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May 5, 2020

Maryland Department of the Environment
Voluntary Clean-up Program
1800 Washington Boulevard, Suite 621
Baltimore, Maryland 21230-1719

Attn: VCP Division Chief

Re: Response Action Plan Submittal
PTV 1075, LLC
Residential and Vacant Property
129, 131 and 133 E. Main Street
Grantsville, MD 21536

Dear VCP Chief:

On behalf of PTV 1075, LLC, please find attached the Response Action Plan (RAP) for the above referenced site. The plan includes a signed Statement of Certification, along with several other required certifications. PSI is submitting this plan electronically, as well as sending a hard copy. In order to keep the file size down, duplicate appendices that are in the RAP and in the Health & Safety Plan and Soil & Groundwater Management Plan, which are part of the RAP are omitted from their second or third appearance in the electronic copy.

At this time due to the Covid-19 Pandemic and associated state restrictions, a public meeting cannot be scheduled and; thus, the posting of a sign at the subject property and a legal notice in the newspaper, both of which are dependent on the public meeting schedule, cannot be initiated. It is not known how long the ban on large gatherings may be in effect. Please let us know if the Department has formulated any alternative plans regarding public participation.

Please let us know if you have any additional questions. You can reach me at 412-922-4000, Ext. 382.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

David Christner
Project Manager

Attachment: RAP Report
cc: Ben Syput – PennTex Venture

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May 4, 2020

PTV 1075, LLC
c/o PTV Contracting, LLC
400 Penn Center Boulevard
Bldg. 4, Suite 1000
Pittsburgh, PA 15235

Attn: Mr. Ben Syput
Project Design Manager

Re: **Proposed Grantsville, MD DG Site Response Action Plan**
129, 131 and 133 E. Main Street
Grantsville, MD 21536
PSI Project No. 8163843-4
PTV P.O. #706-$12,940

Dear Mr. Syput:

In accordance with our agreement, Professional Service Industries, Inc. (PSI) has prepared a Response Action Plan (RAP) for the above referenced property. Please find one electronic copy of the report enclosed. One additional electronic copy and one hard copy have also been sent to the Maryland Department of the Environment (MDE) – Voluntary Clean-up Program.

Thank you for choosing PSI as your consultant for this project. If you have any questions, or if we can be of service, please call us at (412) 922-4000.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

David A. Christner
Project Manager

Patricia St. Peter, LPG (IN)
Principal Consultant

Enclosures

RESPONSE ACTION PLAN

For the

PTV 1075, LLC
Proposed Grantsville DG Site
129, 131 and 133 E. Main Street
Grantsville, Garrett County, MD 21536

Prepared for

Maryland Department of the Environment
Voluntary Clean-up Program
1800 Washington Boulevard, Suite 621
Baltimore, Maryland 21230

and

PTV 1075 , LLC
400 Penn Center Boulevard
Bldg. 4, Suite 1000
Pittsburgh, PA 15235

Prepared by

Professional Service Industries, Inc.
850 Poplar Street
Pittsburgh, Pennsylvania 15220
Telephone (412) 922-4000

PSI PROJECT NO. 08163843-4

May 4, 2020

Prepared by: David Christner
Title: Environmental Professional
Date: April 20, 2020

Reviewed by: Patricia St. Peter, PG (IN)
Title: Principal Consultant
Date: April 20, 2020

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1.0 PROJECT SUMMARY

Professional Service Industries, Inc. (PSI) has prepared this Response Action Plan for the Proposed Grantsville DG Site located at 129, 131 and 133 E. Main Street in Grantsville, Garrett County, Maryland. This report has been prepared in accordance with the rules and regulations under the State of Maryland, Department of the Environment (MDE) Voluntary Clean-up Program (VCP).

1.1 Introduction

On September 22, 2019, Voluntary Clean-up Program (VCP) and Inculpable Person Status applications were submitted to the Maryland Department of the Environment (MDE) by Professional Service Industries, Inc. on behalf of PTV1075, LLC for the site located at 129, 131 and 133 E. Main Street in Grantsville, Garrett County, Maryland. The VCP application included a Phase II ESA Report, dated April 18, 2019 The MDE subsequently requested that two supplemental investigations be conducted at the subject property. These investigations were conducted and the reports, dated February 1, 2020 and March 13, 2020 were submitted to the MDE. In a letter, dated April 3, 2020, the MDE officially accepted the property into the VCP and confirmed the “Inculpable Person” status to PTV 1075, LLC. The property was approved for future restricted commercial 2B status. Based on the elevated levels of total petroleum hydrocarbons (TPH) and priority pollutant metals in the soil and groundwater at the subject property, the property did not qualify for a “No Further Requirements Determination” (NFRD) and a Response Action Plan is required in order to obtain a Certificate of Completion.

1.2 Site Description

The subject property consists of two adjoining parcels of land totaling 0.67 acres.

The western Tax Parcel (Map 008A Grid 0016 Parcel 0049) which contains two addresses (131 and 133 E. Main Street) is owned by Gregory Lawson/Roger Resh Life Int. The Garrett County Tax Assessment Office provides the address for this portion as 161 E. Main Street; however, that specific address is located further west of the subject property and may have been the property owner’s physical address. This parcel is currently a vacant grass-covered lot with a gravel driveway.

The eastern Tax Parcel (Map 008A Grid 0016 Parcel 130) which contains one address (129 E. Main Street) is owned by Norman & Hazel Beitzel. This parcel is improved with an approximately 1,500 square foot (SF), two-story with basement residential home and approximately one-third of a 600 SF garage. There is an asphalt / grass-covered drive that goes to the existing detached garage. There is an active 1,000-gallon underground heating oil tank located adjacent to the east side of the house.

There are no water bodies located on the subject property.

Current use(s) of surrounding property include: Ravine Street, followed by a residential property and medical/dentist office building to the north; residential properties, followed

by Church Street to the east; E. Main Street (Rt. 40 Alt.), followed by residential properties and Thomas Tax Service to the south; and Pennsylvania Avenue, followed by residential properties to the west, with a Car Quest Auto Parts store to the northwest. Figure 1.0, which is appended, shows an aerial photograph with the location of the subject property outlined.

1.3 Site History

129 E. Main Street – This property has contained a two-story plus basement residential structure and detached garage since circa 1930. The house is currently occupied.

131 and 133 E. Main Street – This property contained an auto repair garage and gasoline filling station (referred to in a past deed as “Grantsville Garage”) from at least 1922 until the mid-1990’s when it reportedly burned down. The use of the gasoline station was discontinued in the 1980’s prior to the on-set of EPA and State UST regulations; however, the auto repair garage use continued. The 1922 Sanborn Map shows two underground storage tanks outside the south side of the shop and the 1930 Sanborn Map shows five USTs at the same location. The auto repair garage structure was located on the western side of this parcel. The eastern side of this portion of the subject property contained a residential structure, that may have also been utilized at times as an unknown shop, from at least 1922 until circa 2009, when it was demolished.

1.4 Prior Investigation Summary

The following prior environmental investigations were conducted at the subject property and the information reviewed and incorporated into this RAP report.

A Phase I ESA was conducted at the subject property in accordance with ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (the Practice). The Phase I ESA Report, dated March 4, 2019 identified the following evidence of recognized environmental conditions (REC):

On-Site Recognized Environmental Conditions

- There was a gasoline station and auto service garage located on the western portion of the subject property from at least 1922 until approximately the late 1990's when the garage burnt down. It is not known if the garage was vacant prior to burning down. The 1922 and 1930 Sanborn Maps identify underground storage tanks (USTs) on the southwestern portion of the site. The status of the USTs is not known. This facility operated prior to the implementation of current environmental regulations. Based on the lack of information on the USTs, the length of time the facility operated as a gasoline station and auto service garage, and the facility present prior to the implementation of current environmental regulations, the former gasoline station and auto service garage would be considered a REC in relation to the subject property.

- There is a 500-gallon underground storage tank (UST) located outside the residential home (eastern parcel). The UST contains home heating oil. There were no reported releases with the UST. The age of the UST was not reported. The UST is not equipped with automatic leak or spill detection. No tightness testing has been conducted. USTs with 1,100-gallon capacity or less that are used to store petroleum products at a private residence or farm are exempt from most Maryland oil control regulations. However, these systems must comply with closure requirements when no longer used as a fuel source. Due to its underground location and lack of automatic leak detection, PSI cannot rule out the possibility of a latent release from the tank, thus it is considered to represent evidence of a REC.

Subsequent to the Phase I ESA, a Phase II ESA was designed to investigate the impact, if any, to the subject site from the identified recognized environmental conditions.

The scope of the Phase II ESA investigation included the conductance of a Geophysical Survey, advancement of five soil borings, installation of three temporary monitoring wells, and the collection and analysis of five soil and three groundwater samples. However, due to property boundary constraints and underground utilities, only four borings were conducted. In addition, due to the detection of groundwater in only one of the four borings, only one temporary monitoring well was installed, and one groundwater sample collected. The Phase II ESA, dated April 18, 2019, offered the following conclusions and recommendations:

Initial Phase II ESA Findings

- No evidence of current underground storage tanks (USTs) was found on the southwestern corner of the subject property (133 E. Main Street) in the area where historic Sanborn Maps showed USTs to be present.
- The presence of one heating oil UST was visually confirmed outside the southeast corner of the residential house at 129 E. Main Street.
- Petroleum product soil and groundwater impact above regulatory standards was found on the southwestern corner of the subject property in the area where the historic Sanborn Maps showed USTs to be present.
- The area of petroleum odor impacted soils and elevated PID readings appeared to be confined from approximately five feet to 11.5 feet below ground surface (bgs). The groundwater was found at approximately six feet bgs.
- No compounds were found in the soils from a soil boing conducted adjacent to and on the up-gradient side of the heating oil UST. Due to property boundaries and subsurface utilities, no sample could be collected on the down-gradient side of the heating oil tank. No groundwater was found in this area to a depth of 13’ below ground surface (bgs).

Following completion of the Phase II ESA, the client submitted an application to enter into the Maryland DEP's Voluntary Clean-up Program. The Phase II ESA, along with other materials were submitted to the MDE as part of the application. Upon their review, the MDE requested additional investigation activities at the subject property. PSI prepared a written scope of work. The MDE reviewed the scope of work and recommended several changes to the scope. PSI incorporated these into the written scope of work. The work commenced upon approval of the work scope by the MDE. The Additional Investigation included the conductance of eight additional borings to various depths. It included collecting soil samples at various pre-determined depths [surface (0-2' bgs) and subsurface (>2' bgs)], as well as additional samples from any areas where field indications of suspect contamination were found. The scope also included the collection of three groundwater samples from deep borings, if encountered, and the collection of additional groundwater from the moderately deep borings if encountered. A total of sixteen soil and three groundwater samples were collected and submitted to the laboratory for analysis of various compounds.

The additional Phase II ESA Additional Phase II ESA Activity Report, dated February 6, 2020 contained the following findings:

Additional Phase II ESA Investigation Findings

- Petroleum product soil impact above MDE regulatory standards was found at the location of the former USTs on the southwestern corner of the subject property.
- Petroleum product odor-impacted soils appear to be located beginning at 6' bgs in the area of the former USTs; 12' bgs to the north of the former UST area; and approximately 18' bgs on the northern portion of the property.
- Petroleum product impact above MDE regulatory standards was found in the groundwater in all three deep soil borings. Groundwater appears to be located approximately 16 to 19 feet bgs.
- One SVOC compound, benzo (a) pyrene, above MDE regulatory standards, was found in the shallow soils at the existing heating oil UST.
- Arsenic and total chromium impact above the MDE arsenic and hexavalent chromium standards was found in the majority of the soils at the subject property above their respective MDE regulatory standards. The majority of the impact appeared to be consistent with natural background levels, with the exception of the arsenic concentration in soils at approximately five feet bgs on the western side of the subject property (Composite Sample 3).

The Additional Phase II ESA Investigation Activities Report was forwarded to the MDE VCP on February 13, 2020. Following their review, they requested some additional investigation at the subject property in the form of soil gas sampling. A copy of the work plan for this sampling was submitted to the MDE. The plan included the collection of three near source soil gas samples below the southern edge of the proposed future retail building. This is the area of the building nearest the former UST field/petroleum impact. The work plan was approved by the MDE VCP and the sampling conducted on March 6, 2020.

The Additional Phase II ESA Investigation - Soil Gas Sampling Report, dated March 18, 2020 contained the following findings:

Additional Phase II ESA Soil Gas Sampling Findings

- Numerous VOC compounds were detected in all three of the soil gas samples. The detected concentrations were below both the Tier I and Tier 2 EPA Risk-based concentrations for commercial properties.

Figures 3, 4 and 5 contain graphic illustrations of the analytical results that exceed the applicable MDE Standards and are located in Appendix A. Table 1.0, which is located in Appendix B contains summary of all of the detected analytical compounds during all of the investigations.

Following submittal of all of the requested additional investigations and other information, the subject property was formerly accepted into the MDE VCP Program.

1.5 Summary of Proposed Response Actions

Table I

Summary of Proposed Response Actions

Identified Potential Risk	Proposed Remedial Action	Rational
Ingestion, Inhalation and dermal contacts with identified soil contaminants	Implementation of Site-Specific Health and Safety Plan (HASP) and a Soil & Groundwater Management Plan (SGMP) for construction activities	The HASP and SGMP Plans will provide specific guidelines to be followed during construction activities in order to minimize potential exposure to construction workers during construction activities.
	Off-site disposal of petroleum impacted soils/groundwater	During excavation at the site for construction of the new building, if evidence of petroleum odor impacted soils are found, then these soils will be stockpiled and disposed off-site. No excavation, outside that required to reach construction grade will occur. If groundwater is encountered and dewatering is necessary for construction, then the groundwater will be excavated, stored and disposed off-site.

Table I (continued)

Identified Potential Risk	Proposed Remedial Action	Rational
Ingestion, Inhalation and dermal contacts with identified soil contaminants (continued)	Impervious capping to prevent direct contact exposure	Upon completion of the project, the overall majority of the subject property will be covered with impervious surfaces including the building foundation, paved asphalt parking and drive lanes and concrete.
	Placement of two feet of clean fill on any remaining surfaces not covered by impervious surfaces.	In order to prevent incidental direct contact with impacted soils, two feet of MDE certified Clean Fill will be placed on top of any area that will not be covered with an impervious surface. All utility trenches will be backfilled with clean fill. These surfaces will then be covered with landscape material and/or vegetation
	A Deed restriction will be implemented to guide any future excavations that may need to be conducted at the subject property	This deed restriction will prevent future intrusive activity at the subject property unless it is conducted in a manner that will protect the health and safety of the workers conducting the activity and the MDE is notified prior to its conductance.
Ingestion and Dermal contact of groundwater	Implementation of Site-Specific Health and Safety Plan (HASP) and a Soil & Groundwater Management Plan for construction activities	The HASP and SGMP Plans will provide construction workers with a set of guidelines in order for them to minimize their potential exposure during construction activities.
	Deed notice to restrict groundwater use at the subject property	A restriction of the use of groundwater for any purpose at the subject property will be incorporated into the subject property deed.

2.0 ADDITIONAL INVESTIGORY INFORMATION

Professional Service Industries, Inc. (PSI) has previously conducted several sub-surface investigations at the subject property. No further investigations are required at this time.

The MDE may request in the future that sampling of the proposed clean fill be conducted. If necessary, this sampling would be conducted per their required number of samples and the required parameters.

If any groundwater or any petroleum odor impacted soils are encountered that require off-site disposal, these materials may require additional sampling for characterization if the selected landfill requires any analyses in addition to the samples that have already been collected.

As part of the development activities, the existing home heating oil UST at the subject property will be removed. Confirmatory testing will be conducted per the MDE Oil Control Program. In the event that widespread impact is found during the removal, the MDE VCP will be notified per the “Criteria for Contingency Measures” in Section 6.2 and additional sampling may be required.

3.0 EXOSURE ASSESSMENT

3.1 Current Property Use

The subject property is currently used as a single-family residential home. Now that the subject property has been accepted into the VCP Program, a closing date for the property transfer to PTV 1075, LLC is being scheduled. The closing is currently tentatively scheduled for early June 2020. At that time, the residential use of the subject property will be discontinued. In the interim, potable water to the residence is provided by the local municipal source. No ground excavation activities will be conducted until the RAP Plan is approved by the MDE VCP.

3.2 Proposed Development Plan

The subject property is zoned Town Center (TC), which allows for commercial and residential uses. The land use and restriction category for the property will be Tier 2B, Restricted Commercial Use. The term restricted commercial refers to the planed use of the property that allows exposure and access by the general public, workers, and other expected users, including patrons, customers and visitors. Commercial purposes allow access to the property and duration consistent with a typical business day. Tier 2 properties typically include shopping centers, retail businesses, vehicle service stations, medical offices, hotels, commercial offices, religious institutions and restaurants. Restricted Commercial also indicates that one or more land use controls are imposed on the subject property as a condition for the future use of the property.

The proposed development includes the demolition of the existing two-story home and detached auto garage located on the subject property. The entire structure will be demolished, including the house foundation. The existing, currently unregulated, 1,000-gallon home heating oil UST will be removed. The existing underground municipal sewer line crossing the northwestern portion of the property will be relocated along the property perimeter. A new underground storm water pod will be installed. A new approximately 9,100 square foot, slab on-grade, one story retail store building will be constructed on the northern portion of the subject property. The majority of the remainder of the property will contain an asphalt and concrete paved parking lot, driveways and sidewalks. There will be a total of 26 parking spots. A retaining wall will be constructed around the majority of the property. There will be a trash enclosure on the northeastern corner. There will be approximately 7,140 square feet of land not covered by an impervious surface and covered with turfgrass or other landscaping.

The construction will require some cut and fill. One to three feet of soil will be cut from the southern and southwestern portions of the property and the soils filled on the remaining portions of the property Utilities will be placed in trenches. Some estimated depths of proposed deeper excavations associated with the construction are summarized below.

Feature	Location	Estimated Depth
Current and Proposed Municipal Storm Water Line	Northwestern Portion	7’ bgs
Other utilities (water, sanitary sewer)	Across Site	4 to 5’ bgs
Storm Water Pod	Northeastern Portion	8’ bgs
Pylon Sign Structure	Southeastern Corner	8’ bgs
Building Footers	Northern Side	5.5 to 6’ bgs

An Isopach Map of the proposed cut and fill is located in Appendix A as Figure No. 6. The Site Development Plans are located in Appendix C.

3.3 Media of Concern

Based on the prior investigations, the media of concern are both soils and groundwater.

Soils: Specific Chemicals of Concern (COCs) above non-residential Maryland Department of the Environmental Generic Numeric Cleanup Standards in the soils include: heavy metals (arsenic, unspeciated chromium and nickel), ethylbenzene (VOC), Total Petroleum Hydrocarbon (TPH) – Gasoline Range Organics (GRO), TPH – Diesel Range Organics (DRO) and benzo(a)pyrene (polycyclic aromatic hydrocarbon).

The metals impact appears to be to both the surface and subsurface soils. The majority of the metals’ concentrations appear to be consistent with background levels, with the exception of the arsenic concentrations found in the soils at a depth of 5’ bgs in the area of the former auto repair garage; The petroleum product odor impacted soils appear to begin at a depth of approximately 5’ bgs on the southwestern portion of the subject property in the area of the former USTs; at depths beginning at approximately 12’ bgs in the area northeast of the former UST field; and at depths beginning ap[proximately 18’ bgs on the northern portion of the property. The PAH or SVOC impact appears to be limited to the surface soils in the vicinity of the current fuel oil UST on the southeastern portion of the property.

Groundwater: Specific Chemicals of Concern (COCs) above non-residential Maryland Department of the Environmental Generic Numeric Cleanup Standards in the groundwater include: heavy metals (unspeciated chromium), VOCs (benzene, ethylbenzene, isopropylbenzene, naphthalene, 1,2,4 and 1,3-5-trimethylbenzene, toluene, 1,2,4 and 1,3,5 trimethlybenzene), TPH – GRO, TPH – DRO and benzo(a)pyrene (a polycyclic aromatic hydrocarbon or semivolatile organic compound).

Some apparent perched groundwater was found at approximately 6’ bgs in the area of the former UST field during the initial Phase I ESA. Based on the overall investigation activities, PSI believes, this water was likely sitting (perched) in a former UST pit that

had been backfilled with rock and is not the true groundwater. Dedicated groundwater appeared to be located at depths ranging from approximately 16 to 19 feet bgs on top of bedrock. Based on the amount of groundwater available for the groundwater sampling and its recharge rate during the sampling, groundwater appears to be limited, especially on the northern side of the subject property.

3.4 Potentially Exposed Populations

Current Occupants - The subject property is currently occupied by a single-family residential house. The number of occupants and their ages could not be determined. The current occupants are currently scheduled to vacate the property in early June 2020. Based on the privately owned nature of the subject property, it is not generally accessed by the general public. Visitors, delivery and utility people may briefly visit the property. The current occupants will have vacated the property prior to the initiation of the Response Actions; thus, no exposure assessment has been conducted for this population.

Future Occupants - The subject property is currently proposed to be developed with a Dollar General Retail Store. Occupants will include shoppers and store employees. Most Dollar Stores operate on a relatively low volume of daily shoppers. Customers will vary in age, with a small number of children under the age of 18 and 3. Shoppers are not anticipated to spend a long time at the store, with the average visit lasting approximately 15 minutes. There will generally be two to four employees at the store at any one time.

In addition, the property will initially be occupied by construction workers. The construction workers will most likely predominately be middle age. Based on the nature of the construction work, no one under the age of 18 will likely be present. Following completion of the retail building, there may be occasional construction, utility and/or maintenance workers who may do some excavation at the subject property.

3.5 Exposure Pathways

Based on the affected media being soil and groundwater, the potential future exposure pathways are through dermal contact, digestion and inhalation (of soil particles or groundwater droplets and off-gassing of VOC). The following is a breakdown of exposure levels for the various future occupants:

Retail Customers, Store Workers and Intermittent Visitors:

Soils and Groundwater: The dermal contact, digestion and inhalation pathways are considered to be incomplete. Following completion of the Response Actions, the subject property will be predominately covered with impervious surfaces and those areas not covered by impervious surfaces will contain a minimum of two feet of clean fill. A deed restriction will be in place, that will prohibit the use of groundwater for any purpose. In

addition, deed restrictions will require the continued inspection and maintenance of the impervious cap and clean fill placement barrier.

Construction and Maintenance Workers:

Soils and Groundwater: For all construction workers at the property who will be involved in the construction of the planned retail building, or involved in any excavation activities following completion of the building and site improvements, the potential dermal, ingestion (accidental) and inhalation pathways are/will be considered to be complete.

Following completion of the Response Actions, for any construction and maintenance workers whose work will not involve any excavation activities into the soils, the dermal contact, digestion and inhalation pathways will be incomplete, as the subject property will be predominately covered with impervious surfaces will contain a minimum of two feet of clean fill and the use of groundwater will be deed restricted.

Following completion of the Response Actions, for any construction workers who will conduct excavation activities at the subject property, the dermal, ingestion and inhalation exposure pathways will remain complete due to contaminants remaining in the soil and groundwater. Preparation and implementation of a HASP and a SGMP will be conducted in order to minimize exposure to these construction and maintenance workers. In addition, a deed restriction preventing future excavation activities at the subject property without notification of the MDE and implementation of the HASP and SGMP will be recorded and will also be recorded with the Maryland Public Utility One Call System so that the future construction workers will be aware of the presence of the contaminants.

3.6 Ecological Receptors

There are no flood plains, surface water bodies or wetlands located on the subject property. The nearest surface water body is an unnamed stream that is located approximately 115 feet north of the subject property. The stream enters an underground culvert at this point and flows to the east-southeast. It emerges aboveground approximately 200 feet to the east-northeast of the subject property.

The subject property is developed with one residential house and detached garage. The remainder of the site includes two driveways, one paved asphalt and grass and the other gravel. The remainder of the site is mowed turfgrass with a few small bushes. There are no trees on the site. Based on the observed features, there are no suitable habitats for endangered species.

Based on the above, there are no ecological receptors on the subject property.

4.0 CLEAN-UP CRITERIA

4.1 Soil Clean-up Criteria

The existing underground storage tank containing home heating oil will be removed from the subject property. This removal will be done in accordance with the regulations under the MDE's Oil Control Program. The program requires that the UST be removed from the ground once it is no longer in service. The removal is to be conducted by an MDE certified UST remover. If evidence of a release is found, then it must be reported to the MDE OCP. If during this removal, evidence of a release is not found, then the soils will be tested and compared to the state standards. If significant soil impact is found during the removal of the UST, then the MDE VCP will be notified and the Contingency measures described in Section 6.2 followed.

Excavation activities will be conducted at the subject property during construction of the proposed retail building. If any obviously petroleum impacted soils (soils exhibiting a petroleum odor) are excavated as part of the proposed construction activities will be segregated and disposed off-site. No additional soils will be excavated beyond that necessary for reaching the planned construction grade. The remainder of the soils will remain on-site; thus, the identified COCs will remain in the soils. The following activities will be conducted in order to minimize any dermal contact, incidental ingestion, or inhalation risks from the impacted soils. Implementation of a HASP and SGMP during planned and future construction activities, capping of the property with impervious surfaces or structures, backfilling of utility trenches with certified clean fill and the placement of a minimum of two feet of clean fill in any areas not covered with an impervious surface. A deed restriction will be placed to prevent future intrusive activities that have the potential to encounter impacted soils without notification to the MDE VCP and use of the HASP during such activities.

Based on the nature of the response actions, there are no numeric standards that will be utilized as a clean-up criterion. The completion of clean-up will be based on the satisfactory completion of the selected response actions, which will eliminate or mitigate the exposure pathways.

4.2 Groundwater Clean-up Criteria

The depth to groundwater is approximately 16' bgs; with the exception of a small area of perched groundwater on the southern side; thus, it is not anticipated that groundwater will be encountered during development or subsequent construction activities. However, the HASP and Soil/Groundwater Management Plan that will be prepared for the subject property will contain activities and procedures to be followed in case groundwater is encountered.

In order to maintain an incomplete pathway for groundwater ingestion for future store employees, shoppers and intermittent visitors of all ages, a deed restriction will be placed on the property prohibiting the use of the groundwater at the subject property for any

purpose. Based on the depth to groundwater; the building occupants and visitors will not be directly exposed to the groundwater; thus, the dermal and inhalation (accidental) risks are eliminated.

Based on the nature of the response actions, there are no numeric standards that will be utilized as a clean-up criterion. The completion of clean-up will be based on the satisfactory completion of the selected response actions, which will eliminate or mitigate the exposure pathways.

4.3 Soil Gas Clean-up Criteria

As part of the prior investigation of the subject property, soil gas samples were collected in the area underneath the proposed future building at the location nearest to the petroleum impacted soils. The analytical results were all below the applicable standards. The regulatory standards used for the comparison of the analytical results of the sampling are the State of Maryland Department of the Environment *Technical Guidelines for Vapor Intrusion*, dated September 2019. The standards contained within are based on the Environmental Protection Agency's Regional Screening Levels, dated May 2019. Based on the property's future proposed retail use, PSI selected the commercial standards. The standards supply two different numeric standards for each compound (Tier I and Tier 2).Tier I Commercial Soil Gas Standards contained in the Environmental Protection Agency's Regional Screening Levels, dated May 2019. Thus, vapor intrusion due to soil gas is not considered a contaminant of concern.

5.0 Remedial Approach and Institutional Controls

5.1 Selected Technologies

The following technologies and institutional controls will be utilized for remediation and mitigation of environmental impacts at the subject property.

5.1.1 Surface and Subsurface Soil

Remedial activities include the off-site disposal of any obviously petroleum product odor impacted soils that are excavated from the ground during the proposed excavation activities, the implementation of both a HASP and Soil & Groundwater Management Plan (SGMP), impervious capping to prevent direct exposure, backfilling of all utility trenches with MDE VCP Certified clean fill, the placement of a minimum of two feet of MDE Certified clean fill on all areas not covered with impervious capping, and a deed restriction to prevent future excavation activities at the subject property unless the MDE VCP is notified and the HASP is enforced.

Disposal of Off-Site Soils: During development of the subject property, it is expected that the excavation and grading operations will encounter petroleum product and metals' impacted soil. These soils will be moved around the subject property as part of the cut and fill activities. Based on the anticipated depths of the cut and fill activities, the more "heavily" petroleum product impacted soils (as indicated by noticeable petroleum product odors, which based on the prior investigations correspond with the more "heavily" concentrations of petroleum contaminants) are not anticipated to be encountered during these activities. The procedures established in the HASP (discussed below) will be utilized to protect workers and the general public during these cut and fill activities. Deeper excavations for such activities as building footer installations, sign placement and subsurface utility installation, may encounter the more highly petroleum product impacted soils. Therefore, the excavation activities will be monitored by an experienced geologist/environmental scientist during these excavation activities. Soils and other materials from these deeper excavations will be inspected for indications (either visual or olfactory) of petroleum product contamination, primarily VOCs, and field screened using a calibrated Photoionization Detector (PID). Any soils exhibiting a noticeable petroleum odor will be segregated for off-site disposal. No additional soils, regardless of the soil quality conditions, will be excavated beyond that necessary to reach the planned construction grades. In the event that excavated soil is stockpiled at the subject property, the stockpiled soil will be placed on and covered with 6-mil high density plastic sheeting at all times. The plastic sheeting cover will be anchored to minimize weather related migration of contaminants prior to disposal at an appropriate off-Site facility. These odor-impacted petroleum soils will be sampled, characterized and disposed of at an appropriately permitted disposal facility. All impacted soil transmitted off-site will be

properly manifested with copies provided to the MDE VCP in the RAP completion report.

All soils or other fill material that will be imported onto the subject property must be approved by the MDE VCP prior to being brought on-site. Due to the proposed future commercial use of the subject property there are two options for the utilization of imported fill. The first option is to obtain an affidavit from the supplier of the fill stating that "the fill material has not been contaminated by controlled hazardous substances or oil". The second option is to have the proposed fill material sampled and tested. If the material meets the required commercial levels, it can then be used as clean fill. Sufficient time will be allocated in the RAP implementation schedule to allow for any testing and/or MDE VCP approval of the proposed fill.

Imported fill material should preferentially not be brought onto the site until such time as it is needed and can be applied directly to the area of use. If this is not feasible, then any imported clean fill should be properly stockpiled on site. It should be either directly placed on top of an impervious surface, or heavy-duty impervious polyethylene sheeting. Stockpiled clean fill should never be placed directly on the virgin soils unless the placement represents the final two-foot clean surface layer. Stockpiled fill materials should be covered with heavy duty polyethylene sheeting.

..

Site Specific Health & Safety Plan (HASP) and a Soil & Groundwater Management Plan Preparation (SGMP):

All applicable Occupational Safety and Health Administration (OSHA) regulations will be followed during the implementation of this RAP. A site-specific Health and Safety Plan (HASP) for all personnel will be developed, implemented and maintained on-site. All on-site personnel must be made aware of and sign the HASP. The development of the HASP is the responsibility of the participant. On-site records of HASP signatures must be available to the Department upon request.

Both the HASP and SGMP will be prepared and implemented during all construction activities involving excavation to ensure that the soils are handled properly and that the workers are following the designated work and other prescribed methods to minimize their exposure. The HASP will include work procedures, training, personal protective equipment (as needed) and air monitoring in order to protect workers from exposure during intrusive construction activities. The SGMP will provide guidelines and practices for managing the soil and groundwater during construction in order to minimize worker exposure, as well as being protective of the environment. Copies of the HASP and SGMP are located in Appendices D and E.

Soil Capping: The majority of the subject property will be covered with impervious surfaces, including the proposed building structure, paved asphalt parking and drive lanes and concrete walkways and miscellaneous surface areas. Specifications for these are included in The Site Final Development Plan, which is attached. The paved asphalt will consist of approximately 1.5" of wearing course asphalt, 2.5" of binder

course asphalt and 6" of aggregate base. Concrete areas will consist of approximately 8" of concrete on a 6" aggregate base. Sidewalks will consist of approximately 4" of concrete on a 4" aggregate base. The building slab will consist of approximately 4" of wire reinforced concrete with an approximate 4" aggregate base below. Plans details for these impervious covers are located in the Site Development Plans, which are located in Appendix C.

Areas of the subject property that will not be covered with impervious surfaces will be covered with a minimum of two feet of certified "soil like" clean fill suitable for vegetative growth. Following placement of the clean fill, these areas will be covered with turfgrass through either the placement of sod or by seeding. In addition to the above, any utility trenches that are excavated as part of the construction will be backfilled with clean fill. The majority of each trench will be backfilled with commercially purchased crushed limestone or rock per the specifications in the attached Site Final Development Plan (Appendix C). At a minimum, areas where an impervious cover will not be located, will be covered with a minimum of two feet of certified "soil like" clean fill to facilitate the planned turfgrass growth.

Deed Restriction: An Environmental Covenant will be executed and recorded with the deed that will prohibit future excavation at the subject property unless certain conditions are met. This environmental covenant will also be supplied the Maryland One Call Utility alert (Miss Utility). These conditions include the notification of the MDE prior to beginning any excavation activities at the property and ensuring a HASP and SGMP are in place and enforced during the proposed activities. This will eliminate the ingestion pathway for all site occupants with the exception of construction workers who may could potentially accidently ingest groundwater if they encounter it and whose exposure will be controlled through the HASP and SGMP.

5.1.2 Groundwater

HASP and Soil & Groundwater Management Plan Preparation: A HASP and a Groundwater Management Plan will be prepared and in force during all construction activities involving excavation to ensure that the groundwater is handled properly and that the workers are following the designated work and other prescribed methods to minimize exposure. The HASP will include work procedures, training, personal protective equipment (as needed) and air monitoring. The Groundwater Management Plan will provide guidelines and practices for managing the groundwater during construction in order to minimize worker exposure, as well as being protective of the environment. Aside from an area of likely moderately shallow (6 ft. bgs) perched groundwater on the southwestern portion of the subject property, the main groundwater table is relatively deep (>16 ft. bgs.) and should not be impacted during the proposed construction. However, procedures will be put in place in the event it is encountered. If groundwater is present in any utility trenches and dewatering is necessary for the completion of construction activities (i.e. pipe installation), then the groundwater will be pumped into an appropriate holding tank and properly disposed

off-site. No other groundwater will be collected or disposed. Copies of the HASP and SGMP are located in Appendices D and E.

Deed Restriction: A deed restriction will be placed on the subject property that will prohibit the use of groundwater for any purpose. This will eliminate the ingestion pathway for all site occupants with the exception of construction workers who could potentially accidently ingest groundwater if they encounter it and whose exposure will be controlled by the HASP above.

5.1.3 Building Demolition

The existing residential house and portion of the detached garage on the subject property will be demolished. The entire structures will be demolished, including the foundations. A pre-renovation survey was conducted on February 19, 2019. Both friable and non-friable asbestos-containing materials (ACM) were conducted. The following ACM was identified:

The following ACMs were identified through PLM analysis during this investigation:
- **Grey Wallpaper Mastic (HM #6) - Located in throughout 1st floor of house.**
- **Off-White Air Duct Wrap (HM #11) - Located throughout in basement of house.**
- **Dark Off-White Air Duct Wrap (HM #12) – Located throughout basement of house.**
- **Black Roofing Material (HM #16) – Located throughout the garage roof.**

The ACM will be handled in accordance with the MDE Asbestos Program. Any friable ACM or non-friable ACM that may become friable during demolition will need to be removed prior to demolition. The remaining ACM may remain in place during demolition; however, all of the demolition debris will need to be disposed at Construction and Demolition Landfill. All demolition debris will be disposed off-site and none will remain on-site.

Per conversations with the Maryland Department of Poison Prevention, due to the proposed demolition including the entirety of the structures, including the foundations, the work does not fall under their regulations.

5.1.4 Home Heating Oil UST Removal

The existing 1,000-gallon UST containing home heating oil will be removed. The UST will be removed in accordance with the MDE Oil Control Division (OCP) regulations. Underground Storage Tanks (USTs) with 1,100-gallon capacity or less that are used to store petroleum products at a private residence or farm are exempt from most Maryland oil control regulations. However, these systems must comply with closure requirements when no longer used as a fuel source (COMAR 26.10.10).

- The OCP does not require prior notice of the closure.
- Removal must be performed by MDE-certified technician or remover.

- The tank owner and contractor must report any discovered release as required by Maryland law and regulations.

5.2 Institutional Controls

The land use and restriction category for the property will be Restricted Commercial 2B. An Environmental Covenant recorded in the property Deed and Deed restrictions will be utilized. These institutional controls were discussed above.

5.3 Long Term Monitoring Requirements

As part of the deed restriction, future excavations at the subject property will be prohibited unless certain procedures are adhered to. These include notification of the MDE prior to commencing the activities and following the prepared HASP and SGMP plan during conductance of the activities and supplying a copy of the Certificate of Completion to the Maryland One Call Utility Alert (Mis Maryland). In addition, the Response Actions also include the placement of an impervious cap on the majority of the property, with any surfaces not covered by the impervious cap to be covered with two feet of MDE Certified Clean Fill. These covers will need to be inspected on an annual basis and repaired promptly as needed. The then current property owner will be responsible for carrying out these activities. Forms for inspections and notices related to these activities are located in the SGMP which is located in Appendix E.

6.0 EVALUATION CRITERIA FOR THE SELECTED TECHNOLOGY

6.1 Criteria for Certificate of Completion

A Certificate of Completion will be issued by the MDE VCP when all of the following have been completed:

1. Any petroleum odor-impacted soils that were segregated from the other soils and/or any groundwater from needed dewatering activities have been properly disposed and manifested.

2. The capping of the site with impervious materials and the placement of two feet of clean fill on any areas not covered with impervious surfaces. In addition, after the backfilling of any utility trenches with clean fill has been completed.

3. Completion of the HASP and Soil and Groundwater Management Plan.

4. Upon submission and MDE VCP acceptance of the RAP Completion Report. The RAP Completion Report will document that all of the proposed Response Actions proposed in the RAP Plan have been completed. The report will include waste manifests, if any; figures showing the final extent of impervious surfaces and impervious surfaces covered with clean fill; and the origins and any associated required analytical results for the clean fill.

Once a Certificate of Completion has been received, the Environmental Covenant and deed restrictions outlined in the RAP Report will be recorded in the land records of Garrett County, MD.

6.2 Criteria for Contingency Measures

Should any new contamination, exposure pathways, or other circumstances not currently known to exist at the subject property be encountered during implementation of the RAP, the following actions will be taken: the MDE VCP will be notified within 24 hours, further implementation of the RAP will be halted, the new circumstances at the subject property will be evaluated, and the RAP will be amended to address the new circumstances.

6.3 Action Levels

The prior investigations appear to have adequately characterized the subject property for environmental impact. The response actions proposed in this plan were designed to protect future occupants, visitors, construction personnel, the general public and the environment from exposure due to the identified COCs. There are no numeric standards that will be utilized as “Action Levels” to judge the effectiveness of the proposed Response Actions, rather their effectiveness will be judged by observations through the various stages of implementation. Should the response actions be judged to not be

being followed as specified or are not adequately serving their purposes, the remedial actions will be halted, and new Response Actions proposed.

7.0 RESPORTING REQUIREMENTS

7.1 RAP Reporting Requirements

Reporting required as part of the implementation of the RAP will consist of information related to the public participation process, including copies of the public notice sign and newspaper notification, the initial written notification of the start of the response actions (i.e. start of construction), a final construction schedule, origin, certification and testing, if needed) of the proposed clean fill, monthly progress reports, and submission of the Response Action Completion Report.

7.1.1 RAP Reporting Requirements Schedule

The following reporting requirements will be adhered to during the implementation of this RAP:

- An initial notification (letter or email correspondence) will be submitted to the MDE VCP project manager five calendar days prior to the start of RAP implementation activities at the property.

- Monthly RAP implementation progress reports documenting RAP activities will be submitted to the MDE VCP project manager until the Certificate of Completion has been issued for the Site. These reports will be submitted on a monthly basis.

- The VCP will be verbally notified within 48 hours (72 hours in writing) of any changes (planned or emergency) to the RAP implementation schedule.

- Should any new contamination, exposure pathways, or other circumstances not currently known to exist at the subject property be encountered during implementation of the RAP, the MDE VCP will be notified within 24 hours

- The final RAP Completion Report will be submitted to the MDE VCP project manager within 30 days following completion of RAP implementation activities.

Written Notifications will be sent to the following:

MDE Voluntary Clean-up Program
Attn: Division Chief
1800 Washington Boulevard, Suite 625
Baltimore Maryland 21230
Phone: 410-537-3493

7.2 Maintenance Notification Requirements

Institutional Controls will be used as part of the remedial controls at the subject property. These include the placement and maintenance of an impervious cap and clean fill cover. An Environmental Covenant will be recorded in the deed to restrict future intrusive excavations at the subject property unless notification to the MDE has occurred. A Deed restriction prohibiting the use of the groundwater at the subject property will also be recorded in the deed.

7.1.1 Maintenance Notification Schedule

- The Certificate of Completion, along with the required Environmental Covenant must be recorded in the local within 30-days of issuance of the Certificate of Completion.
- A copy of the Certificate of Completion must be sent to the Public Utilities One Call system for recording within 30 days of its issuance.
- Inspections of the impervious cap and landscape fill cover must be conducted on an annual basis. If any maintenance activities are required, the MDE must be notified within 10 business days. If any repairs are needed, they will be completed within 15 business days.
- The MDE must be notified 5-days prior to any transfer of ownership. They must be provided with contact information for the new owner. A form for this notification is provided in Appendix G.

Following receipt of the Certificate of Completion, the MDE VCP, will no longer be the contact point for further correspondence. After this date, future correspondence should be sent to:

MDE Controlled Hazardous Substance
Attn: Enforcement Division
1800 Washington Boulevard
Baltimore Maryland 21230
Phone: 410-537-3493

8.0 PERMITS, NOTIFICATIONS, AND CONTINGENCIES

The participant will comply with all federal, State and local laws and regulations by obtaining all necessary approvals and permits to conduct all activities and implement this RAP. The VCP will be verbally notified within 48 hours (72 hours in writing) of any changes (planned or emergency) to the RAP implementation schedule, any previously undiscovered contamination, any previously undiscovered storage tanks and other oil-related issues, and citations from regulatory entities related to health and safety practices. All notifications shall be made to the VCP project manager at 410-537-3493. If the VCP project manager is unavailable, the notifications must be made to another VCP staff member.

The VCP must be provided with all documentation and analytical reports generated as a result of any previously unidentified contamination. The participant understands that previously undiscovered contamination and/or previously undiscovered storage tanks or other oil-related issues may require an amendment to this RAP.

If unexpected conditions are encountered, RAP activities will be halted while the situation is assessed. In the interim, if immediate measures are needed in order to abate any immediate threats, these measures will be implemented immediately. The MDE will be provided with all documentation and analytical reports generated as a result of any previously unidentified contamination. The participants understand that previously undiscovered contamination and/or previously undiscovered storage tanks or other oil related issues may require an amendment to this RAP.

9.0 HEALTH & SAFETY PLAN

A Site-Specific Health & Safety Plan (HASP) has been prepared and will be maintained on-Site for the duration of RAP activities. The purpose of the HASP is to minimize the risk presented to construction workers who are involved in subsurface activities. A copy of this plan is contained in Appendix D.

All applicable Occupational Safety and Health Administration (OSHA) regulations will be followed during the implementation of this RAP. A site-specific Health and Safety Plan (HASP) for all personnel will be developed, implemented and maintained on-site. All on-site personnel must be made aware of and sign the HASP. The development of the HASP is the responsibility of the participant. On-site records of HASP signatures must be available to the Department upon request.

The current property owner will be responsible for ensuring that the HASP is followed during all RAP activities. The plan will be implemented during construction of the proposed Dollar General Retail Store. The HASP will also be maintained by the current and future property owners, who will be responsible for their implementation during any future sub-surface construction activities.

10.0 SOIL AND GROUNDWATER MANGEMENT PLAN

A Soil and Groundwater Management Plan (SGMP) has been prepared and will be maintained on-Site for the duration of RAP activities. The purpose of the SGMP is to minimize the risk presented to construction workers and future site occupants due to the petroleum product and metals' impact to the soil and groundwater. The SGMP will incorporate the Proposed Response Actions outlined in the RAP Report and guide the completion of these activities. A copy of this plan is contained in Appendix C.

The current property owner will be responsible for ensuring that the SGMP is followed during all RAP activities. The plan will be implemented during construction of the proposed Dollar General Retail Store. The SGMP will also be maintained by the property owner and will be implemented during any future sub-surface construction activities.

11.0 IMPLEMENTTION SCHEDULE

The schedule below is for informational purposes. All dates are approximate due to the current situation with the COVID Virus. The MDE VCP project manager will be notified (letter or email correspondence) five calendar days prior to the beginning of RAP implementation activities. Monthly RAP implementation reports will be submitted to the MDE VCP project manager during the implementation of this RAP. In addition, the MDE VCP project manager will be verbally notified within 48 hours (72 hours in writing) of any changes (planned or emergency) to the RAP implementation schedule.

Event	**Date**
MDE VCP RAP Approval	TBD
Submit performance bond or other security	10 Days Following RAP Approval
Construction	30 Days Following RAP Approval
Begin Submittal of RAP Implementation Progress Reports to MDE	30 Days after RAP Implementation
Submittal of RAP Completion Report to MDE	30 Days after RAP Implementation Completion

Monthly Progress Reports will be submitted to the MDE Project Manager by e-mail.

12.0 ADMINISTRATIVE REQUIREMENTS

12.1 Written Agreement Regarding Withdrawal

If the response action plan is approved by the MDE, the participant (PTV 1075, LLC) agrees, subject to the withdrawal provisions of Section 7-512 of the Environment Article, to comply with the provisions of the RAP. The Participant understands that if they fail to implement and complete the requirements of the approved plan and schedule, the MDE may reach an agreement with the participant to revise the schedule of completion in the approved response action plan or, if an agreement cannot be reached, the MDE may withdraw approval of the plan. Copies of the executed agreements are presented in Appendix F.

12.2 Certified Statement Regarding Zoning Requirements

The participant hereby certifies that the property meets all applicable municipal zoning requirements. The participant acknowledges that there are significant penalties for falsifying any information required by MDE under Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland, and that this certification is required to be included in a Response Action Plan for the Voluntary Cleanup Program pursuant to Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland. Copies of the executed statements are presented in Appendix F.

12.3 Performance Bond or Other Security

PTV 1075, LLC will obtain Performance Bond in the amount of $ 20,000. The performance bond costs are intended and determined based on the items needed to secure and stabilize the Site should the RAP activities not be completed. Activities to be covered under the bond include the following:

- Posting warnings and notices regarding property conditions.
- Restricting access to the property by maintaining perimeter fencing.
- Minor regrading of any open excavations at the property.
- Import and placement of approximately 750 tons of a crushed stone cap across the entire surface of the site.

This financial instrument will be submitted to the MDE within 10 days of the MDE approving the RAP. The participants understand that the Performance Bond remains in effect for the property and does not become void until issuance of the Certificate of Completion for the property, or 16 months after withdrawal of these applications from the VCP. The participants acknowledge that failure to maintain the Performance Bond for the property will result in the withdrawal of these applications from the VCP.

APPENDIX A

FIGURES

Professional Service Industries
850 Poplar Street
Pittsburgh, PA 15220
412-922-4000

Key:

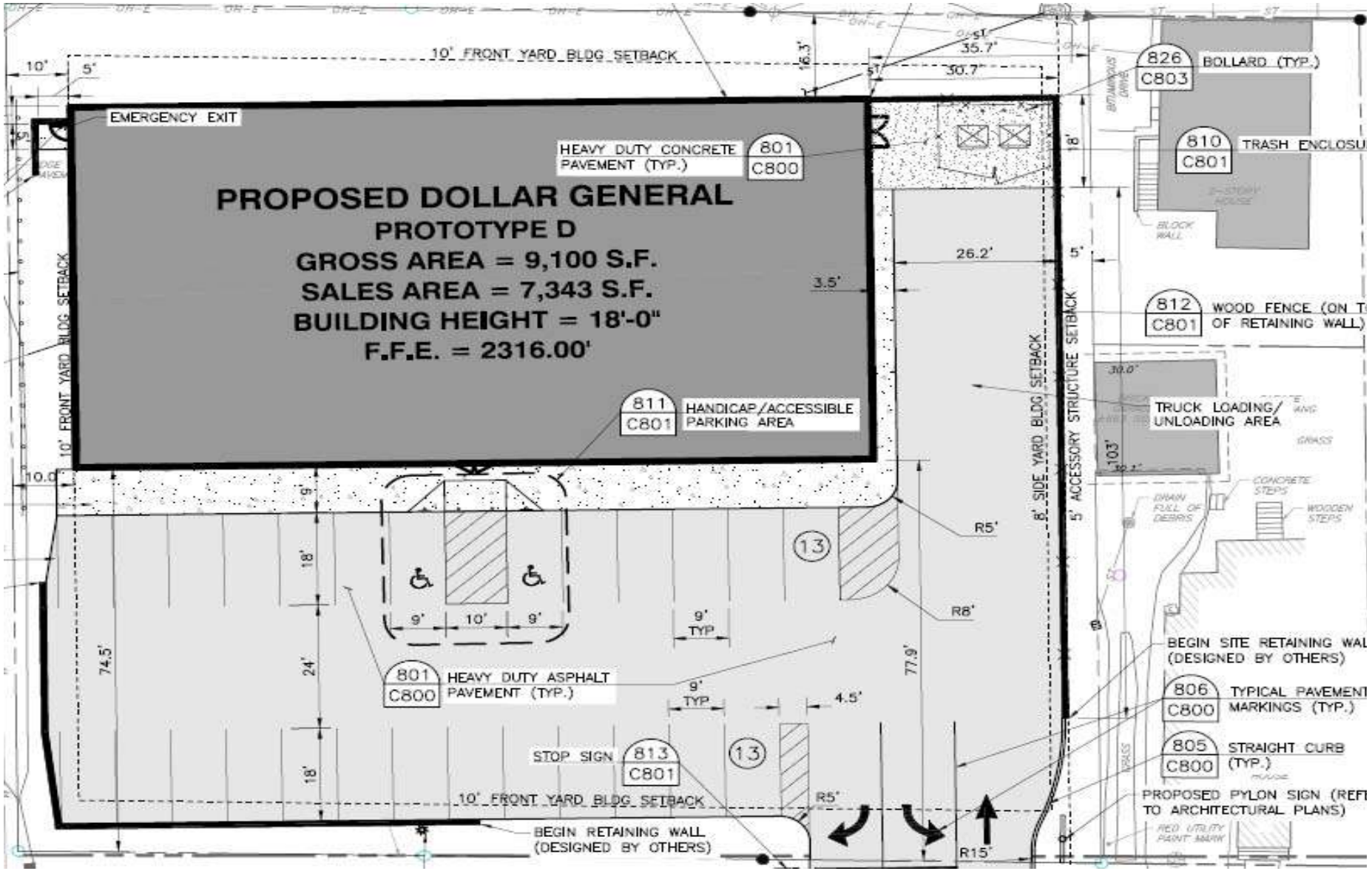
= Subject Property

Figure 1 – Subject Property Current Map

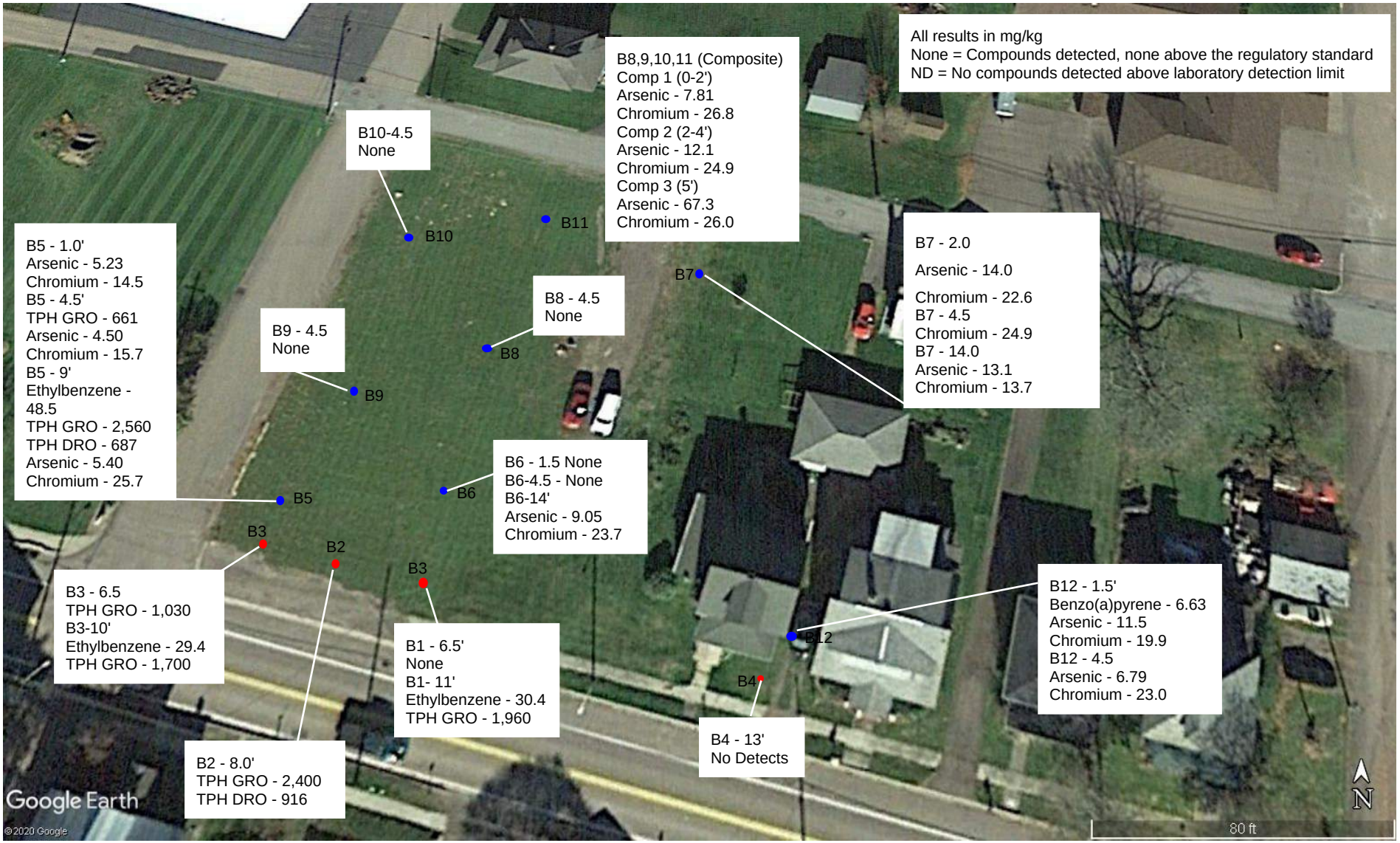
129, 131, 133 E. Main Street

Grantsville, MD 21536

PSI Project No. 08163843	Date: April 16, 2020	Drawn by: DAC



Professional Service Industries 850 Poplar Street Pittsburgh, PA 15220 412-922-4000	**Key:** G = Grass C = Concrete A = Asphalt	Figure 2 – Subject Property – Proposed Plan 129, 131, 133 E. Main Street Grantsville, MD 21536
		PSI Project No. 08163843 | Date: April 16, 2020 | Drawn by: DAC



Professional Service Industries

850 Poplar Street

Pittsburgh, PA 15220

412-922-4000

Key:

B = April 8, 2019 Boring Location

B = January 14 & 15 2020 Boring Location

Figure 3 – Soil Sample Exceedances

129, 131, 133 E. Main Street

Grantsville, MD 21536

PSI Project No. 08163843	Date: April 16, 2020	Drawn by: DAC

Professional Service Industries
850 Poplar Street
Pittsburgh, PA 15220
412-922-4000

Key:

MW = April 8, 2019 Groundwater Well

MW = January 14 & 15 2020 Groundwater Well

Figure 4 – Groundwater Sample Exceedances

129, 131, 133 E. Main Street

Grantsville, MD 21536

PSI Project No. 08163843	Date: April 16, 2020	Drawn by: DAC

Professional Service Industries 850 Poplar Street Pittsburgh, PA 15220 412-922-4000	**Key:** VP = Vapor Point SG = Soil Gas Sample NA = No samples exceed the Standard	Figure 5 – Soil Gas Sample Exceedances 129, 131, 133 E. Main Street Grantsville, MD 21536
		PSI Project No. 08163843 | Date: March 6, 2020 | Drawn by: DAC

Professional Service Industries 850 Poplar Street Pittsburgh, PA 15220 412-922-4000	**Key:**	Figure 6 – Isopach (Cut & Fill Map) 129, 131, 133 E. Main Street Grantsville, MD 21536
		PSI Project No. 08163843 | Date: December 2019 | Drawn by: CEC

APPENDIX B

TABLES

Soil Sample Analytical Results Summary
Proposed Grantsville DG
129, 131, 133 E. Main Street
Grantsville, MD 21536

Constituent	Reporting Units	Generic Numeric MDE Clean-Up Standards		Field Sample ID, Date Sampled, and Depth Sampled in feet below ground surface																					
		Residential	Non-Residential	B1	B1	B2	B3	B3	B4	B5	B5	B5	B6	B6	B6	B7	B7	B7	B8	B9	B10	B12	B12	Comp 1	Comp 2	Comp 3
				4/8/2019	4/8/2019	4/8/2019	4/8/2019	4/8/2019	4/8/2019	1/14/2020	1/14/2020	1/14/2020	1/14/2020	1/14/2020	1/14/2020	1/15/2020	1/15/2020	1/15/2020	1/14/2020	1/15/2020	1/15/2020	1/15/2020	1/15/2020	1/14/2020	1/14/2020	1/14/2020
				6.5	11	8	6.5	10	13	1	4.5	9	1.5	4.5	14	2	4.5	14	4.5	4.5	4.5	1.5	4.5	0-2	2 - 4	4 - 5
VOCs																										
Benzene	mg/kg	1.2	5.1	ND	ND	ND	ND	ND	ND	NA	0.691	4.77	NA	ND	0.519	NA	ND	ND	0.00159	0.00642	0.00161	NA	NA	NA	NA	NA
n-Butylbenzene	mg/kg	NA	NA	0.279	1.83	5.11	2.59	2.49	ND	NA	2.43	4.07	NA	ND	0.222	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
sec-Butylbenzene	mg/kg	NA	NA	0.234	1.4	3.1	1.17	0.216	ND	NA	0.972	1.79	NA	ND	0.121	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Tert-Butylbenzene	mg/kg	NA	NA	ND	ND	0.337	ND	ND	ND	NA	0.276	ND	NA	ND	0.0234	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Chloroform	mg/kg	0.32	1.4	ND	ND	ND	ND	ND	ND	NA	0.172	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Etylbenzene	mg/kg	5.8	25	0.0878	**30.4**	9.94	12	**29.4**	ND	NA	1.93	**48.5**	NA	ND	1.63	NA	ND	0.0085	0.0114	0.143	0.0145	NA	NA	NA	NA	NA
Isopropylbenzene	mg/kg	190	990	0.161	5.47	4.81	2.16	5.38	ND	NA	1.8	4.41	NA	ND	0.28	NA	ND	ND	ND	0.016	ND	NA	NA	NA	NA	NA
p-Isopropyltoluene	mg/kg	NA	NA	0.0462	0.534	1.69	0.576	1.05	ND	NA	0.161	0.902	NA	ND	0.062	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Naphthalene	mg/kg	3.8	17	1.95	7.06	6.78	5	6.33	ND	NA	4.2	1.78	NA	ND	0.714	NA	ND	ND	ND	0.0593	ND	NA	NA	NA	NA	NA
n-Propylbenzene	mg/kg	NA	NA	0.352	9.85	13.1	6.47	13.1	ND	NA	6.55	14.8	NA	ND	0.745	NA	ND	0.00866	ND	0.0599	ND	NA	NA	NA	NA	NA
Toluene	mg/kg	490	4,700	ND	1.77	ND	ND	ND	ND	NA	ND	5.59	NA	ND	0.155	NA	ND	ND	ND	0.0251	ND	NA	NA	NA	NA	NA
1,2-Trichloroethane	mg/kg	0.15	0.63	0.0507	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
1,2,4 Trimethylbenzene	mg/kg	30	180	0.122	67.4	74.9	33.7	67	ND	NA	0.911	7.84	NA	ND	2.15	NA	ND	0.0507	0.0207	0.344	0.0186	NA	NA	NA	NA	NA
1,2,3-Trimethylbenzene	mg/kg	NA	NA	0.245	13.5	15.1	8.55	16.9	ND	NA	10.2	24	NA	ND	0.649	NA	ND	0.00997	ND	0.0698	ND	NA	NA	NA	NA	NA
1,3,5 -Trimethylbenzene	mg/kg	27	150	ND	21.1	9.47	0.799	28.1	ND	NA	0.346	33.7	NA	ND	0.684	NA	ND	0.0172	0.00605	0.0879	ND	NA	NA	NA	NA	NA
Xylenes (Total)	mg/kg	58	250	ND	56.3	14.8	13.3	79.1	ND	NA	1.01	18.9	NA	ND	2.82	NA	ND	0.0343	0.061	0.767	0.0639	NA	NA	NA	NA	NA
Total Petroeum Hydrocarbons																										
Diesel Range Organics	mg/kg	230	620	253	135	**916**	200	189	ND	593	569	**687**	101	6.6	166	NA	9.27	40.4	NA	NA	NA	145	80.7	NA	NA	NA
Gasoline Range Organics	mg/kg	230	620	194	**1,960**	**2,400**	**1,030**	**1,700**	**ND**	**4.18**	**661**	**2,560**	ND	ND	147	NA	ND	7.74	NA	NA	NA	3.67	ND	NA	NA	NA
Polycyclic aromatic hydrocarbons																										
Anthracene	mg/kg	3	47	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	1.22	ND	ND	ND	ND
Benzo(a)anthracene	mg/kg	1.1	21	NA	NA	NA	NA	NA	NA	0.146	ND	ND	NA	NA	ND	0.565	ND	ND	NA	NA	NA	5.96	ND	ND	ND	ND
Benzo(a)pyrene	mg/kg	0.11	2.1	NA	NA	NA	NA	NA	NA	0.207	ND	ND	NA	NA	ND	0.637	ND	ND	NA	NA	NA	**6.63**	ND	ND	ND	ND
Benzo(b)fluoranthene	mg/kg	1.1	21	NA	NA	NA	NA	NA	NA	0.255	ND	ND	NA	NA	ND	0.878	ND	ND	NA	NA	NA	8.52	ND	ND	ND	ND
Benzo(k)fluoranthene	mg/kg	11	210	NA	NA	NA	NA	NA	NA	0.0989	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	2.97	ND	ND	ND	ND
Benzo(g,h,i)perylene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.125	ND	ND	NA	NA	ND	0.386	ND	ND	NA	NA	NA	3.89	ND	ND	ND	ND
Chrysene	mg/kg	110	2,100	NA	NA	NA	NA	NA	NA	0.137	ND	ND	NA	NA	ND	0.51	ND	ND	NA	NA	NA	4.8	ND	ND	ND	ND
Dibenz(a,h)anthracene	mg/kg	0.11	2	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	1.07	ND	ND	ND	ND
Fluoranthene	mg/kg	240	3,000	NA	NA	NA	NA	NA	NA	0.305	ND	ND	NA	NA	ND	0.785	ND	ND	NA	NA	NA	8.6	ND	ND	ND	ND
fluorene	mg/kg	240	3,000	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	0.0666	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	mg/kg	1.1	21	NA	NA	NA	NA	NA	NA	0.116	ND	ND	NA	NA	ND	0.425	ND	ND	NA	NA	NA	4.25	ND	ND	ND	ND
Naphthalene	mg/kg	3.8	17	NA	NA	NA	NA	NA	NA	0.137	4.54	3.86	NA	NA	0.522	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND
Phenanthrene	mg/kg	180	2,300	NA	NA	NA	NA	NA	NA	0.215	0.0484	0.0819	NA	NA	0.0522	ND	ND	ND	NA	NA	NA	1.61	ND	ND	ND	ND
Pyrene	mg/kg	180	2,300	NA	NA	NA	NA	NA	NA	0.254	ND	ND	NA	NA	ND	0.777	ND	ND	NA	NA	NA	7.32	ND	ND	ND	ND
Metals																										
Antimony	mg/kg	3.1	47	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	2.59	2.69	ND	2.79	2.4
Arsenic	mg/kg	0.63	3	NA	NA	NA	NA	NA	NA	**5.23**	**4.5**	**5.4**	NA	NA	**9.05**	**14**	ND	**13.1**	NA	NA	NA	**11.5**	**6.79**	**7.81**	**12.1**	**67.3**
Beryllium	mg/kg	16	230	NA	NA	NA	NA	NA	NA	0.556	0.71	1.33	NA	NA	1.4	0.881	1.64	1.83	NA	NA	NA	1.04	1.35	1.16	1.47	0.976
Cadmium	mg/kg	7.1	98	NA	NA	NA	NA	NA	NA	0.631	ND	1.29	NA	NA	ND	0.696	ND	ND	NA	NA	NA	1.75	ND	ND	ND	ND
Chromium(1)	mg/kg	0.3	6.3	NA	NA	NA	NA	NA	NA	**14.5**	**15.7**	**25.7**	NA	NA	**23.7**	**22.6**	**24.9**	**35.7**	NA	NA	NA	**19.9**	**23**	**26.8**	**24.9**	**26**
Copper	mg/kg	310	4,700	NA	NA	NA	NA	NA	NA	47.7	17.3	26.3	NA	NA	36.4	96.8	37.1	35.6	NA	NA	NA	27.6	27.9	28.1	37.5	34.9
Lead	mg/kg	322	400	NA	NA	NA	NA	NA	NA	322	12.3	28.2	NA	NA	23.7	113	21.9	27.1	NA	NA	NA	300	22	23.2	22.9	23.4
Mercury	mg/kg	0.341	2.3	NA	NA	NA	NA	NA	NA	0.341	ND	0.134	NA	NA	0.0366	0.105	ND	ND	NA	NA	NA	0.157	ND	0.0811	ND	0.0357
Nickel	mg/kg	15	150	NA	NA	NA	NA	NA	NA	15	21.1	**159**	NA	NA	38.8	21.6	40.2	37.5	NA	NA	NA	23.4	35.2	26.2	35.5	28.6
Selenium	mg/kg	39	580	NA	NA	NA	NA	NA	NA	ND	ND	6.16	NA	NA	2.92	ND	ND	ND	NA	NA	NA	2.65	ND	ND	ND	ND
Zinc	mg/kg	221	2,300	NA	NA	NA	NA	NA	NA	221	66.9	140	NA	NA	95.1	188	121	107	NA	NA	NA	574	90.6	81.8	95	82

NA = Not Analyzed; ND = Not Detected, **Bold** = Exceedence of the Non-Residentail MDE Clean-up Standard.

