GREENBRIER STATE PARK
ENTRY GATE FEE STATION IMPROVEMENTS

21843 NATIONAL PIKE BOONSBORO, MD 21713

PROJECT NUMBER: P-052-200-002

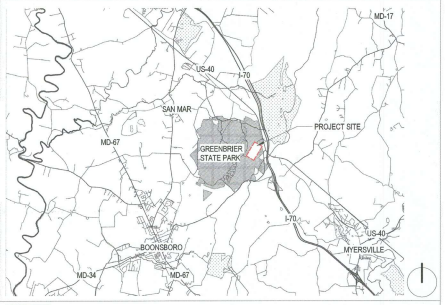
CONTRACT MODIFICATION 01 - EXPANDED SCOPE

GREENBRIER STATE PARK IS LOCATED OFF OF US ROUTE 40, JUST OUTSIDE OF BOONSBORO, IN WESTERN MARYLAND. THE PROJECT SCOPE ORIGINALLY INCLUDED REPLACEMENT OF THE EXISTING FEE COLLECTION BOOTH AND CHARGE STATION, AND A RECONFIGURATION OF OF THE ENTRY GATE ROAD TO ACCOMMODATE THE INCREASED TRAFFIC LOAD INTO THE PARK. THE PROJECT ALSO INCLUDES UPGRADES TO LANDSCAPING AND AND CHARGE STATIONS TO COMPLY WITH ADA REQUIREMENTS.

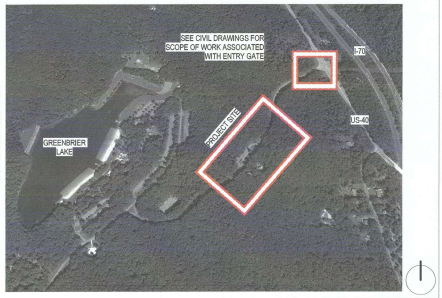
THE EXPANDED SCOPE WILL INCLUDE TWO COLLECTIONS BOOTHS, AS WELL AS A COMPLETE RENOVATION OF THE EXISTING CAMPER REGISTRATION BUILDING. THE HARDSCAPE IMPROVEMENTS SEEK TO ADD ENTRY LANES, IMPROVING CIRCULATION WHILE MAINTAINING SECURE ACCESS POINTS. AS WELL AS CREATING A MORE ACCESSIBLE REGISTRATION AND CHARGE STATIONS. THE REGISTRATION STATION IMPROVEMENTS INCLUDE A RECONFIGURATION OF THE INTERIOR SPACES, AN ADDITION TO INFILL AND ENCLOSE THE CORNER PORCH, A MODIFIED EXTERIOR ENVELOPE AND ROOF, AND A NEW HVAC SYSTEM AND RENOVATED ADA ACCESSIBLE RESTROOM.

EXTERIOR RENDERING

LOCATION MAP



VICINITY MAP



DRAWING LIST

GENERAL
G.000 COVER SHEET
G.110 CODE ANALYSIS AND LIFE SAFETY PLANS

CIVIL
C.001 CIVIL/SITE GENERAL NOTES AND INFORMATION
GL.501 SOIL BORING LOGS
VF.101 EXISTING CONDITIONS PLAN
CD.101 SITE DEMOLITION PLAN
CE.101 EROSION CONTROL PLAN STAGE 1
CE.102 EROSION CONTROL PLAN STAGE 2
CE.103 EROSION CONTROL PLAN STAGE 3
CE.104 EROSION CONTROL PLAN STAGE 4
CE.501 EROSION AND SEDIMENT CONTROL NOTES
CE.502 EROSION AND SEDIMENT CONTROL NOTES
CE.503 EROSION AND SEDIMENT CONTROL DETAILS
CG.101 SITE GRADING AND DRAINAGE PLAN
CG.201 STORM DRAINAGE PROFILES
CG.401 SITE GRADING AND DRAINAGE PLAN
CG.402 SITE GRADING AND DRAINAGE PLAN
CS.101 SITE IMPROVEMENTS PLAN
CS.102 NEW MAIN ENTRY GATE PLAN
CS.501 SITE DETAILS
CS.502 SITE DETAILS
CS.503 SITE DETAILS
CS.504 SITE DETAILS
CS.505 SITE DETAILS
CW.101 STORMWATER MANAGEMENT PLAN
CW.401 SWM #1 ENLARGED PLAN
CW.402 SWM #2 ENLARGED PLAN
CW.403 SWM #2 PROFILE AND SECTION
CW.404 SWM #3 ENLARGED PLAN
CW.501 SWM NOTES AND DETAILS
CW.502 SWM NOTES AND DETAILS
LN.101 NATURAL RESOURCE INVENTORY
LF.101 TREE PROTECTION PLAN
LF.102 TREE PROTECTION NOTES & DETAILS

LANDSCAPE
LS.100 OVERALL LANDSCAPE PLAN
LS.200 LANDSCAPE DETAILS

STRUCTURAL
S.001 STRUCTURAL NOTES
S.100 STRUCTURAL PLANS
S.101 STRUCTURAL DETAILS
S.102 STRUCTURAL DETAILS

ARCHITECTURE
AR.000 ARCH SYMBOLS, MATERIALS, & ABBREVIATIONS
AR.001 PROJECT STANDARDS AND MOUNTING SCHEDULE
AD.100 DEMOLITION PLANS - REGISTRATION STATION
AS.000 SITE PLAN - NEW CONSTRUCTION
A.010 CONSTRUCTION TYPES SCHEDULE
A.011 CONSTRUCTION TYPES SCHEDULE - PARTITION DETAILS
A.100 FLOOR PLAN & RCP - REGISTRATION STATION
A.101 ROOF & ATTIC PLANS - REGISTRATION STATION
A.102 PLANS & RCP - CHARGE STATION
A.300 EXTERIOR ELEVATIONS - REGISTRATION STATION
A.301 BUILDING SECTIONS - REGISTRATION STATION
A.302 ELEVATIONS & SECTIONS - CHARGE STATION
A.400 WALL SECTIONS - REGISTRATION STATION
A.401 WALL SECTIONS - REGISTRATION STATION
A.410 WALL SECTIONS & DETAILS - CHARGE STATION
A.500 REGISTRATION STATION DETAILS
A.501 REGISTRATION STATION DETAILS
A.502 REGISTRATION STATION DETAILS
A.510 CHARGE STATION DETAILS
A.520 FIREWOOD STORAGE DETAILS - ADD ALTERNATE
A.700 INTERIOR ELEVATIONS
A.800 INTERIOR DETAILS
A.900 DOOR & WINDOW SCHEDULES, AND TYPICAL DETAILS

MECHANICAL
M.001 SYMBOLS AND ABBREVIATIONS
M.100 FLOOR PLANS - DEMOLITION AND NEW WORK
M.500 MECHANICAL DETAILS & DIAGRAMS
M.600 MECHANICAL SCHEDULES

PLUMBING
P.100 FLOOR PLANS - PLUMBING - DEMOLITION AND NEW WORK
P.500 PLUMBING DETAILS & DIAGRAMS
P.600 PLUMBING SCHEDULES

ELECTRICAL
E.001 SYMBOLS AND ABBREVIATIONS
E.002 SITE PLAN - DEMOLITION
E.003 SITE PLAN - NEW WORK
ED.100 FLOOR PLANS - ELECTRICAL - DEMOLITION
E.100 FLOOR PLANS - ELECTRICAL - LIGHTING
E.101 FLOOR PLANS - POWER - NEW WORK
E.500 DETAILS AND DIAGRAMS
E.501 DETAILS AND DIAGRAMS
E.601 SCHEDULES

DISCIPLINE BREAKDOWN

DRAWING DISCIPLINES:

G - GENERAL
C - CIVIL
L - LANDSCAPE
S - STRUCTURAL
AR - ARCHITECTURAL REFERENCE
AD - ARCHITECTURAL DEMOLITION
AS - ARCHITECTURAL SITE
A - ARCHITECTURAL
M - MECHANICAL
P - PLUMBING
E - ELECTRICAL
FA - FIRE ALARM
FP - FIRE PROTECTION
T - TECHNOLOGY

DRAWING CATEGORY (ARCH):

0 - GENERAL
1 - FLOOR PLANS & REFLECTED CEILING PLANS
2 - BUILDING ELEVATIONS
3 - BUILDING SECTIONS & WALL SECTIONS
4 - DETAILS
5 - CORE ELEMENTS
6 - SCHEDULES
7 - INTERIORS

SHEET NUMBERING

A.2.01
- DISCIPLINE
- SHEET NUMBER
- DRAWING CATEGORY

STATE OF MARYLAND

DEPARTMENT OF GENERAL SERVICES
ATIF CHAUDHRY, SECRETARY
301 WEST PRESTON STREET, ROOM 1405
BALTIMORE, MARYLAND 21201

BOARD OF PUBLIC WORKS
WES MOORE, GOVERNOR
BROOKE E. LIERMAN, COMPTROLLER
DERECK E. DAVIS, TREASURER

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5570

LANDSCPE ARCHITECT
Fluora Treeter Landscape Architects
600 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/28/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

USING AGENCY APPROVAL Director E&C
NAME Floyd A. Odell DATE: 3/23/21
DGS APP. J.O. Lair 03/31/2023
TITLE: Chief of Design
PROJECT MANAGER: DATE: 8/23/2021
ASST. SECRETARY OF FPD&C: DATE:

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	G3P_G.000.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

COVER SHEET

G.000

8/23/2021 4:14:07 PM

A. APPLICABLE CODES AND STANDARDS

State of Maryland, Department of Labor, in compliance with COMAR 09.12.50.

International Building Code (IBC), 2018 Edition
International Existing Building Code (IEBC) 2018 Edition

International Mechanical Code (IMC), 2018 Edition
International Standard Plumbing Code, 2018 Edition
National Electrical Code, 2017 Edition
International Fuel Gas Code, 2018 Edition
International Energy Conservation Code (IECC), 2018 Edition

NFPA 101: Life Safety Code, 2018 Edition
NFPA 1: Fire Code, 2018 Edition
NFPA 13: Sprinkler Code, 2016 Edition
NFPA 72: 2016 Edition

ASHRAE 90.1 - Latest Edition
ANSI/ASME A17.1, 2016 Edition
Accessibility Code: MAC Comar 05.02.02 and ADA Standards - 2010
AASHTO/ASSC/ACI (Latest Edition)

Occupational Safety and Health Act (OSHA)
SMACNA HVAC Duct Construction Standards - Metal and Flexible
SMACNA Rectangular Industrial Duct Construction Standards
SMACNA Round Industrial Duct Construction Standards

A. BUILDING STATISTICS

Areas in Square Feet:

Camper Registration Station =	810 GSF
Charge Station =	89 GSF
Charge Station =	89 GSF
Total =	988 GSF

B. FIRE SAFETY FEATURES

Automatic Fire Detection System:
Fire Extinguishers

C. IBC CODE ANALYSIS

1) USE AND OCCUPANCY CLASSIFICATION (IBC CHAPTER 3)

Office:
IBC Section 304.1 Business Group B.

2) GENERAL BUILDING HEIGHTS AND AREAS (IBC CHAPTER 5)

a) IBC table 504.3 (Group B – Type IIB)

Non-sprinklered:

Height and Area Limitations - Type IIB:
55' Height
3 Stories
23,000 SF per Level

Actual Height and Area - Registration Station:
19'-0" Height
810 SF Footprint

Actual Height and Area - Charge Station:
14'-0" Height
89 SF Footprint

3) TYPES OF CONSTRUCTION (IBC CHAPTER 6)

a) Fire Resistance (Table 601 – Type IIB)
i. Structural Frame = 0 Hrs
ii. Bearing Walls Exterior = 0 Hrs
iii. Bearing Walls Interior = 0 Hrs
iv. Non-Bearing Walls Exterior = 0 Hrs (Table 602, X ≥ 30)
v. Non-Bearing Walls Interior = 0 Hrs
vi. Floor Construction = 0 Hrs
vii. Roof Construction = 0 Hrs

4) FIRE AND SMOKE PROTECTION FEATURES (IBC CHAPTER 7)

a) Exterior Walls (Section 705)
i. (705.2.1) Projections from Type I or II Construction shall be of noncombustible materials or combustible materials as allowed by Sections 1406.3 and 1406.4.
ii. (705.8.1, Exception 2) Buildings whose exterior bearing walls, exterior nonbearing walls and exterior primary structural frame are not required to be fire-resistance rated shall be permitted to have unlimited unprotected openings.
iii. (705.8.3) Unprotected openings. Where unprotected openings are permitted, windows and doors shall be constructed of any approved materials. Glazing shall conform to the requirements of Chapters 24 and 26.

5) INTERIOR FINISHES (IBC CHAPTER 8)

a) Wall and Ceiling Finishes (Table 803.11) For B in Non-Sprinklered Buildings
i. Interior exit stairways & exit passageways: A
ii. Corridors and enclosure for exit access stairways: B
iii. Rooms and enclosed spaces: C

Class A: Flame spread index 0-25; smoke developed index 0-450.
Class B: Flame spread index 26-75; smoke developed index 0-450.
Class C: Flame spread index 76-200; smoke developed index 0-450.

6) MEANS OF EGRESS (CHAPTER 10)

a) Table 1004.1.1 Maximum Floor Area Allowances Per Occupant:

FLOOR LEVEL	AREA	OCCUPANCY CLASSIFICATION	TOTAL OCCUPANTS
Registration Station	810	Business - Office 150 gross	6
Charge Station	89	Business - Office 150 gross	1 each 2 total

b) Means of Egress Sizing (Section 1005)
i. Other egress components: 0.2"/occupant
c) Number of Exits and Exit Access Doorways (Section 1006)
i. Occupancy B - One Exit or Exit Access Doorway (Table 1006.2.1)
- Maximum Occupant Load of Space: 49
- Maximum Common Path of Egress Travel Distance, Occupant load ≤30: 100 Feet

d) Accessible Means of Egress (Section 1009)
i. Shall be provided with not less than one accessible means of egress.
ii. (1009.2) Each required accessible means of egress shall be continuous to a public way and shall consist of one or more of the following components:
1. Accessible routes complying with Section 1104.
2. Interior exit stairways complying with Sections 1009.3 and 1023.
3. Exit access stairways complying with Sections 1009.3 and 1019.3 or 1019.4.
4. Exterior exit stairways complying with Sections 1009.3 and 1027 and serving levels other than the level of exit discharge.
5. Elevators complying with Section 1009.4.
6. Platform lifts complying with Section 1009.5.
7. Horizontal exits complying with Section 1026.
8. Ramps complying with Section 1012.
9. Areas of refuge complying with Section 1009.6.
10. Exterior areas for assisted rescue complying with Section 1009.7 serving exits at the level of exit discharge.

e) Exit Access Travel Distance (Section 1017)
i. Exit Access Travel Distance for B without sprinkler system: 200'-0"
f) Corridors (Section 1020)
i. A fire resistance rating is not required for corridors in an occupancy in Group B that is a space requiring only a single means of egress complying with Section 1006.2 (less than 30 people).
ii. Corridors shall be a minimum width of 44" (1020.2).
iii. Corridors may be minimum width of 36" with an occupant load less than 50 (1020.2).
iv. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20'-0.

E. PLUMBING

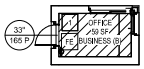
1) PLUMBING FIXTURE SCHEDULE (IBC TABLE 2902.1)

BUILDING TYPE	REGISTRATION STATION	CHARGE STATION	TOTAL OCCUPANTS
OCCUPANTS	6	2	8

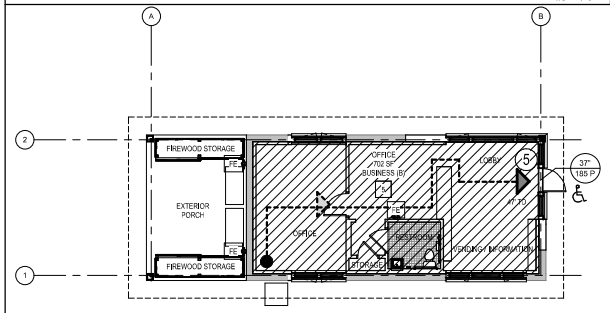
TYPE	NUMBER OF OCCUPANTS	W.C. Male	W.C. Female	LAVS Male	LAVS Female	DRINKING FOUNTAIN	SERVICE SINK
B	100/2 = 50 Occupants per gender	.16	.16	.16	.16	-	
	LEVEL 1 – TOTAL FIXTURES	1		1		-	-

Table 403.1.e - For Business and Mercantile classifications with an occupant load of 15 or fewer, service sinks shall not be required.

410.2 - Small Occupancies - Drinking Fountains shall not be required for an occupant load of 15 or fewer.



LIFE SAFETY PLAN - CHARGE STATION C2
1/8" = 1'-0" G.110



LIFE SAFETY PLAN - REGISTRATION STATION A2
1/8" = 1'-0" G.110

LIFE SAFETY LEGEND

MOST REMOTE POINT PER STORY

XX' TD — TRAVEL DISTANCE
XX' CPT — COMMON PATH OF TRAVEL
EGRESS PATH

EGRESS - EXIT SIGN

EGRESS DISCHARGE AT LEVEL ABOVE / BELOW

1-HR WALL RATING

2-HR WALL RATING

3-HR WALL RATING

EGRESS DISCHARGE AT LEVEL ABOVE / BELOW

ROOM TAG:

ROOM — ROOM NAME
150 SF — ROOM AREA (NET OR GROSS SF)
OCCUPANCY — OCCUPANCY TYPE

23 — ROOM / SPACE OCCUPANT LOAD

23 — OCCUPANT LOAD SERVED BY DESIGNATED EGRESS COMPONENT

DOOR EGRESS:

33" / 165 P
CLEAR DIMENSION PROVIDED BY EGRESS DOOR, OR ASSEMBLY OF EGRESS DOORS. DIMENSION PROVIDED IS 31 LESS PER LEAF(S) FOR DOOR OPENING TYPICAL
NUMBER OF PERSONS ACCOMMODATED BY CLEAR DIMENSION PROVIDED, BASED ON 0.2" PER OCCUPANT

STAIR EGRESS:

37" / 185 P
CLEAR DIMENSION PROVIDED BY EGRESS STAIR, INCLUDING HANDRAIL ENCROACHMENT
NUMBER OF PERSONS ACCOMMODATED BY CLEAR DIMENSION PROVIDED, BASED ON 0.3" PER OCCUPANT

EQUIPMENT / DEVICES:

FE — FIRE EXTINGUISHER

OCCUPANCY LEGEND

BUSINESS (B)
150 GSF / PERSON

EXISTING WALL

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonilla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413
ZIGER / SNEAD LLP
STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_G.110.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

CODE ANALYSIS AND LIFE SAFETY PLANS

G.110

8/23/2021 4:14:07 PM

GENERAL NOTES

1. ALL PROPOSED WORK TO BE CONSTRUCTED IN ACCORDANCE WITH THE INVITATION FOR BID MANUAL, LATEST STANDARDS AND UPDATES OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION, LATEST EDITION OF STANDARDS AND SPECIFICATIONS FOR HIGHWAYS AND INCIDENTAL STRUCTURES AND MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION, LATEST EDITION OF STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIALS. EROSION AND SEDIMENT CONTROL WORK TO BE CONSTRUCTED IN ACCORDANCE WITH THE MARYLAND DEPARTMENT OF THE ENVIRONMENT 2011 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

2. THE EXISTING CONDITIONS FOR THIS PROJECT HAVE BEEN FIELD SURVEYED BY A. MORTON THOMAS AND ASSOCIATES, OCTOBER 2020.

3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD-VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY WORK.

4. THE LOCATION OF ALL UTILITIES SHOWN HEREON IS BASED ON FIELD SURVEY DATA AND RECORD DRAWING INFORMATION. THE UTILITY INFORMATION SHOWN IS NOT NECESSARILY COMPLETE AND THE GENERAL LOCATIONS SHOWN ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES WELL IN ADVANCE OF CONDUCTING ANY OPERATIONS WHICH COULD DAMAGE OR INTERRUPT THESE FACILITIES IN AREAS WHERE THE PROPOSED CONSTRUCTION MAY CONFLICT WITH EXISTING UTILITIES. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING UTILITIES. IF AN UNDERGROUND UTILITY IS DAMAGED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER. ANY DAMAGE SUSTAINED TO UTILITIES ABOVE OR BELOW GROUND SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE SATISFACTION OF THE OWNER. OMISSION AND/OR ADDITIONS OF UTILITIES FOUND DURING CONSTRUCTION SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR ENGAGED IN EXCAVATION AT THE SITE. THE OWNER SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL UTILITY INFORMATION, OMISSIONS AND ADDITIONS FOUND BY ANY CONTRACTOR.

5. DUE TO THE IMPORTANCE OF MAINTAINING SERVICES TO THE EXISTING FACILITIES, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE "ALL PRIVATE" UNDERGROUND UTILITIES AND INFRASTRUCTURE INCLUDING BUT NOT LIMITED TO : PIPES, DRAINS, CABLE, ETC., IN ANY PROPOSED EXCAVATION AREA. THE CONTRACTOR IS ALERTED TO THE FACT THAT "MISS UTILITY" MUST BE CONTACTED AT 1-800-257-7777 A MINIMUM OF 48 HOURS PRIOR TO EXCAVATION. NOTE: "MISS UTILITY" WILL NOT LOCATE PRIVATE INFRASTRUCTURE.

6. IT SHALL BE THE DUTY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS GIVEN ON THE DRAWINGS AND REPORT TO THE OWNER ANY ERROR OR INCONSISTENCY WITH THE ACTUAL CIRCUMSTANCES IN THE FIELD PRIOR TO COMMENCING WORK.

7. THE CONTRACTOR SHALL TAKE NOTE THAT THE UTILITIES IN THIS AREA MAY HAVE PORTIONS OF SHEETING AND SHORING USED TO FACILITATE THEIR CONSTRUCTION ABANDONED AND LEFT IN PLACE, WHICH MAY INTERFERE WITH THE NEW WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF THIS SITUATION OCCURS.

8. THE CONTRACTOR SHALL SCHEDULE ALL DEMOLITION ACTIVITIES AND REQUIRED UTILITY RELOCATION TO MINIMIZE SHUTDOWNS AND DISRUPTIONS. UNLESS OTHERWISE NOTED, ALL UTILITIES MUST REMAIN IN SERVICE THROUGHOUT THE DURATION OF THE PROJECT AND PROTECTED AND SUPPORTED AS REQUIRED. NOTIFY OWNER TWO WEEKS IN ADVANCE IF TEMPORARY SHUTDOWN/DISRUPTION OF UTILITIES IS REQUIRED.

9. THE CONTRACTOR SHALL CONDUCT TEST PITS AS REQUIRED TO ESTABLISH THE CONDITION AND ELEVATION OF ALL UTILITY AND STRUCTURES PRIOR TO FABRICATING ANY PIECES OR ORDERING ANY MATERIALS FOR THE UTILITY SYSTEMS. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.

10. BASED UPON THE RESULTS OF THE TEST PITS, THE CONTRACTOR SHALL SUBMIT SKETCHES TO THE ENGINEER SHOWING THE RECOMMENDATION REVISING THE DESIGN INVERT AND TOP ELEVATIONS AS REQUIRED TO AVOID ANY CONFLICTS WITH EXISTING UTILITY LINES AND OTHER FEATURES.

11. OMISSION OR ADDITIONS OF UTILITIES FOUND DURING CONSTRUCTION SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR ENGAGED IN EXCAVATION AT THE SITE. THE OWNER SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL UTILITY INFORMATION, OMISSIONS AND ADDITIONS FOUND BY ANY CONTRACTOR. DAMAGE TO EXISTING UTILITIES SHALL BE FIXED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

12. THE CONTRACTOR SHALL STAKE-OUT ALL BASELINES OF CONSTRUCTION AND THE LOCATION OF ALL NEW CONSTRUCTION, AND VERIFY ALL SETBACKS, OFFSETS, AND CLEARANCES PRIOR TO START OF ANY WORK.

13. ALL DISTURBED AREAS NOT STABILIZED WITH STRUCTURES, PAVING, SOD OR PLANTINGS SHALL BE STABILIZED WITH FOUR INCHES OF TOPSOIL, SEED, MULCH, AND WATER TO ESTABLISH AN ADEQUATE GROWTH OF GRASS.

14. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.

15. THE TOPS OF ALL FRAMES, GRATES, AND COVERS OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF CONTRACT AND LIMITS DISTURBANCE SHALL BE ADJUSTED TO THE NEW GRADES.

16. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES AND SHALL PROVIDE ALL NEEDED LABOR, EQUIPMENT, AND MATERIALS TO PROTECT THE PROJECT SITE FROM PONDING WATER AND FLOODING.

17. NUMERICAL DIMENSIONS AND ELEVATIONS SHOWN SHALL SUPERSEDE ANY DISCREPANCY IN THE SCALING ON THE DRAWINGS.

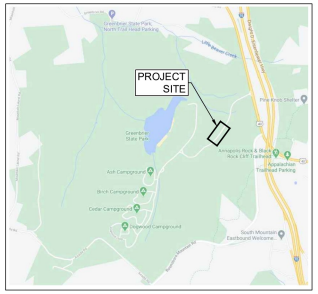
18. EXISTING UTILITY SERVICE LINES, POLES, VALVE BOXES, METERS, ETC. ARE TO REMAIN IN PLACE AND IN OPERATION, UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT. EXISTING UTILITIES AND LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE PLAN LOCATIONS SHOWN ARE NOT GUARANTEED; VERIFY IN THE FIELD.

19. SAVE AND PROTECT EXISTING TREES AND SHRUBS, EXCEPT THOSE SPECIFICALLY NOTED FOR REMOVAL. REFER TO DEMOLITION PLANS FOR TREE PROTECTION FENCING. REFER TO TREE PROTECTION SPECIFICATIONS FOR REQUIREMENTS WHEN WORKING INSIDE OR ADJACENT TO TREE PROTECTION FENCING.

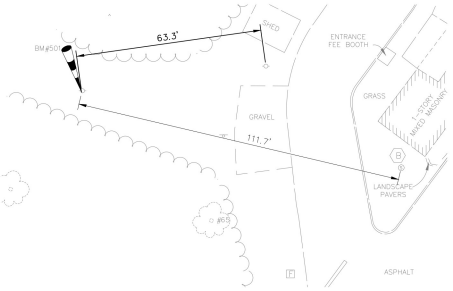
20. PROVIDE POSITIVE DRAINAGE ON OR NEAR STOCKPILE AREAS. MAINTAIN NATURAL DRAINAGE WAYS.

21. RESTORE ALL AREAS DAMAGED DURING CONSTRUCTION.

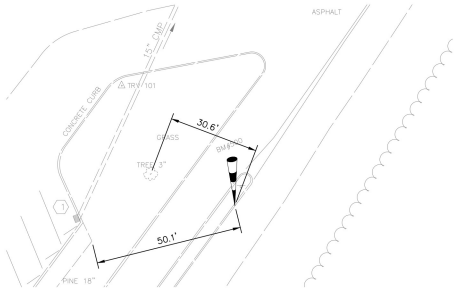
1 VICINITY MAP
SCALE:NTS



2 LOCATION MAP
SCALE:NTS



3 BENCHMARK 501
SCALE:1"=20'



4 BENCHMARK 500
SCALE:1"=20'

MDE INDEX OF DRAWINGS	
DWG NO. CIVIL	SHEET TITLE
C001	CIVIL SITE GENERAL NOTES AND INFORMATION
GI501	SOIL BORING LOGS
VF101	EXISTING CONDITIONS PLAN
CD101	SITE DEMOLITION PLAN
CE101	EROSION CONTROL PLAN STAGE 1
CE102	EROSION CONTROL PLAN STAGE 2
CE103	EROSION CONTROL PLAN STAGE 3
CE104	EROSION CONTROL PLAN STAGE 4
CE501	EROSION AND SEDIMENT CONTROL NOTES
CE502	EROSION AND SEDIMENT CONTROL NOTES
CE503	EROSION AND SEDIMENT CONTROL DETAILS
CG101	SITE GRADING AND DRAINAGE PLAN
CG201	STORM DRAINAGE PROFILES
CG401	SITE GRADING AND DRAINAGE PLAN
CG402	SITE GRADING AND DRAINAGE PLAN
CS101	SITE PLAN
CS102	SITE PLAN
CS501	SITE DETAILS
CS502	SITE DETAILS
CS503	SITE DETAILS
CS504	SITE DETAILS
CS505	SITE DETAILS
CW101	STORMWATER MANAGEMENT PLAN
CW401	SWM 1 ENLARGED PLAN
CW402	SWM 2 ENLARGED PLAN
CW403	SWM 2 PROFILE AND SECTION
CW404	SWM 3 ENLARGED PLAN
CW501	STORMWATER MANAGEMENT DETAILS
CW502	STORMWATER MANAGEMENT NOTES AND DETAILS
LN101	NATURAL RESOURCE INVENTORY
LF101	TREE PROTECTION PLAN
LF102	TREE PROTECTION NOTES AND DETAILS

PROJECT INFORMATION

1. NAME: GREENBRIER STATE PARK CHARGE STATION
2. LOCATION: 21843 NATIONAL PIKE, BOONSBORO, MD 21713
3. MDE NO.: 21-SF-0104

DESIGN CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II INCLUDING SUPPLEMENTS, THE ENVIRONMENT ARTICLE SECTIONS 4-101 THROUGH 116 AND SECTIONS 4-201 AND 215, AND THE CODE OF MARYLAND REGULATIONS (COMAR) 26.17.01 AND COMAR 26.17.02 FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, RESPECTIVELY.

DATE

DESIGNER'S SIGNATURE

MD REGISTRATION NO. 32151
(P.E.) R.L.S., R.L.A. OR R.A. (CIRCLE ONE)

MATTHEW ERNEST, P.E.
PRINTED NAME

OWNER'S / DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION, AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I/WE HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY APPROPRIATE INSPECTION AND ENFORCEMENT AUTHORITY OR THE STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT. I/WE HEREBY CERTIFY THAT STORMWATER MANAGEMENT FACILITIES WILL BE MAINTAINED IN ACCORDANCE WITH APPROVED PLANS.

DATE

OWNER/DEVELOPER SIGNATURE

RESPONSIBLE PERSONNEL CERTIFICATION NO.

PRINTED NAME AND TITLE

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND MATTHEW A. ERNEST No. 32151 PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	C001 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

CIVIL SITE GENERAL NOTES AND INFORMATION

C.001

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\C001 - P052200002.DWG, 8/19/2021 4:25 PM, MERNEST

B-1

Project: Entry Gate Fee Station Improvements, Greenbrier State Park, Boonsboro, Maryland
Boring Number: B-1
Contract Number: 20C14026.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc. Frederick, Maryland
Contractor Foreman: B. Mullendore
Schnabel Representative: S. Henry
Equipment: CME-55LC (Track)
Method: 3-1/4" I.D. Hollow Stem Auger
Hammer Type: Auto Hammer (140 lb)
Dates Started: 10/22/20 **Finished:** 10/22/20
Location: See Location Plan
Ground Surface Elevation: 1025± (ft) **Total Depth:** 12.5 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered	10/22	---	---	---	---
Completion	10/22	10:43 AM	Dry	12.5'	---
Casing Pulled	10/22	10:46 AM	Dry	---	8.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.5	Asphalt, 7 inches		1024.4					Surface
0.8	AGGREGATE BASE, 3 inches		1024.2					Residual
2.3	SILT WITH SAND; moist, orangish brown with mottles of light brown	ML	1022.7			S-1, SPT 5-5-6 REC=18", 100%	MC = 17.9% PP = 2.50 tsf	
4.5	SILT WITH ROCK FRAGMENTS; moist, tan	ML	1020.5	B	5	S-2, SPT 6-9-7 REC=12", 67%	MC = 9.7% PP = 2.00 tsf	
7.5	SANDY SILT WITH ROCK FRAGMENTS; moist, light brown with streaks of light gray	ML	1017.5			S-3, SPT 13-9-9 REC=13", 72%	PP = 2.00 tsf	
12.5	DISINTEGRATED ROCK; sampled as silty sand, fine to medium grained sand; moist, reddish brown	DR	1012.5	C	10	S-4, SPT 50/3" 50/3" REC=3", 100%		Disintegrated Rock
						S-5, SPT 50/0" 50/0" REC=0"		

Bottom of Boring at 12.5 ft.
Auger refusal at 12.5 ft.
Boring backfilled with cuttings upon completion.

B-2

Project: Entry Gate Fee Station Improvements, Greenbrier State Park, Boonsboro, Maryland
Boring Number: B-2
Contract Number: 20C14026.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc. Frederick, Maryland
Contractor Foreman: B. Mullendore
Schnabel Representative: S. Henry
Equipment: CME-55LC (Track)
Method: 3-1/4" I.D. Hollow Stem Auger
Hammer Type: Auto Hammer (140 lb)
Dates Started: 10/22/20 **Finished:** 10/22/20
Location: See Location Plan
Ground Surface Elevation: 1026± (ft) **Total Depth:** 20.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered	10/22	---	---	---	---
Completion	10/22	11:50 AM	Dry	18.5'	---
Casing Pulled	10/22	11:55 AM	Dry	---	12.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.3	Asphalt, 4 inches		1025.2					Surface
1.0	AGGREGATE BASE, 8 inches		1024.5					Residual
2.5	SILT; moist, light brown	ML	1023.0			S-1, SPT 5-3-4 REC=13", 72%	MC = 18.0%	
	SANDY SILT; moist, orangish brown					S-2, SPT 5-8-5 REC=10", 56%	LL = 34 PI = 5 MC = 14.7% % Passing #200 = 57.8	
	Change: light yellowish brown	ML		B	5	S-3, SPT 5-6-9 REC=15", 83%	PP = 2.75 tsf MC = 12.9% PP = 4.00 tsf	
9.0	DISINTEGRATED ROCK, sampled as silty sand, fine to medium grained sand; moist, light reddish brown with speckles of white	DR	1016.5	C	10	S-4, SPT 33-50/4" REC=10", 100%		Disintegrated Rock
14.1	SILT; moist, light brown with streaks of light gray	ML	1011.4	B	15	S-5, SPT 10-16-24 REC=18", 100%	PP = 4.25 tsf	Residual
16.8	DISINTEGRATED ROCK, sampled as silt with sand; moist, light brown, contains rock fragments	DR	1008.8	C	20	S-6, SPT 50/0" REC=3", 100%		Disintegrated Rock
20.0			1005.5					

Bottom of Boring at 20.0 ft.
Boring backfilled with cuttings upon completion.

SWM-1

Project: Entry Gate Fee Station Improvements, Greenbrier State Park, Boonsboro, Maryland
Boring Number: SWM-1
Contract Number: 20C14026.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc. Frederick, Maryland
Contractor Foreman: B. Mullendore
Schnabel Representative: S. Henry
Equipment: CME-55LC (Track)
Method: 3-1/4" I.D. Hollow Stem Auger
Hammer Type: Auto Hammer (140 lb)
Dates Started: 10/22/20 **Finished:** 10/22/20
Location: See Location Plan
Ground Surface Elevation: 1025± (ft) **Total Depth:** 10.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered	10/22	---	---	---	---
Completion	10/22	8:40 AM	Dry	8.5'	---
Casing Pulled	10/22	8:45 AM	Dry	---	6.0'
End of Day	10/22	12:00 PM	Dry	---	5.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.3	Topsoil; 3 inches		1024.3					Surface
	FILL, sampled as sandy lean clay with gravel sized rock fragments; moist, brown	FILL		A		S-1, SPT 5-3-3 REC=18", 89%	MC = 15.6% LL = 40 PI = 24 % Passing #200 = 58.1	Fill
					5	S-2, SPT 3+20+10 REC=15", 83%		Spoon glancing off probable boulder
5.2	FILL, sampled as silt with sand; moist, light orangish brown, contains rock fragments, contains root fragments	FILL	1019.5			S-3, SPT 12+20+19 REC=2", 50%	PP = 1.75 tsf	
7.5	SILTY SAND WITH ROCK FRAGMENTS; moist, light orangish brown, LOAM (USDA)	SM	1017.0	B		S-4, SPT 7+5+3 REC=18", 100%	MC = 17.2% % Passing #200 = 46.1 PP = 1.50 tsf	Residual
10.0			1014.5		10			

Bottom of Boring at 10.0 ft.
Boring backfilled with cuttings after last groundwater measurement.
Bulk sample collected from 0-5 feet

SWM-2

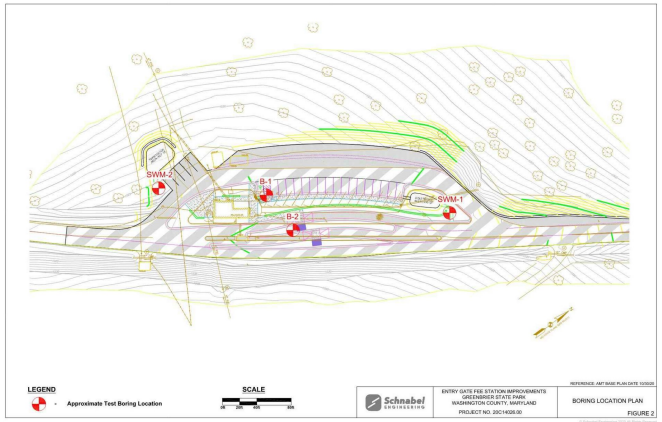
Project: Entry Gate Fee Station Improvements, Greenbrier State Park, Boonsboro, Maryland
Boring Number: SWM-2
Contract Number: 20C14026.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc. Frederick, Maryland
Contractor Foreman: B. Mullendore
Schnabel Representative: S. Henry
Equipment: CME-55LC (Track)
Method: 3-1/4" I.D. Hollow Stem Auger
Hammer Type: Auto Hammer (140 lb)
Dates Started: 10/22/20 **Finished:** 10/22/20
Location: See Location Plan
Ground Surface Elevation: 1025± (ft) **Total Depth:** 10.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered	10/22	---	---	---	---
Completion	10/22	9:55 AM	Dry	8.5'	---
Casing Pulled	10/22	9:58 AM	Dry	---	5.5'
End of Day	10/22	12:10 PM	Dry	---	5.5'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.3	Topsoil; 3 inches		1024.8					Surface
	SILTY SAND, fine grained sand; moist, light brown	SM				S-1, SPT 5-4-6 REC=18", 88%		Residual
						S-2, SPT 5-8-7 REC=18", 100%		
4.5	SILT WITH SAND; moist, light brown, SILT LOAM (USDA)	ML	1020.5	B	5	S-3, SPT 8-9-11 REC=18", 100%	MC = 7.5% % Passing #200 = 71.2 PP = 2.50 tsf	
7.5	SANDY SILT WITH ROCK FRAGMENTS; moist, light brown	ML	1017.5			S-4, SPT 8-18-33 REC=11", 61%		
10.0			1015.0		10			

Bottom of Boring at 10.0 ft.
Boring backfilled with cuttings after last groundwater measurement.



DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

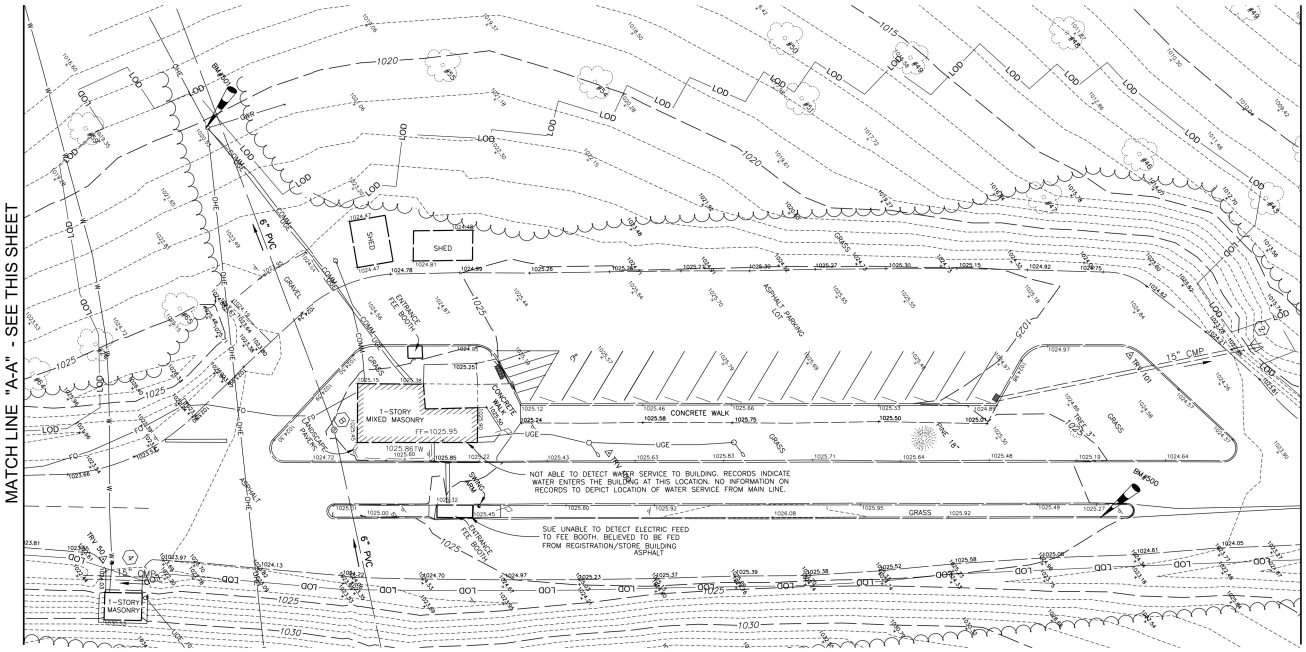
BID AND CONSTRUCTION DOCUMENTS 23 August 2021

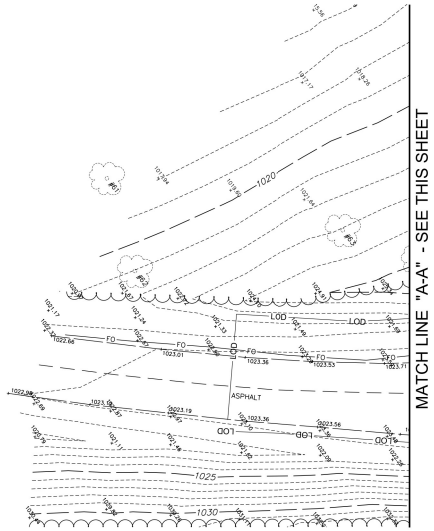
CAD DWG FILE:	GI501 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

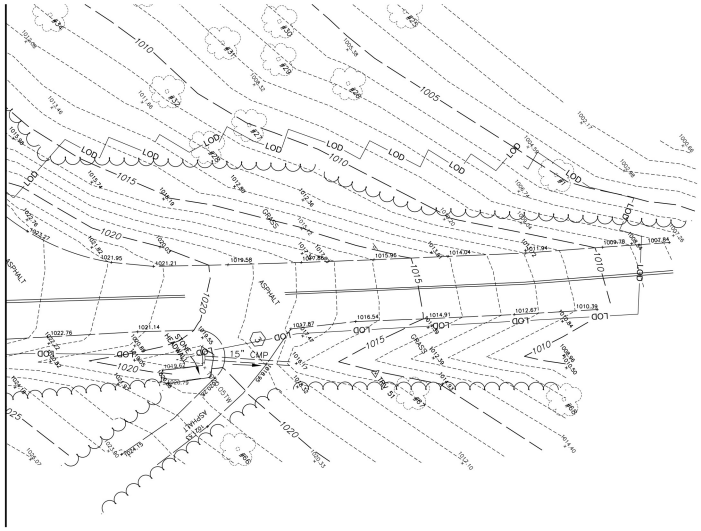
SOIL
BORING
LOGS

GI.501

X:\ROCK\VILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\GI501 - P052200002.DWG, 8/19/2021 4:25 PM, MERNEST







MD STATE PLANE NAD 83

SURVEY LEGEND:

- TREE #TAG NUMBER
- GRATE INLET
- POST
- SINGLE POST SIGN
- LIGHT POLE
- POWER POLE
- FIBER OPTIC JUNCTION BOXES
- SANITARY SEWER MANHOLE
- WATER VALVE
- FLAG POLE
- BOLLARD
- TRAVERSE
- BENCHMARK
- CURB AND GUTTER
- FO — UNDERGROUND FIBER OPTIC LINE
- W — UNDERGROUND WATERLINE PAINT
- UGE — UNDERGROUND ELECTRIC PAINT
- OHE — OVERHEAD ELECTRIC LINE
- GWR — GUY WIRE
- COMM — UNDERGROUND COMMUNICATION PAINT
- OVERHANG
- EOI — END OF OL-B UTILITIES
- FF — FINISH FLOOR ELEVATION
- BUILDING

STORM INVERTS

1. GRATE INLET
   TOP=1024.49
   INV OUT=1021.14
2. OUTFALL
   INV=1017.30
3. CULVERT
   IN=1017.35
   OUT=1016.47
4. CULVERT
   IN=1022.04
   OUT=1022.12

SEWER INVERTS

A. TOP=1034.29
   INV IN=1018.89
   INV OUT=1018.51
B. TOP=1025.11
   INV IN=1018.59
   INV OUT=1018.31
C. TOP=1014.30
   INV IN=1007.53
   INV OUT=1006.53

TRAVERSE DATA:

NO	NORTHING	EASTING	ELEV	DESCRIPTION
50	681916.1141	1139604.8741	1023.80	MAG-NAIL
51	682341.6570	1139927.1990	1015.19	60d NAIL
100	682076.1982	1139678.1379	1025.75	REBAR & CAP
101	682238.6269	1139756.6677	1024.59	REBAR & CAP
102	682321.1272	1139620.6082	1008.14	IRON SPIKE
103	682202.4115	1139513.1825	1012.62	IRON SPIKE

BENCHMARK DATA:

NO	ELEV	DESCRIPTION
500	1025.29	X-CUT ON TOP OF CURB
501	1021.70	RR SPIKE IN POWER POLE

GENERAL NOTES

1. HORIZONTAL DATUM: MARYLAND STATE PLANE NAD 83/2011 (BASED UPON RTK OBSERVATIONS)
   VERTICAL DATUM: NAVD 88 GEOID 12A(BASED UPON RTK OBSERVATIONS)
2. UTILITIES SHOWN ARE BASED ON FIELD INVESTIGATION, VISIBLE FIELD EVIDENCE, AVAILABLE RECORDS AND QUALITY LEVEL "B" DESIGNATION IN ACCORDANCE WITH APWA STANDARDS AND ASCE C/I 38-02 GUIDELINES.
3. SEE FROZEN LAYERS FOR ADDITIONAL INFORMATION, SUCH AS SPOT ELEVATIONS.
4. NO PROPERTY OR BOUNDARY SURVEY PROCEDURES WERE PERFORMED AS PART OF THIS SURVEY.
5. ONLY TREES 24" DIAMETER AND LARGER WERE SURVEYED WITHIN THE FORESTED AREA. SMALLER TREES MAY EXIST WITHIN THE WOODED AREA.

0 10' 20' 40'
SCALE: 1"=20'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5970

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

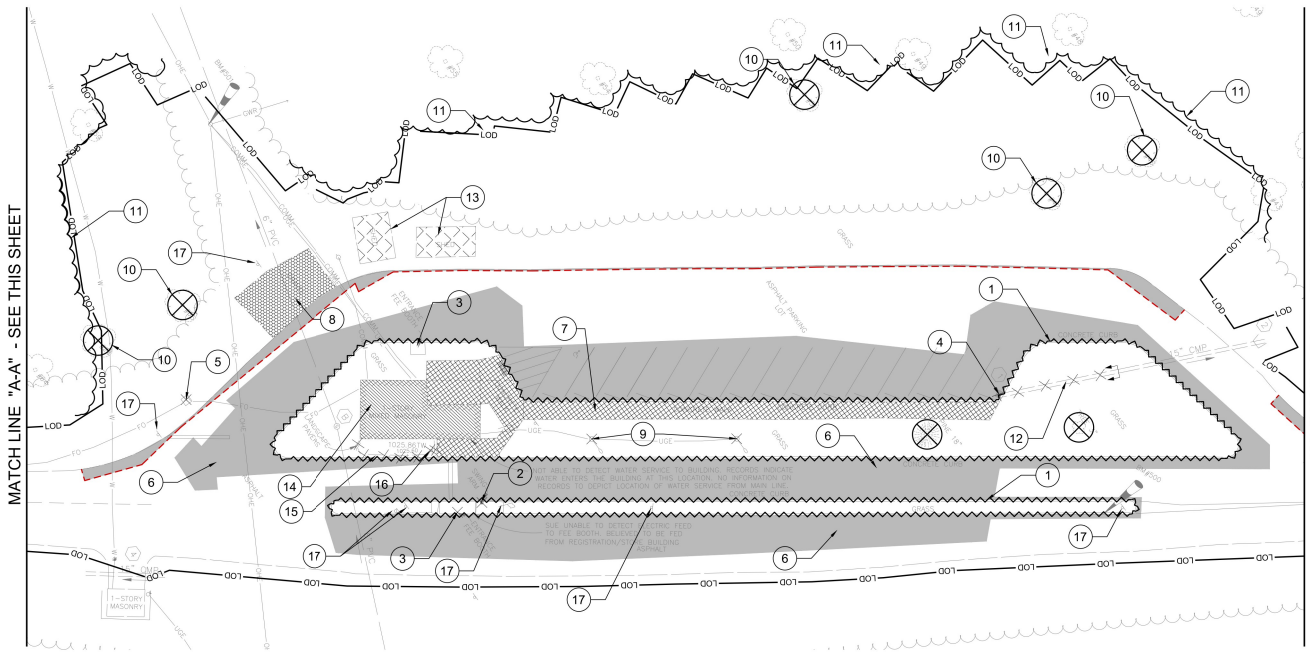
NO.	REVISION TITLE	DATE

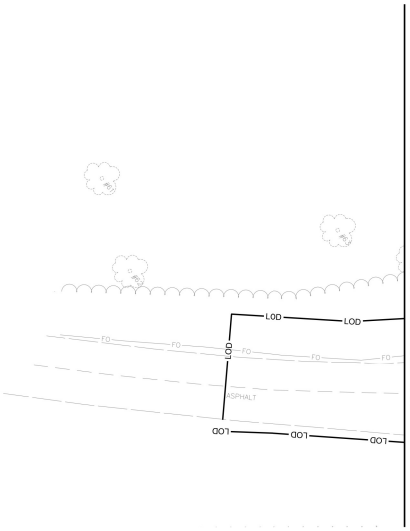
BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	VF101 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

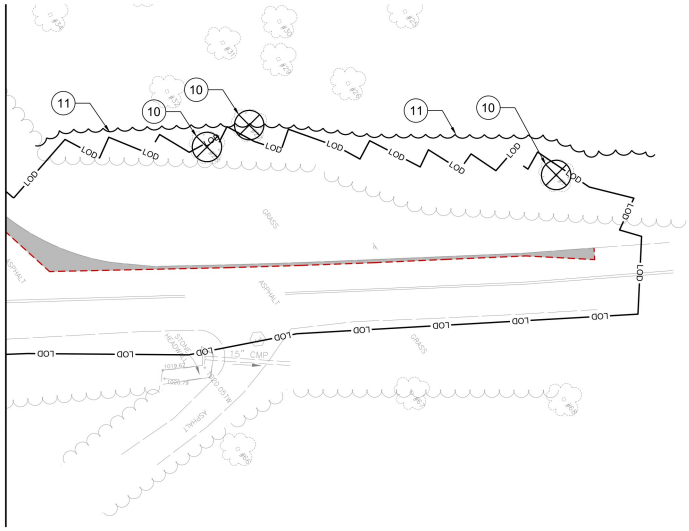
EXISTING CONDITIONS PLAN

VF.101

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\VF101 - P052200002.DWG, 8/19/2021 4:26 PM, MERNEST







DEMOLITION KEYNOTES

1. REMOVE EXISTING CURB
2. REMOVE EXISTING SWING ARM
3. REMOVE EXISTING FEE BOOTH
4. REMOVE EXISTING STORM DRAIN STRUCTURE
5. REMOVE AND RELOCATE EXISTING BOX
6. REMOVE EXISTING ASPHALT AND BASE COURSE
7. REMOVE EXISTING CONCRETE WALK AND BASE COURSE
8. REMOVE EXISTING GRAVEL
9. REMOVE EXISTING STREET LIGHT
10. REMOVE TREE
11. LIMIT OF TREE CLEARING (LESS THAN 24" DIA) AND VEGETATION CLEARING
12. REMOVE EXISTING CMP PIPE
13. REMOVE EXISTING SHED
14. DEMOLISH EXISTING 1-STORY BUILDING
15. DEMOLISH EXISTING WALL
16. RELOCATE EXISTING SIGN
17. ITEM TO BE SALVAGED AND RETURNED TO DNR

DEMOLISH AND REMOVE ASPHALT PAVEMENT

MILL ASPHALT PAVEMENT

DEMOLISH AND REMOVE CONCRETE PAVEMENT/WALK/STEPS

DEMOLISH AND REMOVE MISCELLANEOUS GROUND COVERING MATERIAL

MISCELLANEOUS DEMOLITION

DEMOLISH EXISTING BUILDING

TREE TO BE REMOVED

LINEAR OBJECT TO BE REMOVED

ITEM TO BE REMOVED

LIMITS OF REMOVAL

0 10' 20' 40'
SCALE: 1"=20'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CD101 - P052200002.DWG, 8/19/2021 4:26 PM, MERNEST

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

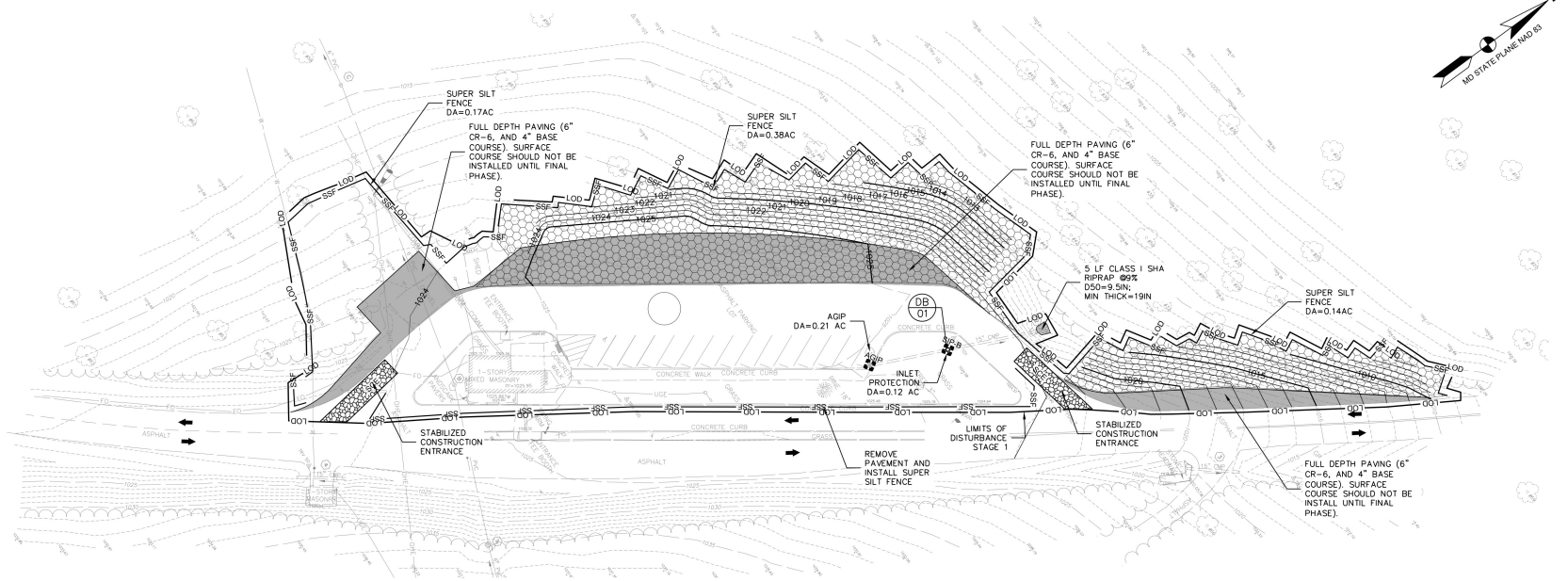
BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CD101 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT

PROJECT NUMBER:	2015.00
DATE:	23 August 2021

SITE DEMOLITION PLAN

CD.101



EROSION CONTROL SEQUENCE OF CONSTRUCTION

STAGE 1 SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR SHALL NOTIFY THE WATER AND SCIENCE ADMINISTRATION (WSA) AT (410) 537-3510 SEVEN DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITIES AND SHALL HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND REPRESENTATIVES OF THE WSA, UNLESS WAIVED BY THE WSA.
2. FIELD MARK THE LIMITS OF DISTURBANCE.
3. CLEAR AND GRUB FOR AND INSTALL PERIMETER CONTROL SUPER SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE.
4. ONCE ALL EROSION CONTROL MEASURES ARE INSTALLED, WITH THE APPROVAL FROM THE MDE INSPECTOR, START WITH THE GRADING FOR ROADWAY CONSTRUCTION. STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORK DAY.
5. CONSTRUCT ROADWAY AS SHOWN ON THIS PLAN. STABILIZED ALL DISTURBED AREAS AT THE END OF EACH WORK DAY.
6. INSTALL NEW DOG HOUSE STORM DRAIN INLET DB-01 AS SHOWN ON THIS PLAN. ONCE INLET IS INSTALL, IMMEDIATELY INSTALL STANDARD INLET PROTECTION.
7. WITH THE APPROVAL FROM THE MDE INSPECTOR, PROCEED TO THE EROSION CONTROL STAGE 2 OF CONSTRUCTION.

EROSION/SEDIMENT CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SSF	SUPER SILT FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE
SIP	STANDARD INLET PROTECTION
	SAME DAY STABILIZATION – SOIL STABILIZATION MATTING
	PAVEMENT SAME DAY STABILIZATION – CONTRACTOR SHALL ONLY DISTURB AN AREA THAT CAN BE STABILIZED WITH THE AGGREGATE BASE SECTION AT THE END OF EACH WORK DAY

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

STREET CLEANING NOTES

CONTRACTOR SHALL CLEAR ALL STREETS FREE OF SEDIMENT AT THE END OF EACH WORK DAY. ALL EFFORTS ARE TO MADE TO PREVENT SEDIMENT FROM GETTING ON THE STREETS. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ONTO THE ROAD MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING OR SWEEPING. WHEN WASHING WATER IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE THAT DRAINS TO AN APPROVED SEDIMENT CONTROL DEVICE.

0 30' 60'
SCALE: 1"=30'

DGS No. P-052-200-002	MDE (SWM + E&S) No. 21-SF-0104		

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. BENNETT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

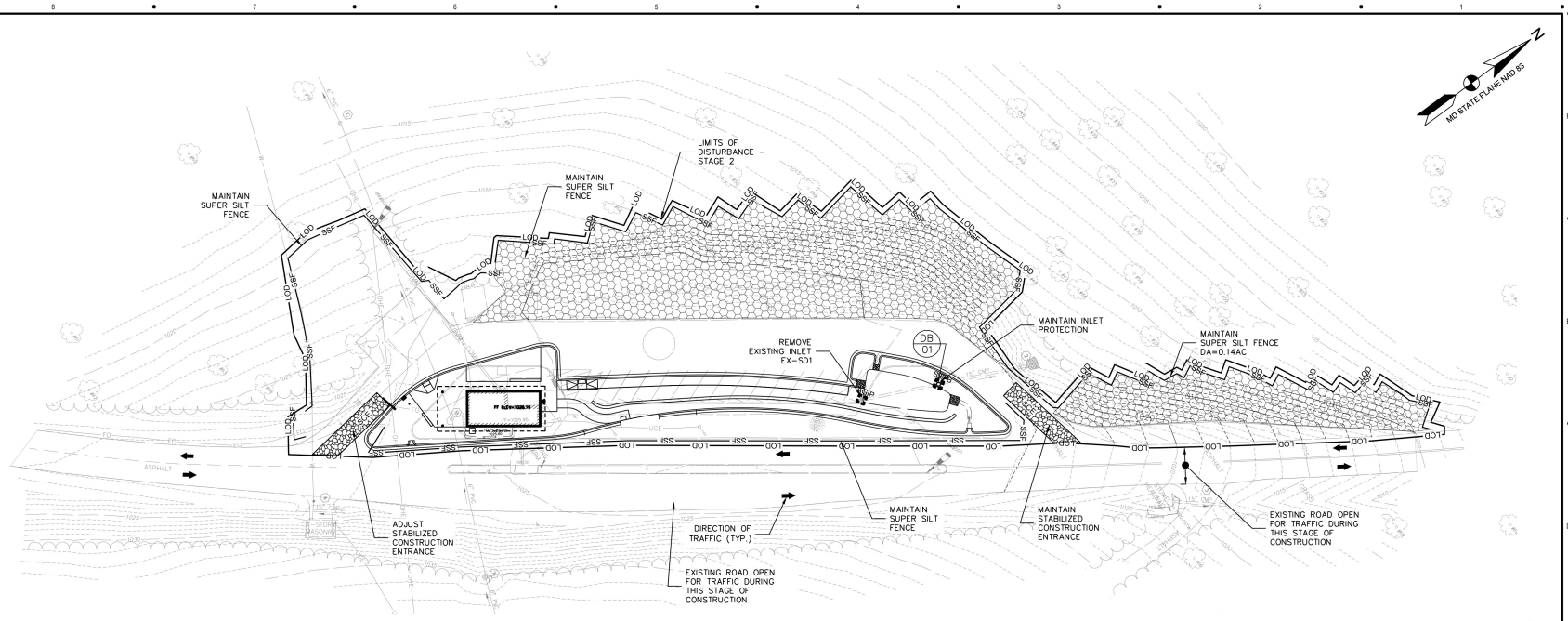
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CE101 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

EROSION CONTROL PLAN STAGE 1

CE.101

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CE101 - P052200002.DWG, 8/19/2021 4:26 PM, MERNEST



EROSION CONTROL SEQUENCE OF CONSTRUCTION

STAGE 2 SEQUENCE OF CONSTRUCTION

1. MAINTAIN ALL PERIMETER CONTROLS INSTALLED UNDER THE STAGE 1.
2. SLIGHTLY ADJUST CLEAR STABILIZED CONSTRUCTION ENTRANCE TO ALLOW FOR SITE IMPROVEMENTS CONSTRUCTION.
3. REMOVE PART OF EXISTING 15" CMP AND EXISTING STORM DRAIN INLET EX-SD1. STABILIZED ALL DISTURBED AREAS AT THE END OF EACH WORK DAY.
4. START WITH THE GRADING FOR ROADWAY CONSTRUCTION. STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORK DAY.
5. CONSTRUCT ALL OF THE ROADWAY AND SITE IMPROVEMENTS EXCEPT FOR THE STORMWATER MANAGEMENT FACILITY #1 AND #2 APPURTENANCES.
6. WITH THE APPROVAL FROM THE MDE INSPECTOR, PROCEED TO STAGE 3 OF CONSTRUCTION.

EROSION/SEDIMENT CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SSF	SUPER SILT FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE
SIP	STANDARD INLET PROTECTION
	SAME DAY STABILIZATION – SOIL STABILIZATION MATTING
	PAVEMENT SAME DAY STABILIZATION – CONTRACTOR SHALL ONLY DISTURB AN AREA THAT CAN BE STABILIZED WITH THE AGGREGATE BASE SECTION AT THE END OF EACH WORK DAY

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

STREET CLEANING NOTES

CONTRACTOR SHALL CLEAR ALL STREETS FREE OF SEDIMENT AT THE END OF EACH WORK DAY. ALL EFFORTS ARE TO MADE TO PREVENT SEDIMENT FROM GETTING ON THE STREETS. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ONTO THE ROAD MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING OR SWEEPING. WHEN WASHING WATER IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE THAT DRAINS TO AN APPROVED SEDIMENT CONTROL DEVICE.

0 30' 60'
SCALE: 1"=30'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

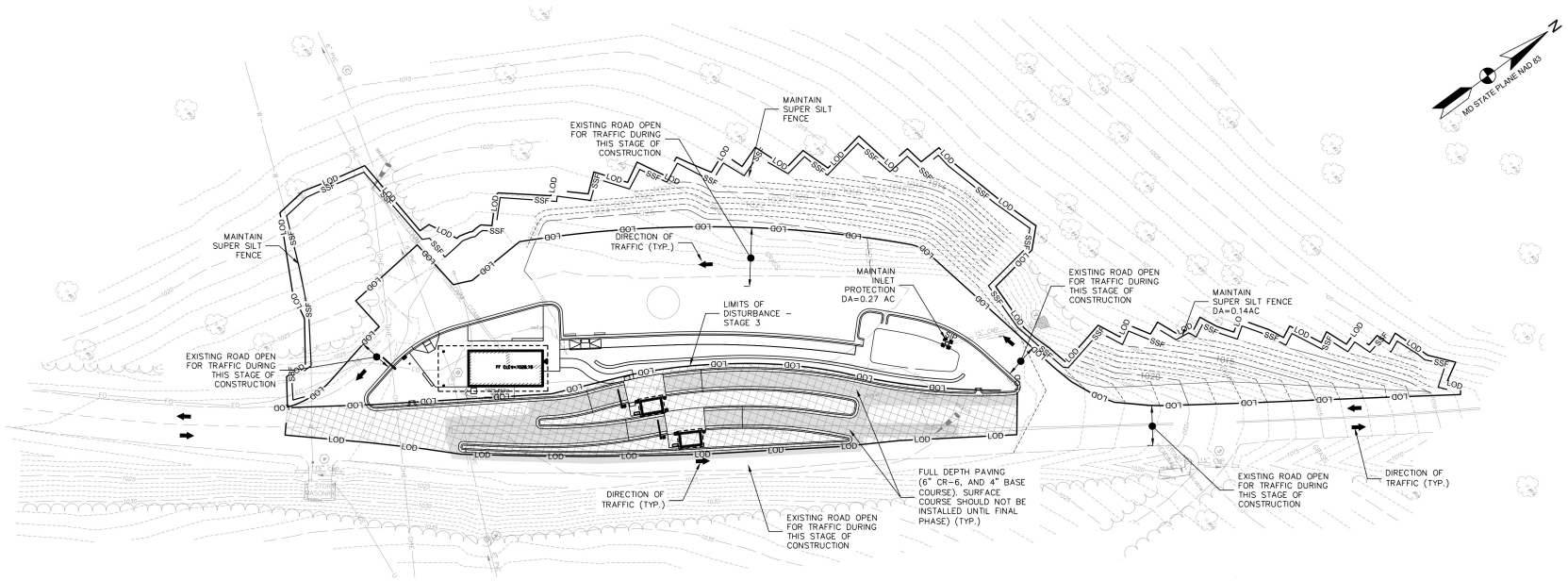
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CE102 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

EROSION CONTROL PLAN STAGE 2

CE.102

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CE102 - P052200002.DWG, 8/19/2021 4:27 PM, MERNEST



EROSION CONTROL SEQUENCE OF CONSTRUCTION

STAGE 3 SEQUENCE OF CONSTRUCTION

1. MAINTAIN ALL PERIMETER CONTROLS INSTALLED UNDER THE STAGE 1.
2. REMOVE STABILIZED CONSTRUCTION ENTRANCES AND OPEN ROAD FOR TRAFFIC.
3. START WITH THE GRADING FOR ROADWAY CONSTRUCTION. STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORK DAY.
4. CONSTRUCT ALL OF THE ROADWAY AND SITE IMPROVEMENTS EXCEPT FOR THE STORMWATER MANAGEMENT FACILITY #1 AND #2 APPURTENANCES.
5. WITH THE APPROVAL FROM THE MDE INSPECTOR, PROCEED TO STAGE 4 OF CONSTRUCTION.

EROSION/SEDIMENT CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SSF	SUPER SILT FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE
SIP	STANDARD INLET PROTECTION
	SAME DAY STABILIZATION – SOIL STABILIZATION MATTING
	PAVEMENT SAME DAY STABILIZATION – CONTRACTOR SHALL ONLY DISTURB AN AREA THAT CAN BE STABILIZED WITH THE AGGREGATE BASE SECTION AT THE END OF EACH WORK DAY

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

STREET CLEANING NOTES

CONTRACTOR SHALL CLEAR ALL STREETS FREE OF SEDIMENT AT THE END OF EACH WORK DAY. ALL EFFORTS ARE TO MADE TO PREVENT SEDIMENT FROM GETTING ON THE STREETS. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ONTO THE ROAD MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING OR SWEEPING. WHEN WASHING WATER IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE THAT DRAINS TO AN APPROVED SEDIMENT CONTROL DEVICE.

