR CONTOUR (149), MAJOR CONTOUR (150), DITCH, CSX TRACK C/L, INDUSTRY TRACK C/L, WETLAND LINE/EDGE, WETLAND AREA, and POINT OF SWITCH.

ABBREVIATIONS:

APPROX = APPROXIMATE
AREMA = AMERICAN RAILWAY AND MAINTENANCE-OF-WAY ASSOCIATION
ASTM = AMERICAN SOCIETY FOR TESTING AND MATERIALS
CL = CENTERLINE
CLR = CLEAR
CMF = CONCRETE MONUMENT FOUND
CMP = CORRUGATED METAL PIPE
CONC = CONCRETE
DB = DEED BOOK
DEMO = DEMOLITION
DIM = DIMENSION
DWG = DRAWING
E = EAST
EA = EACH
EDA = ECONOMIC DEVELOPMENT ADMINISTRATION
EL = ELEVATION
ELEV = ELEVATION
EPD = ENVIRONMENTAL PROTECTION DIVISION
ETC = ET CETERA
EXIST = EXISTING
FEMA = FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION
FPS = FEET PER SECOND
FRA = FEDERAL RAILROAD ADMINISTRATION
FT = FEET
GDOT = GEORGIA DEPARTMENT OF TRANSPORTATION
HWY = HIGHWAY
IAW = IN ACCORDANCE WITH
IN = INCHES
INC = INCORPORATED
INV = INVERT
IRF = IRON ROD FOUND
IRS = IRON ROD SET
LB = POUND
LF = LINEAR FEET
LH = LEFT HAND
LHTO = LEFT HAND TURNOUT
MAX = MAXIMUM
MDD = MAXIMUM DRY DENSITY
MIN = MINIMUM
MISC = MISCELLANEOUS
N = NORTH
N/F = NOW OR FORMERLY
NAD = NORTH AMERICAN DATUM
NAVD = NORTH AMERICAN VERTICAL DATUM
NGVD = NATIONAL GEODETIC VERTICAL DATUM
NIC = NOT IN CONTRACT

No. = NUMBER
NTS = NOT TO SCALE
OC = ON CENTER
OHPL = OVERHEAD POWER LINE
PG = PAGE
PKF = P.K. NAIL FOUND
PP = POWER POLE
PS = POINT OF SWITCH
RHTO = RIGHT HAND TURNOUT
R/W = RIGHT OF WAY
RMF = RAILBOUND MANGANESE FROG
RCP = REINFORCED CONCRETE PIPE
REQ'D = REQUIRED
RH = RIGHT HAND
S = SOUTH
SCH = SCHEDULE
SF = SQUARE FEET
SR = STATE ROAD
ST = STREET
STA = STATION
STD = STANDARD
SY = SQUARE YARD
TYP = TYPICAL
UON = UNLESS OTHERWISE NOTED
W = WEST
WI = WITH
WP = WORK POINT
= NUMBER OR POUNDS
& = AND
@ = AT
C = CENTERLINE
Ø = DIAMETER
r = PLATE
" = SECONDS OR INCH
' = MINUTES OR FEET
± = PLUS OR MINUS
° = DEGREES
% = PERCENT

SECTION AND DETAIL SYMBOL

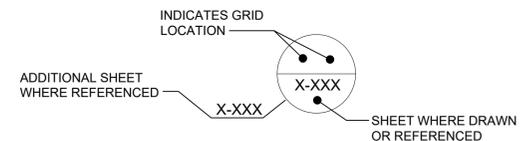
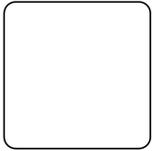


Table with 2 columns: MARK, DESCRIPTION. Includes rows for various symbols and their descriptions.