(1) Analysis did not differentiate the type of chromium (III or VI), MDE regulations have separate standards for chromium III and VI. The samples were assumed to be composed of chromium VI, which has a more stringent MDE standard.

Groundwater Sample Analytical Results Summary
Proposed Grantsville DG
129, 131, 133 E. Main Street
Grantsville, MD 21536

Constituent	Reporting Units	Generic Numeric MDE Clean-Up Standards Groundwater Standards Type I and II Aquifers	Field Sample ID, Date Sampled, Depth Sampled in feet below ground surface						
			B1H2O	B5H2O	B6H2O	B7H2O			
			4/8/2020	1/14/2020	1/14/2020	1/15/2020			
			6'	16.5'	18.5'	25.5'			
VOCs									
Benzene	ug/L	5	ND	**374**	**3,070**	ND			
Ethylbenzene	ug/L	700	392	409	**2,570**	ND			
Isopropylbenzene	ug/L	45	**149**	31	**132**	ND			
MTBE	ug/L	20	ND	ND	ND	3.11			
Naphthalene	ug/L	0.17	**112**	ND	**542**	ND			
n-Proylbenzene	ug/L	NA	343	77.8	233	ND			
Toluene	ug/L	1000	47.1	499	**1,270**	ND			
1,2,4 Trimethylbenzene	ug/L	5.6	**2,250**	**456**	**1,740**	ND			
1,2,3 Trimethylbenzene	ug/L	NA	513	163	551	ND			
1,3,5-Trimethylbenzene	ug/L	6	**563**	**138**	**504**	ND			
Xylenes	ug/L	10,000	1,320	1,800	10,000	ND			
TPH									
Diesel Range Organics	ug/L	47	**6,500**	**9,200**	**62,200**	**319**			
Gasoline Range Organics	ug/L	47	**12,100**	**17,700**	**67,200**	ND			
PAHs									
Acenaphthalene	ug/L	53	NA	ND	2.29	ND			
fluorene	ug/L	29	NA	ND	4.53	ND			
Naphthalene	ug/L	0.17	NA	**53.1**	**424**	ND			
Phenanthrene	ug/L	12	NA	ND	2.14	ND			
Dimethylphenol	ug/L	36	NA	16.8	31.2	ND			
Metals									
Chromium	ug/L	0.035	NA	**10.6**	ND	ND			
Lead	ug/L	15	NA	5.68	5.74	ND			
Nickel	ug/L	39	NA	17.4	17.9	ND			
Selenium	ug/L	50	NA	23	ND	ND			

NA = Not Analyzed; ND = None Detected, **Bold = Exceedence of applicable MDE Standard**

Soil Gas Sample Analytical Results Summary
Proposed Grantsville DG
129, 131, 133 E. Main Street
Grantsville, MD 21536

Constituent	Reporting Units	MDE Target Soil Gas Concentrations		Sample No., Sample Date and Depth below ground surface		
		Tier I	Tier 2	SG1	SG2	SG3
				3/5/2020	3/5/2020	3/5/2020
				5	5	5
VOCs						
Acetone	ug/M^3	13,700,000	68,500,000	ND	ND	43.5
Benzene	ug/M^3	1,600	8,000	1.54	1.59	3.55
Carbon Disulfide	ug/M^3	310,000	1,550,000	ND	0.915	ND
Chloromethane (methyl chloride)	ug/M^3	40,000	200,000	0.971	0.872	0.481
Cyclohexane	ug/M^3	440,000	2,200,200	46.1	3.37	ND
1,3 Dichlorobenzene	ug/M^3	1,120	5,600	43.6	40.8	1.97
Ethanol	ug/M^3	NA	NA	45.3	43.9	95.2
Trichlorofluoromethane	ug/M^3	310,000	1,550,000	1.37	1.48	1.28
Dichlorofluoromethane	ug/M^3	44,000	220,000	2.15	2.31	2.25
Heptane	ug/M^3	176,000	880,000	4.34	2	1.06
Hexane	ug/M^3	308,000	1,540,000	109	3.67	1.89
2-Butanone (MEK)	ug/M^3	2,200,000	11,000,000	5.31	5.57	ND
Methylene Chloride	ug/M^3	265,000	1,330,000	ND	0.906	ND
2-Propanol (Isopropanol)	ug/M^3	88,000	440,000	1,750	1,800	263
Propene	ug/M^3	1,320,000	6,600,000	119	26.3	6.78
Toluene	ug/M^3	2,200,000	11,000,000	20.2	20.5	34.6
1,2,4-Trimethylbenzene	ug/M^3	26,400	132,000	5.4	1.17	ND
2,2,4-Trimethylpentene	ug/M^3	NA	NA	ND	1.21	ND
Xylenes (Total)	ug/M^3	310,000	1,550,000	3.95	3.108	1.75
ND = Not Applicable, ND = Non=Detected						

APPENDIX C

DEVELOPMENT PLAN

PTV 1075, LLC

GRANTSVILLE DOLLAR GENERAL STORE

161 MAIN STREET, GRANTSVILLE, MD 21550

OUT-TO-BID PLAN SET

NOTES:

1. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
2. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER, OWNER'S REPRESENTATIVE, AND ENGINEER FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT AND/OR EXISTING FACILITIES OCCURRING IN THE COURSE OF THE CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.
3. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
4. THE IMPROVEMENT AND MAINTENANCE OF ANY PRIVATE ACCESS DRIVE SHALL BE THE SOLE RESPONSIBILITY OF THOSE PERSONS BENEFITING FROM THE USE THEREOF.
5. THE DEVELOPER AND/OR THE LOT PURCHASER(S) ASSUMES FULL RESPONSIBILITY FOR OBTAINING ANY LOCAL, STATE, AND FEDERAL PERMITS AND/OR APPROVALS, RELATING TO WETLAND AND/OR STREAM IMPACTS.

UTILITY COMPANIES

ELECTRIC SERVICE

FIRST ENERGY CORPORATION
CUSTOMER SERVICE,
PHONE: (800) 686-0011

GAS SERVICE

COLUMBIA GAS OF MARYLAND
CUSTOMER SERVICE
PHONE: (888) 460-4332

CABLE SERVICE

COMCAST BUSINESS
CUSTOMER SERVICE
PHONE: (855) 211-1804

TELEPHONE

VERIZON
CUSTOMER SERVICE
PHONE: (800) 837-4966

PUBLIC WATER SERVICE

GARRETT CO. DEPARTMENT OF PUBLIC WORKS
PUBLIC SERVICE CENTER
2008 MARYLAND HIGHWAY, SUITE 2
MT. LAKE PARK, MD 21550
CONTACT: BILL HETRICK
PHONE: (301) 895--3144
MOBILE:: (301) 707-3070

SANITARY SEWER SERVICE (CONVEYANCE)

GARRETT CO. DEPARTMENT OF PUBLIC WORKS
PUBLIC SERVICE CENTER
2008 MARYLAND HIGHWAY, SUITE 2
MT. LAKE PARK, MD 21550
CONTACT: BILL HETRICK
PHONE: (301) 895--3144
MOBILE:: (301) 707-3070

VICINITY MAP

LIST OF DRAWINGS	
SHEET NUMBER	SHEET TITLE
C000	COVER SHEET
C001	PROJECT NOTES
C100	EXISTING CONDITIONS AND DEMOLITION PLAN
C200	SITE LAYOUT PLAN
C300	GRADING PLAN
C400	STORMWATER MANAGEMENT PLAN
C401	STORM SEWER PROFILES
C500	SITE UTILITY PLAN
C700	LANDSCAPE PLAN AND DETAILS
C800	SITE CONSTRUCTION DETAILS
C801	SITE CONSTRUCTION DETAILS
C802	SITE CONSTRUCTION DETAILS
C803	SITE CONSTRUCTION DETAILS
C900	EROSION AND SEDIMENT CONTROL PLAN
C901	EROSION AND SEDIMENT CONTROL NOTES
C902	EROSION AND SEDIMENT CONTROL DETAILS
SUPPLEMENTAL PLANS PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC	
SUB-01	SURVEY – LOT CONSOLIDATION PLAN
SUPPLEMENTAL PLANS PREPARED BY HART ARCHITECTURAL SERVICES, LLC.	
PH1.1	PHOTOMETRIC PLAN
SUPPLEMENTAL PLANS PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC	
HOP-01	TITLE SHEET, LOCATION MAP, UTILITY INFORMATION
HOP-02	WORK ZONE TRAFFIC CONTROL
HOP-03	CONSTRUCTION PLAN
HOP-04	DETAILS/PROFILES
HOP-05	DETAILS/PROFILES
HOP-06	SIGNAGE AND PAVEMENT MARKING PLAN
HOP-07	VEHICLE TRACKING TURNING TEMPLATES
HOP-08	VEHICLE TRACKING TURNING TEMPLATED
HOP-09	SITE PLAN

APPROVED FOR SEDIMENT CONTROL
Garrett Soil Conservation District
Signature Date
Title
Pond 378 Approval: ☐Yes ☐No

APPROVED FOR STORMWATER MANAGEMENT
Garrett County, MD Stormwater Management
Engineer Date
Pond Approval: ☐Yes ☐No
GP#

PROPERTY OWNER (AGREEMENT TO OWN) AND DEVELOPER:

PTV 1075, LLC
400 PENN CENTER BLVD.,
BUILDING 4, SUITE 1000
PITTSBURGH, PENNSYLVANIA 15235

CONTACT: WILLIAM R. OWEN
PHONE: (724) 420-5367

CIVIL ENGINEERING FIRM:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 BALDWIN ROAD
PITTSBURGH, PENNSYLVANIA 15205

CONTACT: STEPHEN H. DONALDSON, P.E.
PHONE: (412) 429-2324

ARCHITECTURAL FIRM:

HART ARCHITECTURAL SERVICES, LLC.
984 GREENFIELD AVENUE
PITTSBURGH, PENNSYLVANIA 15217

CONTACT: NATHAN HART, R.A., LEED AP
PHONE: (412) 214-7550

PRELIMINARY
NOT FOR CONSTRUCTION

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT/ STORMWATER/ LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

COVER SHEET

DATE:	JANUARY 13, 2020
DRAWN BY:	ADH
DWG SCALE:	
CHECKED BY:	APW
PROJECT NO:	192-215
APPROVED BY:	*CJR

DRAWING NO.: **C000**
SHEET 1 OF 16

P:\2019\192-215\-CAD01\Dwg\CIVIL\192215-CV01-C000.dwg{C000} LS:4/23/2020 - sbrice) - LP: 4/29/2020 4:06 PM

GENERAL NOTES

1. EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
2. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
3. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER AND OWNER'S REPRESENTATIVE AND ENGINEER FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT AND/OR EXISTING FACILITIES OCCURRING IN THE COURSE OF THE DEMOLITION AND CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL CODES, OBTAIN ALL APPLICABLE PERMITS, AND PAY ALL REQUIRED FEES PRIOR TO BEGINNING WORK.
5. ALL WORK PERFORMED BY THE CONTRACTOR SHALL CONFORM TO THE LATEST REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT.
6. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
7. CONTRACTOR TO COMPLY WITH ALL APPLICABLE MDOT, MUNICIPAL, UTILITY COMPANY, AND PROJECT SPECIFIC SPECIFICATIONS.
8. TOPOGRAPHICAL INFORMATION TAKEN FROM SURVEY PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. ON 10/14/2019; FILENAME: "192215–SV01–SUB.DWG".
9. BEFORE INSTALLATION OF STORM OR SANITARY SEWER, OR OTHER UTILITY, THE CONTRACTOR SHALL VERIFY ALL CROSSINGS, BY EXCAVATION WHERE NECESSARY, AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS. THE ENGINEER WILL BE HELD HARMLESS IN THE EVENT HE IS NOT NOTIFIED OF DESIGN CONFLICTS PRIOR TO CONSTRUCTION.

DEMOLITION GENERAL NOTES

1. ALL EXISTING ABOVE AND BELOW GROUND STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REMOVED UNLESS NOTED OTHERWISE WITHIN THIS CONSTRUCTION SET AND/OR PROJECT SPECIFICATIONS. THIS INCLUDES FOUNDATION SLABS, WALLS AND FOOTINGS. CAVITIES LEFT BY STRUCTURE REMOVAL SHALL BE BACKFILLED WITH SATISFACTORY MATERIALS AND COMPACTED AS PER RECOMMENDATION FROM THE GEOTECHNICAL ENGINEERING SERVICES REPORT.
2. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD.
3. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. REPAIR DAMAGE ACCORDING TO THE APPROPRIATE UTILITY COMPANY STANDARDS AND AT THE CONTRACTOR'S EXPENSE.
4. THE BURNING OF CLEARED MATERIAL AND DEBRIS SHALL NOT BE ALLOWED UNLESS CONTRACTOR OBTAINS PRIOR WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITIES.
5. EROSION AND SEDIMENTATION CONTROL MEASURES AROUND AREAS OF DEMOLITION SHALL BE PROPERLY INSTALLED AND SHALL FUNCTION PROPERLY PRIOR TO INITIALIZATION OF DEMOLITION ACTIVITIES.
6. ASBESTOS OR HAZARDOUS MATERIALS ARE NOT EXPECTED. IF FOUND ON SITE, SUCH MATERIALS SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF HAZARDOUS MATERIALS ARE ENCOUNTERED.
7. CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL AND OSHA REGULATIONS DURING ALL DEMOLITION ACTIVITIES.
8. CONTRACTOR SHALL PROTECT ALL CORNER PINS, MONUMENTS, PROPERTY CORNERS AND BENCHMARKS DURING DEMOLITION ACTIVITIES. IF DISTURBED, CONTRACTOR SHALL HAVE DISTURBED ITEMS RESET BY A LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
9. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, AND FEATURES TO REMAIN. ANY ITEMS TO REMAIN THAT HAVE BEEN DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION REGULATIONS AND AS REQUIRED BY LOCAL AGENCIES WHEN WORKING IN AND/OR ALONG STREETS, ROADS, HIGHWAYS, ETC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN APPROVAL AND COORDINATE WITH LOCAL AND/OR STATE AGENCIES REGARDING THE NEED, EXTENT AND LIMITATIONS ASSOCIATED WITH INSTALLING AND MAINTAINING TRAFFIC CONTROL MEASURES.
11. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAW CUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT DEMOLITION.
12. ALL UTILITY AND STRUCTURE REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED AND PROPERLY DOCUMENTED BY A CERTIFIED PROFESSIONAL, WHEN APPLICABLE, WITH THE APPROPRIATE UTILITY COMPANY, MUNICIPALITY AND/OR AGENCY. DEMOLITION OF REGULATED ITEMS MAY INCLUDE, BUT ARE NOT LIMITED TO: WELLS, ASBESTOS, UNDERGROUND STORAGE TANKS, SEPTIC TANKS AND ELECTRIC TRANSFORMERS. DEMOLITION CONTRACTOR SHALL REFER TO ANY ENVIRONMENTAL STUDIES FOR DEMOLITION RECOMMENDATIONS AND GUIDANCE. AVAILABLE ENVIRONMENTAL STUDIES MAY INCLUDE, BUT ARE NOT LIMITED TO: PHASE I ESA, PHASE II, WETLAND AND STREAM DELINEATION AND ASBESTOS SURVEY. ALL APPLICABLE ENVIRONMENTAL STUDIES SHALL BE MADE AVAILABLE UPON REQUEST.
13. NO TREES SHALL BE REMOVED, NOR VEGETATION DISTURBED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
14. ALL PAVEMENT, BASE COURSES, SIDEWALKS, CURBS, BUILDINGS, FOUNDATIONS, ETC., WITHIN THE AREA TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH. EXISTING BASE COURSE MATERIALS MAY BE WORKED INTO THE NEW PAVEMENT OR BUILDING SUBGRADE PROVIDED THAT THE GRADATION, CONSISTENCY, COMPACTION, SUBGRADE CONDITION, ETC., ARE IN ACCORDANCE WITH THE SPECIFICATIONS AND RECOMMENDATIONS OF THE REPORT OF GEOTECHNICAL INVESTIGATION. BASE COURSE MATERIALS SHALL NOT BE WORKED INTO THE SUBGRADE AREAS TO RECEIVE LANDSCAPING.
15. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITY.

LAYOUT GENERAL NOTES

1. THE CONTRACTOR SHALL CHECK EXISTING GRADES, DIMENSIONS, AND INVERTS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, INCLUDING IRRIGATION LINES. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. RELOCATE EXISTING UTILITIES AS INDICATED, OR AS NECESSARY FOR CONSTRUCTION.
3. PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND NEW PAVEMENT. FIELD ADJUSTMENT OF FINAL GRADES MAY BE NECESSARY. INSTALL ALL UTILITIES, INCLUDING CONDUITS, PRIOR TO INSTALLATION OF PAVED SURFACES.
4. SITE WORK CONCRETE WALKS AND PADS SHALL HAVE A BROOM FINISH TO ALL SURFACES.
5. ALL DAMAGE TO EXISTING PAVEMENT TO REMAIN WHICH RESULTS FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH LIKE MATERIALS AT THE CONTRACTOR'S EXPENSE.
6. SITE DIMENSIONS SHOWN ARE TO THE FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL MAINTAIN ONE SET OF AS–BUILT/RECORD DRAWINGS ON THE JOB SITE DURING CONSTRUCTION FOR DISTRIBUTION TO THE OWNER AND/OR OWNER'S REPRESENTATIVE UPON COMPLETION.
8. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS AND LOCATIONS OF UTILITY SERVICE ENTRY LOCATIONS AND PRECISE BUILDING DIMENSIONS.
9. THIS SITE LAYOUT IS SPECIFIC TO THE APPROVALS NECESSARY FOR THE CONSTRUCTION IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS. NO CHANGES TO THE SITE LAYOUT ARE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. CHANGES MADE TO THE SITE LAYOUT WITHOUT APPROVAL ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. CHANGES INCLUDE BUT ARE NOT LIMITED TO, INCREASED IMPERVIOUS PAVEMENT, ADDITION / DELETION OF PARKING SPACES, MOVEMENT OF CURB LINES, CHANGES TO DRAINAGE PATTERNS AND STRUCTURES, LANDSCAPING, ETC.

GRADING GENERAL NOTES

1. REFER TO AND FOLLOW THE RECOMMENDATIONS OF THE "GEOTECHNICAL ENGINEERING SERVICES REPORT" PREPARED FOR THIS PROJECT BY PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI), DATED MARCH 22, 2019.
2. CONTRACTOR SHALL STRICTLY ADHERE TO THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARED FOR THIS PROJECT.
3. EARTHWORK SHALL INCLUDE CLEARING AND GRUBBING, STRIPPING AND STOCKPILING TOPSOIL, MASS GRADING, EXCAVATION, FILLING, UNDER CUT AND REPLACEMENT, IF REQUIRED, AND COMPACTION.
4. CONTRACTOR TO REFILL UNDERCUT AREAS WITH SUITABLE MATERIAL AND COMPACT AS RECOMMENDED BY THE GEOTECHNICAL REPORT.
5. ALL AREAS NOT PAVED SHALL BE STABILIZED IN ACCORDANCE WITH THE EROSION AND SEDIMENTATION CONTROL PLAN, UNLESS NOTED OTHERWISE.
6. ALL EXCESS SOIL MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
7. BUILDING FOUNDATION DESIGN WAS PREPARED BY OTHERS. INSTALL IN ACCORDANCE WITH PLANS AND DETAILS PREPARED BY OTHERS.

DRAINAGE GENERAL NOTES

1. DISTANCES SHOWN ON PIPING ARE HORIZONTAL DISTANCES FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE INSTALLATION, INSPECTION, TESTING AND FINAL ACCEPTANCE OF ALL NEW STORMWATER MANAGEMENT FACILITIES CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH ALL APPLICABLE REGULATING AGENCIES CONCERNING INSTALLATION, INSPECTION AND APPROVAL OF THE STORM DRAINAGE SYSTEM CONSTRUCTION.
3. ALL STORMWATER MANAGEMENT FACILITIES, INCLUDING COLLECTION AND CONVEYANCE STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, MDOT CURRENT PUBLICATION OF STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS.
4. ANY WORK PERFORMED IN THE LOCAL OR STATE RIGHT OF WAYS SHALL BE IN ACCORDANCE WITH THE APPLICABLE LOCAL OR STATE REQUIREMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SCHEDULE NECESSARY INSPECTIONS AND PROVIDE THE NECESSARY TRAFFIC CONTROL MEASURES AND DEVICES, ETC., FOR WORK PERFORMED IN THE RIGHT OF WAYS.

UTILITY GENERAL NOTES

1. ALL PROPOSED UTILITY LINES AND EXTENSIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE UTILITY COMPANY SPECIFICATIONS. CONTRACTOR SHALL COORDINATE UTILITY DISCONNECTIONS WITH THE APPROPRIATE AGENCY.
2. THE CONTRACTOR IS PARTICULARLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF THE EXISTING UTILITIES SHOWN HEREON IS BASED ON TOPOGRAPHIC SURVEYS AND RECORD DRAWINGS. THE CONTRACTOR SHALL NOT RELY UPON THIS INFORMATION AS BEING EXACT OR COMPLETE. SHOULD UNCHARTED UTILITIES BE ENCOUNTERED DURING EXCAVATION OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR INSTRUCTIONS. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION AND REQUEST FIELD VERIFICATION OF UTILITY LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE EXISTING UTILITIES CONFLICTING WITH IMPROVEMENTS SHOWN HEREON IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED UTILITY WORK PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE SEQUENCING OF CONSTRUCTION FOR ALL UTILITY LINES SO THAT WATER LINES AND UNDERGROUND ELECTRIC DO NOT CONFLICT WITH SANITARY SEWERS OR STORM SEWERS. INSTALL UTILITIES PRIOR TO PAVEMENT CONSTRUCTION.
5. ALL TRENCH SPOILS BECOME THE PROPERTY OF THE CONTRACTOR. UNLESS OTHERWISE DESIGNATED, ALL TRENCH SPOILS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
6. ADJUST ALL EXISTING UTILITY SURFACE FEATURES INCLUDING BUT NOT LIMITED TO CASTINGS, VALVE BOXES, PEDESTALS, CLEANOUTS, ETC. TO MATCH PROPOSED FINISHED GRADES, UNLESS OTHERWISE INDICATED.
7. THE CONTRACTOR IS TO PROVIDE RECORD DRAWINGS OF ALL IMPROVEMENTS. INCLUDE AT LEAST TWO DIMENSIONS TO EACH VALVE AND MANHOLE FROM KNOWN SITE FEATURES. DRAWINGS SHALL INCLUDE HORIZONTAL AND VERTICAL INFORMATION ON ALL NEW UTILITIES AS WELL AS EXISTING UTILITIES ENCOUNTERED.
8. CONTRACTOR IS TO COORDINATE WITH EACH UTILITY PROVIDER REGARDING INSTALLATION OF UTILITY CONDUITS FOR ELECTRICAL WORK. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR FOR THE TRENCHING AND CONDUIT INSTALLATION. COST FOR INSTALLATION AND MATERIALS SHALL BE INCLUDED IN VARIOUS BID ITEMS.
9. DIMENSIONS SHOWN ARE FOR CENTER OF SANITARY SEWER MANHOLES, CENTER OF STORM STRUCTURES AND CENTER AT FACE OF CURB FOR CURB INLETS, UNLESS OTHERWISE NOTED.

CONSTRUCTION STAGING GENERAL NOTES

1. AT LEAST SEVEN (7) DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING AND GRUBBING), THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE STORMWATER MANAGEMENT PLAN PREPARER, AND A REPRESENTATIVE FROM THE GARRETT SOIL CONSERVATION DISTRICT TO AN ON–SITE PRE–CONSTRUCTION MEETING.
2. UPON INSTALLATION AND/OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BEST MANAGEMENT PRACTICES, AND AT LEAST THREE (3) DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO–PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.
3. AT LEAST THREE (3) WORKING DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE MARYLAND ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–257–7777 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED BY THE GARRETT SOIL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION. EACH STEP OF THE SEQUENCE SHALL BE COMPLETED BEFORE PROCEEDING TO THE NEXT STEP, EXCEPT WHERE NOTED.
5. IMMEDIATELY STABILIZE ALL DISTURBED AREAS UPON A TEMPORARY CESSATION OF WORK (4 DAYS OR MORE) OR AS SOON AS ANY GRADED AREA REACHES FINAL GRADE.
6. AS SOON AS SLOPES, CHANNELS, PONDS AND OTHER DISTURBED AREAS REACH FINAL GRADE THEY MUST BE PERMANENTLY STABILIZED. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS.

CONSTRUCTION WASTE RECYCLING/DISPOSAL

CONSTRUCTION WASTES ARE REFUSE MATERIALS THAT ARE EXISTING ON–SITE OR GENERATED DURING THE COURSE OF CONSTRUCTION AND INCLUDE, BUT ARE NOT LIMITED TO, PAPER, PLASTIC, RUBBER, WOOD, TEXTILE, AND METAL PRODUCTS.

<u>INSTALLATION:</u> THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING WASTE RECYCLING/DISPOSAL AREAS ON THE E&S PLAN ONCE THEY HAVE BEEN DETERMINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL WASTE RECYCLING/DISPOSAL PERMITS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

<u>MAINTENANCE:</u> ALL CONSTRUCTION WASTE SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF AT A STATE–APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL/STATE CODES AND PERMIT REQUIREMENTS. THE BURNING OF WASTE MATERIALS WILL NOT BE PERMITTED.

PRELIMINARY
NOT FOR CONSTRUCTION

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT/ STORMWATER/ LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

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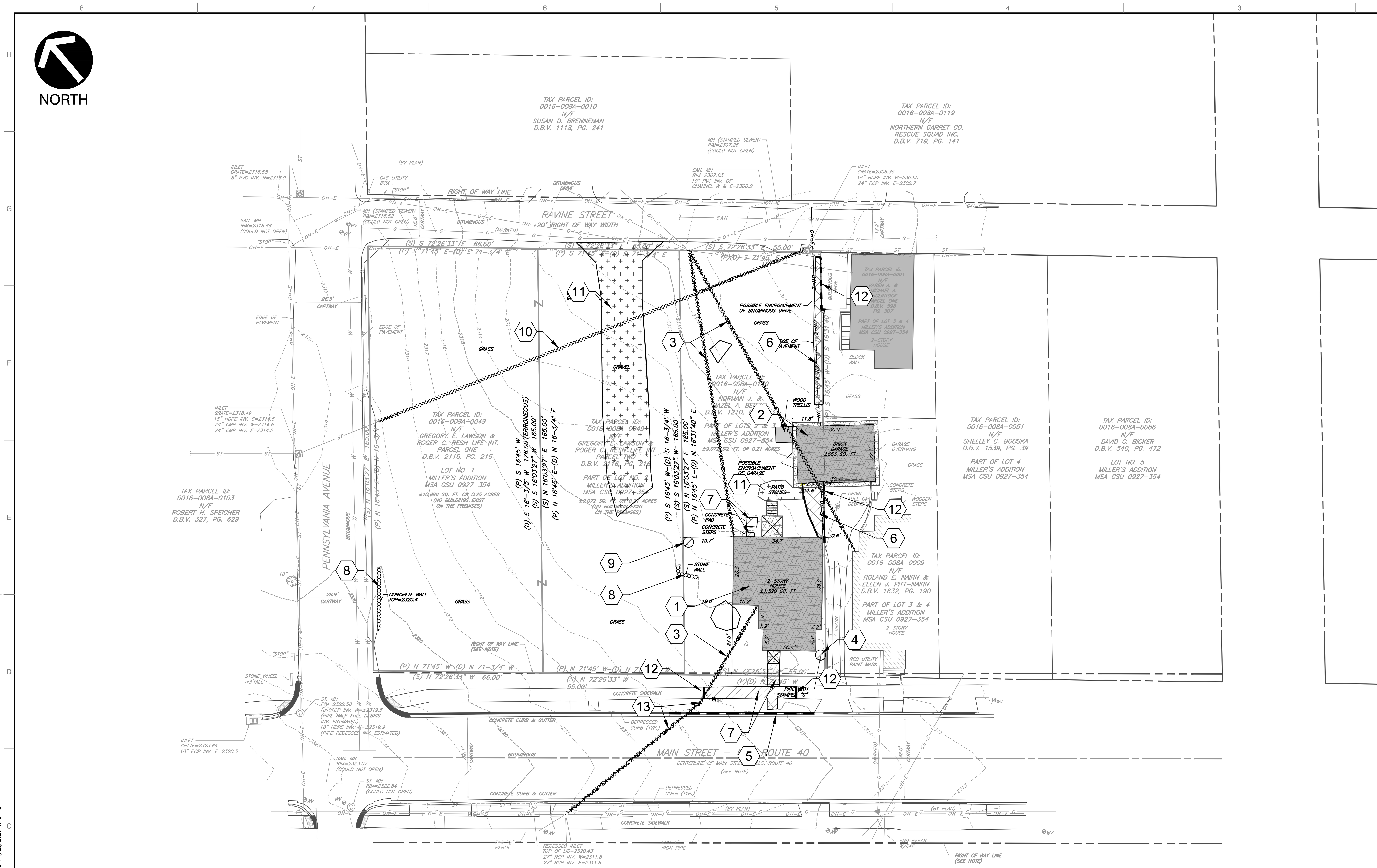
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

PROJECT NOTES

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	1"=20'	CHECKED BY:	APW
PROJECT NO:	192-215	APPROVED BY:	*CJR

DRAWING NO.: **C001**

SHEET 2 OF 16



LEGEND

	EXISTING SUBJECT PROPERTY LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING RIGHT-OF-WAY
	EXISTING EASEMENT
	EXISTING SETBACK LINE
	EXISTING ROADWAY EDGE
	EXISTING ROADWAY EDGE
	EXISTING GRAVEL EDGE
OH-E	EXISTING OVERHEAD ELECTRIC LINE
ST	EXISTING STORM SEWER
W	EXISTING WATER LINE
G	EXISTING GAS LINE
SAN	EXISTING SANITARY SEWER LINE
	EXISTING FENCE
	EXISTING INLET
	EXISTING GAS VALVE
	EXISTING WATER VALVE
S	EXISTING SANITARY SEWER MANHOLE
	EXISTING ELECTRIC POLE
	EXISTING BUILDING TO BE REMOVED
	GRAVEL PAVEMENT REMOVAL
	ASPHALT TO BE REMOVED
	CONCRETE TO BE REMOVED
	LANDSCAPING TO BE REMOVED
	SAWCUT EXISTING PAVEMENT
	CONCRETE CURB TO BE REMOVED
	EXISTING UTILITY TO BE REMOVED
	MISC. ITEM TO BE REMOVED
	MISC. ITEM TO BE REMOVED

DEMOLITION ITEMS:

1. RAZE EXISTING BUILDING AND FOOTINGS/FOUNDATIONS IN THEIR ENTIRETY; DISPOSE OF OFF SITE.
2. RAZE EXISTING GARAGE TO SLAB; SAWCUT AND REMOVE PORTION OF CONCRETE SLAB AND BASE TO ADJOINING PROPERTY LINE; DISPOSE OF OFF SITE.
3. REMOVE EXISTING OVERHEAD UTILITY LINE TO POLE; COORDINATE WITH LOCAL UTILITY COMPANY.
4. EXISTING GAS METER TO BE REMOVED COMPLETE.
5. REMOVE CONCRETE CURB COMPLETE; DISPOSE OF OFF SITE.
6. REMOVE EXISTING ASPHALT & BASE COMPLETE; DISPOSE OF OFF SITE.
7. REMOVE EXISTING CONCRETE COMPLETE; DISPOSE OF OFF SITE.
8. REMOVE EXISTING WALL COMPLETE; DISPOSE OF OFF SITE.
9. EXISTING LANDSCAPING TO BE REMOVED COMPLETE; DISPOSE OF OFF SITE
10. REMOVE EXISTING STORM PIPE AND DISPOSE OF OFF SITE.
11. REMOVE EXISTING GRAVEL AND DISPOSE OF OFF SITE.
12. FULL DEPTH SAWCUT.
13. RELOCATE UTILITY LINES AND LIGHT/UTILITY POLE

NOTE

1. CONTRACTOR SHALL COMPLY WITH OSHA STANDARDS DURING ALL DEMOLITION AND CONSTRUCTION ACTIVITIES.
2. ANY POOR, UNSUITABLE, OR DELETERIOUS MATERIALS ENCOUNTERED SHALL BE UNDERCUT AND REMOVED FROM THE SITE AND REPLACED WITH CONTROLLED STRUCTURAL FILL PLACED IN CONTROLLED COMPACTED LIFTS AS PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
3. DEMOLITION DEBRIS FROM THE EXISTING SITE SHALL BE REMOVED IN THEIR ENTIRETY BENEATH THE PROPOSED BUILDING FOOTPRINT.
4. CONTRACTOR SHALL REFER TO GENERAL DEMOLITION AND UTILITY NOTES ON DRAWING NO. C001.
5. REMOVE EXISTING PLANTS/VEGETATION AS NEEDED TO PERFORM DEMOLITION, INSTALLATIONS, AND/OR GRADING OPERATIONS.
6. CONTRACTOR SHALL COORDINATE WITH ELECTRIC/TELEPHONE UTILITY COMPANIES DURING THE REMOVAL, RELOCATION, OR UPGRADING OF EXISTING UTILITY LINES, POLES, METERS, ETC.
7. CONTRACTOR SHALL COORDINATE WITH THE MARYLAND DEPARTMENT OF TRANSPORTATION WITH THE REMOVAL OR RELOCATION OF EXISTING HIGHWAY SIGNS.
8. CONTRACTOR SHALL COORDINATE WITH GARRETT COUNTY DEPARTMENT OF PUBLIC WORKS FOR REMOVAL OF EXISTING SANITARY SEWER MAINLINE.

MISS UTILITY
1-800-257-7777 or 811
missutility.net

REFERENCE

1.) THE BASIS OF BEARING IS GRID NORTH DERIVED FROM POST PROCESSING METHODS USING THE NORTH AMERICAN DATUM OF 1983 (2011) STATE PLANE COORDINATES, MARYLAND ZONE 1900. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 ELEVATIONS BASED ON GEOID 2012B.

2.) FIELD SURVEY BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED 10/14/2019.

3.) THE UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES LOCATED HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES LOCATED ARE IN THE EXACT LOCATION INDICATED. THE MARYLAND MISS UTILITY TICKET NO. IS 19611307.

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE IN FEET
0 20 40

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
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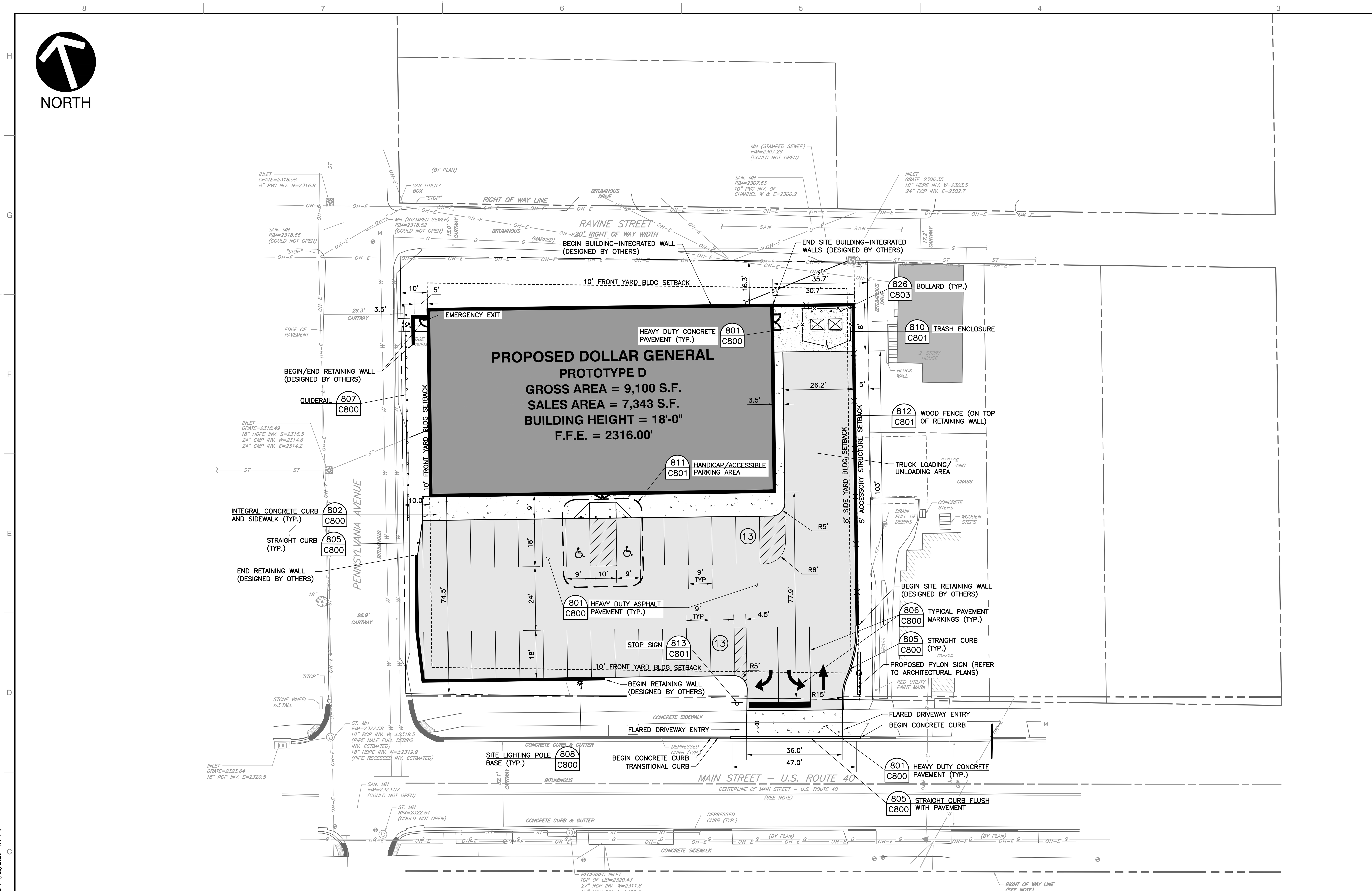
EXISTING CONDITIONS AND DEMOLITION PLAN

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	1"=20'	CHECKED BY:	APW
PROJECT NO:	192-215		
APPROVED BY:	*CJR		

DRAWING NO.: **C100**

SHEET 3 OF 16



LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT
- EXISTING SETBACK LINE
- EXISTING ROADWAY EDGE
- EXISTING ROADWAY EDGE
- EXISTING GRAVEL EDGE
- OH-E — EXISTING OVERHEAD ELECTRIC LINE
- ST — EXISTING STORM SEWER
- W — EXISTING WATER LINE
- G — EXISTING GAS LINE
- SAN — EXISTING SANITARY SEWER LINE
- EXISTING FENCE
- EXISTING INLET
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING ELECTRIC POLE
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED CONCRETE WALK
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED BUILDING
- PROPOSED PROPERTY LINE
- PROPOSED BUILDING SETBACK LINE
- PROPOSED ASPHALT WEDGE CURB
- PROPOSED PAVEMENT EDGE
- PROPOSED RETAINING WALL
- PROPOSED FENCE
- PROPOSED GUIDERAIL
- PROPOSED PAVEMENT MARKINGS
- PROPOSED SIGN
- PROPOSED PYLON SIGN
- PROPOSED BOLLARD
- PROPOSED SITE LIGHT POLE
- (10) PROPOSED NUMBER OF PARKING STALLS

NOTES

1. FOR PROPOSED SITE LIGHTING IMPROVEMENTS, PLEASE REFER TO THE SITE LIGHTING PLAN, SHEET PH1.1, PREPARED BY HART ARCHITECTURAL SERVICES, INC.
2. REFER TO DRAWING NO. C001 FOR SITE LAYOUT GENERAL NOTES.
3. REFER TO ARCHITECTURAL PLANS PREPARED BY HART ARCHITECTURAL SERVICES, INC. FOR BUILDING AND SITE SIGNAGE DETAILS.

SITE DATA TABLE

ZONING DISTRICT:	TC – TOWN CENTER DISTRICT
SITE AREA:	0.67 AC.
LOCAL JURISDICTION:	TOWN OF GRANTSVILLE
LAND USE:	RETAIL – PERMITTED

BULK & AREA REQUIREMENTS	REQUIRED	PROPOSED
MIN. LOT SIZE:	5000 S.F. (0.11 AC)	0.67 AC
MIN. LOT FRONTAGE:	50'	165'
MAX. BUILDING HEIGHT:	35'	18'
MAX. LOT COVERAGE:	–	80%
MIN. FRONT YARD	10'	16.3', 10', 74.5'
MIN. SIDE YARD:	8'	35.7'
MIN. REAR YARD:	NA	NA

PARKING REQUIREMENTS	REQUIRED	PROPOSED
MIN. PARKING STALL QUANTITY*: (1 STALL/200 SF OF GFA)	61	26*
MIN. PARKING STALL AREA:	9'x18'	9'x18'
MIN. PARKING AISLE WIDTH:	20'	24'

*A ZONING VARIANCE FOR PARKING STALL QUANTITY LESS THAN THE REQUIRED IS PENDING.

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SITE LAYOUT PLAN

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DWG SCALE:	1"=20'	CHECKED BY:	APW
PROJECT NO:			192-215
APPROVED BY:			*CJR

DRAWING NO.: C200
SHEET 4 OF 16

*HAND SIGNATURE ON FILE

PRELIMINARY
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SCALE IN FEET
0 20 40

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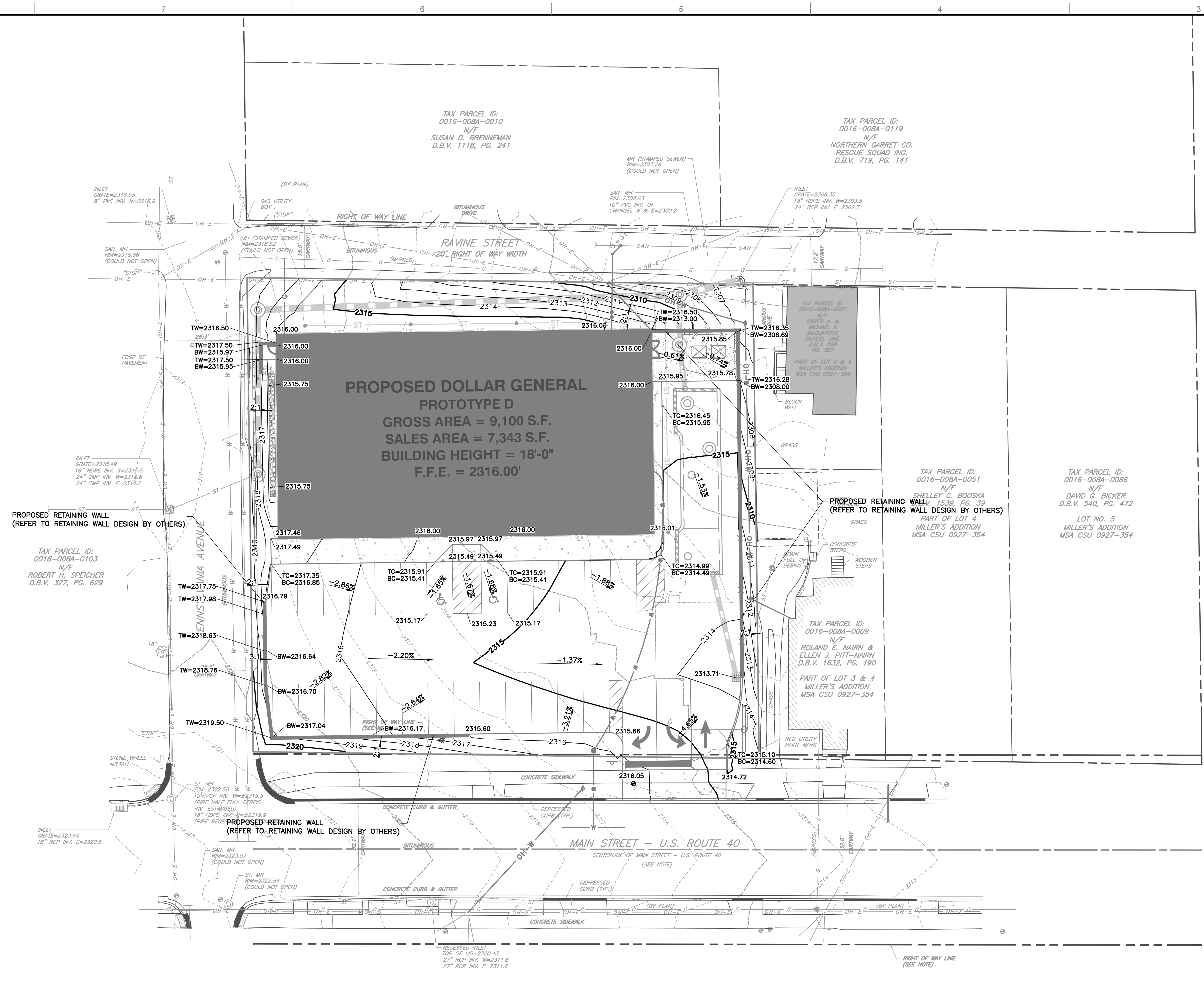
REFERENCE

1.) THE BASIS OF BEARING IS GRID NORTH DERIVED FROM POST PROCESSING METHODS USING THE NORTH AMERICAN DATUM OF 1983 (2011) STATE PLANE COORDINATES, MARYLAND ZONE 1900. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 ELEVATIONS BASED ON GEOID 2012B.

2.) FIELD SURVEY BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED 10/14/2019.

3.) THE UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES LOCATED HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES LOCATED ARE IN THE EXACT LOCATION INDICATED. THE MARYLAND MISS UTILITY TICKET NO. IS 19611307.

NORTH



LEGEND

- EXISTING SUBJECT PROPERTY LINE
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- PROPOSED PAVEMENT MARKINGS
- PROPOSED SIGN
- PROPOSED PYLON SIGN
- PROPOSED BOLLARD
- PROPOSED SITE LIGHT POLE
- 1215 PROPOSED INDEX CONTOUR
- 1214 PROPOSED INTERMEDIATE CONTOUR
- 1214.75 PROPOSED SPOT ELEVATION
- TC=1214.50 / BC=1214.00 PROPOSED TOP OF CURB ELEV / PROPOSED BOTTOM OF CURB ELEV
- TW=1216.50 / BW=1214.00 PROPOSED TOP OF WALL ELEV / PROPOSED BOTTOM OF WALL ELEV
- PROPOSED STORM SEWER LINE
- PROPOSED STORM SEWER/FOUNDATION DRAIN
- PROPOSED STORM SEWER INLET
- PROPOSED CLEANOUT
- PROPOSED MANHOLE
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED GAS LINE
- PROPOSED OVERHEAD ELECTRIC WIRE
- PROPOSED UTILITY POLE

NOTES

1. FOR PROPOSED SITE LIGHTING IMPROVEMENTS, PLEASE REFER TO THE SITE LIGHTING PLAN, SHEET PH1.1, PREPARED BY HART ARCHITECTURAL SERVICES, LLC.
2. REFER TO DRAWING NO. C001 FOR GRADING AND DRAINAGE GENERAL NOTES.
3. REFER TO DRAWING NO. C402 FOR STORM SEWER PROFILES.
4. ALL STORMWATER BMPs SHALL BE MAINTAINED AND CONSTRUCTED ACCORDING TO THE PLAN.
5. CONTRACTOR SHALL VERIFY ALL RETAINING WALL LOCATIONS, LENGTHS, AND TOP AND BOTTOM OF WALL WITH RETAINING WALL PLANS PRIOR TO CONSTRUCTION.
6. REFER TO GEOTECHNICAL REPORT PREPARED BY PSI, DATED MARCH 22, 2019, FOR ADDITIONAL INFORMATION INCLUDING, BUT NOT LIMITED TO, COMPACTION, FILLING, PAVEMENT DESIGN, ETC.