0 30' 60'
SCALE: 1"=30'

DGS No. P-052-200-002	MDE (SWM + E&S) No. 21-SF-0104		

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. EMMERT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

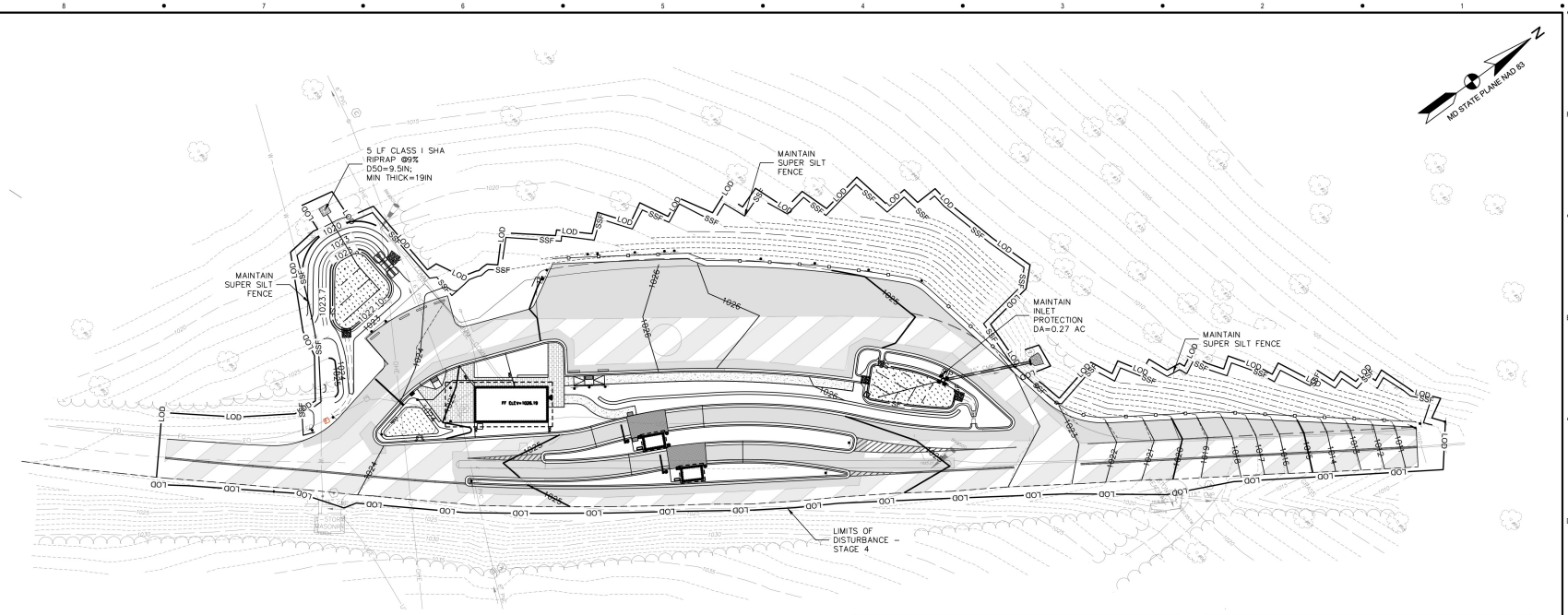
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CE103 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

EROSION
CONTROL PLAN
STAGE 3

CE.103

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CE103 - P052200002.DWG, 8/19/2021 4:27 PM, MERNEST



EROSION CONTROL SEQUENCE OF CONSTRUCTION

STAGE 4 SEQUENCE OF CONSTRUCTION

1. MAINTAIN ALL PERIMETER CONTROLS INSTALLED UNDER STAGE 1 OF CONSTRUCTION.
2. MILL AND OVERLAY AND INSTALL SURFACE COURSE AS SHOWN ON PLAN.
3. ONCE ALL AREAS UPSTREAM OF THE MICRO–BIORETENTION FACILITIES #1 AND #2 ARE STABILIZED, WITH THE APPROVAL FROM THE MDE INSPECTOR, BEGIN CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITIES #1 AND #2. CONTRACTOR SHALL COORDINATE ALL REQUIRED SWM AS–BUILT INSPECTIONS AS OUTLINED IN THE PROJECT SPECIFICATIONS.
4. ONCE THE FILTER MEDIA IS INSTALLED, INSTALL SILT FENCE AROUND ITS PERIMETER.THE CONTRACTOR SHALL PREVENT ANY SEDIMENT LADEN RUN–OFF FROM ENTERING THE STORMWATER MANAGEMENT FACILITIES.
5. PRIOR TO THE INSTALLATION OF THE FINAL LANDSCAPING, CONTRACTOR SHALL CONDUCT A TOPOGRAPHIC SURVEY OF THE STORMWATER MANAGEMENT FACILITY AND PROVIDE THIS TOPOGRAPHIC SURVEY TO THE CERTIFYING ENGINEER FOR REVIEW AND ACCEPTANCE. THE CONTRACTOR SHALL PREVENT ANY SEDIMENT LADEN RUN–OFF FROM ENTERING THE STORMWATER MANAGEMENT FACILITIES.
6. WITH THE APPROVAL FROM CERTIFYING ENGINEER THAT THE FACILITY HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS, INSTALL FINAL SITE AND STORMWATER MANAGEMENT LANDSCAPING. NOTE ADJUSTMENTS MAY ARISE DURING THE MDE AS–BUILT REVIEW PROCESS. THE CONTRACTOR SHALL MAKE ALL ADJUSTMENTS AT NO ADDITIONAL COSTS.
7. ONCE ALL AREAS ARE STABILIZED, WITH THE APPROVAL FROM THE MDE INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES AND IMMEDIATELY STABILIZE THE AREAS DISTURBED BY THEIR REMOVAL.
8. PROVIDE FINAL AS–BUILT DOCUMENTATION TO THE CERTIFYING ENGINEER TO SUBMIT AND FINALIZE THE MDE AS–BUILT REVIEW PROCESS. ADDRESS ALL COMMENTS TO OBTAIN FINAL APPROVAL FROM THE MDE.

EROSION/SEDIMENT CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SSF	SUPER SILT FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE
SIP	STANDARD INLET PROTECTION
	SAME DAY STABILIZATION – SOIL STABILIZATION MATTING
	PAVEMENT SAME DAY STABILIZATION – CONTRACTOR SHALL ONLY DISTURB AN AREA THAT CAN BE STABILIZED WITH THE AGGREGATE BASE SECTION AT THE END OF EACH WORK DAY

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE–DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

STREET CLEANING NOTES

CONTRACTOR SHALL CLEAR ALL STREETS FREE OF SEDIMENT AT THE END OF EACH WORK DAY. ALL EFFORTS ARE TO MADE TO PREVENT SEDIMENT FROM GETTING ON THE STREETS. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ONTO THE ROAD MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING OR SWEEPING. WHEN WASHING WATER IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE THAT DRAINS TO AN APPROVED SEDIMENT CONTROL DEVICE.

0 30' 60'
SCALE: 1"=30'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CE104 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

EROSION
CONTROL PLAN
STAGE 4

CE.104

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CE104 - P052200002.DWG, 8/19/2021 4:28 PM, MERNEST

EROSION AND SEDIMENT CONTROL GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY MDE AT (410) 537-3510 SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY MDE, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF MDE.

2. THE CONTRACTOR SHALL NOTIFY MDE IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:
   A. THE REQUIRED PRE-CONSTRUCTION MEETING.
   B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES.
   C. DURING THE INSTALLATION OF SEDIMENT BASINS (TO BE CONVERTED INTO PERMANENT STORMWATER MANAGEMENT STRUCTURES) AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION OF EACH STEP IS MANDATORY.
   D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
   E. PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.
   F. PRIOR TO FINAL ACCEPTANCE.

3. THE PLAN APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, DAILY LOG BOOKS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MDE AND THE AGENCY RESPONSIBLE FOR THE PROJECT.

4. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND SHALL HAVE THEM INSPECTED AND APPROVED BY THE MDE INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE MDE INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM MDE INSPECTOR. THE CONTRACTOR SHALL OBTAIN PRIOR AGENCY AND MDE APPROVAL FOR MODIFICATIONS TO THE EROSION AND SEDIMENT CONTROL PLAN AND/OR SEQUENCE OF CONSTRUCTION.

5. THE MDE INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SAFETY OR SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.

6. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.

7. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE MDE INSPECTOR.

8. EROSION AND SEDIMENT CONTROL FOR UTILITY CONSTRUCTION SHALL BE PROVIDED IN ACCORDANCE WITH APPROVED PLANS. UTILITY CONSTRUCTION SHALL ONLY BE FOR AREAS WITHIN THE DELINEATED LIMIT OF DISTURBANCE. CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK. WHEN SAME DAY STABILIZATION IS APPROVED:
   A. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
   B. TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED, AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY.

9. ALL WATER REMOVED FROM EXCAVATED AREAS SHALL BE PASSED THROUGH AN MDE APPROVED DEWATERING PRACTICE OR PUMPED TO A SEDIMENT TRAP OR BASIN PRIOR TO DISCHARGE TO A FUNCTIONAL STORM DRAIN SYSTEM OR TO STABLE GROUND SURFACE.

10. CONCRETE WASHOUT STRUCTURES SHALL BE USED WHEN CONCRETE TRUCKS, DRUMS, PUMPS, CHUTES, OR OTHER EQUIPMENT IS RINSED OR CLEANED ON-SITE.

11. CONSTRUCTION ACTIVITIES PRODUCING DUST SHALL IMPLEMENT CONTROL MEASURES TO AVOID THE SUSPENSION OF DUST PARTICLES AND/OR PREVENT DUST FROM BLOWING OFF-SITE OR TO AREAS WITHOUT TREATMENT.

12. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
   B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

13. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO APPROPRIATE SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SODDING, AND GROUND COVERS.

14. WHEN SEEDING, ALL DISTURBED AREAS WITH SLOPES FLATTER THAN 2:1 SHALL BE STABILIZED WITH 4 INCHES OF TOPSOIL, SEED, AND MULCH. ALL DISTURBED AREAS WITH SLOPES 2:1 OR STEEPER SHALL BE STABILIZED WITH MATTING OVER 2 INCHES OF TOPSOIL AND SEED.

15. ALL SEDIMENT BASINS, TRAP EMBANKMENTS AND SLOPES, PERIMETER DIKES, SWALES AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SEED AND ANCHORED STRAW MULCH, SOD, OR OTHER APPROVED STABILIZATION MEASURES, AS SOON AS POSSIBLE BUT NO LATER THAN THREE (3) CALENDAR DAYS AFTER ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM SHALL BE MINIMIZED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.

16. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SEED AND AN APPROVED EROSION CONTROL MATTING, SOD, RIP-RAP, OR OTHER APPROVED STABILIZATION MEASURES.

17. FOR STOCKPILE SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), THE CONTRACTOR SHALL APPLY SEED AND ANCHORED STRAW MULCH, SOD, OR OTHER APPROVED STABILIZATION MEASURES TO THE FACE OF THE STOCKPILE WITHIN THREE (3) CALENDAR DAYS OF ACTIVITY HAVING CEASED ON THE RESPECTIVE FACE. FOR SLOPES 3:1 OR FLATTER, THE CONTRACTOR SHALL APPLY STABILIZATION MEASURES TO THE FACE OF THE STOCKPILE WITHIN SEVEN (7) CALENDAR DAYS OF ACTIVITY HAVING CEASED ON THE RESPECTIVE FACE. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.

18. FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS TO PREVENT WATER FROM PONDING FOR MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL EVENT. DRAINAGE COURSES AND SWALE FLOW AREAS MAY TAKE AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL EVENT TO DRAIN. AREAS DESIGNED TO HAVE STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.

19. WHERE DEEMED APPROPRIATE BY THE ENGINEER OR INSPECTOR, SEDIMENT BASINS AND TRAPS MAY NEED TO BE SURROUNDED WITH AN APPROVED SAFETY FENCE. THE FENCE MUST CONFORM TO LOCAL ORDINANCES AND REGULATIONS. THE DEVELOPER OR OWNER SHALL CHECK WITH LOCAL BUILDING OFFICIALS ON APPLICABLE SAFETY REQUIREMENTS. WHERE SAFETY FENCE IS DEEMED APPROPRIATE AND LOCAL ORDINANCES DO NOT SPECIFY FENCING SIZES AND TYPES, THE FOLLOWING SHALL BE USED AS A MINIMUM STANDARD: THE SAFETY FENCE SHALL BE MADE OF WELDED WIRE AND AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 4 INCHES IN HEIGHT WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE SHALL BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.

20. ALL SEDIMENT TRAP DEPTH DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. ALL TRAPS SHALL HAVE A STABLE OUTFALL. ALL TRAPS AND BASINS SHALL HAVE STABLE INFLOW POINTS.

21. SEDIMENT SHALL BE REMOVED AND THE TRAP OR BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE QUARTER OF THE TOTAL DEPTH OF THE TRAP OR BASIN. TOTAL DEPTH SHALL BE MEASURED FROM THE TRAP OR BASIN BOTTOM TO THE CREST OF THE OUTLET.

22. SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR TREE-SAVE AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE SHALL BE DIRECTED TO AN MDE APPROVED SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE. A SUMP PIT MAY BE USED IF SEDIMENT TRAPS THEMSELVES ARE BEING PUMPED OUT.

23. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION FOR ALL CONTRIBUTORY DISTURBED AREAS USING SCD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NOT LATER THAN THREE (3) CALENDAR DAYS AFTER ESTABLISHMENT FOR SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN (7) CALENDAR DAYS FOR FLATTER SLOPES. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, TEMPORARY SEED AND ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE APPLIED BY MARCH 15 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.

24. TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED WITH PERMISSION OF THE MDE INSPECTOR WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. UPON REMOVAL OF SEDIMENT CONTROL DEVICES, THE AREA DISTURBED BY REMOVAL SHALL BE STABILIZED WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED, WITHIN 24 HOURS OF SAID REMOVAL. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

25. OFF-SITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY SHALL HAVE PRIOR APPROVAL BY MDE AND OTHER APPLICABLE STATE, FEDERAL, AND LOCAL AGENCIES; OTHERWISE APPROVAL SHALL BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE SHALL BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.

26. SITE INFORMATION:
   A. AREA DISTURBED 3.17 ACRES
   B. TOTAL CUT 2,500 CUBIC YARDS
   C. TOTAL FILL 600 CUBIC YARDS
   D. OFF-SITE WASTE / BORROW AREA LOCATION TO BE DETERMINED BY CONTRACTOR. AREA MUST HAVE ACTIVE SEDIMENT CONTROL PERMIT.

EARTHWORK NOTE:

1. EARTHWORK QUANTITIES SHOWN HERE ON ARE APPROXIMATE AND ARE FOR MDE, THE REVIEWING AGENCY, USE ONLY. THE CONTRACTOR MUST MAKE HIS OWN DETERMINATION OF EARTHWORK QUANTITIES.

SECTION B-4: STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

NOTE: SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT

INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS AND RESEEDINGS WITHIN THE PLANTING SEASON.

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95% GROUNDCOVER.

2. IF AN AREA HAS LESS THAN 40% GROUNDCOVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.

3. IF AN AREA HAS BETWEEN 40%-94% GROUNDCOVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.

4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

SECTION B-4-1: STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

A. INCREMENTAL STABILIZATION – CUT SLOPES

1. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.

2. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO SECTION B-4-1, FIGURE B.1):

   a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.

   b. PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.

   c. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.

   d. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

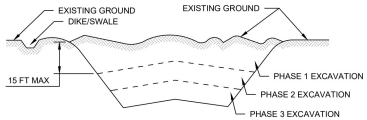


Figure B.1: INCREMENTAL STABILIZATION CUT

B. INCREMENTAL STABILIZATION – FILL SLOPES

1. CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.

2. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.

3. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.

4. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO SECTION B-4-1, FIGURE B.1):

   a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.

   b. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.

   c. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.

   d. PLACE PHASE 2 FILL, PREPARE SEEDBED AND STABILIZE.

   e. PERFORM FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

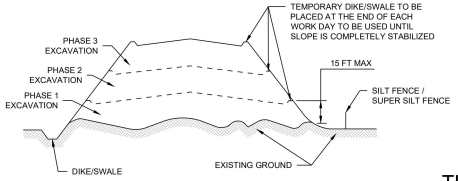


Figure B.2: INCREMENTAL STABILIZATION FILL

SECTION B-4-2: STDS & SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, & SOIL AMENDMENTS

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

   a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3"-5" BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS, CHISEL PLOWS, OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER SHOULD BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

   b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

   c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3"-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

   a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT AREA:
      - SOIL pH BETWEEN 6.0 AND 7.0.
      - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
      - SOIL CONTAINS LESS THAN 40% CLAY, BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

   b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

   c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3"-5".

   d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

   e. MIX SOIL AMENDMENTS INTO THE TOP 3"-5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE; REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVING THE TOP 1"-3" OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY NOT BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW pH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
   a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

   b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

   c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

   d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
   a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½" IN DIAMETER.

   b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

   c. TOPSOIL SUBSTITUTE OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

6. TOPSOIL APPLICATION
   a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED BY APPLYING TOPSOIL.

   b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5"-8" LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4". SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

   c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.
2. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING, AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL BE DELIVERED TO THE SITE, FULLY LABELED ACCORDING TO APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME OR TRADEMARK, AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A #100 MESH SIEVE, AND 98% TO 100% WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3"-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

NOTE TO CONTRACTOR: "EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED"

THIS PLAN IS FOR EROSION AND SEDIMENT CONTROL ONLY

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS 23 August 2021

CAD DWG FILE: CE501 - P052200002.DWG
DRAWN BY: AMT
CHECKED BY: AMT

PROJECT NUMBER: 2015.00
DATE: 23 August 2021

EROSION AND SEDIMENT CONTROL NOTES

CE.501

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CE501 - P052200002.DWG, 8/19/2021 4:28 PM, MERNEST

SECTION B-4-3: STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

A. SEEDING

1. SPECIFICATIONS

a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

c. INOCULANTS – THE INOCULANTS FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANTS AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 – 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE INOCULANTS LESS EFFECTIVE.

d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

- INCORPORATE SEED INTO SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
- APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

- CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST ¼" OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
- APPLY SEED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER)

- IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN – MAXIMUM OF 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS): 200 POUNDS/ACRE; K20 (POTASSIUM): 200 POUNDS/ACRE.
- LIME – USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
- MIX SEED AND FERTILIZER ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY WITHOUT INTERRUPTION.
- WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

- WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
- WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
- WCFM SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER, AND OTHER ADDITIVES TO FORM A HOMOGENOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
- WCFM SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
- WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 mm., DIAMETER APPROXIMATELY 1 mm., pH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6% MAXIMUM, AND WATER HOLDING CAPACITY OF 90% MINIMUM.

2. APPLICATION

a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

b. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF 1"–2". APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS/ACRE.

c. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 LBS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

- A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2". THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
- WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 LBS./ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK A R OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
- LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

SECTION B-4-4: STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.b AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TABLE B.1: TEMPORARY SEEDING FOR SITE STABILIZATION

PLANT SPECIES	SEEDING RATE		SEEDING DEPTH (INCHES)	RECOMMENDED SEEDING DATES HARDINESS ZONE 7A
	LB/AC	LB/1000 SF		
COOL-SEASON GRASSES				
ANNUAL RYEGRASS (LOLIUM PERENNE SSP. MULTIFLORUM)	40	1.0	0.5	FEB 15 TO APRIL 30, AUG 15 TO NOV 30
BARLEY (HORDEUM VULGARE)	96	2.2	1.0	FEB 15 TO APRIL 30, AUG 15 TO NOV 30
OATS (AVENA SATIVA)	72	1.7	1.0	FEB 15 TO APRIL 30, AUG 15 TO NOV 30
WHEAT (TRITICUM AESTIVUM)	120	2.8	1.0	FEB 15 TO APRIL 30, AUG 15 TO NOV 30
CEREAL RYE (SECALE CEREALE)	112	2.8	1.0	FEB 15 TO APRIL 30, AUG 15 TO DEC 15
WARM-SEASON GRASSES				
FOXTAIL MILLET (SETARIA ITALICA)	30	0.7	0.5	MAY 1 TO AUG 14
PEARL MILLET (PENNISETUM GLAUCUM)	20	0.5	0.5	MAY 1 TO AUG 14

FERTILIZER RATE (10-20-20): 436 LB/AC (10 LB/1000 SF)
LIME RATE: 2 TONS/AC (90 LB/1000 SF)

NOTES

1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.

   SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE ½ OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT ½ OF THE RATE LISTED ABOVE.

   OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.

2. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
3. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

SECTION B-4-5: STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

A. SEED MIXTURES

1. GENERAL USE

a. SELECT ONE OR MORE MIXTURES LISTED IN TABLE B.2 BELOW.

b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 – CRITICAL AREA PLANTING.

c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3½ POUNDS PER 1,000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

TABLE B.2: PERMANENT SEEDING FOR SITE STABILIZATION

HARDINESS ZONE: 7A					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	
5	HARD FESCUE (FESTUCA TRACHYPHYLLA)	20	FEB 15 TO APR 30 AUG 15 TO OCT 31 NOV 1 TO NOV 30*	¼"–½"	45 LB/AC (1.0 LB/1000 SF)	90 LB/AC (2.0 LB/1000 SF)	90 LB/AC (2.0 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
	PERENNIAL RYEGRASS (LOLIUM PERENNE)	10		¼"–½"				
	FLATPEA (LATHYRUS SYLVESTRIS)	15		¼"–½"				
9	TALL FESCUE (LOLIUM ARUNDINACEUM)	60	FEB 15 TO APR 30 AUG 15 TO OCT 31 NOV 1 TO NOV 30*	¼"–½"				
	KENTUCKY BLUEGRASS (POA PRATENSIS)	40		¼"–½"				
	PERENNIAL RYEGRASS (LOLIUM PERENNE)	20		¼"–½"				

*FREQUENT FREEZING AND THAWING OF WET SOILS MAY RESULT IN FROST-HEAVING OF MATERIALS PLANTED IN LATE FALL, IF PLANTS HAVE NO SUFFICIENTLY ROOTED IN PLACE.

2. TURFGRASS MIXTURES

a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE.

- KENTUCKY BLUEGRASS – FULL SUN MIXTURE – FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND THE EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS/1000 SQUARE FEET. A MINIMUM OF THREE BLUEGRASS CULTIVARS SHOULD BE CHOSEN, RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.
- KENTUCKY BLUEGRASS/PERENNIAL RYE – FULL SUN MIXTURE – FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM 10%-35% OF THE MIXTURE BY WEIGHT.
- TALL FESCUE/KENTUCKY BLUEGRASS – FULL SUN MIXTURE – FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95%-100%; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0-5%. SEEDING RATE: 5 TO 8 POUNDS/1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
- KENTUCKY BLUEGRASS/FINE FESCUE – SHADE MIXTURE – FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30-40% AND CERTIFIED FINE FESCUE AND 60-75%. SEEDING RATE: 1-1/2 TO 3 POUNDS/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.

  NOTE: TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND."

  NOTE: CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVARS PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

c. IDEAL TIMES OF SEEDING

- WESTERN MD: MARCH 15-JUNE 1; AUGUST 1-OCTOBER 1 (HARDINESS ZONES: 5b, 6a)
- CENTRAL MD: MARCH 1-MAY 15; AUGUST 15-OCTOBER 15 (HARDINESS ZONE: 6b)
- SOUTHERN MD, EASTERN SHORE: MARCH 1-MAY 15, AUGUST 15-OCTOBER 15 (HARDINESS ZONES: 7a, 7b)

d. TILL AREAS AS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2"-4", LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½" IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½"-1" EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASON, OR ON ADVERSE SITES.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

a. CLASS OF TURFGRASS MUST BE MARYLAND STATE CERTIFIED. SOD LABELS SHALL BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

b. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4", PLUS OR MINUS 1/4", AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

c. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

d. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

e. SOD SHALL BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION

a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

d. WATER SOD IMMEDIATELY FOLLOWING ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING, AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

3. SOD MAINTENANCE

a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4". WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.

b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.

c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3" UNLESS OTHERWISE SPECIFIED.

SECTION H-5: STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

1. MULCHES: SEE SECTION B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS, SECTION B-4-3 SEEDING AND MULCHING, AND SECTION B-4-4- TEMPORARY STABILIZATION. MULCH MUST BE ANCHORED TO PREVENT BLOWING.
2. VEGETATIVE COVER: SEE SECTION B-4-1 TEMPORARY STABILIZATION.
3. TILLAGE: TILL TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT THAT MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION: SPRINKLE SITE WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. THE SITE MUST NOT BE IRRIGATED TO THE POINT THAT RUNOFF OCCURS.
5. BARRIERS:; SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.
6. CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE APPROPRIATE PLAN REVIEW AUTHORITY.

NOTE TO CONTRACTOR: "EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED"
THIS PLAN IS FOR EROSION AND SEDIMENT CONTROL ONLY

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. EMMERT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	CE502 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

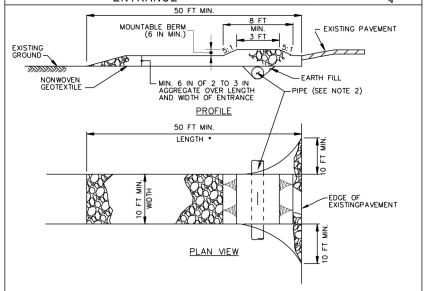
EROSION AND SEDIMENT CONTROL NOTES

CE.502

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CE502 - P052200002.DWG, 8/19/2021 4:29 PM, MERNEST

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL SCE



CONSTRUCTION SPECIFICATIONS

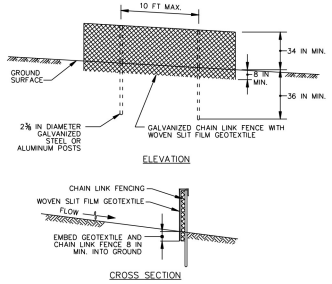
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMEN". ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL —SSF—



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

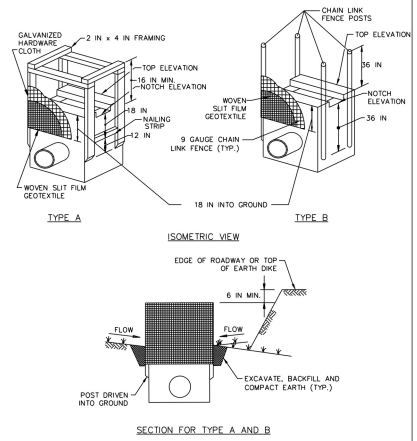
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL SIP

TYPE A MAXIMUM DRAINAGE AREA = ¾ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL SIP

CONSTRUCTION SPECIFICATIONS

1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH ½ INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.

   FOR TYPE B, USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

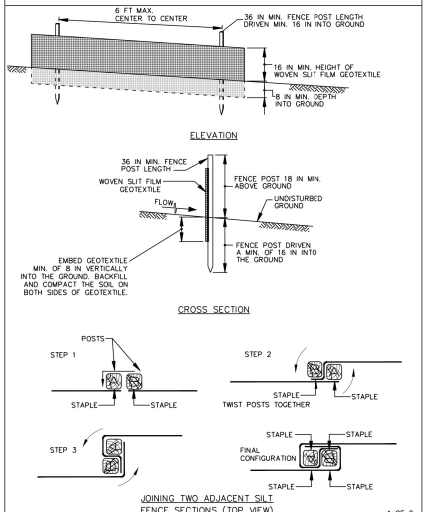
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL —SF—



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL —SF—

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

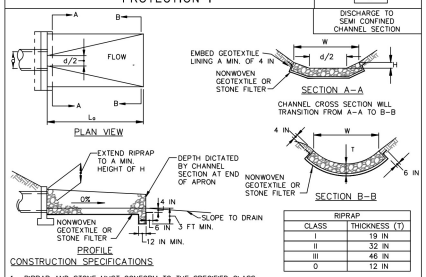
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-4-1-A ROCK OUTLET PROTECTION I

STANDARD SYMBOL ROP1

DISCHARGE TO SEMI CONFINED CHANNEL SECTION



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN
O	12 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

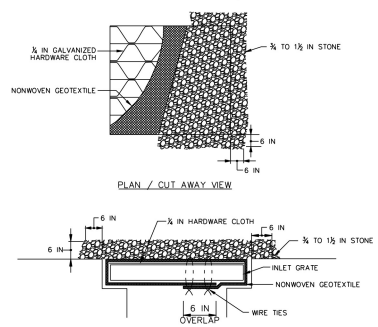
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE TO CONTRACTOR: "EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED"
THIS PLAN IS FOR EROSION AND SEDIMENT CONTROL ONLY

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND — MATTHEW A. ERNEST — No. 32151 — PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

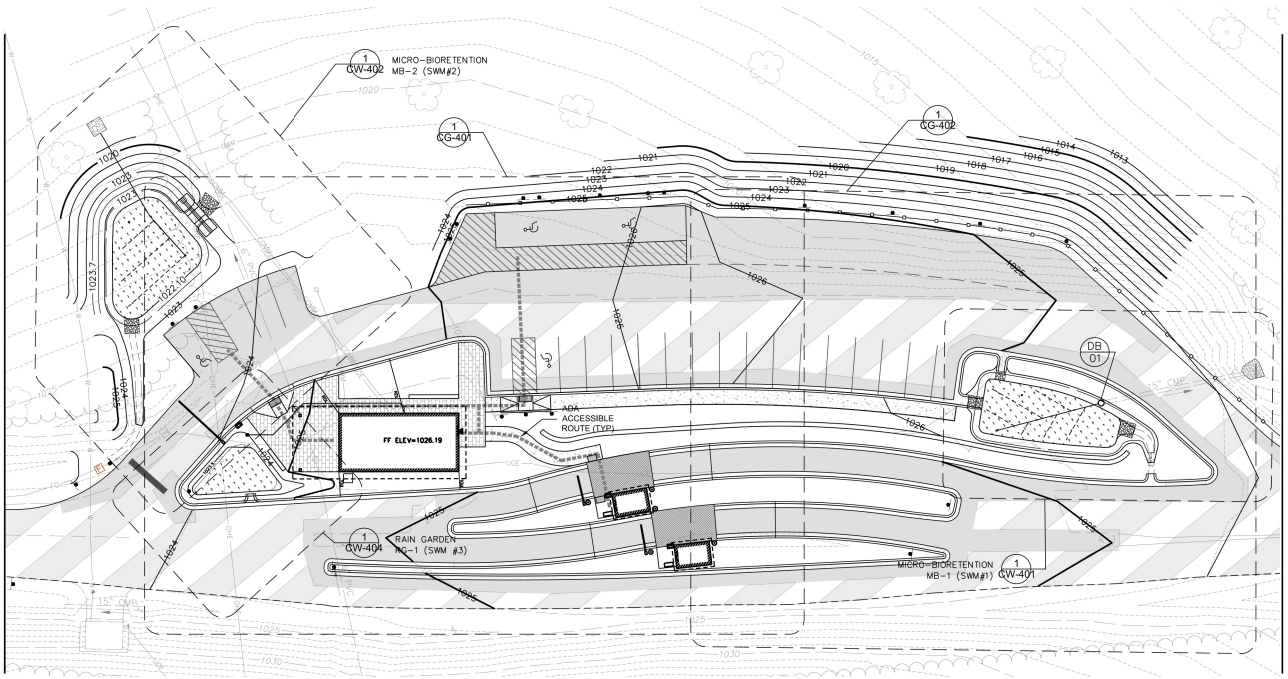
NO.	REVISION TITLE	DATE

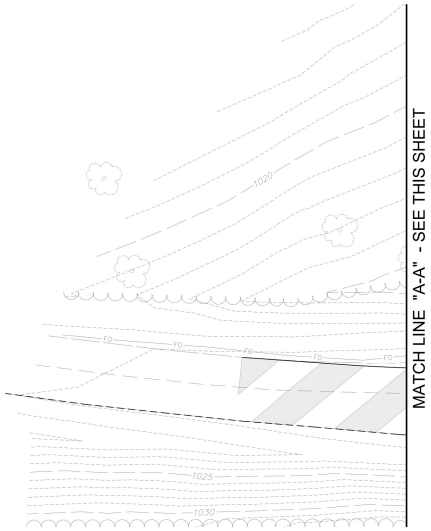
BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	CE503 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

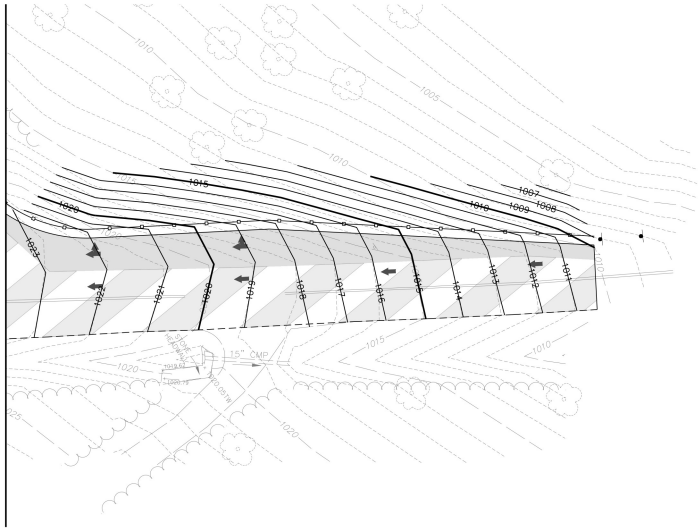
EROSION AND SEDIMENT CONTROL DETAILS

CE.503

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CE503 - P052200002.DWG, 8/19/2021 4:29 PM, MERNEST







GENERAL SHEET NOTES

- FULL DEPTH PAVING (4 / CS-501)
- MILLING/WEDGE/LEVEL/OVERLAY (6 / CS-501)
- CONCRETE SIDEWALK (5 / CS-501)
- VEHICULAR CONCRETE PAVING (8 / CS-501)
- MICRO-BIORETENTION
- SPILL CURB (1/B / CS-502)
- CATCH CURB (1/A / CS-502)
- 328 — PROPOSED CONTOUR

ADA SITE CONSTRUCTION NOTE

1. ENSURE THAT ALL SITE WORK ELEMENTS ARE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN (ADA) AND ANY RESPECTIVE UPDATES. THE ADA PARKING STALLS, ACCESSIBLE AISLES, AND ACCESSIBLE ROUTES AS CONSTRUCTED SHALL NOT EXCEED THE ADA REQUIREMENTS INCLUDING GRADE AND SLOPE TOLERANCES MEASURED WITH A TWO FOOT DIGITAL LEVEL. THE CONTRACTOR SHALL CERTIFY THAT ADA PARKING STALLS, ACCESS AISLES AND ACCESSIBLE ROUTES COMPLY WITH ADA REQUIREMENTS.

0 10' 20' 40'
SCALE: 1"=20'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. EMMERT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

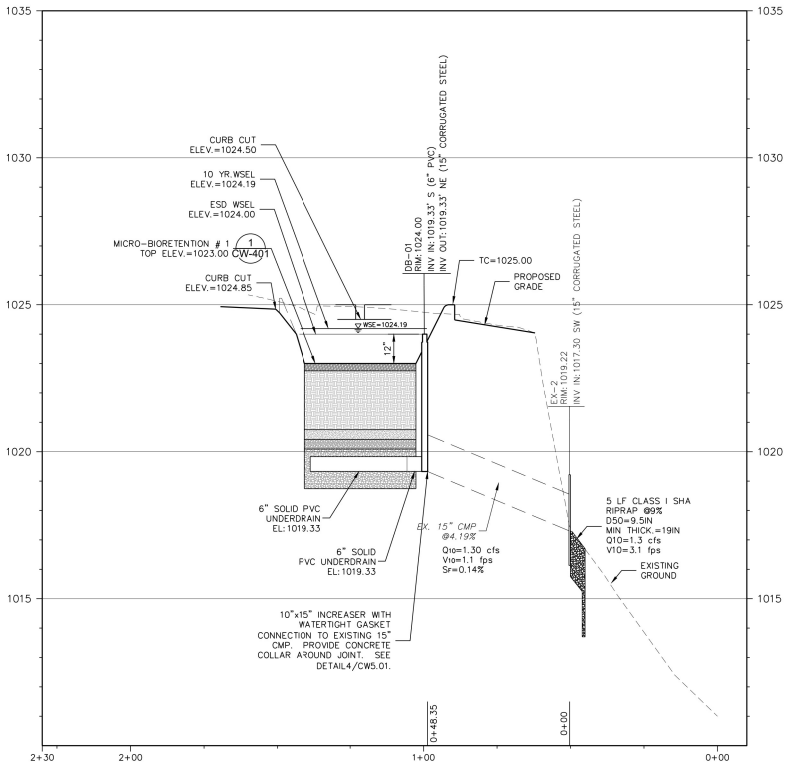
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CG101 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

SITE GRADING AND DRAINAGE PLAN

CG.101

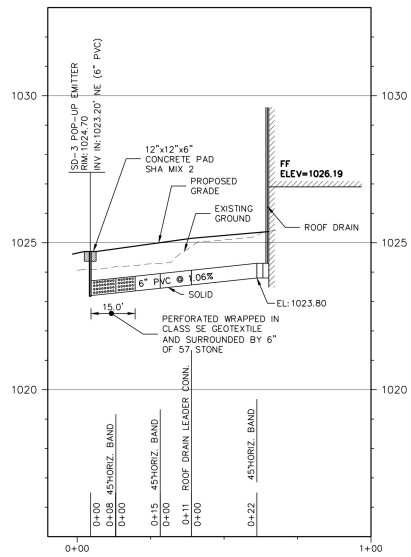
X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CG101 - P052200002.DWG, 8/19/2021 4:29 PM, MERNEST



MICRO-BIORETENTION # 1 TO EX-2

SCALE: HORZ 1"=20'
VERT 1"=2'

STRUCTURE SCHEDULE							
STRUCTURE	TYPE	NORTHING	EASTING	TOP	INVERT IN	INVERT OUT	NOTES
DB-01	CATCH BASIN	682232.17	1139759.82	1024.00	6" (S) 1019.33'	10" (NE) 1019.33'	10" NYLOPLAST OR APROVED EQUAL. CATCH BASIN WITH DOME GRATE
POP UP EMMITTER							6" DRAINAGE EMITTER, NDS PART 625 OR APPROVED EQUAL.



POP UP EMITTER TO ROOF DRAIN

SCALE: HORZ 1"=20'
VERT 1"=2'

HORIZ.SCALE: 1"=20'

VERT. SCALE: 1"=2'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. EMMERT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

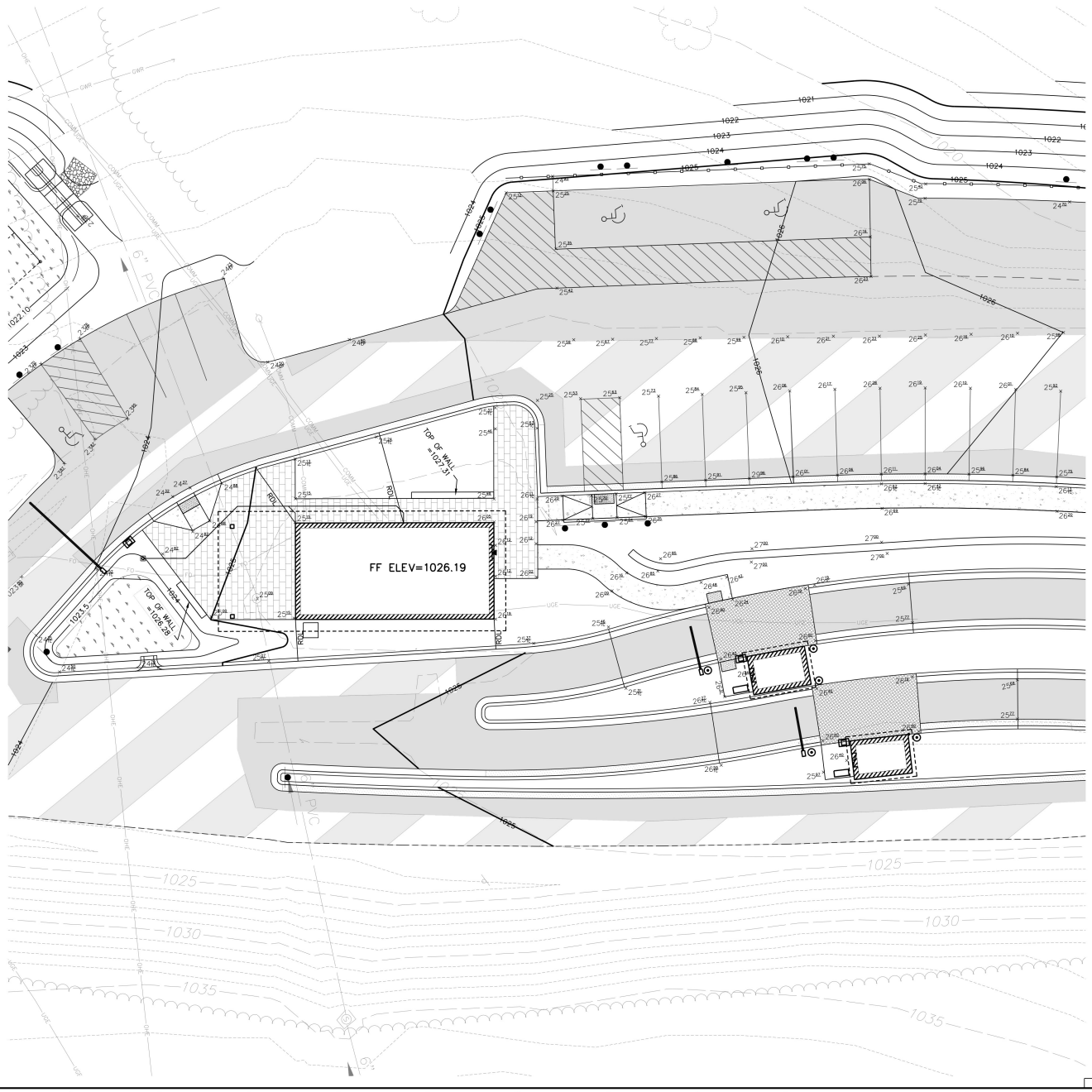
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CG201 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

STORM
DRAINAGE
PROFILES

CG.201

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CG201 - P052200002.DWG, 8/19/2021 4:30 PM, MERNEST



GENERAL SHEET NOTES

- FULL DEPTH PAVING (4 / CS-501)
- MILLING/WEDGE/LEVEL/OVERLAY (6 / CS-501)
- CONCRETE SIDEWALK (5 / CS-501)
- VEHICULAR CONCRETE PAVING (8 / CS-501)
- MICRO-BIORETENTION
- SPILL CURB (1/B / CS-502)
- CATCH CURB (1/A / CS-502)
- 328 PROPOSED CONTOUR

0 10' 20'
SCALE: 1"=10'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CG401 - P052200002.DWG, 8/19/2021 4:30 PM, MERNEST

Z|S
ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

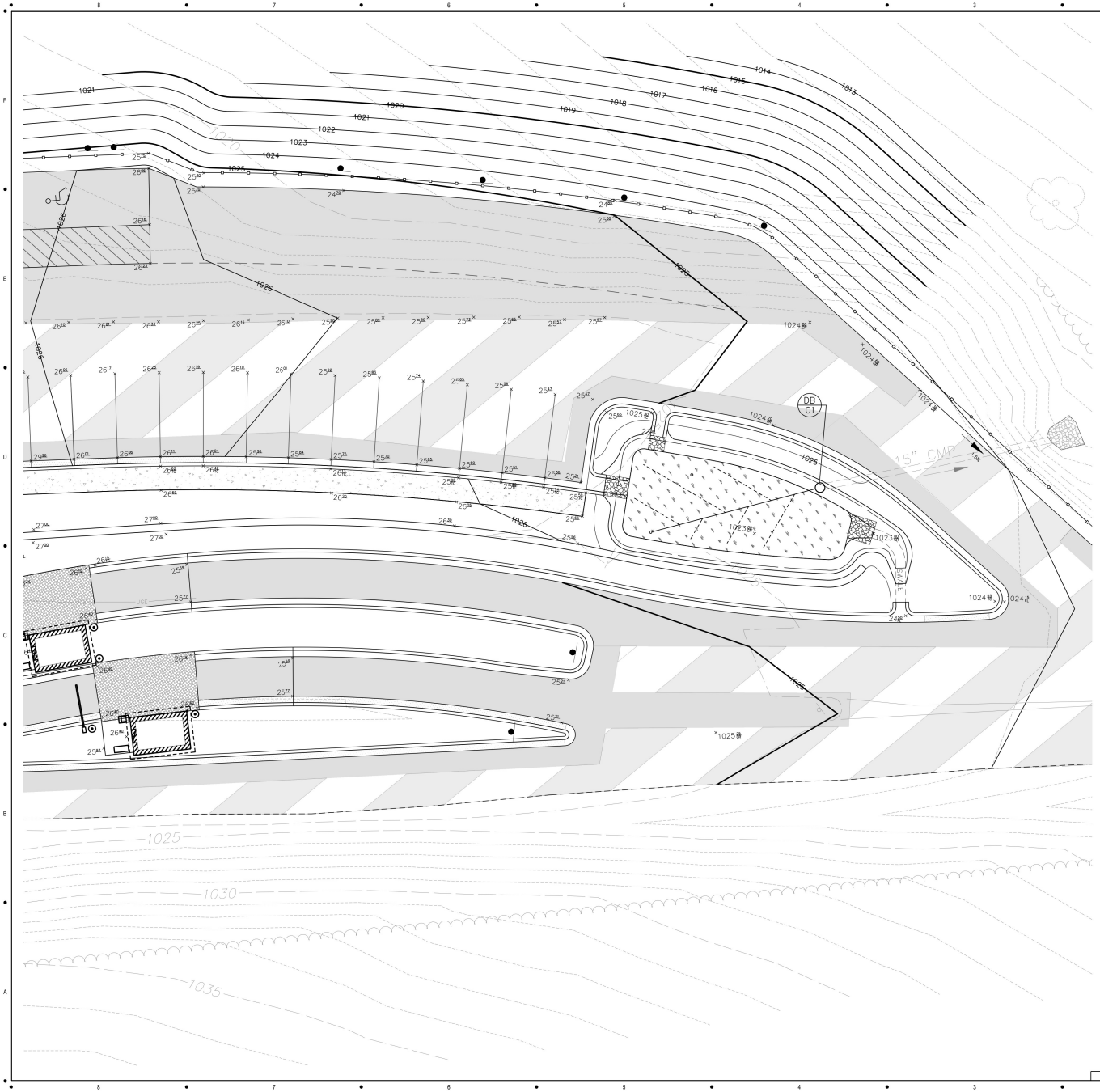
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CG401 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

SITE GRADING AND DRAINAGE PLAN

CG.401



GENERAL SHEET NOTES

- FULL DEPTH PAVING (4 / CS-501)
- MILLING/WEDGE/LEVEL/OVERLAY (6 / CS-501)
- CONCRETE SIDEWALK (5 / CS-501)
- VEHICULAR CONCRETE PAVING (8 / CS-501)
- MICRO-BIORETENTION
- SPILL CURB (1/B / CS-502)
- CATCH CURB (1/A / CS-502)
- 328 PROPOSED CONTOUR

SCALE: 1"=10'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

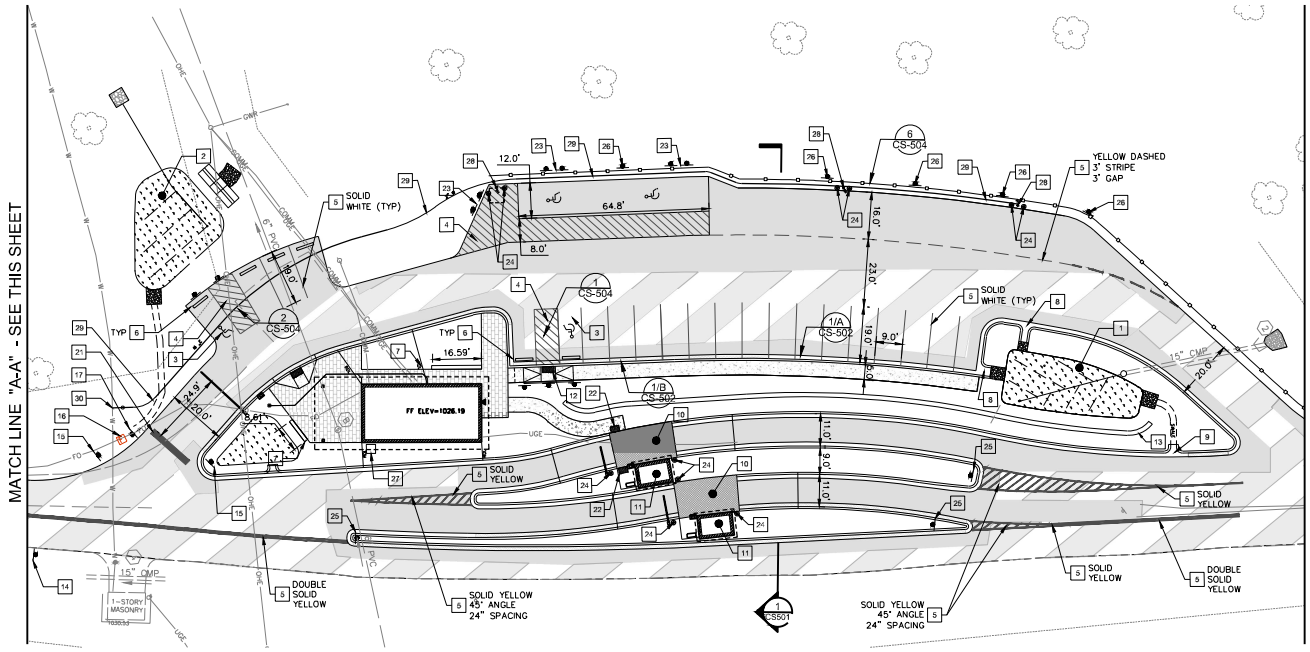
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

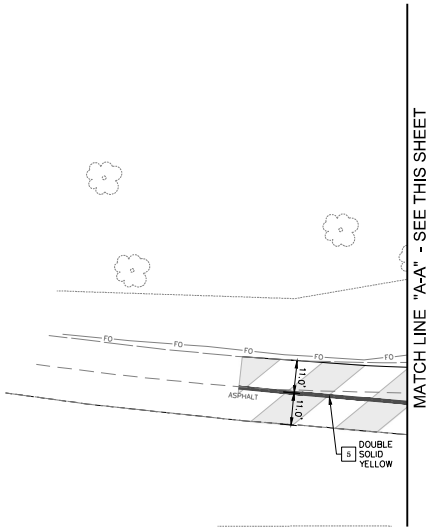
CAD DWG FILE:	CG402 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

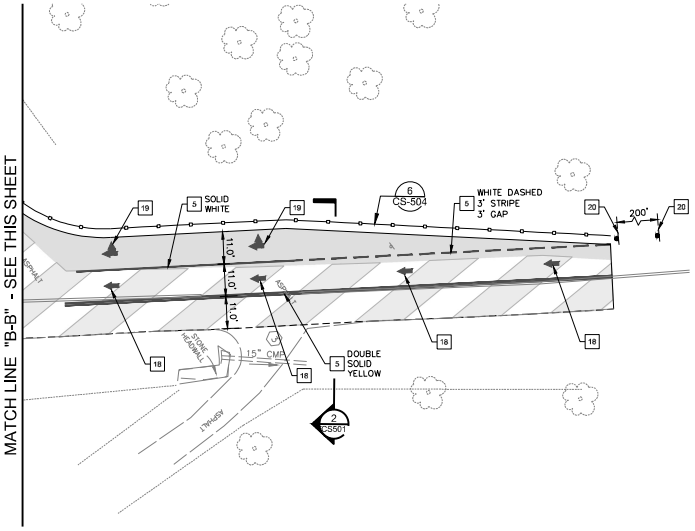
SITE GRADING AND DRAINAGE PLAN

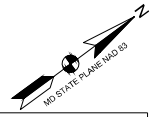
CG.402

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CG402 - P052200002.DWG, 8/19/2021 4:31 PM, MERNEST









SITE KEYNOTES

1. MICRO-BIORETENTION # 1. SEE SHEET CW401.
2. MICRO-BIORETENTION # 2. SEE SHEETS CW402 AND CW403.
3. ADA PARKING STALL. SEE DETAILS 1/CS504 AND 2/CS504.
4. ADA PARKING AISLE. SEE DETAILS 1/CS504 AND 2/CS504.
5. 4" WIDE PAVEMENT MARKING
6. WHEEL STOP. SEE DETAIL 3/CS502.
7. SEAT WALL. SEE DETAIL 1/CS505.
8. CURB OPENING. SEE DETAIL 1/CS503.
9. CURB OPENING. SEE DETAIL 2/CS503
10. ROADWAY TABLE. SEE DETAIL 4/CS502
11. PAY BOOTH. SEE ARCHITECTURAL PLANS.
12. SIDEWALK RAMP. SEE DETAIL 3/CS503.
13. DRY STACKED WALL. SEE LANDSCAPE PLANS.
14. "NO LEFT TURN" SIGN
15. "DO NOT ENTER" SIGN
16. RELOCATED FIBER OPTIC HAND HOLE. SPLICE AND RECONNECT CABLE TO EXISTING AT EXISTING HANDHOLE AND NEW HANDHOLE LOCATION.
17. "STOP" SIGN
18. PAVEMENT MARKING – STRAIGHT ARROW. PER MUTCD.
19. PAVEMENT MARKING – STRAIGHT AND RIGHT TURN ARROW. PER MUTCD.
20. "CAMPER REGISTRATION. USE RIGHT LANE" SIGN ATTACHED TO SIGN POST PER DETAIL 3/CS504.
21. PAINTED WHITE STOP BAR (2' WIDE BY 16' LONG)
22. ADA DECTABLE WARNING SURFACE (2'X3'). REFERENCE DETAIL 3/CS503 FOR MATERIALS.
23. ADA PARKING STALL SIGNAGE ATTACHED TO SIGN POST PER DETAIL 3/CS504.
24. BOLLARD. SEE DETAIL 3/CS505
25. KEEP RIGHT SIGN. SEE DETAIL 2/CS505.
26. "RV AND CAMPER PARKING ONLY" SIGN ATTACHED TO SIGN POST PER DETAIL 3/CS504.
27. EQUIPMENT PAD. SEE ARCHITECTURAL AND MEP PLANS.
28. ADA COMPLIANT FREEZELESS YARD HYDRANT WITH INTEGRAL BACKFLOW PREVENTION.
29. 2" COPPER WATER LINE. 4' MINIMUM COVER.
30. CONNECT TO EXISTING WATERLINE WITH A SERVICE SADDLE AND CORPORATION STOP(REMAINS OPEN) AND CURB STOP AND VALVE BOX.

GENERAL SHEET NOTES

FULL DEPTH PAVING	3/CS-501, 4/CS-501
MILLING/OVERLAY	6/CS-501
CONCRETE SIDEWALK	5/CS-501
MICRO-BIORETENTION	
SPILL CURB	1/B CS-502
CATCH CURB	1/A CS-502

0 10' 20' 40'
SCALE: 1"=20'

DCS No. P-252-305-202 | MDE ISWM + E&SI No. 21-01-0164

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, WS-12
Baltimore, MD 21224
410-522-5070

LANDSCPE ARCHITECT
Flora Teeter Landscape Architects
600 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-8100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9600 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/15/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

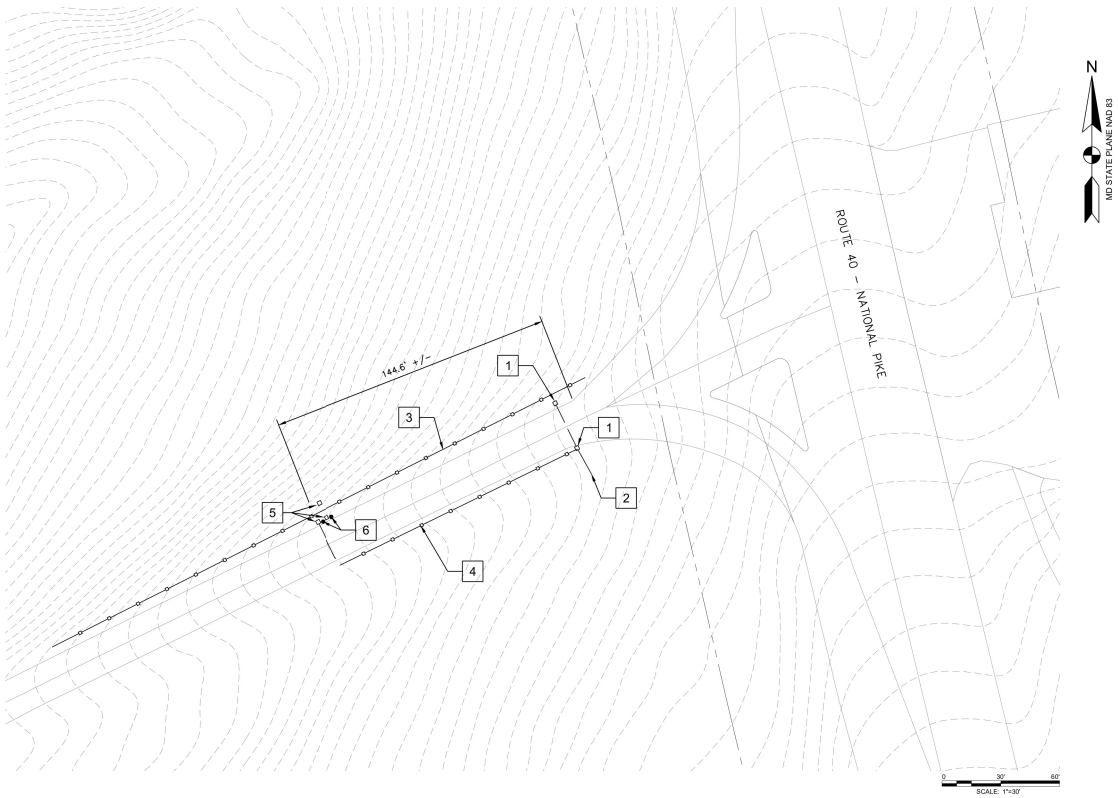
BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CS101 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

SITE IMPROVEMENTS PLAN

CS.101

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CS101 - P052200002.DWG, 8/23/2021 1:59 PM, MERNEST



SITE KEYNOTES

1. REMOVE EXISTING GATE
2. EXISTING SPLIT RAIL FENCE
3. EXISTING WOOD GUARD RAIL
4. NEW SPLIT RAIL FENCE (2 RAILS), 135 LF. CONNECT TO EXISTING FENCE
5. NEW ACCESS CONTROL GATE.
   - 5.1. SOLAR POWER CONTROLLED
   - 5.2. 20' LONG GATE ARM
   - 5.3. CONTROLLER/TERMINAL FOR CODE AND CARD ENTRY ON PARK INBOUND LANE
   - 5.4. CONTROLS FOR GATE TO ALSO OPEN WHEN APPROACHED BY A VEHICLE ON THE PARK OUTBOUND LANE
6. PIPE BOLLARD. SEE DETAIL 3/CS505

Access-RE

24V barrier

- Very low operating costs thanks to efficient and durable MHTM™ drive
- Ease-of-use and optimum accessibility thanks to well thought-out design
- High level of functionality for numerous applications
- Solar power option allows for up to 500 cycles per day in remote locations, where it is cost prohibitive to run power

For access control

The Access-RE line is specifically designed for facilities that already have a 24V DC power source. The solar power option gives you the ability to use your MHTM™ MotorDrive in remote locations where it is cost-prohibitive to run power. The easily integrated option fits completely inside the gate housing and allows operation of up to 500 cycles per day, depending on the conditions. The solar panel options also includes either a 100 or 200 watt solar panel, two 27Ah batteries, and mounting bracket that allows mounting on a wall or up to a 4" round post.

The Access series barriers from Magnetic are optimized solutions for access control at car parks, company grounds, residential buildings, port facilities and other secured areas with lane widths up to 20 ft. At the heart of the Access series is the innovative MHTM™ drive that is distinguished by its energy efficiency, lack of maintenance and long service life – the Access series is designed for 10 million opening and closing cycles.

Technical data	Access-RE	Access Pro-H RE
Barrier width (D)	Max. 12 ft	Max. 20 ft
Opening/closing time	2.2 s	4.0 s
Power consumption	Max. 25 W	Max. 25 W
Drive technology	MHTM™	MHTM™
Voltage	21-28V DC	21-28V DC
Duty cycle	100 %	100 %
Housing dimensions (L×W×H)	12.4 x 14.2 x 39.2 in	12.4 x 14.2 x 39.2 in
Enclosure rating	IP 54	IP 54
Temperature range	-22 to +131 °F	-22 to +131 °F
Weight without arm	95 lb	121 lb

Features	Access-RE	Access Pro-H RE
Standard colors	RAL 2000, 9010	RAL 2000, 9010
Barrier arm type	Microlibecon	Microlibecon
Control system	MSC	MSC Pro
Integrated 2-channel inductor for induction loops	Standard	Standard
Variable LED assignment	n/a	Standard
No. of digital inputs	8	8
No. of relays/digital outputs	6/4	6/4
Selectable closing speed	Standard	Standard
Selectable opening speed	n/a	Standard

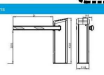
Standard barrier colors

Orange RAL 2000 — White RAL 9010

Standard door color

Black-Gray (Anthracite) similar to RAL 7021

Dimensions



MAGNETIC AUTOCONTROL
www.magnetic-access.com/usa

11

Options	Item no.	Access-RE	Access Pro-H RE
Special colors	BL86/BL81/RL84	✓	✓
Upcharge for standard passage height articulated arm	KB001-STX9881-HDA	✓	✓
Upcharge for custom passage height articulated arm	KB00+X9002	✓	✓
Pendulum support*	PS01	✓	✓
Support post*	APX2 (APX)	✓	✓
Barrier arm presence sensor	BAK01	✓	✓
Key-operated switch	BS01-KA/S9002-KA	✓	✓
Radio module**	FMX2-AM	✓	✓
Ethernet module**	EMX1	✓	✓
RS485 module**	RBM01	✓	✓
CAN module (coupling)**	ECN01	✓	✓
Additional loop detector module**	DMX2	✓	✓
Photoelectric light barrier**	LS01/APLS01	✓	✓
Solar power option	BATC1-S/BAT01-N	✓	✓

*Barrier arms over 13 ft must be supported with a pendulum support or with a support post.
** Not recommended for use with solar power option

Access to Progress

Magnetic stands for pioneering products – in every way. Our access control systems for vehicles or pedestrians clear the way for thousands of people every day – at car parks, toll gates, stations, airports and in buildings. Our technology is also pioneering, however: with innovative drives, intelligent control systems and well thought out details it provides maximum safety and longevity. Are you also on the path to Magnetic?

Vehicle barriers
Access barriers
Parking barriers
Toll barriers
Traffic barriers
Special barriers

Pedestrian gates
Turnstiles
Swing gates
Tripod gates
Retractable gates
Wing gates

Terminals
Cars
Trucks

MAGNETIC AUTOCONTROL
www.magnetic-access.com/usa

N. and S. America (excl. Brazil)
FAAC INTERNATIONAL, INC
3700 Rue Jean Talon Nord Montréal, PQ, H2R 1W8 USA
Phone +1 514 326 3568 E-mail: info@magnetic-usa.com

Member of FAAC Group

DGS No. P-052-200-002	MDE (SWM + E&S) No. 21-SF-0104		

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. BENNETT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

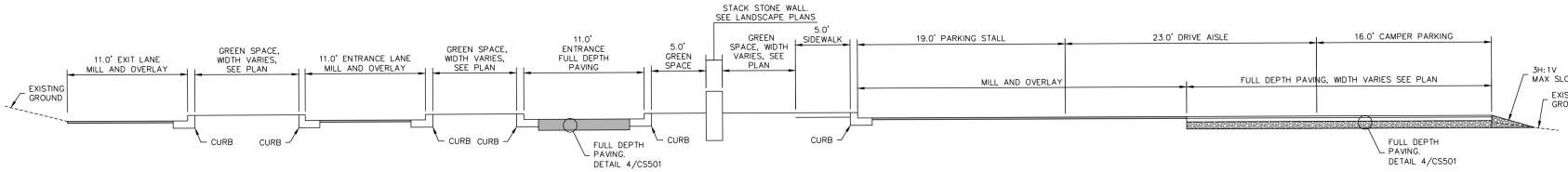
NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	CS102 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

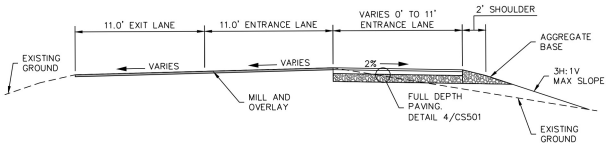
NEW MAIN ENTRY GATE PLAN

CS.102

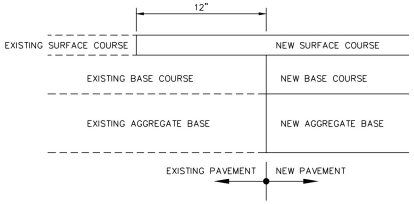
X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CS102 - P052200002.DWG, 8/19/2021 4:31 PM, MERNEST



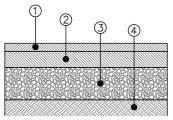
1 CROSS SECTION THROUGH ROADWAYS AND PARKING AREA
SCALE: 1"=5'



2 ENTRANCE ROAD TYPICAL SECTION
SCALE: 1"=5'

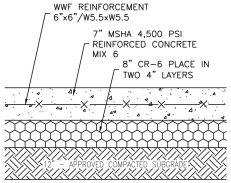


3 NEW PAVEMENT TO EXISTING PAVEMENT TRANSITION
SCALE: NTS

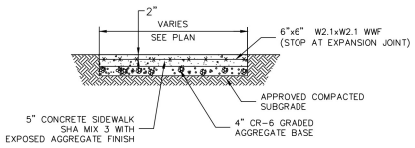


1. 2" SURFACE COURSE (SUPERPAVE HMA 12.5 mm)
2. 4" BASE COURSE (SUPERPAVE HMA 19 mm)
3. 8" CR-6 PLACED IN TWO 4" LAYERS
4. APPROVED COMPACTED SUBGRADE

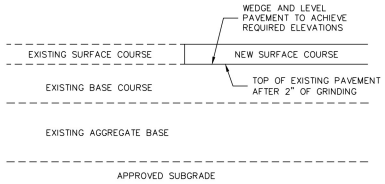
4 FULL DEPTH PAVING DETAIL
SCALE: NTS



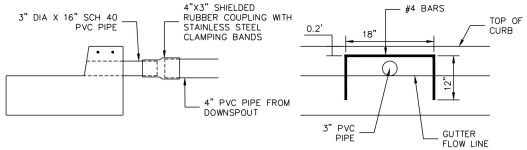
8 VEHICULAR CONCRETE PAVING DETAIL
SCALE: NTS



5 CONCRETE SIDEWALK - EXPOSED AGGREGATE FINISH
SCALE: NTS



6 MILL/WEDGE/LEVEL/OVERLAY DETAIL
SCALE: NTS



7 DOWNSPOUT DRAIN PIPE THROUGH CURB DETAIL
SCALE: NTS

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CS501 - P052200002.DWG, 8/19/2021 4:32 PM, MERNEST

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

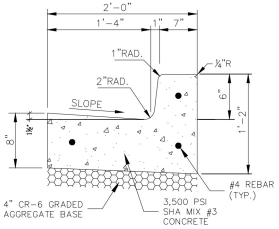
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	CS501 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

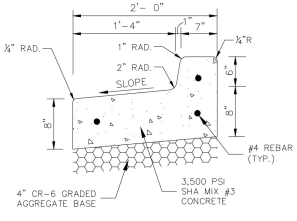
SITE DETAILS

CS.501



ADA NOTE: THE SLOPE OF THE GUTTER PAN SHALL NOT EXCEED 5% AT LOCATIONS OF ADA ACCESSIBLE ROUTES.

a) STANDARD HEIGHT CURB AND GUTTER
(CATCH CONDITION)



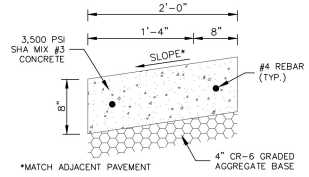
ADA NOTE: THE SLOPE OF THE GUTTER PAN SHALL NOT EXCEED 5% AT LOCATIONS OF ADA ACCESSIBLE ROUTES.

b) STANDARD HEIGHT CURB AND GUTTER
(SPILL CONDITION)

NOTES

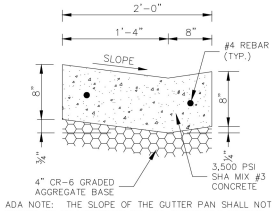
1. WHENEVER A STD. CONCRETE CURB AND GUTTER AND A STD. CONCRETE SPILL GUTTER ARE USED, A TEN FOOT (10') TRANSITION SHALL BE PROVIDED.
2. CONSTRUCT CONTROL JOINTS AT 10' INTERVALS (STD.), CONSTRUCT EXPANSION JOINTS AT BEGINNING AND ENDS OF ALL CURVE P.O.T'S. AT STRUCTURES AND AT MIDPOINT OF ALL CURB RETURNS. MAX. AND MIN. DISTANCES SHALL BE 13' & 6' RESPECTIVELY. USE 1/2" PRE-FORMED EXPANSION JOINT FILLER, NON EXTRUDING.
3. REFER TO SPECIFICATIONS FOR MATERIALS, METHODS OF CONSTRUCTION AND EXPANSION JOINT LOCATIONS.

1 CURB AND GUTTER DETAILS
SCALE:NTS



ADA NOTE: THE SLOPE OF THE GUTTER PAN SHALL NOT EXCEED 5% AT LOCATIONS OF ADA ACCESSIBLE ROUTES.

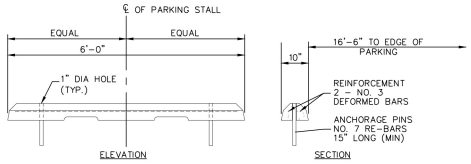
c) ADA COMPLIANT DEPRESSED CURB AND GUTTER
(SPILL CONDITION)



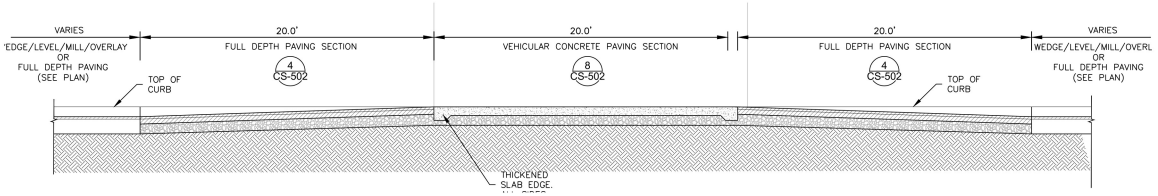
ADA NOTE: THE SLOPE OF THE GUTTER PAN SHALL NOT EXCEED 5% AT LOCATIONS OF ADA ACCESSIBLE ROUTES.

d) ADA COMPLIANT DEPRESSED CURB AND GUTTER
(CATCH CONDITION)

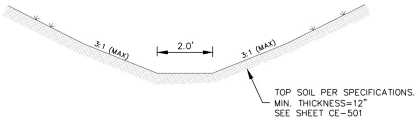
2 DEPRESSED CURB DETAIL
SCALE:NTS



3 CONCRETE WHEEL STOP DETAIL
SCALE:NTS

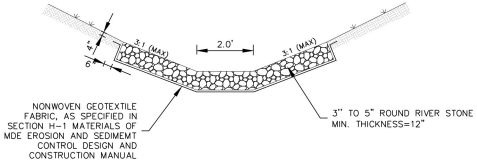


4 ROADWAY TABLE
SCALE:NTS



NOTE:
1. SEE PLAN VIEW FOR LENGTH AND ALIGNMENT OF PROPOSED GRASS SWALE.

5 GRASS SWALE
SCALE:NTS



NOTE:
1. SEE PLAN VIEW FOR LENGTH AND ALIGNMENT OF PROPOSED INFLOW PROTECTION.