Ball Maritime Group, LLC
4 Cedar View Court, Savannah, Georgia 31410 (912) 662-2014
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DRAWN BY: BMA
DESIGNED BY: JPB
CHECKED BY: MTF
SUBMITTED BY: JPB
FILE NAME: 20-1019 G002-GENNOTESLEGABB.DWG
ISSUE DATE: 4/30/2021
SOLICITATION NO.: 001
CONTRACT NO.: 001
CATEGORY CODE:



PIERCE COUNTY INDUSTRIAL PARK RAIL ACCESS
GENERAL NOTES, LEGEND AND ABBREVIATIONS

SHEET ID G002

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Sediment Barrier (Sd1)



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

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

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

DESIGN CRITERIA
Sediment barriers are designed to retain sediment transported by sheet flow from disturbed area. It is important for the design professional to take into account the profile of the product for use on the site. Sediment Barriers should also provide a riprap splash pad or other outlet protection device for any point where flow may overtop the sediment barrier. Ensure that the maximum height of the barrier at a protected, reinforced outlet does not exceed 1 foot and that the support spacing does not exceed 4 feet.
Where all runoff is to be stored behind the sediment barrier (where no storm water disposal system is present), maximum continuous slope length behind a sediment barrier shall not exceed those shown in Table 6-27.1. For longer slope lengths, slope interrupters must be used. The drainage areas shall not exceed 1/4 acre for every 100 feet of sediment barrier.

Placement
The type of sediment barrier depends on whether the area is sensitive or non-sensitive. Sensitive areas can be defined as any area that needs additional protection, these areas include but are not limited to, state waters, wetlands, or any area the design professional designates as sensitive.
When using multiple types of sediment barriers on a site in a single run, the barriers must be overlapped 18 inches or as specified by design professional. See Figure 6-27.5

CONSTRUCTION SPECIFICATIONS

Non-sensitive Areas* (Sd1-NS)
Sediment barriers being used as Type NS shall have a support spacing of no greater than 6 feet on center, with each being driven into the ground a minimum of 18 inches.

Sensitive Areas* (Sd1-S)
Sediment barriers being used as Type S shall have a support spacing of no greater than 4 feet on center, with each being driven into the ground a minimum of 18 inches. *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
The 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.

Type B Silt Fence
Though only 22-inches wide, this filter fabric allows the same flow rate as Type A silt fence. Type B silt fence shall be limited to use on minor projects, such as residential home sites or small commercial developments where permanent stabilization will be achieved in less than six Type B is classified as sensitive application.

Type C Silt Fence
Type C fence is 36-inches wide with wire reinforcement or equivalent. The wire reinforcement is necessary because this fabric allows almost three times the flow rate as Type A silt fence. Type C silt fence shall be used where runoff flows or velocities are particularly high or where slopes exceed a vertical height of 10 feet. Type C is classified as sensitive application.

Filter Media Sock Specifications
Compost filter media used for sediment barrier filter material shall be weed free and derived from a well-decomposed source of organic matter. Filter Media Sock is classified as a Type B, non-sensitive application. The compost shall be produced using an aerobic composting process meeting CFR 503 regulations including time and temperature data. The compost shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products will not be accepted without applicable water quality test results. Test methods for the items below follow US Composting Council Test Methods for the Examination of Composting and Compost guidelines for laboratory procedures:
A. pH - 5.0-8.0 in accordance with TMECC 04.11-A, "Electrometric pH Determinations for Compost"
B. Particle size - 99% passing a 2 inch (50mm) sieve and a maximum of 40% passing a 3/8 inch (9.5mm) sieve, in accordance with TMECC 02.02-B, "Sample Sieving for Aggregate Size Classification." (Note: In the field, product commonly is between 1/2 in./12.5mm and 2 in./50 mm in particle size.)
C. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.

Washing
If the action of the vehicle traveling over the gravel pad does not sufficiently remove the mud, the tires should be washed prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with crushed stone and provisions that intercept the sediment-laden runoff and direct it into an approved sediment trap or sediment basin.
Location
The exit shall be located or protected to prevent sediment from leaving the site.
CONSTRUCTION SPECIFICATIONS
It is recommended that the entrance area be excavated to a depth of 3 inches and be cleared of all vegetation and roots.
Diversion Ridge
On sites where the grade toward the paved area is greater than 2%, a diversion ridge 6 to 8 inches high with 3:1 side slopes shall be constructed across the foundation approximately 15 feet above the road.
Geotextile
The geotextile underliner must be placed the full length and width of the entrance. Geotextile selection shall be based on AASHTO M288-06 specification:
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 Re-requirements.
2. For subgrades with a CBR between 1 and 3 or shear strength between 30 and 90 kPa, geotextile must meet requirements of section AASHTO M288-06 Section 8, Geotextile Property Requirements for Subsurface Drainage, Separation, Stabilization, and Permanent Erosion Control (Geotextile Property Requirements).
MAINTENANCE
The exit shall be maintained in a condition that will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 1.5-3 inch stone, as conditions demand, and repair and/or cleanout of any structures to trap sediment. All materials spilled, Figure 6-14.1 dropped, washed, or tracked from vehicles or sites onto roadways or into storm drains must be removed immediately.