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REFERENCE

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*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

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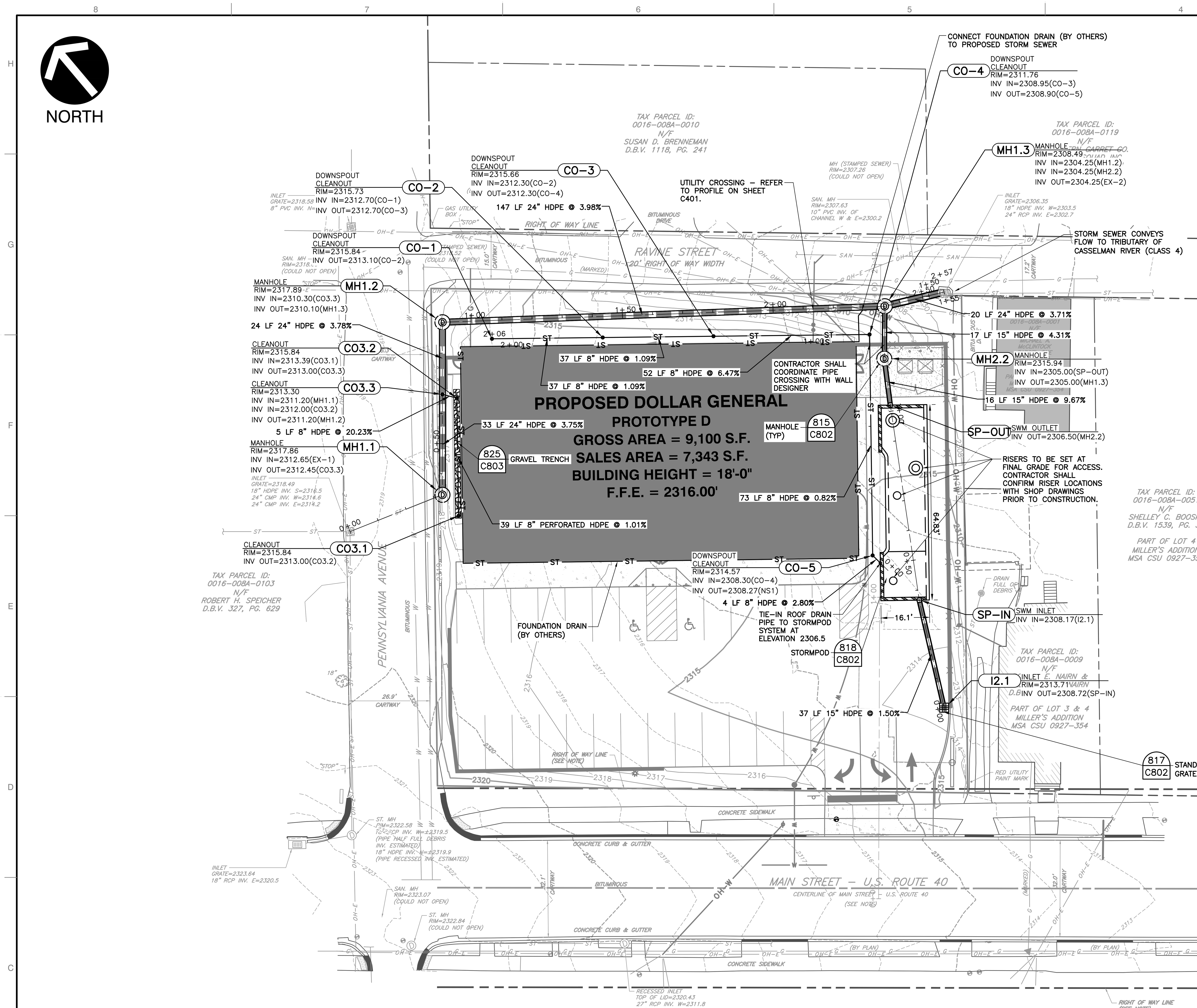
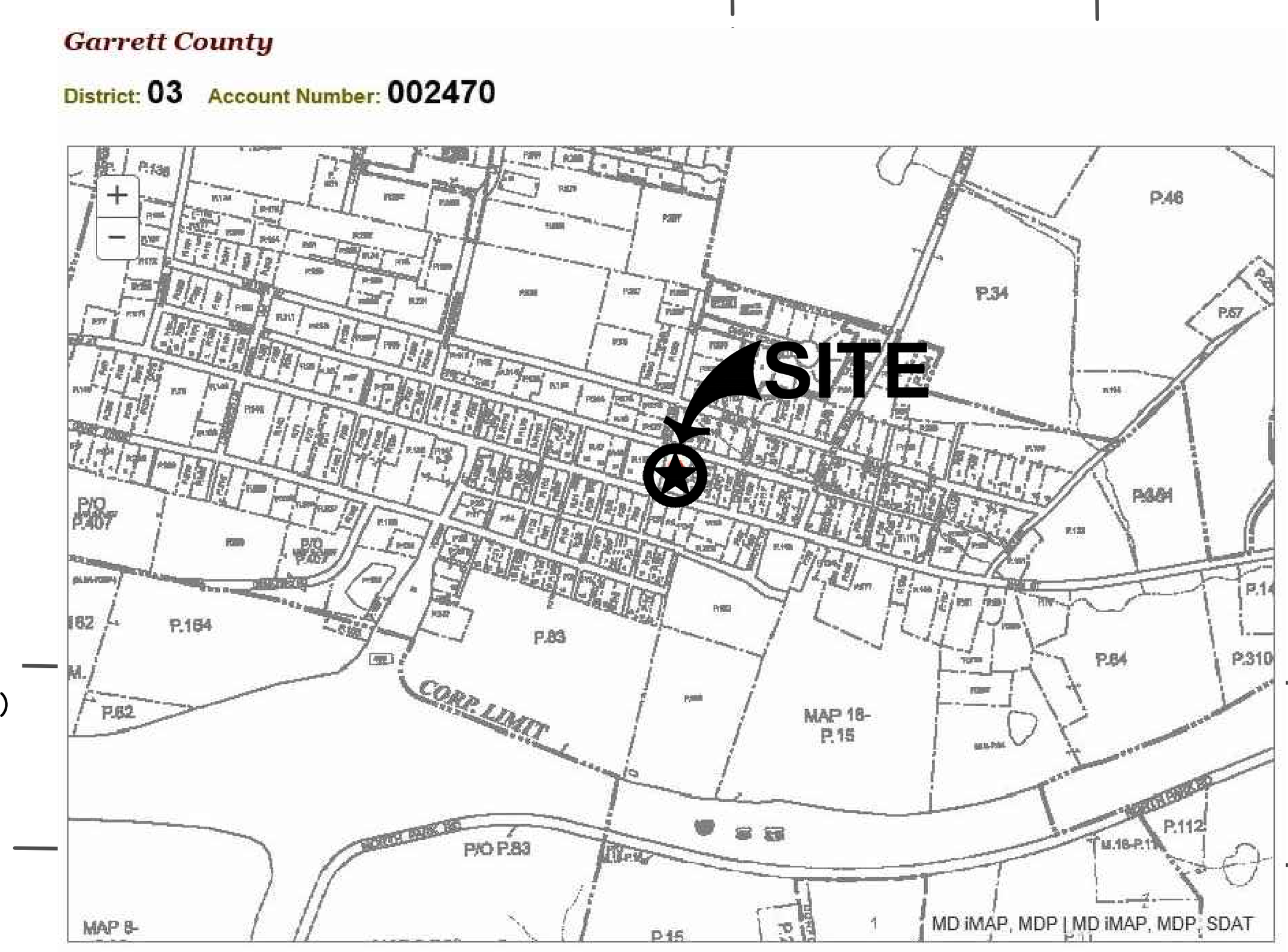
GRADING PLAN

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	1"=20'	CHECKED BY:	APW
PROJECT NO:	192-215	APPROVED BY:	*CJR

DRAWING NO.: **C300**
SHEET 5 OF 16





VICINITY MAP

REFERENCE

1. GARRETT COUNTY, MD TAX MAP

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT
- EXISTING SETBACK LINE
- EXISTING ROADWAY EDGE
- EXISTING ROADWAY EDGE
- EXISTING GRAVEL EDGE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING STORM SEWER
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER LINE
- EXISTING FENCE
- EXISTING INLET
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING ELECTRIC POLE
- PROPOSED CONCRETE WALK
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED BUILDING
- PROPOSED PROPERTY LINE
- PROPOSED BUILDING SETBACK LINE
- PROPOSED ASPHALT WEDGE CURB
- PROPOSED PAVEMENT EDGE
- PROPOSED RETAINING WALL
- PROPOSED FENCE
- PROPOSED GUIDERAIL
- PROPOSED PAVEMENT MARKINGS
- PROPOSED SIGN
- PROPOSED PYLON SIGN
- PROPOSED BOLLARD
- PROPOSED SITE LIGHT POLE
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED STORM SEWER LINE
- PROPOSED STORM SEWER/FOUNDATION DRAIN
- PROPOSED STORM SEWER INLET
- PROPOSED CLEANOUT
- PROPOSED MANHOLE
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED GAS LINE
- PROPOSED OVERHEAD ELECTRIC WIRE
- PROPOSED UTILITY POLE

NOTES

1. FOR PROPOSED SITE LIGHTING IMPROVEMENTS, PLEASE REFER TO THE SITE LIGHTING PLAN, SHEET PH1.1, PREPARED BY HART ARCHITECTURAL SERVICES, LLC.
2. REFER TO DRAWING NO. C001 FOR GRADING AND DRAINAGE GENERAL NOTES.
3. REFER TO DRAWING NO. C401 FOR STORM SEWER PROFILES.
4. ALL STORMWATER BMPs SHALL BE MAINTAINED AND CONSTRUCTED ACCORDING TO THE PLAN.
5. REFER TO GEOTECHNICAL REPORT PREPARED BY PSI, DATED MARCH 22, 2019, FOR ADDITIONAL INFORMATION INCLUDING, BUT NOT LIMITED TO, COMPACTION, FILLING, PAVEMENT DESIGN, ETC.
6. CONTRACTOR SHALL REFER TO APPROVED SHOP DRAWINGS FOR STORMPOD SYSTEM PROVIDED BY ROTONDO ENVIRONMENTAL SOLUTIONS, LLC.

SITE SOIL CLASSIFICATION TABLE

SYMBOL	SOIL TYPE
ErB	ERNEST SILT LOAM, 3 TO 8 PERCENT SLOPES, HYDROLOGIC SOIL GROUP D
GnC2	GILPIN CHANNERY SILT LOAM, 10 TO 20 PERCENT SLOPES, MODERATELY ERODED; HYDROLOGIC SOIL GROUP C

OFF-SITE RECEIVING WATERS

SITE RUNOFF IS CONVEYED TO STORM SEWER AT POI–1. EXISTING STORM SEWER CONVEYS FLOW TO TRIBUTARY OF CASSELMAN RIVER (STREAM CLASSIFICATION: CLASS 4)

COUNTY AS-BUILT REQUEST

THE COUNTY MAY REQUIRE AN AS–BUILT SURVEY TO BE PROVIDED FOR VERIFICATION THAT CONSTRUCTION OF THE STORMWATER FACILITIES WAS CONDUCTED IN ACCORDANCE WITH THE PLANS. AS–BUILT SURVEYS WILL BE SUBMITTED TO THE COUNTY UPON REQUEST.

CONSTRUCTION SEQUENCE

1. MOBILIZE EQUIPMENT, CONSTRUCTION TRAILER, MATERIAL STORAGE BINS, ETC. ONSITE.
2. LAYOUT THE LIMITS OF THE SITE, ESTABLISH BENCHMARKS, AND REFERENCE POINTS. FLAG THE LIMIT OF DISTURBANCE. DO NOT DISTURB ANY TREES OR VEGETATION LOCATED OUTSIDE OF THOSE LIMITS, WHILE MINIMIZING THE DISTURBANCE OF ALL VEGETATION WITHIN.
3. INSTALL THE ROCK CONSTRUCTION ENTRANCE AND TEMPORARY CONCRETE WASHOUT FACILITY AT THE LOCATIONS SHOWN ON THE PLAN AND IN ACCORDANCE WITH THE STANDARD DETAILS.
4. PERFORM INITIAL CLEARING FOR INSTALLATION OF PERIMETER BMP'S.
5. INSTALL PERIMTER CONTROLS AND INLET PROTECTION IN INLET ALONG RAVINE STREET PER PLANS.
6. REMOVE TOPSOIL FROM THE REMAINING CONSTRUCTION AREA AND PLACE IN THE TOPSOIL STOCKPILE AREA.
7. BEGIN DEMOLITION OF EXISTING ONSITE STRUCTURES, STORM SEWER, UTILITIES, PAVEMENT, ETC AS PER THE PLAN.
8. INSTALL STORM SEWER RE–ROUTE FROM PENNSYLVANIA AVENUE (MANHOLE MH1.1) TO THE EXISTING INLET IN RAVINE STREET.
9. BEGIN ROUGH GRADING OF SITE. CONSTRUCT RETAINING WALLS AND IMPORT CLEAN STRUCTURAL FILL TO BRING SITE TO FINAL GRADE.
10. DURING EARTHMOVING AND WALL CONSTRUCTION, INSTALL REMAINING STORM SEWERS, STORM INLETS, MANHOLES, SANITARY SEWER LATERAL, OTHER UTILITIES, STORMWATER MANAGEMENT FACILITY, ETC. AS PER THE PLANS. EXCAVATE TRENCHES ONLY AS REQUIRED. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION, AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY. PLACE EXCAVATED MATERIAL ON THE UPSLOPE SIDE OF THE TRENCH. ANY ACCUMULATED WATER SHALL BE REMOVED BY PUMPING THROUGH A PUMPED WATER FILTER BAG. ON THE DAY FOLLOWING THE PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA SHALL BE GRADED TO FINAL SUBGRADE AND SEEDED AND MULCHED OR STABILIZED WITH STONE PER THE PERMANENT SEEDING SCHEDULE.
11. BEGIN CONSTRUCTING THE PROPOSED RETAIL BUILDING.
12. ALL SLOPES 3H:1V OR STEEPER THAT HAVE REACHED FINAL GRADE SHALL RECEIVE EROSION CONTROL BLANKETING IN ACCORDANCE WITH THE STANDARD DETAIL.
13. BEGIN FINE GRADING THE BUILDING'S SURROUNDING SIDEWALK, CONCRETE CURBS AND ADA AND LOADING RAMPS. FINE GRADE ALL PAVED AND OPEN SPACE AREAS AND INSTALL CURBS, SUBBASE, PAVING, AND ALL OTHER SITE RELATED ITEMS. SPREAD TOPSOIL, SEED AND MULCH OPEN SPACE AREAS WITHIN 24 HOURS OF COMPLETION.
14. BEGIN PAVING OPERATIONS. INSPECT AND REPLACE DAMAGED FILTER BAGS IN INLETS AFTER PAVING IS COMPLETED.
15. ONCE CONSTRUCTION IS COMPLETED, REMOVE ANY SEDIMENT THAT MAY HAVE ACCUMULATED IN THE PROPOSED STORM SEWER SYSTEM. REMOVE THE ROCK CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT FACILITY AND RE–ESTABLISH VEGETATIVE COVER IN THE DISTURBED AREA.
16. ONCE THE SITE HAS ACHIEVED A UNIFORM 70% PERENNIAL VEGETATIVE COVER AND IMPERVIOUS AREAS ARE STABILIZED, REMOVE THE COMPOST FILTER SOCKS AND ALL FILTER BAGS. DISPOSE OF ANY REMAINING SILT, COMPOST FILTER SOCKS, AND FILTER BAGS AT A STATE–APPROVED WASTE SITE. SEED ALL REMAINING DISTURBED AREAS ONCE GRADING IS COMPLETE OR WITHIN SEVEN (7) DAYS WHEN THE CONSTRUCTION HAS COMPLETED.

DEVELOPER ACKNOWLEDGMENT

I, ______________________________, (DEVELOPER) CERTIFY THAT ALL CLEARING, GRADING, DRAINAGE, CONSTRUCTION, AND DEVELOPMENT SHALL BE CONDUCTED IN STRICT ACCORDANCE WITH THE PLAN.

MAINTENANCE OF STORMWATER FACILITIES

STORMWATER COLLECTION AND CONVEYANCE (SEWER) SYSTEM:

- ALL INLETS SHOULD BE THOROUGHLY INSPECTED A MINIMUM OF FOUR (4) TIMES PER YEAR.
- INLET GRATES SHOULD BE KEPT FREE OF TRASH AND DEBRIS.
- SEWERS SHOULD BE FLUSHED AS NEEDED TO CLEAR BUILD–UP OF SEDIMENT, DEBRIS, AND LITTER THAT MAY INHIBIT FLOW. THAT WHICH IS REMOVED FROM THE FACILITIES SHALL BE DISPOSED OF IN AN APPROPRIATE LOCATION IN ACCORDANCE WITH THE LOCAL AND STATE CODES. UNDER NO CIRCUMSTANCE SHALL SEDIMENT, DEBRIS, OR LITTER BE DISPOSED OF IN OR NEAR SURFACE WATERS.

UNDERGROUND WATER QUALITY SYSTEM (STORMPOD):

- THE UNDERGROUND WATER QUALITY SHOULD BE THOROUGHLY INSPECTED A MINIMUM OF TWO (2) TIMES PER YEAR.
- THE CONTRACTOR PERFORMING INSPECTION AND MAINTENANCE SHALL REFER TO THE MANUFACTURER'S OPERATION, INSPECTION, & MAINTENANCE MANUAL.

MISS UTILITY
1-800-257-7777 or 811
missutility.net

REFERENCE

1.) THE BASIS OF BEARING IS GRID NORTH DERIVED FROM POST PROCESSING METHODS USING THE NORTH AMERICAN DATUM OF 1983 (2011) STATE PLANE COORDINATES, MARYLAND ZONE 1900. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 ELEVATIONS BASED ON GEOID 2012B.

2.) FIELD SURVEY BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED 10/14/2019.

3.) THE UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES LOCATED HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES LOCATED ARE IN THE EXACT LOCATION INDICATED. THE MARYLAND MISS UTILITY TICKET NO. IS 19611307.

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE IN FEET
0 20 40

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

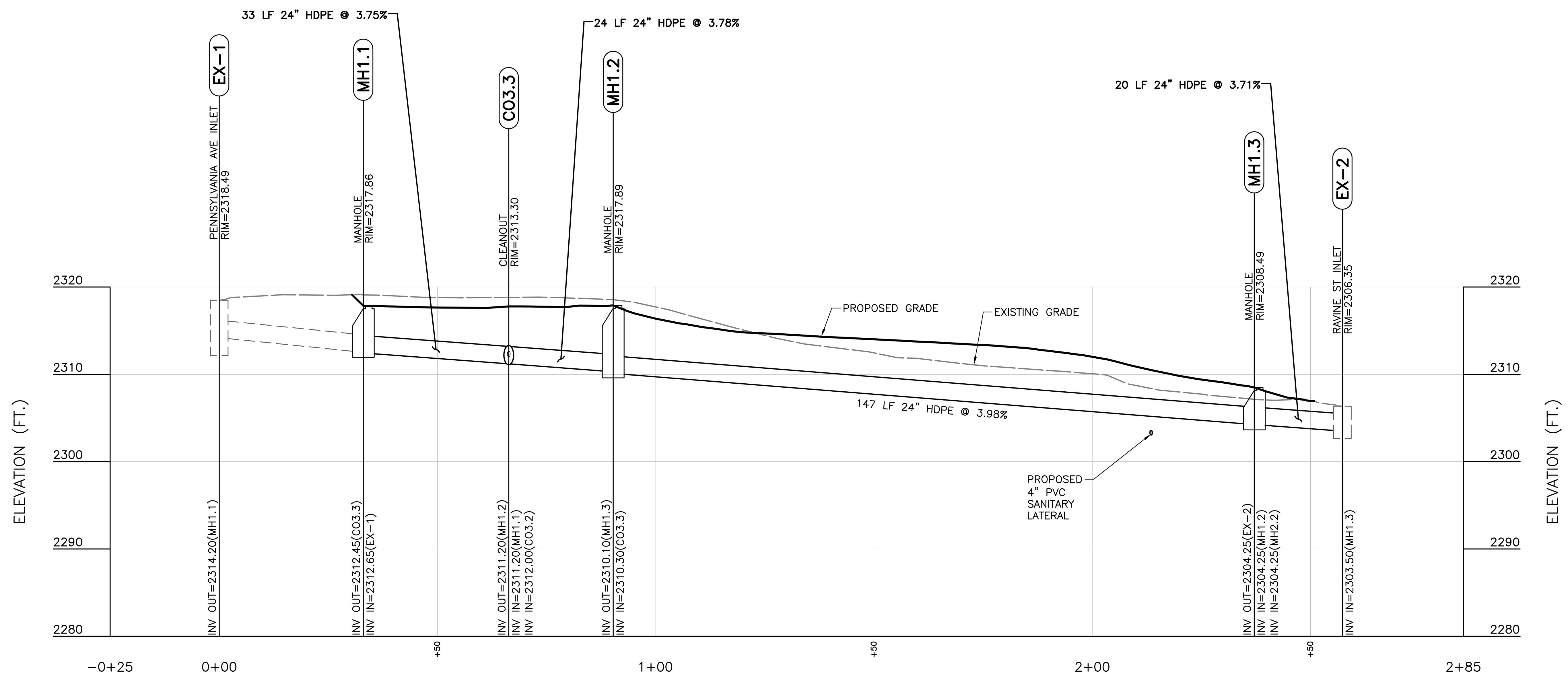
PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

STORMWATER MANAGEMENT PLAN

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	1"=20'	CHECKED BY:	APW
PROJECT NO:	192-215		
APPROVED BY:	*CJR		

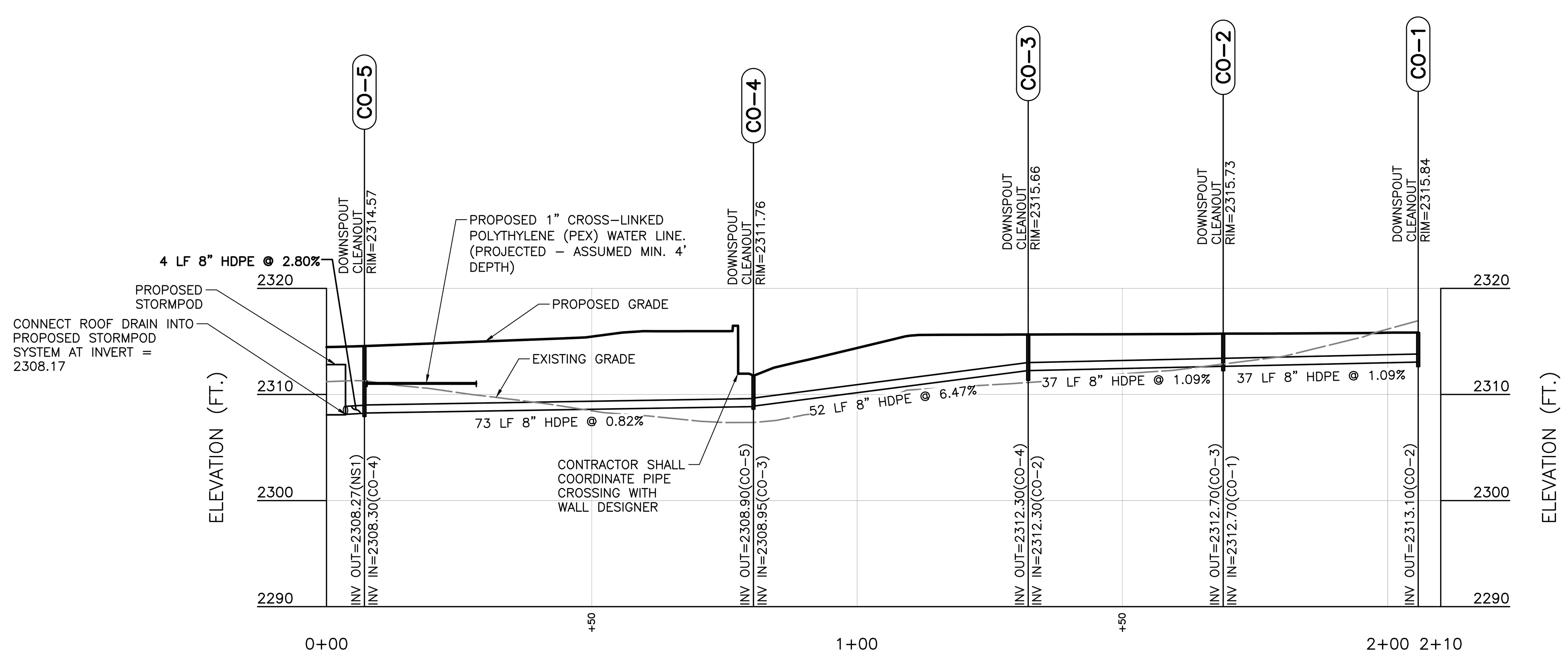
DRAWING NO.: **C400**

SHEET 6 OF 16



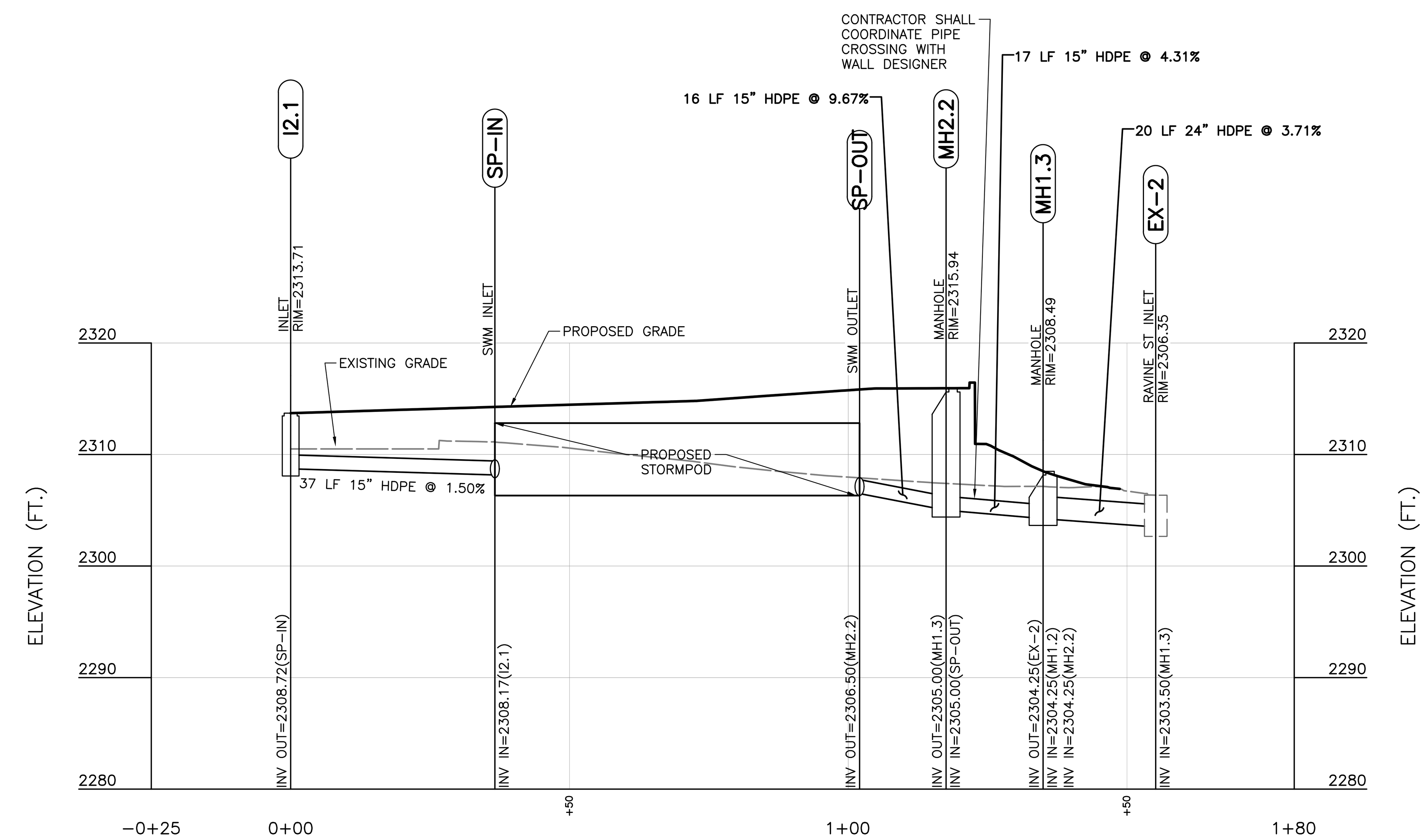
PENNSYLVANIA AVE TO RAVINE STREET PROFILE

SCALE H:1"=20'; V:1"=10'



ROOF DRAIN PROFILE

SCALE H:1"=20'; V:1"=10'



I2.1 TO RAVINE STREET PROFILE

SCALE H:1"=20'; V:1"=10'

MISS UTILITY

1-800-257-7777 or 811

missutility.net

REFERENCE

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PRELIMINARY
NOT FOR CONSTRUCTION

SCALE IN FEET
0 20 40

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

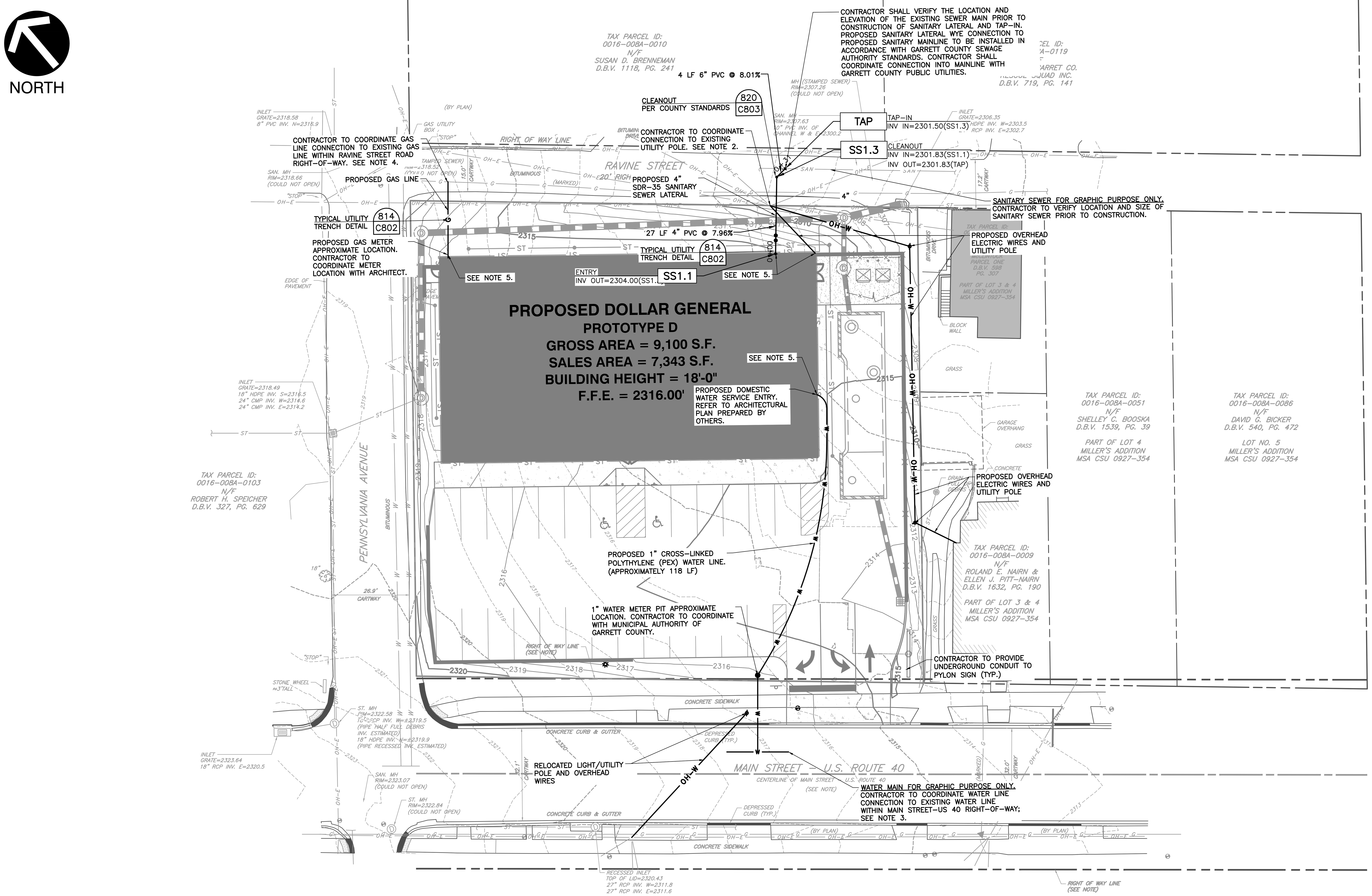
PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

STORM SEWER PROFILES

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:		CHECKED BY:	APW
PROJECT NO:	192-215	APPROVED BY:	*CJR

DRAWING NO.: **C401**

SHEET 7 OF 16



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- ST EXISTING STORM SEWER
- W EXISTING WATER LINE
- G EXISTING GAS LINE
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- PROPOSED PAVEMENT MARKINGS
- PROPOSED SIGN
- PROPOSED PYLON SIGN
- PROPOSED BOLLARD
- PROPOSED SITE LIGHT POLE
- 1215 PROPOSED INDEX CONTOUR
- 1214 PROPOSED INTERMEDIATE CONTOUR
- PROPOSED STORM SEWER LINE
- ST PROPOSED STORM SEWER/FOUNDATION DRAIN
- PROPOSED STORM SEWER INLET
- PROPOSED CLEANOUT
- PROPOSED MANHOLE
- SAN PROPOSED SANITARY SEWER
- W PROPOSED WATER LINE
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- PROPOSED UTILITY POLE

NOTES

1. FOR PROPOSED SITE LIGHTING IMPROVEMENTS, PLEASE REFER TO THE SITE LIGHTING PLAN, SHEET PH1.1, HART ARCHITECTURAL SERVICES, INC..
2. CONTRACTOR SHALL COORDINATE WITH ELECTRIC/TELEPHONE/CABLE UTILITY COMPANIES WHEN WORKING WITH EXISTING AND PROPOSED UTILITY POLES AND SERVICE LINES.
3. CONTRACTOR SHALL COORDINATE WATER LINE CONNECTION TO EXISTING WATER LINE WITHIN THE MAIN STREET (US-40) RIGHT-OF-WAY. CONTRACTOR SHALL INSTALL ALL METERS, FIXTURES, ETC. REQUIRED BY THE UTILITY COMPANY.
4. CONTRACTOR SHALL COORDINATE GAS LINE CONNECTION TO EXISTING GAS LINE WITHIN THE RAVINE STREET RIGHT-OF-WAY. CONTRACTOR SHALL INSTALL ALL METERS, FIXTURES, ETC. REQUIRED BY THE UTILITY COMPANY.
5. CONTRACTOR SHALL VERIFY UTILITY SERVICE ENTRY LOCATIONS WITH ARCHITECTURAL AND MEP PLANS.
6. REFER TO DRAWING NO. C001 FOR SITE UTILITY GENERAL NOTES.
7. FOR WYE CONNECTION DETAIL, REFER TO DETAIL 822 ON SHEET C803.
8. FOR PIPE BEDDING DETAIL, REFER TO DETAIL 814 ON SHEET C802.
9. SANITARY SEWER FACILITIES, STRUCTURES AND PIPING, ETC., SHALL BE INSTALLED IN ACCORDANCE WITH GARRETT COUNTY SEWAGE AUTHORITY STANDARDS.
10. CONTRACTOR SHALL CONDUCT MANDREL, PRESSURE AND VACUUM TESTING AS REQUIRED BY GARRETT COUNTY.
11. CONTRACTOR SHALL ADJUST MANHOLE LIDS TO FINISHED GRADE UPON COMPLETION OF GRADING AND PAVING.
12. CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH GARRETT COUNTY TWO WEEKS MINIMUM PRIOR TO THE START OF CONSTRUCTION.

MISS UTILITY
1-800-257-7777 or 811
missutility.net

REFERENCE

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PRELIMINARY
NOT FOR CONSTRUCTION

SCALE IN FEET
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*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT/ STORMWATER/ LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

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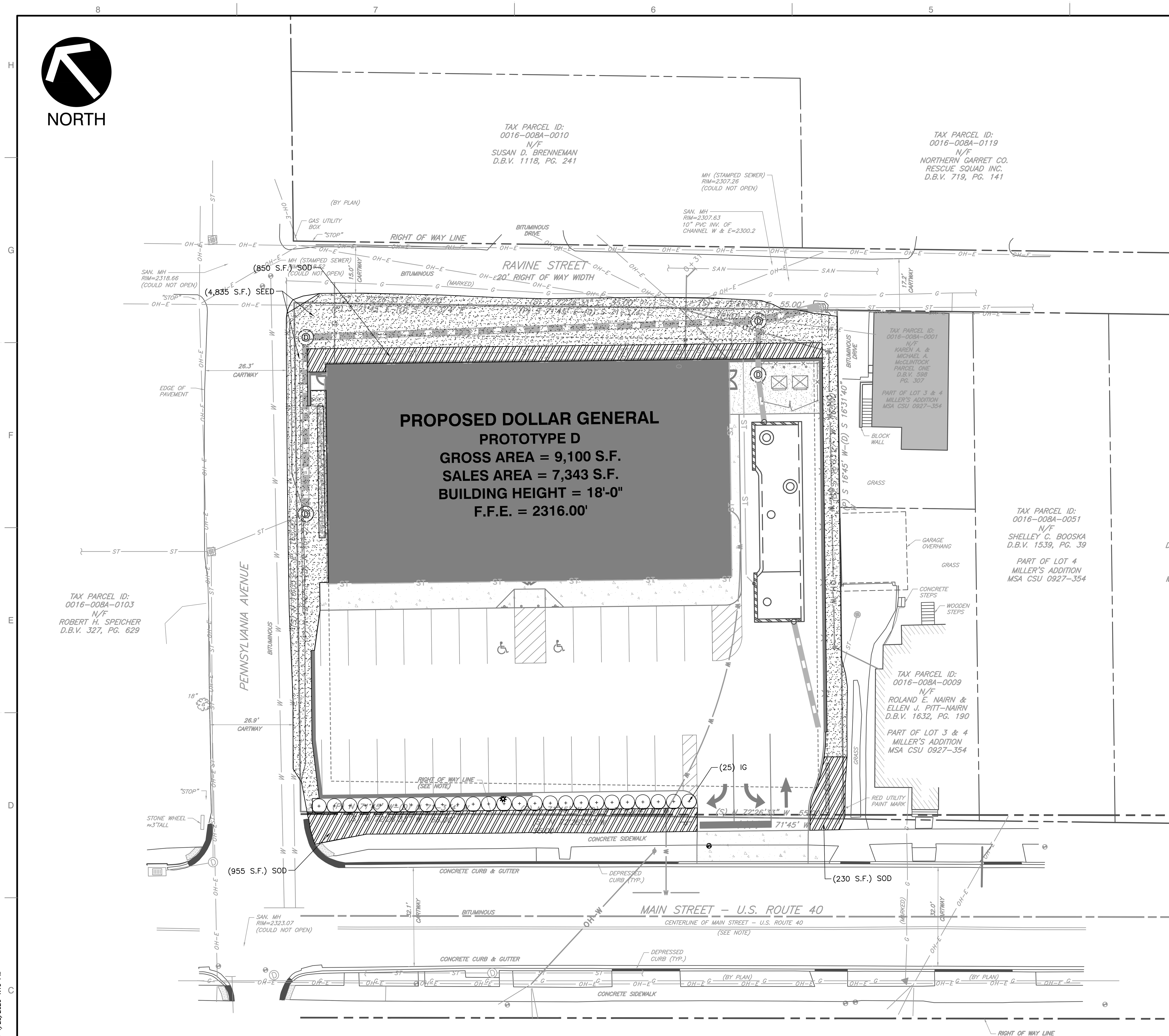
PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

SITE UTILITY PLAN

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	1"=20'	CHECKED BY:	APW
PROJECT NO:	192-215	APPROVED BY:	*CJR

DRAWING NO.: C500
SHEET 8 OF 16



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- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING ELECTRIC POLE
- 1200 EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED CONCRETE WALK
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
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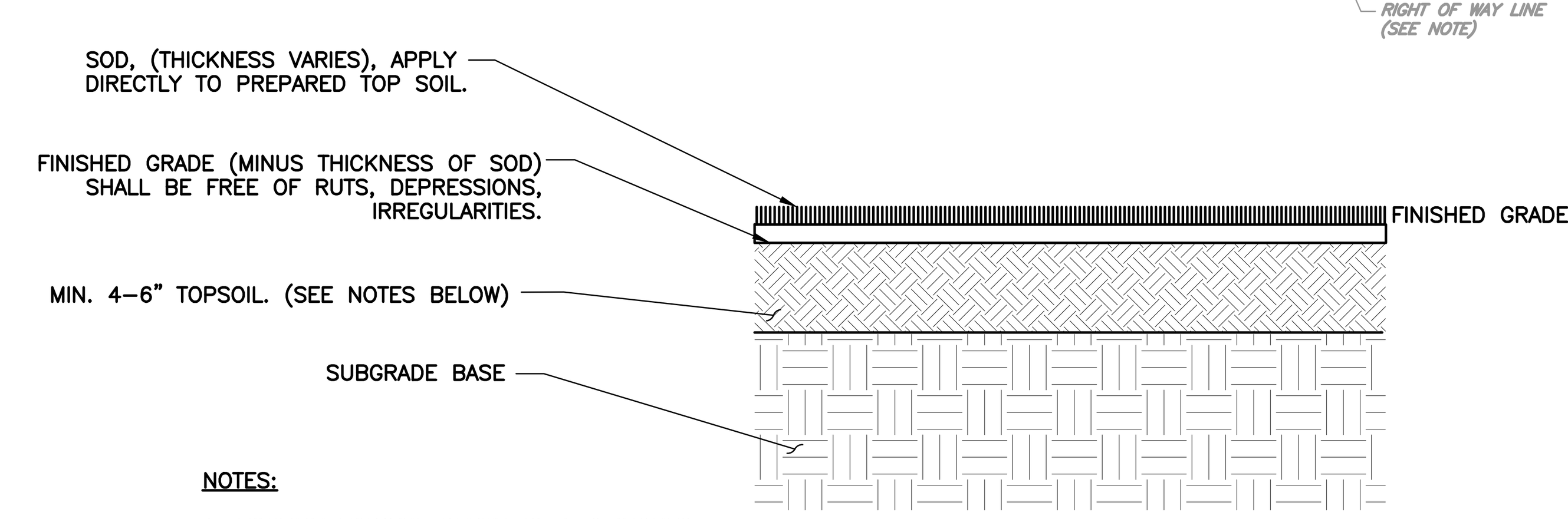
- OH-W PROPOSED OVERHEAD ELECTRIC WIRE
- PROPOSED UTILITY POLE

PLANT SCHEDULE

GROUND COVER	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	HT.	SPACING
	SOD	2,035 S.F	Turf Grass	Solid Sod Panels		
	SEED	4,835 S.F.	Turf Grass	Seed		
SHRUBS	**CODE**	**QTY**	**BOTANICAL NAME / COMMON NAME**	**CONT**	**HT.**	**SPACING**
⊙	IG	25	Ilex glabra / Inkberry	BB/ #3 Cont.	HT.	5' O.C.

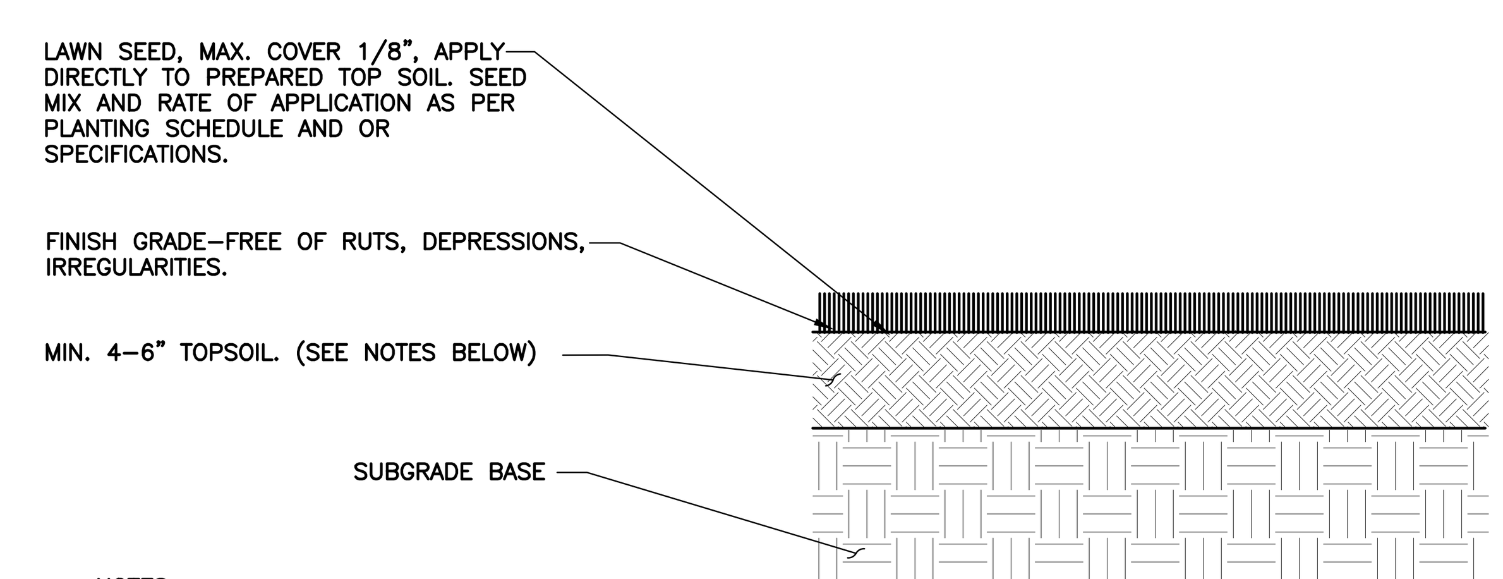


NOTES:

1. MINIMUM TOPSOIL DEPTH IS 4–6 INCHES.
2. TOPSOIL SHOULD HAVE A GOOD HUMUS CONTENT. THIS CAN BE 20 TONS OF COMPOSTED MANURE PER ACRE OR 170 BALES OF PEAT PER ACRE.
3. TOPSOIL WITH A PH OF 6 OR LESS WILL NEED A LIME AMENDMENT. EVENLY APPLY HYDRATED LIME OR GROUND LIMESTONE TO TOP SOIL UNTIL PH IS ADJUSTED TO BETWEEN 6–7. PH BELOW 5.5 OR ABOVE 7.5 IS UNACCEPTABLE FOR LAWNS.
4. 650 LBS OF SLOW RELEASE WELL BALANCED FERTILIZER 10–10–10 PER ACRE SHOULD BE HARROWED INTO THE TOPSOIL PRIOR TO SODING.
5. SODING IS BEST IN THE LATE SUMMER–EARLY AUTUMN. A HARROW MAY BE USED TO OBTAIN AN EVEN SURFACE THAT IS FIRM.
6. CONTRACTOR RESPONSIBLE FOR ENSURING SOD IS WATERED DURING ESTABLISHMENT.
7. SEE SPECIFICATIONS FOR ADDITIONAL NOTES.

SOD PLANTING

N.T.S.



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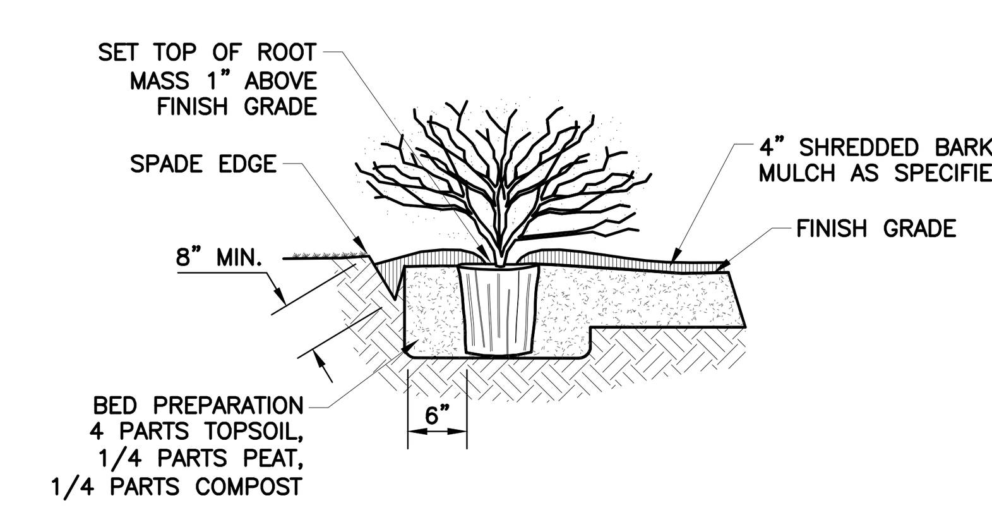
4. 650 LBS OF SLOW RELEASE WELL BALANCED FERTILIZER 10–10–10 PER ACRE SHOULD BE HARROWED INTO THE TOPSOIL PRIOR TO SEEDING.
5. SEEDING IS BEST IN THE LATE SUMMER–EARLY AUTUMN. A HARROW MAY BE USED TO OBTAIN AN EVEN SURFACE THAT IS FIRM. THE SEED MAY BE MECHANICALLY SPREAD INTO THE SURFACE AS PER THE PLANTING SCHEDULE AND OR SPECIFICATIONS.
6. SEE SPECIFICATIONS FOR ADDITIONAL NOTES.

LAWN PLANTING DETAIL

N.T.S.



SHRUB/ SMALL TREE PLANTING

NOT TO SCALE

MISS UTILITY

1-800-257-7777 or 811
missutility.net

REFERENCE

1.) THE BASIS OF BEARING IS GRID NORTH DERIVED FROM POST PROCESSING METHODS USING THE NORTH AMERICAN DATUM OF 1983 (2011) STATE PLANE COORDINATES, MARYLAND ZONE 1900. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 ELEVATIONS BASED ON GEOID 2012B.

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PRELIMINARY
NOT FOR CONSTRUCTION

SCALE IN FEET
0 20 40

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT/ STORMWATER/ LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

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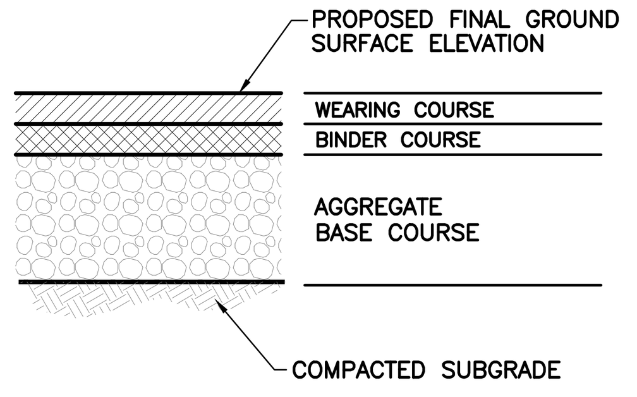
PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

LANDSCPAE PLAN

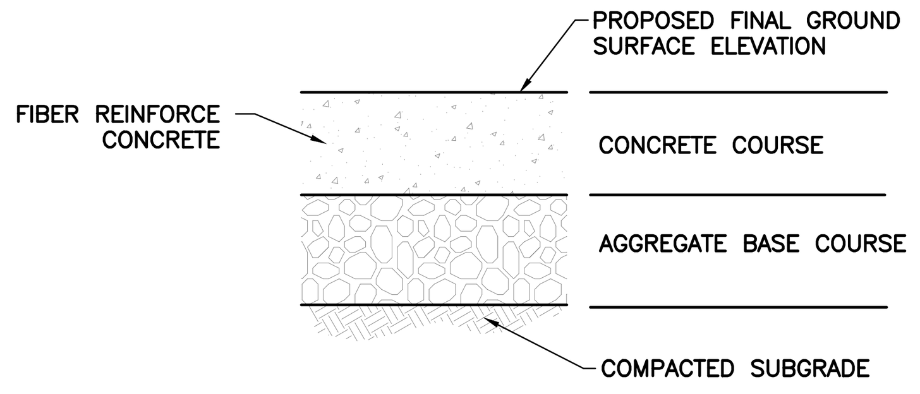
DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	1"=20'	CHECKED BY:	APW
PROJECT NO:	192-215	APPROVED BY:	*CJR

DRAWING NO.: **C700**

SHEET 9 OF 16



FLEXIBLE PAVEMENT SECTION



RIGID PAVEMENT SECTION

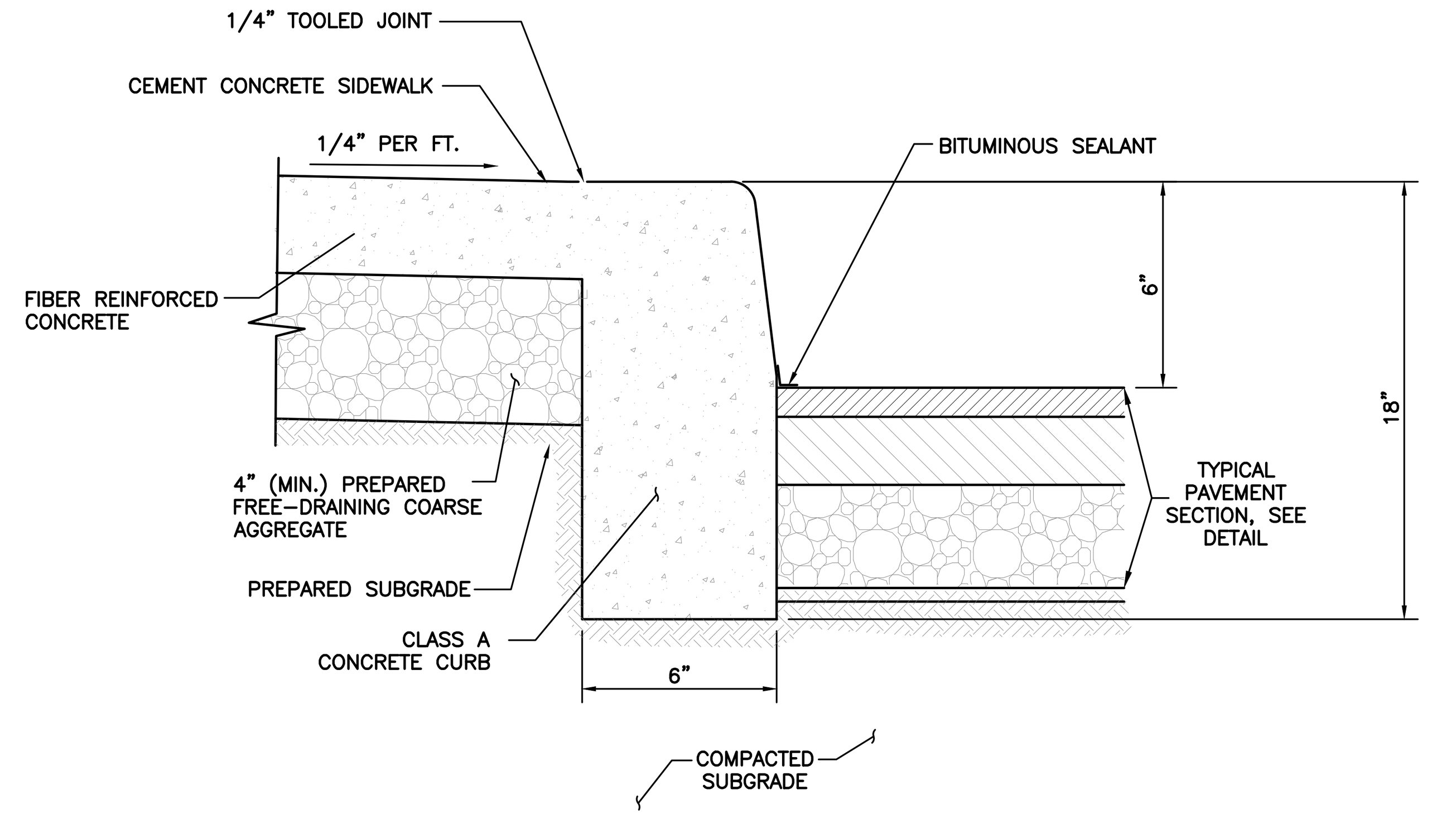
FLEXIBLE PAVEMENT			
MSHA BOOK OF STANDARDS	ITEM	STANDARD DUTY PAVEMENT SECTION	HEAVY DUTY PAVEMENT SECTION
MSHA, 9.5mm SUPERPAVE MIX	BITUMINOUS WEARING COURSE	1.5"	2.0"
MSHA, 19mm SUPERPAVE MIX	BITUMINOUS BINDER COURSE	2.5"	2.5"
SECTION 901.01, GRADED AGGREGATE	AGGREGATE BASE COURSE	6.0"	6.5"

RIGID PAVEMENT		
MSHA BOOK OF STANDARDS	ITEM	HEAVY DUTY PAVEMENT SECTION
TYPE: IIIA CONCRETE W/ 3/4" MAX AGGREGATE	PORTLAND CEMENT CONCRETE COURSE	8.0"
SECTION 901.01 GRADED AGGREGATE	AGGREGATE BASE COURSE	6.0"

NOTES:

1. PRIOR TO PLACEMENT OF AGGREGATE, THE PAVEMENT SUBGRADE SHALL BE PREPARED AS FOLLOWS:
   A. PAVEMENT SUBGRADE SHALL BE PROOFROLLED AND COMPACTED TO AT LEAST 98% OF ITS MAXIMUM DRY DENSITY AND WITHIN ±2% OF ITS OPTIMUM MOISTURE CONTENT, AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR). ANY SOFT AREAS SHALL BE OVEREXCAVATED TO A FIRM AND COMPETENT MATERIAL AND BACKFILLED AS DESCRIBED IN 1B.
   B. ALL APPROVED FILL SHALL BE PLACED IN MAXIMUM 8" THICK, LOOSE LIFTS AND COMPACTED TO 98% OF ITS MAXIMUM DRY DENSITY AND WITHIN ±2% OF ITS OPTIMUM MOISTURE CONTENT. THE FILL MATERIAL'S MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT SHALL BE DETERMINED BY ASTM D1557 (MODIFIED PROCTOR).
   C. AFTER COMPACTION, THE PAVEMENT SUBGRADE SHALL PROVIDE A FIRM UNYIELDING FOUNDATION WITH NO SUDDEN, SHARP OR ABRUPT CHANGES OR BREAKS IN GRADES. NO STANDING WATER OR EXCESS MOISTURE SHALL BE PRESENT. ALL SOFT AND YIELDING AREAS SHALL BE REWORKED BY OVEREXCAVATING TO A FIRM AND COMPETENT MATERIAL, AND BACKFILLED AS DESCRIBED IN 1B.
   D. THE SUBGRADE SHALL BE GRADED AND SHAPED AS REQUIRED TO CONSTRUCT THE AGGREGATE BASE COURSE IN CONFORMANCE WITH THE GRADES, LINES AND THICKNESSES SHOWN ON THE DRAWINGS.
2. THE BITUMINOUS COURSES SHALL BE TAPERED INTO THE STORM SEWER INLETS WHILE MAINTAINING FULL PAVEMENT SECTION DEPTH.
3. REINFORCED CONCRETE COURSE SHALL CONTAIN 1/2" TO 1-1/2" TYPE III, MONOFILAMENT FIBERS COMPLYING WITH ASTM C1116/C1116M TO BE PLACED IN CONCRETE PAD. CONCRETE COURSE SHALL BE 4,000 PSI AIR ENTRAINED CONCRETE.
4. PAVEMENT SECTION DESIGN OBTAINED FROM "GEOTECHNICAL ENGINEERING SERVICES REPORT", PREPARED BY PROFESSIONAL SERVICES INDUSTRIES, INC. DATED MARCH 22, 2019.

DETAIL 801
PAVEMENT SECTIONS
N.T.S.

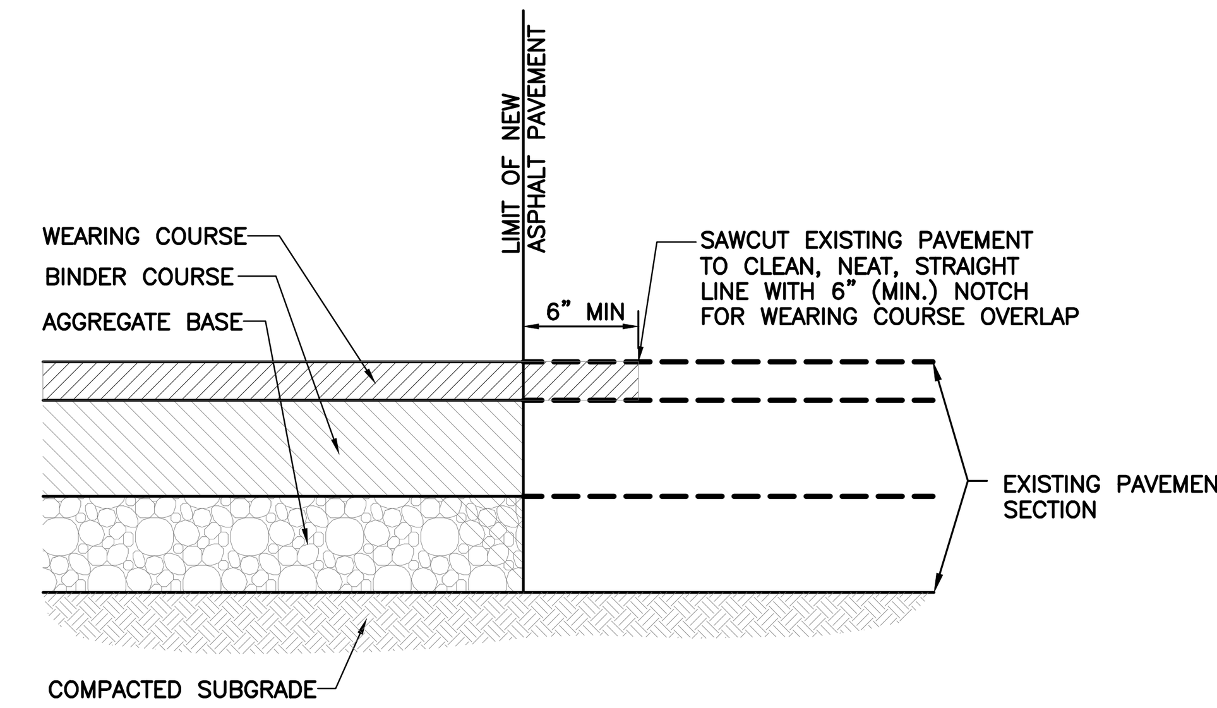


INTEGRAL CONCRETE CURB AT SIDEWALK

NOTES:

1. PROVIDE ½" PRE-MOLDED EXPANSION JOINT FILLER WITH SEALANT AT MAXIMUM INTERVALS OF 20' ON-CENTER.
2. BITUMINOUS SEALANT SHALL BE ASPHALT CEMENT, CLASS AC-20.
3. REFER TO CONCRETE SIDEWALK DETAIL FOR CONTINUATION.

