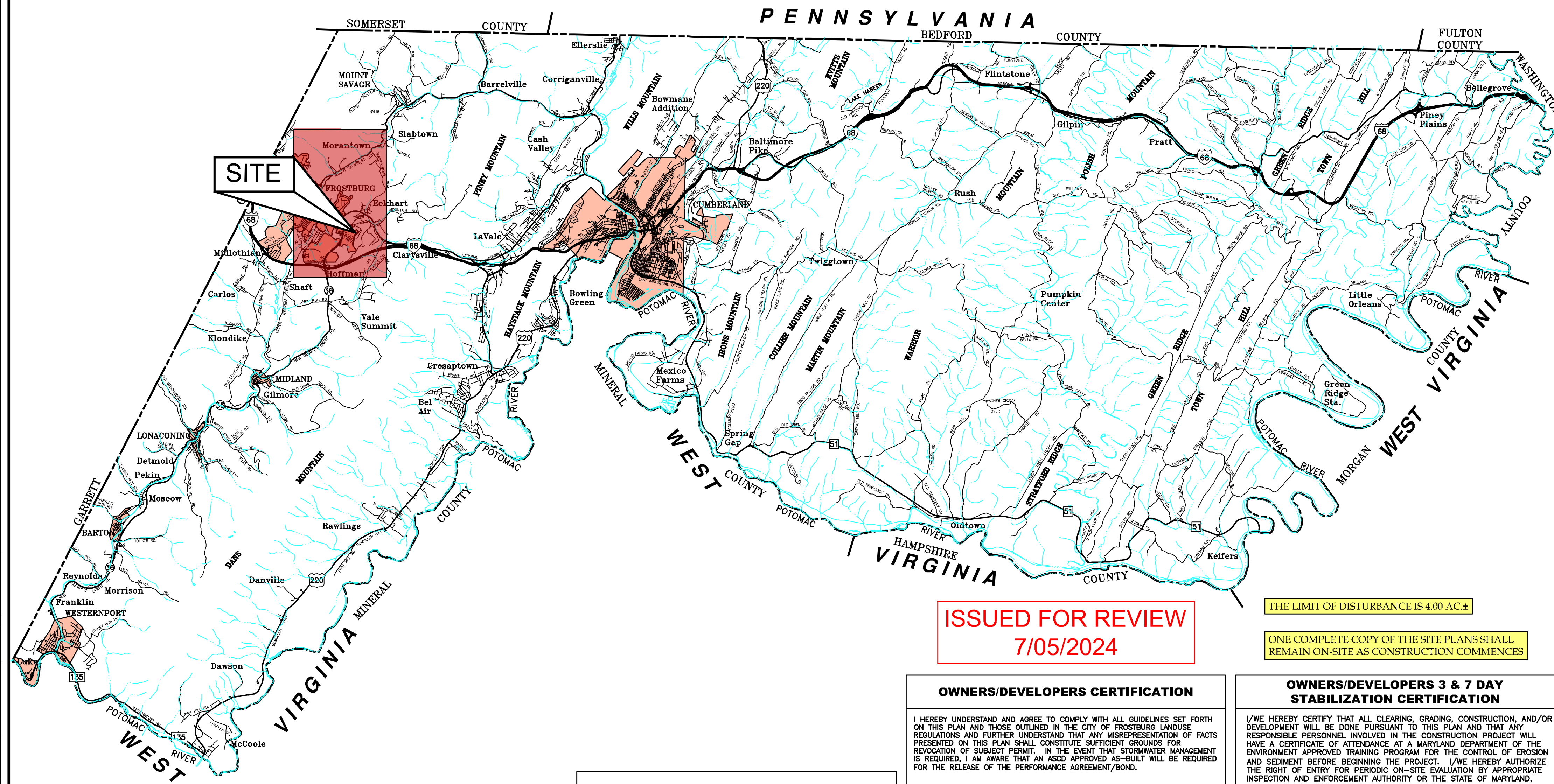


# FINAL PLAN SUBMITTAL - PHASE 2

## FUTURE INDUSTRIAL DEVELOPMENT SITE

### FROSTBURG BUSINESS PARK

#### FROSTBURG, ALLEGANY COUNTY, MARYLAND



**ISSUED FOR REVIEW**  
7/05/2024

THE LIMIT OF DISTURBANCE IS 4.00 AC±

ONE COMPLETE COPY OF THE SITE PLANS SHALL REMAIN ON-SITE AS CONSTRUCTION COMMENCES

**APPROVED FOR SEDIMENT EROSION CONTROL**

BRENT WALKER  
SEDIMENT CONTROL PLANNER  
ALLEGANY SOIL CONSERVATION DISTRICT

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**APPROVED FOR CONSTRUCTION**

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

CITY ENGINEER  
CITY OF FROSTBURG ENGINEERING DIVISION

**OWNERS/DEVELOPERS CERTIFICATION**

I HEREBY UNDERSTAND AND AGREE TO COMPLY WITH ALL GUIDELINES SET FORTH ON THIS PLAN AND THOSE OUTLINED IN THE CITY OF FROSTBURG LANDUSE REGULATIONS AND FURTHER UNDERSTAND THAT ANY MISREPRESENTATION OF FACTS PRESENTED ON THIS PLAN SHALL CONSTITUTE SUFFICIENT GROUNDS FOR REVOCATION OF SUBJECT PERMIT. IN THE EVENT THAT STORMWATER MANAGEMENT IS REQUIRED, I AM AWARE THAT AN ASCD APPROVED AS-BUILT WILL BE REQUIRED FOR THE RELEASE OF THE PERFORMANCE AGREEMENT/BOND.

RICHARD POLICE (DIRECTOR, BUSINESS DEVELOPMENT) DATE \_\_\_\_\_  
CLYM ENVIRONMENTAL SERVICES, LLC.  
1539 TILCO DRIVE, SUITE 200  
FREDERICK, MARYLAND 21704  
(301) 694-6000

**CONSULTANT CERTIFICATION**

I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICABLE AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ALLEGANY SOIL CONSERVATION DISTRICT AND "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL." I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

MATTHEW S. BREWER DATE \_\_\_\_\_  
NO. 41424  
BENNETT, BREWER, AND ASSOCIATES  
23 EAST MAIN STREET, SUITE 200  
FROSTBURG, MARYLAND 21532  
(301) 687-0494  
EXPIRATION DATE JANUARY 8, 2026

SEAL

**OWNERS/DEVELOPERS 3 & 7 DAY STABILIZATION 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.

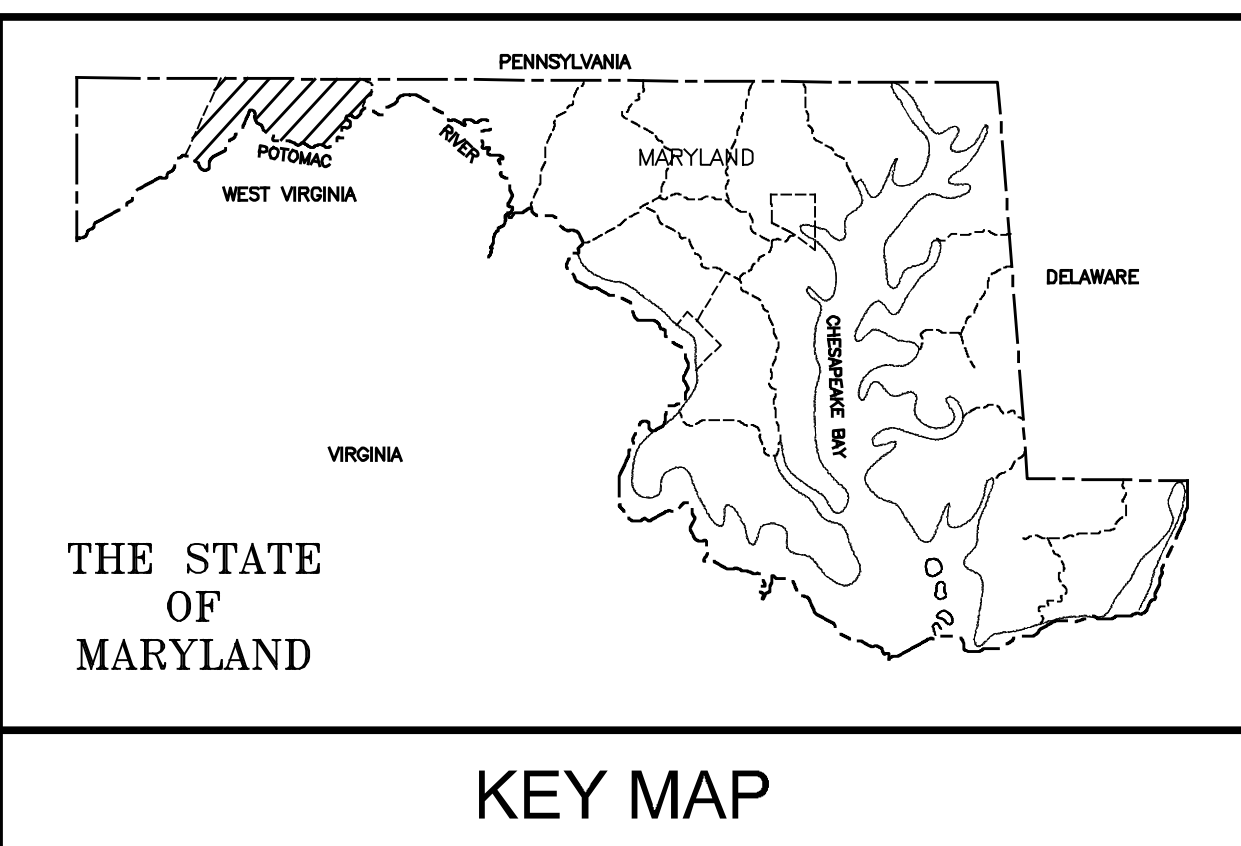
RICHARD POLICE (DIRECTOR, BUSINESS DEVELOPMENT) DATE \_\_\_\_\_  
CLYM ENVIRONMENTAL SERVICES, LLC.  
1539 TILCO DRIVE, SUITE 200  
FREDERICK, MARYLAND 21704  
(301) 694-6000

**PROFESSIONAL ENGINEER CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAW OF THE STATE OF MARYLAND, LICENSE NO. 41424, EXPIRATION DATE JANUARY 8, 2026.

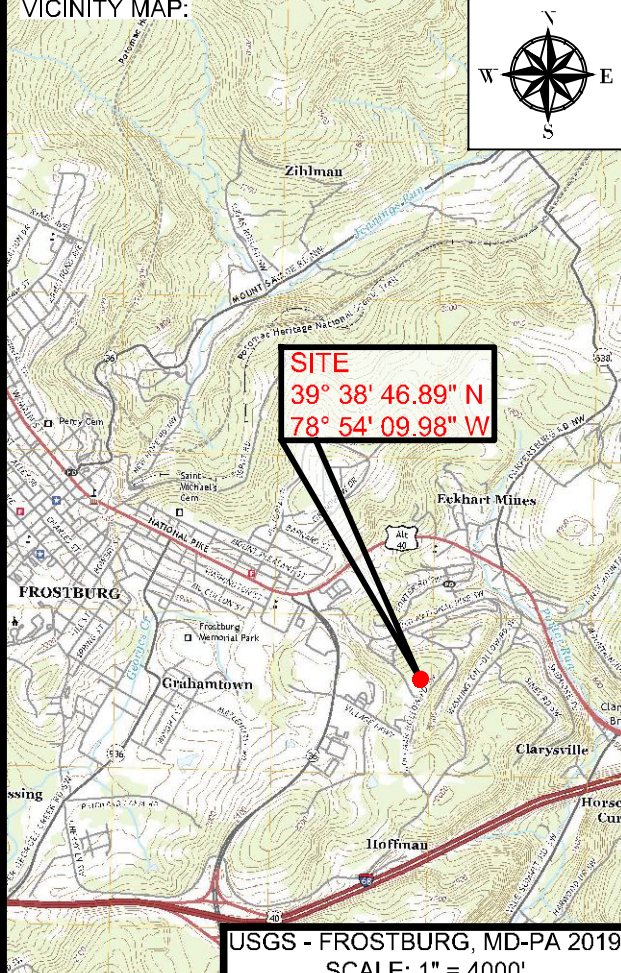
MATTHEW S. BREWER PE DATE \_\_\_\_\_  
P.E. NO. 41424  
BENNETT, BREWER, AND ASSOCIATES  
23 EAST MAIN STREET, SUITE 200  
FROSTBURG, MARYLAND 21532  
(301) 687-0494  
EXPIRATION DATE JANUARY 8, 2026

SEAL



**INDEX OF DRAWINGS**

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C-124	POST CONSTRUCTION PLAN
C-125	POST CONSTRUCTION DRAINAGE PLAN
C-211	SITE PLAN
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C-323	EROSION & SEDIMENT CONTROL DETAILS & NOTES
C-324	MDE STANDARD SEEDING & MULCHING DETAILS & NOTES
C-325	MDE STANDARD EROSION & SEDIMENT DETAILS & NOTES
C-326	VEGETATED BMP INSTALLATION & MAINTENANCE NOTES
C-327	EARTHWORK & EARTH MOVING SPECIFICATIONS
C-401	MICROBASIN 1 & 2 & STORM DRAIN DETAILS
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C-404	MICROBASIN 5 & STORM DRAIN DETAILS
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C-601	SOIL BORINGS
C-602	SOIL BORINGS
C-603	SOIL BORINGS
C-604	SOIL BORINGS



PROJECT:

**FINAL PLAN SUBMITTAL**  
FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
MARYLAND

CLIENT:

CLYM ENVIRONMENTAL SERVICES, LLC  
1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704

Know what's below.  
Call before you dig.

**bba**  
Surveyors | Engineers | Planners

Bennett Brewer & Associates, LLC  
23 East Main Street, Suite 200 Frostburg, Maryland 21532  
Phone (301)-687-0494 Fax (301)-687-0495  
www.bbasurevey.com

**REVISIONS**

NO.	BY	DATE	DESCRIPTION
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-	-	-	-
-	-	-	-

DRAWN: BBA DATE: 7/05/2024  
CHECKED: MB SCALE: AS NOTED  
APPROVED: MB CRD FILE: 23088

BBA# 2023088

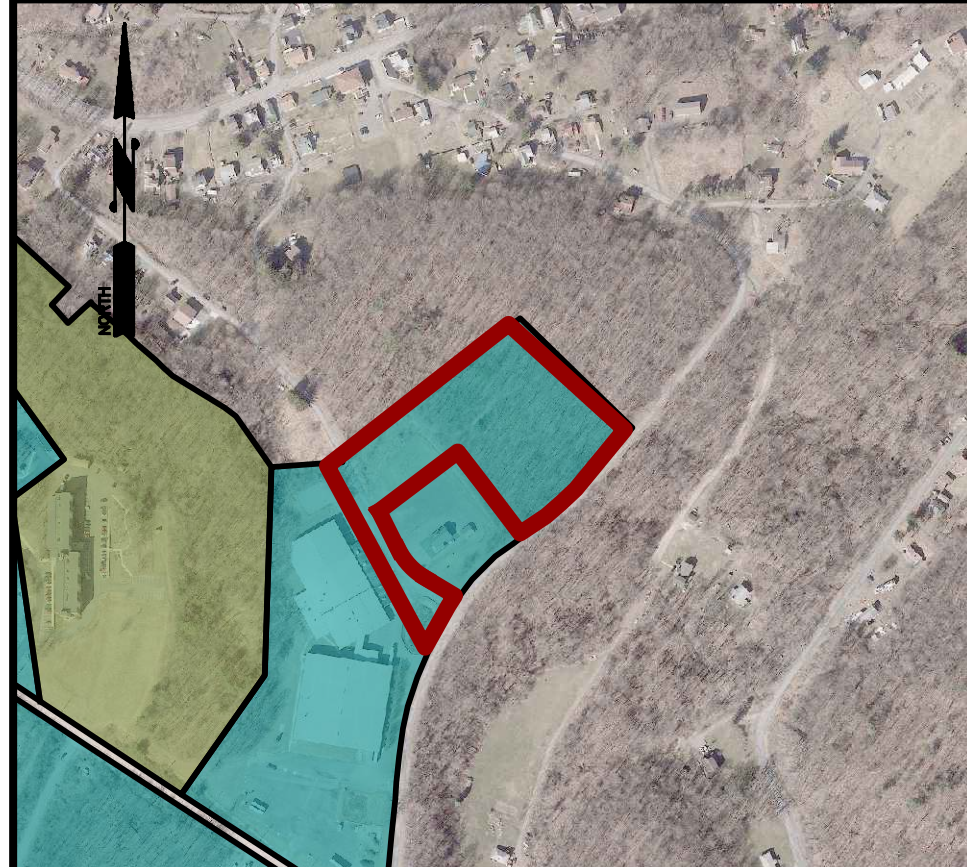
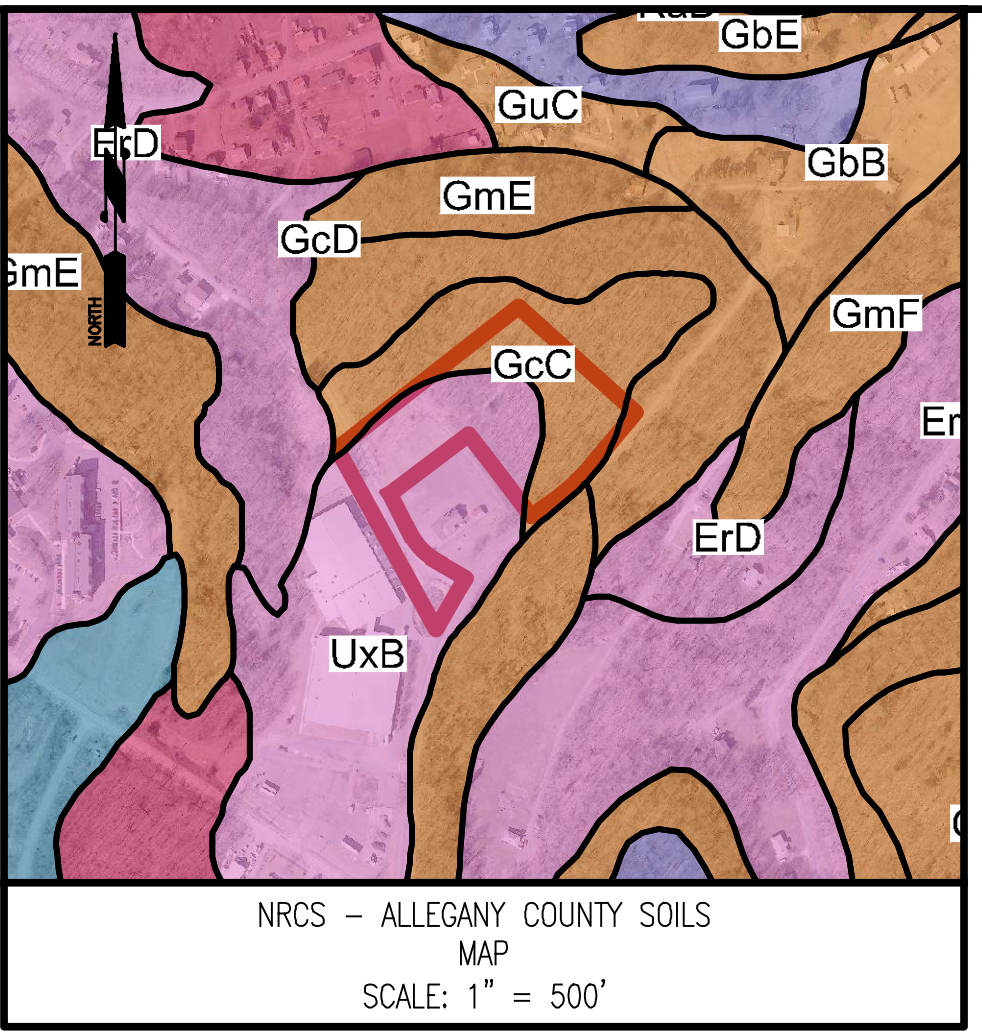
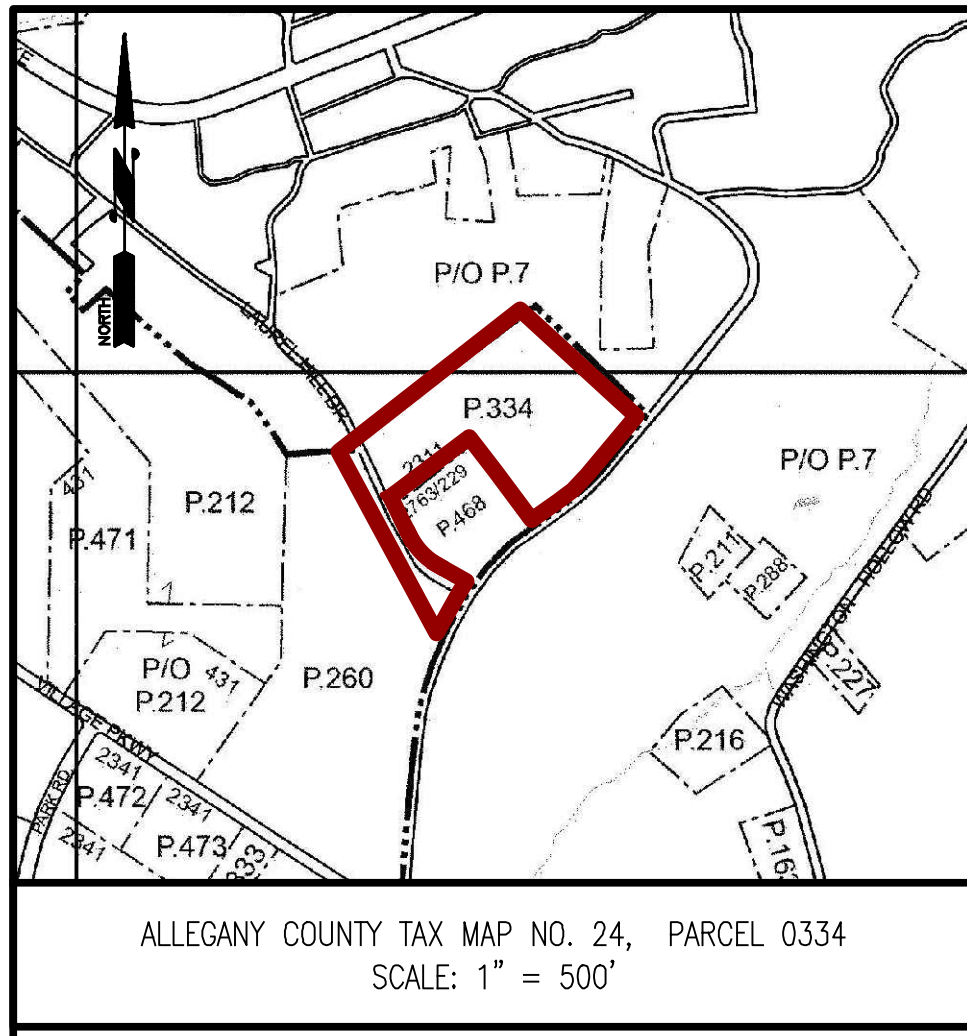
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**TITLE SHEET**

IFR: 7/05/2024

SHEET #:  
C-001

CAD FILE: E:\2023\23088 - Cym Environmental - Cym Environmental - Design Services\PRODUCTION\C-001.dwg PLOT DATE/TIME: 7/4/2024 - 21:14pm LAST SAVE BY: WORKLOS

NOTE - THIS PLAN REPRESENTS PHASE 2 OF THE CIVIL WORK ASSOCIATED WITH THIS PROJECT. THIS DESIGN FURTHER ASSUMES THAT PHASE 1 (SITE PREPARATION) IS COMPLETE IN ACCORDANCE WITH THE PHASE 1 SITE PREPARATION PLAN PREPARED BY BENNETT, BREWER & ASSOCIATES DATED 5/17/2024, HEREBY INCORPORATED BY REFERENCE.



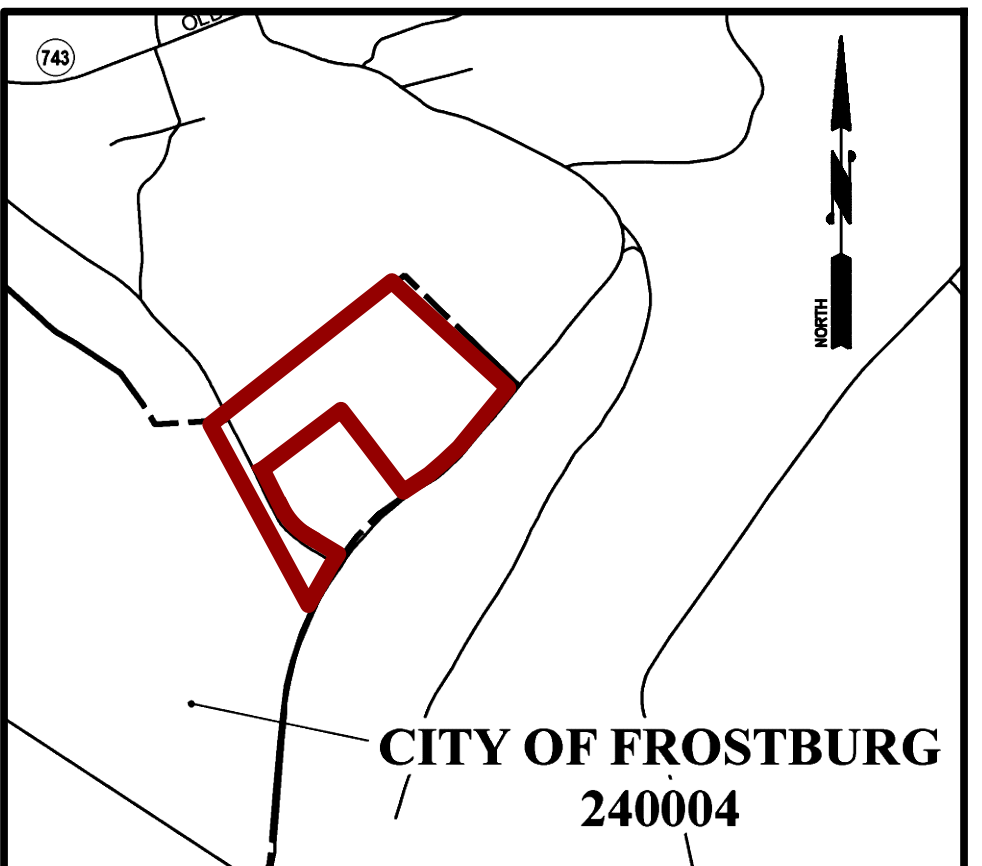
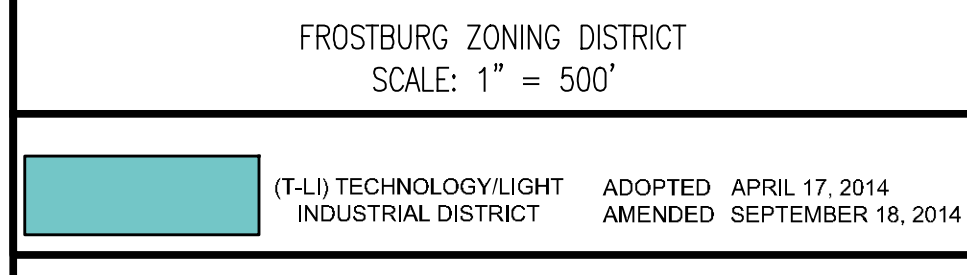
SOILS TABLE

MAP SYMBOL	MAP UNIT NAME	HYDROLOGIC RATING	K FACTOR
GcC	Gilpin channery silt loam, 8 to 15 percent slopes, very stony	C	N/A
GcD	Gilpin channery silt loam, 15 to 25 percent slopes, very stony	C	N/A
UxB	Urban land, 0 to 8 percent slopes	D	N/A

Soil Hydrologic Rating - N/A

Soil Hydrologic Rating - C

Soil Hydrologic Rating - D



FEMA FIRM MAP 24001C0019E  
SCALE: 1" = 500'

FEMA INFORMATION

FEMA FIRM PANEL NUMBER	DATE	ZONE
24001C0019E	APRIL 3, 2020	X

THE ENTIRE PROJECT LIES WITHIN FLOOD ZONE X  
AREA OUTSIDE THE 0.2% ANNUAL CHANGE FLOODPLAIN

MAP SYMBOL	MAP UNIT NAME
	Pm - Monongahela Formation (PENNSYLVANIAN)

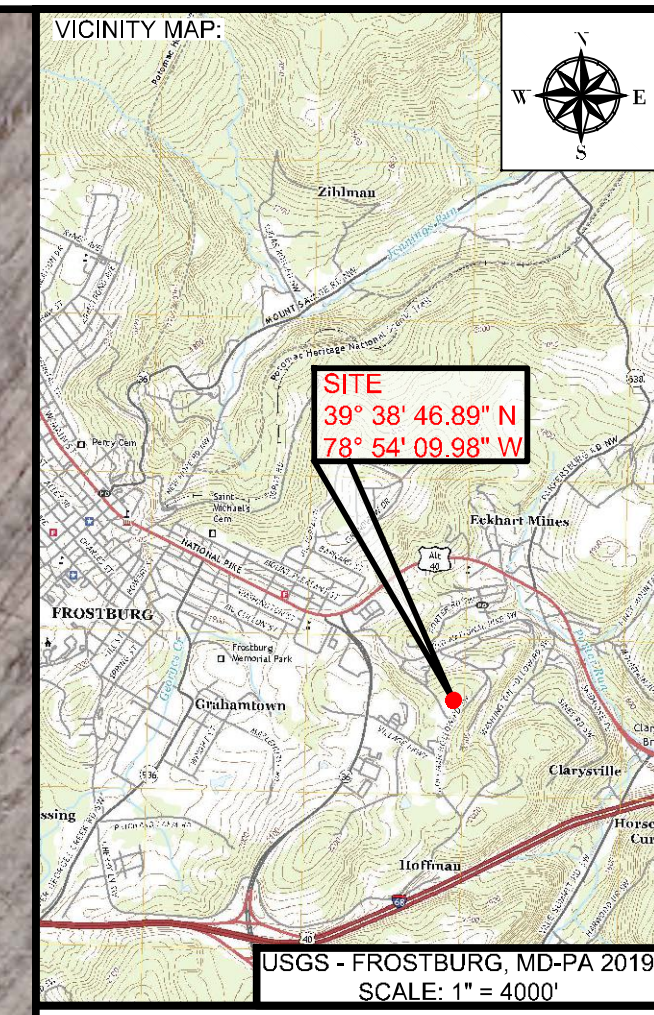
NOTE:

- THERE ARE NO TIER II WATERS WITHIN THE PROJECT LIMITS AS PER THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S WEBSITE: [www.mde.state.md.us/programs/Water/TMDL/Water%20Quality%20Standards/Pages/HighQualityWatersMap.aspx](http://www.mde.state.md.us/programs/Water/TMDL/Water%20Quality%20Standards/Pages/HighQualityWatersMap.aspx)
- THERE WERE NO WETLAND AREAS OBSERVED WITHIN THE PROJECT LIMITS.

SITE COORDINATES

MARYLAND STATE PLANE COORDINATES (NAD83 US FEET)  
NORTH: 726596.44  
EAST: 776524.35

GEOGRAPHIC COORDINATES (DEGREES, MINUTES, SECONDS)  
LATITUDE: 39° 38' 46.89" N  
LONGITUDE: 78° 54' 09.98" W

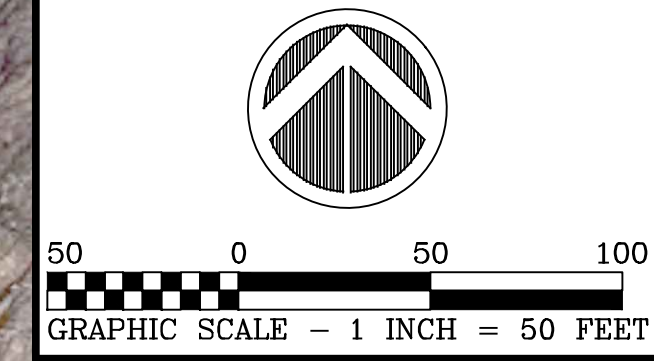


PROJECT:

**FINAL PLAN SUBMITTAL**  
FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
MARYLAND

CLIENT:

CLYM ENVIRONMENTAL SERVICES, LLC  
1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704



**bba**  
Surveyors | Engineers | Planners  
Bennett Brewer & Associates, LLC  
23 East Main Street, Suite 200 Frostburg, Maryland 21532  
Phone (301)-687-5494 Fax (301)-687-5495  
www.bbasurevey.com

REVISIONS

NO.	BY	DATE	DESCRIPTION
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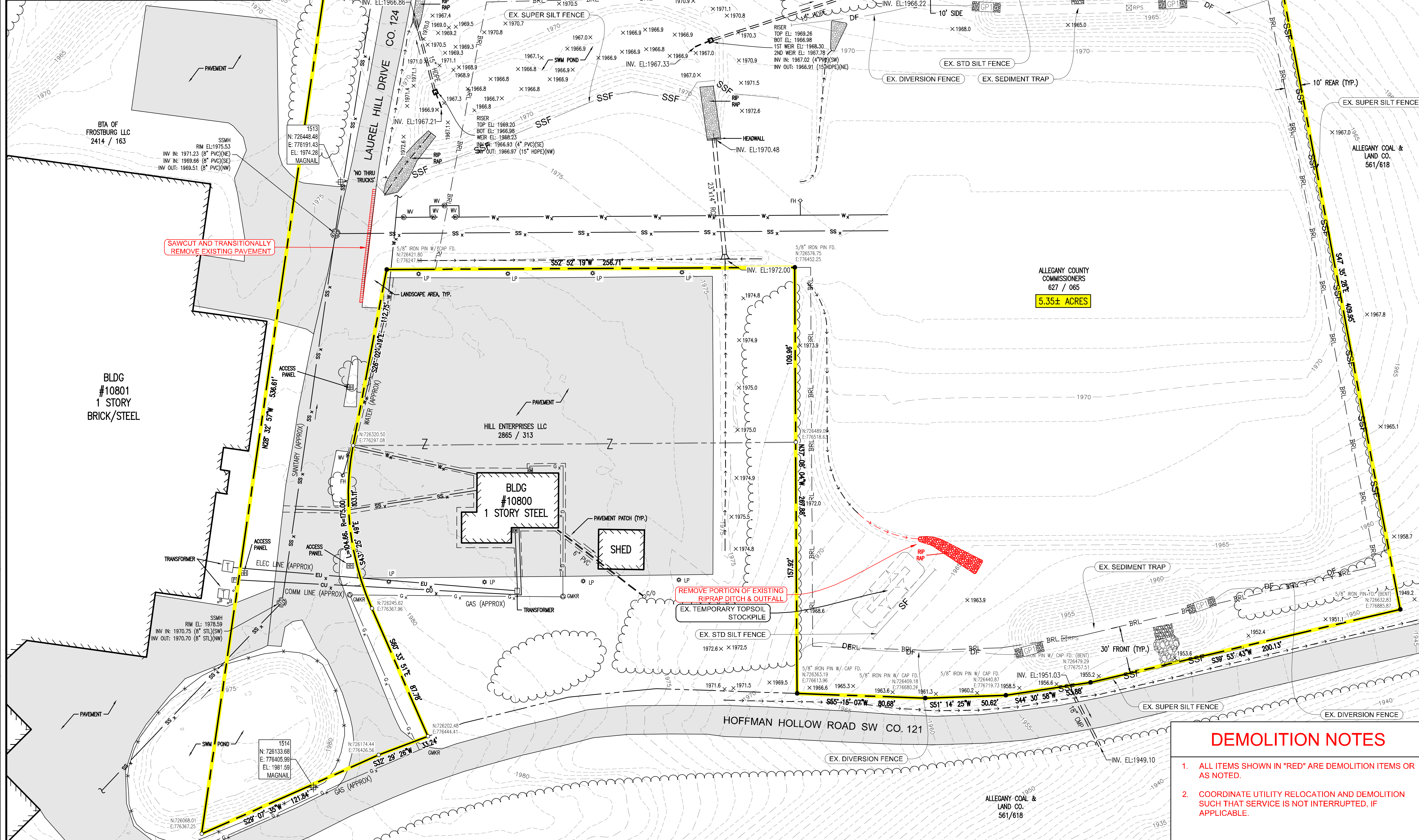
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APPROVED: MB CRD FILE: 23088

BBA# 2023088

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**NATURAL RESOURCES SHEET**  
IFR: 7/05/2024  
SHEET #:  
C-050

CAD FILE: E:\2023\23088 - Cym Environmental - Cym Services\PRODUCTION\C-050.dwg PLOT DATE/TIME: 7/4/2024 - 1:30pm LAST SAVE BY: work106

	COMMERCIAL USE
MINIMUM LOT AREA	6,000 SQ. FT.
MINIMUM FRONT YARD	30 FT.
MINIMUM REAR YARD	10 FT.
MINIMUM SIDE YARD	ADJOINING A 'C' DISTRICT: NONE, OR IF SIDE YARD PROVIDED A MINIMUM OF 10 FT.; ADJOINING A 'R' DISTRICT: 10 FT.
MINIMUM LOT WIDTH	STREET LINE: 50 FT.; FRONT BUILDING LINE: 50 FT.
MAXIMUM LOT COVERAGE	80%
MAXIMUM HEIGHT	4 STORIES / 50 FEET



**SEC. 3.11. - "T-LI" TECHNOLOGY/LIGHT INDUSTRIAL DISTRICT.**

**A. PURPOSE.** TO PROVIDE FOR COMMERCIAL AND LIGHT INDUSTRIAL USES WHICH ARE COMPATIBLE WITH RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL USES IN ADJACENT AREAS OF THE CITY. THIS DISTRICT IS DESIGNED TO ACCOMMODATE PLANNED BUSINESS PARKS OR SUBSTANTIAL TRACTS OF LAND SUITABLE FOR BUSINESS AND INDUSTRY WITH A FOCUS ON THE TECHNOLOGY SECTOR. THIS DISTRICT SHALL PROVIDE FOR FLEXIBILITY, BUT REQUIRES WELL-PLANNED ACCESS AND DESIGN.

**B. PRINCIPAL PERMITTED USES AND STRUCTURES.** THE FOLLOWING PRINCIPAL USES AND STRUCTURES ARE PERMITTED IN THE "T-LI" DISTRICT:

- (1) GROUP HOMES CONSISTENT WITH SECTION 8.5.
- (2) TREATMENT CENTERS.
- (3) ADULT DAY CARE CENTERS.
- (4) ASSISTED LIVING CENTERS AND NURSING HOMES.
- (5) COLLEGES, TRADE OR HOBBY SCHOOLS.
- (6) HOSPICES AND HOSPITALS.
- (7) BUILDING MATERIAL SALES YARD, INCLUDING THE SALE OF ROCK, SAND, GRAVEL, AND THE LIKE, AND TRADESPERSONS EQUIPMENT STORAGE YARD OR HEADQUARTERS.
- (8) CONTRACTOR OFFICES.
- (9) FITNESS CENTERS.

**C. SPECIAL EXCEPTIONS.** THE FOLLOWING PRINCIPAL USES ARE PERMITTED AS SPECIAL EXCEPTIONS AFTER APPROVAL BY THE BOARD OF ZONING APPEALS:

- (1) ADULT USES.
- (2) GAMBLING ESTABLISHMENTS.
- (3) BODY ART STUDIOS.

**(10) MEDICAL LABORATORIES.**

**(11) WHOLESALE BUSINESS, WAREHOUSE, TRUCKING TERMINALS, AND SIMILAR NON-PROCESSING STORAGE AND DISTRIBUTION USES, BUT NOT INCLUDING PROHIBITED USES.**

**(12) MANUFACTURING, COMPOUNDING, PROCESSING, OR PACKAGING OF FOOD AND FOOD PRODUCTS, AND COSMETICS, TOILETRIES, AND PHARMACEUTICALS.**

**(13) MANUFACTURING, COMPOUNDING OR ASSEMBLING OF ARTICLES USING THE FOLLOWING OR SIMILAR PREPARED MATERIALS: BONE OR SHELL, CELLOPHANE, FUR, GLASS, LEATHER, PLASTIC, PRECIOUS OR SEMIPRECIOUS METALS OR STONES, RUBBER, TEXTILES OR CLOTH PRODUCTS, TOBACCO, WOOD OR WOOD PRODUCTS.**(14)

**(14) MANUFACTURING OF CERAMIC OR GLASS PRODUCTS.**(15)

**(15) MANUFACTURING OR ASSEMBLING FROM PREPARED MATERIALS OF THE FOLLOWING OR SIMILAR ITEMS: MUSICAL INSTRUMENTS, CLOCKS OR WATCHES, TOYS OR NOVELTIES, ELECTRICAL APPLIANCES, SCIENTIFIC OR ELECTRONIC DEVICES, LIGHT SHEET METAL PRODUCTS, MACHINE TOOL, OFFICE EQUIPMENT.**(16)

**(16) MANUFACTURING OR ASSEMBLING FROM PREPARED MATERIALS OF THE FOLLOWING OR SIMILAR ITEMS: MUSICAL INSTRUMENTS, CLOCKS OR WATCHES, TOYS OR NOVELTIES, ELECTRICAL APPLIANCES, SCIENTIFIC OR ELECTRONIC DEVICES, LIGHT SHEET METAL PRODUCTS, MACHINE TOOL, OFFICE EQUIPMENT.**(17)

**(17) TECHNOLOGICAL OR COMMUNICATION BASED ENTERPRISES.**(18)

**(18) AGRICULTURE, LIMITED TO CROPLAND, NURSERIES AND GREENHOUSES.**

**(4) WIND ENERGY SYSTEMS** COMPLYING WITH REGULATIONS FOUND IN SECTION 8.8.

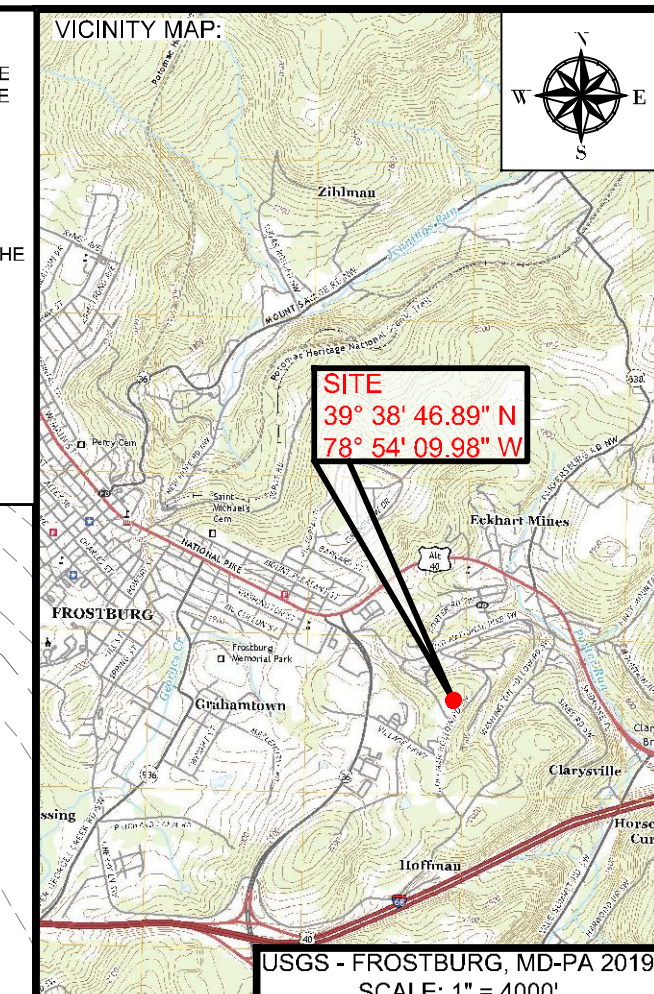
**(5) SELF-STORAGE FACILITIES,** SUBJECT TO THE PROVISIONS SET FORTH IN SECTION 8.9.

**(6) A USE OR STRUCTURE** THAT THE APPLICANT PROVES TO THE SATISFACTION OF THE BOARD OF ZONING APPEALS TO BE OF THE SAME GENERAL CHARACTER AS THE ABOVE PERMITTED USES AND SPECIAL EXCEPTION USES, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 1.18(C), BUT NOT INCLUDING USES THAT ARE SPECIFICALLY PROHIBITED IN THIS DISTRICT.

**D. ACCESSORY USES AND STRUCTURES.** THE FOLLOWING ACCESSORY USES AND STRUCTURES SHALL BE PERMITTED IN THE "T-LI" DISTRICT:

- (1) TEMPORARY BUILDINGS AND STRUCTURES IN ACCORDANCE WITH SECTION 6.6.
- (2) SIGNS IN ACCORDANCE WITH PART 7 OF THIS ORDINANCE.
- (3) ACCESSORY USES AND STRUCTURES THAT ARE CLEARLY CUSTOMARILY ACCESSORY AND DIRECTLY INCIDENTAL TO THE PERMITTED PRINCIPAL USES AND STRUCTURES.

**E. LOT, YARD AND HEIGHT REQUIREMENTS:** THE FOLLOWING MINIMUM REQUIREMENTS SHALL APPLY TO ALL USES AND STRUCTURES IN THE "T-LI" DISTRICT, EXCEPT AS SUPERSEDED BY MORE RESTRICTIVE PROVISIONS OF THIS ORDINANCE.



PROJECT:

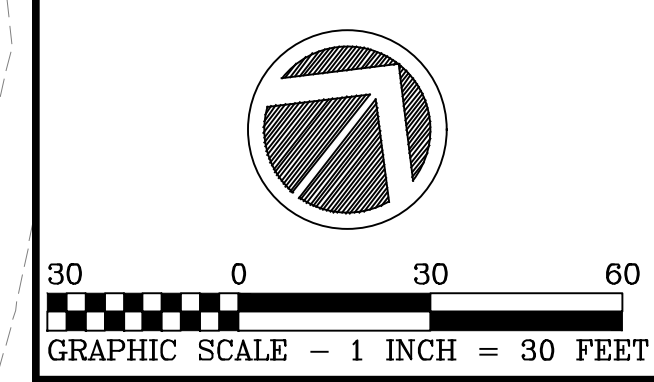
**FINAL PLAN SUBMITTAL**

FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
MARYLAND

CLIENT:

CLYM ENVIRONMENTAL SERVICES, LLC  
1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704

MARYLAND COORDINATE SYSTEM NAD 83 FEET / NAD 88



**bba**  
Surveyors | Engineers | Planners

Bennett Brewer & Associates, LLC  
23 East Main Street, Suite 200, Frostburg, Maryland 21532  
Phone (301)-687-0494, Fax (301)-687-0495, www.bbasurey.com

REVISIONS			
NO.	BY	DATE	DESCRIPTION
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DRAWN: BBA DATE: 7/05/2024  
CHECKED: MB SCALE: 1" = 30'  
APPROVED: MB CRD FILE: 23088

BBA# 2023088

SHEET TITLE:

**EXISTING SITE / DEMOLITION PLAN**

IFR: 7/05/2024

SHEET #:

C-100

**DEMOLITION NOTES**

1. ALL ITEMS SHOWN IN "RED" ARE DEMOLITION ITEMS OR AS NOTED.
2. COORDINATE UTILITY RELOCATION AND DEMOLITION SUCH THAT SERVICE IS NOT INTERRUPTED, IF APPLICABLE.

CAD FILE: E:\2023\23088 - Cym Environmental - Cym Environmental - Design Services\PRODUCTION\C-100.dwg PLOT DATE/TIME: 7/4/2024 1:13 PM LAST SAVE BY: work\06

**CONTACT LIST**

ALLEGANY COUNTY LAND DEVELOPMENT SERVICES  
 ALLEGANY COUNTY OFFICE COMPLEX  
 701 KELLY ROAD, SUITE 300  
 CUMBERLAND, MARYLAND 21501  
 PHONE - 301-777-2199  
 FAX - 301-777-2001  
 CONTACT PERSON - JERROD COOK

ALLEGANY COUNTY DEPARTMENT OF PUBLIC WORKS - ENGINEERING  
 ALLEGANY COUNTY OFFICE COMPLEX  
 701 KELLY ROAD, SUITE 300  
 CUMBERLAND, MARYLAND 21501  
 PHONE - 301-777-5933  
 FAX - 301-777-2001  
 CONTACT PERSON - DAN DEWITT, ENGINEER

ALLEGANY COUNTY DEPARTMENT OF PUBLIC WORKS - UTILITIES  
 ALLEGANY COUNTY OFFICE COMPLEX  
 701 KELLY ROAD, SUITE 300  
 CUMBERLAND, MARYLAND 21501  
 PHONE - 301-729-3311  
 FAX - 301-777-2001  
 CONTACT PERSON - SLICK ENSMINGER, AREA SUPERVISOR

ALLEGANY COUNTY ROADS DIVISION  
 ALLEGANY COUNTY OFFICE COMPLEX  
 701 KELLY ROAD  
 CUMBERLAND, MARYLAND 21501  
 PHONE - 301-876-9579  
 FAX - 301-777-1439  
 CONTACT PERSON - JOHN MCMILLAN, SUPERINTENDENT

ALLEGANY COUNTY DIVISION OF PERMITS AND COMPLIANCE  
 ALLEGANY COUNTY OFFICE COMPLEX  
 701 KELLY ROAD, SUITE 400  
 CUMBERLAND, MARYLAND 21501  
 PHONE - 301-777-5951  
 FAX - 301-777-2001  
 CONTACT PERSON - JAMES A. SQUIRES, DIVISION CHIEF

CITY OF FROSTBURG ENGINEER  
 35 BROADWAY  
 FROSTBURG, MARYLAND 21532  
 PHONE - 301-689-5111  
 FAX - 301-689-2640  
 CONTACT PERSON - HAYDEN LINDSEY, DIRECTOR OF PUBLIC WORKS

CITY OF FROSTBURG WATER DEPARTMENT  
 PHONE - 301-689-5855  
 CONTACT PERSONS - JIM WILLIAMS, SUPERVISOR

CITY OF FROSTBURG STREET & SEWER DEPARTMENT  
 PHONE - 301-689-6111  
 CONTACT PERSON - SHANE ELLIOT, SUPERVISOR

COLUMBIA GAS OF MARYLAND, INC.  
 1000 INDUSTRIAL BOULEVARD  
 CUMBERLAND, MARYLAND 21502  
 PHONE - 301-784-3361  
 FAX - 301-759-9331  
 CONTACT PERSON - GERALD KREIGER, AREA PLANT SUPERVISOR

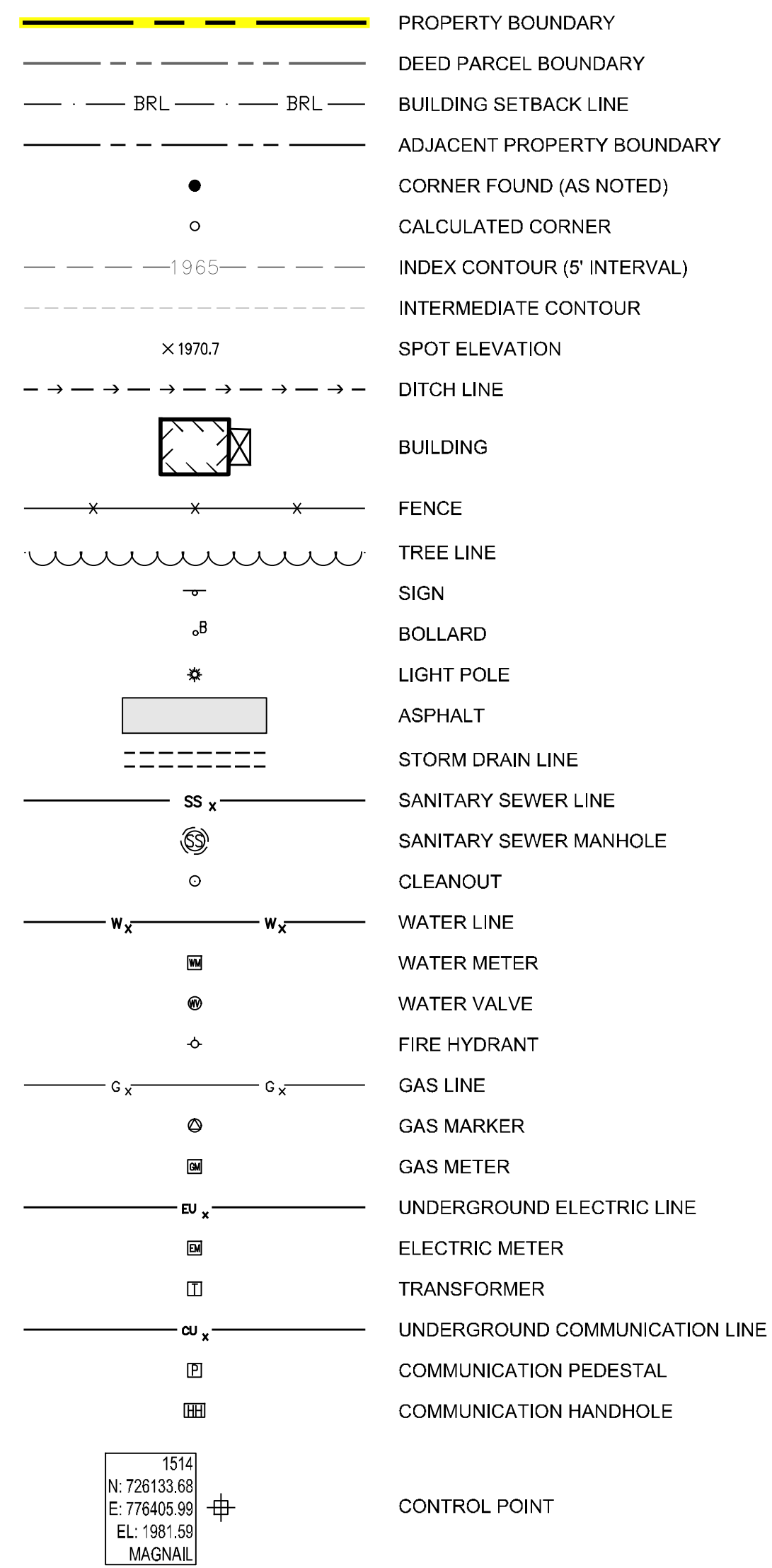
POTOMAC EDISON  
 700 FOURTH STREET @ SOMERVILLE AVENUE  
 CUMBERLAND, MARYLAND 21502  
 PHONE - 301-759-5710  
 FAX - 301-759-5753  
 CONTACT PERSON - MS. SUSAN J. MCLEOD, DISTRIBUTION TECH. III, DESIGN SERVICES

VERIZON (PHONE)  
 425 BLACKISTON AVENUE  
 CUMBERLAND, MD 21502  
 PHONE - 301-759-1846  
 CONTACT PERSON - GARY H. BENNETT, ENGINEERING ASSISTANT  
 PHONE - 301-334-9940  
 CONTACT PERSON - GENE BROWNING, I&M SUPERVISOR

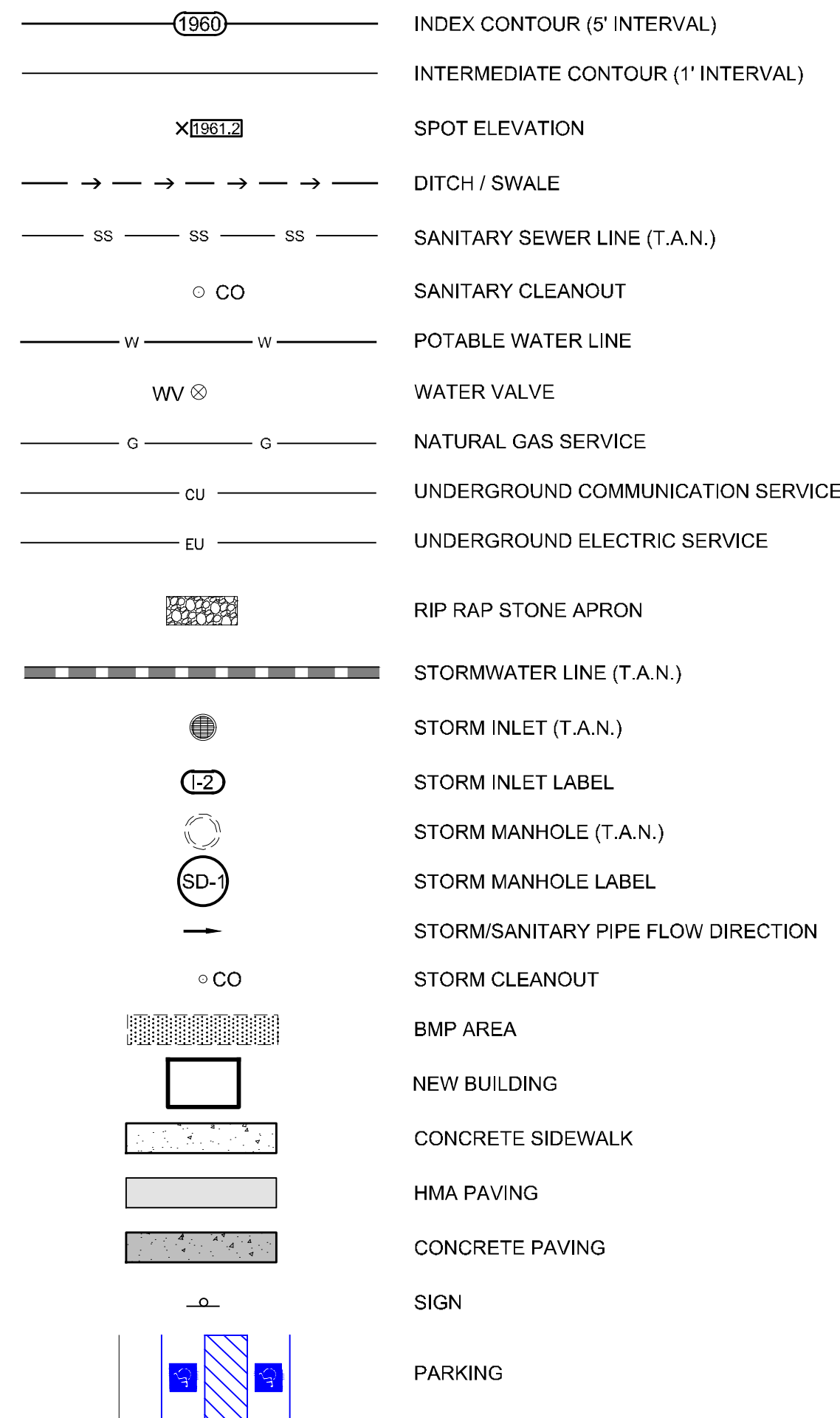
COMCAST  
 244 LOCKER LANE / P.O. BOX 66  
 GRANTSVILLE, MARYLAND 21536  
 PHONE - 301-895-4375  
 CELL - 304-692-8522  
 EMAIL ADDRESS: BARRY\_SAVAGE@CABLE.COMCAST.COM  
 CONTACT PERSON - HEAD TECHNICIAN - BARRY SAVAGE

MISS UTILITY (1-800-257-7777)  
 HANOVER, MARYLAND 21076

**EXISTING FEATURES LEGEND**



**PROPOSED FEATURES LEGEND**



**SITE NOTES**

- THIS SITE LIES WITHIN FLOOD ZONE "X" (AREA OF MINIMAL FLOODING) AS SHOWN ON FIRM PANEL NO. 24001C00191E, DATED APRIL 3.
- THIS PROPERTY IS LOCATED ON TAX MAP NO. 24, PARCEL 0334.
- ALL HORIZONTAL AND VERTICAL DATA PRESENTED HEREON IS A COMPLICATION OF FIELD RUN SURVEY (BY BBA) AND GIS DATA PROVIDED BY ALLEGANY COUNTY DEPARTMENT OF PLANNING AND ZONING.
- ALL VERTICAL DATA PRESENTED HEREON ARE REFERENCED TO NAVD 88.
- ALL HORIZONTAL DATA PRESENTED HEREON ARE REFERENCED TO THE NAD 2011 MARYLAND STATE PLANE ZONE, US FOOT.
- CONTOUR DATA SHOWN HEREON DERIVED FROM THE FOLLOWING:  
 - FIELD RUN SURVEY PERFORMED BY BENNETT, BREWER, AND ASSOCIATES.  
 - 2012 DEM FILES PROVIDED BY STATE OF MARYLAND MAPPING & GIS DATA PORTAL.
- THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES AND RECORD DRAWINGS PROVIDED THE SURVEYOR. LOCATIONS OF UNDERGROUND UTILITIES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES. BEFORE EXCAVATIONS ARE BEGUN, THE VARIOUS UTILITY COMPANIES SHOULD BE CONTACTED FOR VERIFICATION OF UTILITY TYPE AND ALSO FOR FIELD LOCATION.
- CITY OF FROSTBURG ZONING: "T-LI" TECHNOLOGY/LIGHT INDUSTRIAL DISTRICT.

**GENERAL NOTES**

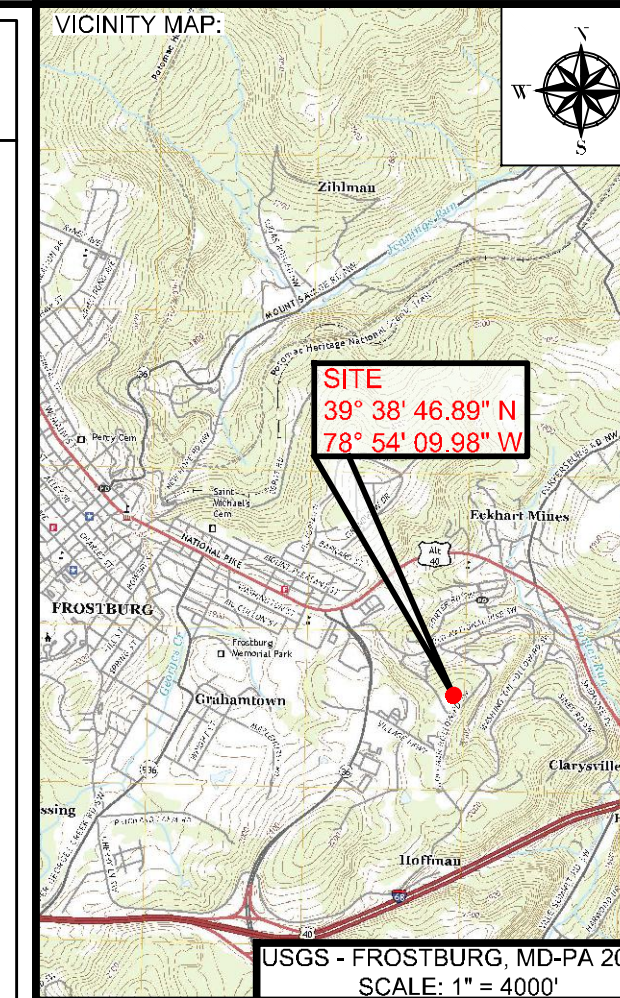
- THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL THE UTILITIES, SHOWN HEREON OR OTHERWISE, AND VERIFY EXISTING CONDITIONS BEFORE BEGINNING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO ASSURE THEMSELVES THAT NO HAZARD EXISTS OR DAMAGE WILL OCCUR TO THE UTILITIES. IT IS REQUIRED THAT "MISS UTILITY" (1-800-257-7777) AND ALL APPLICABLE UTILITY COMPANIES BE CONTACTED AT LEAST ONE WEEK PRIOR TO COMMENCEMENT OF WORK.
- JOB SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OFFICE OF THE ENGINEER AND THE ARCHITECT OF ANY DISCREPANCIES IN THE PLANS OR IN THE RELATIONSHIP OF FINISHED GRADES TO EXISTING PRIOR TO BEGINNING WORK.
- THE CONTRACTOR SHALL NOTE THAT IN CASE OF DISCREPANCY BETWEEN THE SCALED AND FIGURED DIMENSIONS SHOWN ON THE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN.
- ALL ELECTRIC, PHONE, CABLE, AND GAS UTILITIES (IF ANY) WITHIN THE SCOPE OF WORK SHALL BE REMOVED, REPLACED, ADJUSTED TO GRADE OR RELOCATED BY OTHERS. CONTRACTOR SHALL COORDINATE UTILITY WORK WITH THE APPROPRIATE ENTITY REPRESENTATIVE.
- ALL POTABLE WATER AND SANITARY SEWER ITEMS TO REMAIN SHALL BE ADJUSTED TO FINAL GRADE BY THE CONTRACTOR.
- THE CONTRACTOR IS TO PROTECT ALL MONUMENTATION FROM DISTURBANCE OR DAMAGE DURING CONSTRUCTION. THIS SHALL INCLUDE ALL CONCRETE MONUMENTS, PROPERTY MARKERS, BURIED CENTERLINE MARKERS, ETC., INCLUDING THOSE SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. ALL MONUMENTS SHOULD BE WITNESSED PRIOR TO CONSTRUCTION IN A MANNER THAT ENSURES THE REPLACEMENT OF THE MONUMENT TO A POSITION WITHIN FIVE MILLIMETERS (13/64") OF THE ORIGINAL POSITION. SURVEY NOTES OF THE WITNESSES SHALL BE PROVIDED TO THE ENGINEER PRIOR TO STARTING CONSTRUCTION. ALL MONUMENTS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE RESET BY THE CONTRACTOR. SURVEY NOTES OF THE RESETTING MUST BE SUBMITTED TO, AND APPROVED, BY THE ENGINEER BEFORE FINAL PAYMENT CAN BE MADE. THE SURVEY WORK TO SET THE WITNESSES AND TO RESET ANY MONUMENTATION SHALL BE DONE BY A PROFESSIONAL SURVEYOR LICENSED BY THE STATE OF MARYLAND, AND THE SURVEY NOTES MUST BEAR SAID SURVEYOR'S SEAL.
- ALL OPEN TRENCHES SHALL BE MARKED OFF WITH FLASHING BARRICADES & SAFETY FENCING AS REQUIRED FOR NIGHT WARNING.
- ALL AREAS WITHIN THE PROJECT LIMITS NOT OTHERWISE TREATED ARE TO BE SEEDED AND MULCHED OR STABILIZED WITH SOD. AREAS OUTSIDE THE PROJECT LIMITS DISTURBED AS A RESULT OF CONSTRUCTION WORK SHALL BE RESTORED TO THEIR PRECONSTRUCTION CONDITION, OR BETTER.
- CONTRACTOR SHALL FOLLOW THE SEDIMENT AND EROSION CONTROL PLAN AS SHOWN IN THESE DRAWINGS. ANY CHANGES TO THE PLAN MUST RECEIVE APPROVAL BY THE ENGINEER AND ALL APPROPRIATE AGENCIES BEFORE SAID CHANGES CAN BE MADE.
- THE LOCATION OF EXISTING UTILITIES ARE COMPILED FROM THE BEST AVAILABLE INFORMATION. HOWEVER, THEIR ACCURACY IS NOT WARRANTED AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THEIR EXACT LOCATION, AND TO PROTECT THEM BY SUITABLE MEANS APPROVED BY THE OWNERS OF THE UTILITIES FROM ANY AND ALL DAMAGE. APPROVAL OF THE OWNER SHALL BE OBTAINED BEFORE COMMENCING WORK IN THE VICINITY OF ANY EXISTING UTILITIES.

**DEMOLITION NOTES**

- ALL DEBRIS, VEGETATION, AND OTHER MATERIALS NOTED "TO BE REMOVED" SHALL BE TAKEN FROM THE SITE IN THEIR ENTIRETY. THE CONTRACTOR SHALL BE RESPONSIBLE TO DISPOSE OF SAID MATERIALS IN AN APPROVED MANNER.
- CONTRACTOR SHALL NOTIFY ENTITY REPRESENTATIVES AT LEAST 72 HOURS PRIOR TO UTILITY DEMOLITION. CONTRACTOR SHALL VERIFY SALVAGE RIGHTS FOR VALVES, INLET GRATES, MANHOLE COVERS, ETC. WITH THE APPROPRIATE PARTY.

**COMMON ABBREVIATIONS**

AASHTO = AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	CO = CLEANOUT	HGL = HYDRAULIC GRADE LINE	O.C. or C.C. = ON CENTER or CENTER TO CENTER	PVT = POINT OF VERTICAL TANGENT	STD = STANDARD
ADS = ADVANCED DRAINAGE SYSTEM	CONC = CONCRETE	HDPE = HIGH DENSITY POLYETHYLENE	PC = POINT OF CURVE	R.O.W. = RIGHT OF WAY	S.Y. = SQUARE YARDS
ASTM = AMERICAN SOCIETY FOR TESTING & MATERIAL	DA = DRAINAGE AREA	INV = INVERT	PCC = POINT OF COMPOUND CURVE	RX = REMOVE EXISTING	T.A.N. = TYPE AS NOTED
AWWA = AMERICAN WATER WORKS ASSOCIATION	DIA = DIAMETER	L.F. = LINEAR FEET	PGL = PROPOSED GRADE LINE	SAN = SANITARY	TEMP = TEMPORARY
BLDG = BUILDING	DIP = DUCTILE IRON PIPE	MAX = MAXIMUM	PRC = POINT OF REVERSE CURVE	SCE = STABILIZED CONSTRUCTION ENTRANCE	TG = TOP OF GRATE
BOT = BOTTOM	EGL = EXISTING GRADE LINE	MIN = MINIMUM	PT = POINT OF TANGENT	SDMH = STORM DRAIN MANHOLE	(TYP.) = TYPICAL
CJ = CONTRACTION JOINT	EJ = EXPANSION JOINT	NO = NUMBER	PVC = POINT OF VERTICAL CURVE	SDR = STANDARD DIMENSION RATIO	VCF = VITRIFIED CLAY PIPE
CL = CENTERLINE	EX = EXISTING	N.T.C. = NOT THIS CONTRACT	PVC = POLYVINYL CHLORIDE	S.F. = SQUARE FEET	VIF = VERIFY IN FIELD
CMP = CORRUGATED METAL PIPE	FH = FIRE HYDRANT	N.T.S. = NOT TO SCALE	PVI = POINT OF VERTICAL INTERSECTION	SSMH = SANITARY MANHOLE	WM = WATER METER
	GV = GAS VALVE	O.A.E. = OR APPROVED EQUAL		STA = STATION	WV = WATER VALVE



PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
 ALLEGANY COUNTY  
 MARYLAND

CLIENT:  
  
 CLYM ENVIRONMENTAL SERVICES, LLC  
 1539 TILCO DRIVE  
 FREDERICK, MARYLAND 21704



**bba**  
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 Phone (301)-687-0494  
 www.bbasurey.com  
 Fax (301)-687-0495

NO.	BY	DATE	DESCRIPTION
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DRAWN: BBA DATE: 7/05/2024  
 CHECKED: MB SCALE: AS NOTED  
 APPROVED: MB CRD FILE: 23088

BBA# 2023088  
 SHEET TITLE:  
**GENERAL NOTES & LEGENDS**  
**IFR: 7/05/2024**  
 SHEET #:  
**C-111**

CAD FILE: E:\2023\23088 - Cym. Environmental - Design Services\PRODUCTION\C-111.dwg  
 PLOT DATE/TIME: 7/4/2024 - 1:31pm  
 LAST SAVE BY: WORK\06

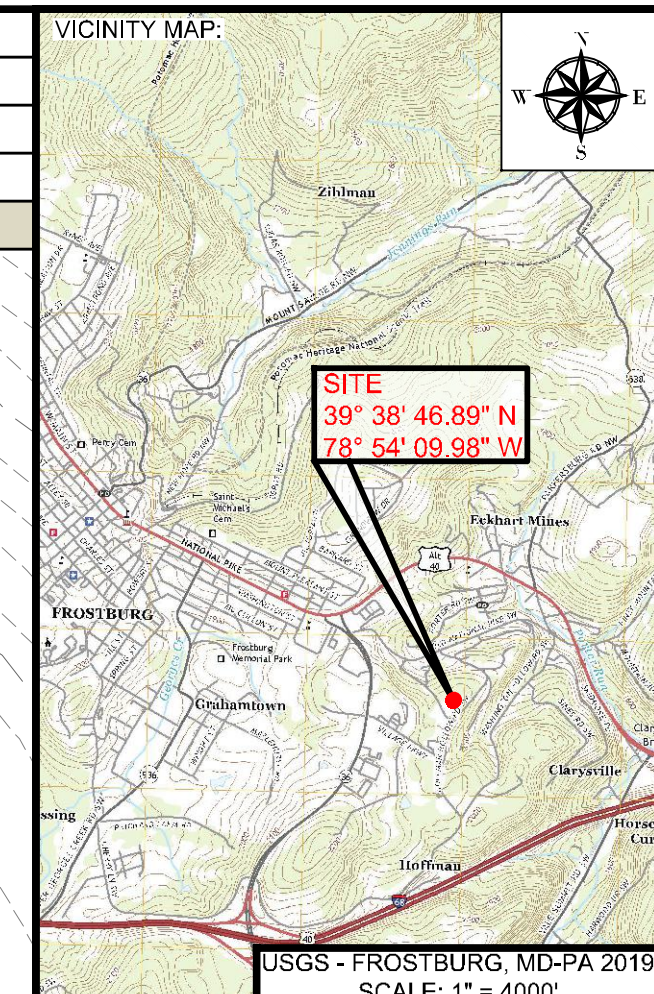
LANDUSE FEATURES LEGEND			
<span style="color: green;">(GcC)</span>	SOIL DESIGNATION		
<span style="border-bottom: 2px solid red; width: 20px; display: inline-block;"></span>	LANDUSE AREA LIMITS		
<span style="background-color: gray; width: 20px; height: 10px; display: inline-block;"></span>	IMPERVIOUS AREA		
<span style="background-color: lightgreen; width: 20px; height: 10px; display: inline-block;"></span>	GRASS TYPE 'C' SOIL		
<span style="background-color: green; width: 20px; height: 10px; display: inline-block;"></span>	GRASS TYPE 'D' SOIL		
<span style="background-color: orange; width: 20px; height: 10px; display: inline-block;"></span>	WOODS TYPE 'C' SOIL		
<span style="background-color: brown; width: 20px; height: 10px; display: inline-block;"></span>	WOODS TYPE 'D' SOIL		

SOILS TABLE			
MAP SYMBOL	MAP UNIT NAME	HYDROLOGIC RATING	K FACTOR
UxB	URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	D	N/A
GcC	GILPIN CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY	C	N/A
GcD	GILPIN CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES, VERY STONY	C	N/A

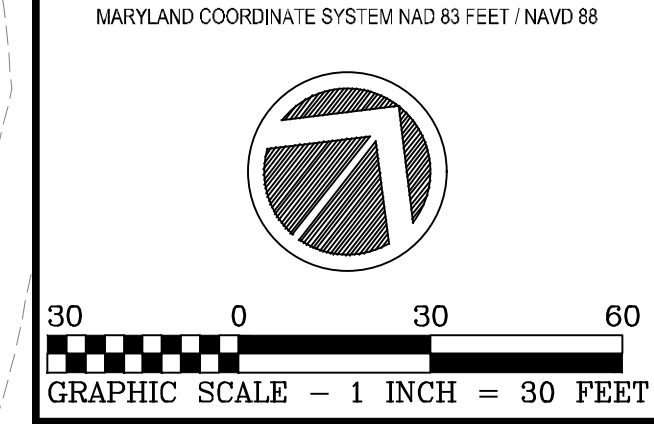
LANDUSE AREA = 0.0% +/- IMPERVIOUS

LANDUSE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD	
PRE CONSTRUCTION	0.00	1780.44	23168.98	64900.37	52674.51	142524.30	SQ.FT.
	0.00	0.04	0.53	1.49	1.21	3.27	AC.



PROJECT:  
**FINAL PLAN SUBMITTAL**  
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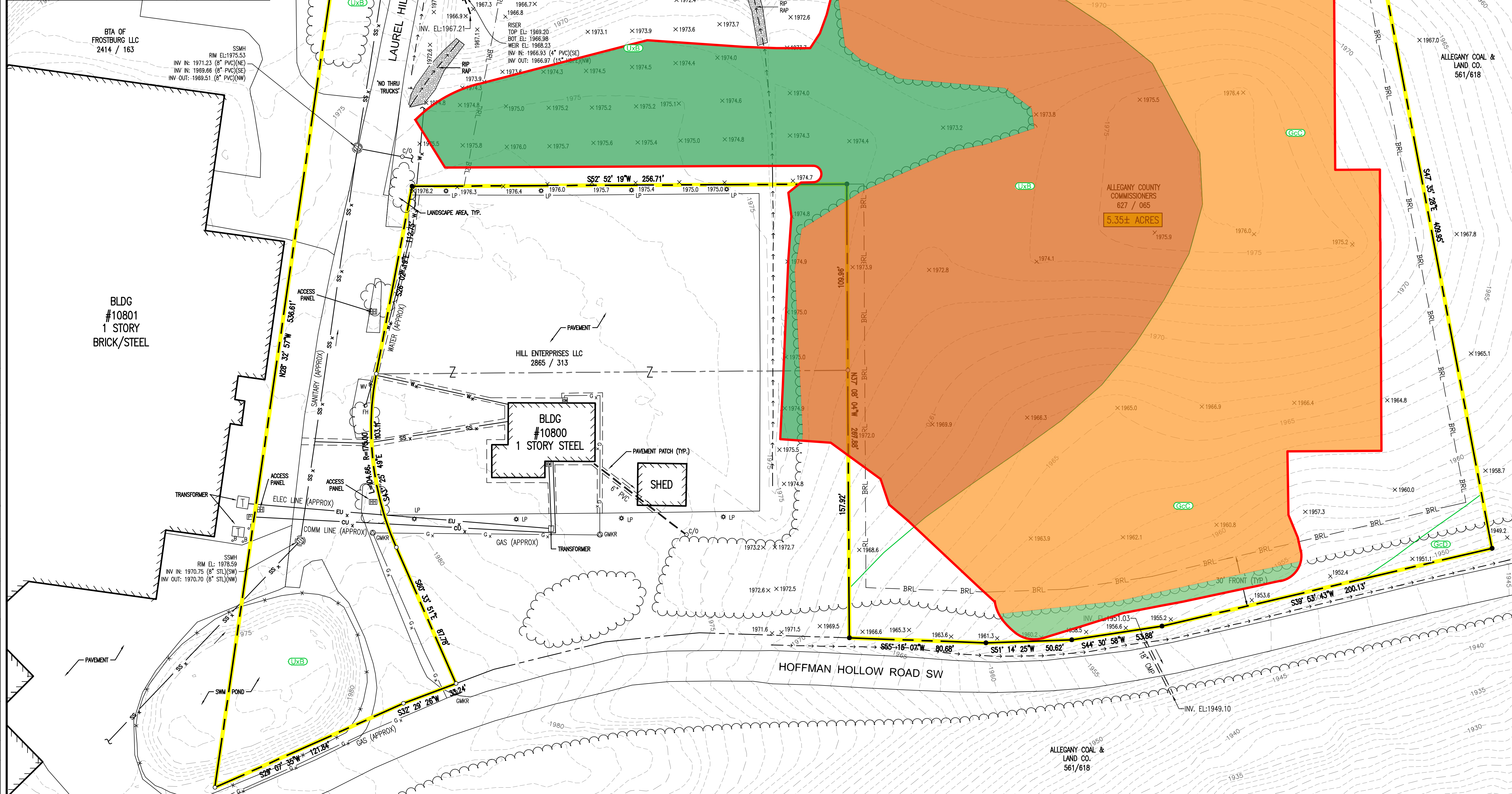


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NO.	BY	DATE	DESCRIPTION

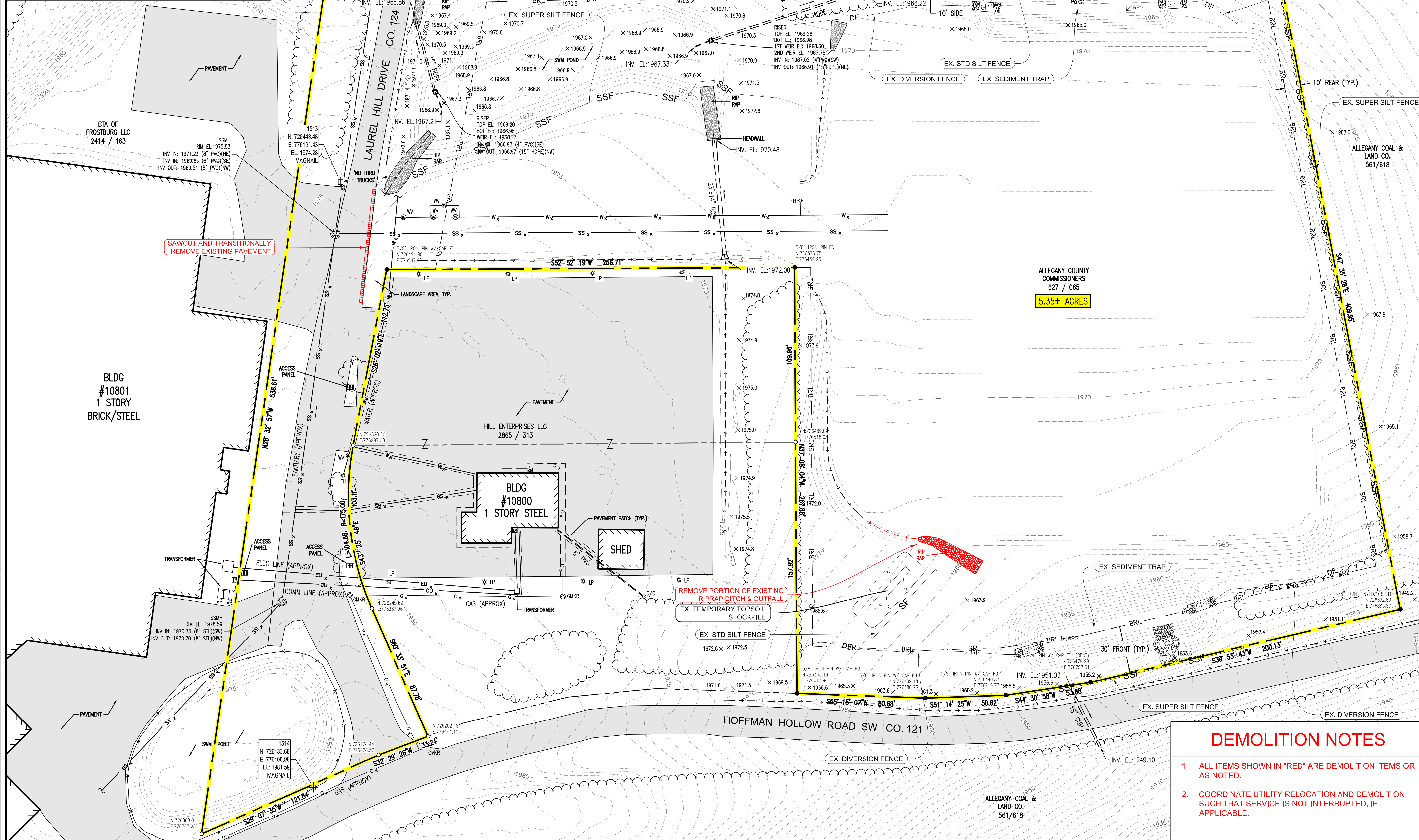
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CHECKED:	MB	SCALE:	1" = 30'
APPROVED:	MB	CRD FILE:	23088

BBA# 2023088  
 SHEET TITLE:  
**PRE-CONSTRUCTION PLAN**  
**IFR: 7/05/2024**  
 SHEET #:  
**C-122**



CAD FILE: E:\2023\23088 - Design Services\PRODUCTION\C-122.dwg PLOT DATE/TIME: 7/4/2024 - 1:32pm LAST SAVE BY: work106

MINIMUM LOT AREA	6,000 SQ. FT.
MINIMUM FRONT YARD	30 FT.
MINIMUM REAR YARD	10 FT.
MINIMUM SIDE YARD	ADJOINING A 'C' DISTRICT: NONE, OR IF SIDE YARD PROVIDED A MINIMUM OF 10 FT.; ADJOINING A 'R' DISTRICT: 10 FT.
MINIMUM LOT WIDTH	STREET LINE: 50 FT.; FRONT BUILDING LINE: 50 FT.
MAXIMUM LOT COVERAGE	80%
MAXIMUM HEIGHT	4 STORIES / 50 FEET



**SEC. 3.11. - "T-LI" TECHNOLOGY/LIGHT INDUSTRIAL DISTRICT.**

**A. PURPOSE.** TO PROVIDE FOR COMMERCIAL AND LIGHT INDUSTRIAL USES WHICH ARE COMPATIBLE WITH RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL USES IN ADJACENT AREAS OF THE CITY. THIS DISTRICT IS DESIGNED TO ACCOMMODATE PLANNED BUSINESS PARKS OR SUBSTANTIAL TRACTS OF LAND SUITABLE FOR BUSINESS AND INDUSTRY WITH A FOCUS ON THE TECHNOLOGY SECTOR. THIS DISTRICT SHALL PROVIDE FOR FLEXIBILITY, BUT REQUIRES WELL-PLANNED ACCESS AND DESIGN.