D. Material shall be relatively free (<1% by dry weight) of inert or foreign manmade materials.
Trenching Method
Trenching machines have been used for over twenty-five years to dig a trench for burying part of the filter fabric underground. Usually the trench is about 2'-6" wide with a 6" excavation. Post setting and fabric installation often precede compaction, which make effective compaction more difficult to achieve. EPA supported an independent technology evaluation (ASCE 2001), which compared three progressively better variations of the trenching method with static slicing areas. The static slicing method performed better than two lower performance levels of the trenching method, and was as good as or better than the trenching method's highest performance. The best trenching method typically required nearly triple the time and effort to achieve results comparable to the static slicing method.
Along all state waters and other sensitive areas, two rows of Type S sediment barriers shall be used. The two rows of Type S should be placed a minimum of 36 inches apart.
MAINTENANCE
Sediment shall be removed once it has accumulated to one-half the original height of the barrier. Sediment barriers shall be replaced whenever they have deteriorated to such an extent that the effectiveness of the product is reduced (approximately six months) or the height of the product is not maintaining 80% of its properly installed height.
Temporary sediment barriers shall remain in place until disturbed areas have been permanently stabilized. All sediment accumulated at the barrier shall be removed and properly disposed of before the barrier is removed.

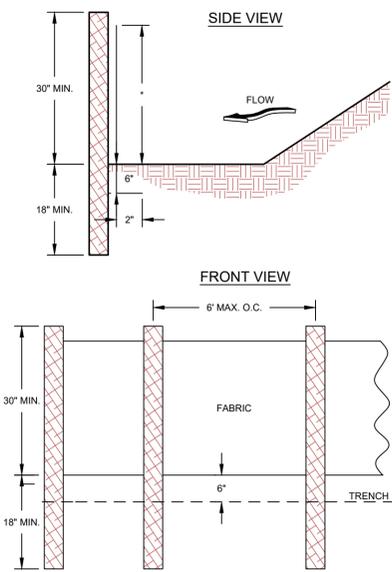
Brush Barrier (Sd1-BB)
(Only during timber clearing operations) Brush obtained from clearing and grubbing operations may be piled in a row along the perimeter of disturbance at the time of clearing and grubbing. Brush barriers should not be used in developed areas or locations where aesthetics are a concern. Brush should be wind-rowed on the contour as nearly as possible and may require compaction. Construction equipment may be utilized to satisfy this requirement. The minimum base width of the brush barrier shall be 5 feet and should be no wider 10 feet. The height of the brush barrier should be between 3 and 5 feet tall.
A brush barrier is a good tool to use in developing pasture in an agricultural situation to prevent sediment from leaving the site until the pasture is stabilized. If greater filtering capacity is required, a commercially available sediment barrier may be placed on the side of the brush barrier receiving the sediment-laden runoff. The lower edge of the fabric must be buried in a 6-inch deep trench immediately uphill from the barrier. The upper edge 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.
Installation
Sediment barriers should be installed along the contour.
Temporary sediment barriers shall be installed according to the following specifications as shown on the plans or as directed by the design professional.
For installation of the barriers, See Figures 6-27.1, 6-27.2, 6-27.3 and 6-27.4, respectively. It is important to remember that not all sediment barriers need to be trenched into the ground but most taller sediment barriers do.
Post installation shall start at the center of a low point (if applicable) with the remaining posts spaced no greater than 6 feet apart for Type NS sediment barriers and no greater than 4 feet apart for Type 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
The static slicing machine pulls a narrow blade through the ground to create a silt 12" deep, and simultaneously inserts the silt fence fabric into this silt behind the blade. The blade is designed to slightly disrupt soil upward next to the silt 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 silt in the ground 2 to 4 times to achieve nearly the same or greater compaction as the original undisturbed area. This vertical compaction reduces the air spaces between soil particles, which minimizes infiltration. Without this compaction infiltration can saturate the soil, and water may find a pathway under the fence. When a silt fence is holding back several tons of accumulated water and sediment, it needs to be supported by posts that are driven 18 inches into the soil. Driving in the posts and attaching the fabric to them completes the installation.