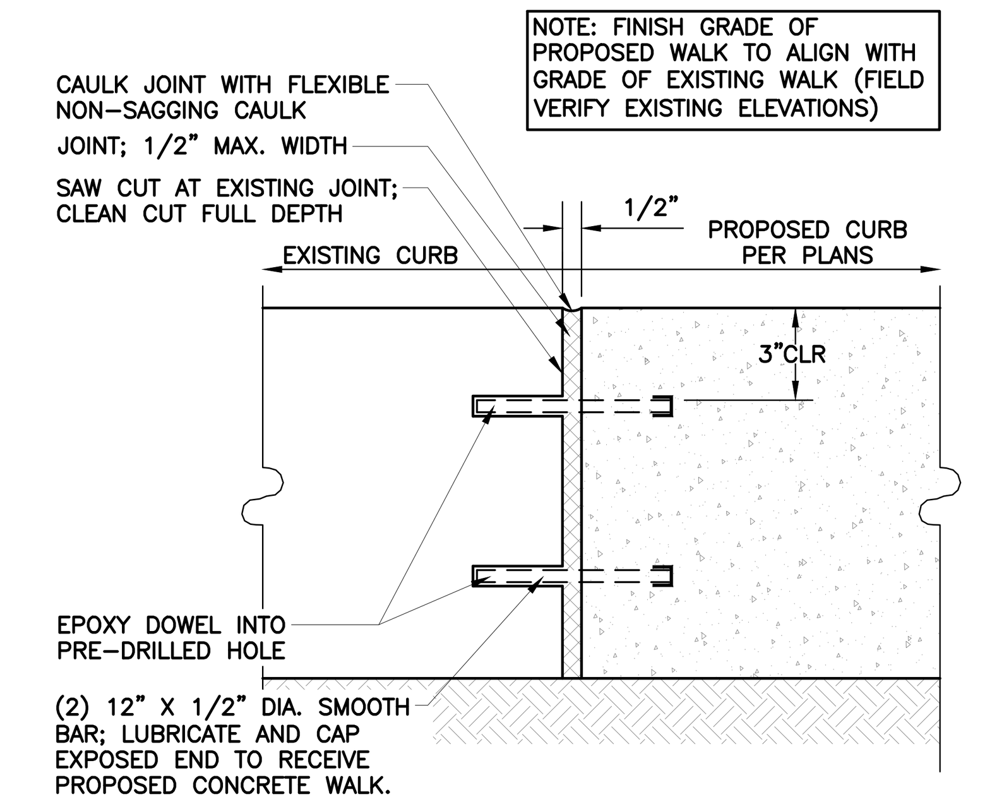
DETAIL 802
INTEGRAL CONCRETE CURB AND SIDEWALK
N.T.S.



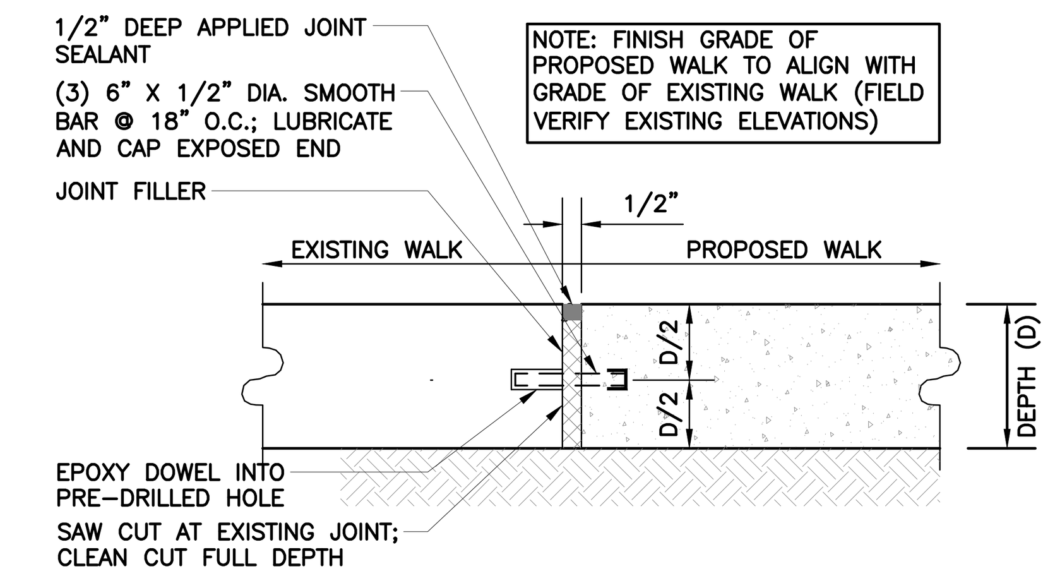
NOTES:

1. PROVIDE TACK COAT ALONG SAWCUT TO BIND EXISTING PAVEMENT TO NEW PAVEMENT. FOR AREAS WITH PATCHING AND OVERLAY, PROVIDE TACK COAT TO BIND EXISTING PAVEMENT WITH NEW ASPHALT.
2. REFER TO ASPHALT PAVEMENT SECTION DETAIL ON THIS SHEET FOR ADDITIONAL INFORMATION REGARDING PAVEMENT SECTIONS.

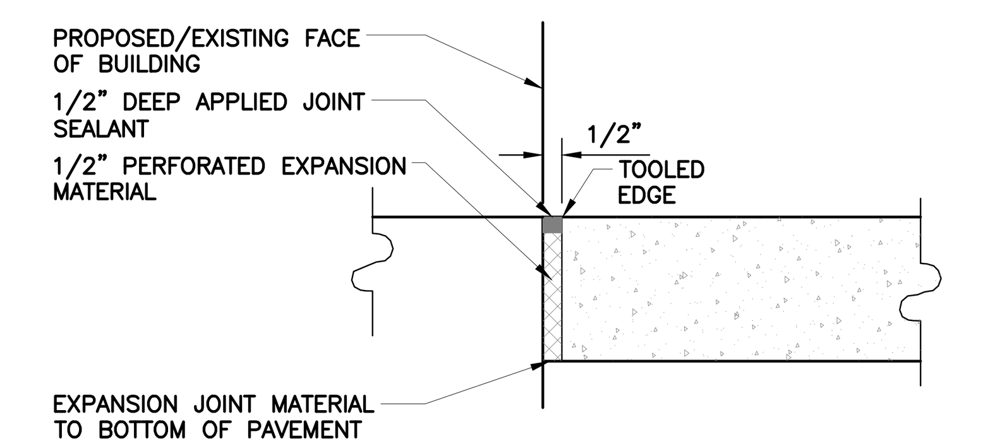
DETAIL 803
PAVEMENT SAWCUT
N.T.S.



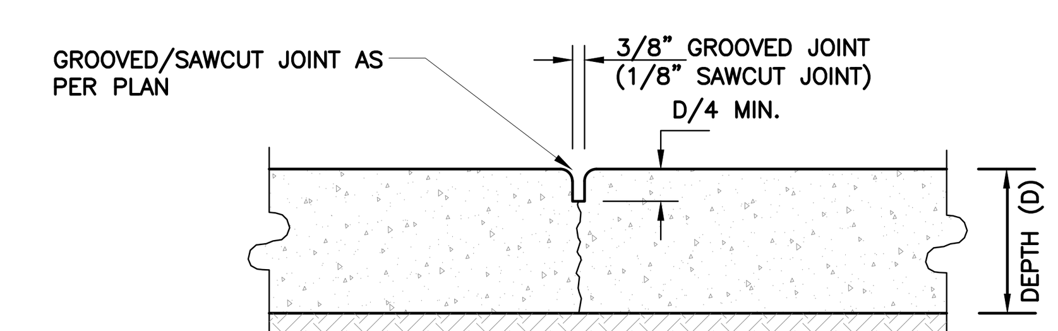
JOINT DETAIL AT EXISTING CURB



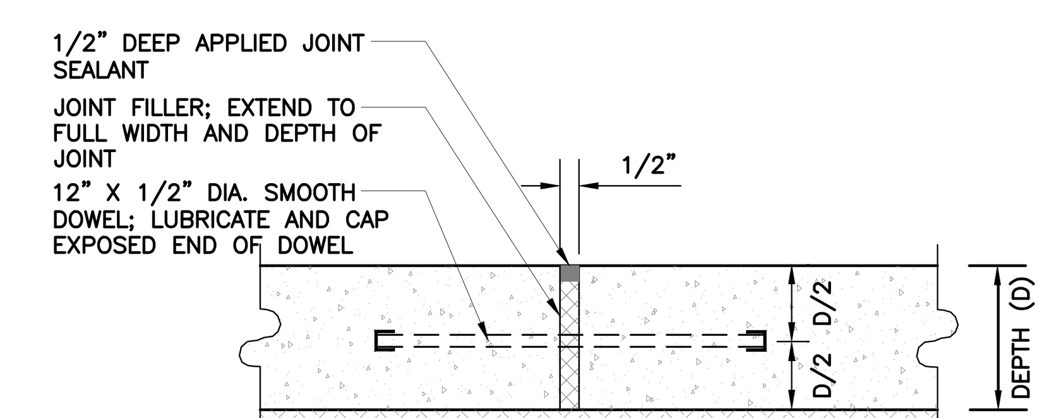
JOINT DETAIL AT EXISTING WALK



ISOLATION JOINT

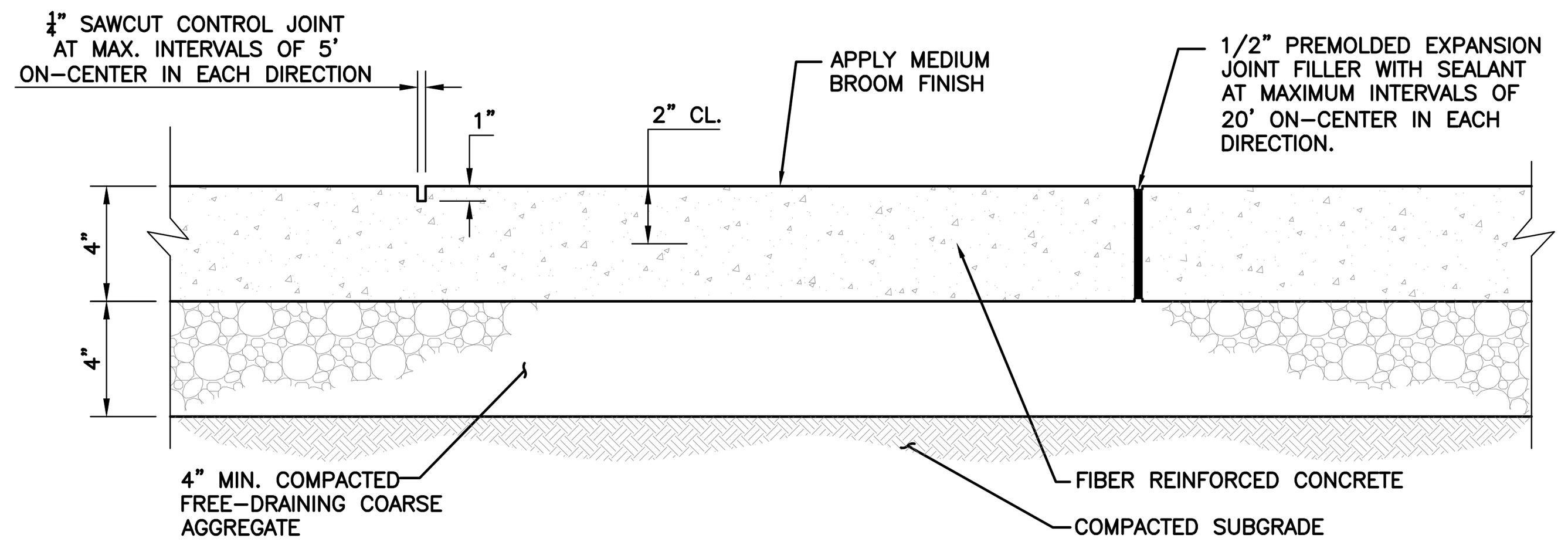


CONTROL JOINT



EXPANSION JOINT

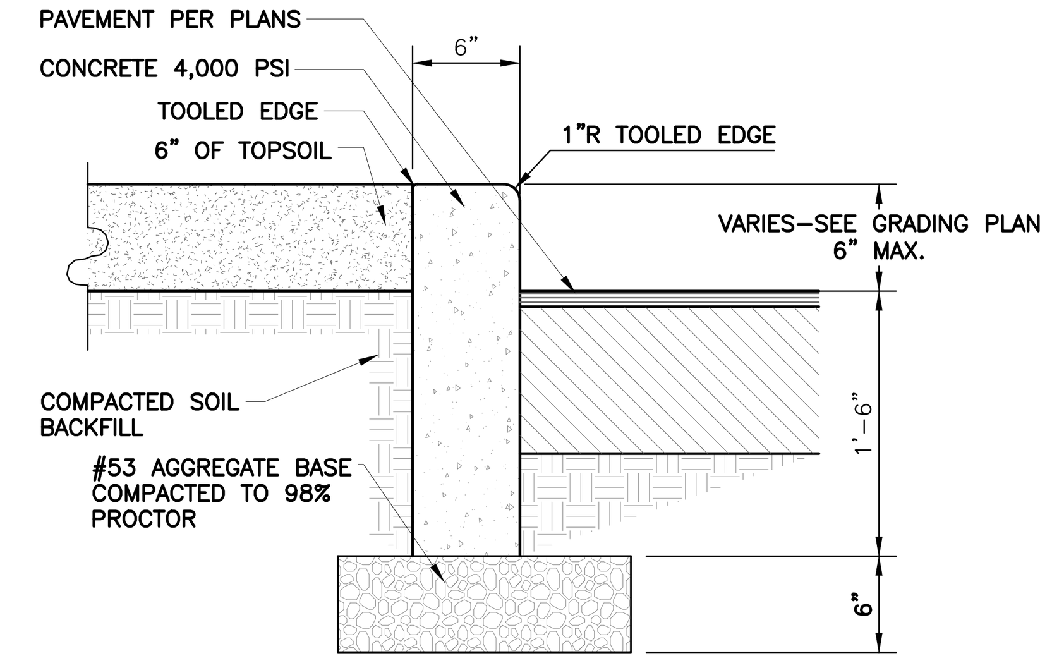
DETAIL 809
CONCRETE JOINT DETAILS
N.T.S.



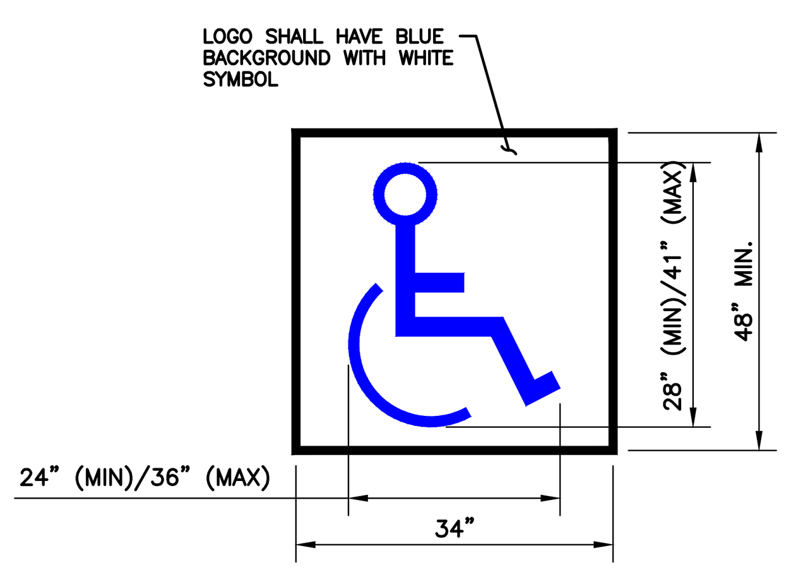
NOTES:

1. PROVIDE 1/2" EXPANSION JOINT FILLER WITH SEALANT WHERE THE CONCRETE SIDEWALK ABUTS THE BUILDING.
2. PROVIDE MEDIUM BROOM FINISH.
3. CONCRETE SHALL BE 4,000 PSI AIR ENTRAINED CONCRETE UNLESS OTHERWISE NOTED.

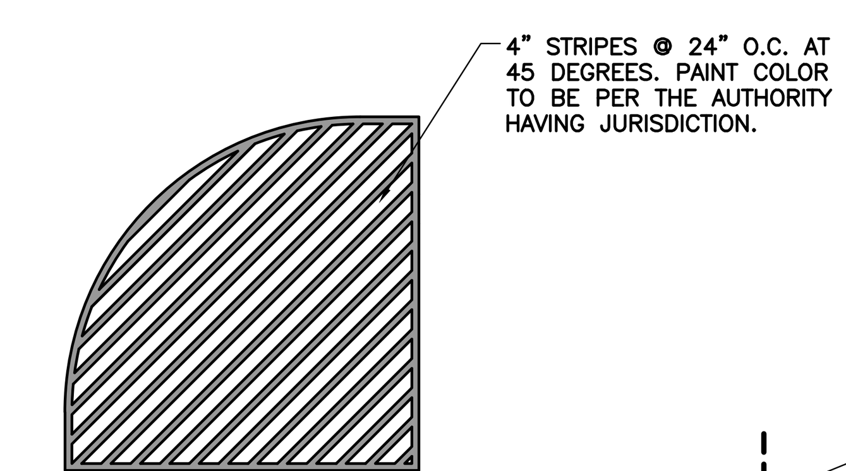
DETAIL 804
CONCRETE SIDEWALK
N.T.S.



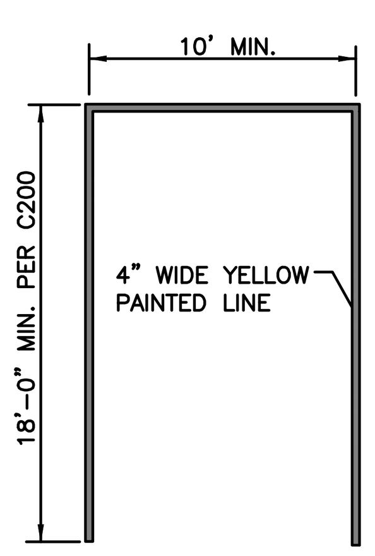
DETAIL 805
STRAIGHT CONCRETE CURB DETAIL
N.T.S.



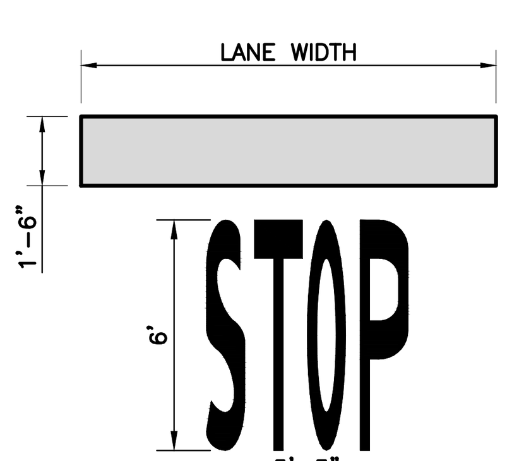
ADA ACCESSIBLE SPACE



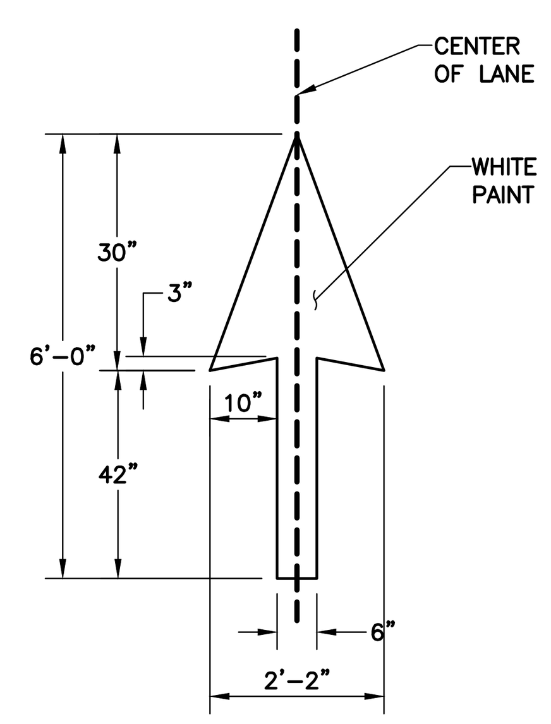
NO PARKING ZONE STRIPING



PARKING STALL STRIPING



STOP BAR

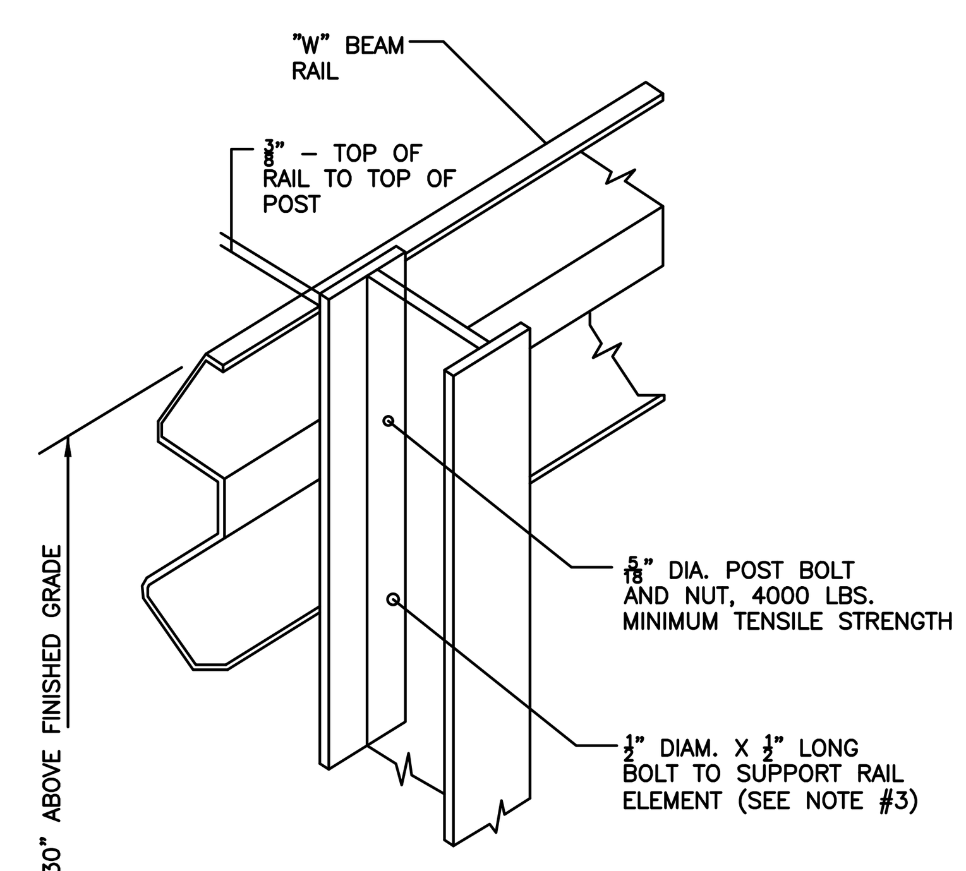


THROUGH ARROW

NOTES:

1. ALL TRAFFIC FLOW ARROWS TO BE SOLID WHITE NON-REFLECTIVE TRAFFIC PAINT OR THERMOPLASTIC AS PER DIMENSIONS AND AS SPECIFIED ON PROPOSED PLANS.
2. STRIPING SHALL HAVE TWO COATS OF PAINT, ALKYD BASE SYNTHETIC RESIN, FED. SPEC. TTP-115 TYPE 1 (OR APPROVED EQUAL). IF SEAL COAT IS USED, IT SHALL BE COMPATIBLE WITH STRIPING COMPOUND.
3. PARKING LOT MARKINGS AND STRIPING TO MEET MSHA BOOK OF STANDARDS AND SPECIFICATIONS FOR STREETS AND HIGHWAYS.

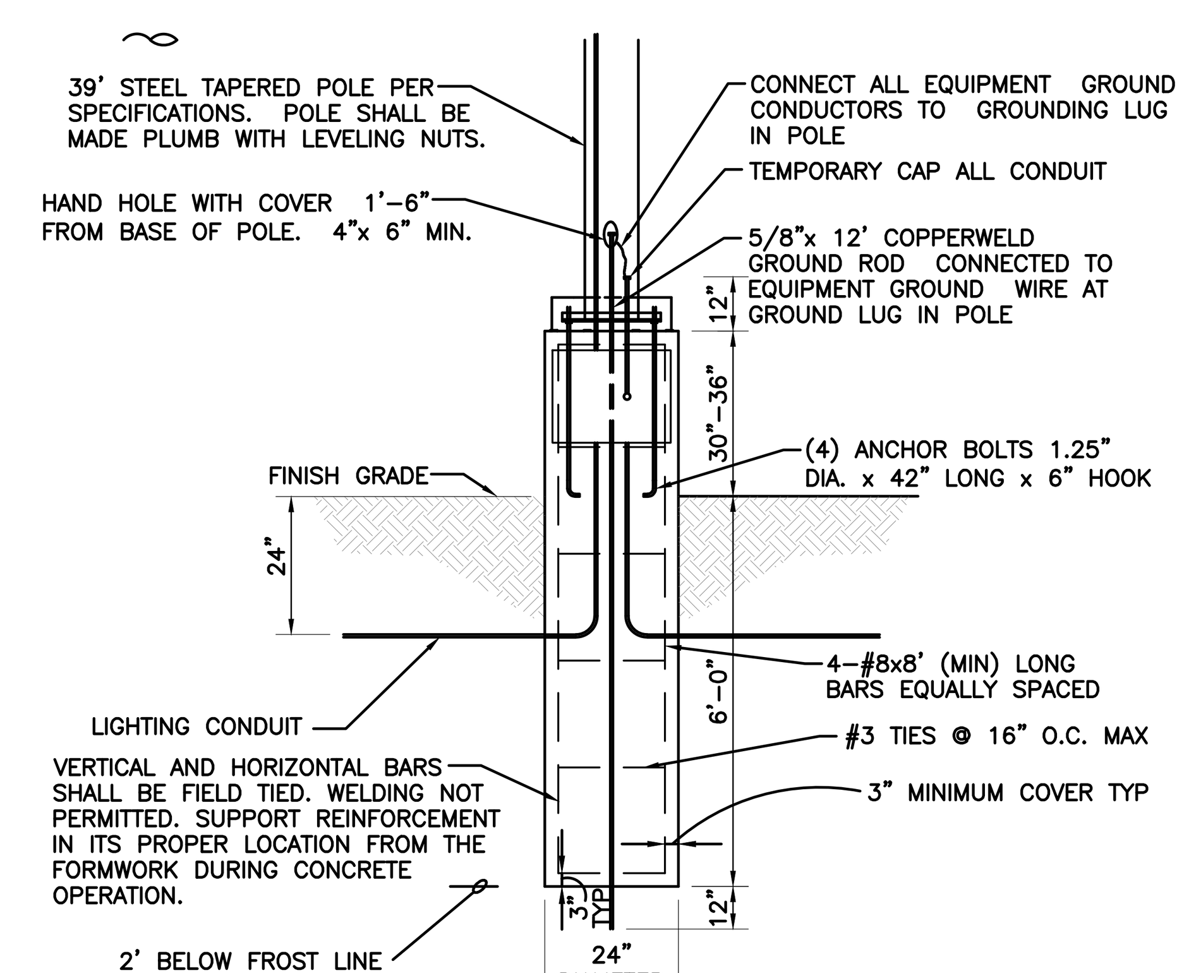
DETAIL 806
TYPICAL PAVEMENT MARKINGS
N.T.S.



NOTES:

1. REFERENCE RC-53M, PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION.
2. FURNISH AND INSTALL MATERIALS IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 520.
3. THE 3-⅜" X 2-¼" COLD FORMED CHANNEL POST, S3 X 5.7 POST AND ALUMINUM ALLOY POST MAY BE BID AS ALTERNATES FOR TYPE 2 WEAK POST GUIDE RAIL SYSTEM; HOWEVER MIXING OF DIFFERENT POSTS WILL NOT BE ACCEPTABLE WITHIN THE PROJECT.
4. DURING ERECTION, USE TEMPORARY SUPPORT BOLTS OR TEMPORARY DRIFT PINS TO SUPPORT THE RAIL ELEMENT UNTIL THE 5/16" POST BOLTS ARE PROPERLY TORQUED.
5. ATTACH W-BEAM RAIL ELEMENT TO EACH POST, SPLICE ONLY AT POSTS AND LAP IN THE DIRECTION OF TRAFFIC.

DETAIL 807
GUIDERAIL DETAIL
N.T.S.



NOTES:

1. ALL LIGHT POLE BASE FOUNDATIONS SHALL BE CAST-IN-PLACE CONCRETE, 3500 PSI MIN. 28 DAY COMPRESSIVE STRENGTH CONCRETE WITH GRADE 60 REINFORCING STEEL.
2. IF WATER IS PRESENT IN EXCAVATED HOLE, REMOVE BEFORE POURING CONCRETE.
3. FOUNDATION EXCAVATION SHALL BE BY 24" AUGER IN UNDISTURBED OR PROPERLY COMPACTED FILL PER SPECIFICATIONS.
4. FOUNDATION SHALL HAVE A MINIMUM ALLOWABLE END BEARING OF 2000 PSF.
5. FOUNDATION HAS BEEN DESIGNED FOR A COHESIVE SOIL BASED ON A MINIMUM COHESIVE VALUE OF 1000 PSF.
6. FOUNDATION HAS BEEN DESIGNED FOR A GRANULAR SOIL BASED ON A MINIMUM LATERAL SOIL PRESSURE OF 1000 PSF, UTILIZING AASHTO FIGURE 1.8.2C(4) OF "EMBEDMENT OF POSTS WITH OVERTURNING LOADS".

DETAIL 808
SITE LIGHTING POLE BASE
N.T.S.

PRELIMINARY
NOT FOR CONSTRUCTION

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/27/2020	LAND DEVELOPMENT/GRADING PERMIT, STORMWATER, LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

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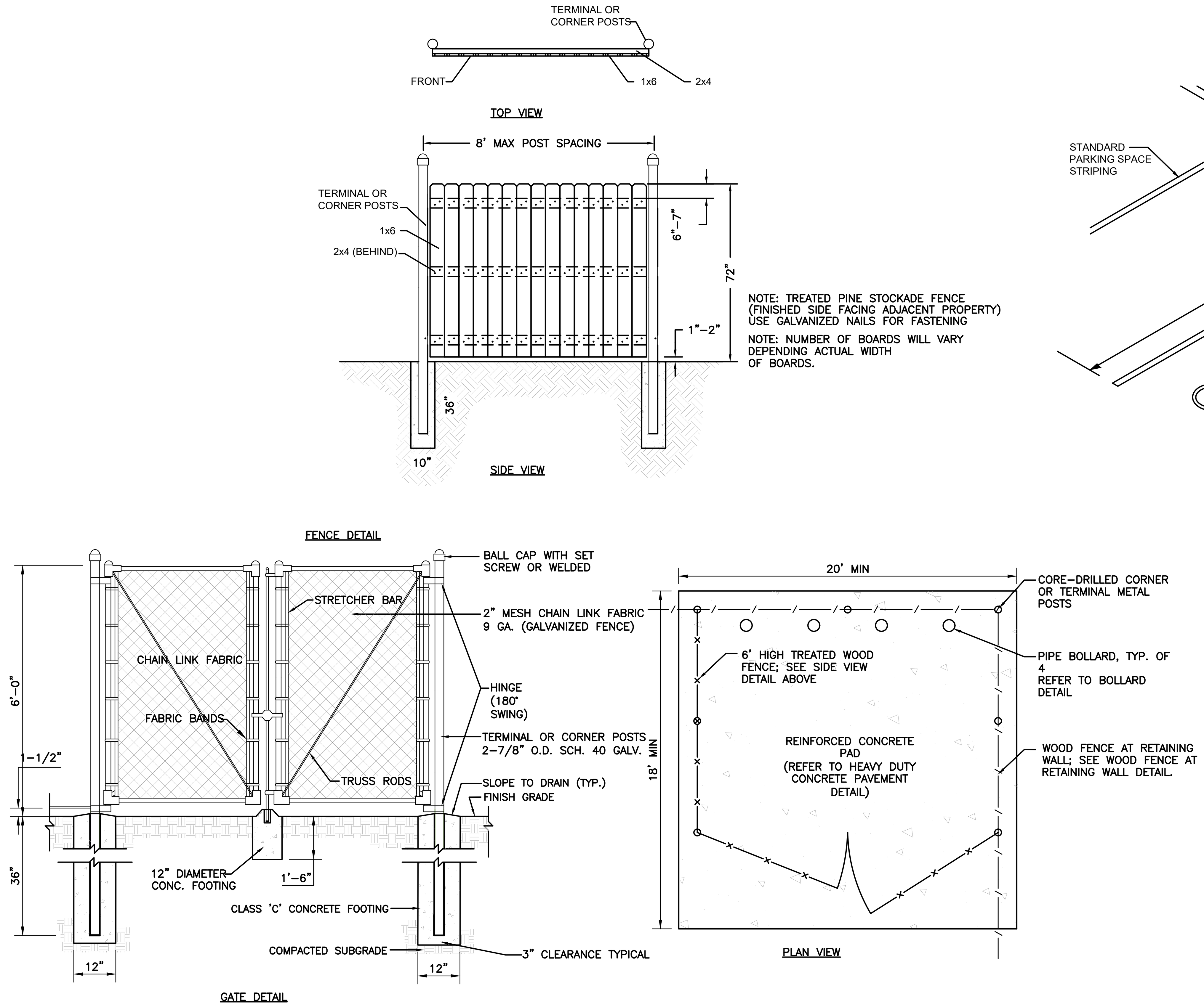
SITE CONSTRUCTION DETAILS

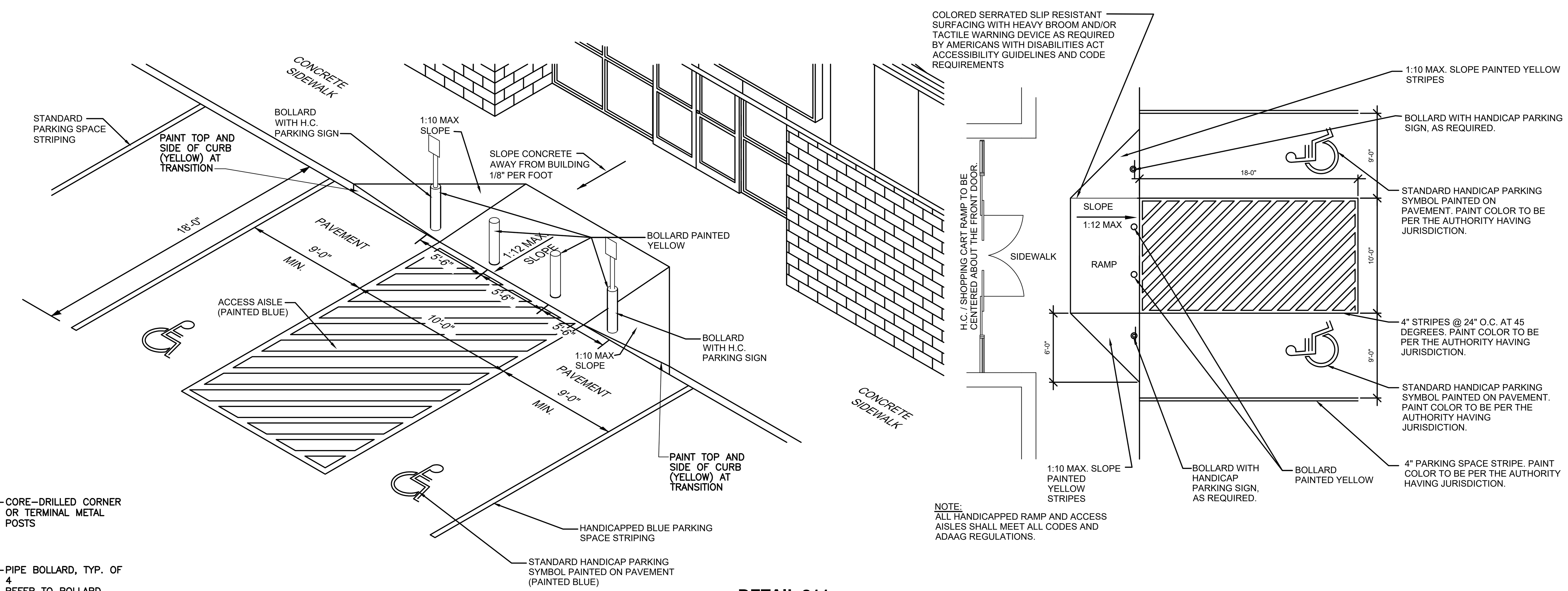
DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:		CHECKED BY:	APW
PROJECT NO:	192-215		
APPROVED BY:	*CJR		

DRAWING NO.: C800

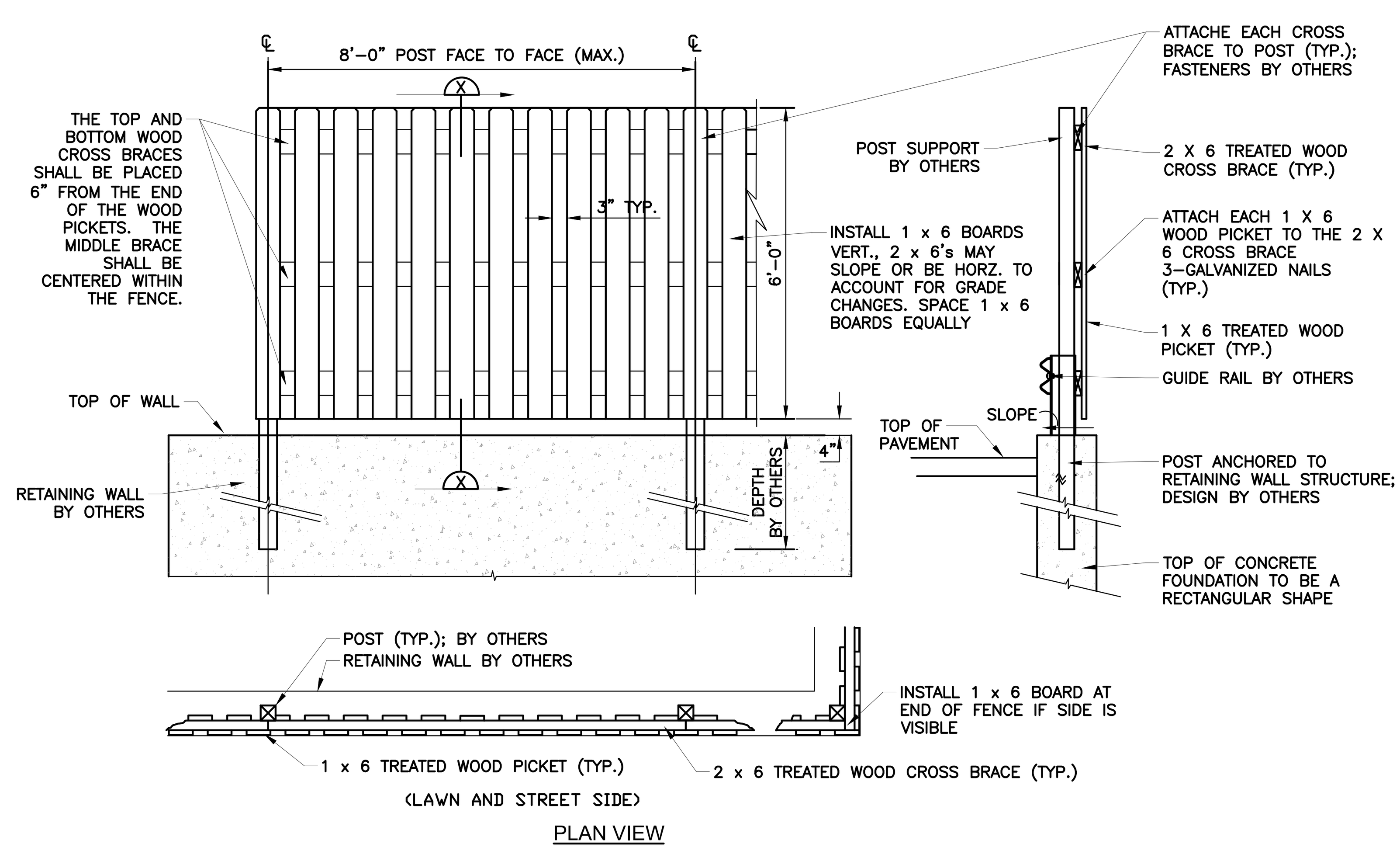
SHEET 10 OF 16



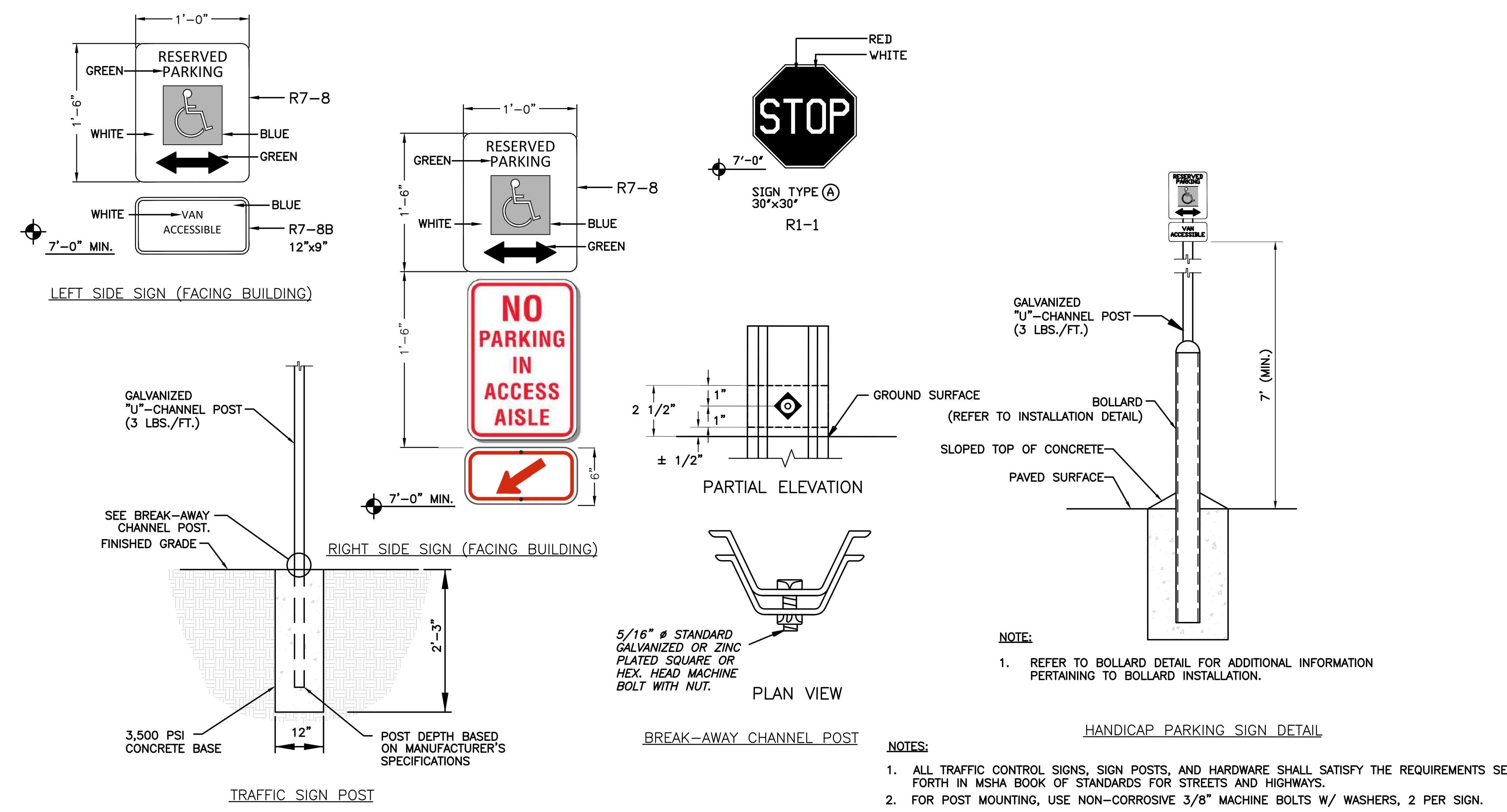
DETAIL 810
TRASH ENCLOSURE
N.T.S.



DETAIL 811
HANDICAP/ACCESSIBLE RAMP DETAIL
N.T.S.



DETAIL 812
WOOD FENCE AT RETAINING WALL
N.T.S.



NOTES:

1. ALL TRAFFIC CONTROL SIGNS, SIGN POSTS, AND HARDWARE SHALL SATISFY THE REQUIREMENTS SET FORTH IN MSHA BOOK OF STANDARDS FOR STREETS AND HIGHWAYS.
2. FOR POST MOUNTING, USE NON-CORROSIVE 3/8" MACHINE BOLTS W/ WASHERS, 2 PER SIGN.
3. ALL ACCESSIBLE PARKING SIGNAGE SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE LOWEST SIGN AT LEAST 84" ABOVE FINISHED GRADE.

DETAIL 813
TRAFFIC SIGNS
N.T.S.

PRELIMINARY
NOT FOR CONSTRUCTION

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT, STORMWATER, LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

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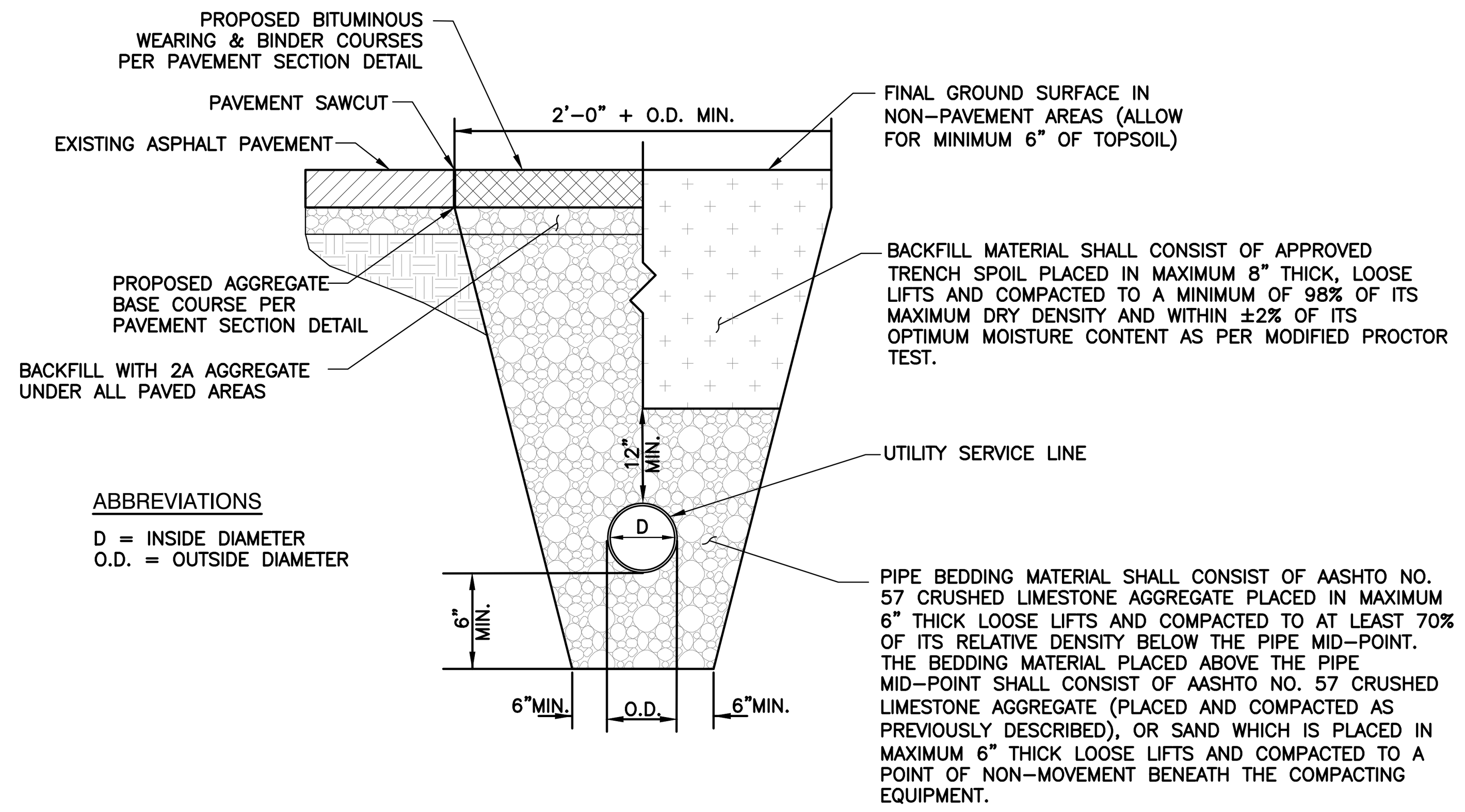
SITE CONSTRUCTION DETAILS

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:		CHECKED BY:	APW
PROJECT NO:	192-215	APPROVED BY:	*CJR

DRAWING NO.: **C801**
SHEET 11 OF 16



ABBREVIATIONS

D = INSIDE DIAMETER
O.D. = OUTSIDE DIAMETER

NOTES:

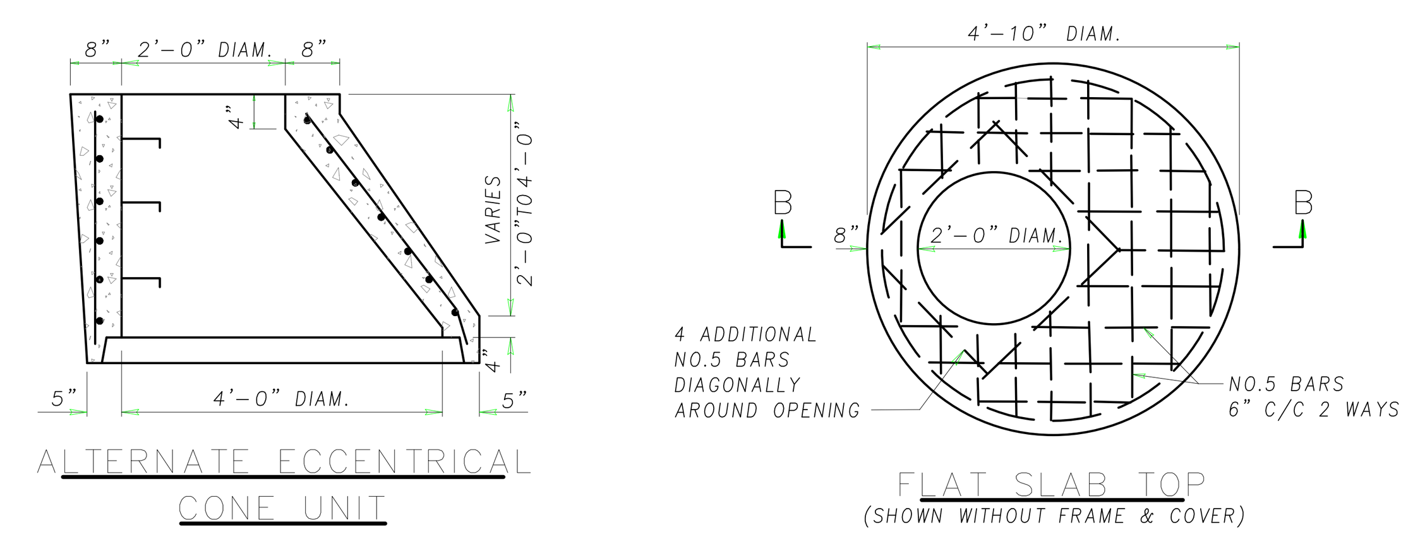
1. ALL MATERIALS EXCAVATED FROM THE UTILITY TRENCH SHALL BE STOCKPILED A MINIMUM SUFFICIENT DISTANCE FROM ALL TRENCHES TO PREVENT SLIDES OR CAVE-INS.
2. ALL BACKFILL MATERIALS SHALL BE APPROVED BY THE OWNER OR THEIR REPRESENTATIVE BEFORE BEING PLACED.
3. AASHTO NO. 57 CRUSHED LIMESTONE AGGREGATE AND NO. 2A CRUSHED STONE AGGREGATE SHALL SATISFY THE REQUIREMENTS OF MSHA BOOK OF STANDARDS FOR STREETS AND HIGHWAYS.
4. THE MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT FOR THE BACKFILL MATERIALS SHALL BE DETERMINED BY ASTM D1557, AND THE RELATIVE DENSITY OF THE AASHTO NO. 57 AGGREGATE SHALL BE DETERMINED BY ASTM D4253 AND ASTM D4254.
5. THE CONTRACTOR SHALL CONSTRUCT THE UTILITY TRENCHES AND PROVIDE ADEQUATE SHORING (WHERE NECESSARY) IN CONFORMANCE WITH THE LATEST REQUIREMENTS FOR CONSTRUCTION STANDARD FOR EXCAVATIONS (29 CFR PART 1926.650-.652 SUBPART P) PROMULGATED BY OSHA.
6. THE CONTRACTOR SHALL VERIFY THAT THE MINIMUM SPECIFIED PIPE COVER IS PROVIDED BETWEEN THE FINAL GROUND SURFACE AND TOP OF PIPE BEFORE LAYING PIPE. PROVIDE A MINIMUM OF 2 FT. OF COVER ABOVE ALL PIPES DURING CONSTRUCTION.
7. INCREASE TRENCH WIDTH AS NECESSARY TO ALLOW FOR PROPER COMPACTION OF BEDDING/BACKFILL.
8. FURNISH AND INSTALL DETECTABLE WARNING TAPE FOR EACH UNDERGROUND UTILITY LINE, PER MANUFACTURER'S SPECIFICATIONS.
9. CONTRACTOR SHALL USE 5" SCHEDULE 80 ELECTRICAL CONDUIT FOR UNDERGROUND MAIN ELECTRICAL ENTRANCE TO THE BUILDING.

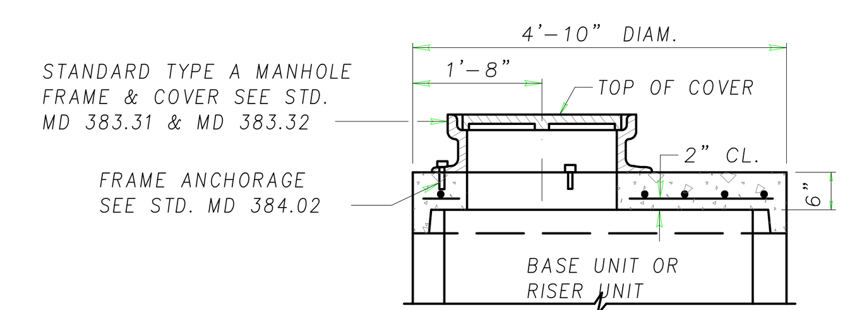
COVER REQUIREMENTS

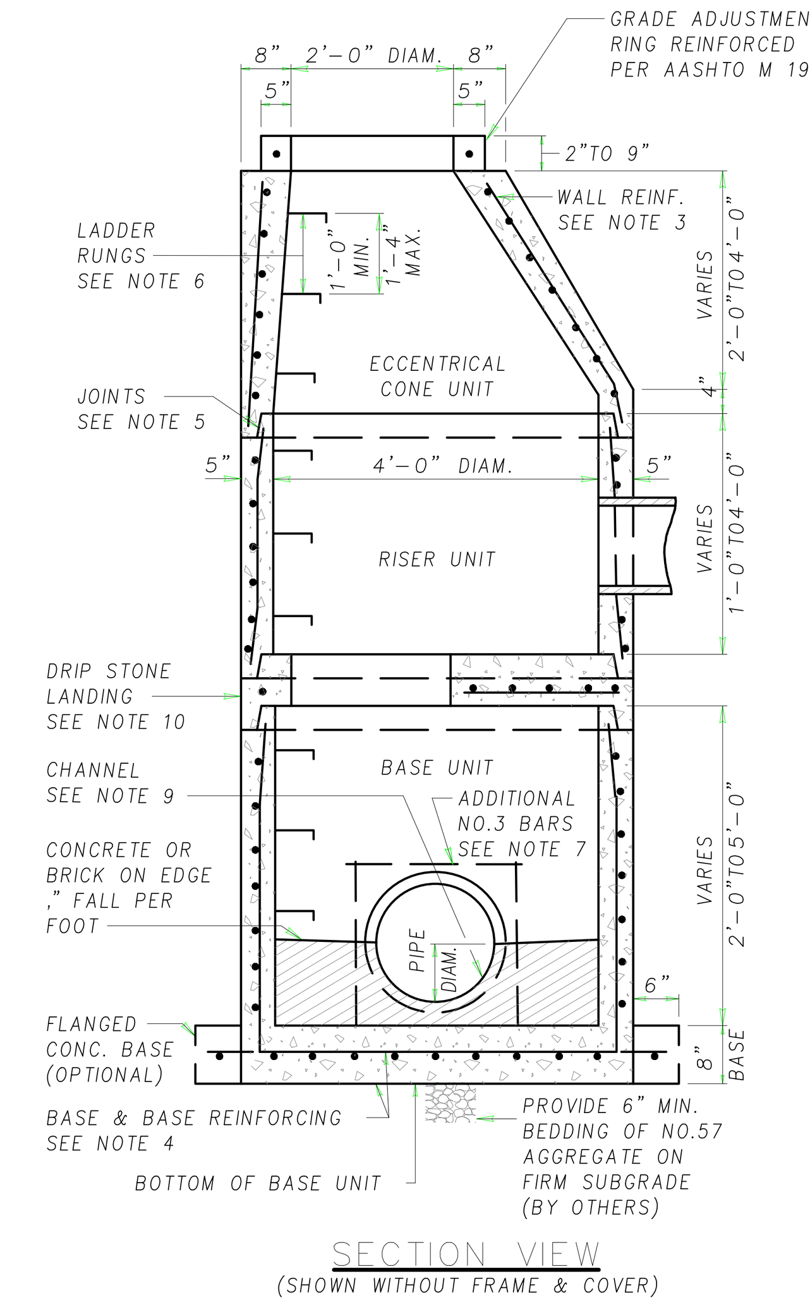
UTILITY	MINIMUM COVER REQUIRED*
SANITARY SEWER	4.0 FT.
WATER LINE	4.0 FT.
GAS LINE	2.0 FT.
TELEPHONE/CABLE CONDUITS	2.5 FT.
ELECTRIC CONDUITS	3.5 FT.

* AS MEASURED FROM TOP OF PIPE TO FINAL GROUND SURFACE

DETAIL 814
TYPICAL UTILITY TRENCH DETAIL
N.T.S.