**B. PRINCIPAL PERMITTED USES AND STRUCTURES.** THE FOLLOWING PRINCIPAL USES AND STRUCTURES ARE PERMITTED IN THE "T-LI" DISTRICT:

- (1) GROUP HOMES CONSISTENT WITH SECTION 8.5.
- (2) TREATMENT CENTERS.
- (3) ADULT DAY CARE CENTERS.
- (4) ASSISTED LIVING CENTERS AND NURSING HOMES.
- (5) COLLEGES, TRADE OR HOBBY SCHOOLS.
- (6) HOSPICES AND HOSPITALS.
- (7) BUILDING MATERIAL SALES YARD, INCLUDING THE SALE OF ROCK, SAND, GRAVEL, AND THE LIKE, AND TRADEPERSONS EQUIPMENT STORAGE YARD OR HEADQUARTERS.
- (8) CONTRACTOR OFFICES.
- (9) FITNESS CENTERS.

**C. SPECIAL EXCEPTIONS.** THE FOLLOWING PRINCIPAL USES ARE PERMITTED AS SPECIAL EXCEPTIONS AFTER APPROVAL BY THE BOARD OF ZONING APPEALS:

- (1) ADULT USES.
- (2) GAMBLING ESTABLISHMENTS.
- (3) BODY ART STUDIOS.

**(10) MEDICAL LABORATORIES.**

**(11) WHOLESALE BUSINESS, WAREHOUSE, TRUCKING TERMINALS, AND SIMILAR NON-PROCESSING STORAGE AND DISTRIBUTION USES, BUT NOT INCLUDING PROHIBITED USES.**

**(12) MANUFACTURING, COMPOUNDING, PROCESSING, OR PACKAGING OF FOOD AND FOOD PRODUCTS, AND COSMETICS, TOILETRIES, AND PHARMACEUTICALS.**

**(13) MANUFACTURING, COMPOUNDING OR ASSEMBLING OF ARTICLES USING THE FOLLOWING OR SIMILAR PREPARED MATERIALS: BONE OR SHELL, CELLOPHANE, FUR, GLASS, LEATHER, PLASTIC, PRECIOUS OR SEMIPRECIOUS METALS OR STONES, RUBBER, TEXTILES OR CLOTH PRODUCTS, TOBACCO, WOOD OR WOOD PRODUCTS.**(14)

**(14) MANUFACTURING OF CERAMIC OR GLASS PRODUCTS.**(15)

**(15) MANUFACTURING OR ASSEMBLING FROM PREPARED MATERIALS OF THE FOLLOWING OR SIMILAR ITEMS: MUSICAL INSTRUMENTS, CLOCKS OR WATCHES, TOYS OR NOVELTIES, ELECTRICAL APPLIANCES, SCIENTIFIC OR ELECTRONIC DEVICES, LIGHT SHEET METAL PRODUCTS, MACHINE TOOL OFFICE EQUIPMENT.**(16)

**(16) MANUFACTURING OR ASSEMBLING FROM PREPARED MATERIALS OF THE FOLLOWING OR SIMILAR ITEMS: MUSICAL INSTRUMENTS, CLOCKS OR WATCHES, TOYS OR NOVELTIES, ELECTRICAL APPLIANCES, SCIENTIFIC OR ELECTRONIC DEVICES, LIGHT SHEET METAL PRODUCTS, MACHINE TOOL OFFICE EQUIPMENT.**(17)

**(17) TECHNOLOGICAL OR COMMUNICATION BASED ENTERPRISES.**(18)

**(18) AGRICULTURE, LIMITED TO CROPLAND, NURSERIES AND GREENHOUSES.**

**(4) WIND ENERGY SYSTEMS** COMPLYING WITH REGULATIONS FOUND IN SECTION 8.8.

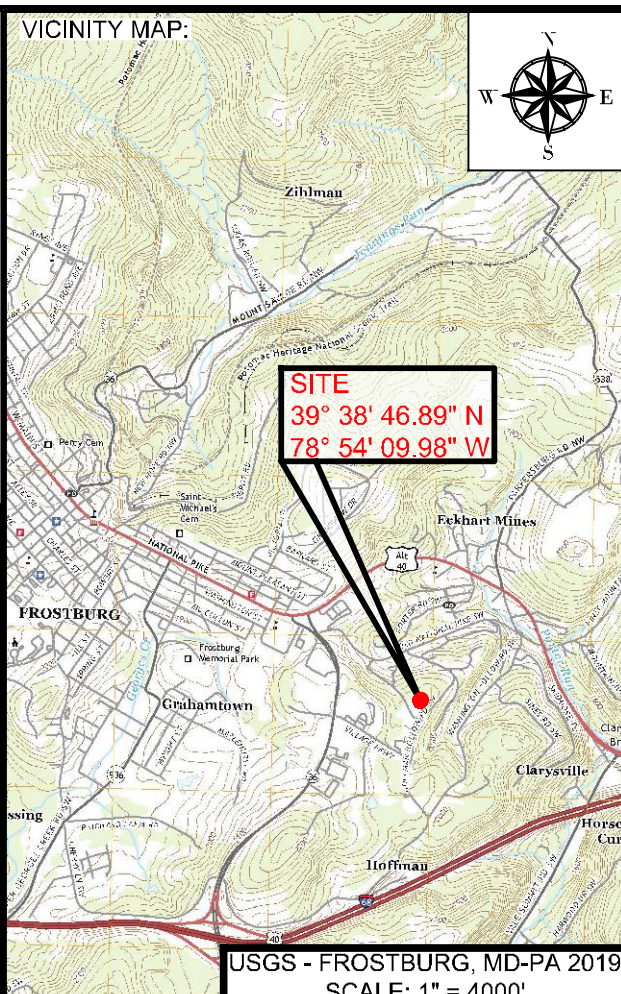
**(5) SELF-STORAGE FACILITIES,** SUBJECT TO THE PROVISIONS SET FORTH IN SECTION 8.9.

**(6) A USE OR STRUCTURE THAT THE APPLICANT PROVES TO THE SATISFACTION OF THE BOARD OF ZONING APPEALS TO BE OF THE SAME GENERAL CHARACTER AS THE ABOVE PERMITTED USES AND SPECIAL EXCEPTION USES, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 1.18(C3), BUT NOT INCLUDING USES THAT ARE SPECIFICALLY PROHIBITED IN THIS DISTRICT.**

**D. ACCESSORY USES AND STRUCTURES.** THE FOLLOWING ACCESSORY USES AND STRUCTURES SHALL BE PERMITTED IN THE "T-LI" DISTRICT:

- (1) TEMPORARY BUILDINGS AND STRUCTURES IN ACCORDANCE WITH SECTION 6.6.
- (2) SIGNS IN ACCORDANCE WITH PART 7 OF THIS ORDINANCE.
- (3) ACCESSORY USES AND STRUCTURES THAT ARE CLEARLY CUSTOMARILY ACCESSORY AND DIRECTLY INCIDENTAL TO THE PERMITTED PRINCIPAL USES AND STRUCTURES.

**E. LOT, YARD AND HEIGHT REQUIREMENTS:** THE FOLLOWING MINIMUM REQUIREMENTS SHALL APPLY TO ALL USES AND STRUCTURES IN THE "T-LI" DISTRICT, EXCEPT AS SUPERSEDED BY MORE RESTRICTIVE PROVISIONS OF THIS ORDINANCE.



**PROJECT:**

**FINAL PLAN SUBMITTAL**

**FUTURE INDUSTRIAL DEVELOPMENT SITE**

**FROSTBURG BUSINESS PARK**

**FROSTBURG**

**ZONING: T-LI**

**ELECTION DISTRICT: 24-000**

**ALLEGANY COUNTY MARYLAND**

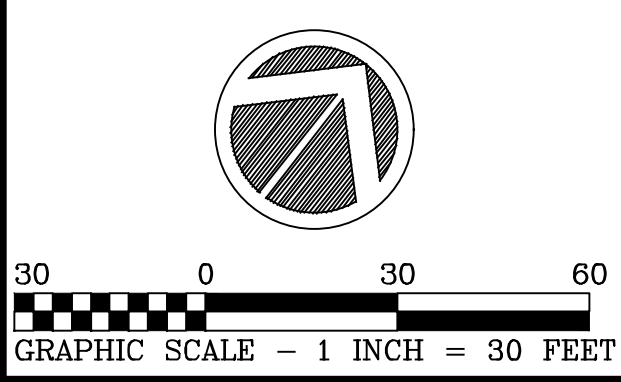
**CLIENT:**



**CLYM ENVIRONMENTAL SERVICES, LLC**

1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704

MARYLAND COORDINATE SYSTEM NAD 83 FEET / NAD 88



**bba**

Surveyors | Engineers | Planners

Bennett Brewer & Associates, LLC

23 East Main Street, Suite 200, Frostburg, Maryland 21532  
Phone (301)-687-0494, Fax (301)-687-0495, www.bbasurey.com

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**DRAWN:** BBA **DATE:** 7/05/2024

**CHECKED:** MB **SCALE:** 1" = 30'

**APPROVED:** MB **CRD FILE:** 23088

**BBA# 2023088**

**SHEET TITLE:**

**EXISTING SITE / DEMOLITION PLAN**

**IFR: 7/05/2024**

**SHEET #:**

**C-123**

**DEMOLITION NOTES**

1. ALL ITEMS SHOWN IN "RED" ARE DEMOLITION ITEMS OR AS NOTED.
2. COORDINATE UTILITY RELOCATION AND DEMOLITION SUCH THAT SERVICE IS NOT INTERRUPTED, IF APPLICABLE.

CAD FILE: E:\2023\23088 - Cym Environmental - Cym Environmental - Design Services\PRODUCTION\C-123.dwg PLOT DATE/TIME: 7/4/2024 - 2:16pm LAST SAVE BY: work\06

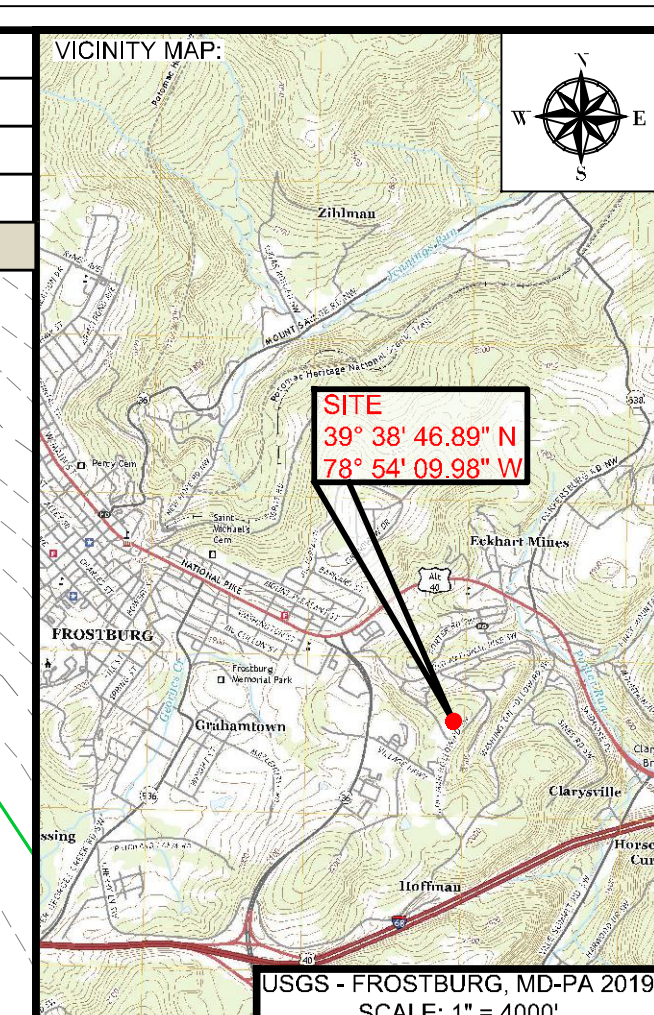
LANDUSE FEATURES LEGEND			
<span style="color: green;">(GcC)</span>	SOIL DESIGNATION		
<span style="border: 2px solid red; display: inline-block; width: 20px; height: 5px;"></span>	LANDUSE AREA LIMITS		
<span style="background-color: gray; display: inline-block; width: 20px; height: 10px;"></span>	IMPERVIOUS AREA		
<span style="background-color: lightgreen; display: inline-block; width: 20px; height: 10px;"></span>	GRASS TYPE 'C' SOIL		
<span style="background-color: green; display: inline-block; width: 20px; height: 10px;"></span>	GRASS TYPE 'D' SOIL		
<span style="background-color: orange; display: inline-block; width: 20px; height: 10px;"></span>	WOODS TYPE 'C' SOIL		
<span style="background-color: brown; display: inline-block; width: 20px; height: 10px;"></span>	WOODS TYPE 'D' SOIL		

SOILS TABLE			
MAP SYMBOL	MAP UNIT NAME	HYDROLOGIC RATING	K FACTOR
UxB	URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	D	N/A
GcC	GILPIN CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY	C	N/A
GcD	GILPIN CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES, VERY STONY	C	N/A

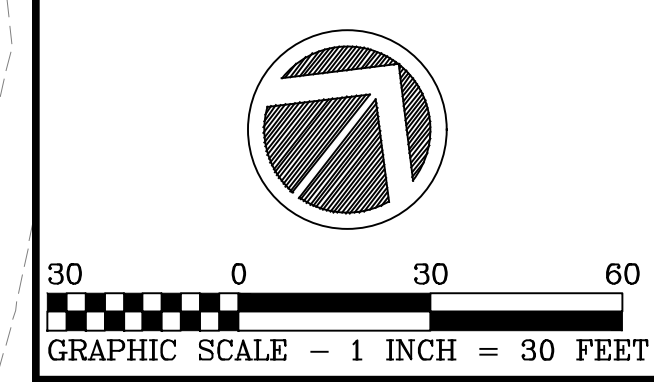
LANDUSE AREA = 37.9% +/- IMPERVIOUS

LANDUSE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD	
POST CONSTRUCTION	54172.89	52825.39	31631.20	0.00	3894.82	142524.30	SQ.FT.
	1.24	1.21	0.73	0.00	0.09	3.27	AC.



PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
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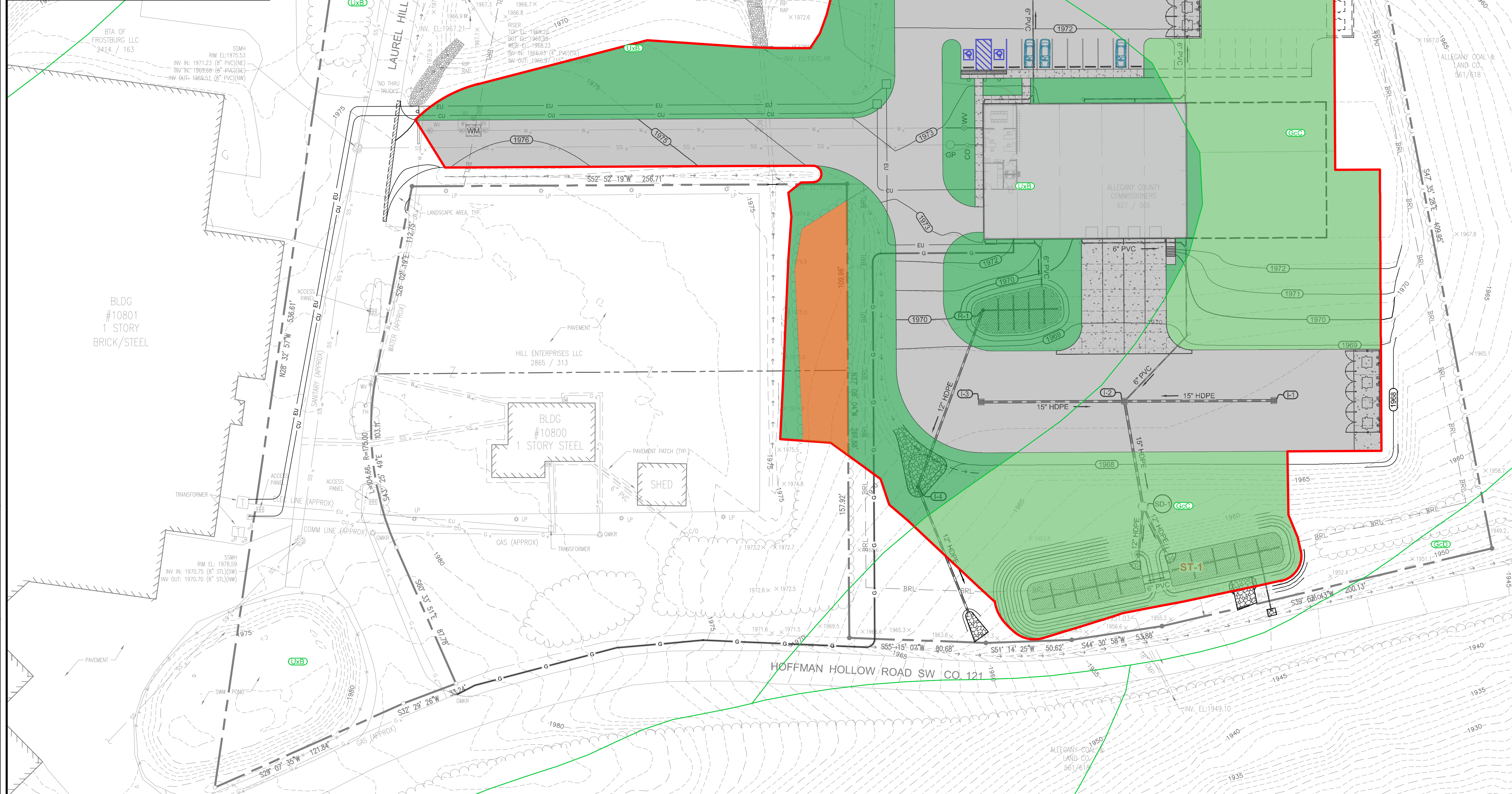


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APPROVED:	MB	CRD FILE:	23088

BBA# 2023088  
 SHEET TITLE:  
**POST CONSTRUCTION PLAN**  
 IFR: 7/05/2024  
 SHEET #:  
**C-124**



CAD FILE: E:\2023\23088 - Cym Environmental - Design Services\PRODUCTION\C-124.dwg  
 PLOT DATE/TIME: 7/4/2024 - 1:32pm  
 LAST SAVE BY: work108

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
1	5336.89	0.00	7747.54	0.00	0.00	13084.43	SQ.FT.	6	0.00	5204.77	293.23	0.00	0.00	5498.00
	0.123	0.000	0.178	0.000	0.000	0.300	AC.		0.000	0.119	0.007	0.000	0.000	0.126

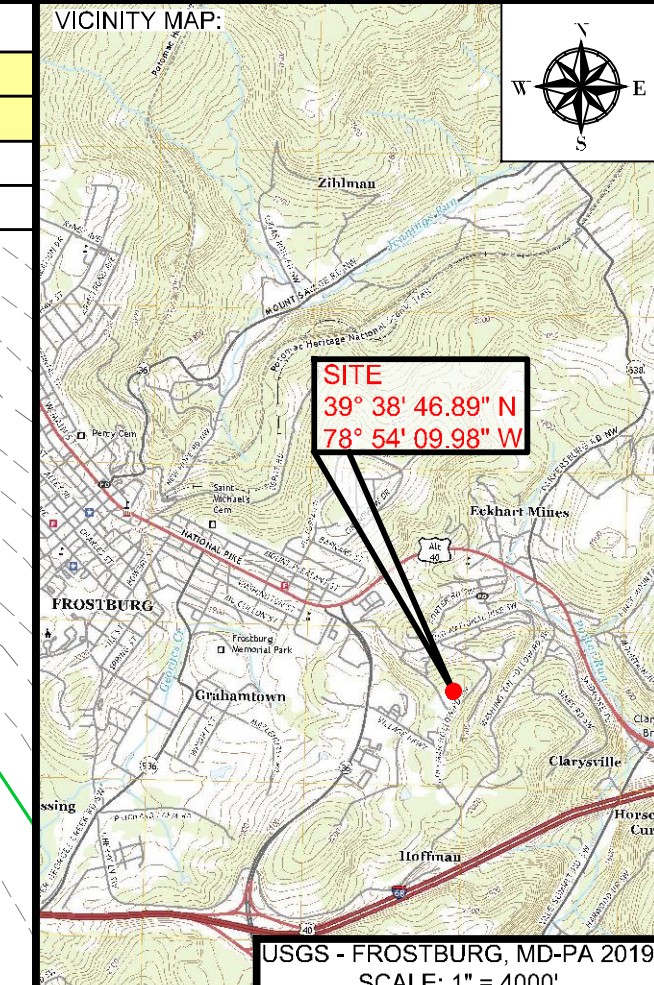
DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
2	3272.73	0.00	3765.79	0.00	0.00	7038.52	SQ.FT.	7	0.00	14488.14	0.00	0.00	0.00	14488.14
	0.075	0.000	0.086	0.000	0.000	0.162	AC.		0.000	0.333	0.000	0.000	0.000	0.333

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
3	0.00	68.75	2059.45	0.00	0.00	2128.20	SQ.FT.							
	0.000	0.002	0.047	0.000	0.000	0.049	AC.							

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
4	6904.81	142.97	1640.61	0.00	0.00	8688.39	SQ.FT.							
	0.159	0.003	0.038	0.000	0.000	0.199	AC.							

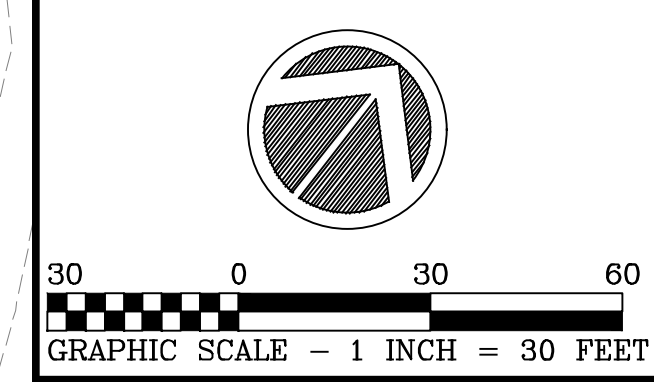
DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
5	4487.90	2479.12	1286.19	0.00	0.00	8233.21	SQ.FT.							
	0.103	0.057	0.029	0.000	0.000	0.189	AC.							

DITCH DESIGN TABLE										
DITCH NO.	AVERAGE SLOPE %	BOTTOM WIDTH	SIDE SLOPE	REQUIRED Q 10	ACTUAL DEPTH	DESIGN VELOCITY	TREATMENT	DESIGN DEPTH	LENGTH	AREA
1	2.40%	1.5	3:1	X	X	X	GRASS	1.0	90	7057
2	2.80%	2	3:1	X	X	X	RIPRAP	1.0	196	10890



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 ALLEGANY COUNTY  
 MARYLAND

CLIENT:  
  
 CLYM ENVIRONMENTAL SERVICES, LLC  
 1539 TILCO DRIVE  
 FREDERICK, MARYLAND 21704  
 MARYLAND COORDINATE SYSTEM NAD 83 FEET / NAD 88



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 BBA# 2023088

SHEET TITLE:  
**POST CONSTRUCTION DRAINAGE PLAN**  
 IFR: 7/05/2024  
 SHEET #:  
**C-125**

**LANDUSE FEATURES LEGEND**

- SOIL TYPE BOUNDARY
- SOIL DESIGNATION
- DRAINAGE LIMITS
- IMPERVIOUS AREA
- GRASS TYPE 'C' SOIL
- GRASS TYPE 'D' SOIL
- WOODS TYPE 'C' SOIL
- WOODS TYPE 'D' SOIL

**SOILS TABLE**

MAP SYMBOL	MAP UNIT NAME	HYDROLOGIC RATING	K FACTOR
UxB	URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	D	N/A
GcC	GILPIN CHANNERY SILT LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY	C	N/A
GcD	GILPIN CHANNERY SILT LOAM, 15 TO 25 PERCENT SLOPES, VERY STONY	C	N/A

**TOTAL BMP DRAINAGE AREAS**

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	TOTAL LOD
BMP-1 & BMP-2	0.609 AC.	0.699 AC.	0.038 AC.	1.346 AC.
BMP-3 & BMP-4	0.371 AC.	0.512 AC.	0.074 AC.	0.957 AC.
BMP-5	0.041 AC.	0.000 AC.	0.118 AC.	0.159 AC.
TOTAL	1.021 AC.	1.211 AC.	0.230 AC.	2.462 AC.

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD	
8	64.38	0.00	5149.91	0.00	0.00	5214.29	SQ.FT.
	0.001	0.000	0.118	0.000	0.000	0.120	AC.

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
9	6421.38	1889.39	518.26	0.00	0.00	8829.03	SQ.FT.							
	0.147	0.043	0.012	0.000	0.000	0.203	AC.							

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
10	7621.42	10364.46	0.00	0.00	0.00	17985.88	SQ.FT.	12	0.00	10706.22	788.23	0.00	0.00	11494.45
	0.175	0.238	0.000	0.000	0.000	0.413	AC.		0.000	0.246	0.018	0.000	0.000	0.264

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
11	0.00	7481.30	0.00	0.00	0.00	7481.30	SQ.FT.	13	9484.54	0.00	363.17	0.00	0.00	9847.71
	0.000	0.172	0.000	0.000	0.000	0.172	AC.		0.218	0.000	0.008	0.000	0.000	0.226

DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD		DRAINAGE AREA	IMPERVIOUS	GRASS C	GRASS D	WOODS C	WOODS D	TOTAL LOD
14	975.84	0.00	8037.07	0.00	3897.24	12910.15	SQ.FT.							
	0.022	0.000	0.185	0.000	0.089	0.296	AC.							

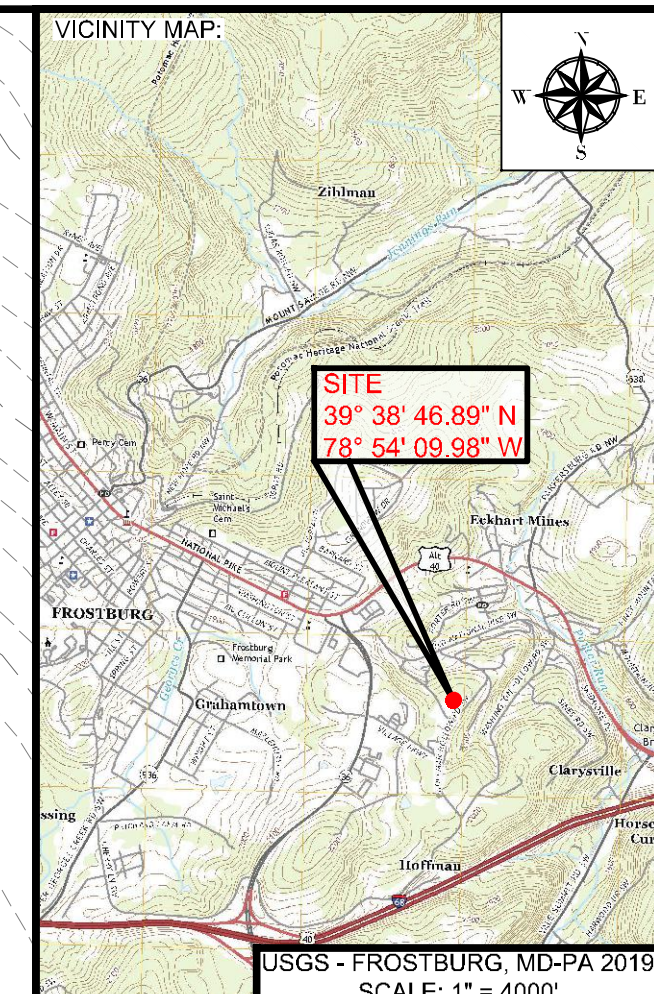
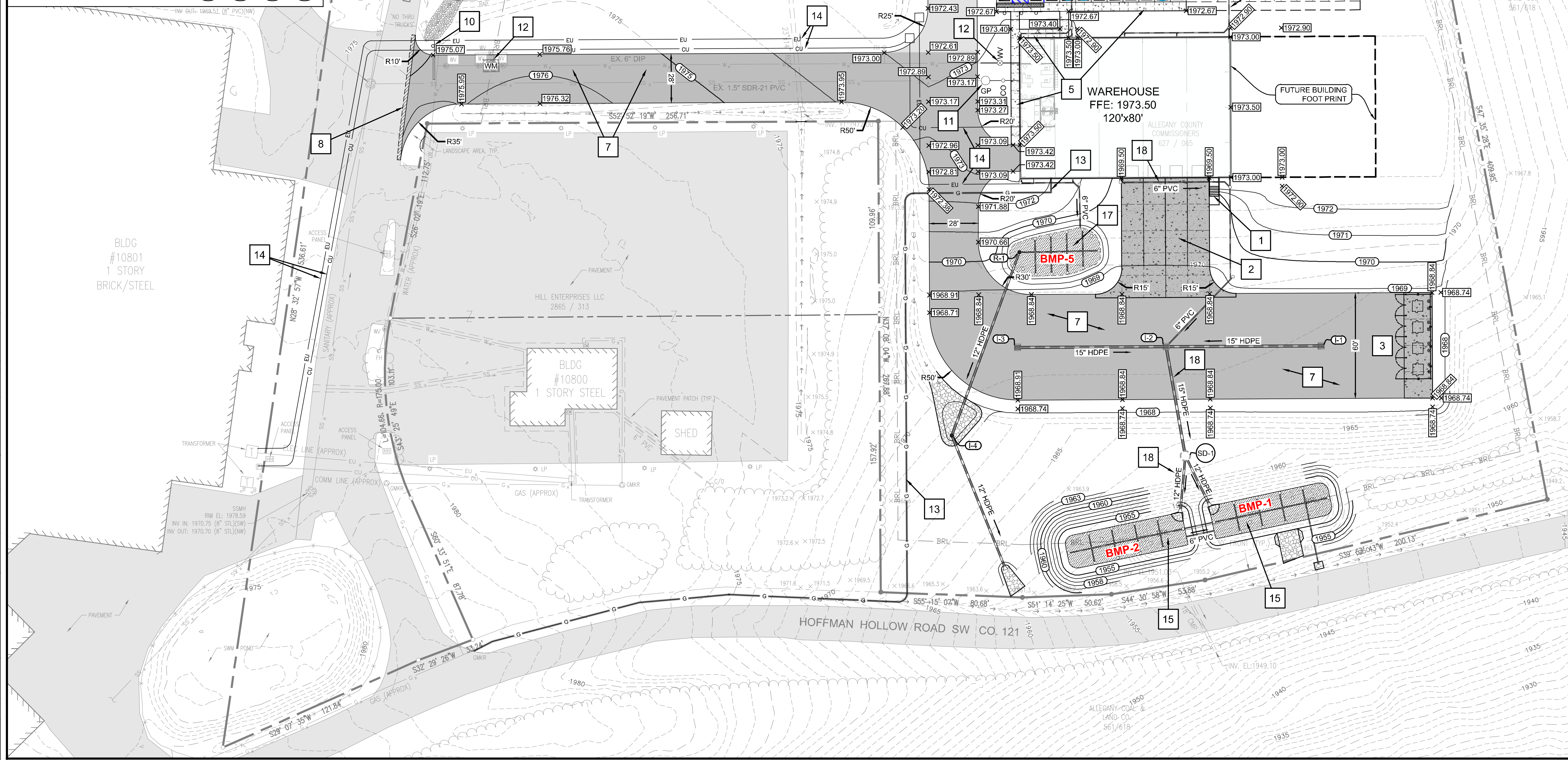
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#	SITE NOTES
1.	NEW CONCRETE STEPS TSEL: 1973.40 BSEL: 1969.32
2.	NEW CONCRETE TRUCK COURT
3.	NEW CONCRETE DUMPSTER PAD (16'X26') & APPURTENANCES
4.	NEW CONCRETE DUMPSTER PAD (16'X60') & APPURTENANCES
5.	NEW CONCRETE SIDEWALK
6.	NEW GENERAL HMA PAVING
7.	NEW HEAVY DUTY HMA PAVING
8.	PAVEMENT TRANSITION
9.	NEW PARKING & APPURTENANCES

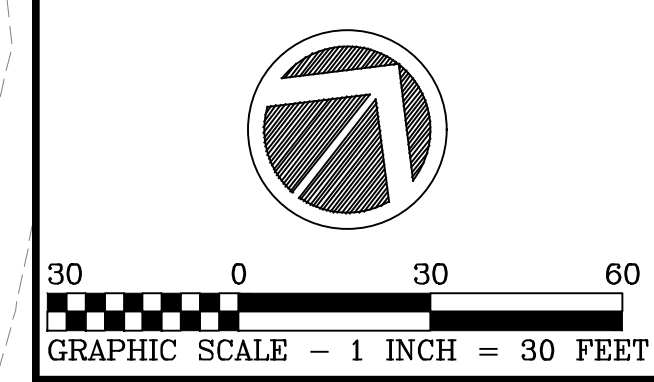
#	SITE NOTES
10.	NEW STOP SIGN WITH 12" STOP BAR
11.	INSTALL NEW SANITARY FORCEMAIN SERVICE & APPURTENANCES
12.	INSTALL NEW WATER SERVICE & APPURTENANCES
13.	INSTALL NEW GAS SERVICE & APPURTENANCES COORDINATE WITH PROVIDER
14.	INSTALL NEW ELECTRIC & COMMUNICATION SERVICE & APPURTENANCES COORDINATE WITH PROVIDER

#	SITE NOTES
15.	NEW BIORETENTION AREAS
16.	NEW BIORETENTION AREAS
17.	NEW BIORETENTION AREA NEW STORM DRAIN
18.	NEW STORM DRAINS



PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
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 ELECTION DISTRICT: 24-000  
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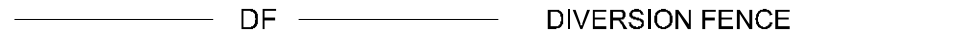







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NO.	DESCRIPTION

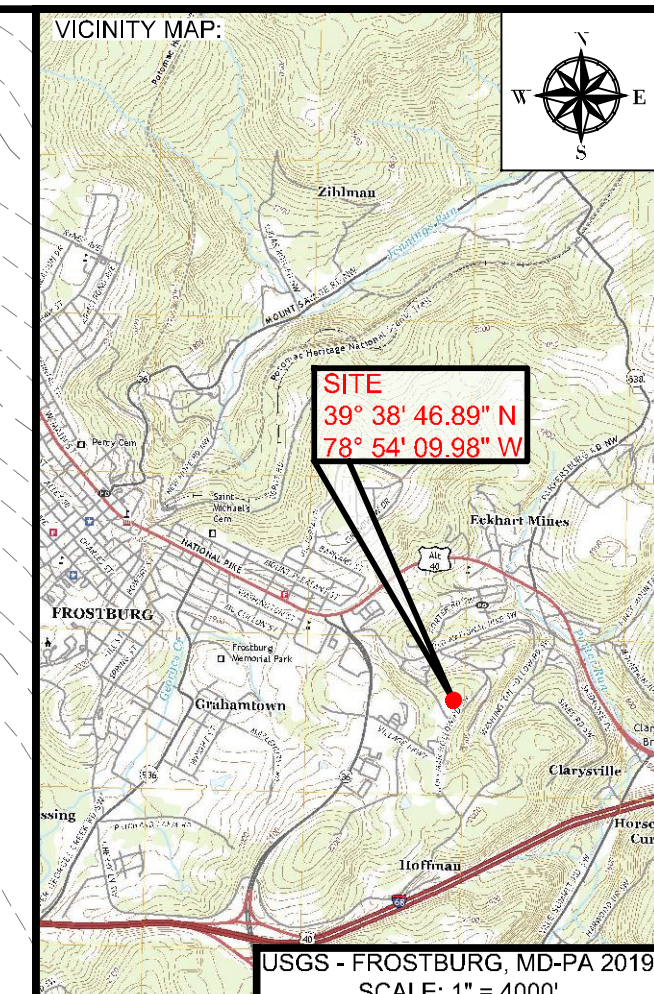
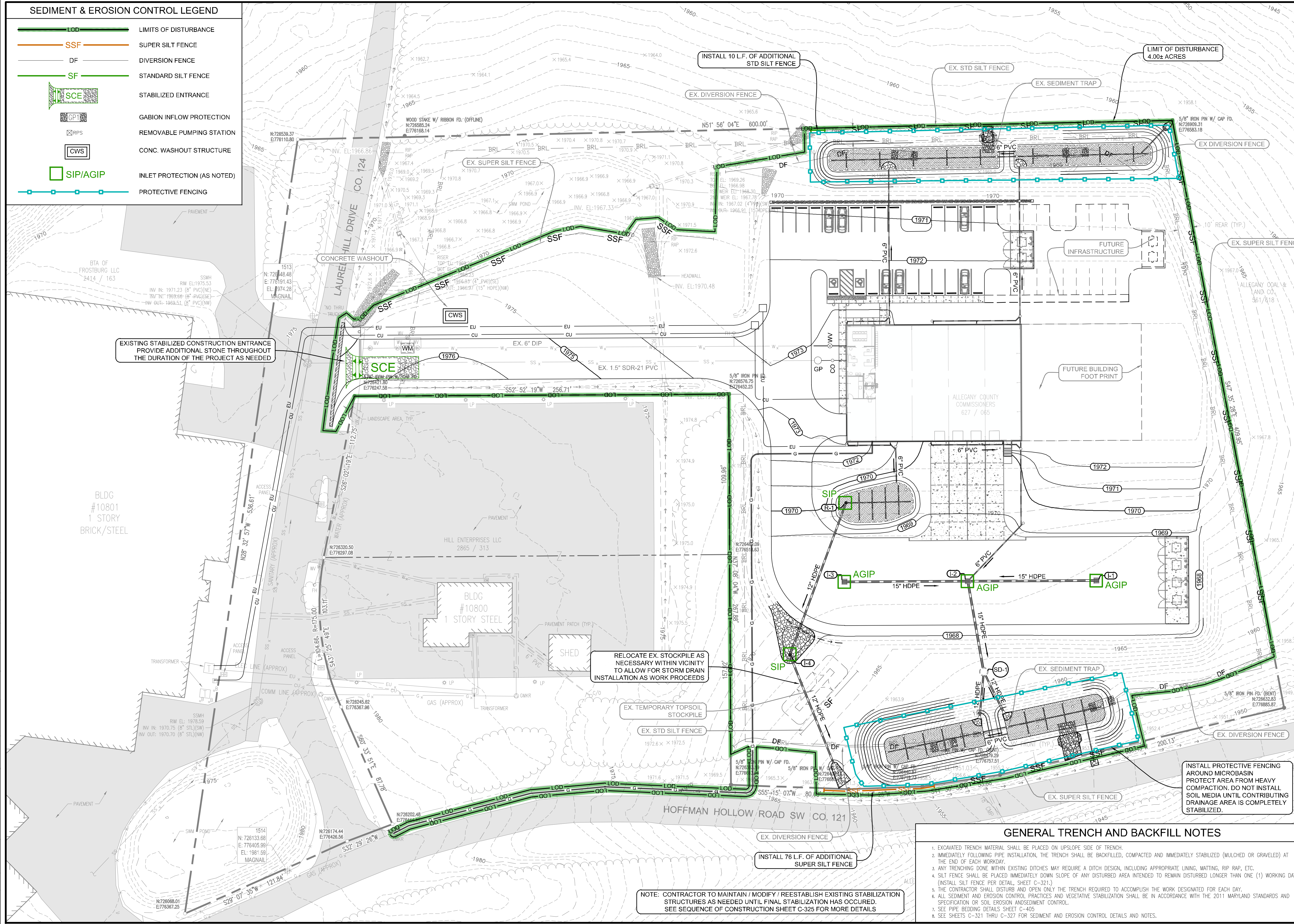
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BBA# 2023088  
 SHEET TITLE:  
**SITE PLAN**  
 IFR: 7/05/2024  
 SHEET #:  
**C-211**

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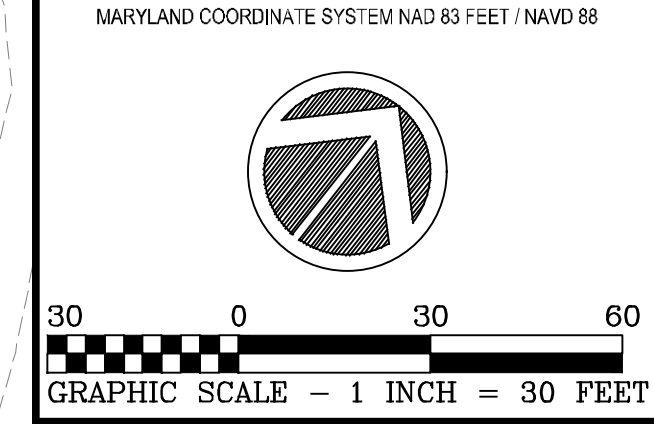
**SEDIMENT & EROSION CONTROL LEGEND**

-  LOD LIMITS OF DISTURBANCE
-  SSF SUPER SILT FENCE
-  DF DIVERSION FENCE
-  SF STANDARD SILT FENCE
-  SCE STABILIZED ENTRANCE
-  GP GABION INFLOW PROTECTION
-  RPS REMOVABLE PUMPING STATION
-  CWS CONC. WASHOUT STRUCTURE
-  SIP/AGIP INLET PROTECTION (AS NOTED)
-  PROTECTIVE FENCING



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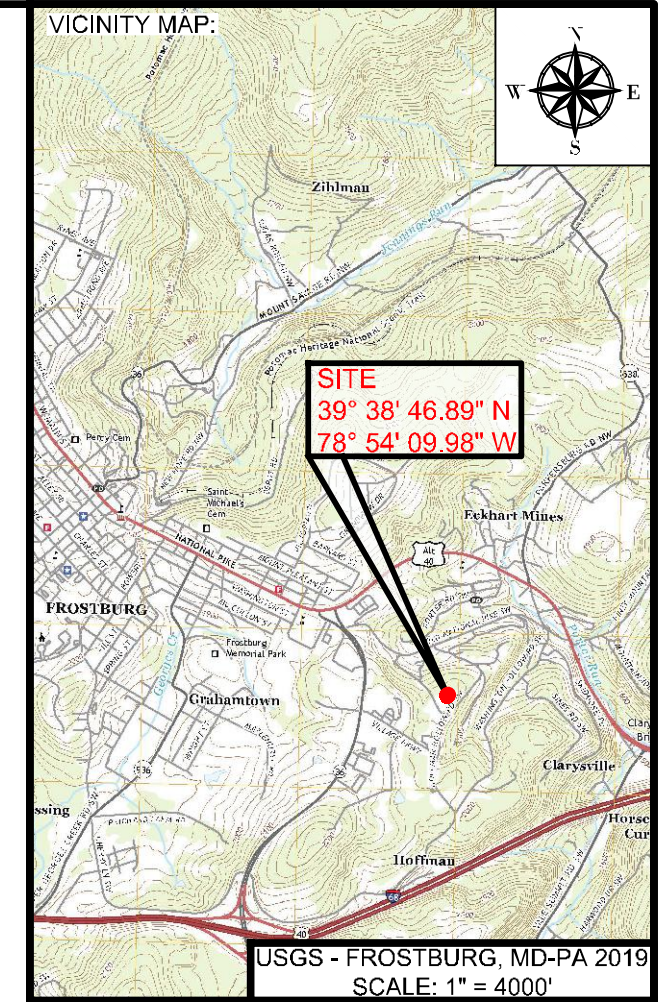
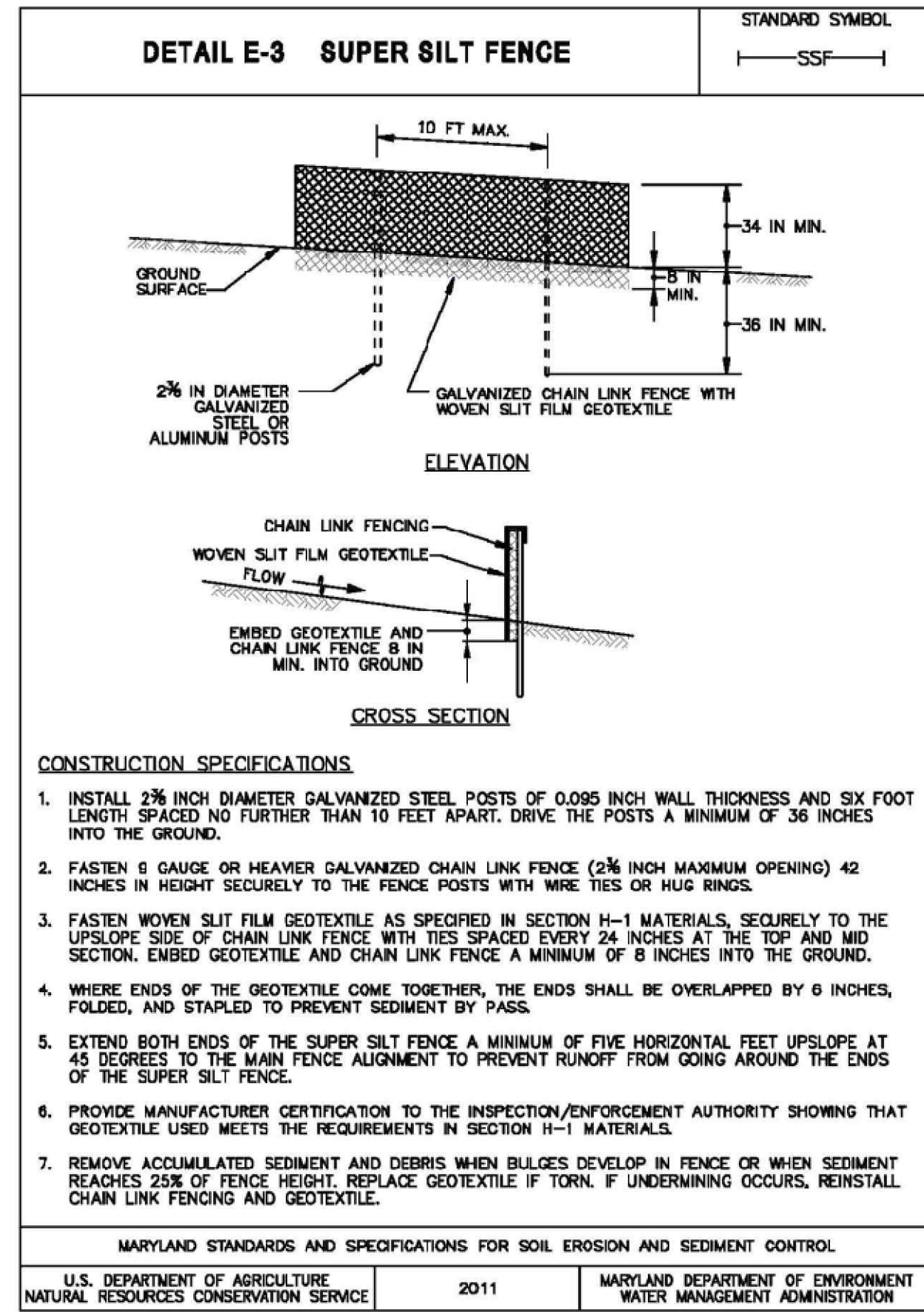
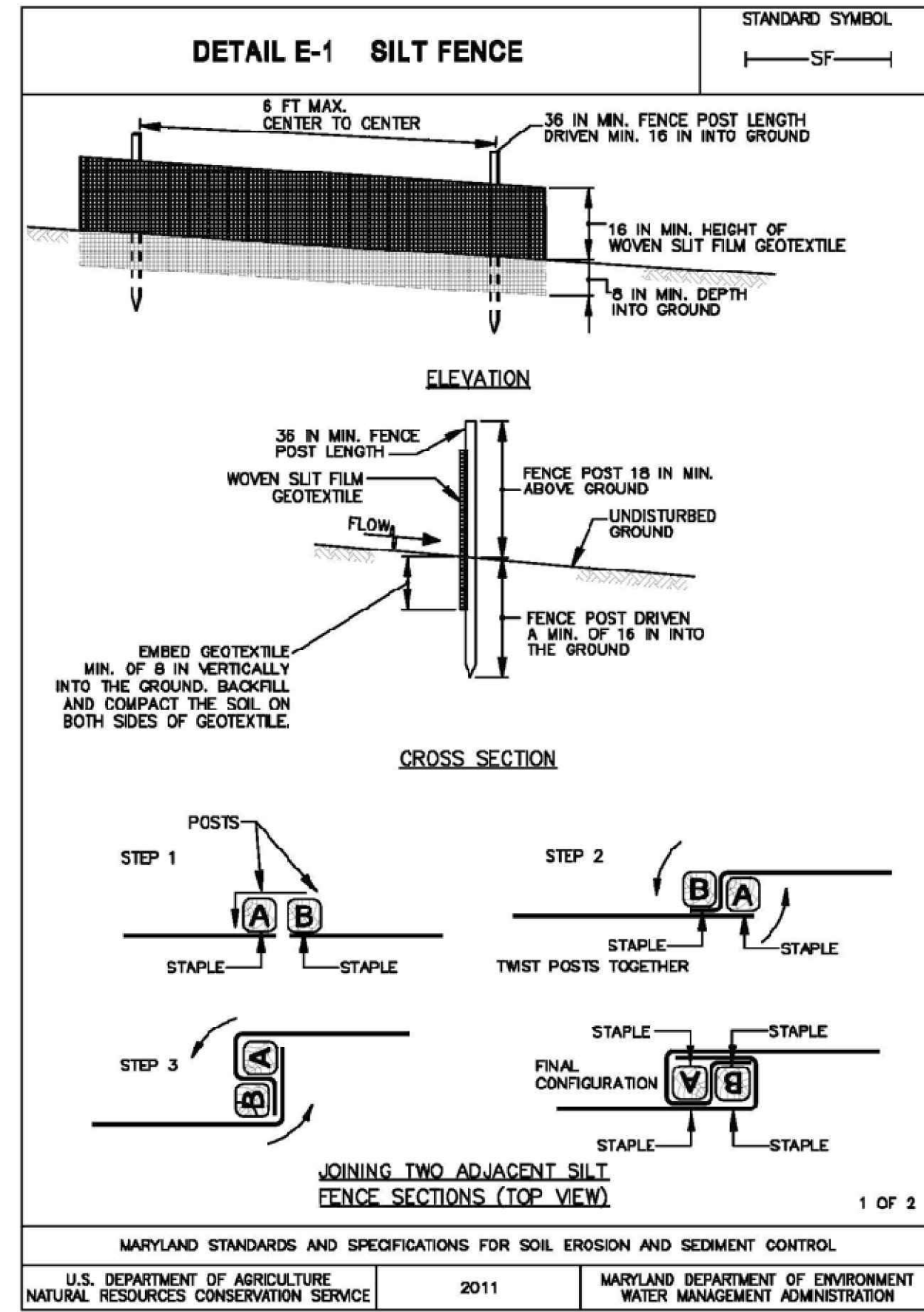
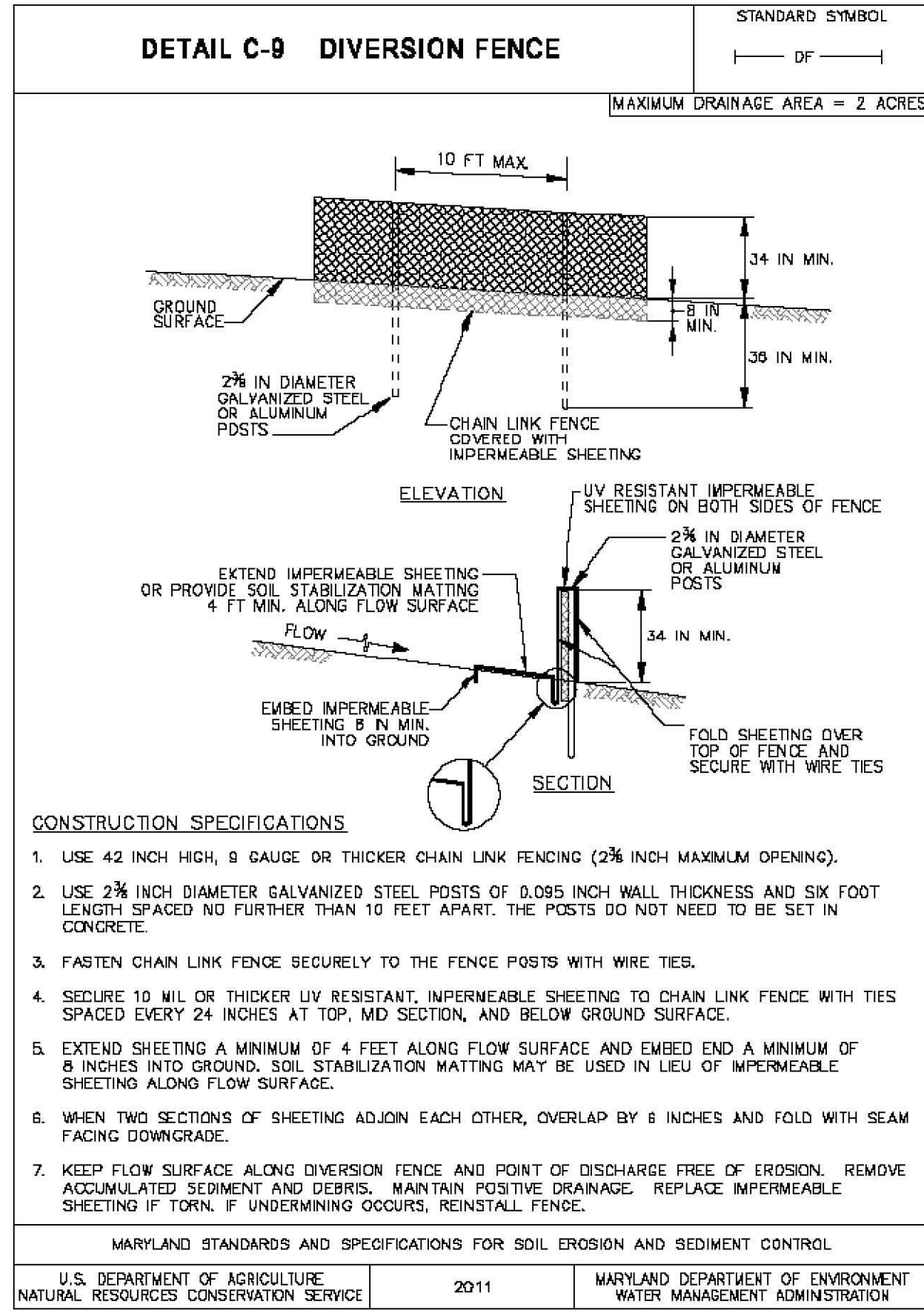
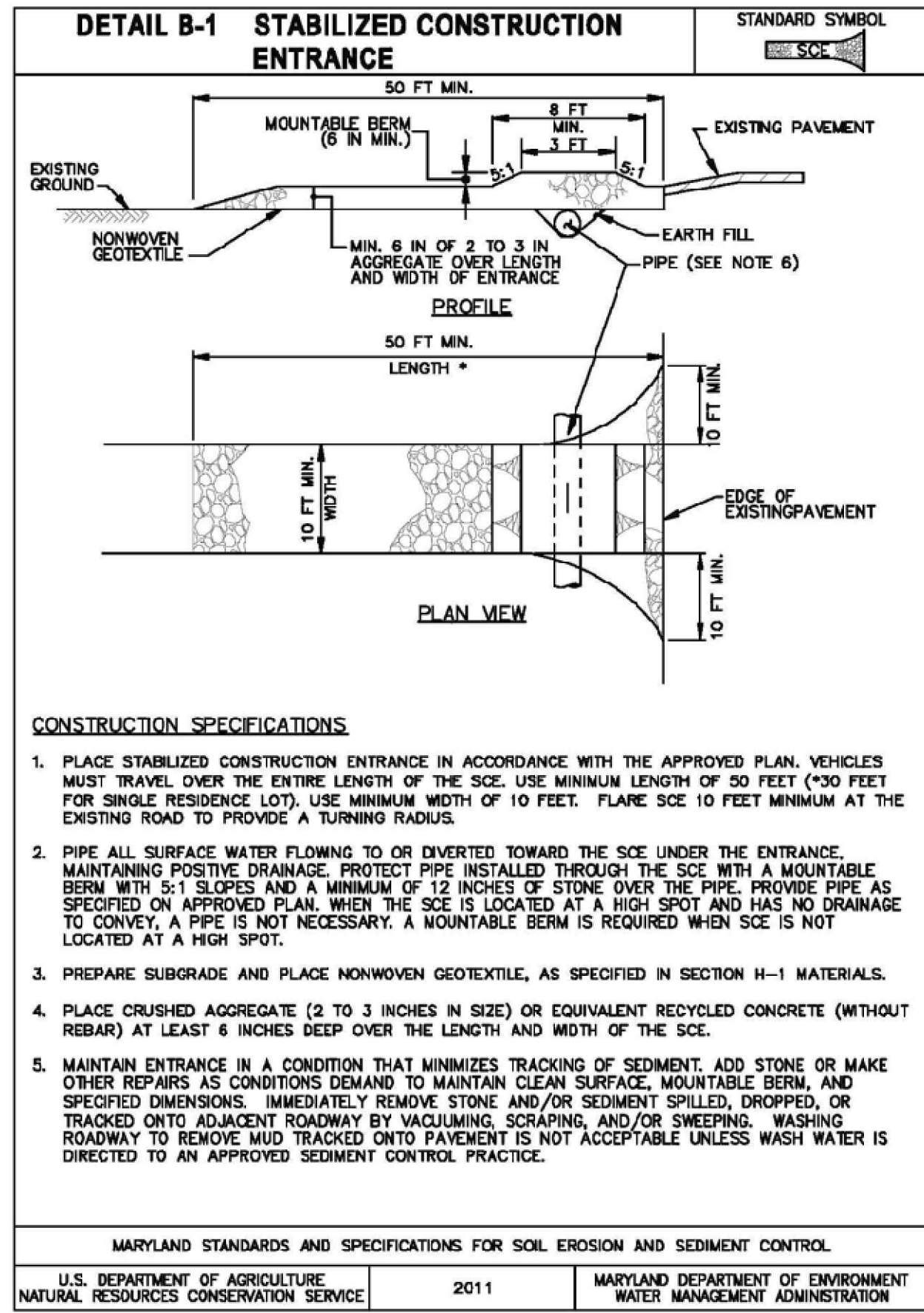
BBA# 2023088  
 SHEET TITLE:  
**EROSION & SEDIMENT CONTROL PLAN**

IFR: 7/05/2024  
 SHEET #:  
**C-301**

- GENERAL TRENCH AND BACKFILL NOTES**
- EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON UPSLOPE SIDE OF TRENCH.
  - IMMEDIATELY FOLLOWING PIPE INSTALLATION, THE TRENCH SHALL BE BACKFILLED, COMPACTED AND IMMEDIATELY STABILIZED (MULCHED OR GRAVELED) AT THE END OF EACH WORKDAY.
  - ANY TRENCHING DONE WITHIN EXISTING DITCHES MAY REQUIRE A DITCH DESIGN, INCLUDING APPROPRIATE LINING, MATTING, RIP RAP, ETC.
  - SILT FENCE SHALL BE PLACED IMMEDIATELY DOWN SLOPE OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED LONGER THAN ONE (1) WORKING DAY.
  - INSTALL SILT FENCE PER DETAIL SHEET C-321.
  - THE CONTRACTOR SHALL DISTURB AND OPEN ONLY THE TRENCH REQUIRED TO ACCOMPLISH THE WORK DESIGNATED FOR EACH DAY.
  - ALL SEDIMENT AND EROSION CONTROL PRACTICES AND VEGETATIVE STABILIZATION SHALL BE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATION OR SOIL EROSION AND SEDIMENT CONTROL.
  - SEE PIPE BEDDING DETAILS SHEET C-405
  - SEE SHEETS C-321 THRU C-327 FOR SEDIMENT AND EROSION CONTROL DETAILS AND NOTES.

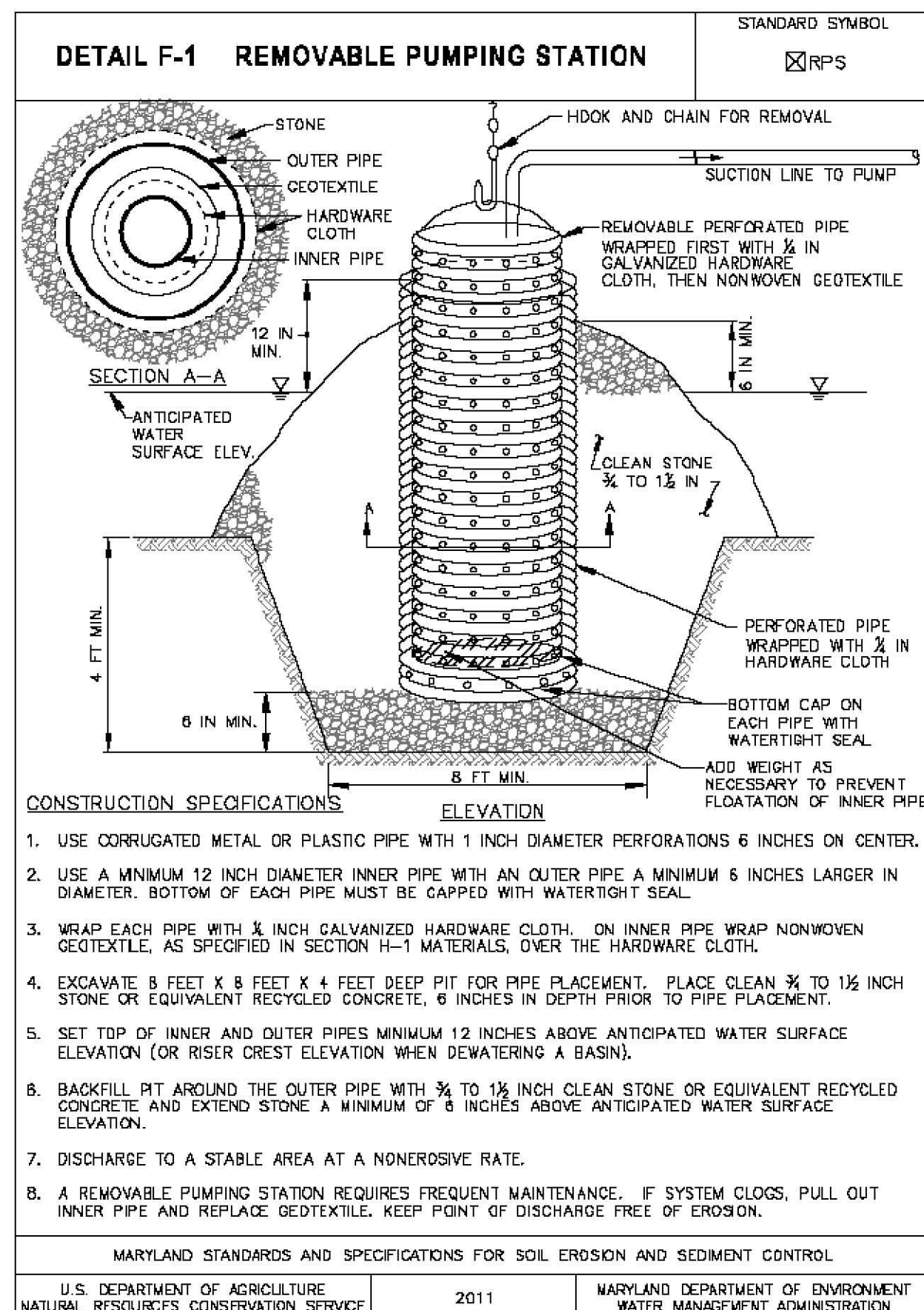
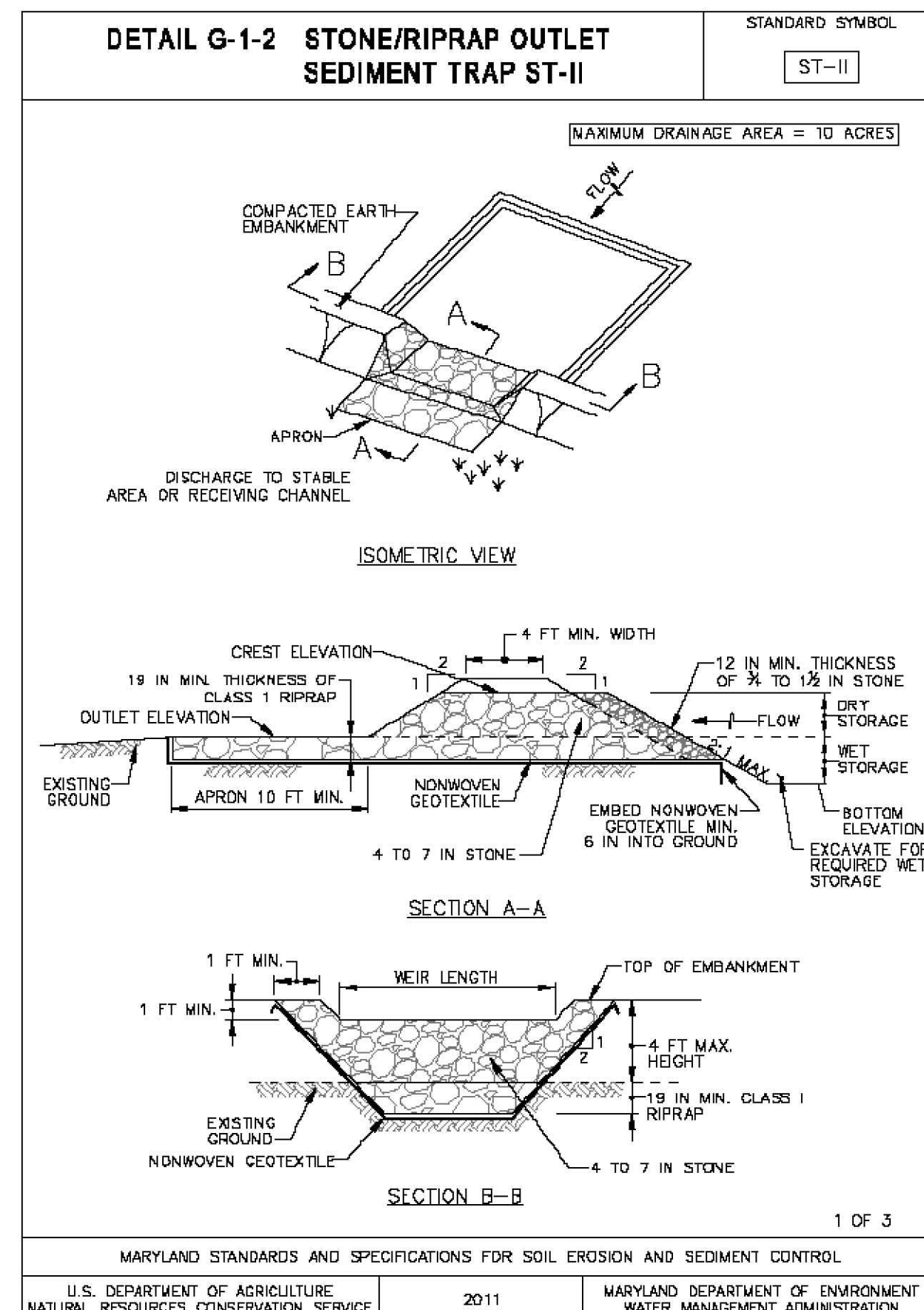
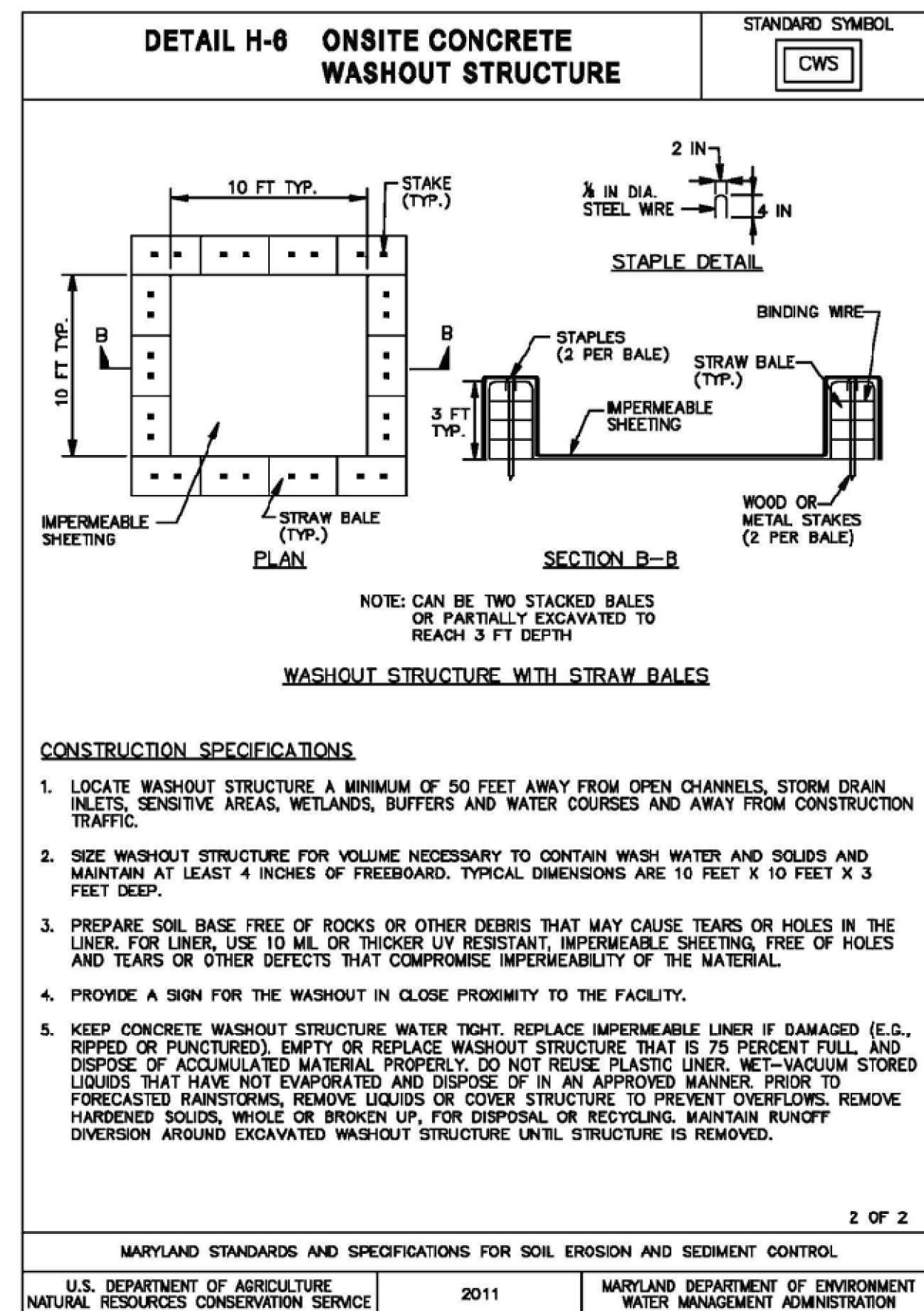
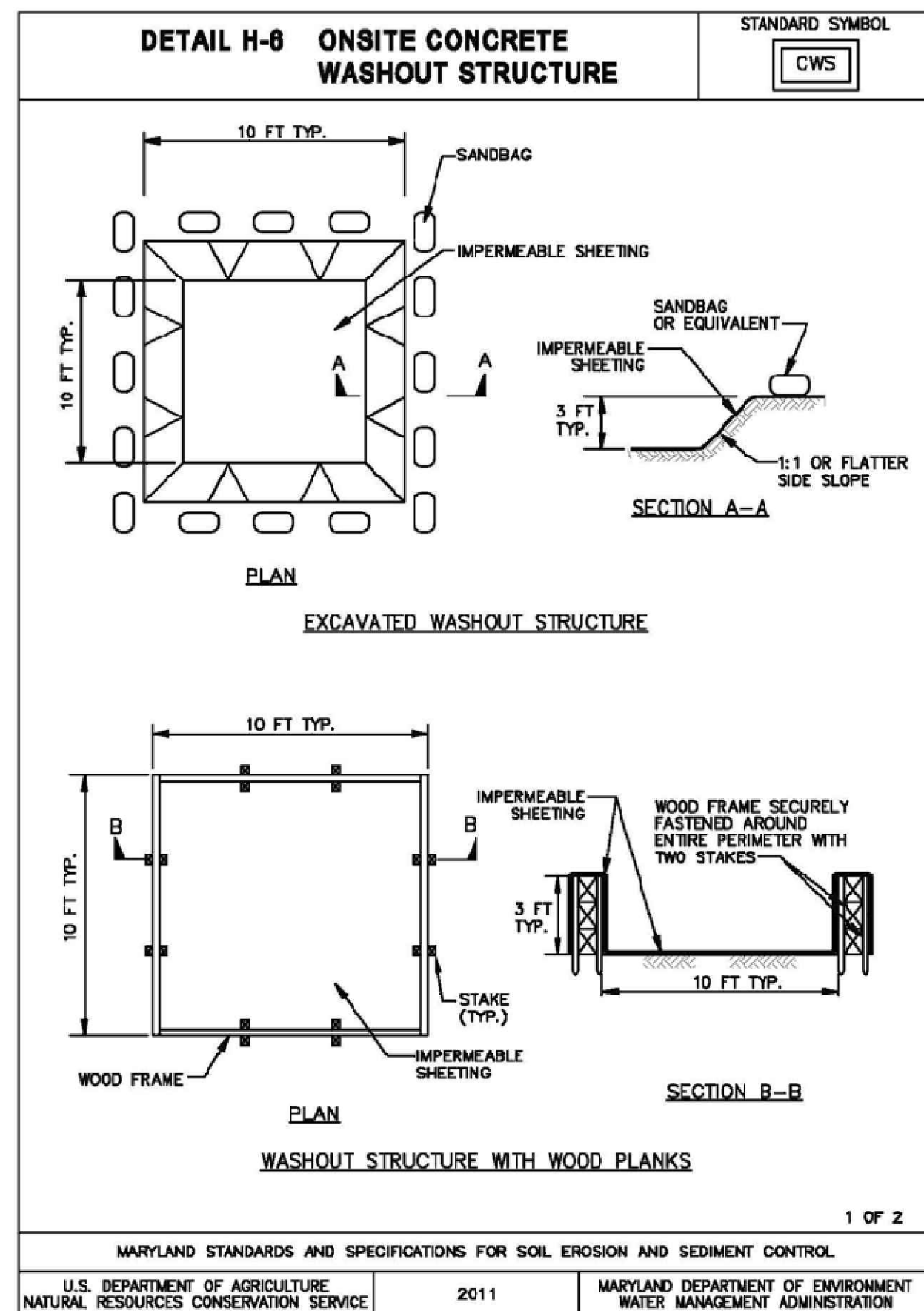
NOTE: CONTRACTOR TO MAINTAIN / MODIFY / REESTABLISH EXISTING STABILIZATION STRUCTURES AS NEEDED UNTIL FINAL STABILIZATION HAS OCCURRED. SEE SEQUENCE OF CONSTRUCTION SHEET C-325 FOR MORE DETAILS