Table 6-27.4

TYPE FENCE	A	B	C
Tensile Strength (Lbs. Min.) (1)	Warp - 120 Fill - 100	Warp - 120 Fill - 100	Warp - 260 Fill - 180
Elongation (% Max.)	40	40	40
AOS (Apparent Opening Size)	#30	#30	#30
Flow Rate (Gal/Min/Sq. Ft.)	25	25	70
Ultraviolet Stability (2)			
ASTM D-4632 after 300 hours	80	80	80
weathering in accordance with ASTM D-4355)			
Bursting Strength (PSI Min.)	175	175	175
ASTM D-3786 Diaphragm Bursting Strength Tester)			
Minimum Fabric Width (Inches)	36	22	36

(1) Minimum roll average of five specimens.
(2) Percent of required initial minimum tensile strength.

SILT FENCE - TYPE NON-SENSITIVE



NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (") IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

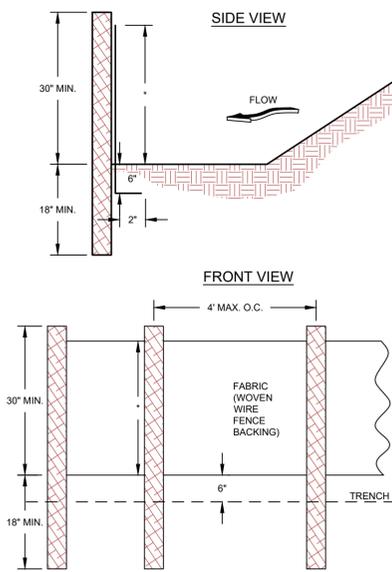
Figure 6-27.1

Table 6-27.1 Criteria for Sediment Barrier

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

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

SILT FENCE - TYPE SENSITIVE



NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (") IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

Figure 6-27.2

Table 6-27.2 Post Size

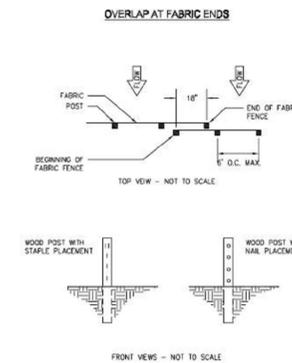
Type	Min Length	Type of Post	Size of Post
NS	4'	Soft wood Oak Steel	3" dia or 2x4 1.5" x 1.5" 1.15lb./ft. min
S	4'	Steel Oak	1.15-1.25 lb./ft. min 2"x2"

Table 6-27.3 Fasteners for Wood Posts

	Gauge	Crown	Legs	Staples / Post
Wire Staples	17 min.	3/4" wide	1/2" x 1/2"	5 min.
	Gauge	Length	Button Heads	Nail / Post
	14 min.	1"	3/4"	4 min

Note: Filter Fabric may also be attached to the post by wire, cords, and pockets.

FASTENERS FOR SILT FENCES



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.

Figure 6-27.5

Construction Exit (Co)



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

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

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

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

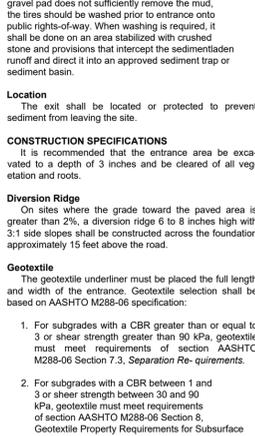
Aggregate Size
Stone will be in accordance with National Stone Association R-2 (1.5 to 3.5 inch stone).

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

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

Pad Length
The gravel pad shall have a minimum length of 50 feet. When the construction is less than 50' from the paved access, the length shall be from the edge of existing pavement to the permitted building being constructed.

CRUSHED STONE CONSTRUCTION EXIT



NOTES:
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 CURVE 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".
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 (DIVERGENT 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 NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE 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.

Disturbed Area Stabilization (With Mulching Only) (Ds1)



DEFINITION
Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

PURPOSE
-To reduce runoff and erosion
-To conserve moisture
-To prevent surface compaction or crusting
-To control undesirable vegetation
-To modify soil temperature
-To increase biological activity in the soil

REQUIREMENT FOR REGULATORY COMPLIANCE
Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored and have a continuous 90% cover or greater of the soil surface.
Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months.
If any area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed. Refer to Ds2 - Disturbed Area Stabilization (With Temporary Seeding), Ds3 - Disturbed Area Stabilization (With Permanent Seeding), and Ds4 - Disturbed Area Stabilization (With Sodding).