6 INFLOW PROTECTION
SCALE:NTS

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

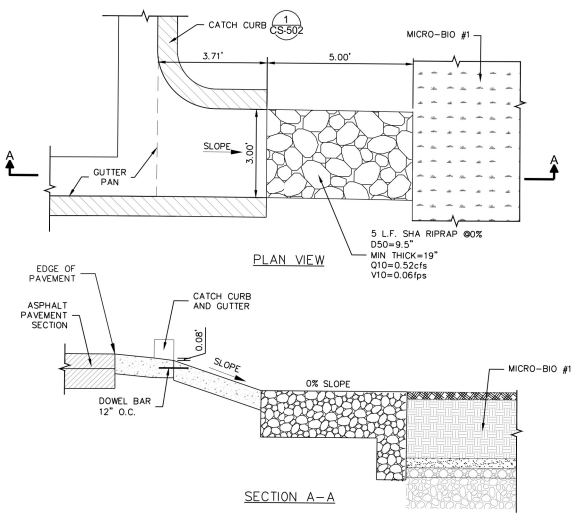
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CS502 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

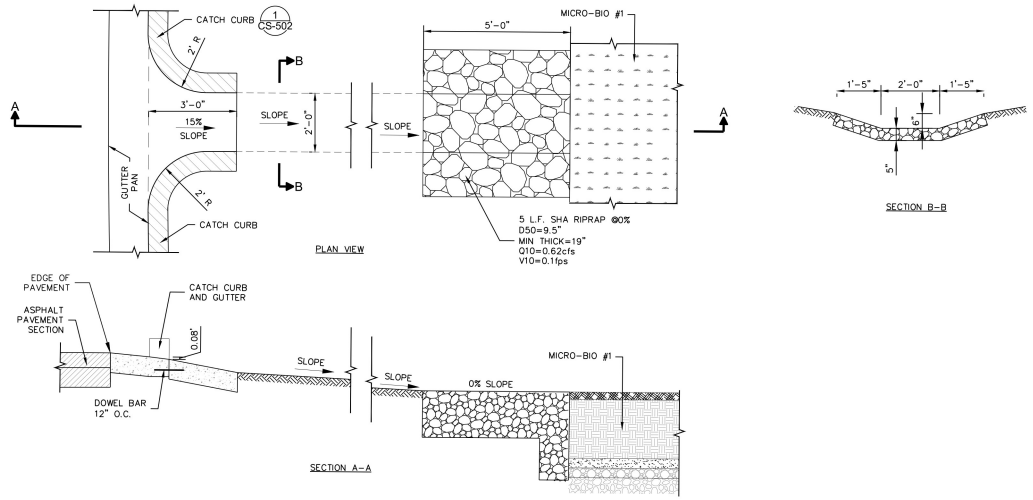
SITE DETAILS

CS.502

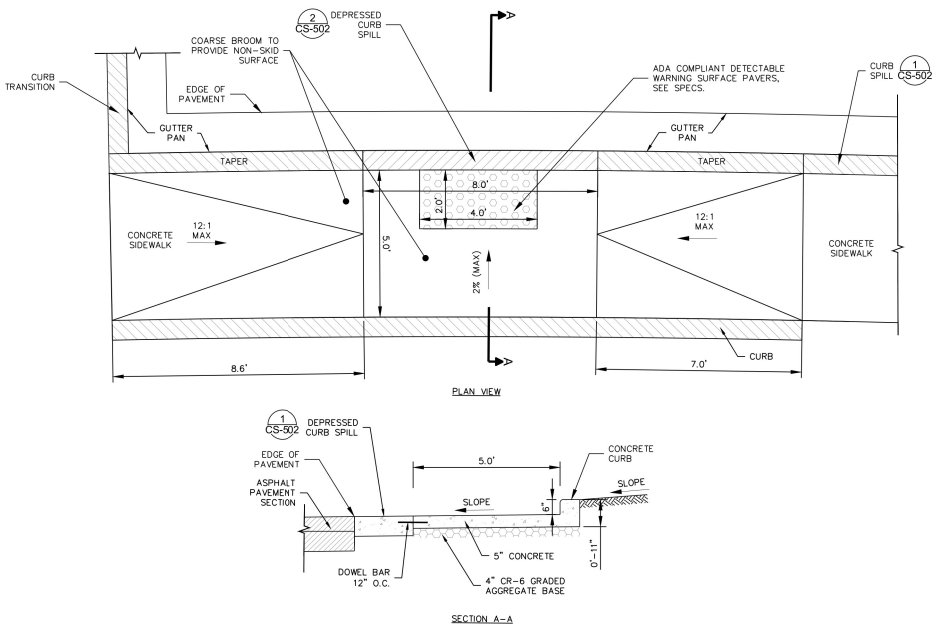
X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CS502 - P052200002.DWG, 8/19/2021 4:32 PM, MERNEST



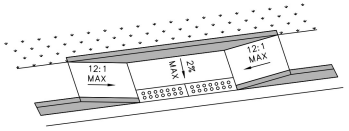
1 CURB OPENING AT CONCRETE CHANNEL DETAIL (MICRO-BIO #1)
SCALE:SCALE: 1"=2'



2 CURB OPENING AT GRASS SWALE DETAIL (MICRO-BIO #1)
SCALE:SCALE: 1"=2'



3 SIDEWALK RAMP DETAIL
SCALE:SCALE: 1"=2'



ISOMETRIC VIEW

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CS503 - P052200002.DWG, 8/19/2021 4:32 PM, MERNEST

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

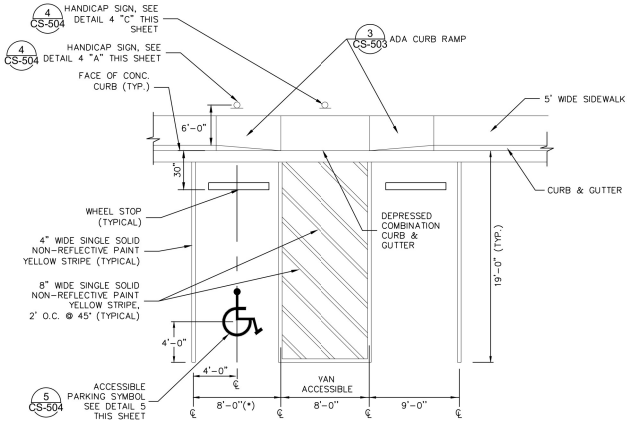
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CS503 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

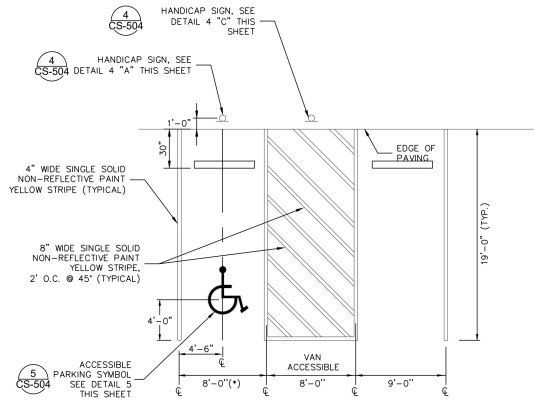
SITE DETAILS

CS.503



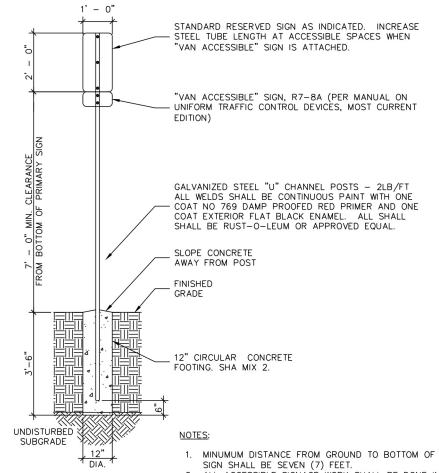
- STRIPING SHOULD END AT FACE OF CURB, U.N.O.
- STRIPING MATERIAL AND METHODS OF CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST MUTCD EDITION AND SHA STDS. & SPECS.
- (*) INSTALL "VAN ACCESSIBLE" SIGN ON 8'-0" WIDE SPACE, AS NOTED ON PLAN.
- ALL DIMENSIONS, LAYOUT, BACKGROUND AND COLOR TO CONFORM TO MOST CURRENT ADA GUIDELINES.

1 ADA ACCESSIBLE PARKING SPACE LAYOUT #1
SCALE:NTS



- STRIPING SHOULD END AT EDGE OF PAVING, U.N.O.
- STRIPING MATERIAL AND METHODS OF CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST MUTCD EDITION AND SHA STDS. & SPECS.
- (*) INSTALL "VAN ACCESSIBLE" SIGN ON 8'-0" WIDE SPACE, AS NOTED ON PLAN.
- ALL DIMENSIONS, LAYOUT, BACKGROUND AND COLOR TO CONFORM TO MOST CURRENT ADA GUIDELINES.
- THE PARKING SPACES ARE ON A RADIUS. THE LENGTH ALONG THE SHORT RADIUS SHALL BE 8' AND 9' AS INDICATED.

2 ADA ACCESSIBLE PARKING SPACE LAYOUT #2
SCALE:NTS



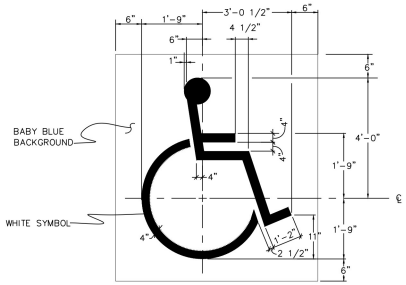
NOTES:

1. MINUMUM DISTANCE FROM GROUND TO BOTTOM OF PRIMARY SIGN SHALL BE SEVEN (7) FEET.
2. ALL ACCESSIBLE SIGNAGE WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT ADA STANDARDS.
3. FASTEN SIGN WITH A MINIMUM OF THREE (3) #26 CHERRY MATE RIVETS.
4. ALL SIGN CORNERS AND BORDERS SHALL BE ROUNDED AT A 1-1/2" RADIUS, AND THE SIGN MADE OF #14 GAUGE ALUMINUM.

3 SIGN MOUNTING DETAIL
SCALE:NTS

SIGN A SIGN B SIGN C

4 RESERVED HANDICAPPED PARKING SIGN DETAILS
SCALE:NTS



- PLACE SYMBOL @ CENTERLINE OF STALL, REFER TO PARKING STRIPING DETAIL THIS SHEET FOR DIMENSIONS.

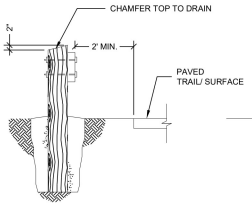
NOTE: THIS DETAIL PROVIDED FOR REFERENCE ONLY! ALL DIMENSIONS, LAYOUT, BACKGROUNDS AND COLOR MUST CONFORM TO MOST CURRENT ADA GUIDELINES.

5 ACCESSIBLE PARKING SYMBOL LAYOUT
SCALE:NTS

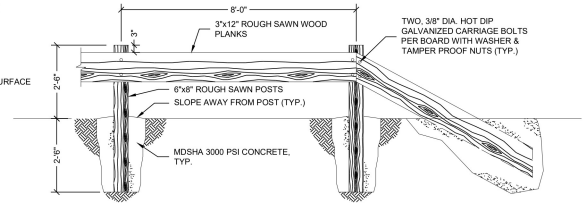
NOTES:

1. PROVIDE ROUGH SAWN, PRESSURE TREATED SOUTHERN PINE OR APPROVED PS (PENTACHLORO- % #/CF), AWPA PHENOL @ 0.60 STANDARD P5 (COPPER ARSENATE % #/CF) OR TIMBER MAY BE @ 0.50 WOLMANIZED.
2. PROVIDE GALV. FASTENER HARDWARE & BOLTS THAT CONFORM TO ASTM A307.
3. PLACE POST IN MECHANICALLY OR HAND-AUGERED HOLE AND SECURELY TAMP

PLAN VIEW



SECTION VIEW



ELEVATION VIEW

6 WOOD GUARD RAIL DETAIL
SCALE:NTS

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CS504 - P052200002.DWG, 8/19/2021 4:33 PM, MERNEST

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

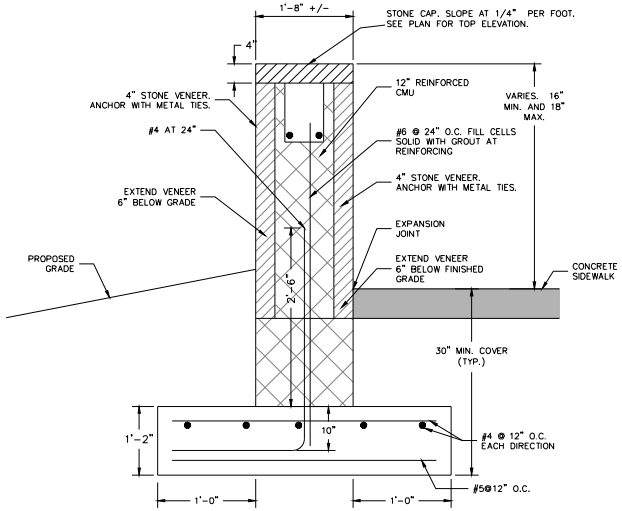
BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CS504 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT

PROJECT NUMBER:	2015.00
DATE:	23 August 2021

SITE DETAILS

CS.504



1 FIELD STONE WALL
SCALE:NTS

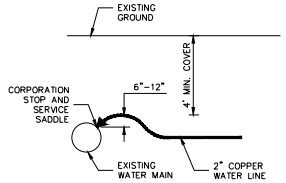
MATERIAL SPECIFICATIONS:

1. CEMENT – ASTM C150 TYPE I OR II
2. AGGREGATES – ASTM C-33
3. CHEMICAL ADMIXTURES – ASTM C494
4. CONCRETE FOR FOOTING – AIR ENTRAINED 6% (±1.5%), 28-DAY STRENGTH OF 3000PSI, WEIGHT OF 150 PFC, W/C RATIO OF 0.55
5. DEFORMED REINFORCING BARS – ASTM A615, GRADE 60
6. MASONRY
   A. LOAD BEARING CONCRETE MASONRY UNITS – HOLLOW ASTM C90, GRADE N, MINIMUM COMPRESSIVE STRENGTH ON NET AREA OF 1900PSI, MAXIMUM LINEAR SHRINKAGE OF 0.065%
   B. MORTAR – ASTM C270, TYPE M
   C. GROUT – ASTM C476, MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000PSI
   D. HORIZONTAL JOINT REINFORCING – ASTM A82, FY OF 70KSI, 9-GAUGE TRUSS TYPE GALVANIZED
7. SEE SPECIFICATIONS FOR STONE VENEER MATERIAL AND INSTALLATION.

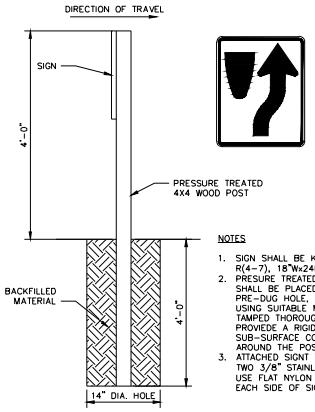
GENERAL NOTES

1. MATERIALS AND CONSTRUCTION PRACTICES FOR CONCRETE MASONRY RETAINING WALLS SHALL COMPLY WITH "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES (ACI 531).
2. USE FINE GROUT WHERE GROUT SPACE IS LESS THAN 3 INCHES IN THE LEAST DIMENSION. USE COARSE GROUT WHERE THE LEAST DIMENSION IS OF THE GROUT SPACE IS 3 INCHES OR MORE.
3. STEEL REINFORCEMENT SHALL BE CLEAN, FREE OF HARMFUL RUST AND IN COMPLIANCE WITH THE APPLICABLE ASTM STANDARDS FOR DEFORMED BARS AND STEEL WIRE.
4. ALTERNATE VERTICAL BARS SHALL BE STOPPED AT THE WALL MIDHEIGHT. VERTICAL REINFORCEMENT IS SECURED IN PLACE AFTER THE MASONRY WORK HAS BEEN COMPLETED AND BEFORE GROUTING.
5. TOP OF MASONRY RETAINING WALLS SHALL BE CAPPED OR OTHERWISE PROTECTED TO PREVENT ENTRY OF WATER INTO UNFILLED HOLLOW CELLS AND SPACES. IF BOND BEAMS ARE USED, STEEL SHALL PLACED IN THE BEAMS AS THE WALL IS CONSTRUCTED. HORIZONTAL JOINT REINFORCEMENT MAY BE PLACED IN EACH JOINT (8 INCHES ON CENTER) AND THE BOND BEAMS OMITTED.
6. ALLOW 24 HOURS FOR MASONRY TO SET BEFORE GROUTING. POUR GROUT IN 4 FOOT LAYERS, 1 HOUR BETWEEN EACH POUR. BREAK LONG WALLS INTO PANELS OF 20 OR 30 FOOT IN LENGTH WITH VERTICAL CONTROL JOINTS.

FIELD STONE WALL EXAMPLE – GREENBRIER STATE PARK BATH HOUSE PLAZA



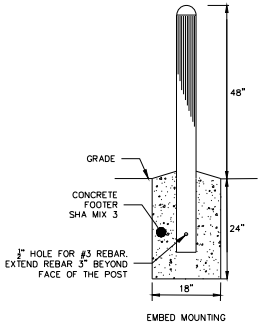
4 WATER CONNECTION DETAIL
SCALE:NTS



NOTES

1. SIGN SHALL BE KEEP RIGHT R(4-7), 18"Wx24H.
2. PRESURE TREATED WOOD POST SHALL BE PLACED IN A PRE-DUG HOLE, BACKFILLED USING SUITABLE MATERIAL, AND TAMPED THOROUGHLY TO PROVIEDE A RIGID SUB-SURFACE CONDITION AROUND THE POST.
3. ATTACHED SIGNT TO POST WTIH TWO 3/8" STAINLESS HEX BOLT. USE FLAT NYLON WASHER ON EACH SIDE OF SIGN.

2 KEEP RIGHT SIGN DETAIL
SCALE:NTS



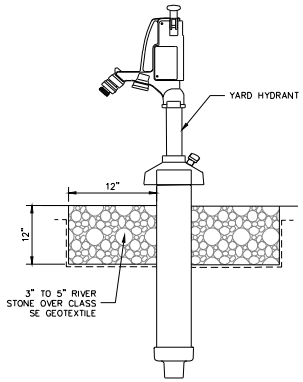
BOLLARD NOTES:

1. BOLLARD CORES SHALL CONSIST OF A 6'-0' LONG LENGTH OF 4" DIAMETER GALVANIZED SCHEDULE 80 STEEL PIPE, SET MINIMUM 24' INTO THE GROUND IN CONCRETE ENCASEMENT. COAT EXTERIOR SECTION OF BELOW GRADE PIPE WITH ASPHALTIC COATING. STEEL PIPE CORES SHALL BE SET TRUE, CORRECTLY ALIGNED AND WELL ANCHORED IN BELOW GRADE CONCRETE ENCASEMENT. FILL STEEL PIPE CORES WITH CONCRETE AND STRIKE LEVEL ACROSS THE TOP OF PIPE.
2. PROVIDE DECORATIVE, HIGH IMPACT POLYETHYLENE PLASTIC BOLLARD PROTECTIVE COVER FOR EACH PIPE BOLLARD.
3. BOLLARD PROTECTIVE COVERS SHALL BE YELLOW.
4. BOLLARD SLEEVES SHALL BE MANUFACTURED OF HDPE AND LDPE POLYETHYLENE, WITH THE FOLLOWING PERFORMANCE REQUIREMENTS:

A. HIGH MOLECULAR WEIGHT MATERIAL. DESIGNED FOR OPTIMUM BALANCE OF DENSITY, MOLECULAR WEIGHT AND MOLECULAR WEIGHT DISTRIBUTION DEMONSTRATING MAXIMUM PROPERTY ADVANTAGES FOR LARGE PRODUCTS THAT REQUIRE HIGH IMPACT RESISTANCE.
B. ULTRAVIOLET PROTECTION ADDITIVE. FIVE (5) YEAR UV STABILIZER PACKAGE. WARRANTY 5 YEARS.
C. THICKNESS: NOMINAL WALL THICKNESS SHALL BE 0.125 INCH
D. ABRASION RESISTANT
E. ENVIRONMENTAL STRESS CRACKS RESISTANT
F. FLEXURAL MODULUS: 200,000 PSI
G. TENSILE STRENGTH: 4,000 PSI

5. PRIOR TO INSTALLATION OF BOLLARD PROTECTIVE COVERS, INSPECT THE BOLLARD PIPE CORES TO ENSURE THAT THEY HAVE BEEN INSTALLED LEVEL, TRUE AND PER ALL BOLLARD PROTECTIVE COVERS MANUFACTURER RECOMMENDATIONS.
6.
7. INSTALL BOLLARD PROTECTIVE COVERS IN STRICT ACCORDANCE WITH ALL MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS

3 PIPE BOLLARD DETAIL
SCALE:NTS



5 YARD HYDRANT DETAIL
SCALE:NTS

DCS No. P-252-305-002 | MDE ISWM + E&SI No. 21-01-0164

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, WS-12
Baltimore, MD 21224
410-522-5970

LANDSCPE ARCHITECT
Flora Teeter Landscape Architects
600 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-8100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9600 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/15/2023.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

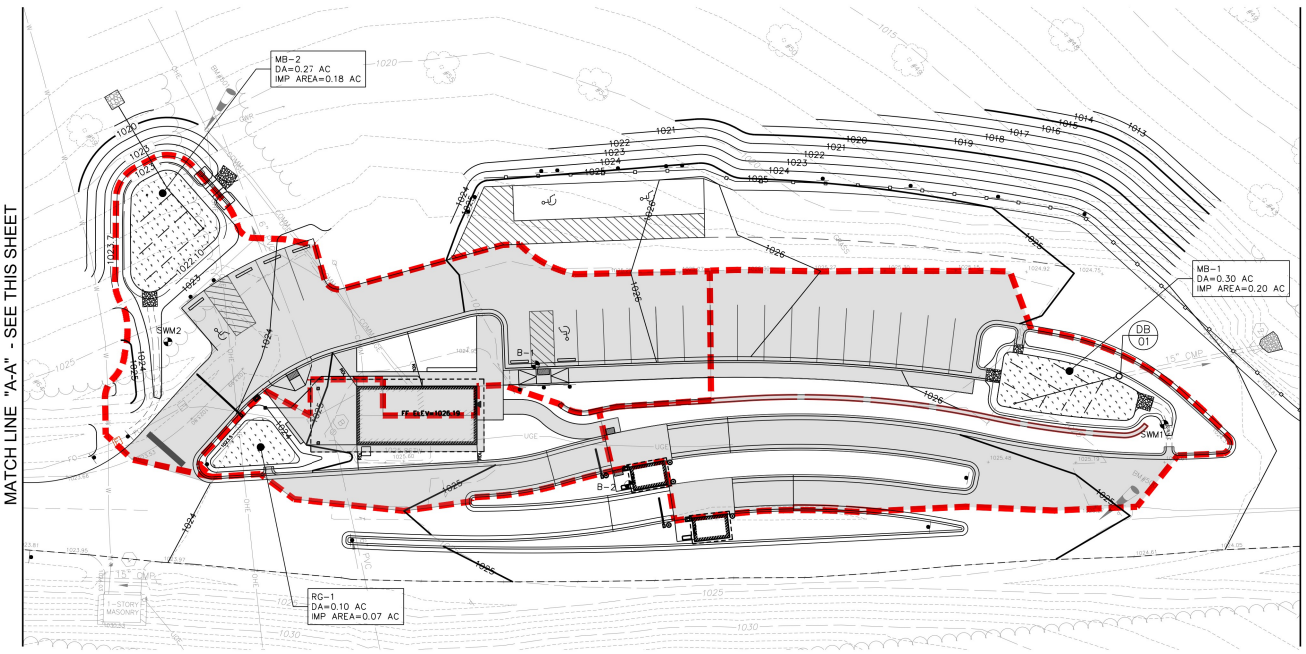
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

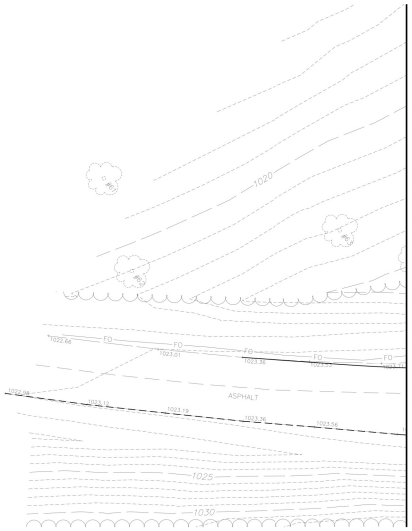
CAD DWG FILE:	CS505 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

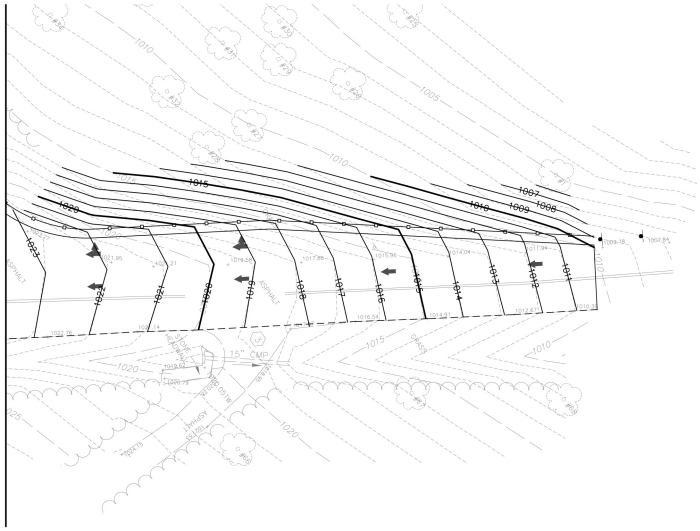
SITE DETAILS

CS.505

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CS505 - P052200002.DWG, 8/23/2021 1:42 PM, MERNEST







SCALE: 1"=20'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CW101 - P052200002.DWG, 8/19/2021 4:33 PM, MERNEST

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

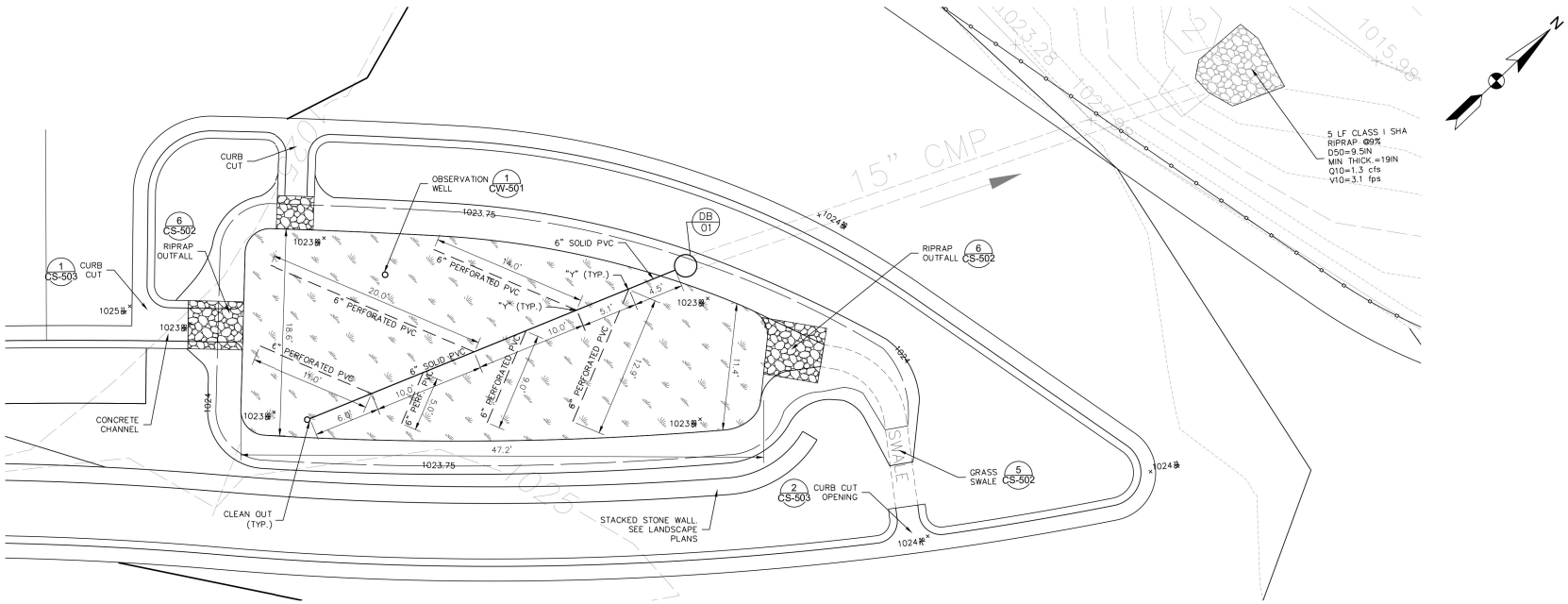
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CW101 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

STORMWATER MANAGEMENT PLAN

CW.101



1 CW401 SWM 1 ENLARGED PLAN
SCALE: 1"=5'

0 5' 10'
SCALE: 1"=5'

AS-BUILT DATA FOR BIORETENTION FACILITIES TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: BIORETENTION	MICRO-BIORETENTION #1	
	DESIGN	*AS-BUILT
FILTER BED AREA (LxW)/ SURFACE AREA (SF)	780	
FILTER BED SURFACE ELEVATION	1023.00	
OVERFLOW WEIR: TOP ELEVATION	1024.00	
10-YEAR WATER SURFACE ELEVATION	1024.16	
6" (MIN) FREEBOARD: TOP ELEVATION	1025.00	
UNDERDRAIN PIPE SIZE / ELEVATION	6"/1019.33	
OUTLET PIPE SIZE / ELEVATION	15"/1019.33	
OVERFLOW WEIR/SIZE:	10" DIAMETER	
STORAGE ABOVE FILTER MEDIA (1023 TO 1024) (CF)	1,037	
MULCH THICKNESS (IN)	3	
PLANTING MEDIA THICKNESS (IN)	24	
PLANTING MEDIA MATERIAL	PLANTING SOIL	
SAND THICKNESS (IN)	4	
PEA GRAVEL THICKNESS (IN)	4	
GRAVEL THICKNESS (IN)	15	
MDE NUMBER	21-SF-0104	
UNDERDRAIN LENGTH (FT)	72	
PROVIDE COMPOSITION CERTIFICATION OF FILTER MEDIA		
VERIFY GEOTEXTILE FABRIC INSTALLATION (SIDES ONLY)		
VERIFY PLANTING (SPECIES, NUMBER AND HEALTH) SEE LANDSCAPE PLANS		
DATE AS-BUILT ACCEPTED BY MDE:		

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT FACILITY SHOWN ON THE PLANS HAS (HAVE) BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, EXCEPT AS NOTED IN RED ON THE "AS BUILT" DRAWINGS.

NAME _____ SIGNATURE _____

MARYLAND REGISTRATION NUMBER _____ DATE _____

MDE NO. _____ FACILITY IDENTIFICATION (NUMBER AND/OR TYPE) _____

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL TESTS CONDUCTED DURING CONSTRUCTION.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. _____, EXPIRATION DATE _____

AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF CONSTRUCTION:

BIORETENTION

(A) DURING EXCAVATION TO SUBGRADE AND PLACEMENT AND BACKFILL OF UNDERDRAIN SYSTEMS AND OBSERVATION WELLS.
(B) DURING PLACEMENT OF GEOTEXTILE AND ALL FILTER MEDIA.
(C) DURING CONSTRUCTION OF APPURTENANT CONVEYANCE SYSTEMS SUCH AS FLOW DIVERSION STRUCTURES, PRE-TREATMENT, INLETS, OUTLETS, AND FLOW DISTRIBUTION STRUCTURES.
(D) UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. BENNETT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

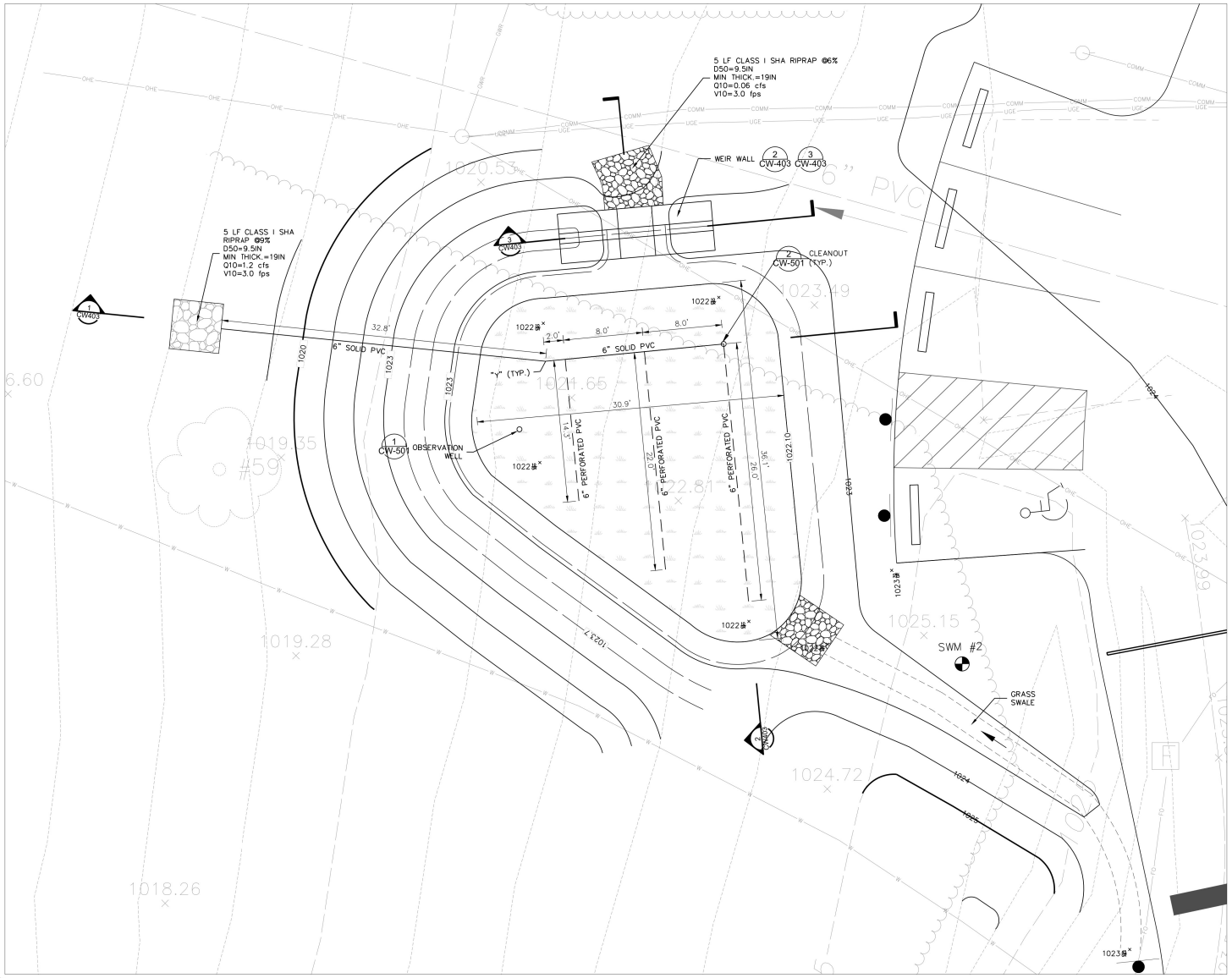
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CW401 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

SWM #1
ENLARGED PLAN

CW.401

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CW401 - P052200002.DWG, 8/19/2021 4:34 PM, MERNEST



1 CW402 SWM 2 ENLARGED PLAN
SCALE: 1"=5'

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. BENNETT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

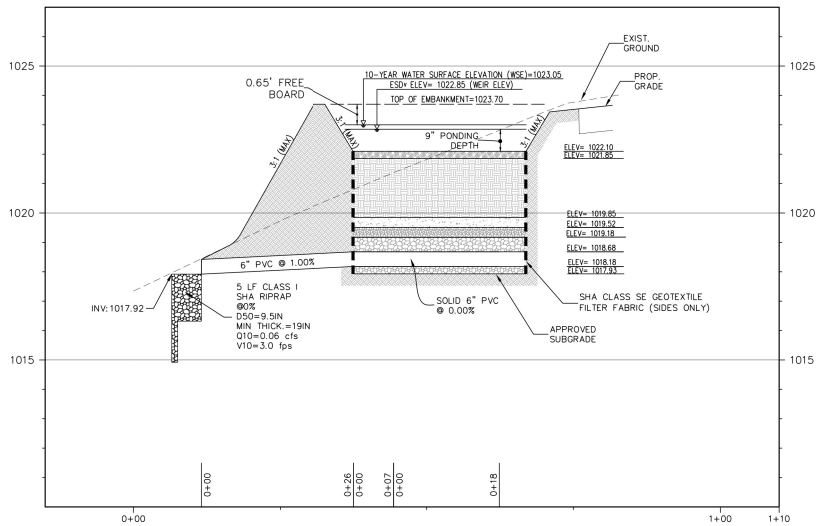
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CW402 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

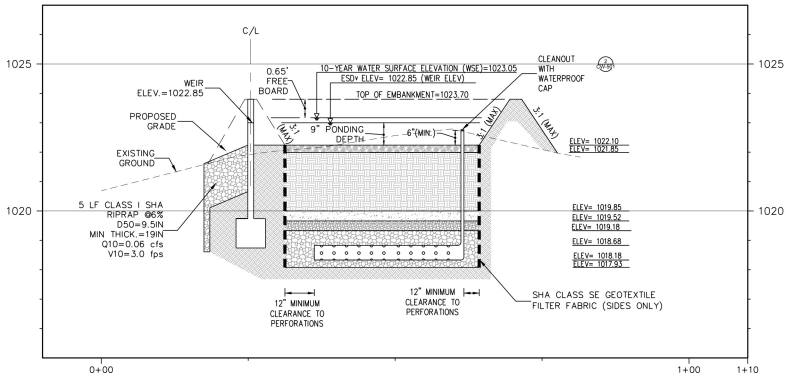
SWM #2
ENLARGED
PLAN

CW.402

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CW402 - P052200002.DWG, 8/19/2021 4:34 PM, MERNEST



MICRO-BIORETENTION #2 PROFILE
SCALE: HORZ 1"=4'
VERT 1"=1'



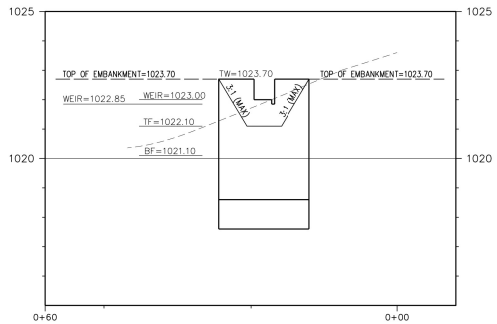
MICRO-BIORETENTION #2 SECTION THROUGH WEIR WALL
SCALE: HORZ 1"=4'
VERT 1"=1'

1 SWM 2 PROFILE
SCALE:HORIZ.1"=10' VERT: 1"=2"

2 SWM 2 SECTION
SCALE:HORIZ.1"=10' VERT: 1"=2"

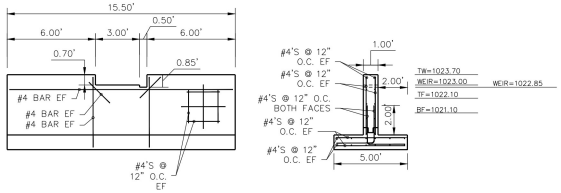
HORIZ.SCALE: 1"=10'

VERT. SCALE: 1"=2"



PROFILE ALONG WEIR WALL CENTER LINE
SCALE: HORZ 1"=4'
VERT 1"=1'

3 WEIR WALL PROFILE
SCALE:HORIZ.1"=10' VERT: 1"=2"



4 WEIR WALL DETAIL
SCALE:NTS

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT FACILITY SHOWN ON THE PLANS HAS (HAVE) BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, EXCEPT AS NOTED IN RED ON THE "AS BUILT" DRAWINGS.

NAME _____ SIGNATURE _____

MARYLAND REGISTRATION NUMBER _____ DATE _____

MDE NO. _____ FACILITY IDENTIFICATION (NUMBER AND/OR TYPE) _____

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL TESTS CONDUCTED DURING CONSTRUCTION.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. _____, EXPIRATION DATE _____

AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF CONSTRUCTION:

BIORETENTION

(A)DURING EXCAVATION TO SUBGRADE AND PLACEMENT AND BACKFILL OF UNDERDRAIN SYSTEMS AND OBSERVATION WELLS.
(B)DURING PLACEMENT OF GEOTEXTILE AND ALL FILTER MEDIA.
(C)DURING CONSTRUCTION OF APPURTENANT CONVEYANCE SYSTEMS SUCH AS FLOW DIVERSION STRUCTURES, PRE-TREATMENT, INLETS, OUTLETS, AND FLOW DISTRIBUTION STRUCTURES
(D) UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

AS-BUILT DATA FOR BIORETENTION FACILITIES TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: BIORETENTION	MICRO-BIORETENTION #2	
	DESIGN	*AS-BUILT
FILTER BED AREA (LxW)/ SURFACE AREA (SF)	875	
FILTER BED SURFACE ELEVATION	1022.10	
OVERFLOW WEIR: TOP ELEVATION	1022.85	
10-YEAR WATER SURFACE ELEVATION	1023.05	
6" (MIN) FREEBOARD: TOP ELEVATION	1023.70	
UNDERDRAIN PIPE SIZE / ELEVATION	6"/1018.18	
OUTLET PIPE SIZE / ELEVATION	6"/1018.18	
OVERFLOW WEIR/SIZE:	PER DETAIL	
MICRO-BIORETENTION VOLUME (CF) BETWEEN 1022.10 AND 1022.85	842	
MULCH THICKNESS (IN)	3	
PLANTING MEDIA THICKNESS (IN)	24	
PLANTING MEDIA MATERIAL	PLANTING SOIL	
SAND THICKNESS (IN)	4	
PEA GRAVEL THICKNESS (IN)	4	
GRAVEL THICKNESS (IN)	15	
MDE NUMBER	21-SF-0104	
UNDERDRAIN LENGTH (FT)	67	
PROVIDE COMPOSITION CERTIFICATION OF FILTER MEDIA		
VERIFY GEOTEXTILE FABRIC INSTALLATION (SIDES ONLY)		
VERIFY PLANTING (SPECIES, NUMBER AND HEALTH) SEE LANDSCAPE PLANS		
DATE AS-BUILT ACCEPTED BY MDE:		

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS 23 August 2021

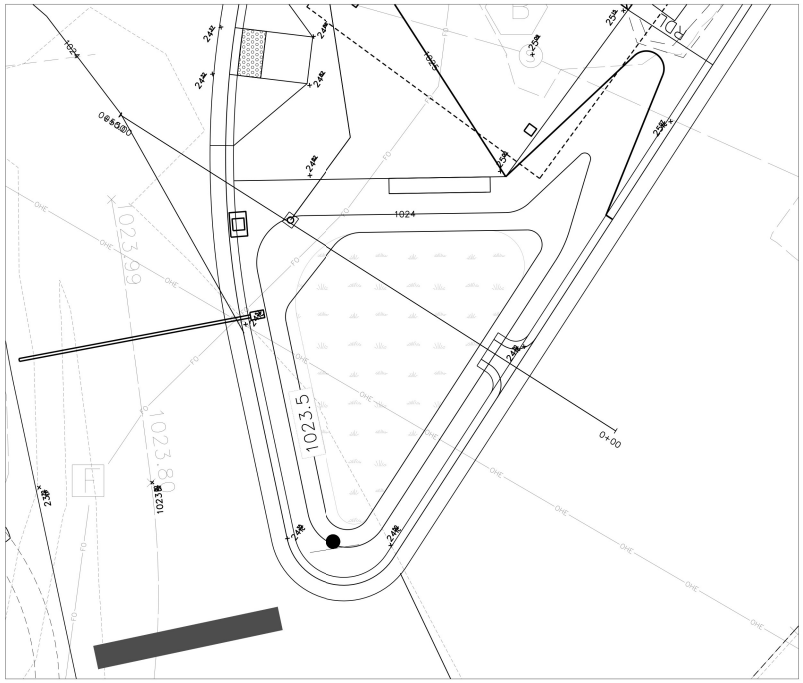
CAD DWG FILE: CW403 - P052200002.DWG
DRAWN BY: AMT
CHECKED BY: AMT

PROJECT NUMBER: 2015.00
DATE: 23 August 2021

SWM #2 PROFILE AND SECTION

CW.403

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CW403 - P052200002.DWG, 8/19/2021 4:35 PM, MERNEST



AS-BUILT DATA FOR RAIN GARDEN FACILITIES TO BE COMPLETED BY THE CERTIFYING ENGINEER		
TYPE OF FACILITY: RAIN GARDEN	RAIN GARDEN #1	
	DESIGN	*AS-BUILT
FILTER BED AREA (LxW)/ SURFACE AREA (SF)	320 SF	
FILTER BED SURFACE ELEVATION	1023.50	
OVERFLOW ELEVATION	1024.08	
RAIN GARDEN PONDING VOLUME	236 CF	
MULCH THICKNESS/TOP ELEV.	3"/1023.50	
PLANTING MEDIA THICKNESS	12"	
SUBSOIL FACTURED	YES	
PROVIDE COMPOSITION CERTIFICATION OF FILTER MEDIA		
VERIFY GEOTEXTILE FABRIC INSTALLATION (SIDES ONLY)		
VERIFY PLANTING (SPECIES, NUMBER AND HEALTH)		
DATE AS-BUILT ACCEPTED BY MDE:		

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT FACILITY SHOWN ON THE PLANS HAS (HAVE) BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, EXCEPT AS NOTED IN RED ON THE "AS BUILT" DRAWINGS.

NAME _____ SIGNATURE _____

MARYLAND REGISTRATION NUMBER _____ DATE _____

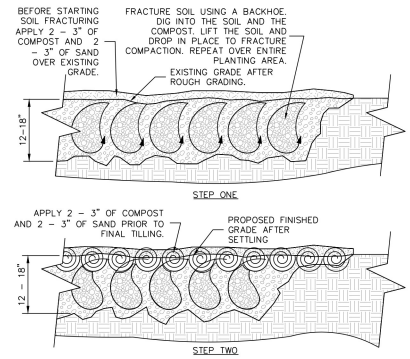
MDE NO. 21-SF-0104 — FACILITY IDENTIFICATION (NUMBER AND/OR TYPE): RAIN GARDEN (RG-1)

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL TESTS CONDUCTED DURING CONSTRUCTION.

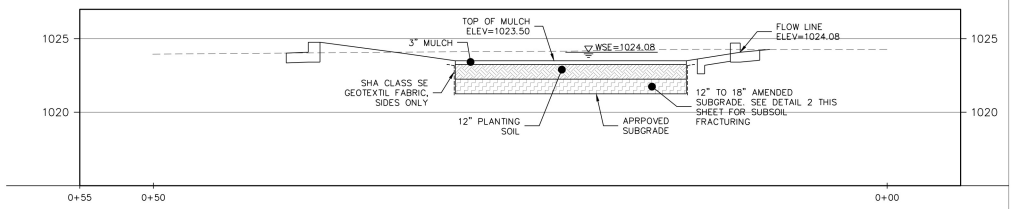
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. _____, EXPIRATION DATE



2 SUBSOIL FRACTURING DETAIL
SCALE:NTS



RAIN GARDEN (RG-1) BASELINE
SCALE: HORZ 1"=4'
VERT 1"=4'

1 RAINGARDEN TYPICAL SECTION
SCALE:AS SHOWN

SCALE: 1"=4'

RAIN GARDEN CONSTRUCTION SPECIFICATIONS			
MATERIAL	SPECIFICATION/ TEST METHOD	SIZE	NOTES
PLANTING SOIL [12" DEEP]	LOAMY SAND (60–65%) COMPOST (35–40%) OR SANDY LOAM (30%) COARSE AND (30%) COMPOST (40%)		USDA SOIL TYPES LOAMY SAND OR SANDY LOAM; CLAY CONTENT < 5%
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D 2974)		
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
GEOTEXTILE		N/A	PE TYPE 1 NONWOVEN
SAND	AASHTO-M-6 or ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.
SUBGRADE SOIL AMENDMENTS	PER DETAIL 4 ON SHEET CW-501		

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND — MATTHEW A. ERNEST — No. 32151 — PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

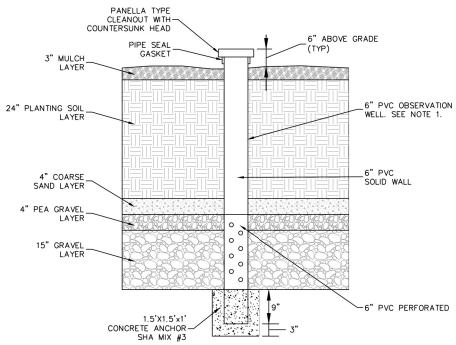
NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	CW404 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

SWM #3
ENLARGED
PLAN

CW.404

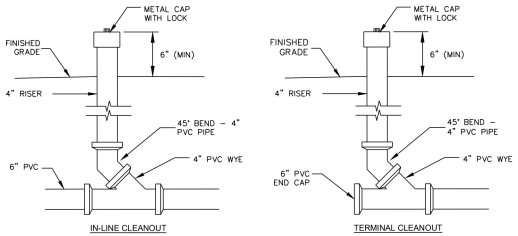
X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CW404 - P052200002.DWG, 8/19/2021 4:35 PM, MERNEST



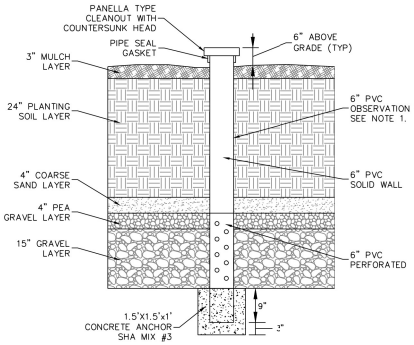
NOTES:

1. PROVIDE PERFORATED PVC PIPE ONLY WITHIN THE STONE/GRAVEL LAYER, TO AVOID PLANT MEDIA AND SAND LOSS.
2. CONTRACTOR SHALL PERMANENTLY MARK THE FIELD MEASURED DEPTH TO THE BOTTOM OF THE WELL ON THE INSIDE OF THE CAP AFTER FACILITY AND WELL ARE INSTALLED.
3. FOR AN UNDERGROUND FLUSH MOUNTED OBSERVATION WELL/CLEANOUT, PROVIDE A TUBE MADE OF GALVANIZED, SCHEDULE 40 OR EQUAL, AT LEAST THREE FEET LONG WITH AN INSIDE DIMENSION TO ACCOMMODATE A 6" PIPE.
4. THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA-VIOLET RAYS
5. CONTRACTOR SHALL NOTE THE DEPTH TO THE BOTTOM ON THE CAP.

1 OBSERVATION WELL DETAIL
SCALE:NTS



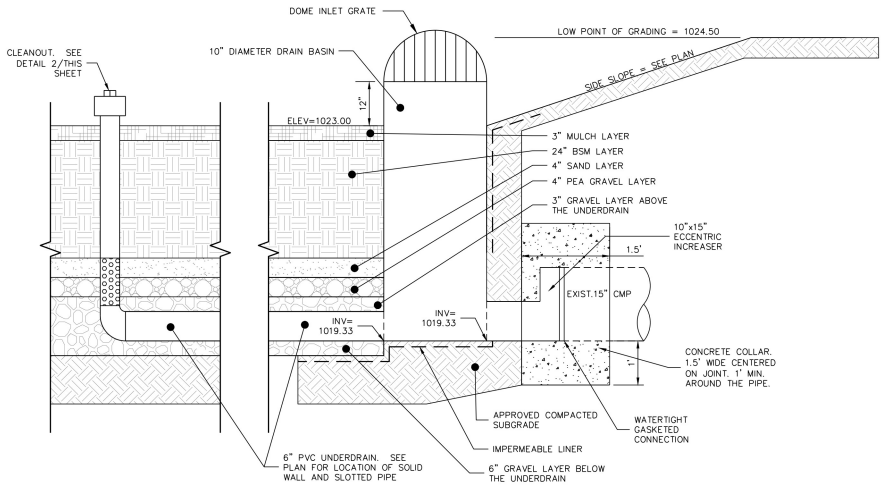
2 MICRO-BIORETENTION CLEANOUT DETAIL
SCALE:NTS



NOTES:

1. PROVIDE PERFORATED PVC PIPE ONLY WITHIN THE STONE/GRAVEL LAYER, TO AVOID PLANT MEDIA AND SAND LOSS.
2. CONTRACTOR SHALL PERMANENTLY MARK THE FIELD MEASURED DEPTH TO THE BOTTOM OF THE WELL ON THE INSIDE OF THE CAP AFTER FACILITY AND WELL ARE INSTALLED.
3. FOR AN UNDERGROUND FLUSH MOUNTED OBSERVATION WELL/CLEANOUT, PROVIDE A TUBE MADE OF GALVANIZED, SCHEDULE 40 OR EQUAL, AT LEAST THREE FEET LONG WITH AN INSIDE DIMENSION TO ACCOMMODATE A 6" PIPE.
4. THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA-VIOLET RAYS
5. CONTRACTOR SHALL NOTE THE DEPTH TO THE BOTTOM ON THE CAP.

3 OBSERVATION WELL DETAIL
SCALE:NTS



4 MICRO-BIORETENTION #1 - TYPICAL SECTION
SCALE:NTS

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. ERNEST
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	CW501 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT

PROJECT NUMBER:	2015.00
DATE:	23 August 2021

SWM NOTES AND DETAILS

CW.501

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CW501 - P052200002.DWG, 8/19/2021 4:35 PM, MERNEST

MICRO-BIORETENTION CONSTRUCTION SPECIFICATIONS

MATERIAL	SPECIFICATION/ TEST METHOD	SIZE	NOTES
PLANTING SOIL [2' TO 4' DEEP]	5 PARTS COARSE SAND 3 PARTS BASE SOIL 2 PARTS FINE BARK (SEE DEFINITIONS: THIS SHEET)		CONFORMING TO ALL REQUIREMENTS OF SHA SECTION 920.01.05 BIORETENTION SOIL MIX (BSM)
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D 2974)		
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
PEA GRAVEL DIAPHRAGM	PEA GRAVEL: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
CURTAIN DRAIN	ORNAMENTAL STONE: WASHED COBBLES	STONE: 2" TO 5"	
GEOTEXTILE		N/A	PE TYPE 1 NONWOVEN
GRAVEL (UNDERDRAINS AND INFILTRATION BERMS)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	6" RIGID SCHEDULE 40 PVC OR SDR35	PERFORATED PIPE; 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3' OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH ¼-INCH GALVANIZED HARDWARE CLOTH
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; F'C = 3500 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM-615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND - DESIGN TO INCLUDE MEETING ACI CODE 350.R/89; VERTICAL LOADING [H-10 OR H-20]; ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND	AASHTO-M-6 or ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.
FILL MATERIAL FOR PERIMETER AND INTER-CELL BERMS	UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL	AT LEAST 30% OF THE MATERIAL MUST PASS THE #200 SIEVE	THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ±2% OF THE OPTIMUM. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR). BERMS SHOULD HAVE 4" THICK OUTER TOPSOIL LAYER TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION.

MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION

INSPECTION ITEM	INSPECTION REQUIREMENTS	REMEDIAL ACTION
MONTHLY INSPECTION		
DEBRIS AND TRASH	CHECK FOR TRASH AND DEBRIS IN FACILITY INCLUDING INLETS, OUTLETS, CONVEYANCE SYSTEMS, AND AREA AROUND FACILITY.	REMOVE ALL TRASH AND DEBRIS AND DISPOSE IN AN ACCEPTABLE MANNER. UNCLOG ALL OPENINGS
PLANT COMPOSITION AND HEALTH	COMPARE PLANT COMPOSITION WITH APPROVED PLANS. CHECK FOR INVASIVE SPECIES OR WEEDS. CHECK FOR DEAD OR DYING VEGETATION.	REMOVE INVASIVE SPECIES AND WEEDS. REPLACE DEAD PLANTS IN ACCORDANCE WITH APPROVED LANDSCAPING PLAN.
VEGETATIVE COVER	CHECK FOR CHANNELIZING, EROSION, AND BARE SPOTS. CHECK FOR VEGETATION BLOCKING INLET AND OUTLET.	REMOVE OR CUT BACK VEGETATION AROUND INLET AND OUTLET STRUCTURES. MOW SIDE SLOPES WHEN GRASS EXCEEDS 12 INCHES IN HEIGHT, BUT DO NOT MOW FILTER BED. REMOVE GRASS CLIPPINGS. RE-SEED OR RE-PLANT IN ACCORDANCE WITH APPROVED LANDSCAPING PLANS.
MULCH LAYER	CHECK MULCH FOR ADEQUATE COVER, SEDIMENT ACCUMULATION, OR DISCOLORATION.	REPLACE AND REMOVE OLD MULCH AND EXCESS SEDIMENT. PROVIDE ADEQUATE MULCH COVER ACCORDING TO APPROVED DESIGN.
SEASONAL INSPECTION AND AFTER A MAJOR STORM		
DEWATERING	CHECK PONDING LEVEL, SURFACE STORAGE MUST DEWATER WITHIN 48 HOURS OF RAINFALL. NOTICEABLE ODORS, STAINED WATER ON THE FILTER SURFACE OR AT THE OUTLET, OR THE PRESENCE OF ALGAE OR AQUATIC VEGETATION ARE INDICATORS OF ANAEROBIC CONDITIONS AND INADEQUATE DEWATERING OF THE FACILITY.	REMOVE AND REPLACE TOP FEW INCHES OF MEDIA. CONFIRM ADEQUATE DEWATERING WITH FOLLOW UP INSPECTIONS. IF THE FACILITY DOES NOT FUNCTION AS INTENDED AFTER THE ABOVE ACTION, THE ENTIRE SYSTEM INCLUDING THE UNDERDRAIN MAY NEED REFURBISHING.
EROSION	CHECK INLETS, FILTER BED, OUTLETS, AND SIDE SLOPES FOR EROSION, RILLS, GULLIES, AND RUNOFF CHANNELIZATION.	RE-GRADING MAY BE REQUIRED WHEN CONCENTRATED FLOW CAUSES RILLS OR GULLYING THROUGH THE FACILITY. GRADE, VEGETATE, AND/OR ARMOR TO PROVIDE STABLE CONVEYANCE IN ACCORDANCE WITH APPROVED PLANS.
SEDIMENT ACCUMULATION	CHECK FOR ACCUMULATED SEDIMENT IN CONVEYANCE SYSTEMS AND ON FILTER BED. CHECK FOR CLOGGED OPENINGS.	WHEN SEDIMENT ACCUMULATES TO 1 INCH DEPTH, REMOVE SEDIMENT. REMOVE SEDIMENT FROM CLOGGED OPENINGS. DISPOSE OF ALL SEDIMENT IN AN ACCEPTABLE LOCATION.
BLOCKAGES	CHECK OVERFLOW INLET (RISER), PIPING, AND UNDERDRAIN FOR BLOCKAGES. CHECK OBSERVATION WELLS FOR WATER LEVEL.	CLEAR OUT ANY BLOCKAGES.
ANNUAL INSPECTIONS		
MAINTENANCE ACCESS	CHECK FOR ACCESSIBILITY TO FACILITY	PREVENT EXCESSIVE VEGETATIVE GROWTH, EROSION, AND OBSTRUCTIONS ON ACCESS WAY.
FLOW CONVEYANCE SYSTEM	CHECK OVERFLOW INLET, PIPING, AND BYPASS FOR MISALIGNMENTS, BREAKAGE, AND BLOCKAGE	REPAIR ANY BROKEN OR FAULTY PIPING. CLEAR OUT ANY BLOCKAGES.
STRUCTURAL COMPONENTS	CHECK FOR EVIDENCE OF STRUCTURAL DETERIORATION, SPALLING, OR CRACKING. INLET AND OUTLET STRUCTURES AS WELL AS RIPRAP OUTFALLS MUST BE IN GOOD CONDITION.	REPAIR TO GOOD CONDITION ACCORDING TO SPECIFICATIONS ON THE APPROVED PLANS
OVERALL FUNCTION OF FACILITY	CHECK THAT PRACTICE IS FUNCTIONING AS DESIGNED	REPAIR TO GOOD CONDITION ACCORDING TO SPECIFICATIONS ON THE APPROVED PLANS

SPECIFICATIONS FOR MICRO-BIORETENTION

1. MATERIAL SPECIFICATIONS
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. FILTERING MEDIA OR PLANTING SOIL (SHA SECTION 920.01.05 BIORETENTION SOIL MIX [BSM])
A HOMOGENEOUS MIXTURE COMPOSED BY LOOSE VOLUME OF 5 PARTS COARSE SAND, 3 PARTS BASE SOIL, AND 2 PARTS FINE BARK. BSM SHALL CONFORM TO THE FOLLOWING:

A) COMPONENTS: COMPONENTS OF BSM SHALL BE SAMPLED, TESTED AND APPROVED BEFORE MIXING AS FOLLOWS:

1) COARSE SAND: MSMT 356. COARSE SAND SHALL BE WASHED SILICA SAND OR CRUSHED GLASS THAT CONFORMS TO ASTM FINE AGGREGATE C-33. COARSE SAND SHALL INCLUDE LESS THAT 1% BY WEIGHT OF CLAY OF SILT SIZE PARTICLES, AND LESS THAN 5% BY WEIGHT OF ANY COMBINATION OF DIABASE, GREYSTONE, CALCAREOUS OR DOLOMITIC SAND.

2) BASE SOIL: BASE SOIL SHALL BE TESTED AND CERTIFIED BY THE PRODUCER TO CONFORM TO THE FOLLOWING REQUIREMENTS:

COMPOSITION - BASE SOIL

TEST PROPERTY	TEST METHOD	TEST VALUE AND AMENDMENT			
PROHIBITED WEEDS	–	FREE OF SEED AND VIABLE PLANT PARTS OF SPECIES IN 920.06.02(a)(b)(c) WHEN INSPECTED.			
DEBRIS	–	NO OBSERVABLE CONTENT OF CEMENT, CONCRETE, ASPHALT, CRUSHED GRAVEL OR CONSTRUCTION DEBRIS WHEN INSPECTED.			
GRADING ANALYSIS	T 87	SIEVE SIZE		PASSING BY WEIGHT MINIMUM %	
		2 IN.		100	
		NO. 4		90	
		NO. 10		80	
TEXTURAL ANALYSIS	T 88	PARTICLE		% PASSING BY WEIGHT	
		SIZE	mm	MINIMUM	MAXIMUM
		SAND	2.0 – 0.050	50	85
		SILT	0.050 – 0.002	5	45
		CLAY	LESS THAN 0.002	5	10
SOIL pH	D 4972	pH OF 5.7 TO 6.9.			
ORGANIC MATTER	T 194	1.0 TO 10.0% BY WEIGHT.			
SOLUBLE SALTS	EC 1:2 (v:v)	500 PPM (1.25 mmhos/cm) OR LESS.			
HARMFUL MATERIALS	–	920.01.01(a)			

3) FINE BARK: FINE BARK SHALL BE THE BARK OF HARDWOOD TREES THAT IS MILLED AND SCREENED TO A UNIFORM PARTICLE SIZE FO 2 IN. OR LESS. FINE BARK SHALL BE COMPOSTED AND AGED FOR 6 MONTHS OR LONGER, AND BE FREE FROM SAWDUST AND FOREIGN MATERIALS.

A 1 TO 2 LB SAMPLE OF FINE BARK SHALL BE SUBMITTED TO THE ARCHITECT FOR EXAMINATION.

B) COMPOSITION: BSM SHALL BE SAMPLED AND TESTED ACCORDING TO THE REQUIREMENTS OF MSMT 356 AND CONFORM TO THE FOLLOWING:

COMPOSITION - BIORETENTION SOIL MIX (BSM)

TEST PROPERTY	TEST METHOD	TEST VALUE AND AMENDMENT				
WEEDS	–	FREE OF SEED AND VIABLE PLANT PARTS OF SPECIES IN 920.06.02(a)(b)(c) WHEN INSPECTED.				
DEBRIS	–	920.01.05(a)(2)				
TEXTURAL ANALYSIS	T 88	PARTICLE		% PASSING BY WEIGHT		
		SIZE	mm	MINIMUM	MAXIMUM	
		SAND	2.0 – 0.050	50	85	
		SILT	0.050 – 0.002	5	45	
		CLAY	LESS THAN 0.002	5	10	
SOIL pH	D 4972	pH OF 5.7 TO 7.1.				
ORGANIC MATTER	T 194	MINIMUM 1.5% BY WEIGHT.				
NUTRIENT ANALYSIS AND SOLUBLE SALTS	MEHLICH-3	CONCENTRATION				
		ELEMENT	MINIMUM		MAXIMUM	
			PPM	FIV	PPM	FIV
		CALCIUM (Ca)	32	25	NO LIMIT	NO LIMIT
		MAGNESUM (Mg)	15	25	NO LIMIT	NO LIMIT
		PHOSPHORUS (P)	18	25	92	100
		POTASSUM (K)	22	25	NO LIMIT	NO LIMIT
		SULFUR (SO_4)	25	N/A	NO LIMIT	NO LIMIT
	EC 1:2 (v:v)	SOLUBLE SALTS	40	N/A	500	N/A
HARMFUL MATERIALS	–	920.01.01(a).				

C) AMENDMENT OR FAILURE: BSM THAT DOES NOT CONFORM TO COMPOSITION REQUIREMENTS FOR pH OR NUTRIENT ANALYSIS SHALL BE AMENDED AS SPECIFIED BY THE NMP. BSM THAT EXCEEDS MAXIMUM PHOSPHOROUS CONCENTRATION OR FAILS OTHER COMPOSITION REQUIREMENTS WILL NOT BE ACCEPTED, AND SHALL NOT BE DELIVERED OR USED AS BSM.

D) STORAGE: 920.01.02(b). BSM SHALL BE STORED IN A STOCKPILE THAT IS PROTECTED FROM WEATHER UNDER TARP OR SHED. BSM STORED FOR 6 MONTHS OR LONGER SHALL BE RESAMPLED, RETESTED, AND REAPPROVED BEFORE USE.

MICRO-BIORETENTION CONSTRUCTION REQUIREMENTS

1. SITE PROTECTION. PRIOR TO CONSTRUCTING SWM FILTRATION FACILITIES, ENSURE THAT THE SWM FACILITY SITE AREAS ARE PROTECTED FROM VEHICULAR TRAFFIC AND IS NOT USED FOR EROSION AND SEDIMENT CONTROLS, STOCKPILES OR EQUIPMENT STORAGE.

2. SITE PREPARATION. UNLESS FACILITIES ARE OFF-LINE AND WILL RECEIVE NO RUNOFF, CONSTRUCT FACILITIES ONLY AFTER ALL SURROUNDING AND ADJACENT AREAS ARE PERMANENTLY STABILIZED. DIVERT FLOW FROM ENTERING THE SWM FILTRATION FACILITY AREAS UNLESS SAME-DAY STABILIZATION IS SPECIFIED FOR THE SWM FILTRATION FACILITY LOCATION. PREVENT TRASH, DEBRIS AND SEDIMENT FROM ENTERING SWM FILTRATION FACILITIES DURING CONSTRUCTION.

3. SCHEDULE. PERFORM SWM FILTRATION FACILITY ACTIVITIES DURING DRY WEATHER AND WHEN SOIL MOISTURE CONDITIONS ARE SUITABLE AND UNLESS THE FACILITY IS OFF-LINE OR FLOW DIVERSIONS ARE IN PLACE. ONLY WORK WITH SOIL THAT IS FRIABLE AND NOT IN A MUDDY OR FROZEN CONDITION. CEASE OPERATIONS WHEN SOIL AND OVERALL CONDITIONS ARE OTHERWISE UNSUITABLE.

4. EXCAVATION. USE METHODS OF EXCAVATION THAT MINIMIZE COMPACTION OF THE UNDERLYING SOILS. WHERE FEASIBLE, OPERATE EQUIPMENT FROM LOCATIONS ADJACENT TO SWM FILTRATION FACILITIES RATHER THAN WITHIN THE FACILITY AREA. USE ONLY WIDE-TRACK OR MARSH-TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF-TYPE TIRES TO EXCAVATE, GRADE, AND PLACE MATERIALS. DO NOT USE EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES.

5. EXCAVATION AREA BOTTOM PREPARATION. ONLY WORK WITH SOIL THAT IS FRIABLE AND NOT IN A MUDDY OR FROZEN CONDITION. WHEN PRESENT, REMOVE ANY STANDING WATER FROM THE EXCAVATION AREA. PREPARE THE BOTTOM OF THE EXCAVATED AREA AS FOLLOWS.

(a) TILL TO A MINIMUM DEPTH OF 8 IN. TO LOOSEN SOIL.
(b) IF IMPEMEABLE LINER IS INDICATED ON THE BOTTOM AND SIDES OF THE FACILITY, TILLING OF THE SOIL IS NOT REQUIRED. ANY SHARP OBJECTS SUCH AS STONES, ROOTS OR OTHER DELETOUIS MATERIALS SHALL BE REMOVED FROM THE EXCAVATED AREA PRIOR TO THE PLACEMENT OF THE LINER.

6. GEOTEXTILE (IF INDICATED). PLACE TIGHTLY AGAINST THE VERTICAL SIDES OF THE EXCAVATION AREA, PULLING TIGHT TO ELIMINATE WRINKLES AND FOLDS AND PIN SECURELY. ELIMINATE ANY VOIDS BETWEEN THE GEOTEXTILE AND THE UNDERLYING SOIL AND AVOID WRINKLING AND FOLDING THE GEOTEXTILE. MAINTAIN A MINIMUM 12 IN. OVERLAP AT THE GEOTEXTILE JOINT ENDS OR BREAKS. PIN LONGITUDINAL JOINTS, OVERLAPS AND EDGES SECURELY WITH PINS SPACED NO GREATER THAN 10 FT ON CENTER. DO NOT PLACE GEOTEXTILE ON THE BOTTOM OF THE EXCAVATED AREA.

6. IMPERMEABLE LINER (IF INDICATED). PLACE TIGHTLY AGAINST THE VERTICAL SIDES OF THE EXCAVATION AREA, PULLING TIGHT TO ELIMINATE WRINKLES AND FOLDS AND PIN SECURELY. ELIMINATE ANY VOIDS BETWEEN THE LINER AND THE UNDERLYING SOIL AND AVOID WRINKLING AND FOLDING THE LINER. INSTALL PER LINER MANUFACTURER'S RECOMMENDATIONS. INSTALL LINER TO ELEVATIONS INDICATED.

7. MISCELLANEOUS STRUCTURES. FURNISH AND INSTALL AS INDICATED.

8. AGGREGATE. PLACE AGGREGATE IN LAYERS AS SPECIFIED. PREVENT SOIL, FINES, AND OTHER DEBRIS FROM CONTAMINATING THE AGGREGATE. REMOVE CONTAMINATED AGGREGATE AND REPLACE WITH CLEAN AGGREGATE.

9. SUBDRAIN PIPE. CAP THE ENDS OF ALL SUBDRAIN PIPE NOT TERMINATING IN A CLEANOUT, VENT, OR DRAINAGE STRUCTURE UNLESS OTHERWISE SPECIFIED. ENSURE PERFORATIONS ARE PLACED ON THE BOTTOM OF THE HORIZONTAL SUBDRAIN PIPE RUNS.

(a) CLEANOUTS. INSTALL SOLID-WALL PIPE VERTICALLY AND CONNECT TO HORIZONTAL SUBDRAIN WITH APPROVED MANUFACTURED CONNECTIONS. PROVIDE A COUNTER-SUNK SCREW CAP ON THE EXPOSED ENDS.

(b) VENTS (IF INDICATED). INSTALL SOLID-WALL PIPE VERTICALLY AND CONNECT TO THE HORIZONTAL SUBDRAIN WITH APPROVED MANUFACTURED CONNECTIONS. PROVIDE A VENTILATED SCREW CAP ON THE EXPOSED ENDS. VENTILATION HOLES OR SLOTS SHALL BE NO LARGER THAN 1/4 IN. IN DIAMETER OR WIDTH. THE SUM TOTAL AREA OF THE OPENINGS SHALL BE NO LESS THAN 1 IN2. ENSURE THAT THE VENTILATION OPENINGS ARE ABOVE THE MAXIMUM SPECIFIED WATER SURFACE ELEVATION.

(c) OBSERVATION WELLS. USE PERFORATED AND SOLID-WALL PIPE. PLACE THE GEOTEXTILE SOCK OVER THE PERFORATED PIPE PORTION AND SECURE AT BOTH ENDS. PROVIDE A SCREW CAP ON THE EXPOSED END EXTENDING 2 IN. ABOVE THE SURFACE. WHEN A CONCRETE COLLAR IS SPECIFIED, ENSURE THE TOP OF THE WELL IS FLUSH WITH THE SURFACE OF THE CONCRETE COLLAR.