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PROJECT:  
**FINAL PLAN SUBMITTAL**  
FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
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ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
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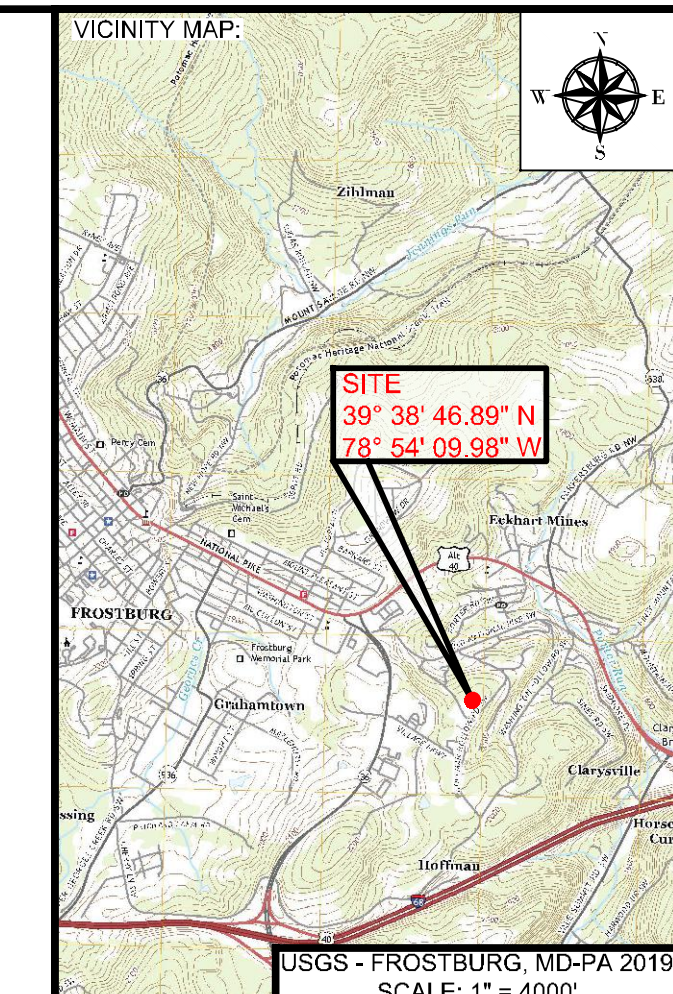
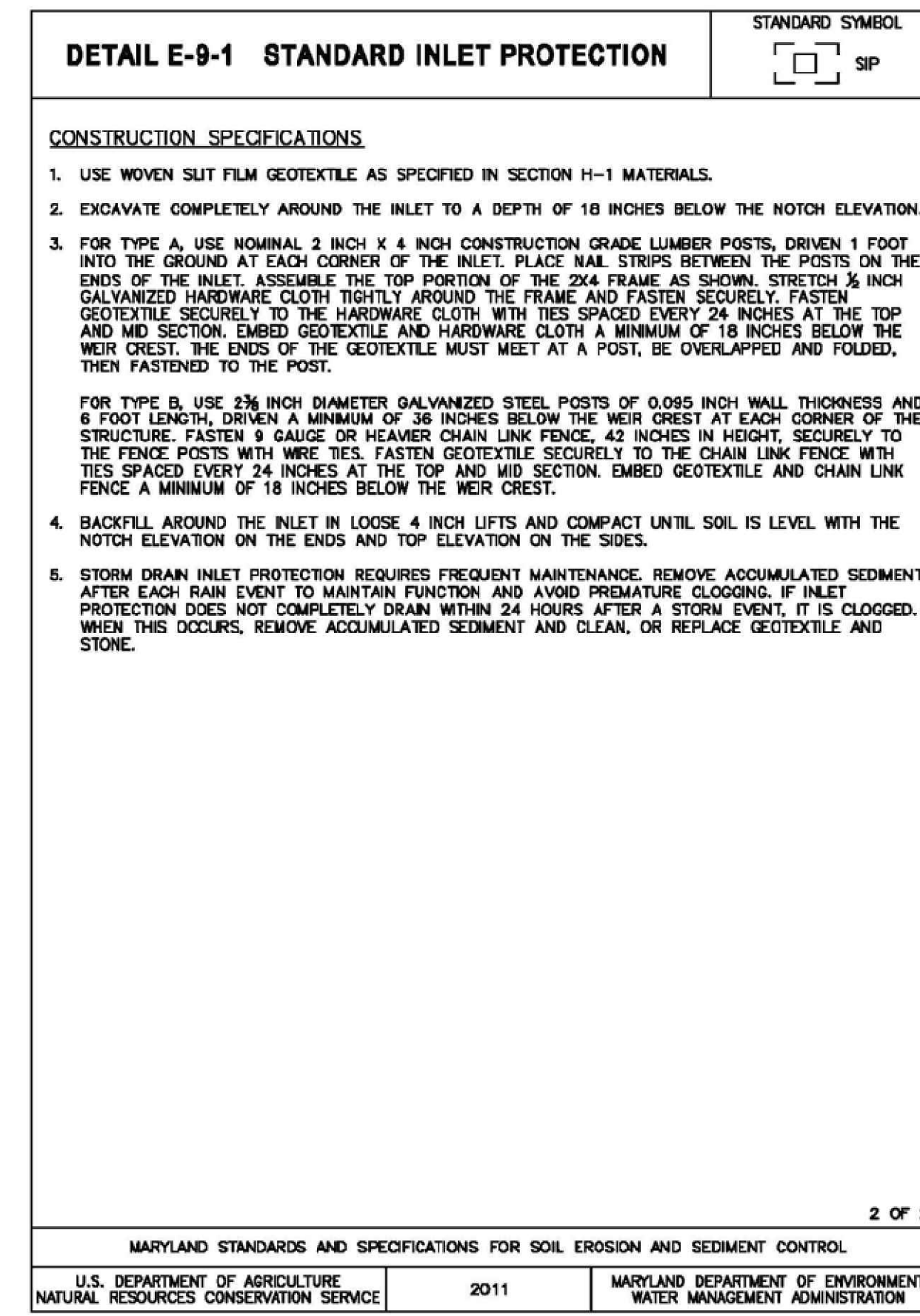
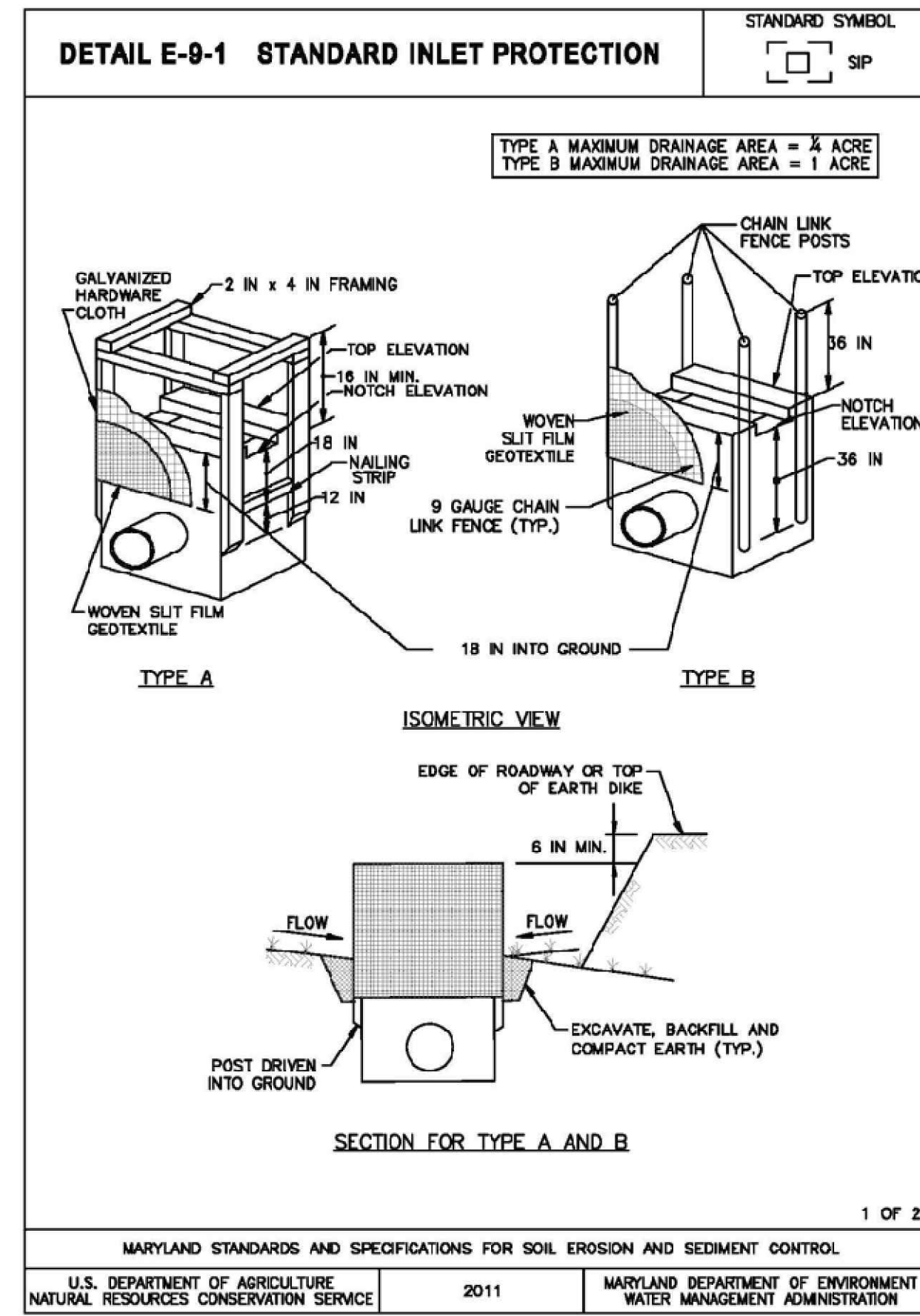
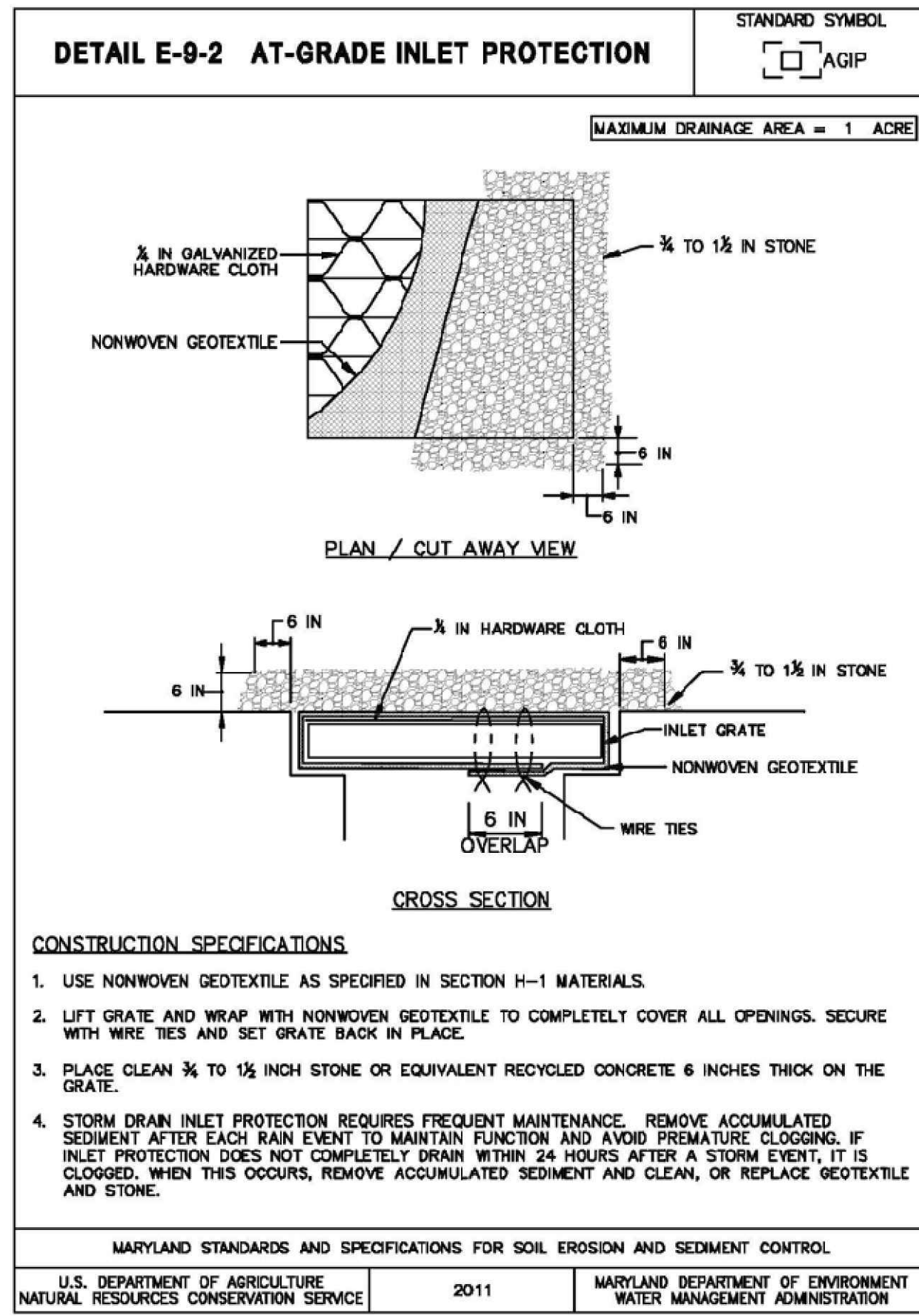
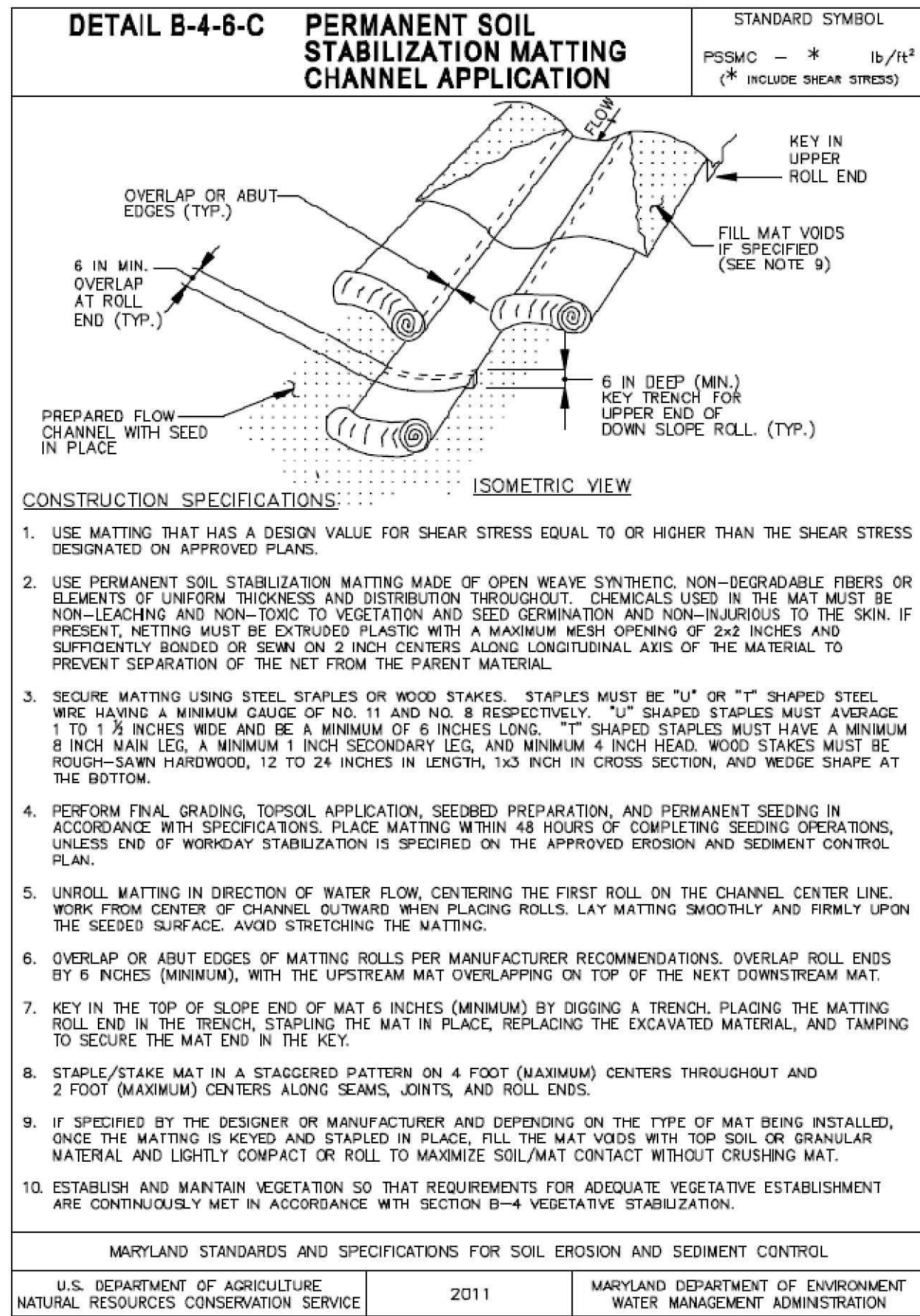


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SHEET TITLE:  
**EROSION & SEDIMENT CONTROL DETAILS**  
IFR: 7/05/2024  
SHEET #:  
C-321



PROJECT:

**FINAL PLAN SUBMITTAL**

FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
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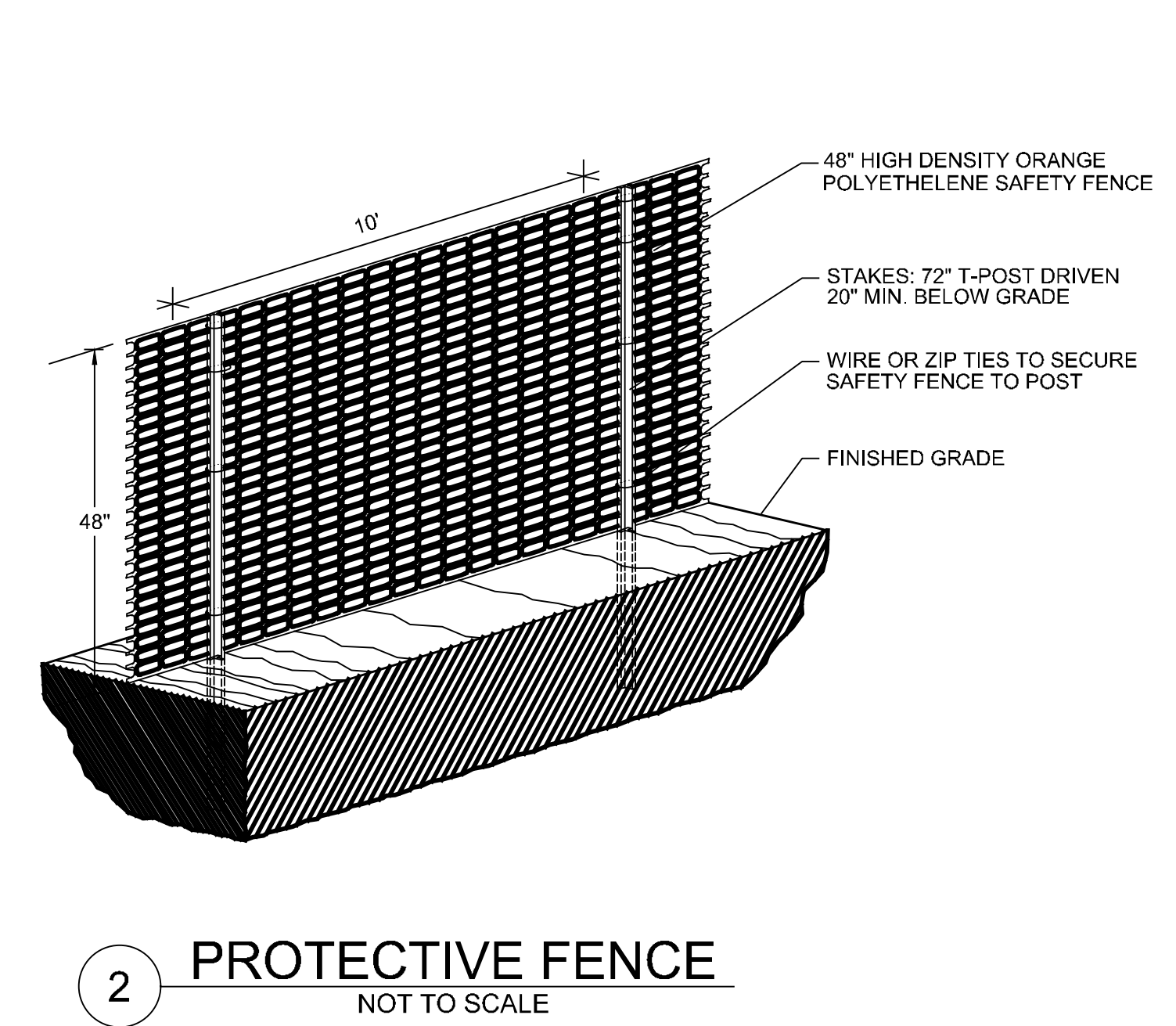
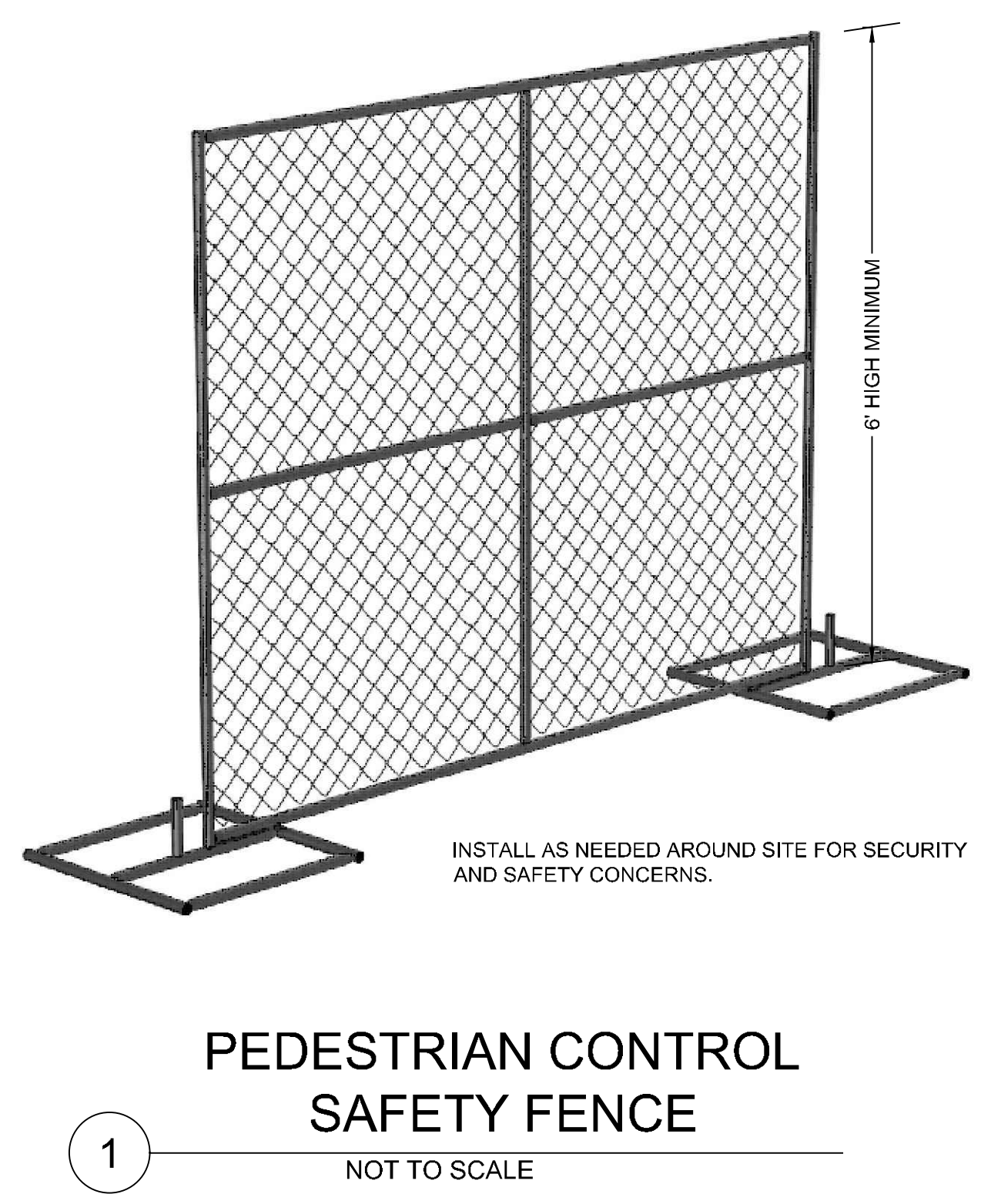
SHEET TITLE:

**EROSION & SEDIMENT CONTROL DETAILS**

IFR: 7/05/2024

SHEET #:

C-322



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B-4 STANDARDS AND SPECIFICATIONS	
FOR	
VEGETATIVE STABILIZATION	
<u>Definition</u>	Using vegetation as cover to protect exposed soil from erosion.
<u>Purpose</u>	To promote the establishment of vegetation on exposed soil.
<u>Conditions Where Practice Applies</u>	On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.
<u>Effects on Water Quality and Quantity</u>	Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.
	Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
	Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.
	<b>Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.</b>
<u>Adequate Vegetative Establishment</u>	Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.
	<ol style="list-style-type: none"> <li>Adequate vegetative stabilization requires 95 percent groundcover.</li> <li>If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.</li> <li>If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.</li> <li>Maintenance fertilizer rates for permanent seeding are shown in Table B.6.</li> </ol>

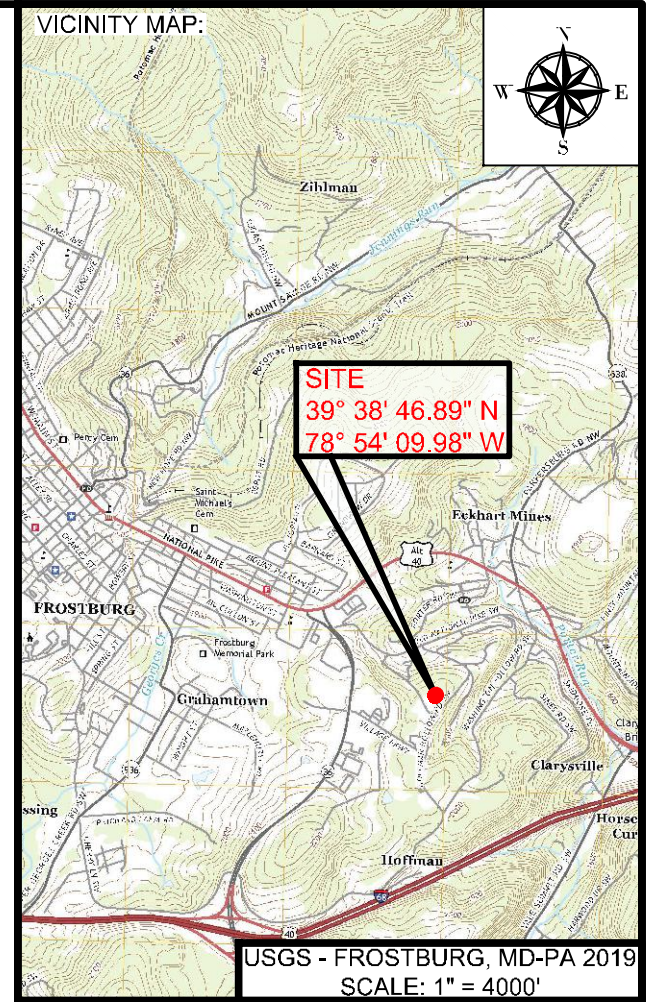
B.9

B-4.1 STANDARDS AND SPECIFICATIONS	
FOR	
INCREMENTAL STABILIZATION	
<u>Definition</u>	Establishment of vegetative cover on cut and fill slopes.
<u>Purpose</u>	To provide timely vegetative cover on cut and fill slopes as work progresses.
<u>Conditions Where Practice Applies</u>	Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.
<u>Criteria</u>	<ol style="list-style-type: none"> <li>Incremental Stabilization - Cut Slopes <ol style="list-style-type: none"> <li>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.</li> <li>Construction sequence example (Refer to Figure B.1): <ol style="list-style-type: none"> <li>Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.</li> <li>Perform Phase 1 excavation, prepare seedbed, and stabilize.</li> <li>Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.</li> <li>Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.</li> </ol> </li> </ol> </li> </ol>
	<b>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.</b>

B.10

B. Incremental Stabilization - Fill Slopes	
	<ol style="list-style-type: none"> <li>Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.</li> <li>Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.</li> <li>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.</li> <li>Construction sequence example (Refer to Figure B.2): <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Place Phase 1 fill, prepare seedbed, and stabilize.</li> <li>Place Phase 2 fill, prepare seedbed, and stabilize.</li> <li>Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.</li> </ol> </li> </ol>
	<b>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.</b>

B.11



PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
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SHEET TITLE:  
**EROSION & SEDIMENT CONTROL DETAILS & NOTES**  
 IFR: 7/05/2024  
 SHEET #:  
**C-323**

B-4.2 STANDARDS AND SPECIFICATIONS	
FOR	
SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS	
<u>Definition</u>	The process of preparing the soils to sustain adequate vegetative stabilization.
<u>Purpose</u>	To provide a suitable soil medium for vegetative growth.
<u>Conditions Where Practice Applies</u>	Where vegetative stabilization is to be established.
<u>Criteria</u>	<ol style="list-style-type: none"> <li>Soil Preparation <ol style="list-style-type: none"> <li>Temporary Stabilization <ol style="list-style-type: none"> <li>Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or 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 are to be tracked with ridges running parallel to the contour of the slope.</li> <li>Apply fertilizer and lime as prescribed on the plans.</li> <li>Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.</li> </ol> </li> <li>Permanent Stabilization <ol style="list-style-type: none"> <li>A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are: <ol style="list-style-type: none"> <li>Soil pH between 6.0 and 7.0.</li> <li>Soluble salts less than 500 parts per million (ppm).</li> <li>Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent 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 (less than 30 percent silt plus clay) would be acceptable.</li> <li>Soil contains 1.5 percent minimum organic matter by weight.</li> <li>Soil contains sufficient pore space to permit adequate root penetration.</li> </ol> </li> <li>Application of amendments or topsoil is required if on-site soils do not meet the above conditions.</li> <li>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 to 5 inches.</li> </ol> </li> </ol> </li> </ol>

B.12

	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 to 5 inches of soil by disking or other suitable means. Rake lawn areas 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. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.
<u>Topsoiling</u>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Topsoiling is limited to areas having 2:1 or flatter slopes where: <ol style="list-style-type: none"> <li>The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.</li> <li>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.</li> <li>The original soil to be vegetated contains material toxic to plant growth.</li> <li>The soil is so acidic that treatment with limestone is not feasible.</li> </ol> </li> <li>Areas having slopes steeper than 2:1 require special consideration and design.</li> <li>Topsoil Specifications: Soil to be used as topsoil must meet the following criteria: <ol style="list-style-type: none"> <li>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 inches in diameter.</li> <li>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.</li> <li>Topsoil substitutes 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.</li> </ol> </li> <li>Topsoil Application <ol style="list-style-type: none"> <li>Erosion and sediment control practices must be maintained when applying topsoil.</li> <li>Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. 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.</li> <li>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</li> </ol> </li> </ol>

B.13

	and seedbed preparation.
<u>Soil Amendments (Fertilizer and Lime Specifications)</u>	<ol style="list-style-type: none"> <li>Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.</li> <li>Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.</li> <li>Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydrosedding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.</li> <li>Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.</li> <li>Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.</li> </ol>

B.14

B-4.8 STANDARDS AND SPECIFICATIONS	
FOR	
STOCKPILE AREA	
<u>Definition</u>	A mound or pile of soil protected by appropriately designed erosion and sediment control measures.
<u>Purpose</u>	To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.
<u>Conditions Where Practice Applies</u>	Stockpile areas are utilized when it is necessary to salvage and store soil for later use.
<u>Criteria</u>	<ol style="list-style-type: none"> <li>The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.</li> <li>The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.</li> <li>Runoff from the stockpile area must drain to a suitable sediment control practice.</li> <li>Access the stockpile area from the upgrade side.</li> <li>Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.</li> <li>Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.</li> <li>Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4.1 Incremental Stabilization and Standard B-4.4 Temporary Stabilization.</li> <li>If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.</li> </ol>
<u>Maintenance</u>	The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for a 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

B.43

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**B-4.3 STANDARDS AND SPECIFICATIONS**

**FOR SEEDING AND MULCHING**

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding

1. Specifications

- a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must 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 inoculant 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 the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant 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 phytotoxic materials.

2. Application

- a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
  - i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
  - ii. 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.15

**B-4.5 STANDARDS AND SPECIFICATIONS**

**FOR PERMANENT STABILIZATION**

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

1. General Use

- a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
- 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 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- 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. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
    - i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
    - ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where

B.21

- b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
  - i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
  - ii. 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).
  - i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P<sub>2</sub>O<sub>5</sub> (phosphorous), 200 pounds per acre; K<sub>2</sub>O (potassium), 200 pounds per acre.
  - ii. 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.
  - iii. Mix seed and fertilizer on site and seed immediately and without interruption.
  - iv. 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, oat, or barley and 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.
  - i. WCFM is to 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.
  - ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
  - iii. WCFM materials are to 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 homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
  - iv. WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
  - v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

B.16

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 per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

- iii. 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 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
- iv. 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 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ to 3 pounds per 1000 square feet.

**Notes:**  
Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

**Choose certified material. Certified material is the best guarantee of cultivar 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 for Turf Grass Mixtures
  - Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
  - Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
  - Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
- d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1½ inches 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 seedlings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B.22

- 2. Application
  - a. Apply mulch to all seeded areas immediately after seeding.
  - b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. 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 per acre.
  - c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- 3. Anchoring
  - a. Perform mulch anchoring immediately following application of mulch 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:
    - i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. 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.
    - ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
    - iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petrosol, Terra Tax II, Terra Tack AR 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.**
    - iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B.17

PERMANENT SEEDING SUMMARY							
SEED MIXTURE (HARDINESS ZONE 6a) FROM TABLE 25				FERTILIZER RATE (10-20-20)			
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	N	P205 K2O	
3	ENDOPHYTE-FREE FESCUE (75%) PERENNIAL RYEGRASS (10%) KENTUCKY BLUEGRASS (5%) BIRDS FOOT TREFOL (INOCULATED) (10%)	150 10	3/15 TO 6/1 8/1 TO 10/1	1/2" TO 1"	45 lb/ac (11 lb/1,000 sf)	90 lb/ac (22 lb/1,000 sf)	90 lb/ac (22 lb/1,000 sf)
							2 tons/ac (50 lb/1,000 sf)

- NOTES:**
1. PLANTING OF KY31 FESCUE IS PROHIBITED. USE FORAGER FESCUE IN LIEU OF KY31.
  2. ALL DISTURBED AREAS WILL BE CONVERTED FROM EROSION AND SEDIMENT CONTROL TO PERMANENT SWM UPON APPROVAL OF THE MDE INSPECTOR.

- 1. General Specifications
  - a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
  - b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, 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 must 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 must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
  - e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must 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 it 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 the sod immediately following rolling and 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.

B.23

**B-4.4 STANDARDS AND SPECIFICATIONS**

**FOR**

**TEMPORARY STABILIZATION**

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
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.

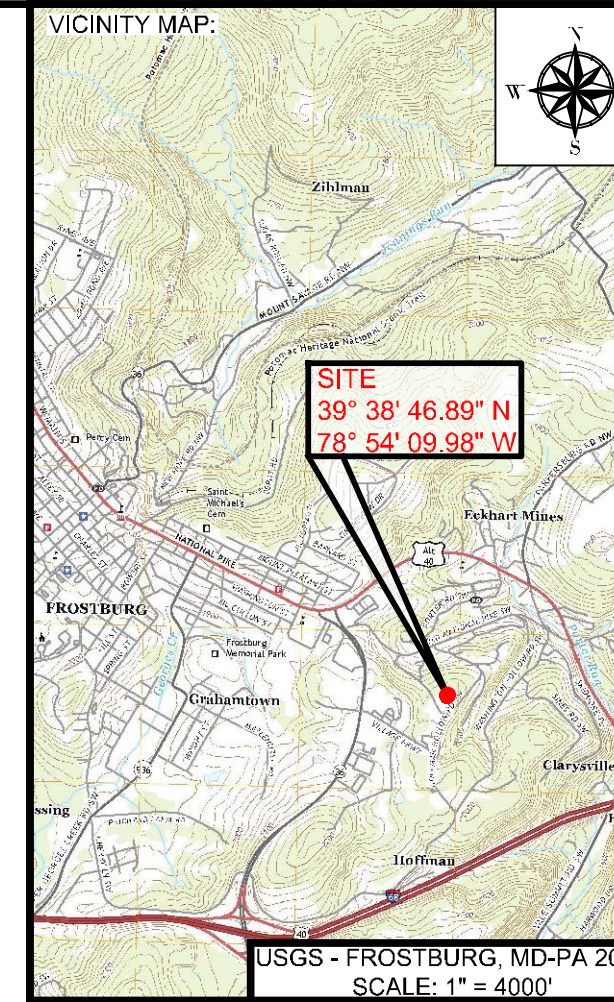
B.18

TEMPORARY SEEDING SUMMARY						
SEED MIXTURE (HARDINESS ZONE 6a) FROM TABLE 26				FERTILIZER RATE (10-20-20)		LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	N	P205 K2O
1	BARLEY OR RYE PLUS FOXTAIL MILLET	150	3/15 TO 10/1	1"	436 lb/ac (10 lb/1,000 sf)	2 tons/ac (50 lb/1,000 sf)
2	ANNUAL RYEGRASS	50	3/15 TO 5/31 8/1 TO 8/15	1/4" TO 1/2"		

- NOTES:**
1. PLANTING OF KY31 FESCUE IS PROHIBITED. USE FORAGER FESCUE IN LIEU OF KY31.
  2. ALL DISTURBED AREAS WILL BE CONVERTED FROM EROSION AND SEDIMENT CONTROL TO PERMANENT SWM UPON APPROVAL OF THE MDE INSPECTOR.

- 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 inches. 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 ½ of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B.24



PROJECT:  
**FINAL PLAN SUBMITTAL**  
FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
MARYLAND

CLIENT:  
  
CLYM ENVIRONMENTAL SERVICES, LLC  
1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704



**bba**  
Surveyors | Engineers | Planners  
Bennett Brewer & Associates, LLC  
23 East Main Street, Suite 200  
Frostburg, Maryland 21532  
Phone (301)-687-0494  
www.bbasurey.com Fax (301)-687-0495

NO.	BY	DATE	DESCRIPTION
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DRAWN:	BBA	DATE:	7/05/2024
CHECKED:	MB	SCALE:	AS NOTED
APPROVED:	MB	CRD FILE:	23088

**BBA# 2023088**  
SHEET TITLE:  
**MDE STANDARD SEEDING & MULCHING DETAILS & NOTES**

**IFR: 7/05/2024**

SHEET #:  
**C-324**

CAD FILE: E:\2023\23088 - Cym Services\PRODUCTION\C-321 SERIES.dwg - Cym Environmental - Design Services\PRODUCTION\C-321 SERIES.dwg - 1:35pm - PLOT DATE/TIME: 7/4/2024 - LAST SAVE BY: work106

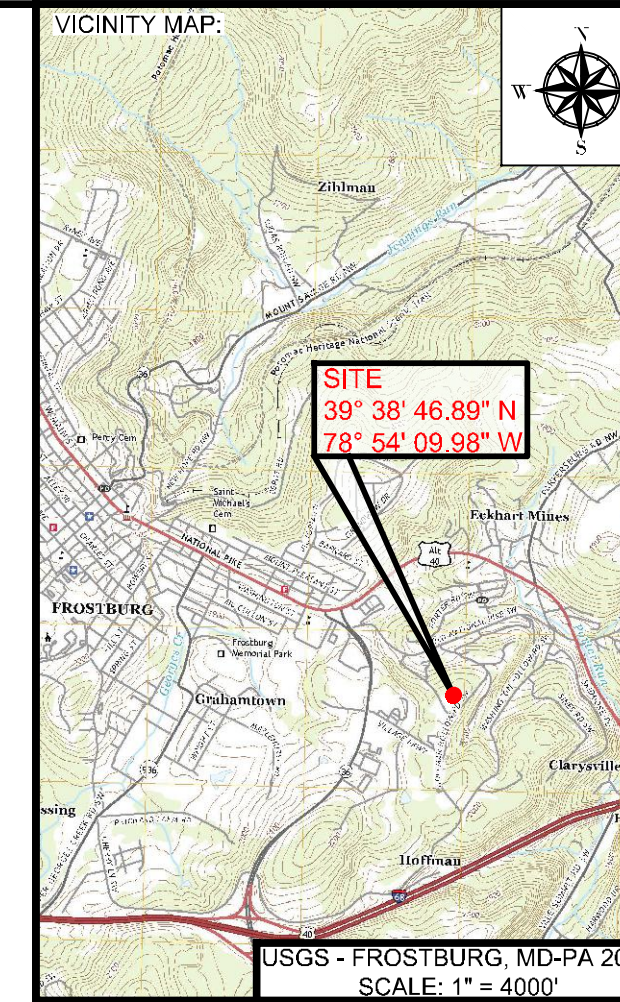
**STANDARD EROSION AND SEDIMENT CONTROL NOTES**

MDE REQUIRES THAT THESE NOTES, IN THEIR ENTIRETY, BE INCLUDED ON THE EROSION AND SEDIMENT CONTROL PLAN. IT IS RECOGNIZED THAT NOT EVERY NOTE MAY APPLY TO ALL PROJECTS. THE REQUIREMENT OF ANY INDIVIDUAL NOTE NOT APPLICABLE TO THE SUBJECT PROJECT IS NOT BINDING UPON THE APPLICANT OR THE APPLICANT'S CONTRACTOR.

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 SOD 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.
- NOTE: THE DISTURBED AREA FOR THIS PROJECT IS MORE THAN ONE ACRE. A MARYLAND DEPARTMENT OF THE ENVIRONMENT NPDES PERMIT IS REQUIRED PRIOR TO THE START OF CONSTRUCTION.
26. SITE INFORMATION:
 

A. AREA DISTURBED	4.00 ACRES
B. TOTAL CUT	1406 CUBIC YARDS
C. TOTAL FILL	996 CUBIC YARDS
D. OFF-SITE WASTE / BORROW AREA LOCATION	N/A
E. AREA TO BE ROOFED OR PAVED	1.26 ACRES
  27. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF A CUT OR FILL SLOPE UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.
  28. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.
  29. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION THAT EXISTS OR IS UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.
  30. SITES WHERE INFILTRATION DEVICES ARE USED FOR THE CONTROL OF STORMWATER, EXTREME CARE MUST BE TAKEN TO PREVENT RUNOFF FROM UNSTABILIZED AREAS FROM ENTERING THE STRUCTURE DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISH GRADE BOTTOM ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING A SEDIMENT TRAP TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.
  31. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARILY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO THE INLETS TO AVOID SURCHARGING AND OVERFLOW OF INLETS IN SUMP AREAS.
  32. THE APPLICANT IS RESPONSIBLE FOR OBTAINING ANY OTHER FEDERAL, STATE, AND LOCAL AUTHORIZATIONS WHICH MAY BE REQUIRED.
  33. THE APPROVAL OF THIS PLAN MAKES NO REPRESENTATION AS TO THE EXISTENCE OR NONEXISTENCE OF ANY UTILITIES AT THIS SITE. IT IS THE RESPONSIBILITY OF THE LANDOWNERS OR OPERATORS AND CONTRACTORS TO ASSURE THAT NO HAZARD EXISTS OR DAMAGE WILL OCCUR TO UTILITIES. IT IS SUGGESTED THAT MISS UTILITY BE CONTACTED AT: PHONE 1-800-257-7777.



PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
 ALLEGANY COUNTY  
 MARYLAND



**bba**

Surveyors | Engineers | Planners

Bennett Brewer & Associates, LLC

23 East Main Street, Suite 200      Frostburg, Maryland 21532  
 Phone (301)-687-0494      www.bbasurevey.com      Fax (301)-687-0495

SEQUENCE OF CONSTRUCTION	

REVISIONS			
NO.	BY	DATE	DESCRIPTION
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-	-	-	-
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DRAWN: BBA      DATE: 7/05/2024  
 CHECKED: MB      SCALE: AS NOTED  
 APPROVED: MB      CRD FILE: 23088

**BBA# 2023088**

SHEET TITLE:  
**MDE STANDARD EROSION & SEDIMENT DETAILS & NOTES**

**IFR: 7/05/2024**

SHEET #:  
**C-325**

CAD FILE: E:\2023\23088 - Cym Environmental - Cym Services\PRODUCTION\C-321 SERIES.dwg      PLOT DATE/TIME: 7/4/2024 - 1:35pm      LAST SAVE BY: work106

**SHORT-TERM**

THESE TASKS ARE TO BE COMPLETED DURING CONSTRUCTION OF THE AREA SURROUNDING THE BMP, DURING CONSTRUCTION AND ESTABLISHMENT OF THE BMP ITSELF, AND APPROXIMATELY THE FIRST THREE MONTHS AFTER THE BMP IS BROUGHT ONLINE.

**PRIOR TO AND DURING INSTALLATION AND ESTABLISHMENT OF BMP** - DURING CONSTRUCTION OF THE AREAS SURROUNDING THE BMP SITE, TAKE PREVENTATIVE ACTION TO LIMIT DISTURBANCES SUCH AS COMPACTING, LAND EXPOSURE, OR POLLUTION. THIS MAY BE ACHIEVED THROUGH PHASED CONSTRUCTION TO LIMIT THE AMOUNT OF BARE SOIL EXPOSED TO EROSION AND DECREASE NEED FOR EROSION CONTROL DEVICES. PRIOR TO BMP CONSTRUCTION, DEVELOPMENT OF THE SURROUNDING AREAS MUST BE COMPLETE. THIS IS TO REDUCE POTENTIAL FOR SEDIMENT INFLUX TO BMP AND CONSEQUENT CLOGGING. FOR INFILTRATION BMPs SUCH AS BIO-RETENTION FACILITIES IT IS CRITICAL THAT EXCESS SEDIMENT BE REMOVED AND MEASURES BE TAKEN TO PREVENT EXCESS SEDIMENT FROM ENTERING BMP. INSTALL BMP VEGETATION IN THE EARLY SPRING (MARCH-APRIL) OR ACCORDING TO THE GUIDELINES PROVIDED BY A VEGETATION EXPERT. SEVERAL METHODS CAN BE UTILIZED TO AUGMENT GRASS ESTABLISHMENT SUCH AS MULCHING AND COVER CROPS TO REDUCE COMPETITION FOR RESOURCES AND PREVENT WEED GROWTH. PREVENT OTHER DISTURBANCES, SUCH AS HUMAN/ANIMAL FOOT TRAFFIC, THROUGH SIGNAGE AND FENCING. SIGNAGE CAN ALSO BE USED TO RAISE PUBLIC INTEREST AND PROVIDE EDUCATION. STORMWATER RUNOFF SHOULD BE ROUTED AWAY FROM THE BMP FOR THE MINIMUM ESTABLISHMENT PERIOD OF 45 DAYS IN ORDER TO PREVENT DAMAGE. THIS WILL PREVENT NASCENT (YOUNG) GRASSES AND EXPENSIVE BMP COMPONENTS FROM BEING OVERWHELMED AND/OR DAMAGED IN WET WEATHER EVENTS. IRRIGATE VEGETATION AS NECESSARY DURING PERIOD THAT STORMWATER IS ROUTED AWAY FROM BMP TO AID IN ESTABLISHMENT. IN THE EVENT THE BMP IS UTILIZED FOR TEMPORARY SEDIMENT CONTROL, THE AREA SHALL BE PROTECTED FROM HEAVY EQUIPMENT TRAFFIC AND RESTORED TO SUITABLE SOIL/PLANTING CONDITIONS PRIOR TO FINAL INSTALLATION.

**DURING THREE MONTHS POST-INSTALLATION** - THIS PERIOD IS TO MONITOR BMP FUNCTION DURING THE INITIAL THREE MONTHS AFTER THE BMP BEGINS TO RECEIVE STORMWATER. WITHIN 24 HOURS OF EVERY STORMWATER EVENT WHICH RESULTS IN PRECIPITATION OF 0.5 INCHES OR GREATER, INSPECT BMP TO ENSURE THAT VEGETATION AND OTHER EROSION CONTROL MECHANISMS ARE INTACT. CHECK STRUCTURES FOR STABILITY AND REMOVE TRASH AND DEBRIS. THIS THREE MONTH TIME FRAME IS AN OPPORTUNITY TO BEGIN COMMUNITY INVOLVEMENT - THEY WILL SEE THE EVOLUTION OF THE BMP. HELP ESTABLISH "GREEN TEAMS" OR OTHER COMMUNITY GROUPS TO HELP MAINTAIN BMP WITH WEEDING AND TRASH REMOVAL. DURING THIS TIME IT IS CRITICAL THAT VEGETATION BE MONITORED AND THAT DEAD PLANTS ARE REPLACED. MAINTAIN AT LEAST A 70-PERCENT VEGETATION DENSITY TO ENSURE STABILITY. CONTINUE IRRIGATION TO SUPPLEMENT RAINFALL DURING DRY SUMMER MONTHS.

**SHORT-TERM MAINTENANCE TASKS FOR VEGETATED BMP**

PRIOR TO AND DURING INSTALLATION AND ESTABLISHMENT OF BMP

TASK	DESCRIPTION
ENCOURAGE PHASED CONSTRUCTION OF DEVELOPMENT SURROUNDING BMP	UTILIZE STAGED CONSTRUCTION TO LIMIT EROSION POTENTIAL OF LAND EXPOSED
PROVIDE TEMPORARY STORMWATER CONTROL	STORMWATER RUNOFF SHALL BE ROUTED AROUND FACILITY UNTIL VEGETATION IS ESTABLISHED (GENERALLY 2-3 MONTHS)
PROVIDE SITE STABILIZATION	UTILIZE EROSION CONTROL DURING CONSTRUCTION AND UNTIL FACILITY IS ESTABLISHED
PROTECTION FROM FOOT TRAFFIC AND BMP EDUCATION THROUGH SIGNAGE	USE FENCING AND SIGNAGE TO PREVENT DAMAGE FROM ANIMAL AND HUMAN FOOT TRAFFIC AND TO INITIATE PUBLIC INTEREST AND EDUCATION
PLANTING OF NATIVE VEGETATION	OPTIMUM PLANTING WINDOW DEPENDS ON LOCATION; SEE LANDSCAPE PLANS AND SEDIMENT EROSION CONTROL PLANS FOR SEEDING RATES AND PLANTING REQUIREMENTS
MULCHING	USE MULCH MADE FROM NATIVE HAY OR NATIVE PLANTS TO REDUCE POTENTIAL COMPETITION FOR RESOURCES
FERTILIZATION	TYPICALLY WITH NATIVE VEGETATION FERTILIZATION IS NOT REQUIRED, HOWEVER CONSULT LOCAL NRCS FOR FERTILIZING SUGGESTIONS AFTER SOILS TEST
IRRIGATION/WATERING	WATERING SCHEDULE MUST BE ESTABLISHED FOR UPKEEP OF VEGETATION

DURING 3 MONTHS POST-INSTALLATION

TASK	DESCRIPTION
POST WET-WEATHER EVENT (PRECIPITATION > 0.5")	ENSURE THAT VEGETATION AND OTHER EROSION STABILIZING MECHANISMS ARE INTACT AND CHECK INLET/OUTLET STRUCTURES AND SURROUNDING AREA FOR SIGNS OF EROSION OR INSTABILITY
PROTECTION FROM FOOT TRAFFIC AND BMP EDUCATION THROUGH SIGNAGE	USE FENCING AND SIGNAGE TO PREVENT DAMAGE FROM ANIMAL AND HUMAN FOOT TRAFFIC AND TO ENCOURAGE BMP EDUCATION AND INTEREST
CHECK AREAS SURROUNDING BMPs	CHECK FOR SIGNS OF EROSION OR INSTABILITY AND MAKE SURE THAT AESTHETICS ARE MAINTAINED THROUGHOUT THE BMP FOOTPRINT
IRRIGATION/WATERING	WATERING SCHEDULE MUST BE ESTABLISHED FOR UPKEEP OF VEGETATION
WEEDING	PARTICULARLY IMPORTANT DURING INITIAL GROWTH TO REDUCE COMPETITION FOR MOISTURE, NUTRIENTS, AND SUNLIGHT
REPLACEMENT OF DEAD PLANTS	ALL DEAD PLANTS SHOULD BE REMOVED, THE CAUSE OF THEIR DEATH INVESTIGATED, AND IF THE CAUSE IS THE BMP ENVIRONMENT, ATTEMPT GROWTH OF NEW PLANT TYPE
ESTABLISH "GREEN TEAMS" OR OTHER COMMUNITY GROUPS	ENCOURAGE COMMUNITY INVOLVEMENT AND ESTABLISH MAINTENANCE CREWS TO PERFORM ROUTINE CLEAN OUT OF TRASH AND DEBRIS AND TO MAINTAIN APPEARANCE OF BMP

**LONG-TERM**

THESE TASKS ARE TO BE COMPLETED BI-ANNUALLY ACCORDING TO THE VEGETATION GROWING SEASON. TASKS TO BE CARRIED OUT DURING THESE BI-ANNUAL INSPECTIONS WILL BE ROUTINE FOR EACH YEAR OF THE BMPs LIFE. NATIVE GRASSES TYPICALLY BECOME FULLY ESTABLISHED IN TWO TO THREE GROWING SEASONS. THE MAIN PURPOSE OF THESE INSPECTIONS IS TO ASSESS THE BMP CONDITION, AND REMEDY FUNCTIONAL AND VEGETATION ISSUES IDENTIFIED.

**FALL INSPECTION - END OF GROWING SEASON (AUGUST-SEPTEMBER)** - THE TIMING OF THIS INSPECTION SHOULD CORRESPOND TO THE TAPERING OF VEGETATION GROWTH IN EARLY FALL. AT THIS TIME, THE VEGETATION SHOULD BE HARVESTED TO RETAIN THE MAXIMUM NUTRIENT VALUE. CLIP OR MOW STORMWATER TO A MINIMUM OF 4-6 INCHES. RETAIN 4-6 INCHES OF STALK TO ENSURE WINTER SURVIVAL AND MAINTENANCE OF THE ROOT SYSTEMS. GENERAL CLEAN UP OF THE PLANT BED SHOULD ALSO OCCUR AT THIS TIME TO REMOVE DEAD PLANTS AND INVASIVE SPECIES. OTHER LANDSCAPING MAY BE REQUIRED TO MAINTAIN THE AESTHETIC CONDITION OF THE BMP OVER THE WINTER.

**SPRING INSPECTION-BEGINNING OF GROWING SEASON (MARCH-APRIL)** - THE SPRING INSPECTION SHOULD OCCUR AT THE BEGINNING OF THE SPRING SEASON BEFORE VEGETATION GROWTH. LANDSCAPING DUTIES INCLUDE REPLACING AND AUGMENTING EXISTING VEGETATION. WINTER WEATHER WILL WARRANT A GENERAL CLEAN UP OF THE BMP TO MAINTAIN AESTHETICS. CLEAN OUT TRASH AND DEBRIS AND CLEAN UP EDUCATIONAL SIGNS.

**COMMON INSPECTION ITEMS FOR BOTH FALL AND SPRING** - A PROFESSIONAL INSPECTION SHOULD OCCUR ONCE A YEAR AT EITHER THE FALL OR SPRING INSPECTION TO ASSESS THE FUNCTIONAL CONDITION OF THE BMP. BMP STRUCTURES SUCH AS DAMS, EMBANKMENTS, INLETS, AND OUTLETS SHOULD BE ASSESSED FOR STABILITY AND FUNCTION. WAYS TO ASSESS BMP FUNCTION INCLUDE CHECKING FOR STANDING WATER, SEDIMENT ACCUMULATION, AND SIGNS OF EROSION. SEDIMENT SHOULD BE REMOVED FROM THE BMP WHEN THE GROUND SURFACE IS COMPLETELY DRY. REMOVING SEDIMENT WHEN THE BMP IS WET MAY CAUSE COMPACTION. CHECK AREAS SURROUNDING THE BMP FOR SIGNS OF EROSION OR INSTABILITY. ALSO MAKE SURE THAT AESTHETICS ARE MAINTAINED THROUGHOUT THE BMP FOOTPRINT. TREES AND OTHER LARGE VEGETATION SHOULD BE REMOVED TO PREVENT LATERAL DAMAGE TO THE BMP VIA ROOT GROWTH. SHADE-PRODUCING VEGETATION IS NOT DESIRABLE IN A BMP WITH GRASSES.

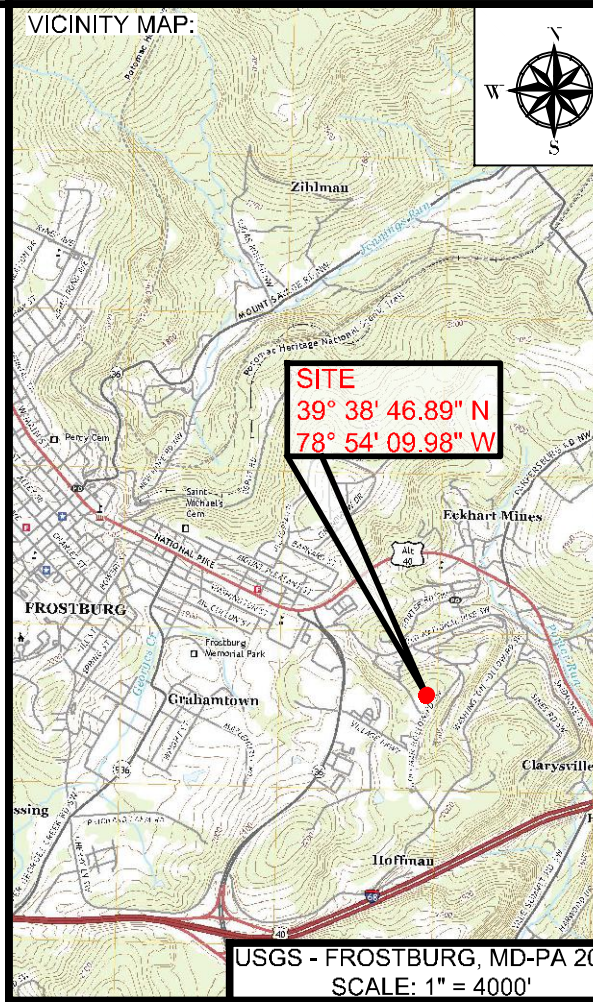
**LONG-TERM MAINTENANCE TASKS FOR VEGETATED BMP**

END OF GROWING SEASON (AUGUST – SEPTEMBER)

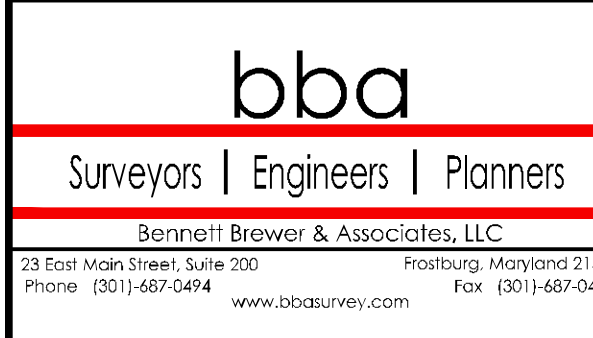
TASK	DESCRIPTION
GENERAL INSPECTION	CHECK FOR STANDING WATER, SLOPE STABILITY, SEDIMENT ACCUMULATION, TRASH AND DEBRIS, PRESENCE OF BURROWS AND EROSION, AND INTEGRITY OF INLET/OUTLET, DAM, AND OTHER ENGINEERED STRUCTURES
CLEAN OUT SEDIMENTS AND DEBRIS	CLEAN OUT SEDIMENTS AND DEBRIS FROM INLET, OUTLET, THE BMP AND FOR DETENTION BASINS, REMOVE SEDIMENT WHEN ACCUMULATION REDUCES THE PERMANENT POOL BY 10-PERCENT OR THE FOREBAY BY 50-PERCENT AND DISPOSE OF APPROPRIATELY
CHECK AREAS SURROUNDING BMPs	CHECK FOR SIGNS OF EROSION OR INSTABILITY AND MAKE SURE THAT AESTHETICS ARE MAINTAINED THROUGHOUT THE BMP FOOTPRINT
MOWING/HARVEST	NATIVE GRASSES SHOULD BE TRIMMED TO 4-6" TO PROVIDE ADEQUATE BIOMASS FOR REGROWTH THE FOLLOWING YEAR
MAINTAIN BMP SIGNAGE	REPAIRS SHOULD BE MADE TO SIGNAGE, WALKWAYS, PICNIC TABLES, OR ANY OTHER PUBLIC RECREATION EQUIPMENT AS NECESSARY
WINTER STABILIZATION	MAY BE NECESSARY TO ESTABLISH EROSION PREVENTION PRACTICES TO MAINTAIN BMP OVER THE WINTER WHEN PLANTS ARE DORMANT
CONTINUE TO SUPPORT AND EDUCATE "GREEN TEAMS" OR OTHER COMMUNITY GROUPS	IT IS IMPORTANT TO MAINTAIN COMMUNITY INVOLVEMENT AND PROVIDE EDUCATION AND OPPORTUNITIES FOR SERVICE

BEGINNING OF GROWING SEASON (MARCH – APRIL)

TASK	DESCRIPTION
GENERAL INSPECTION	CHECK FOR STANDING WATER, SLOPE STABILITY, SEDIMENT ACCUMULATION, TRASH AND DEBRIS, PRESENCE OF BURROWS AND EROSION, AND INTEGRITY OF INLET/OUTLET, DAM, AND OTHER ENGINEERED STRUCTURES
CLEAN OUT SEDIMENTS AND DEBRIS	CLEAN OUT SEDIMENTS AND DEBRIS FROM INLET, OUTLET, THE BMP AND FOR DETENTION BASINS, REMOVE SEDIMENT WHEN ACCUMULATION REDUCES THE PERMANENT POOL BY 10-PERCENT OR THE FOREBAY BY 50-PERCENT AND DISPOSE OF APPROPRIATELY
PROVIDE SITE STABILIZATION	ENSURE THAT VEGETATION AND OTHER EROSION STABILIZING MECHANISMS ARE INTACT
CHECK AREAS SURROUNDING BMPs	CHECK FOR SIGNS OF EROSION OR INSTABILITY AND MAKE SURE THAT AESTHETICS ARE MAINTAINED THROUGHOUT THE BMP FOOTPRINT
WEEDING/PRUNING	REMOVE INVASIVE AND EXCESS BIOMASS AND DISPOSE OF APPROPRIATELY
REPLACE/AUGMENT VEGETATION	AUGMENT EXISTING PLANTS BY SAME PLANTING PROCEDURE AS DURING CONSTRUCTION IF NECESSARY AND DEAD PLANTS SHOULD BE REMOVED AND REPLACED
CONTINUE TO SUPPORT AND EDUCATE "GREEN TEAMS" OR OTHER COMMUNITY GROUPS	IT IS IMPORTANT TO MAINTAIN COMMUNITY INVOLVEMENT AND PROVIDE EDUCATION AND OPPORTUNITIES FOR SERVICE



PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
 ALLEGANY COUNTY  
 MARYLAND



NO.		BY	DATE	DESCRIPTION
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BBA# 2023088  
 SHEET TITLE:  
**VEGETATED BMP INSTALLATION & MAINTENANCE NOTES**  
**IFR: 7/05/2024**  
 SHEET #:  
**C-326**

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**CONSTRUCTION RECOMMENDATIONS**

**SITE PREPARATION**

INITIAL SITE CLEARING AND GRUBBING SHOULD INCLUDE REMOVAL OF THE TOPSOIL ANY DELETERIOUS MATERIALS WITHIN AREAS TO RECEIVE NEW FILL. AFTER REMOVAL OF THE UNSUITABLE MATERIALS, THE SUBGRADE SOILS SHOULD BE HEAVILY PROOF-ROLLED WITH APPROVED CONSTRUCTION EQUIPMENT TO LOCATE ISOLATED SOFT SPOTS OR AREAS OF EXCESSIVE "PUMPING" WHICH ARE TOO WET AND UNSTABLE TO ACCOMMODATE COMPACTED FILL. THESE AREAS SHOULD BE EITHER SCARIFIED, AIR-DRIED TO AN APPROPRIATE MOISTURE CONTENT AND RE-COMPACTED PRIOR TO FILL PLACEMENT, MECHANICALLY STABILIZED UTILIZING VARYING SIZED ROCK OR EXCAVATED TO A LEVEL OF STABLE SOILS.

**EXCAVATION AREAS**

IN GENERAL, THE RESIDUAL SOILS CAN BE EXCAVATED WITH CONVENTIONAL EARTH MOVING EQUIPMENT SUCH AS BACKHOES AND TRACKED LOADERS. DECOMPOSED ROCK ENCOUNTERED CAN POSSIBLY BE REMOVED TO A LIMITED EXTENT WITH A RIPPER. HOWEVER, HARD BEDROCK OR LARGE BOULDERS WILL REQUIRE HOE RAMMING OR FOR EFFECTIVE REMOVAL. DUE TO THE UNDERGROUND MINING AT THE SITE BLASTING FOR ROCK REMOVAL IS NOT RECOMMENDED. DURING EXCAVATION OPERATIONS, DRY CONDITIONS SHOULD BE MAINTAINED WITHIN THE CUT AREAS AT ALL TIMES TO MINIMIZE THE NEED FOR ADDITIONAL UNDERCUTTING OR AERATION OF SOILS. THE CONTRACTOR SHOULD BE PREPARED TO IMPLEMENT TEMPORARY DE-WATERING MEASURES IN THESE AREAS DURING CONSTRUCTION. ALL CUT AREAS SHOULD BE SEALED AT THE END OF EACH DAY, TO THE EXTENT WHICH CONSTRUCTION PRACTICALITY WILL PERMIT, TO HELP PREVENT INFILTRATION OF PRECIPITATION AND SUBSEQUENT UNSUITABLE SOIL CONDITIONS. ALL TRENCHES SHOULD BE SLOPED AND/OR SUPPORTED IN ACCORDANCE WITH CURRENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.) REQUIREMENTS. TRENCHES BELOW STRUCTURE AND PAVEMENT AREAS SHOULD BE BACKFILLED IN ACCORDANCE WITH THE CONTROLLED FILL SECTION OF THIS REPORT.

**CONTROLLED FILL**

**SATISFACTORY SOILS**

FILL MATERIALS SHOULD NOT CONTAIN ANY PYRITES, DEBRIS, WASTE, OR FROZEN MATERIALS AND THEY SHOULD CONTAIN LESS THAN TWO (2) PERCENT VEGETATION-ORGANIC MATERIALS BY WEIGHT. ALSO, MATERIALS CLASSIFIED AS CL, CH, OR FT ARE NOT SUITABLE FOR USE AS STRUCTURAL FILL. THE ON-SITE SOILS ARE GENERALLY SUITABLE FOR RE-USE AS STRUCTURAL FILL PROVIDED THAT PROPER DRAINAGE, GRADING AND SLOPING AWAY FROM THE STRUCTURE IS MAINTAINED BOTH DURING AND AFTER CONSTRUCTION. BLASTED OR "SHOT" ROCK CAN BE UTILIZED FOR FILL PROVIDED THAT CERTAIN CONSTRUCTION PROCEDURES ARE OBSERVED. THESE PROCEDURES INCLUDE MAINTAINING THE MAXIMUM PARTICLE SIZE OF THE ROCK, PROHIBITING NESTING OF BOULDERS, AND MIXING SUFFICIENT AMOUNTS OF SOIL FINES WITH THE ROCK TO FILL IN OPEN VOIDS BETWEEN THE ROCK PARTICLES. MATERIALS PLACED FROM THE SUBGRADE TO A DEPTH OF 1 FOOT BELOW UTILITY INVERT LEVELS, IN THE TOP ONE (1) FOOT OF PAVEMENT SUBGRADE AND TO A DEPTH OF 1 FOOT BELOW FOUNDATION SUBGRADE SHOULD BE FREE OF ROCK OR GRAVEL LARGER THAN SIX (6) INCHES IN ANY DIMENSION. MATERIALS PLACED BELOW THESE LEVELS SHOULD BE FREE OF ROCK LARGER THAN TWELVE (12) INCHES IN ANY DIMENSION. ALL PROPOSED FILL MATERIALS SHOULD BE APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT AS CONTROLLED FILL, AND REPRESENTATIVE SAMPLES SHOULD BE SUBMITTED BY THE CONTRACTOR ONE WEEK PRIOR TO PLACEMENT OF THAT MATERIAL TO ALLOW TIME FOR COMPLETION OF THE NECESSARY LABORATORY TESTS.

**PLACEMENT AND COMPACTION**

BEFORE COMPACTION, EACH LAYER SHOULD BE MOISTENED OR AERATED AS NECESSARY TO OBTAIN THE REQUIRED COMPACTION. EACH LAYER SHOULD BE COMPACTED TO THE REQUIRED PERCENTAGE OF MAXIMUM DRY DENSITY. FILL SHOULD NOT BE PLACED ON SURFACES THAT ARE MUDDY OR FROZEN, OR HAVE NOT BEEN APPROVED BY TESTING AND/OR PROOF-ROLLING. FREE WATER SHOULD BE PREVENTED FROM APPEARING ON THE SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS. SOIL MATERIAL WHICH IS REMOVED BECAUSE IT IS TOO WET TO PERMIT PROPER COMPACTION CAN BE SPREAD AND ALLOWED TO DRY. DRYING CAN BE FACILITATED BY DISCING OR HARROWING UNTIL THE MOISTURE CONTENT IS REDUCED TO AN ACCEPTABLE LEVEL. WHEN THE SOIL IS TOO DRY, WATER SHOULD BE APPLIED UNIFORMLY TO THE SUBGRADE SURFACE OR TO THE LAYER TO BE COMPACTED. ALL FILL MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT SHOULD BE PLACED IN MAXIMUM 12-INCH LOOSE LIFTS. ALL FILL MATERIAL COMPACTED BY HAND-OPERATED TAMPERS OR LIGHT COMPACTION EQUIPMENT SHOULD BE PLACED IN MAXIMUM 4-INCH LOOSE LIFTS. FILL MATERIAL SHOULD BE COMPACTED TO AT LEAST 98 PERCENT OF THE LABORATORY MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR METHOD (ASTM D 698). THE MOISTURE CONTENT OF THE SOILS SHOULD BE AT OR WITHIN TWO (2) PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT. IN AREAS WHERE WEATHERED ROCK FILL IS PLACED, MINIMUM PASSES WITH COMPACTION EQUIPMENT SHOULD BE ESTABLISHED DURING CONSTRUCTION, AND ALL AREAS SHOULD BE PROOF-ROLLED FOR ACCEPTANCE OF COMPACTION WHERE DENSITY TESTS CANNOT BE REASONABLY CONDUCTED.

**FOUNDATION CONSTRUCTION**

WE ANTICIPATE THAT CONVENTIONAL EARTH EXCAVATION EQUIPMENT SUCH AS A BACKHOE CAN BE UTILIZED TO EXCAVATE THE ALLUVIAL SOILS OR CONTROLLED FILL FOR FOUNDATION CONSTRUCTION. ANY FOUNDATION EXCAVATIONS WHICH ENCOUNTER HARD ROCK WILL REQUIRE HOE RAM CHIPPING TO ATTAIN REQUIRED BEARING ELEVATIONS. WE RECOMMEND THAT ANY LOOSE MATERIALS PRESENT AT THE BOTTOM OF FOOTING EXCAVATIONS AS A RESULT OF EXCAVATION OPERATIONS BE RE-COMPACTED IN ORDER TO MINIMIZE DIFFERENTIAL SETTLEMENTS. IF PARTIAL HARD ROCK BEARING IS ENCOUNTERED AT THE BOTTOM OF PROPOSED FOOTING LEVELS, WE RECOMMEND THAT THE ROCK BE UNDERCUT A MINIMUM OF ONE (1) FOOT AND BE REPLACED WITH CONTROLLED FILL. THIS TREATMENT GENERALLY REDUCES THE MAGNITUDE OF DIFFERENTIAL SETTLEMENTS ASSOCIATED WITH FOOTINGS BEARING PARTIALLY ON HARD ROCK AND PARTIALLY ON SOIL. FOUNDATION CONCRETE SHOULD BE PLACED THE SAME DAY THAT EXCAVATIONS ARE COMPLETED TO REDUCE THE POTENTIAL FOR SOFTENING DUE TO PRECIPITATION AND/OR RUNOFF. ALL FOOTING EXCAVATIONS FOR THE PROPOSED STRUCTURES SHOULD BE EXAMINED BY A GEOTECHNICAL ENGINEER OR A QUALIFIED REPRESENTATIVE FROM OUR OFFICE PRIOR TO PLACING CONCRETE TO CONFIRM THAT THE REQUIRED BEARING SUPPORT IS AVAILABLE.

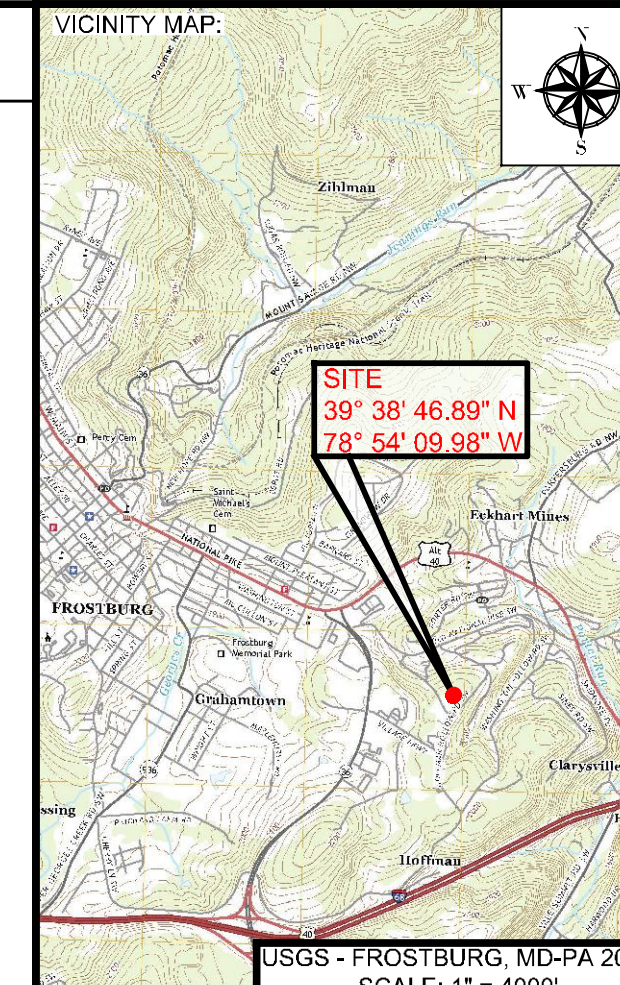
**PAVEMENT CONSTRUCTION**

DRAINAGE DITCHES AND/OR INLETS SHOULD BE CONSTRUCTED FOR THE ACCESS ROADS AND PAVEMENT AREAS TO MAINTAIN DRAINAGE AND DIVERT RUNOFF AWAY FROM THE PAVEMENT SUBGRADE. IT IS VERY IMPORTANT THAT THE PAVEMENT SUBGRADE BE PROPERLY SLOPED TO HELP MAINTAIN ADEQUATE DRAINAGE AFTER CONSTRUCTION. ANY WET/UNSTABLE SOILS PRESENT AT THE SUBGRADE LEVEL DURING GRADING OPERATIONS SHOULD BE EITHER SCARIFIED, AERATED AND RE-COMPACTED OR SHOULD BE REMOVED AND REPLACED WITH SUITABLE FILL MATERIALS. UNSUITABLE SUBGRADE CONDITIONS SHOULD BE CORRECTED IMMEDIATELY PRIOR TO PLACEMENT OF BASE STONE AND CONCRETE. BOTH THE AGGREGATE BASE, ASPHALT AND/OR CONCRETE SHOULD BE PLACED IMMEDIATELY AFTER FINAL SOIL SUBGRADE APPROVAL HAS BEEN OBTAINED DUE TO THE POTENTIAL FOR SUBGRADE SOFTENING FROM ADVERSE WEATHER CONDITIONS. IN ADDITION, HEAVY CONSTRUCTION TRAFFIC SHOULD BE LIMITED FROM TRAVELING ACROSS APPROVED FINAL SUBGRADE AREAS THAT HAVE BEEN SUBJECTED TO ADVERSE WEATHER CONDITIONS IN ORDER TO HELP MAINTAIN A STABLE SUBGRADE PRIOR TO PAVEMENT CONSTRUCTION. IF HARD ROCK IS ENCOUNTERED ABOVE FINAL GRADES IN PAVEMENT AREA EXCAVATIONS, IT SHOULD BE OVER-EXCAVATED TO AT LEAST THE LEVEL OF THE BOTTOM OF THE PAVEMENT SECTION (I.E., THE BOTTOM OF THE AGGREGATE BASE MATERIAL).

**CONSTRUCTION MONITORING**

WE RECOMMEND THAT TRIAD BE RETAINED TO MONITOR THE CONSTRUCTION ACTIVITIES TO VERIFY THAT THE FIELD CONDITIONS ARE CONSISTENT WITH THE FINDINGS OF OUR EXPLORATION. IF SIGNIFICANT VARIATIONS ARE ENCOUNTERED, OR IF THE DESIGN IS ALTERED, WE SHOULD BE NOTIFIED. AS PART OF THIS EFFORT, TRIAD SHOULD BE PRESENT TO LOG AND ADDITIONAL BORINGS OR AIR TRACK HOLES PERFORMED AT THE SITE AS WELL AS ANY MINE GROUTING PERFORMED.

TRIAD SHOULD PROVIDE PERSONNEL AS REQUIRED TO OBSERVE ALL EXCAVATIONS AND DOCUMENT PROOF-ROLLING PRIOR TO FILL PLACEMENT. IN ADDITION, ALL FILL MATERIAL SHOULD BE MONITORED, TESTED AND APPROVED DURING FILL CONSTRUCTION. FIELD DENSITY TESTS SHOULD BE PERFORMED IN ACCORDANCE WITH ASTM D 6938 (NUCLEAR METHOD). A MINIMUM OF THREE FIELD DENSITY TESTS SHOULD BE PERFORMED FOR EACH LIFT OF FILL PLACED OR A MINIMUM OF ONE TEST EVERY 2,500 SQUARE FEET OF FILL PLACED TO CONFIRM THE REQUIRED SOIL COMPACTION.