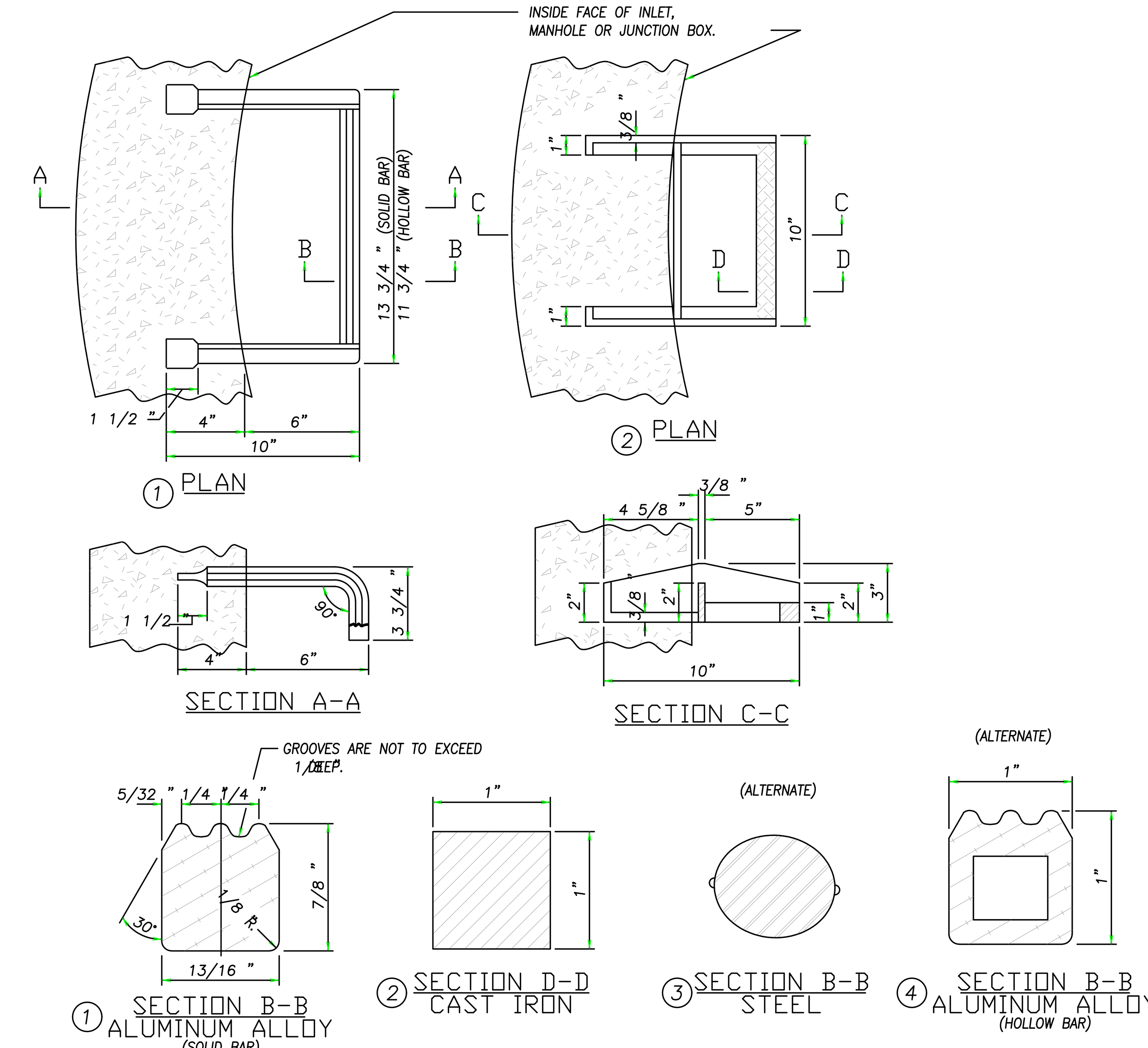


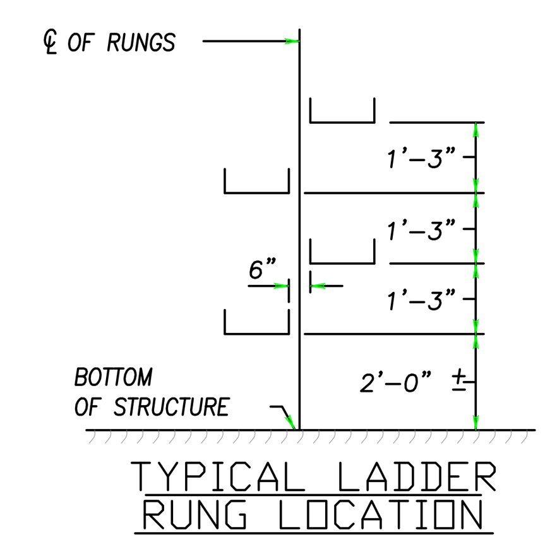


NOTES

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
2. CONCRETE SHALL BE MIX NO. 6 (4500 PSI).
3. WALL REINFORCEMENT FOR BASE UNITS, RISER UNITS AND ECCENTRICAL CONE UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.12 IN $/FT^2$ AND MAXIMUM SPACING OF 12" FOR THE 48" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 52. REINFORCEMENT SHALL MEET ASTM A 615, GRADE 60.
4. BASE REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.20 IN $/FT^2$ AND A MAXIMUM SPACING OF 10" WITH 2" COVER FROM THE TOP OF BASE. THE BASE SHALL BE CAST MONOLITHIC WITH THE UNIT OR JOINTED PER THE MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR, RUBBER 0-RING GASKETS MEETING ASTM C 361 & C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR MD 383.92 LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN MULTIPLE OPENINGS IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO. 3 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
9. MIX NO. 2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. MD 384.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 9'-0" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 9'-0". THE COST OF THE DRIP STONE LANDING. NO. 57 AGGREGATE GROUT. SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.
12. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

DETAIL 815 (MD-384.01)
48" DIA PRECAST MANHOLE (MSHA)
FOR 12" TO 24" PIPES
N.T.S.





NOTES

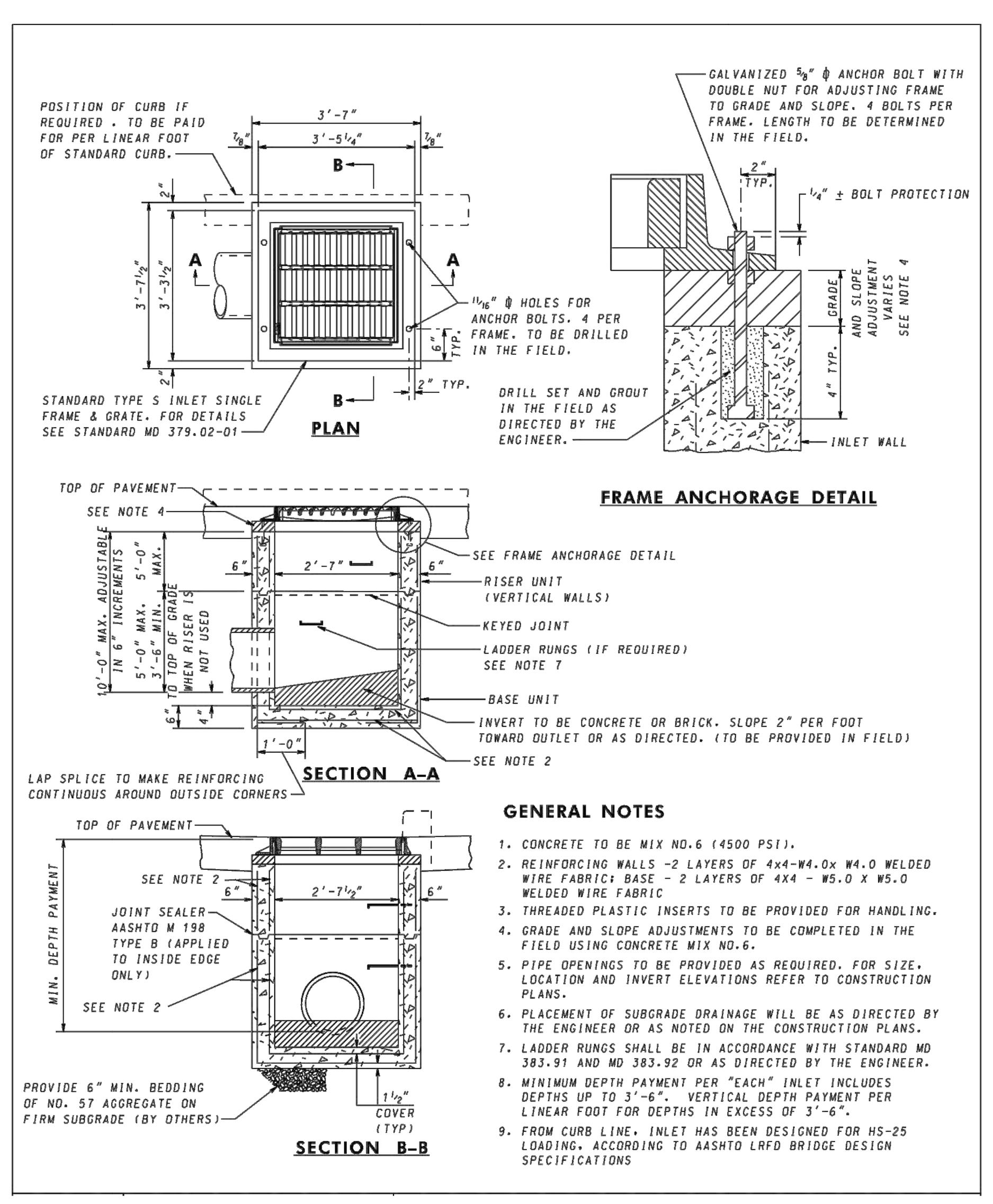
METAL LADDER RUNGS ARE TO BE USED IN INLETS, MANHOLES, AND JUNCTION BOXES OVER THREE FEET IN DEPTH OR AS DIRECTED BY THE ENGINEER, USED EITHER WITH BRICK OR CONCRETE CONSTRUCTION. (WHERE BRICK CONSTRUCTION IS EMPLOYED, THE MORTAR JOINTS SHALL BE ADJUSTED TO ACCOMMODATE LADDER RUNGS.) METAL LADDER RUNGS MAY BE COMPRISED OF ONE OF THE FOLLOWING.

(1)&(4) ALUMINUM ALLOY- SHALL CONFORM TO A.S.T.M. DESIGNATION B 221 ALLOY 6061-T6. THAT PORTION EMBEDDED IN THE STRUCTURE SHALL BE COATED WITH ZINC CHROMATE OR APPROVED EQUIVALENT COATING.

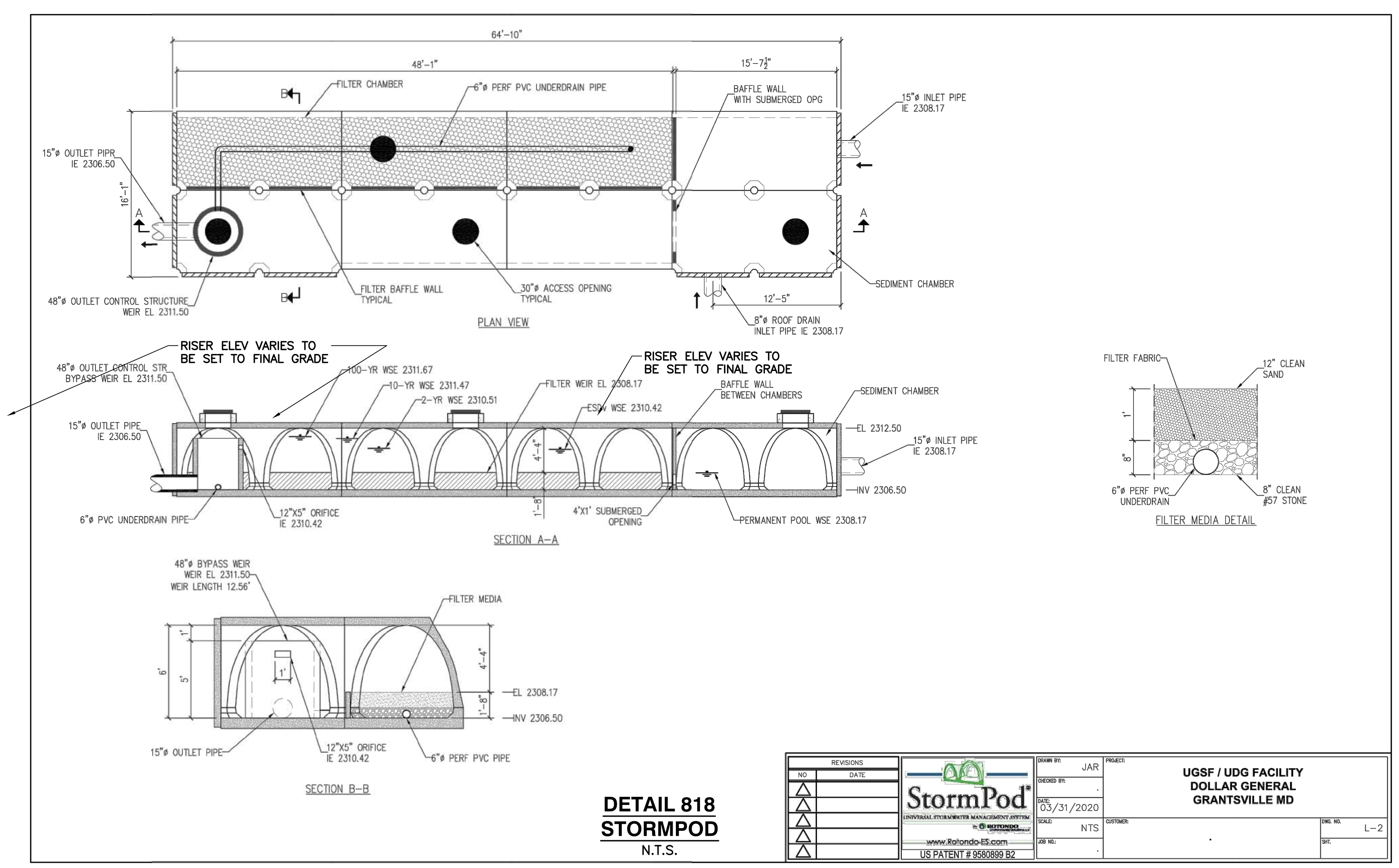
(2) CAST IRON- SHALL CONFORM TO A.S.T.M. A- 48 CLASS 30 B.

(3) STEEL- SHALL CONFORM TO A.S.T.M. DESIGNATION A-615 GRADE 40, GALVANIZED AFTER FABRICATION AS PER A.S.T.M. DESIGNATION A-153.

DETAIL 816 (MD-383.91)
STANDARD METAL LADDER RUNGS (MSHA)
N.T.S.



DETAIL 817
STANDARD S-TYPE INLET GRATE
N.T.S.



DETAIL 818
STORMPOD
N.T.S.

PRELIMINARY
NOT FOR CONSTRUCTION

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT/ STORMWATER/ LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

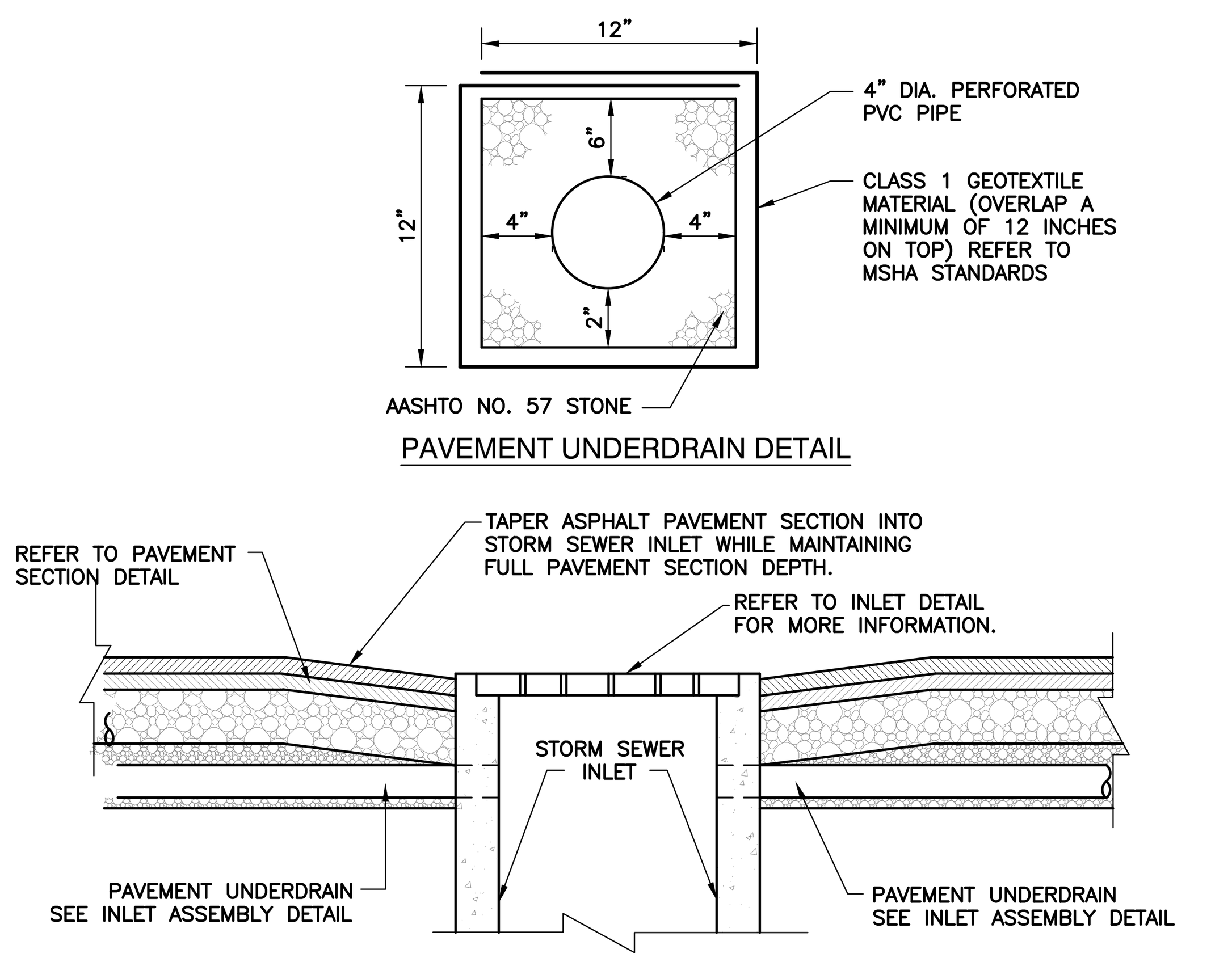
PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

SITE CONSTRUCTION DETAILS

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:		CHECKED BY:	APW
PROJECT NO:			192-215
APPROVED BY:			*CJR

DRAWING NO.:
C802

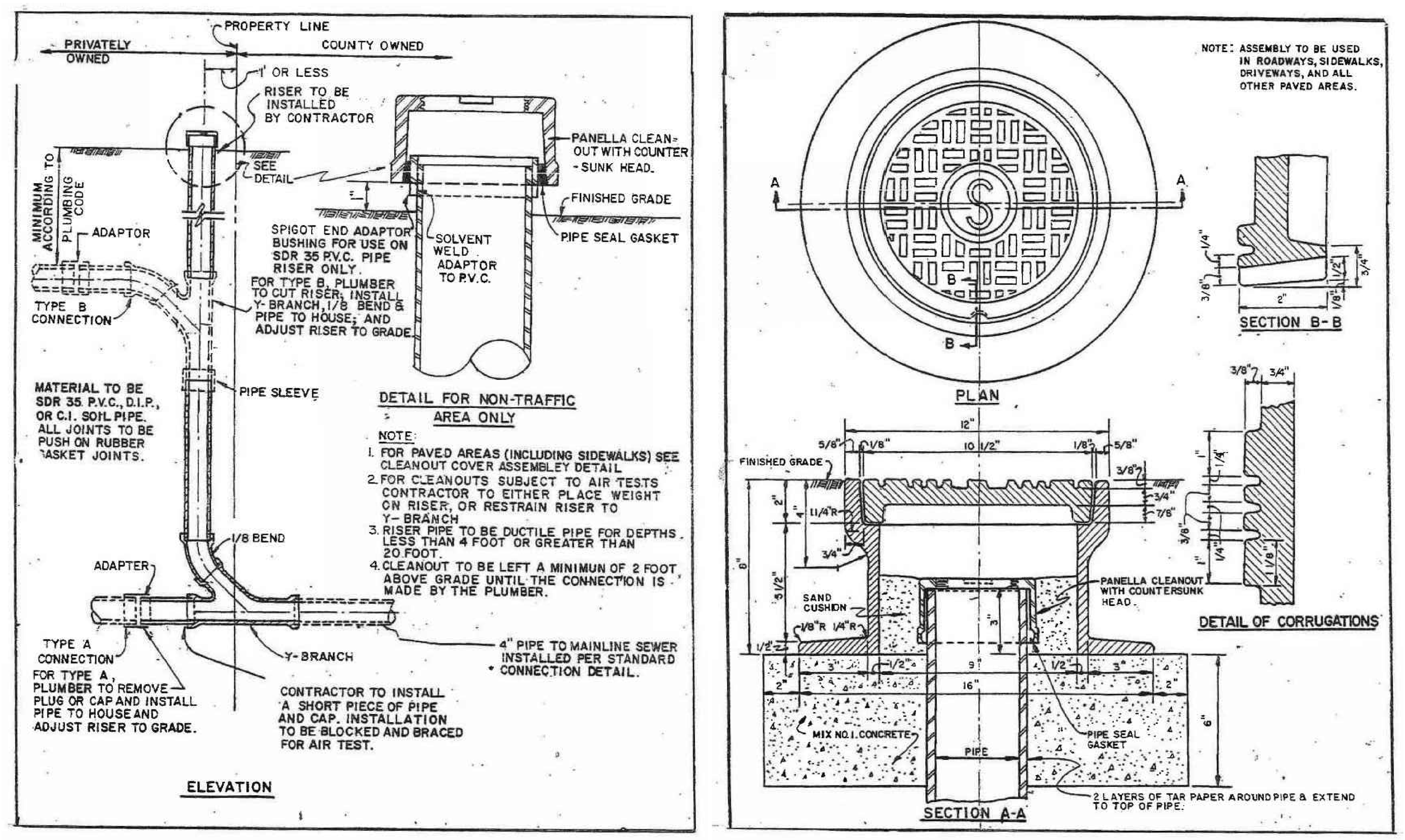
SHEET 12 OF 16



NOTES:

1. UNDERDRAINS SHALL EXTEND OUT A MINIMUM OF 10' FROM FOUR SIDES OF TYPE M STORM SEWER INLETS.
2. THE AASHTO NO. 57 AGGREGATE SHALL MEET THE REQUIREMENTS OF MSHA BOOK OF STANDARDS.
3. THE CLASS 1 DRAINAGE GEOTEXTILE MATERIAL AND INSTALLATION SHALL MEET THE REQUIREMENTS OF THE MSHA BOOK OF STANDARDS.

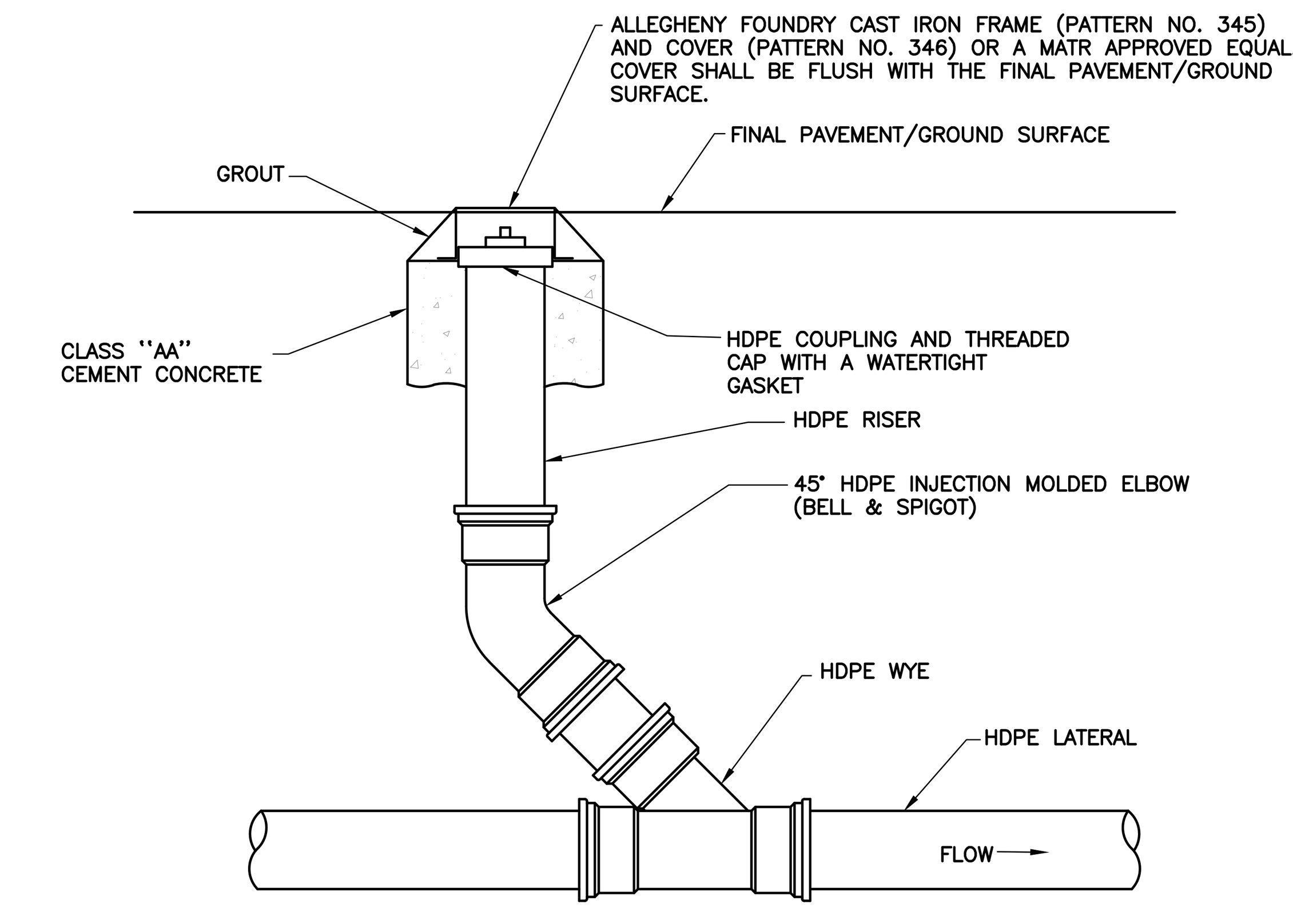
DETAIL 819
DRAINAGE REQUIREMENTS AT INLETS
N.T.S.



SANITARY SEWER CLEANOUT (NON-TRAFFIC)

CASTING ASSEMBLY FOR PAVED AREAS

DETAIL 820
SANITARY SEWER CLEANOUT AT RIGHT OF WAY
N.T.S.

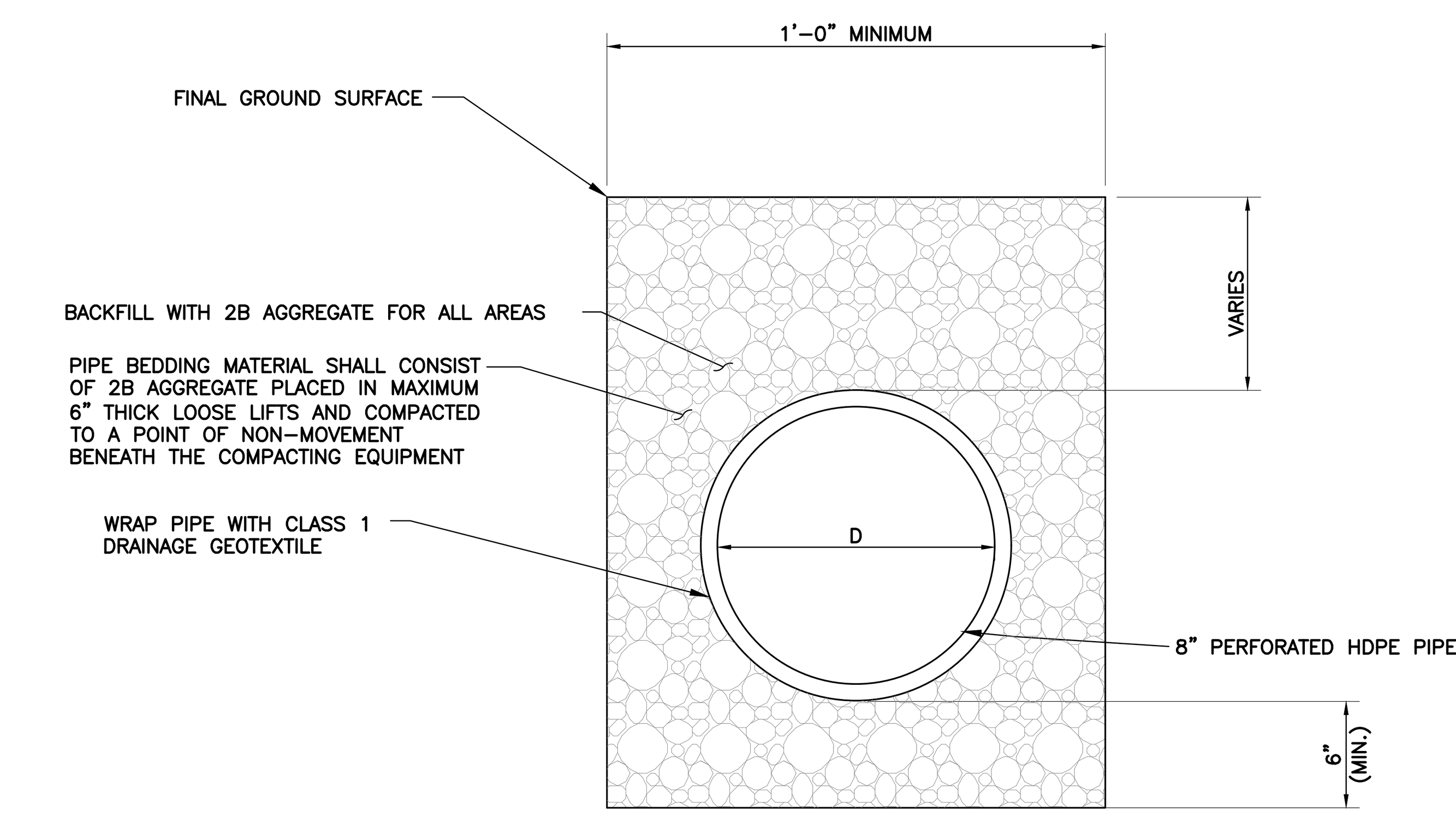


NOTES:

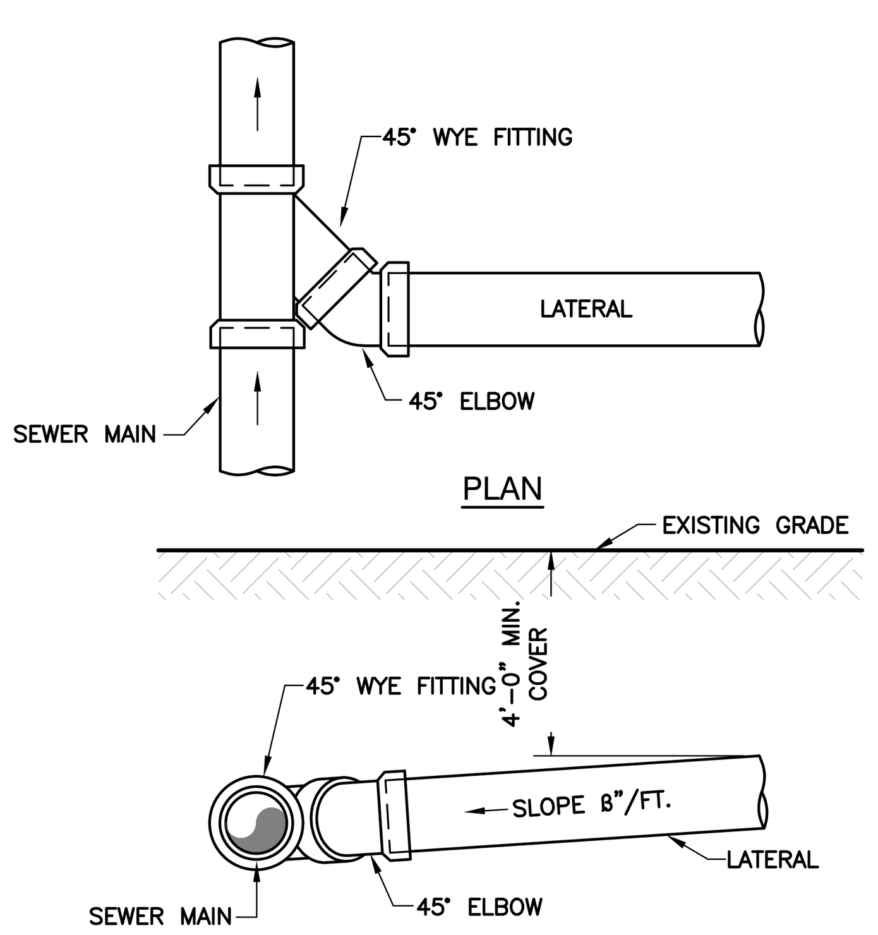
1. THIS DETAIL APPLIES TO STORM EWER CLEANOUTS WITH APPROPRIATE CHANGES TO WYE AND PIPE SIZES.
2. THE CLASS "AA" CEMENT CONCRETE SHALL SATISFY THE REQUIREMENTS OF MSHA PUBLICATION 408, SECTION 704.

STORM SEWER CLEANOUT (HDPE)

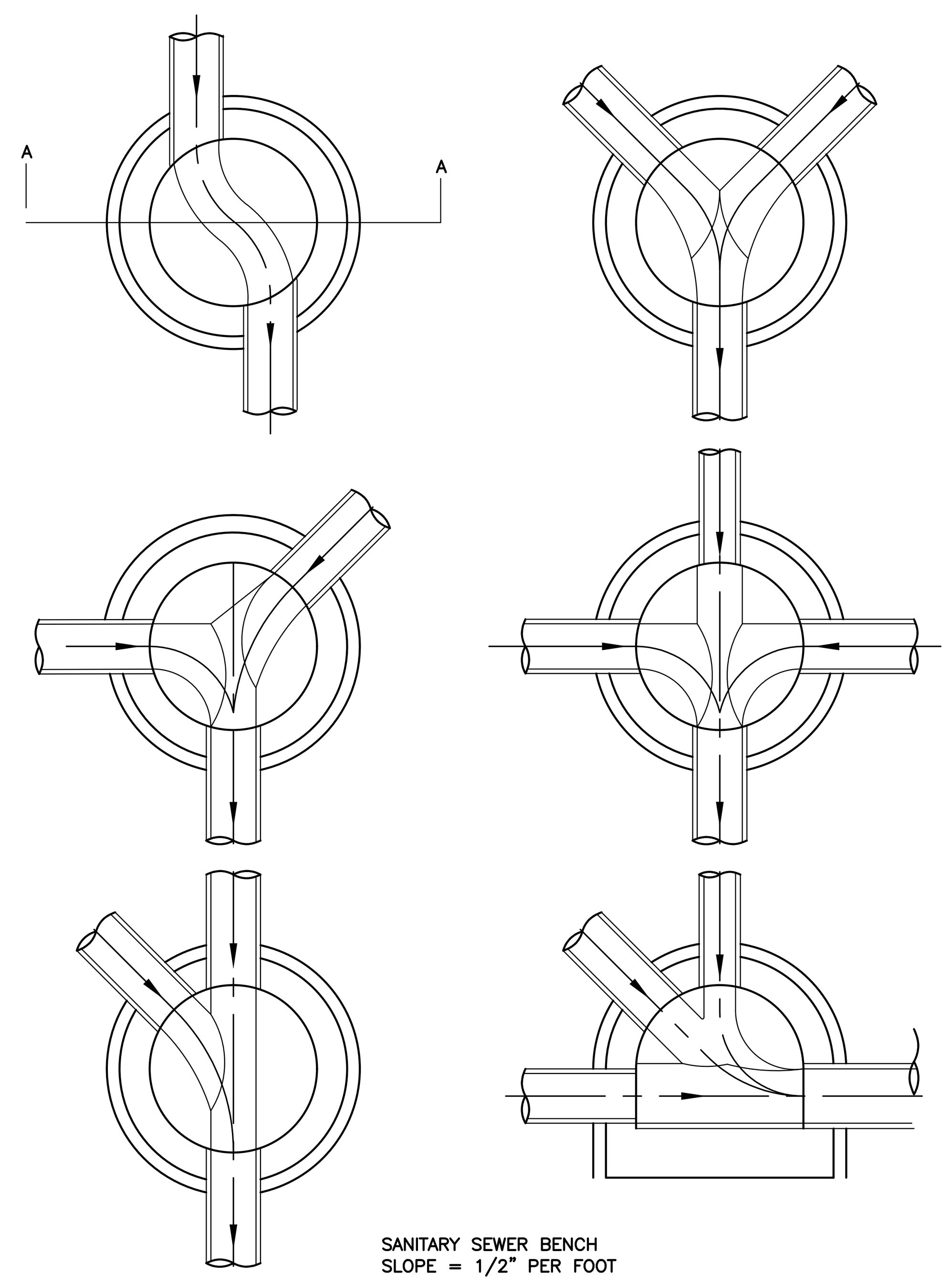
DETAIL 821
TYPICAL STORM SEWER CLEANOUT
N.T.S.



DETAIL 825
GRAVEL TRENCH DETAIL
N.T.S.



DETAIL 822
STANDARD WYE CONNECTION
N.T.S



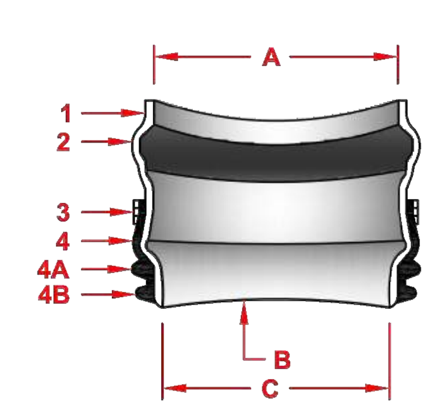
DETAIL 823
STANDARD MANHOLE BENCHES
NOT TO SCALE

SDR 35 GASKETED BELL GRAVITY APPLICATIONS

A. EQUIVALENT O.BELL END ACCEPTS PIPE WITH SDR 35, ASTM D3034 OR EQUIVALENT O.D. SPECIFICATION IN 8", 10", 12", 15", 18", 21", 24", 27", AND 30" SIZES. (FOR 4" AND 6" SIZES REFER TO FATBOY SPECIFICATIONS).

B. CURVATURE VARIES WITH MAINLINE DIAMETERS.

C. SPIGOT END PVC SDR 35, ASTM D3034 DIAMETERS: 8", 10", 12", 15", 18", 21", 24", 27" AND 30"



PART	PART NAME	MATERIALS
1	HUB ADAPTOR	PVC SDR 35 ASTM D3034
2	RUBBER GASKET	ASTM F477
3	SECURING CLAMP*	BAND SS #301 SCREW SS #305 HOUSING SS #301
4	RUBBER SLEEVE (AVAILABLE IN NITRILE AND EPDM BY SPECIAL ORDER)	ASTM F477
4A	UPPER SEGMENT**	
4B	LOWER SEGMENT***	

* OPTIONAL: #316 STAINLESS STEEL BAND, SCREW AND HOUSING
** DISTANCE BETWEEN 4A AND 4B WILL VARY BY PRODUCT TYPE
*** WILL NOT APPEAR ON RUBBER SLEEVES FOR CONCRETE OR CLAY PIPE

INSERTA TEE SIZE	HOLE DIAMETER
8" (200 mm)	8 3/4" (222mm)
10" (250 mm)	10 7/8" (276mm)
12" (300 mm)	12 7/8" (327mm)
15" (375 mm)	15 13/16" (402mm)
18" (450 mm)	19 3/16" (503mm)
21" (525 mm)	22 9/16" (573mm)
24" (600 mm)	25 5/16" (643mm)
27" (675 mm)	28 1/2" (724mm)
30" (750 mm)	32 17/32" (826mm)

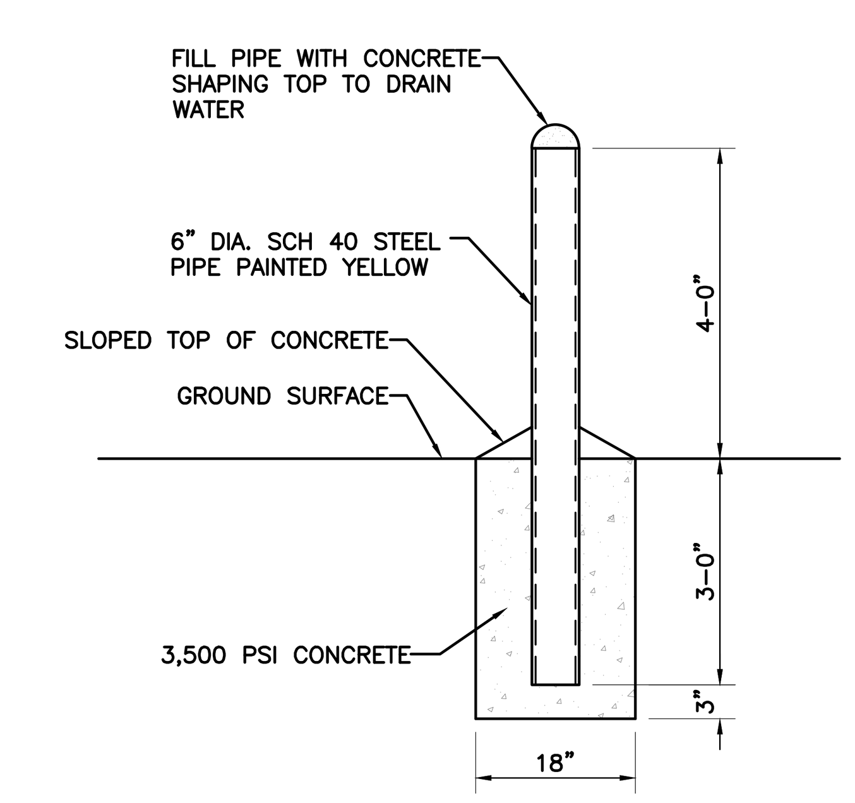
NOTE: RECOMMENDED METHOD OF CUTTING HOLE IS WITH HOLE SAW FOR PVC AND OTHER PLASTICS, AND DIAMOND BIT FOR CONCRETES, CLAY, FRP AND D.I. (SEE INSTALLATION INSTRUCTIONS. HOLE SAWS ARE AVAILABLE FOR PURCHASE OR RENT.)

INSERTA TEE | PO BOX 714
CORNELIUS, OR 97116
PH:(503) 357-2110 FAX:(503) 359-5417
SALES@INSERTATEE.COM

SDR 35 GASKETED BELL GRAVITY APPLICATION SPECIFICATIONS

SCALE:	NTS
DATE:	9/12/2013
DRAWN BY:	KLJ

DETAIL 824
INSERTA TEE
N.T.S.



DETAIL 826
BOLLARD
N.T.S.

PRELIMINARY
NOT FOR CONSTRUCTION

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
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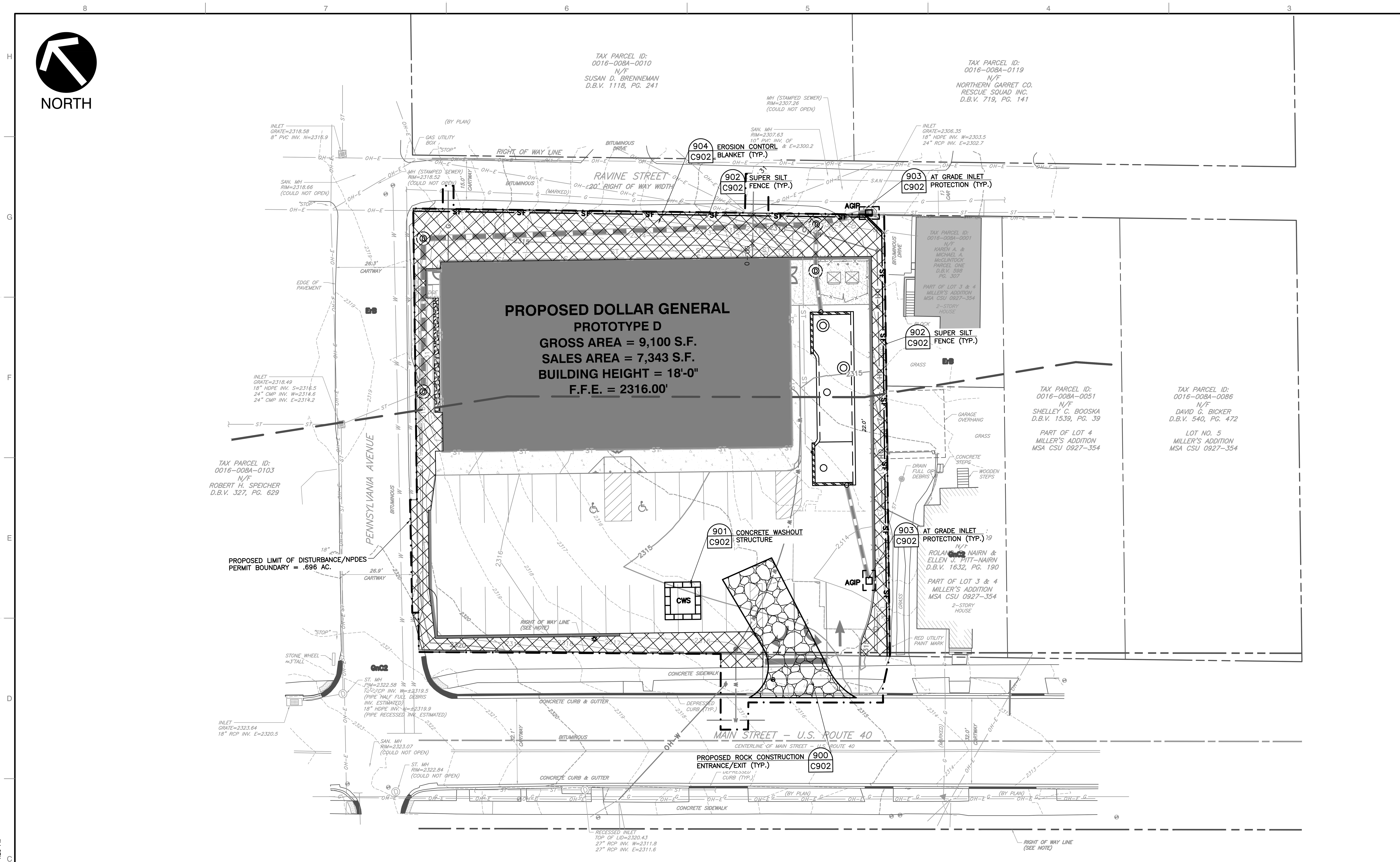
SITE CONSTRUCTION DETAILS

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:		CHECKED BY:	APW
PROJECT NO:			192-215
APPROVED BY:			*CJR

DRAWING NO.: C803
SHEET 13 OF 16



LEGEND

Symbol	Description
	EXISTING SUBJECT PROPERTY LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING RIGHT–OF–WAY
	EXISTING EASEMENT
	EXISTING SETBACK LINE
	EXISTING ROADWAY EDGE
	EXISTING ROADWAY EDGE
	EXISTING GRAVEL EDGE
OH–E	EXISTING OVERHEAD ELECTRIC LINE
ST	EXISTING STORM SEWER
W	EXISTING WATER LINE
G	EXISTING GAS LINE
SAN	EXISTING SANITARY SEWER LINE
	EXISTING FENCE
	EXISTING INLET
	EXISTING GAS VALVE
	EXISTING WATER VALVE
S	EXISTING SANITARY SEWER MANHOLE
	EXISTING ELECTRIC POLE
	PROPOSED CONCRETE WALK
	PROPOSED HEAVY DUTY CONCRETE PAVEMENT
	PROPOSED BUILDING
	PROPOSED PROPERTY LINE
	PROPOSED BUILDING SETBACK LINE
	PROPOSED ASPHALT WEDGE CURB
	PROPOSED PAVEMENT EDGE
	PROPOSED RETAINING WALL
	PROPOSED FENCE
	PROPOSED GUIDERAIL
	PROPOSED PAVEMENT MARKINGS
	PROPOSED SIGN
	PROPOSED PYLON SIGN
	PROPOSED BOLLARD
	PROPOSED SITE LIGHT POLE
1215	PROPOSED INDEX CONTOUR
1214	PROPOSED INTERMEDIATE CONTOUR
	PROPOSED STORM SEWER LINE
ST	PROPOSED STORM SEWER/FOUNDATION DRAIN
	PROPOSED STORM SEWER INLET
	PROPOSED CLEANOUT
	PROPOSED MANHOLE
SAN	PROPOSED SANITARY SEWER
W	PROPOSED WATER LINE
G	PROPOSED GAS LINE
OH–W	PROPOSED OVERHEAD ELECTRIC WIRE
	PROPOSED UTILITY POLE
	PROPOSED LIMIT OF DISTURBANCE
SF	PROPOSED SILT FENCE
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	PROPOSED EROSION CONTROL BLANKET
AGIP	PROPOSED INLET PROTECTION

SITE INFORMATION

TOTAL SITE AREA:	0.67 AC.
AREA OF DISTURBANCE:	0.696 AC
IMPERVIOUS AREA:	0.53 AC.
LIMIT OF 100–YEAR: FLOOD PLAIN	SITE IS NOT WITH 100–YEAR FLOOD PLAIN
WETLANDS:	NO WETLANDS ARE ON SITE
STOCK PILE/: BORROW PIT	NONE PROVIDED

SITE SOIL CLASSIFICATION TABLE

SYMBOL	SOIL TYPE
ErB	ERNEST SILT LOAM, 3 TO 8 PERCENT SLOPES, HYDROLOGIC SOIL GROUP D
GnC2	GILPIN CHANNERY SILT LOAM, 10 TO 20 PERCENT SLOPES, MODERATELY ERODED; HYDROLOGIC SOIL GROUP C

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE–DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

1. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
2. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

REQUIRED EROSION AND SEDIMENT CONTROL NOTES

1. 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.
2. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN ALL EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS PERMANENT STABILIZATION OF EXPOSED SOIL OCCURS.
3. 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 APRIL 15 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.
4. THE SITE'S APPROVED EROSION AND SEDIMENT CONTROL PLANS SHALL BE AVAILABLE AT THE SITE.
5. THE APPLICANT IS RESPONSIBLE FOR OBTAINING ANY OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATION WHICH MAY BE REQUIRED.

UTILITY CONSTRUCTION OUTSIDE SEDIMENT CONTROL PRACTICES

1. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON UPSLOPE SIDE OF TRENCH.
2. IMMEDIATELY FOLLOWING PIPE INSTALLATION, THE TRENCH SHALL BE BACKFILLED, COMPACTED AND IMMEDIATELY STABILIZED (MULCHED OR GRAVELED) AT THE END OF EACH WORKDAY.
3. ANY TRENCHING DONE WITHIN EXISTING DITCHES MAY REQUIRE A DITCH DESIGN INCLUDING APPROPRIATE LINING, MATTING, RIPRAP, ETC.
4. 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 22.)
5. THE CONTRACTOR SHALL DISTURB AND OPEN ONLY THE TRENCH REQUIRED TO ACCOMPLISH THE WORK DESIGNATED FOR EACH DAY.
6. ALL SEDIMENT AND EROSION CONTROL PRACTICES AND VEGETATIVE STABILIZATION SHALL BE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATION OF SOIL EROSION AND SEDIMENT CONTROL.

CONSTRUCTION SEQUENCE

1. MOBILIZE EQUIPMENT, CONSTRUCTION TRAILER, MATERIAL STORAGE BINS, ETC. ONSITE.
2. LAYOUT THE LIMITS OF THE SITE, ESTABLISH BENCHMARKS, AND REFERENCE POINTS. FLAG THE LIMIT OF DISTURBANCE. DO NOT DISTURB ANY TREES OR VEGETATION LOCATED OUTSIDE OF THOSE LIMITS, WHILE MINIMIZING THE DISTURBANCE OF ALL VEGETATION WITHIN.
3. INSTALL THE ROCK CONSTRUCTION ENTRANCE AND TEMPORARY CONCRETE WASHOUT FACILITY AT THE LOCATIONS SHOWN ON THE PLAN AND IN ACCORDANCE WITH THE STANDARD DETAILS.
4. PERFORM INITIAL CLEARING FOR INSTALLATION OF PERIMETER BMP'S.
5. INSTALL PERIMTER CONTROLS AND INLET PROTECTION IN INLET ALONG RAVINE STREET PER PLANS.
6. REMOVE TOPSOIL FROM THE REMAINING CONSTRUCTION AREA AND PLACE IN THE TOPSOIL STOCKPILE AREA.
7. BEGIN DEMOLITION OF EXISTING ONSITE STRUCTURES, STORM SEWER, UTILITIES, PAVEMENT, ETC AS PER THE PLAN.
8. INSTALL STORM SEWER RE–ROUTE FROM PENNSYLVANIA AVENUE (MANHOLE MH1.1) TO THE EXISTING INLET IN RAVINE STREET.
9. BEGIN ROUGH GRADING OF SITE. CONSTRUCT RETAINING WALLS AND IMPORT CLEAN STRUCTURAL FILL TO BRING SITE TO FINAL GRADE.
10. DURING EARTHMOVING AND WALL CONSTRUCTION, INSTALL REMAINING STORM SEWERS, STORM INLETS, MANHOLES, SANITARY SEWER LATERAL, OTHER UTILITIES, STORMWATER MANAGEMENT FACILITY, ETC. AS PER THE PLANS. EXCAVATE TRENCHES ONLY AS REQUIRED. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION, AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY. PLACE EXCAVATED MATERIAL ON THE UPSLOPE SIDE OF THE TRENCH. ANY ACCUMULATED WATER SHALL BE REMOVED BY PUMPING THROUGH A PUMPED WATER FILTER BAG. ON THE DAY FOLLOWING THE PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA SHALL BE GRADED TO FINAL SUBGRADE AND SEEDED AND MULCHED OR STABILIZED WITH STONE PER THE PERMANENT SEEDING SCHEDULE.
11. BEGIN CONSTRUCTING THE PROPOSED RETAIL BUILDING.
12. ALL SLOPES 3H:1V OR STEEPER THAT HAVE REACHED FINAL GRADE SHALL RECEIVE EROSION CONTROL BLANKETING IN ACCORDANCE WITH THE STANDARD DETAIL.
13. BEGIN FINE GRADING THE BUILDING'S SURROUNDING SIDEWALK, CONCRETE CURBS AND ADA AND LOADING RAMPS. FINE GRADE ALL PAVED AND OPEN SPACE AREAS AND INSTALL CURBS, SUBBASE, PAVING, AND ALL OTHER SITE RELATED ITEMS. SPREAD TOPSOIL, SEED AND MULCH OPEN SPACE AREAS WITHIN 24 HOURS OF COMPLETION.
14. BEGIN PAVING OPERATIONS. INSPECT AND REPLACE DAMAGED FILTER BAGS IN INLETS AFTER PAVING IS COMPLETED.
15. ONCE CONSTRUCTION IS COMPLETED, REMOVE ANY SEDIMENT THAT MAY HAVE ACCUMULATED IN THE PROPOSED STORM SEWER SYSTEM. REMOVE THE ROCK CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT FACILITY AND RE–ESTABLISH VEGETATIVE COVER IN THE DISTURBED AREA.
16. ONCE THE SITE HAS ACHIEVED A UNIFORM 70% PERENNIAL VEGETATIVE COVER AND IMPERVIOUS AREAS ARE STABILIZED, REMOVE THE COMPOST FILTER SOCKS AND ALL FILTER BAGS. DISPOSE OF ANY REMAINING SILT, COMPOST FILTER SOCKS, AND FILTER BAGS AT A STATE–APPROVED WASTE SITE. SEED ALL REMAINING DISTURBED AREAS ONCE GRADING IS COMPLETE OR WITHIN SEVEN (7) DAYS WHEN THE CONSTRUCTION HAS COMPLETED.

MISS UTILITY 811
1-800-257-7777 or 811
missutility.net

REFERENCE

1.) THE BASIS OF BEARING IS GRID NORTH DERIVED FROM POST PROCESSING METHODS USING THE NORTH AMERICAN DATUM OF 1983 (2011) STATE PLANE COORDINATES, MARYLAND ZONE 1900. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 ELEVATIONS BASED ON GEOID 2012B.

2.) FIELD SURVEY BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED 10/14/2019.

3.) THE UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES LOCATED HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES LOCATED ARE IN THE EXACT LOCATION INDICATED. THE MARYLAND MISS UTILITY TICKET NO. IS 19611307.

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE IN FEET: 0 20 40

*HAND SIGNATURE ON FILE

SUBMITTAL & REVISION RECORD

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161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

EROSION & SEDIMENT CONTROL PLAN

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	1"=20'	CHECKED BY:	APW
PROJECT NO:	192-215	APPROVED BY:	*CJR

DRAWING NO.: C900
SHEET 14 OF 16

TEMPORARY CONTROL MEASURES

THE E&S CONTROL FACILITIES FOR THE PROPOSED DOLLAR GENERAL STORE PROJECT ARE SHOWN ON THE E&S CONTROL PLAN. CONTROL MEASURES SHOWN ON THIS PLAN ARE MINIMUM CONTROLS TO PROTECT OFFSITE AREAS FROM SEDIMENT-LADEN RUNOFF. ADDITIONAL CONTROLS MAY BE REQUIRED DEPENDING ON THE PROGRESS OF CONSTRUCTION AND VARYING CONDITIONS ENCOUNTERED.

A. STABILIZED CONSTRUCTION ENTRANCE/EXIT

A ROCK CONSTRUCTION ENTRANCE WILL BE PROVIDED AT THE LOCATION SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE STANDARD DETAIL TO REMOVE SEDIMENT/MUD FROM VEHICLES BEFORE ENTERING CITY ROADS.

INSTALLATION: TO CONSTRUCT THE PAD, PLACE A LAYER OF GEOTEXTILE AND AN INITIAL 2 TO 3 INCHES OF STONE ACROSS THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. THE STONE PAD SHOULD BE AT LEAST 50 FEET IN LENGTH, 20 FEET IN WIDTH, AND 8 INCHES THICK. COMPLETE THE PLACEMENT OF STONE TO THE REQUIRED THICKNESS.

MAINTENANCE: THE STABILIZED CONSTRUCTION ENTRANCE MUST BE MAINTAINED IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. THIS MAY REQUIRE ADDING STONE OR MAKING OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN A CLEAN SURFACE, THE MOUNTABLE BERM, AND THE SPECIFIED DIMENSIONS. ALL STONE OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO THE ADJACENT ROADWAY MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING THE ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NO ACCEPTABLE UNLESS THE WAS WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

B. TEMPORARY VEGETATIVE STABILIZATION

INSTALLATION: FERTILIZING, SEEDING, AND MULCHING WILL BE USED AS A TEMPORARY E&S CONTROL MEASURE ON ALL NON-PAVED DISTURBED AREAS. EXPOSED SOILS, NOT SUBJECT TO CONSTRUCTION TRAFFIC, SHALL NOT REMAIN UNSEEDED OR UNCOVERED BY MULCH FOR MORE THAN 4 DAYS, INCLUDING STOCKPILED SOIL MATERIALS. WITH REGARD TO THE TEMPORARY SEED MIX, REFER TO THE SEEDING MIXTURE TABLE PROVIDED ON THE E&S CONTROL PLAN DETAIL SHEET. UNLESS THE OWNER'S REPRESENTATIVE DIRECTS OTHERWISE, VEGETATION SHALL BE ESTABLISHED AS FOLLOWS.