10. PEA GRAVEL. PLACE PEA GRAVEL IN HORIZONTAL LAYERS AS SPECIFIED. PREVENT SOIL, FINES, AND OTHER DEBRIS FROM CONTAMINATING THE PEA GRAVEL. REMOVE CONTAMINATED AGGREGATE AND REPLACE WITH CLEAN AGGREGATE.

11. COARSE SAND. PLACE COARSE SAND IN HORIZONTAL LAYERS NOT EXCEEDING 12 IN. AFTER EACH LIFT, SPREAD THE COARSE SAND TO PROVIDE A UNIFORM SURFACE THEN SPRAY OR SPRINKLE WATER TO SATURATE THE LIFT UNTIL WATER FLOWS FROM THE SUBDRAIN OUTLET. USE AN APPROPRIATE SEDIMENT CONTROL DEVICE TO CAPTURE ANY DISCHARGED SEDIMENT-LADEN WATER FROM THE SUBDRAIN OUTLET. PLACE, SPREAD, AND WATER COARSE SAND TO UNIFORM SURFACE TRUE TO DEPTH, LINE, CROSS SECTION AND ELEVATION TO ENSURE THE COMPLETED WORK IS AS SPECIFIED AFTER SETTLEMENT. PREVENT SOIL, FINES AND OTHER DEBRIS FROM CONTAMINATING THE COARSE SAND. REMOVE CONTAMINATED COARSE SAND AND REPLACE WITH CLEAN COARSE SAND.

12. BIORETENTION SOIL MIX (BSM). PLACE BSM IN HORIZONTAL LAYERS NOT EXCEEDING 12 IN. AFTER EACH LIFT, SPREAD THE BSM TO PROVIDE A UNIFORM SURFACE AND SPRAY OR SPRINKLE WATER TO SATURATE THE ENTIRE AREA OF BSM UNTIL WATER FLOWS FROM THE SUBDRAIN OUTLET. USE AN APPROVED SEDIMENT CONTROL DEVICE TO CAPTURE ANY DISCHARGE SEDIMENT-LADEN WATER. PLACE, SPREAD, AND WATER BSM TO UNIFORM SURFACE TRUE TO DEPTH, LINE, CROSS SECTION AND ELEVATION TO ENSURE THE COMPLETED WORK IS AS SPECIFIED AFTER SETTLEMENT. PREVENT SOIL, FINES, AND OTHER DEBRIS FROM CONTAMINATING THE BSM. REMOVE CONTAMINATED BSM AND REPLACE WITH UNCONTAMINATED BSM.

13. TOPSOIL. PLACE TOPSOIL AS SPECIFIED. DO NOT BLEND TOPSOIL INTO BSM WHEN TOPSOIL IS PLACED ON TOP OF BSM.

14. CHECK DAMS (IF INDICATED).
(a) TOPSOIL CHECK DAMS. CONSTRUCT TOPSOIL CHECK DAMS TO THE DIMENSIONS, GRADES, AND DEPTHS SPECIFIED.
(b) CONCRETE CHECK DAMS. FURNISH AND INSTALL CONCRETE CHECK DAMS AS SPECIFIED.

15. SOIL STABILIZATION MATTING (SSM). INSTALL AT SHOWN ON THE DRAWINGS..

16. VEGETATION INSTALLATION AND ESTABLISHMENT. UNLESS FACILITIES ARE OFF-LINE OR FLOW DIVERSIONS ARE IN PLACE, INSTALL SEED, SOD, TREES, SHRUBS, PERENNIALS, AND ANNUALS WITHIN SWM FILTRATION FACILITY AREAS IMMEDIATELY AFTER FINAL GRADING. IN THE EVENT THAT VEGETATION CANNOT BE INSTALLED AND ESTABLISHED DUE TO TIME-OF-YEAR OR WEATHER RESTRICTIONS, KEEP DIVERSION CONTROLS IN PLACE UNTIL SUCH TIME THAT PERMANENT VEGETATION MAY BE ESTABLISHED. DO NOT USE MACHINERY OTHER THAN HAND HELD WITHIN THE BSM FOOTPRINT.

(a) TURFGRASS ESTABLISHMENT. PER LANDSCAPE PLANS AND SPECIFICATIONS.
(b) MEADOW ESTABLISHMENT AND WILDFLOWER SEEDING. PER LANDSCAPE PLANS AND SPECIFICATIONS.
(c) TURFGRASS SOD ESTABLISHMENT. PER LANDSCAPE PLANS AND SPECIFICATIONS.
(d) TREE, SHRUBS AND PERENNIAL INSTALLATION AND ESTABLISHMENT. PER LANDSCAPE PLANS AND SPECIFICATIONS.
(e) ANNUALS & BULB INSTALLATION AND ESTABLISHMENT. PER LANDSCAPE PLANS AND SPECIFICATIONS.

17. SOIL AMENDMENTS AND FERTILIZER. APPLY PER THE SPECIFICATIONS. USE THE FOLLOWING FOR PLANT MATERIALS INSTALLED IN BSM.
(a) NON-VEGETATED BSM. DO NOT APPLY COMPOST, OTHER SOIL AMENDMENTS, OR FERTILIZER TO NON-VEGETATED BSM.
(b) TREES, SHRUB, AND PERENNIALS IN BSM. DO NOT APPLY COMPOST OR OTHER SOIL AMENDMENTS TO BACKFILL SOIL OR TO PLANTING BEDS.

APPLY FERTILIZER TO EACH PLANTING PIT PER THE SPECIFICATIONS WHEN TREES, SHRUBS, PERENNIALS, PERENNIAL PLUGS, OR OTHER PLANT MATERIALS ARE INSTALLED IN BSM.

(c) SEEDED OR SODDED BSM. DO NOT APPLY COMPOST OR OTHER SOIL AMENDMENTS.

UNIFORMLY APPLY EITHER OF THE FERTILIZERS IN TABLE 1 AT THE RATE SPECIFIED OVER THE INSTALLED SURFACE OF THE BSM WHEN BSM WILL BE PERMANENTLY VEGETATED WITH TURFGRASS ESTABLISHMENT, SHRUB SEEDING ESTABLISHMENT, MEADOW ESTABLISHMENT, TURFGRASS SOD ESTABLISHMENT, OR OTHER SEEDED OR SODDED VEGETATION ESTABLISHMENT AS SPECIFIED.

BIORETENTION SOIL MIX
TABLE 1 – FERTILIZER APPLICATION RATES

FERTILIZER
20-16-12 (8.3% UF WITH MAP AND SOP) = 0.052 LBS PER SY(200 LBS PER ACRE)
14-14-14 POLYMER COATED OR GRANULAR = 0.062 LBS PER SY (275 LBS PER ACRE)

(d) FERTILIZER. RAKE FERTILIZER THAT IS BROADCAST OVER THE SURFACE OF THE BSM FOR SEEDING OR SODDING TO A DEPTH OF 1/8 IN. TO 1/2 IN. RAKING MAY BE PERFORMED AS PART OF SEEDING OR SODDING OPERATIONS. COMPLETE RAKING BEFORE SOIL STABILIZATION MATTING OR SOD IS INSTALLED.

18. SHREDDED HARDWOOD BARK (SHB) MULCH. AS INDICATED.

19. INSPECTION AND SWM FACILITY AS-BUILT CERTIFICATION. INSPECT AND DOCUMENT EACH STEP OF CONSTRUCTION OF SWM FILTRATION FACILITIES AND COMPLETE THE APPLICABLE CHECKLISTS AND FURNISH THE SWM FACILITY AS-BUILT CERTIFICATION ACCORDING TO THE CONTRACT DOCUMENTS.

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

Z|S
ZIGER|SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
MATTHEW A. EMMERT
No. 32151
PROFESSIONAL ENGINEER
8-23-21

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 32151, expiration date 7/18/2023.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS 23 August 2021

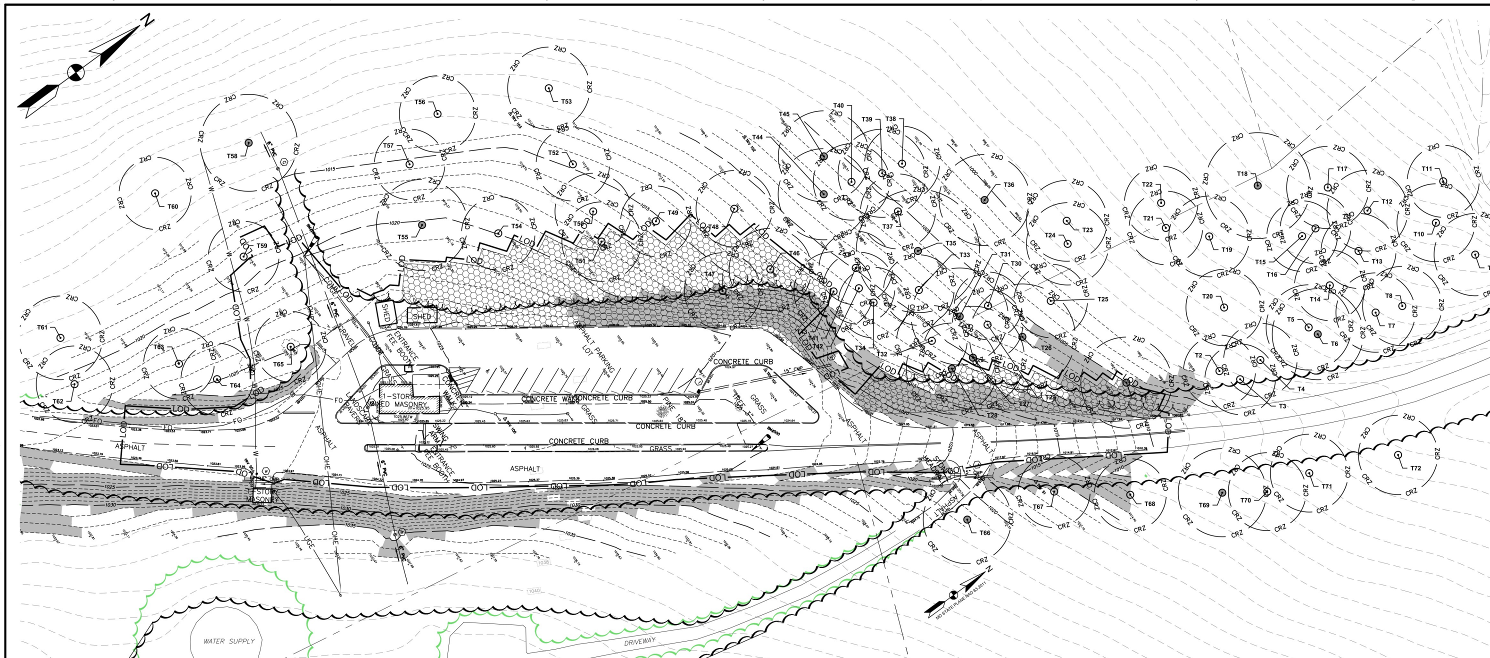
CAD DWG FILE: CW502 - P052200002.DWG
DRAWN BY: AMT
CHECKED BY: AMT

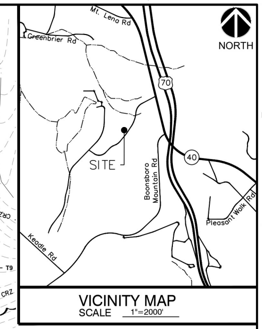
PROJECT NUMBER: 2015.00
DATE: 23 August 2021

SWM NOTES AND DETAILS

CW.502

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\CW502 - P052200002.DWG 8/19/2021 4:35 PM, MERNEST





VICINITY MAP
SCALE 1"=2000'

SCALE: 1"=40'

LEGEND:

- CURB AND GUTTER
- PROPERTY LINE
- W — WATERLINE PAINT MARK
- COMM — UNDERGROUND COMMUNICATION PAINT
- UGE — UNDERGOUND ELECTRIC PAINT
- G — GAS LINE PAINT MARK
- X — FENCE
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- LIGHT POLE
- LOD — LIMIT OF DISTURBANCE
- STEEP SLOPES (15% OR GREATER)
- EX. TREE AND CRITICAL ROOT ZONE
- EX. TREE AND CRITICAL ROOT ZONE FOR 30" + TREES
- TREE LINE
- FORESTED AREA

PROPERTY INFORMATION: (PROJECT LIMITS)

PARCEL NUMBER:	0217
ACCOUNT NUMBER:	003419
ADC MAP/GRID:	MAP 27 / GRID 11K
LIBER/FOLIO:	N/A / N/A
TAX MAP:	N/A
WSSC GRID:	N/A
PROJECT LIMITS:	1.63 ACRES
FEMA MAP	24043C0340D

SOIL DESCRIPTIONS: (MAJOR COMPONENTS ONLY)

HnC—HAZEL CHANNERY SILT LOAM, 8-15% SLOPES: THE HAZEL COMPONENT MAKES UP 85 PERCENT OF THE MAP UNIT. SLOPES ARE 8 TO 15 PERCENT. THE PARENT MATERIAL CONSISTS OF LOAMY RESIDUUM WEATHERED FROM PHYLLITE. DEPTH TO A ROOT RESTRICTIVE LAYER, BEDROCK, LITHIC, IS 20 TO 40 INCHES. THE NATURAL DRAINAGE CLASS IS WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS HIGH. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS LOW. SHRINK-SWELL POTENTIAL IS LOW. THIS SOIL IS NOT FLOODED. IT IS NOT PONDED. THERE IS NO ZONE OF WATER SATURATION WITHIN A DEPTH OF 72 INCHES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 1 PERCENT. NONIRRIGATED LAND CAPABILITY CLASSIFICATION IS 3E. THIS SOIL DOES NOT MEET HYDRIC CRITERIA.

MAPPED SOIL TYPES

SYMBOL	DESCRIPTION	HYDRIC	HIGHLY ERODIBLE
HnC	Hazel channery silt loam, 8-15%	No	No

SUMMARY TABLE (FOR PROJECT LIMITS)

EXISTING FOREST	0.18 ACRES
WETLANDS	0.00 ACRES
FORESTED WETLANDS	0.00 ACRES
STREAM BUFFER	0.00 ACRES
FORESTED STREAM BUFFER	0.00 ACRES
100 YEAR FLOODPLAIN	0.00 ACRES
FORESTED 100 YEAR FLOODPLAIN	0.00 ACRES
LINEAR EXTENTS OF STREAMS	0 LF
AVERAGE WIDTH OF STREAM BUFFER	0 FEET

NARRATIVE:

THIS SECTION OF GREENBRIER STATE PARK IS BOUNDED BY NATIONAL PIKE TO THE EAST, GREENBRIER LAKE TO THE WEST, AND THE VISITOR'S CENTER TO THE SOUTH.

THE SITE MOSTLY CONSISTS OF FOREST TO THE NORTH AND SOUTH, WITH A PAVED PARKING LOT AND ENTRY STATION. THE PROJECT WILL INCLUDE REPLACEMENT OF THE EXISTING ENTRY STATION AND RECONFIGURATION OF THE ENTRY ROAD AND PARKING.

WITHIN THE LOD THERE IS APPROXIMATELY 34,023 SQ. FT. OF PAVED AREA AND 7,988 SQ. FT. OF FORESTED AREA.

TREE TABLE

NO.	COMMON NAME	SCIENTIFIC NAME	D.B.H (INCHES)	CRZ RADIUS (FEET)	CONDITION RATING	CONDITION COMMENTS
T1	**Northern red oak**	***Quercus rubra***	**31**	**46.50**	**GOOD**	
T2	Tulip poplar	*Liriodendron tulipifera*	24.5	36.75	GOOD/AVG.	
T3	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD	
T4	Tulip poplar	*Liriodendron tulipifera*	25	37.50	GOOD	
T5	Tulip poplar	*Liriodendron tulipifera*	29	43.50	GOOD/AVG.	
T6	**Tulip poplar**	***Liriodendron tulipifera***	**31**	**46.50**	**GOOD**	
T7	Tulip poplar	*Liriodendron tulipifera*	27	40.50	GOOD/AVG.	
T8	Tulip poplar	*Liriodendron tulipifera*	27	40.50	AVG.	wound in trunk
T9	Tulip poplar	*Liriodendron tulipifera*	28	42.00	GOOD/AVG.	2 trunks (15, 23.5), some broken limbs
T10	Tulip poplar	*Liriodendron tulipifera*	26.5	39.75	GOOD/AVG.	
T11	Tulip poplar	*Liriodendron tulipifera*	24.5	36.75	GOOD/AVG.	
T12	Chestnut oak	*Quercus prinus*	27.5	41.25	POOR	wound in trunk, almost dead
T13	Tulip poplar	*Liriodendron tulipifera*	25.5	38.25	GOOD	
T14	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD/AVG.	
T15	Northern red oak	*Quercus rubra*	24	36.00	GOOD/AVG.	
T16	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD/AVG.	
T17	Northern red oak	*Quercus rubra*	28	42.00	GOOD/AVG.	
T18	**Tulip poplar**	***Liriodendron tulipifera***	**36**	**54.00**	**GOOD/AVG.**	
T19	Tulip poplar	*Liriodendron tulipifera*	27.5	41.25	GOOD/AVG.	
T20	Tulip poplar	*Liriodendron tulipifera*	26	39.00	GOOD	
T21	Tulip poplar	*Liriodendron tulipifera*	25	37.50	GOOD	
T22	Tulip poplar	*Liriodendron tulipifera*	25	37.50	GOOD	
T23	Northern red oak	*Quercus rubra*	27.5	41.25	GOOD/AVG.	
T24	Mockernut hickory	*Carya tomentosa*	28	42.00	AVG.	Leaning
T25	Tulip poplar	*Liriodendron tulipifera*	25	37.50	GOOD/AVG.	2 trunks (19, 17)
T26	**Tulip poplar**	***Liriodendron tulipifera***	**36**	**54.00**	**GOOD/AVG.**	**4 trunks (13, 15, 24, 18)**
T27	**Tulip poplar**	***Liriodendron tulipifera***	**35**	**52.50**	**AVG.**	**4 trunks (18, 20, 20, 10), dead leader**
T28	**Tulip poplar**	***Liriodendron tulipifera***	**31**	**46.50**	**GOOD/AVG.**	**2 trunks (25, 18)**
T29	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD/AVG.	Some vines
T30	Tulip poplar	*Liriodendron tulipifera*	23	34.50	GOOD/AVG.	3 trunks (9, 11, 18)
T31	**Tulip poplar**	***Liriodendron tulipifera***	**33**	**49.50**	**GOOD/AVG.**	**Double leader**
T32	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD	
T33	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD/AVG.	
T34	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD	
T35	**Tulip poplar**	***Liriodendron tulipifera***	**42**	**63.00**	**GOOD/AVG.**	**3 trunks (25, 24, 24), wound in trunk**
T36	**White oak**	***Quercus alba***	**31**	**46.50**	**GOOD/AVG.**	
T37	Tulip poplar	*Liriodendron tulipifera*	25.5	38.25	GOOD/AVG.	
T38	Tulip poplar	*Liriodendron tulipifera*	25.5	38.25	GOOD	
T39	**Tulip poplar**	***Liriodendron tulipifera***	**30**	**45.00**	**GOOD/AVG.**	**2 trunks (24, 18)**
T40	Tulip poplar	*Liriodendron tulipifera*	26	39.00	GOOD/AVG.	2 trunks (14, 22)
T41	Mockernut hickory	*Carya tomentosa*	25	37.50	GOOD/AVG.	
T42	Tulip poplar	*Liriodendron tulipifera*	24.5	36.75	GOOD	
T43	Tulip poplar	*Liriodendron tulipifera*	27	40.50	GOOD	
T44	**Northern red oak**	***Quercus rubra***	**31**	**46.50**	**GOOD/AVG.**	**2 trunks (25, 18)**
T45	**Tulip poplar**	***Liriodendron tulipifera***	**31**	**46.50**	**GOOD/AVG.**	**2 trunks (21, 23)**
T46	Tulip poplar	*Liriodendron tulipifera*	28	42.00	GOOD/AVG.	2 trunks (25, 12)
T47	Tulip poplar	*Liriodendron tulipifera*	26	39.00	GOOD	
T48	Tulip poplar	*Liriodendron tulipifera*	26	39.00	GOOD/AVG.	
T49	White oak	*Quercus alba*	24	36.00	GOOD/AVG.	
T50	Northern red oak	*Quercus rubra*	26	39.00	GOOD/AVG.	Slightly leaning
T51	Red maple	*Acer rubrum*	27	40.50	GOOD/AVG.	2 trunks (12, 24)
T52	Chestnut oak	*Quercus prinus*	25	37.50	GOOD/AVG.	2 trunks (18, 18)
T53	Northern red oak	*Quercus rubra*	28	42.00	GOOD/AVG.	
T54	Chestnut oak	*Quercus prinus*	25	37.50	GOOD	
T55	**Chestnut oak**	***Quercus prinus***	**31**	**46.50**	**GOOD/AVG.**	**2 trunks (26, 16)**
T56	Northern red oak	*Quercus rubra*	26	39.00	GOOD/AVG.	
T57	Chestnut oak	*Quercus prinus*	24	36.00	AVG.	2 trunks (22, 9), dead leader
T58	**Northern red oak**	***Quercus rubra***	**33**	**49.50**	**GOOD**	**Next to overhead utility line**
T59	Chestnut oak	*Quercus prinus*	24	36.00	GOOD	
T60	Northern red oak	*Quercus rubra*	24.5	36.75	GOOD/AVG.	
T61	Chestnut oak	*Quercus prinus*	28.5	42.75	GOOD/AVG.	
T62	Northern red oak	*Quercus rubra*	26	39.00	GOOD/AVG.	3 trunks (18, 13, 14)
T63	Chestnut oak	*Quercus prinus*	24	36.00	GOOD/AVG.	
T64	Northern red oak	*Quercus rubra*	24.5	36.75	GOOD	
T65	Red maple	*Acer rubrum*	24	36.00	GOOD/AVG.	3 trunks (22, 7, 8)
T66	**Northern red oak**	***Quercus rubra***	**30**	**45.00**	**GOOD/AVG.**	
T67	Northern red oak	*Quercus rubra*	24.5	36.75	GOOD/AVG.	
T68	Northern red oak	*Quercus rubra*	24.5	36.75	GOOD/AVG.	
T69	**Tulip poplar**	***Liriodendron tulipifera***	**30**	**45.00**	**GOOD**	
T70	Tulip poplar	*Liriodendron tulipifera*	26.5	39.75	GOOD/AVG.	
T71	Tulip poplar	*Liriodendron tulipifera*	26.5	39.75	GOOD	
T72	White oak	*Quercus alba*	27	40.50	GOOD/AVG.	

*** BOLD DENOTES SPECIMEN TREE**

FOREST STAND NARRATIVE

THIS MID-SUCCESSIONAL UPLAND FOREST HAS AN AVERAGE FOREST STRUCTURE. THE FOREST IS COMPRISED OF *LIRIODENDRON TULIPIFERA*, QUERCUS RUBRA, QUERCUS PRINUS, QUERCUS ALBA, *ACER RUBRUM*, AND *CARYA TOMENTOSA*. DOMINANT TREES ARE TYPICALLY BETWEEN 10" AND 29.9" DBH. SMALLER TREES (2"-9.9" DBH) AND MEDIUM TREES (6"-9.9" DBH) ARE WELL REPRESENTED. THERE ARE 16 SPECIMEN TREES LOCATED IN THE VICINITY OF THE PROJECT SITE. SEE THE TABLE PROVIDED FOR SIZE AND CONDITION OF SPECIMEN TREES. THE UNDERSTORY IS COMPRISED OF *CARYA TOMENTOSA* AND *ACER RUBRUM*. INVASIVE SPECIES COVER APPROXIMATELY 2% OF THE FOREST FLOOR AND INCLUDE *MICROSTEGIUM VIMINEUM, ROSA MULTIFLORA, RUBUS PHOENICOLASIUS, AND BERBERIS THUNBERGII*. THE TOPOGRAPHY OF THE STAND IS SLOPING DOWNWARDS AWAY FROM THE EXISTING PARKING LOT TO THE NORTH, EAST, AND WEST. ACROSS THE STREET FROM THE EXISTING PARKING LOT, THE SITE SLOPES UPWARDS TO THE SOUTH.

IN A LETTER DATED 10/02/2020, THE MARYLAND DEPARTMENT OF NATURAL RESOURCES NATURAL HERITAGE PROGRAM HAS DETERMINED THAT THE PROJECT SITE FALLS WITHIN THE DRAINAGE TO A PORTION OF BEAVER CREEK WHICH IS KNOW TO SUPPORT THE HIGHLY RARE CHECKERED SCULPIN (COTTUS SP. 7). IN ORDER TO REDUCE THE LIKELIHOOD OF ADVERSE IMPACTS TO THE SCULPIN IT IS IMPORTANT TO ADHERE STRINGENTLY TO ALL APPROPRIATE BEST MANAGEMENT PRACTICES FOR SEDIMENT AND EROSION CONTROL.

THIS PLAN IS FOR NATURAL RESOURCE INVENTORY/EXISTING CONDITIONS/FOREST STAND DELINEATION PLAN PURPOSES ONLY

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the State of Maryland, license number 5381, expiration date 10/22/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

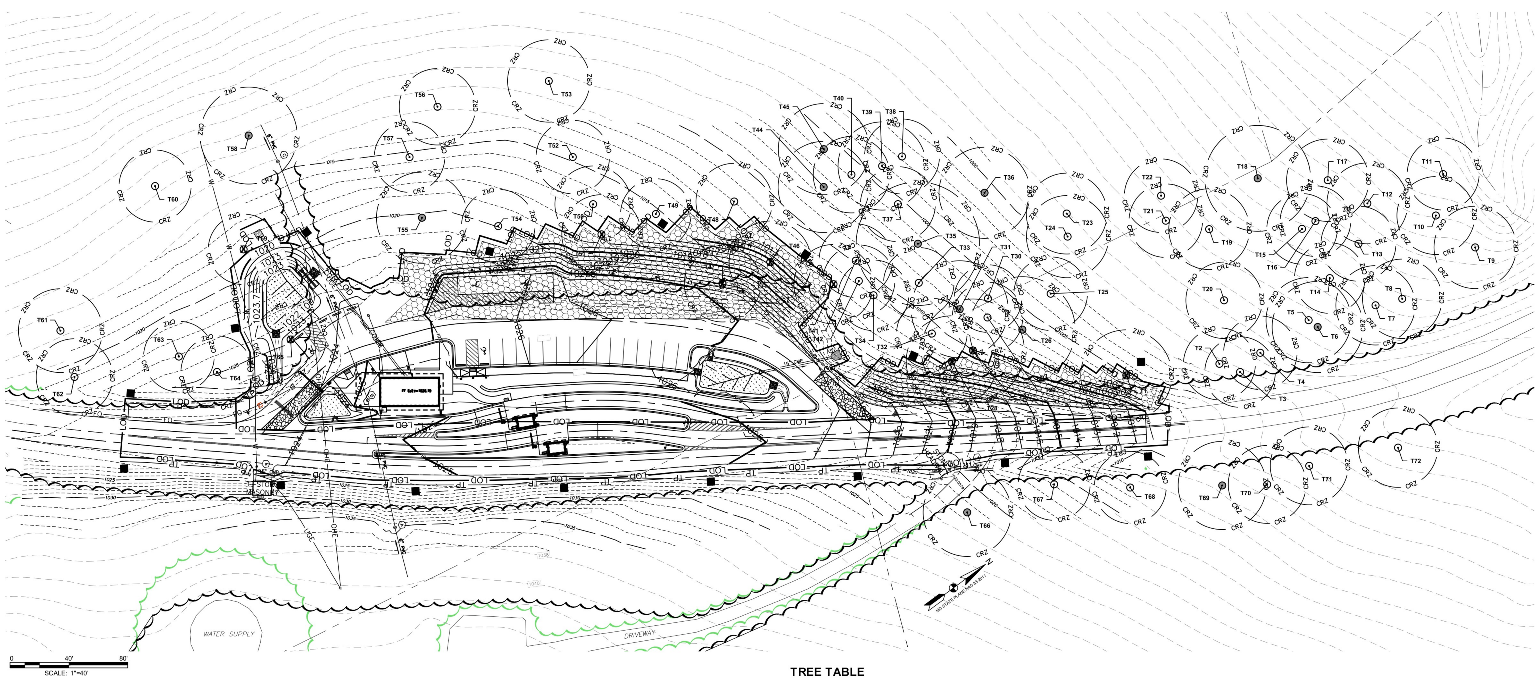
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	LN101 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

NATURAL RESOURCE INVENTORY

LN.101

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\LN101 - P052200002.DWG, 8/19/2021 4:36 PM, MERNEST



LEGEND:

- CURB AND GUTTER
- PROPERTY LINE
- W — WATERLINE PAINT MARK
- COMM — UNDERGROUND COMMUNICATION PAINT
- UGE — UNDERGOUND ELECTRIC PAINT
- G — GAS LINE PAINT MARK
- X — FENCE
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- LIGHT POLE
- LOD — LIMIT OF DISTURBANCE
- EXISTING TREE LINE
- TP — TREE PROTECTION FENCE
- CRZ / TX — EX. TREE AND CRITICAL ROOT ZONE
- CRZ / TX — EX. TREE AND CRITICAL ROOT ZONE FOR 30" + TREES
- CRZ / TX — EX. TREE TO BE REMOVED
- TREE PROTECTION SIGN

PROPERTY INFORMATION: (PROJECT LIMITS)

PARCEL NUMBER:	0217
ACCOUNT NUMBER:	003419
ADC MAP/GRID:	MAP 27 / GRID 11K
LIBER/FOLIO:	N/A / N/A
TAX MAP:	N/A
WSSC GRID:	N/A
PROJECT LIMITS:	1.63 ACRES
FEMA MAP	24043C0340D

TREE TABLE

NO.	COMMON NAME	SCIENTIFIC NAME	D.B.H (INCHES)	CRZ RADIUS (FEET)	CONDITION RATING	CONDITION COMMENTS	DISPOSITION
T1	**Northern red oak**	***Quercus rubra***	**31**	**46.50**	**GOOD**		**REMOVE**
T2	Tulip poplar	*Liriodendron tulipifera*	24.5	36.75	GOOD/AVG.		SAVE
T3	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD		SAVE
T4	Tulip poplar	*Liriodendron tulipifera*	25	37.50	GOOD		SAVE
T5	Tulip poplar	*Liriodendron tulipifera*	29	43.50	GOOD/AVG.		SAVE
T6	**Tulip poplar**	***Liriodendron tulipifera***	**31**	**46.50**	**GOOD**		**SAVE**
T7	Tulip poplar	*Liriodendron tulipifera*	27	40.50	GOOD/AVG.		SAVE
T8	Tulip poplar	*Liriodendron tulipifera*	27	40.50	AVG.	wound in trunk	SAVE
T9	Tulip poplar	*Liriodendron tulipifera*	28	42.00	GOOD/AVG.	2 trunks (15, 23.5), some broken limbs	SAVE
T10	Tulip poplar	*Liriodendron tulipifera*	26.5	39.75	GOOD/AVG.		SAVE
T11	Tulip poplar	*Liriodendron tulipifera*	24.5	36.75	GOOD/AVG.		SAVE
T12	Chestnut oak	*Quercus prinus*	27.5	41.25	POOR	wound in trunk, almost dead	SAVE
T13	Tulip poplar	*Liriodendron tulipifera*	25.5	38.25	GOOD		SAVE
T14	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD/AVG.		SAVE
T15	Northern red oak	*Quercus rubra*	24	36.00	GOOD/AVG.		SAVE
T16	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD/AVG.		SAVE
T17	Northern red oak	*Quercus rubra*	28	42.00	GOOD/AVG.		SAVE
T18	**Tulip poplar**	***Liriodendron tulipifera***	**36**	**54.00**	**GOOD/AVG.**		**SAVE**
T19	Tulip poplar	*Liriodendron tulipifera*	27.5	41.25	GOOD/AVG.		SAVE
T20	Tulip poplar	*Liriodendron tulipifera*	26	39.00	GOOD		SAVE
T21	Tulip poplar	*Liriodendron tulipifera*	25	37.50	GOOD		SAVE
T22	Tulip poplar	*Liriodendron tulipifera*	25	37.50	GOOD		SAVE
T23	Northern red oak	*Quercus rubra*	27.5	41.25	GOOD/AVG.		SAVE
T24	Mockernut hickory	*Carya tomentosa*	28	42.00	AVG.	Leaning	SAVE
T25	Tulip poplar	*Liriodendron tulipifera*	25	37.50	GOOD/AVG.	2 trunks (19, 17)	SAVE
T26	**Tulip poplar**	***Liriodendron tulipifera***	**36**	**54.00**	**GOOD/AVG.**	**4 trunks (13, 15, 24, 18)**	**SAVE**
T27	**Tulip poplar**	***Liriodendron tulipifera***	**35**	**52.50**	**AVG.**	**4 trunks (18, 20, 20, 10), dead leader**	**REMOVE**
T28	**Tulip poplar**	***Liriodendron tulipifera***	**31**	**46.50**	**GOOD/AVG.**	**2 trunks (25, 18)**	**REMOVE**
T29	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD/AVG.	Some vines	SAVE
T30	Tulip poplar	*Liriodendron tulipifera*	23	34.50	GOOD/AVG.	3 trunks (9, 11, 18)	SAVE
T31	**Tulip poplar**	***Liriodendron tulipifera***	**33**	**49.50**	**GOOD/AVG.**	**Double leader**	**SAVE**
T32	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD		SAVE
T33	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD/AVG.		SAVE
T34	Tulip poplar	*Liriodendron tulipifera*	24	36.00	GOOD		SAVE
T35	**Tulip poplar**	***Liriodendron tulipifera***	**42**	**63.00**	**GOOD/AVG.**	**3 trunks (25, 24, 24), wound in trunk**	**SAVE**
T36	**White oak**	***Quercus alba***	**31**	**46.50**	**GOOD/AVG.**		**SAVE**
T37	Tulip poplar	*Liriodendron tulipifera*	25.5	38.25	GOOD/AVG.		SAVE
T38	Tulip poplar	*Liriodendron tulipifera*	25.5	38.25	GOOD		SAVE
T39	**Tulip poplar**	***Liriodendron tulipifera***	**30**	**45.00**	**GOOD/AVG.**	**2 trunks (24, 18)**	**SAVE**
T40	Tulip poplar	*Liriodendron tulipifera*	26	39.00	GOOD/AVG.	2 trunks (14, 22)	SAVE
T41	Mockernut hickory	*Carya tomentosa*	25	37.50	GOOD/AVG.		SAVE
T42	Tulip poplar	*Liriodendron tulipifera*	24.5	36.75	GOOD		SAVE
T43	Tulip poplar	*Liriodendron tulipifera*	27	40.50	GOOD		REMOVE
T44	**Northern red oak**	***Quercus rubra***	**31**	**46.50**	**GOOD/AVG.**	**2 trunks (25, 18)**	**SAVE**
T45	**Tulip poplar**	***Liriodendron tulipifera***	**31**	**46.50**	**GOOD/AVG.**	**2 trunks (21, 23)**	**SAVE**
T46	Tulip poplar	*Liriodendron tulipifera*	28	42.00	GOOD/AVG.	2 trunks (25, 12)	REMOVE
T47	Tulip poplar	*Liriodendron tulipifera*	26	39.00	GOOD		REMOVE
T48	Tulip poplar	*Liriodendron tulipifera*	26	39.00	GOOD/AVG.		SAVE
T49	White oak	*Quercus alba*	24	36.00	GOOD/AVG.		SAVE
T50	Northern red oak	*Quercus rubra*	26	39.00	GOOD/AVG.	Slightly leaning	SAVE
T51	Red maple	*Acer rubrum*	27	40.50	GOOD/AVG.	2 trunks (12, 24)	REMOVE
T52	Chestnut oak	*Quercus prinus*	25	37.50	GOOD/AVG.	2 trunks (18, 18)	SAVE
T53	Northern red oak	*Quercus rubra*	28	42.00	GOOD/AVG.		SAVE
T54	Chestnut oak	*Quercus prinus*	25	37.50	GOOD		SAVE
T55	**Chestnut oak**	***Quercus prinus***	**31**	**46.50**	**GOOD/AVG.**	**2 trunks (26, 16)**	**SAVE**
T56	Northern red oak	*Quercus rubra*	26	39.00	GOOD/AVG.		SAVE
T57	Chestnut oak	*Quercus prinus*	24	36.00	AVG.	2 trunks (22, 9), dead leader	SAVE
T58	**Northern red oak**	***Quercus rubra***	**33**	**49.50**	**GOOD**	**Next to overhead utility line**	**SAVE**
T59	Chestnut oak	*Quercus prinus*	24	36.00	GOOD		REMOVE
T60	Northern red oak	*Quercus rubra*	24.5	36.75	GOOD/AVG.		SAVE
T61	Chestnut oak	*Quercus prinus*	28.5	42.75	GOOD/AVG.		SAVE
T62	Northern red oak	*Quercus rubra*	26	39.00	GOOD/AVG.	3 trunks (18, 13, 14)	SAVE
T63	Chestnut oak	*Quercus prinus*	24	36.00	GOOD/AVG.		SAVE
T64	Northern red oak	*Quercus rubra*	24.5	36.75	GOOD		SAVE
T65	Red maple	*Acer rubrum*	24	36.00	GOOD/AVG.	3 trunks (22, 7, 8)	REMOVE
T66	**Northern red oak**	***Quercus rubra***	**30**	**45.00**	**GOOD/AVG.**		**SAVE**
T67	Northern red oak	*Quercus rubra*	24.5	36.75	GOOD/AVG.		SAVE
T68	Northern red oak	*Quercus rubra*	24.5	36.75	GOOD/AVG.		SAVE
T69	**Tulip poplar**	***Liriodendron tulipifera***	**30**	**45.00**	**GOOD**		**SAVE**
T70	Tulip poplar	*Liriodendron tulipifera*	26.5	39.75	GOOD/AVG.		SAVE
T71	Tulip poplar	*Liriodendron tulipifera*	26.5	39.75	GOOD		SAVE
T72	White oak	*Quercus alba*	27	40.50	GOOD/AVG.		SAVE

*** BOLD DENOTES SPECIMEN TREE**

TREE PROTECTION NOTES

1. CONTRACTOR SHALL HOLD PRE-CONSTRUCTION MEETING WITH OWNER'S REPRESENTATIVE, SEDIMENT CONTROL INSPECTOR, ARBORIST AND CONTRACTOR IN ATTENDANCE. ISA CERTIFIED ARBORIST/LICENSED TREE EXPERT SHALL IMPLEMENT TREE PROTECTION MEASURES AS NOTED ON THIS PLAN PRIOR TO THE START OF CONSTRUCTION. CONTACT INSPECTOR TO INSPECT IMPLEMENTATION OF TREE PROTECTION MEASURES PRIOR TO START OF CONSTRUCTION. CONTACT INSPECTOR FOR FINAL INSPECTION PRIOR TO REMOVAL OF TREE PROTECTION MEASURES.

THIS PLAN IS FOR TREE PROTECTION PURPOSES ONLY

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND · ANDREW EUGENE STREAGLE · No. 3381 · LANDSCAPE ARCHITECT

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the State of Maryland, license number 3381, expiration date 10/22/2022.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

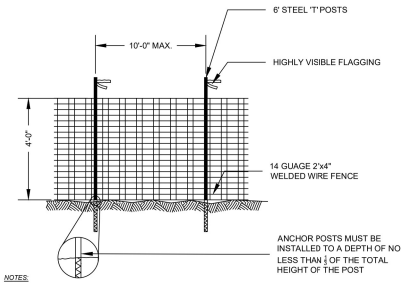
CAD DWG FILE:	LF101 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT
PROJECT NUMBER:	2015.00
DATE:	23 August 2021

TREE
PROTECTION
PLAN

LF.101

DGS No. P-052-200-002 | MDE (SWM + E&S) No. 21-SF-0104

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\LF101 - P052200002.DWG, 8/19/2021 4:37 PM, MERNEST

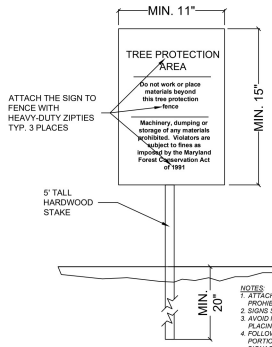


NOTES:

1. *FOREST/TREE PROTECTION DEVICE ONLY.*
2. *RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.*
3. *BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLATION OF DEVICE.*
4. *ROOT DAMAGE SHOULD BE AVOIDED.*
5. *PROTECTIVE SIGNAGE IS REQUIRED.*
6. *TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.*
7. *ALTERNATIVE TREE PROTECTION DEVICE: SUPER SILT FENCE.*
8. *FOLLOWING COMPLETION OF A PARTICULAR PORTION OF THE CONSTRUCTION AREA, FENCING MAY BE REMOVED, RELOCATED, AND REINSTALLED IN NEW CONSTRUCTION AREAS AS INDICATED ON PLAN.*

1 TREE PROTECTION FENCE

NTS 31-07



NOTES:

1. *ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.*
2. *SIGNS SHOULD BE PROPERLY MAINTAINED.*
3. *AVOID INJURY TO ROOTS WHEN PLACING POSTS FOR THE SIGNS.*
4. *FOLLOWING COMPLETION OF A PARTICULAR PORTION OF THE CONSTRUCTION AREA, SIGNAGE MAY BE REMOVED, RELOCATED, AND REINSTALLED IN NEW CONSTRUCTION AREAS.*

2 TREE PROTECTION SIGNAGE

NTS 31-13

TREE PROTECTION SEQUENCE NOTES

PRE-CONSTRUCTION

1. AN ON-SITE PRE-CONSTRUCTION MEETING IS REQUIRED AFTER THE LIMITS OF DISTURBANCE HAVE BEEN STAKED AND FLAGGED AND BEFORE ANY LAND DISTURBANCE TO VERIFY THE LIMITS OF DISTURBANCE AND DISCUSS TREE PROTECTION AND TREE CARE MEASURES. THE PROPERTY OWNER'S REPRESENTATIVE, CONSTRUCTION SUPERINTENDENT, INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFIED ARBORIST THAT WILL IMPLEMENT THE TREE PROTECTION MEASURES, FOREST CONSERVATION INSPECTOR, AND SEDIMENT CONTROL INSPECTOR MUST ATTEND THIS PRE-CONSTRUCTION MEETING.

2. NO LAND DISTURBANCE SHALL BEGIN BEFORE STRESS-REDUCTION MEASURES HAVE BEEN IMPLEMENTED. APPROPRIATE STRESS-REDUCTION MEASURES MAY INCLUDE, BUT ARE NOT LIMITED TO:

A. ROOT PRUNING
B. CROWN REDUCTION OR PRUNING
C. WATERING
D. FERTILIZING
E. VERTICAL MULCHING
F. ROOT AERATION MATTING

MEASURES NOT SPECIFIED ON THE PLAN MAY BE REQUIRED AS DETERMINED BY THE FOREST CONSERVATION INSPECTOR IN COORDINATION WITH THE PROPERTY OWNER'S ARBORIST.

3. AN ISA CERTIFIED ARBORIST MUST PERFORM ALL STRESS REDUCTION MEASURES. IMPLEMENTATION OF THE STRESS REDUCTION MEASURES MUST BE OBSERVED BY THE FOREST CONSERVATION INSPECTOR OR WRITTEN DOCUMENTATION MUST BE SENT TO THE FOREST CONSERVATION INSPECTOR.

4. TEMPORARY TREE PROTECTION DEVICES SHALL BE INSTALLED PER THE TREE PROTECTION PLAN AND PRIOR TO ANY LAND DISTURBANCE. TREE PROTECTION FENCING LOCATIONS MUST BE STAKED AND FLAGGED PRIOR TO THE PRE-CONSTRUCTION MEETING. THE FOREST CONSERVATION INSPECTOR, IN COORDINATION WITH THE SEDIMENT CONTROL INSPECTOR, MAY MAKE FIELD ADJUSTMENTS TO INCREASE THE SURVIVABILITY OF TREES SHOWN AS SAVED ON THE APPROVED PLAN. TEMPORARY TREE PROTECTION FENCING MUST BE CHAIN LINK FENCE (FOUR FEET HIGH).

5. TEMPORARY PROTECTION DEVICES MUST BE MAINTAINED AND INSTALLED BY THE PROPERTY OWNER FOR THE DURATION OF CONSTRUCTION PROJECT AND MUST NOT BE ALTERED WITHOUT PRIOR APPROVAL FROM THE FOREST CONSERVATION INSPECTOR. NO EQUIPMENT, TRUCKS, MATERIALS, OR DEBRIS MAY BE STORED WITHIN THE TREE PROTECTION FENCE AREAS DURING THE ENTIRE CONSTRUCTION PROJECT. NO VEHICLE OR EQUIPMENT ACCESS TO THE FENCED AREA IS PERMITTED. TREE PROTECTION MUST NOT BE REMOVED WITHOUT PRIOR APPROVAL OF FOREST CONSERVATION INSPECTOR.

6. TREE PROTECTION AREA SIGNS SHALL BE INSTALLED AS SHOWN ON THE APPROVED PLANS. THE FOREST CONSERVATION INSPECTOR MAY REQUIRE ADJUSTMENTS OR ADDITIONAL SIGNS.

7. LONG-TERM PROTECTION DEVICES MUST BE INSTALLED PER THE APPROVED PLAN. INSTALLATION WILL OCCUR AT THE APPROPRIATE TIME DURING THE CONSTRUCTION PROJECT. REFER TO THE APPROVED PLAN DRAWING FOR THE LONG-TERM PROTECTION MEASURES TO BE INSTALLED.

DURING CONSTRUCTION

8. PERIODIC INSPECTIONS BY THE FOREST CONSERVATION INSPECTOR WILL OCCUR DURING THE CONSTRUCTION PROJECT. CORRECTIONS AND REPAIRS TO ALL TREE PROTECTION DEVICES, AS DETERMINED BY THE FOREST CONSERVATION INSPECTOR, MUST BE MADE WITHIN THE TIMEFRAME ESTABLISHED BY THE FOREST CONSERVATION INSPECTOR.

POST-CONSTRUCTION

10. AFTER CONSTRUCTION IS COMPLETED, THE PROPERTY OWNER MUST REQUEST A FINAL INSPECTION WITH THE FOREST CONSERVATION INSPECTOR. AT THE FINAL INSPECTION, THE FOREST CONSERVATION INSPECTOR MAY REQUIRE ADDITIONAL CORRECTIVE MEASURES, WHICH MAY INCLUDE:

A. REMOVAL AND REPLACEMENT OF DEAD AND DYING TREES
B. PRUNING OF DEAD OR DECLINING LIMBS
C. SOIL AERATION
D. FERTILIZATION
E. WATERING
F. WOUND REPAIR
G. CLEAN UP OF RETENTION AREAS INCLUDING TRASH REMOVAL

11. AFTER THE FINAL INSPECTION AND COMPLETION OF ALL CORRECTIVE MEASURES THE FOREST CONSERVATION INSPECTOR WILL REQUEST ALL TEMPORARY TREE AND FOREST PROTECTION DEVICES BE REMOVED FROM THE SITE. REMOVAL OF TREE PROTECTION DEVICES THAT ALSO OPERATE FOR EROSION AND SEDIMENT CONTROL MUST BE COORDINATED WITH BOTH THE SEDIMENT CONTROL AND THE FOREST CONSERVATION INSPECTORS. NO ADDITIONAL GRADING, SODDING, OR BURIAL MAY TAKE PLACE AFTER THE TREE PROTECTION FENCING IS REMOVED.

THIS PLAN IS FOR TREE PROTECTION PURPOSES ONLY

DGS No. P-052-200-002	MDE (SWM + E&S) No. 21-SF-0104		

X:\ROCKVILLE\20-0424.001 - GREENBRIER STATE PARK GATE HOUSE\05-CAD\LF102 - P052200002.DWG, 8/19/2021 4:38 PM, MERNEST

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the State of Maryland, license number 3381, expiration date 10/22/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	LF102 - P052200002.DWG
DRAWN BY:	AMT
CHECKED BY:	AMT

PROJECT NUMBER:	2015.00
DATE:	23 August 2021

TREE PROTECTION NOTES & DETAILS

LF.102

PLANT SCHEDULE:

MASTER PLANT SCHEDULE

Symbol	Quantity	Botanical Name	Common Name	Size	Note
Major Trees					
PO	6	Platanus occidentalis	American Sycamore	2" Cal.	B&B Matched
QC	4	Quercus coccinea	Scarlet Oak	2.5" Cal.	B&B
Minor Trees					
CC	7	Cercis canadensis	Eastern Redbud	2" Cal.	B&B/ #15 CG
CF	15	Cornus florida	Flowering Dogwood	2.5" Cal.	B&B
IO	4	Ilex opaca	American Holly	5' Ht.	B&B Full to Base
Evergreen Trees					
PS	1	Pinus strobus	Eastern White Pine	6' Ht.	B&B
Shrubs					
Cp	113	Comptonia peregrina	Sweet Fern	3 Gal.	30" O.C.
Va	45	Vaccinium pallidum	Lowbush Blueberry	24" Ht.	5 Gal.
Vd	10	Viburnum dentatum	Arrowwood Viburnum	36" Ht.	B&B/ #7 CG
Groundcovers and Perennials					
at	795	Asclepias tuberosa	Butterfly Weed	1 Qt.	18" O.C.
ba	15	Baptisia australis	Wild Blue Indigo	1 Qt.	Distribute in Area Shown
cl	272	Chasmanthium latifolium	Inidan woodoats	1 Gal.	18" O.C.
cv	405	Chrysogonum virginianum	Green and gold	3.5" Pots	8" O.C.
de	822	Dryopteris marginalis	Shield Fern	1 Qt.	18" OC
iv	227	Iris versicolor	Iris	1 Gal.	18" O.C.
ss	583	Schizachyrium scoparium	Little Bluestem	1 Gal.	18" O.C.
tc	569	Tiarella cordifolia	Foam Flower	1 Qt.	12" O.C.

PLANTING NOTES:

1. ALL PLANT MATERIAL SHALL CONFORM TO THE SIZES GIVEN IN THE PLANT SCHEDULE AND SHALL BE NURSERY GROWN IN ACCORDANCE WITH THE "AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1-2004" LATEST EDITION PREPARED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, 230 SOUTHERN BUILDING, WASHINGTON, D.C. 20005.

2. CONTRACTOR MUST VERIFY THE CORRECT LOCATION OF ANY EXISTING UTILITIES WHICH ARE UNDERGROUND, PRIOR TO PLANT INSTALLATION. THE CONTRACTOR SHALL CALL MISS UTILITY (1-800-257-7777) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.

3. ALL PLANT BEDS SHALL BE MULCHED WITH A MINIMUM OF 2" AND A MAXIMUM OF 3" LAYER OF MULCH WITHIN TWO DAYS AFTER PLANTING. THIS SHALL BE SHREDDED HARDWOOD BARK, AND SHALL COVER ENTIRELY THE PLANTING BED.

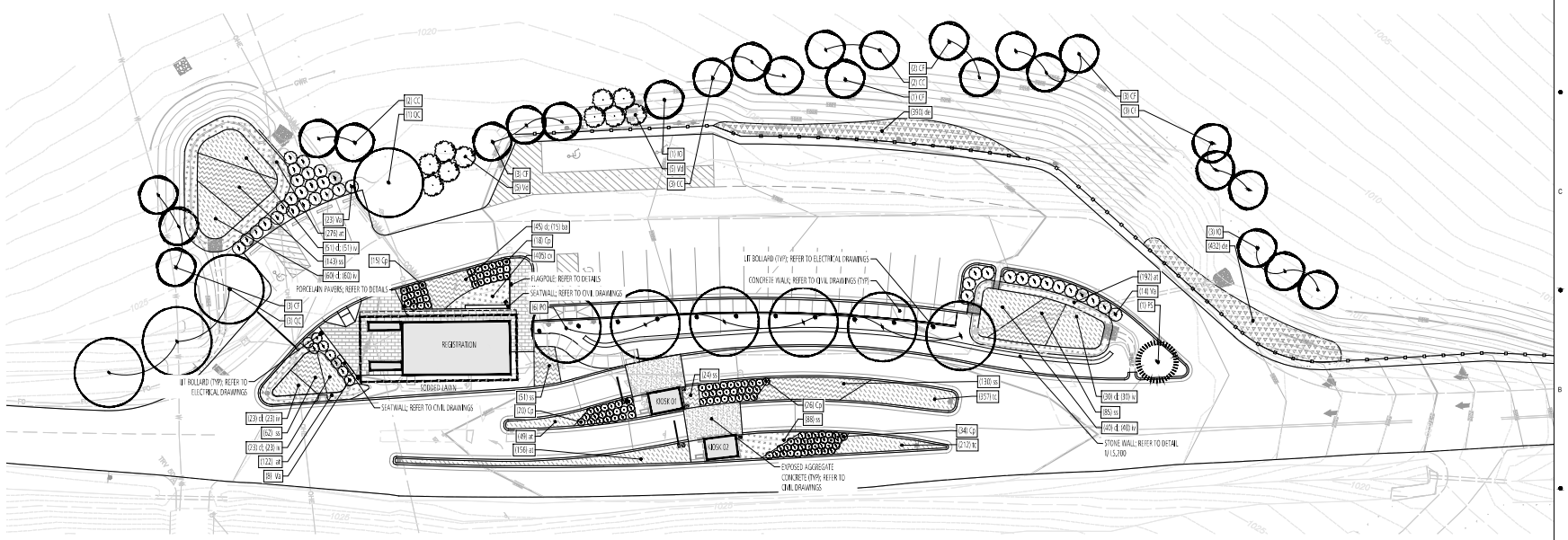
4. ALL PLANTS SHALL BE GUARANTEED TO REMAIN ALIVE AND HEALTHY FOR A PERIOD OF TWO FULL YEARS AFTER INITIAL ACCEPTANCE. ANY REPLACEMENT PLANTS, REQUIREMENTS, ETC., AND METHOD OF PLANTING SHALL COMPLY WITH THE REQUIREMENTS SPECIFIED HEREIN, WITHIN THE SPECIFICATIONS, AND ON THE DRAWINGS.

5. EXISTING SOIL IN PLANTING BED AREAS SHALL BE AMENDED TO A MINIMUM DEPTH OF 12" AND SOIL MIX IN ALL PLANTING BEDS SHALL BE TWO THIRDS EXISTING SOIL, AND ONE THIRD NEW TOP SOIL. SEE DETAIL FOR TREE PITS.

6. PLANT MATERIAL AVAILABILITY MAY VARY AT THE TIME OF CONSTRUCTION. ANY SUBSTITUTIONS ARE TO BE OF EQUIVALENT TYPE AND SIZE (OR LARGER), AND MUST BE APPROVED BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.

7. WHERE THE CONDITION EXISTS THAT THE BALLED AND BURLAPPED TREES ARE DELIVERED IN WIRE BASKETS, THE WIRE BASKETS SHALL BE CUT DOWN THE SIDE OF EACH MESH AND PEELED AWAY FROM THE ROOTBALL OR REMOVED ENTIRELY. NO PORTION OF THE WIRE BASKET SHALL REMAIN INTACT AROUND THE SIDES OF THE ROOTBALL OR EXTEND ABOVE FINISHED GRADE.

8. ANY DAMAGE TO THE EXISTING UTILITIES, BUILDINGS, PAVING, CURBS, WALLS, VEGETATION AND ANY OTHER EXISTING FEATURES NOT DESIGNATED FOR REMOVAL ON THESE PLANS, SHALL BE REPAIRED TO PREVIOUS CONDITION OR REPLACED BY THE CONTRACTOR AT THE HIS OR HER EXPENSE. ALL AREAS DISTURBED DURING CONSTRUCTION ARE TO BE SEEDED PER THE PLANS AND SPECIFICATION UNLESS OTHERWISE NOTED.



1 OVERALL LANDSCAPE PLAN
PLAN

FTLA_Overall Landscape Plan.dwg
SCALE: 1"=20'-0"

0' 10' 10' 20' 40'
SCALE: 1" = 20'

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8095

MECHANICAL ENGINEER
James Posey Associates
11150 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Job Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-861-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
JOHN ANDREA FOURT
No. 1093
LICENSED LANDSCAPE ARCHITECT

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/28/2020.

USING AGENCY APPROVAL
NAME: DATE:
DGS APPROVAL
TITLE:
PROJECT MANAGER: DATE:
ASST. SECRETARY OF FPD&C: DATE:

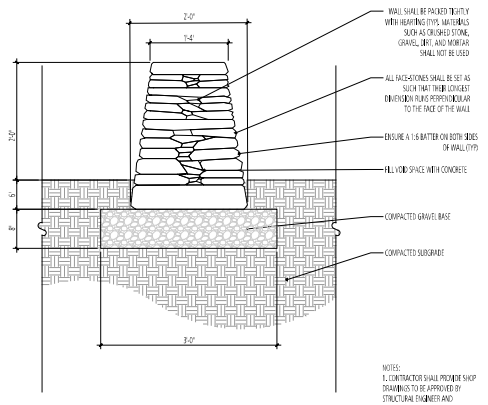
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	FTLA_Overall Landscape Plan.dwg
DRAWN BY:	MSE
CHECKED BY:	LK
DGS PROJECT NUMBER:	P-052-200-002
ZS PROJECT NUMBER:	2015.00
DATE:	23 August 2021

OVERALL
LANDSCAPE PLAN

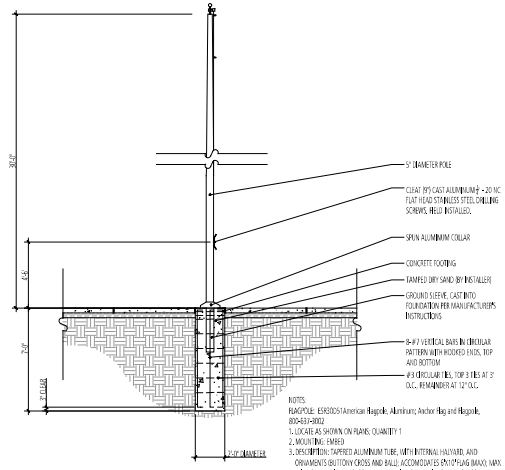
LS.100

SHEET Page 35 of 79



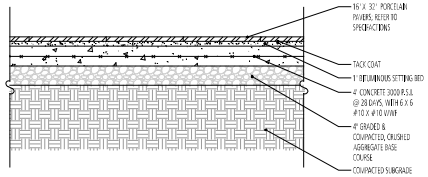
NOTES:
1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO BE APPROVED BY STRUCTURAL ENGINEER AND LANDSCAPE ARCHITECT PRIOR TO BEGINNING ANY WORK.

1 DRY STACKED STONE WALL
SECTION — d-dry stacked stone wall.dwg
SCALE: 1"=1'-0"

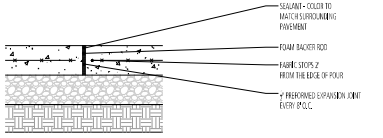


NOTES:
FLAGPOLE: ESR3025 | American Flagpole, Aluminum; Anchor Flag and Flagpole, 800-583-8002
1. LOCATE AS SHOWN ON PLANS; QUANTITY 1
2. MOUNTING: EMBED
3. DESCRIPTION: TAPERED ALUMINUM TUBE, (WITH INTERNAL HALYARD, AND ORNAMENTS (BUTTON CROSS AND BALL) ACCOMODATES (FLY)*5'-6" (MAX); MAX. WIND SPEED WITH FLAG: 90 MPH ; MAX WIND SPEED WITHOUT FLAG: 130 MPH
4. COLOR: SILVER

2 FLAG POLE
SECTION — d-flag pole.dwg
SCALE: 1/4" = 1'-0"

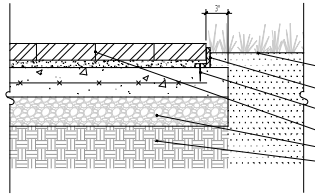


3 PAVER DETAIL
SECTION — d-paver.dwg
SCALE: 1" = 1'-0"

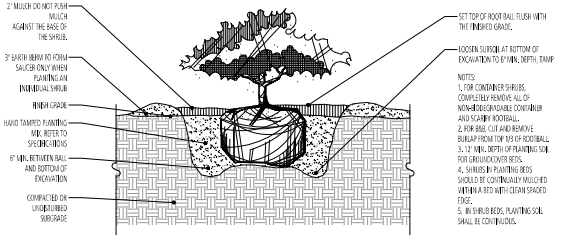


NOTES:
1. INSTALL EXPANSION JOINTS IN PAVING AND PAVEMENT WHERE PAVEMENT ABUTS VERTICAL SURFACES SUCH AS, BUT NOT LIMITED TO WALLS, ROOFTOPS, CURBING, HYDRANTS, OR OTHER VERTICAL SITE FEATURES.

4 EXPANSION JOINT (TYP.)
SECTION — d-expansion_joint.dwg
SCALE: 1" = 1'-0"

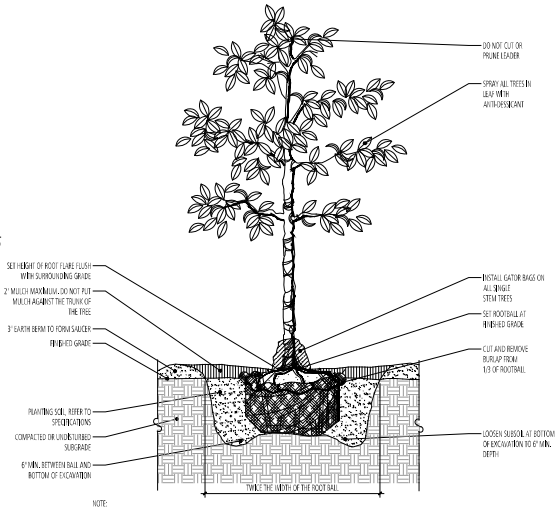


5 EDGE RESTRAINT
SECTION — SCALE: 1-1/2" = 1'-0"



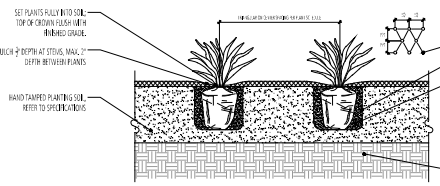
NOTES:
1. FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL OF NON-BIODEGRADABLE CONTAINER AND SCARIFY ROOTBALL.
2. FOR B&B, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOTBALL.
3. 12" MIN. DEPTH OF PLANTING SOIL FOR GROUNDCOVER BEDS.
4. SHRUBS IN PLANTING BEDS SHOULD BE CONTINUALLY MULCHED WITHIN A BED WITH CLEAN SPADED EDGE.
5. IN SHRUB BEDS, PLANTING SOIL SHALL BE CONTINUOUS.

6 SHRUB PLANTING DETAIL
SECTION — d-shrub_planting.dwg
SCALE: 1/2" = 1'-0"



NOTE:
1. REMOVE ANY BROKEN OR DAMAGED BRANCHES WITH CLEAN CUTS.
2. ALL TREES GREATER THAN 3" CALIPER SHOULD BE GATOR BAGGED, RATHER THAN STAKED.
3. IF TREE COMES IN A BASKET, CUT TOP TWO ROWS OF WIRE IN FOUR PLACES AND FOLD DOWN INTO HOLE. CUT BURLAP AWAY FROM THE TRUNK AND FOLD DOWN INTO HOLE AFTER LOCATION AND DEPTH HAVE BEEN APPROVED BY THE LANDSCAPE ARCHITECT.

7 TREE PLANTING DETAIL
SECTION — d-tree_planting.dwg
SCALE: 1/2" = 1'-0"



8 PERENNIAL PLANTING DETAIL
SECTION — d-grndcover_planting.dwg
SCALE: 1/2" = 1'-0"

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Abracht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
900 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANCAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Job Shuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-861-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND — JOAN ANDREA FLOURA — No. 1093 — LICENSED LANDSCAPE ARCHITECT

Professional Certification.
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/28/2023.

USING AGENCY APPROVAL

NAME:	DATE:
DGS APPROVAL	
TITLE:	
PROJECT MANAGER:	DATE:
ASST. SECRETARY OF FPD&C:	DATE:

NO.	REVISION TITLE	DATE
BID AND CONSTRUCTION DOCUMENTS		23 August 2021

CAD DWG FILE:	FTLA_Overall Landscape Plan.dwg
DRAWN BY:	MSE
CHECKED BY:	LK
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

LANDSCAPE DETAILS

LS.200

SHEET Page 36 of 79

DESIGN CRITERIA

A. STRUCTURAL DESIGN SHALL BE IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE FOLLOWING CODE, STANDARDS AND SPECIFICATIONS:
1. INTERNATIONAL BUILDING CODE (IBC) 2018 WITH MODIFICATIONS AND LOCAL AMMENDMENTS FOR WASHINGTON COUNTY, MD.
2. ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
3. ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
4. ACI 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL CONCRETE STRUCTURES.
5. ACI 530-16 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
6. AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.
7. AWS D1.1-17 STRUCTURAL WELDING CODE - STEEL.

B. SUPERIMPOSED DESIGN LOADS:
LIVE LOADS (MIN):
ROOF: 30 PSF
ATTIC: 30 PSF (PLUS WEIGHT OF MECH EQUIPMENT)
FLOOR: 100 PSF
DEAD LOADS:
ROOF: 10 PSF
ATTIC: 10 PSF
ASCE 7 RISK CATEGORY = II
WIND LOADS:
ULTIMATE DESIGN SPEED: 110 MPH
NOMINAL DESIGN SPEED: 90 MPH
EXPOSURE: C
EDGE DISTANCE (a): 6.0 FEET
WIND VELOCITY PRESSURE (C&C)
WALL ZONE A: 26.1 PSF
WALL ZONE C: 20.8 PSF
ROOF ZONE F: -15.85 PSF
WALL ZONE H: -13.67 PSF
INTERNAL PRESSURE COEFFICIENT: ± 0.18
EARTHQUAKE DESIGN DATA:
SEISMIC IMPORTANCE FACTOR: Ie=1.0
DESIGN SPECTRAL RESPONSE ACCELERATION: Ss=0.126
DESIGN SPECTRAL RESPONSE ACCELERATION: S1=0.042
DESIGN SPECTRAL RESPONSE ACCELERATION: SdS=0.134
DESIGN SPECTRAL RESPONSE ACCELERATION: Sd1=0.067
SOIL SITE CLASSIFICATION: TYPE D (ASSUMED)
SEISMIC DESIGN CATEGORY: B
DESIGN BASE SHEAR: 7,700 POUNDS
SEISMIC RESPONSE COEFFICIENT: Cs=0.0896
RESPONSE COEFFICIENT: R=1.5
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
SNOW LOADS:
GROUND SNOW LOAD (Pg): 40 PSF
ROOF DESIGN SNOW LOAD (Ps): 33.6 PSF
SNOW EXPOSURE FACTOR (Ce): 1.0
SNOW THERMAL FACTOR (Ct): 1.2
SNOW LOAD IMPORTANCE FACTOR (Is): 1.0

C. FOUNDATION: SPREAD & WALL FOOTINGS
ALLOWABLE BEARING PRESSURE: 2,000 PSF (CONTRACTOR TO CONFIRM)
REFER TO GEOTECHNICAL REPORT BY SCHNABEL ENGINEERING DATED NOVEMBER 20, 2020, FOR ADDITIONAL REQUIREMENTS.

DEMOLITION

A. REMOVE EXISTING CONSTRUCTION AS SHOWN ON PLANS. SEE PLANS, SECTIONS, AND DETAILS FOR EXTENT OF STRUCTURE TO BE REMOVED.
B. EXISTING STRUCTURAL FRAMING SHALL REMAIN UNLESS SPECIFICALLY NOTED ON PLAN TO BE REMOVED.
C. IF FIELD CONDITIONS DIFFER FROM THOSE SHOWN ON DRAWINGS, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING.
D. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE THE EXISTING BUILDING DURING THE COURSE OF CONSTRUCTION AND IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY AREAS WHERE THE STRUCTURE EXHIBITS DISTRESS OR FAILURE.
E. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE LOCATION OF ANY UTILITIES IN THE IMMEDIATE VICINITY OF CONSTRUCTION SO AS TO PREVENT DAMAGE TO THEM. SHOULD ANY DAMAGE TO SUCH UTILITIES OCCUR THE CONTRACTOR SHALL BE REQUIRED TO REPAIR SUCH DAMAGE AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER.

GENERAL

A. ALL ELEVATIONS ARE REFERENCED TO MSL. SEE CIVIL DWG FOR FINISHED FLOOR ELEV. ALL ELEVATIONS SHOWN ON PLANS ARE REFERENCED TO THIS DATUM UNLESS NOTED.
B. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR START OF CONSTRUCTION.
C. NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED OR OTHERWISE REDUCED IN STRENGTH WITHOUT THE PRIOR NOTIFICATION OF THE STRUCTURAL ENGINEER.
D. THE GENERAL CONTRACTOR SHALL COORDINATE ALL OTHER DISCIPLINES FOR ANY ITEMS WHICH EFFECT THE STRUCTURAL DRAWINGS.
E. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING, GUY WIRES, ETC., WHERE NECESSARY TO ADEQUATELY RESIST ALL CONSTRUCTION LOADS.

FOUNDATION

A. ALL FOUNDATIONS SHALL BEAR ON 4" OF #57 STONE OVER UNDISTURBED SOIL WITH AN ALLOWABLE BEARING CAPACITY SPECIFIED.
B. CONCRETE SHALL NOT BE POURED ON FROZEN GROUND.
C. PROVIDE SHEETING AS REQUIRED TO SUPPORT LATERAL LOADS DURING EXCAVATION. SEE GEOTECHNICAL REPORT FOR SOIL PROPERTIES.
D. FILL ALL VOIDS AND REPLACE DISTURBED SOIL WITH LEAN CONCRETE.
E. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

EXISTING CONSTRUCTION

A. ALL MEMBER SIZES AND DIMENSIONS AND ELEVATIONS OF EXISTING STRUCTURES SHOWN ON THE DRAWINGS ARE OBTAINED FROM AVAILABLE SOURCES, AND ARE NOT GUARANTEED TO BE TRUE AND EXACT. THE CONTRACTOR SHALL VERIFY THESE DIMENSIONS AND ELEVATIONS BY ACTUAL FIELD MEASUREMENTS PRIOR TO FABRICATION OF ANY MATERIALS AND START OF WORK, AND REPORT ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER.
B. THE CONTRACTOR SHALL PROVIDE ALL SHORING, NEEDLING AND BRACING AS REQUIRED TO SUPPORT THE EXISTING STRUCTURE. THE CONTRACTOR SHALL EXAMINE THE EXISTING STRUCTURE TO DETERMINE THE EXTENT OF THE NECESSARY SHORING, NEEDLING, AND UNDERPINNING. THE CAPACITY AND METHOD FOR SHORING AND NEEDLING SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

CONCRETE

A. ALL CONCRETE SHALL CONFORM TO THE PROVISIONS OF ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-LATEST EDITION) AND ACI SPECIFICATIONS FOR STRUCTURAL CONCRETE IN BUILDINGS (ACI 301-LATEST EDITION).
B. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE, HAVING A DESIGN COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS:
- FOOTINGS AND SLAB ON GRADE 4,500 PSI
- TOPPING SLAB 3,500 PSI
C. NO CONCRETE SHALL BE PLACED UNTIL CONCRETE DESIGN MIXES HAVE BEEN SUBMITTED FOR EACH CLASS OF CONCRETE AND HAVE BEEN REVIEWED BY THE ENGINEER.
D. USE A WATER REDUCING ADMIXTURE IN ALL CONCRETE.
E. SLUMP SHALL BE AS REQUIRED BY ACI 302 - LATEST EDITION.
F. AIR ENTRAIN ALL CONCRETE EXPOSED TO WEATHER 5% ±1%.
G. EXCAVATIONS SHALL BE KEPT FREE OF WATER. NO CONCRETE SHALL BE PLACED IN WATER.
H. ALL SLABS ON GRADE SHALL HAVE THICKENINGS, DEPRESSIONS, OPENINGS, ETC. AS SHOWN OR AS REQUIRED BY VARIOUS TRADES.
I. CONTROL JOINTS SHALL OCCUR AT ALL COLUMNS AND SHALL BE NO GREATER THAN 30 FEET APART.
J. RETAIN THE SERVICES OF AN INDEPENDENT TESTING AGENCY TO PERFORM TESTS OF CONCRETE. TAKE A MINIMUM OF 4 CYLINDERS FOR EACH CLASS OF CONCRETE POURED IN ANY ONE DAY. PERFORM ONE SLUMP TEST PER TRUCK LOAD OF CONCRETE.