SPECIFICATIONS
Mulching Without Seeding
This standard applies to graded or cleared areas where seedlings may not have a suitable growing season to produce an erosion retardant cover, but can be

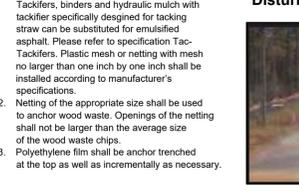
stabilized with a mulch cover.
Site Preparation
1. Grade to permit the use of equipment for applying and anchoring mulch.
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
3. Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
Select one of the following materials and apply at the depth indicated:
1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.
2. Wood waste (chips, sawdust or bark) shall be applied from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
3. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and re-used.

Applying Mulch
When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.
1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.
2. If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.
3. Apply polyethylene film on exposed areas.

Anchoring Mulch
1. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "pucker disk".
2. Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application.

Dust Control on Disturbed Areas (Du)



DEFINITION
Controlling surface and air movement of dust on construction sites, roads, and demolition sites.

PURPOSE
-To prevent surface and air movement of dust from exposed soil surfaces.
-To reduce the presence of airborne substances that may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

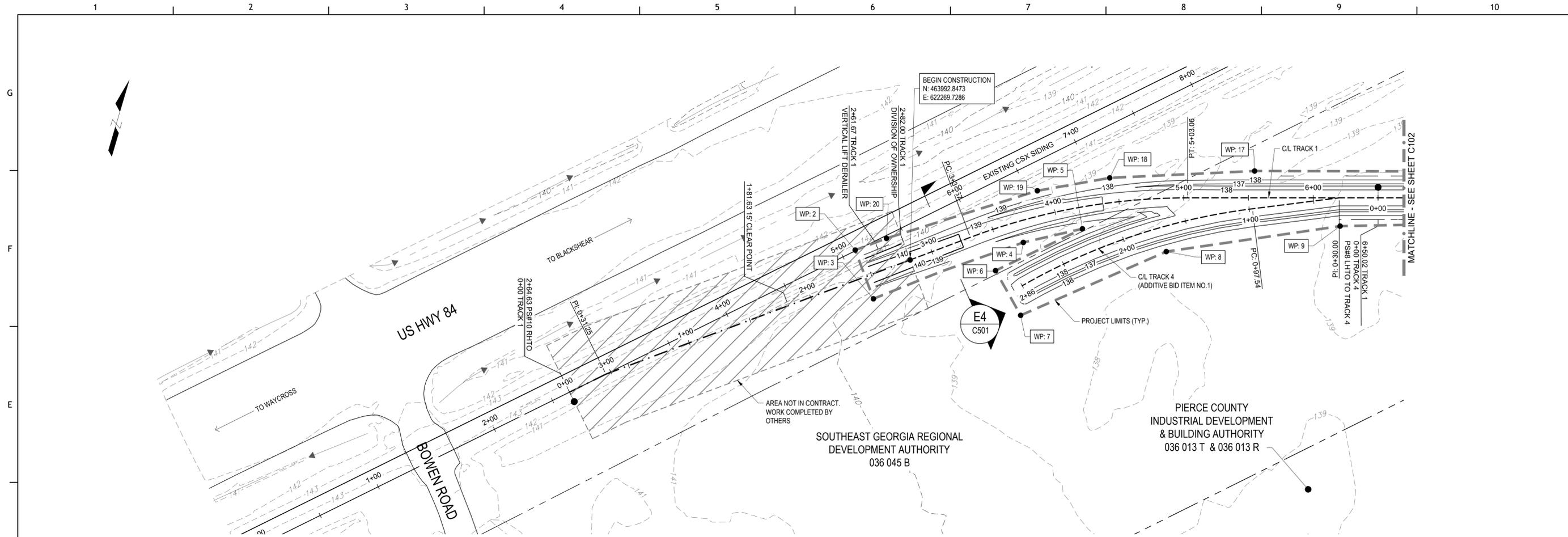
CONDITIONS
This practice is applicable to areas subject to surface and air movement of dust where on and off-site damage may occur without treatment.
METHOD AND MATERIALS
A. Temporary Methods
1. Mulches. See standard Ds1 - Disturbed Area Stabilization (With Mulching Only). Synthetic resins may be used instead of asphalt to bind mulch material. Refer to specification Tac - Tackifiers. Resins should be used according to manufacturer's recommendations.
2. Vegetative Cover. See specification Ds2 - Disturbed Area Stabilization (With Temporary Seeding).
3. Spray-on Adhesives. These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to specification Tac - Tackifiers.