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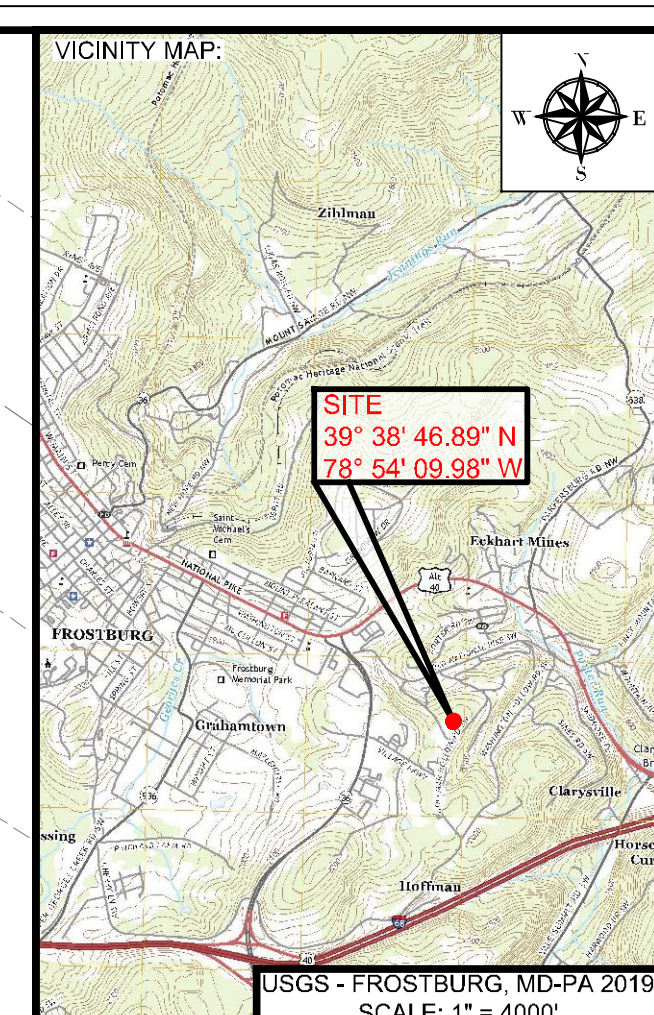
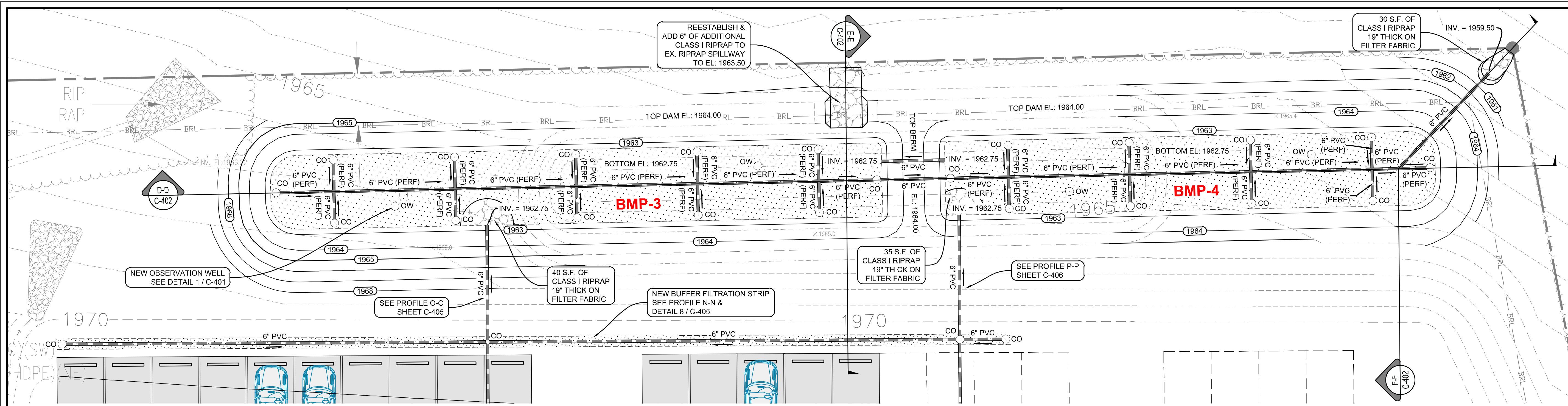
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**IFR: 7/05/2024**

SHEET #:  
**C-327**

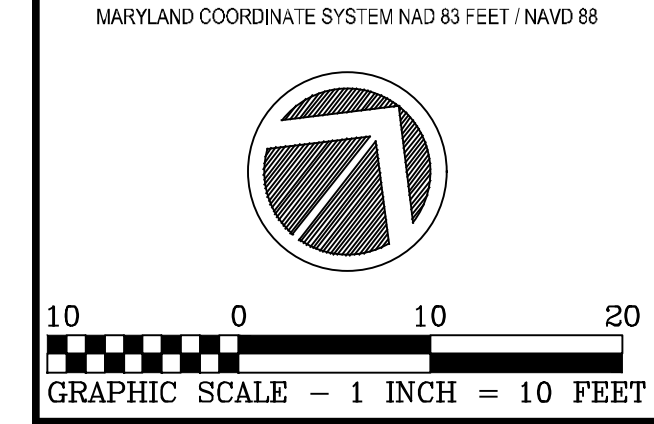
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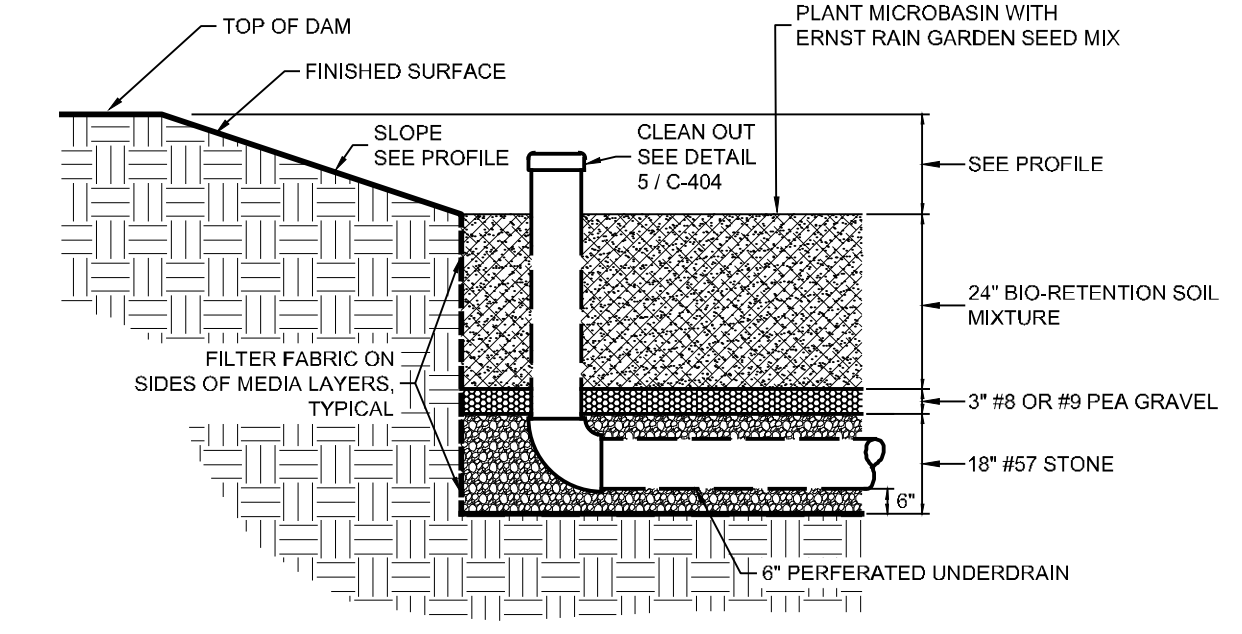
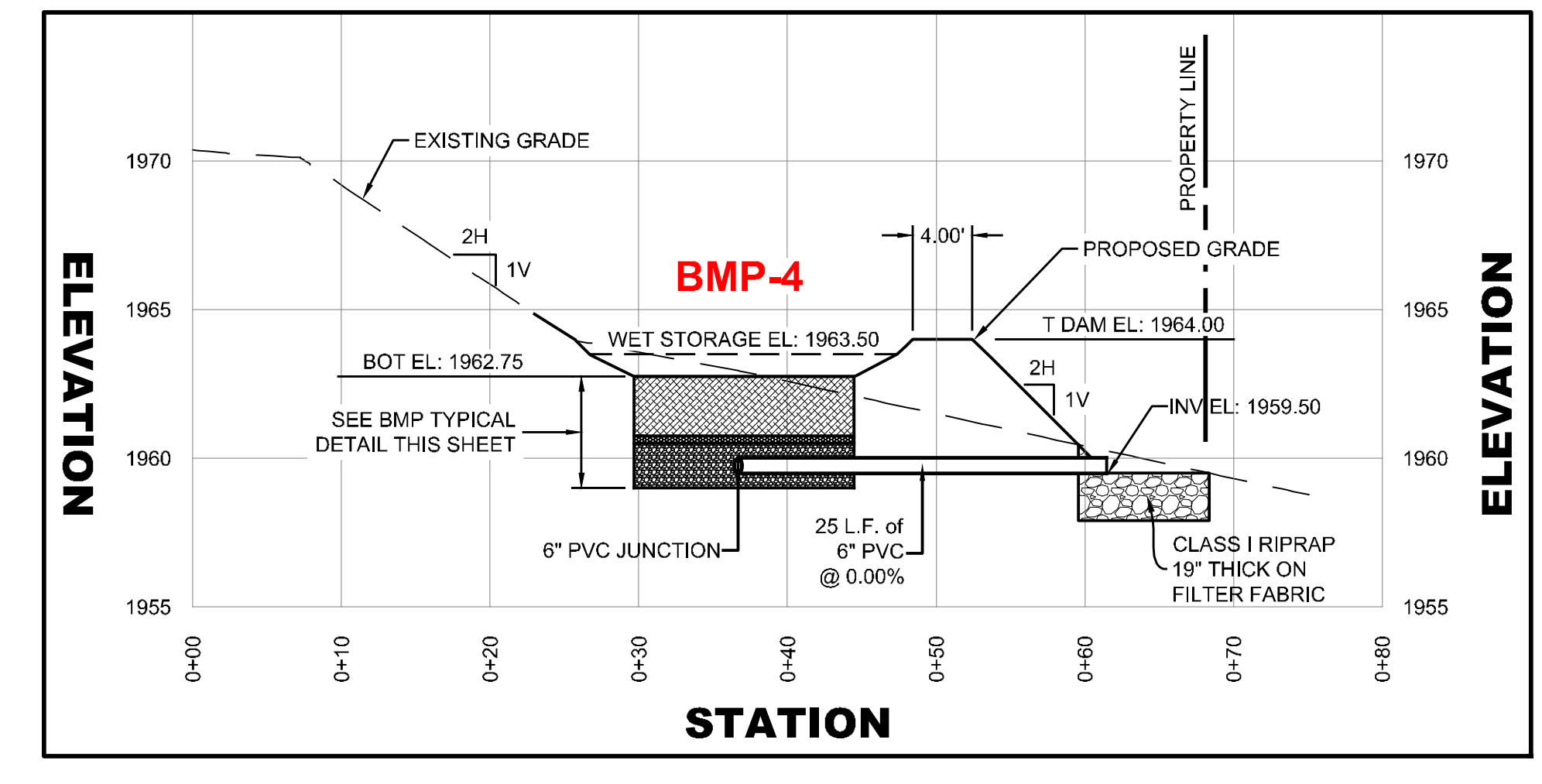
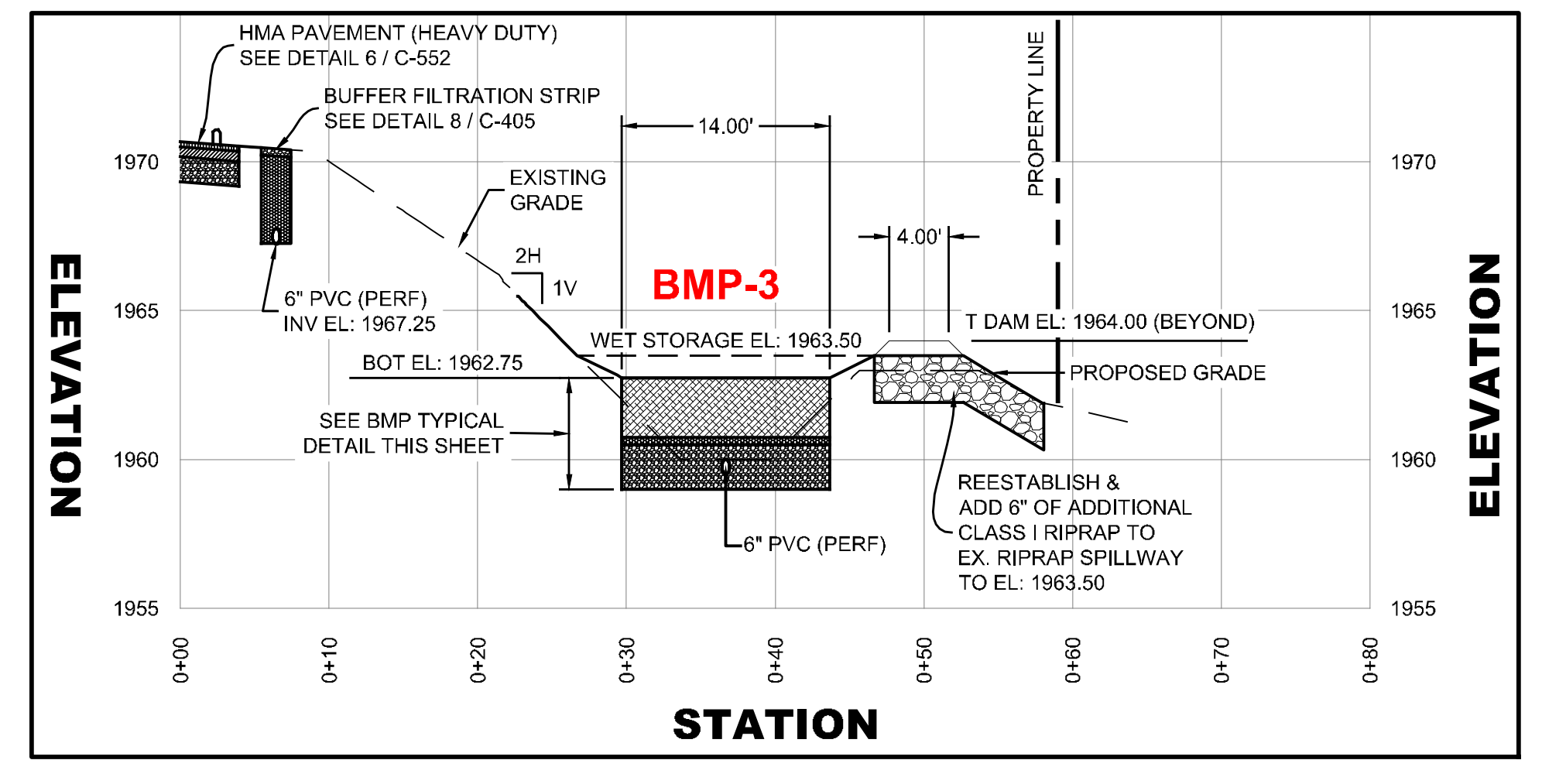
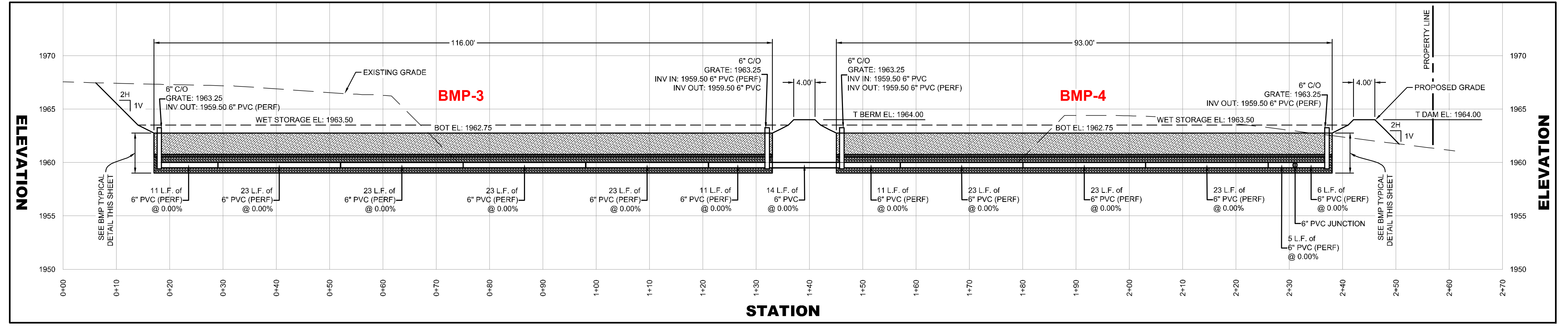


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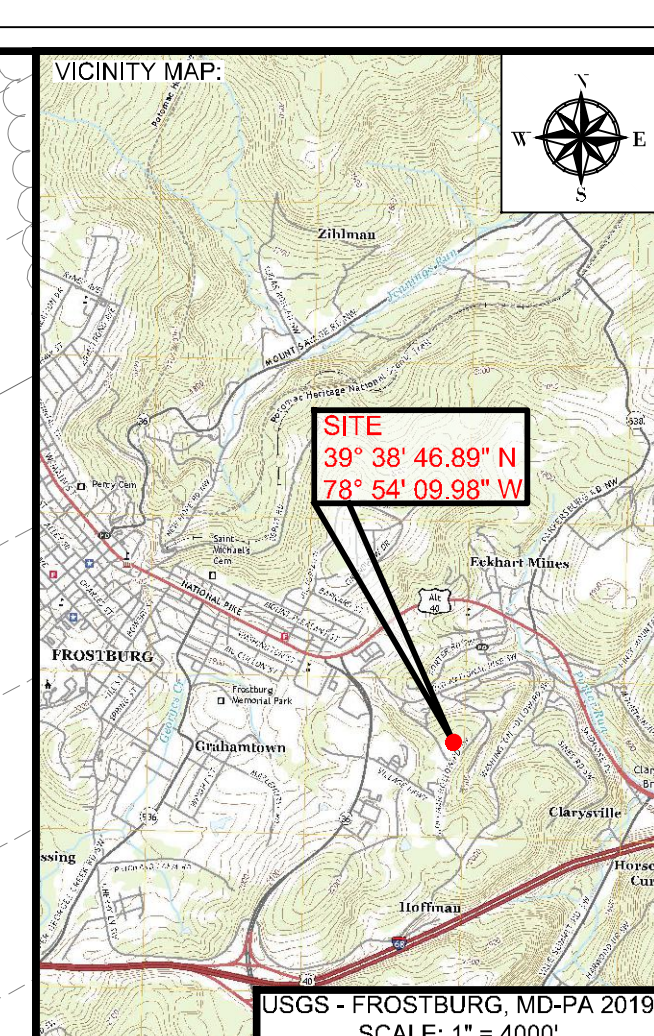
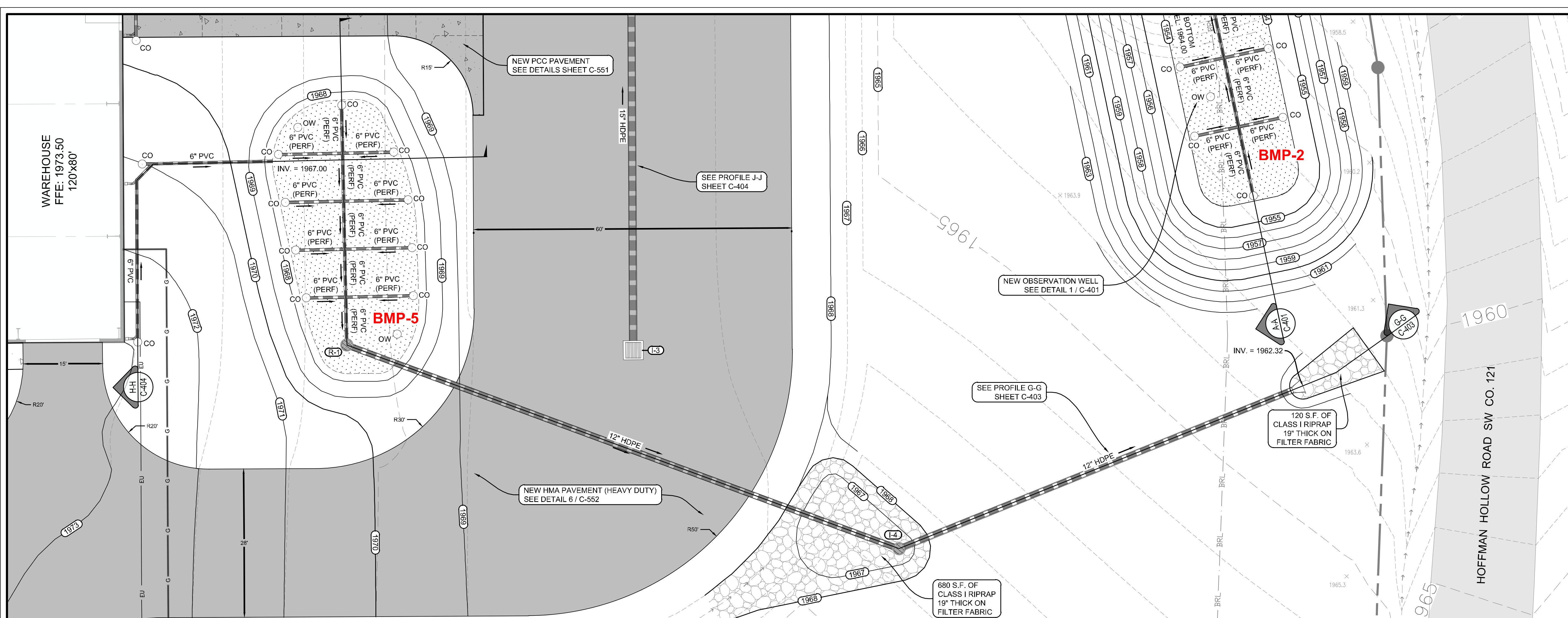


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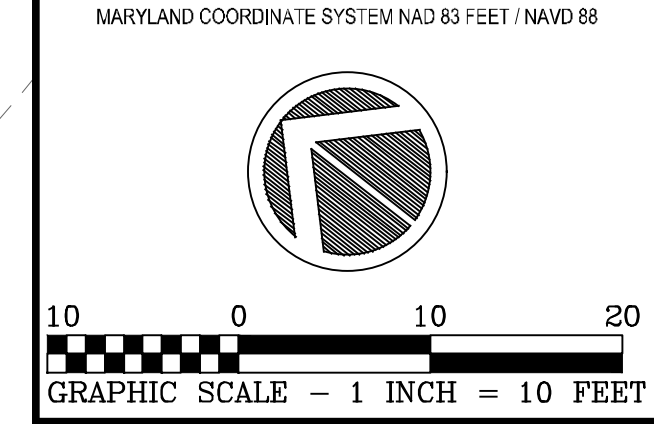
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**MICROBASIN 3 & 4 & STORM DRAIN DETAILS**  
 IFR: 7/05/2024  
 SHEET #:  
 C-402

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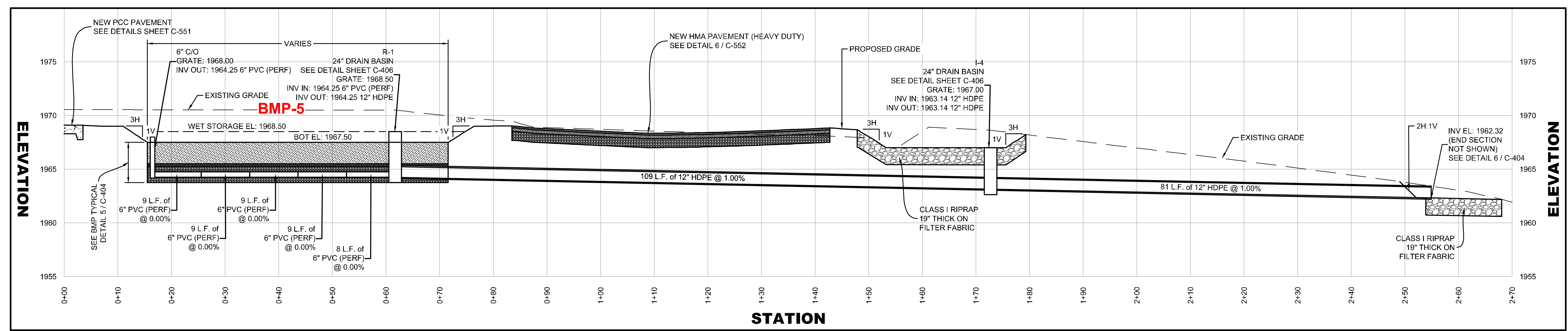


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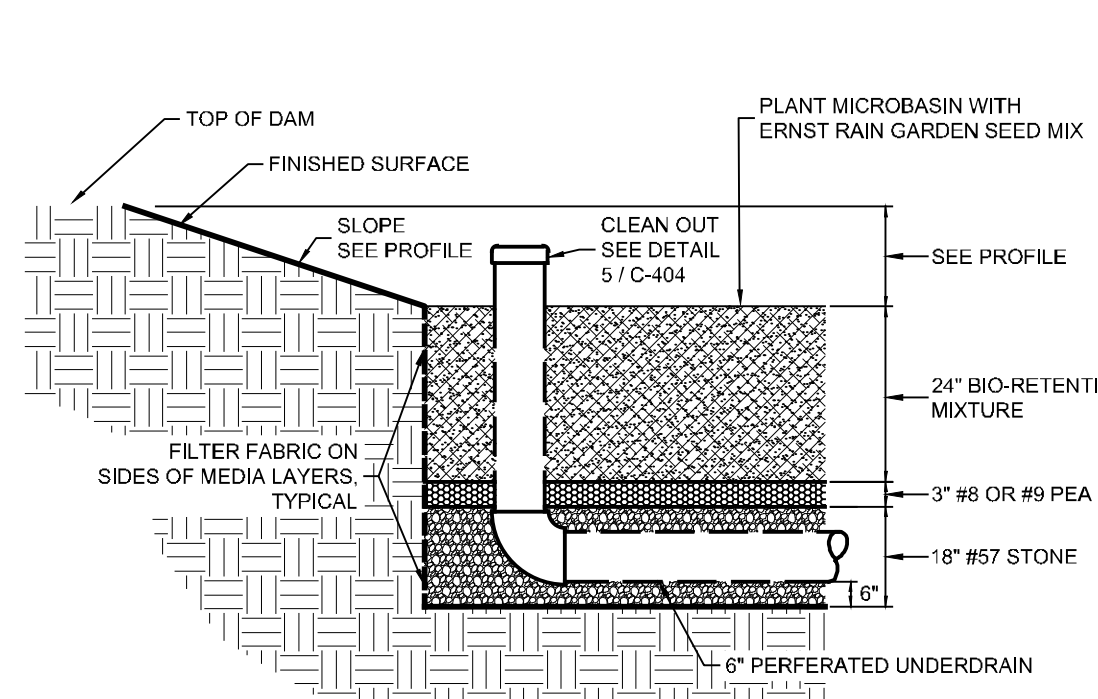
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**IFR: 7/05/2024**  
 SHEET #:  
**C-403**

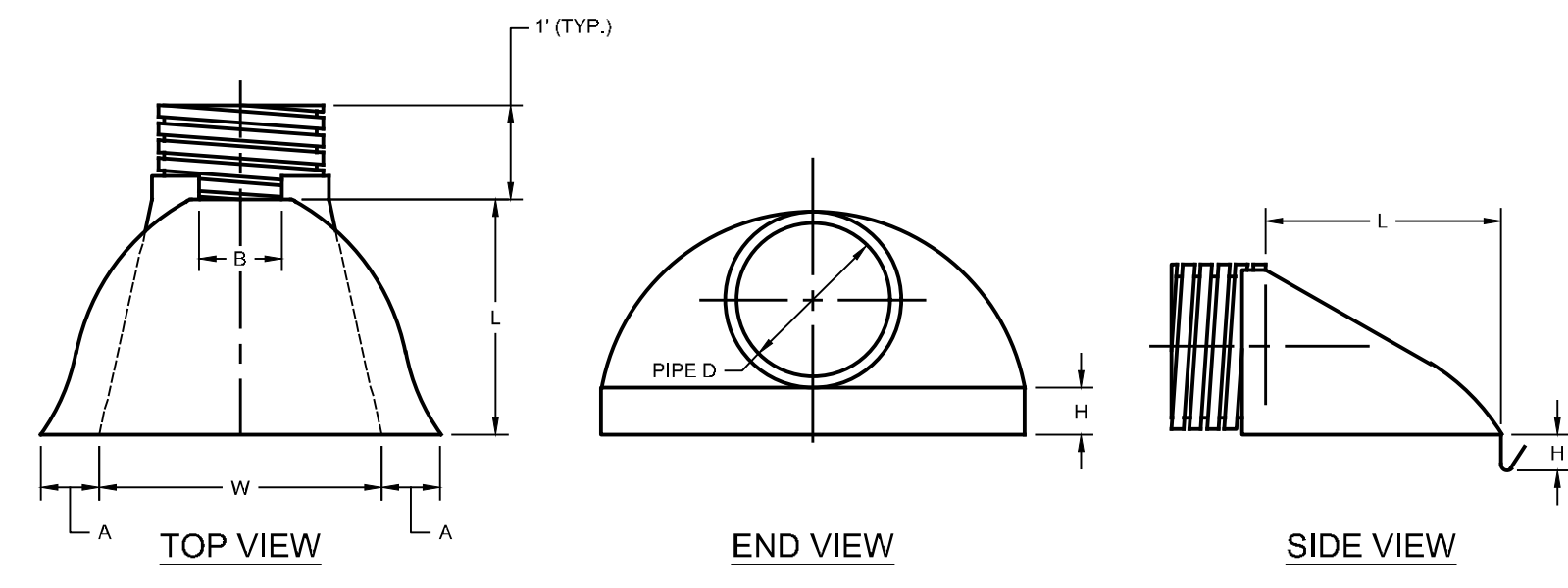


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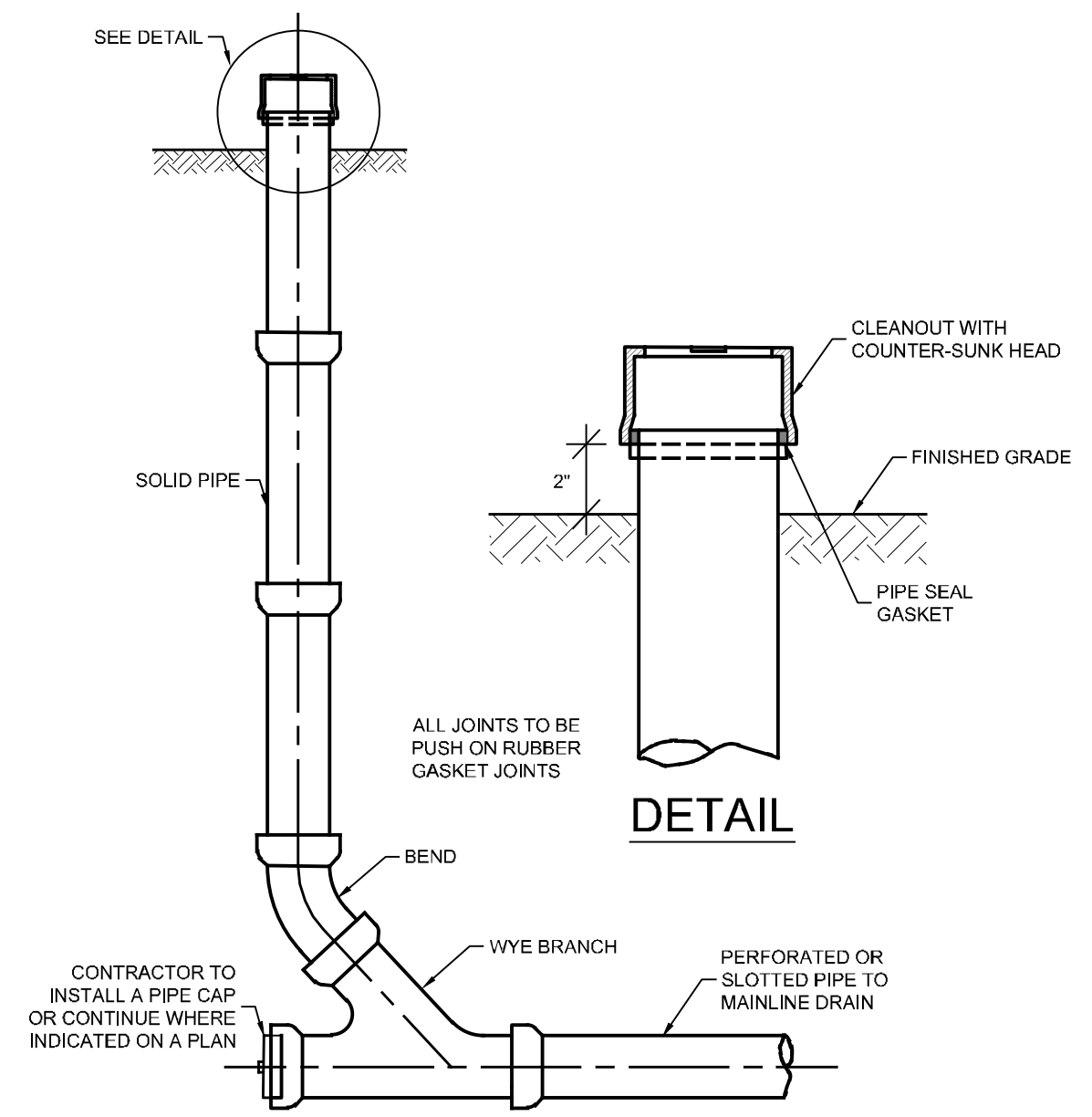
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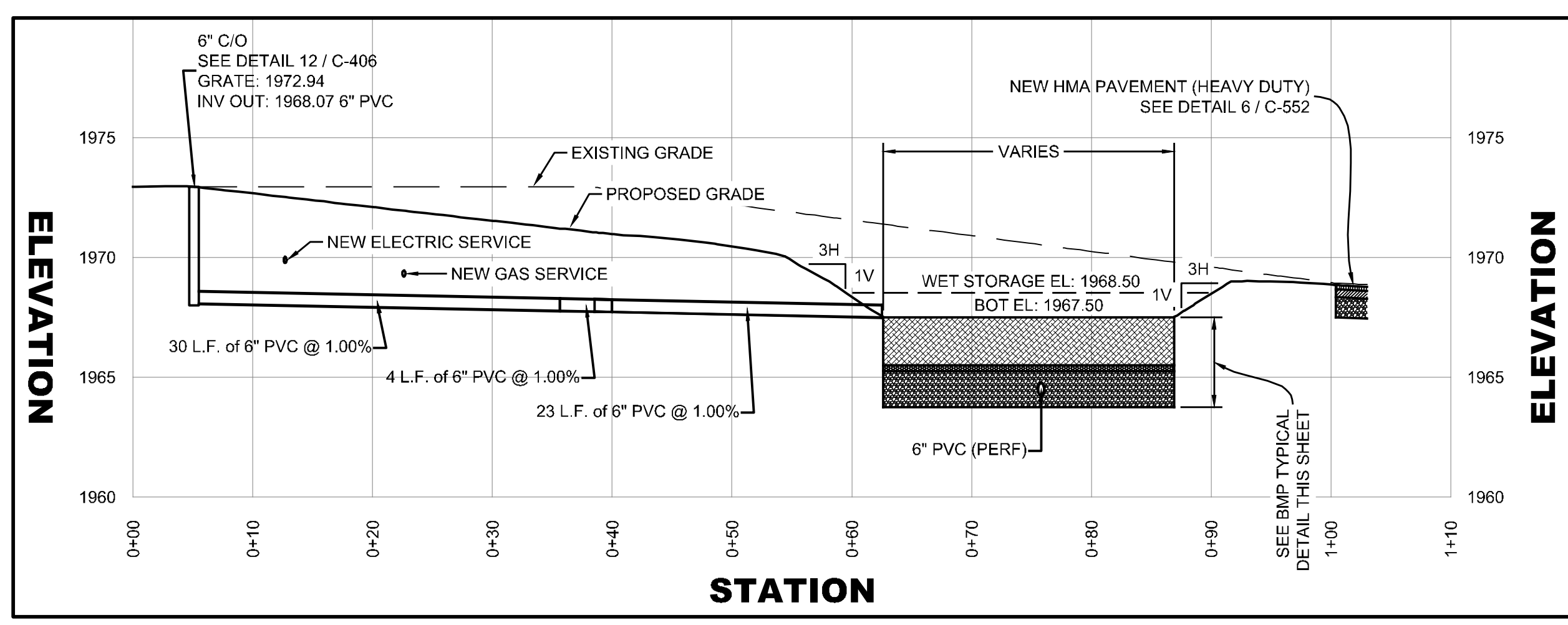
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18	1810 NP	7.5	15	6.5	32	35
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36	3610 NP	10.5	NA	7.0	53	68

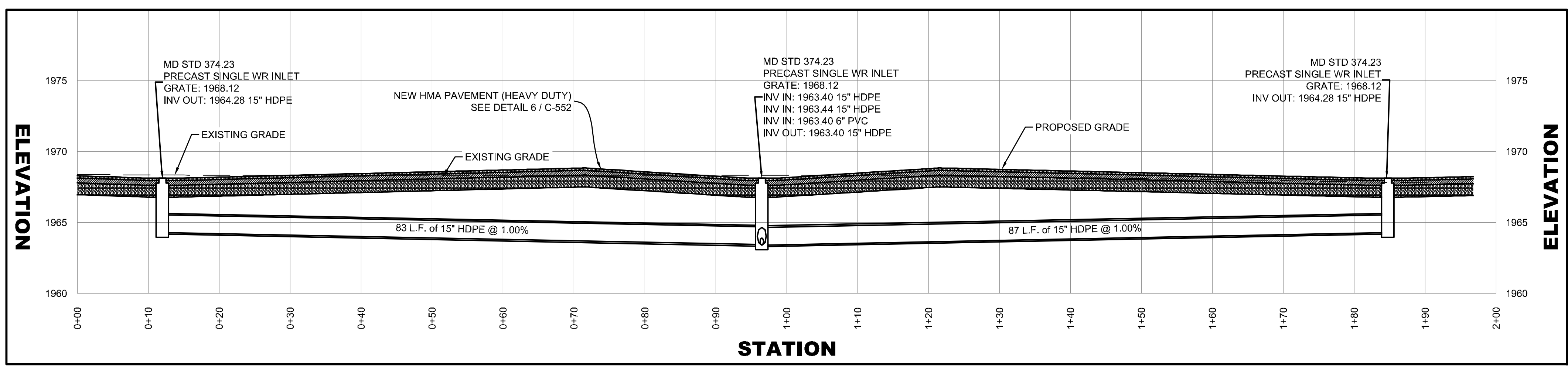
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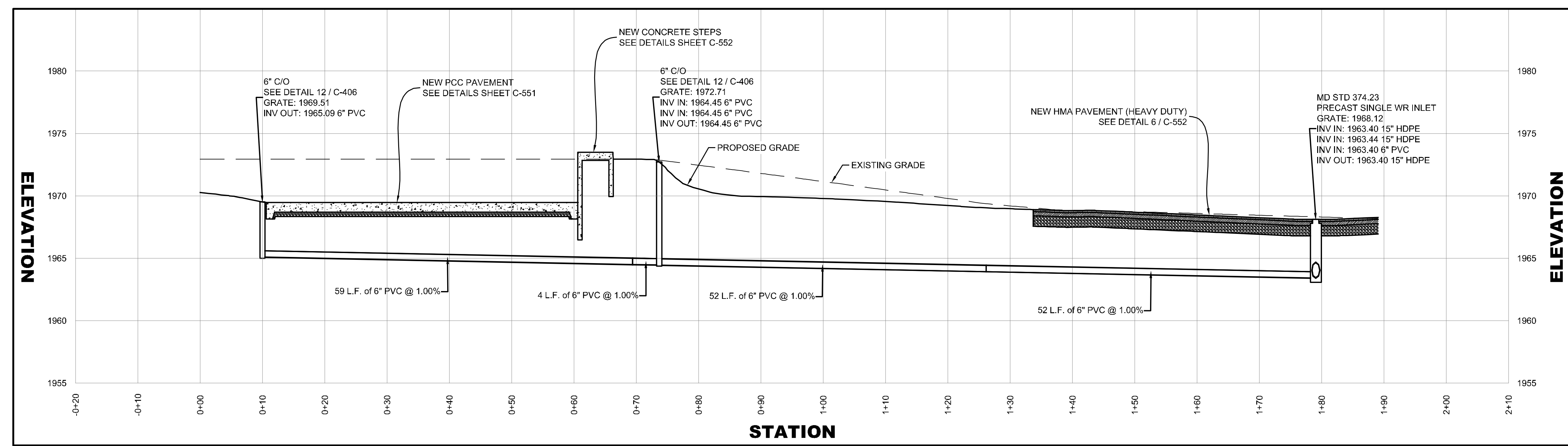
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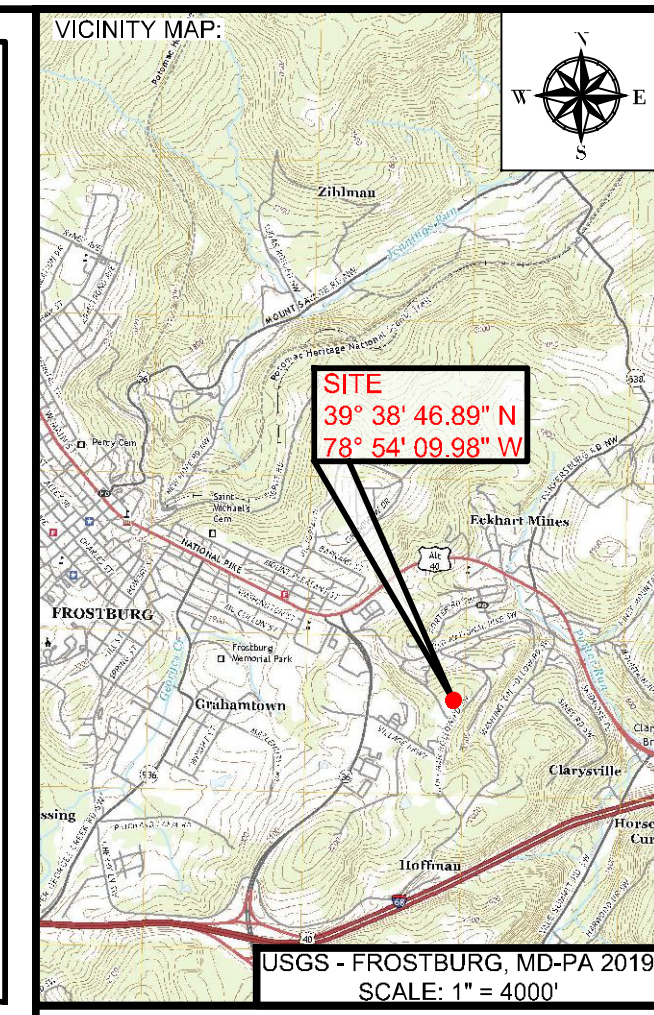
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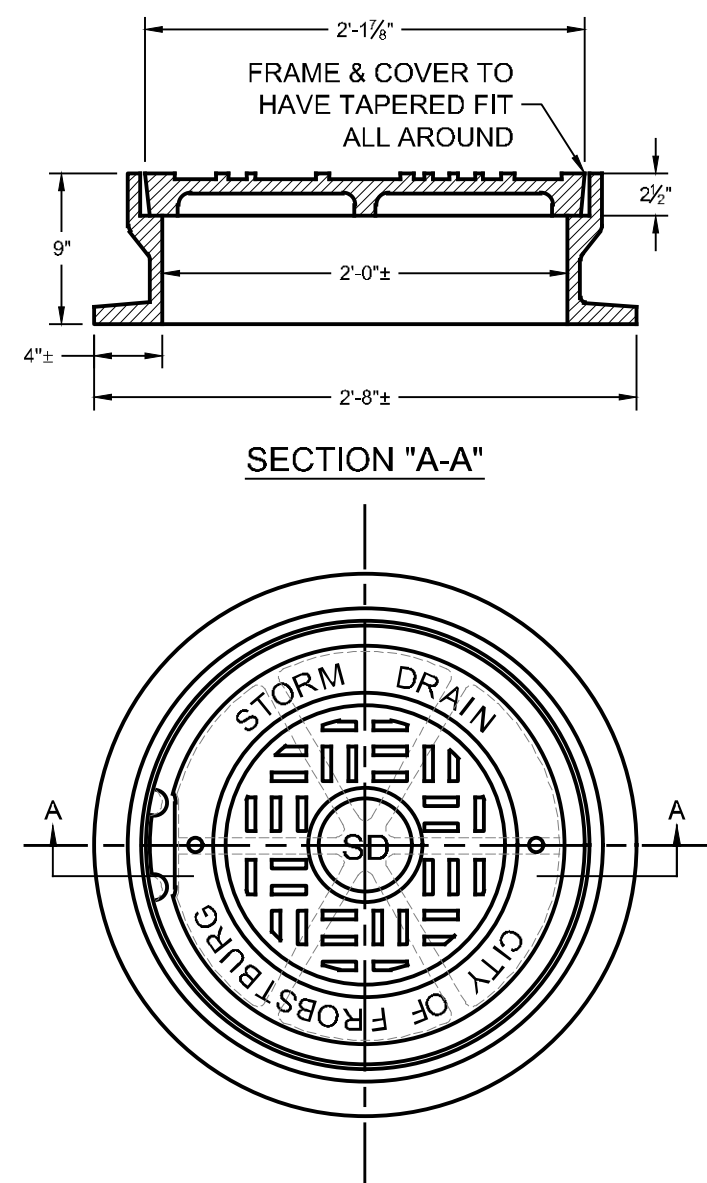
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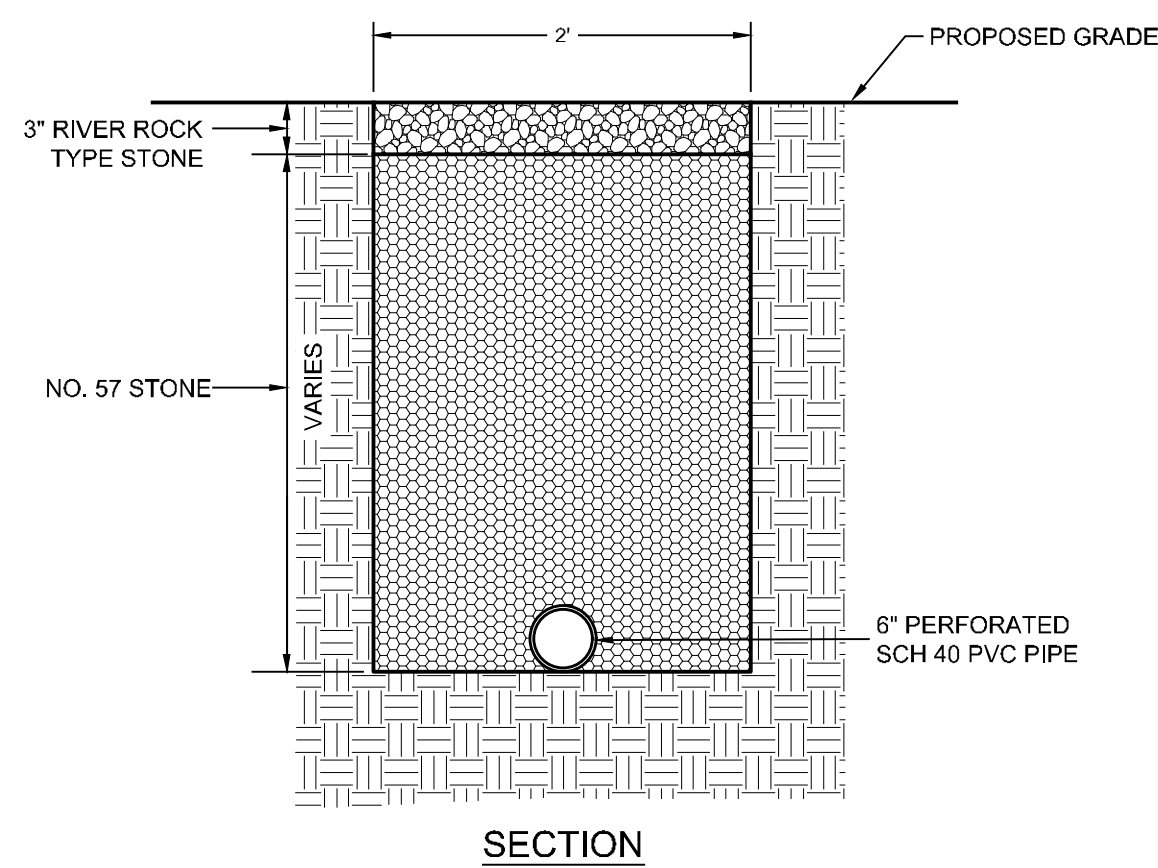
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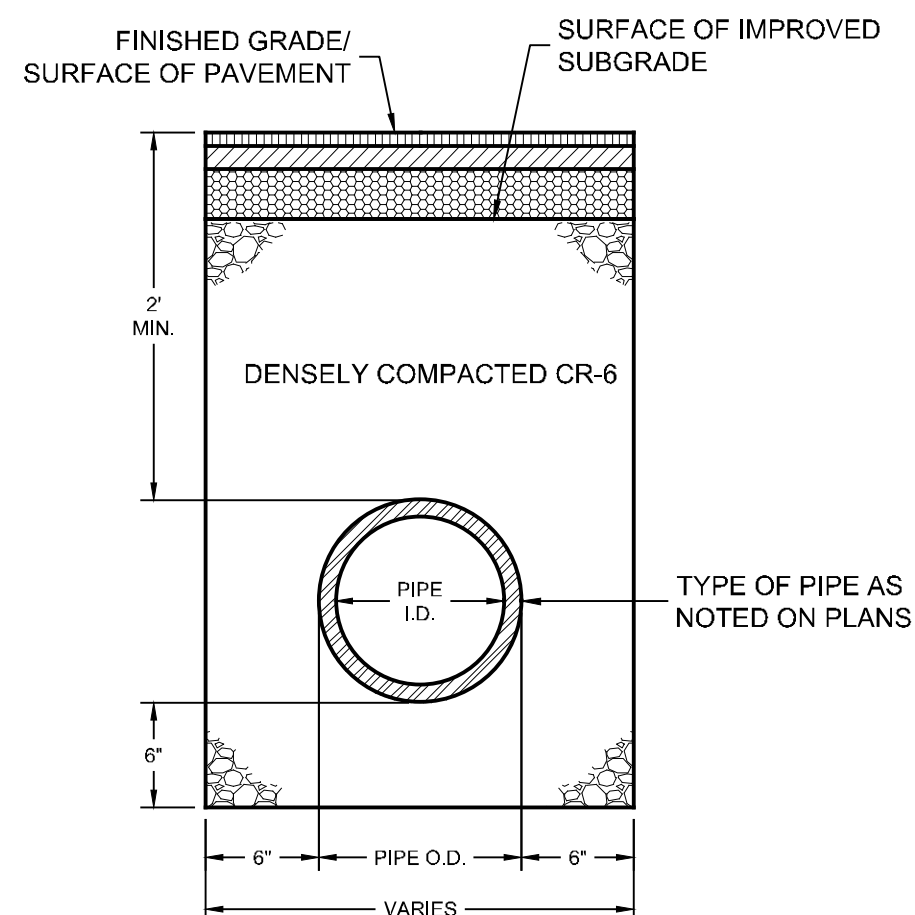


- NOTES:**
1. MANHOLE COVERS TO BE FURNISHED WITH VENT HOLES.
  2. TOTAL AVERAGE WEIGHT 400 LBS.

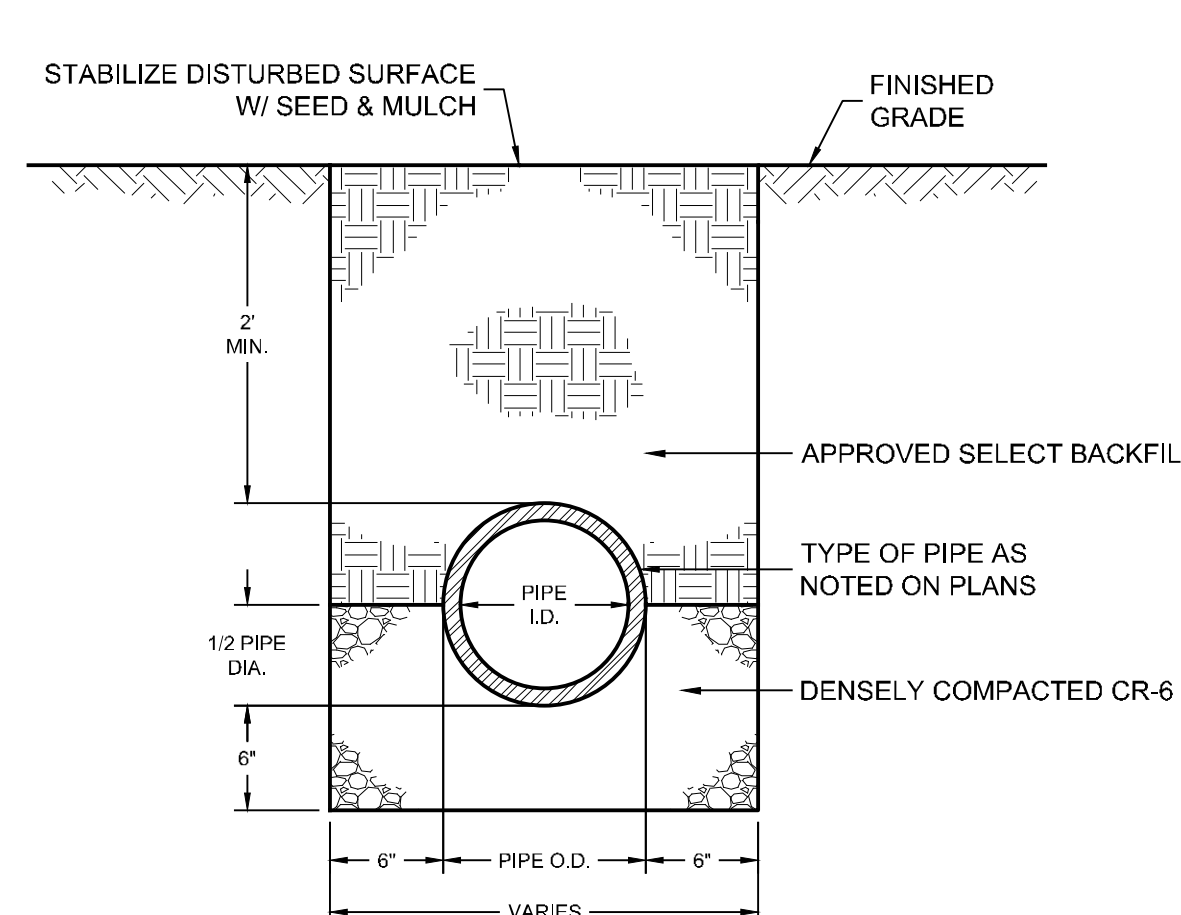
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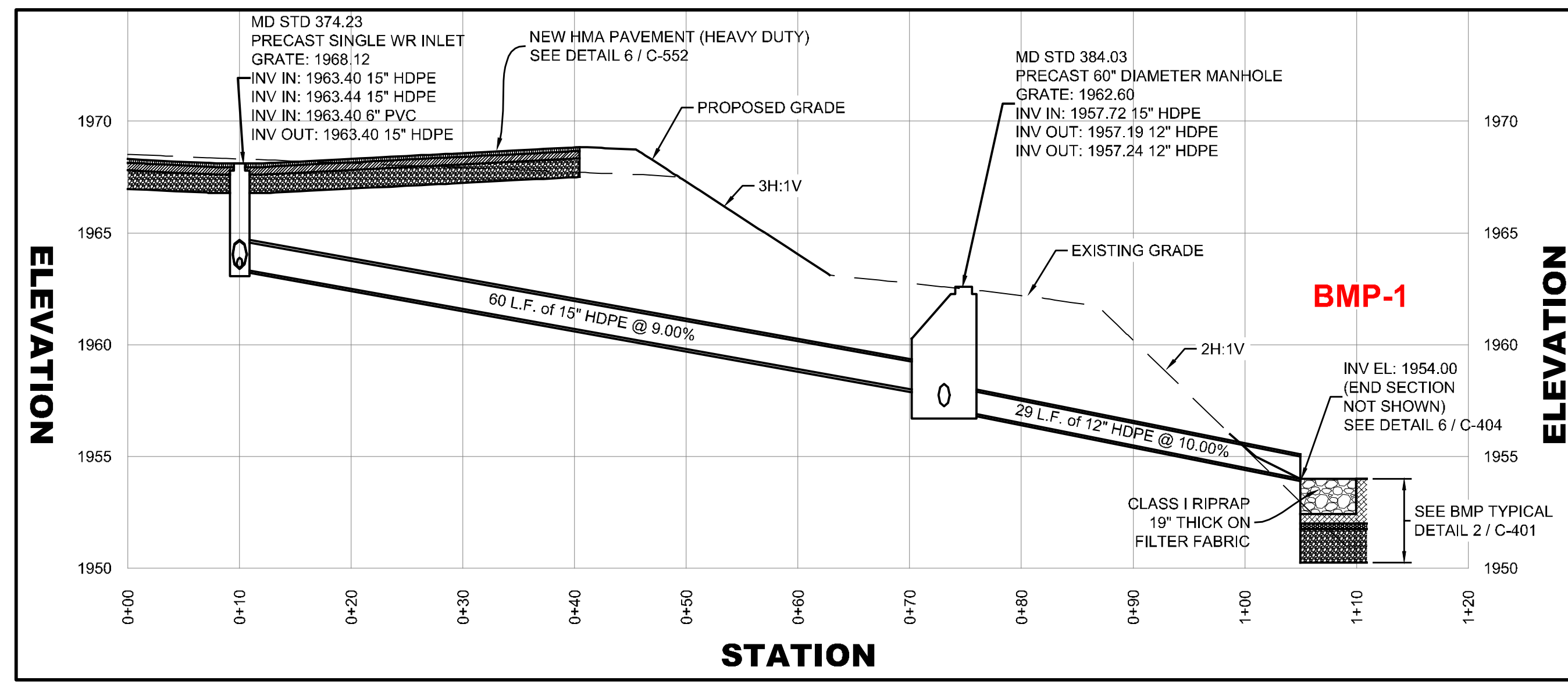
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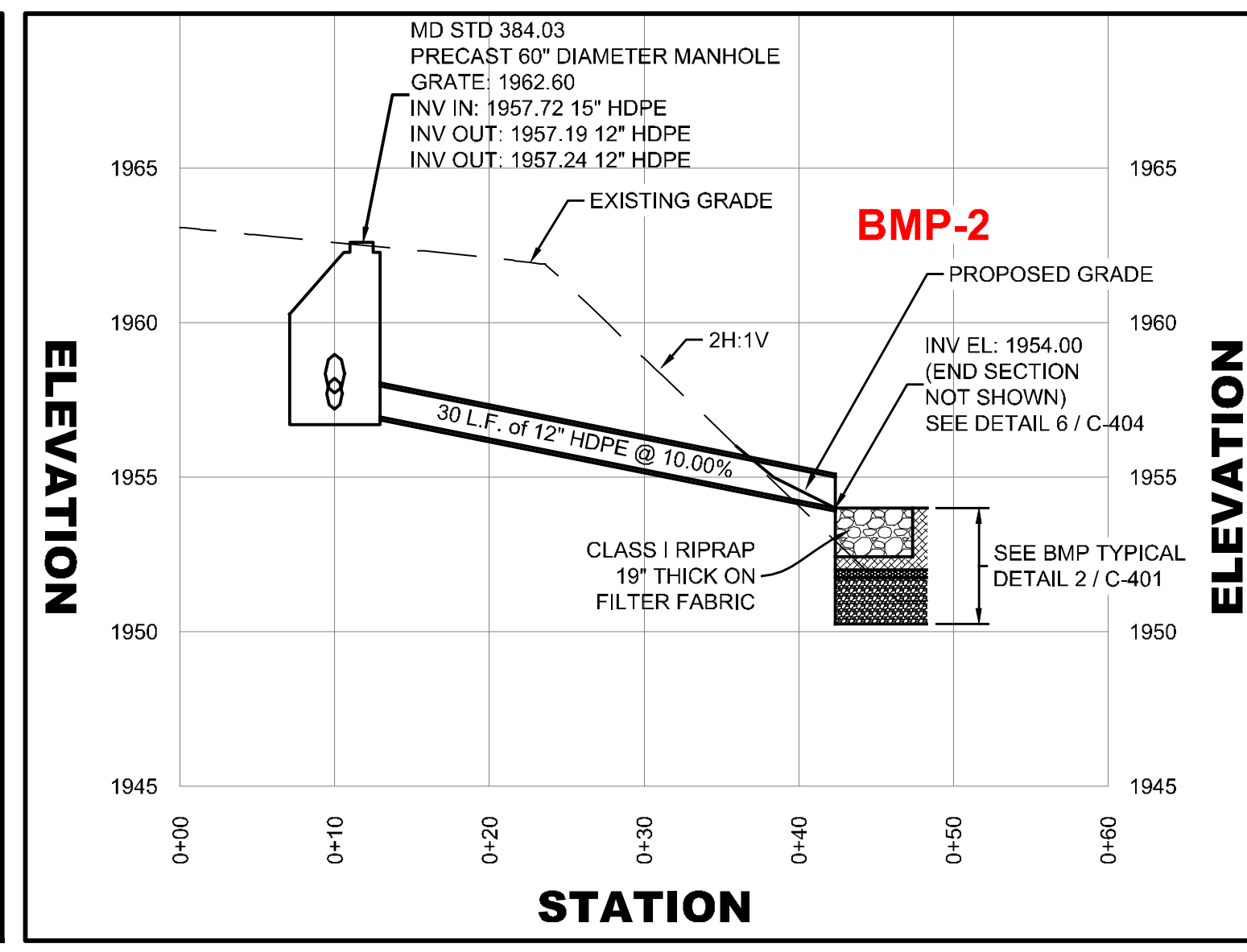
**9 STORM PIPE TRENCH DETAIL FOR PAVED AREAS**  
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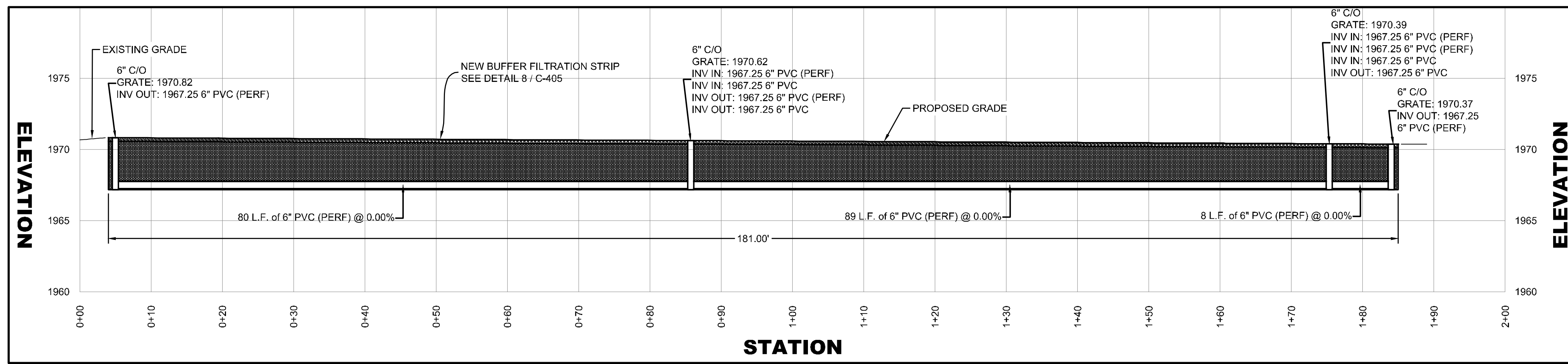
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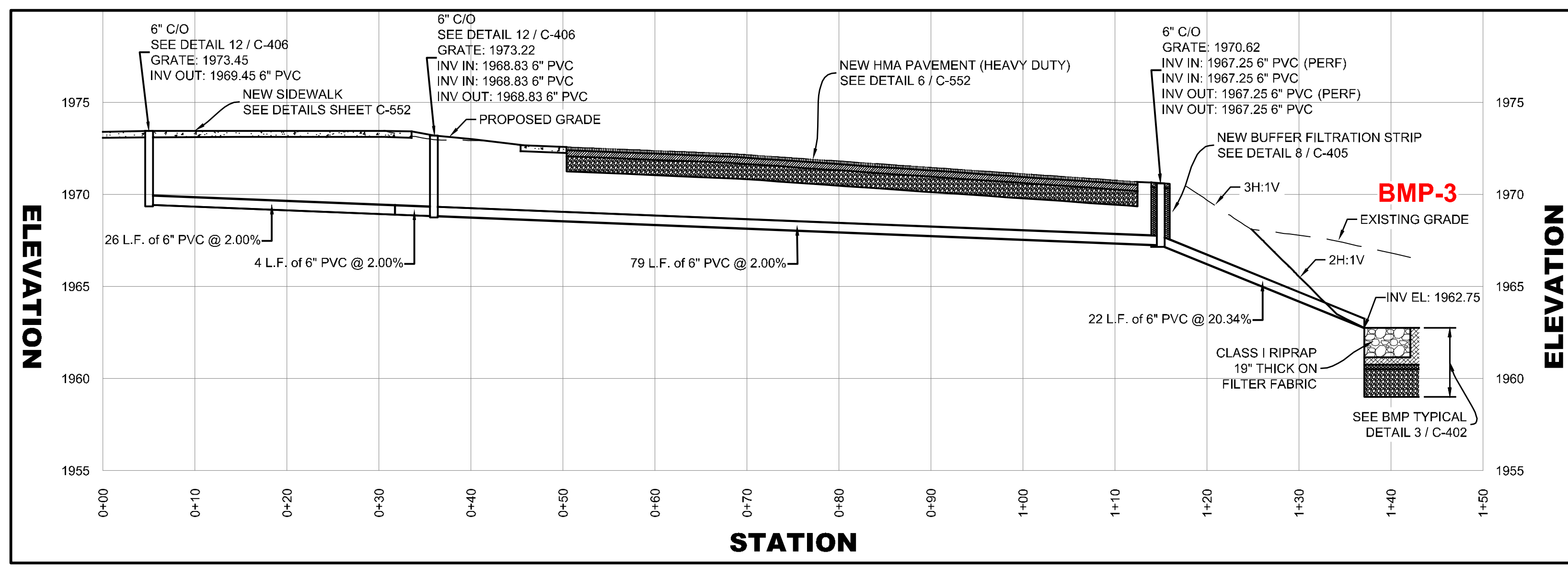
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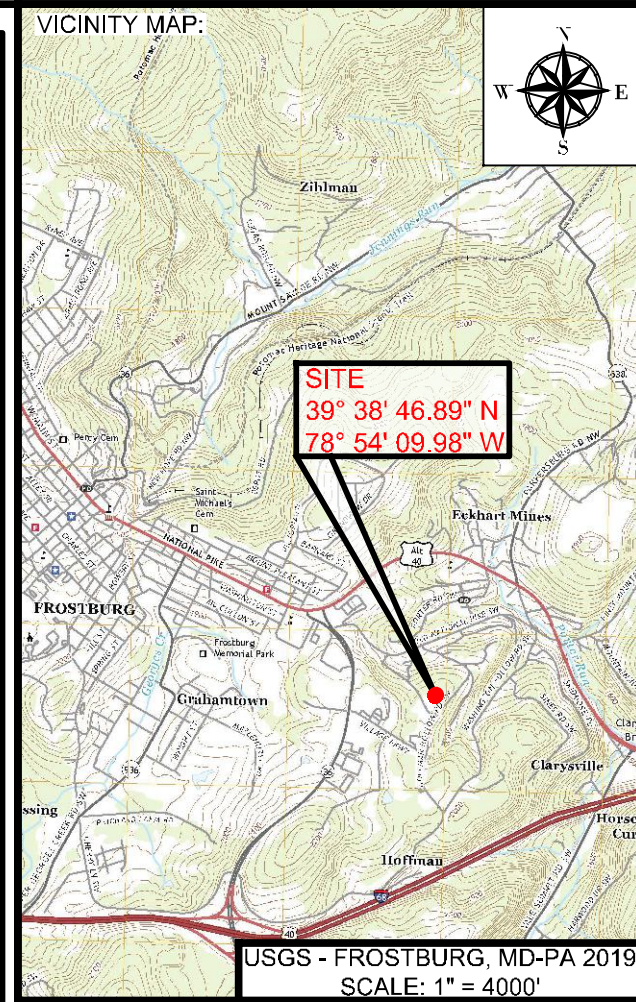
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**Profile - O-O**  
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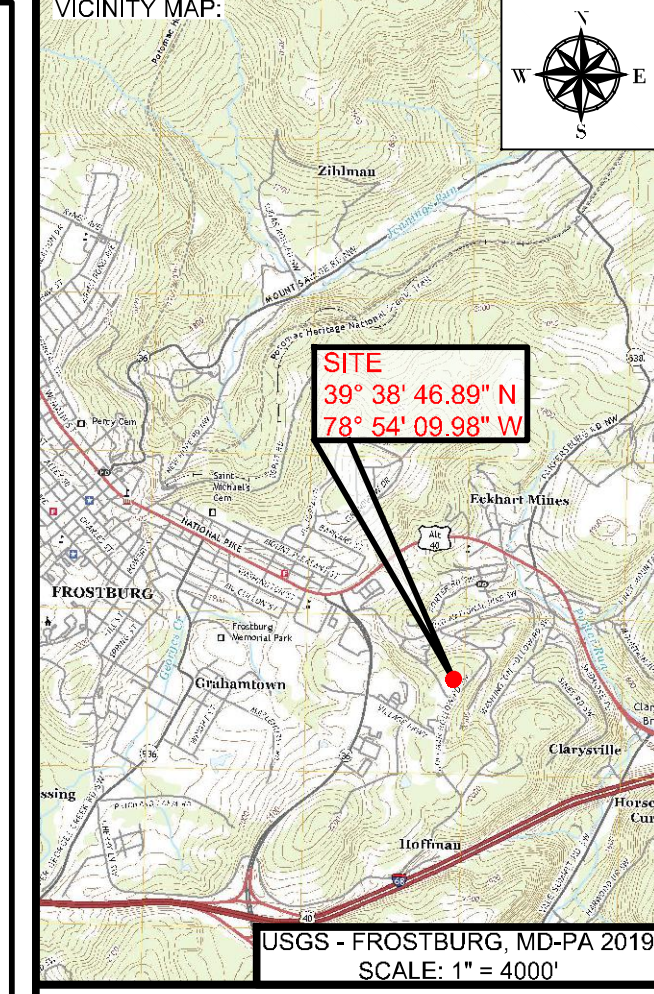
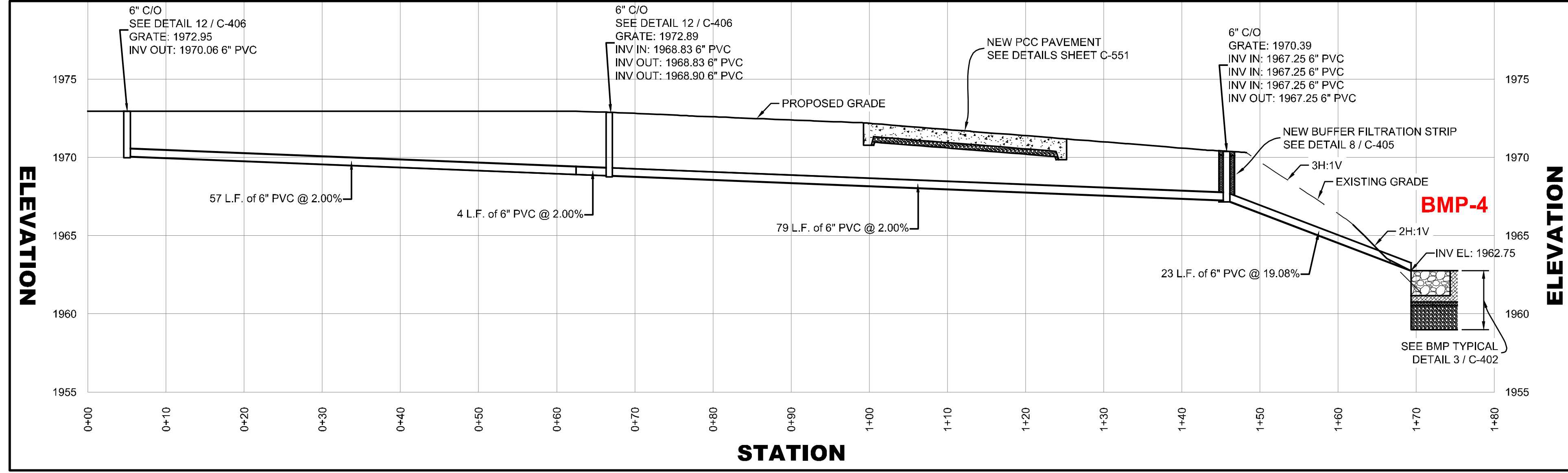
**STORM DRAIN DETAILS**  
IFR: 7/05/2024

SHEET #:  
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**NOTICE OF REQUIRED STORMWATER MANAGEMENT CONSTRUCTION INSPECTIONS FOR BIORETENTION**  
 THE FOLLOWING INSPECTIONS ARE REQUIRED TO BE PERFORMED BY THE QUALIFIED PROFESSIONAL FOR THE CONSTRUCTION OF ANY BIORETENTION FACILITY. ADDITIONAL INSPECTIONS MAY BE NEEDED BASED ON PROFESSIONAL ENGINEERING JUDGMENT. EACH INSPECTION IS REQUIRED AT THE START OF EACH STAGE. INSPECTOR MUST INITIAL AND DATE EACH STAGE FOR EACH STRUCTURE.

	BMP 1 DATE / INSPECTOR	BMP 2 DATE / INSPECTOR	BMP 3 DATE / INSPECTOR	BMP 4 DATE / INSPECTOR	BMP 5 DATE / INSPECTOR
<b>EXCAVATION OF FACILITY</b> - PRIOR TO EXCAVATION, VERIFY SEDIMENT AND EROSION CONTROL FEATURES ARE IN PLACE TO PREVENT SEDIMENT INFLOW. VERIFY ALL FLAGGING REQUIRED IN THE AREA OF SENSITIVE AREA PROTECTION. VERIFY GRADING IS ACCURATELY STAKED-OUT AND RESTAKED AS NEEDED. FACILITY DIMENSIONS SHALL BE VERIFIED AND SOILS CHECKED FOR INFILTRATION. VERIFY SCARIFICATION OF INVERT AS NEEDED. VERIFY CONTRIBUTING AREA IS PERMANENTLY STABILIZED. VERIFY THAT WATER IS NOT PRESENT. VERIFY THAT COMPACTION OF FACILITY BASE IS MINIMIZED.					
<b>PLACEMENT OF OUTFALL STRUCTURE</b> - VERIFY SIZE, MATERIAL, LOCATION, AND ELEVATIONS OF OUTFALL STRUCTURE AND PIPES. VERIFY PIPE JOINTS ARE SEALED.					
<b>PLACEMENT OF UNDERDRAINS AND OBSERVATION WELLS</b> - LOCATIONS, SIZE, AND MATERIAL OF UNDERDRAIN AND OBSERVATION WELLS SHALL BE VERIFIED PRIOR TO STONE PLACEMENT. VERIFY PIPE ENDS CAPPED. VERIFY 3" GRAVEL COVER.					
<b>PLACEMENT OF FILTERING MEDIA</b> - VERIFY BOTTOM LAYER MATERIAL AND THICKNESS. VERIFY SAND AND/OR FILTER MEDIA LAYER MATERIAL THICKNESS. VERIFY PEA GRAVEL LAYER. VERIFY TOP FILTER MEDIA LAYER.					
<b>STABILIZATION AND LANDSCAPING</b> - VERIFY SITE TOP SOILED, DEEDED, AND MULCHED. VERIFY LOCATION, SIZE, TYPE, AND NUMBER OF PLANTED LANDSCAPE MATERIAL. VERIFY NO MORE THAN 1/8 INCH ROOT BALL EXPOSED. VERIFY PLANTING STOCK KEPT MOIST DURING ON-SITE STORAGE.					
<b>SIGNAGE</b> - VERIFY PLACEMENT OF SNOW STOCKPILE SIGNS.					



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 CHECKED: MB SCALE: AS NOTED  
 APPROVED: MB CRD FILE: 23088

BBA# 2023088  
 SHEET TITLE:

**MICROBASIN & STORM DRAIN DETAILS**  
 IFR: 7/05/2024  
 SHEET #:  
 C-406

**PLANTING NOTES**

- LOW MARSH PLANTS (ARROW ARUM, DUCK POTATO, BURREED, SPATTERDOCK, SOFTTRUSH, HOLLY, AND BLUEBERRY) SHALL BE INSTALLED AS INDIVIDUAL PLANTS, 12" TO 24" ON CENTER, PLACED AT RANDOM WITHIN THE DESIGNATED AREA.
- SHALLOW MARSH SEEDED PLANTS (RICE CUTGRASS, SEDGES, AND SWITCHGRASS) SHALL BE INSTALLED AS A SEED MIX WITHIN THE DESIGNATED AREA. INSTALL COMMERCIAL SEED MIX AT 20 LBS. PER ACRE ACCORDING TO MANUFACTURER'S INSTRUCTIONS. SHALLOW MARSH INDIVIDUAL PLANTS (HOLLY AND BLUEBERRY) SHALL BE INSTALLED AT 48" ON CENTER, PLACED AT RANDOM WITHIN THE DESIGNATED AREA.
- RECOMMENDED SUPPLIERS FOR WETLANDS PLANTS:
  - ENVIRONMENTAL CONCERN, INC.  
210 WEST CHEW AVENUE  
SAINT MICHAELS, MARYLAND 21663  
(410) 745-9620
  - SYLVA NATIVE NURSERY AND SEED COMPANY  
NEW FREEDOM, PENNSYLVANIA  
(717) 227-0073
  - ERNST CONSERVATION SEEDS  
900 MERCER PIKE  
MEADVILLE, PENNSYLVANIA 16335  
(814) 338-2404

- ELK RIDGE NATURE WORKS, LLC  
283 ELK RIDGE LAND  
GRANTSVILLE, MARYLAND 22536  
(301) 895-3686
  - AMERICAN NATIVE PLANTS, INC.  
PO BOX 158  
PERRY HALL, MD 21128  
FAX (410) 529-3883
  - CLEAR RIDGE NURSERY  
217 CLEAR RIDGE RD  
UNION BRIDGE, MD 21781  
(410) 775-7700
- IF A MINIMUM COVERAGE OF 50% IS NOT ACHIEVED IN THE PLANTED AREAS AFTER THE SECOND GROWING SEASON, A REINFORCEMENT PLANTING IS REQUIRED.
  - SEE MDE SWM MANUAL FOR PLANTING DATES AND OTHER SPECIFICATIONS.

**FILTER MEDIA**  
 THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICROBIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:  
 SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION) ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).  
 CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.  
 PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED INTO THE SOIL TO INCREASE OR DECREASE PH.