REINFORCEMENT

A. ALL DEVELOPMENT AND SPLICES OF REINFORCEMENT SHALL CONFORM TO THE PROVISIONS OF ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-LATEST EDITION).
B. REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE NEW BILLET STEEL CONFORMING TO CURRENT REQUIREMENTS OF ASTM A615 GRADE 60. ALL HOOKS SHALL BE STANDARD HOOKS, UNLESS OTHERWISE NOTED.
C. WELDED WIRE FABRIC (W.W.F.) SHALL CONFORM TO ASTM A1064 (LATEST EDITION).
D. ALL WELDED WIRE FABRIC SHALL BE SPLICED SO THAT THE OVERLAP OF THE OUTERMOST CROSS WIRES OF EACH ADJOINING SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRES PLUS TWO INCHES, UNLESS NOTED OTHERWISE.
E. REINFORCING BAR SUPPORTS AND SPACERS SHALL CONFORM TO ACI 315-(LATEST EDITION) DETAILING MANUAL.
F. SHOP DRAWINGS SHOWING ALL NECESSARY SECTIONS AND DETAILS FOR THE PROPER POSITIONING OF ALL REINFORCING STEEL SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW BEFORE FABRICATION OR PLACEMENT OF THE STEEL.
G. ALL REINFORCEMENT SHALL HAVE 3" COVER UNLESS OTHERWISE NOTED.

CONCRETE MASONRY

A. ALL MASONRY SHALL CONFORM TO THE PROVISIONS OF BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530-LATEST EDITION).
B. HOLLOW UNITS: MIN. 3,750 PSI @ 28 DAYS, MIN. 45% SOLID, ASTM C90, GRADE N, NORMAL WEIGHT, fm=2,500 PSI.
C. MORTAR: ASTM C270, TYPE S, MIN. 1800 PSI @ 28 DAYS, 3/8" FULL BEDDING. REMOVE MORTAR PROTRUDING INTO CELL CAVITIES TO BE REINFORCED AND GROUTED.
D. GROUT: ASTM C476, MIN. 2,000 PSI @ 28 DAYS, 3/8" AGGREGATE MAX., 8"-10" SLUMP.
E. REINFORCEMENT:
- HORIZONTAL JOINTS: STD. DUR-O-WALL @ 16" OC. USE PREFABRICATED CORNERS AND TEES @ WALL INTERSECTIONS, OVERLAP DISCONTINUED ENDS AND EXTEND INTO COLUMNS 6" MIN.
- VERTICAL AND HORIZONTAL REINFORCEMENT: ASTM 615, GRADE 60. PROVIDE MIN. #4 BARS TYP @ WALL INTERSECTIONS, EACH SIDE OF OPENINGS, AND @ WALL ENDS. HOOK TOP OF ALL DISCONTINUED BARS, LAP CONT. REINF 48 BAR DIA. UNO.
- USE BAR SPACERS IN EVERY 4TH COURSE WHERE CELLS ARE TO BE GROUTED.
F. PROVIDE CLEANOUT OPENINGS FOR EACH GROUTED CELL.
G. HIGH LIFT GROUTING SHALL BE USED WITH A MAXIMUM POUR OF 12'-0" IN 4' MAX LIFTS WITH ONE HOUR BETWEEN LIFTS. VIBRATE EACH LIFT AND RECONSOLIDATE PREVIOUS LIFT AFTER PLACING NEXT LIFT. VERTICAL CORES TO BE FILLED WITH GROUT SHALL HAVE A MINIMUM CLEAR DIMENSION OF 3"x3".
H. WHERE EXPANSION ANCHOR BOLTS ARE SET IN MASONRY WALLS, FILL BLOCK CELLS WITH GROUT FOR BOLTED COURSE AND TWO COURSES BELOW ANCHOR ELEVATION.
I. PROVIDE LINTELS OVER OPENINGS LARGER THAN 1'-0". FOR OPENINGS UP TO 6'-8" USE PRECAST LINTELS OF ADEQUATE CAPACITY OR A MINIMUM 8"x8" FORMED IN PLACE MASONRY LINTEL W/(2) #5 REBAR AT 2" CLEAR, UNLESS NOTED OTHERWISE. PROVIDE MINIMUM BEARING OF 8" AT EACH JAMB, UNLESS NOTED OTHERWISE.

TIMBER

A. ALL LUMBER FOR JOISTS AND RAFTERS SHALL BE SOUTHERN PINE SELECT STRUCTURAL AND ALL OTHER FRAMING SHALL BE SOUTHERN PINE NO. 1, OR EQUAL WOOD WITH A MAXIMUM MOISTURE CONTENT OF 19%.
B. ENGINEERED LUMBER: PROVIDE PRODUCTS WITH CURRENT EVALUATION REPORTS THAT SHOW COMPLIANCE WITH THE CODE, SUCH AS TRUSJOIST OR APPROVED EQUAL AS FOLLOWS:
- MICROLAM LVL (Fb=2600 PSI, E=1,900,000 PSI)
- PARALAM PSL (Fb=2900 PSI, E=2,000,000 PSI)
C. ALL SHEATHING SHALL COMPLY WITH THE FOLLOWING APA REQUIREMENTS:
- ROOF : 3/4, 48/24 RATED SHEATHING EXTERIOR
- WALLS: 1/2, 32/16 STRUCTURAL I SHEATHING EXPOSURE I
- ATTIC: 3/4, 48/24 RATED SHEATHING EXPOSURE I
D. PROVIDE PANEL SHEATHING CLIPS AT ALL NON-SUPPORTED EDGES OF ROOF SHEATHING.
E. DOUBLE TOP PLATES SHALL BE PROVIDED TO OVERLAP AT CORNERS AND INTERSECTIONS AND SHALL HAVE JOINTS STAGGERED AT LEAST 32". TOP PLATES SHALL BE CONNECTED TOGETHER WITH 16d NAILS @ 16" ON CENTER AND 8-16d NAILS AT EACH SIDE OF JOINT. A SINGLE TOP PLATE IS PERMITTED, PROVIDED THE PLATE IS TIED AT CORNERS AND INTERSECTIONS WITH TIE PLATE TP37 AND (6) 8d NAILS EACH SIDE OF JOINT AND SPLICE BETWEEN ADJACENT PLATES IS TIED WITH TIE PLATE TP312 AND (12) 8d NAILS EACH SIDE OF JOINT.
F. PROVIDE 2 ROWS OF BRIDGING OR BLOCKING AT SPANS GREATER THAN 14FT.
G. WHERE JOIST ORIENTATION IS PARALLEL TO EXTERIOR WALL, PROVIDE BLOCKING AT 4'-0" OC FOR 3 BAYS. WHERE SHEATHING IS NOT CONTINUOUSLY FASTENED TO TOP OR BOTTOM OF JOISTS, PROVIDE LSTA12 BETWEEN BLOCKING MEMBERS.
H. ALL SILL PLATES SHALL BE P.T. AND ANCHORED WITH 5/8" DIA. HEADED ANCHOR BOLTS (ASTM F1554) WITH 7" MIN EMBED AT 4'-0" OC AND WITHIN 12" OF ENDS OR SPLICE, MIN 2 PER SEGMENT. A PROPERLY SIZED NUT AND WASHER SHALL BE TIGHTENED ON EACH BOLT TO THE PLATE.
I. ALL CONNECTORS AND FASTENERS IN CONTACT WITH PRESERVATIVE TREATED WOOD SHALL BE HOT DIP GALVANIZED WITH MIN 1.85 OZ OF ZINC PER SQUARE FOOT. STAINLESS STEEL MAY BE USED INSTEAD OF GALVANIZED.

SPECIAL INSPECTION

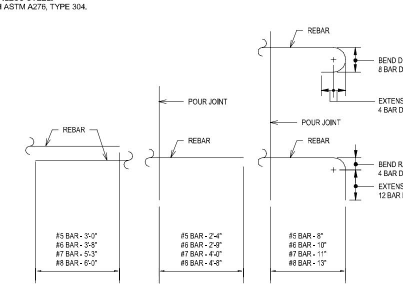
A.	SPECIAL INSPECTIONS	1704.2
B.	STEEL CONSTRUCTION	1705.2
C.	CONCRETE CONSTRUCTION	1705.3
D.	MASONRY CONSTRUCTION	1705.4
E.	WOOD CONSTRUCTION	1705.5
F.	SOILS	1705.6

STRUCTURAL STEEL

A. ALL STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS
B. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
· STRUCTURAL STEEL CHANNELS, ANGLES, BARS & PLATES: A36 HAVING MIN YIELD STRENGTH OF 36 KSI.
BOLTS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS: HIGH STRENGTH BOLTS: ASTM F3125 GRADE 325. ANCHOR BOLTS: ASTM F1554 GRADE 36
C. ALL BOLTS SHALL BE 3/4" DIAMETER, OPEN HOLES 13/16" DIAMETER, UNLESS OTHERWISE SHOWN OR NOTED.
D. WELDING SHALL BE IN ACCORDANCE WITH AWS CODE FOR WELDING IN BUILDING CONSTRUCTION (AWS D1.1) AND SHALL BE PERFORMED BY CERTIFIED WELDERS. ALL WELDS SHALL BE MADE WITH AWS A5.1 E-70XX ELECTRODES.
E. ALL SHOP CONNECTIONS SHALL BE HIGH STRENGTH BOLTED OR WELDED.
F. ALL FIELD CONNECTIONS SHALL BE HIGH STRENGTH BOLTED EXCEPT WHERE DETAILS INDICATE WELDING.
G. NO PENETRATIONS ARE PERMITTED THROUGH STRUCTURAL STEEL MEMBERS UNLESS INDICATED ON STRUCTURAL DRAWINGS OR APPROVED BY ARCHITECT/ENGINEER.
H. APPROVAL OF THE ARCHITECT/ENGINEER SHALL BE MANDATORY FOR THE USE OF CUTTING TORCH IN THE FIELD.
I. ALL EXTERIOR STEEL & CONNECTIONS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL.
J. ALL STEEL DESIGNATED AS "STAINLESS STEEL" SHALL BE IN ACCORDANCE WITH ASTM A276, TYPE 304.

ABBREVIATIONS

∠	ANGLE
@	AT
℄	CENTERLINE
∅	DIAMETER
℘	PLATE
ADD'L	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
ALUM	ALUMINUM
ARCH	ARCHITECTURAL
BOT	BOTTOM
BRG	BEARING
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
DEG	DEGREE
DIA	DIAMETER
DIM	DIMENSION
DTL	DETAIL
DWG(S)	DRAWING(S)
EA	EACH
EE	EACH END
EF	EACH FACE
ELEV	ELEVATION
EMBED	EMBED(MENT)
EQ	EQUAL
EX	EXISTING
EW	EACH WAY
EXP	EXPANSION
FF	FINISHED FLOOR
FTG	FOOTING
FV	FIELD VERIFY
FRP	FIBER REINFORCED PLASTIC
GALV	GALVANIZED
HD	HOLD DOWN
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
JT	JOINT
KSI	KIPS/SQUARE INCH
LLH	LONG LEG HORIZONTAL
LONG	LONGITUDINAL
MANUF	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MRWR	MID RANGE WATER REDUCER
NO	NUMBER
OC	ON CENTER
PCF	POUNDS/CUBIC FOOT
PLWD	PLYWOOD
PSF	POUNDS/SQUARE FOOT
PSI	POUNDS/SQUARE INCH
REINF	REINFORCEMENT
RTU	ROOF TOP UNIT
SCH	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT
SIM	SIMILAR
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
TOS	TOP OF SLAB
TS	TUBE STEEL
TRANSV	TRANSVERSE
TYP	TYPICAL
T/RET WALL	TOP OF RETAINING WALL
T/WALL	TOP OF WALL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/C	WATER TO CEMENT RATIO
W/IN	WITHIN
W/O	WITHOUT
WWF	WELDED WIRE FABRIC



TYPICAL MINIMUM LAP LENGTH

TYPICAL MINIMUM EMBEDMENT LENGTH

TYPICAL HOOK EMBEDMENT LENGTH

NOTE: ALL LENGTHS ARE MINIMUM

	ROOF		
1	Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3 - 8d common (2½" × 0.131") 3-10d box (3"x0.128") 3 - 3" × 0.131" nails 3 - 3" 14 gage staples, 7/16" crown	Toenail each end
	Blocking between rafters or truss not at the wall top plate, to rafter or truss	2 - 8d common (2½" × 0.131") 2 - 3" × 0.131" nails 2 - 3" 14 gage staples	Toenail each end
		2-16d common (3 ½"x0.162") 3-3"x0.131" nails 3-3" 14 gage staples	End nail
	Flat blocking to truss and web filler	16d common (3 ½"x0.162") @6" o.c. 3-3"x0.131" nails @ 6" o.c. 3-3" 14 gage staples @ 6" o.c.	Face nail
2	Ceiling joists to top plate	3-8d common 3-10d box 3-3"x0.131" nails 3-3" 14 gage staples, 7/16" crown	Toenail each joist
3	Ceiling joist not attached to parallel rafter, laps over partitions (no thrust)	3-16d common 4-10d box 4-3"x0.131" nails 4-3" 14 gage staples, 7/16" crown	Face nail
4	Ceiling joists attached to parallel rafter (heel joint)	Table 2308.7.3.1	Face nail
5	Collar tie to rafter	3-10d common 4-10d box 4-3"x0.131" nails 4-3" 14 gage staples, 7/16" crown	Face nail
6	Rafter or roof truss to top plate (Table and section 2308.7.5)	3-10 common 3-16d box 4-10d box 4-3"x0.131" nails	Toenail
7	Roof rafters to ridge valley or hip rafters; or roof rafter to 2" ridge beam	2-16d common 3-10d box 3-3"x0.131" nails 3-3" 14 gage staples, 7/16" crown	End nail
		3-10d common 3-16d box 4-10d box 4-3"x0.131" nails 4- 3" 14 gage staples, 7/16" crown	Toenail
	WALL		
8	Stud to Stud (not at braced wall panels)	16d common	24" o.c. face nail
		10d box 3"x0.131" nails 3" 14 gage staples, 7/16" crown	16" o.c. face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common	16" o.c. face nail
		16d box	12" o.c. face nail
		3"x0.131" nails 3" 14 gage staples, 7/16" crown	12" o.c. face nail
10	Built-up header	16d common	16" o.c. each edge, face nail
		16d box	12" o.c. each edge, face nail
11	Continuous header to stud	4-8d common 4-10d box	Toenail
12	Top plate to top plate	16d common	16" o.c. face nail
		10d box 3"x0.131" nails 3" 14 gage staples, 7/16" crown	12" o.c. face nail
13	Top plate to top plate, at end joints	8-16d common 12-10d box 12-3"x0.131" nails 12-3" 14 gage staples, 7/16" crown	Each side of end joint, face nail (min 24" lap splice length each side of end joint)
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common	16" o.c. face nail
		16d box 3"x0.131" nails 3" 14 gage staples, 7/16" crown	12" o.c. face nail
15	Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common 3-16d box 4-3"x0.131" nails 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail
16	Stud to top or bottom plate	4-8d common 4-10d box 4-3"x0.131" nails 4-3" 14 gage staples, 7/16" crown	Toenail
		2-16d common 3-10d box 3-3"x0.131" nails 3-3" 14 gage staples, 7/16" crown	End nail
17	Top or bottom plate to stud	2-16d common 3-10d box 3-3"x0.131" nails 3-3" 14 gage staples, 7/16" crown	End nail
18	Top plates, laps at corners and intersections	2-16d common 3-10d box 3- 3"x0.131" nails 3-3" 14 gage staples, 7/16" crown	Face nail
19	1" brace to each stud and plate	2-8d common 2-10d box 2- 3"x0.131" nails 2- 3" 14 gage staples, 7/16" crown	Face nail
20	1"x6" sheathing to each bearing	2-8d common 2-10d box	Face nail
21	1"x8" and wider sheathing to each bearing	3-8d common 3-10d box	Face nail
	FLOOR		
22	Joist to sill, top plate, or girder	3-8d common 3-10d box 3-3"x0.131" nails 3-3" 14 gage staples, 7/16" crown	Toenail
23	Rim joist, band joist, or blocking to top plate, sill or other framing below	8d common 10d box 3"x0.131" nails 3" 14 gage staples, 7/16" crown	6" o.c., toenail
24	1"x6" subfloor or less to each joist	2-8d common 2-10d box	Face nail
25	2" subfloor to joist or girder	2-16d common	Face nail
26	2" plank	2-16d common	Each bearing, face nail
27	Built up girders and beams, 2" lumber layers	20d common	32" o.c. face nail at top and
		10d box 3"x0.131" nails 3" 14 gage staples, 7/16" crown	24" o.c. face nail at top and bottom staggered on opposite sides
		And 2-20d common 3-10dbox 3- 3"x0.131" nails 3- 3" 14 gage staples, 7/16" crown	Ends and at each splice, face nail
28	Ledger strip supporting joists or rafters	3-16d common 4-10d box 4-3"x0.131" nails 4-3" 14 gage staples, 7/16" crown	Each joist or rafter, face nail
29	Joist to band joist or rim joist	3-16d common 4-10d box 4-3"x0.131" nails 4-3" 14 gage staples, 7/16" crown	End nail
30	Bridging or blocking tojoist, rafter or truss	2-8d common 2-10d box 2-3"x0.131" nails 2-3" 14 gage staples, 7/16" crown	Each end, toenail
	WOOD STRUCTURAL PANELS, SUB FLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING		
31	3/8"-1/2"	8d common or deformed (subfloor and wall) 8d common or deformed (roof) 2 3/8"x0.131" nail (subfloor and wall)	6" edge 12" intermediate supports
		1 ¾" 16 gage staple, 7/16" crown 2 3/8" x0.131" nail (roof)	4" edge 8" intermediate supports
		1 ¾"16 gage staple, 7/16" crown (roof)	3" edge
32	19/32" –3/4"	8d common 8d deformed	6" edge 12" intermediate supports
		2 3/8"x0.131 nail 2" 16" gage staple, 7/16" crown	4" edge 8" intermediate supports
33	7/8" – 1/4"	10d common 10d deformed	6" edge 12" intermediate supports
	OTHER EXTERIOR WALL SHEATHING		
34	1/2" fiberboard sheathing	1 ½" galvanized roof nail 1 ¼" 16 gage staple with 7/16" or 1" crown	3" edge 6" intermediate supports
35	25/32" fiberboard sheathing	1 ¾" galvanized roof nail 1 ½" 16 gage staple with 7/16" or 1" crown	3" edge 6" intermediate supports
	WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING		
36	¾" and less	8d common 8d deformed	6" edge 12" intermediate supports
37	7/8"-1"	8d common 8d deformed	6" edge 12" intermediate supports
38	1 1/8"-1 ¼"	10d common 10d deformed	6" edge 12" intermediate supports
	PANEL SIDING TO FRAMING		
39	½" or less	6d corrosion-resistant siding 6d corrosion-resistant casing	6" edge 12" intermediate supports
40	5/8"	8d corrosion-resistant siding 8d corrosion-resistant casing	6" edge 12" intermediate supports
	INTERIOR PANELING		
41	¼"	4d casing 4d finish	6" edge 12" intermediate supports
42	3/8"	6d casing 6d finish	6" edge 12" intermediate supports

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd,
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND · RACHEL LYNNE ALBRECHT · No. 23393 · PROFESSIONAL ENGINEER

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed engineer under the laws of the State of Maryland, license number 23393, expiration date 8/25/2022.

GREENBRIER STATE PARK

STATE OF MARYLAND - DEPARTMENT OF GENERAL SEFVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

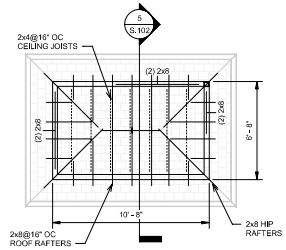
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 AUGUST 2021

CAD DWG FILE:	GSP_S.001.dwg
DRAWN BY:	EB
CHECKED BY:	CCC
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2019-031.01
DATE:	23 AUGUST 2021

STRUCTURAL NOTES

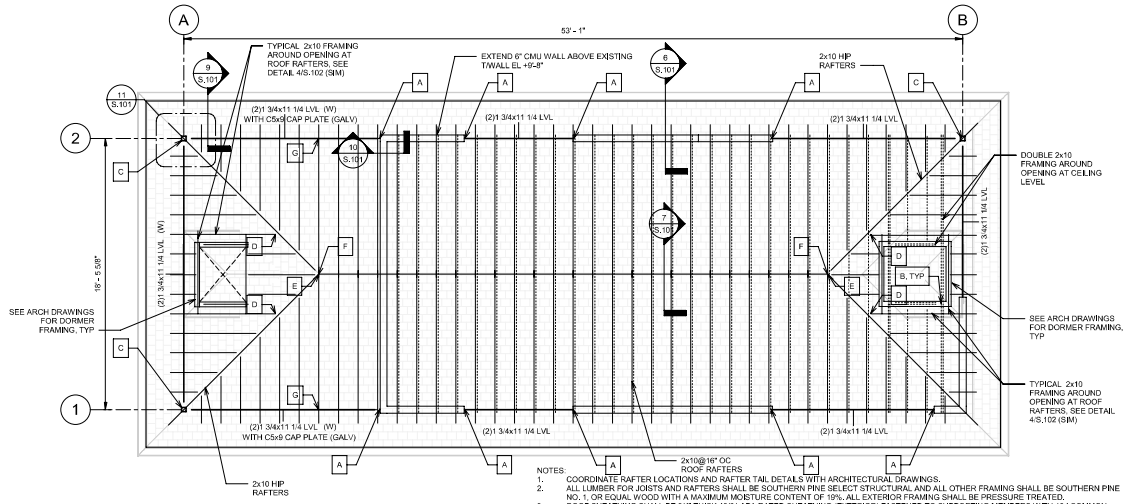
S.001

8/19/2021 12:57:48 PM



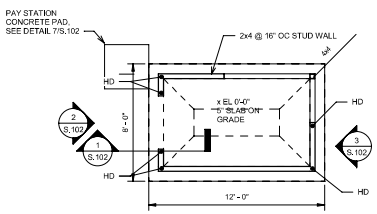
NOTES:
1. COORDINATE RAFTER LOCATIONS AND RAFTER TAIL DETAILS WITH ARCHITECTURAL DRAWINGS.
2. ROOF SHEATHING SHALL BE 3/4" THICK 48/24 APA RATED SHEATHING (EXTERIOR) FASTENED TO SUPPORTING MEMBERS WITH 10d COMMON NAILS AT 6" OC AT PANEL EDGES AND AT 12" OC AT INTERMEDIATE SUPPORTS.

4 ROOF PLAN - CHARGE STATION
1/4" = 1'-0"



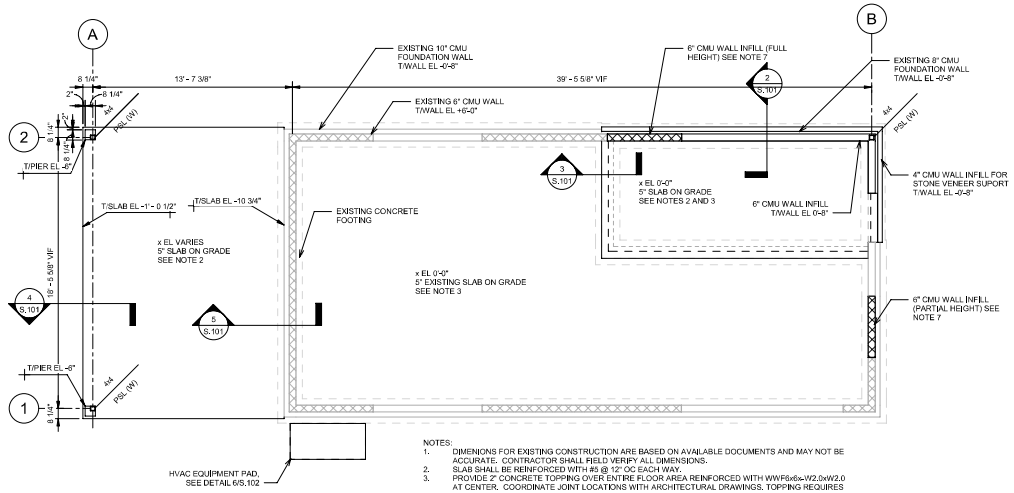
NOTES:
1. COORDINATE RAFTER LOCATIONS AND RAFTER TAIL DETAILS WITH ARCHITECTURAL DRAWINGS.
2. ALL LUMBER FOR JOISTS AND RAFTERS SHALL BE SOUTHERN PINE SELECT STRUCTURAL AND ALL OTHER FRAMING SHALL BE SOUTHERN PINE NO. 1, OR EQUAL WOOD WITH A MAXIMUM MOISTURE CONTENT OF 19%. ALL EXTERIOR FRAMING SHALL BE PRESSURE TREATED.
3. ROOF SHEATHING SHALL BE 3/4" THICK 48/24 APA RATED SHEATHING (EXTERIOR) FASTENED TO SUPPORTING MEMBERS WITH 10d COMMON NAILS AT 6" OC AT PANEL EDGES AND AT 12" OC AT INTERMEDIATE SUPPORTS.
4. WOOD CONNECTORS SHALL BE BY SIMPSON AS FOLLOWS:
   - A: MBHA3.56/11.25 - MASONRY TOP FLANGE HANGER, GROUT WALL SOLID AT ANCHORS
   - B: LUS28-2 - FACEMOUNT HANGER
   - C: ECCLQ444 - COLUMN CAP (3) SDS25212 TOESCREWS
   - D: HRC22 - HIP-RIDGE CONNECTOR
   - E: LS50 - RIDGE TO RAFTER, EACH FACE SEE DETAIL 12/S1.01
   - G:

2 ROOF PLAN - REGISTRATION STATION
1/4" = 1'-0"



NOTES:
1. SLAB SHALL BE REINFORCED WITH #5 @ 12" OC EACH WAY.
2. PROVIDE 5/8" ANCHOR BOLTS AT 48" OC AND WITHIN 12" OF END, MIN 2 PER SEGMENT, 7" MIN EMBED
3. WALL SHEATHING SHALL BE 1/2" THICK 32/16 STRUCTURAL I SHEATHING (EXPOSURE I) FASTENED TO SUPPORTING MEMBERS WITH 8d COMMON NAILS AT 6" OC AT ALL PANEL EDGES AND AT 12" OC AT INTERMEDIATE SUPPORTS.

3 FOUNDATION PLAN - CHARGE STATION
1/4" = 1'-0"



NOTES:
1. DIMENIONS FOR EXISTING CONSTRUCTION ARE BASED ON AVAILABLE DOCUMENTS AND MAY NOT BE ACCURATE. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. SLAB SHALL BE REINFORCED WITH #5 @ 12" OC EACH WAY.
3. PROVIDE 2" CONCRETE TOPPING OVER ENTIRE FLOOR AREA REINFORCED WITH WWF6x6x-W2.0xW2.0 AT CENTER. COORDINATE JOINT LOCATIONS WITH ARCHITECTURAL DRAWINGS. TOPPING REQUIRES A ROUGH, OPEN SURFACE FOR BOND. THE ROUGH SURFACE CAN BE CREATED DURING BASE SLAB INSTALLATION BY BROOMING OR RAKING THE TOP SURFACE, OR BY MECHANICAL AND ABRASIVE METHODS SUCH AS SANDBLASTING JUST PRIOR TO TOPPING INSTALLATION.
4. ALL NEW MASONRY SHALL BE TOOTHED IN WITH ADJACENT EXISTING MASONRY.
5. ALL CMU WALLS SHALL BE GROUTED SOLID.
6. (W) DENOTES WOLMANIZED ENGINEEERED LUMBER.
7. JOINT BETWEEN NEW AND EXISTING TO BE SATURATED, SURFACE DRY BEFORE MORTAR INSTALLATION. IF REINFORCING IS ENCOUNTERED IN EXISTING CMU, DRILL AND EPOXY BARS TO MATCH EXISTING IN WALL ABOVE (4" MIN EMBED).

FOUNDATION PLAN - REGISTRATION STATION

TRUE NORTH

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, WS-12
Baltimore, MD 21224
410-522-9870

LANDSCPE ARCHITECT
Fluorn Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-526-8295

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-685-2545

COST ESTIMATOR
Foralla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
RACHEL LYNNE ALBRIGHT
No. 23393
PROFESSIONAL ENGINEER

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed engineer under the laws of the State of Maryland, license number 23393, expiration date 6/25/2022.

GREENBRIER STATE PARK

STATE OF MARYLAND - DEPARTMENT OF GENERAL SEFVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

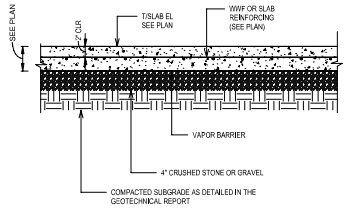
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 AUGUST 2021

CAD DWG FILE:	GSP_S.100.dwg
DRAWN BY:	EB
CHECKED BY:	CCC
DGS PROJECT NUMBER:	P-952-000-002
ZS PROJECT NUMBER:	2019-031.01
DATE:	23 AUGUST 2021

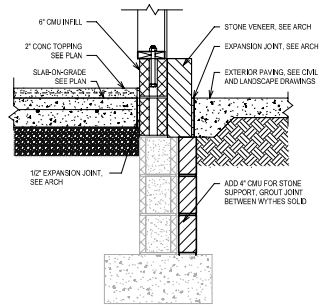
STRUCTURAL PLANS

S.100

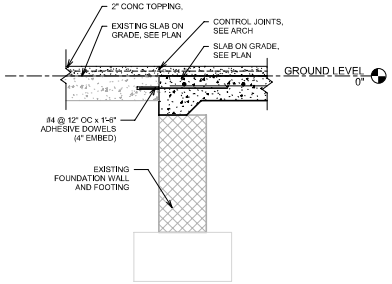
8/19/2021 12:57:59 PM



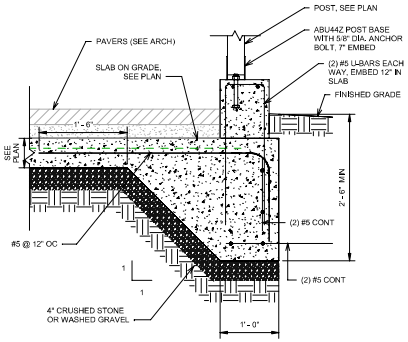
1 S.101 SLAB-ON-GRADE
1" = 1'-0"



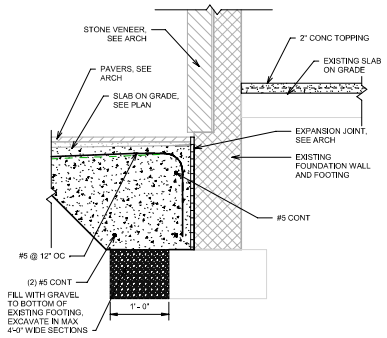
2 S.101 EXTERIOR WALL FOOTING
1" = 1'-0"



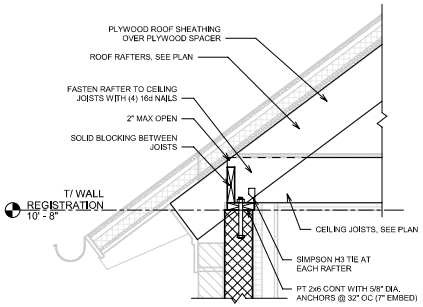
3 S.101 FOUNDATION SECTION AT INTERIOR
1" = 1'-0"



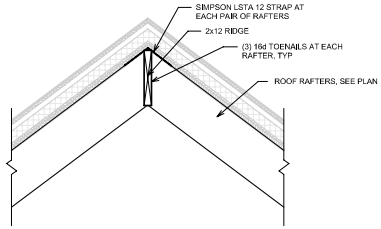
4 S.101 TURN-DOWN SLAB - REGISTRATION
1" = 1'-0"



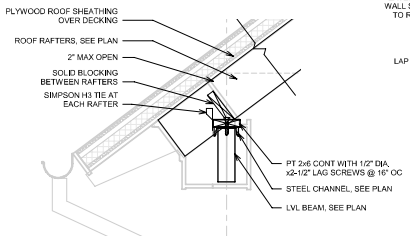
5 S.101 FOUNDATION SECTION AT EXTERIOR
1" = 1'-0"



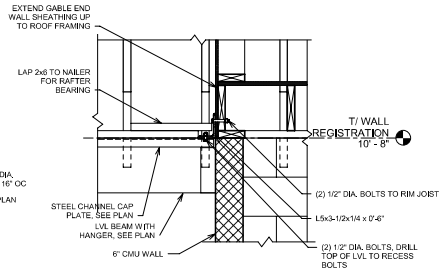
6 S.101 ROOF SECTION - REGISTRATION
1" = 1'-0"



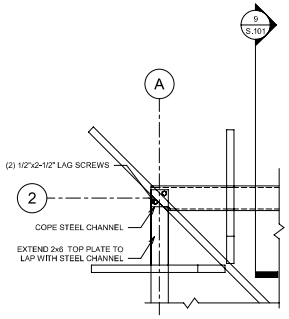
7 S.101 RIDGE SECTION - REGISTRATION
1" = 1'-0"



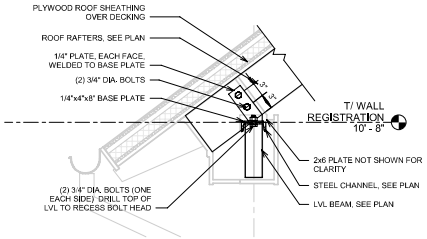
9 S.101 ROOF SECTION
1" = 1'-0"



10 S.101 ROOF DETAIL 1
1" = 1'-0"



11 S.101 ROOF DETAIL 2
1" = 1'-0"



12 S.101 ROOF SECTION DETAIL
1" = 1'-0"

8/19/2021 12:57:51 PM

Z|S

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, NS-12
Baltimore, MD 21224
410-522-9870

LANDSCPE ARCHITECT
Fluorie Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-326-8296

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-685-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
RAQUEL LYNNE ALBRIGHT
No. 23393
PROFESSIONAL ENGINEER

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed engineer under the laws of the State of Maryland, license number 23393, expiration date 6/25/2022.

GREENBRIER STATE PARK

STATE OF MARYLAND - DEPARTMENT OF GENERAL SEFVICES

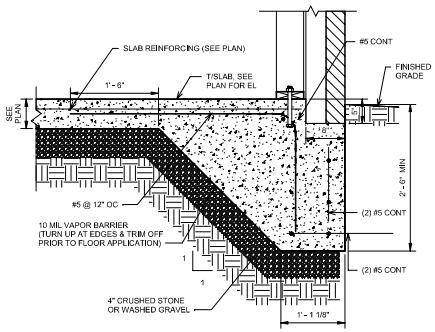
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 AUGUST 2021

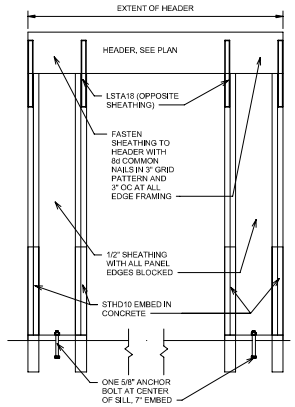
CAD DWG FILE:	GSP_S.101.dwg
DRAWN BY:	EB
CHECKED BY:	CCC
DGS PROJECT NUMBER:	P-562-000-002
Z|S PROJECT NUMBER:	2019-031.01
DATE:	23 AUGUST 2021

STRUCTURAL DETAILS

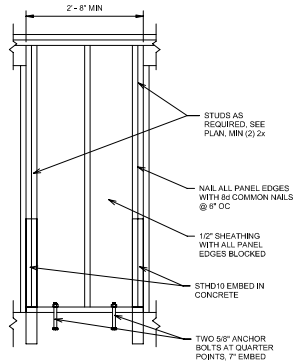
S.101



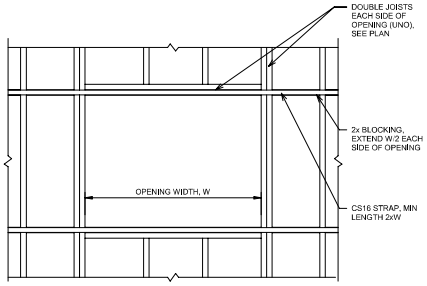
1 S.102 TURN-DOWN SLAB - CHARGE
1" = 1'-0"



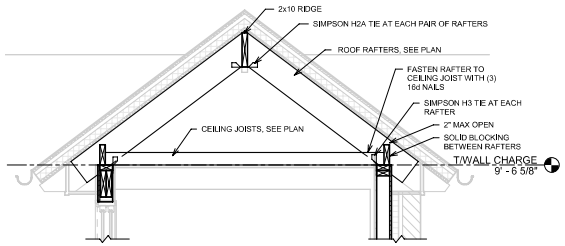
2 S.102 PORTAL FRAME WITH HOLDOWNS
3/4" = 1'-0"



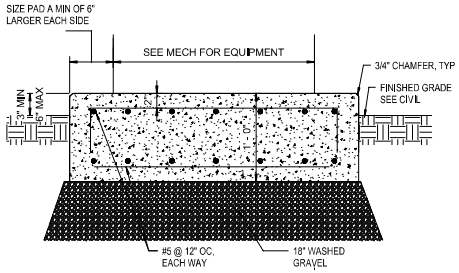
3 S.102 ALTERNATE BRACED WALL PANEL
3/4" = 1'-0"



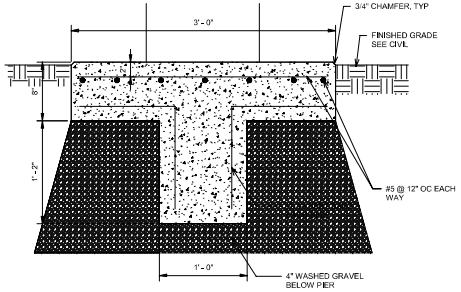
4 S.102 OPENING IN ROOF
3/4" = 1'-0"



5 S.102 ROOF SECTION - CHARGE
3/4" = 1'-0"



6 S.102 EXTERIOR EQUIPMENT PAD
1 1/2" = 1'-0"



7 S.102 EXTERIOR PAY STATION PAD
1 1/2" = 1'-0"

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, NS-12
Baltimore, MD 21224
410-522-9870

LANDSCPE ARCHITECT
Fluorescent Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8295

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-685-2545

COST ESTIMATOR
Foralla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2020 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

STATE OF MARYLAND
RACHEL LYNNE ALBRIGHT
No. 23393
PROFESSIONAL ENGINEER

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed engineer under the laws of the State of Maryland, license number 23393, expiration date 8/25/2022.

GREENBRIER STATE PARK

STATE OF MARYLAND - DEPARTMENT OF GENERAL SEFVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 AUGUST 2021

CAD DWG FILE:	GSP_S.102.dwg
DRAWN BY:	EB
CHECKED BY:	CCC
DGS PROJECT NUMBER:	P-562-000-002
Z|S PROJECT NUMBER:	2019-031.01
DATE:	23 AUGUST 2021

STRUCTURAL DETAILS

S.102

8/19/2021 12:57:54 PM

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
&	AND
<	ANGLE(S)
@	AT
A/C	AIR CONDITIONING
AB	ANCHOR BOLT
ABV	ABOVE
ACM	ALUMINUM COMPOSITE MATERIAL
ACOU	ACOUSTICAL
ACP	ACOUSTICAL CEILING PANEL
ADA	AMERICAN (WITH) DISABILITIES ACT
ADD	ADDENDUM, ADDITION
ADD'L	ADDITIONAL
ADJ	ADJUST, ADJACENT
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
ALN	(ALIGN
ALT	ALTERNATE
ALUM	ALUMINUM
ANC	ANCHOR
APPR	APPROVE, APPROVED
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECTURAL
ASSY	ASSEMBLY
ATC	ACOUSTICAL TILE CEILING
ATS	ABOVE TOP OF SLAB
ATTEN	ATTENUATION
AUTO	AUTOMATIC
AVE	AVENUE
AVG	AVERAGE
BAL	BALANCE
BD	BOARD
BLDG	BUILDING
BLK(G)	BLOCK(ING)
BLVD	BOULEVARD
BM	BEAM
BOS	BOTTOM OF STEEL
BOT(T)	BOTTOM
BRG	BEARING
BRK	BRICK
BTWN	BETWEEN
CAB	CABINET
CAT	CATEGORY
CCT	CLOSED CAPTION TV
CER	CERAMIC
CFM	CUBIC FEET PER MINUTE
CHAM	CHAMFER
CIP	CAST IN PLACE CONCRETE
CIR	CIRCLE
CJ	CONTROL JOINT, CONSTRUCTION JOINT
CL	CENTERLINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR, CLEARANCE
CMU	CONCRETE MASONRY UNIT(S)
COL	COLUMN
CONC	CONCRETE
CONF	CONFERENCE
CONST(R)	CONSTRUCTION
CONT	CONTINUED, CONTINUOUS
CONTR	CONTRACT, CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
CU FT	CUBIC FEET
CW	CURTAIN WALL
CYD	CUBIC YARD
DBL	DOUBLE
DEG / °	DEGREE
DEMO	DEMOLISH
DEPT	DEPARTMENT
DEV	DEVELOP
DIA / Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIV	DIVISION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL(S)
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
E	EAST
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
ENGR	ENGINEER
ENT	ENTRANCE
EO	EDGE OF
EOS	EDGE OF SLAB
EQ	EQUAL, EQUALLY
EQUIP	EQUIPMENT
ESH	EMERGENCY SHOWER HEAD
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXH	EXHAUST
EXP	EXPOSED
EXST	EXISTING
EXT	EXTERIOR, EXTERNAL

ABBREVIATION	DESCRIPTION
F	FAHRENHEIT
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FAMAB	FLUID-APPLIED MEMBRANE AIR BARRIER
FB	FLOOR BOX
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIN	FINISH
FLR	FLOOR
FLUOR	FLUORESCENT
FMI	FOR MORE INFORMATION
FO	FACE OF
FPL	FIREPLACE
FT	FEET, FOOT
FTG	FOOTING
FURR	FURRING
GA	GAGE/GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GEN	GENERAL
GL	GLASS, GLAZING
GRD	GROUND
GYP	GYPSUM
HB	HOSE BIBB
HC	HOLLOW CORE
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HO	HOLD OPEN (DOOR HARDWARE)
HORIZ	HORIZONTAL
HQ	HEADQUARTERS
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING VENTILATING AIR CONDITIONING
HWY	HIGHWAY
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIMENSION
IMPR	IMPREGNATED
IN	INCH(ES)
INCAN	INCANDESCENT
INCL	INCLUD(ED) (ING)
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
JAN	JANITOR
JB	JUNCTION BOX
JST	JOIST
JT	JOINT
L	LONG
LA	LANDSCAPE ARCHITECT
LAB	LABORATORY
LAM	LAMINATE(D)
LAV	LAVATORY
LB(S)	POUND(S)
LED	LIGHT EMITTING DIODE
LEV(S)	LEVEL(ING)
LF	LINEAR FEET
LG	LARGE
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LT(S)	LIGHT(S)
LTG	LIGHTING
MAINT	MAINTENANCE
MANF(D)	MANUFACTURE(D)
MAT	MATERIAL
MAX	MAXIMUM
MDF	MEDIUM DENSITY FIBERBOARD
ME	MECHANICAL ENGINEER
MECH	MECHANICAL
MEZZ	MEZZANINE
MH	MANHOLE
MIL	MILLIMETER
MIN	MINIMUM, MINUTE
MIR	MIRROR
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MPL	METAL PANEL
MSNRY	MASONRY
MTD	MOUNTED
MTL	METAL
MULL	MULLION
N	NORTH
NA	NOT APPLICABLE
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NO / #	NUMBER
NOA	NOTICE OF ACEPTANCE
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OFO	OUTSIDE FACE OF
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OPP HND	OPPOSITE HAND
OZ	OUNCE

ABBREVIATION	DESCRIPTION
%	PERCENT
	PER
PAR	PARALLEL
PENTR	PENETRATION
PEP	POURED IN PLACE
PERP	PERPENDICULAR
PLAM	PLASTIC LAMINATE
PLMB	PLUMBING
PLS	PLASTER
PLT / PL	PLATE
PLYWD	PLYWOOD
PNT / PTD	PAINTED
PR	PAIR
PREFAB	PREFABRICATED
PREFIN	PREFINISH(ED)
PROJ	PROJECT
PROP	PROPERTY
PSF	POUNDS / SQUARE FOOT
PSI	POUNDS / SQUARE INCH
PT	PRESSURE TREATED
±	PLUS OR MINUS
QT	QUARRY TILE
QTY	QUANTITY
R	RADIUS, RISER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN, ROUND
REBAR	REINFORCING BAR
REF	REFERENCE
REFR	REFRIGERATOR
REG	REGULAR
REINF	REINFORCE(D) (ING)
REQ	REQUIRED
RES	RESILIENT
REV	REVISE, REVISION
RGD	RIGID
RL	RAIL
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
RX	REMOVE EXISTING
S	SOUTH
SASAB	SELF-ADHERED SHEET AIR BARRIER
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT, STOREFRONT
SHT	SHEET
SHTHG	SHEATHING
SIL	SILICONE
SIM	SIMILAR
SM	SMALL
SMK	SMOKE RATING REQUIRED
SPCG	SPACING
SPEC	SPECIFICATIONS
SPKR	SPEAKER
SQ	SQUARE
SS	STAINLESS STEEL
ST	STREET
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STL	STEEL
STN	STAINED
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPEND(ED)
SW	SWITCH
SX	SALVAGE EXISTING
SYM	SYMMETRICAL
SYS	SYSTEM
T	TOILET
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T.O.	TOP OF
TBD	TO BE DETERMINED
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
THK	THICK
THR	THRESHOLD
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOP	TOP OF PARAPET
TOS	TOP OF STEEL
TOT	TOTAL
TR	TREAD
TRANS	TRANSVERSE
TV	TELEVISION
TYP	TYPICAL
UC	UNDER CUT
UL	UNDERWRITERS LAB
UNO	UNLES NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WIDE, WIDTH, WEST
W/	WITH
W/O	WITHOUT
WC	WATERCLOSET
WD	WOOD
WH	WATER HEATER
WP	WEATHERPROOF
WR	WASTE RECEPTICAL
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD(S)	YARD(S)
Z|S	ZIGER|SNEAD

MATERIALS

CONCRETE
REINFORCED CONCRETE
CMU
CMU (ELEVATION)
ROCK FILL
EARTH
ALUMINUM
STEEL/METAL
BATT INSULATION
RIGID INSULATION
GWB, STUCCO, PLS
WOOD
BRICK (CUT)
BRICK (ELEVATION)
GLASS (ELEVATION)
BLOCKING - BS - CONTINUOUS
SHIM (S) - NON-CONTINUOUS
EXISTING TO REMAIN

SYMBOLS

REVISION MARK
REVISION CLOUD & REVISION SYMBOL

NORTH ARROW
PROJECT NORTH
TRUE NORTH

BUILDING SECTION MARK
D6 SM A0.545 — DETAIL NO., SHEET NO.
EXTENT OF SECTION CUT
D6 SIM A0.545 — SIMILAR DETAIL

WALL SECTION MARK
D6 SM A0.545 — SIMILAR DETAIL, DETAIL NO., SHEET NO.
EXTENT OF SECTION CUT

DETAIL CALLOUT MARK
G9 / A.806 — DETAIL NO., SHEET NO.
EXTENT OF DETAIL CALL OUT

EXTERIOR ELEVATION MARK
A2 A.302 — DETAIL NO., SHEET NO.

INTERIOR ELEVATION MARK
D4 A.721 A2 B9 — SHEET NO., DETAIL NO.

COLUMN GRID
COL — EXIST. COLUMN LINE DESIGNATION
EXIST. COLUMN GRID LINE
COL — COLUMN LINE DESIGNATION
COLUMN GRID LINE

ELEVATION DATUM
EL. 365.89' (-01 - SECOND FLOOR)

SPOT ELEVATION
OR

ROOM / AREA DESIGNATION
ROOM NAME ### 150 SF — ROOM / AREA NAME, ROOM NUMBER, NET SQUARE FEET

DOOR / OPENING DESIGNATION
DOOR — DOOR / OPENING NO.

WINDOW TYPE DESIGNATION
B1 — WINDOW MARK

GLAZING TYPE DESIGNATION
G — GLAZING MARK

WALL TYPE DESIGNATION
S3A — WALL TYPE MARK

KEYNOTE MARK
— KEYNOTE SPECIFICATION NO. & DESCRIPTION

PLAN NOTE MARK
1 — PLAN NOTE NO. (DEMO WORK)
7 — PLAN NOTE NO. (NEW WORK)

WALL MOUNTED ITEM DESIGNATION
MB1 INCLUDES:
MB: MARKER BOARD
EMB: ELECTRONIC MARKER BOARD
BB: BULLETIN BOARD
FEC: FIRE EXTINGUISHER CABINET

SIGN DESIGNATION
SIGN — KEY NOTE NO.

GENERAL PROJECT NOTES

1. THESE PROJECT NOTES APPLY TO ARCHITECTURAL SHEETS.
2. GENERAL NOTES ON ARCHITECTURAL SHEETS APPLY ONLY TO THE SHEET ON WHICH THEY APPEAR.
3. PLAN NOTES ON ARCHITECTURAL SHEETS APPLY ONLY TO THE SHEET ON WHICH THEY APPEAR.
4. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT JOB SITE PRIOR TO BIDDING AND START OF CONSTRUCTION. IF DISCREPANCIES ARE FOUND, NOTIFY THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.
5. ABBREVIATIONS THROUGHOUT THE PLANS ARE THOSE IN COMMON USE. IF THE MEANING OF ANY ABBREVIATION IS UNCLEAR, NOTIFY THE ARCHITECT FOR CLARIFICATION.
6. FLOOR ELEVATIONS ARE TO THE TOP OF FINISHED FLOOR UNLESS NOTED OTHERWISE. CEILING HEIGHT DIMENSIONS ARE TO FINISHED SURFACE OF CEILING UNLESS NOTED OTHERWISE.
7. ALL DIMENSIONS ARE TO COLUMN GRID LINES OR FACE OF CONCRETE, CONC, MASONRY UNITS (CMU) OR FINISHED SURFACE UNLESS NOTED OTHERWISE. WALLS ARE CENTERED ON COLUMN CENTERLINES. PIERS OR WINDOW MULLIONS UNLESS NOTED OTHERWISE.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL ACCESSORIES INCLUDING STIFFENERS, BACK-UP PLATES, SUPPORTING BRACKETS, ETC., AS MAY BE NECESSARY TO MAKE THE WORK WHOLE AND COMPLETE.
9. CONTACT BETWEEN DISSIMILAR METALS SHALL BE PROTECTED TO PREVENT GALVANIC CORROSION.

GENERAL DEMOLITION NOTES

1. DEMOLITION DRAWINGS ARE PROVIDED FOR INFORMATION PURPOSES. DEMOLITION CONTRACT SHALL INCLUDE ALL REMOVAL REQUIRED FOR INSTALLATION OF NEW WORK.
2. COORDINATE SEQUENCE OF DEMOLITION ACTIVITIES WITH CONSTRUCTION SCHEDULE AND OWNERS PROGRAM ACTIVITIES.
3. ALL MATERIALS AND EQUIPMENT THAT ARE SCHEDULED FOR DEMOLITION SHALL BE REMOVED FROM SITE AND DISPOSED OF PROPERLY UNLESS NOTED OTHERWISE.
4. DASHED LINES INDICATE CONSTRUCTION TO BE REMOVED. U.N.O.
5. PRIOR TO DEMOLITION, PROVIDE A WALK-THRU WITH THE OWNER TO IDENTIFY EXISTING HARDWARE AND EQUIPMENT TO BE SALVAGED AND RETURNED TO THE OWNER. THESE ITEMS SHALL BE TAGGED, PROTECTED AND RETURNED TO THE OWNER AT THEIR DESIGNATED AREA. THESE ITEMS SHALL INCLUDE THE FOLLOWING: WINDOW BLINDS, ROLLER SHADES, CLOCKS...
6. DEMOLITION INCLUDES THE REMOVAL AND DISPOSAL OF ALL ARTWORK, POSTERS, NAILS, HOOKS, BULLETIN BOARDS, ETC, NOT REMOVED BY THE OWNER PRIOR TO THE COMMENCEMENT OF THE PROJECT. WHERE REMOVAL LEAVES HOLES OR SURFACE DAMAGE, PREPARE AS NECESSARY FOR PATCHING AND SCHEDULED FINISH.
7. MECHANICAL REMOVAL SHALL INCLUDE THE REMOVAL OF ALL DEVICES IN WALLS AND CEILINGS THAT ARE SCHEDULED FOR DEMOLITION INCLUDING BUT NOT LIMITED TO: AIR DEVICES, DUCT WORK, PIPING AND WIRING. COORDINATE WORK WITH MECHANICAL DRAWINGS.
8. ELECTRICAL REMOVAL SHALL INCLUDE THE REMOVAL OF ALL DEVICES IN WALLS, CEILINGS, COUNTERS, ETC. THAT ARE SCHEDULED FOR DEMOLITION INCLUDING BUT NOT LIMITED TO: DEVICES AND FIXTURES PLUS ASSOCIATED WIRING AND CONDUIT. IN ORDER TO PERMIT REUSE OF CONDUIT SYSTEM, REMOVE WIRING AND CONDUIT BACK TO A REUSEABLE JUNCTION BOX IF POSSIBLE. AFTER DEMOLITION WORK IS COMPLETE, ELECTRICAL CONTRACTOR SHALL IDENTIFY CIRCUITS IN EXISTING PANEL THAT ARE AVAILABLE FOR USE, AS A RESULT OF THE REMOVAL WORK. COORDINATE WORK WITH ELECTRICAL DRAWINGS.
9. PLUMBING REMOVAL SHALL CONSIST OF THE REMOVAL OF ALL EXISTING WATER, WASTE AND VENT LINES THAT OCCUR IN EXISTING WALLS, COUNTERS, ETC., SCHEDULED FOR DEMOLITION. THESE LINES SHALL BE REMOVED TO A POINT ABOVE CEILING, BELOW FLOOR OR WALL AND CAPPED FOR POSSIBLE REUSE. COORDINATE WORK WITH PLUMBING DRAWINGS.
10. EXISTING WALLS TO REMAIN AT ROOMS AND AREAS SCHEDULED FOR DEMOLITION, SHALL BE CLEARED OF ALL MISCELLANEOUS ITEMS INCLUDING BUT NOT LIMITED TO: TACK STRIPS, NAILS, WALL ANCHORS AND OTHER HARDWARE. REMAINING WALLS SHALL BE CLEAN AND NEAT, READY FOR PATCHING AND REPAIRING AS A PART OF THE NEW WORK.
11. DOORS SHOWN AT A 45° ANGLE REQUIRE NO WORK UNDER THIS SCOPE OF CONTRACT, U.N.O. (THIS INCLUDES RESPECTIVE FRAME AND ASSOCIATED HARDWARE).

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Floura Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonzilla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 — ZIGER / SNEAD LLP — STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

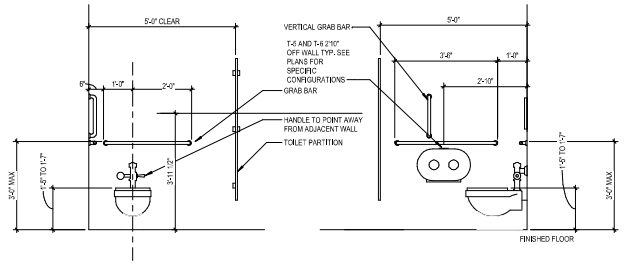
BID AND CONSTRUCTION DOCUMENTS 23 August 2021

CAD DWG FILE:	GSP_AR.000.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

ARCH SYMBOLS, MATERIALS, & ABBREVIATIONS

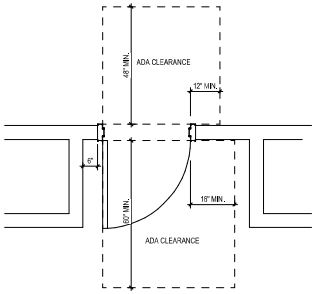
AR.000

8/23/2021 4:14:05 PM



STANDARD - ADA TOILET STALL DIMENSIONS | E3 | AR.001

1/2" = 1'-0"

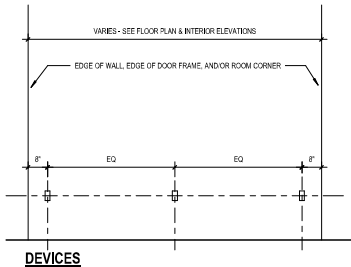


STD - SWINGING DOOR CLEARANCES | E7 | AR.001

1/2" = 1'-0"

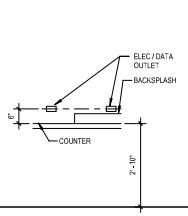
NOTE: DIAGRAMS ON THIS SHEET REPRESENT MINIMUM CLEARANCE REQUIREMENTS. REER TO ARCHITECTURAL DRAWINGS FOR SPECIFIC REQUIREMENTS.

NOTIFY ARCHITECT OF ANY CONDITIONS WHICH DO NOT CONFORM TO MINIMUM CLEARANCE REQUIREMENTS SHOWN HERE.



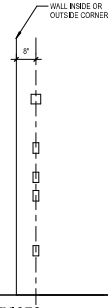
DEVICES

ONE DEVICE: LOCATE @ CENTER OF WALL
TWO DEVICES: LOCATE 8" FROM EDGES (WITHOUT THE CENTER)
THREE DEVICES: AS SHOWN
FOUR DEVICES OR MORE: LOCATE TWO 8" FROM EDGES, AND EQUALLY SPACE THE REST IN BETWEEN



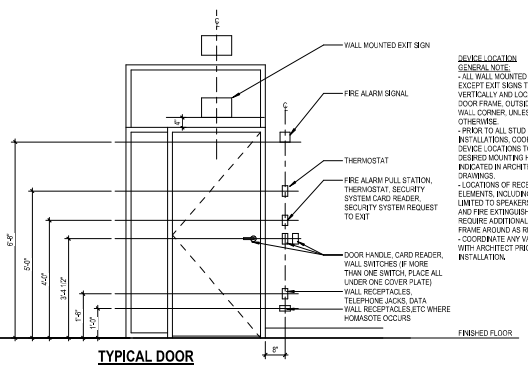
DEVICES

TYP. DEVICE MOUNTING HEIGHTS ABOVE COUNTER, U.N.O.



DEVICES

DEVICES WITHIN 18" OF WALL INSIDE/OUTSIDE CORNER



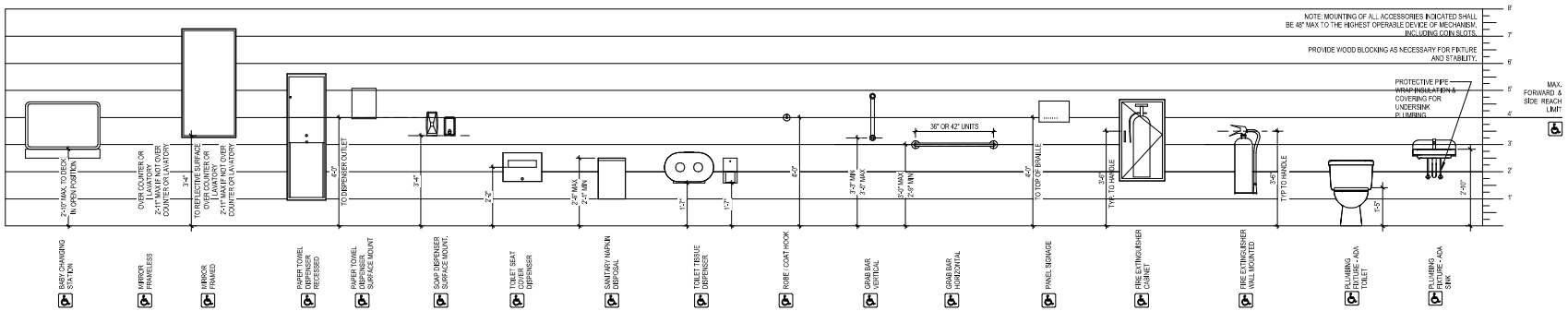
DEVICE LOCATION GENERAL NOTE:
- ALL WALL MOUNTED DEVICES EXCEPT EXIT SIGNS TO BE ALIGNED VERTICALLY AND LOCATED 8" FROM DOOR FRAME, OUTSIDE OR INSIDE WALL CORNER, UNLESS NOTED OTHERWISE.
- PRIOR TO ALL STUD FRAMING INSTALLATIONS, COORDINATE ALL DEVICE LOCATIONS TO ENSURE DESIRED MOUNTING HEIGHTS AS INDICATED IN ARCHITECTURAL DRAWINGS.
- LOCATIONS OF RECESSED ELEMENTS, INCLUDING BUT NOT LIMITED TO SPEAKERS, HANDSET AND FIRE EXTINGUISHERS MAY REQUIRE ADDITIONAL FRAMING, FRAME AROUND AS REQUIRED.
- COORDINATE ANY VARIANCES WITH ARCHITECT PRIOR TO INSTALLATION.

TYPICAL DOOR

DEVICES & HARDWARE - TYP. MOUNTING HEIGHTS @ DOOR, U.N.O.

STANDARD - MISC MOUNTING HEIGHTS | C1 | AR.001

1/2" = 1'-0"



MOUNTING SCHEDULE

1/2" = 1'-0"

8/23/2021 4:14:06 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonilla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

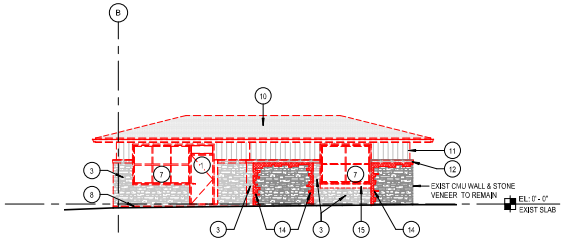
NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021

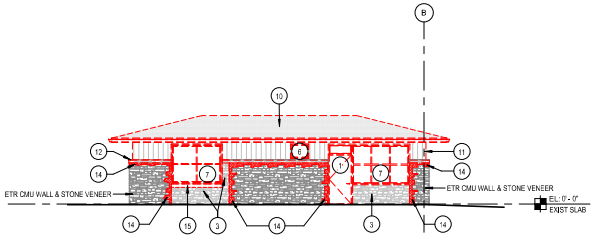
CAD DWG FILE:	GSP_AR.001.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

PROJECT STANDARDS AND MOUNTING SCHEDULE

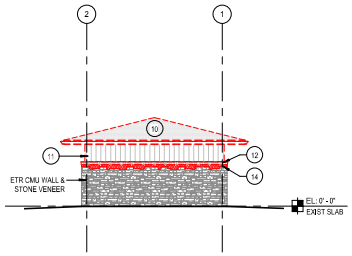
AR.001



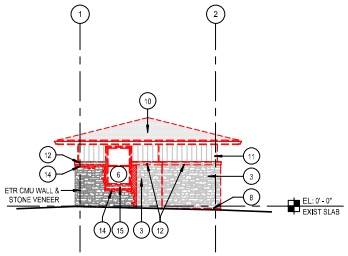
DEMO ELEVATION - NORTH FACADE E5
1/8" = 1'-0" AD.100



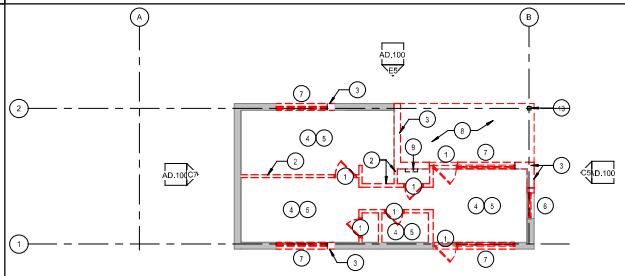
DEMO ELEVATION - SOUTH FACADE E2
1/8" = 1'-0" AD.100



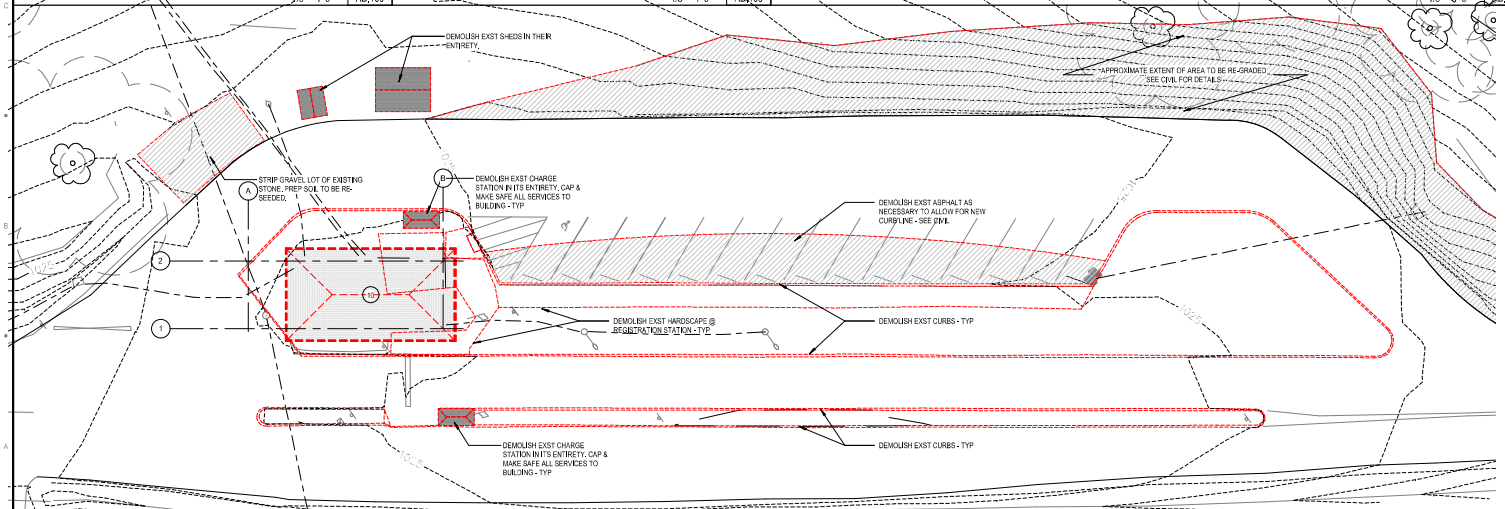
DEMO ELEVATION - WEST FACADE C7
1/8" = 1'-0" AD.100



DEMO ELEVATION - EAST FACADE C5
1/8" = 1'-0" AD.100



DEMOLITION FLOOR PLAN - REGISTRATION STATION C2
1/8" = 1'-0" AD.100



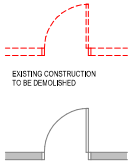
SITE PLAN - ARCHITECTURAL DEMOLITION A2
1/16" = 1'-0" AD.100

DEMOLITION NOTES

1. DEMOLISH EXISTING DOOR, FRAME, AND ANY ASSOCIATED BLOCKING.
2. DEMOLISH EXISTING INTERIOR WALL IN ITS ENTIRETY. REMOVE ALL ELECTRICAL & MECHANICAL DEVICES WITHIN WALL. CUT ANY PLUMBING LINES FLUSH AND CAP AT FLOOR LEVEL.
3. DEMOLISH EXISTING EXTERIOR CMU WALL, TO THE EXTENTS SHOWN. CUT FLUSH ANY EXISTING SUBSTRATE, STRUCTURE, OR FLASHING TO REMAIN. SALVAGE EXST FACADE STONE.
4. DEMOLISH EXISTING CEILING FINISH, STRUCTURE, AND ANY LIGHTING FIXTURES WITHIN SPACE.
5. REMOVE EXISTING FLOOR FINISH. REMOVE ANY ADHESIVE AND / OR FASTENERS USED TO SECURE FINISH TO SLAB.
6. REMOVE EXISTING WINDOW. PREP REMAINING ROUGH OPENING TO BE INFILLED.
7. REMOVE EXISTING WINDOW. DEMOLISH EXISTING WALL DIRECTLY BELOW SILL, DOWN TO FINISH FLOOR. SALVAGE EXST FACADE STONE. CUT FLUSH ANY EXISTING SUBSTRATE, STRUCTURE, OR FLASHING TO REMAIN.
8. DEMOLISH EXISTING SLAB ON GRADE.
9. DEMOLISH EXISTING ELECTRICAL PANEL. PREP PANEL TO BE RELOCATED TO PROPOSED LOCATION.
10. DEMOLISH EXISTING ROOF IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO: SHINGLES, UNDERLAYMENT, SUBSTRATE, RAFTERS, INSULATION, FASCIA, SOFFIT, GUTTERS, ETC.
11. DEMOLISH EXISTING EXTERIOR BOARD & BATTEN FRAMED WALL, ABOVE CMU / STONE WALL.
12. REMOVE & SALVAGE EXISTING STONE WATER TABLE. REMOVE ONE COURSE OF STONE BELOW WATER TABLE - SALVAGE FOR REUSE. REMAINDER OF STONE CLADDING TO REMAIN.
13. REMOVE EXISTING WOOD POST, AND ANY ASSOCIATED CONNECTIONS.
14. REMOVE & SALVAGE EXISTING FACADE STONE, BACK TO NEAREST WHOLE STONE. PREP REMAINING SURFACES TO RECEIVE NEW TOOTHED-IN STONE, AS PART OF NEW WORK.
15. REMOVE & SALVAGE EXISTING STONE SILL FOR REUSE.

NOTE:
REFER TO DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL DEMOLITION SCOPE.