Tillage. This practice is designed to roughen and bring clods to the surface. It is an emergency measure that should be used before wind erosion starts. Begin plowing on windward side of Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet. Repeat as needed.
Barriers. Solid board fences, snowfences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 15 times their height are effective in controlling wind erosion.
Calcium Chloride. Apply at rate that will keep surface moist. May need retreatment.
B. Permanent Methods
1. Permanent Vegetation. See specification Ds3-Disturbed Area Stabilization (With Permanent Vegetation). Existing trees and large shrubs may afford valuable protection if left in place.
2. Topsoiling. This entails covering the surface with less erosive soil material. See specification Tp - Topsoiling.
3. Stone. Cover surface with crushed stone or coarse gravel. See specification Cr-Construction Road Stabilization.



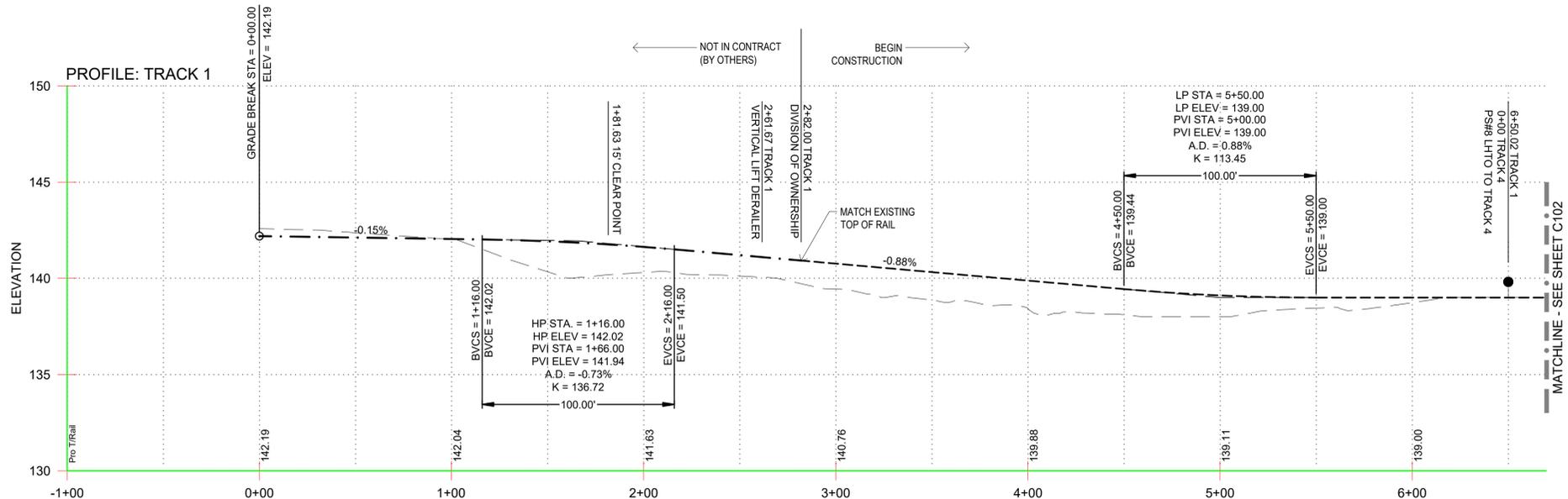
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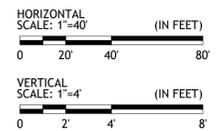


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WP: 4	622349.7569	464030.5279
WP: 5	622390.4977	464053.5317
WP: 6	622335.2983	464003.6318
WP: 7	622363.6662	463976.1280
WP: 8	622457.5540	464055.0274
WP: 9	622580.6656	464111.8462
WP: 10	622927.9181	464221.6532
WP: 11	623121.1742	464274.8578
WP: 12	623606.0724	464422.1854
WP: 13	623589.3766	464478.7057
WP: 14	623114.0798	464341.0595
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WP: 16	622674.3065	464183.2828
WP: 17	622505.3582	464133.8272
WP: 18	622399.6190	464097.0547
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PROFILE
SCALE: H: 1" = 40', V: 1" = 4'