**COMPACTION**  
 IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

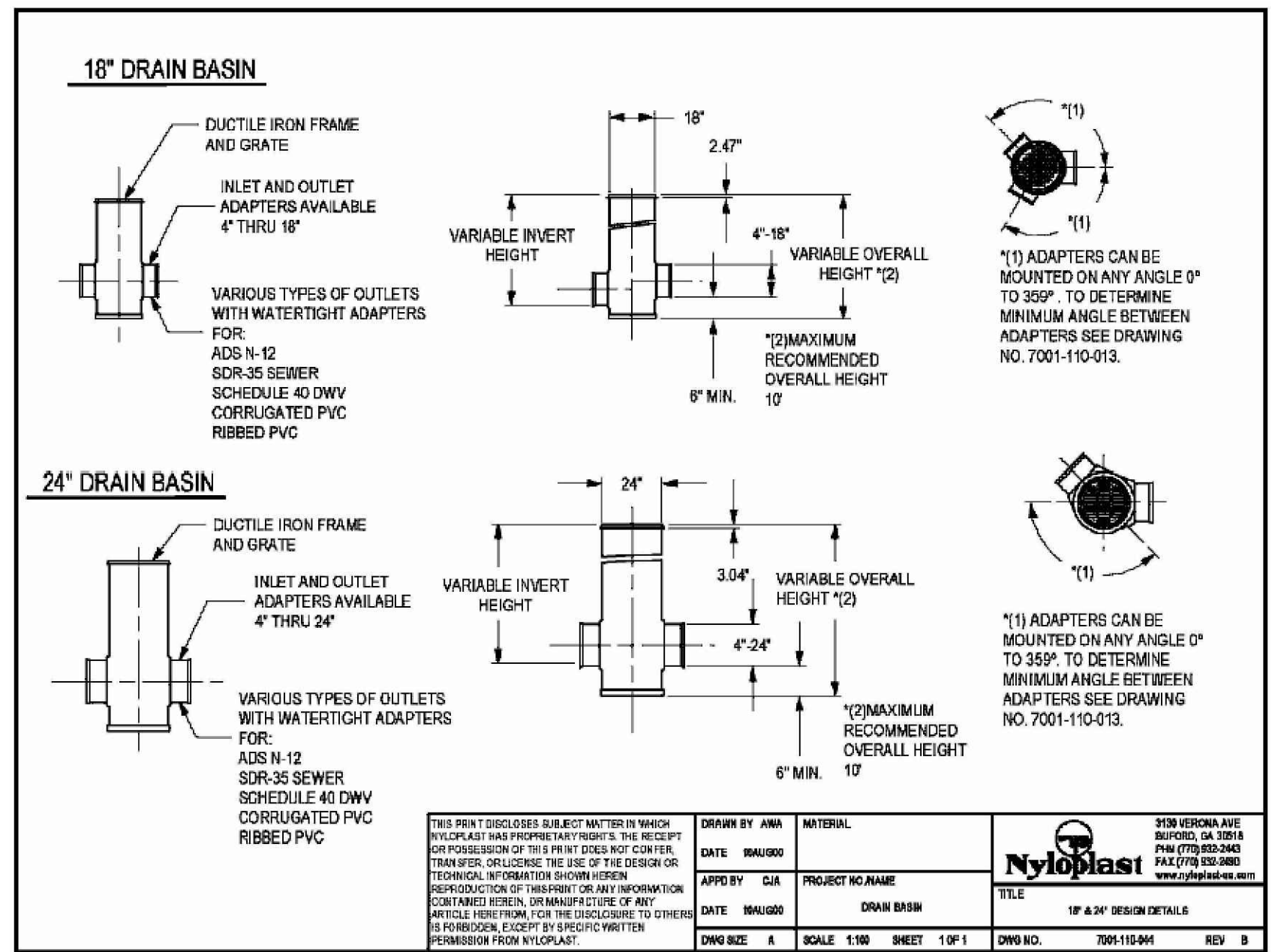
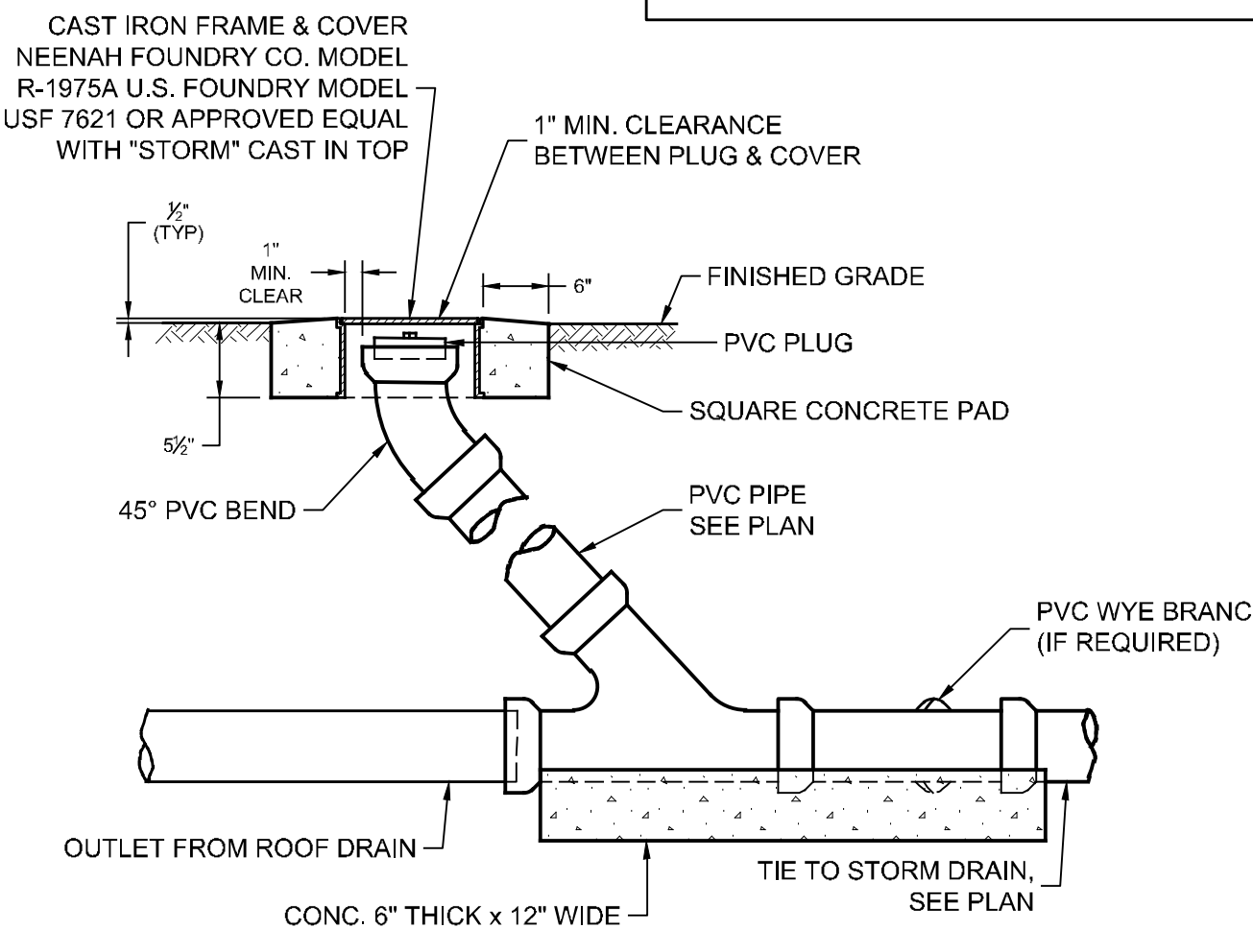
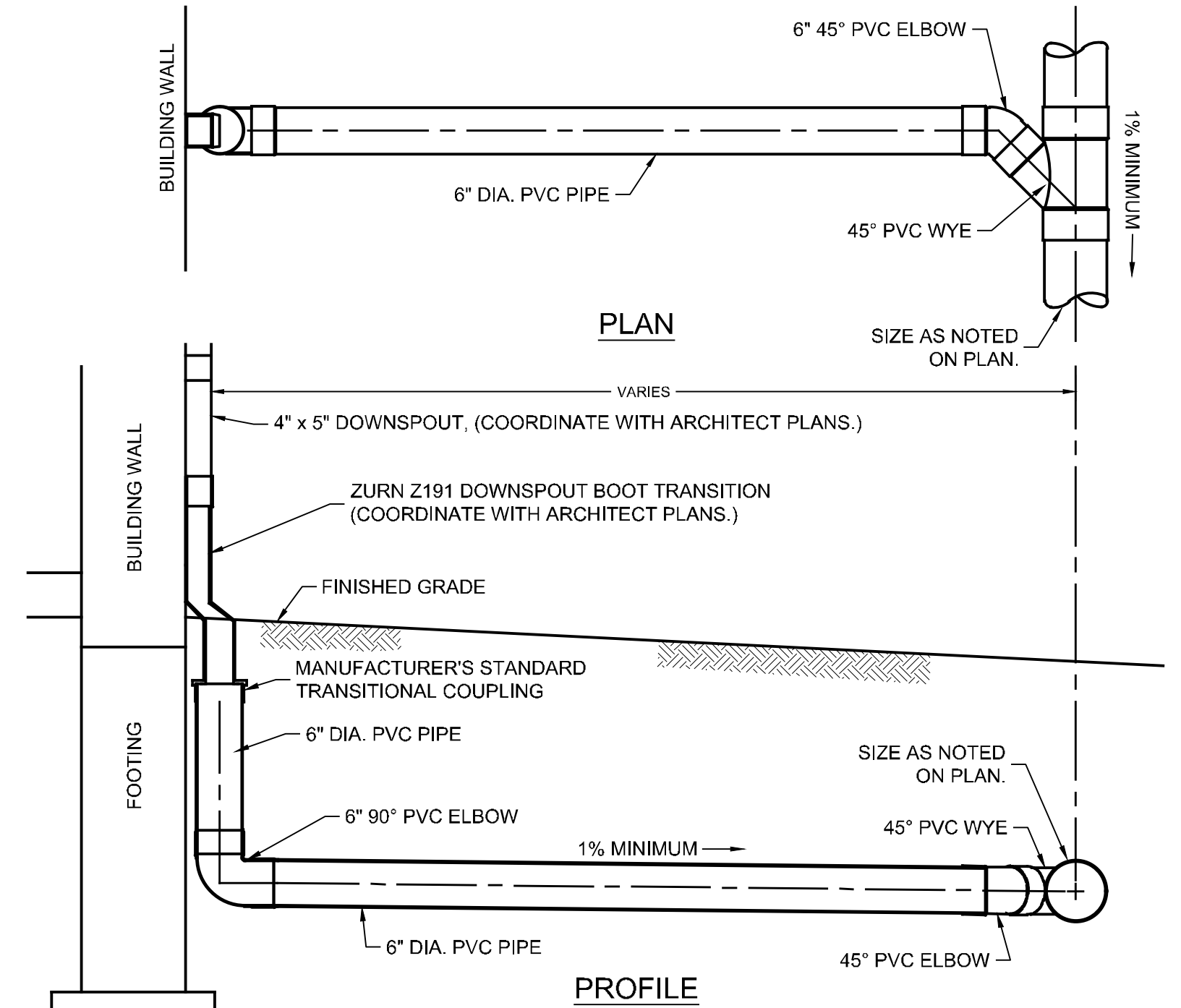
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SAND AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

**Table B.4.1 Materials Specifications for Micro-Bioretentation, Rain Gardens & Landscape Infiltration-**

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2' to 4' deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	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
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	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or 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 1/4-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 350.8/89; vertical loading [H-30 or H-20]; allowable horizontal loading (based on soil pressure); 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.

**BIORETENTION AREA INSPECTIONS**

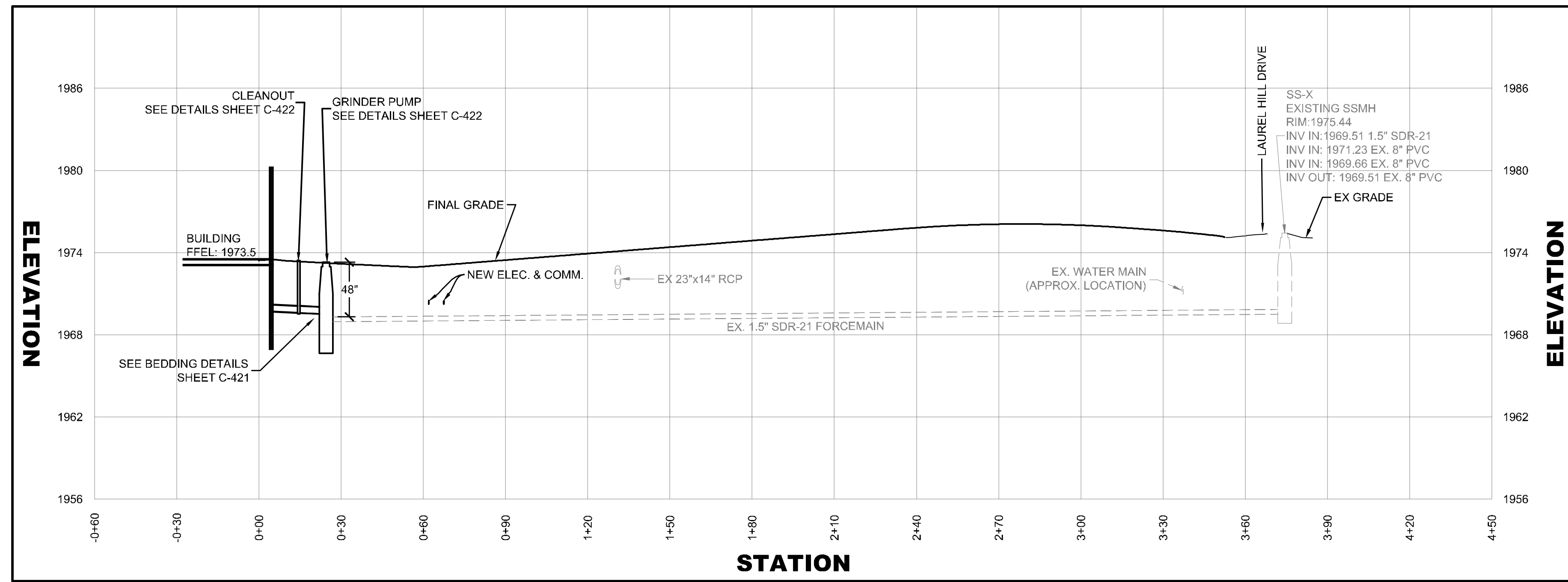
- REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CONTRACTING ENGINEER 48 HOURS PRIOR TO REQUIRED INSPECTION.
- DURING EXCAVATION OF SUBGRADE.
  - DURING PLACEMENT OF GEOTEXTILE.
  - DURING PLACEMENT AND BACKFILL OF UNDERDRAIN PIPE AND GRAVEL.
  - DURING PLACEMENT OF BACKFILL AND BIORETENTION SOIL MIXTURE.
  - DURING PLACEMENT OF MULCH.
  - DURING PLACEMENT OF PLANTS, (IF REQUIRED)



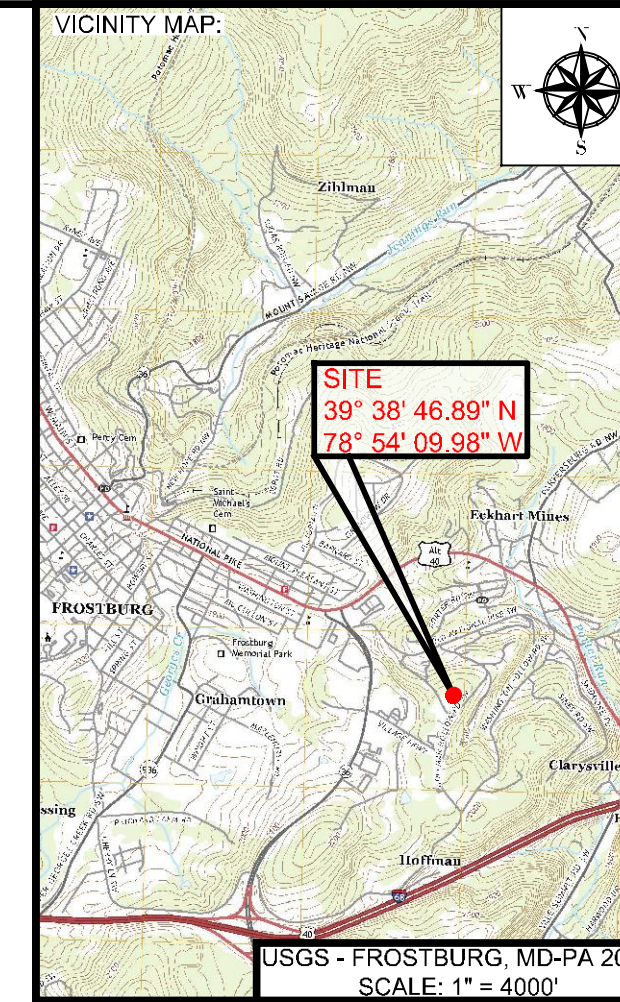
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**SANITARY H-H**  
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**1" = 30' (H)**



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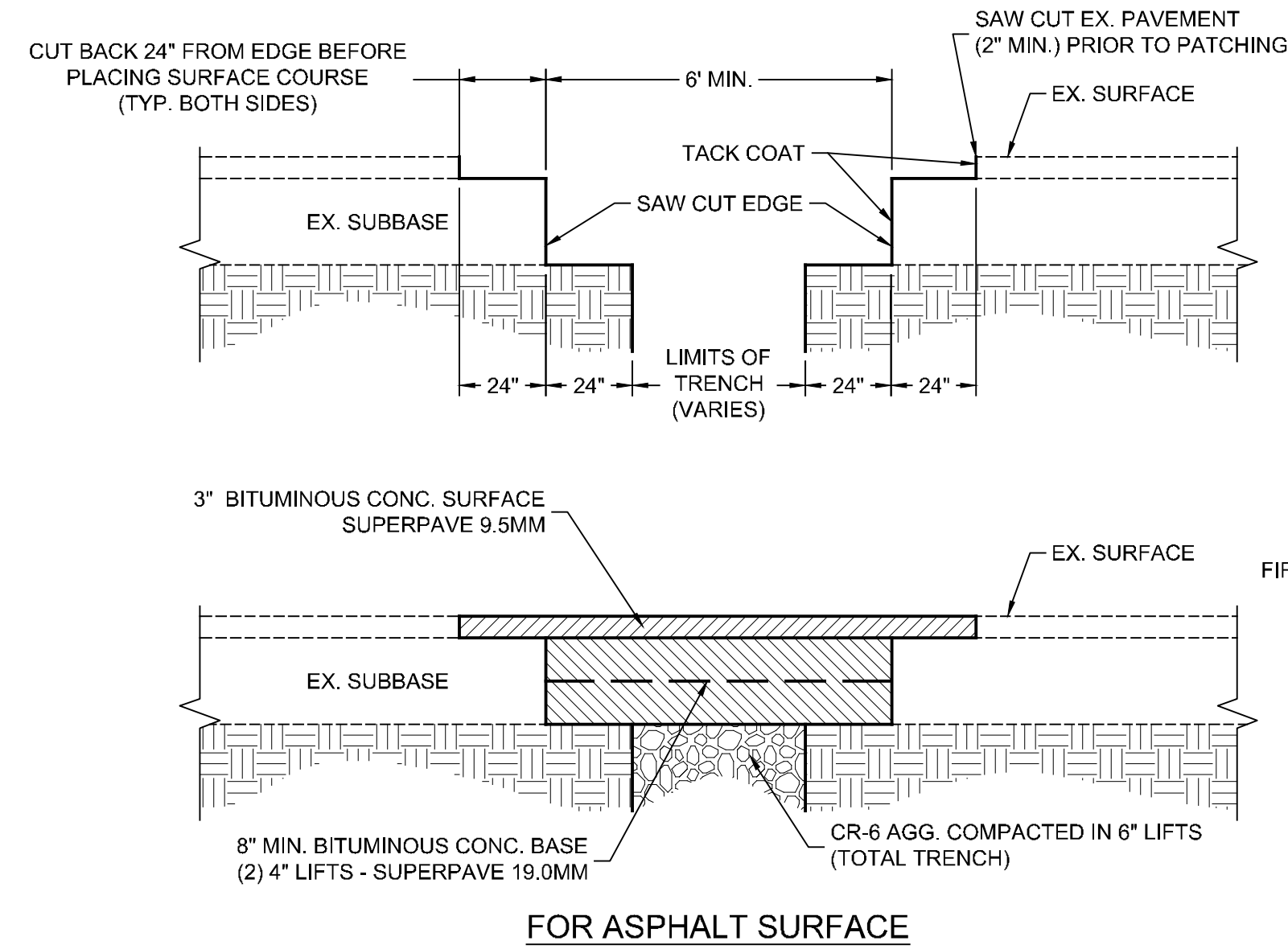


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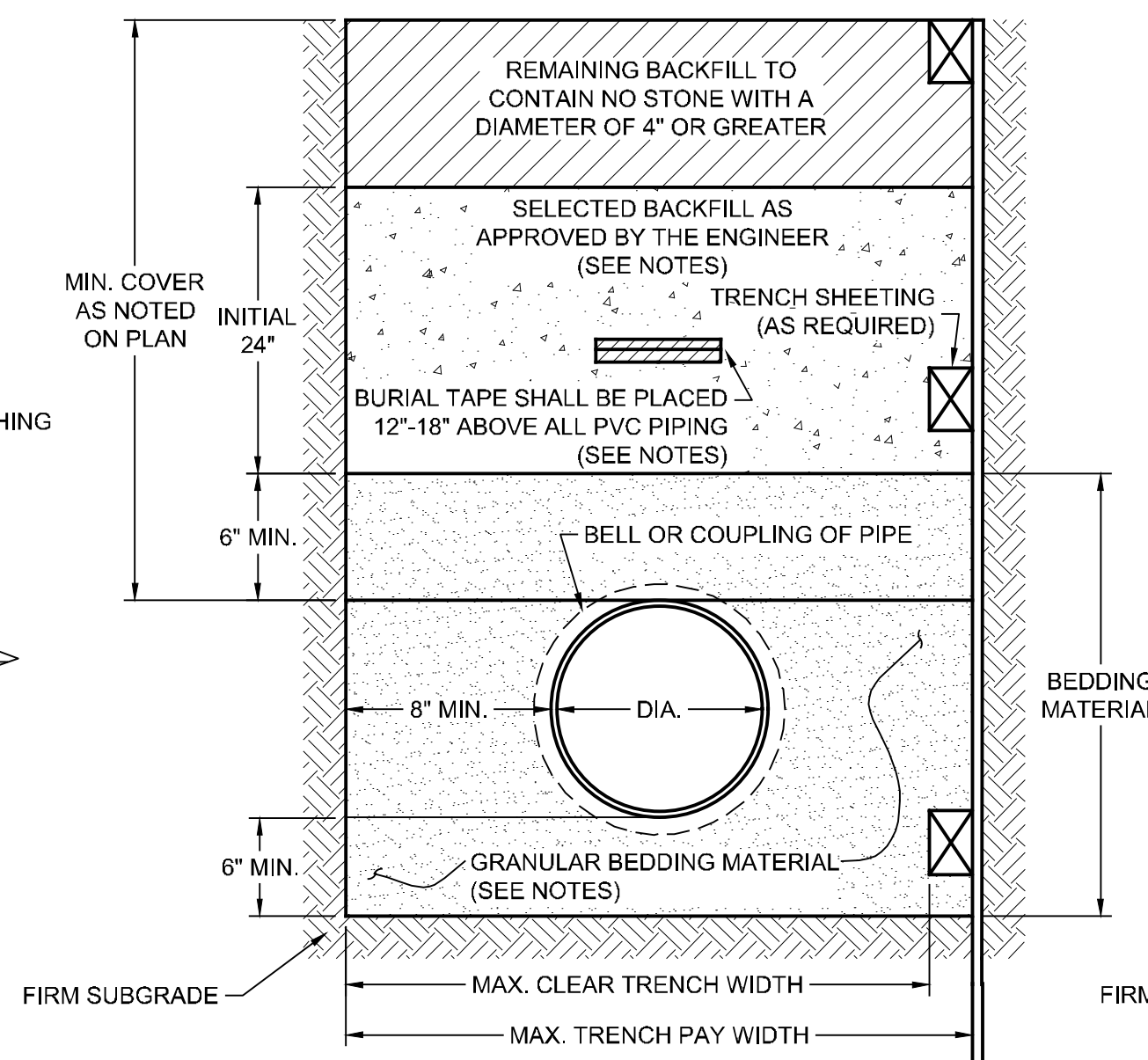
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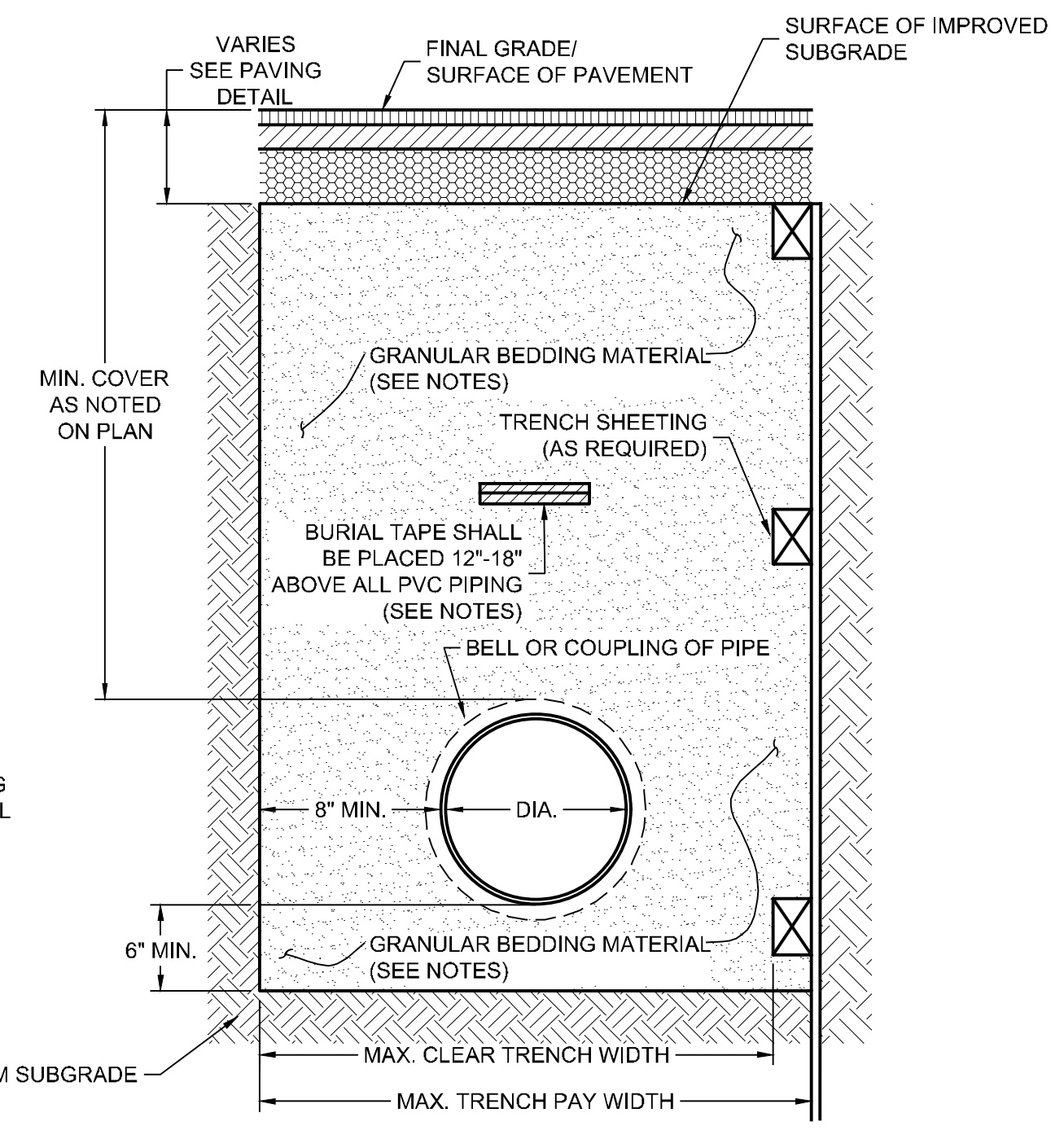
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**1** TRENCH PAVING DETAIL  
 NOT TO SCALE



**2** PIPE BEDDING DETAIL  
 FOR NON-TRAFFIC AREAS  
 NOT TO SCALE



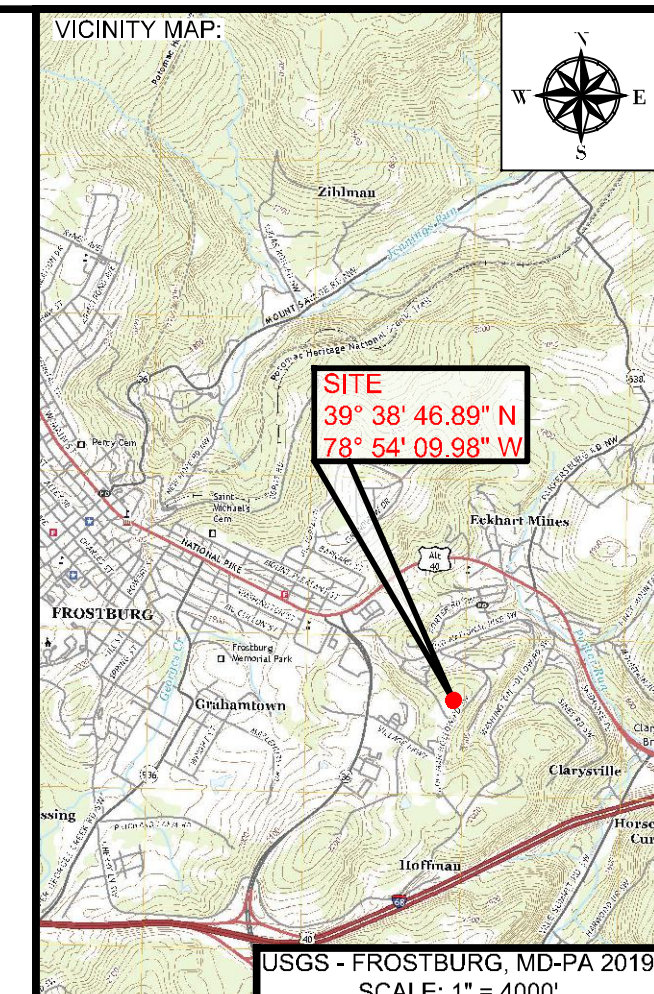
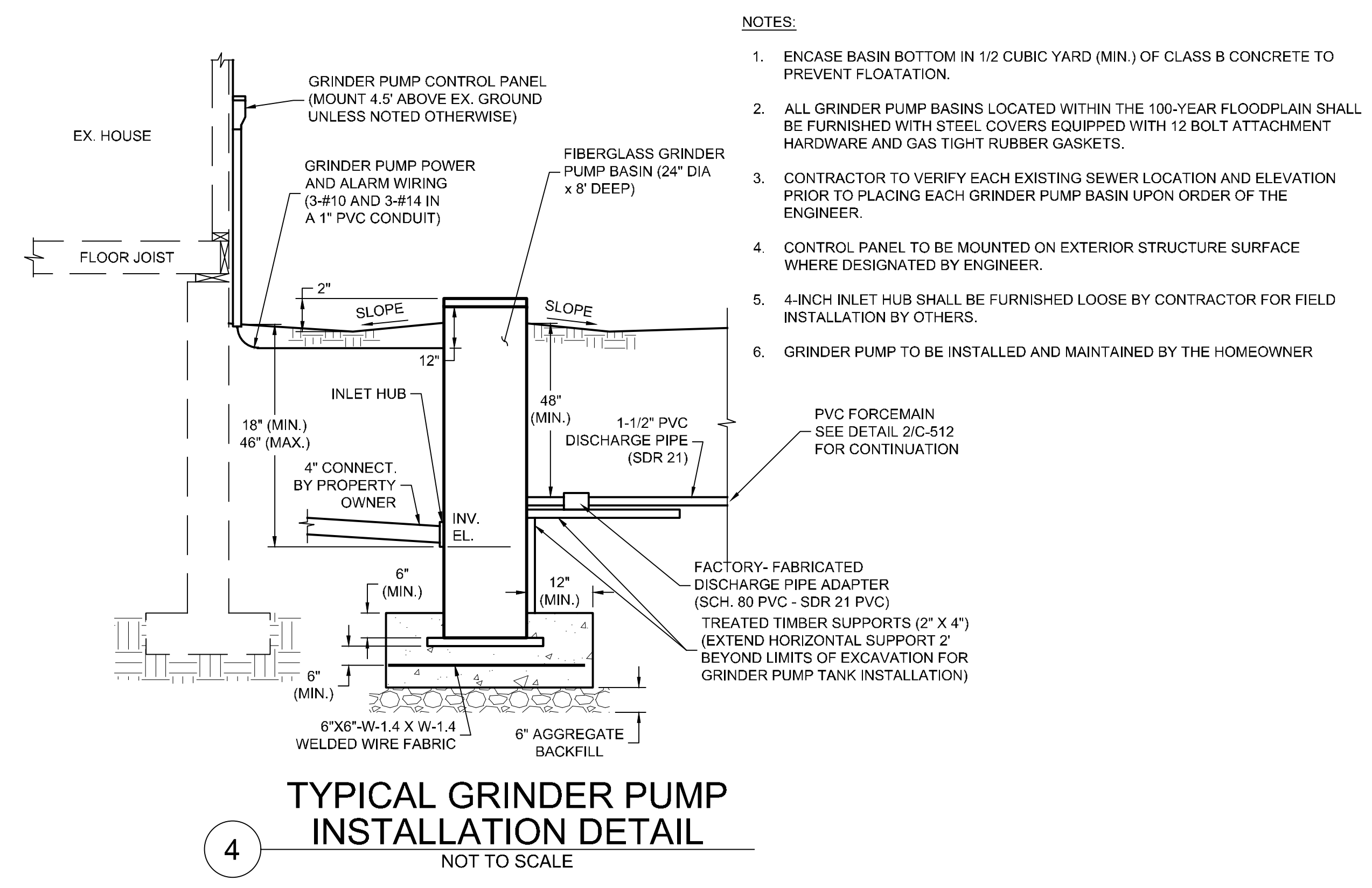
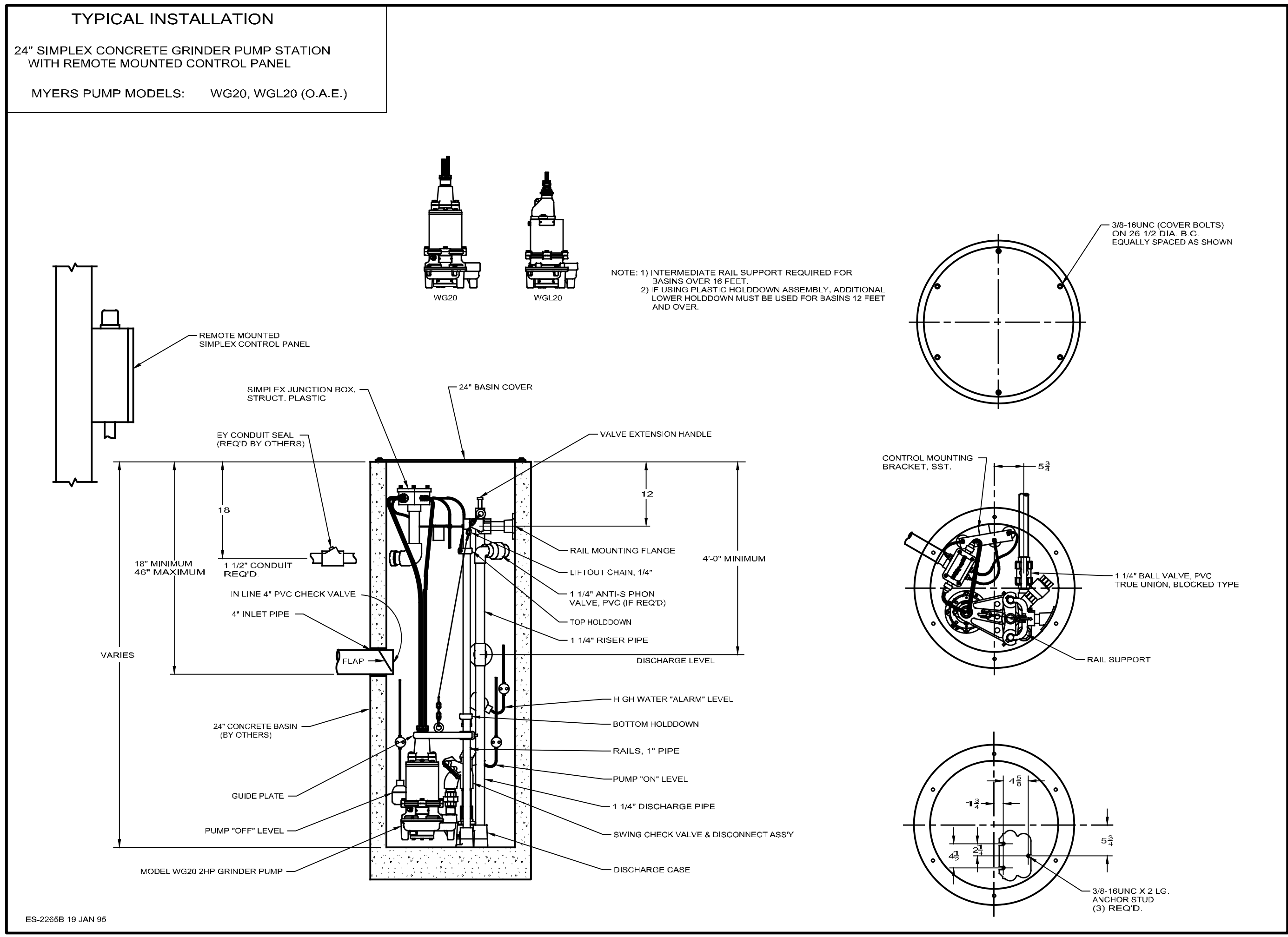
**3** PIPE BEDDING DETAIL  
 FOR PAVED AREAS  
 NOT TO SCALE

- NOTES:**
- THIS DETAIL APPLIES TO ALL POLYVINYL CHLORIDE (PVC) RIGID PLASTIC PIPE.
  - BEDDING MATERIAL SHALL BE QUARRY DUST OR CRUSHED STONE (CR6 OR CRD) WITH A MAXIMUM SIZE OF 3/4".
  - THE INITIAL 24" OF BACKFILL OVER THE PIPE BEDDING SHALL BE NO LARGER THAN NO. 67 AGGREGATE MEETING ASTM D448-86.
  - MAXIMUM TRENCH WIDTH SHALL BE ADEQUATE TO PROVIDE SPACE FOR PROPER JOINTING BUT SHALL NOT EXCEED 24" PLUS THE OUTSIDE DIAMETER OF THE PIPE.
  - BURIAL TAPE SHALL BE AT LEAST 4" WIDE AND METALLIC ON ONE SIDE. TAPE SHALL BE BLUE IN COLOR FOR WATERLINES AND GREEN FOR SEWER LINES.
  - ALL BEDDING MATERIAL AND BACKFILL SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-99.

- NOTES:**
- THIS DETAIL APPLIES TO ALL POLYVINYL CHLORIDE (PVC) RIGID PLASTIC PIPE.
  - BEDDING MATERIAL SHALL BE QUARRY DUST OR CRUSHED STONE (CR6 OR CRD) WITH A MAXIMUM SIZE OF 3/4".
  - THE TOP 12" BELOW SUBGRADE ELEVATION SHALL BE COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH AASHTO T-99.
  - MAXIMUM TRENCH WIDTH SHALL BE ADEQUATE TO PROVIDE SPACE FOR PROPER JOINTING BUT SHALL NOT EXCEED 24" PLUS THE OUTSIDE DIAMETER OF THE PIPE.
  - BURIAL TAPE SHALL BE AT LEAST 4" WIDE AND METALLIC ON ONE SIDE. TAPE SHALL BE BLUE IN COLOR FOR WATERLINES AND GREEN FOR SEWER LINES.
  - ALL BEDDING MATERIAL AND BACKFILL SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-99.

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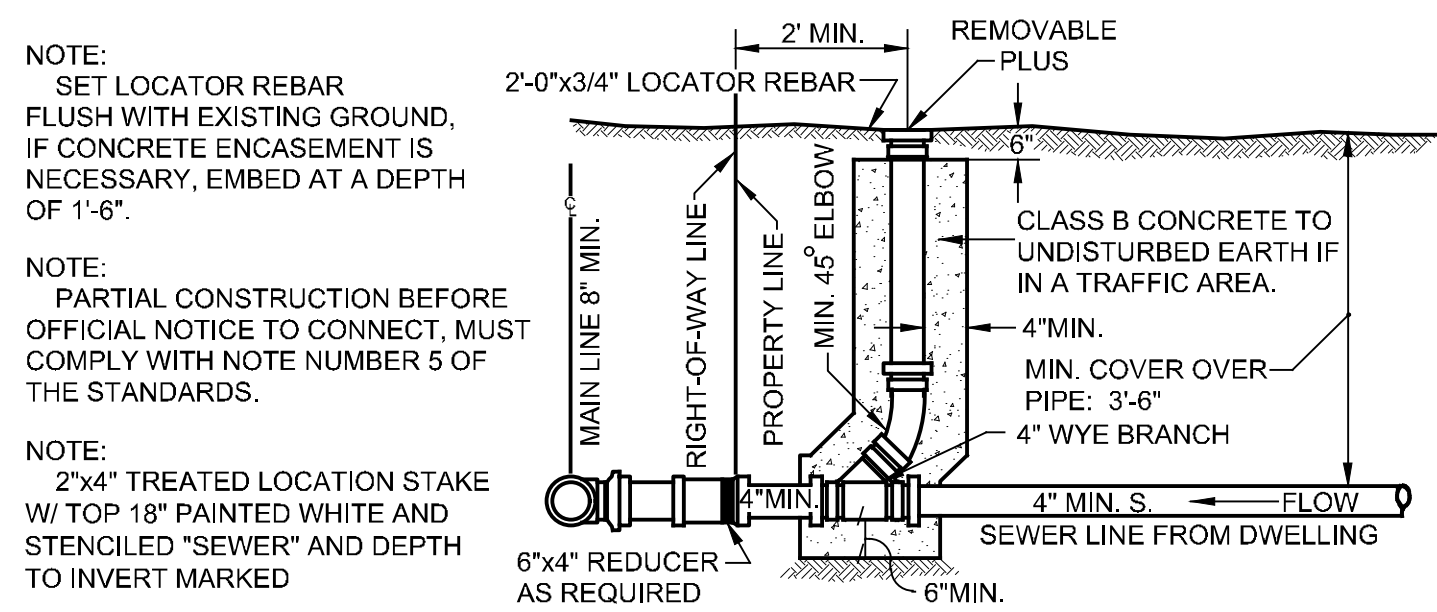
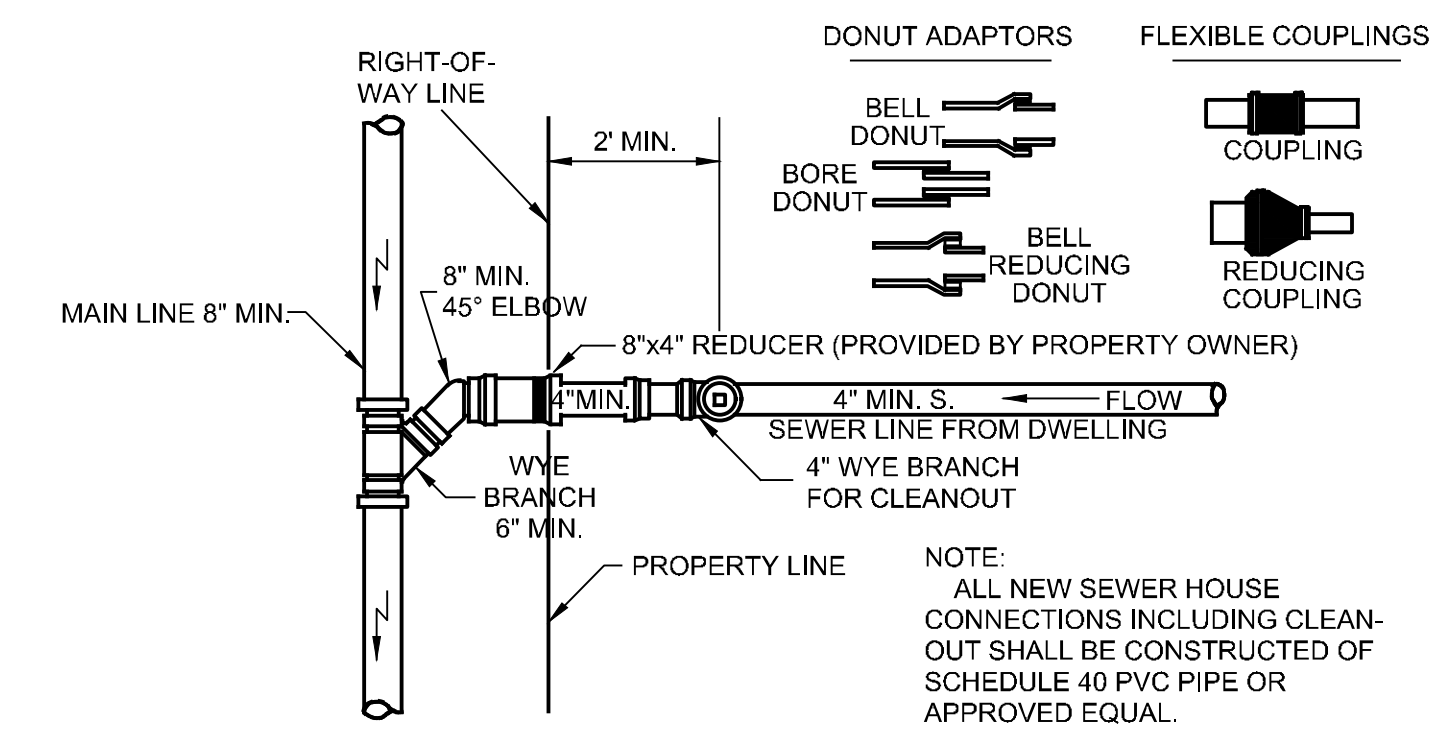
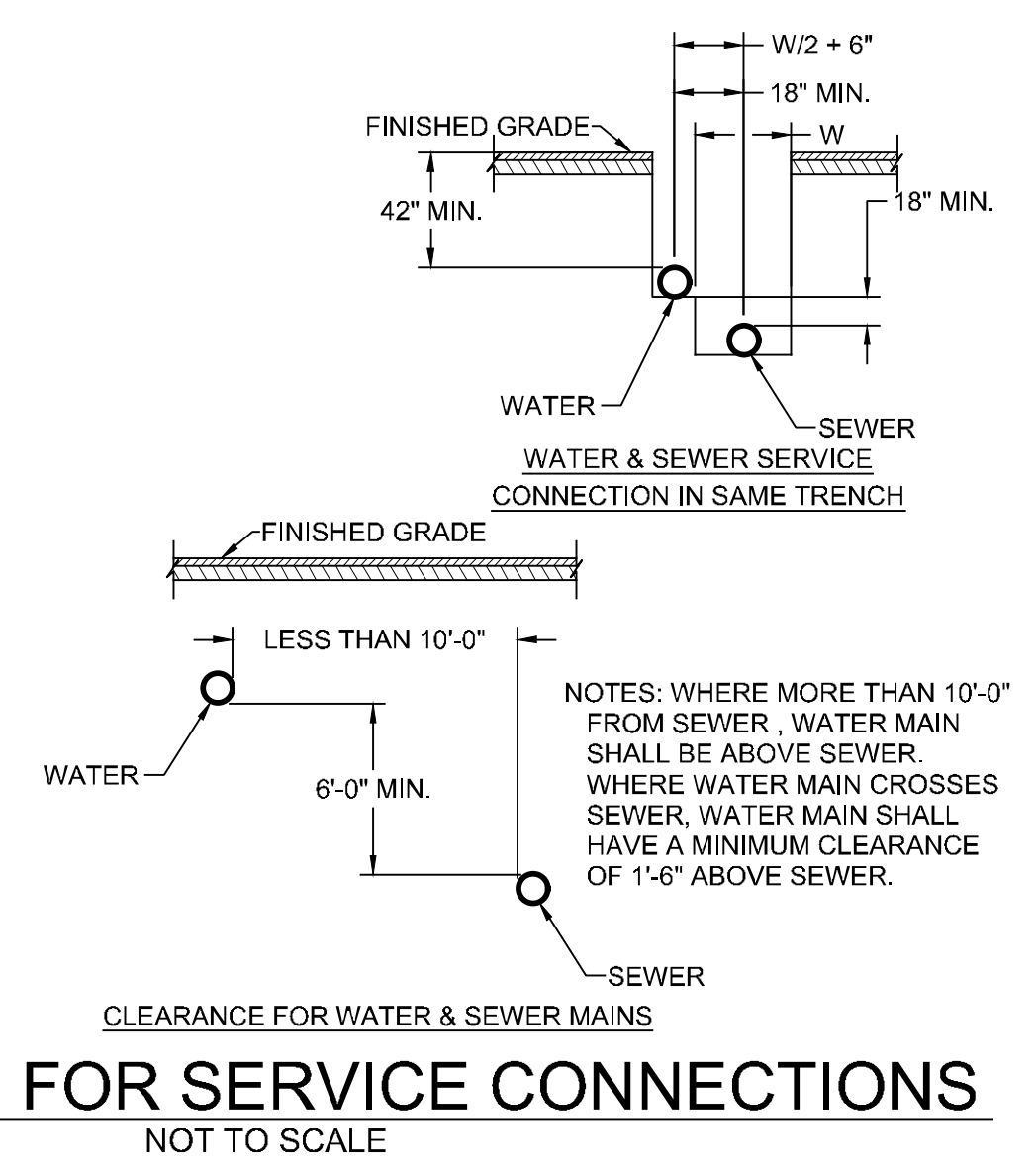
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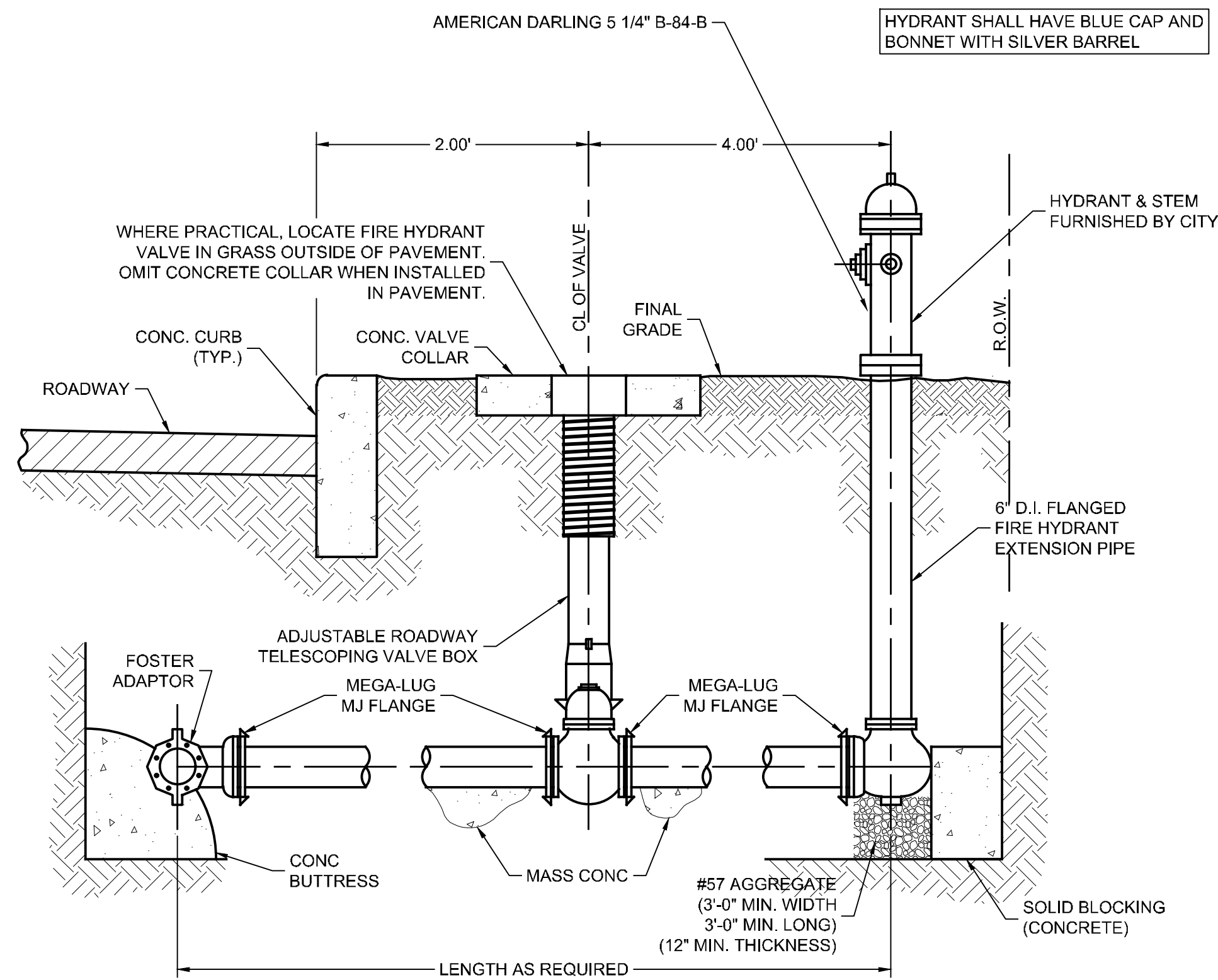
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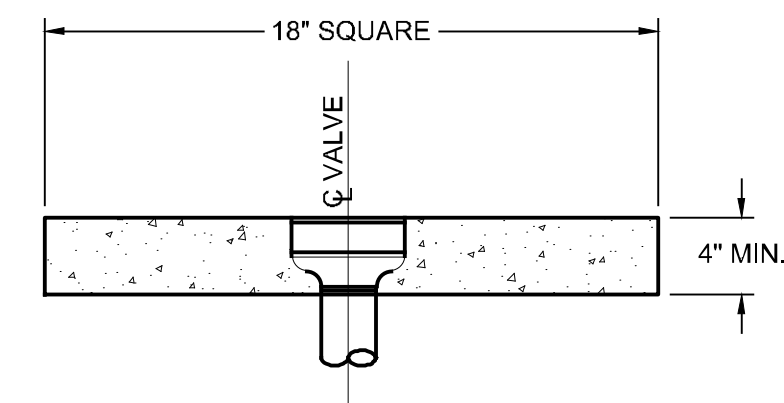


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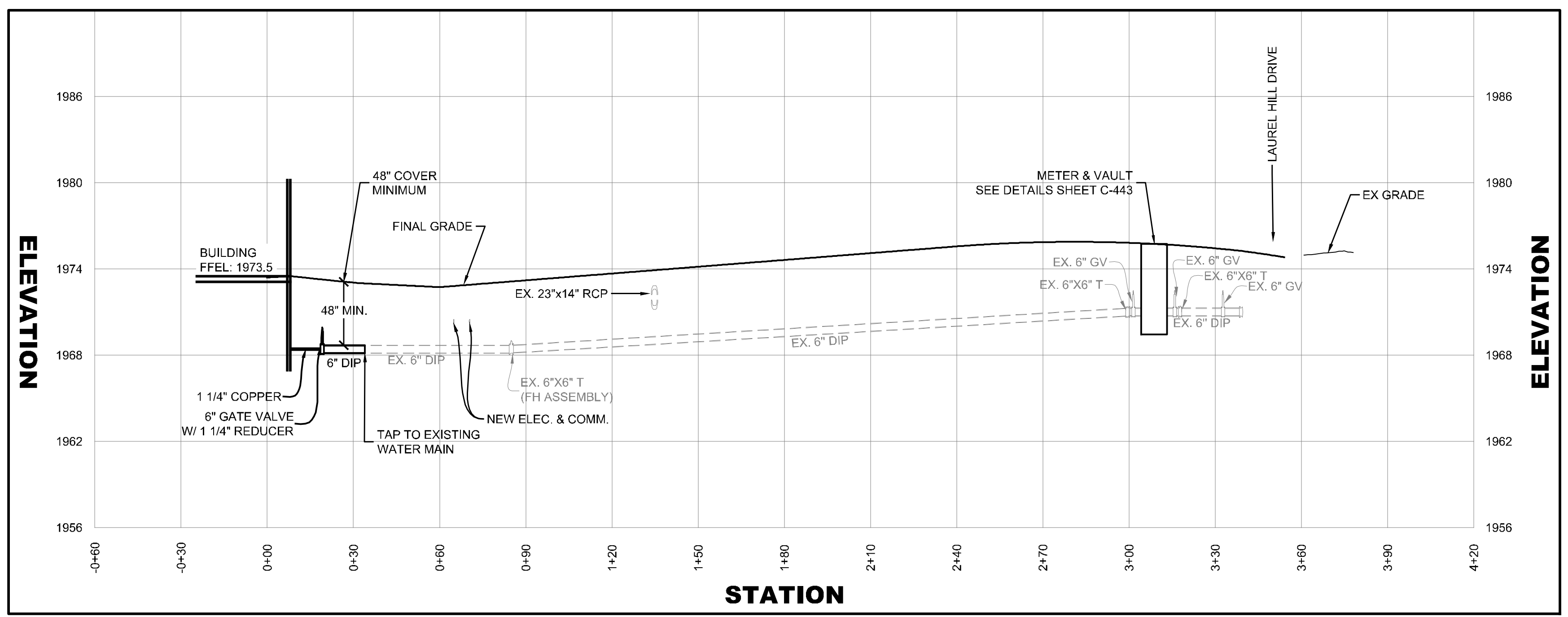
- NOTES:
- 3/4" GRAVEL OR CRUSHED STONE FULL WIDTH OF TRENCH FRONT OF HYDRANT TO END OF TRENCH BOTTOM TO POINT 4" ABOVE DRIP OPENING.
  - SEE SITE PLAN FOR LOCATION OF NEW FIRE HYDRANT AND GATE VALVE.

**1 FIRE HYDRANT ASSEMBLY**  
NOT TO SCALE

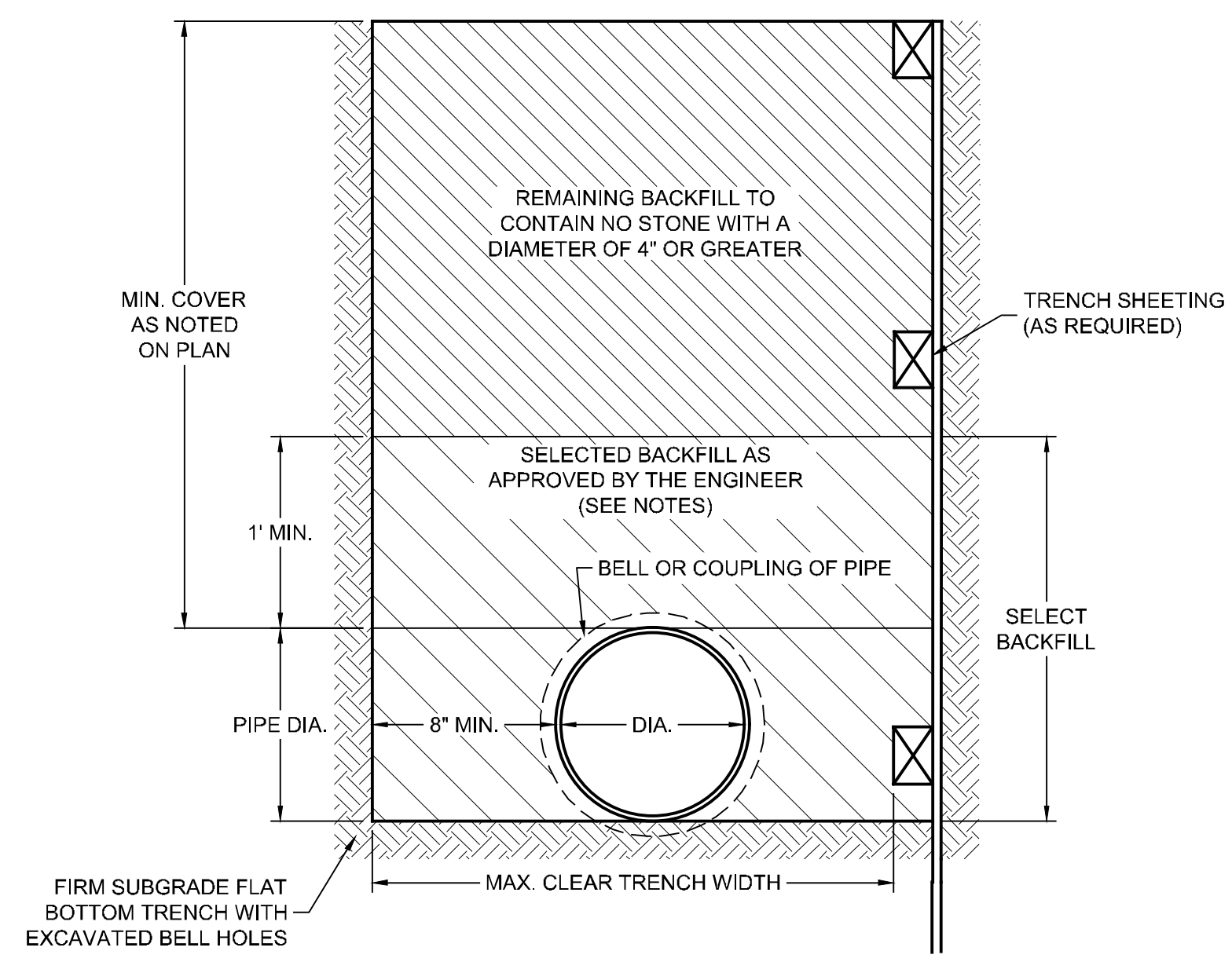


- NOTES:
- USE FOR ALL VALVE IN NON-ROADWAY APPLICATIONS (NOT USED WITH CURB STOPS)
  - 2500 PSI CONC. IN 28 DAYS
  - GRADE SO AS FLUSH OR SLIGHTLY BELOW SURROUNDING GRADE.
  - INCIDENTAL TO VALVE INSTALLATION.

**2 CONCRETE VALVE COVER DETAIL**  
NOT TO SCALE

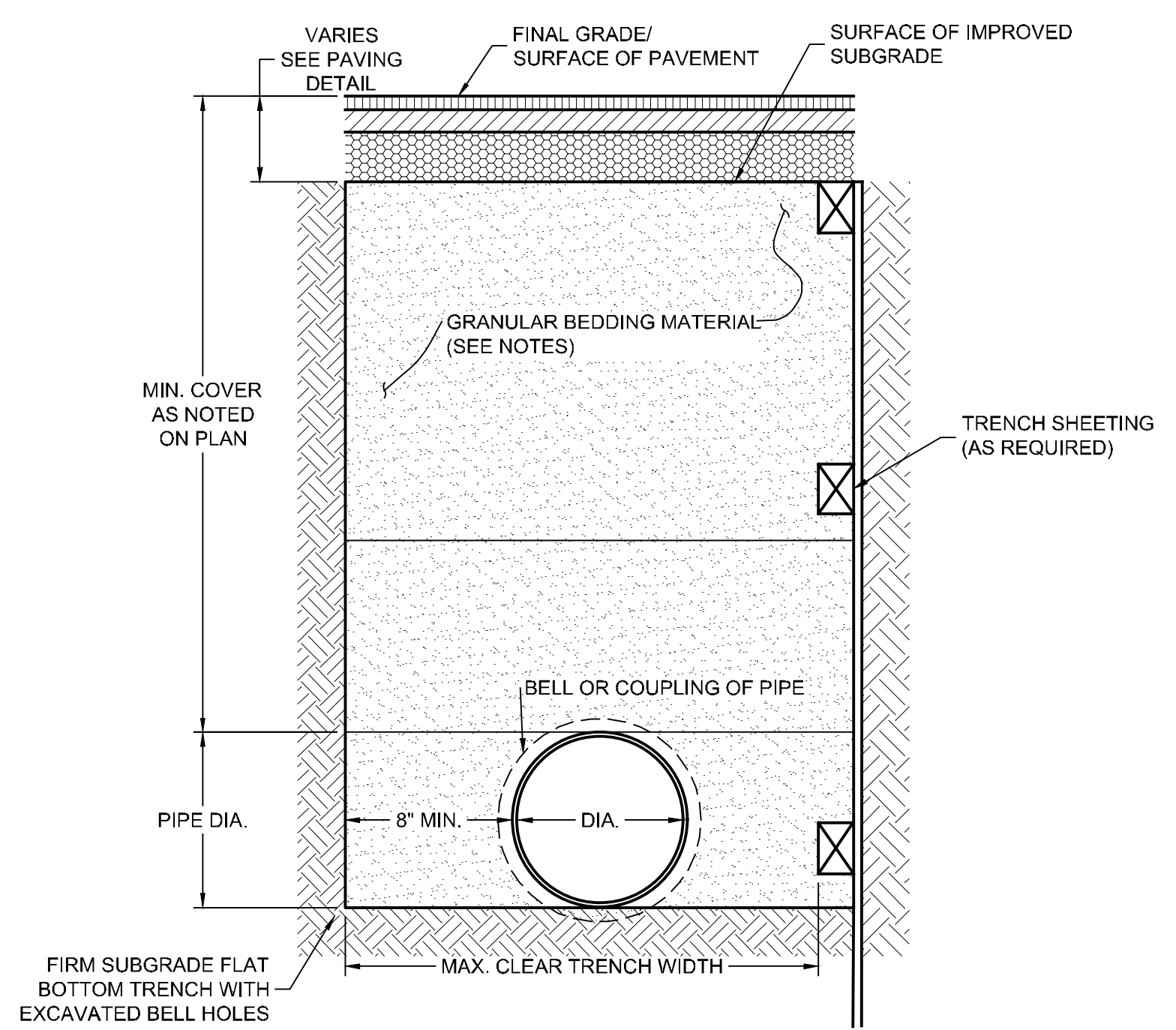


**WATER J-J**  
SCALE: 1" = 6' (V)  
1" = 30' (H)



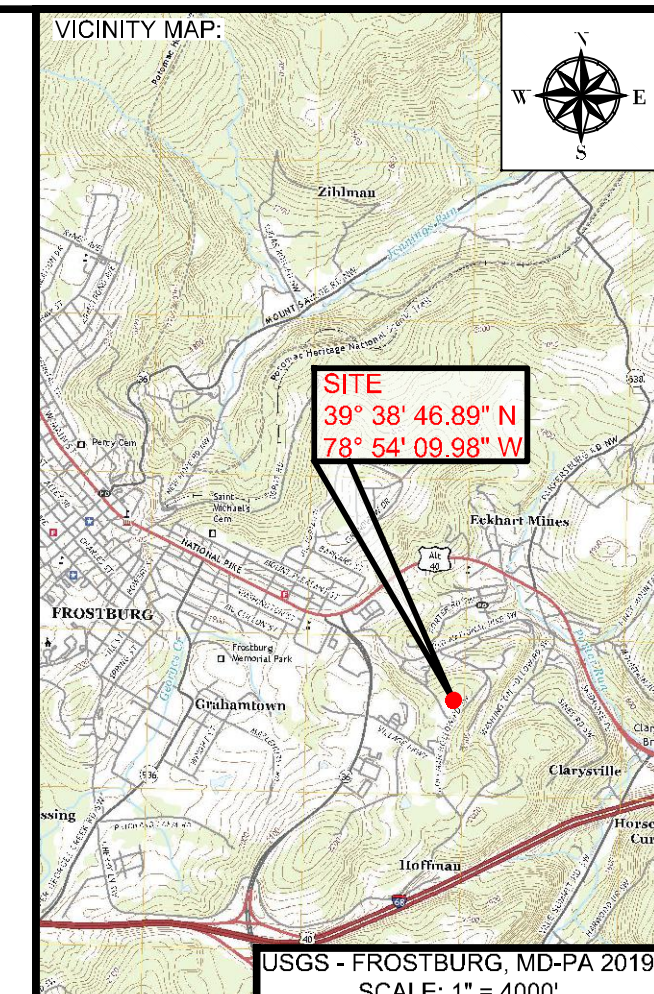
- NOTES:
- THIS DETAIL APPLIES TO ALL DUCTILE IRON PIPE WITH A DIAMETER OF 24" OR LESS.
  - ALL PIPE SHALL BE LAID ON THE FLAT TRENCH BOTTOM AND BACKFILLED TO A HEIGHT OF AT LEAST 1 FOOT OVER THE TOP OF THE PIPE WITH MATERIAL THAT SHALL BE DETERMINED SUITABLE BY THE ENGINEER AND CONTAIN NO STONE LARGER THAN NO. 67 AGGREGATE MEETING ASTM D448-86.
  - MAXIMUM TRENCH WIDTH SHALL BE ADEQUATE TO PROVIDE SPACE FOR PROPER JOINTING BUT SHALL NOT EXCEED 24" PLUS THE OUTSIDE DIAMETER OF THE PIPE.
  - ALL BACKFILL SHALL BE PLACED IN 6 INCH LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-99.
  - IF ROCK IS ENCOUNTERED, PREPARE TRENCH BOTTOM AS DIRECTED BY THE ENGINEER.

**3 PIPE BEDDING DETAIL FOR NON-TRAFFIC AREAS**  
NOT TO SCALE



- NOTES:
- THIS DETAIL APPLIES TO ALL DUCTILE IRON PIPE WITH A DIAMETER OF 24" OR LESS.
  - ALL PIPE SHALL BE LAID ON THE FLAT TRENCH BOTTOM. BEDDING MATERIAL SHALL BE QUARRY DUST OR CRUSHED STONE (CR6 OR CRD) WITH A MAXIMUM SIZE OF 3/4".
  - MAXIMUM TRENCH WIDTH SHALL BE ADEQUATE TO PROVIDE SPACE FOR PROPER JOINTING BUT SHALL NOT EXCEED 24" PLUS THE OUTSIDE DIAMETER OF THE PIPE.
  - ALL BACKFILL SHALL BE PLACED IN 6 INCH LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-99. THE TOP 12" BELOW SUBGRADE ELEVATION SHALL BE COMPACTED TO 100% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-99.
  - IF ROCK IS ENCOUNTERED, PREPARE TRENCH BOTTOM AS DIRECTED BY THE ENGINEER.

**4 PIPE BEDDING DETAIL FOR PAVED AREAS**  
NOT TO SCALE



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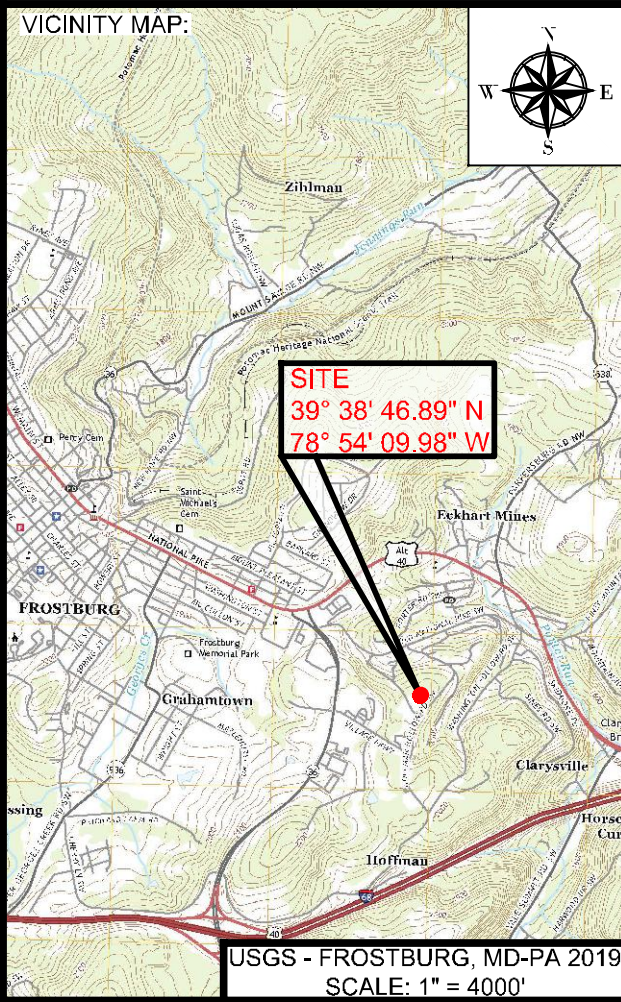
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Frostburg, Maryland 21532  
Phone (301)-687-5494 Fax (301)-687-5495  
www.bbasurevey.com

REVISIONS			
NO.	BY	DATE	DESCRIPTION
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DRAWN: BBA DATE: 7/05/2024  
CHECKED: MB SCALE: AS NOTED  
APPROVED: MB CRD FILE: 23088

BBA# 2023088  
SHEET TITLE:  
**WATER PROFILE & DETAILS**  
IFR: 7/05/2024  
SHEET #:  
C-441

CAD FILE: E:\2023\23088 - Cym Environmental - Cym Services\PRODUCTION\C-441 SERIES.dwg PLOT DATE/TIME: 7/4/2024 - 1:36pm LAST SAVE BY: work106



PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
 ALLEGANY COUNTY  
 MARYLAND

CLIENT:  
  
 CLYM ENVIRONMENTAL SERVICES, LLC  
 1539 TILCO DRIVE  
 FREDERICK, MARYLAND 21704

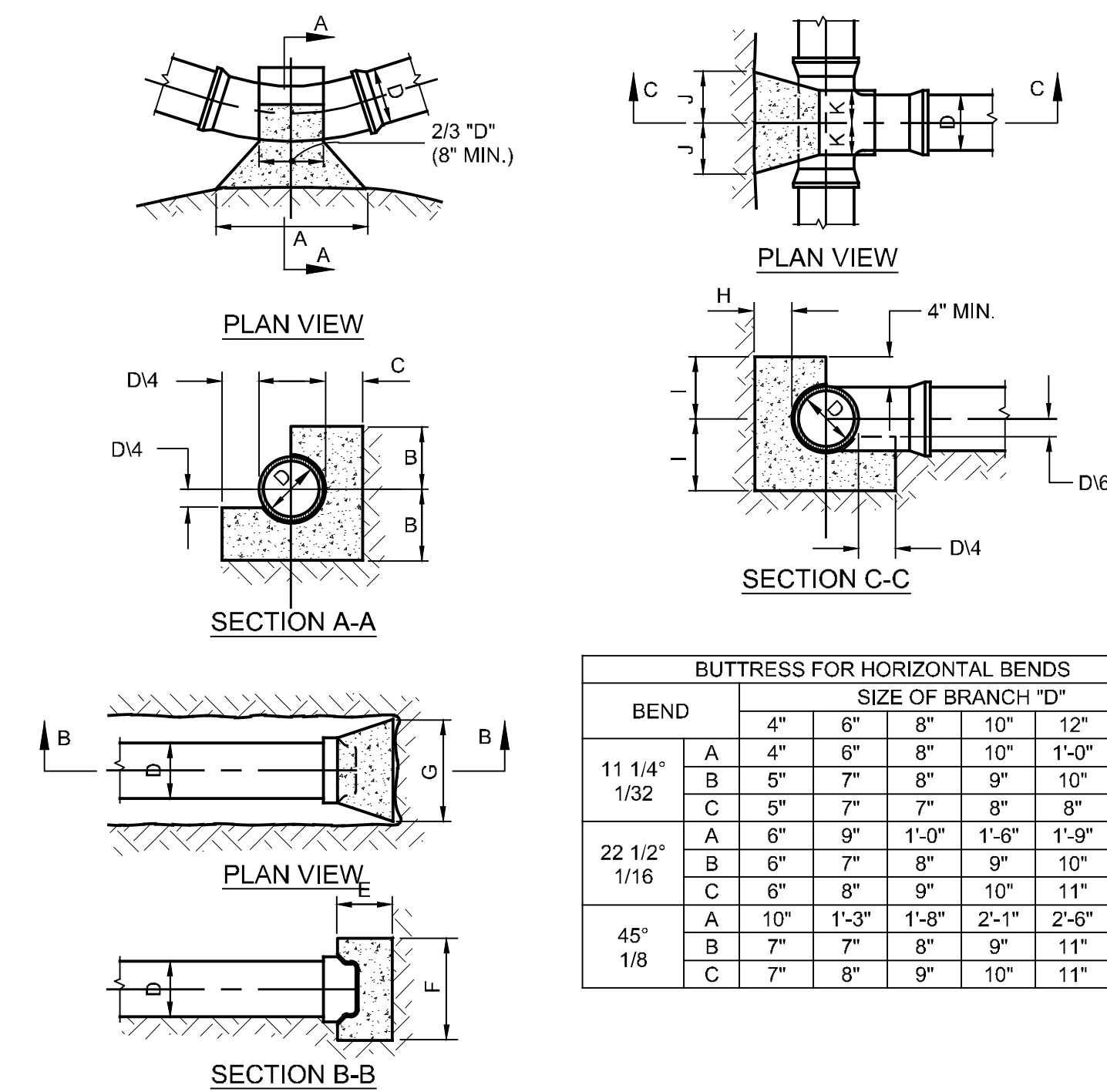
**811**  
 Know what's below.  
 Call before you dig.

**bba**  
 Surveyors | Engineers | Planners  
 Bennett Brewer & Associates, LLC  
 23 East Main Street, Suite 200 Frostburg, Maryland 21532  
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-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

DRAWN: BBA DATE: 7/05/2024  
 CHECKED: MB SCALE: AS NOTED  
 APPROVED: MB CRD FILE: 23088

BBA# 2023088  
 SHEET TITLE:  
**WATER VALVE ANCHOR DETAILS**  
 IFR: 7/05/2024  
 SHEET #:  
**C-442**



- NOTES:
- ALL BUTTRESSES TO BE CARRIED TO UNDISTURBED EARTH.
  - ALL CONCRETE TO BE CLASS "B" - (2500 P.S.I.)
  - BUTTRESS DIMENSIONS SHOWN ARE MINIMUM. DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 3000 P.S.F. AND STATIC WATER PRESSURE OF 150 P.S.I. WHERE PRESSURE EXCEEDS 150 P.S.I., OR WHERE SOIL BEARING IS LESS THAN 3000 P.S.F., SPECIAL BUTTRESS DESIGN IS REQUIRED.

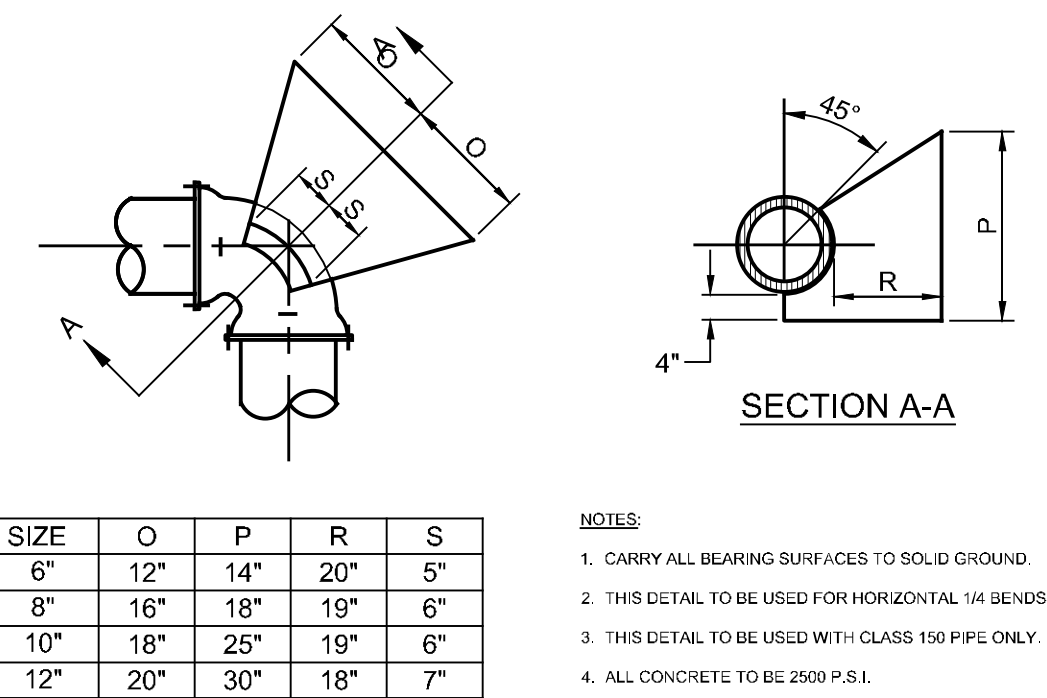
BEND	SIZE OF BRANCH "D"						
	4"	6"	8"	10"	12"	16"	
11 1/4" / 1/32	A	4"	6"	8"	10"	1'-0"	1'-4"
	B	5"	7"	8"	9"	10"	1'-0"
	C	5"	7"	7"	8"	8"	9"
22 1/2" / 1/16	A	6"	9"	1'-0"	1'-6"	1'-9"	2'-3"
	B	6"	7"	8"	9"	10"	1'-0"
	C	6"	8"	9"	10"	11"	1'-2"
45° / 1/8	A	10"	1'-3"	1'-8"	2'-1"	2'-6"	3'-4"
	B	7"	7"	8"	9"	11"	1'-3"
	C	7"	8"	9"	10"	11"	1'-2"

CAPS	D	4"	6"	8"	10"	12"	16"
	E	6"	6"	8"	8"	10"	1'-0"
	F	9"	11"	1'-2"	1'-6"	1'-9"	2'-4"
G	10"	1'-3"	1'-8"	2'-1"	2'-6"	3'-4"	

TEES	D	4"	6"	8"	10"	12"	16"
	H	6"	8"	9"	10"	1'-0"	1'-2"
	I	5"	8"	10"	1'-0"	1'-3"	1'-8"
	J	5"	6"	8"	1'-0"	1'-0"	1'-4"
K	6"	6"	8"	8"	8"	10"	

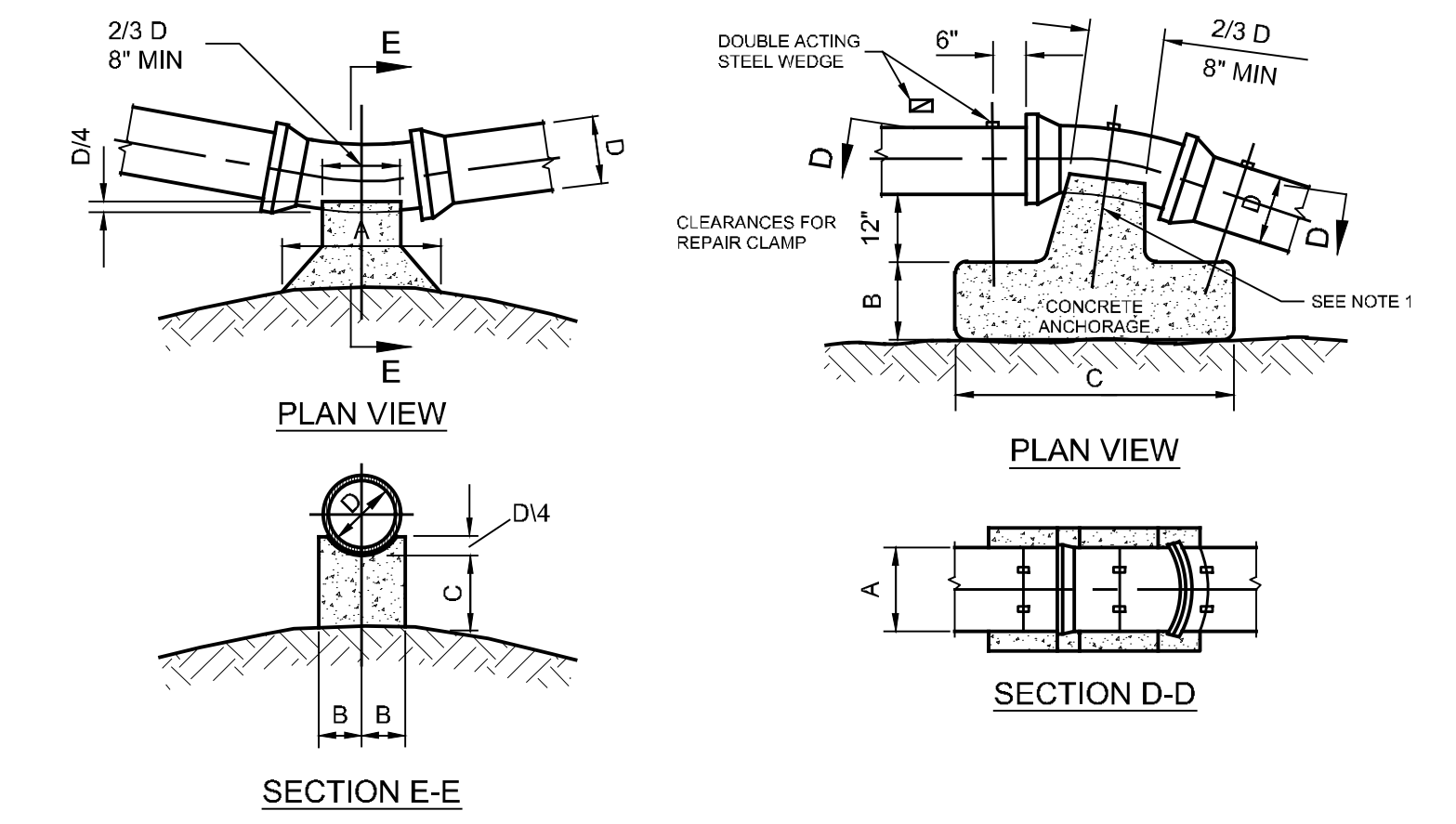
**5 BUTTRESS FOR BENDS, TEES, & CAPS**  
 NOT TO SCALE



- NOTES:
- CARRY ALL BEARING SURFACES TO SOLID GROUND.
  - THIS DETAIL TO BE USED FOR HORIZONTAL 1/4 BENDS ONLY.
  - THIS DETAIL TO BE USED WITH CLASS 150 PIPE ONLY.
  - ALL CONCRETE TO BE 2500 P.S.I.