DEMOLITION KEY



ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413
ZIGER / SNEAD LLP
STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

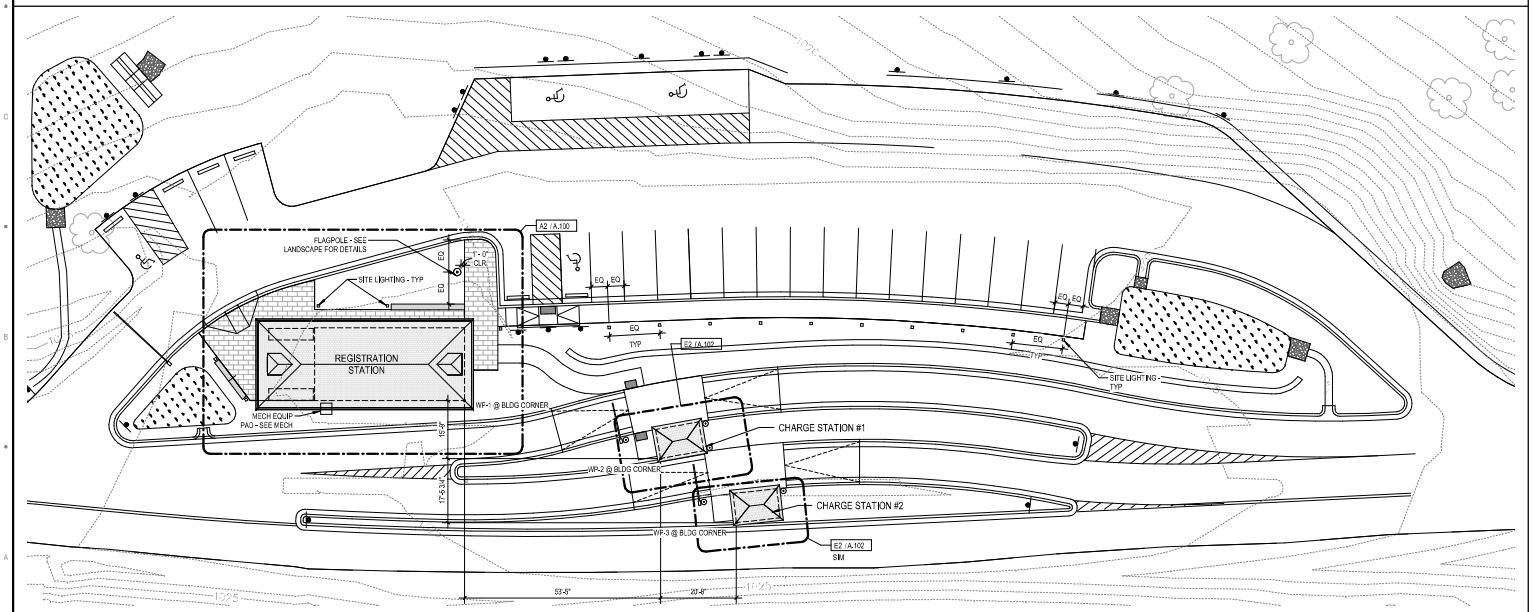
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_AD.100.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

DEMOLITION PLANS - REGISTRATION STATION

AD.100

8/23/2021 4:14:03 PM



ARCHITECTURAL SITE PLAN

1/16" = 1'-0"

A2

AS.000

0 8'-0" 16'-0"

8/23/2021 4:14:06 PM

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGNEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonilla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413
ZIGER / SNEAD LLP
STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

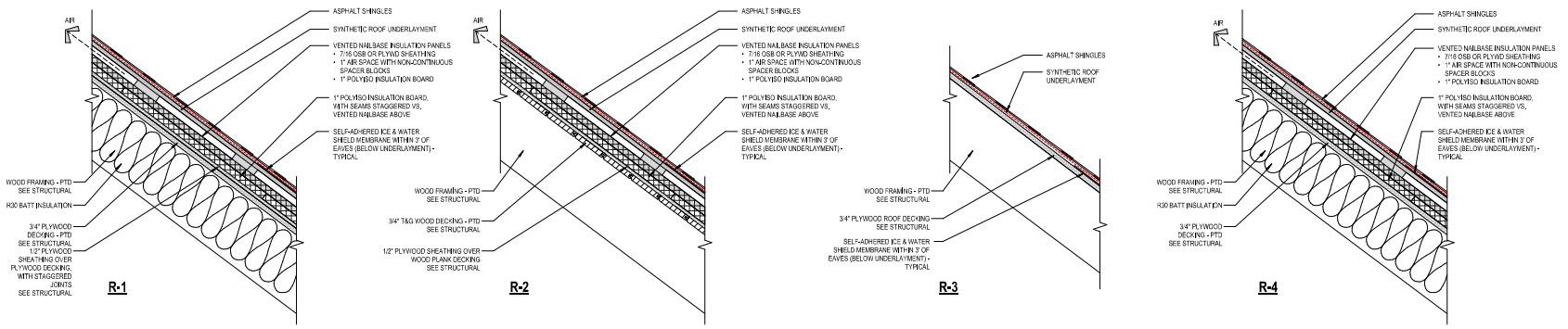
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_AS.000.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

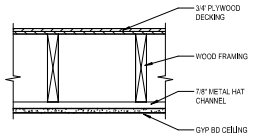
SITE PLAN - NEW CONSTRUCTION

AS.000

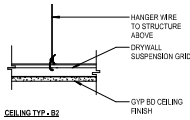


ROOFING TYPES — E1

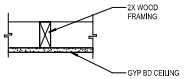
0 4" 8" 1 1/2" = 1'-0" A.010



CEILING TYP - B1
- ONE (1) LAYER 5/8" GYP BD - PTD
- METAL HAT CHANNELS @ 16" O.C.
- ATTACH HAT CHANNELS TO UNDERSIDE OF WOOD FRAMING ABOVE.



CEILING TYP - B2
- ONE (1) LAYER 5/8" MOISTURE-RESISTANT GYP BD - PTD
- SUSPENDED DRYWALL GRID SYSTEM. SECURE TO STRUCTURE ABOVE WITH HANGER WIRE.



CEILING TYP - B3
- ONE (1) LAYER 5/8" GYP BD - PTD
- 2X NOM WOOD FRAMING - SEE DETAILS

***LOCATE ALL NECESSARY ACCESS PANELS AND CONFIRM LOCATION WITH ARCHITECT BEFORE INSTALL**

CEILING TYPES — C4

1 1/2" = 1'-0" A.010

PARTITION GENERAL NOTES

1. COMPLY WITH ALL REQUIREMENTS OF DESIGNATED UL ASSEMBLIES FOR FIRE RATED CONSTRUCTION, WHETHER SHOWN ON DRAWINGS OR NOT.
2. PROVIDE BLOCKING AS REQUIRED FOR ALL WALL-HUNG CASEWORK, SHELVING, DEVICES, EQUIPMENT, RAILINGS, ETC.
3. PROVIDE CONTROL JOINTS IN GYP BD PARTITIONS PER ASTM C 840, UNLESS NOTED OTHERWISE ON THE DRAWINGS. COORDINATE ALL JOINT LOCATIONS WITH ARCHITECT. INSTALL CONTROL JOINTS PER PARTITION RATING REQUIREMENTS:
   - A. INSTALL CONTROL JOINTS IN PARTITIONS WHERE LINEAR DISTANCE EXCEEDS 30 FEET, AT INCREMENTS NOT TO EXCEED 30 FEET OC.
   - B. COORDINATE CONTROL JOINTS IN FURRED ASSEMBLIES TO CONTROL JOINT LOCATIONS IN BASE ASSEMBLY.
4. AT ALL TELECOM AND ELECTRICAL ROOMS, PROVIDE PAINTED 3/4" FIRE-RETARDANT TREATED PLYWOOD ON ALL WALLS FROM 8" AFF TO 8'-8" AFF.
5. COORDINATE GYP BD TYPES AT WET AND TILE LOCATIONS WITH SPECIFICATIONS.
6. ALL WALLS AND GYP BD TO EXTEND TO BOTTOM OF FLOOR ABOVE, UON.
7. REFER TO MOUNTING SCHEDULE ON SHEET AR.001 FOR ALL DEVICE MOUNTING HEIGHTS.

NOTES

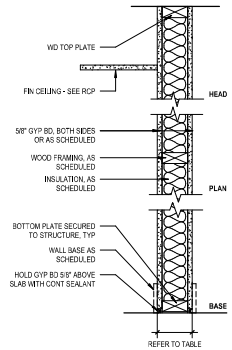
A#1A
- A — FIRST CHARACTER INDICATES THE WALL CONSTRUCTION TYPE
- 4 — SECOND CHARACTER INDICATES THE NOMINAL THICKNESS OF THE FRAMING
- 1 — THIRD CHARACTER (OPTIONAL) INDICATES THE FIRE RATING
- A — FOURTH CHARACTER (OPTIONAL) IS A MODIFIER. REFER TO PARTITION NOTES

WALL CONSTRUCTION TYPE
- A — TWO-SIDED PARTITION - WD FRAMING
- C — ONE-SIDED FURRING PARTION - WD FRAMING

FRAMING THICKNESS
- 1 — <1" NOMINAL
- 2 — 1" - <2" NOMINAL
- 3 — 2" - <3" NOMINAL
- 4 — 3" - <6" NOMINAL
- 6 — 6" - <8" NOMINAL
- 8 — 8" - <10" NOMINAL
- 10 — 10" - <12" NOMINAL

FIRE/SMOKE PARTITION
- 1 — 1 HR FIRE RATED
- S — SMOKE RESISTIVE

ADDITONAL MODIFIERS
- A — ACOUSTIC
- T — THERMAL

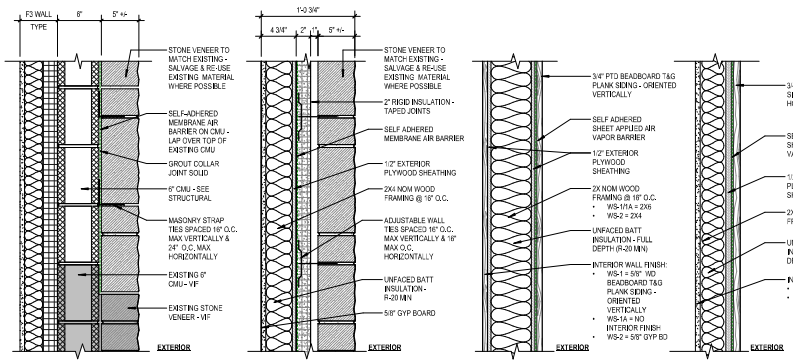


TYPE	WIDTH	O.C.	SIZE	FIRE INFO.		STC RATING	NOTES
				RATING	U.L. #		
A4	4-3/4"	16"	3-1/2"	N/A	N/A	-	
A4A	4-7/8"	16"	3-1/2"	N/A	N/A	49	1, 2
A6	6-3/4"	16"	5-1/2"	N/A	N/A	-	
A6A	6-3/4"	16"	5-1/2"	N/A	N/A	49	1, 2

NOTES LEGEND
1. SOUND ATTENUATION BLANKETS. FULL DEPTH OF FRAMING.
2. ACOUSTICAL SEALANT AT ALL JOINTS AND PENETRATIONS

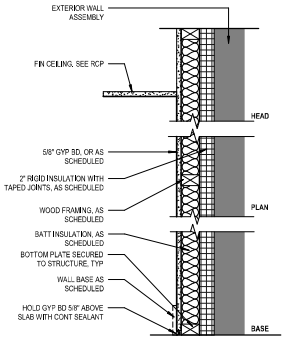
TYPE "A" PARTITION — A

0 4" 8" 1 1/2" = 1'-0" A.010



EXTERIOR WALL TYPES — A4

0 4" 8" 1 1/2" = 1'-0" A.010



TYPE	WIDTH	O.C.	SIZE	FIRE INFO.		STC RATING	NOTES
				RATING	U.L. #		
F3	3-1/8"	16"	2-1/2"	N/A	N/A	-	1,2
F3T	5-1/8"	16"	2-1/2"	N/A	N/A	-	1,2,3
F6T	8-1/8"	16"	5-1/2"	N/A	N/A	-	1,2,3

NOTES LEGEND
1. ONE (1) LAYER 5/8" GYP BD, ONE SIDE ONLY.
2. R-19 FIBERGLASS BATT INSULATION - FULL DEPTH OF FRAMING.
3. 2" RIGID XPS FOAM INSULATION, WITH TAPED JOINTS.

TYPE "F" PARTITION — F

0 4" 8" 1 1/2" = 1'-0" A.010

8/23/2021 4:13:18 PM

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 326, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 — ZIGER / SNEAD LLP — STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

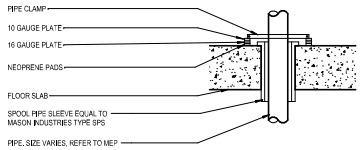
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	GSP_A.010.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

CONSTRUCTION TYPES SCHEDULE

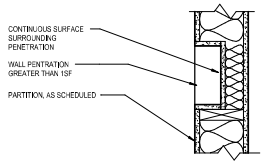
A.010



NOTES:
1. USE ACOUSTICAL SPOOL PIPE SLEEVE ON ALL PIPES 1" DIAMETER OR GREATER.
2. SIZE ACOUSTICAL SPOOL PIPE SLEEVE BASED ON FLOOR SLAB THICKNESS.
3. SEAL ALL PENETRATIONS SEALANT, USE FIRE SEALANT AT RATED FLOORS.
REFER TO CODE STUDY FOR LOCATION OF RATED ASSEMBLIES.

TYPICAL PIPE SLEEVE @ FLOOR — E7

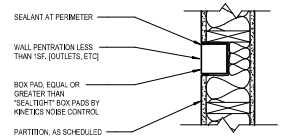
1 1/2" = 1'-0" — A.011



NOTES:
1. BACK TO BACK PENETRATIONS INCLUDING, BUT NOT LIMITED TO OUTLET BOXES, AV, ETC ARE NOT PERMITED.

TYP WALL PENETRATION OVER 1 SF — E5

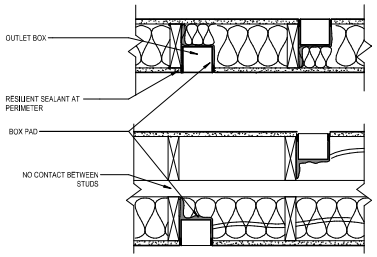
1 1/2" = 1'-0" — A.011



NOTES:
1. THIS DETAIL IS APPLICABLE TO ELECTRICAL POWER, LIGHT SWITCHES, AUDIO, DATA AND TELEPHONE OUTLET BOXES IN ALL PARTITIONS WITH STC-45 OR HIGHER RATINGS.
2. PLACE OUTLET BOXES IN SEPERATE FRAMING BAYS.
3. BACK TO BACK PENETRATIONS INCLUDING, BUT NOT LIMITED TO OUTLET BOXES, AV, SWITCHES, ETC ARE NOT PERMITED.
4. PLUG ALL UNUSED CONDUIT KNOCK-OUTS IN OUTLET BOXES WITH KNOCK-OUT CAPS.
5. BOX PADS TO BE EQUAL TO 'SEAL TIGHT' BOX PADS BY KINETICS NOISE CONTROL (TEL: (614) 889 0480) OR FULLY 'BUTTER' OUTLET BOX WITH RESILIENT SEALANT.
6. APPLY BOX PADS OR RESILIENT SEALANT TO SIDES, TOP AND BOTTOM OF ALL ELECTRICAL OUTLET BOXES.

TYP WALL PENETRATION UNDER 1 SF — E3

1 1/2" = 1'-0" — A.011

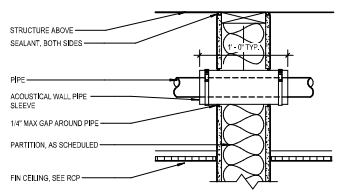


NOTES:
1. THIS DETAIL IS APPLICABLE TO ELECTRICAL POWER, LIGHT SWITCHES, AUDIO, DATA, AND TELEPHONE OUTLET BOXES IN ALL PARTITIONS WITH STC-45 OR HIGHER RATINGS.
2. PLACE OUTLET BOXES IN SEPARATE FRAMING BAYS.
3. BACK-TO-BACK OUTLET BOXES ARE NOT PERMITTED.
4. PLUG ALL UNUSED CONDUIT KNOCK-OUTS IN OUTLET BOXES WITH KNOCK-OUT CAPS.
5. BOX PADS TO BE EQUAL TO "SEAL TIGHT" BOX PADS BY KINETICS NOISE CONTROL (TEL: 614.889.0480) OR FULLY "BUTTER" OUTLET BOX WITH RESILIENT SEALANT.
6. APPLY BOX PADS OR RESILIENT SEALANT TO SIDES, TOP, AND BOTTOM OF ALL ELECTRICAL OUTLET BOXES.

ELECTRICAL OUTLET BOX CAULKING — E1

1 1/2" = 1'-0" — A.011

SECTION

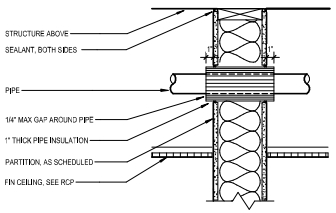


NOTES:
1. THIS DETAIL APPLICABLE TO ALL PARTITIONS WITH STC-45 OR HIGHER RATINGS.
2. USE ACOUSTICAL WALL PIPE SLEEVE ON ALL PIPES GREATER THAN 3" IN DIAMETER.
3. ACOUSTICAL WALL PIPE SLEEVE TO BE EQUAL TO TYPE "SWS" BY MASON INDUSTRIES (TEL: 631.348.0282).
4. PIPES ARE NOT TO MAKE RIGID CONTACT WITH GYP BD OR MTL FRAMING. CENTER PIPES IN PARTITION OPENING.
5. PROVIDE HANGERS TO SUPPORT PIPES. DO NOT CARRY PIPE WEIGHT ON PARTITIONS.
6. SEAL LARGE OPENINGS AROUND PIPES.
7. SEAL ALL PENETRATIONS WITH SEALANT, USE FIRE SEALANT AT RATED PARTITIONS.

GYP BD LARGE PIPE PENETRATION — C7

1 1/2" = 1'-0" — A.011

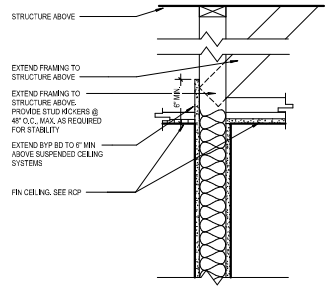
SECTION



NOTES:
1. THIS DETAIL APPLICABLE TO ALL PARTITIONS WITH STC-45 OR HIGHER RATINGS.
2. USE PIPE INSULATION ON ALL PIPES LESS THAN 3" IN DIAMETER.
3. PIPE INSULATION TO BE EQUAL TO TYPE "ARMAFLEX TUBE" BY ARMACELL. (TEL: 919.304.3846).
4. PIPES ARE NOT TO MAKE RIGID CONTACT WITH GYP BD OR MTL FRAMING. CENTER PIPES IN PARTITION OPENING.
5. PROVIDE HANGERS TO SUPPORT PIPES. DO NOT CARRY PIPE WEIGHT ON PARTITIONS.
6. SEAL OFF LARGE OPENINGS AROUND PIPES.
7. SEAL ALL PENETRATIONS WITH SEALANT. USE FIRE SEALANT AT RATED PARTITIONS.

GYP BD SMALL PIPE PENETRATION — C5

1 1/2" = 1'-0" — A.011

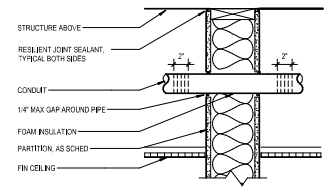


• REFER TO CONSTRUCTION AND/OR PARTITION PLANS FOR REFERENCED LOCATIONS

TYPICAL TOP OF WALL — C3

1 1/2" = 1'-0" — A.011

SECTION

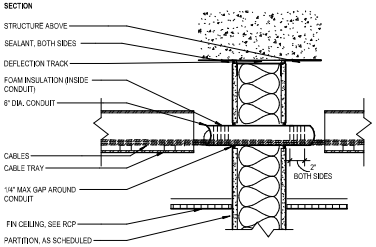


NOTES:
1. CONDUITS ARE NOT TO MAKE RIGID CONTACT WITH GWB OR STUDES. CENTER CONDUITS IN PARTITION OPENING.
2. USE GWB FILLER PIECES TO CLOSE OFF LARGE OPENINGS AROUND PIPES.
3. SEAL ALL PENETRATIONS WITH RESILIENT SEALANT TO CLOSE GAPS. USE FIRE SEALANT AT RATED PARTITIONS.
4. FILL BOTH ENDS OF CONDUIT WITH FOAM OR FIBERGLASS INSULATION FOR A MINIMUM DEPTH OF 2"
5. THIS DETAIL IS APPLICABLE TO DOUBLE STUD PARTITIONS.

GYP BD CONDUIT PENETRATION — C1

1 1/2" = 1'-0" — A.011

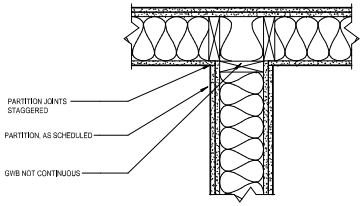
SECTION



NOTES:
1. CONDUITS ARE NOT TO MAKE RIGID CONTACT WITH GWB OR STUDS. CENTER CONDUITS IN PARTITION OPENING.
2. PROVIDE HANGERS TO SUPPORT CABLE TRAY.
3. USE GWB FILLER PIECES TO CLOSE OFF LARGE OPENINGS AROUND CONDUIT
4. SEAL ALL PENETRATIONS WITH RESILIENT SEALANT TO CLOSE GAPS. USE FIRE SEALANT TO CLOSE GAPS. USE FIRE SEALANT AT RATED PARTITIONS.
5. FILL BOTH ENDS OF CONDUIT WITH FOAM OR FIBERGLASS INSULATION FOR A MINIMUM DEPTH OF 2"
6. THIS DETAIL IS APPLICABLE TO DOUBLE STUD PARTITIONS.

GYP BD CABLE TRAY PENETRATION — A7

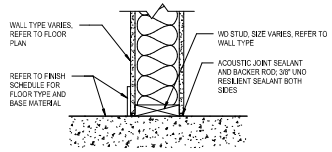
1 1/2" = 1'-0" — A.011



NOTES:
1. THIS DETAIL IS APPLICABLE TO ALL GYPSUM BOARD PARTITIONS.
2. SEE DRAWINGS FOR SCHEDULED PARTITIONS AND LOCATIONS.
3. GYPSUM BOARD IS NOT TO RUN CONTINUOUS BETWEEN ROOMS AT THE PARTITION SIDE THAT FACES TOWARD EACH ROOM.

TYP PARTITION INTERSECTION — A5

1 1/2" = 1'-0" — A.011



NOTES:
1. THIS DETAIL IS APPLICABLE TO ALL GWB PARTITIONS.
2. REMOVE ALL DEBRIS FROM FLOOR AND BROOM SWEEP CLEAN BEFORE SETTING RUNNERS AND APPLYING RESILIENT SEALANT.
3. USE A MINIMUM OF (2) BEADS OF RESILIENT SEALANT IN THICKNESS NOTED AT PARTITION BOTTOM.
4. THIS DETAIL IS SIMILAR AT PARTITION HEAD.
5. FOR MULTILAYER GWB PARTITIONS, RUN GWB LAYERS CLOSEST TO STUDS RUNNERS WITHIN 1/8" OF FLOOR, RUN THE OUTERMOST GWB LAYER WITHIN 1/4" OF FLOOR.
6. USE BACKER ROD TO CLOSE OFF GWB OPENINGS GREATER THATN 1/4" PRIOR TO APPLICATION OF RESILIENT SEALANT.

TYPICAL BOTTOM OF WALL — A3

1 1/2" = 1'-0" — A.011

GENERAL NOTES:

1. PROVIDE BLOCKING AS REQUIRED FOR ALL WALL-HUNG CASEWORK, SHELVING, DEVICES, EQUIPMENT, RAILINGS, ETC.. PROVIDE ADDITIONAL STUDS AS REQUIRED TO SUPPORT HEAVY LOADS.

2. PROVIDE CONTROL JOINTS IN GYPSUM BOARD PARTITIONS PER ASTM C 840 UNLESS NOTED OTHERWISE ON THE DRAWINGS. COORDINATE ALL LOCATIONS IN THE FIELD WITH ARCHITECT. INSTALL CONTROL JOINTS PER PARTITION RATING REQUIREMENTS.
   A. INSTALL CONTROL JOINTS IN PARTITIONS AND WALL FURRING EXCEEDING 30 FEET.
   B. SPACE CONTROL JOINTS NOT MORE THAN 30 FEET ON CENTER.
   C. INSTALL CONTROL JOINTS IN FRRED ASSEMBLIES WHERE CONTROL JOINTS OCCUR IN BASE WALL.
   D. INSTALL CONTROL JOINTS IN AREAS EXCEEDING 2500 SQUARE FEET.

3. PROVIDE CONTROL JOINTS IN MASONRY WALLS PER THE SPECIFICATIONS. UNLESS NOTED OTHERWISE ON THE DRAWINGS. COORDINATE ALL LOCATIONS IN THE FIELD WITH ARCHITECT. SEAL CONTROL JOINTS PER PARTITION RATING REQUIREMENTS.

4. WALL REINFORCING REQUIREMENTS:
   A. BLOCKING SHALL BE 2X STUD RUNNER SECURED WITH TWO 3/8" PAN HEAD SCREWS.
   B. VERIFY ANCHORAGE REQUIREMENTS WITH CASEWORK MANUFACTURER.
   C. COORDINATE BLOCKING REQUIREMENTS AND LOCATIONS WITH CASEWORK SHOP DRAWINGS.

5. AT ALL GYPSUM BOARD PARTITIONS HOLD THE BOTTOM EDGE OF DRYWALL 5/8" MINIMUM ABOVE THE SLAB AND SEAL WITH A CONTINUOUS BEAD OF SEALANT.

6. AT ALL TELECOM AND ELECTRICAL ROOMS. PROVIDE UNPAINTED 3/4" FIRE RETARDANT TREATED PLYWOOD ON ALL WALLS UP TO 8'-0" AFF.

7. REFER TO TYPICAL ACOUSTIC AND TYPICAL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

8. SOUND ATTENUATION BLANKETS (SAB): 3" THICK AND MINIMUM DENSITY 2.5 POUNDS PER CUBIC FOOT, U.N.O.

9. REFER TO LIFE SAFETY DRAWINGS FOR FIRE AND SMOKE RATED PARTITIONS. ALL SUCH PARTITIONS ARE TO EXTEND TIGHT TO UNDERSIDE OF DECK, AND BE FULLY SEALED AT ALL PENETRATIONS WITH U.L. LISTED FIRE RATED JOINT SYSTEMS.

10. PROVIDE MOISTURE RESISTANT GYP. BOARD FOR ALL INTERIOR PARTITIONS AT WET LOCATIONS NOT DESIGNATED TO RECEIVE TILE. PROVIDE TILE BACKER PANELS FOR ALL PARTITIONS DESIGNATED TO RECEIVE TILE.

8/23/2021 4:13:20 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fordla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 — ZIGER / SNEAD LLP — STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

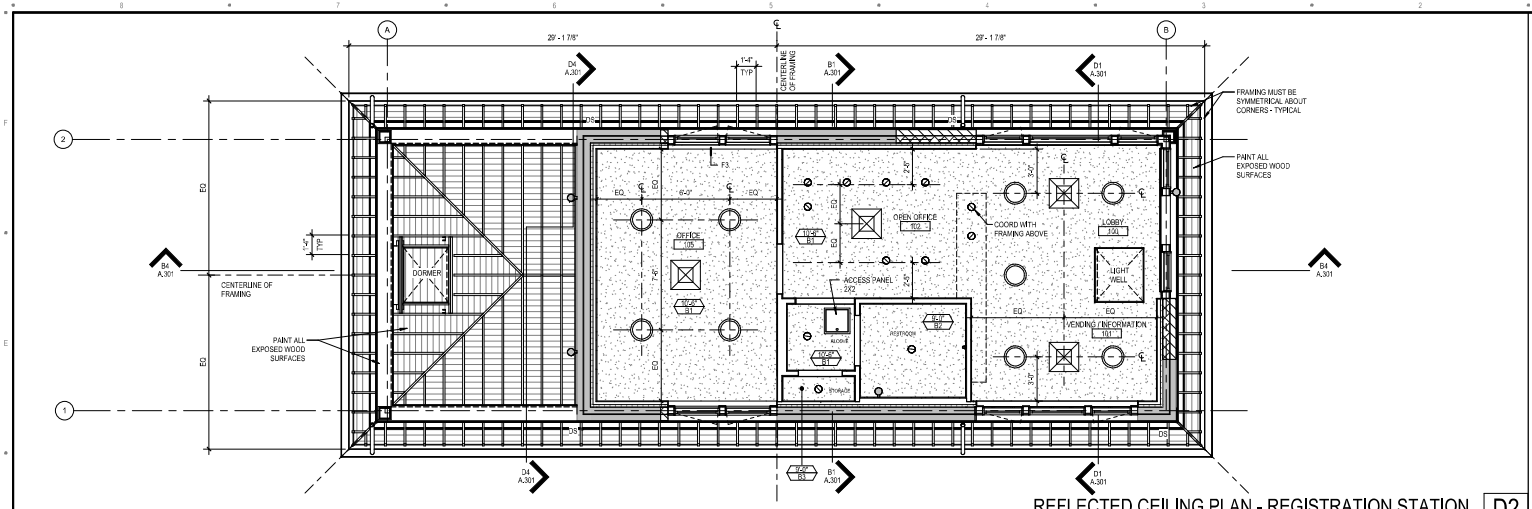
NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.011.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

CONSTRUCTION TYPES SCHEDULE - PARTITION DETAILS

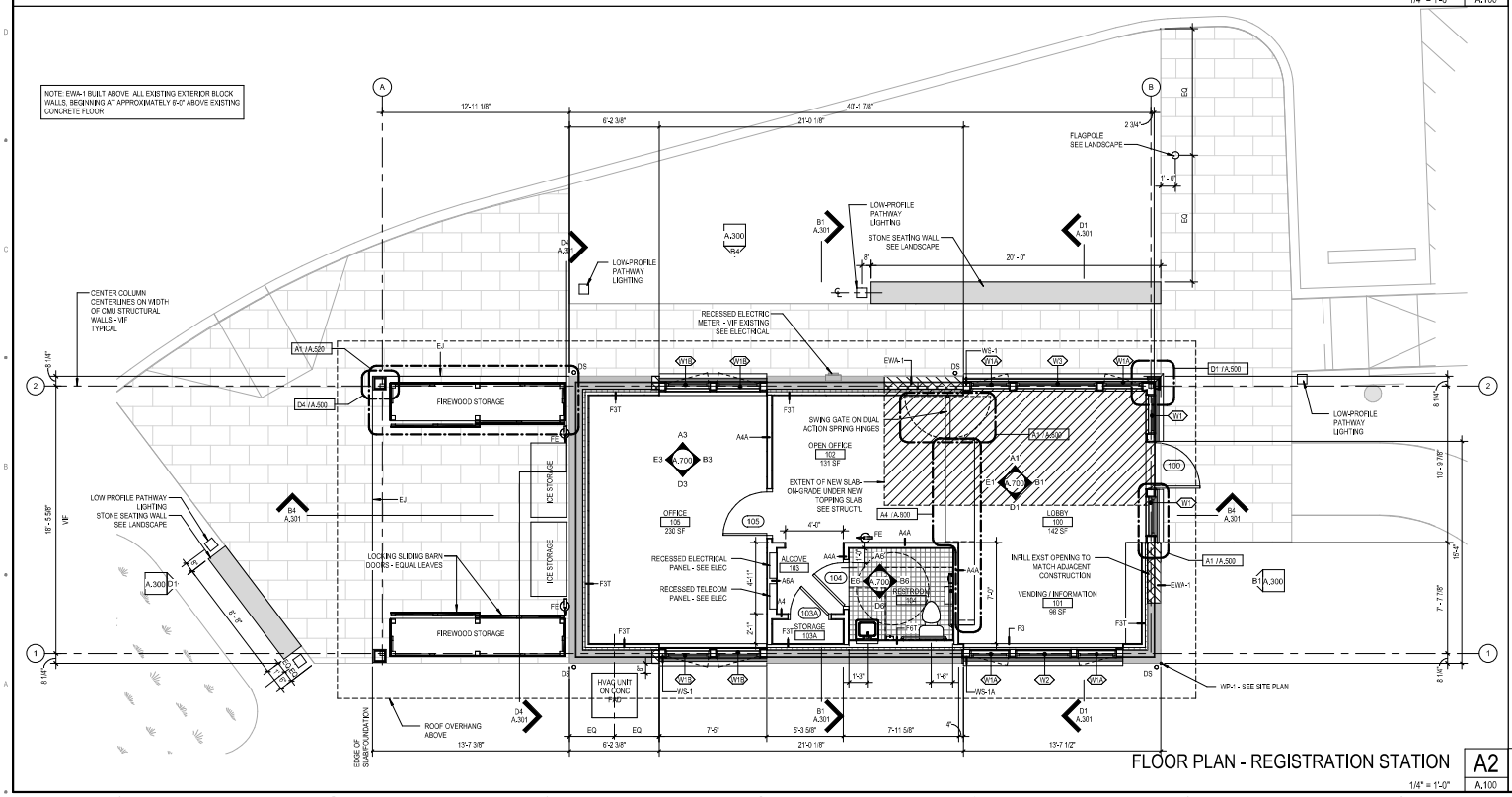
A.011



REFLECTED CEILING PLAN - REGISTRATION STATION

D2 — A.100

1/4" = 1'-0"



FLOOR PLAN - REGISTRATION STATION

A2 — A.100

1/4" = 1'-0"

SYMBOLS

- SURFACE MOUNTED FIXTURE
- DIRECT / INDIRECT PENDANT FIXTURE
- COVE LIGHT FIXTURE
- RECESSED DOWNLIGHT FIXTURE
- WALL MTD FIXTURE
- CEILING ACCESS PANEL
- LINEAR LED TAPE LIGHT

MATERIALS

- C1 - GYP BD CEILING
- C2 - V-GROOVE WD CEILING
- EXTERIOR WD SOFFIT

ANNOTATIONS

CEILING TAG
- CEILING HEIGHT
- CEILING TYPE

GENERAL NOTES

1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR FINAL CEILING DEVICES (I.E. OCC SENSORS, HVAC GRILLES, ETC), COORDINATE FINAL LOCATIONS OF ALL DEVICES WITH ARCHITECT.
2. HEIGHTS ARE INDICATED RELATIVE TO FINISH FLOOR LEVEL WHERE CEILING TAG IS LOCATED, UNO.
3. PROVIDE ACCESS PANELS AS REQUIRED IN GYP BD CEILINGS - COORDINATE LOCATIONS WITH ARCHITECT BEFORE PROCEEDING.
4. ACCESS PANELS ARE TO BE PAINTED THE SAME COLOR AS THE SURROUNDING CEILING. COORDINATE LOCATIONS AROUND LIGHTING AND MECHANICAL FIXTURES.
5. REFER TO ELECTRICAL FOR LIGHT FIXTURE SCHEDULE.
6. REFER TO FIXTURE SCHEDULE AND ELEVATIONS FOR MOUNTING INFORMATION.
7. CENTER V-GROOVE WD CEILINGS WITH EQUAL WIDTH PANELS ON EITHER SIDE OF ROOM.

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 — ZIGER / SNEAD LLP — STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

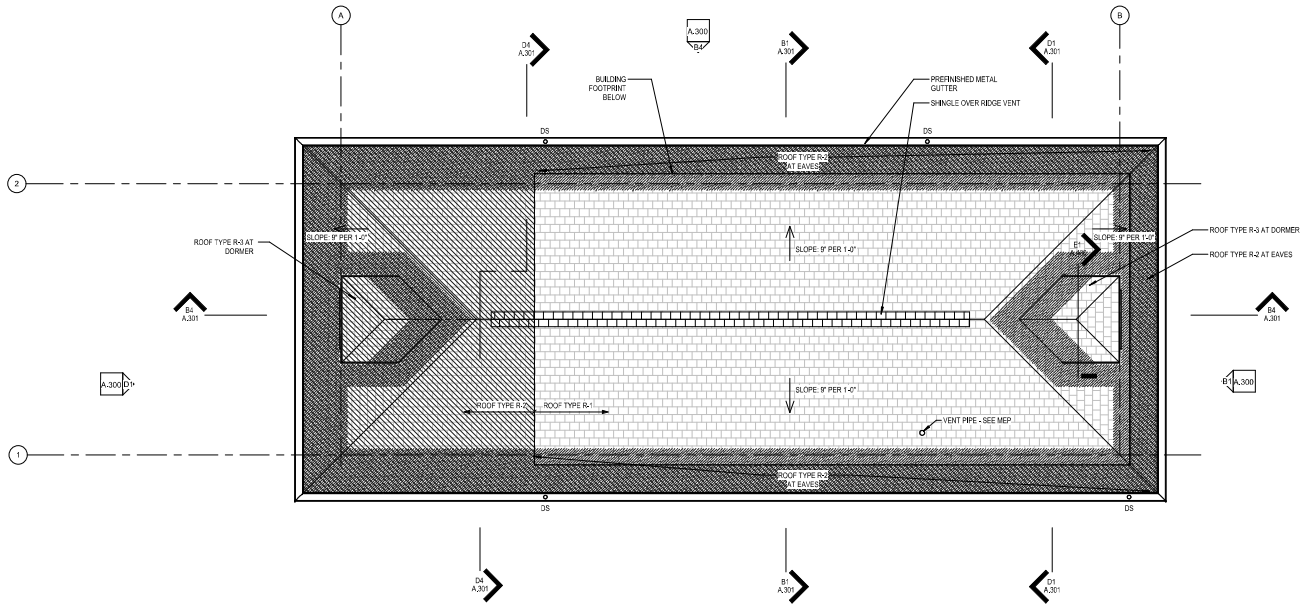
NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	GSP_A.100.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

FLOOR PLAN & RCP - REGISTRATION STATION

A.100

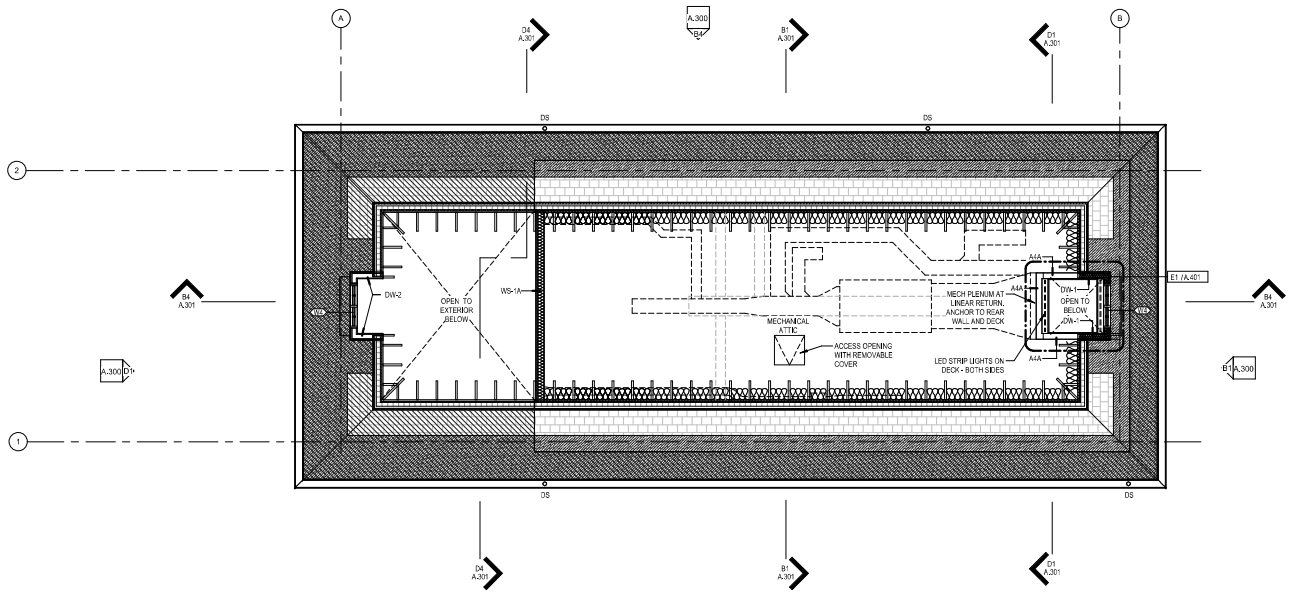
8/23/2021 4:13:20 PM



ROOF PLAN - REGISTRATION STATION

1/4" = 1'-0"

D2 A.101



FLOOR PLAN - MECHANICAL ATTIC

1/4" = 1'-0"

A2 A.101

MATERIALS

RT-1 - ROOF TYPE 1 EXTENTS

RT-2 - ROOF TYPE 2 EXTENTS

ICE & WATER SHIELD EXTENT

NOTES

1. ICE AND WATER SHIELD UNDERLAYMENT MEMBRANE TO BE APPLIED WITHIN 3'-0" OF ALL EAVES, AND TO BE APPLIED TO ALL VALLEYS - TYP
2. SEE STRUCTURAL DRAWINGS FOR ROOF FRAMING DETAILS.

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

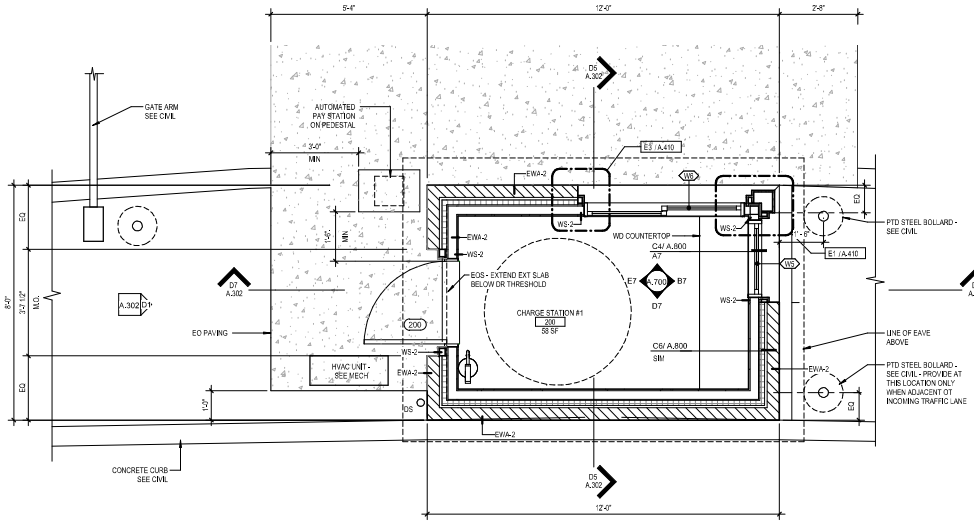
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.101.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

ROOF & ATTIC PLANS - REGISTRATION STATION

A.101

8/23/2021 4:13:21 PM

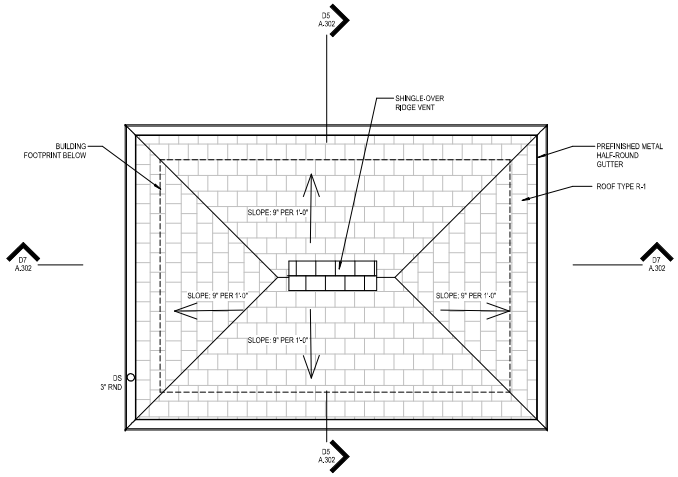


FLOOR PLAN - CHARGE STATION #1

E2

1/2" = 1'-0"

A.102

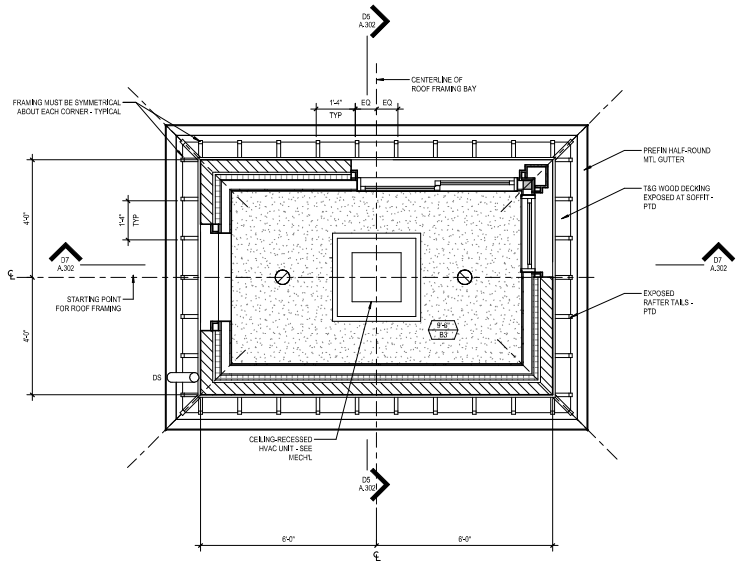


ROOF PLAN - CHARGE STATION

A5

1/2" = 1'-0"

A.102



RCP- CHARGE STATION

A2

1/2" = 1'-0"

A.102

SYMBOLS

- SURFACE MOUNTED FIXTURE
- DIRECT / INDIRECT PENDANT FIXTURE
- COVE LIGHT FIXTURE
- RECESSED DOWNLIGHT FIXTURE
- WALL MTD FIXTURE
- CEILING ACCESS PANEL
- LINEAR LED TAPE LIGHT

MATERIALS

- C1 - GYP BD CEILING
- C2 - V-GROOVE WD CEILING
- EXTERIOR WD SOFFIT

ANNOTATIONS

CEILING TAG

X - XX — CEILING HEIGHT

X1 — CEILING TYPE

GENERAL NOTES

1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR FINAL CEILING DEVICES (I.E. OCC SENSORS, HVAC GRILLES, ETC). COORDINATE FINAL LOCATIONS OF ALL DEVICES WITH ARCHITECT.
2. HEIGHTS ARE INDICATED RELATIVE TO FINISH FLOOR LEVEL WHERE CEILING TAG IS LOCATED, UNO.
3. PROVIDE ACCESS PANELS AS REQUIRED IN GYP BD CEILINGS - COORDINATE LOCATIONS WITH ARCHITECT BEFORE PROCEEDING.
4. ACCESS PANELS ARE TO BE PAINTED THE SAME COLOR AS THE SURROUNDING CEILING. COORDINATE LOCATIONS AROUND LIGHTING AND MECHANICAL FIXTURES.
5. REFER TO ELECTRICAL FOR LIGHT FIXTURE SCHEDULE.
6. REFER TO FIXTURE SCHEDULE AND ELEVATIONS FOR MOUNTING INFORMATION.
7. CENTER V-GROOVE WD CEILINGS WITH EQUAL WIDTH PANELS ON EITHER SIDE OF ROOM.

0 1'-0" 2'-0"

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

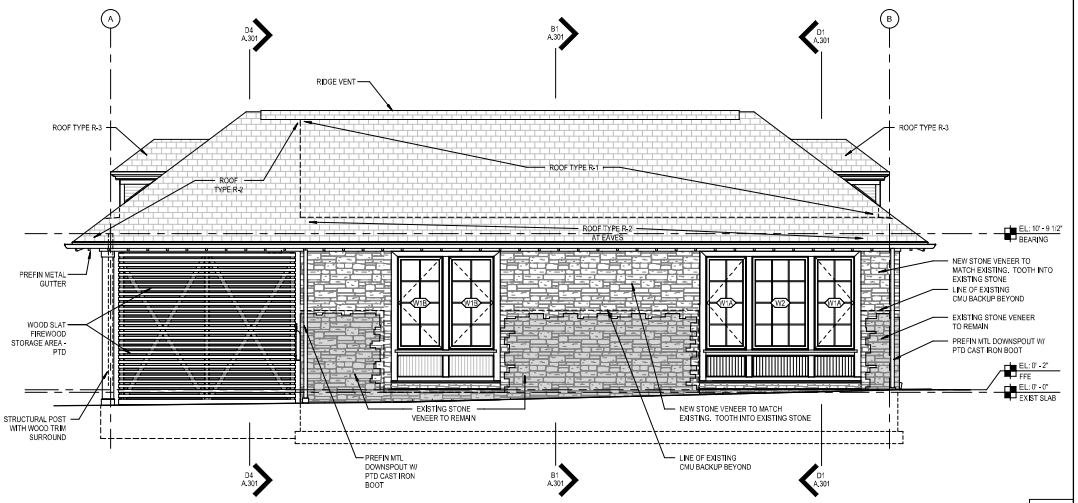
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.102.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

PLANS & RCP - CHARGE STATION

A.102

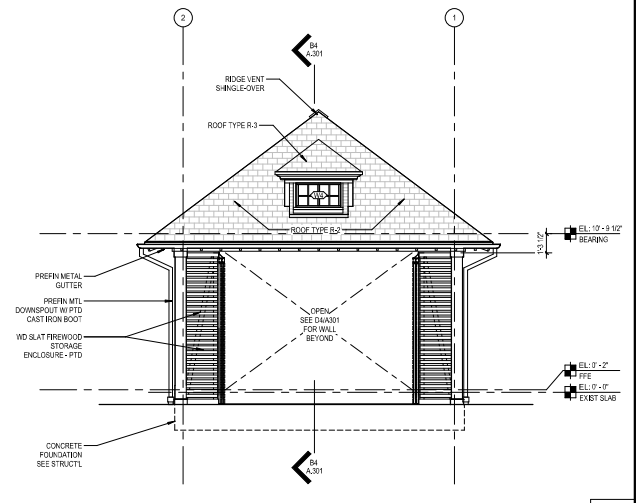
8/23/2021 4:13:21 PM



SOUTH ELEVATION - REGISTRATION STATION

D4 | A.300

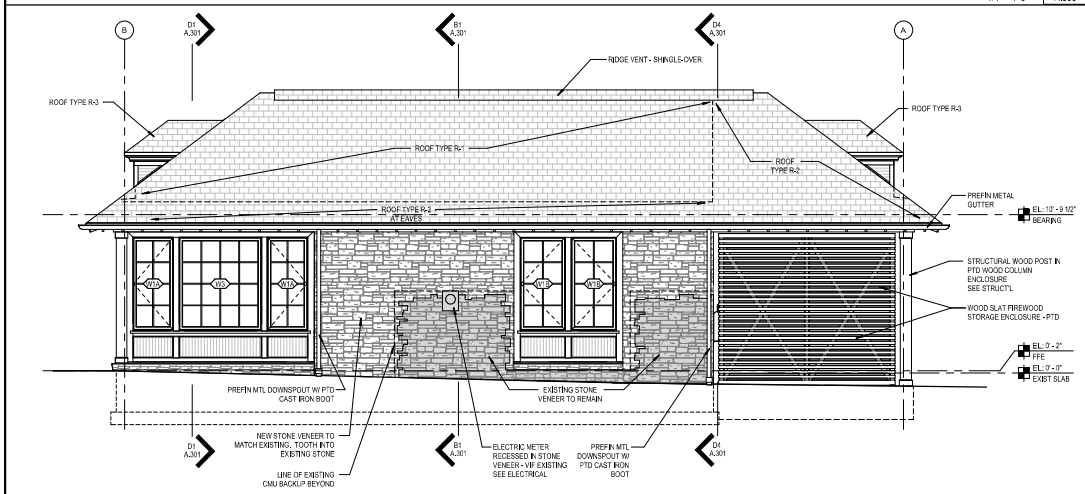
1/4" = 1'-0"



WEST ELEVATION - REGISTRATION STATION

D1 | A.300

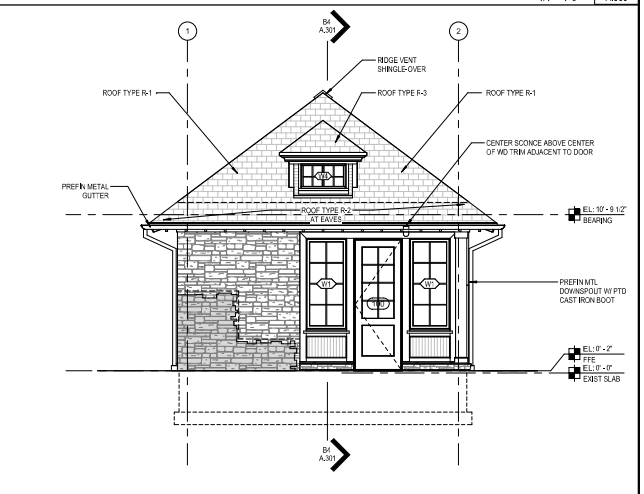
1/4" = 1'-0"



NORTH ELEVATION - REGISTRATION STATION

B4 | A.300

1/4" = 1'-0"



EAST ELEVATION - REGISTRATION STATION

B1 | A.300

1/4" = 1'-0"

MATERIALS

- SHINGLE ROOF
- SALVAGED AND NEW STONE VENEER
- EXISTING STONE TO REMAIN
- BEADBOARD PANELING

NOTES

1. EXPOSED PTD WOOD TRIM TO BE PRIMED ON ALL SIDES, AND CUT SURFACES ARE TO BE FIELD PRIMED, PRIOR TO BEING INSTALLED, TYPICAL. SEE SPECIFICATIONS FOR REQUIREMENTS REGARDING WOOD SPECIES AND LOCATIONS.
2. EXPOSED RAFTERS AND TONGUE AND GROOVE DECKING TO BE PAINTED.

0 2'-0" 4'-0"

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonilla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

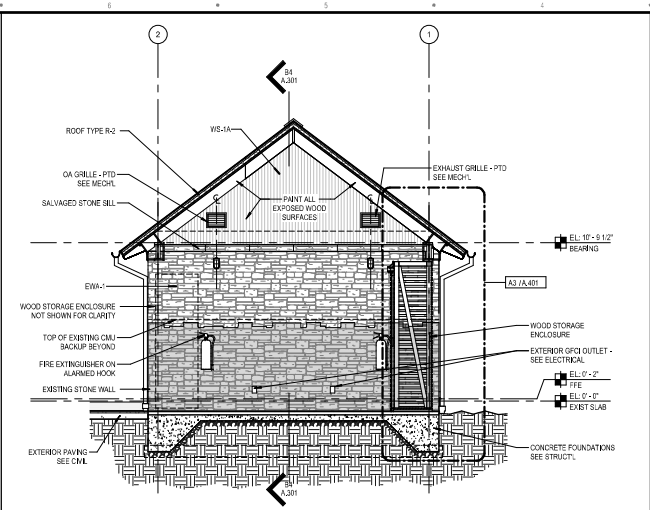
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.300.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

EXTERIOR ELEVATIONS - REGISTRATION STATION

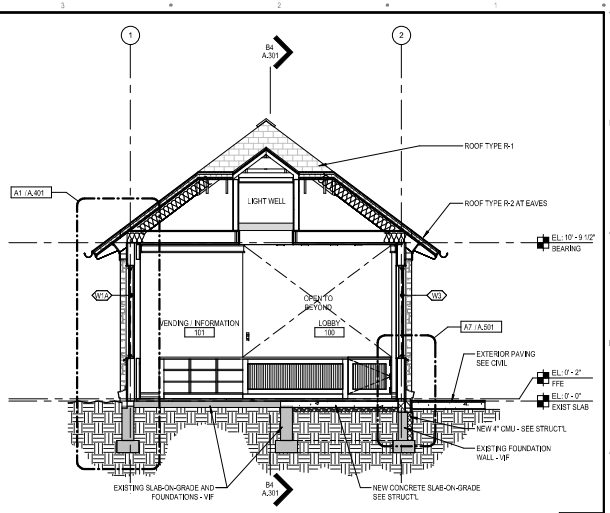
A.300

8/23/2021 4:13:25 PM



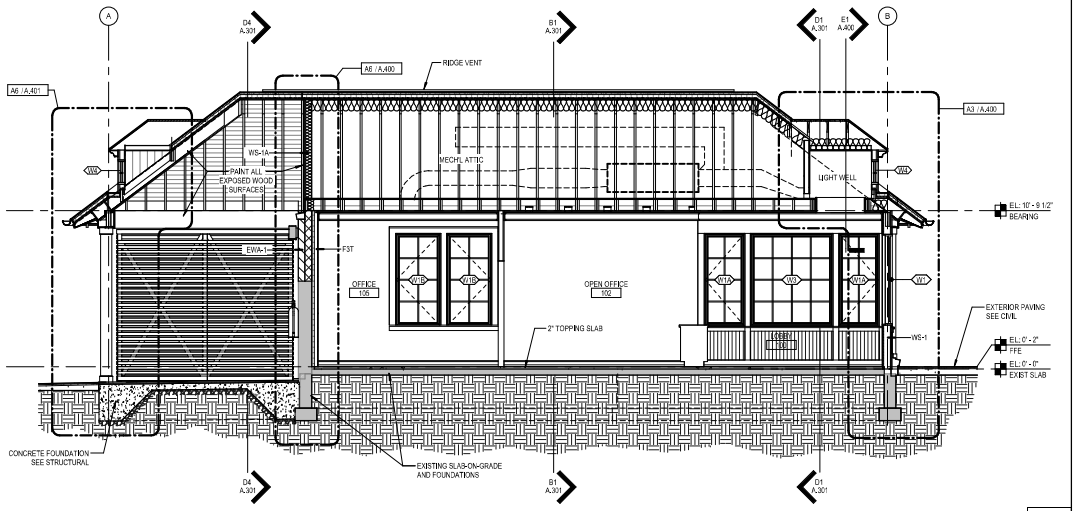
E-W SECTION - CAMPER REGISTRATION - FIRE WOOD STORAGE **D4**

1/4" = 1'-0" A.301



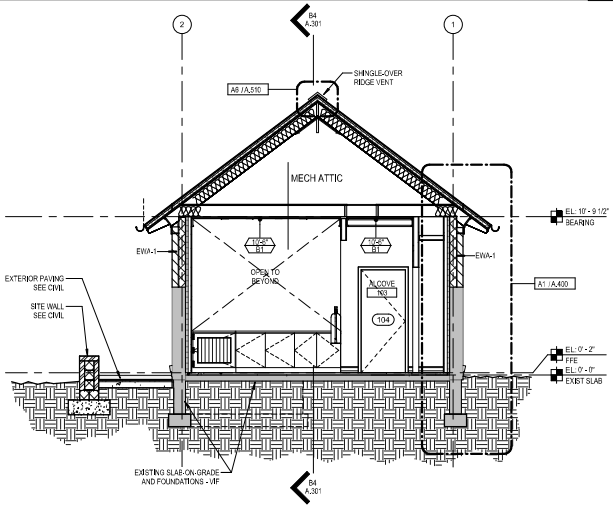
E-W SECTION - CAMPER REGISTRATION - DORMER **D1**

1/4" = 1'-0" A.301



N-S SECTION - CAMPER REGISTRATION **B4**

1/4" = 1'-0" A.301



E-W SECTION - CAMPER REGISTRATION **B1**

1/4" = 1'-0" A.301

MATERIALS

- SHINGLE ROOF
- SALVAGED AND NEW STONE VENEER
- EXISTING STONE TO REMAIN
- BEADBOARD PANELING

NOTES

1. EXPOSED PTD WOOD TRIM TO BE PRIMED ON ALL SIDES, AND CUT SURFACES ARE TO BE FIELD PRIMED, PRIOR TO BEING INSTALLED, TYPICAL. SEE SPECIFICATIONS FOR REQUIREMENTS REGARDING WOOD SPECIES AND LOCATIONS.
2. EXPOSED RAFTERS AND TONGUE AND GROOVE DECKING TO BE PAINTED.

0 2'-0" 4'-0"

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 320, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

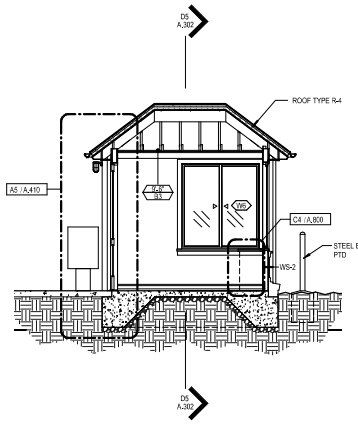
BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.301.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

BUILDING SECTIONS - REGISTRATION STATION

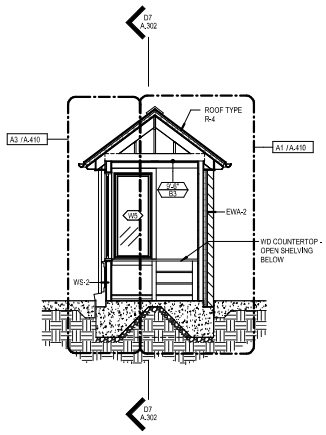
A.301

8/23/2021 4:13:28 PM



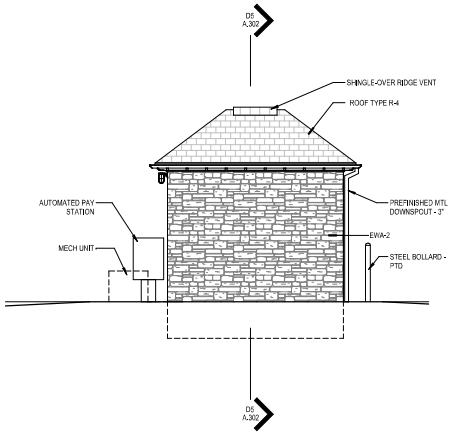
E-W SECTION - CHARGE STATION | D7 | A.302

1/4" = 1'-0"



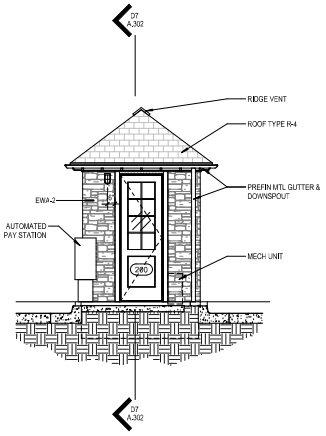
N-S SECTION - CHARGE STATION | D5 | A.302

1/4" = 1'-0"



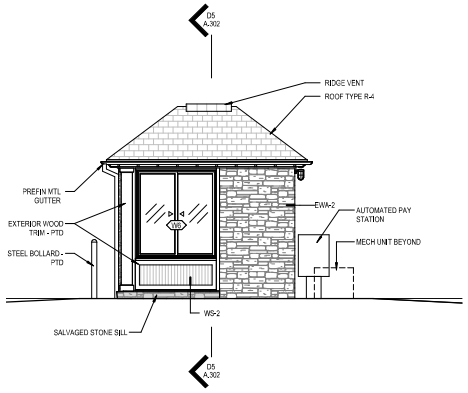
SOUTH ELEVATION - CHARGE STATION | D3 | A.302

1/4" = 1'-0"



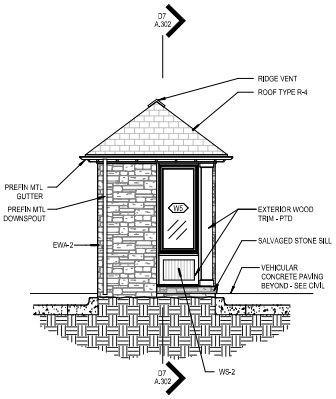
WEST ELEVATION - CHARGE STATION | D1 | A.302

1/4" = 1'-0"



NORTH ELEVATION - CHARGE STATION | B3 | A.302

1/4" = 1'-0"



EAST ELEVATION - CHARGE STATION | B1 | A.302

1/4" = 1'-0"

MATERIALS

- SHINGLE ROOF
- SALVAGED AND NEW STONE VENEER
- EXISTING STONE TO REMAIN
- BEADBOARD PANELING

NOTES

1. EXPOSED PTD WOOD TRIM TO BE PRIMED ON ALL SIDES, AND CUT SURFACES ARE TO BE FIELD PRIMED, PRIOR TO BEING INSTALLED, TYPICAL. SEE SPECIFICATIONS FOR REQUIREMENTS REGARDING WOOD SPECIES AND LOCATIONS.
2. EXPOSED RAFTERS AND TONGUE AND GROOVE DECKING TO BE PAINTED.