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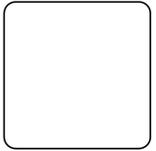
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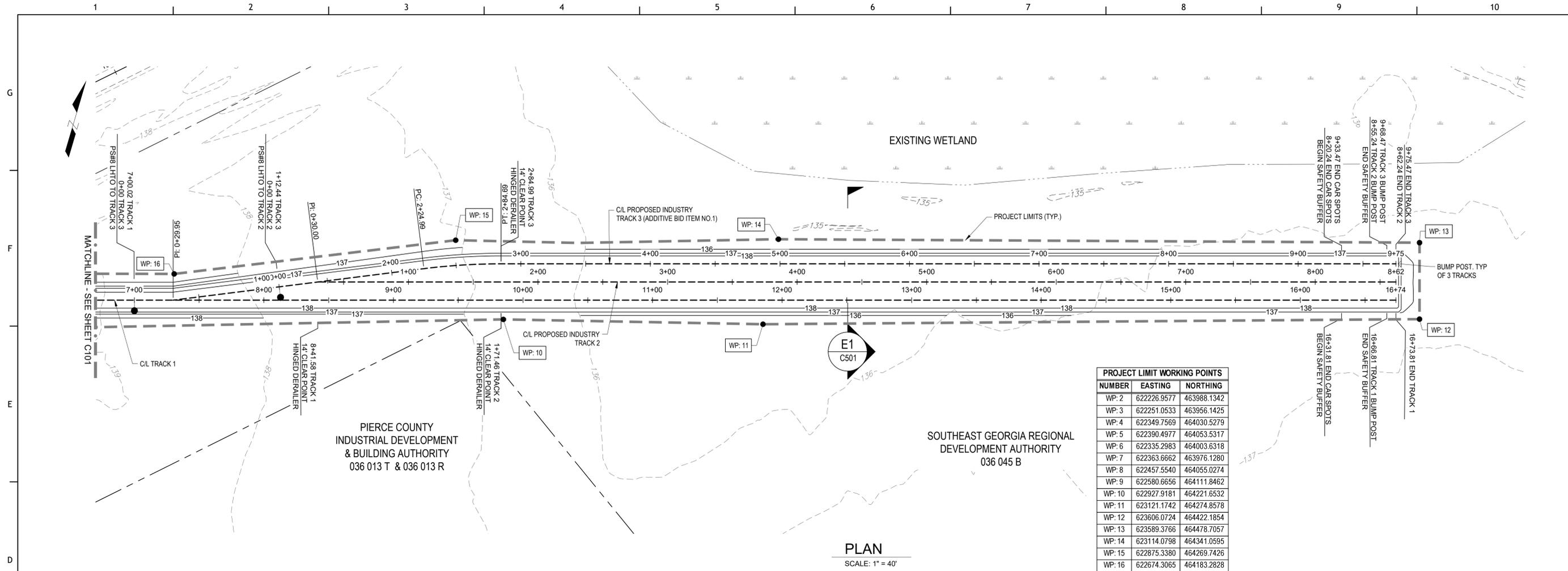
PIERCE COUNTY INDUSTRIAL PARK RAIL ACCESS
 PLAN & PROFILE