1. SOIL PLACEMENT: SOIL SHALL BE PLACED TO THE DESIGN THICKNESS AND GRADE AND TRACKED AND ROLLED INTO PLACE IN A MANNER THAT WILL NO CAUSE EXCESSIVE COMPACTION. IF SOIL DENSITY IS VERIFIED IN THE FIELD, SOIL SHALL BE COMPACTED TO A DRY DENSITY BETWEEN 75 AND 100 POUNDS PER CUBIC FOOT AFTER CORRECTION TO ZERO PERCENT COARSE FRAGMENT (PARTICLES LARGER THAN 2 MILLIMETERS) CONTENT.
2. SOIL TESTING AND SOIL AMENDMENT (LIME AND FERTILIZER) RATES: UNLESS SOIL TEST RESULTS AND RECOMMENDATIONS FROM THE STATE AGRICULTURAL EXTENSION SERVICE LABORATORY (MARYLAND SPECTRAL SERVICES, INC. [410-247-7600] OR EQUIVALENT SOIL TESTING LABORATORY) INDICATE OTHERWISE, EVENLY APPLY: 1) AGRICULTURAL GRADE GROUND LIMESTONE AT A RATE OF 6 TONS PER ACRE (CALCIUM CARBONATE EQUIVALENT BASIS); 2) FERTILIZERS TO SUPPLY 100-200-200 POUNDS PER ACRE N-P_2O_5-K_20 (EXAMPLE: 10-20-20 FERTILIZER AT A RATE OF 1000 POUNDS PER ACRE); AND 3) "BIOPAK" MICROBIAL SOIL INOCULANT (DISTRIBUTED BY PLANT HEALTH CARE, INC. [WWW.PLANTHEALTHCARE.COM OR 800-421-9051]). IF APPROVED PASTEURIZED PELLETIZED POULTRY MANURE (PASTEURIZED PPM) WITH AN ANALYSIS OF AT LEAST 4-2-3 (PERCENT N-P_2O_5-K_20) IS USED, IT WILL BE ASSUMED THAT ONE TON MANURE WILL SUBSTITUTE FOR 60-40-60 POUNDS N-P_2O_5-K_20 AVAILABLE IN THE FIRST YEAR. A PRE-APPROVED SOURCE OF PASTEURIZED PPM IS "MICRO-START 60" AS MANUFACTURED BY PERDUE AGRIRECYCLE, LLC (WWW.MICROSTART60.COM OR 302-628-2360).
3. SOIL AMENDMENT INCORPORATION: PROMPTLY TILL UNDER THE LIME AND FERTILIZER TO A DEPTH OF 2 TO 4 INCHES USING A DISK, HARROW, PLOW, ROTOTILLER OR OTHER SUITABLE EQUIPMENT. IF LIME REQUIREMENTS ARE LESS THAN 4 TONS PER ACRE OR SLOPES ARE TOO STEEP TO PERMIT SAFE TILLAGE, THE SOIL AMENDMENTS CAN BE MIXED INTO A HYDROMULCH SLURRY OR CAN BE TRACKED IN WITH A DOZER IN LIEU OF INCORPORATION. IF TRACKING THE SITE WITH A DOZER, TRACK IN A MANNER THAT LEAVES CLEAT MARKS PARALLEL TO SITE CONTOURS.
4. TEMPORARY SEEDING THAT WILL NOT BE FOLLOWED BY PERMANENT SEEDING, SUCH AS TOPSOIL STOCKPILES OR INTERIM GRADING PATTERNS, DOES NOT REQUIRE THE APPLICATION OF SLOW RELEASE FERTILIZER OR "BIOPAK" INOCULANT.
5. SEEDBED PREPARATION: JUST BEFORE SEEDING, PREPARE SEEDBED BY TRACKING, RAKING, OR OTHER APPROPRIATE METHOD AS NECESSARY TO BREAK UP SOIL CRUSTS. IF TRACKING THE SITE WITH A DOZER, TRACK IN A MANNER THAT LEAVES CLEAT MARKS PARALLEL TO SITE CONTOURS.
6. SEEDING: EVENLY APPLY THE TEMPORARY SEED MIXTURES USING HYDROSEEDING, BROADCAST, OR DRILL SEEDING METHODS THAT PLANT SEED LESS THAN ONE-QUARTER INCH BELOW THE GROUND SURFACE. APPLY LEGUME SEED INOCULANTS SPECIFICALLY MADE FOR THE LEGUME SEED TYPE BEING APPLIED AT FIVE TIMES THE MANUFACTURER'S RECOMMENDED RATE. USE NO SEED OR INOCULANT THAT HAS BEEN IMPROPERLY STORED OR EXPIRED, OR SEED OLDER THAN 9 MONTHS FROM THE SEED TEST DATE. IF HYDROSEEDING METHODS ARE USED, SEED, INOCULANTS, FERTILIZERS, AND POLYMER TACKIFIER/SOIL STABILIZER (BELOW) MAY BE APPLIED IN ONE APPLICATION, PROVIDED THAT SEED AND INOCULANTS ARE NOT HELD IN A SLURRY WITH FERTILIZERS FOR MORE THAN ONE HOUR.
7. MULCHING AND TACKING: PROMPTLY AFTER SEEDING, MULCH USING EITHER 1) "CURLEX" OR EQUIVALENT BRAND OF WOOD EXCELSIOR EROSION CONTROL BLANKET; 2) SYNTHETIC INDUSTRIES "TRM 450" OR NORTH AMERICAN GREEN "P-300" TURF REINFORCEMENT MAT; 3) STRAW APPLIED AT A RATE OF 6,000 POUNDS PER ACRE; OR 4) WOOD/CELLULOSE FIBER HYDROMULCH APPLIED WITH A HYDROSEEDER AT A RATE OF 3,000 POUNDS PER ACRE. WOOD/CELLULOSE FIBER HYDROMULCH MUST CONTAIN AT LEAST 50% VIRGIN WOOD FIBER. IF AT LEAST 1,000 POUNDS PER ACRE APPROVED PASTEURIZED PPM IS BEING APPLIED WITH A HYDROSEEDER, WOOD/CELLULOSE FIBER HYDROMULCH RATES MAY BE REDUCED TO 2,500 POUNDS PER ACRE.

IN SOME LOCATIONS SHOWN ON THE DRAWINGS, SUCH AS SLOPES STEEPER THAN 3:1 (H:V), EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT (TRM) MAY BE THE ONLY PERMISSIBLE MULCHING OPTION. INSTALL EROSION CONTROL BLANKETS/TRM PER MANUFACTURER'S INSTRUCTIONS. STAPLE BLANKET/TRM IN PLACE USING 6-INCH (MINIMUM) SOD STAPLES IN ROWS AT THE EDGES AND CENTERLINE OF THE BLANKET AND ON 24-INCH OR CLOSER CENTERS.

TACK STRAW IN PLACE USING EITHER: 1) A CRIMPER DISK; 2) WOOD/CELLULOSE FIBER HYDROMULCH APPLIED OVER THE STRAW AT A RATE OF 800 TO 1,000 POUNDS PER ACRE; OR 3) WATER SOLUBLE LINEAR POLYACRYLATE (SODIUM ACRYLATE/ACRYLAMIDE) COPOLYMER "POLYMER" AT A RATE OF AT LEAST 8 POUNDS PER ACRE APPLIED IN MIXTURE WITH WATER OVER THE STRAW. APPROVED POLYMER BRANDS INCLUDE "WATERSORB™ PAM" OR "HYDROPAM™" DISTRIBUTED BY POLYMERS, INC. (WWW.WATERSORB.COM OR 501-623-9995), "TERRAPAM™" DISTRIBUTED BY PLANT HEALTH CARE, INC. (WWW.PLANTHEALTHCARE.COM OR 800-421-9051), AND "HYDROGEL B™" DISTRIBUTED BY FINN CORPORATION (WWW.FINNCORP.COM OR 800-543-7166).

TACK WOOD/CELLULOSE FIBER HYDROMULCH IN PLACE USING "POLYMER" SPECIFIED ABOVE AT A RATE OF AT LEAST 4 POUNDS PER ACRE APPLIED IN A SLURRY WITH THE HYDROMULCH.

MAINTENANCE: WATER AS NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION. IN MOWED AREAS, MOW TO MAINTAIN GRASS HEIGHT BETWEEN 4 AND 6 INCHES TALL FOR FIRST TWO MONTHS OF GROWTH DURING THE ESTABLISHMENT YEAR, AND TO THE DESIRED HEIGHT THEREAFTER. IF STRING TRIMMERS ARE USED, TAKE MEASURES TO AVOID DAMAGE TO BARK OF TREES AND SHRUBS.

C. COMPOST FILTER SOCK

THE COMPOST FILTER SOCK AS MANUFACTURED BY FILTREXX, OR EQUIVALENT SHALL BE USED IN THE LOCATIONS INDICATED ON THE PLAN. REFER TO TABLE 4.1 AND TABLE 4.2, SHEET C903, FOR COMPOST STANDARDS.

INSTALLATION:
1. PLACE COMPOST FILTER SOCKS WHERE INDICATED AT LEVEL GRADE ALONG CONTOURS, PERPENDICULAR TO THE DIRECTION OF WATER FLOW. EXTEND BOTH ENDS AT LEAST 8' UP THE SLOPE AT 45 DEGREES TO MAIN SOCK ALIGNMENT.
2. USE WOODEN STAKES TO SECURE THE FILTER SOCKS. WOODEN STAKES MUST BE 2-INCHES BY 2-INCHES AND OF SUFFICIENT LENGTH THAT STAKES WILL BE EMBEDDED A MINIMUM 12-INCHES INTO THE SOIL AND BE EXPOSED 3-INCHES OUT OF THE FILTER SOCK. DRIVE THE STAKES THROUGH THE FILTER SOCK LEAVING NO MORE THAN 3 TO 4 INCHES OF THE STAKE OR PIN EXPOSED. PLACE STAKES EVERY 10 FEET. ADDITIONAL STAKES MAY BE REQUIRED.
3. WHEN MORE THAN ONE LENGTH OF FILTER SOCK IS USED, OVERLAP ENDS A MINIMUM OF 24-INCHES.
4. BACKFILL ALONG UPSLOPE SIDE OF FILTER SOCKS WITH LOOSE COMPOST, FILLING THE SEAM BETWEEN THE SOIL SURFACE AND FILTER SOCK.

MAINTENANCE: ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24-HOURS OF INSPECTION. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

D. STORM SEWER INLET PROTECTION

CURB AND GRATED INLETS ARE PROTECTED FROM THE INTRUSION OF SEDIMENT THROUGH A VARIETY OF MEASURES AS SHOWN ON THE DETAILS INCLUDED IN THE CONSTRUCTION DRAWINGS. THE PRIMARY MECHANISM IS TO PLACE CONTROLS IN THE PATH OF FLOW SUFFICIENT TO SLOW THE SEDIMENT-LADEN WATER TO ALLOW SETTLEMENT OF SUSPENDED SOILS BEFORE DISCHARGING INTO THE STORM SEWER. IT IS POSSIBLE THAT AS CONSTRUCTION PROGRESSES FROM STORM SEWER INSTALLATION THROUGH TO PAVING THAT THE INLET PROTECTION DEVICES WILL CHANGE.

INSTALLATION: THE INLET PROTECTION SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS AND IN ACCORDANCE WITH MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL.

MAINTENANCE: STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING, ACCUMULATED SEDIMENT NEEDS TO BE REMOVED AFTER EACH RAIN EVENT. IF THE INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE THE GEOTEXTILE AND STONE.

E. EROSION CONTROL BLANKET

NORTH AMERICAN GREEN SC150BN OR APPROVED EQUIVALENT EROSION CONTROL BLANKET WILL BE USED TO PREVENT EROSION FROM THE GRADING OPERATIONS AND INSTALLED ON PERMANENT SLOPES. THE EROSION CONTROL BLANKETS WILL PROVIDE EROSION PROTECTION AND ASSIST WITH VEGETATION ESTABLISHMENT FOR UP TO 12 MONTHS. AFTER A 12 MONTH PERIOD THE BLANKETS WILL BIODEGRADE LEAVING A STABLE VEGETATED ROOT STRUCTURE.

INSTALLATION:
1. PREPARE SOIL ON ALL ESTABLISHED TEMPORARY AND PERMANENT SLOPE AND ANY NECESSARY APPLICATION OF FERTILIZER AND SEED. SEE THE SEED MIXTURE TABLE LOCATED ON THE E&S CONTROL PLAN NOTES SHEET BEFORE INSTALLING EROSION CONTROL BLANKET.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE EROSION CONTROL BLANKET IN A 4 INCH BY 6 INCH WIDE TRENCH WITH APPROXIMATELY 12 INCHES OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12 INCH PORTION OF THE EROSION CONTROL BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED APPROXIMATELY 12 INCHES APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE EROSION CONTROL BLANKET DOWN THE SLOPE. BLANKET WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.
4. THE EDGE OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2 TO 5 INCH OVERLAP.

MAINTENANCE: THE EROSION CONTROL BLANKETS SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL EVENT TO LOOK FOR SCOUR/WASHOUT AREAS. ANY SCOURED AREAS SHALL BE FIXED IMMEDIATELY BY COMPACTING SOIL IN THE WASHOUT AREA AND PLACING SEED. ANY DAMAGED EROSION CONTROL BLANKETS SHALL BE REPLACED IMMEDIATELY. BLANKETS SHALL BE MAINTAINED UNTIL A UNIFORM 70% PERENNIAL VEGETATION HAS BEEN ESTABLISHED.

F. CONSTRUCTION WASTE RECYCLING/DISPOSAL

CONSTRUCTION WASTES ARE REFUSE MATERIALS THAT ARE EXISTING ON-SITE OR GENERATED DURING THE COURSE OF CONSTRUCTION AND INCLUDE, BUT ARE NOT LIMITED TO, PAPER, PLASTIC, RUBBER, WOOD, TEXTILE, AND METAL PRODUCTS.

INSTALLATION: THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING WASTE RECYCLING/DISPOSAL AREAS ON THE E&S PLAN ONCE THEY HAVE BEEN DETERMINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL WASTE RECYCLING/DISPOSAL PERMITS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

MAINTENANCE: ALL CONSTRUCTION WASTE SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF AT A STATE-APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL/STATE CODES AND PERMIT REQUIREMENTS. THE BURNING OF WASTE MATERIALS WILL NOT BE PERMITTED.

G. PUMPED WATER FILTER BAGS

FILTER BAGS MAY BE USED TO FILTER WATER PUMPED FROM DISTURBED AREAS PRIOR TO DISCHARGING TO WATERS OF THE COMMONWEALTH. THEY MAY ALSO BE USED TO FILTER WATER PUMPED FROM THE SEDIMENT STORAGE AREAS OF SEDIMENT BASINS.

INSTALLATION: FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH-STRENGTH, DOUBLE-STITCHED "J"-TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME HALF FULL. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.

BAGS SHALL BE LOCATED IN WELL VEGETATED (GRASSY) AREAS AND DISCHARGE ONTO STABLE EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH SHALL BE PROVIDED. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ONE-HALF THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

MAINTENANCE: PUMP AND FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY, AND SHALL NOT RESUME UNTIL THE PROBLEM IS CORRECTED. SEDIMENT REMOVED FROM THE FILTER BAG SHALL BE SPREAD ONSITE UPSTREAM FROM ESTABLISHED SEDIMENT CONTROLS, AND ALLOWED TO DRY. ONCE DRY, THE SEDIMENT MAY BE INCORPORATED ONSITE AS PART OF THE FILL.

H. SUPER SILT FENCE

SUPER SILT FENCE SHALL BE PROVIDED TO INTERCEPT SEDIMENT-LADEN SHEET FLOW RUNOFF ALLOWING THE DEPOSITION OF SEDIMENT TRANSPORTED FROM UPSLOPE.

INSTALLATION: THE SUPER SILT FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS AND IN ACCORDANCE WITH MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL.

MAINTENANCE: ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED WHEN BULGES DEVELOP IN THE FENCE OR WHEN SEDIMENT REACHES 25 PERCENT OF THE FENCE HEIGHT. THE GEOTEXTILE MUST BE REPLACED IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE..

BMP MAINTENANCE EROSION NOTES

IN ORDER TO ENSURE EFFECTIVE AND EFFICIENT OPERATION OF BMPS, ALL TEMPORARY RUNOFF E&S CONTROLS SHALL BE INSPECTED AT LEAST AT THE BEGINNING AND END OF EACH DAY AND AFTER EACH STORMWATER EVENT. ANY DAMAGED CONTROLS SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF IDENTIFICATION OF THE DEFICIENCY. THE CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE AND INSPECTIONS, AND SHALL MAINTAIN RECORDS OF ALL SUCH ACTIVITIES. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR OR REPLACEMENT AND MAINTENANCE ACTIVITIES SHALL BE LOGGED ONTO PADEP FORM 3800-FM-BCW0271D, DATED 05/2018 AND BE KEPT ONSITE AT ALL TIMES.

ALL MEASURES STATES ON THE SITE MAP, AND IN THE POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONING CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT. WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
2. ALL SEEDED AREA SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
3. THE CONSTRUCTION EXITS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY.
4. THE TEMPORARY PARKING AND STORAGE AREAS SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
5. PRIOR TO LEAVING THE SITE, ALL VEHICLES SHALL BE CLEANED OF DEBRIS. ANY DEBRIS AND/OR SEDIMENT REACHING THE PUBLIC STREET SHALL BE CLEANED IMMEDIATELY BY A METHOD OTHER THAN FLUSHING.
6. ALL SEDIMENT REMOVED FROM EROSION CONTROL DEVICES LOCATED AROUND THE SITE SHALL BE DISPOSED OF EVENLY AMONG THE SITE. ONCE A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED AND THE TEMPORARY E&S CONTROLS ARE REMOVED, ALL ACCUMULATED SEDIMENT WILL BE DISPOSED OF AT A PADEP APPROVED FACILITY.

PERMANENT CONTROL MEASURES

A. PERMANENT VEGETATIVE STABILIZATION

INSTALLATION: FERTILIZING, SEEDING, AND MULCHING WILL BE USED AS A PERMANENT E&S CONTROL MEASURE ON ALL NON-PAVED DISTURBED AREAS. WITH REGARD TO THE PERMANENT SEED MIX, REFER TO THE SEEDING MIXTURE TABLE PROVIDED IN THE E&S CONTROL PLAN NOTES SHEET. UNLESS THE OWNER'S REPRESENTATIVE DIRECTS OTHERWISE, VEGETATION SHALL BE ESTABLISHED AS FOLLOWS:

1. SOIL PLACEMENT: SOIL SHALL BE PLACED TO THE DESIGN THICKNESS AND GRADE AND TRACKED AND ROLLED INTO PLACE IN A MANNER THAT WILL NOT CAUSE EXCESSIVE COMPACTION. IF SOIL DENSITY IS VERIFIED IN THE FIELD, SOIL SHALL BE COMPACTED TO A DRY DENSITY BETWEEN 75 AND 100 POUNDS PER CUBIC FOOT AFTER CORRECTION TO ZERO PERCENT COARSE FRAGMENT (PARTICLES LARGER THAN 2 MILLIMETERS) CONTENT.

2. SOIL TESTING AND SOIL AMENDMENT (LIME AND FERTILIZER) RATES: UNLESS SOIL TEST RESULTS AND RECOMMENDATIONS FROM THE STATE AGRICULTURAL EXTENSION SERVICE LABORATORY (MARYLAND SPECTRAL SERVICES, INC. [410-247-7600] OR EQUIVALENT SOIL TESTING LABORATORY) INDICATE OTHERWISE, EVENLY APPLY: 1) AGRICULTURAL GRADE GROUND LIMESTONE AT A RATE OF 6 TONS PER ACRE (CALCIUM CARBONATE EQUIVALENT BASIS); 2) FERTILIZERS TO SUPPLY 100-200-200 POUNDS PER ACRE N-P_2O_5-K_20 (EXAMPLE: 10-20-20 FERTILIZER AT A RATE OF 1000 POUNDS PER ACRE); AND 3) "BIOPAK" MICROBIAL SOIL INOCULANT (DISTRIBUTED BY PLANT HEALTH CARE, INC. [WWW.PLANTHEALTHCARE.COM OR 800-421-9051]). IF APPROVED PASTEURIZED PELLETIZED POULTRY MANURE (PASTEURIZED PPM) WITH AN ANALYSIS OF AT LEAST 4-2-3 (PERCENT N-P_2O_5-K_20) IS USED, IT WILL BE ASSUMED THAT ONE TON MANURE WILL SUBSTITUTE FOR 60-40-60 POUNDS N-P_2O_5-K_20 AVAILABLE IN THE FIRST YEAR. A PRE-APPROVED SOURCE OF PASTEURIZED PPM IS "MICRO-START 60" AS MANUFACTURED BY PERDUE AGRIRECYCLE, LLC (WWW.MICROSTART60.COM <HTTP://WWW.MICROSTART60.COM> OR 302-628-2360).

3. SOIL AMENDMENT INCORPORATION: PROMPTLY TILL UNDER THE LIME AND FERTILIZER TO A DEPTH OF 2 TO 4 INCHES USING A DISK, HARROW, PLOW, ROTOTILLER OR OTHER SUITABLE EQUIPMENT. IF LIME REQUIREMENTS ARE LESS THAN 4 TONS PER ACRE OR SLOPES ARE TOO STEEP TO PERMIT SAFE TILLAGE, THE SOIL AMENDMENTS CAN BE MIXED INTO A HYDROMULCH SLURRY OR CAN BE TRACKED IN WITH A DOZER IN LIEU OF INCORPORATION. IF TRACKING THE SITE WITH A DOZER, TRACK IN A MANNER THAT LEAVES CLEAT MARKS PARALLEL TO SITE CONTOURS.

4. SEEDBED PREPARATION: JUST BEFORE SEEDING, PREPARE SEEDBED BY TRACKING, RAKING, OR OTHER APPROPRIATE METHOD AS NECESSARY TO BREAK UP SOIL CRUSTS. IF TRACKING THE SITE WITH A DOZER, TRACK IN A MANNER THAT LEAVES CLEAT MARKS PARALLEL TO SITE CONTOURS.

5. SEEDING: EVENLY APPLY THE PERMANENT SEED MIXTURES USING HYDROSEEDING, BROADCAST, OR DRILL SEEDING METHODS THAT PLANT SEED LESS THAN ONE-QUARTER INCH BELOW THE GROUND SURFACE: APPLY LEGUME SEED INOCULANTS SPECIFICALLY MADE FOR THE LEGUME SEED TYPE BEING APPLIED AT FIVE TIMES THE MANUFACTURER'S RECOMMENDED RATE. USE NO SEED OR INOCULANT THAT HAS BEEN IMPROPERLY STORED, EXPIRED, OR SEED OLDER THAN 9 MONTHS FROM THE SEED TEST DATE. IF HYDROSEEDING METHODS ARE USED SEED, INOCULANTS, FERTILIZERS, AND POLYMER TACKIFIER/SOIL STABILIZER (BELOW) MAY BE APPLIED IN ONE APPLICATION, PROVIDED THAT SEED AND INOCULANTS ARE NOT HELD IN A SLURRY WITH FERTILIZERS FOR MORE THAN ONE HOUR.

6. MULCHING AND TACKING: PROMPTLY AFTER SEEDING, MULCH USING EITHER: 1) "CURLEX" OR EQUIVALENT BRAND OF WOOD EXCELSIOR EROSION CONTROL BLANKET OR NORTH AMERICAN GREEN S150BN EROSION CONTROL BLANKET; 2) SYNTHETIC INDUSTRIES "TRM 450" OR NORTH AMERICAN GREEN "P-300" TURF REINFORCEMENT MAT; 3) STRAW APPLIED AT A RATE OF 6,000 POUNDS PER ACRE; OR 4) WOOD/CELLULOSE FIBER HYDROMULCH APPLIED WITH A HYDROSEEDER AT A RATE OF 3,000 POUNDS PER ACRE.

WOOD/CELLULOSE FIBER HYDROMULCH MUST CONTAIN AT LEAST 50% VIRGIN WOOD FIBER. IF AT LEAST 1,000 POUNDS PER ACRE APPROVED PASTEURIZED PPM IS BEING APPLIED WITH A HYDROSEEDER, WOOD/CELLULOSE FIBER HYDROMULCH RATES MAY BE REDUCED TO 2,500 POUNDS PER ACRE.

7. IN SOME LOCATIONS SHOWN ON THE DRAWINGS, SUCH AS SLOPES STEEPER THAN 3:1 (H:V), EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT (TRM) MAY BE THE ONLY PERMISSIBLE MULCHING OPTION. INSTALL EROSION CONTROL BLANKETS/TRM PER MANUFACTURER'S INSTRUCTIONS. STAPLE BLANKET/TRM IN PLACE USING 6-INCH (MINIMUM) SOD STAPLES IN ROWS AT THE EDGES AND CENTERLINE OF THE BLANKET AND ON 24-INCH OR CLOSER CENTERS.

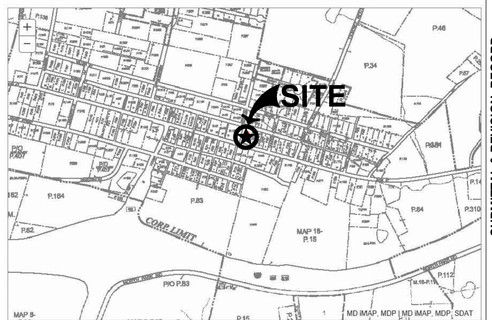
TACK STRAW IN PLACE USING EITHER: 1) A CRIMPER DISK; 2) WOOD/CELLULOSE FIBER HYDROMULCH APPLIED OVER THE STRAW AT A RATE OF 800-1,000 POUNDS PER ACRE; OR 3) WATER SOLUBLE LINEAR POLYACRYLATE (SODIUM ACRYLATE/ACRYLAMIDE) COPOLYMER "POLYMER" AT A RATE OF AT LEAST 8 POUNDS PER ACRE APPLIED IN MIXTURE WITH WATER OVER THE STRAW. APPROVED POLYMER BRANDS INCLUDE "WATERSORB PAM" OR "HYDROPAM" DISTRIBUTED BY POLYMERS, INC. (WWW.WATERSORB.COM OR 501-623-9995), "TERRAPAM" DISTRIBUTED BY PLANT HEALTH CARE, INC. (WWW.PLANTHEALTHCARE.COM OR 800-421-9051), AND "HYDROGEL B" DISTRIBUTED BY FINN CORPORATION (WWW.FINNCORP.COM OR 800-543-7166).

TACK WOOD/CELLULOSE FIBER HYDROMULCH IN PLACE USING "POLYMER" SPECIFIED ABOVE AT A RATE OF AT LEAST 4 POUNDS PER ACRE APPLIED IN A SLURRY WITH THE HYDROMULCH.

8. OVERSEEDING AND RESEEDING: WHEN THE SITE DEVELOPMENT STAGING OR SEASON WILL NOT PERMIT TIMELY SOWING OF THE PERMANENT SEED MIXTURE(S), PREPARE SOILS (FERTILIZERS AND LIME) AS FOR PERMANENT SEEDING, THEN SEED WITH TEMPORARY SEED MIXTURE AND MULCH, THEN OVERSOW THE PERENNIAL SEED MIXTURE INTO THE STUBBLE OF TEMPORARY VEGETATION AT THE NEXT APPROPRIATE SEEDING SEASON.

IF PERENNIAL SEED IS BEING SOWN INTO THE STUBBLE OF ACTIVELY GROWING TEMPORARY VEGETATION, MOW THE TEMPORARY VEGETATION TO REDUCE COMPETITION EITHER BEFORE OR IMMEDIATELY AFTER SOWING THE PERMANENT SEED.

MAINTENANCE: WATER AS NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION. IN MOWED AREAS, MOW TO MAINTAIN GRASS HEIGHT BETWEEN 4 AND 6 INCHES TALL FOR FIRST TWO MONTHS OF GROWTH DURING THE ESTABLISHMENT YEAR, AND TO THE DESIRED HEIGHT THEREAFTER. IF STRING TRIMMERS ARE USED, TAKE MEASURES TO AVOID DAMAGE TO BARK OF TREES AND SHRUBS.



VICINITY MAP

REFERENCE

1. GARRETT COUNTY, MD TAX MAP

PRELIMINARY
NOT FOR CONSTRUCTION

*HAND SIGNATURE ON FILE

STEPHEN H. DONALDSON
No. 18460

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT/ STORMWATER/ LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

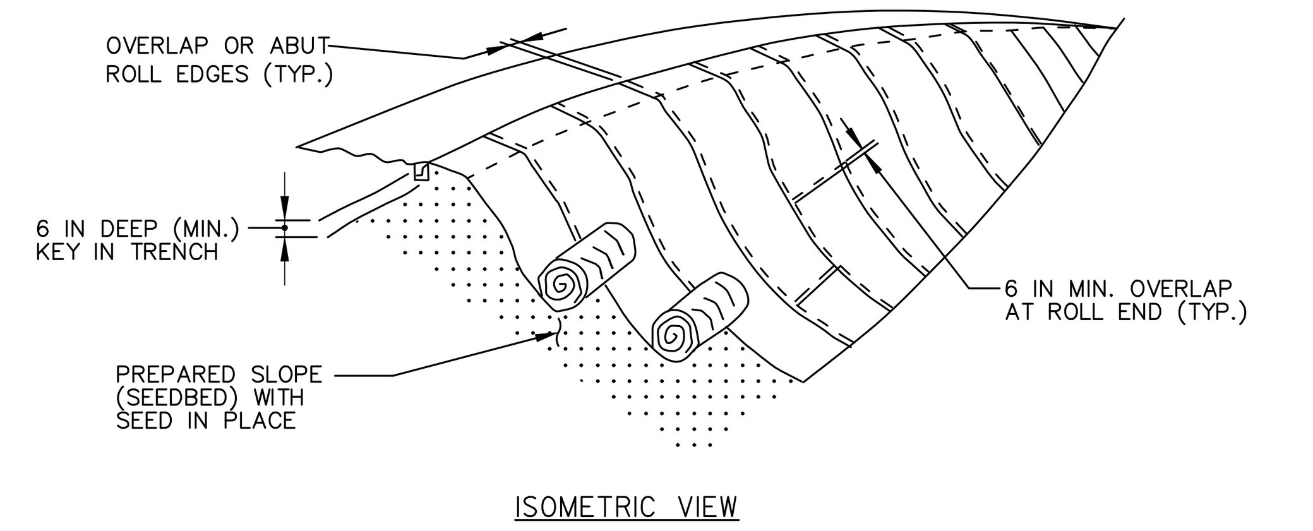
EROSION & SEDIMENT CONTROL NOTES

DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	AS SHOWN	CHECKED BY:	APW
PROJECT NO:			192-215
APPROVED BY:			*CJR

DRAWING NO.:
C901
SHEET 15 OF 16

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS – * lb/ft² (* INCLUDE SHEAR STRESS)



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

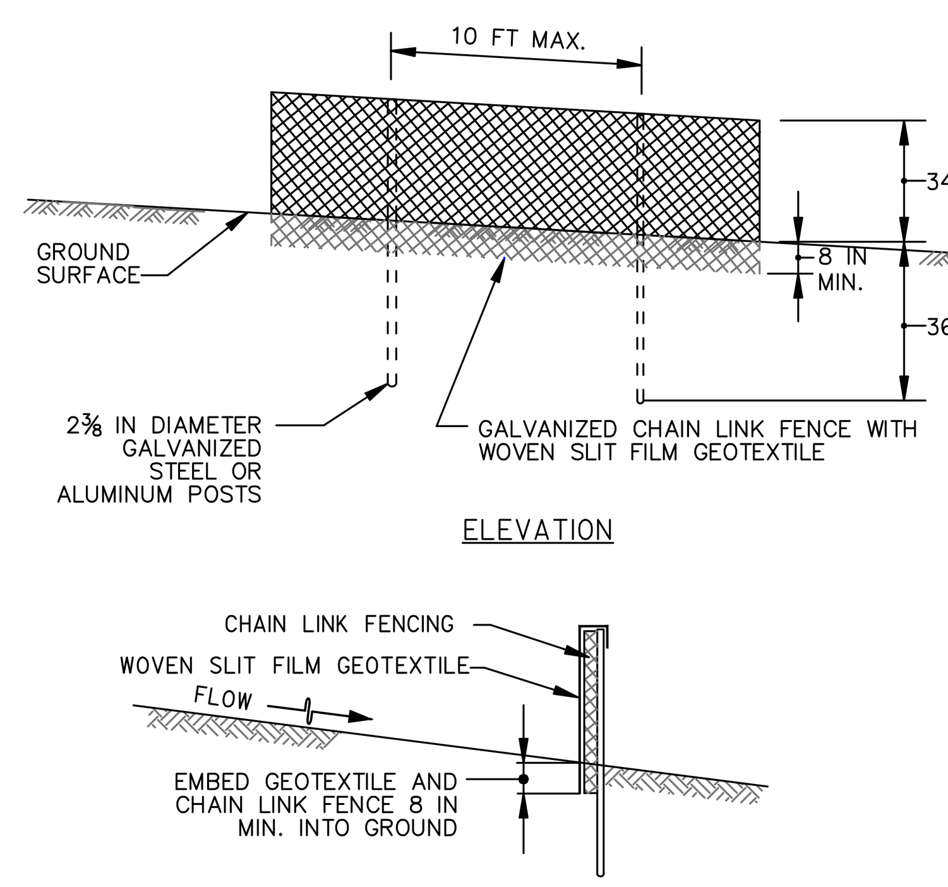
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL 904
TEMPORARY SOIL STABILIZATION MATTING
N.T.S.

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

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

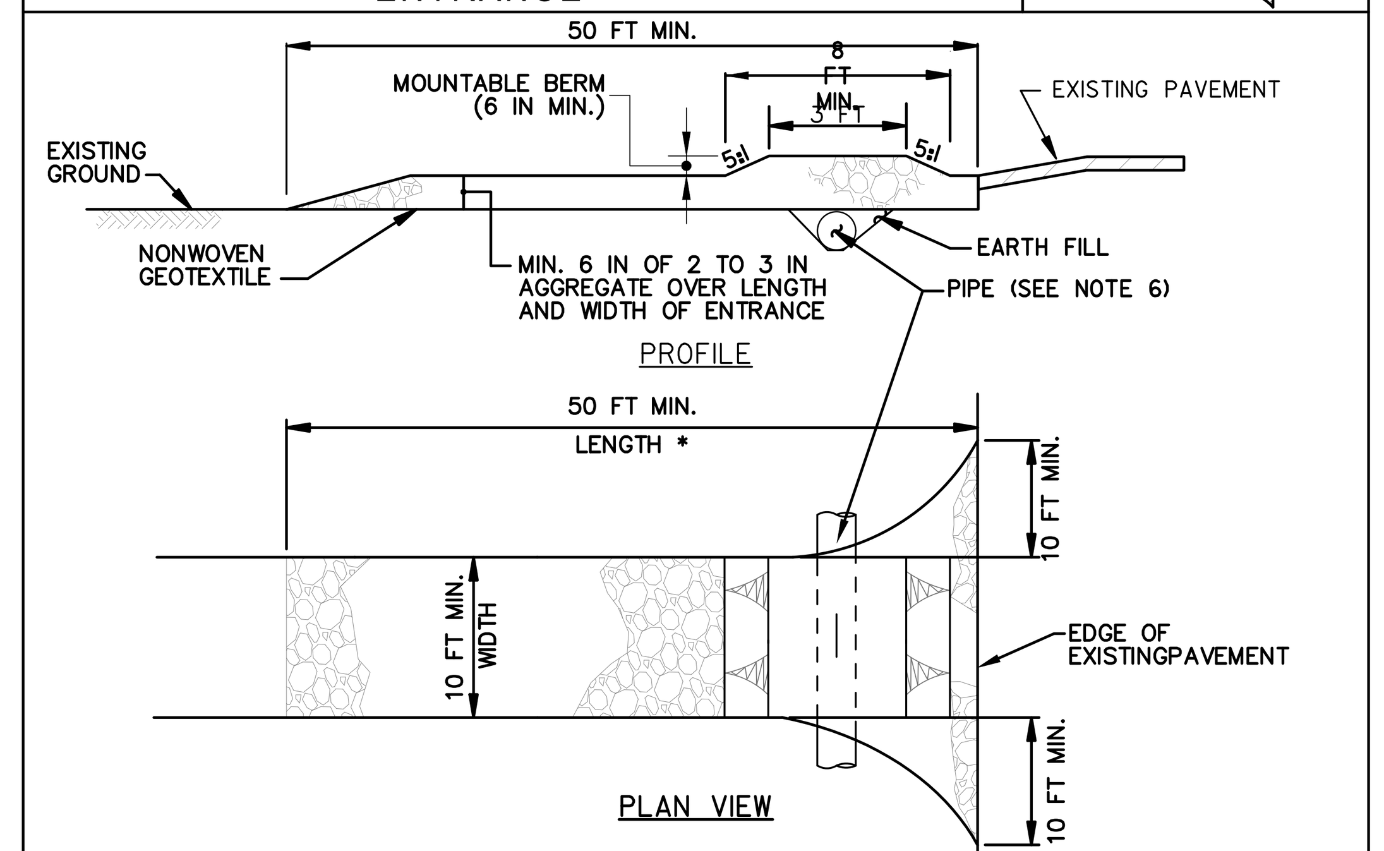
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL 902
SUPER SILT FENCE
N.T.S.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL 900
ROCK CONSTRUCTION ENTRANCE/EXIT
N.T.S.

SEED MIXTURE

TABLE 1: MOWED PERMANENT SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	MINIMUM PURITY (%)	MINIMUM GERMINATION (%)	SEEDING RATE (lbs/1,000 SF)	SEEDING RATE (lbs/ACRE)
Lolium perenne	Perennial Ryegrass (A mixture of at least 2 fine-leaf, turf-type varieties)	98	80	1.2	52
Festuca rubra	Red Fescue (Pennlawn)	98	85	2.4	105
Poa pratensis	Kentucky Bluegrass (Mix at least 4 named varieties)	98	80	2.4	105

NOTE:

1. APPLY ALL OF THE MIXTURE COMPONENTS AS LISTED IN THE ABOVE TABLES.
2. APPLY SEED MIXTURE BETWEEN APRIL 1 AND MAY 30, OR BETWEEN SEPTEMBER 1 AND OCTOBER 1. IF THESE DATES CANNOT BE OBSERVED, APPLY APPROPRIATE TEMPORARY SEEDING MIXTURE.

TABLE 2: NON-MOWED SLOPE SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	MINIMUM HARDSEED (%)	MINIMUM PURITY (%)	MINIMUM GERMINATION (%)	SEEDING RATE (lbs/1,000 SF)	SEEDING RATE (lbs/ACRE)
Lolium perenne	Perennial Ryegrass (A mixture of at least 2 fine-leaf, turf-type varieties)	N/A	98	80	0.8	35
Festuca rubra	Red Fescue (Pennlawn)	N/A	98	85	0.8	35
Lotus corniculatus	Birdsfoot Trifoil ('Viking')	20	98	80	0.7	30

IN ADDITION AND DEPENDING ON THE SEASON AND SEED AVAILABILITY, ADD ONE OF THE FOLLOWING NURSE CROPS:

Avena sativa	Oats: April 1 to Sept 1	N/A	98	85	1.5	64
Secale cereale	Winter Rye: April 1 to Oct 1	N/A	98	85	1.3	56
Secale cereale	Winter Rye: Oct 1 to April 1	N/A	98	85	2.6	112

NOTE:

1. APPLY ALL OF THE MIXTURE COMPONENTS AS LISTED IN THE ABOVE TABLES.
2. APPLY SEED MIXTURE BETWEEN APRIL 1 AND MAY 30, OR BETWEEN SEPTEMBER 1 AND OCTOBER 1. IF THESE DATES CANNOT BE OBSERVED, APPLY APPROPRIATE TEMPORARY SEEDING MIXTURE.

TABLE 3: TEMPORARY SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	MINIMUM PURITY (%)	MINIMUM GERMINATION (%)	SEEDING RATE (lbs/1,000 SF)	SEEDING RATE (lbs/ACRE)
Avena sativa	Oats: April 1 to Sept 1	98	85	2.2	96
OR Secale cereale	Winter Rye: April 1 to Oct 1	98	85	2.6	112

NOTE:

1. APPLY ONE OF THE ABOVE SPECIES WITHIN THE TIME FRAME PRESCRIBED.
2. IF SEEDING AFTER OCTOBER 30, INCREASE STRAW MULCH RATE TO FOUR (4) TONS PER ACRE.

TABLE 4: SOIL AMENDMENT APPLICATION RATE EQUIVALENTS

SOIL AMENDMENT	PERMANENT SEEDING APPLICATION RATE: PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	NOTES
AGRICULTURAL LIME	6 TONS	240 LB.	2,480 LB.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
10-10-20 FERTILIZER	1,000 LB.	25 LB.	210 LB.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
	TEMPORARY SEEDING APPLICATION RATE			
AGRICULTURAL LIME	1 TON	40 LB.	410 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES
10-10-10 FERTILIZER	500 LB.	12.5 LB.	100 LB	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES

NOTE: A COMPOST BLANKET WHICH MEETS THE STANDARDS OF CHAPTER 11 OF THE PADEP EROSION & SEDIMENT CONTROL PROGRAM MANUAL, DATED MARCH 12 MAY BE SUBSTITUTED FOR THE SOIL AMENDMENTS SHOWN IN TABLE 4.

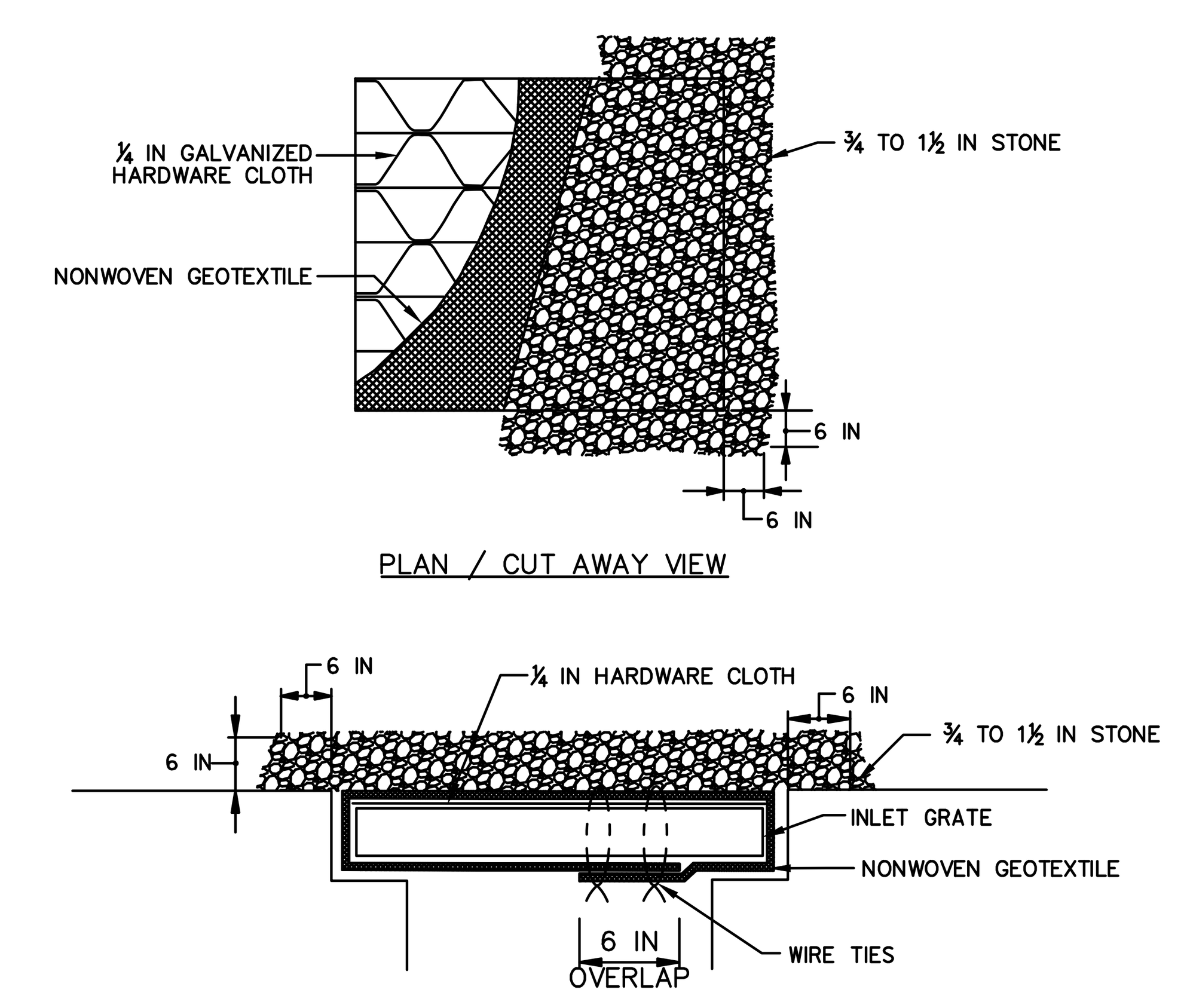
TABLE 5: MULCH APPLICATION RATES

MULCH TYPE	APPLICATION RATE (MIN.): PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	NOTES
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1,240 LB.	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

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

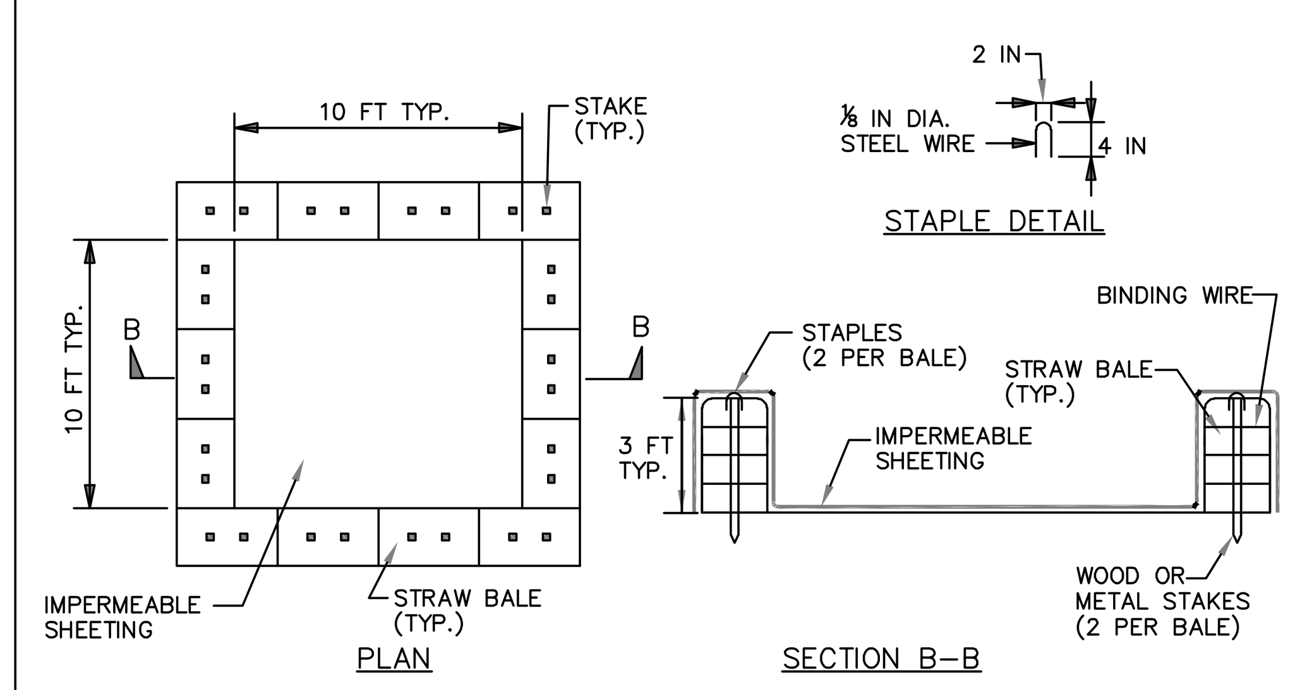
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL 903
AT-GRADE INLET PROTECTION
N.T.S.

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS



NOTE: CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL 9001
CONCRETE WASHOUT STRUCTURE
N.T.S.

PRELIMINARY
NOT FOR CONSTRUCTION

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT/ STORMWATER/ LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

EROSION & SEDIMENT CONTROL DETAILS

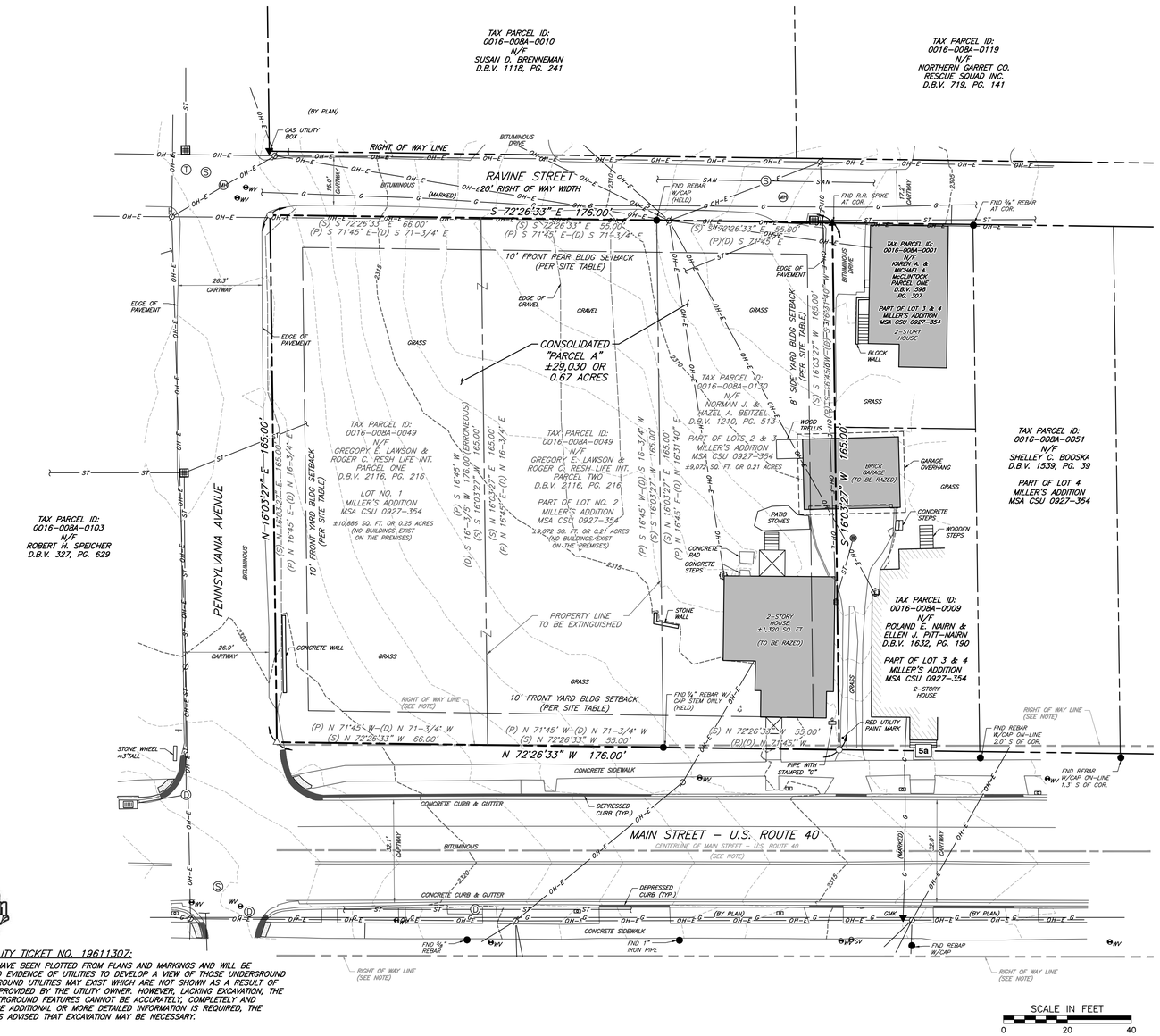
DATE:	JANUARY 13, 2020	DRAWN BY:	ADH
DWG SCALE:	AS SHOWN	CHECKED BY:	APW
PROJECT NO:	192-215		
APPROVED BY:	*CJR		

*HAND SIGNATURE ON FILE

DRAWING NO.: C902

SHEET 16 OF 16

\\svr-pittsburgh\projects\2019\192-215\-CADD\Dwg\CV01\192215-CV01-C901.dwg{C902} LS:(2/17/2020 - awhalen) - LP: 4/28/2020 1:21 PM

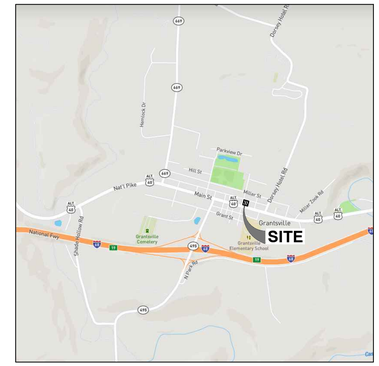


EXISTING LEGEND:

EXISTING PROPERTY LINE		SANITARY MANHOLE	(S)
EXISTING ADJACENT PROPERTY LINE		CLEAN OUT	◎
EXISTING RIGHT-OF-WAY		WATER BOX (WATER VALVE)	WV
EXISTING INDEX CONTOUR	870	GAS LINE MARKER	▼
EXISTING INTERMEDIATE CONTOUR		GAS BOX (GAS VALVE)	GV
EXISTING SANITARY SEWER LINE	S.A.N.	GUY WIRE	→
EXISTING STORM SEWER LINE	ST	TELEPHONE MANHOLE	T
EXISTING GAS LINE	G	ELECTRIC METER	E
EXISTING OVERHEAD ELECTRIC	O.H.-W.	MANHOLE (UTILITY UNKNOWN)	MH
MAG NAIL TO BE SET	△	UTILITY POLE	ø
REBAR IRON PIN & CAP TO BE SET	○	SURVEYED BEARING	(S)
MAILBOX		PLAN BEARING	(P)
SIGN		DEED BEARING	(D)
STORM MANHOLE	D		
CATCH BASIN			
CURB INLET			
DRAIN			
INLET SQUARE			

REVISION RECORD

NO	DATE	DESCRIPTION
1	02/07/2020	Addressed comments from Garrett County.
2		
3		
4		
5		



VICINITY MAP
1"=2,000'

RECORDING INFORMATION:

AT THE REQUEST OF CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

THIS PLAT WAS RECORDED_____

IN PLAT CASE TWM_____ AT FILE_____.

TABULATION OF CONSOLIDATION AREA:

TAX PARCEL ID: 0016-008A-0049:		
DEED BOOK VOLUME 2116, PAGE 216 (PARCEL ONE)	±10,886 SQ. FT.	0.25 ACRES
DEED BOOK VOLUME 2116, PAGE 216 (PARCEL TWO)	±9.072 SQ. FT.	0.21 ACRES
TAX PARCEL ID: 0016-008A-0130:		
DEED BOOK VOLUME 1210, PAGE 513	±9,072 SQ. FT.	0.21 ACRES
"PARCEL A"	±29,030 SQ. FT.	0.67 ACRES

ZONING "TOWN CENTER DISTRICT":

MINIMUM LOT SIZE = 10,000 SQUARE FEET
MINIMUM LOT WIDTH = NA
MINIMUM SETBACK LIMITS:
FRONT = 10 FEET
SIDE = NA
REAR = 35 FEET

SITE DATA TABLE:

ZONING DISTRICT:	TC - TOWN CENTER DISTRICT
SITE AREA:	0.67 AC.
LOCAL JURISDICTION:	TOWN OF GRANTSVILLE
LAND USE:	RETAIL - PERMITTED

BULK & AREA REQUIREMENTS	REQUIRED	PROPOSED
MIN. LOT SIZE:	5000 S.F. (0.11 AC)	0.67 AC
MIN. LOT FRONTAGE:	50'	176'
MAX. BUILDING HEIGHT:	35'	18'
MAX. LOT COVERAGE:	-	80%
MIN. FRONT YARD	10'	15', 10', 76'
MIN. SIDE YARD:	8'	36'
MIN. REAR YARD:	NA	NA
PARKING REQUIREMENTS	**REQUIRED**	**PROPOSED**
MIN. PARKING STALL QUANTITY: (1 STALL/200 SF OF GFA)	61	26
MIN. PARKING STALL AREA:	9'x18'	9'x18'
MIN. PARKING AISLE WIDTH:	20'	24'

MISS UTILITY

MARYLAND MISS UTILITY TICKET NO. 19611307:
UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM PLANS AND MARKINGS AND WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES TO DEVELOP A VIEW OF THOSE UNDERGROUND UTILITIES. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN AS A RESULT OF INFORMATION NOT BEING PROVIDED BY THE UTILITY OWNER. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT OR CONTRACTOR IS ADVISED THAT EXCAVATION MAY BE NECESSARY.

OWNER'S STATEMENT:

WE, THE OWNERS OF THE LAND INVOLVING THE ACCOMPANYING PLANS, BEING DULY SWORN ACCORDING TO LAW, STATE THAT WE ARE THE MAJORITY OWNERS OR ARE THE AUTHORIZED OFFICERS OF THE CORPORATION THAT ARE THE MAJORITY OWNERS OF THIS PROPERTY IN PEACEFUL POSSESSION OF IT, AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE OF SAME, AND THAT WE ACKNOWLEDGE AND ENDORSE THE ACCOMPANYING PLANS AND THAT WE WILL PROPOSE A RECORD PLAN FOR RECORDING (AS APPLICABLE), AFTER RECEIVING ALL REQUIRED MUNICIPAL APPROVALS.

OWNER'S SIGNATURES OR AUTHORIZED CORPORATE OFFICER'S SIGNATURES	PRINTED NAME	DATE
OWNER'S SIGNATURES OR AUTHORIZED CORPORATE OFFICER'S SIGNATURES	PRINTED NAME	DATE
OWNER'S SIGNATURES OR AUTHORIZED CORPORATE OFFICER'S SIGNATURES	PRINTED NAME	DATE
OWNER'S SIGNATURES OR AUTHORIZED CORPORATE OFFICER'S SIGNATURES	PRINTED NAME	DATE

PLAN PREPARER'S STATEMENT:

I, PETE E. BROTHERS, A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF MARYLAND, DO HEREBY CERTIFY THAT THE PLAN CORRECTLY AND ACCURATELY REPRESENTS THE BOUNDARIES OF THE PROPOSED NEW LOT(S).