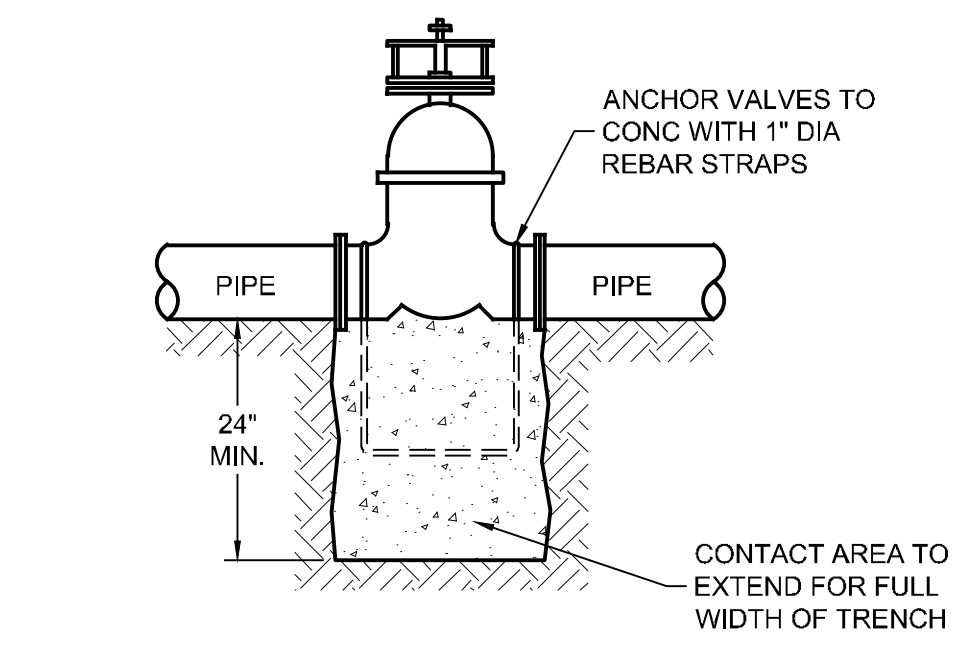
SIZE	O	P	R	S
6"	12"	14"	20"	5"
8"	16"	18"	19"	6"
10"	18"	25"	19"	6"
12"	20"	30"	18"	7"

**6 BUTTRESS FOR 1/4 BENDS**  
 NOT TO SCALE



BEND	BUTTRESS DIMENSIONS						ANCHORAGE DIMENSIONS							
	SIZE						SIZE							
	4"	6"	8"	10"	12"	16"		4"	6"	8"	10"	12"	16"	
11 1/4" / 1/32	A	4"	6"	8"	10"	1'-0"	1'-4"	A	1'-4"	1'-6"	1'-6"	1'-5"	3'-0"	3'-6"
	B	5"	7"	8"	9"	10"	1'-0"	B	1'-0"	1'-3"	1'-9"	1'-3"	2'-0"	2'-0"
	C	5"	7"	7"	8"	8"	9"	C	2'-0"	2'-0"	2'-6"	2'-9"	3'-0"	4'-0"
22 1/2" / 1/16	A	6"	9"	1'-0"	1'-6"	1'-9"	2'-3"	A	1'-8"	2'-0"	3'-4"	3'-8"	4'-0"	4'-4"
	B	6"	7"	7"	8"	10"	1'-0"	B	1'-6"	1'-9"	2'-3"	2'-6"	2'-6"	2'-6"
	C	6"	7"	7"	8"	8"	9"	C	2'-0"	2'-6"	2'-8"	3'-10"	4'-0"	5'-6"
45° / 1/8	A	10"	1'-3"	1'-8"	2'-1"	2'-6"	3'-4"	A	2'-3"	2'-6"	3'-0"	4'-0"	4'-6"	5'-2"
	B	7"	7"	8"	9"	11"	1'-3"	B	1'-9"	2'-6"	2'-9"	3'-0"	3'-6"	4'-0"
	C	7"	7"	8"	10"	11"	1'-3"	C	2'-6"	3'-0"	4'-0"	4'-6"	4'-9"	6'-6"

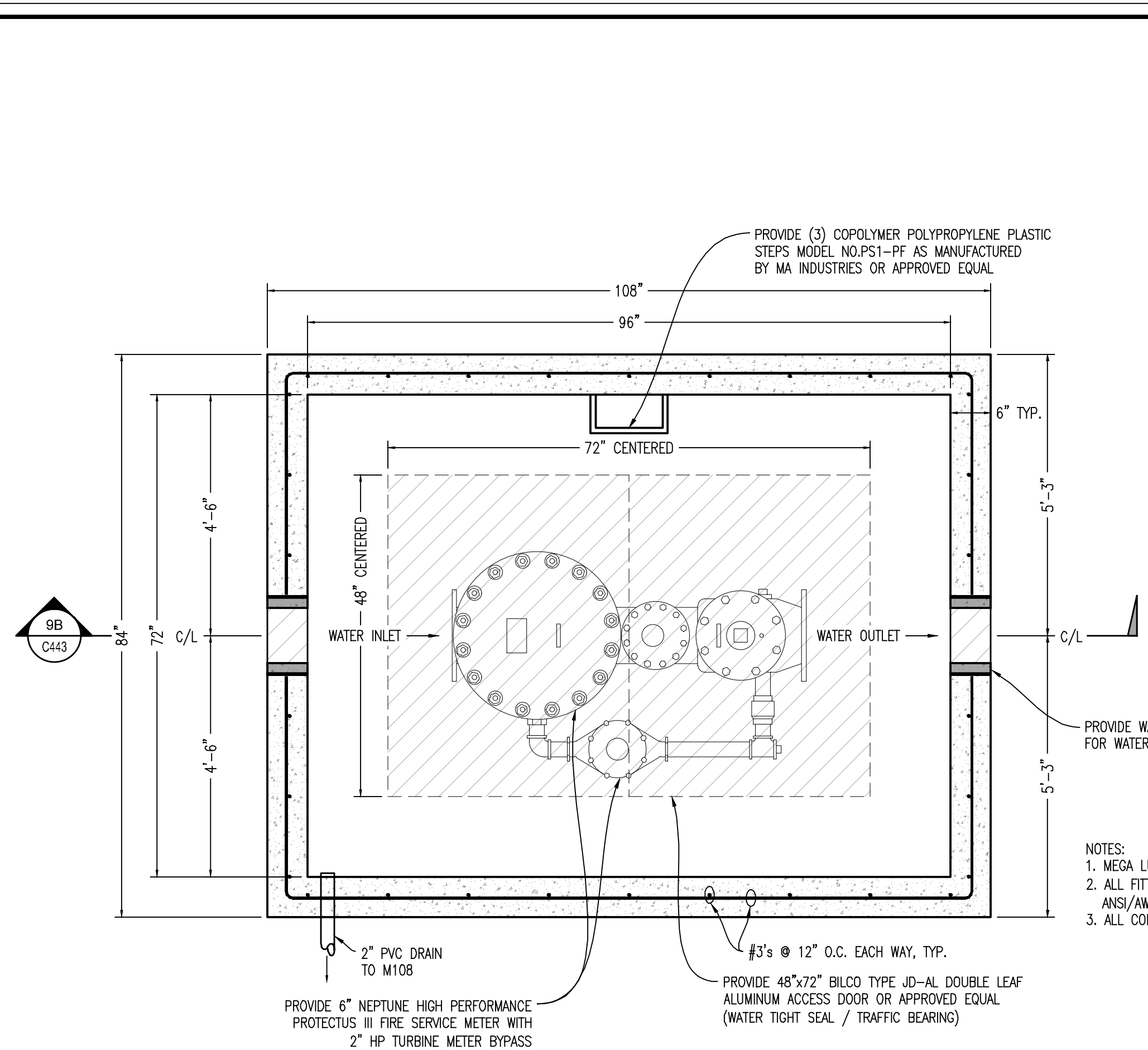
- NOTES:
- USE 3 - #6 REINFORCING BARS AS SHOWN. IMBED 30 DIAMETERS IN CONCRETE AND PAINT EXPOSED SURFACE WITH 2 COATS OF APPROVED BITUMINOUS PAINT.
  - ALL CONCRETE TO BE CLASS "B".
  - ALL BUTTRESSES TO BE CARRIED TO UNDISTURBED EARTH.
  - BUTTRESS DIMENSIONS SHOWN ARE MINIMUM. DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 3000 P.S.F. AND STATIC WATER PRESSURE OF 150 P.S.I. WHERE PRESSURE EXCEEDS 150 P.S.I. OR WHERE SOIL BEARING PRESSURE IS LESS THAN 3000 P.S.F., SPECIAL BUTTRESS DESIGN IS REQUIRED.



**7 WATER VALVE ANCHOR DETAIL**  
 NOT TO SCALE

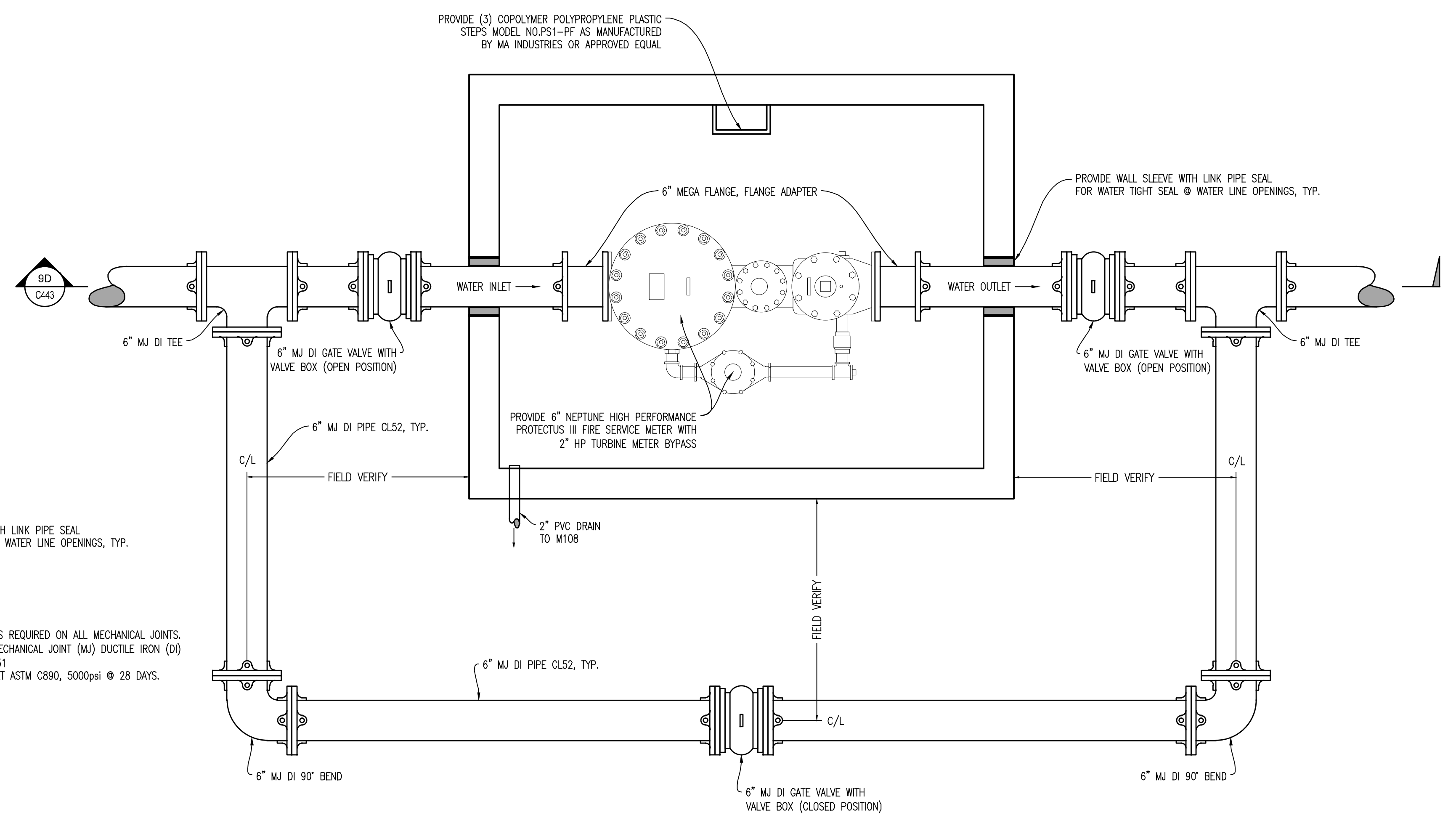
**8 BUTTRESS FOR VERTICAL BENDS**  
 NOT TO SCALE

CAD FILE: E:\2023\23098 - Cym Environmental - Cym Environmental - Design Services\PRODUCTION\C-441 SERIES.dwg  
 PLOT DATE/TIME: 7/4/2024 - 1:39pm  
 LAST SAVE BY: work106



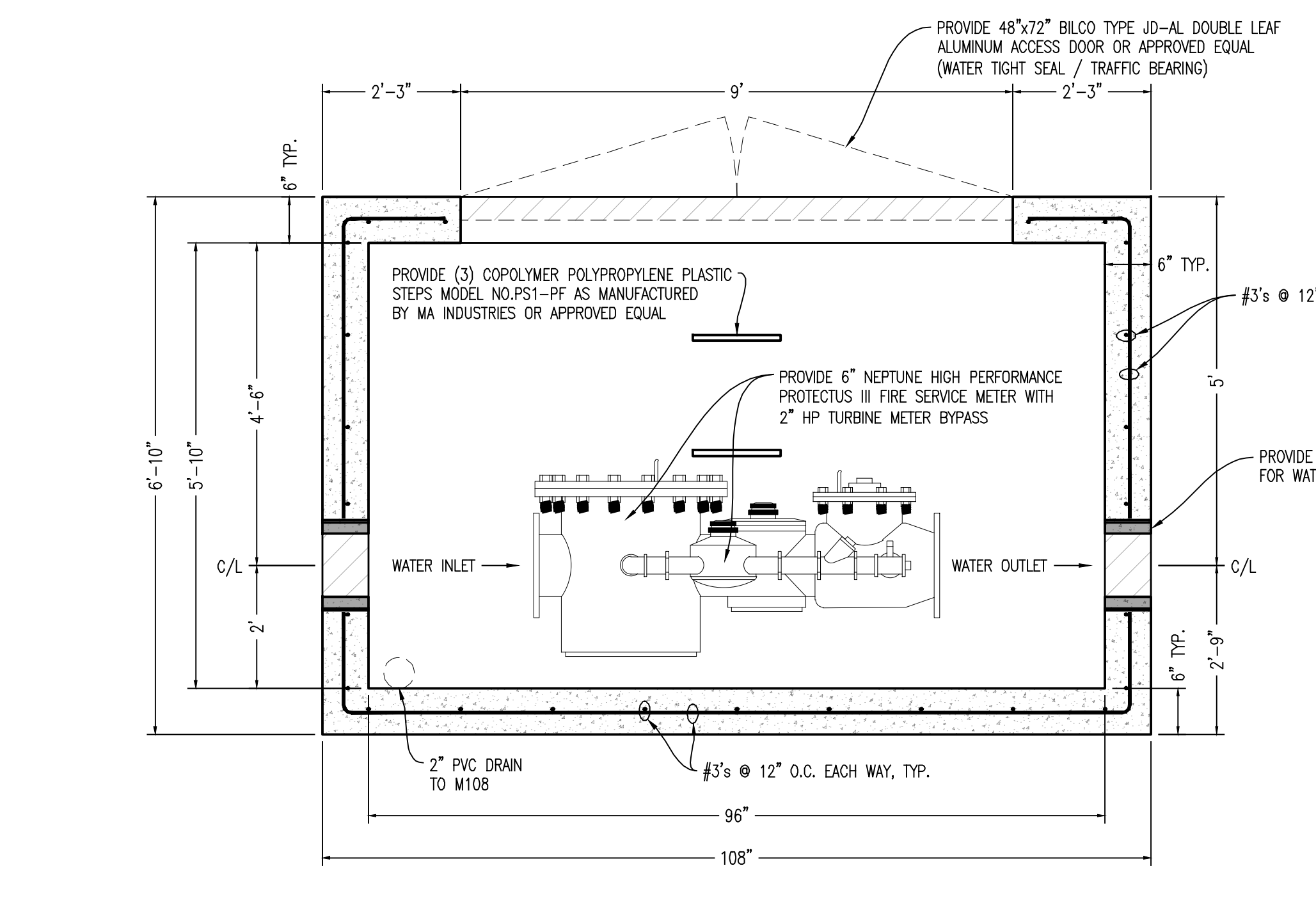
PLAN VIEW - PRECAST CONCRETE WATER METER VAULT - STRUCTURAL  
NOT TO SCALE

9A  
C443



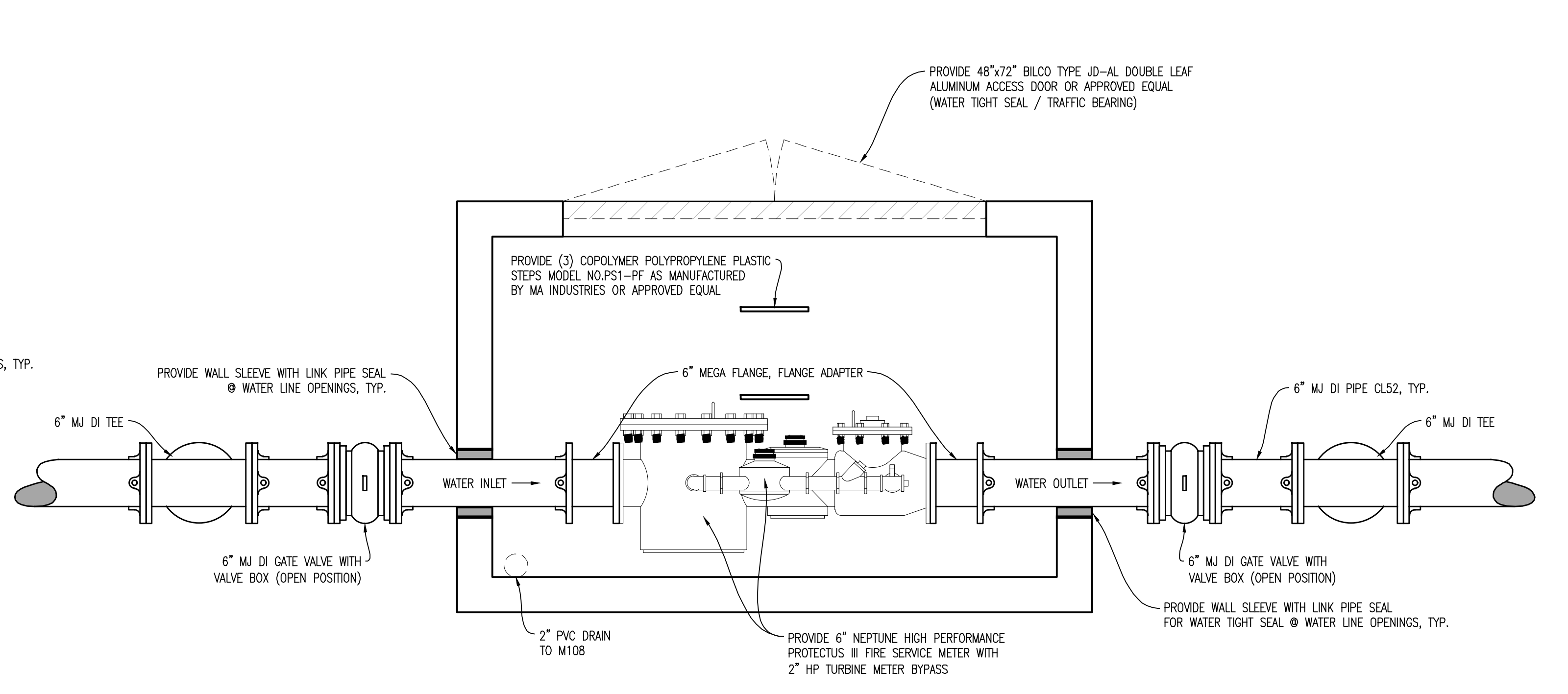
PLAN VIEW - PRECAST CONCRETE WATER METER VAULT - PLUMBING  
NOT TO SCALE

9C  
C443



SECTION VIEW - PRECAST CONCRETE WATER METER VAULT - STRUCTURAL  
NOT TO SCALE

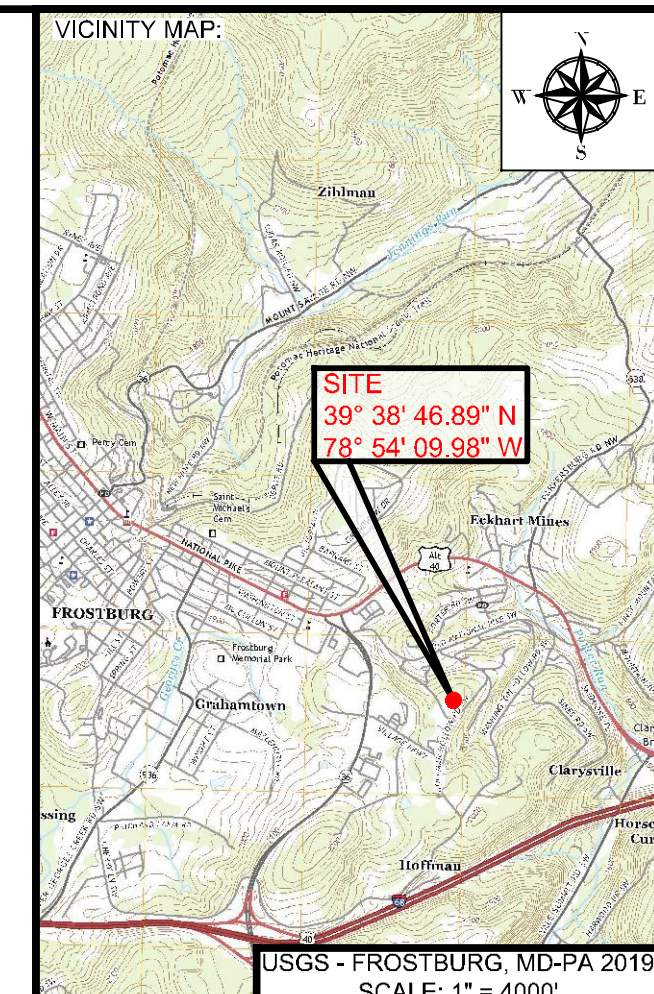
9B  
C443



SECTION VIEW - PRECAST CONCRETE WATER METER VAULT - PLUMBING  
NOT TO SCALE

9D  
C443

**9**  
**WATER METER & VAULT DETAIL**  
NOT TO SCALE



PROJECT:  
**FINAL PLAN SUBMITTAL**  
FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
MARYLAND

CLIENT:  
**CLYM**  
CLYM ENVIRONMENTAL SERVICES, LLC  
1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704



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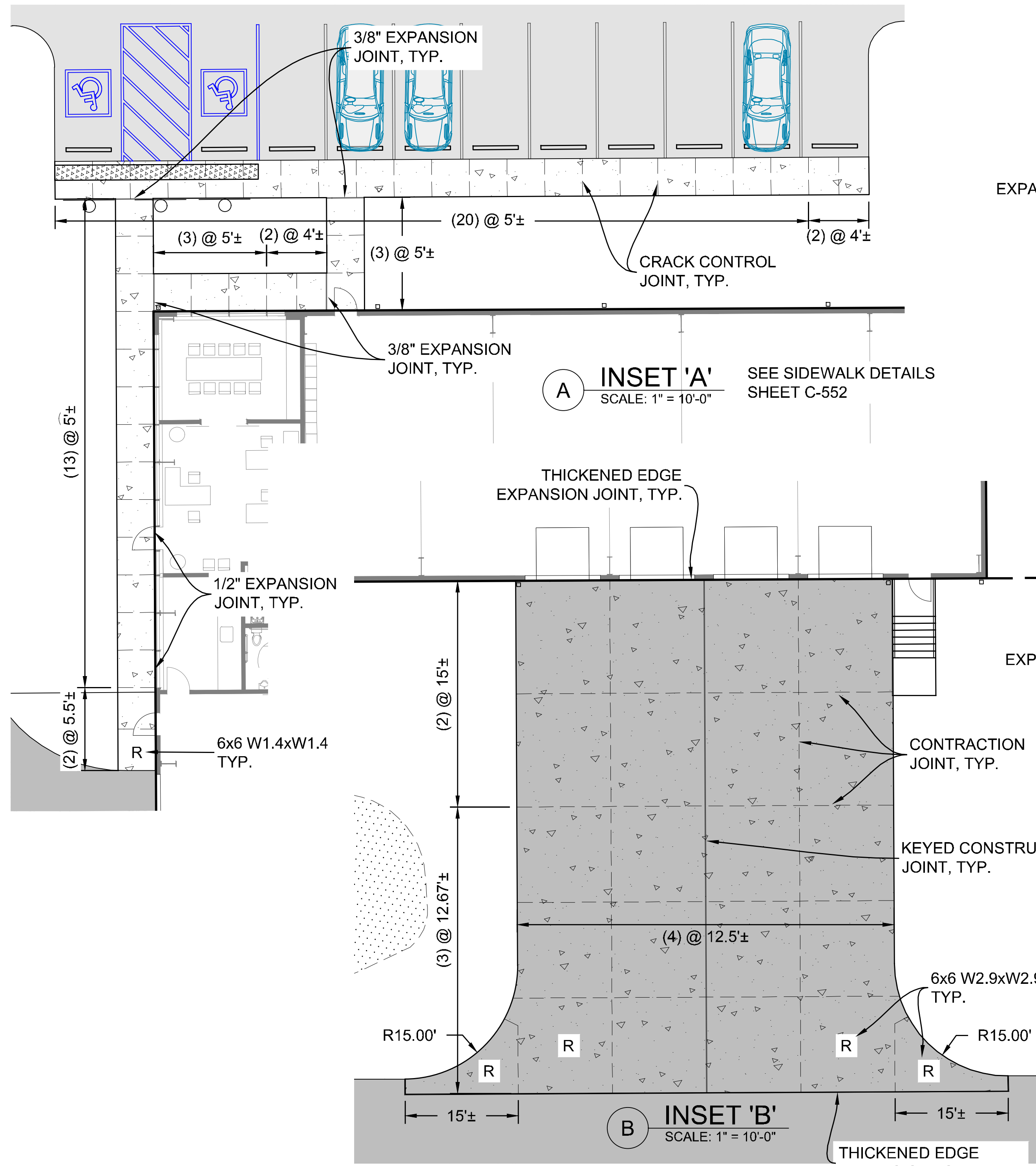
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NO.	BY	DATE	DESCRIPTION

DRAWN: BBA DATE: 7/05/2024  
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APPROVED: MB CRD FILE: 23088

BBA# 2023088

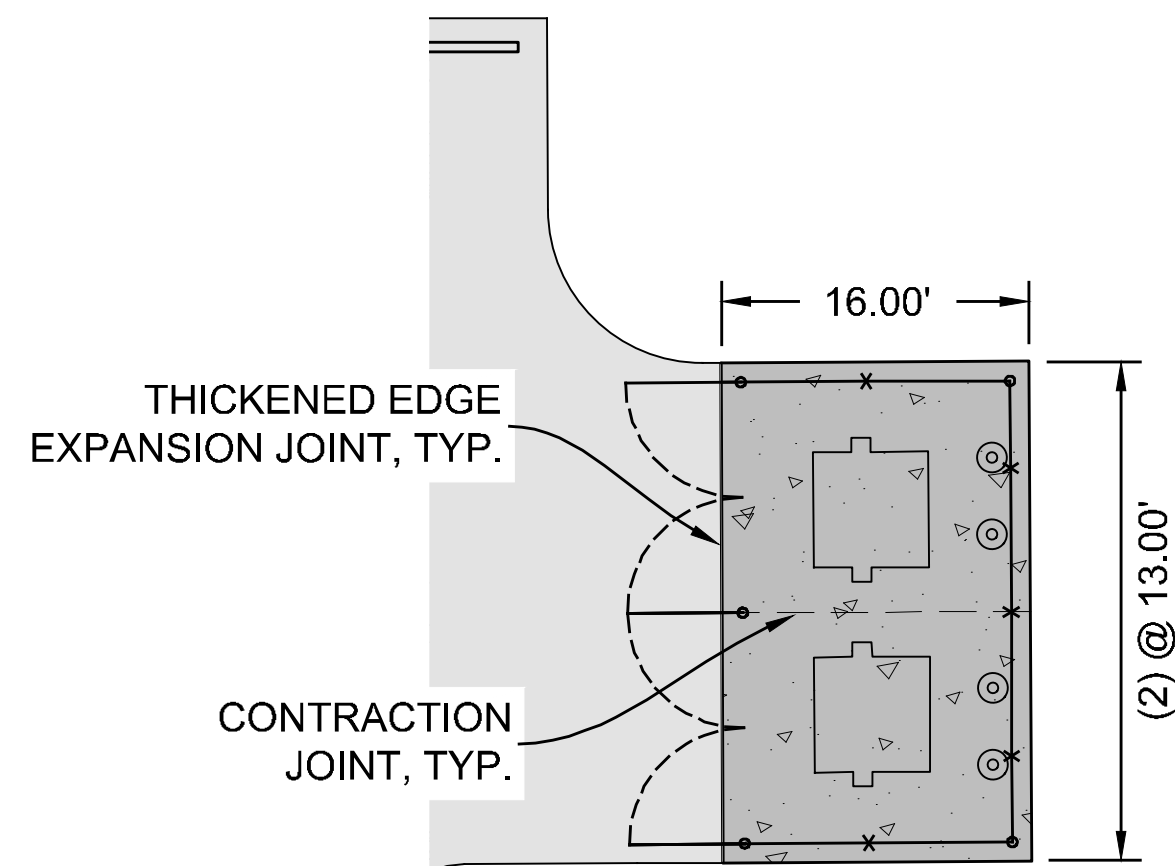
SHEET TITLE:  
**WATER DETAILS**  
IFR: 7/05/2024  
SHEET #:  
C-443

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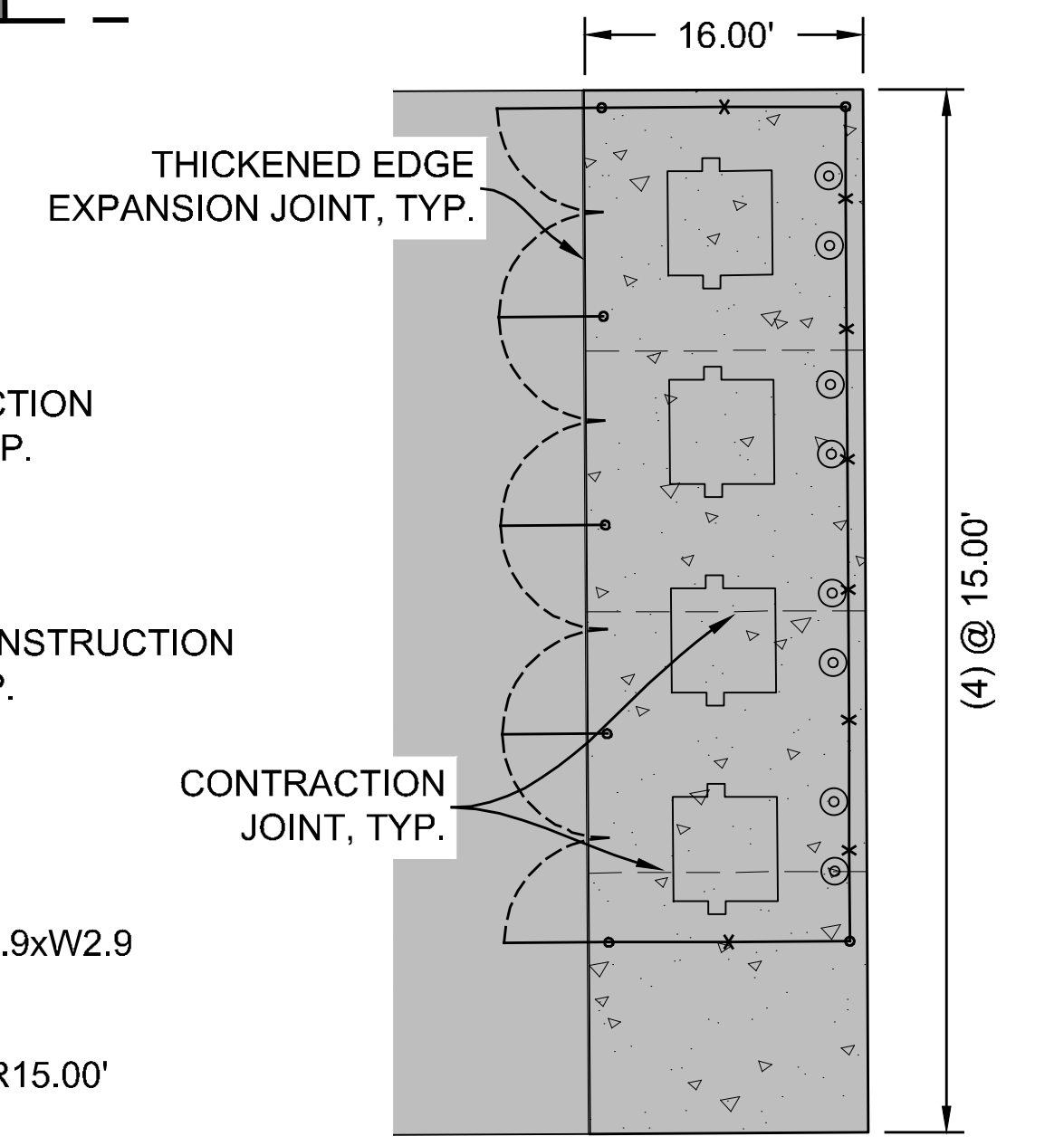


**A INSET 'A'**  
SCALE: 1" = 10'-0"  
SEE SIDEWALK DETAILS SHEET C-552

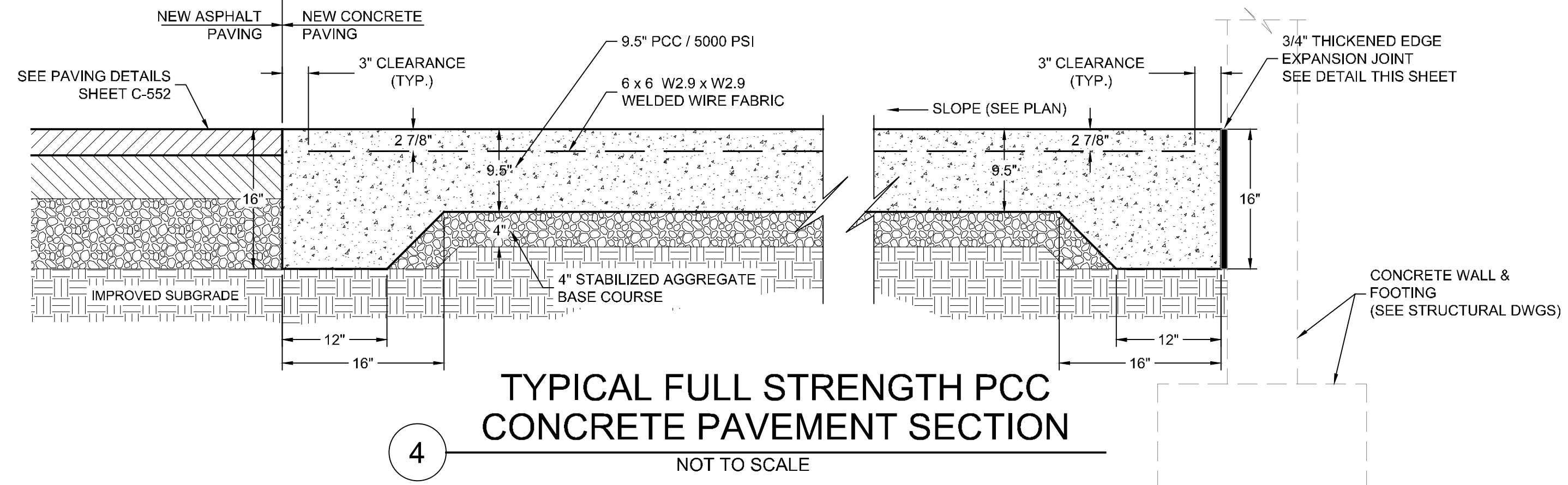
**B INSET 'B'**  
SCALE: 1" = 10'-0"  
THICKENED EDGE EXPANSION JOINT, TYP.



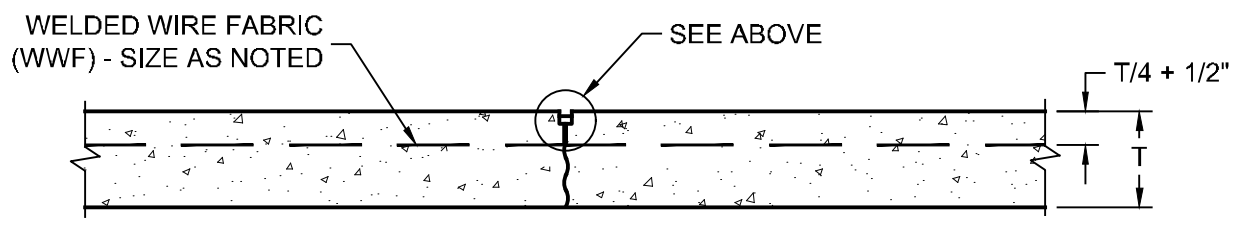
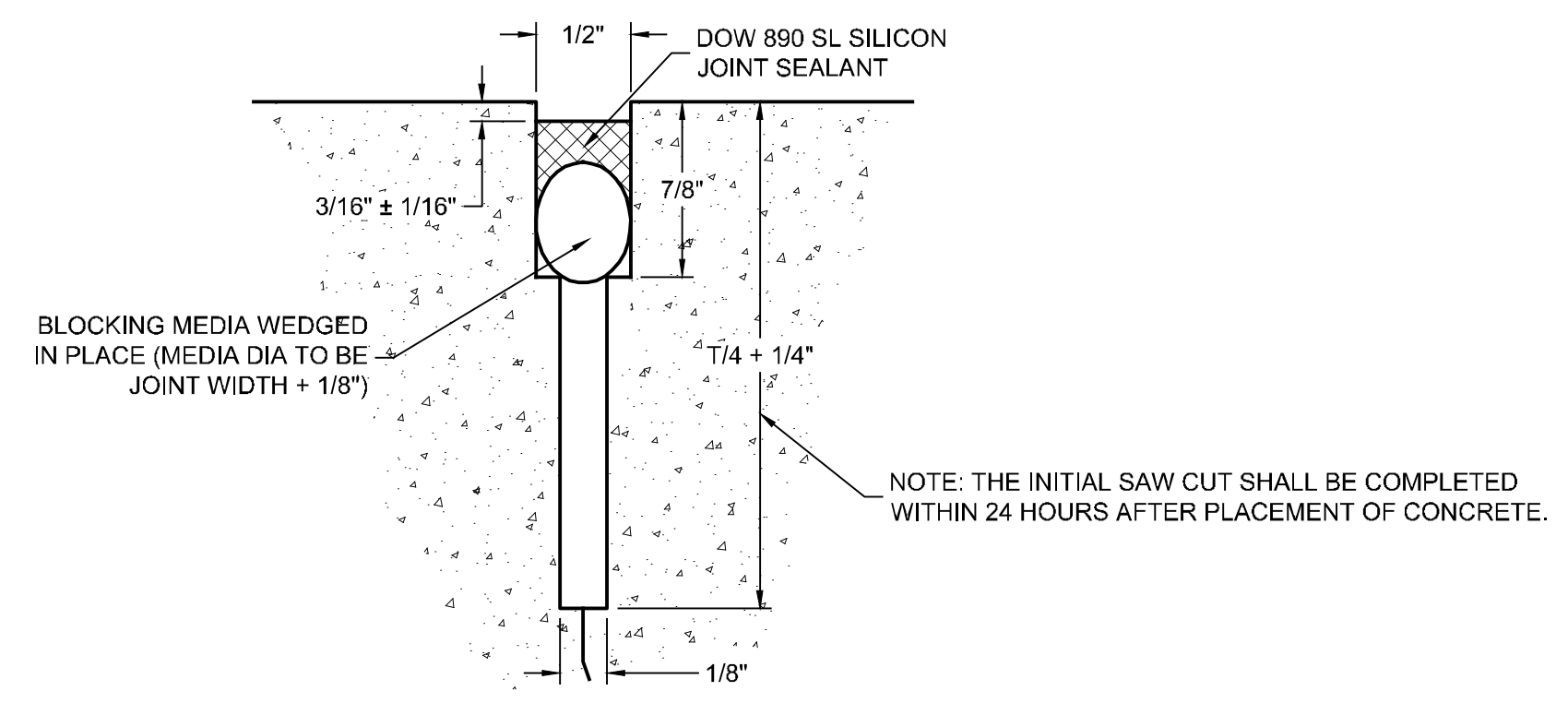
**C INSET 'C'**  
SCALE: 1" = 10'-0"



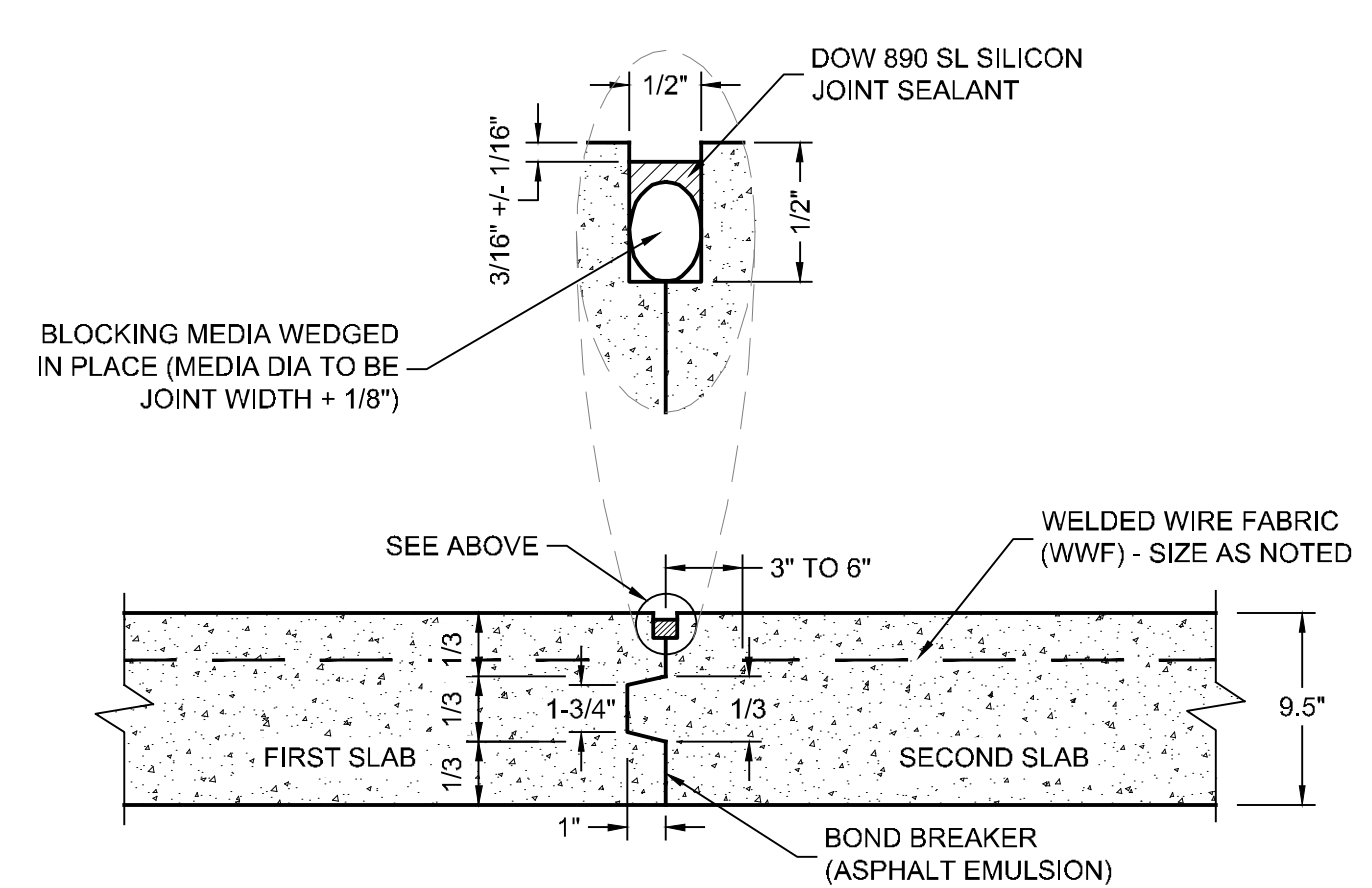
**D INSET 'D'**  
SCALE: 1" = 10'-0"



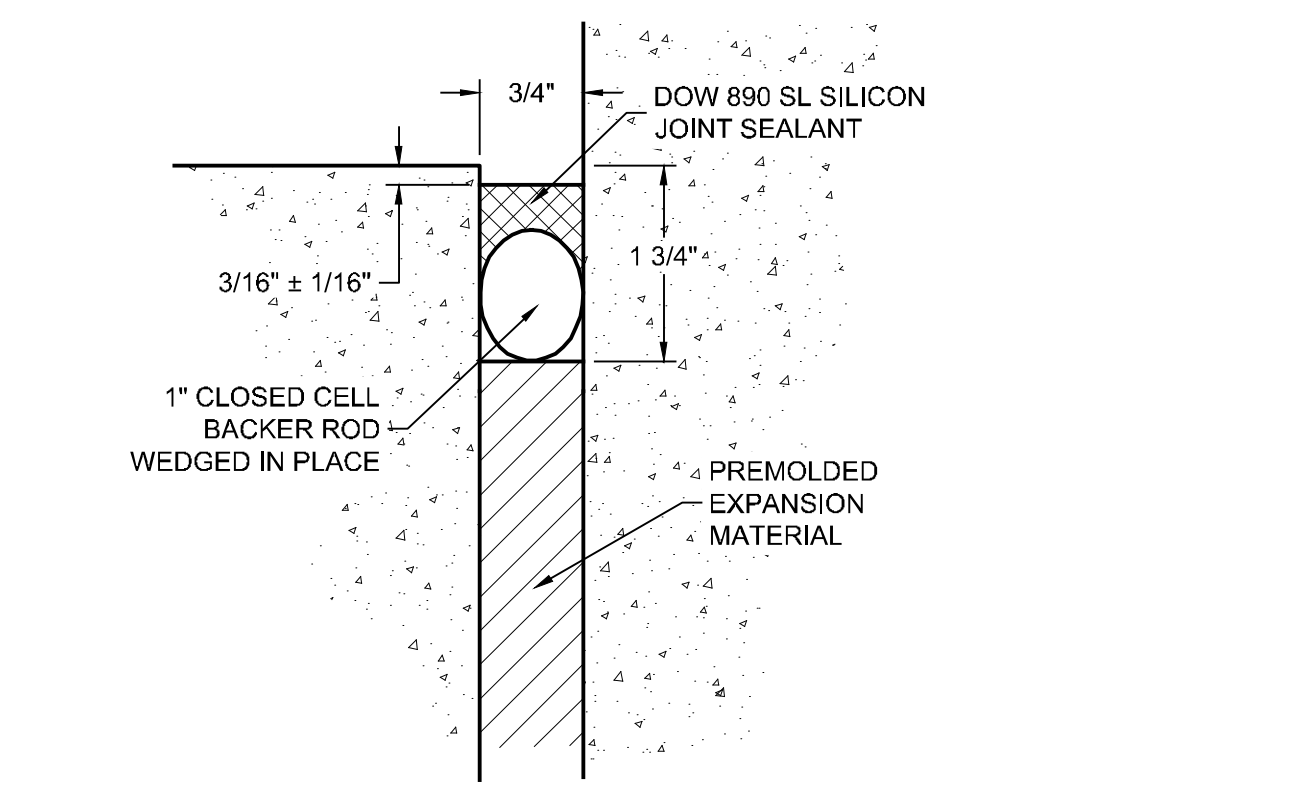
**4 TYPICAL FULL STRENGTH PCC CONCRETE PAVEMENT SECTION**  
NOT TO SCALE



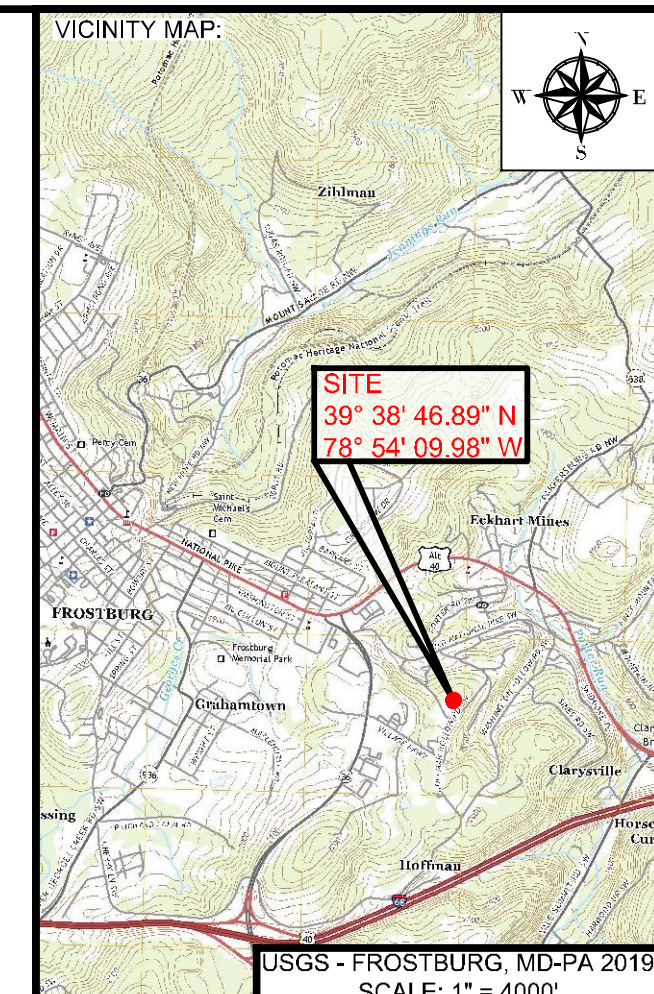
**1 NEW CONTRACTION JOINT (SAWED TYPE)**  
NOT TO SCALE



**2 NEW KEYED CONSTRUCTION JOINT**  
NOT TO SCALE



**3 NEW THICKENED EDGE EXPANSION JOINT**  
NOT TO SCALE



PROJECT:  
**FINAL PLAN SUBMITTAL**  
FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
MARYLAND

CLIENT:  
**CLYM**  
CLYM ENVIRONMENTAL SERVICES, LLC  
1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704



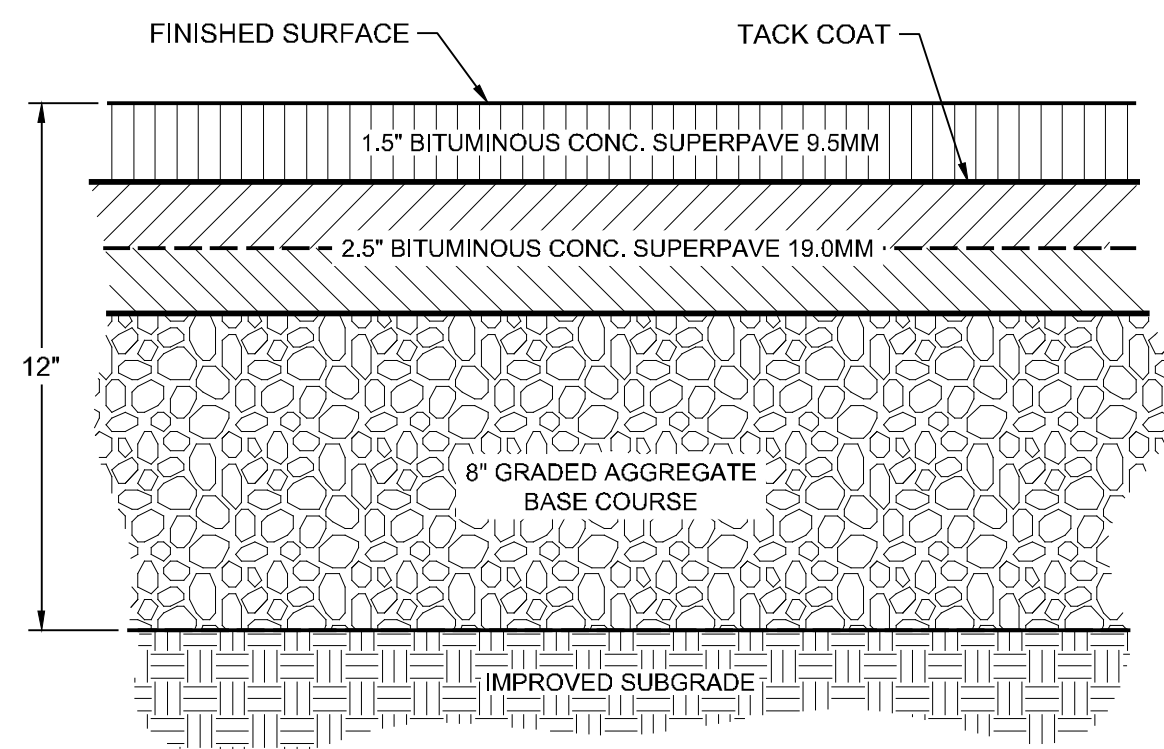
**bba**  
Surveyors | Engineers | Planners  
Bennett Brewer & Associates, LLC  
23 East Main Street, Suite 200 Frostburg, Maryland 21532  
Phone (301)-687-0494 Fax (301)-687-0495  
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APPROVED: MB CRD FILE: 23088

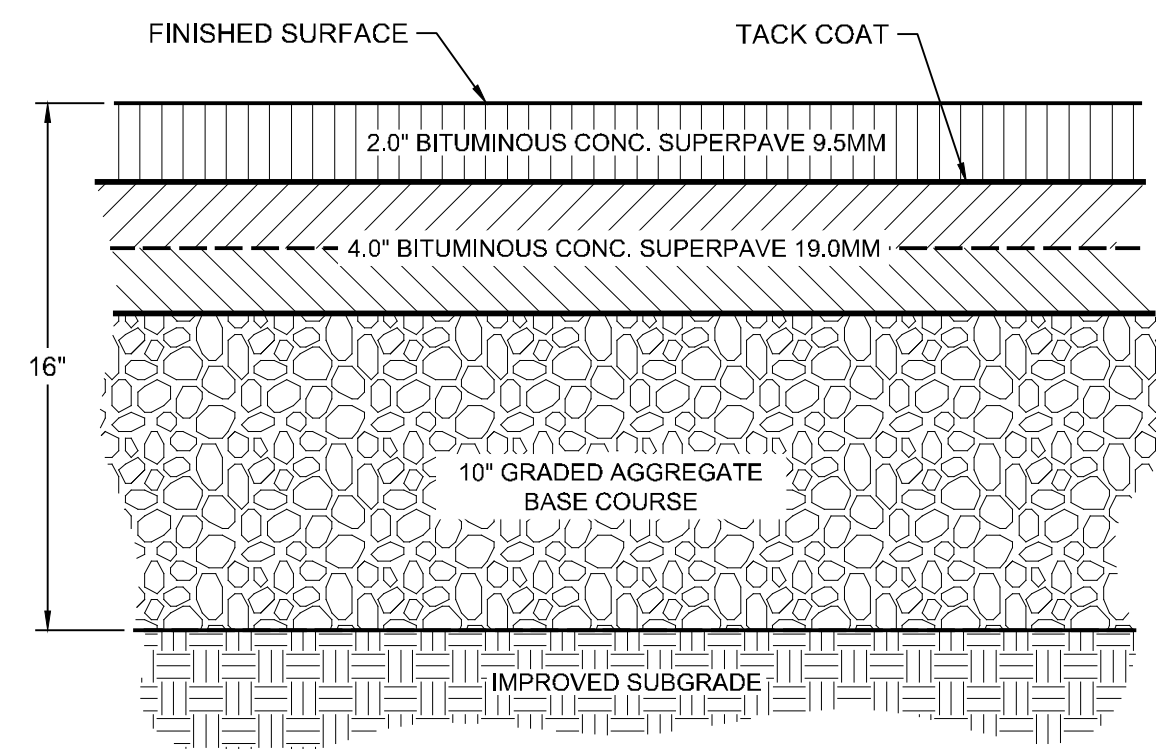
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SHEET TITLE:  
**GENERAL DETAILS**  
IFR: 7/05/2024  
SHEET #:  
C-551

CAD FILE: E:\2023\23088 - Cym Environmental - Cym Environmental - Design Services\PRODUCTION\C-551 SERIES.dwg PLOT DATE/TIME: 7/4/2024 - 1:39pm LAST SAVE BY: work106



NOTE: ALL AGGREGATE BASE AND SUBGRADE TO BE COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY AS PER AASHTO T-99.

5 GENERAL PAVING DETAIL  
NOT TO SCALE

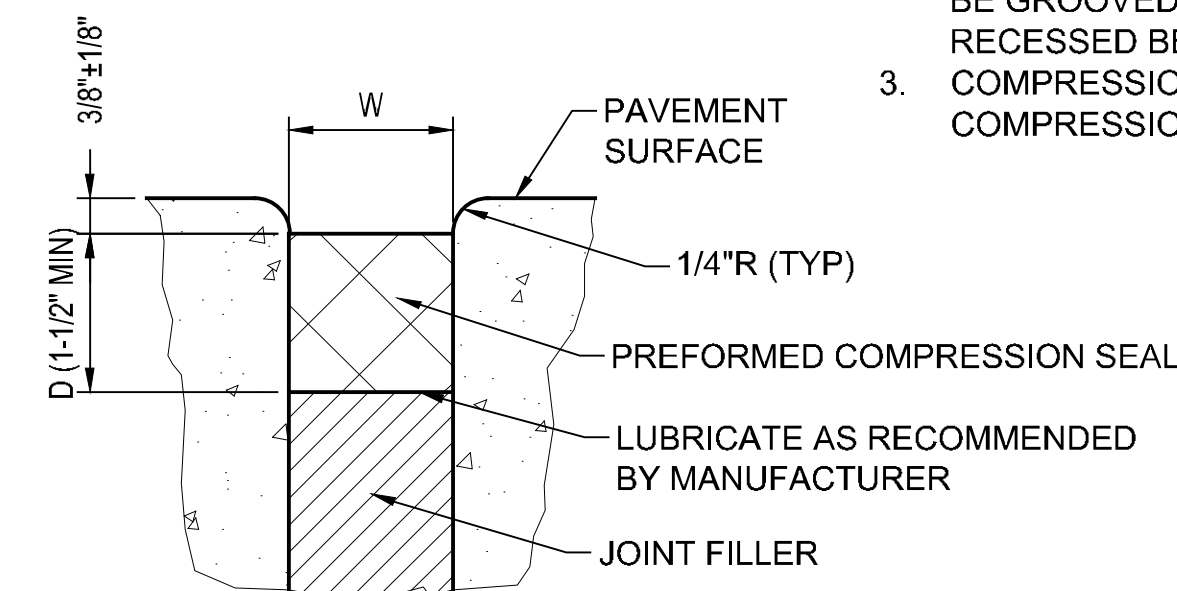


NOTE: ALL AGGREGATE BASE AND SUBGRADE TO BE COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY AS PER AASHTO T-99.

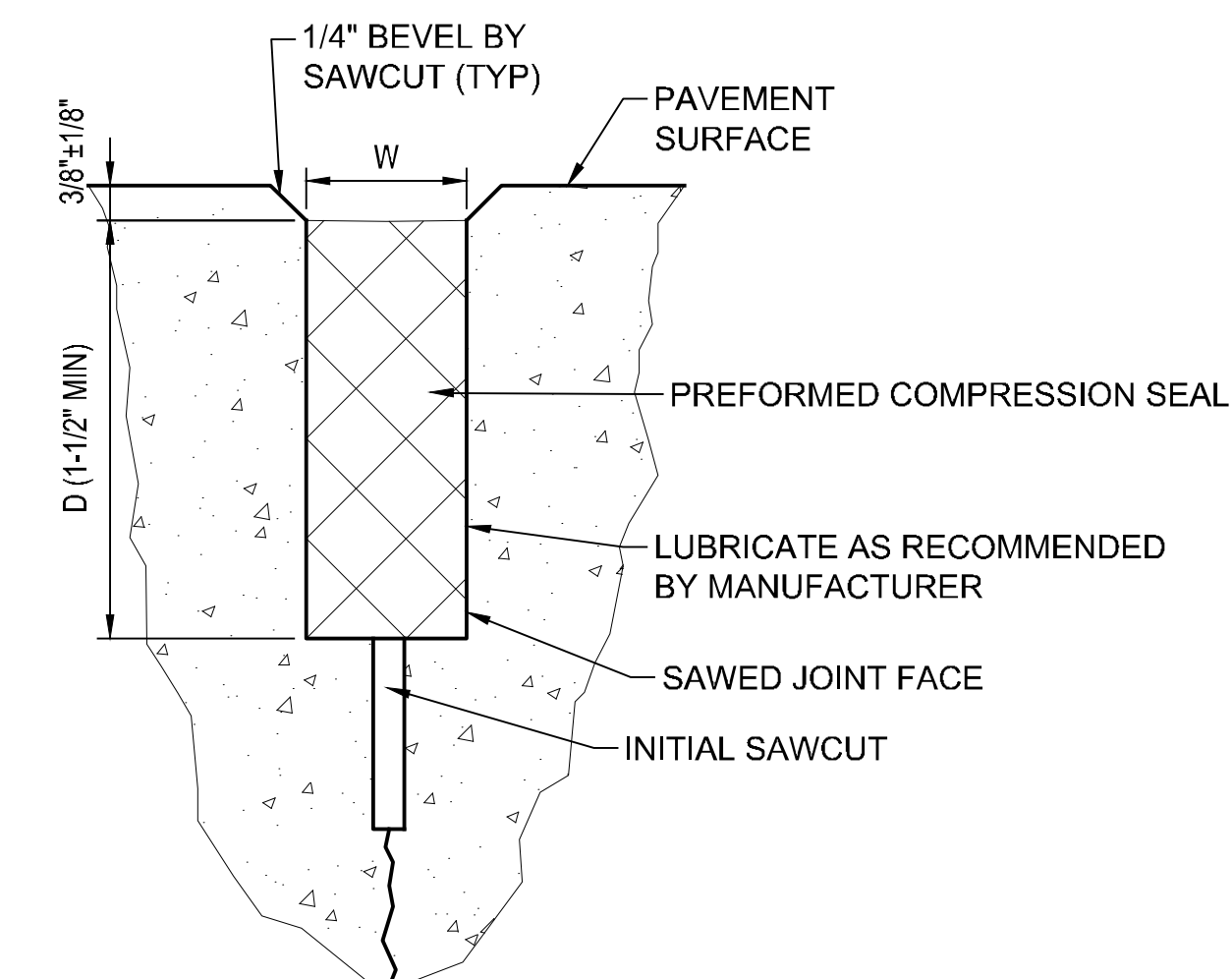
6 HEAVY DUTY PAVING DETAIL  
NOT TO SCALE

**JOINT SEALANT NOTES:**

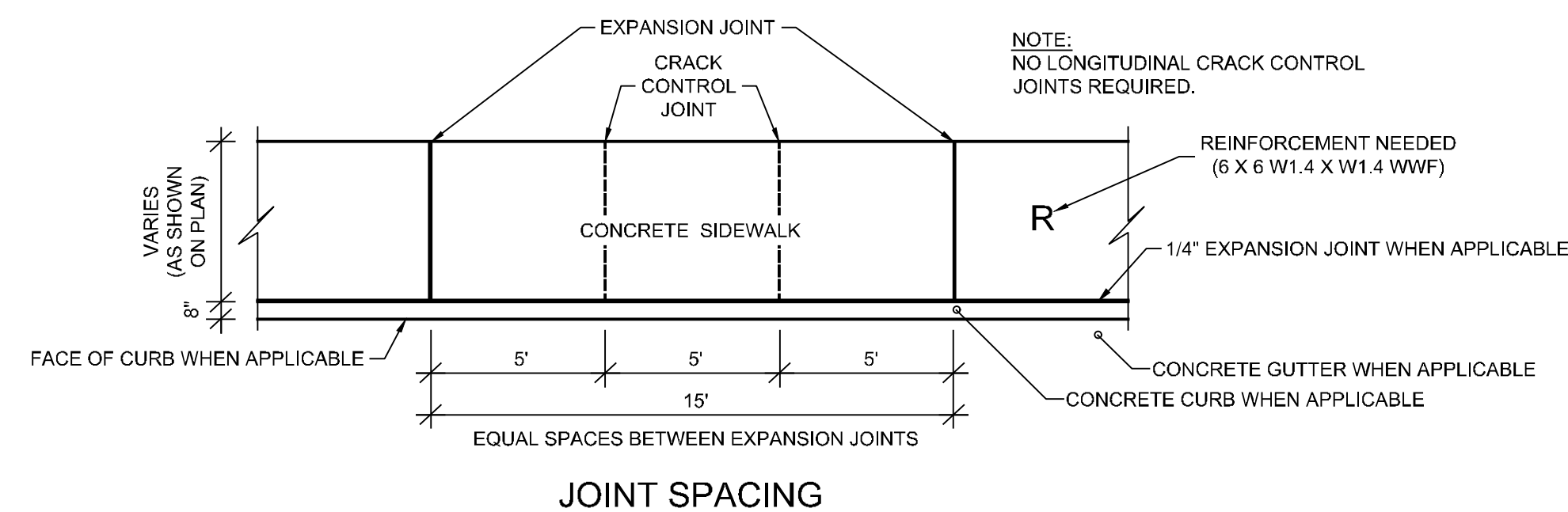
1. DEPTH AND WIDTH OF UNCOMPRESSED SEAL SHALL BE AS RECOMMENDED BY MANUFACTURER.
2. TOP OF PREFORMED SEAL SHALL BE 1/8" TO 1/4" BELOW THE PAVEMENT SURFACE. IN AREAS TO BE GROOVED, THE JOINT SEAL SHALL BE RECESSED BELOW THE DEPTH OF THE GROOVES.
3. COMPRESSIONS SEALS MUST BE IN COMPRESSION AT ALL TIMES.



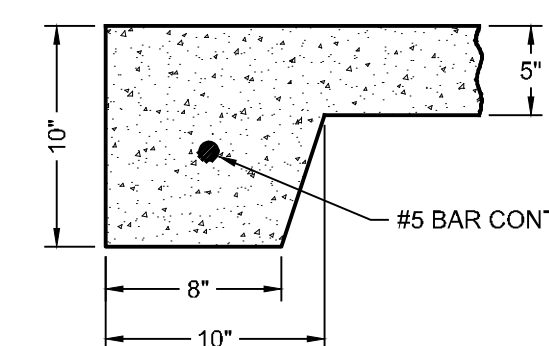
7 EXPANSION JOINT SEALANT  
NOT TO SCALE



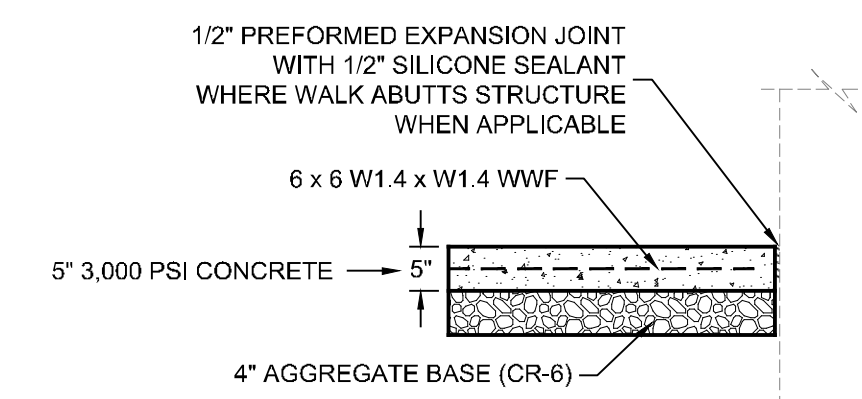
8 CONTRACTION JOINT SEALANT  
NOT TO SCALE



NOTE: TO BE USED AT ALL SIDEWALK TERMINAL ENDS AND AT ALL EDGES OF ISOLATED SIDEWALK AREAS EXCEPT WHERE ADJACENT TO A BUILDING.