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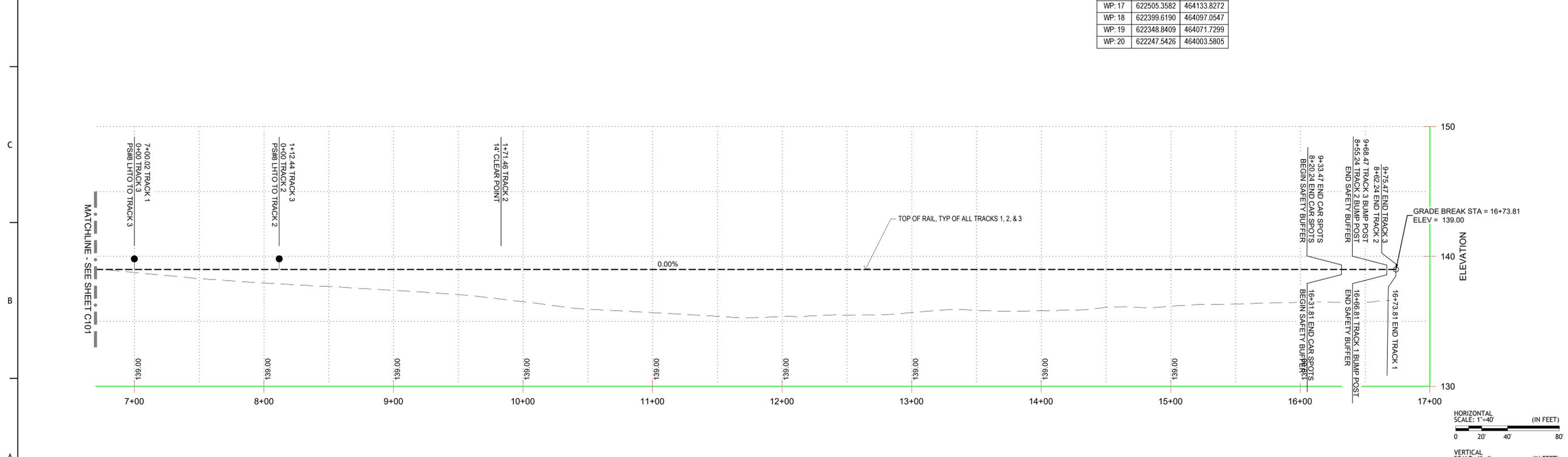
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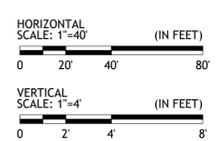


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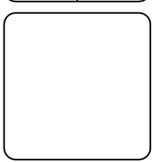
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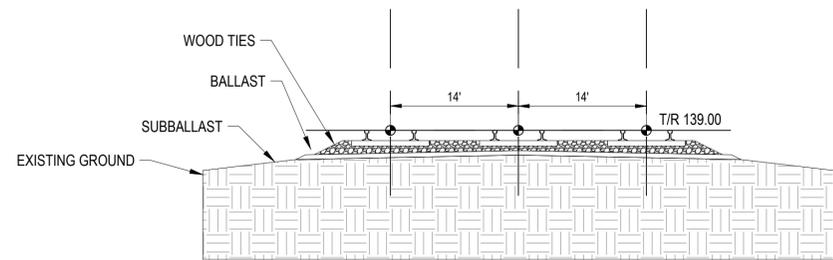
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 BALL MARITIME GROUP, LLC
 4 Cedar View Court, Savannah, Georgia 31410 (912) 662-2014
 www.ballmaritime.com
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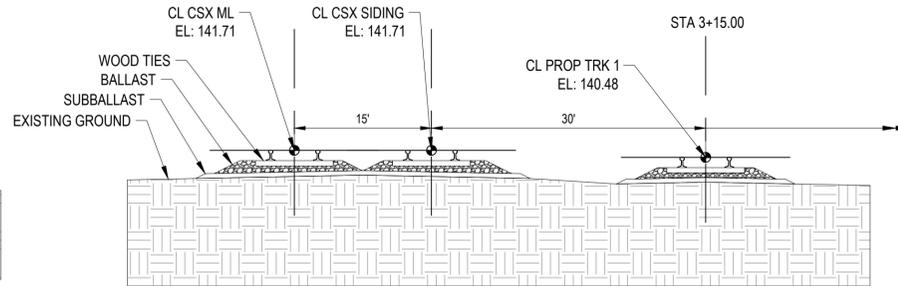


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PLAN & PROFILE

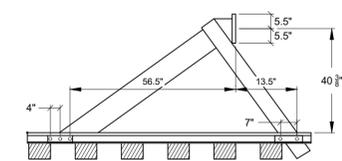
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E1 TYPICAL YARD CROSS-SECTION
P101 SCALE: NTS



E4 BEGINNING CROSS-SECTION
C101 SCALE: NTS

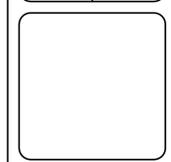


E7 BUMPING POST DETAIL
C102 SCALE: NTS

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4 Cedar View Court | Savannah, Georgia | 31410 | (912) 662-2914
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