DATE

PETE E. BROTHERS
PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21817

PROPERTY OWNER (AGREEMENT TO OWN) AND DEVELOPER:

PTV 1075, LLC
400 PENN CENTER BLVD.,
BUILDING 4, SUITE 1000
PITTSBURGH, PA 15235

CONTACT: WILLIAM R. OWEN
PHONE: (724) 420-5367

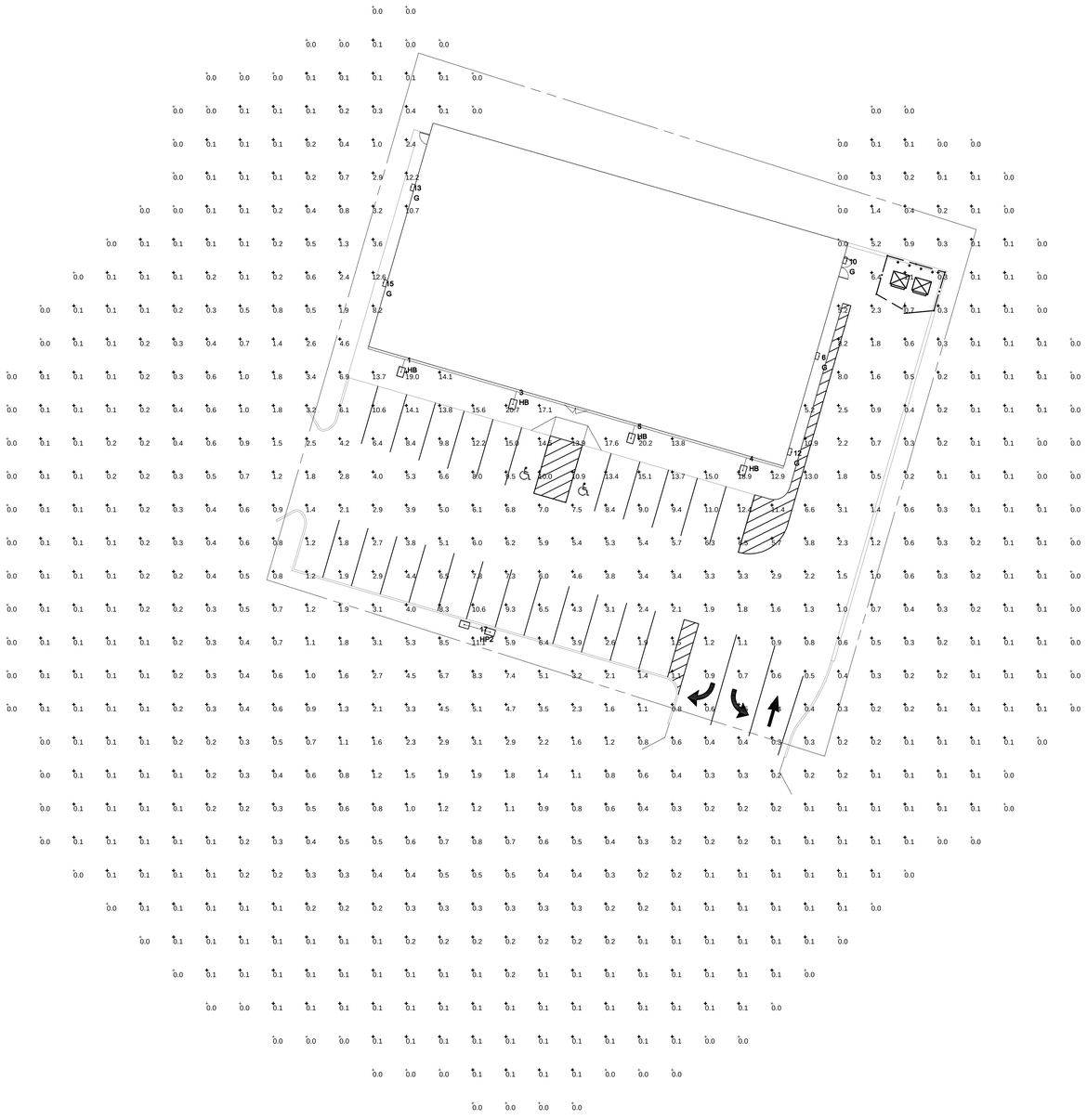
Civil & Environmental Consultants, Inc.
4000 Triangle Lane · Suite 200 · Export, PA 15632
Ph: 724.327.5200 · 800.899.3610 · Fax: 724.327.5280
www.cecinc.com

PENNTEX VENTURES
LOT CONSOLIDATION PLAN
129 & 161 EAST MAIN STREET
Situate In
TOWN OF GRANTSVILLE ELECTION DIST. NO. 3
GARRETT COUNTY, MARYLAND
Made For
PENNTEX VENTURES, LLC
400 PENN CENTER BLVD. BLDG. 4 STE. 1000
PITTSBURGH, PA 15235

DATE:	OCTOBER 14, 2019	SCALE:	1"=20'
DRAWN BY:	JWH	CHECKED BY:	DRAFT
PROJECT NO:	192-215-0001	APPROVED BY:	DRAFT

DRAWING NO.: **SUB-01**
SHEET 1 OF 1

P:\2019\192-215\~Survey\Dwg\192215-0001-SUB.dwg(SUB-SHEET1 LS(02/07/2020 - Resbestion)) - LS, 2/28/2020 11:16 AM



1 Photometric Site Plan
1"=20'-0"

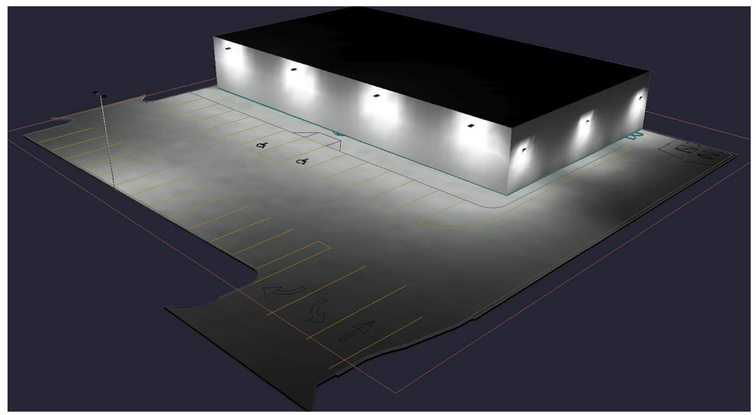
Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LLF	Description	Lumens	Watts
	1	HP2	BACK-BACK	0.998	LEDS - AL-150W-T4-5000K - DUAL POLE MOUNT, 25', TYPE 4	39444	300
	4	HB	SINGLE	0.998	LEDS - AL-150W-T4-5000K - WALL MOUNT, 42" UPSWEEP ARM, TYPE 4	19722	150
	5	G	SINGLE	0.998	LEDS - WP-FC-4550-50K - WALL PACK, FULL CUT-OFF	5816	44.32

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE	Illuminance	Fc	1.63	20.7	0.0	N.A.	N.A.
PARKING AND DRIVE	Illuminance	Fc	4.94	15.1	0.3	16.47	50.33

Luminaire Location Summary		
LumNo	Label	Mounting Height
1	HB	17
3	HB	17
4	HB	17
5	HB	17
6	G	12
10	G	12
12	G	12
13	G	12
15	G	12
17	HP2	27

PLAN NOTES:
* CALCULATIONS AT GRADE LEVEL.
* REFER TO LUMINAIRE LOCATION SUMMARY FOR MOUNTING HEIGHT OF WALL FIXTURES.
* POLE MOUNTED FIXTURES ON 25' POLE AND 2' BASE FOR AN OAH OF 27' AFG.

GENERAL NOTES:
* DUE TO CHANGING LIGHTING ORDINANCES IT IS THE CONTRACTORS RESPONSIBILITY TO SUBMIT THE SITE PHOTOMETRICS AND LUMINAIRE SPECS TO THE LOCAL INSPECTOR BEFORE ORDERING TO ENSURE THIS PLAN COMPLIES WITH LOCAL LIGHTING ORDINANCES.
* THIS LIGHTING DESIGN IS BASED ON INFORMATION SUPPLIED BY OTHERS. CHANGES IN ELECTRICAL SUPPLY, AREA GEOMETRY AND OBJECTS WITHIN THE LIGHTED AREA MAY PRODUCE ILLUMINATION VALUES DIFFERENT FROM THE PREDICTED RESULTS SHOWN ON THIS LAYOUT.
* THIS LAYOUT IS BASED ON .IES FILES THAT WERE LAB TESTED OR COMPUTER GENERATED, ACTUAL RESULTS MAY VARY.



Seal

STATE OF MARYLAND
NATHAN C. HART
21775
ARCHITECT

HART ARCHITECTS

Dollar General

Store # 20989
129 East Main St
Grantsville, MD 21536

Revisions

Date
10.31.2019

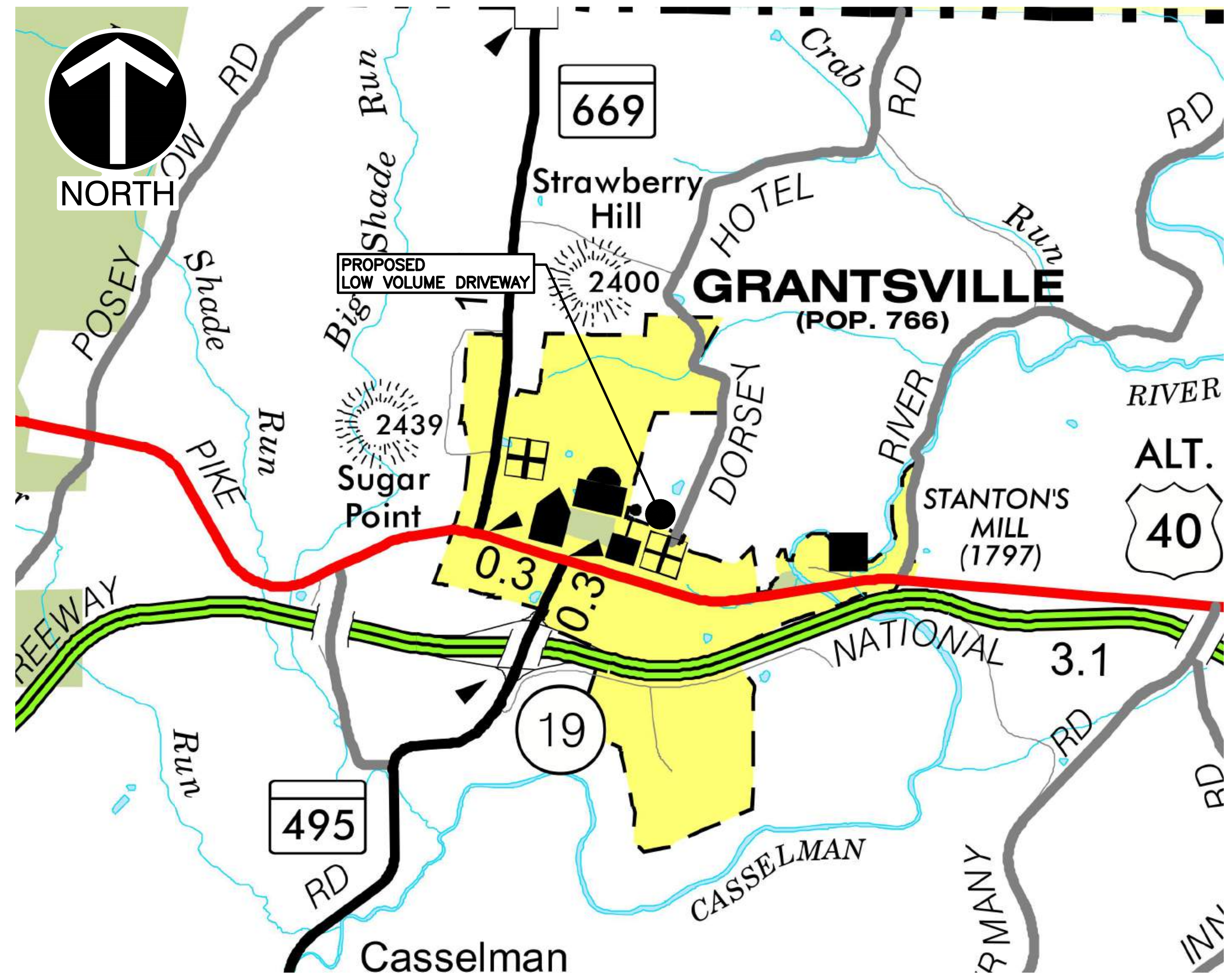
Client
PennTex Ventures

Project No.
1910.805

Drawing Title
Site Lighting

Sheet
PH1.1

GARRETT COUNTY
HIGHWAY ACCESS PERMIT PLANS
FOR PVT 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
PROPOSED COMMERCIAL ENTRANCE



LOCATION MAP

SCALE IN FEET

0 2000 4000

PROPOSED COMMERCIAL ENTRANCE
MAIN STREET
TOWN OF GRANTSVILLE,
GARRETT COUNTY
MARYLAND

SHEET INDEX BLOCK

SHEET NUMBER	SHEET TITLE	NO. OF SHEETS
HOP-1	TITLE SHEET, LOCATION MAP, UTILITY INFORMATION	1
HOP-2	WORK ZONE TRAFFIC CONTROL	1
HOP-3	CONSTRUCTION PLAN	1
HOP-4	DETAILS/PROFILES	2
HOP-6	SIGNAGE AND PAVEMENT MARKING PLAN	1
HOP-7	VEHICLE TRACKING TURNING TEMPLATES	2
HOP-9	SITE PLAN	1

NOTE:

CONSTRUCTION DETAILS SHALL CONFORM TO THE FOLLOWING STANDARD DRAWINGS:

- MD 630.01 JUNE 8, 2016
- MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2011
- MDOT SHA ACCESS MANUAL–TECHNICAL GUIDANCE, SUPPLEMENTAL DESIGN GUIDANCE AND GEOTECHNICAL GUIDANCE

REFERENCE

1.) GENERAL HIGHWAY MAP, GARRETT COUNTY, MARYLAND DATED 2018

UTILITY COMPANIES

ELECTRIC SERVICE

FIRST ENERGY CORPORATION
CUSTOMER SERVICE,
PHONE: (800) 686-0011

GAS SERVICE

COLUMBIA GAS OF MARYLAND
CUSTOMER SERVICE
PHONE: (888) 460-4332

CABLE SERVICE

COMCAST BUSINESS
CUSTOMER SERVICE
PHONE: (855) 211-1804

TELEPHONE

VERIZON
CUSTOMER SERVICE
PHONE: (800) 837-4966

PUBLIC WATER SERVICE

GARRETT CO. DEPARTMENT OF PUBLIC WORKS
PUBLIC SERVICE CENTER
2008 MARYLAND HIGHWAY, SUITE 2
MT. LAKE PARK, MD 21550
CONTACT: BILL HETRICK
PHONE: (301) 895--3144
MOBILE:: (301) 707-3070

SANITARY SEWER SERVICE (CONVEYANCE)

GARRETT CO. DEPARTMENT OF PUBLIC WORKS
PUBLIC SERVICE CENTER
2008 MARYLAND HIGHWAY, SUITE 2
MT. LAKE PARK, MD 21550
CONTACT: BILL HETRICK
PHONE: (301) 895--3144
MOBILE:: (301) 707-3070

SERIAL NO: 19611307

MISS UTILITY 811

1-800-257-7777 or 811
missutility.net

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

PVT 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 2150
GARRETT COUNTY, MARYLAND

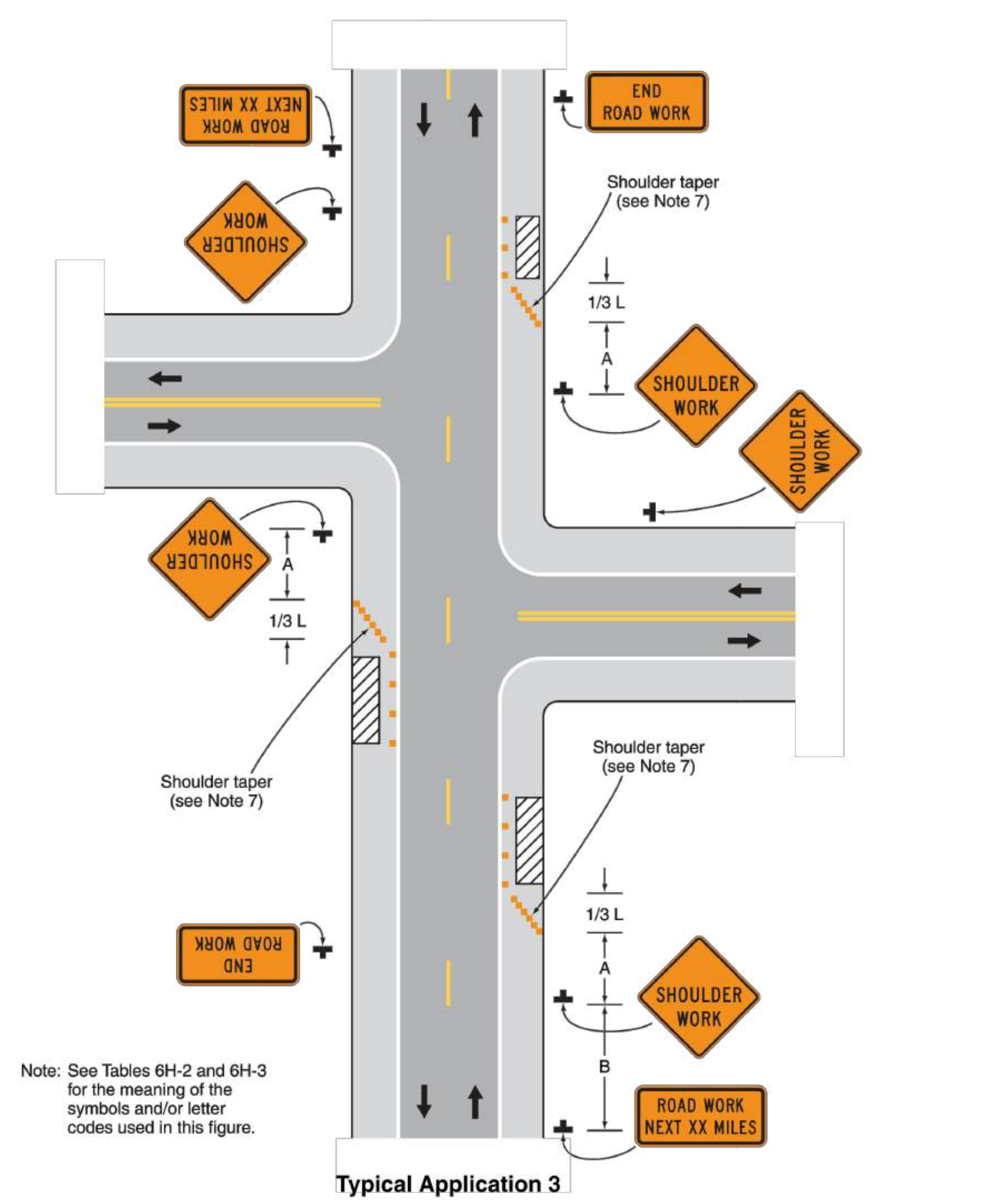
TITLE SHEET, LOCATION MAP, UTILITY INFORMATION
COMMERCIAL ENTRANCE
H.A.P. PLANS

DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215	APPROVED BY:	JMD

DRAWING NO.: **HOP-1**

SHEET 1 OF 9

Figure 6H-3. Work on the Shoulders (TA-3)



Typical Application 3

Notes for Figure 6H-3—Typical Application 3
Work on the Shoulders

Guidance:

1. *A SHOULDER WORK sign should be placed on the left side of the roadway for a divided or one-way street only if the left shoulder is affected.*

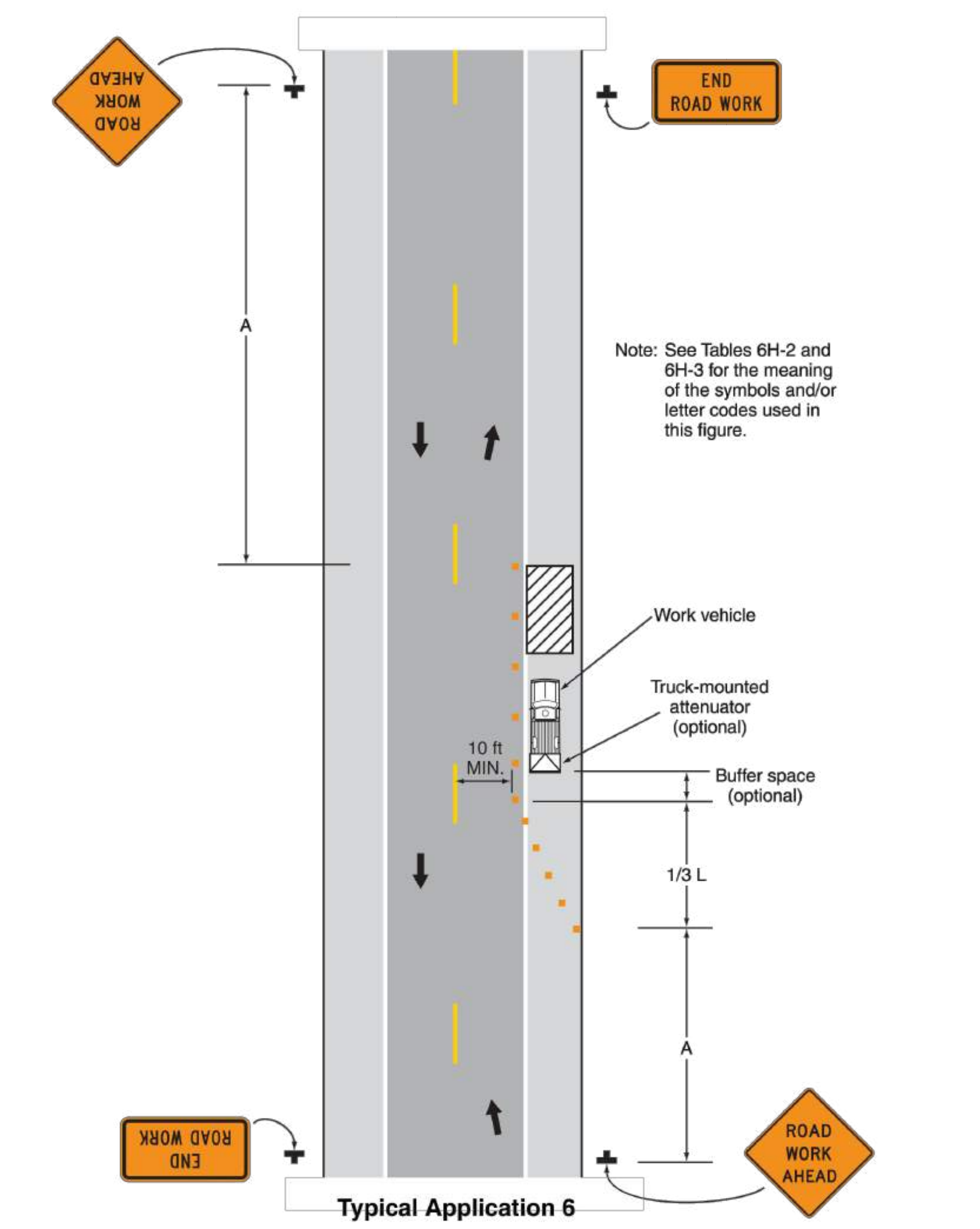
Option:

2. The Workers symbol signs may be used instead of SHOULDER WORK signs.
3. The SHOULDER WORK AHEAD sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.
4. For short duration operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.
5. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

6. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.**
7. **When paved shoulders having a width of 8 feet or more are closed, at least one advance warning sign shall be used. In addition, channelizing devices shall be used to close the shoulder in advance to delineate the beginning of the work space and direct vehicular traffic to remain within the traveled way.**

Figure 6H-6. Shoulder Work with Minor Encroachment (TA-6)



Typical Application 6

Notes for Figure 6H-6—Typical Application 6
Shoulder Work with Minor Encroachment

Guidance:

1. *All lanes should be a minimum of 10 feet in width as measured to the near face of the channelizing devices.*
2. *The treatment shown should be used on a minor road having low speeds. For higher-speed traffic conditions, a lane closure should be used.*

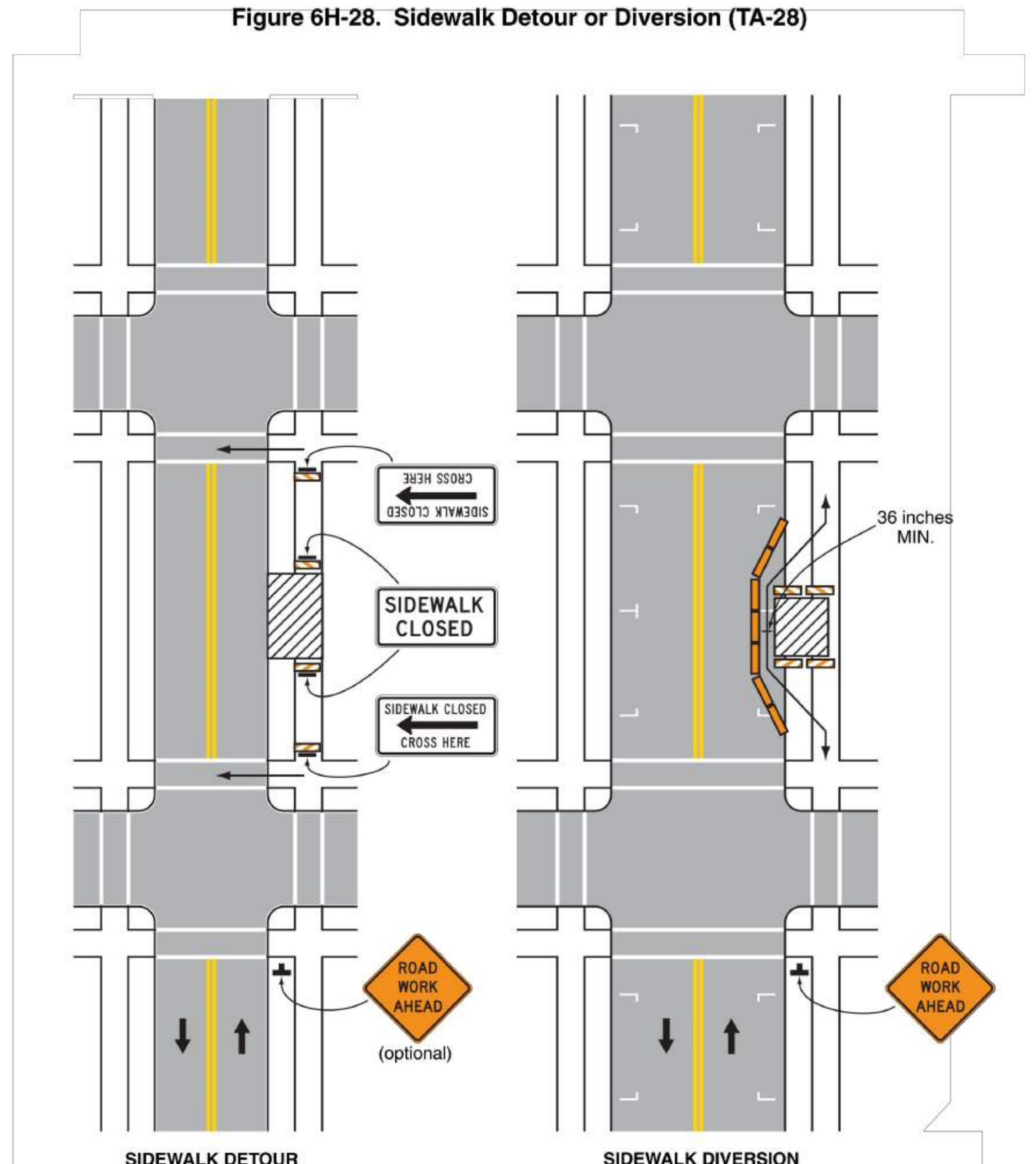
Option:

3. For short-term use on low-volume, low-speed roadways with vehicular traffic that does not include longer and wider heavy commercial vehicles, a minimum lane width of 9 feet may be used.
4. Where the opposite shoulder is suitable for carrying vehicular traffic and of adequate width, lanes may be shifted by use of closely-spaced channelizing devices, provided that the minimum lane width of 10 feet is maintained.
5. Additional advance warning may be appropriate, such as a ROAD NARROWS sign.
6. Temporary traffic barriers may be used along the work space.
7. The shadow vehicle may be omitted if a taper and channelizing devices are used.
8. A truck-mounted attenuator may be used on the shadow vehicle.
9. For short-duration work, the taper and channelizing devices may be omitted if a shadow vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.
10. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

11. **Vehicle-mounted signs shall be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs shall be covered or turned from view when work is not in progress.**
12. **Shadow and work vehicles shall display high-intensity rotating, flashing, oscillating, or strobe lights.**
13. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.**

Figure 6H-28. Sidewalk Detour or Diversion (TA-28)



Typical Application 28

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Notes for Figure 6H-28—Typical Application 28
Sidewalk Detour or Diversion

Standard:

1. **When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.**

Guidance:

2. *Where high speeds are anticipated, a temporary traffic barrier and, if necessary, a crash cushion should be used to separate the temporary sidewalks from vehicular traffic.*
3. *Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.*

Option:

4. Street lighting may be considered.
5. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS signs, may be used to control vehicular traffic.
6. For nighttime closures, Type A Flashing warning lights may be used on barricades that support signs and close sidewalks.
7. Type C Steady-Burn or Type D 360-degree Steady-Burn warning lights may be used on channelizing devices separating the temporary sidewalks from vehicular traffic flow.
8. Signs, such as KEEP RIGHT (LEFT), may be placed along a temporary sidewalk to guide or direct pedestrians.

Figure 6F-7. Channelizing Devices

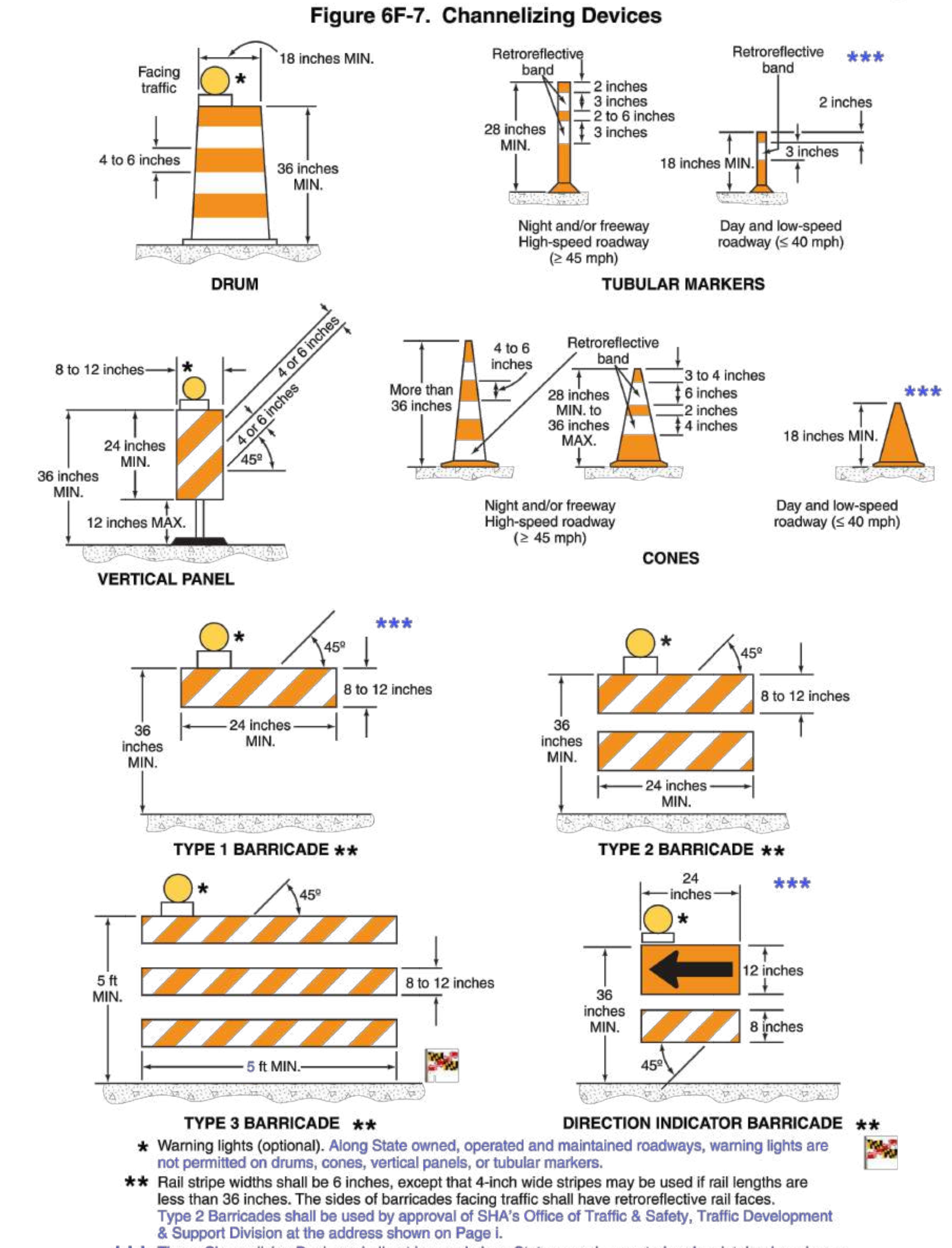


Table 6H-2. Meaning of Symbols on Typical Application Diagrams

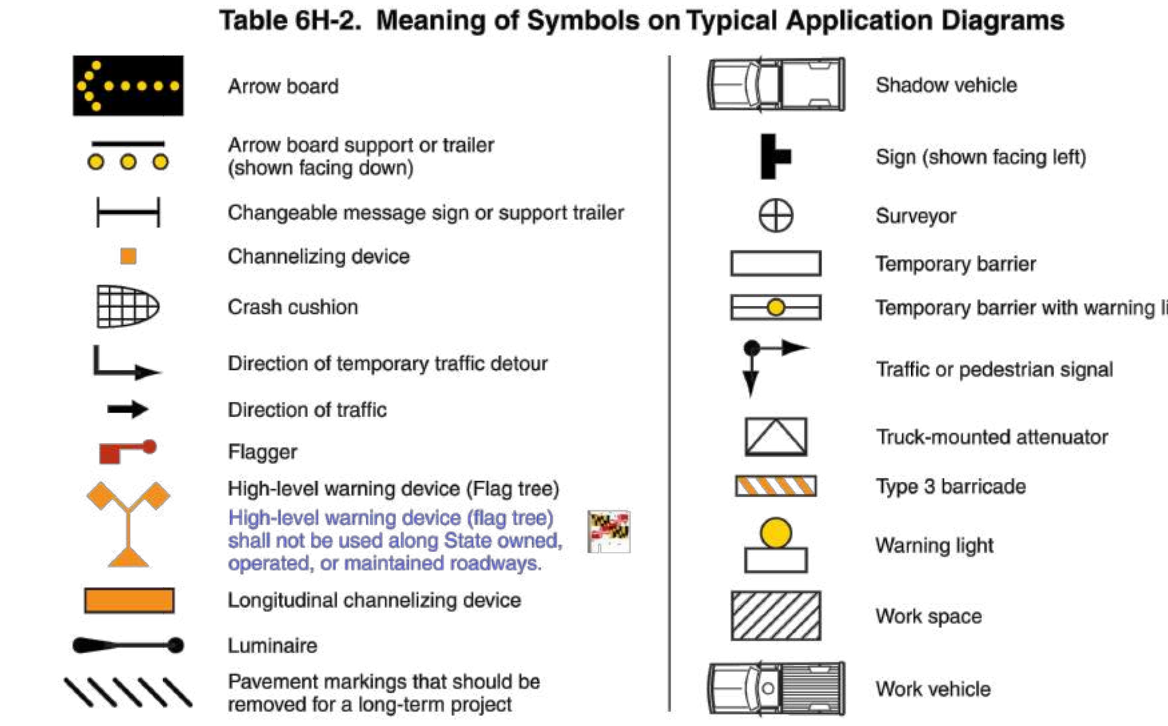


Table 6H-3. Meaning of Letter Codes on Typical Application Diagrams

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by highway agency
Along State owned, operated, and maintained roadways, urban low speed shall be defined as less than or equal to 40 mph and urban high speed shall be defined as greater than 40 mph

** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

Table 6H-4. Formulas for Determining Taper Length

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	$L = WS$

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

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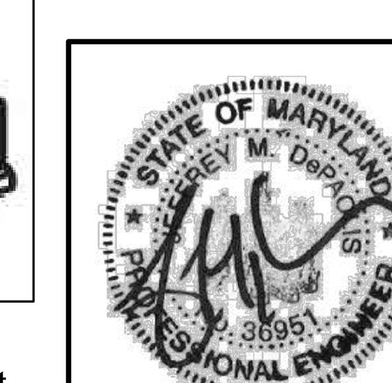


REFERENCE

1.) MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS 2011 EDITION

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

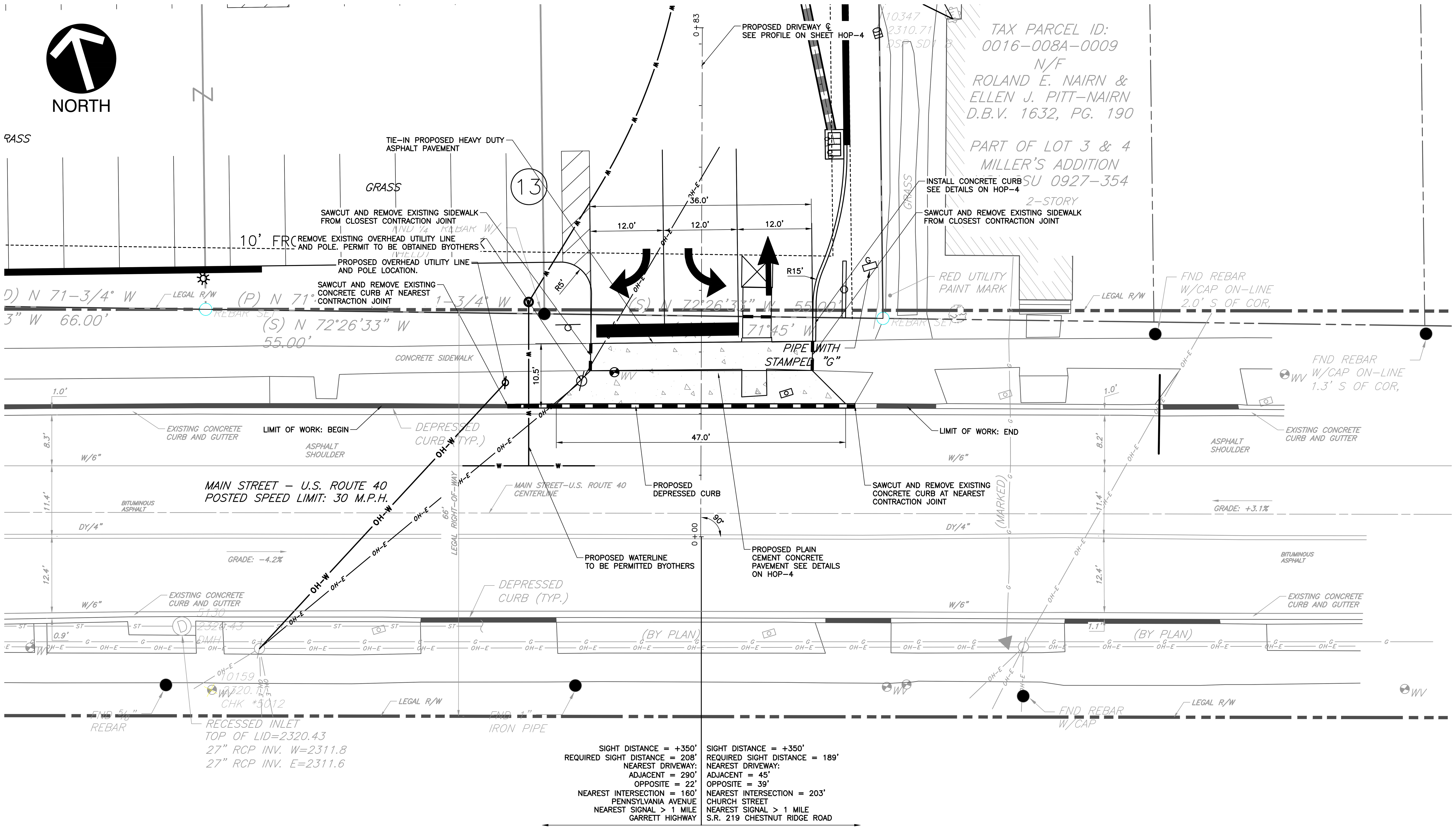
PVT 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 2150
GARRETT COUNTY, MARYLAND

WORK ZONE TRAFFIC CONTROL
COMMERCIAL ENTRANCE
H.A.P. PLANS

DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215	APPROVED BY:	JMD

DRAWING NO.: HOP-2

SHEET 2 OF 9



SIGHT DISTANCE = +350'	SIGHT DISTANCE = +350'
REQUIRED SIGHT DISTANCE = 208'	REQUIRED SIGHT DISTANCE = 189'
NEAREST DRIVEWAY:	NEAREST DRIVEWAY:
ADJACENT = 290'	ADJACENT = 45'
OPPOSITE = 22'	OPPOSITE = 39'
NEAREST INTERSECTION = 160'	NEAREST INTERSECTION = 203'
PENNSYLVANIA AVENUE	CHURCH STREET
NEAREST SIGNAL > 1 MILE	NEAREST SIGNAL > 1 MILE
GARRETT HIGHWAY	S.R. 219 CHESTNUT RIDGE ROAD

U.S. ROUTE 0040, MAIN STREET
PROPOSED COMMERCIAL ENTRANCE

PLAN VIEW

SCALE IN FEET
0 10 20

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT
- EXISTING SETBACK LINE
- EXISTING ROADWAY EDGE
- EXISTING ROADWAY EDGE
- EXISTING GRAVEL EDGE
- OH-E EXISTING OVERHEAD ELECTRIC LINE
- ST EXISTING STORM SEWER
- W EXISTING WATER LINE
- G EXISTING GAS LINE
- SAN EXISTING SANITARY SEWER LINE
- EXISTING FENCE
- EXISTING INLET
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING ELECTRIC POLE
- 1200 EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- SAN PROPOSED SANITARY SEWER
- W PROPOSED WATER LINE
- G PROPOSED GAS LINE
- OH-W PROPOSED OVERHEAD ELECTRIC WIRE
- PROPOSED UTILITY POLE
- 1215 PROPOSED INDEX CONTOUR
- 1214 PROPOSED INTERMEDIATE CONTOUR
- 1214.75 PROPOSED SPOT ELEVATION
- TC=1214.50 BC=1214.00 PROPOSED TOP OF CURB ELEV / PROPOSED BOTTOM OF CURB ELEV
- TW=1216.50 BW=1214.00 PROPOSED TOP OF WALL ELEV / PROPOSED BOTTOM OF WALL ELEV
- PROPOSED STORM SEWER LINE
- ST PROPOSED STORM SEWER/FOUNDATION DR.
- PROPOSED STORM SEWER INLET
- PROPOSED CLEANOUT
- PROPOSED MANHOLE
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED CONCRETE WALK
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED BUILDING
- PROPOSED PROPERTY LINE
- PROPOSED BUILDING SETBACK LINE
- PROPOSED ASPHALT WEDGE CURB
- PROPOSED PAVEMENT EDGE
- PROPOSED RETAINING WALL
- PROPOSED FENCE
- PROPOSED GUIDERAIL
- PROPOSED PAVEMENT MARKINGS
- PROPOSED SIGN
- PROPOSED PYLON SIGN
- PROPOSED BOLLARD
- PROPOSED SITE LIGHT POLE

REFERENCE

1.) THE BASIS OF BEARING IS GRID NORTH DERIVED FROM POST PROCESSING METHODS USING THE NORTH AMERICAN DATUM OF 1983 (2011) STATE PLANE COORDINATES, MARYLAND ZONE 1900. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 ELEVATIONS BASED ON GEOID 2012B.

2.) FIELD SURVEY BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., DATED 10/14/2019.

3.) THE UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES LOCATED HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES LOCATED ARE IN THE EXACT LOCATION INDICATED. THE MARYLAND MISS UTILITY TICKET NO. IS 19611307.

4.) *CENTERLINE AND RIGHT OF WAY NOTE:*
AFTER COMMUNICATION WITH MDOT STATE HIGHWAY ADMINISTRATION – OFFICE OF REAL ESTATE D6, THERE ARE NO PLATS AVAILABLE FOR THIS SECTION OF US ROUTE 40. THEREFORE THE ADMINISTRATION MAINTAINS THAT THERE EXISTS A 66 FOOT TURNPIKE RIGHT OF WAY, BASED ON 33 FEET ON EACH SIDE OF THE ORIGINAL CENTERLINE OF SURFACING. THE ADMINISTRATION'S MAINTENANCE WOULD EXTEND FROM FACE OF CURB TO FACE OF CURB. THEREFORE USING THIS INFORMATION, THE SURVEYOR HAS ESTABLISHED THE RIGHT OF WAY OF US ROUTE 40 BASED ON THE EXISTING PAVEMENT CENTERLINE BY SPLITTING THE EXISTING CURB LINES WITHIN THE PROJECT AREA AS SHOWN.

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NO | DATE | DESCRIPTION

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333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
www.cecinc.com

PVT 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21500
GARRETT COUNTY, MARYLAND

CONSTRUCTION PLAN
COMMERCIAL ENTRANCE
H.A.P. PLANS

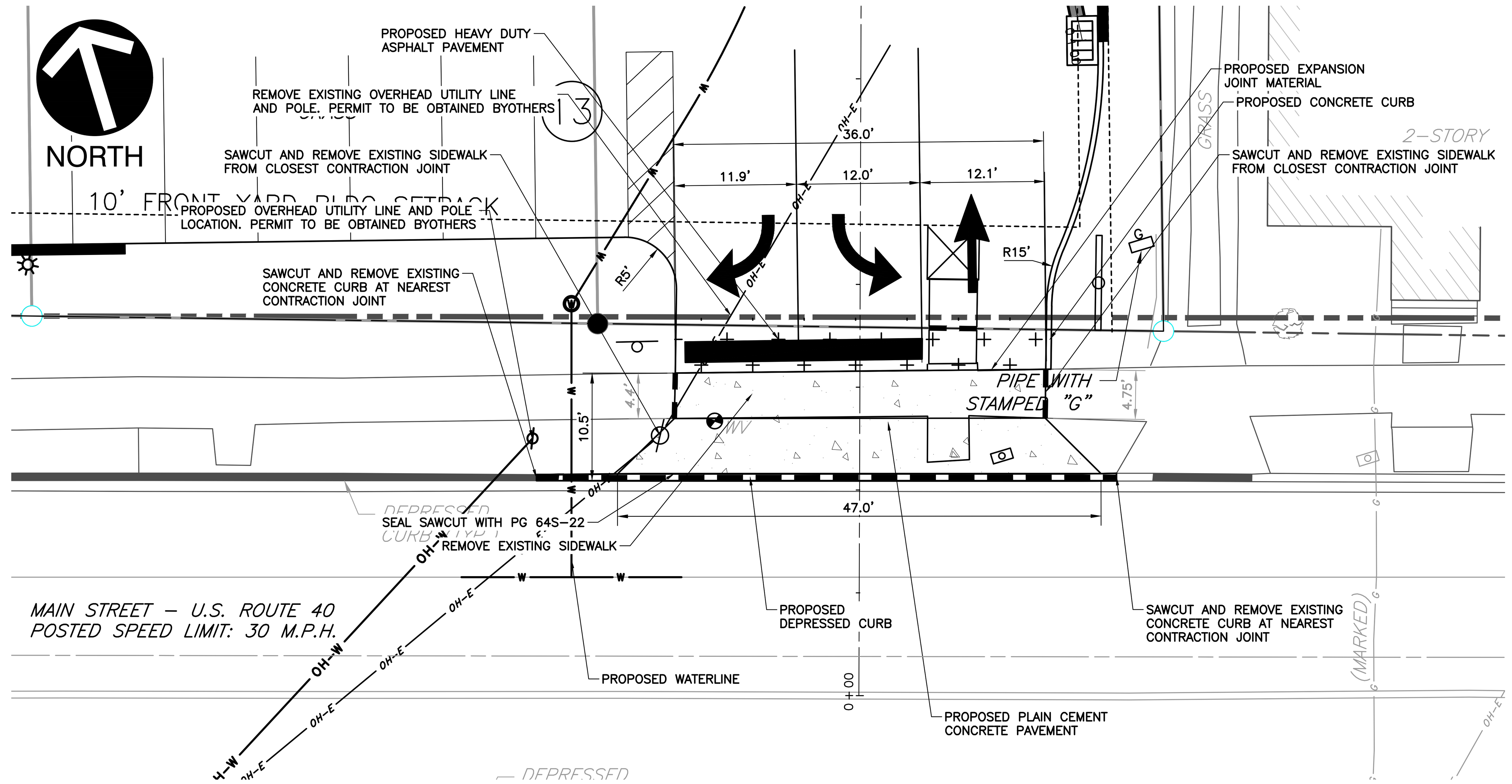
DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215		
APPROVED BY:			JMD

DRAWING NO.: **HOP-3**
SHEET 3 OF 9

C:\Share\HOPs\192-215-Grantsville MD DG\CADD\Dwg\TR01\192-215-TR01-Grantsville Maryland DG HOP.dwg[HOP-3] LS:(12/6/2019 - tjbenkey) LP: 12/17/2019 9:23 AM

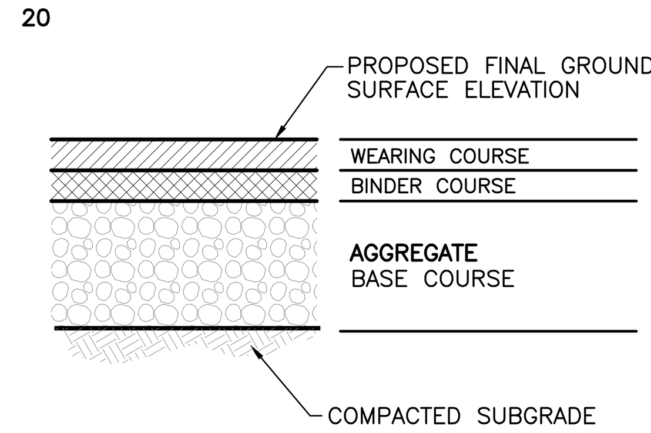
LEGEND

- PROPOSED PLAIN CEMENT CONCRETE PAVEMENT
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- PROPOSED SAWCUT

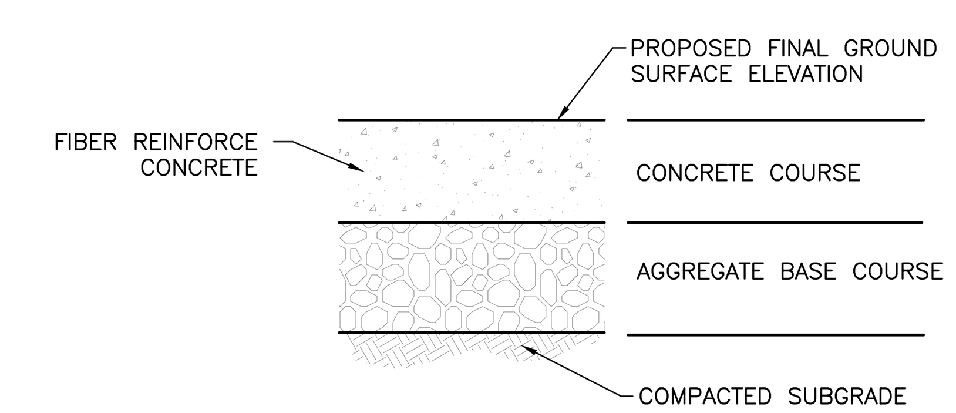


DRIVEWAY DETAIL

SCALE IN FEET
0 10 20



FLEXIBLE PAVEMENT SECTION



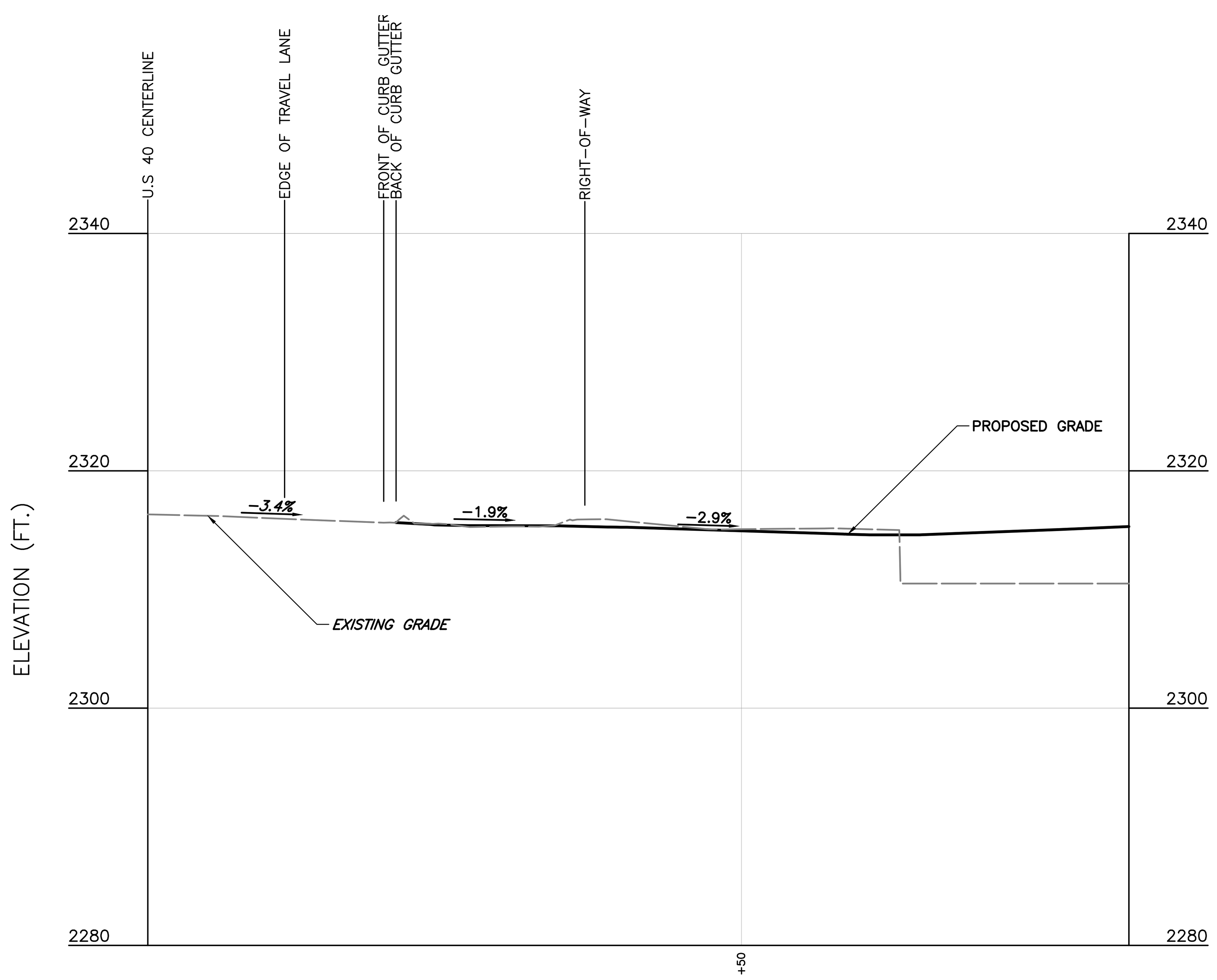
RIGID PAVEMENT SECTION

FLEXIBLE PAVEMENT

MSHA BOOK OF STANDARDS	ITEM	STANDARD DUTY PAVEMENT SECTION	HEAVY DUTY PAVEMENT SECTION
MSHA, 9.5mm SUPERPAVE MIX	BITUMINOUS WEARING COURSE	1.5"	2.0"
MSHA, 19mm SUPERPAVE MIX	BITUMINOUS BINDER COURSE	2.5"	2.5"
SECTION 901.01, GRADED AGGREGATE	AGGREGATE BASE COURSE	6.0"	6.5"

RIGID PAVEMENT

MSHA BOOK OF STANDARDS	ITEM	HEAVY DUTY PAVEMENT SECTION
TYPE: IIIA CONCRETE W/ 3/4" MAX AGGREGATE	PORTLAND CEMENT CONCRETE COURSE	8.0"
SECTION 901.01 GRADED AGGREGATE	AGGREGATE BASE COURSE	6.0"



DRIVEWAY CENTERLINE ALIGNMENT PROFILE

SCALE IN FEET
0 10 20

NOTES:

1. PRIOR TO PLACEMENT OF AGGREGATE, THE PAVEMENT SUBGRADE SHALL BE PREPARED AS FOLLOWS:
   A. PAVEMENT SUBGRADE SHALL BE PROOFROLLED AND COMPACTED TO AT LEAST 98% OF ITS MAXIMUM DRY DENSITY AND WITHIN ±2% OF ITS OPTIMUM MOISTURE CONTENT, AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR). ANY SOFT AREAS SHALL BE OVEREXCAVATED TO A FIRM AND COMPETENT MATERIAL AND BACKFILLED AS DESCRIBED IN 1B.
   B. ALL APPROVED FILL SHALL BE PLACED IN MAXIMUM 8" THICK, LOOSE LIFTS AND COMPACTED TO 98% OF ITS MAXIMUM DRY DENSITY AND WITHIN ±2% OF ITS OPTIMUM MOISTURE CONTENT. THE FILL MATERIAL'S MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT SHALL BE DETERMINED BY ASTM D1557 (MODIFIED PROCTOR).
   C. AFTER COMPACTION, THE PAVEMENT SUBGRADE SHALL PROVIDE A FIRM UNYIELDING FOUNDATION WITH NO SUDDEN, SHARP OR ABRUPT CHANGES OR BREAKS IN GRADES. NO STANDING WATER OR EXCESS MOISTURE SHALL BE PRESENT. ALL SOFT AND YIELDING AREAS SHALL BE REWORKED BY OVEREXCAVATING TO A FIRM AND COMPETENT MATERIAL, AND BACKFILLED AS DESCRIBED IN 1B.
   D. THE SUBGRADE SHALL BE GRADED AND SHAPED AS REQUIRED TO CONSTRUCT THE AGGREGATE BASE COURSE IN CONFORMANCE WITH THE GRADES, LINES AND THICKNESSES SHOWN ON THE DRAWINGS.
2. THE BITUMINOUS COURSES SHALL BE TAPERED INTO THE STORM SEWER INLETS WHILE MAINTAINING FULL PAVEMENT SECTION DEPTH.
3. REINFORCED CONCRETE COURSE SHALL CONTAIN 1/2" TO 1-1/2" TYPE III, MONOFILAMENT FIBERS COMPLYING WITH ASTM C1116/C1116M TO BE PLACED IN CONCRETE PAD. CONCRETE COURSE SHALL BE 4,000 PSI AIR ENTRAINED CONCRETE.
4. PAVEMENT SECTION DESIGN OBTAINED FROM 'GEOTECHNICAL ENGINEERING SERVICES REPORT', PREPARED BY PROFESSIONAL SERVICES INDUSTRIES, INC. DATED MARCH 22, 2019.

PAVEMENT SECTIONS

N.T.S.