0 2'-0" 4'-0"

8/23/2021 4:13:30 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-568-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

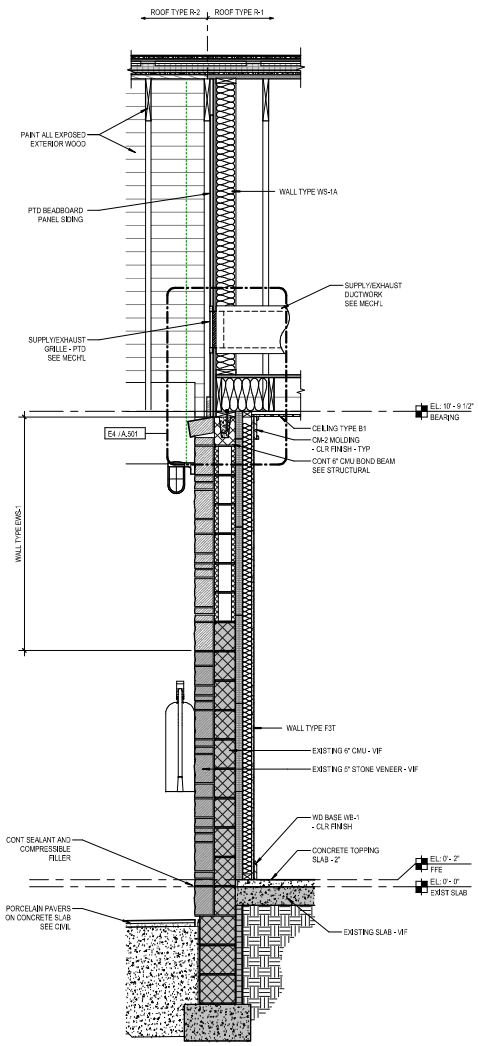
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.302.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

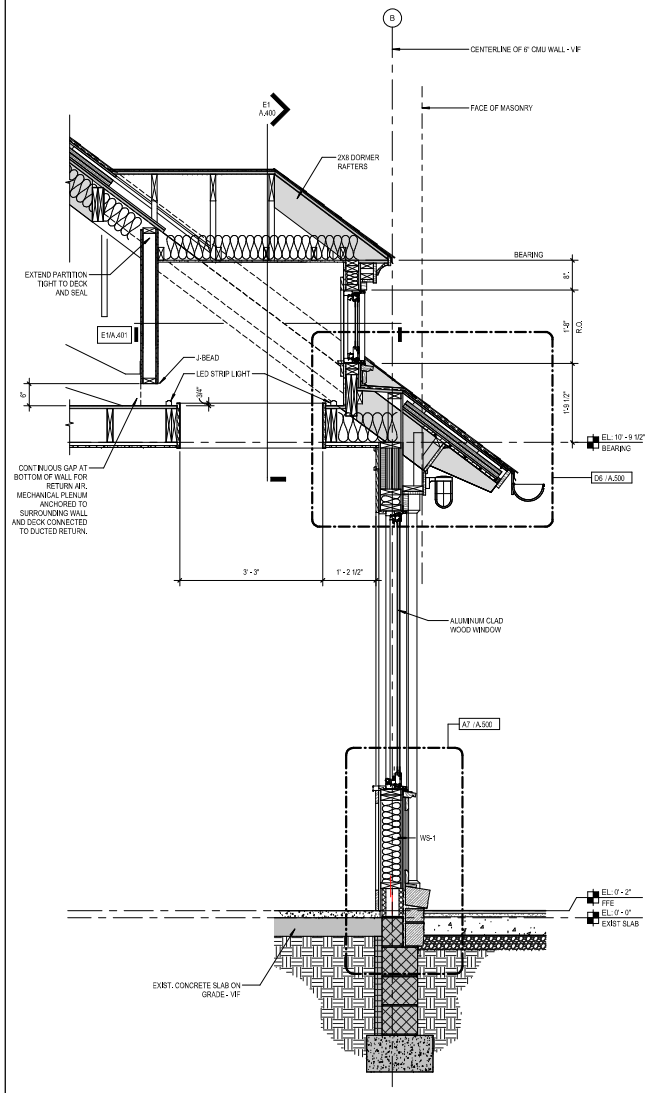
ELEVATIONS & SECTIONS - CHARGE STATION

A.302



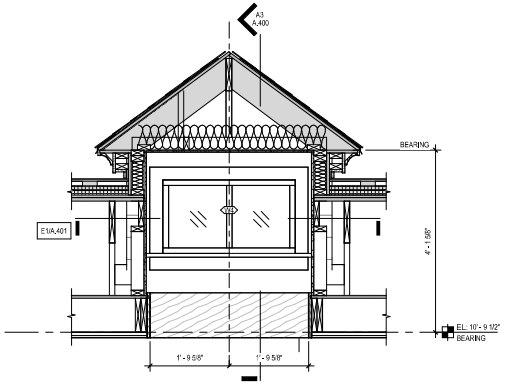
WALL SECTION - PORCH GABLE A6 / A.400

3/4" = 1'-0"



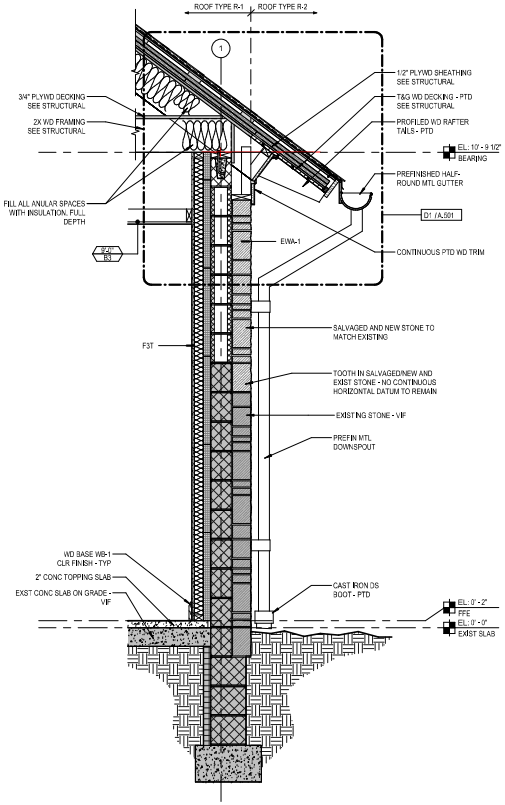
WALL SECTION - EAST WALL/DORMER A3 / A.400

3/4" = 1'-0"



WALL SECTION - EAST DORMER E1 / A.400

3/4" = 1'-0"



WALL SECTION - SOUTH WALL A1 / A.400

3/4" = 1'-0"

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 320, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGNEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fordla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

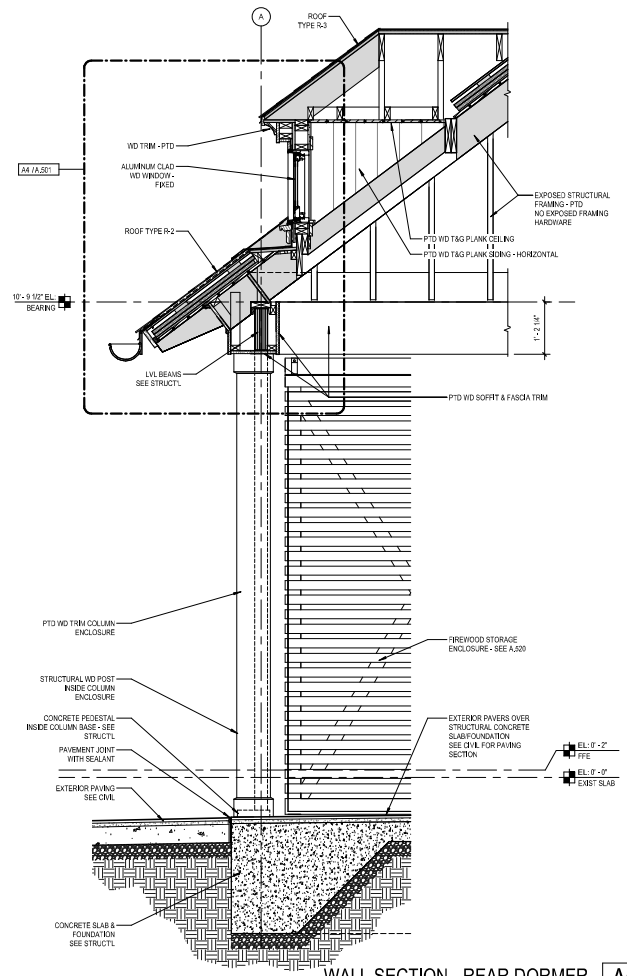
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.400.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

WALL SECTIONS - REGISTRATION STATION

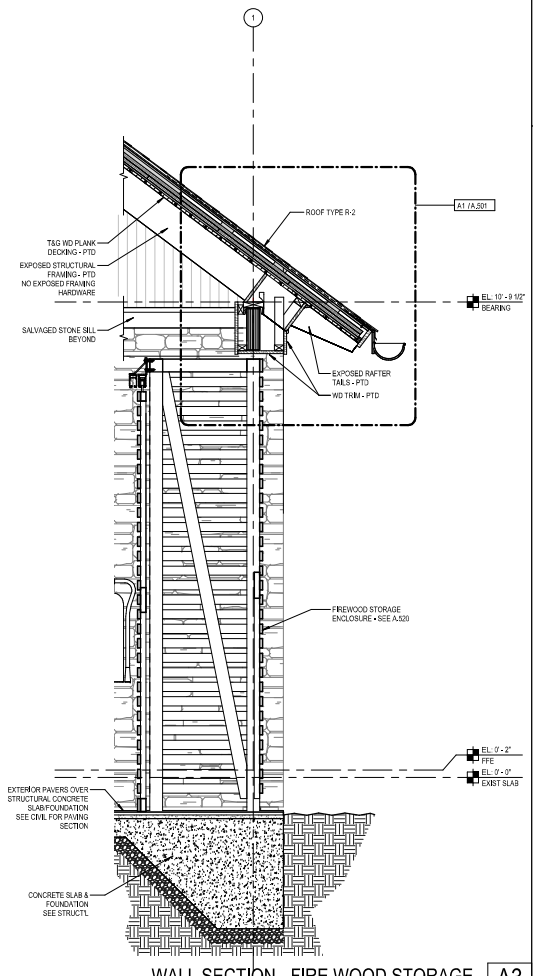
A.400

8/23/2021 4:13:33 PM



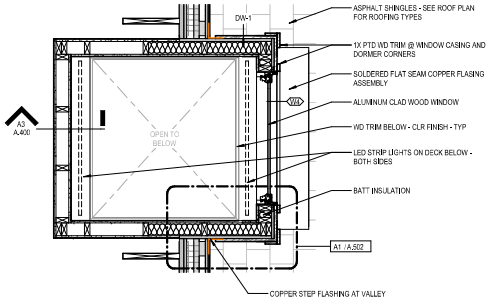
WALL SECTION - REAR DORMER **A6** / A.401

0 8" 1'-4" 3/4" = 1'-0"



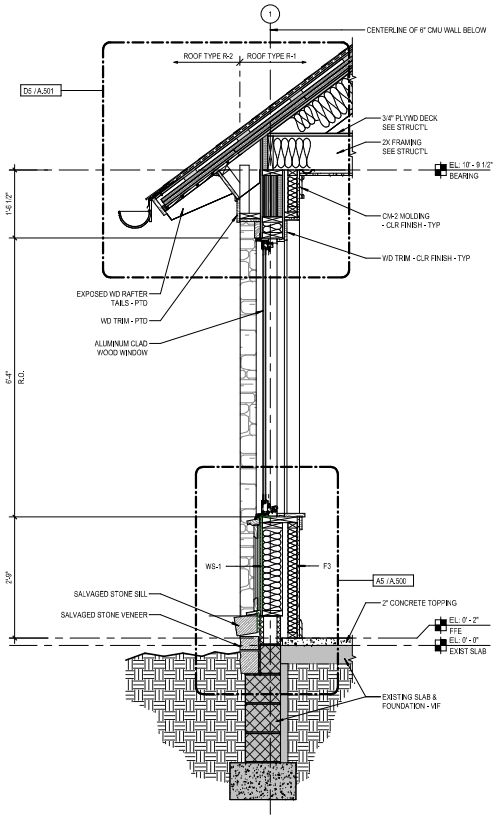
WALL SECTION - FIRE WOOD STORAGE **A3** / A.401

0 8" 1'-4" 3/4" = 1'-0"



ENLARGED PLAN - EAST DORMER **E1** / A.401

0 8" 1'-4" 3/4" = 1'-0"



WALL SECTION - SOUTH WINDOW **A1** / A.401

0 8" 1'-4" 3/4" = 1'-0"

8/23/2021 4:13:36 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 320, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

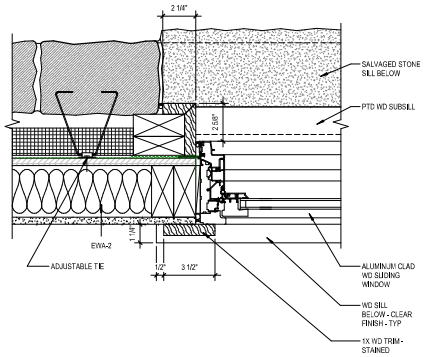
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.401.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

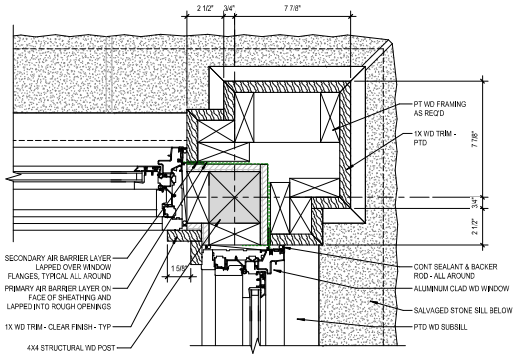
WALL SECTIONS - REGISTRATION STATION

A.401



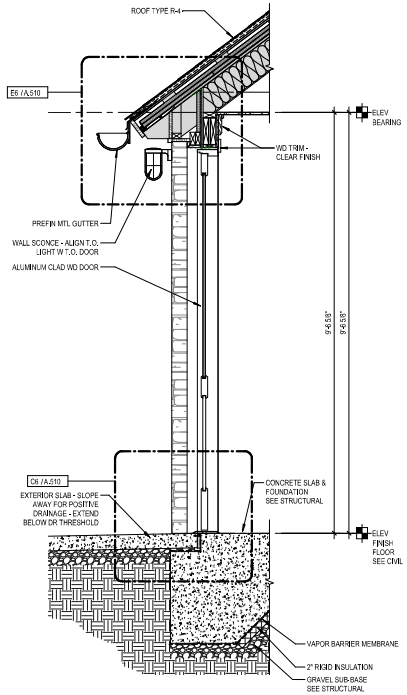
PLAN DETAIL @ WINDOW JAMB **E3**

3" = 1'-0" A.410



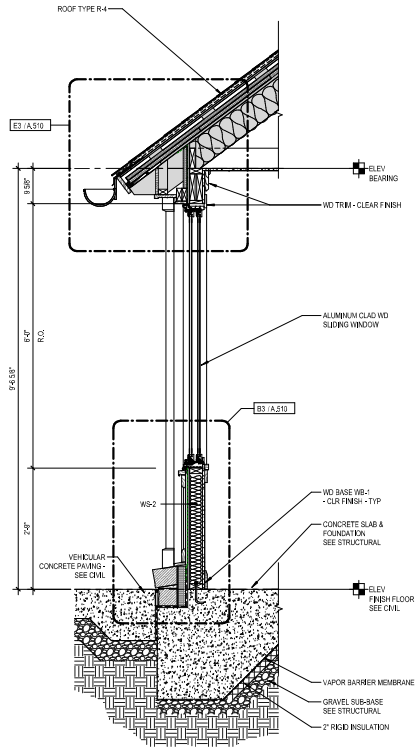
PLAN DETAIL - CORNER **E1**

3" = 1'-0" A.410



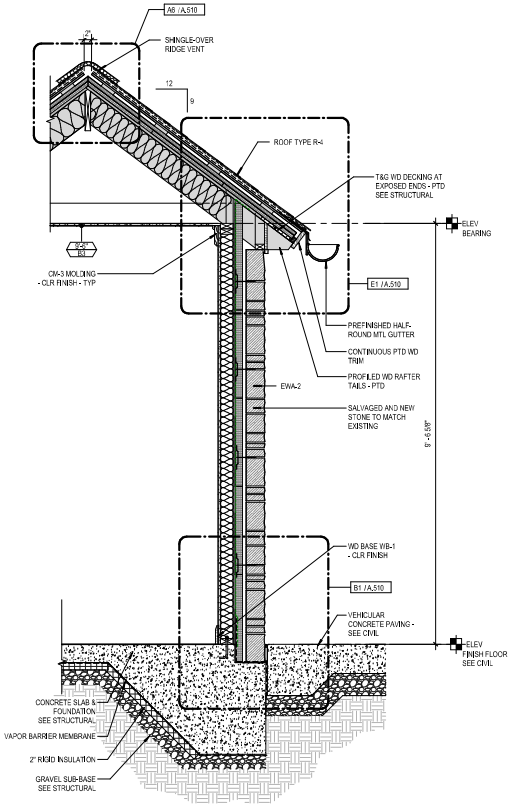
WALL SECTION @ DOOR **A5**

3/4" = 1'-0" A.410



WALL SECTION @ WINDOW **A3**

3/4" = 1'-0" A.410



WALL SECTION - TYPICAL WALL **A1**

3/4" = 1'-0" A.410

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 326, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

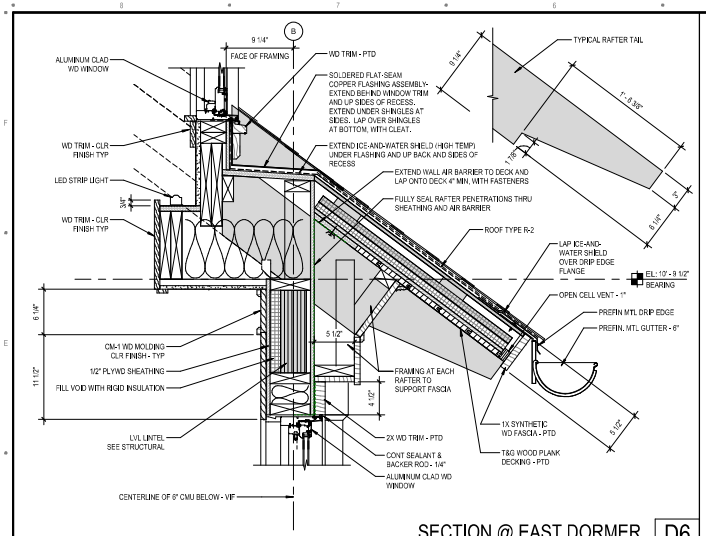
BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.410.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

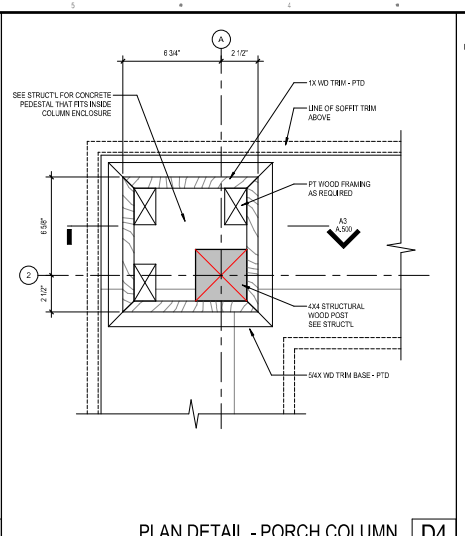
WALL SECTIONS & DETAILS - CHARGE STATION

A.410

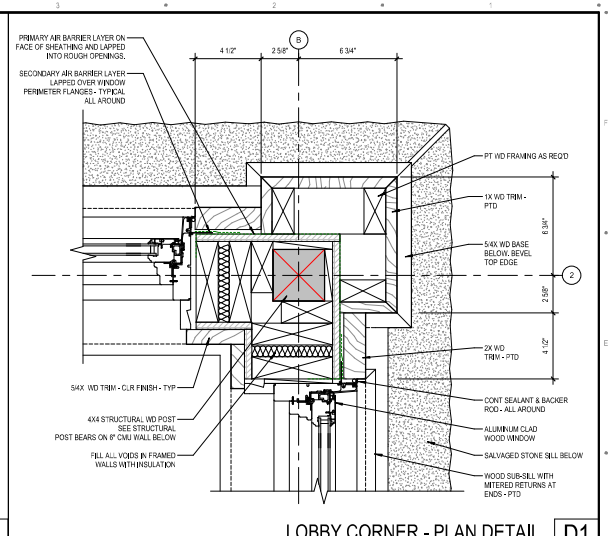
8/23/2021 4:13:38 PM



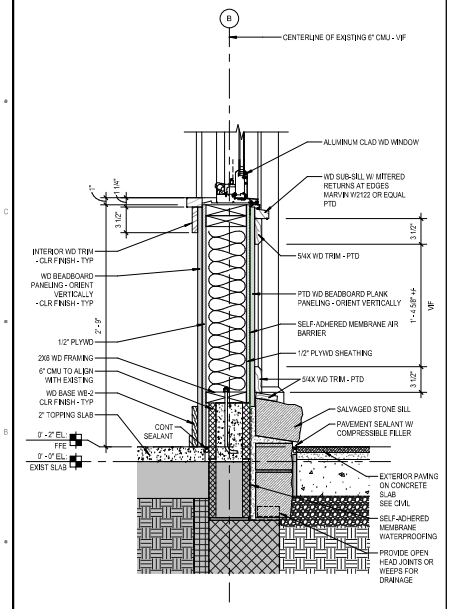
SECTION @ EAST DORMER — D6 / A.500 — 1 1/2" = 1'-0"



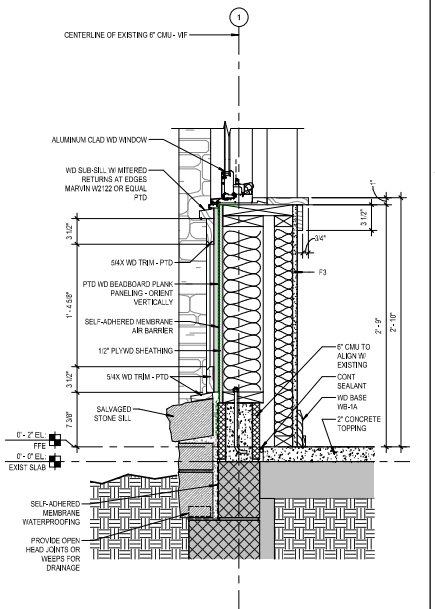
PLAN DETAIL - PORCH COLUMN — D4 / A.500 — 3" = 1'-0"



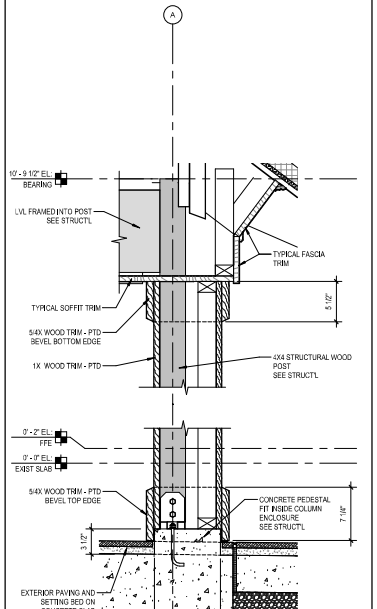
LOBBY CORNER - PLAN DETAIL — D1 / A.500 — 3" = 1'-0"



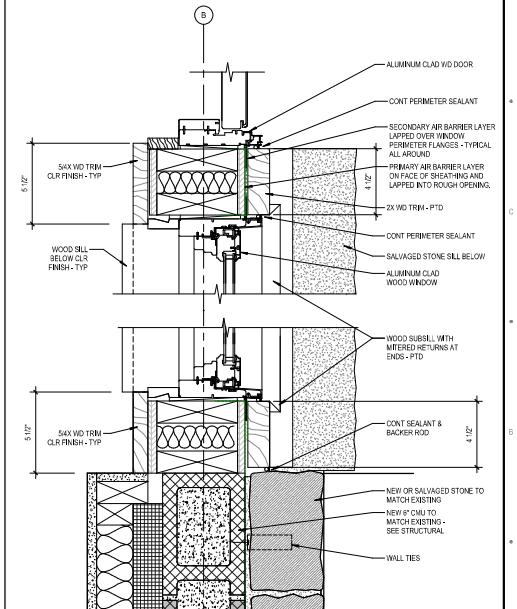
WINDOW SILL - SECTION DETAIL — A7 / A.500 — 1 1/2" = 1'-0"



SECTION DETAIL - WALL @ WINDOW — A5 / A.500 — 1 1/2" = 1'-0"



SECTION @ PORCH POST — A3 / A.500 — 1 1/2" = 1'-0"



CMU WINDOW JAMB - PLAN DETAIL — A1 / A.500 — 3" = 1'-0"

8/23/2021 4:13:42 PM

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 — ZIGER / SNEAD LLP — STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

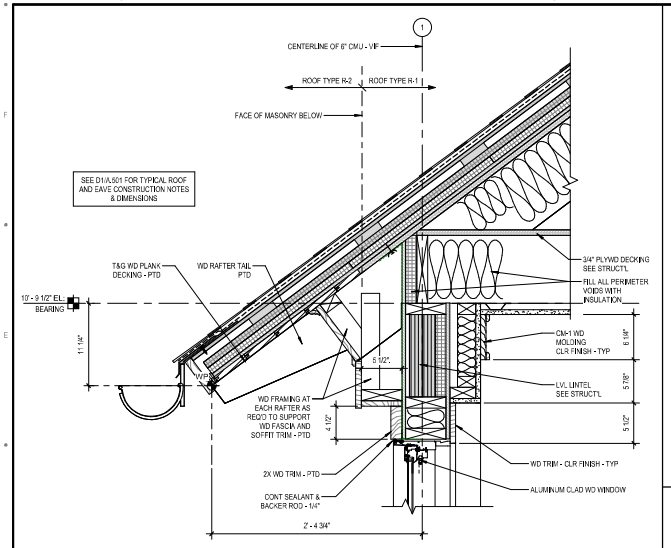
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.500.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

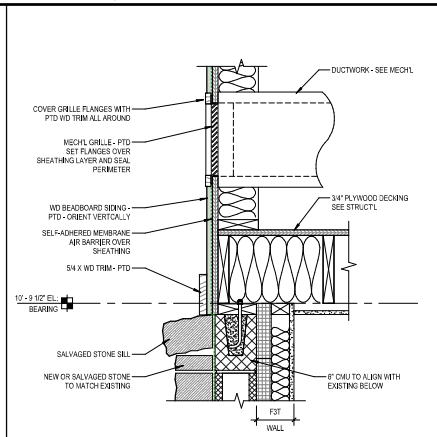
REGISTRATION STATION DETAILS

A.500



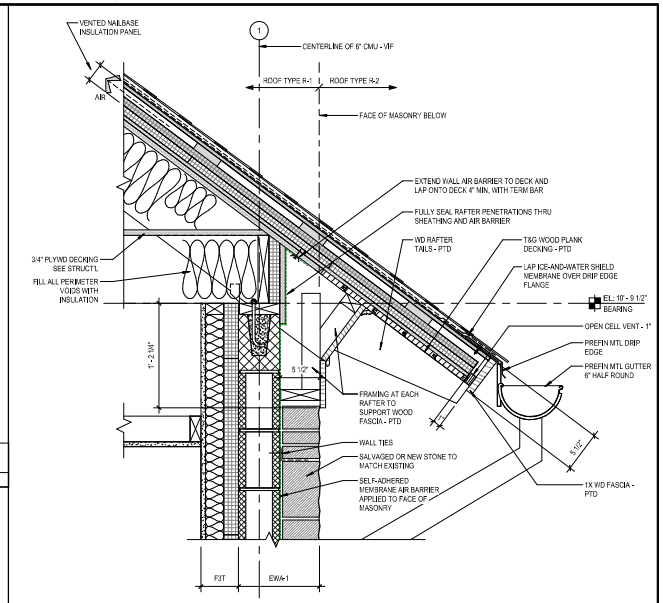
SECTION DETAIL - EAVE @ WINDOW **D5** A.501

1 1/2" = 1'-0"



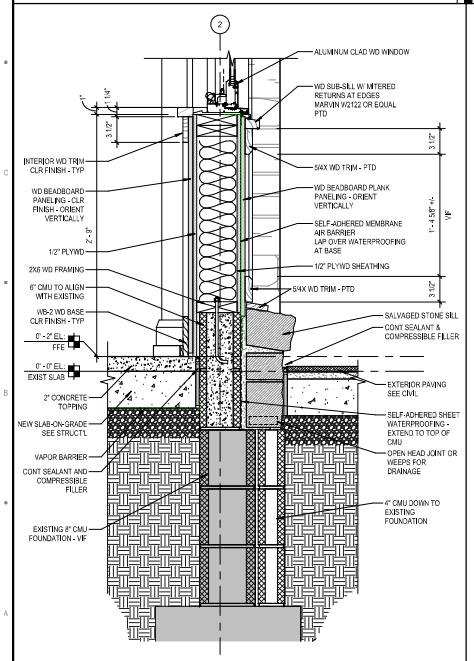
SECTION DETAIL **E4** A.501

1 1/2" = 1'-0"



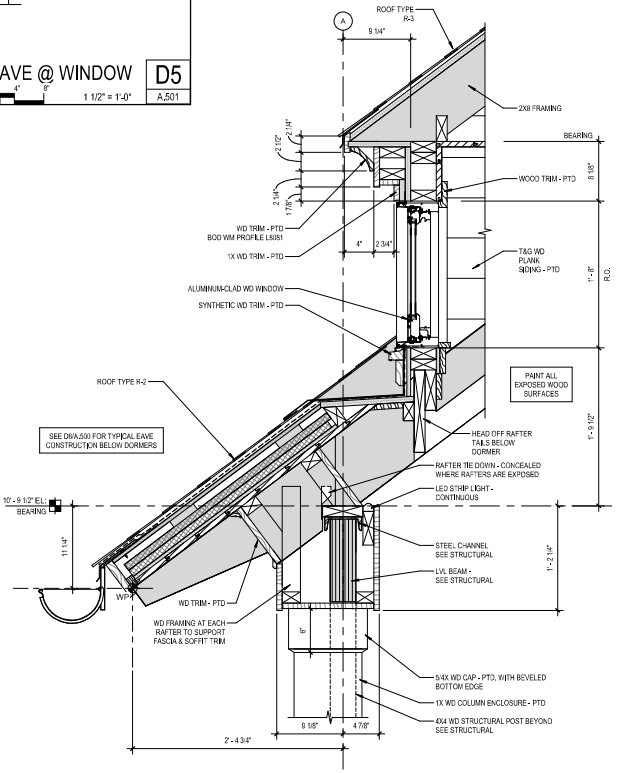
SECTION DETAIL - EAVE @ WALL **D1** A.501

1 1/2" = 1'-0"



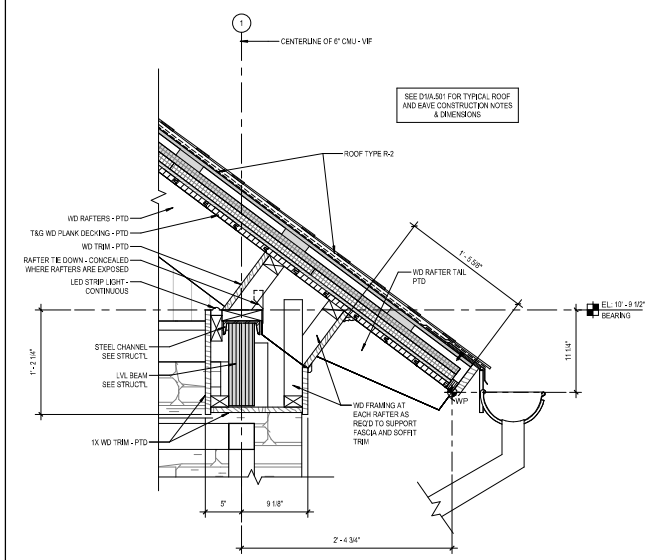
WALL SECTION - NORTH WALL **A7** A.501

1 1/2" = 1'-0"



SECTION DETAIL - WEST DORMER **A4** A.501

1 1/2" = 1'-0"



SECTION DETAIL - EAVE @ PORCH **A1** A.501

1 1/2" = 1'-0"

8/23/2021 4:13:45 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

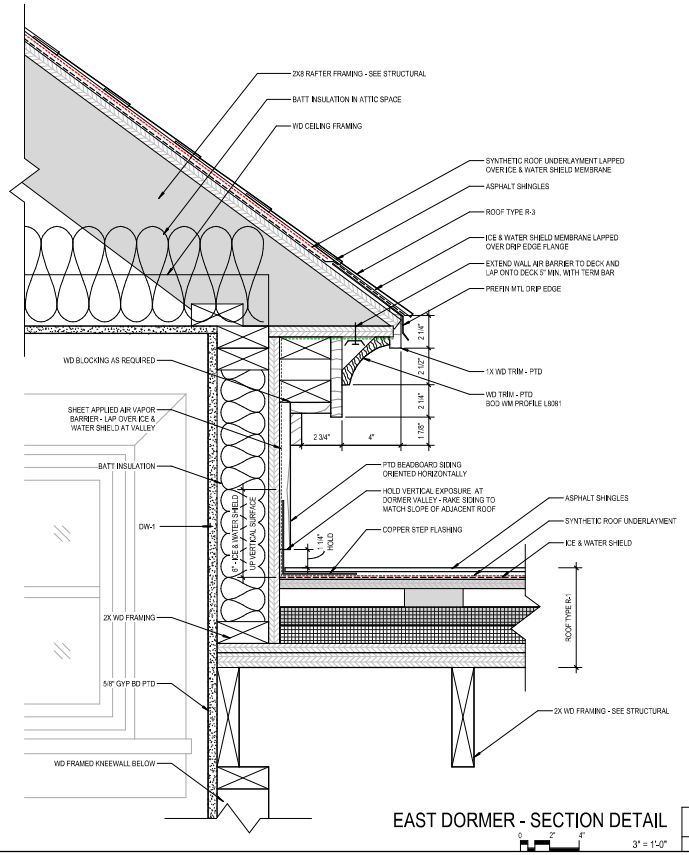
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS	23 August 2021
CAD DWG FILE:	GSP_A.501.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

REGISTRATION STATION DETAILS

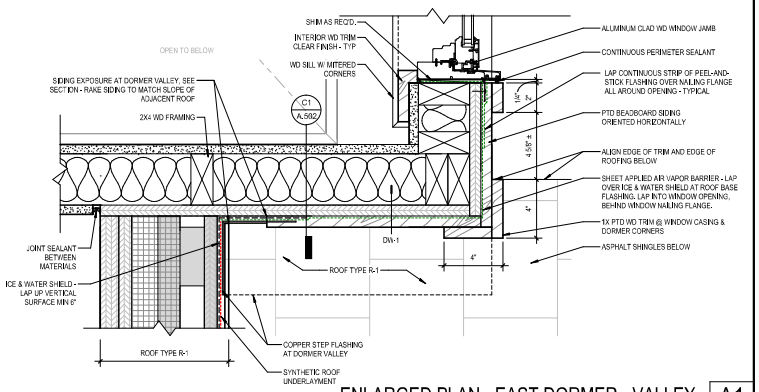
A.501



EAST DORMER - SECTION DETAIL

C1 / A.502

0 2' 4' 3" = 1'-0"



ENLARGED PLAN - EAST DORMER - VALLEY

A1 / A.502

0 2' 4' 3" = 1'-0"

8/23/2021 4:13:46 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-568-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

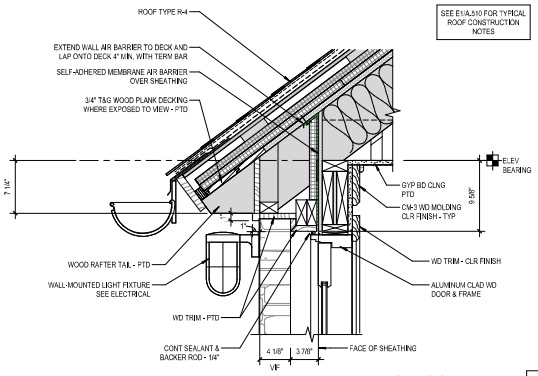
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.502.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

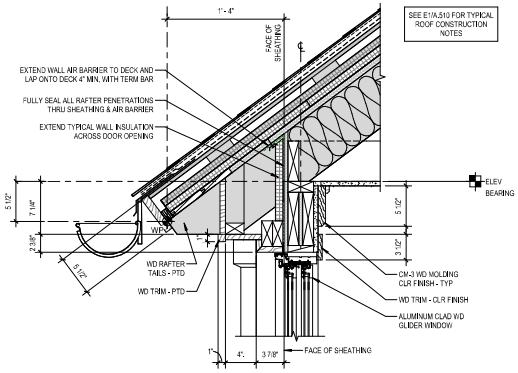
REGISTRATION STATION DETAILS

A.502



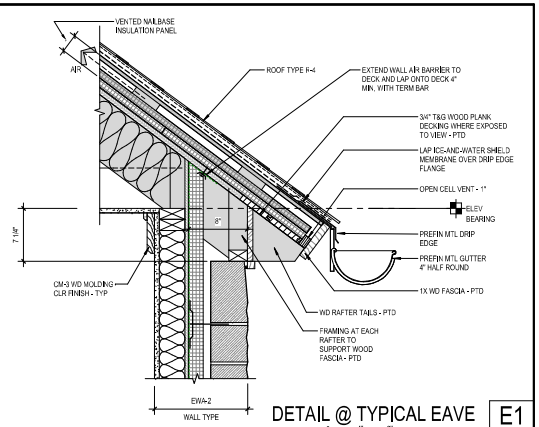
DETAIL @ DOOR HEAD **E6**

1 1/2" = 1'-0" A.510



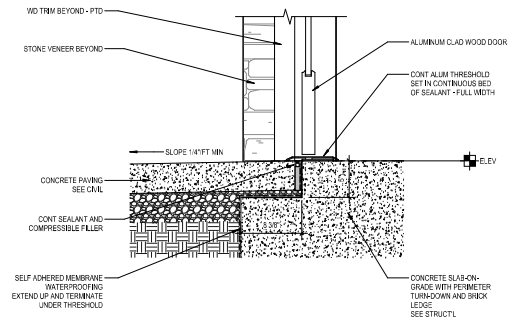
DETAIL @ WINDOW HEAD **E3**

1 1/2" = 1'-0" A.510



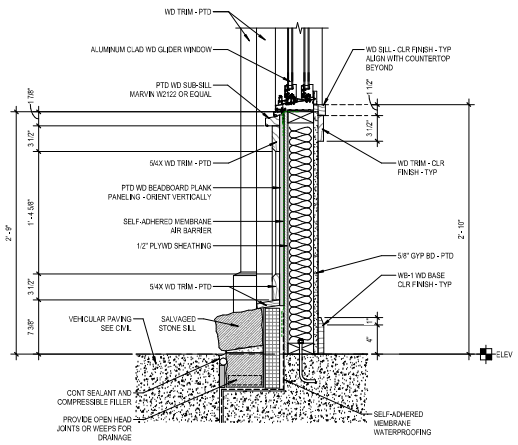
DETAIL @ TYPICAL EAVE **E1**

1 1/2" = 1'-0" A.510



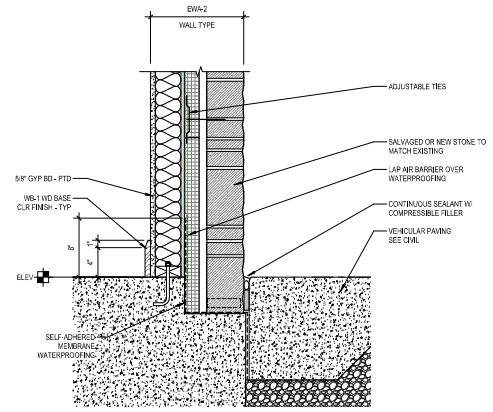
DETAIL @ DOOR SILL **C6**

1 1/2" = 1'-0" A.510



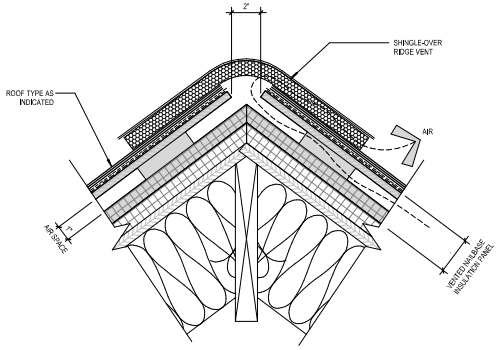
DETAIL @ WINDOW SILL **B3**

1 1/2" = 1'-0" A.510



DETAIL - TYPICAL BOTTOM OF WALL **B1**

1 1/2" = 1'-0" A.510



DETAIL @ RIDGE VENT **A6**

3" = 1'-0" A.510

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

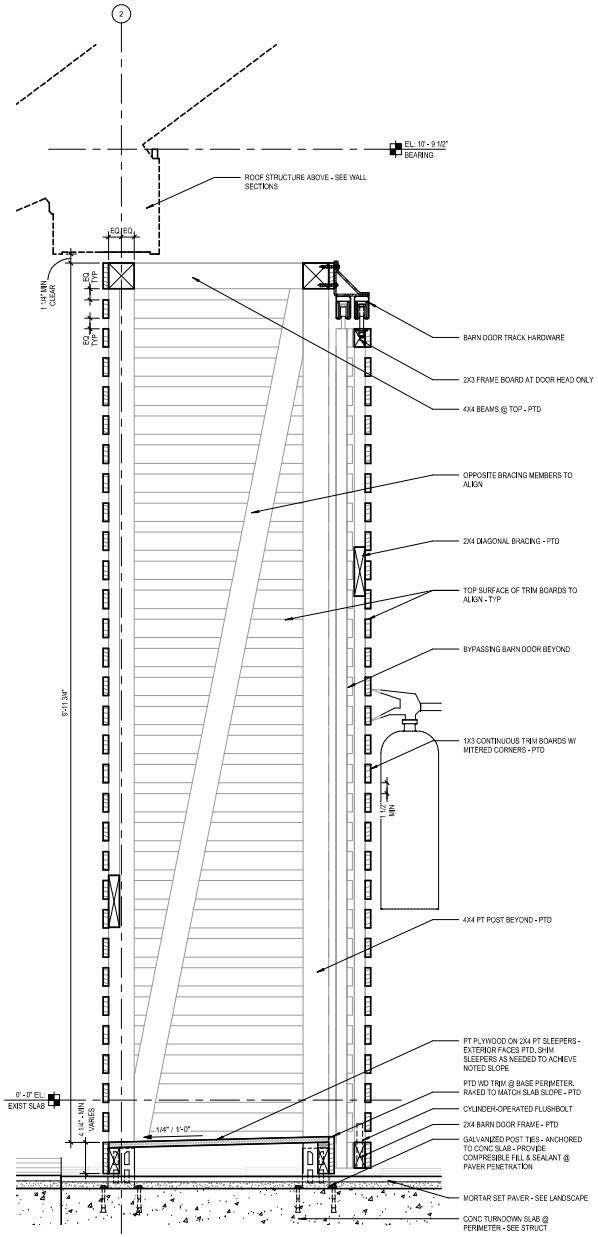
NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.510.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

CHARGE STATION DETAILS

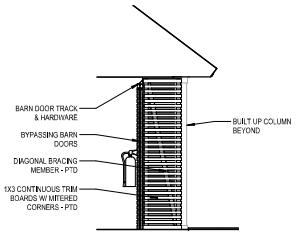
A.510

8/23/2021 4:13:49 PM



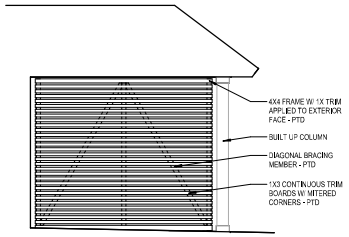
FIRE WOOD STORAGE - SECTION DETAIL **A6** A.520

0 4" 8" 1 1/2" = 1'-0"



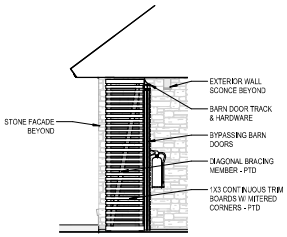
FIRE WOOD STORAGE - EAST ELEVATION **E3** A.520

0 2'-0" 4'-0" 1/4" = 1'-0"



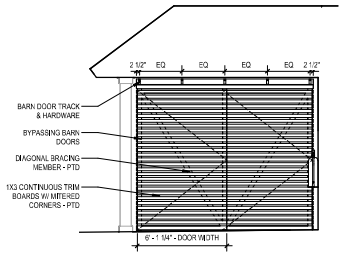
FIRE WOOD STORAGE - NORTH ELEVATION **E1** A.520

0 2'-0" 4'-0" 1/4" = 1'-0"



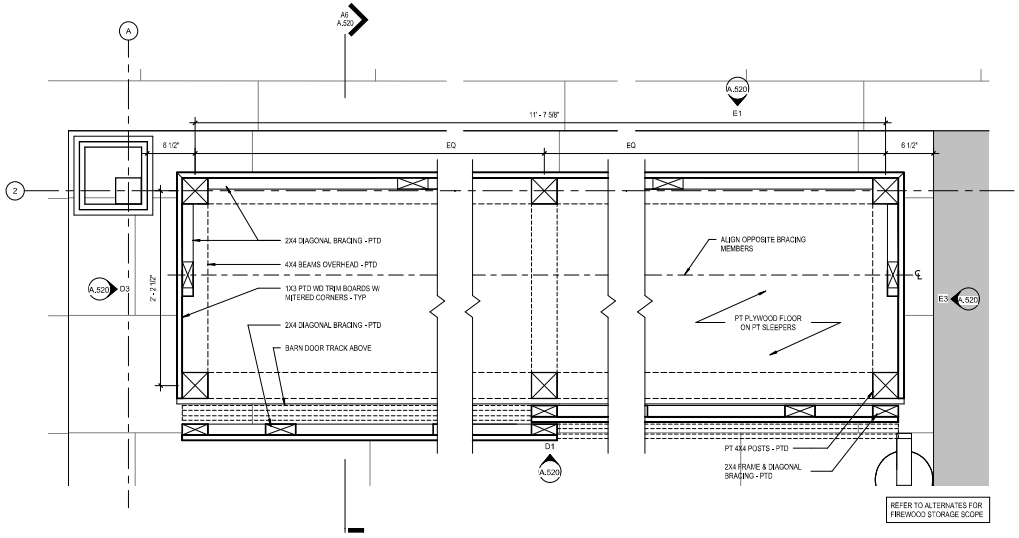
FIREWOOD STORAGE - WEST ELEVATION **D3** A.520

0 2'-0" 4'-0" 1/4" = 1'-0"



FIRE WOOD STORAGE - SOUTH ELEVATION **D1** A.520

0 2'-0" 4'-0" 1/4" = 1'-0"



FIRE WOOD STORAGE - PLAN DETAIL **A1** A.520

0 4" 8" 1 1/2" = 1'-0"

8/23/2021 4:13:52 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

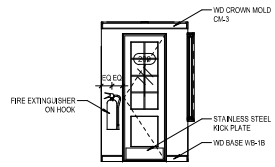
NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION DOCUMENTS 23 August 2021

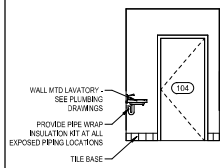
CAD DWG FILE:	GSP_A.520.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

FIREWOOD STORAGE DETAILS - ADD ALTERNATE

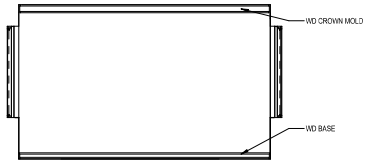
A.520



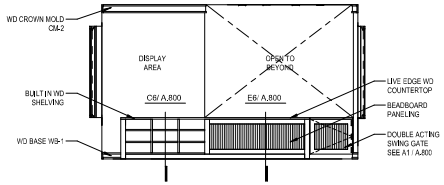
CHARGE STATION - WEST **E7** A.700
1/4" = 1'-0"



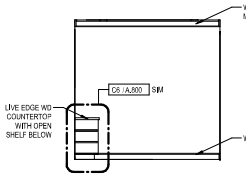
RESTROOM - WEST WALL **E6** A.700
1/4" = 1'-0"



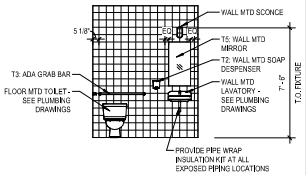
INTERIOR ELEVATION - OFFICE WEST WALL **E3** A.700
1/4" = 1'-0"



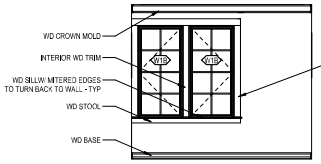
INTERIOR ELEVATION - LOBBY WEST WALL **E1** A.700
1/4" = 1'-0"



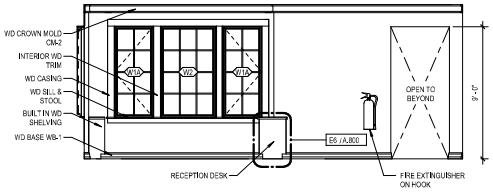
CHARGE STATION - SOUTH **D7** A.700
1/4" = 1'-0"



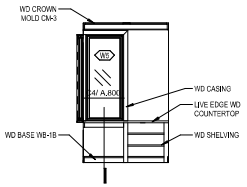
RESTROOM - SOUTH WALL **D6** A.700
1/4" = 1'-0"



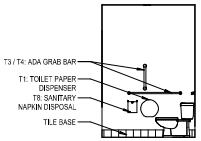
INTERIOR ELEVATION - OFFICE SOUTH WALL **D3** A.700
1/4" = 1'-0"



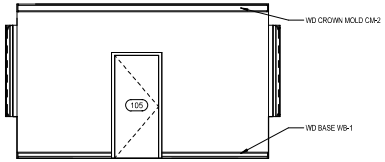
INTERIOR ELEVATION - LOBBY SOUTH WALL **D1** A.700
1/4" = 1'-0"



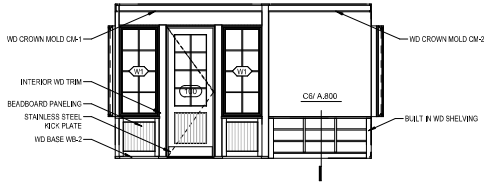
CHARGE STATION - EAST **B7** A.700
1/4" = 1'-0"



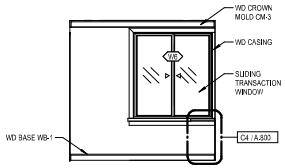
RESTROOM - EAST WALL **B6** A.700
1/4" = 1'-0"



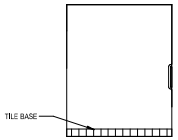
INTERIOR ELEVATION - OFFICE EAST WALL **B3** A.700
1/4" = 1'-0"



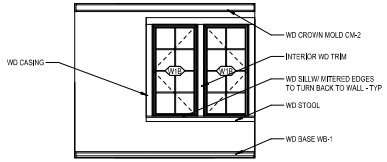
INTERIOR ELEVATION - LOBBY EAST WALL **B1** A.700
1/4" = 1'-0"



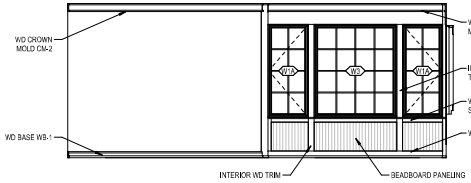
CHARGE STATION - NORTH **A7** A.700
1/4" = 1'-0"



RESTROOM - NORTH WALL **A6** A.700
1/4" = 1'-0"



INTERIOR ELEVATION - OFFICE NORTH WALL **A3** A.700
1/4" = 1'-0"



INTERIOR ELEVATION - LOBBY NORTH WALL **A1** A.700
1/4" = 1'-0"

8/23/2021 4:47:52 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

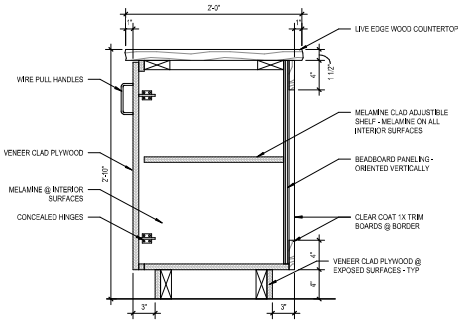
21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.700.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

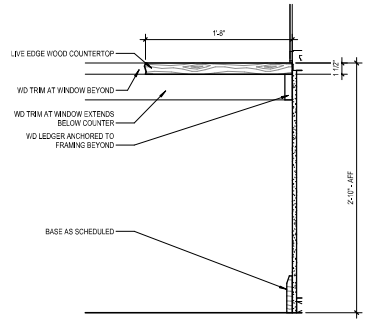
INTERIOR ELEVATIONS

A.700



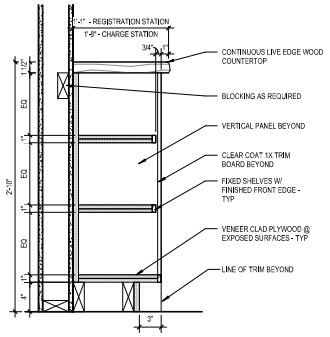
LOBBY COUNTER @ CABINET **E6** A.800

1 1/2" = 1'-0"



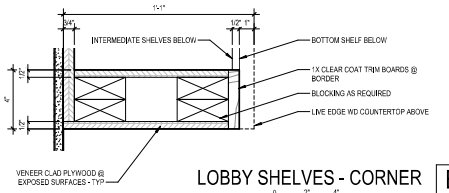
CHARGE STATION DESK **C4** A.800

1 1/2" = 1'-0"



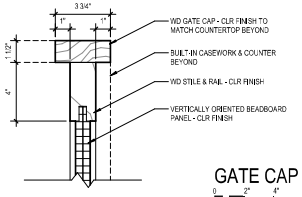
LOBBY COUNTER @ WALL **C6** A.800

1 1/2" = 1'-0"



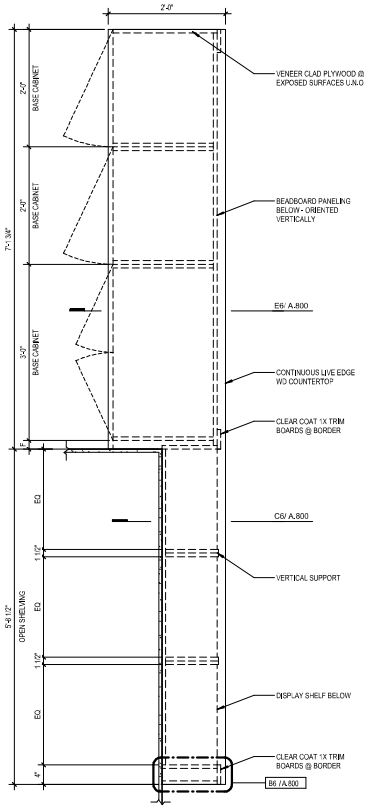
LOBBY SHELVES - CORNER **B6** A.800

3" = 1'-0"



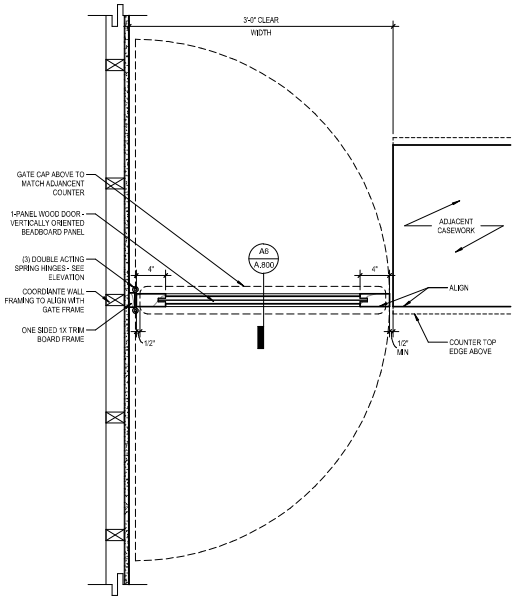
GATE CAP DETAIL **A6** A.800

3" = 1'-0"

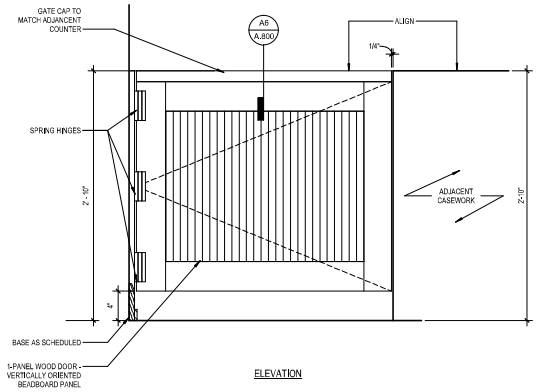


LOBBY COUNTER - PLAN **A4** A.800

1" = 1'-0"



PLAN



ELEVATION

SWING GATE DETAIL **A1** A.800

1 1/2" = 1'-0"

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.800.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

INTERIOR DETAILS

A.800

8/23/2021 4:13:58 PM

DOOR SCHEDULE

DOOR NUMBER	FROM LOCATION #	FROM LOCATION ROOM NAME	TO LOCATION #	TO LOCATION ROOM NAME	DOOR TYPE	DOOR MAT.	DOOR FINISH	DOOR WIDTH	DOOR HEIGHT	DOOR THICK.	FRAME TYPE	FRAME MAT.	FRAME FINISH	HW SET	REMARKS
100	100	LOBBY	-	EXTERIOR	B1	AL/WD	PREFIN	3'-4"	9'-0"	1 3/4"	E1	AL/WD	PREFIN	1	1, 2, 4
103A	103A	STORAGE	103	ALCOVE	F1	WD	STN	2'-8"	7'-0"	1 3/4"	F1	WD	STN	2	
104	104	RESTROOM	103	ALCOVE	F1	WD	STN	3'-0"	7'-0"	1 3/4"	F1	WD	STN	3	3
105	102	OPEN OFFICE	105	OFFICE	F1	WD	STN	3'-0"	7'-0"	1 3/4"	F1	WD	STN	4	
200	-	EXTERIOR	200	CHARGE STATION #1	B1	AL/WD	PREFIN	3'-0"	8'-8 1/2"	1 3/4"	E2	AL/WD	PREFIN	5	1, 2, 5
300	-	EXTERIOR	300	CHARGE STATION #2	B1	AL/WD	PREFIN	3'-0"	8'-8 1/2"	1 3/4"	E2	AL/WD	PREFIN	5	1, 2, 5

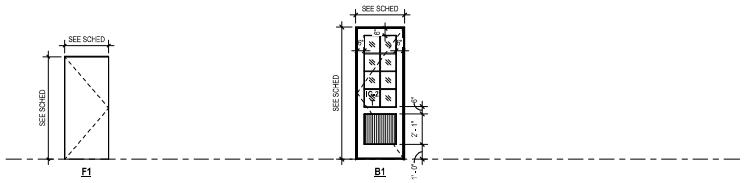
MATERIALS / FINISHES LEGEND:

WD WOOD
AL ALUMINUM CLADDING
PTD PAINTED
STN STAINED
PREFIN PRE-FINISHED

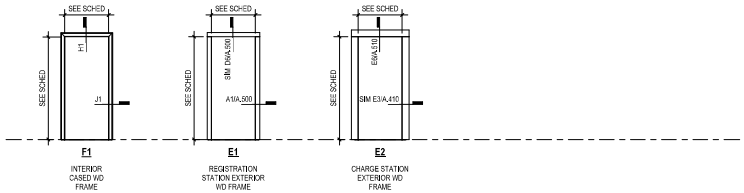
REMARKS LEGEND:

1. ALUMINUM CLAD EXTERIOR DOOR. PREFINISHED EXTERIOR. FACTORY FINISHED STAINED INTERIOR
2. CLOSER
3. OCCUPANCY INDICATOR
4. PROVIDE FIXED DOOR OPENER AND DEADBOLT. DOOR TO REMAIN UNLOCKED WHILE BUILDING IS IN USE.
5. SET CLOSER TO LIMIT DOOR SWING TO 90 DEGREES

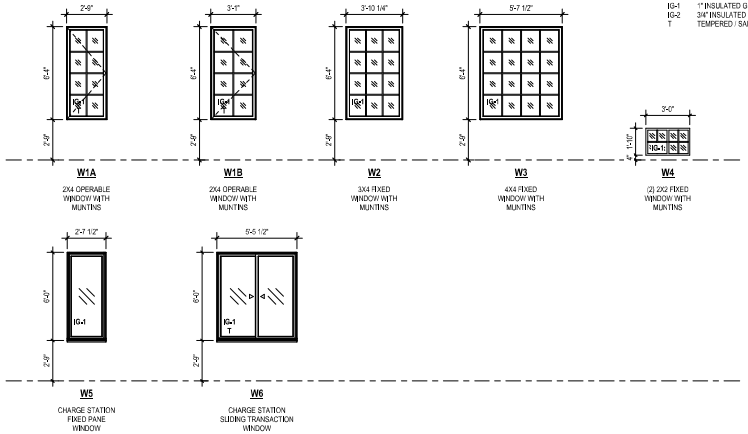
DOOR TYPES



FRAME TYPES

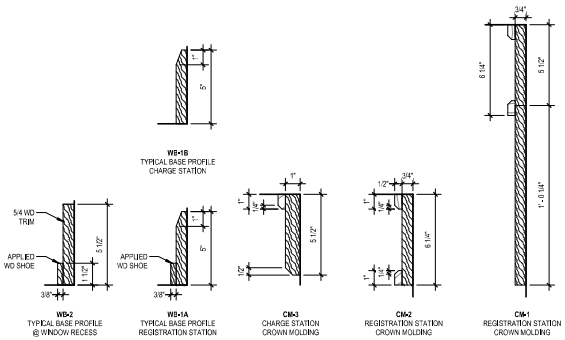


WINDOW TYPES

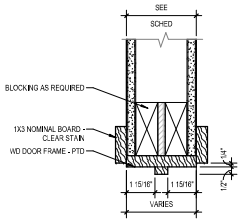


GLAZING LEGEND

IG-1	1" INSULATED GLASS UNIT
IG-2	3/4" INSULATED GLASS UNIT
T	TEMPERED / SAFETY GLASS

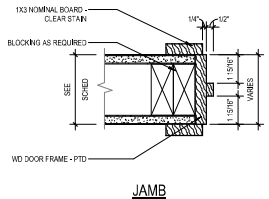


TYPICAL MOLDING PROFILES



H1

HEAD



J1

JAMB

8/23/2021 4:14:00 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluors Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-5395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

© 2021 ZIGER/SNEAD LLP
All rights reserved. The work contained in this document is the exclusive property of the Architect. Nothing contained herein, including the design concept, may be used, copied, or distributed in any way or by any means without the express written permission of the Architect.

BOARD OF ARCHITECTS 12413 ZIGER / SNEAD LLP STATE OF MARYLAND

Professional Certification:
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 12413, expiration date 2/25/2022.

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION DOCUMENTS	23 August 2021

CAD DWG FILE:	GSP_A.900.dwg
DRAWN BY:	ZS
CHECKED BY:	JL
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 August 2021

DOOR & WINDOW SCHEDULES, AND TYPICAL DETAILS

A.900

MECHANICAL SYMBOLS AND ABBREVIATIONS

GENERAL

SYMBOL	ABBR.	TYPE OF PIPE
3/9	–	DETAIL OR DIAGRAM NO. 3 SHOWN ON DRAWING NO. 9
3/7 9	–	SECTION NO. 3 FROM DRAWING NO. 7 SHOWN ON DRAWING NO. 9 (ARROW DENOTES SECTION)
	–	POINT OF CONNECTION, NEW TO EXISTING
	–	DEMOLITION WORK TERMINATION POINT
1	–	SYMBOL FOR SPECIFIC NOTE, NOTE APPLIES TO DRAWING ON WHICH IT OCCURS.
	ø	INDICATES DIAMETER
	ABV	ABOVE
	AFF	ABOVE FINISHED FLOOR
	ALUM	ALUMINUM
	APD	AIR PRESSURE DROP
	ASSOC	ASSOCIATED
	BLDG	BUILDING
	BLW	BELOW
	BTM	BOTTOM
	BTUH	BRITISH THERMAL UNITS PER HOUR
	CFM	CUBIC FEET PER MINUTE
	CI	CAST IRON
	CLG	CEILING
	CONC	CONCRETE
	CONN	CONNECT, CONNECTION
	CONT'N	CONTINUATION
	DB	DRY BULB
	DESG	DESIGNATION
	DIA	DIAMETER
	DWG	DRAWING
	EAT	ENTERING AIR TEMPERATURE
	EDB	ENTERING DRY BULB
	ELEV	ELEVATION
	ESP	EXTERNAL STATIC PRESSURE
	ETR	EXISTING TO REMAIN
	EWB	ENTERING WET BULB
	EWT	ENTERING WATER TEMPERATURE
	EX	EXISTING
	EXP	EXPANSION
	F	FAHRENHEIT
	FL	FLOOR
	FPS	FEET PER SECOND
	FT	FEET
	FT HD	FEET OF HEAD
	GALV	GALVANIZED

GENERAL

GPM	GALLONS PER MINUTE
IN	INCH, INCHES
LAT	LEAVING AIR TEMPERATURE
LB(S)	POUND(S)
LDB	LEAVING DRY BULB
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU'S PER HOUR
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MTD	MOUNTED
PD	PRESSURE DROP
PSIG	POUNDS PER SQUARE INCH GAUGE
PSI	POUNDS PER SQUARE INCH
REQ'D	REQUIRED
RPM	REVOLUTIONS PER MINUTE
RX	REMOVE EXISTING
SF	SQUARE FEET
S/M	SHEET METAL
SPEC	SPECIFICATION
SQ	SQUARE
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER COLUMN

PIPE FITTINGS AND VALVES

SYMBOL	ABBR.	ITEM
	--	UNION
	--	CONCENTRIC REDUCER
	--	FLOW DIRECTION ARROW
	--	STRAINER
	SOV	SHUT-OFF VALVE
	CV	CHECK VALVE; (ARROWHEAD INDICATES DIRECTION OF FLOW)

DUCTWORK AND ACCESSORIES

SYMBOL	ABBR.	ITEM
	MVD	MANUAL VOLUME DAMPER
18"x12"	--	DUCT (SIZE IN INCHES, FIRST FIGURE SIDE SHOWN)
	--	SUPPLY OR OUTDOOR AIR DUCT SECTION
	--	RETURN OR EXHAUST AIR DUCT SECTION
SD SD	--	SMOKE DETECTOR
	--	SQUARE TO ROUND TRANSITION
D	--	INCLINED DROP IN DIRECTION OF ARROW
R	--	INCLINED RISE IN DIRECTION OF ARROW
	--	ROUND FLEXIBLE DUCT
	--	ROUND STRAIGHT DUCT TAP FITTING WITH MANUAL VOLUME DAMPER CONNECTING TO RECTANGULAR DUCT
	--	RECTANGULAR 45 DEGREE DUCT TAP FITTING
12"x12" SR 300 CFM (2-WAY)	--	DIFFUSER DESIGNATION (EXAMPLE). TOP LINE INDICATES FACE SIZE, SECOND LINE INDICATES AIRFLOW, THIRD LINE INDICATES THROW PATTERN (IF OTHER THAN STANDARD 4-WAY), NECK SEIZE EQUAL TO DUCT RUNOUT AS NOTED ON PLAN.
	A/D	ACCESS DOOR
	CA	CONDITIONED OUTDOOR AIR
	EA	EXHAUST AIR
	EG	EXHAUST GRILLE
	ER	EXHAUST REGISTER
	EXH	EXHAUST
	GR	GRILLE
	LSD	LINEAR SLOT DIFFUSER
	OAI	OUTDOOR AIR INTAKE
	OA	OUTDOOR AIR
	RA	RETURN AIR
	REG	REGISTER
	RG	RETURN GRILLE
	RR	RETURN REGISTER
	SA	SUPPLY AIR
	SD	SUPPLY DIFFUSER
	SG	SUPPLY GRILLE
	SP	STATIC PRESSURE
	SPD	STATIC PRESSURE DROP
	SR	SUPPLY REGISTER

PLUMBING

SYMBOL	ABBR.	ITEM
	SAN	SOIL, WASTE, OR SANITARY PIPE
—CD—	CD	CONDENSATE DRAIN PIPE
	VP	VENT PIPE
	CW	DOMESTIC COLD WATER PIPE
	HW	DOMESTIC HOT WATER PIPE
CO	CO	CLEANOUT
	HB	HOSE BIBB
	INV	INVERT
	VTR	VENT THRU ROOF

CONTROLS

SYMBOL	ABBR.	ITEM
SPS	–	STATIC PRESSURE SENSOR
E	–	EMERGENCY FAN DISCONNECT SWITCH
	–	TEMPERATURE SENSOR

ELECTRICAL

SYMBOL	ABBR.	ITEM
	ELEC	ELECTRIC
	FLA	FULL LOAD AMPERES
	HP	HORSEPOWER
	LRA	LOCKED ROTOR AMPERES
	MCA	MINIMUM CIRCUIT AMPACITY
	MOP	MAXIMUM OVERCURRENT PROTECTION
	RLA	RUNNING LOAD AMPERES

EQUIPMENT

SYMBOL	ABBR.	ITEM
	ACCU	AIR COOLED CONDENSING UNIT
	AHU	AIR HANDLING UNIT
	DSS	DUCTLESS SPLIT SYSTEM
	EF	EXHAUST FAN

REFRIGERANT

SYMBOL	ABBR.	ITEM
	RL	REFRIGERANT LIQUID
	RS	REFRIGERANT SUCTION
	SST	SATURATED SUCTION TEMPERATURE

BUILDING DESIGN CRITERIA

INTERIOR:	SUMMER	75°F / 50% RH
	WINTER	70°F
EXTERIOR:	SUMMER	95°F DB / 78°F WB
	WINTER	0°F
INTERIOR LOAD:		LIGHTING DENSITIES - IN ACCORDANCE WITH 2016 ASHRAE STANDARD 90.1
		MISCELLANEOUS - 75 WATTS/COMPUTER
VENTILATION LOAD:		IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE (IMC) 2018 VENTILATION REQUIREMENTS
PEOPLE DENSITY:		BASED ON ARCHITECTURAL FURNISHING PLANS
WALL "U" COEFFICIENT:		EXISTING - 0.104 BTU/(HR)(SQ. FT.)(DEG. F)
		NEW - 0.064 BTU/(HR)(SQ. FT.)(DEG. F)
ROOF "U" COEFFICIENT:		0.027 BTU/(HR)(SQ. FT.)(DEG. F)
COMPOSITE GLAZING "U" COEFFICIENT:		OPERABLE - 0.45 BTU/(HR)(SQ. FT.)(DEG. F)
		FIXED - 0.38 BTU/(HR)(SQ. FT.)(DEG. F)
GLASS SHADING COEFFICIENT:		NORTH FACING - 0.55
		EAST / WEST / SOUTH FACING - 0.41
TOTAL HEATING LOAD:		39.3 MBH
TOTAL COOLING LOAD:		49 MBH

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 25886, Expiration date: 02-02-2023.
JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION SET	23 AUGUST 2021

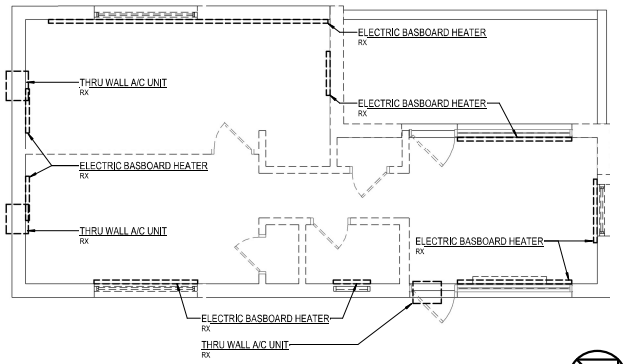
CAD DWG FILE:	GSP_M-001.dwg
DRAWN BY:	MWB
CHECKED BY:	MWB
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

SYMBOLS AND ABBREVIATIONS

M.001

© 2020 James Posey Associates, Inc.

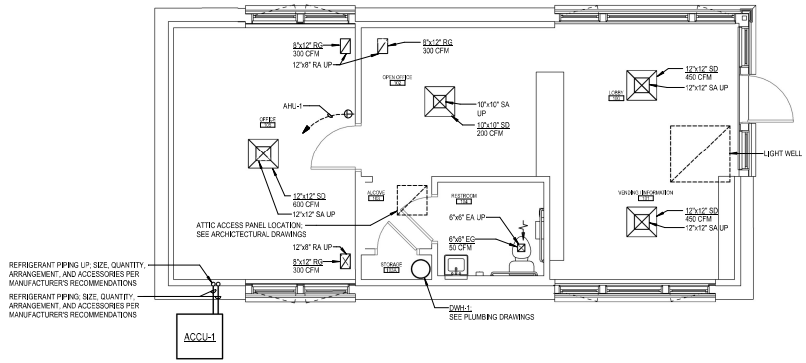
8/20/2021 9:42:37 AM



FLOOR PLAN - REGISTRATION STATION - HVAC - DEMOLITION

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

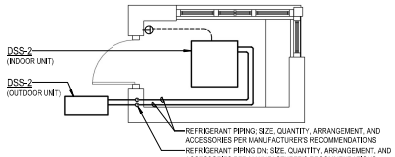
NORTH



FLOOR PLAN - REGISTRATION STATION - HVAC - NEW WORK

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

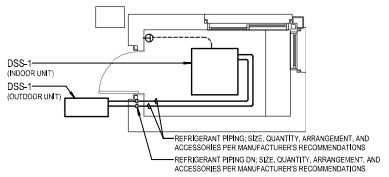
NORTH



FLOOR PLAN - E BOOTH - HVAC - NEW WORK

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

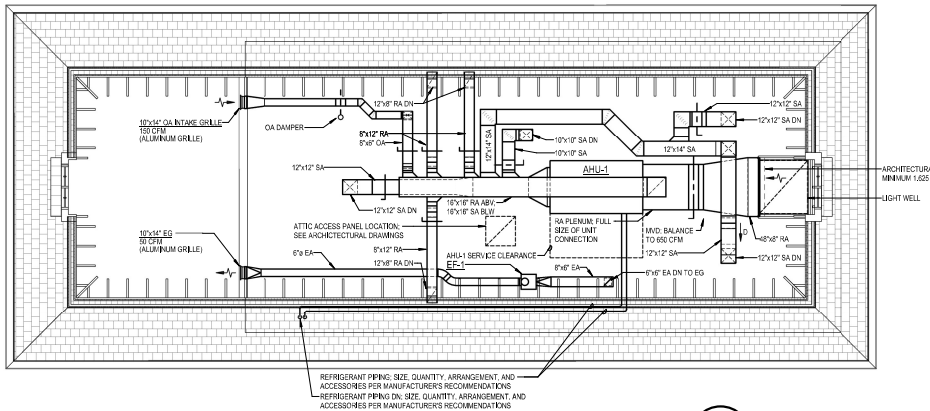
NORTH



FLOOR PLAN - W BOOTH - HVAC - NEW WORK

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

NORTH



ROOF PLAN - REGISTRATION STATION - HVAC - NEW WORK

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

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

GENERAL NOTES: NEW WORK

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

GENERAL NOTES: DEMOLITION

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY MECHANICAL AND RELATED ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

C. UNLESS OTHERWISE NOTED, MECHANICAL/PLUMBING ITEMS SHOWN HEAVY DASHED | — — | SHALL BE REMOVED AND MECHANICAL/PLUMBING ITEMS SHOWN LIGHT SOLID (——— | SHALL REMAIN.

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

STATE OF MARYLAND
SCOTT
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 25886, Expiration date: 02-02-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION SET	23 AUGUST 2021

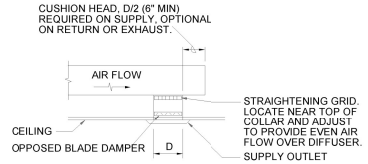
CAD DWG FILE:	GSP_M.100.dwg
DRAWN BY:	MWB
CHECKED BY:	MWB
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

FLOOR PLANS - DEMOLITION AND NEW WORK

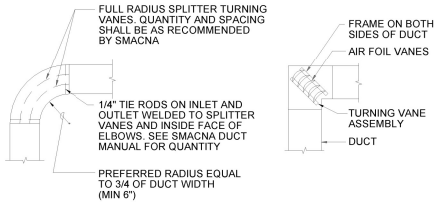
M.100

© 2020 James Posey Associates, Inc.

8/20/2021 9:42:41 AM



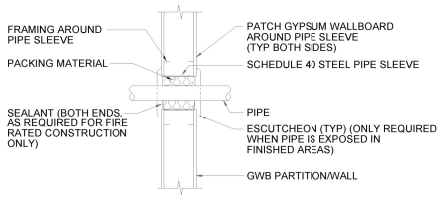
SUPPLY OUTLET LOCATED AT END OF RUN



RADIUS TYPE ELBOW

SQUARE TYPE ELBOW

DETAIL 1/M.500
TYPICAL DUCT DETAILS
NOT TO SCALE

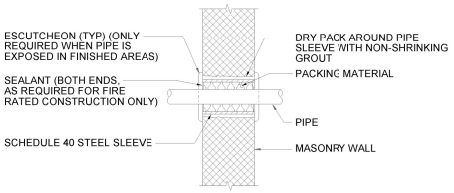


NOTES:

THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

FOR FIRE RATED CONSTRUCTION PROVIDE APPROPRIATE APPROVED THROUGH-PENETRATION FIRESTOP ASSEMBLY TO MAINTAIN THE FIRE RATING OF THE WALL ASSEMBLY.

DETAIL 2/M.500
PIPE THROUGH INTERIOR METAL/WOOD STUD GWB PARTITION OR WALL
NOT TO SCALE

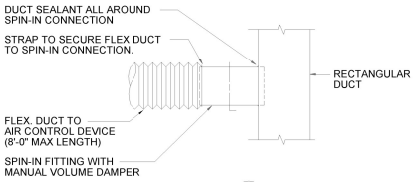


NOTES:

THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

FOR FIRE RATED CONSTRUCTION PROVIDE APPROPRIATE APPROVED THROUGH-PENETRATION FIRESTOP ASSEMBLY TO MAINTAIN THE FIRE RATING OF THE WALL ASSEMBLY.