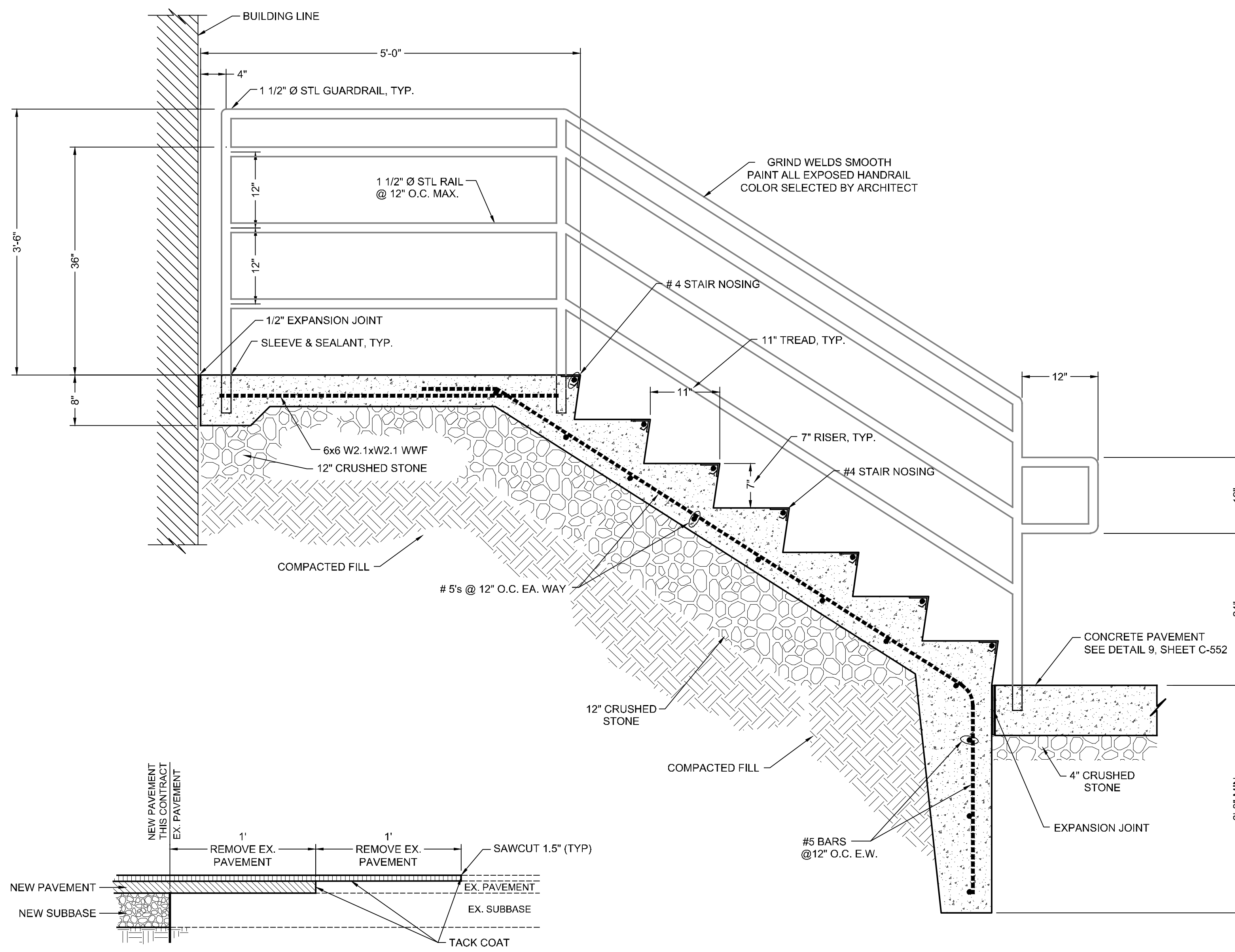


END AND EDGE DETAIL



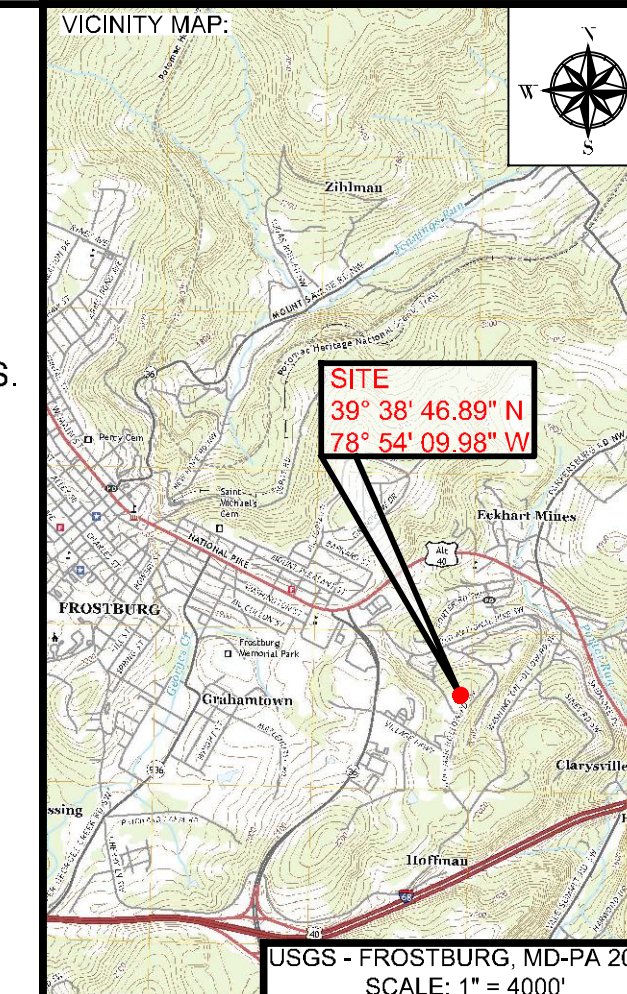
CONCRETE SIDEWALK SECTION

9 SIDEWALK DETAIL  
NOT TO SCALE



10 PAVEMENT TRANSITION DETAIL  
NOT TO SCALE

11 CONCRETE STAIR SECTION  
SCALE: 1" = 1'-0"



PROJECT:  
**FINAL PLAN SUBMITTAL**  
FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
MARYLAND

CLIENT:  
**CLYM**  
CLYM ENVIRONMENTAL SERVICES, LLC  
1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704



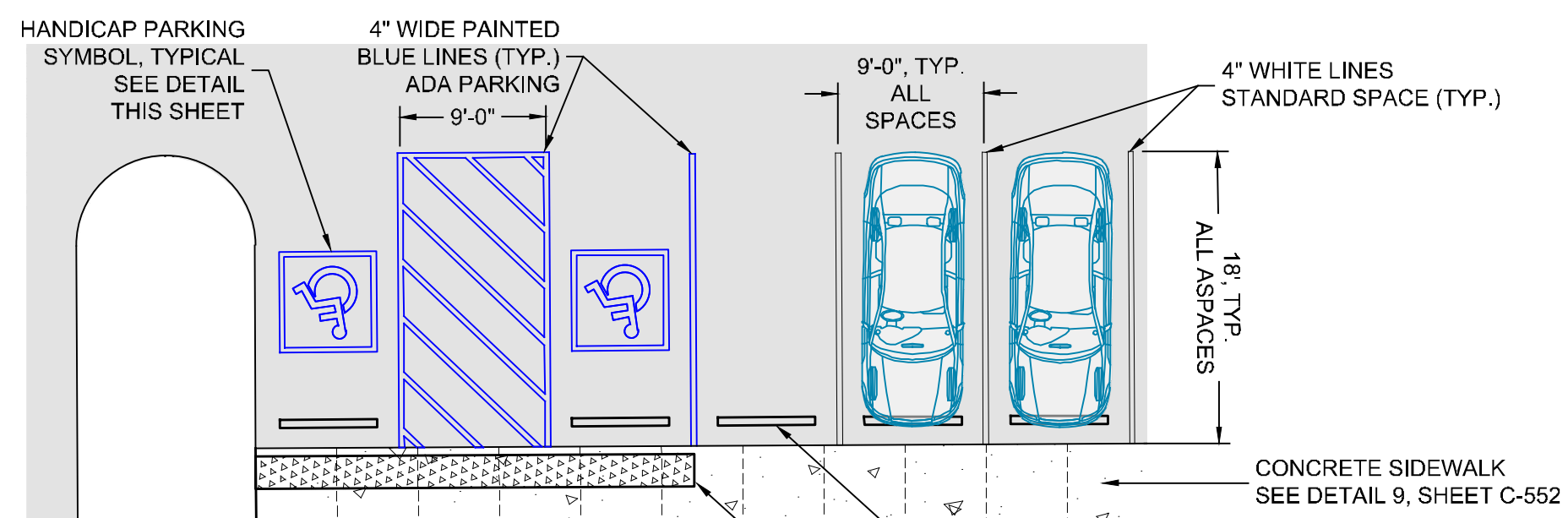
**bba**  
Surveyors | Engineers | Planners  
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23 East Main Street, Suite 200 Frostburg, Maryland 21532  
Phone (301)-687-0494 www.bbasurey.com Fax (301)-687-0495

NO.		BY	DATE	DESCRIPTION
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APPROVED: MB CRD FILE: 23088

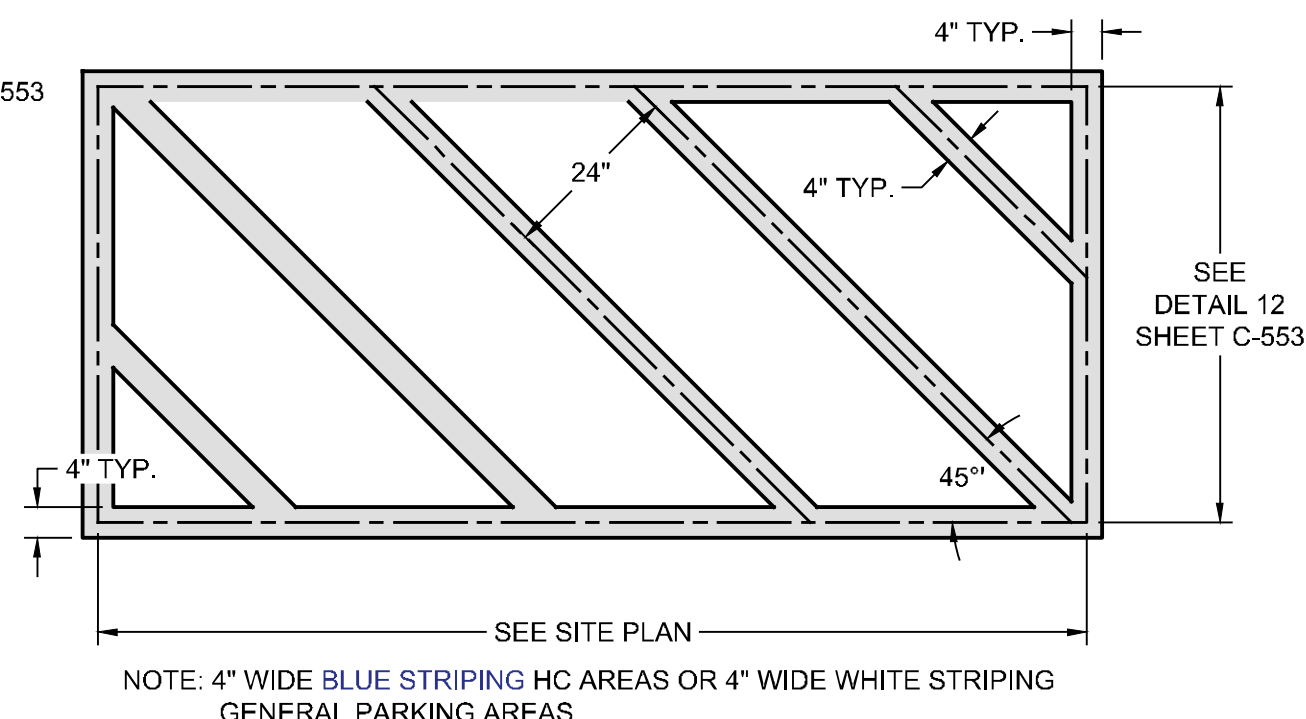
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SHEET TITLE:  
**GENERAL DETAILS**  
IFR: 7/05/2024  
SHEET #:  
C-552

CAD FILE: E:\2023\23088 - Cym Environmental - Design Services\PRODUCTION\C-551 SERIES.dwg PLOT DATE/TIME: 7/4/2024 - 1:40pm LAST SAVE BY: work106

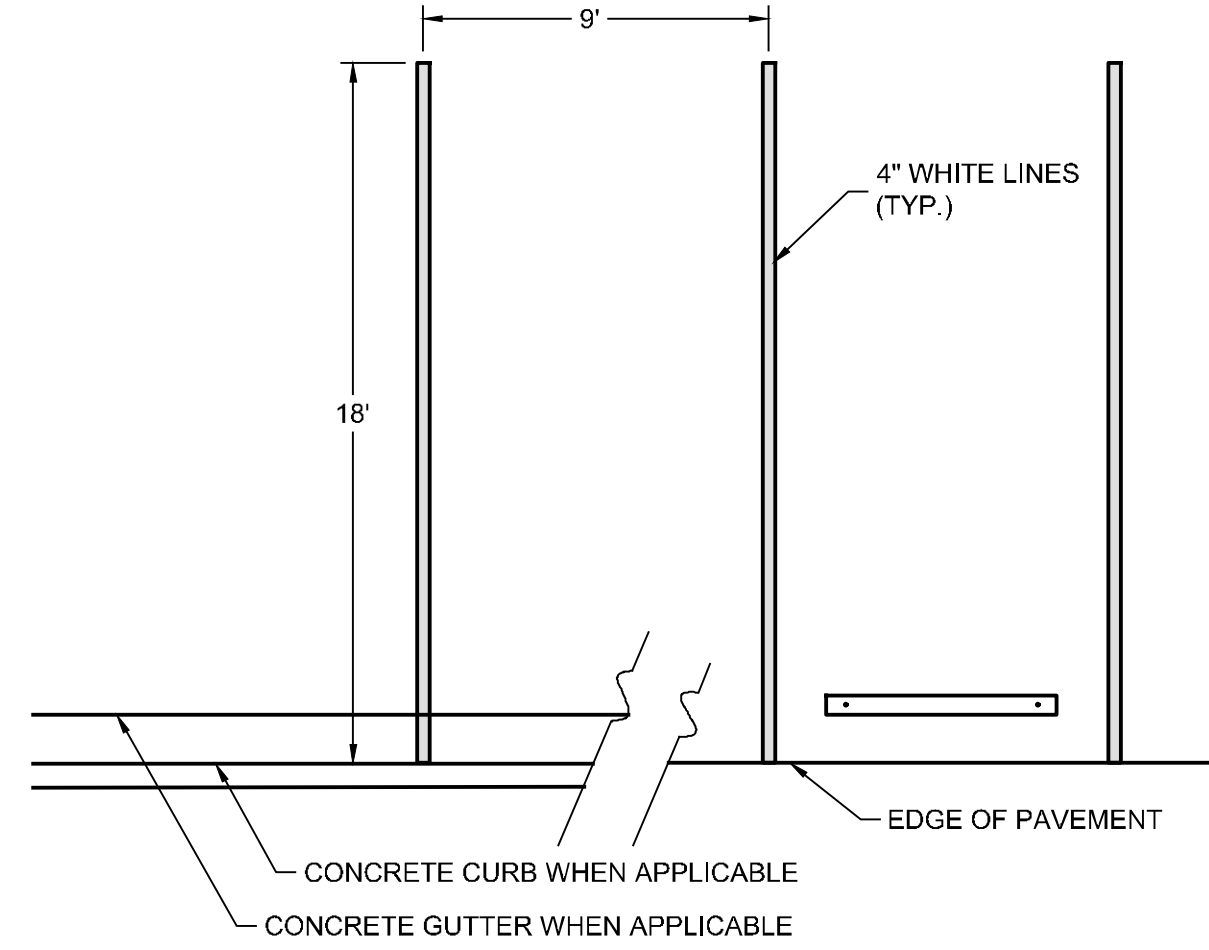


12 PARKING DETAIL  
NOT TO SCALE

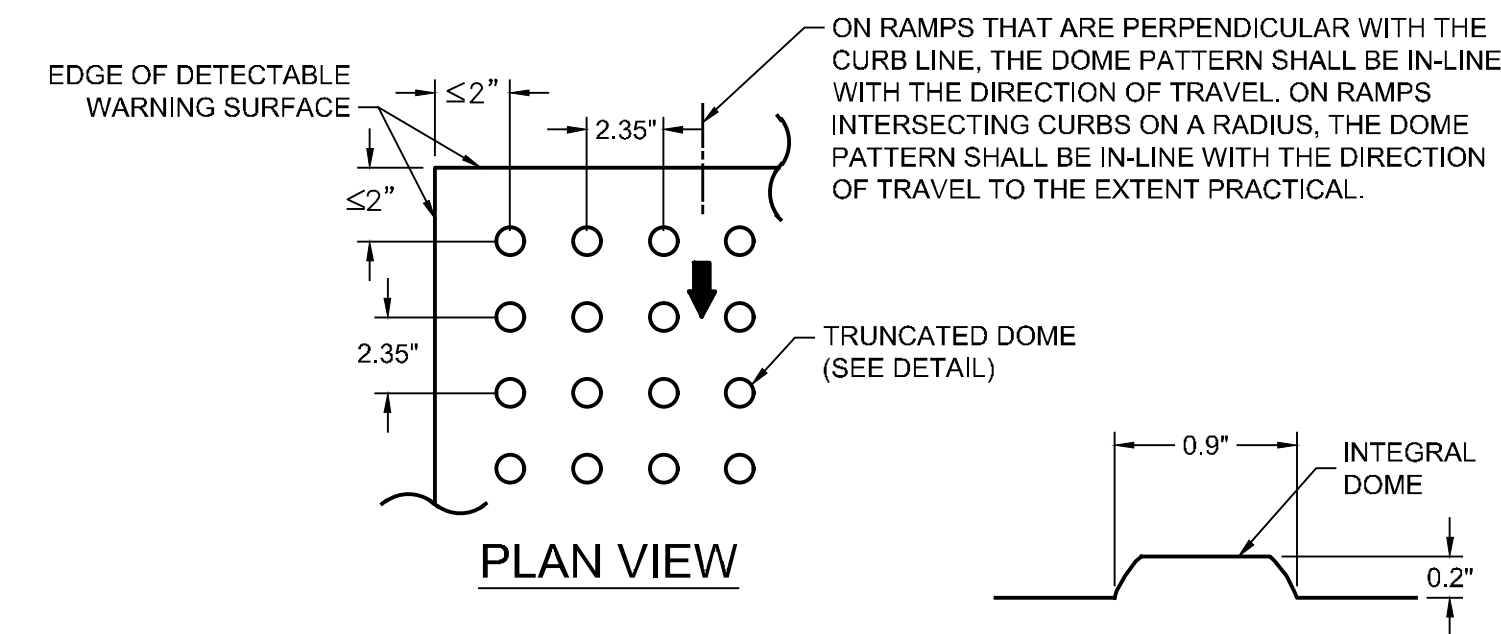
PERMANENT SIGNAGE LEGEND					
No. REQ'D.	IDENTIFICATION	DESCRIPTION	BACKGROUND/LEGEND	SIZE/S.F.	S.F. TOTAL
2	R7-8	HANDICAP RESERVED PARKING	WHITE/GREEN (BLUE SYMBOL)	12" x 18" / 1.5	3.0
1	R7-8a	VAN ACCESSIBLE	WHITE/GREEN	6" x 12" / 0.5	0.5
1	R8-1(2)	NO PARKING IN ACCESS AISLE	WHITE/RED	12" x 18" / 1.5	1.5
1	R1-1	STOP	RED/RED	30" x 30" / 6.25	6.25
TOTAL					11.25



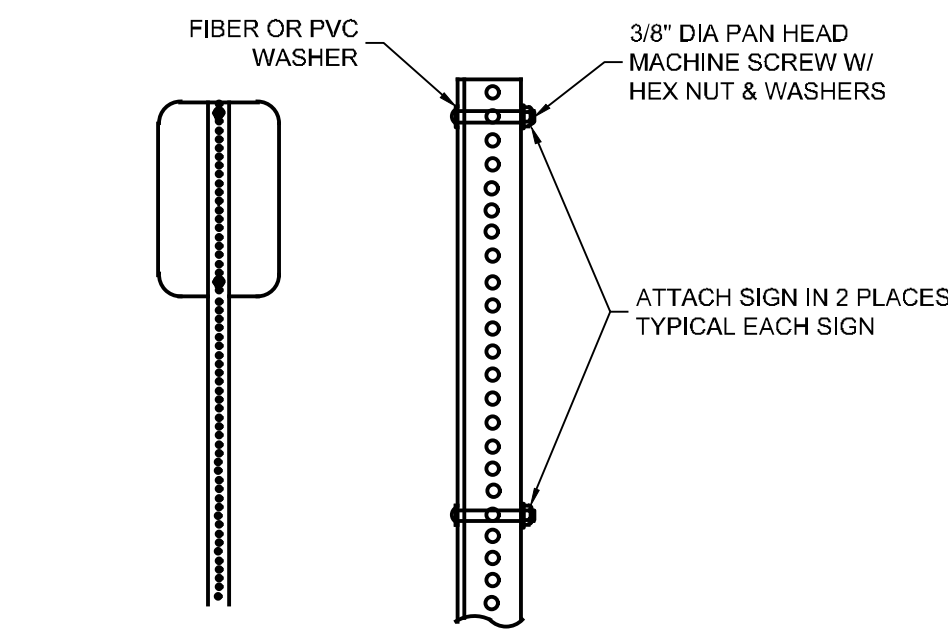
13 DIAGONAL PAINT STRIPING  
NOT TO SCALE



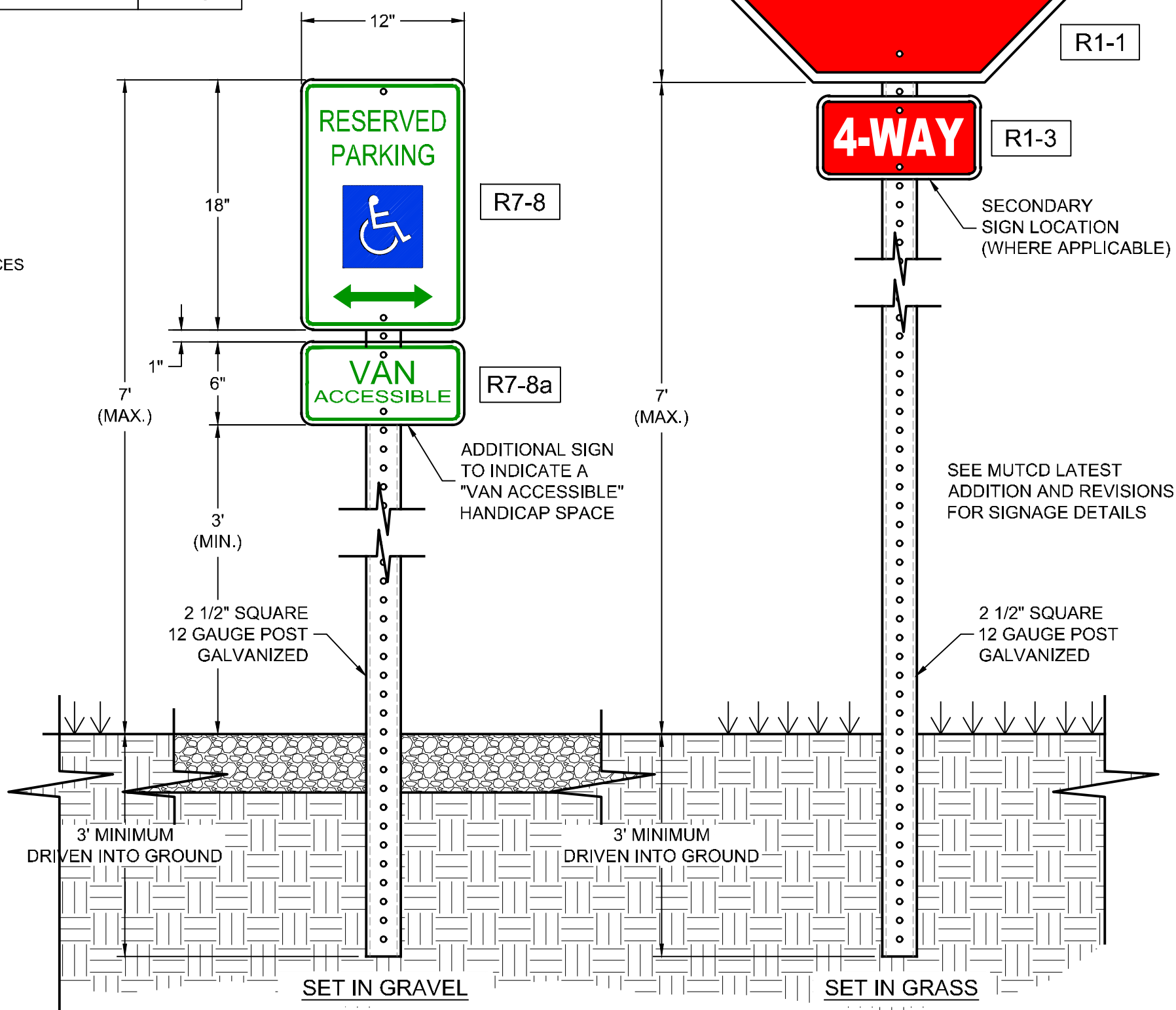
14 GENERAL PARKING PAINT STRIPING DETAIL  
NOT TO SCALE



15 TRUNCATED DOME DETAIL  
NOT TO SCALE

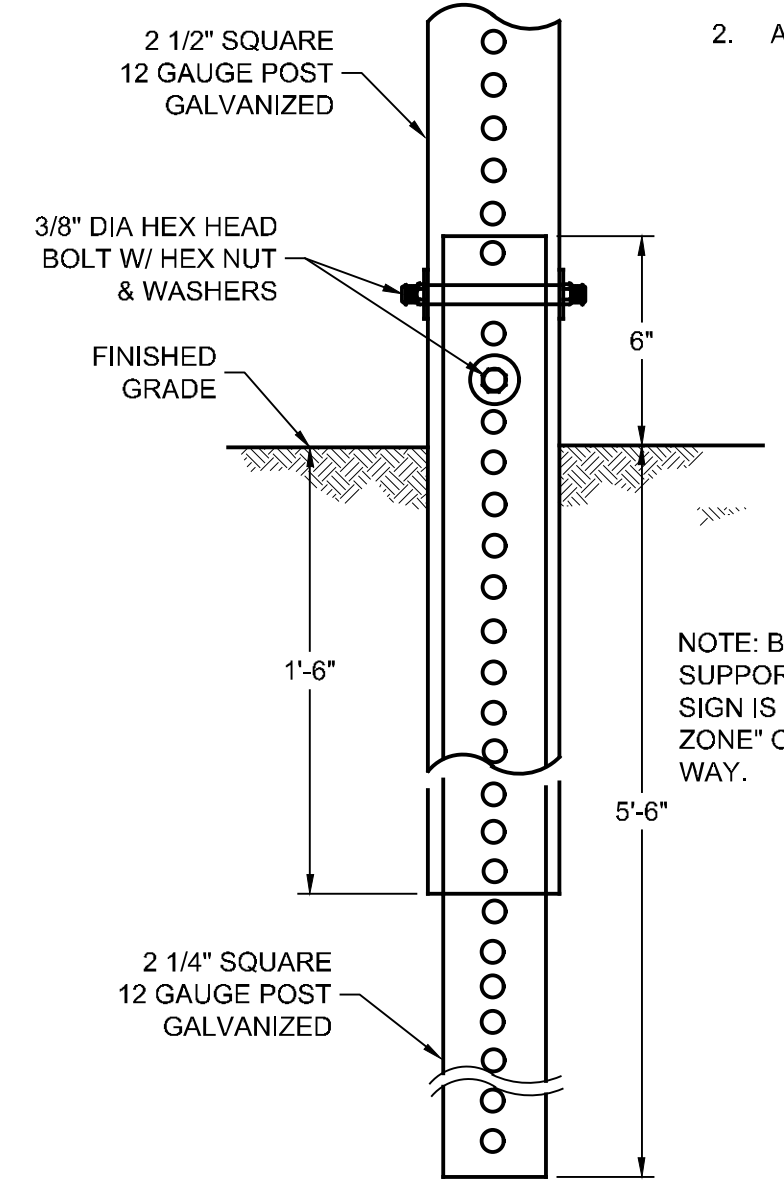


17 SIGN PANEL ATTACHMENT DETAIL  
NOT TO SCALE

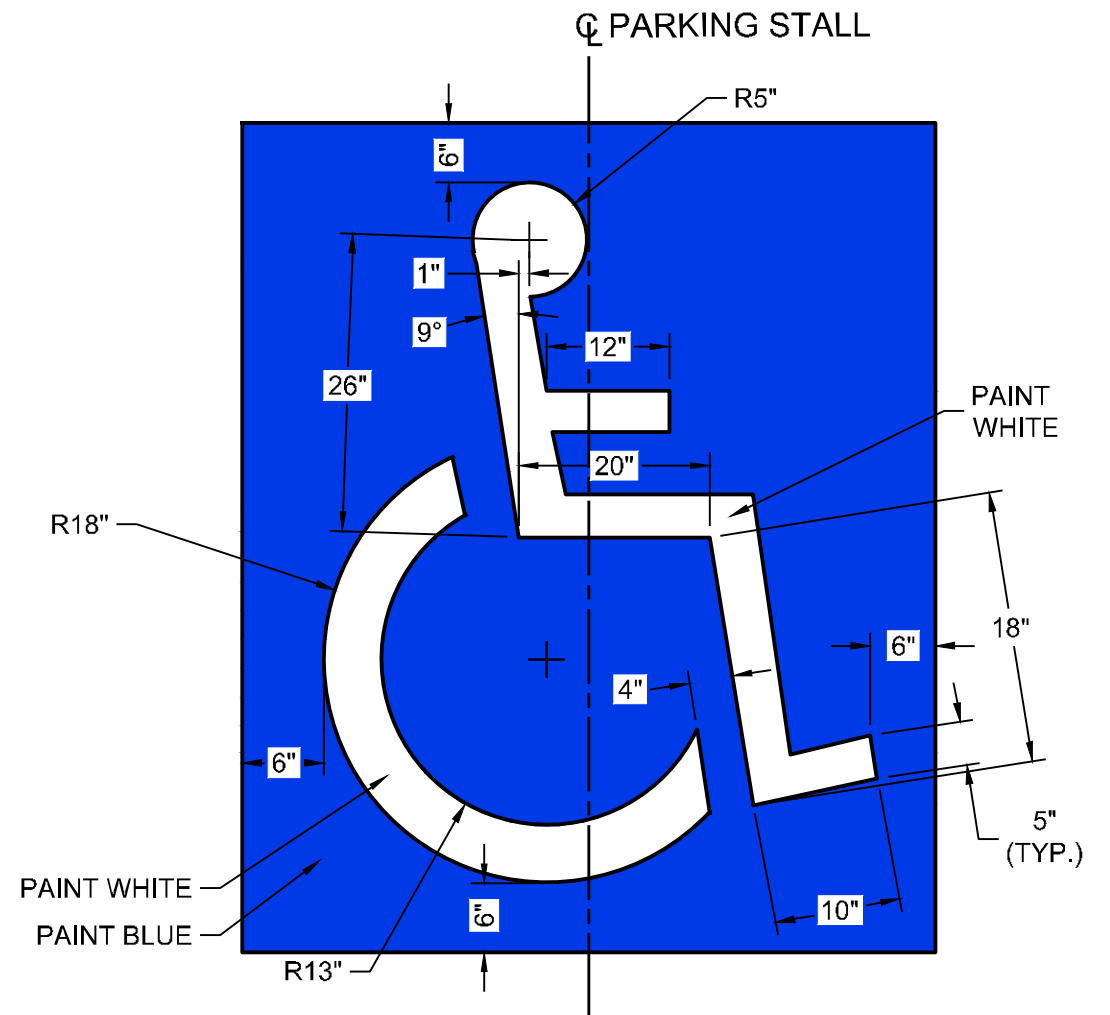


18 TYPICAL SIGN INSTALLATION DETAILS  
NOT TO SCALE

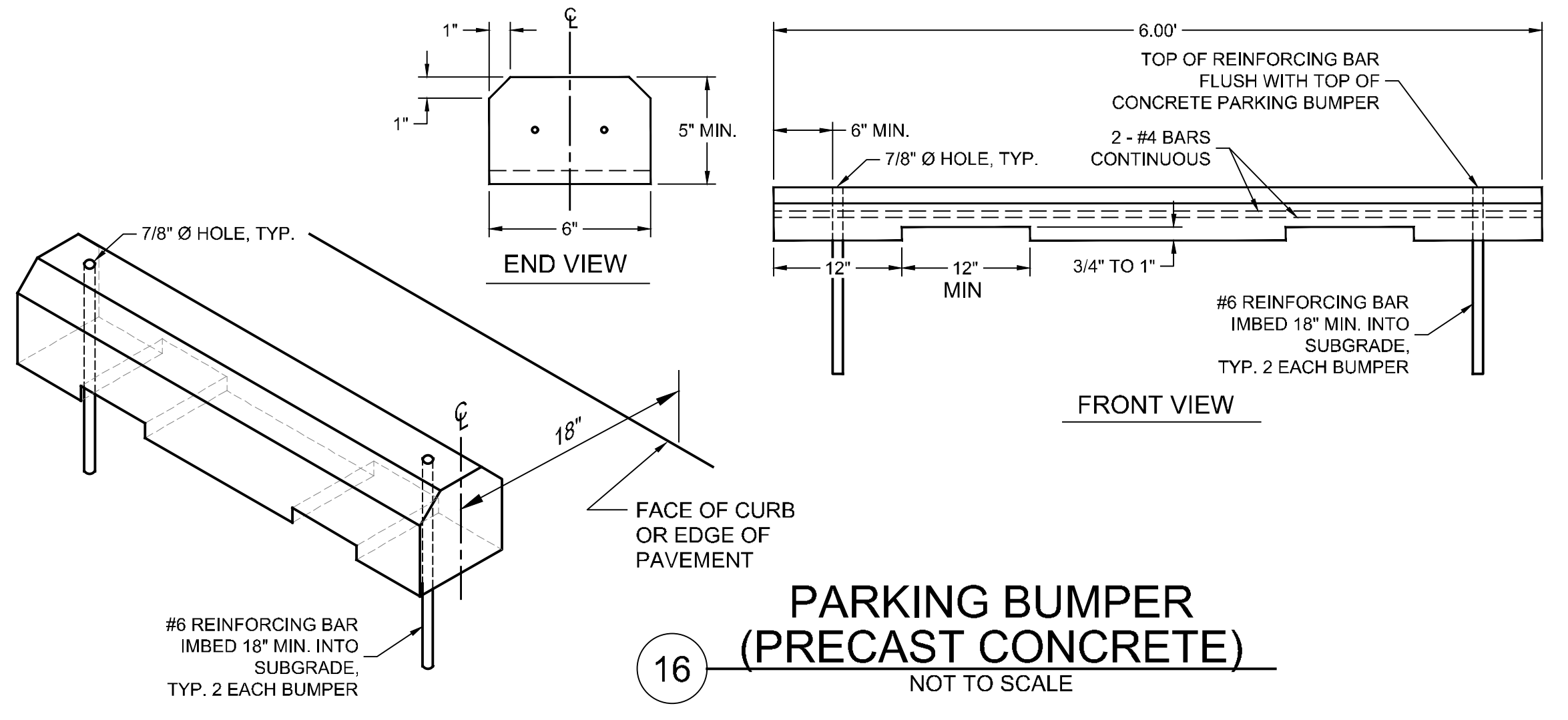
- ADA PARKING NOTES:
- ALL HANDICAPPED PARKING SPACES MUST BE SIGNED AND MARKED PER STANDARDS ESTABLISHED BY THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG).
  - ADA PARKING SPACES SHALL BE DESIGNATED AS RESERVED BY A PAINTED SYMBOL OF ACCESSIBILITY AND A SIGN SHOWING THE ACCESSIBLE SYMBOL.



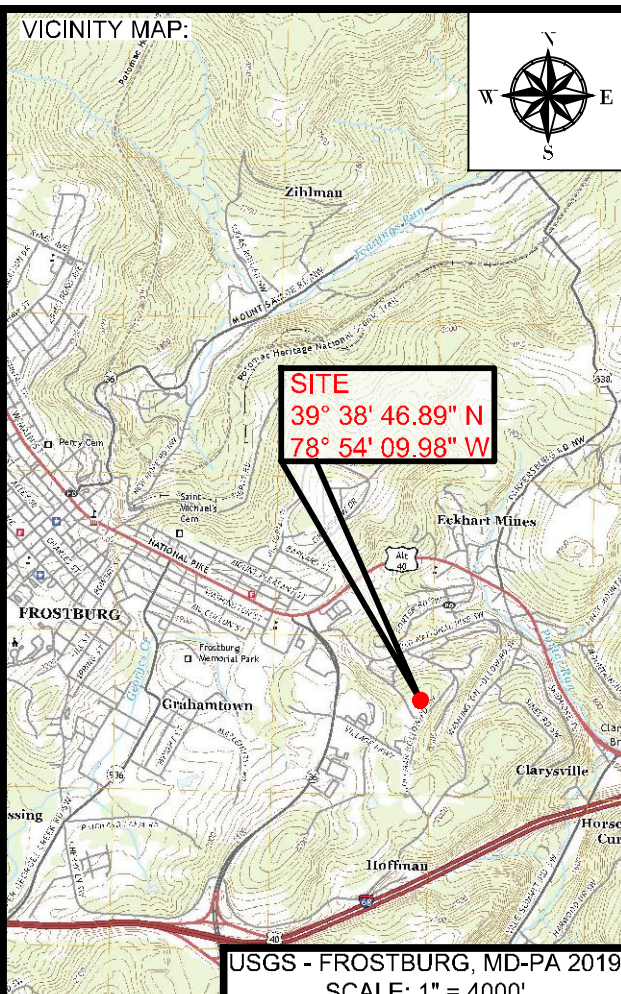
19 BREAKAWAY OR YIELDING SIGN POST DETAIL  
NOT TO SCALE



20 INTERNATIONAL SYMBOL OF ACCESSIBILITY  
NOT TO SCALE



16 PARKING BUMPER (PRECAST CONCRETE)  
NOT TO SCALE



PROJECT:  
**FINAL PLAN SUBMITTAL**  
FUTURE INDUSTRIAL DEVELOPMENT SITE  
FROSTBURG BUSINESS PARK  
FROSTBURG  
ZONING: T-LI  
ELECTION DISTRICT: 24-000  
ALLEGANY COUNTY  
MARYLAND

CLIENT:  
**CLYM**  
CLYM ENVIRONMENTAL SERVICES, LLC  
1539 TILCO DRIVE  
FREDERICK, MARYLAND 21704



**bba**  
Surveyors | Engineers | Planners  
Bennett Brewer & Associates, LLC  
23 East Main Street, Suite 200  
Frostburg, Maryland 21532  
Phone: (301)-687-0494 Fax: (301)-687-0495  
www.bbasurvey.com

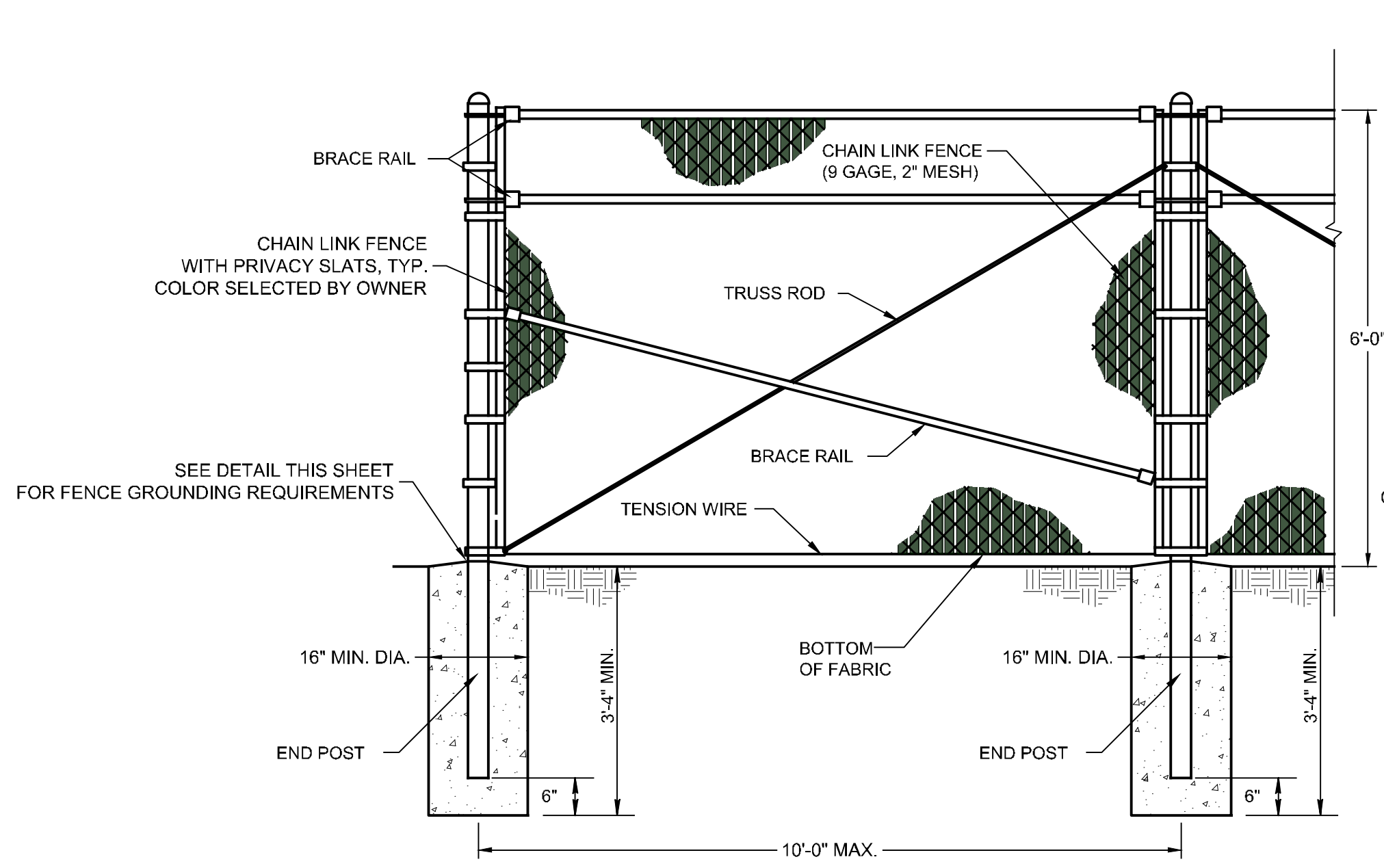
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APPROVED: MB CRD FILE: 23088

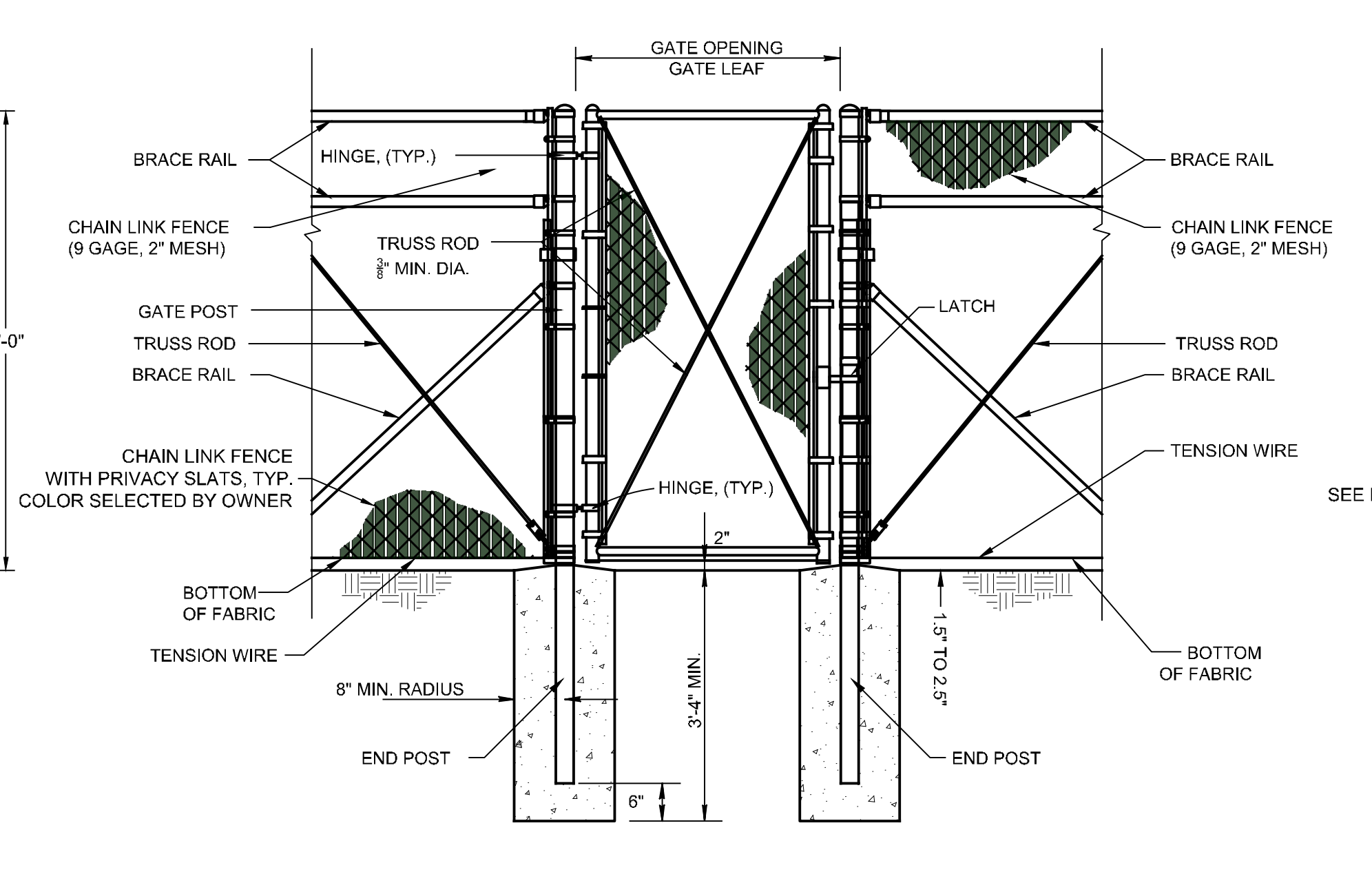
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**GENERAL DETAILS**  
IFR: 7/05/2024  
SHEET #:  
C-553

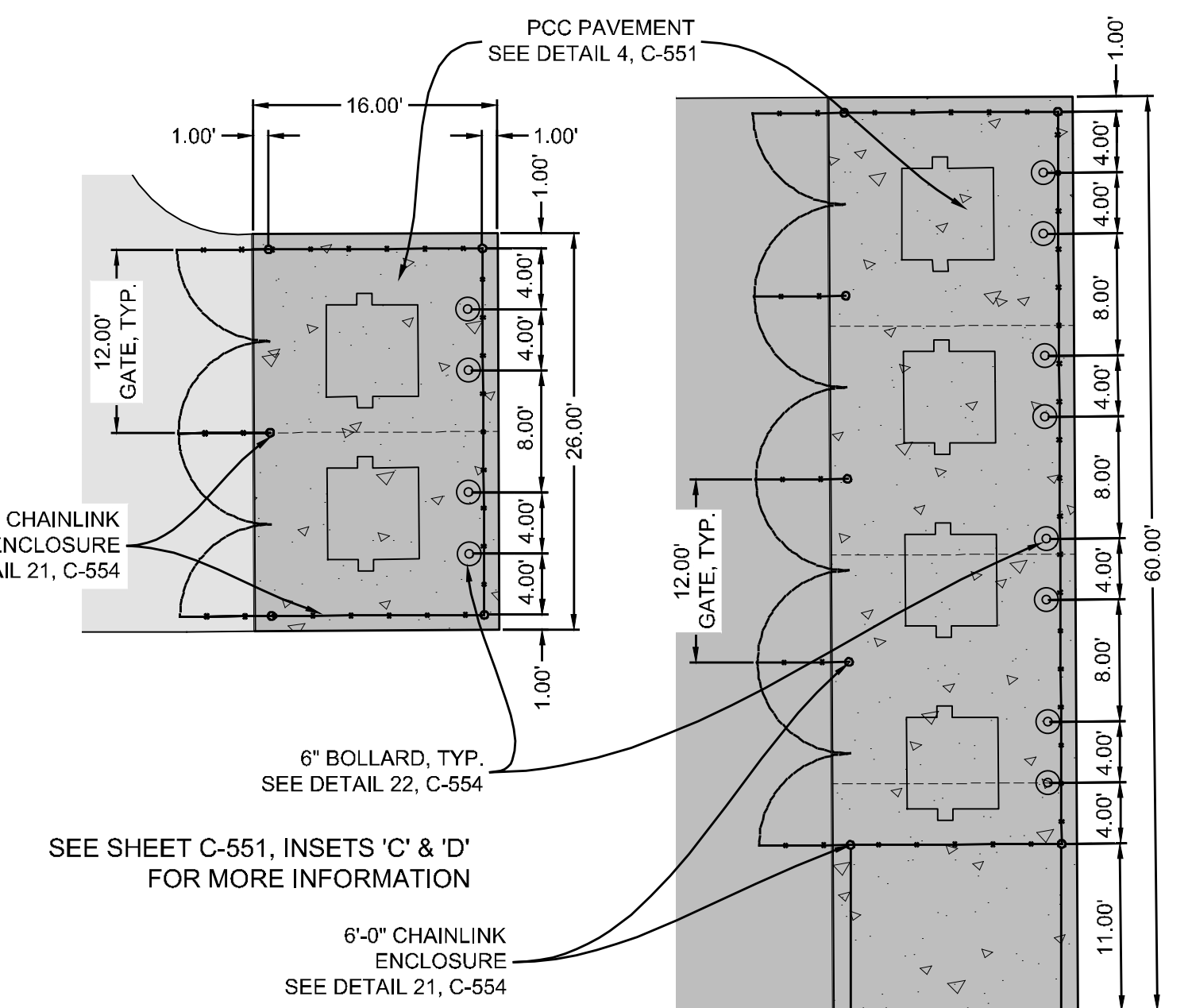
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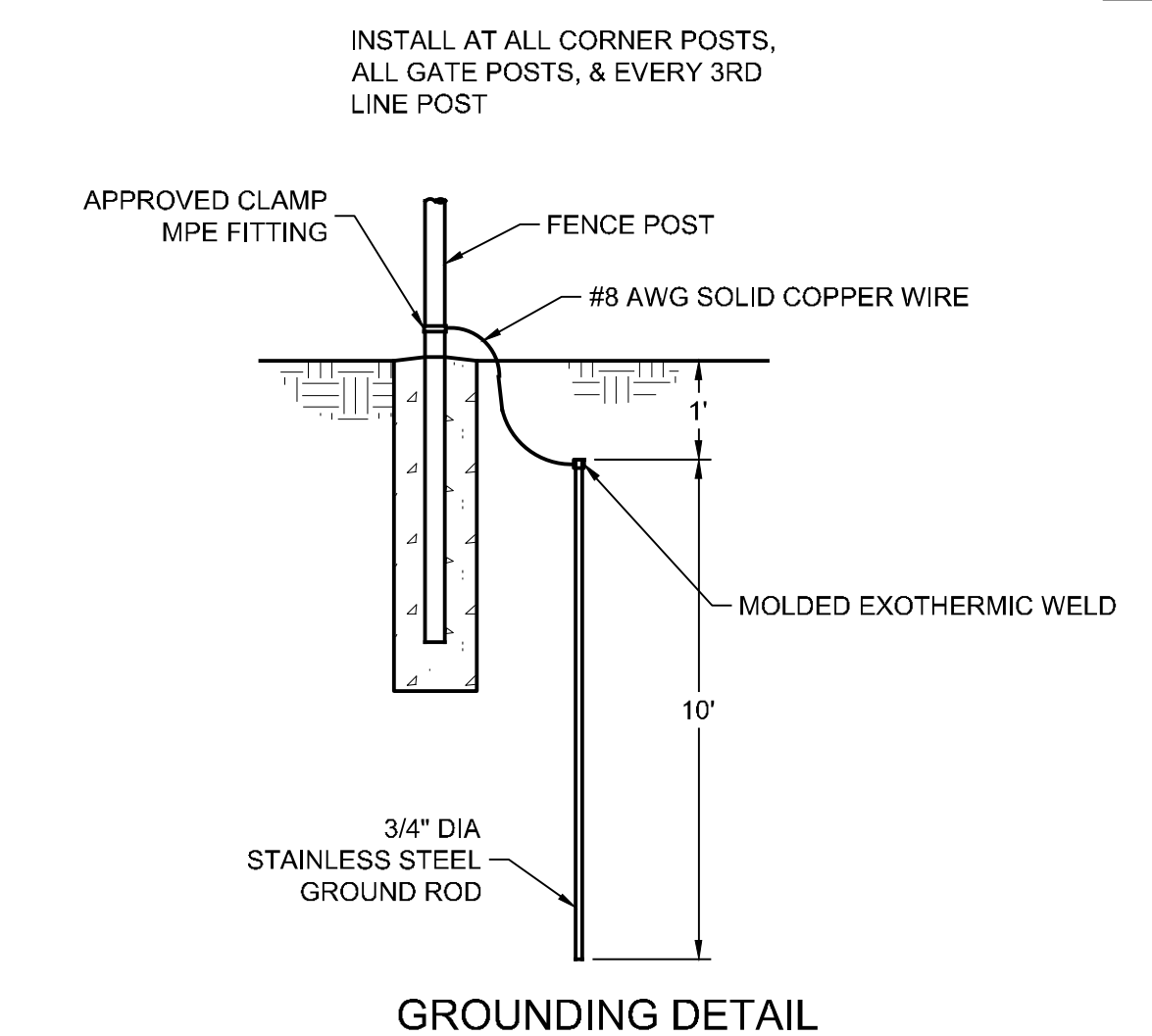
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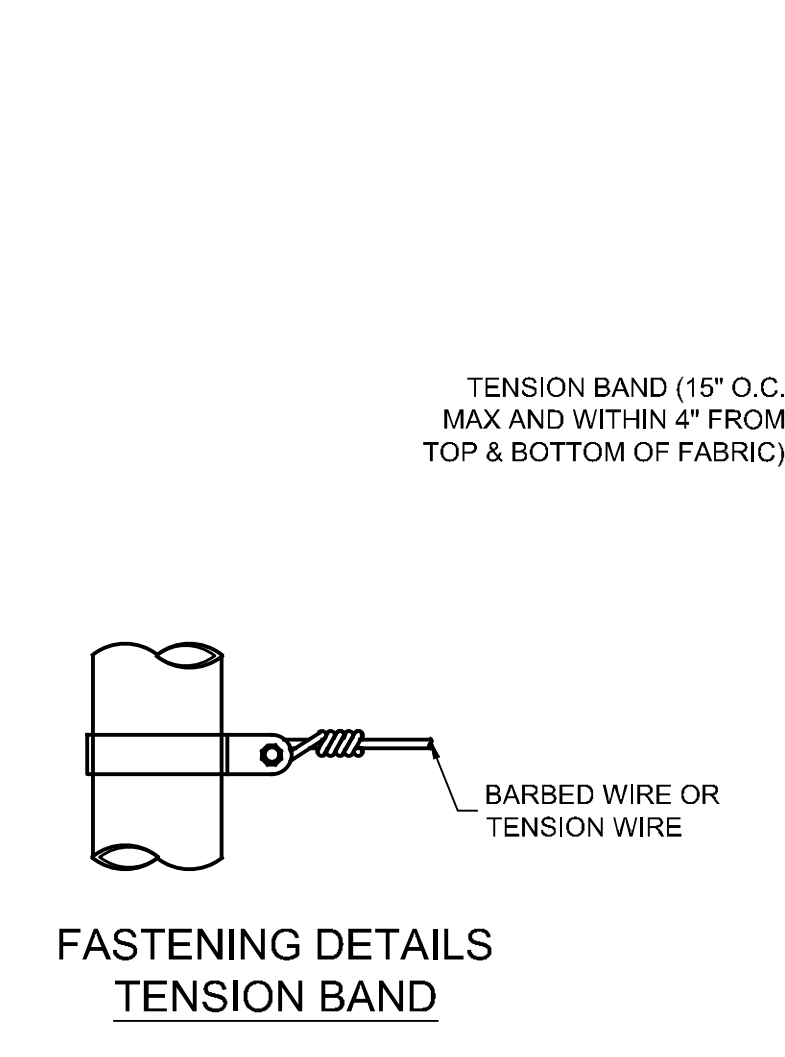
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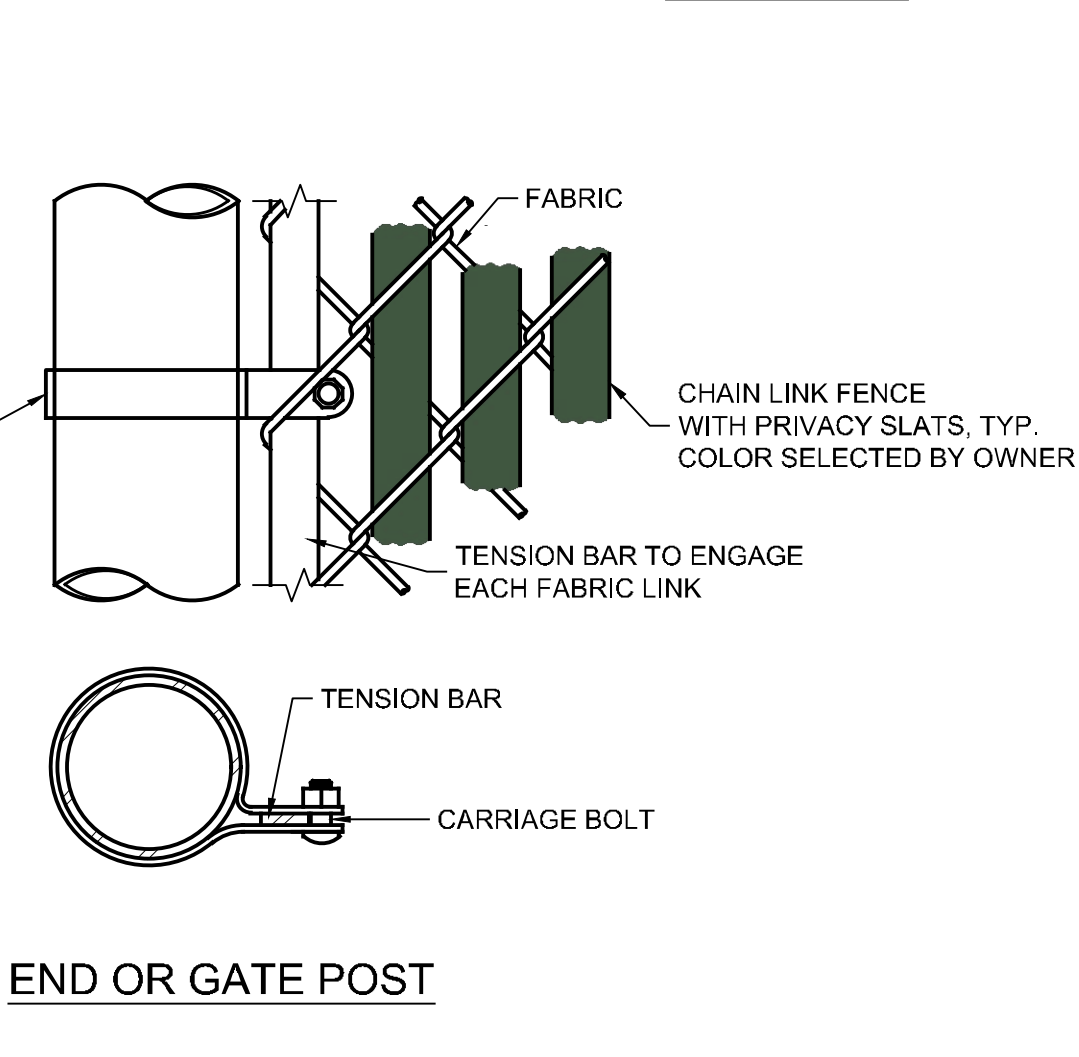
SEE SHEET C-551, INSETS 'C' & 'D' FOR MORE INFORMATION



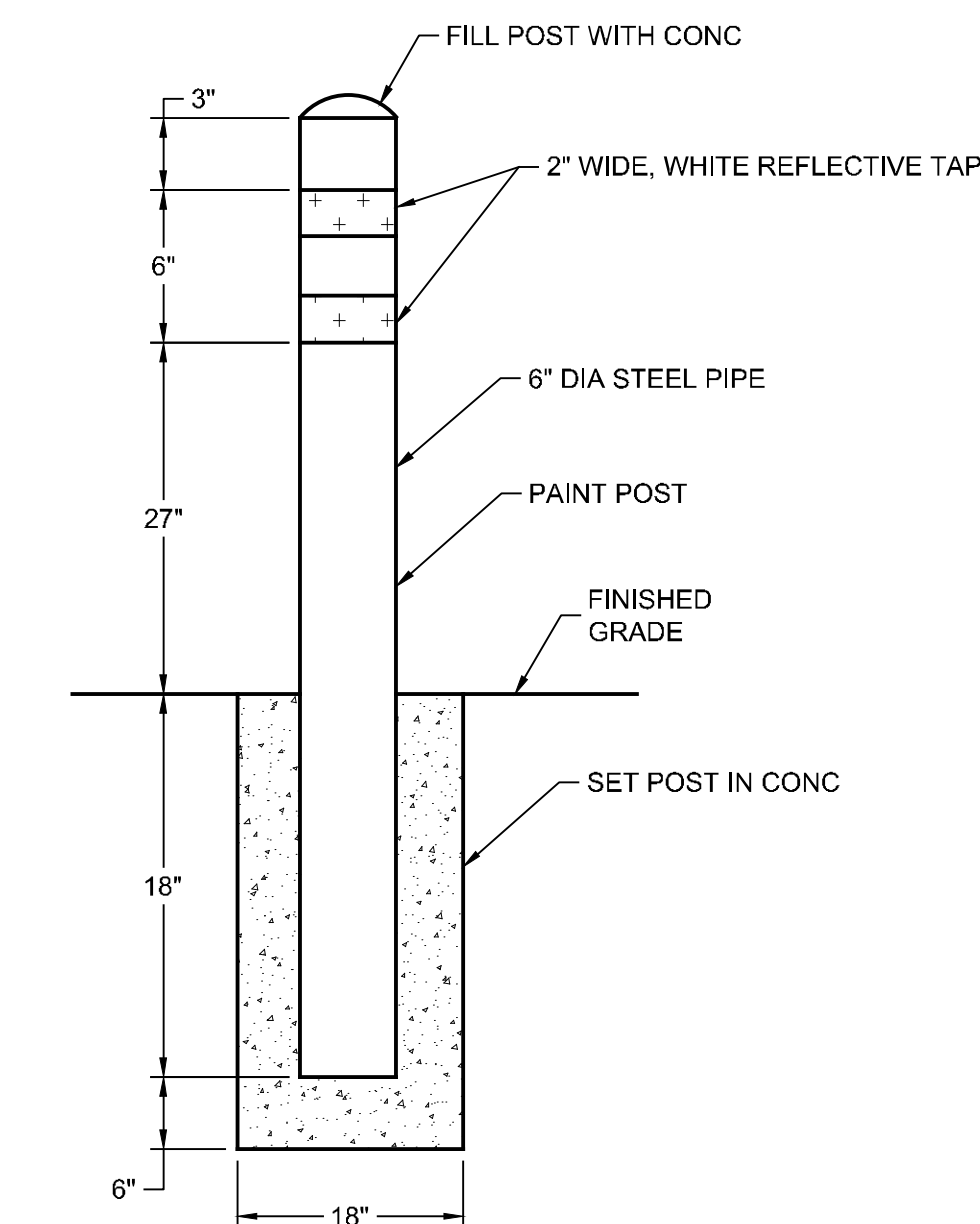
GROUNDING DETAIL



FASTENING DETAILS TENSION BAND

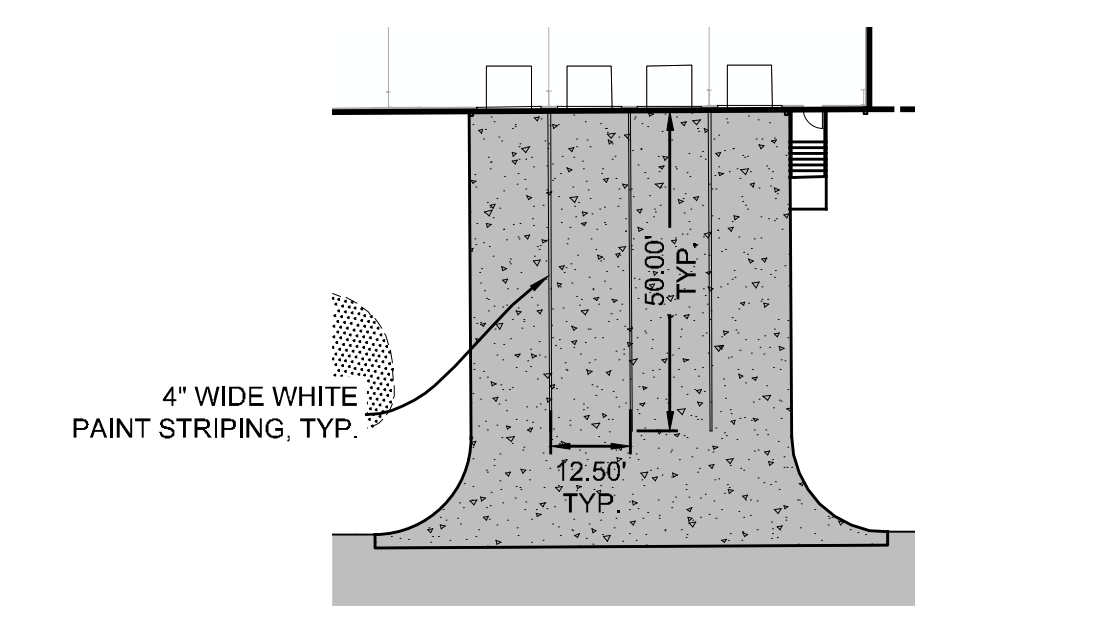


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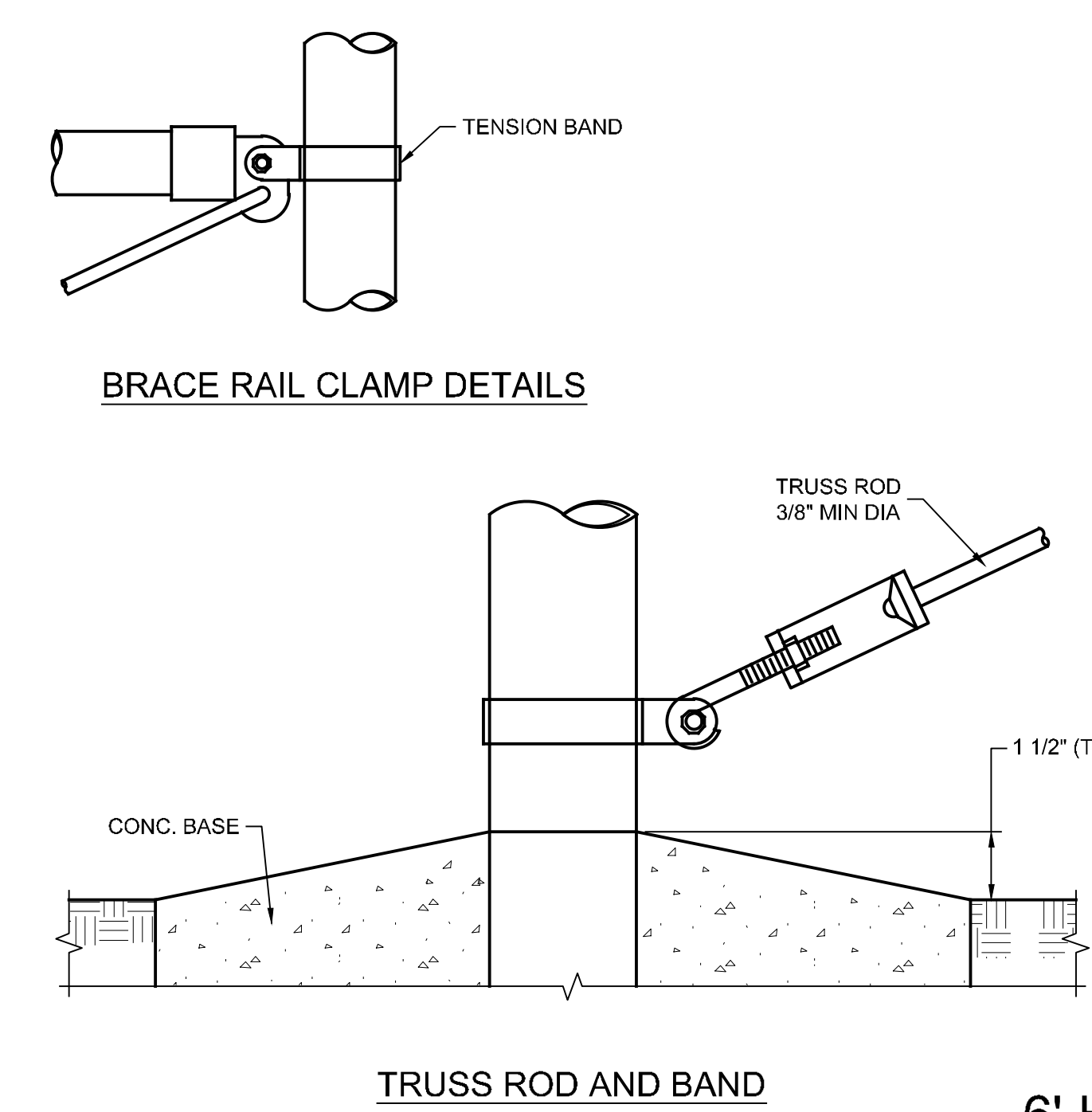
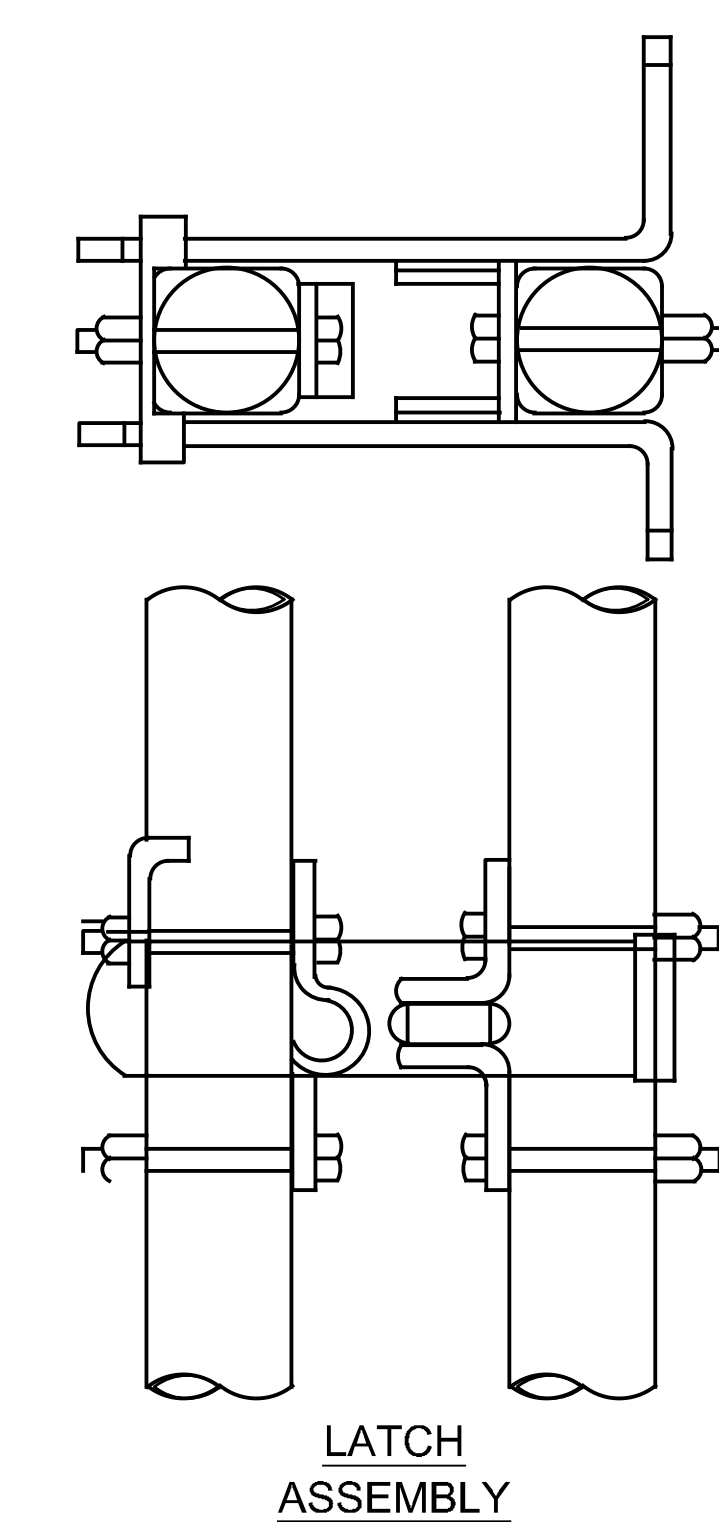


22 TYPICAL BOLLARD DETAIL NOT TO SCALE

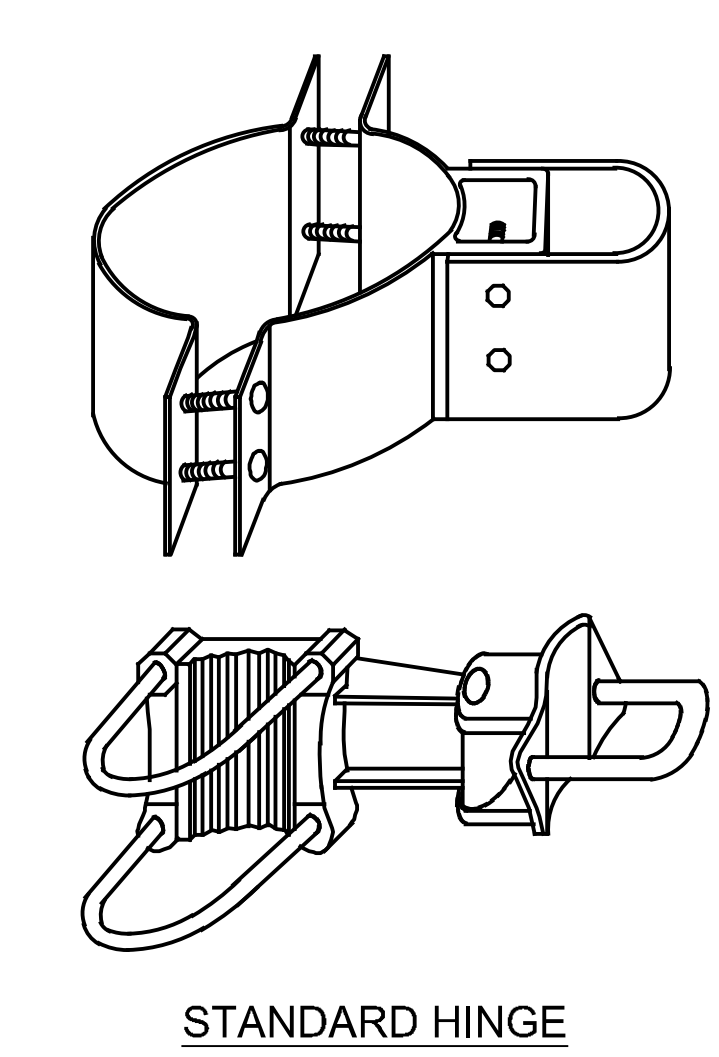
23 DUMPSTER PAD LAYOUTS NOT TO SCALE



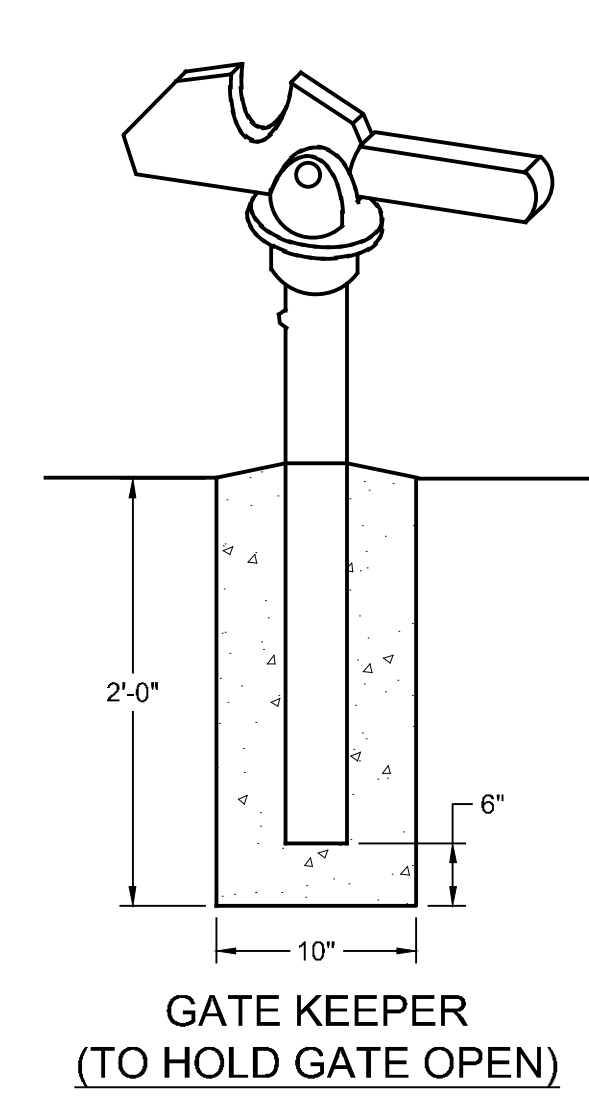
24 LOADING DOCK PAINT MARKING DETAIL NOT TO SCALE



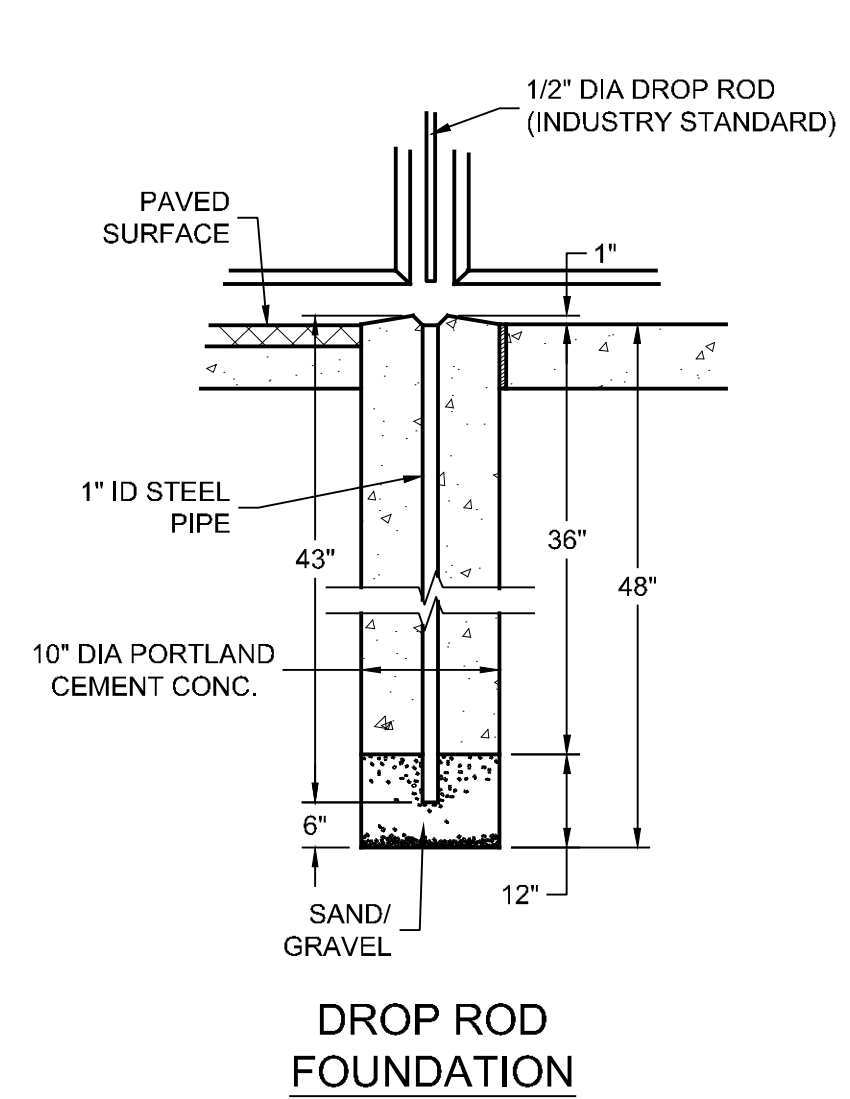
TRUSS ROD AND BAND



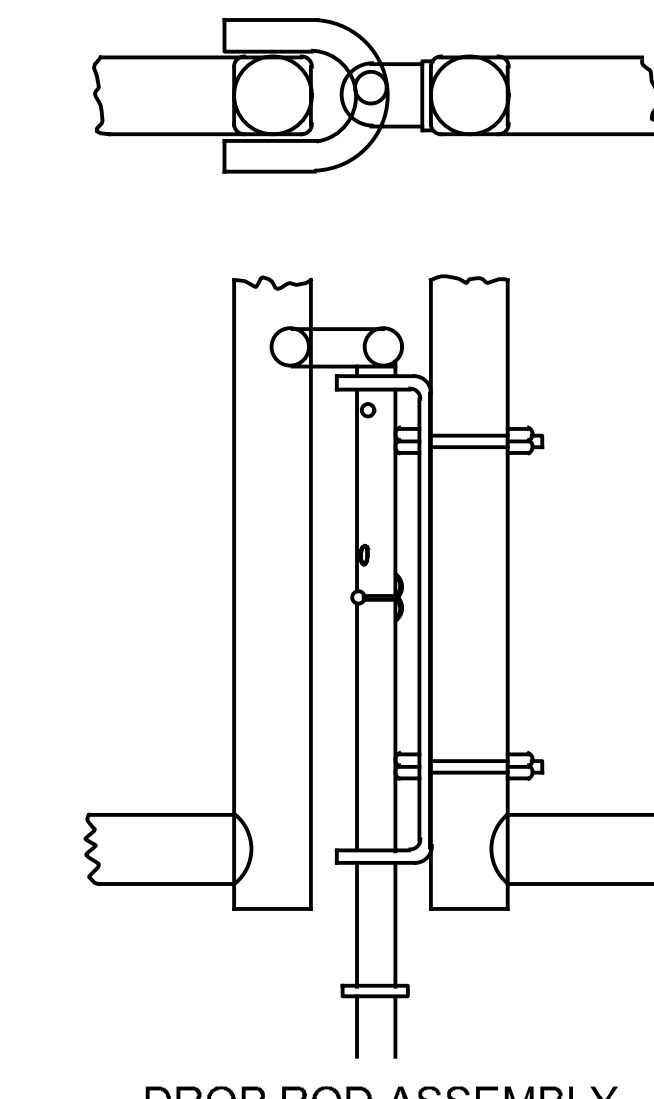
STANDARD HINGE



GATE KEEPER (TO HOLD GATE OPEN)

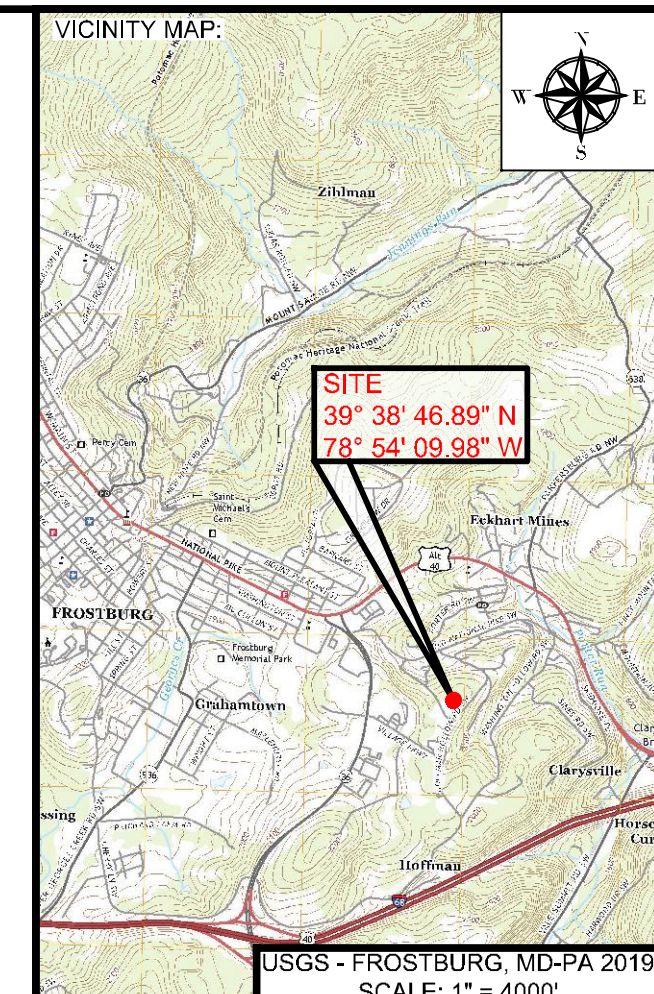


DROP ROD FOUNDATION



DROP ROD ASSEMBLY

21 6' HIGH CHAIN-LINK FENCE DETAILS NOT TO SCALE



PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
 ALLEGANY COUNTY  
 MARYLAND

CLIENT:  
  
 CLYM ENVIRONMENTAL SERVICES, LLC  
 1539 TILCO DRIVE  
 FREDERICK, MARYLAND 21704



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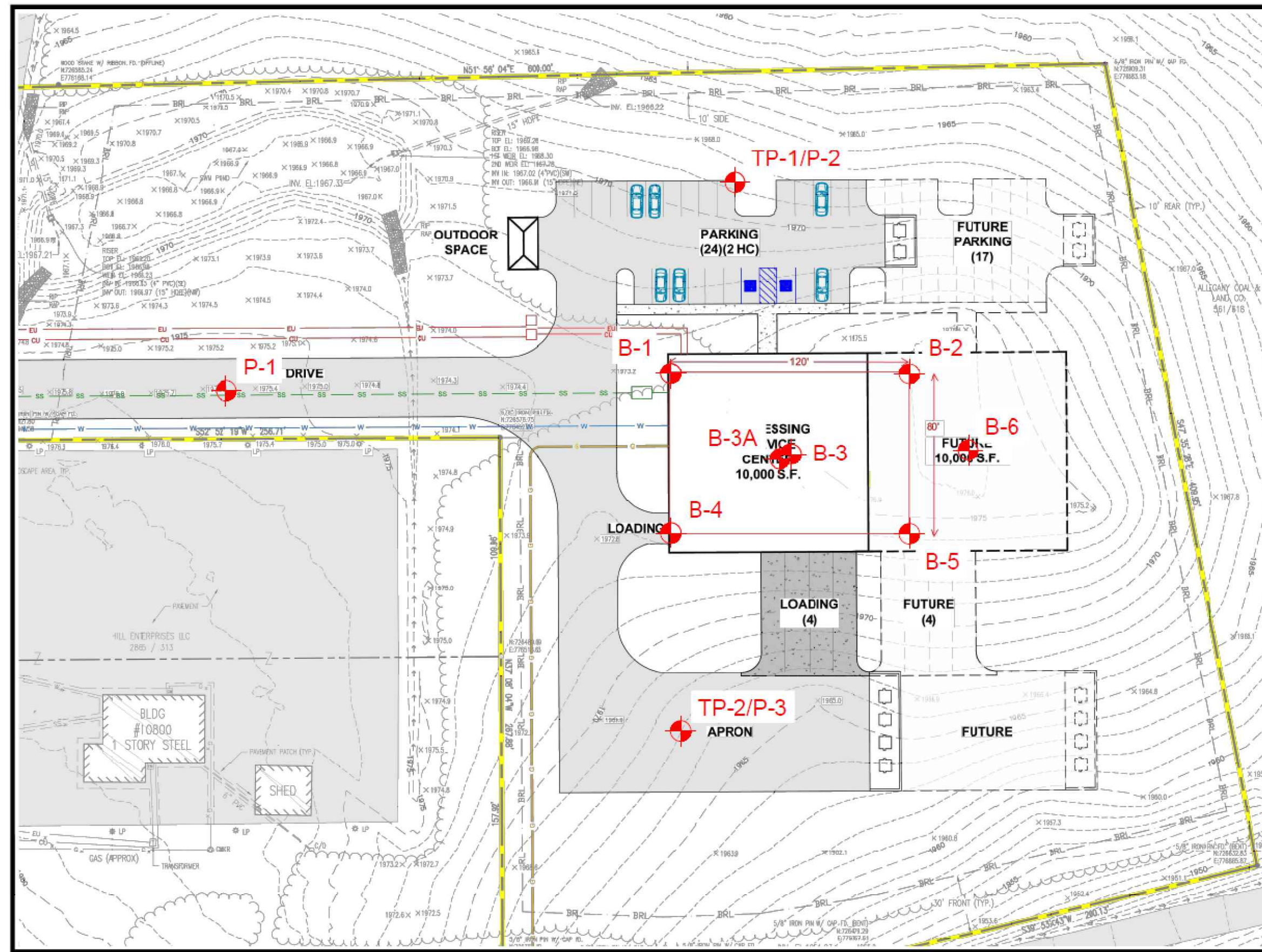
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 CHECKED: MB SCALE: AS NOTED  
 APPROVED: MB CRD FILE: 23088

BBA# 2023088

SHEET TITLE:  
**GENERAL DETAILS**  
**IFR: 7/05/2024**  
 SHEET #:  
**C-554**

CAD FILE: E:\2023\23088 - Cym Environmental - Cym Environmental - Design Services\PRODUCTION\C-551 SERIES.dwg PLOT DATE/TIME: 7/4/2024 - 1:40pm LAST SAVE BY: work106