DETAIL 3/M.500
PIPE THROUGH INTERIOR MASONRY WALL
NOT TO SCALE



DETAIL 4/M.500
SPIN-IN TO FLEXIBLE DUCT CONNECTION
NOT TO SCALE

© 2020 James Posey Associates, Inc.

8/20/2021 9:42:42 AM

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 25886, Expiration date: 02-02-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION SET	23 AUGUST 2021

CAD DWG FILE:	GSP_M.500.dwg
DRAWN BY:	MWB
CHECKED BY:	MWB
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

MECHANICAL DETAILS & DIAGRAMS

M.500

INDOOR SINGLE ZONE VAV AIR HANDLING UNIT

DESIG	MIN OUTSIDE AIR (CFM)	SUPPLY FAN							ELECTRIC HEATING COIL			HEAT PUMP											MAX WEIGHT (AHU-1) (LBS)	MAX DIMENSIONS						ELECTRICAL							MFR'S MODEL NO (AAON)		NOTES
												COOLING OPERATION						HEATING OPERATION						AHU-1			ACCU-1			AHU-1				ACCU-1					
		CFM	APPROX RPM	WHEEL SIZE (IN DIA)	EXT SP (IN WC)	TOTAL SP (IN WC)	NO. OF FANS	MOTOR POWER (HP)	EAT (°F)	TEMP RISE (°F)	KW	TOTAL MBH	SENS MBH	COIL EAT (F)		COIL LAT (F)		MBH	COIL EAT (F)	COIL LAT (F)	MAX SP DROP (IN WC)	ROWS		LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	VOLTS	PHASE	MCA	MOP	VOLTS	PHASE	MCA	MOP	AHU-1	ACCU-1	
														DB	WB	DB	WB																							
AHU-1 / ACCU-1	150	1,700	2600	15.9	1.00	2.78	1	2.3	63.0	22.0	12	58.4	43.7	76.8	64.1	53.0	52.5	40.0	63	85.0	0.7	6.0	700	75	41	23	37	37	43	230	1	81	90	230	1	35	60	H3-BLB-1	CB-B-060	1,2,3,4,5

NOTES:

1. PROVIDE ELECTRIC HEATING COIL WITH SCR CONTROL.
2. FILTER LOADING IS INCLUDED IN THE INTERNAL STATIC PRESSURE.
3. PROVIDE SINGLE POINT POWER CONNECTION.
4. PROVIDE DIRECT DRIVE PLENUM SUPPLY FAN WITH EC MOTOR.
5. PROVIDE 2" MERV 8 PRE-FILTER AND 4" MERV 13 FINAL FILTER.

FAN SCHEDULE

DESIG	AREA SERVED	DUTY	CFM	ESP (IN WC)	FAN RPM (APPROX)	HP (WATTS)	SONES	WHEEL DIA (IN)	FAN TYPE	DRIVE	MFR'S NO. (TWIN CITY)	ELECTRICAL	CONTROL	NOTES
EF-1	RESTROOM 104	EF	50	0.5	650	1/8	1.5	7.82	INLINE	DIRECT	TL100S	115V-1ϕ	A	1,2,3

NOTES:

1. PROVIDE WITH BUILT IN BACKDRAFT DAMPER
2. PROVIDE WITH UNIT MOUNTED SOLID STATE SPEED CONTROLLER.
3. PROVIDE WITH UNIT MOUNTED DISCONNECT SWITCH.

CONTROLS:

A. OCCUPIED/UNOCCUPIED CONTROL

DUCTLESS SPLIT SYSTEM UNIT SCHEDULE

DESIG	AREA SERVED	INDOOR UNIT					OUTDOOR UNIT						MODEL NO'S (MITSUBISHI)		NOTES
		CFM	COOLING CAPACITY SENSIBLE MBH	HEATING CAPACITY MBH	FLA	VOLTAGE/ PHASE	REFRIG TYPE	NOMINAL CAPACITY (MBH)	MIN CIRCUIT AMPS	MAX FUSE SIZE	VOLTAGE/ PHASE	SEER	INDOOR	OUTDOOR	
DSS-1	W BOOTH	600	15.3	11.0	0.36	208V-1P	R410a	18.0	11	28	208V-1P	24.6	PLA-A18EA7	PUZ-A18NKA7	1,2
DSS-2	E BOOTH	600	15.3	11.0	0.36	208V-1P	R410a	18.0	11	28	208V-1P	24.6	PLA-A18EA7	PUZ-A18NKA7	1,2

NOTES:

1. PROVIDE UNIT WITH FAN SPEED CONTROL.
2. UNIT TO BE HEATING AND COOLING, HEAT PUMP DESGN.

© 2020, James Posey Associates, Inc.

8/20/2021 9:42:43 AM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-560-2200

STATE OF MARYLAND
MICHAEL W. WEST
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 25886, Expiration date: 02-02-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

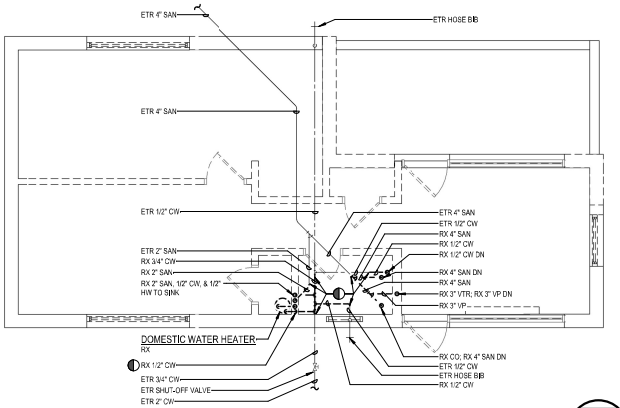
21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
BID AND CONSTRUCTION SET		23 AUGUST 2021

CAD DWG FILE:	GSP_M.600.dwg
DRAWN BY:	MWB
CHECKED BY:	MWB
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

MECHANICAL SCHEDULES

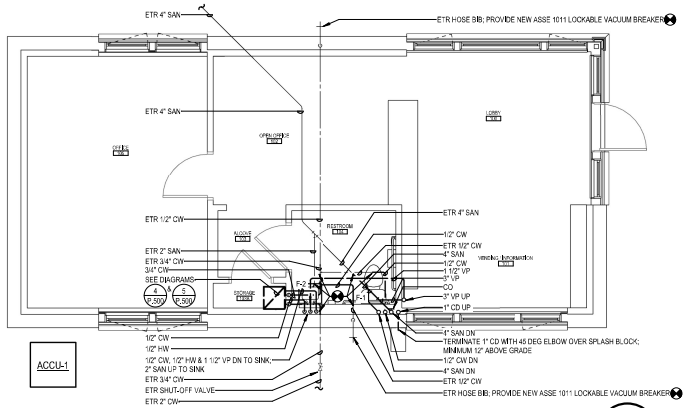
M.600



FLOOR PLAN - REGISTRATION STATION - PLUMBING - DEMOLITION

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

NORTH



FLOOR PLAN - REGISTRATION STATION - PLUMBING - NEW WORK

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

NORTH

GENERAL NOTES: NEW WORK

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

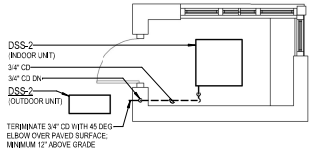
B. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

GENERAL NOTES: DEMOLITION

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY MECHANICAL AND RELATED ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

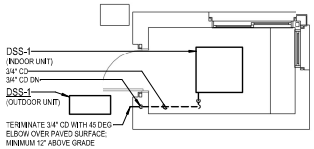
C. UNLESS OTHERWISE NOTED, MECHANICAL/PLUMBING ITEMS SHOWN HEAVY DASHED (——) SHALL BE REMOVED AND MECHANICAL/ PLUMBING ITEMS SHOWN LIGHT SOLID (------) SHALL REMAIN.



FLOOR PLAN - E BOOTH - PLUMBING - NEW WORK

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

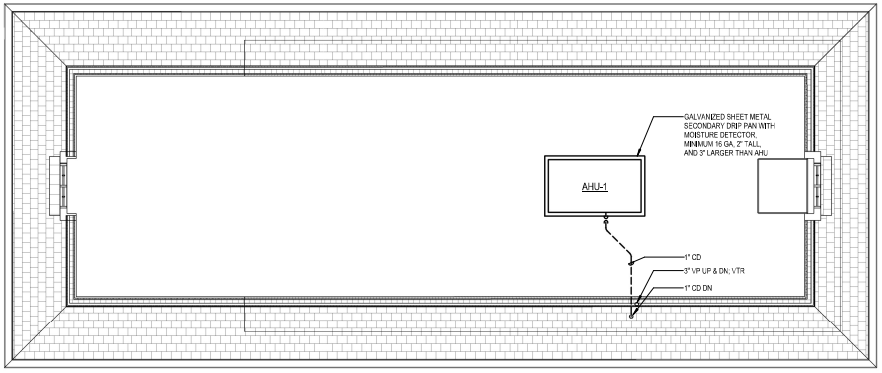
NORTH



FLOOR PLAN - W BOOTH - PLUMBING - NEW WORK

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

NORTH



ROOF PLAN - REGISTRATION STATION - PLUMBING - NEW WORK

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

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonzilla Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 25886, Expiration date: 02-02-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE

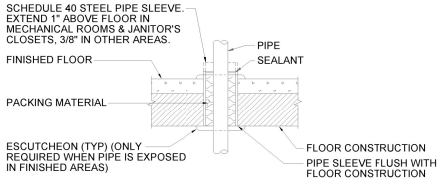
BID AND CONSTRUCTION SET:	23 AUGUST 2021
CAD DWG FILE:	GSP_P.100.dwg
DRAWN BY:	MWB
CHECKED BY:	MWB
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

FLOOR PLANS - PLUMBING - DEMOLITION AND NEW WORK

P.100

© 2020 James Posey Associates, Inc.

8/20/2021 9:42:46 AM

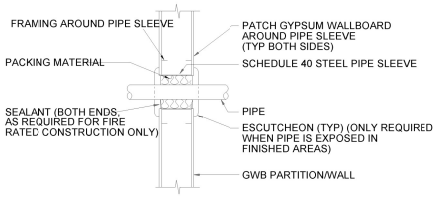


NOTES:

THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

FOR FIRE RATED CONSTRUCTION PROVIDE APPROPRIATE APPROVED THROUGH-PENETRATION FIRESTOP ASSEMBLY TO MAINTAIN THE FIRE RATING OF THE FLOOR ASSEMBLY.

DETAIL 1 / P.500
PIPE THROUGH FLOOR
NOT TO SCALE

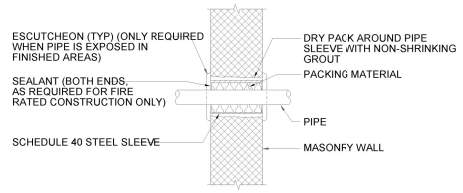


NOTES:

THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

FOR FIRE RATED CONSTRUCTION PROVIDE APPROPRIATE APPROVED THROUGH-PENETRATION FIRESTOP ASSEMBLY TO MAINTAIN THE FIRE RATING OF THE WALL ASSEMBLY.

DETAIL 2 / P.500
PIPE THROUGH INTERIOR METAL/WOOD STUD GWB PARTITION OR WALL
NOT TO SCALE

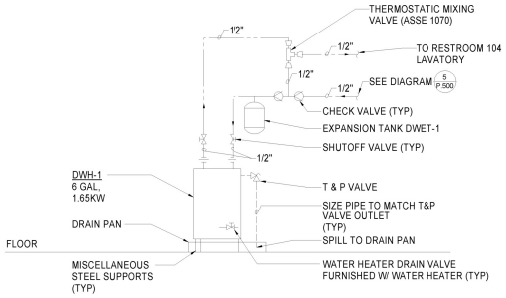


NOTES:

THIS DETAIL APPLIES TO BOTH INSULATED AND NON-INSULATED PIPE.

FOR FIRE RATED CONSTRUCTION PROVIDE APPROPRIATE APPROVED THROUGH-PENETRATION FIRESTOP ASSEMBLY TO MAINTAIN THE FIRE RATING OF THE WALL ASSEMBLY.

DETAIL 3 / P.500
PIPE THROUGH INTERIOR MASONRY WALL
NOT TO SCALE



HOT WATER SYSTEM DESIGN TEMPERATURE SCHEDULE	
EQUIPMENT	TEMPERATURE
WATER HEATER SET POINT	140°F
THERMOSTATIC MIXING VALVE SET POINT (ASSE 1070)	100°F

DIAGRAM 4 / P.500
DOMESTIC HOT WATER HEATER
NOT TO SCALE

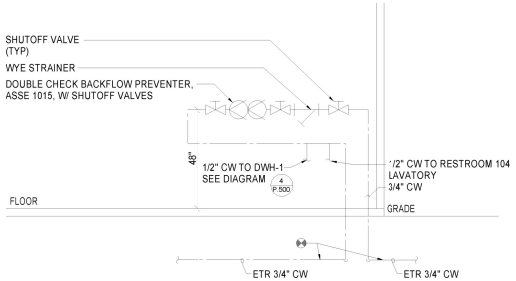


DIAGRAM 5 / P0504
DOMESTIC WATER SERVICE ENTRANCE
NOT TO SCALE

© 2020 James Posey Associates, Inc.

8/20/2021 9:42:47 AM

Z|S

ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 328, MS-12
Baltimore, MD 21224
410-522-5870

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

STATE OF MARYLAND
MICHAEL VAN WYE BOOTH
No. 25886
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 25886, Expiration date: 02-02-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
BID AND CONSTRUCTION SET		23 AUGUST 2021

CAD DWG FILE:	GSP_P.500.dwg
DRAWN BY:	MVB
CHECKED BY:	MVB
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

PLUMBING DETAILS & DIAGRAMS

P.500

BACKFLOW PREVENTER ASSEMBLIES

DESIGNATION	STANDARD NUMBER	BACKFLOW PREVENTER OR METHOD	USE	SIZE	PEAK DESIGN FLOW RATE (GPM)	MAXIMUM PRESSURE DROP AT PEAK DESIGN FLOW(PSI)	FLOW RATE AT MAXIMUM PRESSURE DROP (GPM)	PRESSURE DROP AT LOW FLOW (PSI)	MANUFACTURER AND MODEL NUMBER	NOTES
BFP-1	ASSE 1015	DOUBLE CHECK BACKFLOW ASSEMBLY	DOMESTIC SERVICE ENTRANCE	3/4"	12	4	12	2	WATTS 007M3Q1-S	1

NOTES:

1. LEAD FREE NSF61/ANSI 372.
2. PROVIDE BACKFLOW PREVENTER WITH WYE STRAINER.

WATER HEATER SCHEDULE

DESIGNATION	LOCATION	TYPE OF WATER HEATER	STORAGE CAPACITY (GAL)	INPUT	RECOVERY RATE AT 90 DEG F RISE (GPH)	VOLTS/PHASE	MANUFACTURER AND MODEL NUMBER	NOTES
DWH-1	STORAGE 103A	ELECTRIC TANK	6	1.65 KW	8	120/1	AO SMITH EJC-6	

NOTES:

THERMOSTATIC MIXING VALVES

DESIGNATION	LOCATION	SERVES	PEAK DESIGN FLOWRATE (GPM)	MAX PRESSURE DROP (PSI)	INLET/OUTLET SIZE (IN)	OUTLET TEMPERATURE SETPOINT (DEG)	MANUFACTURER AND MODEL NUMBER	NOTES
TMV-	STORAGE 103A	DWH-1	08	5	0.5/0.5	110	POWERS LFG480	1,2,3

NOTES:
1. LEAD FREE NSF61/ANSI 372.
2. VALVE RATED FOR MINIMUM FLOW 0.25 GPM WITH CONTINUOUSLY OPERATING RECIRCULATION PUMP AS TESTED IN ACCORDANCE WITH ASSE 1070.
3. VALVE IS EXPOSED IN STORAGE 103A.

PLUMBING FIXTURE ROUGH-IN SCHEDULE

DESIGNATION	TYPE OF FIXTURE	ADA	MOUNTING	FLOW RATES	OPERATION		ROUGH-IN CONNECTIONS				NOTES
					MANUAL	SENSOR	CW	HW	TW	SAN	
F-1	WATER CLOSET	●	FLOOR	1.6 GPF	●	-	1/2"	-	-	4"	1
F-2	LAVATORY	●	WALL	0.5 GPM	●	-	1/2"	1/2"	1/2"	1 1/2"	1,2

NOTES:
1. SEE SPECIFICATION SECTION 22 4200 INSTITUTIONAL PLUMBING FIXTURES FOR ADDITIONAL INFORMATION.
2. TEMPERED WATER SUPPLIED THROUGH AN ASSE 1070 THERMOSTATIC MIXING VALVE.

DOMESTIC WATER EXPANSION TANKS

DESIGNATION	LOCATION	ACCEPTANCE VOLUME (GAL)	TOTAL VOLUME (GAL)	TANK CONNECTION SIZE (IN)	MAX WORKING PRESSURE (PSI)	DIMENSIONS	MANUFACTURER AND MODEL NUMBER	NOTES
DWET-1	STORAGE 103A	0.9	2.0	0.75	150	8" DIA X 14" TALL	AMTROL ST-5C	1,2,3

NOTES:
1. LEAD FREE NSF61/ANSI 372.
2. ASME CODE SECTION VIII, DIVISION 1.
3. FACTORY PRECHARGED TO 55 PSIG.

© 2020 James Posey Associates, Inc.

8/20/2021 9:42:49 AM

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 320, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

STATE OF MARYLAND
SCOTT A. ZIGER
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 25886, Expiration date: 02-02-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
BID AND CONSTRUCTION SET		23 AUGUST 2021

CAD DWG FILE:	GSP_P.600.dwg
DRAWN BY:	MWB
CHECKED BY:	MWB
DGS PROJECT NUMBER:	P-952-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

PLUMBING SCHEDULES

P.600

REGISTRATION STATION ELECTRICAL LOAD SUMMARY

LOAD	CONNECTED LOAD	DEMAND LOAD
LIGHTING	2.7 KVA (11.3A)	2.7 KVA (11.3A)
RECEPTACLES	3.4 KVA (14.2A)	3.4 KVA (14.2A)
MECHANICAL	32.0 KVA (133.3A)	32.0 KVA (133.3A)
TOTAL	38.1 KVA (158.8A)	38.1 KVA (158.8A)

UTILITY SERVICE VOLTAGE: 120/240V-1Ø
UTILITY SERVICE SIZE: 200A

ELECTRICAL SYMBOLS AND ABBREVIATIONS

ABBREVIATIONS

A	AMPERE
AF	ABOVE FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AMP	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CAM	CAMERA
CR	CARD READER
CRI	COLOR RENDERING INDEX
DH	DOOR HARDWARE
DL	DOOR LOCK (MAGNETIC)
DN	DOWN
DSS	DUCTLESS SPLIT SYSTEM
DWG	DRAWING
DX	DISCONNECT
E	EXISTING
EF	EXHAUST FAN
EM	EMERGENCY
ESV	ELECTRIC SOLENOID VALVE
ETR	EXISTING TO REMAIN
EVAC	EVACUATION
EWC	ELECTRIC WATER COOLER
EX	EXISTING
EXIST	EXISTING
EWH	ELECTRIC WATER HEATER
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FCU	FAN COIL UNIT
FF	FURNITURE FEED
FT	FOOT
G	GROUND/GROUND FAULT CIRCUIT INTERRUPTER
GD	GARBAGE DISPOSAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HP	HORSEPOWER
K	KELVIN
KVA	KILOVOLT-AMPERES
LED	LIGHT EMITTING DIODE
LM	LUMEN
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MIN	MINIMUM
MOP	MAXIMUM OVERCURRENT PROTECTION
NAC	NOTIFICATION APPLIANCE CIRCUIT
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
P	POLE
PNL	PANEL
RE	RELOATED
REC	RECEPTACLE
RM	ROOM
RTE	REQUEST TO EXIT
RX	REMOVE EXISTING
SLC	SIGNAL LINE CIRCUIT
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTAGE/VOLT
W	WATT/WIRE/WALL
XFMR	TRANSFORMER
Ø	PHASE
&	AND
%	PERCENT

GENERAL

1	DENOTES REFERENCE TO SPECIFIC NOTE ON DRAWING.
1 / DW	DETAIL OR PLAN NUMBER; DRAWING NUMBER WHERE DETAIL OR PLAN IS LOCATED.
#/E###	DETAIL REFERENCE: DETAIL OR PLAN NUMBER/DRAWING NUMBER

GENERAL NOTES

A. MOUNTING HEIGHT ARE TO CENTER OF WIRING DEVICES UNLESS OTHERWISE NOTED. COMPLY WITH ADA (AMERICANS WITH DISABILITIES ACT) GUIDELINES FOR MAXIMUM MOUNTING HEIGHTS.

B. MOUNTING HEIGHTS ARE TO BOTTOM OF LIGHTING FIXTURES UNLESS OTHERWISE NOTED.

C. VERIFY EXACT LOCATION OF SPECIALTY WIRING DEVICES WITH EQUIPMENT SPECIFIED UNDER OTHER DIVISIONS OR SUPPLIED BY OWNER PRIOR TO ROUGH IN.

D. PROVIDE LIGHTING CONTROL CABLING IN CONDUIT IN AREAS WITH HARD CEILINGS AND EXPOSED CEILINGS.

DEMOLITION

- DISCONNECT AND REMOVE EXISTING CEILING OUTLET AND LIGHTING FIXTURE.
- DISCONNECT AND REMOVE EXISTING CEILING OUTLET AND LIGHTING FIXTURE.
- DISCONNECT AND REMOVE EXISTING CEILING OUTLET AND LIGHTING FIXTURE.
- DISCONNECT AND REMOVE EXISTING WALL OUTLET AND LIGHTING FIXTURE.
- DISCONNECT AND REMOVE EXISTING POLE AND LIGHTING FIXTURE.
- DISCONNECT AND REMOVE EXISTING SWITCH.
- DISCONNECT AND REMOVE EXISTING RECEPTACLE.
- DISCONNECT AND REMOVE EXISTING CONNECTION TO EQUIPMENT AS NOTED.
- DISCONNECT AND REMOVE EXISTING SURFACE RACEWAY AND RECEPTACLES.
- DISCONNECT AND REMOVE EXISTING PANELBOARD OR EQUIPMENT CABINET.
- DISCONNECT AND REMOVE EXISTING WIRE AND CONDUIT.
- DISCONNECT AND REMOVE EXISTING UTILITY METER.
- DISCONNECT AND REMOVE EXISTING TRANSFORMER.
- DISCONNECT AND REMOVE EXISTING TELEPHONE OUTLET.
- DISCONNECT AND REMOVE EXISTING SECURITY CAMERA.

LIGHTING/PLUG LOAD CONTROLS

- CEILING OUTLET WITH SURFACE MOUNTED LUMINAIRE, TYPE AS DESIGNATED.
- CEILING OUTLET WITH ROUND RECESSED DOWNLIGHT LUMINAIRE, TYPE AS DESIGNATED.
- CEILING OUTLET WITH ROUND RECESSED WALL WASH DOWNLIGHT LUMINAIRE, TYPE AS DESIGNATED.
- CEILING OUTLET WITH LINEAR LUMINAIRE, TYPE AS DESIGNATED.
- WALL OUTLET AND WALL SCONCE, TYPE AS INDICATED.
- ILLUMINATED BOLLARD, TYPE AS DESIGNATED.
- EXIT SIGN, TYPE AS DESIGNATED.

LIGHTING/PLUG LOAD CONTROLS

- SINGLE RELAY LIGHTING CONTROLLER WITH 0-10V DIMMING CAPABILITY MOUNTED TO JUNCTION BOX ABOVE ACCESSIBLE CEILING.
- SINGLE RELAY LIGHTING CONTROLLER WITH PHASE DIMMING CAPABILITY MOUNTED TO JUNCTION BOX ABOVE ACCESSIBLE CEILING.
- S_m LOW VOLTAGE LIGHTING CONTROL SWITCH, WALL MOUNTED 48" ABOVE FLOOR TO TOP OF BOX.
- LOW-VOLTAGE DUAL-TECHNOLOGY OCCUPANCY SENSOR WITH 360-DEGREE, 2000 SQUARE FOOT COVERAGE, COMPATIBLE WITH LIGHTING CONTROL SYSTEM, CEILING MOUNTED.
- SINGLE RELAY RECEPTACLE CONTROLLER TO SERVE EMERGENCY/LIFE SAFETY LIGHTING LOADS, MOUNTED TO JUNCTION BOX ABOVE ACCESSIBLE CEILING, WHERE INDICATED ON PLAN.
- LINE VOLTAGE, DUAL TECHNOLOGY COMBINATION OCCUPANCY SENSOR SWITCH, MOUNTED 48" AF.
- LINE VOLTAGE, DUAL TECHNOLOGY COMBINATION OCCUPANCY SENSOR SWITCH WITH 0-10V DIMMING, MOUNTED 48" AF.
- EXTERIOR RATED PHOTOCELL, WALL MOUNTED. COORDINATE EXACT LOCATION WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION.

WIRING

- HOMERUN TO PANELBOARD. NUMBER OF ARROW HEADS INDICATES NUMBER OF CIRCUITS. NUMBER OF HASH MARKS INDICATES NUMBER OF CONDUCTORS. WHERE NO HASH MARKS APPEAR, PROVIDE TWO (2) CONDUCTORS PLUS GROUND. REFER TO PANEL SCHEDULES FOR CONDUCTOR SIZES. PROVIDE GROUND WIRES IN CONDUITS.
- HOMERUN TO PANELBOARD, BELOW GRADE OR BELOW FLOOR. NUMBER OF ARROW HEADS INDICATES NUMBER OF CIRCUITS. NUMBER OF HASH MARKS INDICATES NUMBER OF CONDUCTORS. WHERE NO HASH MARKS APPEAR, PROVIDE TWO (2) CONDUCTORS PLUS GROUND. REFER TO PANEL SCHEDULES FOR CONDUCTOR SIZES. PROVIDE GROUND WIRES IN CONDUITS.
- CONDUIT AND WIRING RUN CONCEALED IN CEILING SPACE ABOVE CEILINGS, CONCEALED IN WALL SPACE BEHIND WALLS, AND EXPOSED IN OPEN CEILINGS, UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRES IN CONDUITS.
- CONDUIT AND WIRING RUN UNDER SLAB OR BELOW FLOOR WHERE SHOWN ON FLOOR PLANS. PROVIDE GROUND WIRES IN CONDUITS.
- PULLBOX, SIZE AS REQUIRED.
- J JUNCTION BOX WITH COVER PLATE, CEILING MOUNTED.
- J SINGLE-GANG OUTLET BOX WITH COVER PLATE, RECESSED WALL MOUNTED, UNLESS OTHERWISE NOTED.

POWER

- C DUPLEX CONVENIENCE TYPE GROUNDING RECEPTACLE, NEMA 5-20R, RECESSED MOUNTED 18" ABOVE FLOOR, UNLESS OTHERWISE NOTED. RECEPTACLES INDICATED WITH A "C" SHALL BE CONRTOLLED BY RECEPTACLE CONTROLLER.
- G DUPLEX RECEPTACLE (NEMA 5-20R), WALL MOUNTED 8" ABOVE COUNTER. WHERE THERE IS NO COUNTER, MOUNT 48" ABOVE FLOOR, UON. RECEPTACLES INDICATED WITH A "G" SHALL BE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE.
- HARDWIRED EQUIPMENT CONNECTION AS NOTED.
- HARDWIRED MOTOR CONNECTION AS NOTED.
- D ENCLOSED SWITCH (DISCONNECT/SAFETY SWITCH) IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED. MOUNT 5'-6" ABOVE FLOOR TO TOP OF ENCLOSURE, UNLESS OTHERWISE NOTED. RATING AND FUSING AS INDICATED.
- S_M MANUAL MOTOR STARTER SWITCH, WITH OVERLOAD PROTECTION, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED. MOUNT ADJACENT TO EQUIPMENT BEING SERVED AND NO MORE THAN 2'-0" ABOVE FINISHED CEILING.
- 120/240V PANELBOARD OR EQUIPMENT CABINET AS NOTED, RECESSED IN WALL.
- UTILITY METER.
- H HANDHOLE.
- T TRANSFORMER.

TELECOMMUNICATIONS

- TELECOMMUNICATIONS DROP LOCATION. PROVIDE TWO-GANG BACKBOX WITH SINGLE GANG MUD RING AND CONDUIT TO ACCESSIBLE CEILING SPACE.

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5570

LANDSCPE ARCHITECT
Fluorie Teeter Landscape Architects
500 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-356-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9600 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-365-2945

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-27-2023.

JPA Project No. 7370-20

GREENBRIER STATE PARK
CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION SET	23 AUGUST 2021

CAD DWG FILE:	7370e001.dwg
DRAWN BY:	DRM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

SYMBOLS AND ABBREVIATIONS

E.001

© 2023 James Posey Associates, Inc.

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. WHERE EQUIPMENT IS NOTED "DISCONNECT" OR "REMOVE", REMOVE ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE, UNLESS OTHERWISE NOTED.

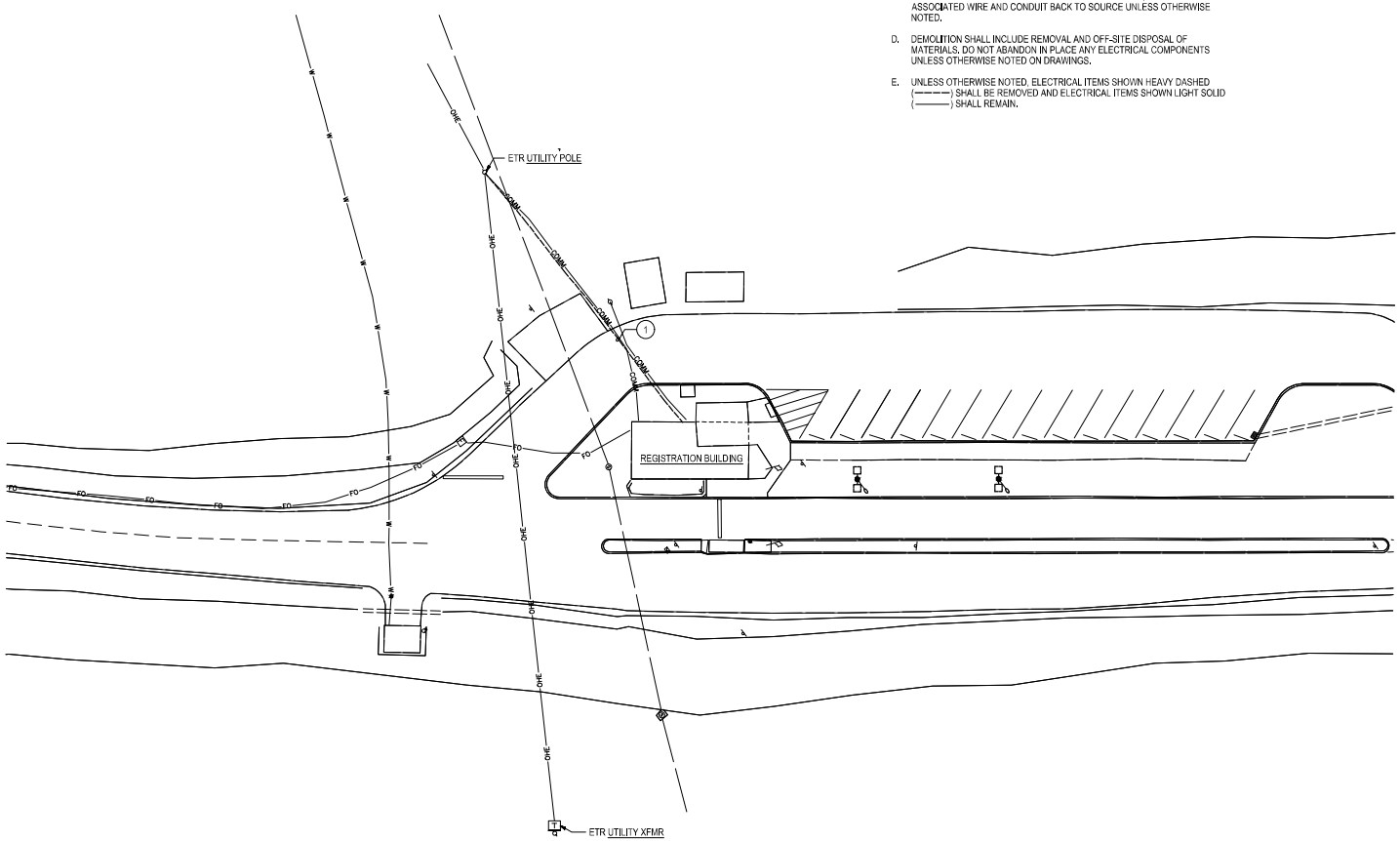
C. REMOVE EXISTING EQUIPMENT AND DEVICES INDICATED, INCLUDING ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.

D. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

E. UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED (————) SHALL BE REMOVED AND ELECTRICAL ITEMS SHOWN LIGHT SOLID (———) SHALL REMAIN.

SPECIFIC NOTES:

1. DISCONNECT AND REMOVE EXISTING UNDERGROUND SERVICE ENTRANCE CABLES AND CONDUIT. COORDINATE START/STOP SERVICE AND SCHEDULED OUTAGE WITH ELECTRIC UTILITY COMPANY, POTOMAC EDISON (FIRST ENERGY).



SITE PLAN - ELECTRICAL - DEMOLITION

SCALE: 1" = 20'-0"

NORTH

© 2022 James Posey Associates, Inc.

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5570

LANDSCPE ARCHITECT
Fluvia Teeter Landscape Architects
500 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-356-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9600 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

STATE OF MARYLAND
TIMOTHY M. CLEMENTS
No. 32060
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-22-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION SET	23 AUGUST 2021

CAD DWG FILE:	7370e002.dwg
DRAWN BY:	DRM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

SITE PLAN - DEMOLITION

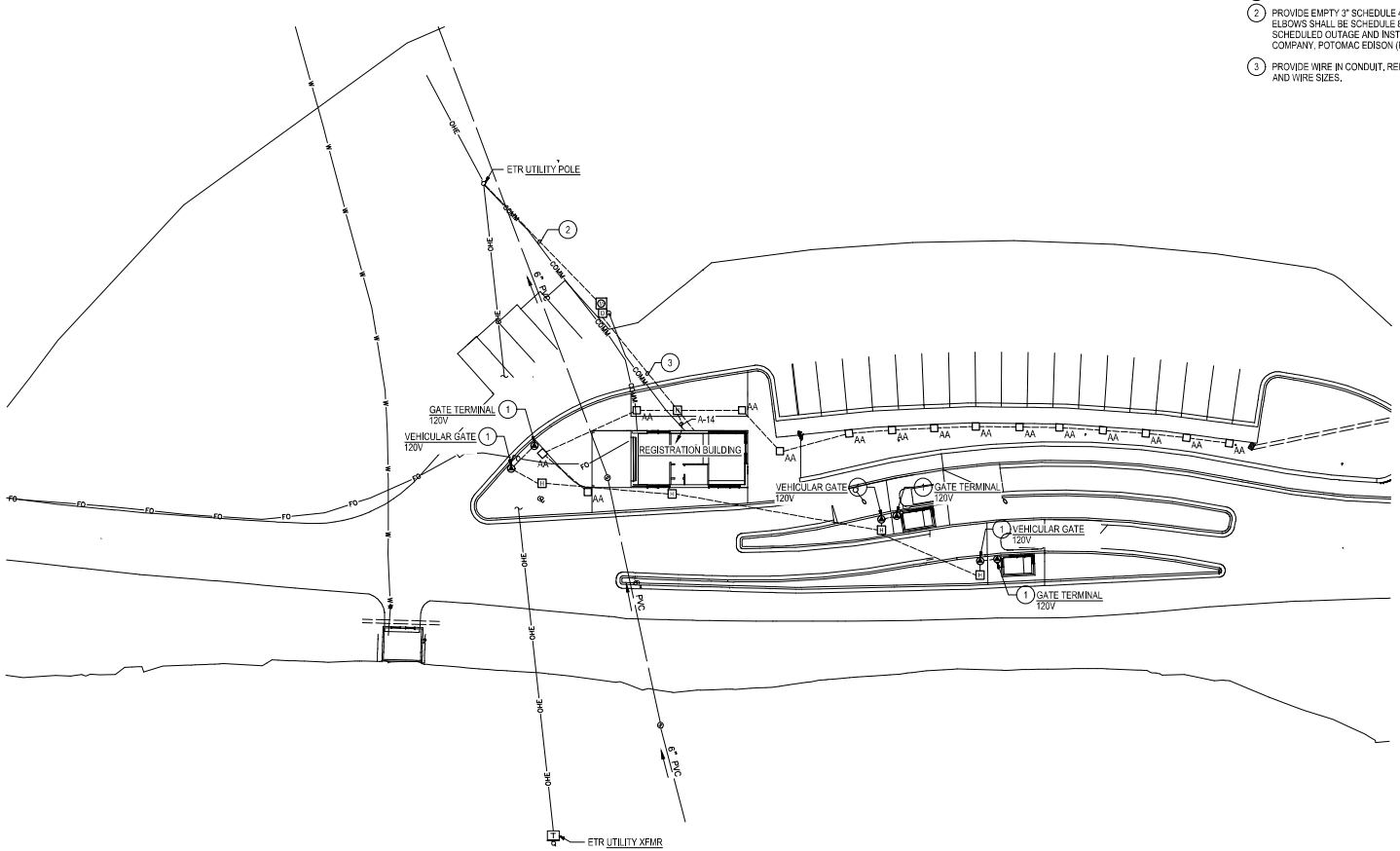
E.002

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

SPECIFIC NOTES:

1. CONNECT TO CIRCUIT A-11.
2. PROVIDE EMPTY 3" SCHEDULE 40 PVC CONDUIT WITH PULL STRING, CONDUIT ELBOWS SHALL BE SCHEDULE 80 PVC. COORDINATE START/STOP SERVICE, SCHEDULED OUTAGE AND INSTALLATION OF CABLES WITH ELECTRIC UTILITY COMPANY, POTOMAC EDISON (FIRST ENERGY).
3. PROVIDE WIRE IN CONDUIT, REFER TO RISER DIAGRAM 4/E.500 FOR CONDUIT AND WIRE SIZES.



SITE PLAN - ELECTRICAL - NEW WORK

SCALE: 1" = 20'-0"

NORTH

© 2022 James Posey Associates, Inc.

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5570

LANDSCPE ARCHITECT
Fluorie Teeter Landscape Architects
500 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-356-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9600 Job Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

STATE OF MARYLAND
TIMOTHY MICHAEL CLEMENTS
No. 32060
PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-27-2023.

JPA Project No. 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

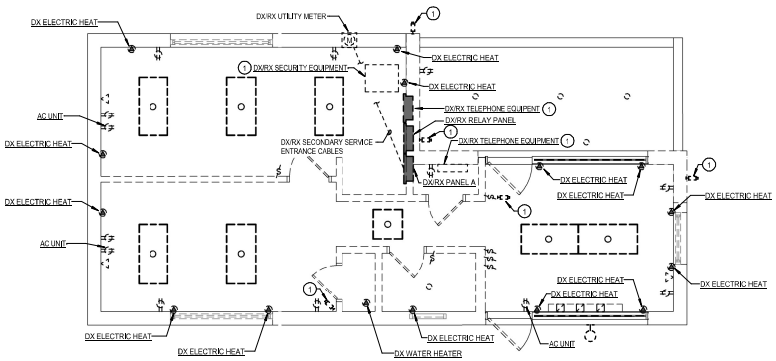
21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION SET	23 AUGUST 2021

CAD DWG FILE:	7370e003.dwg
DRAWN BY:	DRM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

SITE PLAN - NEW WORK

E.003



1 ED.100 FLOOR PLAN - REGISTRATION STATION - ELECTRICAL - DEMOLITION

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

NORTH

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. COORDINATE WITH MECHANICAL WORK SHOWN ON MECHANICAL DRAWINGS AND DISCONNECT MECHANICAL EQUIPMENT AS INDICATED AND REQUIRED.

C. WHERE EQUIPMENT IS NOTED "DISCONNECT" OR "REMOVE", REMOVE ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE, UNLESS OTHERWISE NOTED.

D. REMOVE EXISTING EQUIPMENT AND DEVICES INDICATED, INCLUDING ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.

E. EXISTING CIRCUITS INTERRUPTED BY DEMOLITION, BUT ARE TO REMAIN, SHALL BE MADE CONTINUOUS.

F. WHERE DEVICES ARE TO BE REMOVED AND REINSTALLED, PROVIDE WIRE AND CONDUIT TO NEW LOCATION AS REQUIRED.

G. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

H. UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED (— — —) SHALL BE REMOVED AND ELECTRICAL ITEMS SHOWN LIGHT SOLID (———) SHALL REMAIN.

SPECIFIC NOTES:

1. DISCONNECT, REMOVE AND SALVAGE FOR REUSE DURING NEW WORK. REFER TO E101 FOR ADDITIONAL INFORMATION.

SCALE: 1/8" = 1'-0"

© 2020 James Posey Associates, Inc.

8/20/2021 12:55:12 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3900 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-968-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-22-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
BID AND CONSTRUCTION SET		23 AUGUST 2021

CAD DWG FILE:	GSP_ED.100.dwg
DRAWN BY:	DHM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

FLOOR PLANS - ELECTRICAL - DEMOLITION

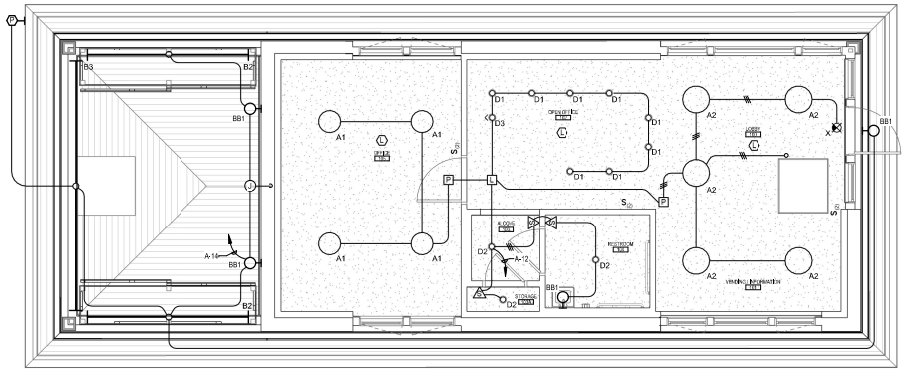
ED.100

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

SPECIFIC NOTES:

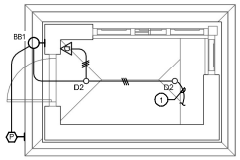
1. CONNECT TO RECEPTACLE CIRCUIT WITH 2#12-#12G-3/4"C. SEE E.101 FOR CONTINUATION.



1 E.100 FLOOR PLAN - REGISTRATION STATION - LIGHTING - NEW WORK

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

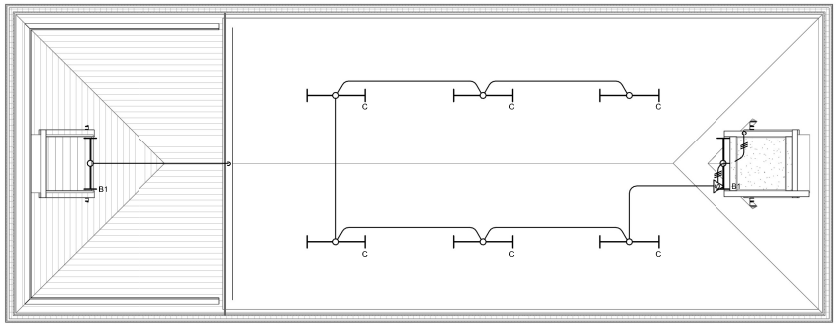
NORTH



3 E.100 FLOOR PLAN - E BOOTH - LIGHTING - NEW WORK

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

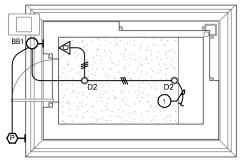
NORTH



2 E.100 ATTIC PLAN - REGISTRATION STATION - LIGHTING

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

NORTH



4 E.100 FLOOR PLAN - W BOOTH - LIGHTING - NEW WORK

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

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

© 2020 James Posey Associates, Inc.

8/20/2021 12:55:08 PM

Z|S

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Fluora Teeter Landscape Architects
800 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-968-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-22-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

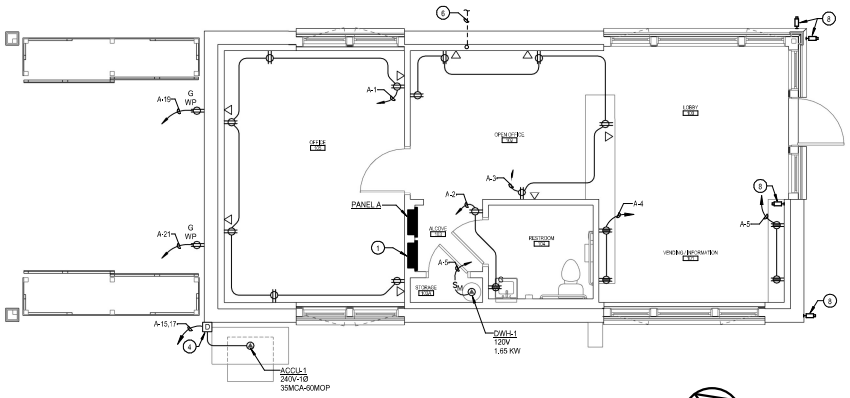
21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE

BID AND CONSTRUCTION SET:	23 AUGUST 2021
CAD DWG FILE:	GSP_E.100.dwg
DRAWN BY:	DHM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

FLOOR PLANS - ELECTRICAL - LIGHTING

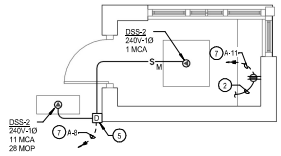
E.100



1 E.101 FLOOR PLAN - REGISTRATION STATION - POWER - NEW WORK

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

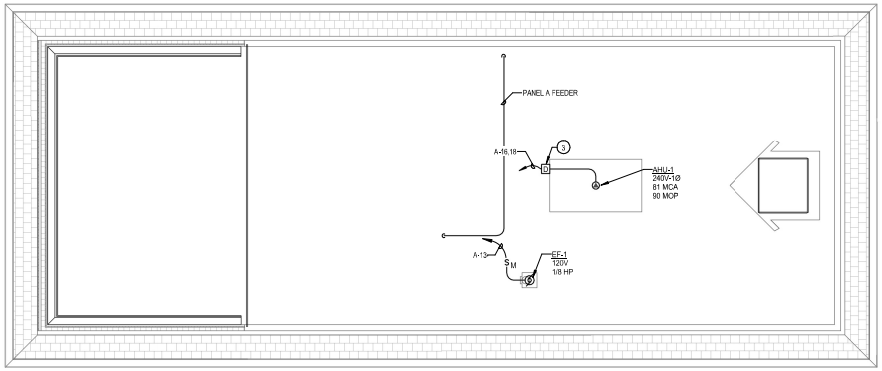
NORTH



3 E.101 FLOOR PLAN - E BOOTH - POWER - NEW WORK

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

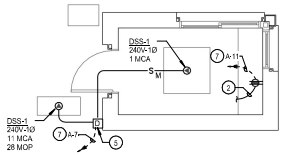
NORTH



2 E.101 ROOF PLAN - REGISTRATION STATION - POWER - NEW WORK

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

NORTH



4 E.101 FLOOR PLAN - W BOOTH - POWER - NEW WORK

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

NORTH

8 4 0 8 16

SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

SPECIFIC NOTES:

1. INSTALL EXISTING TELEPHONE CABINET, SALVAGED DURING DEMOLITION.
2. CONNECT TO LIGHTING FIXTURES WITH 2#12+#12G-3/4"C. SEE E.100 FOR CONTINUATION.
3. PROVIDE 2P-100A-240V FUSED ENCLOSED SWITCH IN NEMA TYPE 3R ENCLOSURE. FUSE PER MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.
4. PROVIDE 2P-60A-240V FUSED ENCLOSED SWITCH IN NEMA TYPE 3R ENCLOSURE. FUSE PER MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.
5. PROVIDE 2P-30A-240V FUSED ENCLOSED SWITCH IN NEMA TYPE 3R ENCLOSURE. FUSE PER MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.
6. REFER TO 1/E.003 FOR CONTINUATION.
7. ROUTE CIRCUIT VIA HANDHOLES AND CONDUIT PATHS AS SHOWN ON 1/E.003.
8. REINSTALL EXISTING SECURITY CAMERA, SALVAGED DURING DEMOLITION. PROVIDE CABLING PER MANUFACTURERS RECOMMENDATIONS IN ORDER TO PROVIDE COMPLETE INSTALLATION.

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5670

LANDSCPE ARCHITECT
Floura Teeter Landscape Architects
600 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8595

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-265-5100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9800 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Fonella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-568-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-22-2023.

JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE

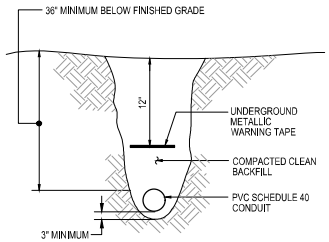
BID AND CONSTRUCTION SET:	23 AUGUST 2021
CAD DWG FILE:	GSP_E.101.dwg
DRAWN BY:	DHM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	F-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

FLOOR PLANS - POWER - NEW WORK

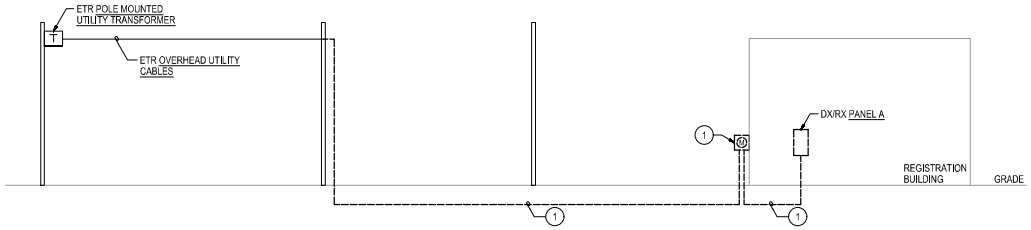
E.101

© 2020 James Posey Associates, Inc.

8/20/2021 12:55:11 PM



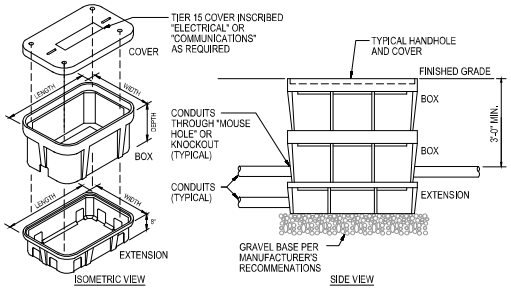
1 / E.500 **DETAIL**
DIRECT-BURIED CONDUIT
NOT TO SCALE



SPECIFIC NOTES:

1. DISCONNECT AND REMOVE EXISTING UNDERGROUND SERVICE ENTRANCE CABLES, CONDUIT AND UTILITY METER. COORDINATE START/STOP SERVICE AND SCHEDULED OUTAGE WITH ELECTRIC UTILITY COMPANY, POTOMAC EDISON (FIRST ENERGY).

3 / E.500 **POWER RISER DIAGRAM**
ELECTRICAL - DEMOLITION
NOT TO SCALE

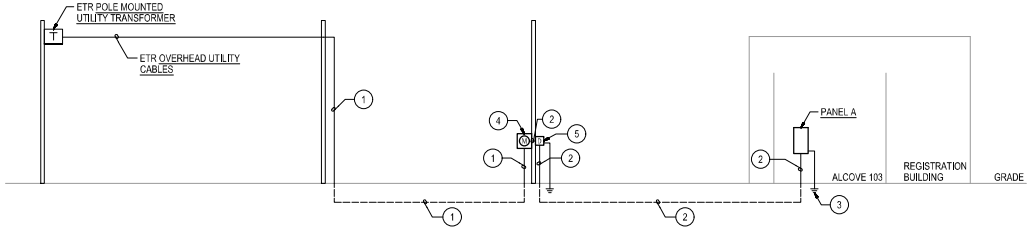


ELECTRICAL HANDHOLE:

PROVIDE PRECAST POLYMER CONCRETE HANDHOLE AND COVER, MINIMUM ANSI/SCTE 77 TIER 15 LOADING, WITH THE FOLLOWING DIMENSIONS:

- $\boxed{1}_1$ HANDHOLE TYPE 1: 30" WIDE x 48" LONG x 18" DEEP MINIMUM, OPEN BOTTOM.
- $\boxed{2}_2$ HANDHOLE TYPE 2: 24" WIDE x 36" LONG x 18" DEEP MINIMUM, OPEN BOTTOM.
- $\boxed{3}_3$ HANDHOLE TYPE 3: 11" WIDE x 18" LONG x 18" DEEP MINIMUM, OPEN BOTTOM.

3 / E.500 **DETAIL**
HANDHOLE AND HANDHOLE COVER
NOT TO SCALE



SPECIFIC NOTES:

1. PROVIDE EMPTY 3" SCHEDULE 40 PVC CONDUIT WITH PULL STRING. CONDUIT ELBOWS SHALL BE SCHEDULE 80 PVC. COORDINATE START/STOP SERVICE, SCHEDULED OUTAGE AND INSTALLATION OF CABLES WITH ELECTRIC UTILITY COMPANY, POTOMAC EDISON (FIRST ENERGY).
2. PROVIDE 3#3/0+#4G-3"C WITH CABLE LIMITERS AT PANELBOARD.
3. REFER TO DETAIL 4/E.501 FOR GROUNDING CONNECTIONS AT PANELBOARD.
4. UTILITY METER MOUNTED TO EXISTING UTILITY POLE.
5. PROVIDE 240V-200A-2P-3W SERVICE-ENTRANCE RATED, FUSED DISCONNECT SWITCH IN NEMA 3R ENCLOSURE FUSED AT 200A. PROVIDE SYSTEM GROUND ROD AND GROUNDING ELECTRODE CONDUCTOR PER NEC ARTICLE 250 FOR SERVICE ENTRANCE GROUNDING.

4 / E.500 **POWER RISER DIAGRAM**
ELECTRICAL - NEW WORK
NOT TO SCALE

© 2022 James Posey Associates, Inc.

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5570

LANDSCPE ARCHITECT
Fluorie Teeter Landscape Architects
500 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-286-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9600 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2545

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-22-2023.
JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

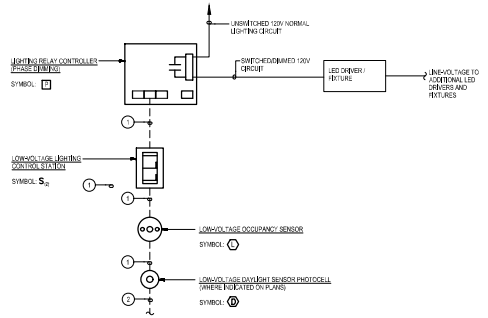
21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION SET	23 AUGUST 2021

CAD DWG FILE:	7370e500.dwg
DRAWN BY:	DRM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

DETAILS AND DIAGRAMS

E.500



GENERAL NOTES (THIS DIAGRAM ONLY):

A. LOW-VOLTAGE WIRING AND CONTROL CABLING IS NOT SHOWN ON PLANS. PROVIDE LOW-VOLTAGE WIRING CONDUCTORS AS REQUIRED BY MANUFACTURER AND MAKE CONNECTIONS REQUIRED FOR COMPLETE INSTALLATION.

B. GROUNDING AND NEUTRAL CONDUCTORS ARE NOT SHOWN ON THIS DIAGRAM.

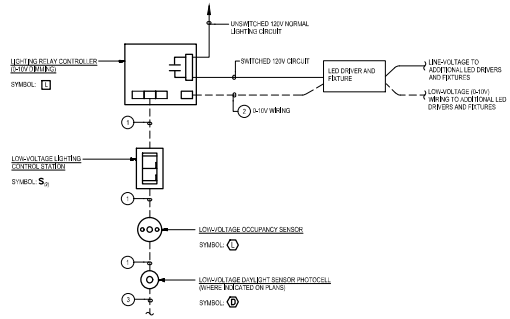
SPECIFIC NOTES (THIS DIAGRAM ONLY):

1. CAT5 OR MANUFACTURER EQUIVALENT LOW-VOLTAGE CONTROL CABLING.
2. TO ADDITIONAL DEVICES AS INDICATED ON FLOORPLANS.

LIGHTING CONTROLLER OPERATIONS:

A. LIGHTING AND RECEPTACLE CONTROLLERS SHALL RESPOND TO SYSTEM INPUTS FROM LOW-VOLTAGE LIGHTING CONTROL STATIONS AND SENSORS AS DESCRIBED IN LIGHTING CONTROL SCHEMES.

1/E.501 DIAGRAM
TYPICAL SINGLE-ZONE RELAY 0-10V DIMMING CONTROLS
NOT TO SCALE



GENERAL NOTES (THIS DIAGRAM ONLY):

A. LOW-VOLTAGE WIRING AND CONTROL CABLING IS NOT SHOWN ON PLANS. PROVIDE LOW-VOLTAGE WIRING CONDUCTORS AS REQUIRED BY MANUFACTURER AND MAKE CONNECTIONS REQUIRED FOR COMPLETE INSTALLATION.

B. GROUNDING AND NEUTRAL CONDUCTORS ARE NOT SHOWN ON THIS DIAGRAM.

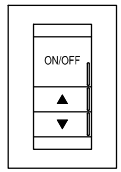
SPECIFIC NOTES (THIS DIAGRAM ONLY):

1. CAT5 OR MANUFACTURER EQUIVALENT LOW-VOLTAGE CONTROL CABLING.
2. LOW-VOLTAGE WIRING FOR 0-10VDC DIMMING CONTROL - 2#18AWG, 600V RATED (PURPLE/GRAY), RUN IN CONDUIT WITH POWER WIRING OR TYPE MC LUMINARY CABLE. LOW-VOLTAGE CONTROL WIRING NOT INDICATED ON PLANS.
3. TO ADDITIONAL DEVICES AS INDICATED ON FLOORPLANS.

LIGHTING CONTROLLER OPERATIONS:

A. LIGHTING AND RECEPTACLE CONTROLLERS SHALL RESPOND TO SYSTEM INPUTS FROM LOW-VOLTAGE LIGHTING CONTROL STATIONS AND SENSORS AS DESCRIBED IN LIGHTING CONTROL SCHEMES.

2/E.501 DIAGRAM
TYPICAL SINGLE-ZONE RELAY PHASE DIMMING CONTROLS
NOT TO SCALE



SYMBOL: S(2)
- LIGHTING CONTROL ZONE (WHERE INDICATED ON PLAN)
- CONTROL STATION TYPE

CONTROL SCHEME APPLIES TO THE FOLLOWING TYPICAL SPACES:

PRIVATE OFFICES, CLASSROOMS, GAME ROOMS, MEETING ROOMS, HUDDLE ROOMS, FITNESS ROOMS, EXERCISE ROOMS, SMALL MULTIPURPOSE ROOM.

SEQUENCE OF OPERATIONS:

A. MANUAL ON: LIGHTING FIXTURES IN SPACE SHALL REQUIRE MANUAL ACTIVATION OF THE 'ON' BUTTON.

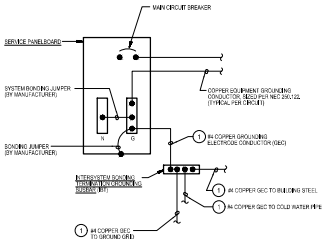
B. LIGHTING CONTROL STATION PROGRAMMING:
   1. ON/OFF: WHEN LIGHTING FIXTURE(S) IN THE SPACE IS (ARE) OFF, ACTIVATION OF THE PUSH BUTTON SHALL TURN THE LIGHTING FIXTURE(S) ON. WHEN LIGHTING FIXTURE(S) IN THE SPACE IS (ARE) ON, ACTIVATION OF THE PUSH BUTTON SHALL TURN THE LIGHTING FIXTURE(S) OFF.
   2. RAISE: LIGHTING FIXTURES IN THE RESPECTIVE CONTROL ZONE SHALL INCREMENTALLY INCREASE LIGHT OUTPUT UP TO FULL OUTPUT.
   3. LOWER: LIGHTING FIXTURES IN THE RESPECTIVE CONTROL ZONE SHALL INCREMENTALLY DECREASE LIGHT OUTPUT DOWN TO OFF.

C. AUTOMATIC OFF: WHEN OCCUPANCY IS NOT DETECTED FOR 20 MINUTES, LIGHTING FIXTURES IN THE SPACE SHALL TURN OFF.

D. DAYLIGHT HARVESTING (WHERE INDICATED ON PLAN): PHOTOCELL SHALL AUTOMATICALLY DIM THE LIGHTING IN THE OFFICE TO MAINTAIN AN AVERAGE ILLUMINANCE OF 40 FOOTCANDLES AT A WORK PLANE 2'-6" ABOVE FLOOR.

E. CONTROLLED RECEPTACLES (WHERE INDICATED ON PLAN):
   1. WHEN OCCUPANCY IS DETECTED, CONTROLLED RECEPTACLES SHALL TURN ON.
   2. WHEN OCCUPANCY IS NOT DETECTED FOR 20-MINUTES, CONTROLLED RECEPTACLES SHALL TURN OFF.

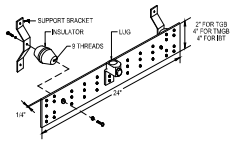
3/E.501 DETAIL
LIGHTING CONTROL SEQUNCE OF OPERATIONS
NOT TO SCALE



SPECIFIC NOTES:

1. SIZE GROUNDING ELECTRODE CONDUCTOR (GEC) PER TABLE 250.66 (2017 NEC).

4/E.501 DETAIL
SERVICE GROUND WIRING DIAGRAM
NOT TO SCALE



BUSBAR DETAIL NOTES:

1. TELECOMMUNICATIONS GROUNDING BUSBAR (TGB) SHALL BE HARGER BICSI PATTERN TGB KIT, PART NO. TGBB1204TGBKIT, OR APPROVED EQUAL. ALL CONNECTIONS TO TGB SHALL BE EXOTHERMIC WELD OR 2-LUG CONNECTOR.
2. INTER-SYSTEM BONDING TERMINATION GROUNDING BUSBAR (IBT) AND TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) SHALL BE HARGER BICSI PATTERN TGB KIT, PART NO. TGBB1404TMGBKIT, OR APPROVED EQUAL. ALL CONNECTIONS TO TMGB SHALL BE EXOTHERMIC WELD OR 2-LUG CONNECTOR.
3. PROVIDE #4/0 COPPER GROUND AND CONNECT TO STRUCTURAL BUILDING STEEL.

SYMBOL: IBT

5/E.501 DETAIL
GROUNDING BUSBAR ASSEMBLY
NOT TO SCALE

© 2022 James Posey Associates, Inc.

Z|S
ZIGER | SNEAD ARCHITECTS
1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5570

LANDSCPE ARCHITECT
Flora Teeter Landscape Architects
500 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-356-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9600 Job Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2945

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-27-2023.
JPA Project No. 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION SET	23 AUGUST 2021

CAD DWG FILE:	7370e501.dwg
DRAWN BY:	DRM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

DETAILS AND DIAGRAMS

E.501

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMP	DESIGN CRITERIA	MAXIMUM WATTAGE	BASIS-OF-DESIGN		VOLT	MOUNTING	NOTES
					MANUFACTURER	CATALOG NO.			
A1	17" ROUND SURFACE MOUNT, SATIN ETCHED WHITE DIFFUSER, BRONZE FINISH	(3) PHILIPS 16A19/PER/930 /P/E26/DIM 6/1PB T20	4,800 LM	48 W	KICHLER	44085OZ	120	SURFACE/ CEILING	--
A2	22" ROUND SURFACE MOUNT, SATIN ETCHED WHITE DIFFUSER, BRONZE FINISH	(4) PHILIPS 16A19/PER/930 /P/E26/DIM 6/1PB T20	6,400 LM	64 W	KICHLER	44086OZ	120	SURFACE/ CEILING	--
B1	3'-6" LONG LENSED TAPE LIGHT, 0-10V DIMMING DRIVER	LED	1,600 LM	20 W	Q TRAN	SW24/5.0-WET-30-BW-BW-N/A-CL2-42	120	COVE	1
B2	11'-0" LONG LENSED TAPE LIGHT, 0-10V DIMMING DRIVER	LED	5,000 LM	55 W	Q TRAN	SW24/5.0-WET-30-BW-BW-N/A-CL2-132	120	COVE	1
B3	17'-0" LONG LENSED TAPE LIGHT, 0-10V DIMMING DRIVER	LED	7,700 LM	85 W	Q TRAN	SW24/5.0-WET-30-BW-BW-N/A-CL2-204	120	COVE	1
C	6" LENSED STRIP LIGHT, ROUNDED DIFFUSE LENS, 0-10V DIMMING DRIVER	LED	3,600 LM	30 W	LITHONIA	CLX-L48-4000LM-SEF-RDL-MVOLT-GZ10-3 0K-80CRI	120	SURFACE/ CEILING	--
D1	4" DIAMETER DOWNLIGHT, CLEAR, SEMI-SPECULAR REFLECTOR, 0-10V DIMMING DRIVER	LED	1,000 LM	10 W	GOTHAM	EVO4-30/10-AR-WD-LSS-MVOLT-GZ10	120	RECESSED	--
D2	4" DIAMETER DOWNLIGHT, CLEAR, SEMI-SPECULAR REFLECTOR, 0-10V DIMMING DRIVER	LED	2,000 LM	20 W	GOTHAM	EVO4-30/26-AR-WD-LSS-MVOLT-GZ10	120	RECESSED	--
D3	4" DIAMETER WALL WASH DOWNLIGHT, CLEAR, SEMI-SPECULAR REFLECTOR, 0-10V DIMMING DRIVER	LED	950 LM	10 W	GOTHAM	EVO4WWA-30/10-AR-LSS-MVOLT-GZ10	120	RECESSED	--
X	EDGE LIT EXIT SIGN, RED LETTERING	LED	N/A	5 W/FACE	LITHONIA	EDGR-1-R-EL	120	RECESSED	--
AA1	SQUARE BOLLARD, BLACK FINISH	LED	200 LM	5 W	BEGA	77 277 BLK	120	GRADE	--
BB1	WALL SCONCE, FROSTED LENS, BRONZE FINISH, WET LOCATION LISTED	(1) PHILIPS 16A19/PER/930 /P/E26/DIM 6/1PB T20	1,600 LM	16 W	ASTRO LIGHTING	1388018 (8132)	120	WALL	--

GENERAL NOTES:

A. EQUALS MUST COMPLY WITH MINIMUM PERFORMANCE CRITERIA LISTED. ADDITIONAL DOCUMENTATION AND CALCULATIONS DEMONSTRATING COMPLIANCE SHOULD BE MADE AVAILABLE UPON REQUEST.

B. LIGHTING FIXTURES SHALL BE PROVIDED WITH 3000K COLOR TEMPERATURE, WITHIN +/- 100K, AND WITHIN THREE MACADAM ELLIPSES, CRI SHALL BE 80 OR GREATER. UNLESS OTHERWISE NOTED IN SCHEDULE ABOVE.

SPECIFIC NOTES:

1. REFER TO MOUNTING DETAILS ON ARCHITECURAL DRAWINGS FOR ADDITIONAL INFORMATION.

WIRING PANEL SCHEDULE PANEL A

120 / 240 VOLTS 1 PHASE 3 WIRE 200 AMP MAINS RECESSED MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / %%C A%%C		B%%C		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	REC - OFFICE 105	#12-3/4"C	1	20	1.1	0.4			2	2	REC - ALCOVE/RESTROOM	#12-3/4"C	1	20
3	3	REC - OPEN OFFICE 102	#12-3/4"C	1	20			1.0	0.4	4	4	REC - VENDING/INFO 101	#12-3/4"C	1	20
5	5	DWH-1	#12-3/4"C	1	20	1.7	0.4			6	6	REC - VENDING/INFO 101	#12-3/4"C	1	20
7	7	DSS-1	#10-3/4"C	2	30			1.1	1.1	8	8	DSS-2	#10-3/4"C	2	30
-	9					1.1	1.1			-	10				
11	11	E/W BOOTH LTG & RECS	#10-3/4"C	1	20			0.9	0.9	12	12	LTG - INDOOR	#12-3/4"C	1	20
13	13	EF-1	#10-3/4"C	1	20	3.3	0.9			14	14	LTG - OUTDOOR	#12-3/4"C	1	20
15	15	ACCU-1	#10-3/4"C	2	60			3.5	7.8	16	16	AHU-1	2#4+#8G- 1-1/4"C	2	90
-	17					3.5	7.8			-	18				
19	19	ICE MACHINE	#12-3/4"C	1	20			1.0	-	20	20	SPARE	--	1	20
21	21	ICE MACHINE	#12-3/4"C	1	20	1.0	-			22	22	SPARE	--	1	20
23	23	SPARE	--	1	20			-	-	24	24	SPARE	--	1	20
25	25	SPARE	--	1	20	-	-			26	26	SPARE	--	1	20
27	27	SPARE	--	1	20			-	-	28	28	SPARE	--	1	20
29	29	SPARE	--	1	20	-	-			30	30	SPARE	--	1	20
						11.7	10.6	7.5	10.2						
						22.3		17.7							

CONNECTED LOAD = 40.0 KVA

DEMAND LOAD = 40.0 KVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

MAIN BREAKER 200 AMPS

LOCATION ALCOVE 103

© 2022 James Posey Associates, Inc.

ZIGER | SNEAD ARCHITECTS

1006 Morton Street
Baltimore, Maryland 21201
410.576.9131
zigersnead.com

STRUCTURAL ENGINEER
Albrecht Engineering
3500 Boston Street
Suite 329, MS-12
Baltimore, MD 21224
410-522-5570

LANDSCPE ARCHITECT
Fluvia Teeter Landscape Architects
500 N. Charles St
Suite 300
Baltimore, MD 21201
410-528-8395

MECHANICAL ENGINEER
James Posey Associates
11155 Red Run Blvd.
Suite 310
Baltimore, MD 21117
410-286-6100

GEOTECHNICAL ENGINEER
Schnabel Engineering
9600 Jeb Stuart Pkwy
Suite 200
Glen Allen, VA 23059
804-264-3222

CIVIL ENGINEER
AMT Engineering, Inc.
800 King Farm Blvd
4th Floor
Rockville, MD 20850
301-881-2945

COST ESTIMATOR
Forella Group, LLC
5180 Parkstone Dr.
Suite 250
Chantilly, VA 20151
703-668-2200

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32060, Expiration date: 06-22-2023.
JPA Project No.: 7370-20

GREENBRIER STATE PARK CHARGE STATION

STATE OF MARYLAND - DEPARTMENT OF GENERAL SERVICES

21843 NATIONAL PIKE
BOONSOBORO, MD 21713

NO.	REVISION TITLE	DATE
	BID AND CONSTRUCTION SET	23 AUGUST 2021

CAD DWG FILE:	7370e601.dwg
DRAWN BY:	DRM
CHECKED BY:	TMC
DGS PROJECT NUMBER:	P-052-200-002
Z|S PROJECT NUMBER:	2015.00
DATE:	23 AUGUST 2021

SCHEDULES

E.601