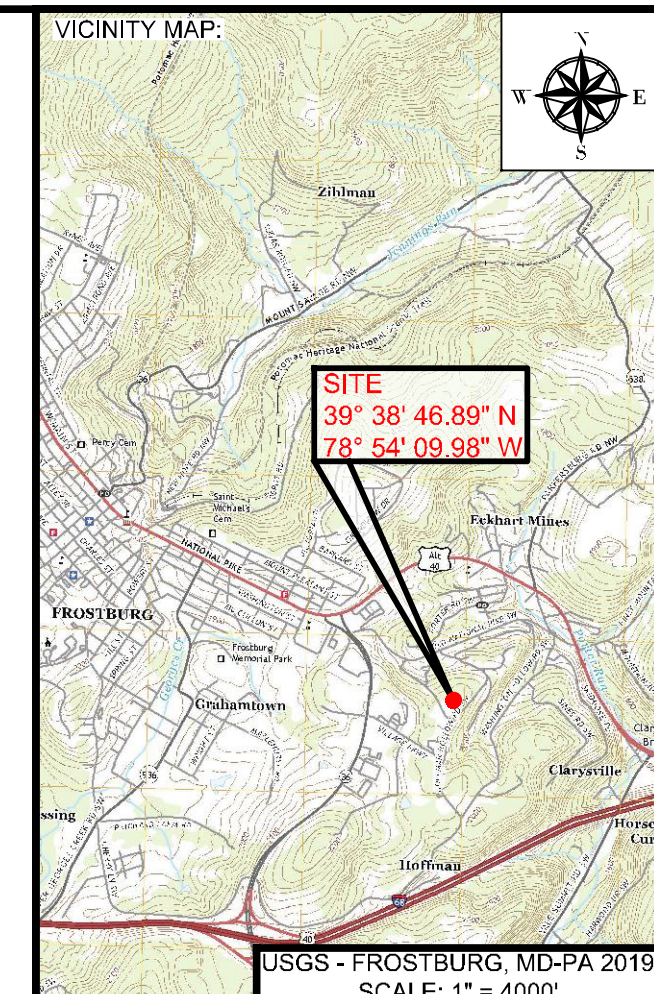
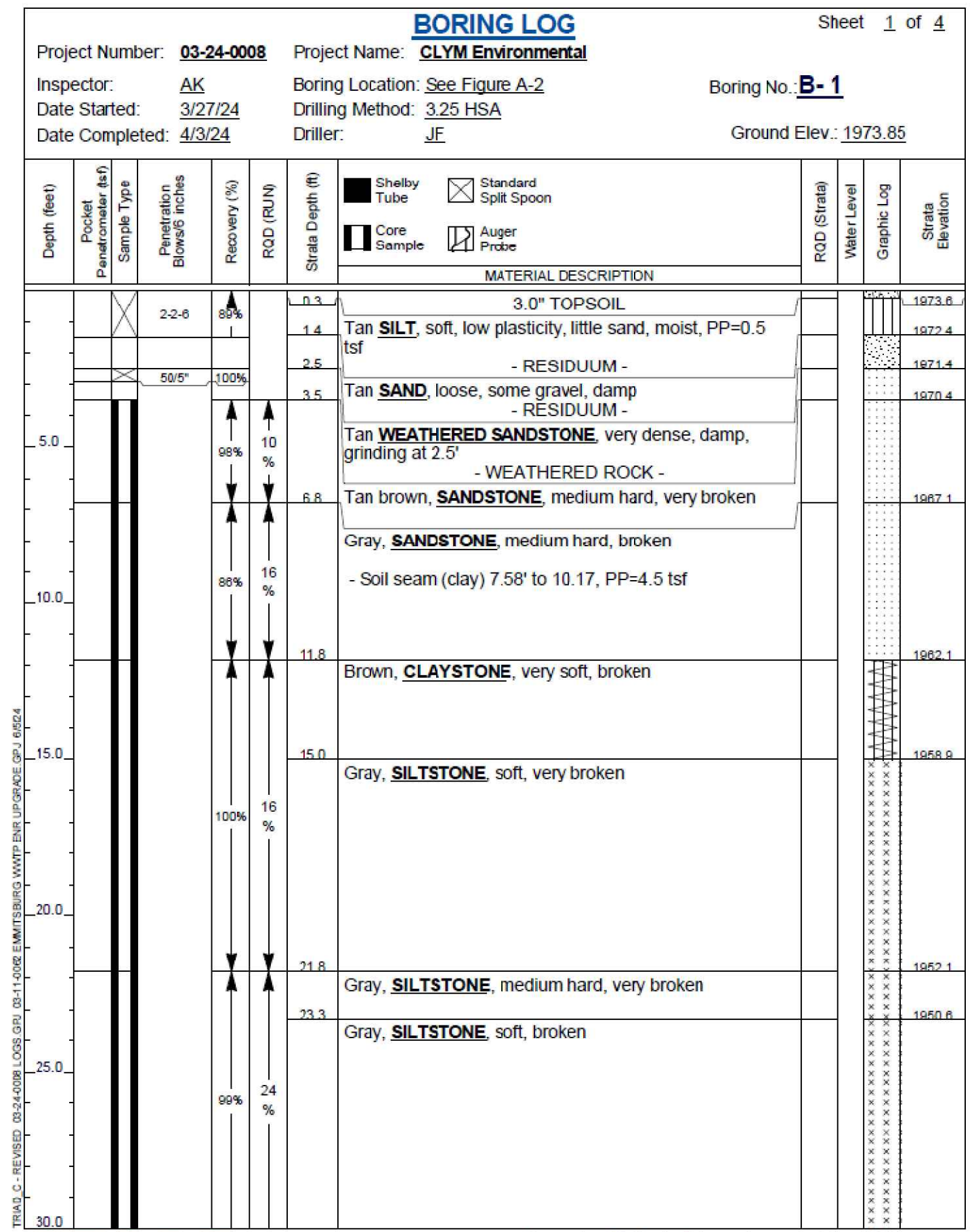


**TRIAID ENGINEERING, INC.**  
 10715 D. SHERMANN AVENUE  
 HAGERSTOWN, MD 21740  
 PH: 301.797.6400 FAX: 301.797.2424  
 OFFICE LOCATIONS: FREDERICK, MARYLAND; WEST VIRGINIA

PROJECT: REGIONAL PROCESS SERVICES CENTER, FROSTBURG BUSINESS PARK, FROSTBURG, MARYLAND  
 CLIENT: CLYM ENVIRONMENTAL SERVICES, LLC  
 PROJECT NO: 03-24-0008  
 DRAWN BY: AK  
 CHECKED BY: JF  
 DATE: 04-11-2024  
 SCALE: 1"=50'

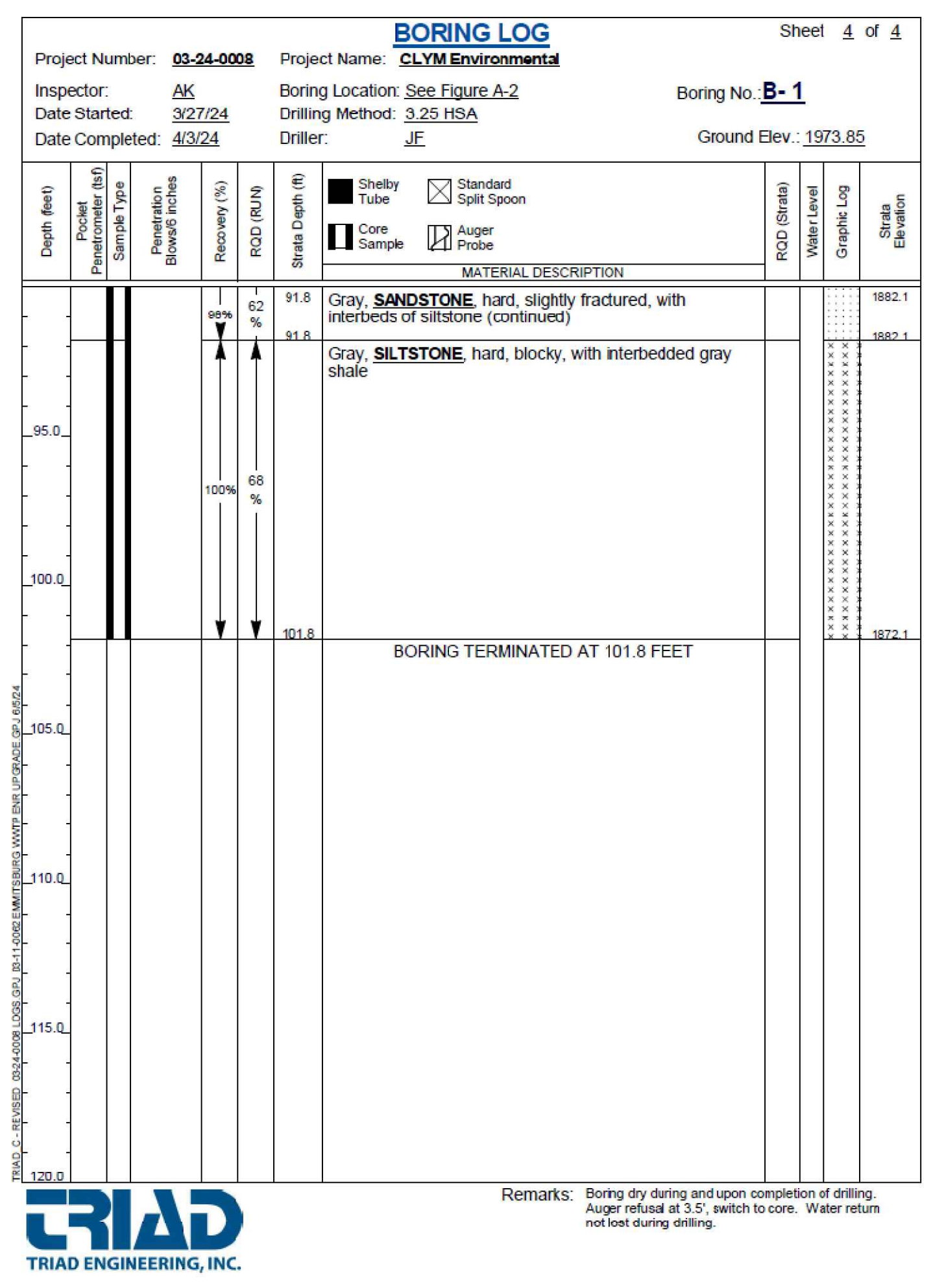
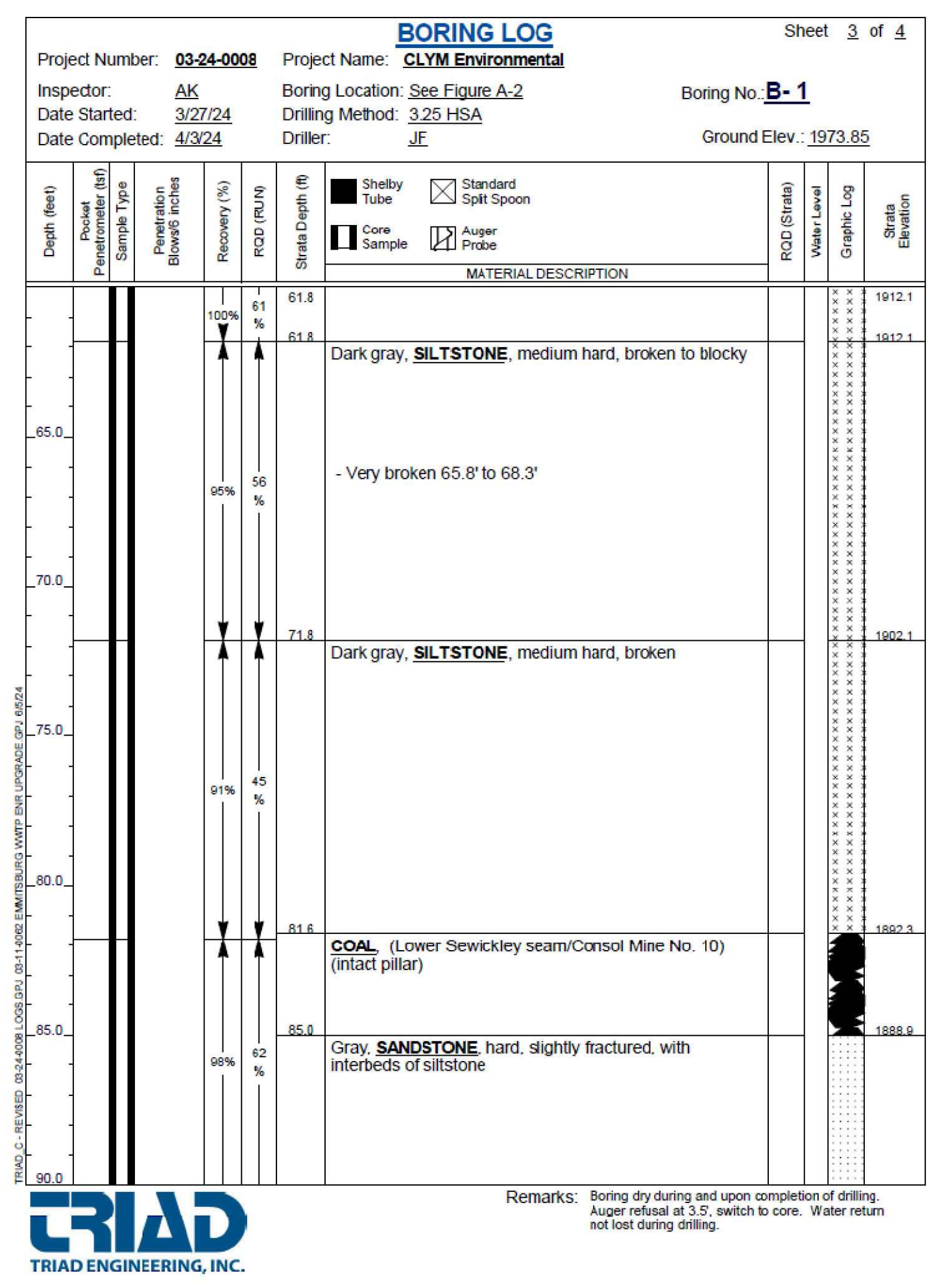
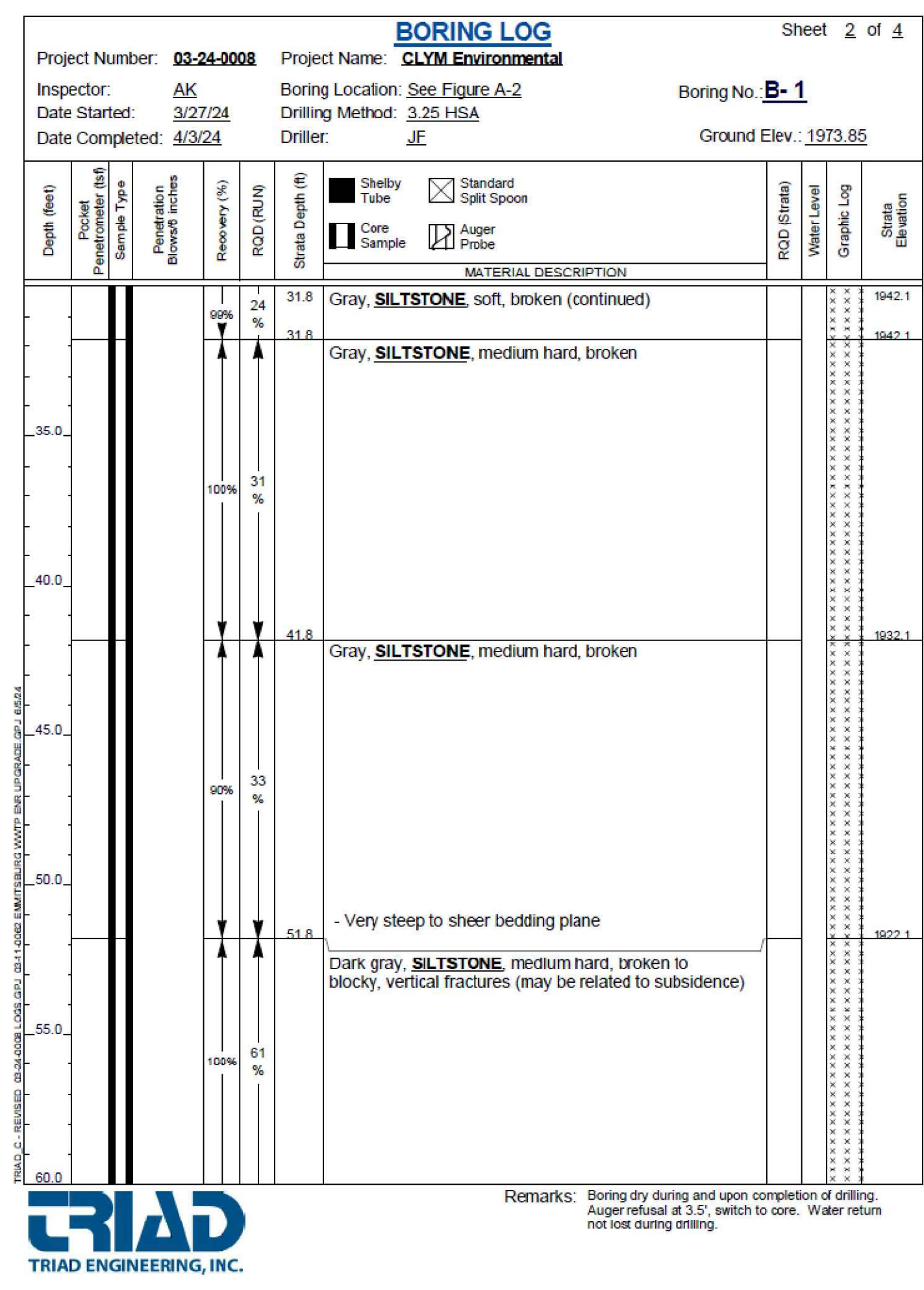
**TEST LOCATION PLAN**  
 CLYM ENVIRONMENTAL  
 FROSTBURG  
 MARYLAND

**FIGURE : A-2**



PROJECT: **FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
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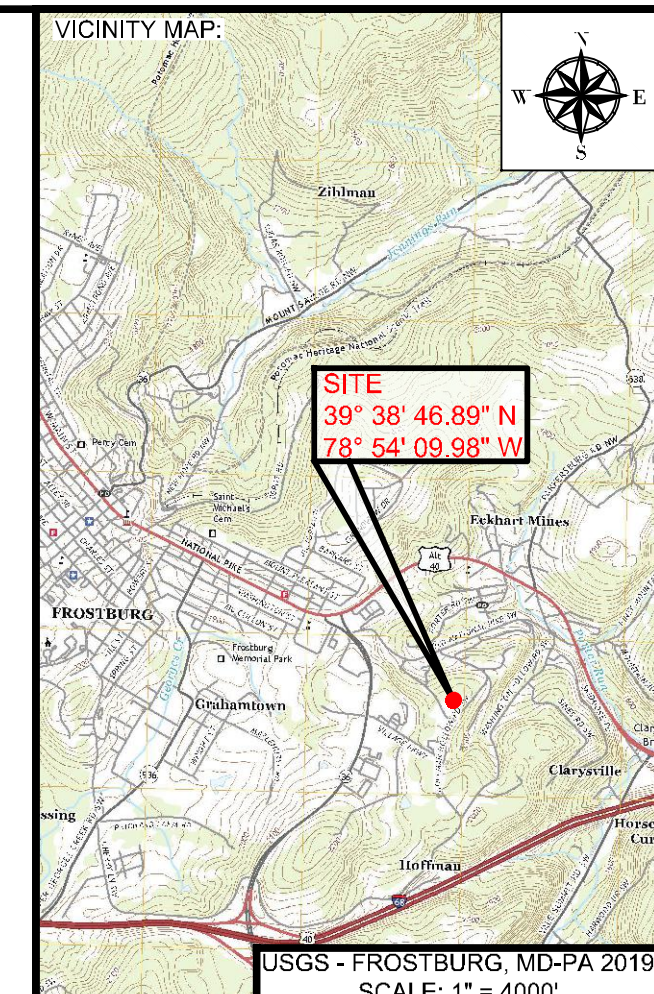
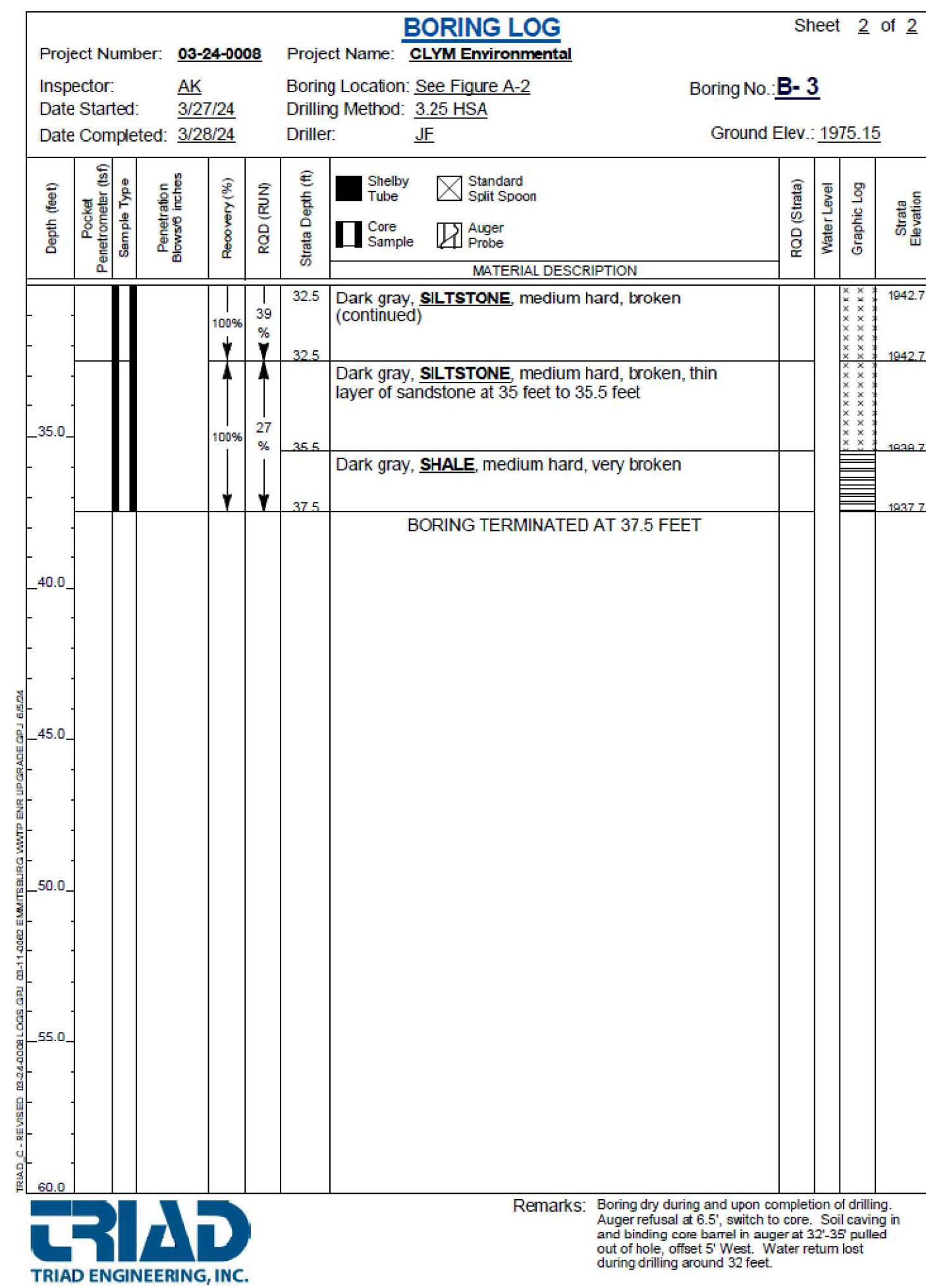
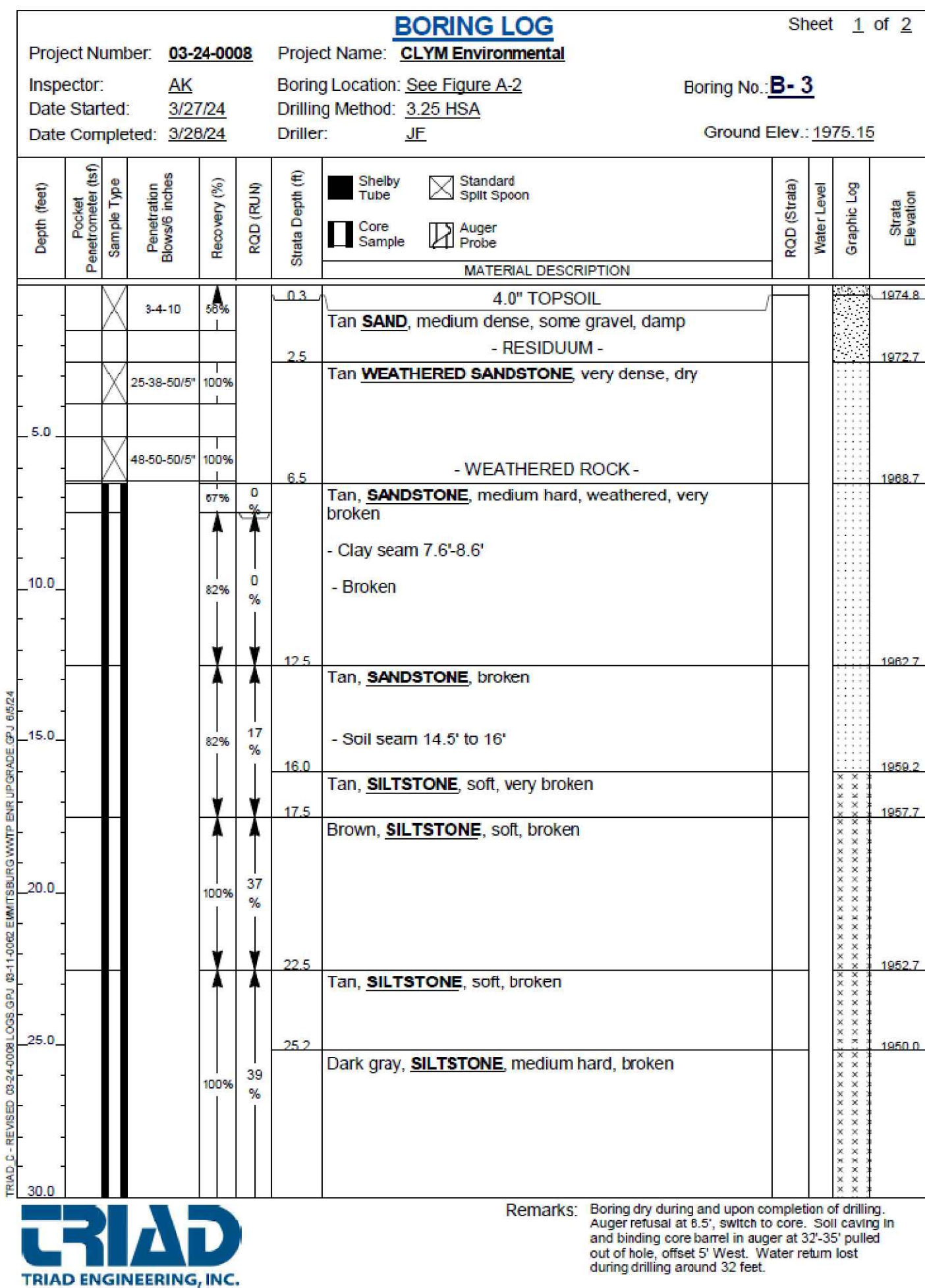
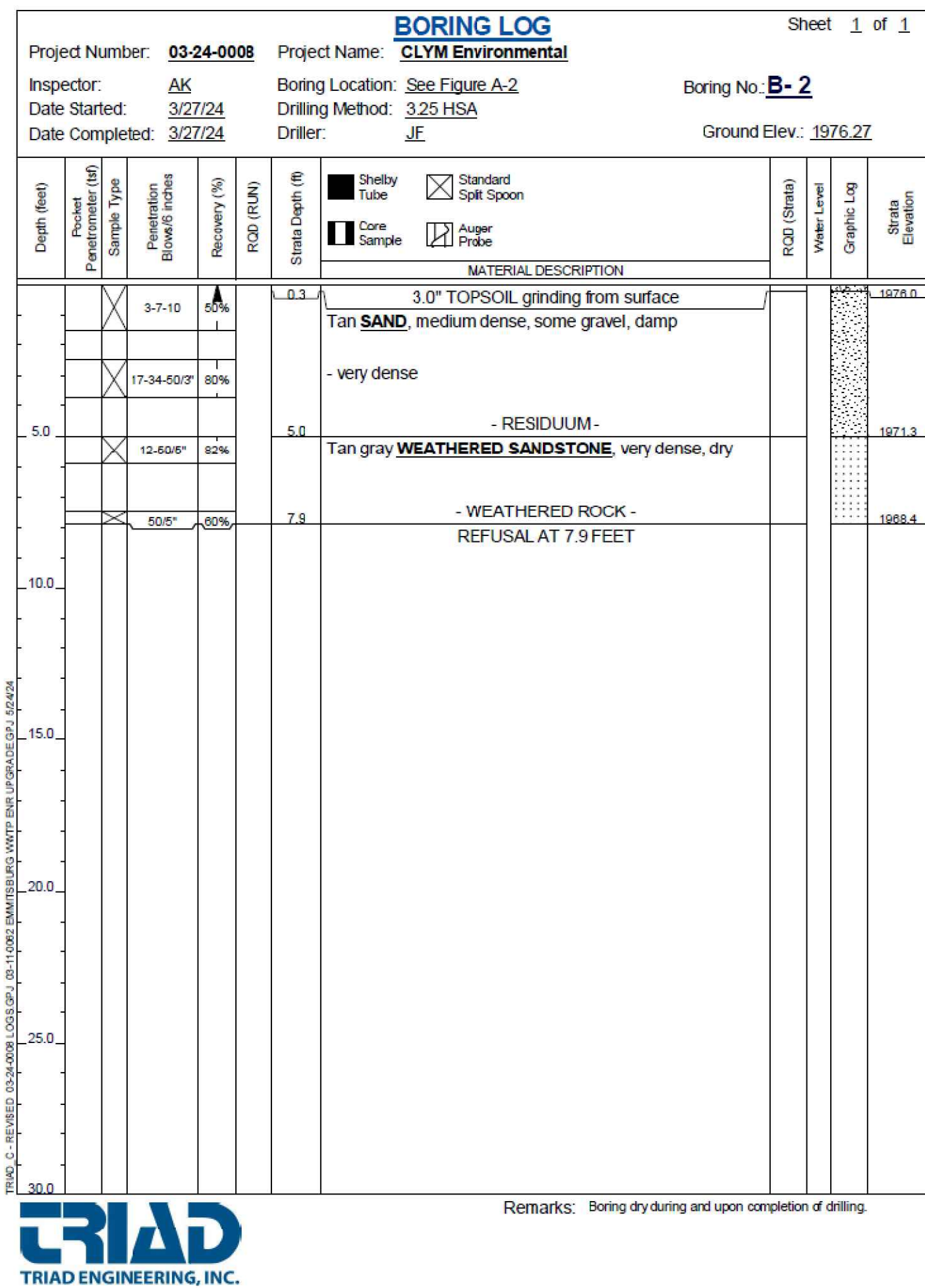
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 APPROVED: **MB** CRD FILE: **23088**

**BBA# 2023088**  
 SHEET TITLE: **SOIL BORINGS**  
**IFR: 7/05/2024**  
 SHEET #: **C-601**

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 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
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 ELECTION DISTRICT: 24-000  
 ALLEGANY COUNTY  
 MARYLAND

CLIENT:  
  
 CLYM ENVIRONMENTAL SERVICES, LLC  
 1539 TILCO DRIVE  
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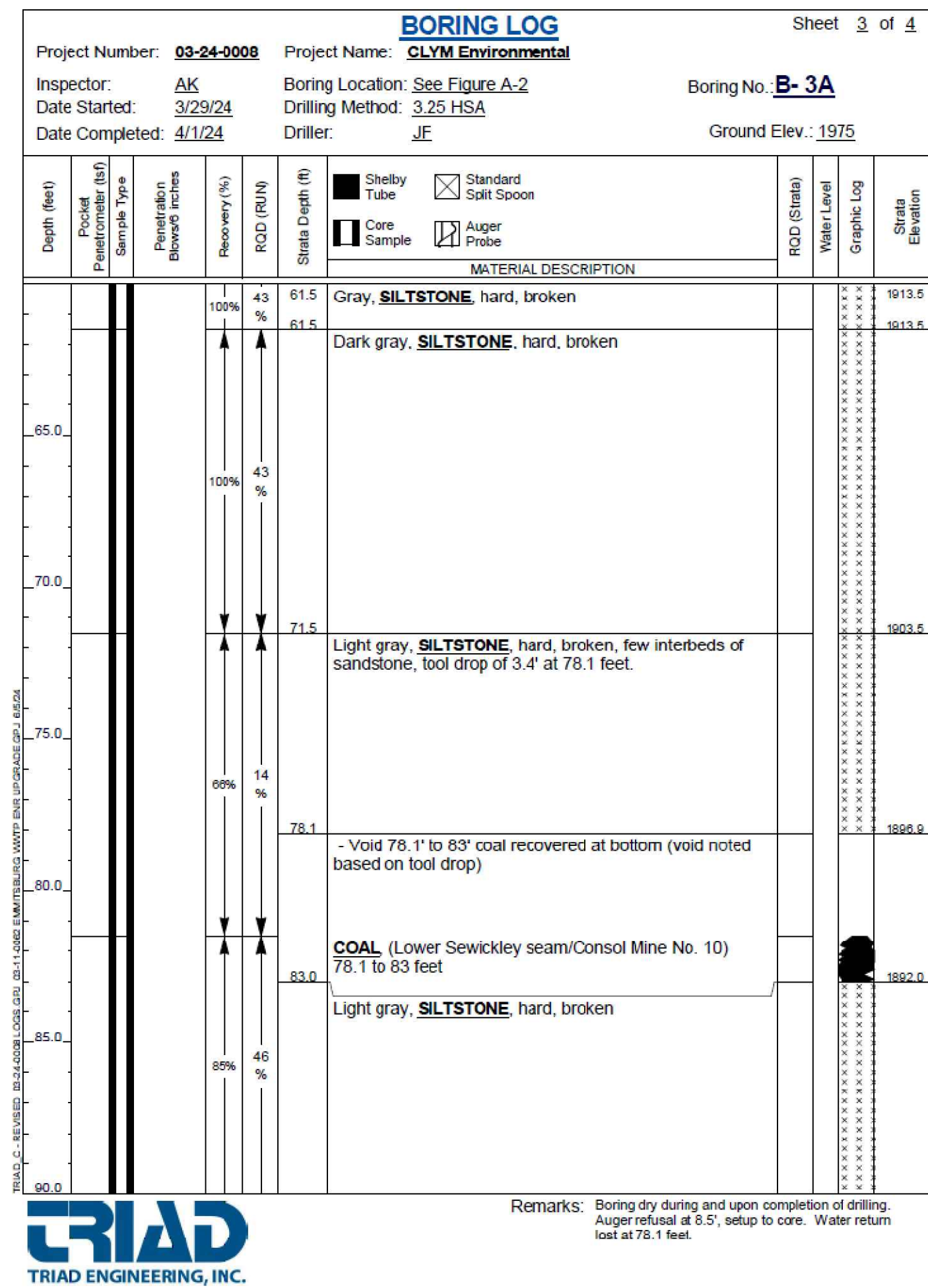
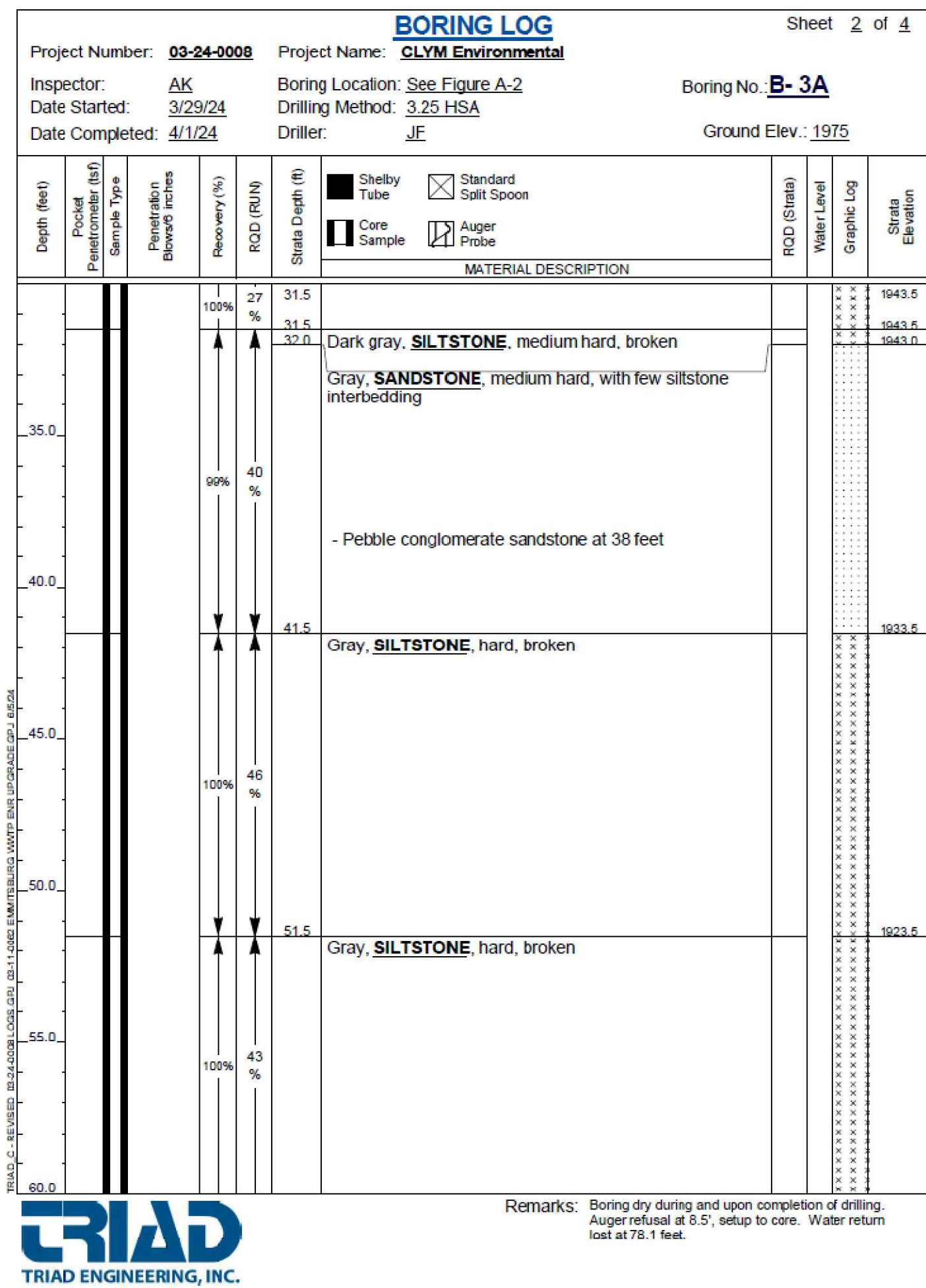
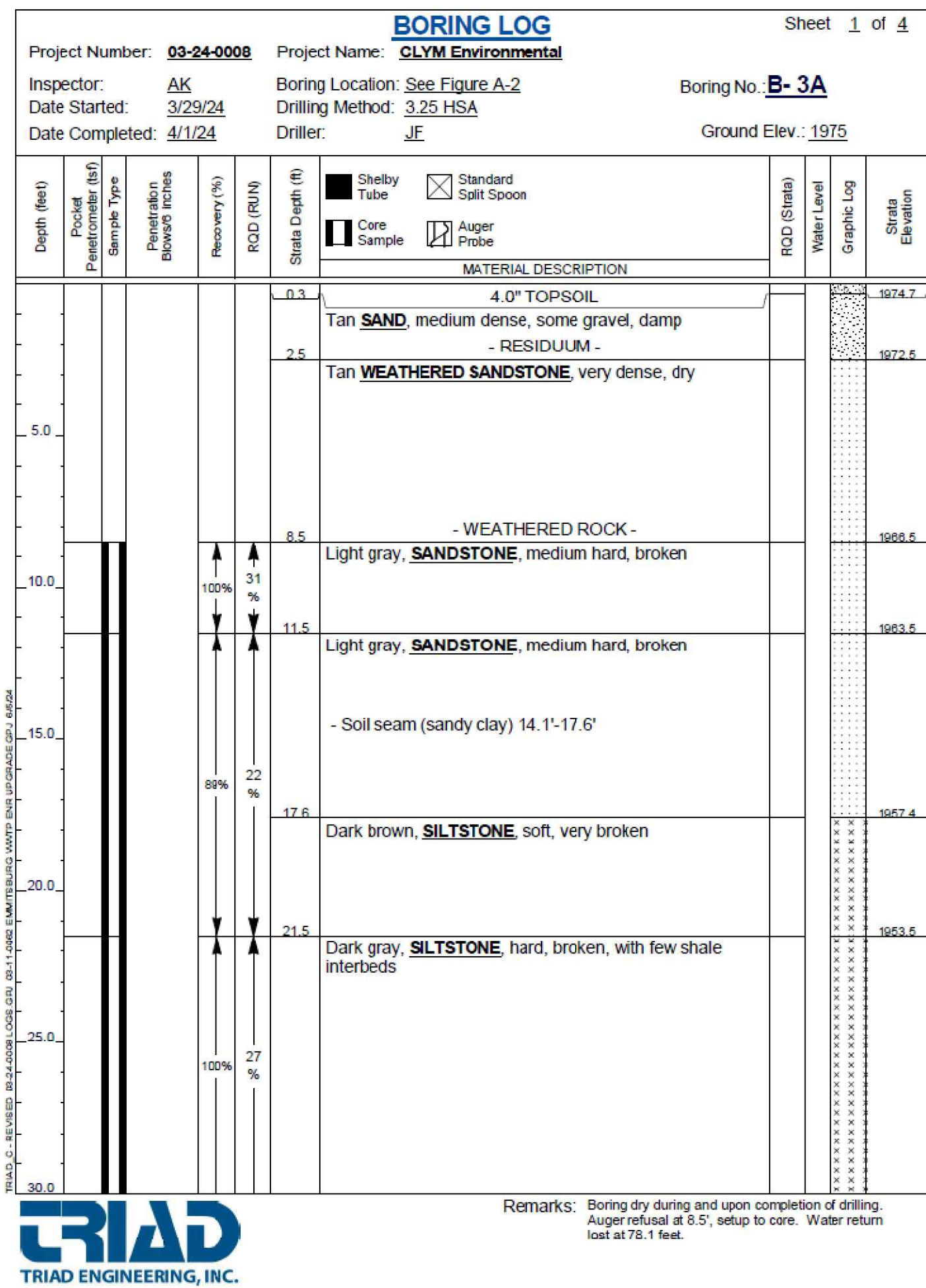
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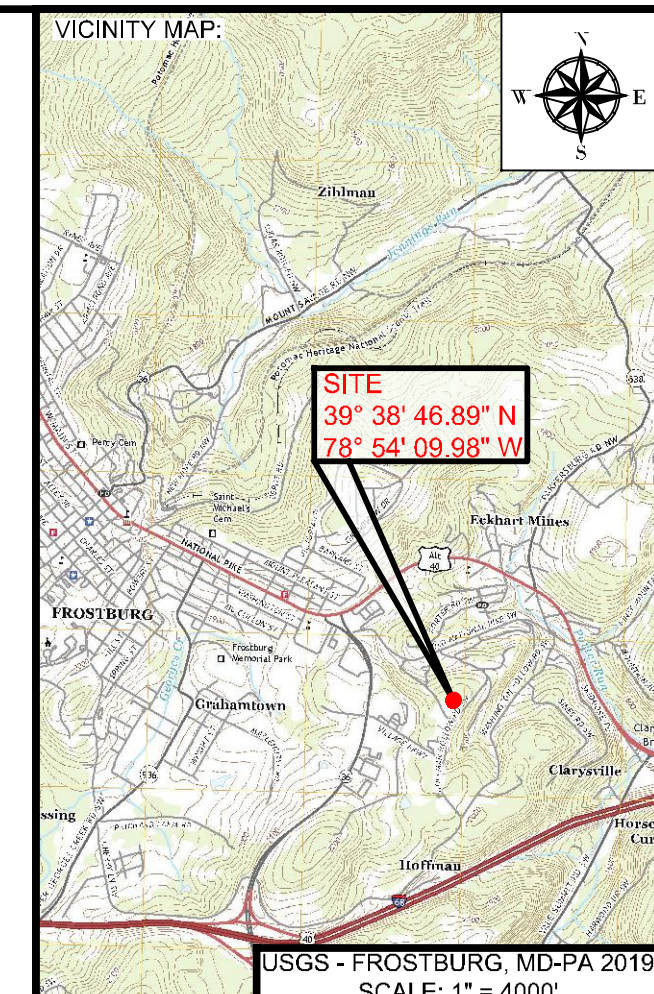
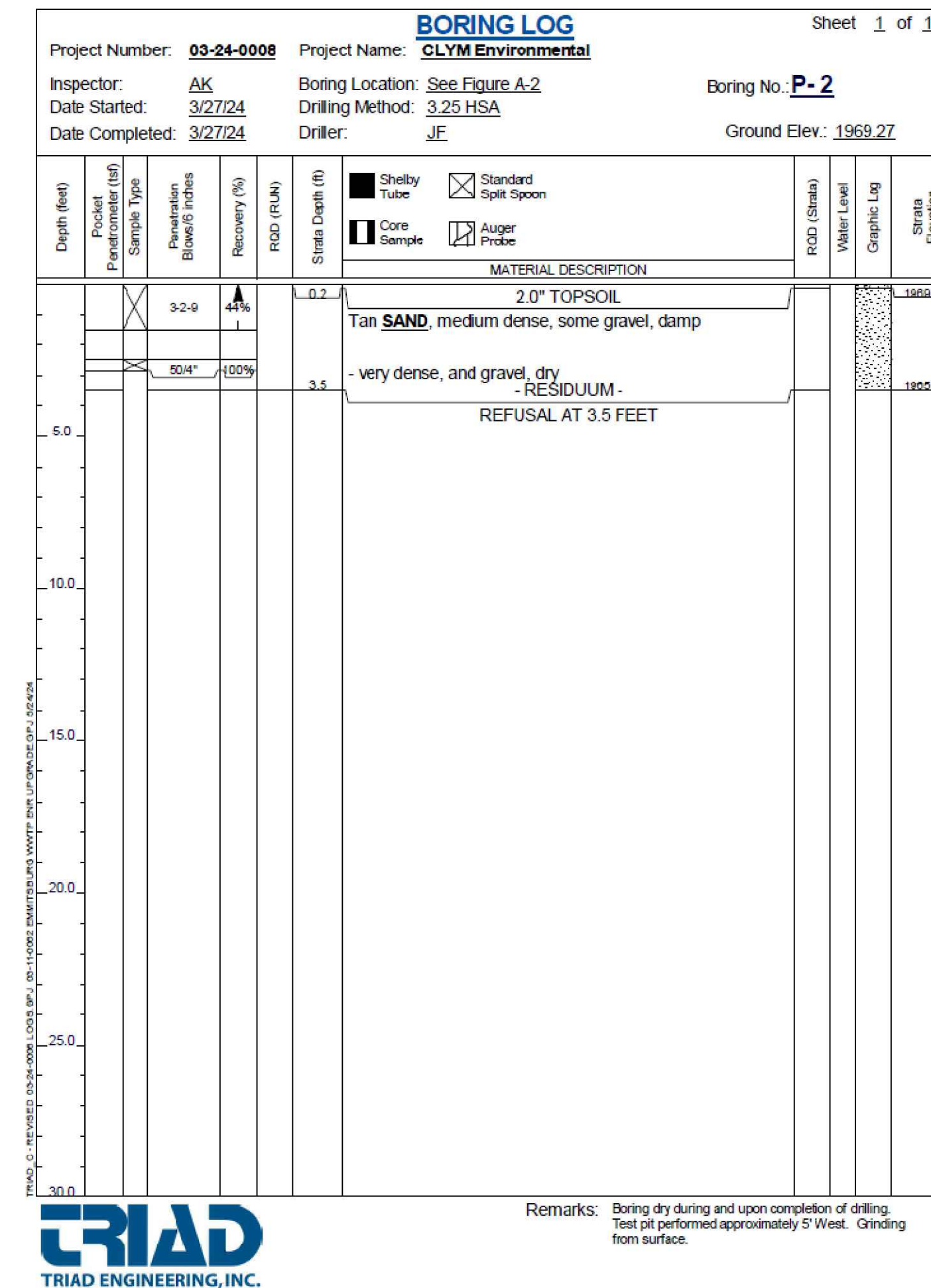
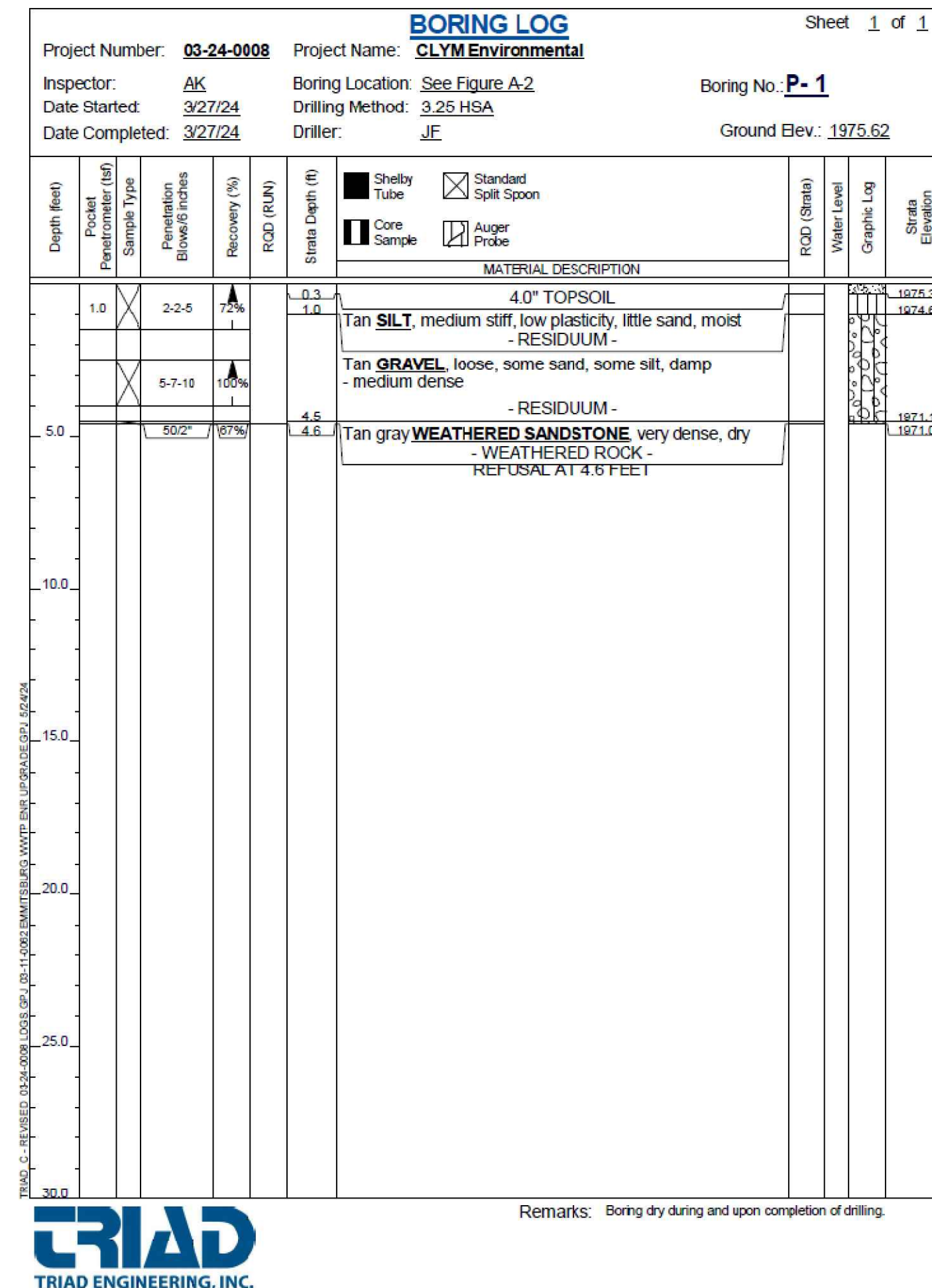
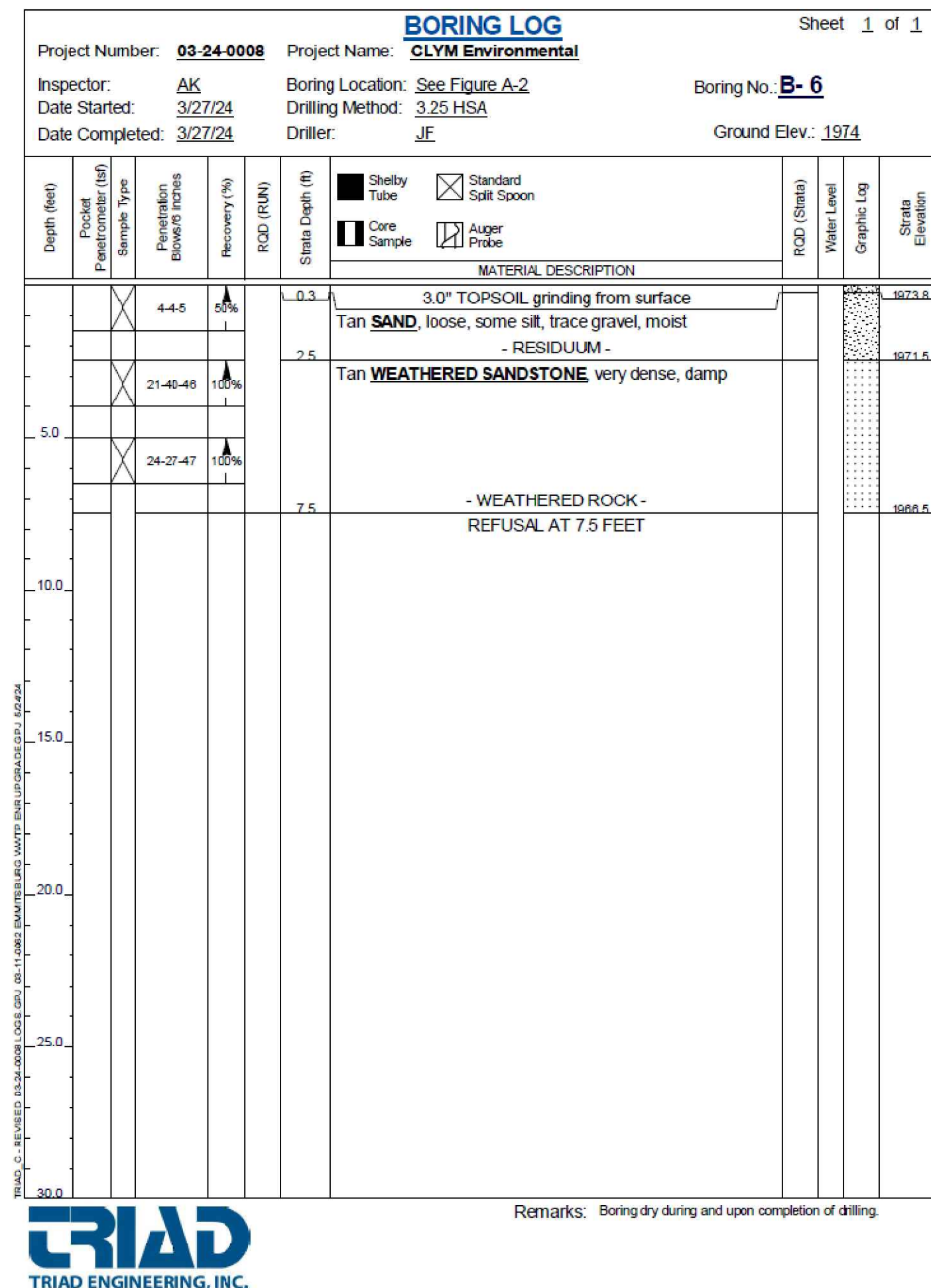
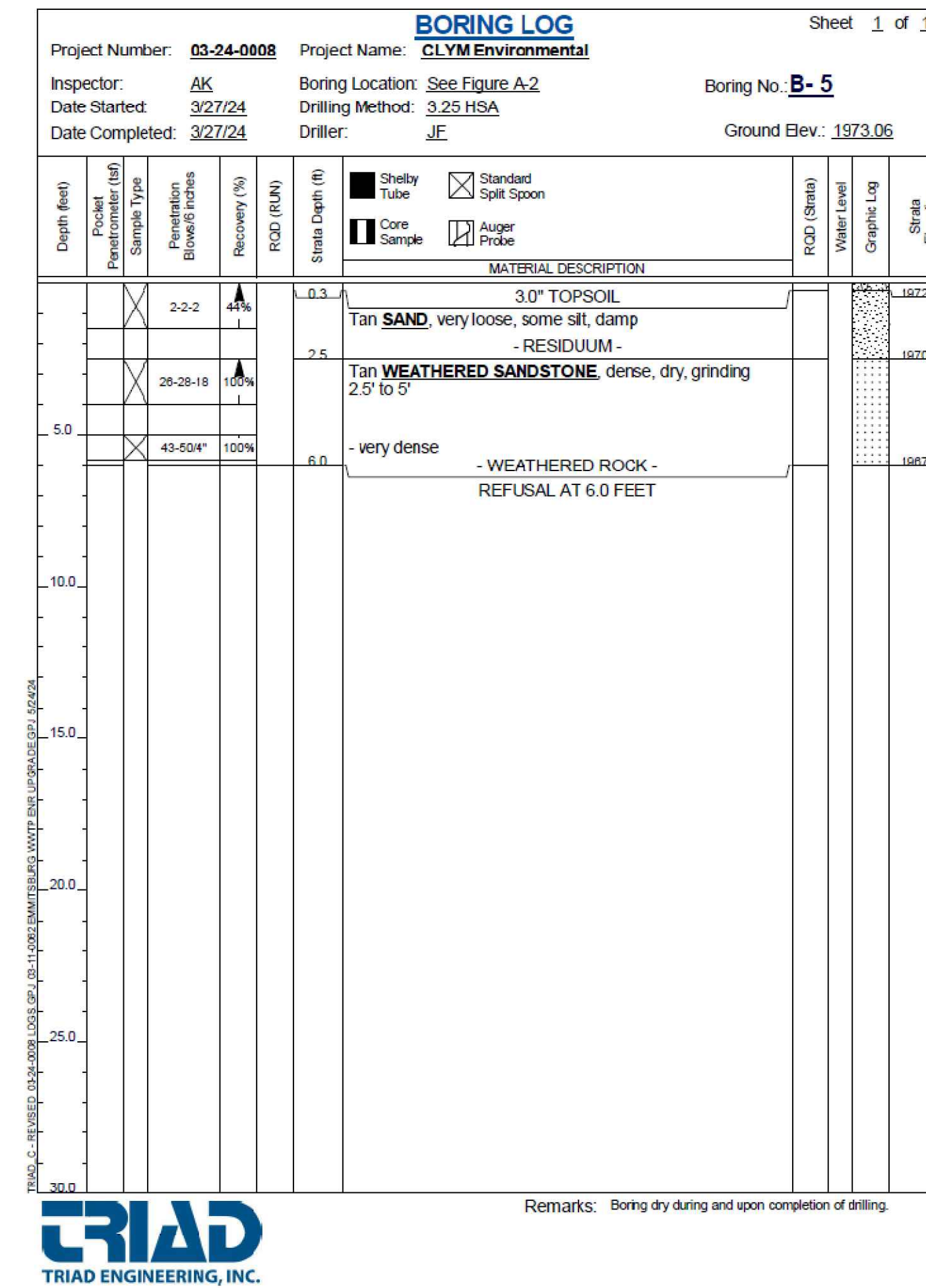
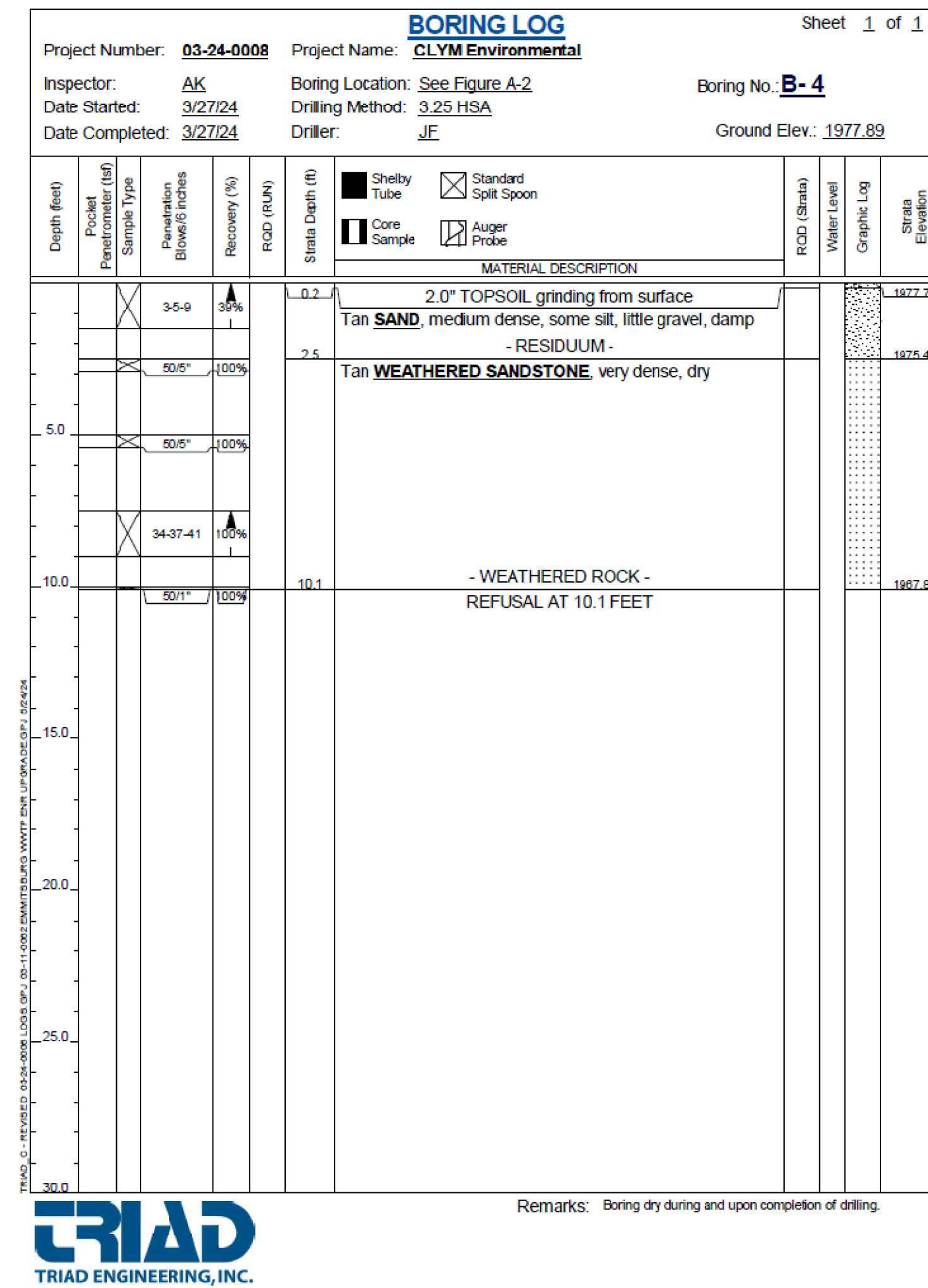
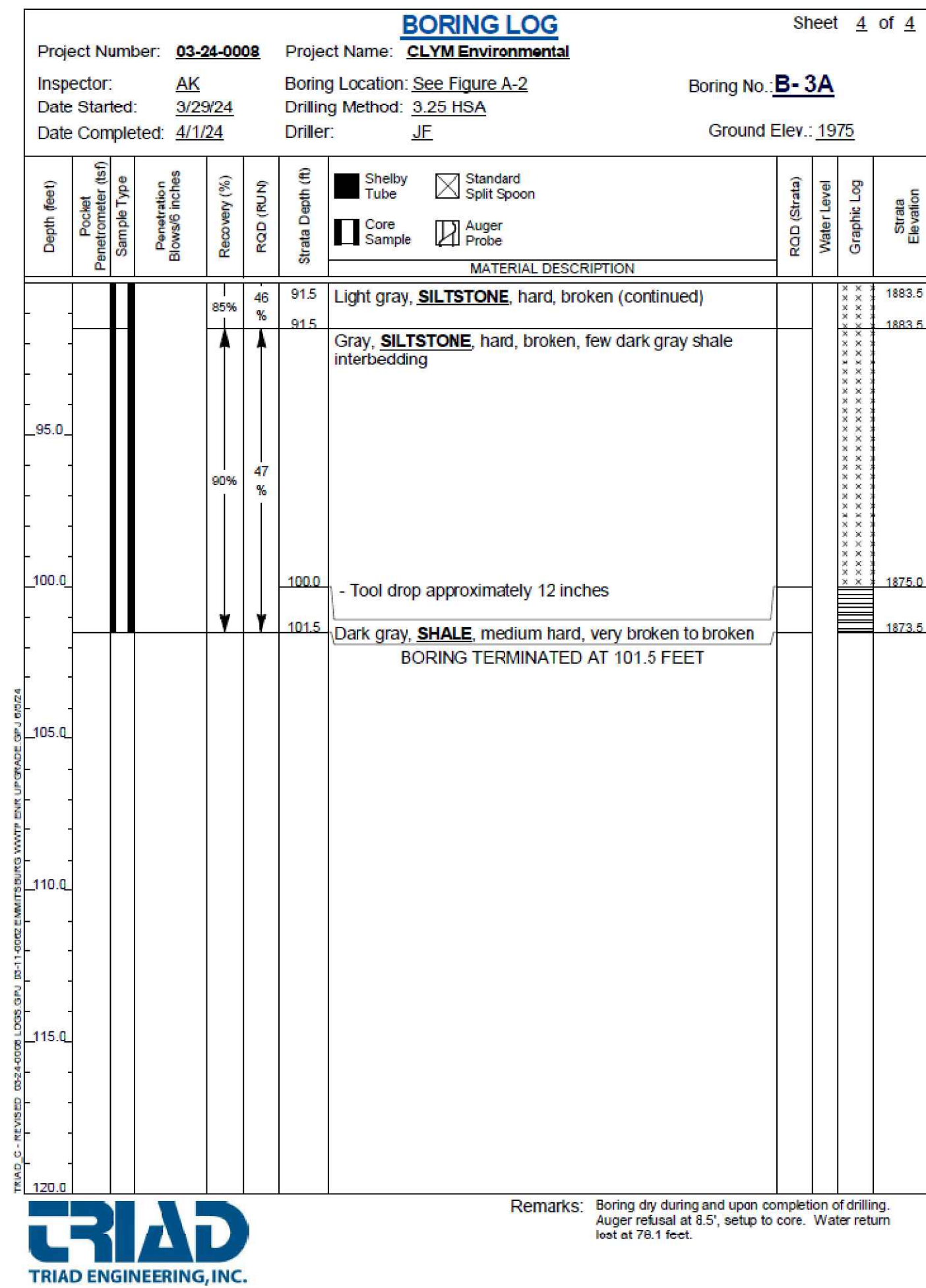
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**BBA# 2023088**

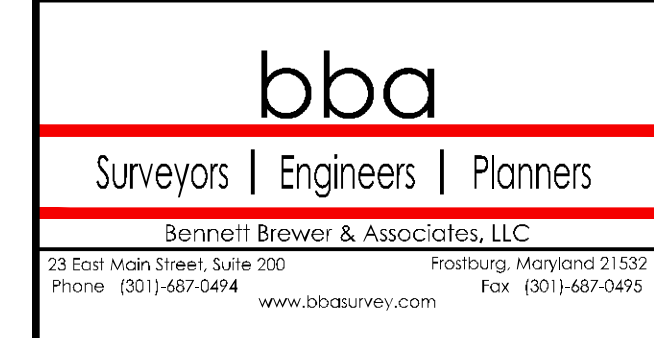
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**SOIL BORINGS**  
**IFR: 7/05/2024**  
 SHEET #:  
**C-602**



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PROJECT:  
**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
 ALLEGANY COUNTY  
 MARYLAND



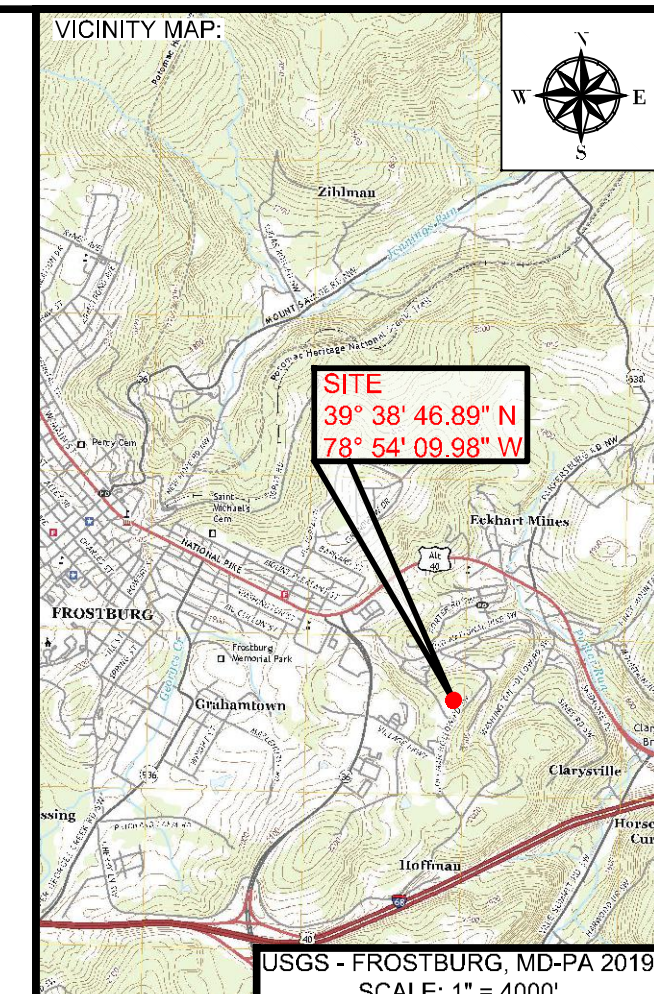
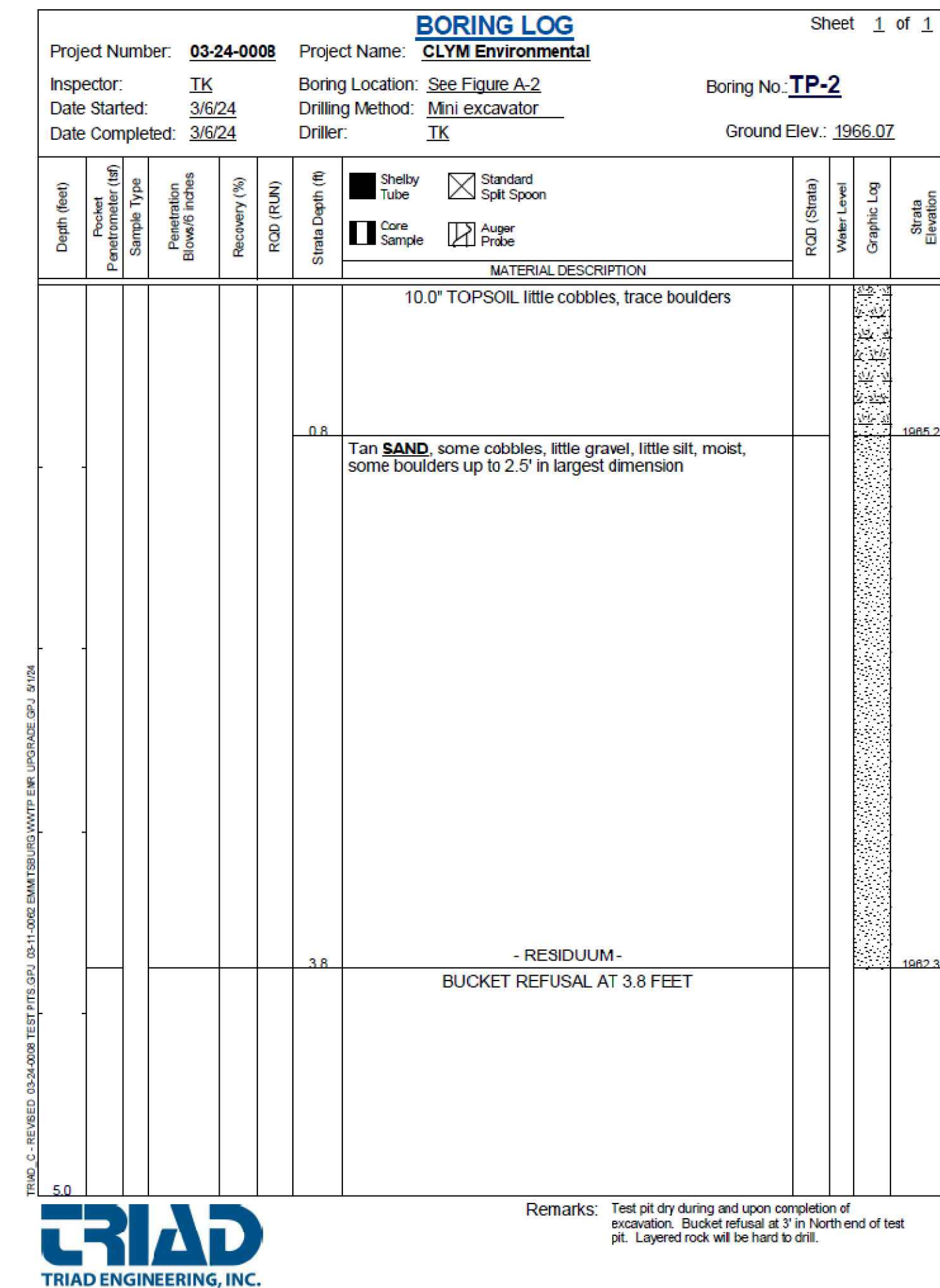
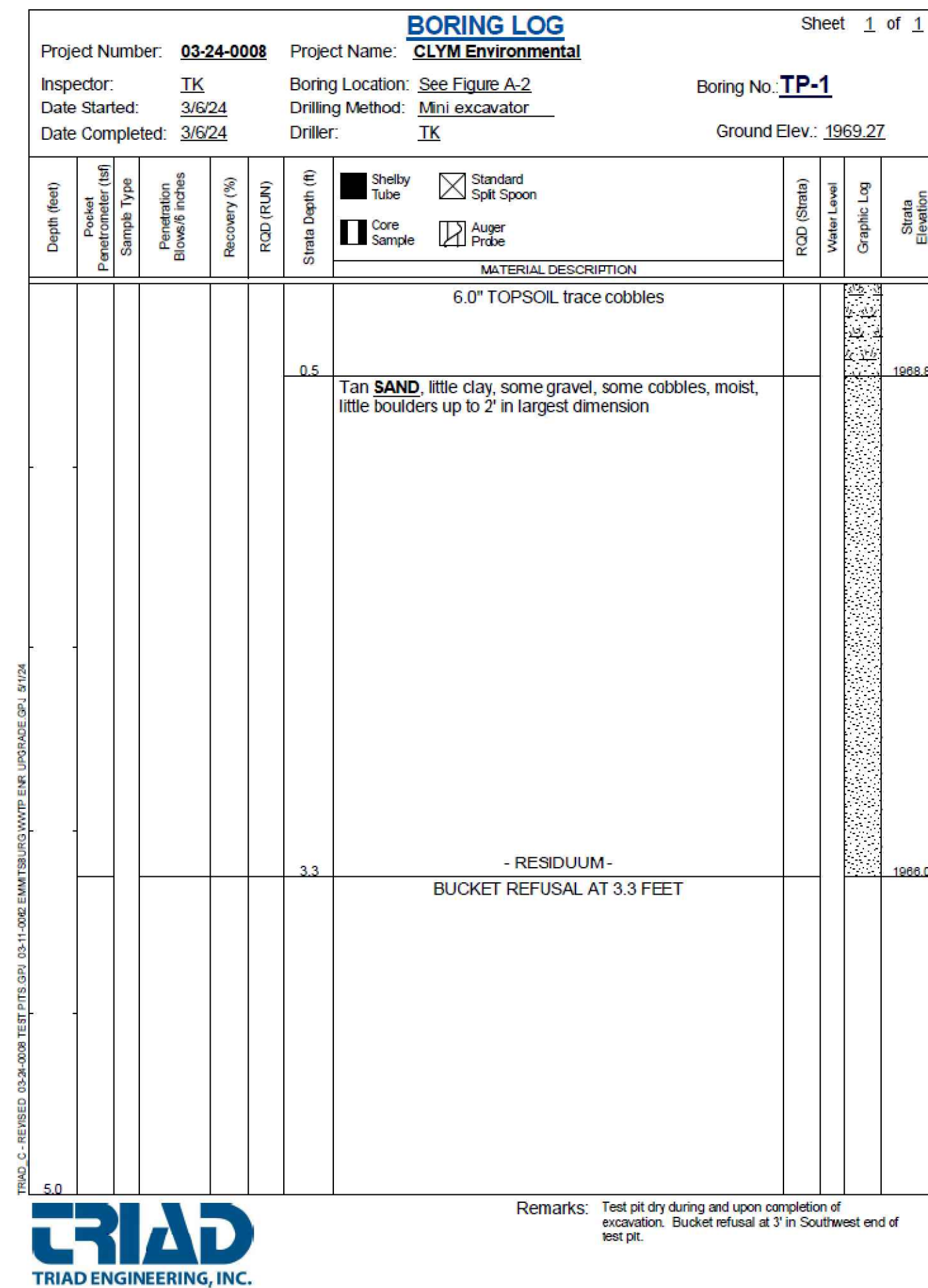
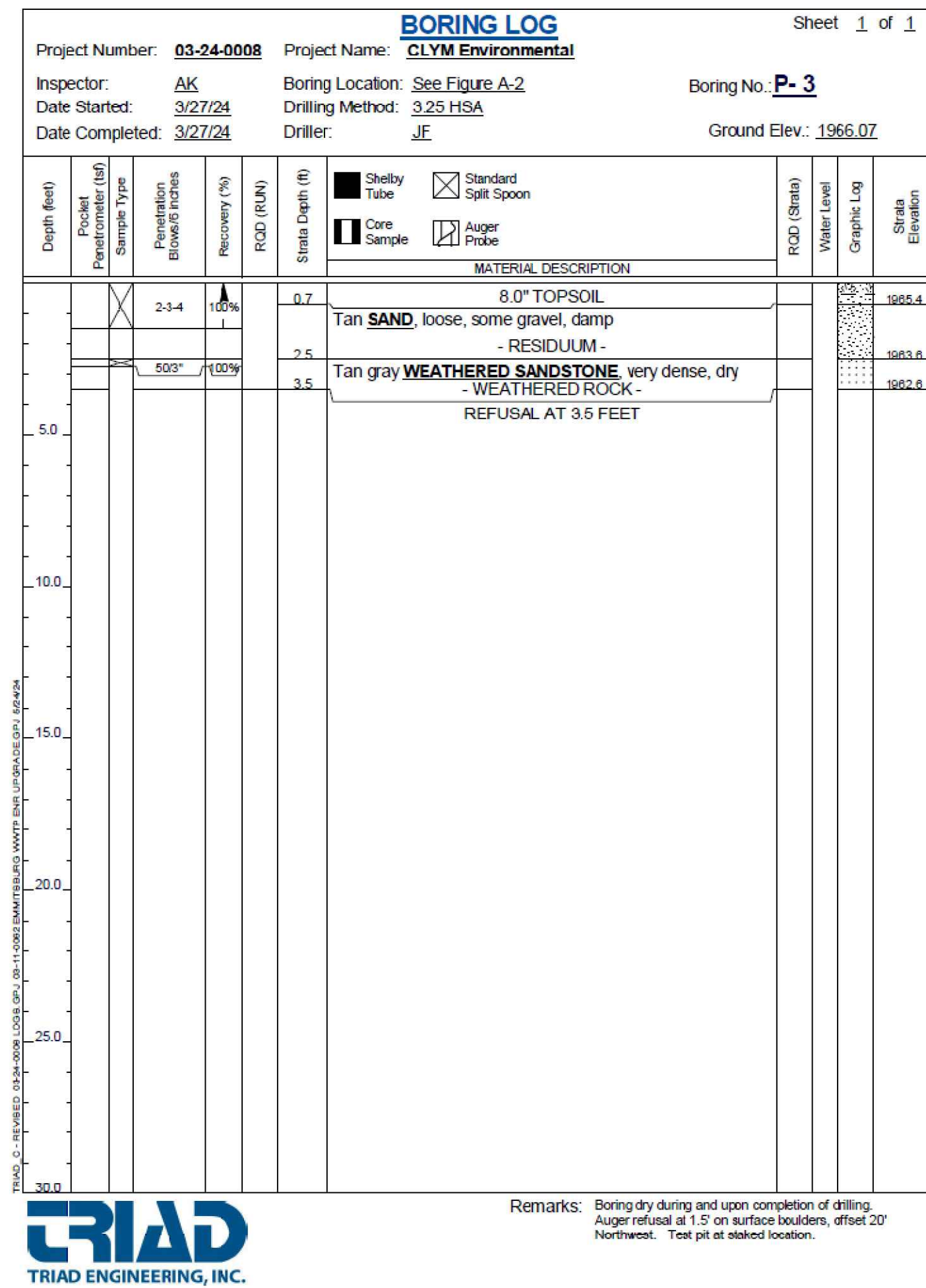
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 CHECKED: MB SCALE: AS NOTED  
 APPROVED: MB CRD FILE: 23088

BBA# 2023088

SHEET TITLE:  
**SOIL BORINGS**  
 IFR: 7/05/2024  
 SHEET #:  
**C-603**

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**FINAL PLAN SUBMITTAL**  
 FUTURE INDUSTRIAL DEVELOPMENT SITE  
 FROSTBURG BUSINESS PARK  
 FROSTBURG  
 ZONING: T-LI  
 ELECTION DISTRICT: 24-000  
 ALLEGANY COUNTY  
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BBA# 2023088  
 SHEET TITLE:  
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**C-604**

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