REFERENCE

1.) MDOT SHA ACCESS MANUAL– CHAPTER 5.8.2, FULL DEPTH PAVEMENT SECTIONS–APPENDIX D PAVING SPECIFICATIONS

SERIAL NO: 19611307

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1-800-257-7777 or 811

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REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
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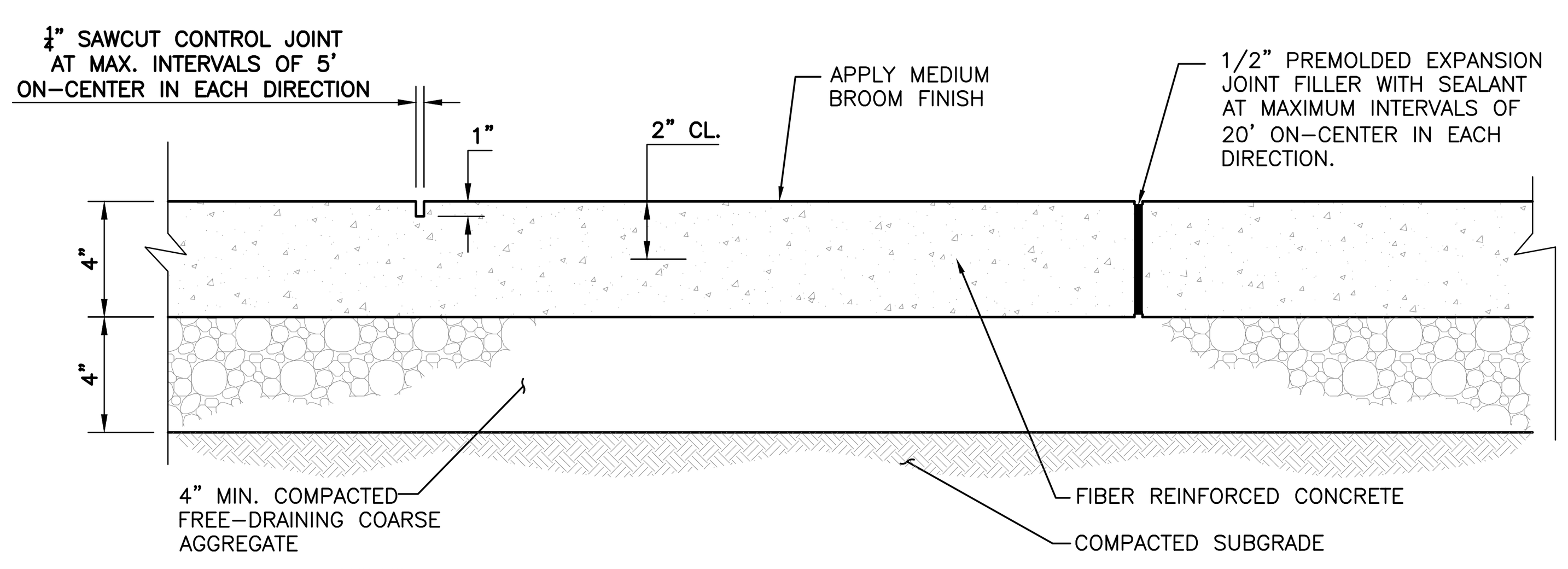
PVT 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 2150
GARRETT COUNTY, MARYLAND

DETAILS/PROFILES
COMMERCIAL ENTRANCE
H.A.P. PLANS

DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215		
APPROVED BY:	JMD		

DRAWING NO.: **HOP-4**

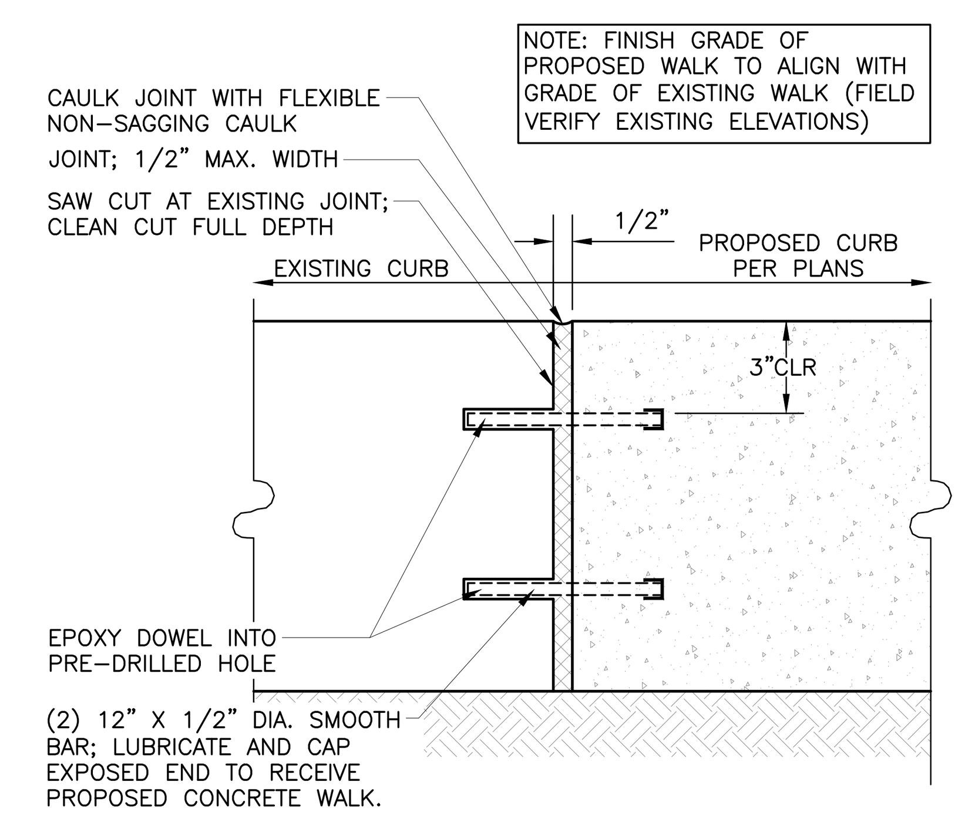


NOTES:

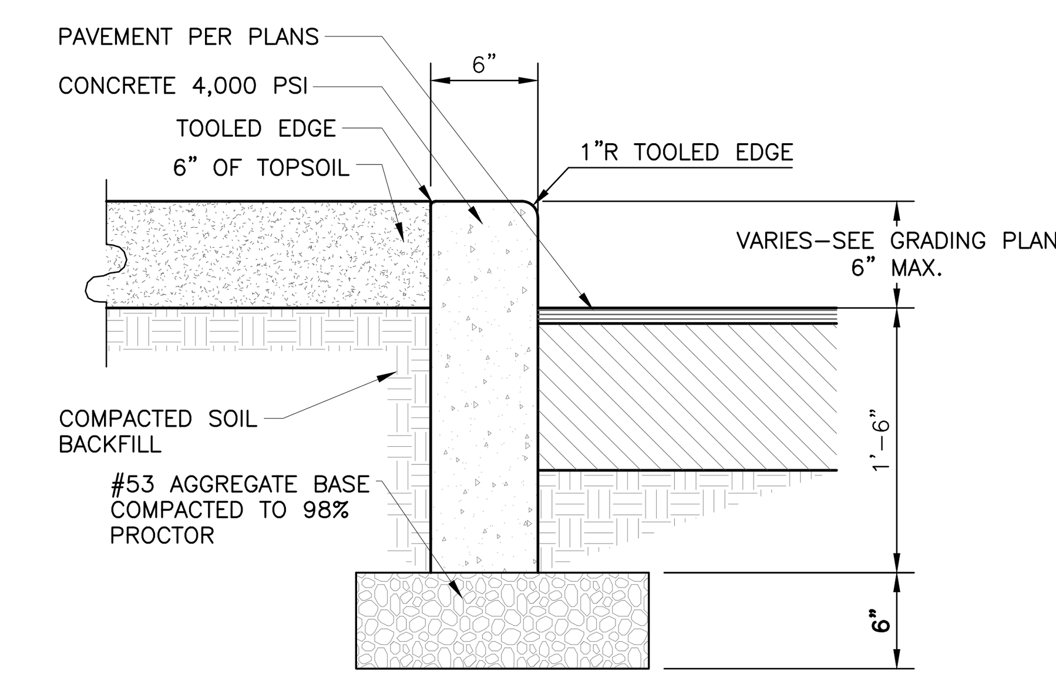
1. PROVIDE 1/2" EXPANSION JOINT FILLER WITH SEALANT WHERE THE CONCRETE SIDEWALK ABUTS THE BUILDING.
2. PROVIDE MEDIUM BROOM FINISH.
3. CONCRETE SHALL BE 4,000 PSI AIR ENTRAINED CONCRETE UNLESS OTHERWISE NOTED.

CONCRETE SIDEWALK DETAIL

N.T.S.



JOINT DETAIL AT EXISTING CURB



STRAIGHT CONCRETE CURB DETAIL

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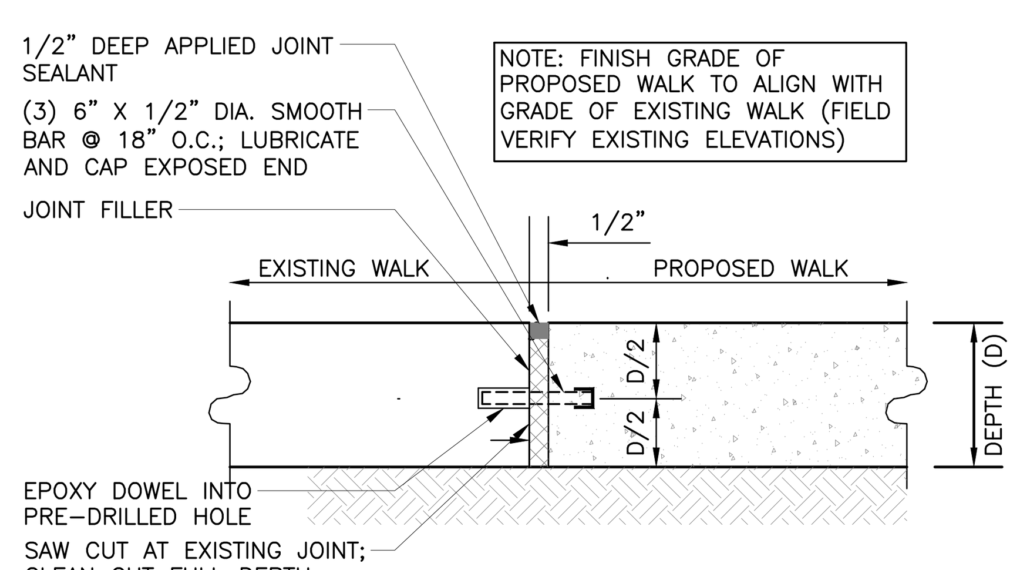

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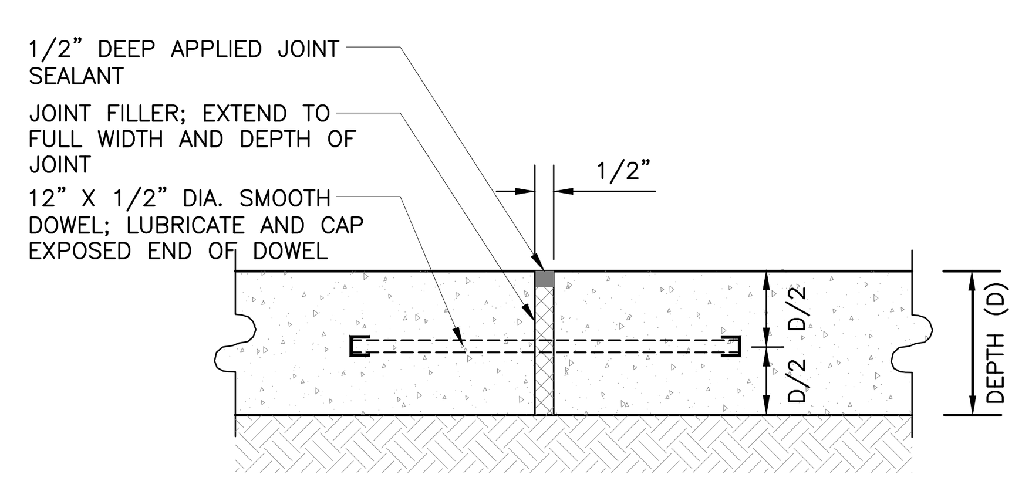
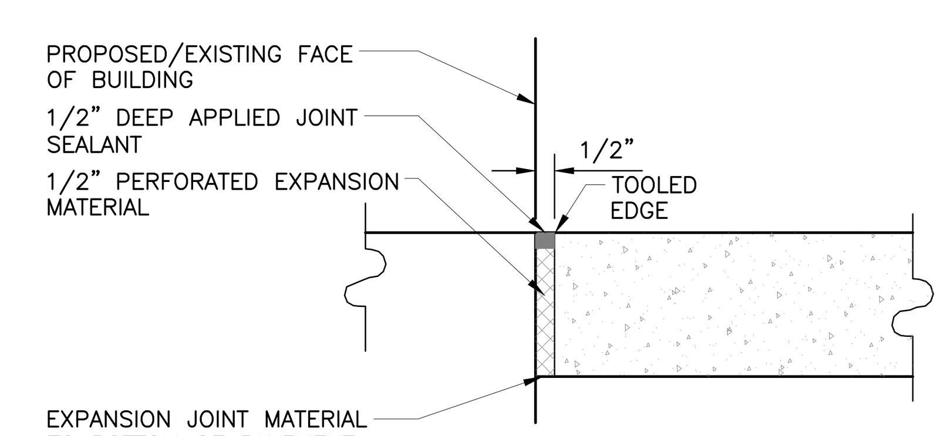
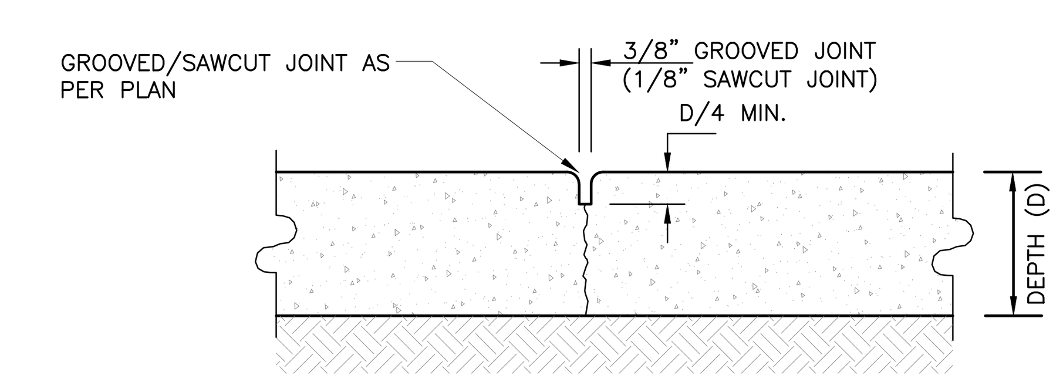


EXPANSION JOINT



ISOLATION JOINT



CONTROL JOINT

REFERENCE

1.) MDOT SHA ACCESS MANUAL- CHAPTER 5.8.2, FULL DEPTH PAVEMENT SECTIONS-APPENDIX D PAVING SPECIFICATIONS

SERIAL NO: 19611307

MISS UTILITY

1-800-257-7777 or 811

missutility.net

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.

333 Baldwin Road · Pittsburgh, PA 15205

412-429-2324 · 800-365-2324

www.cecinc.com

PVT 1075, LLC

GRANTSVILLE DOLLAR GENERAL STORE

161 MAIN STREET, GRANTSVILLE, MD 2150

GARRETT COUNTY, MARYLAND

DETAILS/PROFILES

COMMERCIAL ENTRANCE

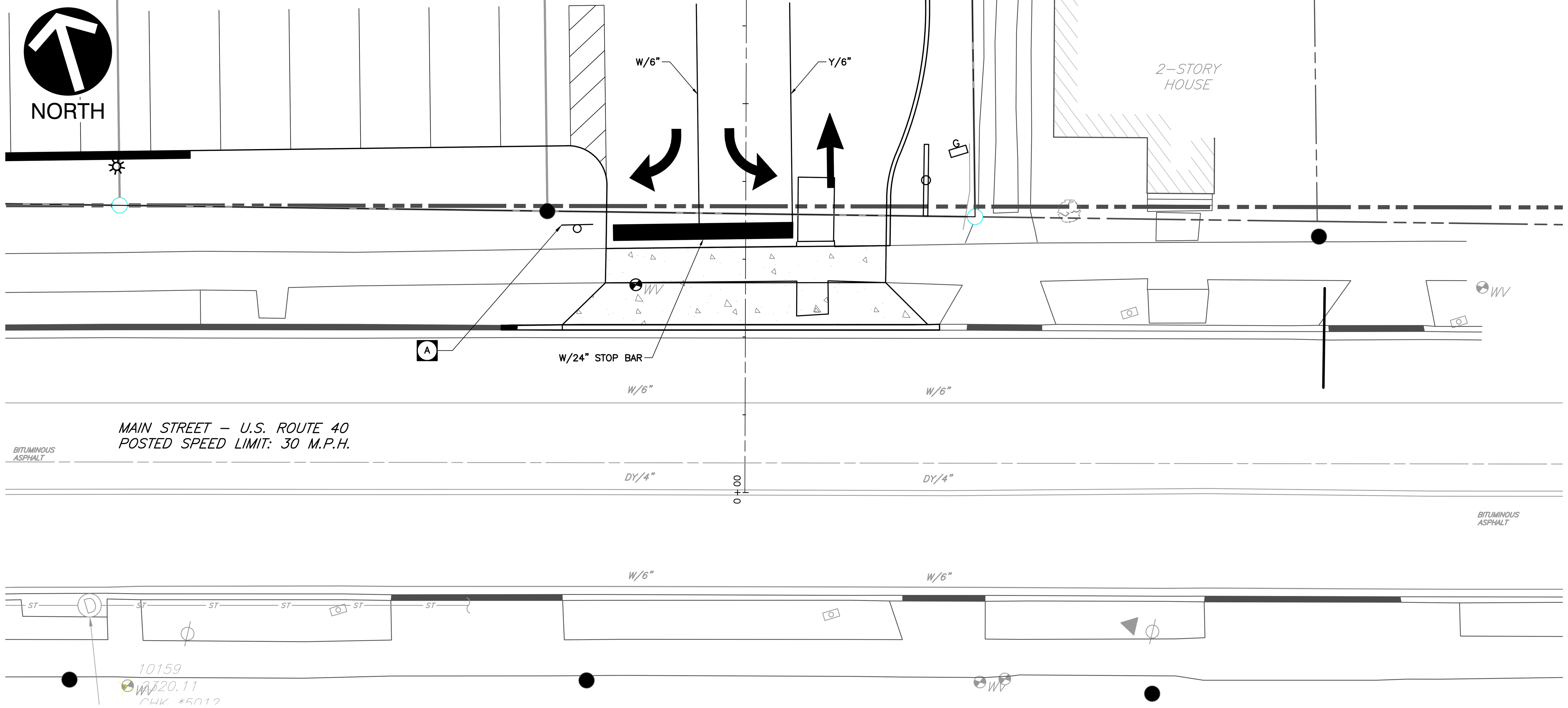
H.A.P. PLANS

DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215	APPROVED BY:	JMD

DRAWING NO.:

HOP-5

SHEET 5 OF 9



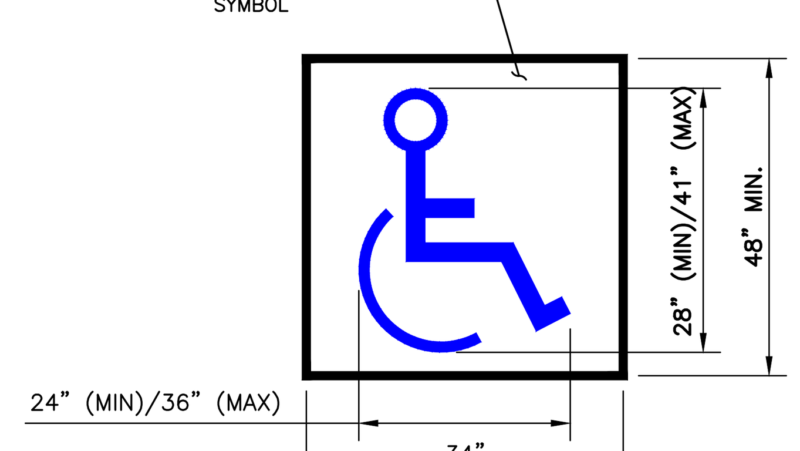
SIGNAGE AND PAVEMENT MARKING PLAN

SCALE IN FEET

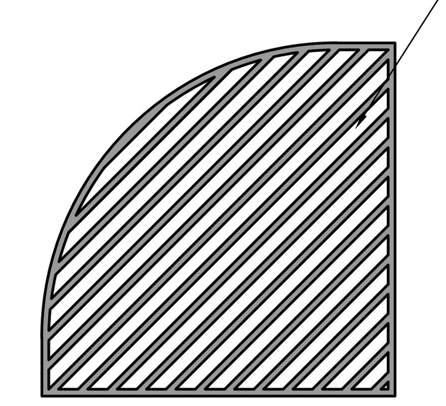
0 10 20

PROPOSED SIGNAGE

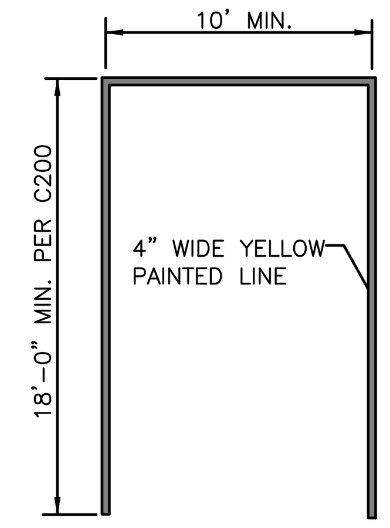
PLAN SYMBOL	SERIES DESIGNATION	SIZE WxH	DESCRIPTION	QUANTITY
A	R1-1	30" x 30"	STOP	1



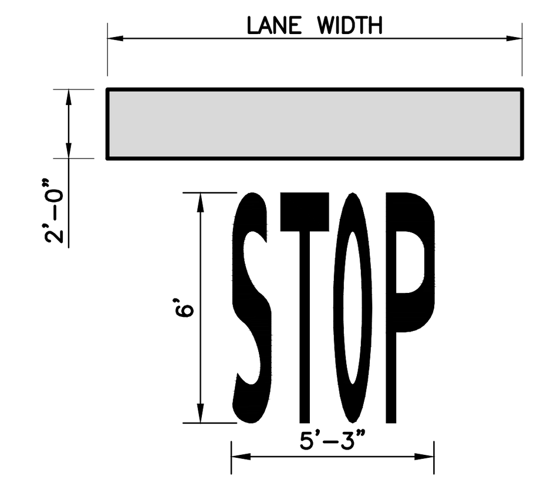
ADA ACCESSIBLE SPACE



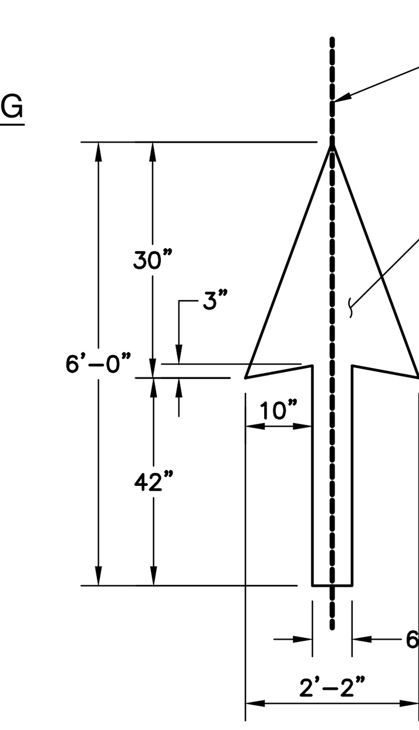
NO PARKING ZONE STRIPING



PARKING STALL STRIPING



STOP BAR



THROUGH ARROW

NOTES:

1. ALL TRAFFIC FLOW ARROWS TO BE SOLID WHITE NON-REFLECTIVE TRAFFIC PAINT OR THERMOPLASTIC AS PER DIMENSIONS AND AS SPECIFIED ON PROJECT PLANS.
2. STRIPING SHALL HAVE TWO COATS OF PAINT, ALKYD BASE SYNTHETIC RESIN, FED. SPEC. TTP-115 TYPE 1 (OR APPROVED EQUAL). IF SEAL COAT IS USED, IT SHALL BE COMPATIBLE WITH STRIPING COMPOUND.
3. PARKING LOT MARKINGS AND STRIPING TO MEET MSHA BOOK OF STANDARDS AND SPECIFICATIONS AND FOR STREETS AND HIGHWAYS.

TYPICAL PAVEMENT MARKINGS

N.T.S.

REFERENCE

1.) MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS 2011 EDITION

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GARRETT COUNTY, MARYLAND

SIGNAGE AND PAVEMENT MARKING PLAN

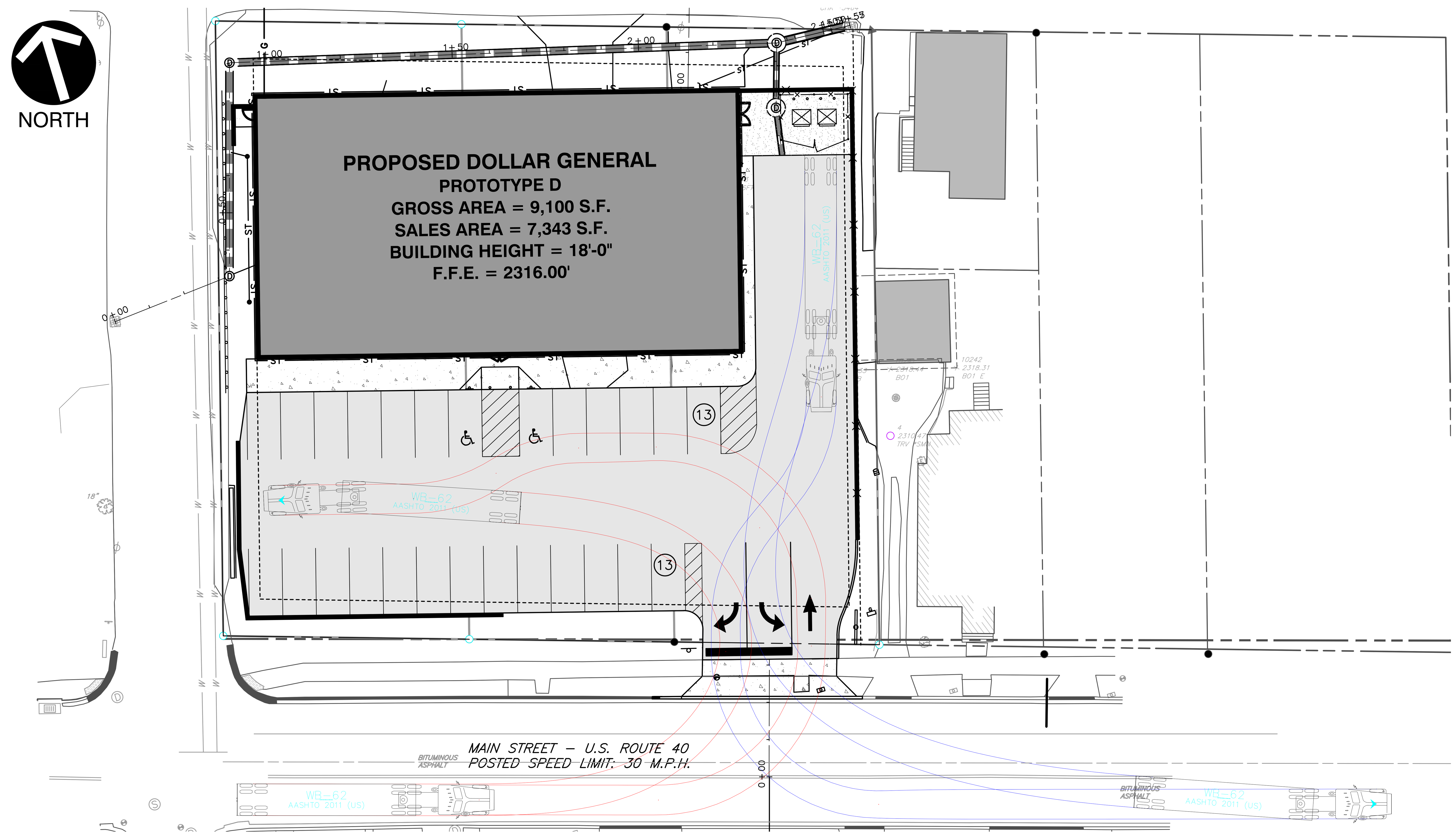
COMMERCIAL ENTRANCE

H.A.P. PLANS

DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215	APPROVED BY:	JMD

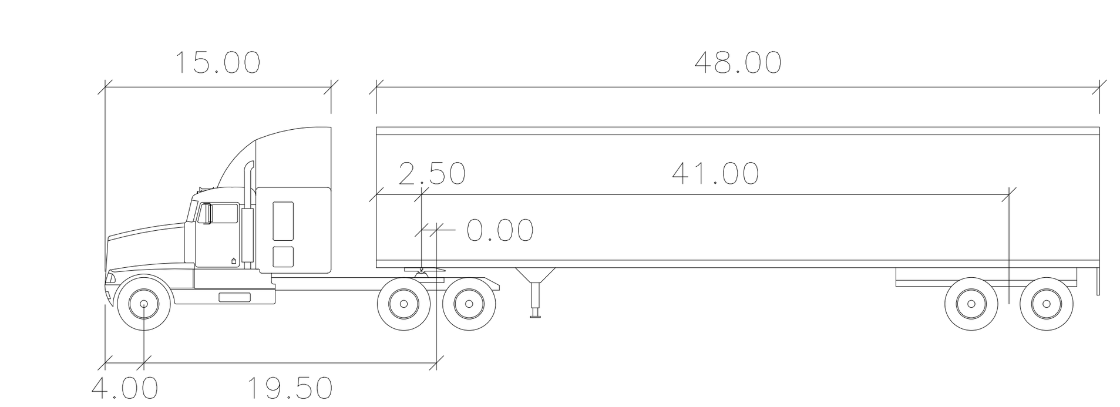
DRAWING NO.: HOP-6

SHEET 6 OF 9



OCCASIONAL VEHICLE TURNING EXHIBIT

SCALE IN FEET
0 20 40



WB-62

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

OCCASIONAL VEHICLE TURNING EXHIBIT-DELIVERY ROUTE

N.T.S.

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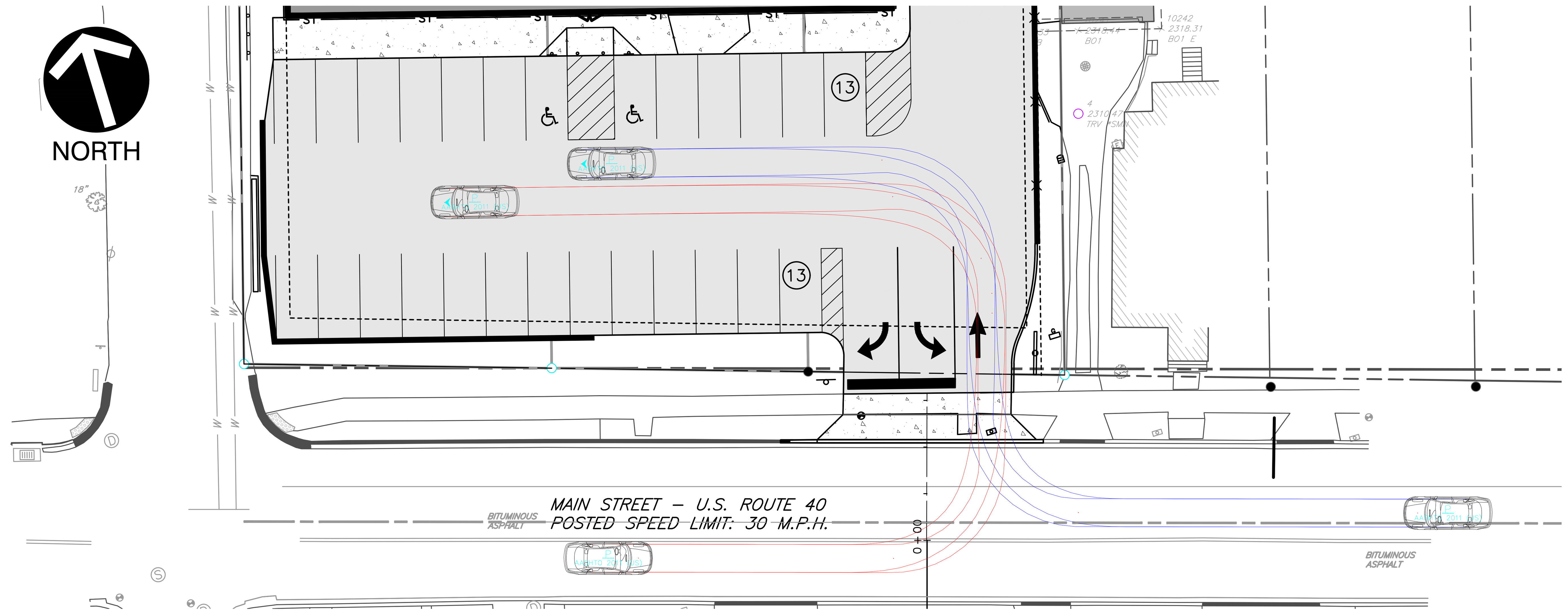
GARRETT COUNTY, MARYLAND

VEHICLE TRACKING TURNING TEMPLATES
COMMERCIAL ENTRANCE
H.A.P. PLANS

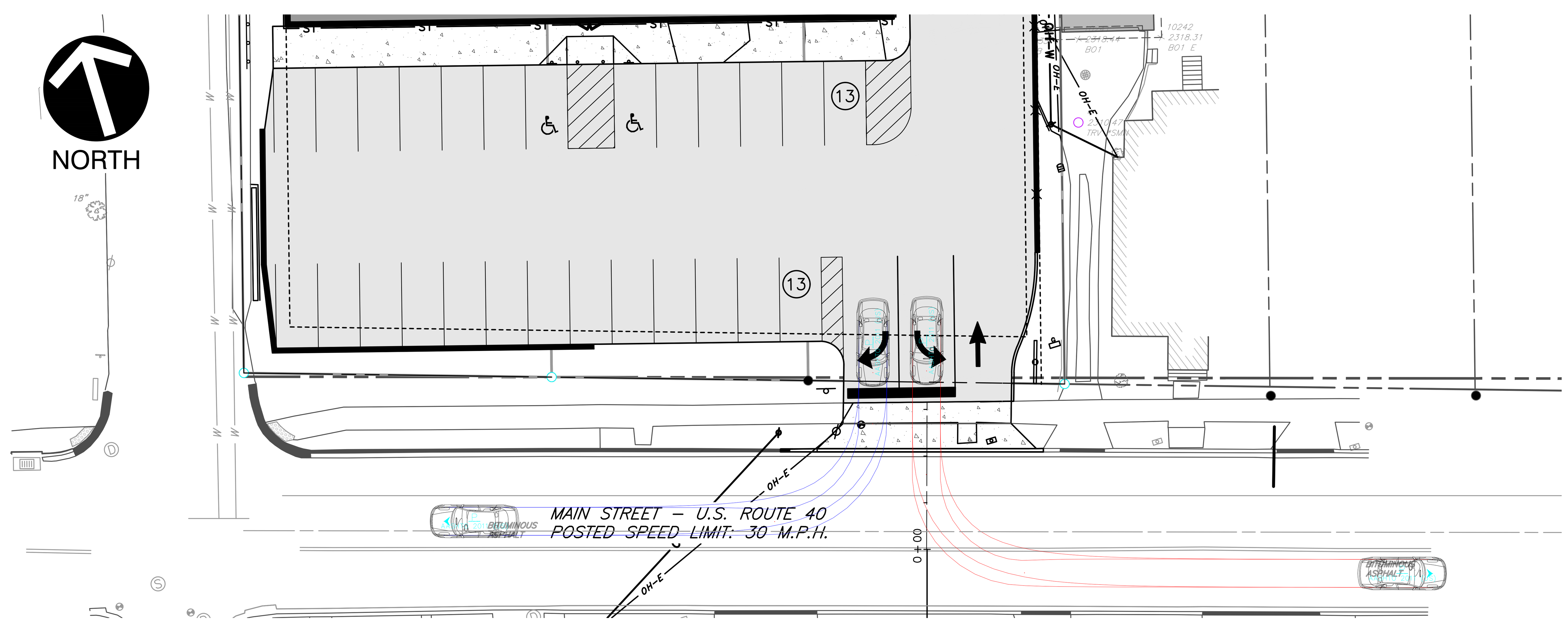
DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215	APPROVED BY:	JMD

DRAWING NO.:
HOP-7
SHEET 7 OF 9



DESIGN VEHICLE TURNING EXHIBIT ENTERING

SCALE IN FEET
0 20 40



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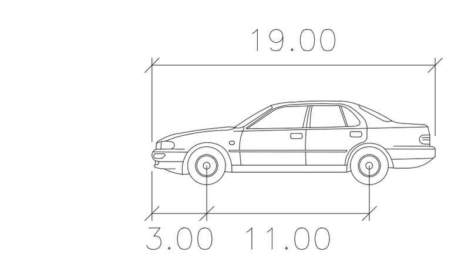
SCALE IN FEET
0 20 40



P

	feet
Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

DESIGN VEHICLE TURNING EXHIBIT
N.T.S.

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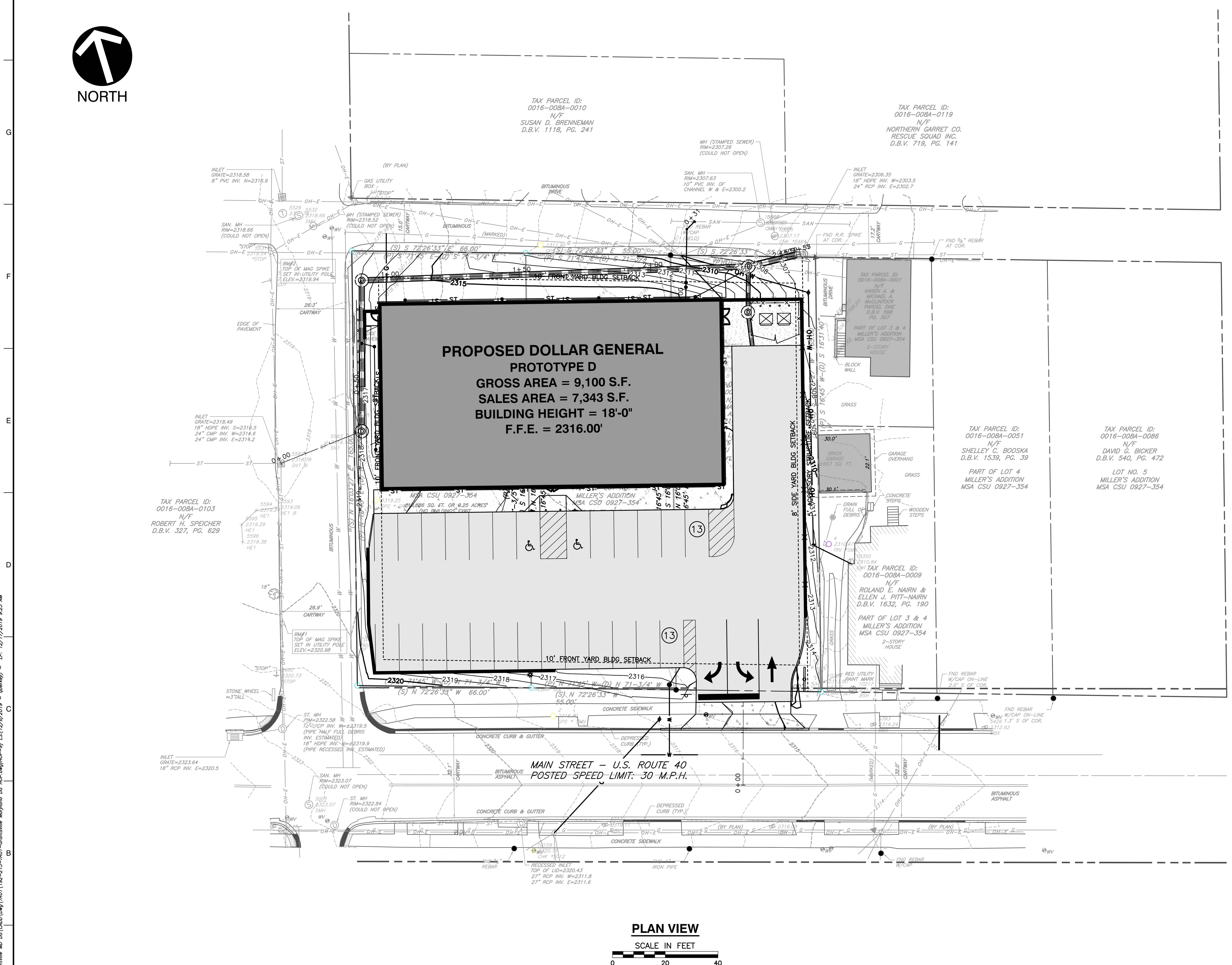
VEHICLE TRACKING TURNING TEMPLATES
COMMERCIAL ENTRANCE
H.A.P. PLANS

DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215	APPROVED BY:	JMD

DRAWING NO.: HOP-8



LEGEND

	EXISTING SUBJECT PROPERTY LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING RIGHT-OF-WAY
	EXISTING EASEMENT
	EXISTING SETBACK LINE
	EXISTING ROADWAY EDGE
	EXISTING ROADWAY EDGE
	EXISTING GRAVEL EDGE
OH-E	EXISTING OVERHEAD ELECTRIC LINE
ST	EXISTING STORM SEWER
W	EXISTING WATER LINE
G	EXISTING GAS LINE
SAN	EXISTING SANITARY SEWER LINE
	EXISTING FENCE
	EXISTING INLET
	EXISTING GAS VALVE
	EXISTING WATER VALVE
	EXISTING SANITARY SEWER MANHOLE
	EXISTING ELECTRIC POLE
1200	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
SAN	PROPOSED SANITARY SEWER
W	PROPOSED WATER LINE
G	PROPOSED GAS LINE
OH-W	PROPOSED OVERHEAD ELECTRIC WIRE
	PROPOSED UTILITY POLE
1215	PROPOSED INDEX CONTOUR
1214	PROPOSED INTERMEDIATE CONTOUR
1214.75	PROPOSED SPOT ELEVATION
TC=1214.50	PROPOSED TOP OF CURB ELEV
BC=1214.00	PROPOSED BOTTOM OF CURB ELEV
TW=1216.50	PROPOSED TOP OF WALL ELEV
BW=1214.00	PROPOSED BOTTOM OF WALL ELEV
	PROPOSED STORM SEWER LINE
ST	PROPOSED STORM SEWER/FOUNDATION DR.
	PROPOSED STORM SEWER INLET
	PROPOSED CLEANOUT
	PROPOSED MANHOLE
	PROPOSED HEAVY DUTY ASPHALT PAVEMENT
	PROPOSED CONCRETE WALK
	PROPOSED HEAVY DUTY CONCRETE PAVEMENT
	PROPOSED BUILDING
	PROPOSED PROPERTY LINE
	PROPOSED BUILDING SETBACK LINE
	PROPOSED ASPHALT WEDGE CURB
	PROPOSED PAVEMENT EDGE
	PROPOSED RETAINING WALL
	PROPOSED FENCE
	PROPOSED GUIDERAIL
	PROPOSED PAVEMENT MARKINGS
	PROPOSED SIGN
	PROPOSED PYLON SIGN
	PROPOSED BOLLARD
	PROPOSED SITE LIGHT POLE

SERIAL NO: 19611307

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161 MAIN STREET, GRANTSVILLE, MD 2150
GARRETT COUNTY, MARYLAND

SITE PLAN
COMMERCIAL ENTRANCE
H.A.P. PLANS

DATE:	DECEMBER 2019	DRAWN BY:	QAB
DWG SCALE:	AS SHOWN	CHECKED BY:	CTZ
PROJECT NO:	192-215		
APPROVED BY:	JMD		

DRAWING NO.: **HOP-9**
SHEET 9 OF 9

APPENDIX D

HEALTH & SAFETY PLAN

Intertek-PSI
850 Poplar Street
Pittsburgh, PA 15220

Tel +1 412.922.4001
Fax +1 412.922.4043
intertek.com/building

HEALTH AND SAFETY PLAN

for the

PROPOSED GRANTSVILLE DOLLAR GENERAL
129, 131 AND 133 E. MAIN STREET
GRANTSVILLE, MARYLAND 21536

Prepared For:

PTV 1075, LLC
400 Penn Center Boulevard
Building 4, Suite 1000
Pittsburgh, Pennsylvania 15235

Prepared by:

PROFESSIONAL SERVICE INDUSTRIES, INC.
850 Poplar Street
Pittsburgh, Pennsylvania 15220
Telephone (412) 922-4000
Fax (412) 922-4043

PSI File No. 08163843-2

May 4, 2020

David A. Christner
Project Manager

John Emerson, CSP, CIEC
Principal Consultant

TABLE OF CONTENTS

SECTION 1 – INTRODUCTION

This plan has been prepared according to applicable sections of 29 CFR 1910.120 as it pertains to potential health & safety concerns during construction activities due to previously identified contaminants in the soils and groundwater at the proposed Grantsville Dollar General Site located at 129, 131 and 133 E. Main Street in Grantsville, Garrett County, Maryland. The facility is located on current residential and cleared grassy land. The western portion of the subject property was property formerly occupied by a former gasoline station and auto service garage on the western portion of the property from 1922 through the 1990s (gas station through the early 1980's). The current residence on the southeastern portion of the subject property has a 1,000-gallon underground storage tank (UST) used for home heating oil. The proposed work consists of excavation activities associated with the construction of the proposed Dollar General retail facility. PSI has conducted several prior environmental investigations on the subject property. Contaminants have been identified in the soils and groundwater at the subject property.

The subject property is currently enrolled in the Maryland Department of the Environment (MDE) Voluntary Clean-up Program (VCP).

This Health and Safety Plan (HASP) is limited to addressing potential health and safety concerns related to previously identified environmental contaminants at the subject property for construction work at the subject property. It is not intended to cover all work procedures specified in the OSHA Construction and General Industry Standards. This HASP does not relieve the contractors from responsibility for the health and safety of their personnel, nor does it prohibit the contractors from establishing more stringent protocols for their workers.

SECTION 2 – SITE DESCRIPTION

The subject property consists of two adjoining parcels of land totaling 0.67 acre. The western parcel (133 E. Main Street) is owned by Gregory Lawson. The western portion of the subject property is a vacant grass-covered lot with an asphalt driveway. The eastern portion of the subject property (129 E. Main Street) is owned by Norman & Hazel Beitzel. The eastern portion of the subject property is improved with an approximately 1,500 square foot (SF) residential home and approximately one-third of a 600 SF garage. There is an asphalt / grass-covered drive that goes to the existing detached garage. There are no water bodies present on the subject property. Access to the subject property is via E. Main Street (Rt. 40 Alt.) to the south, Pennsylvania Avenue to the west, or Ravine Street to the north. There are no surface water bodies located on the subject property.

Current use(s) of surrounding property include: Ravine Street, followed by a residential property and medical/dentist office building to the north; residential properties, followed by Church Street to the east; E. Main Street (Rt. 40 Alt.), followed by residential properties and Thomas Tax Service to the south; and Pennsylvania Avenue, followed by residential properties to the west.

SECTION 3 – SCOPE OF WORK

The client provided PSI with the following scope of the proposed work for this project:

The proposed development includes the demolition of the existing two-story home and detached auto garage located on the subject property. The entire structure will be demolished, including the house foundation. The existing, currently unregulated, 1,000-gallon home heating oil UST will be removed. The existing underground municipal sanitary sewer line crossing the northwestern portion of the property will be relocated along the property perimeter. A new underground storm water pod will be installed. A new approximately 9,100 square foot, slab on-grade, one story retail store building will be constructed on the northern portion of the subject property. The majority of the remainder of the property will contain a paved asphalt parking lot and drives and concrete pads and sidewalks. There will be a total of 26 parking spots. A retaining wall will be constructed around the majority of the property. There will be a trash enclosure on the northeastern corner. There will be approximately 7,140 square feet of land not covered by an impervious surface and covered with turfgrass or other landscaping.

The construction will require some cut and fill. One to three feet of soil will be cut from the southern and southeastern portions of the property and the soils filled on the remaining portions of the property Utilities will be placed in trenches. Some estimated depths of deeper excavation are summarized below.

Feature	**Location**	**Estimated Depth**
Current and Proposed Municipal Storm Water Line	Northwestern Portion	7’ bgs
Other subsurface utilities	Across Site	4 to 5’ bgs
Storm Water Pod	Northeastern Portion	8’ bgs
Pylon Sign Structure	Southeastern Corner	8’ bgs
Building Footers	Northern Side	5.5 to 6’ bgs

Based on the anticipated depths of the excavations, the more heavily petroleum product impacted soils are not anticipated to be encountered on a widespread nature. The deeper (> 5ft.) excavation activities may encounter this odor impacted petroleum soils; however,

only limited deeper excavation activities are anticipated in the areas most likely containing these petroleum odor-impacted soils (southwestern corner).

Based on the anticipated depths of the excavations, groundwater will likely not be encountered; however, if groundwater is encountered, some dewatering activities may be required for utility installation and other activities.

All contractors and workers should familiarize themselves with the contents of this HASP.

SECTION 4 – ORGANIZATIONAL STRUCTURE

The organizational structure section establishes the specific project chain-of-command and specifies the overall responsibilities of supervisors and employees. This organizational structure shall be made available to all affected employees and shall be reviewed and updated as necessary to reflect the current status of the project.

NAME	TITLE/POSITION	COMPANY
Bob Basile	Construction Supervisor	PTV
TBD	Environmental Health & Safety Director (EHSD)	TBD
TBD	Site Health & Safety Officer (SHSO)	TBD
TBD	Sub-Contractor Supervisor(s)	TBD
TBD	Construction Workers	TBD

PennTex Ventures, LLC will be the Construction Supervisor/General Contractor for the project. They will be in charge with both implementing and enforcing the HASP. PennTex Ventures will designate an EHSD and a SHSO. They will have the authority to ensure compliance of the HASP by all subcontractors.

The EHSD has the responsibility and authority to develop and implement the site health and safety plan and verify compliance with the plan. The EHSD has the authority to stop work if there is an imminent safety hazard encountered during site activities.

The SHSO is responsible for the daily monitoring of site activities to ensure that contractors are complying with the HASP. The SHSO reports to the EHSD and General Contractor Supervisor.

Sub-Contractor Supervisor – The supervisor for each individual contractor is responsible for the health and safety of their on-site employees.

Construction Workers – Each construction worker should be familiar with the contents of this HASP. Each worker is responsible for abiding by the actions contained within the report.

SECTION 5 – SITE HEALTH AND SAFETY RISKS

This HASP was prepared based on PSI's review of the following reports/information:

- "Phase I ESA Report," dated March 4, 2019 prepared for PTV Contracting LLC and conducted by PSI,
- "Phase II Investigation Report" prepared for PTV Contracting, LLC dated April 18, 2019 conducted by PSI
- "Additional Phase II Investigation Report" prepared for PTV Contracting, LLC dated February 6, 2020 conducted by PSI,
- "Additional Phase II Investigation Report – Soil Gas Sampling" prepared for PTV Contracting, LLC dated March 18, 2020 conducted by PSI
- *"Proposed Project Development Plans"* provided via e-mail by PTV, LLC.

Identified Hazards – Historical Investigations

Based on a review of the Phase II ESA, the following contaminants were identified on the subject property at concentrations exceeding the MDE Non-residential Generic Numeric Clean-up Standards:

Soils

Surface Soils (0 -2 ft. bgs): Specific Chemicals of Concern (COCs) above non-residential Maryland Department of the Environmental Generic Numeric Cleanup Standards in the surface soils include: heavy metals (arsenic and unspeciated chromium) and benzo(a)pyrene (a polycyclic aromatic hydrocarbon, which are a subset of Semivolatile organic compounds).

Sub-Surface Soils (> 2ft. bgs): Specific Chemicals of Concern (COCs) above non-residential Maryland Department of the Environmental Generic Numeric Cleanup Standards in the soils include: heavy metals (arsenic, nickel and unspeciated chromium), ethylbenzene (VOC), Total Petroleum Hydrocarbon (TPH) – Gasoline Range Organics (GRO), TPH – Diesel Range Organics (DRO).

The metals' impact appears to be to both the surface and subsurface soils. The majority of the metals' concentrations appear to be consistent with background levels, with the exception of the arsenic concentrations found in the soils at a depth of 5' bgs in the area of the former auto repair garage (western side); The petroleum product odor impacted soils appear to begin at a depth of approximately 5' bgs on the southwestern portion of the subject property in the area of the former USTs; at depths beginning at 12' bgs in the area northeast of the former UST field; and at depths beginning ap[proximately 18' bgs on the northern portion of the property. The PAH or SVOC impact appears to be limited to the surface soils in the vicinity of the current fuel oil UST on the southeastern portion of the property.

Groundwater
Specific Chemicals of Concern (COCs) above non-residential Maryland Department of the Environmental Generic Numeric Cleanup Standards in the groundwater include: heavy metals (unspeciated chromium), VOCs (ethylbenzene, isopropylbenzene, naphthalene, 1,2,4 and 1,3-5-trimethylbenzene, TPH – GRO, TPH – DRO and benzo(a)pyrene (a polycyclic aromatic hydrocarbon or semivolatile organic compound).

Some apparent perched groundwater was found at approximately 6' bgs in the area of the former UST field during the initial Phase I ESA. Based on the overall investigation activities, PSI believes, this water was likely sitting (perched) in a former UST pit that had been backfilled with rock and is not the true groundwater. Dedicated groundwater appeared to be located at depths ranging from 16 to 19 feet bgs on top of bedrock. Based on the amount of groundwater available for the groundwater sampling and its recharge rate during the sampling, groundwater appears to be limited, especially on the northern side of the subject property.

These compounds may be present in the soils and/or groundwater. If the soils and/or groundwater are disturbed, the chemicals could become airborne, primarily is soil particles. The VOC compounds could also be present in the air due to off-gassing.

Identified Hazards – Contaminant Discussion

Metals may be present in the soils, groundwater and air (during any groundwater or soil disturbance). The metals are considered carcinogens. Routes of potential exposure concern for metals include inhalation, ingestion and direct contact (skin and eyes). These substances do not produce detectable odors; thus, it is difficult to detect their presence. They do not readily volatilize in the air; however, they can be entrained in the air in soil dust. Visible emissions of dust would be a good indicator that metals may be present in the air.

Volatile organic compounds (VOCs) in the form of individual VOCs as well as Total Petroleum Hydrocarbons (TPHs) are present in the soil, groundwater and air (due to any groundwater or soil disturbance or via off-gassing). These compounds readily volatilize into the air and at higher concentrations can be detected by smell or with a photoionization detector (PID). Routes of exposure concern include inhalation, ingestion, and direct contact (skin and eyes). These compounds could also be dispersed in the air via dust. Visible emissions of dust, elevated PID readings or odors would be a good indicator that TPHs/VOCs may be present in the air.

Other Common Hazards

Physical Hazards

Common physical hazards include slips, trips, falls, and heat/cold stress. All work areas should be kept in a neat and orderly manner, free of tripping hazards. All open trenches and excavations should be demarcated with barrier tape or other suitable warning material. Any non-removable tripping hazards should be marked with fluorescent paint to increase their visibility. Standing water on any slippery surface should be eliminated to the extent feasible. Warning signs should be placed in areas with standing water.

Depending on the time of year the work takes place, heat or cold stress could be an issue. All workers should be trained on the signs and symptoms of heat and cold stress, along with information on how to minimize potential exposure to these conditions. Heat and Cold Stress Fact Sheets are appended. Workers should wear appropriate clothing for the anticipated weather conditions. Particular attention should be paid during hot weather when PPE and/or respirators are being worn as this will put extra stress on the worker.

Based on the proposed work activity, the work will likely involve the following activities, which are regulated under the OSHA Construction Standard, CFR 1926.

Lead: Lead levels are present in the soils and groundwater at the subject property. All contractors will need to follow the OSHA lead Construction Standard under 29 CFR 1926.62.

TPHs and Metals (in addition to Lead): TPHs and Metals other than Lead are present in the soils and groundwater at the subject property. All contractors will need to follow applicable regulations in the Construction Standard, 29 CFR 1926 Subpart Z Toxic and Hazardous Substances.

Respirable Crystalline Silica: Workers in the construction area may to be exposed to some levels of Crystalline Silica. All contractors will need to follow the OSHA Crystalline silica in Construction Standard, 29 CFR 1926.1153.

Excavation/Trenching: All contractors involved in excavation and/or trenching activities need to comply with OSHA's Standards under 1926.650-652 (Subpart P). All contractors involved in trenching must have a "competent person" on-site during these activities. Trenches need to be inspected at least once per day, with additional inspections required if conditions change.

Ladders/Stairways: All contractors involved in the utilization of ladders need to comply with OSHA's Standards under 1926.1051, 1052, 1053 and 1060.

Scaffolding: All contractors involved in the utilization of scaffolding need to comply with OSHA's Standards under 1926.451, 452, 454.

Aerial Lifts: All contractors involved in the utilization of aerial lifts need to comply with OSHA's Standards under 1926.453.

Fall Protection: All contractors involved in the utilization of fall protection need to comply with OSHA's Standards under 1926.500-503 (Subpart M).

Steel Erection: All contractors involved in steel erection need to comply with OSHA's Standards under 1926.750-761 (Subpart R).

Based on the proposed work activity, the following tasks are not anticipated; however, the potential exists for them to occur:

Confined Spaces: If confined spaces are present, then a written confined space entry plan and permitting system must be established and needs to comply with OSHA's Standards under 1926.1201-1213 (Subpart AA).

Location of Contaminants

The contaminants identified above may be present in the soils, groundwater and/or air. The are not likely found at appreciable occupational concentrations of concern in ambient air under normal conditions. However, soil and/or groundwater excavation, storage, movement, or other disturbances could result in them being released into the ambient air at concentrations of occupational concern. This includes gases in the air through volatilization. All contaminants could become entrained in the air via dust particles generated during work activities.

Exposure Symptoms

Exposure to TPHs/VOCs and heavy metals may result in acute (immediate) effects or chronic (long-term) effects. For the purposes of this HASP, only immediate effects (symptoms) are listed **as a means to indicate exposure**. Exposure can occur through direct contact with the skin or eyes, inhalation of vapors/fumes/dusts, or ingestion of the soils or groundwater.

Acute exposure to metals and TPHs/VOCs may result in the following observable symptoms:

- Irritation of the eyes, skin, nose and/or respiratory system,
- Abdominal pain,
- Chest pain

- Muscle weakness
- Headache,
- Nausea,
- Dizziness,
- Staggered gait;
- Fatigue, weakness, exhaustion;
- Irritability;
- Giddiness;
- Choking.

If a worker exhibits any of these characteristics, then toxic exposure should be initially assumed. Persons experiencing or exhibiting these characteristics should be moved to a safe, well-ventilated area. If symptoms persist, the affected person should seek medical treatment. If toxic exposure is confirmed, then a review of the HASP should be undertaken to determine if additional procedures are required to adequately protect site workers.

Exposure to TPHs/VOCs and metals can also lead to long term (chronic effects including:

- Cancer,
- Damage to reproductive system,
- Damage to organs,
- Respiratory tract damage,
- Damage to the Central Nervous System,
- Death.

While these chronic effects will not be manifested during the work, workers should be informed of these chronic effects as part of the site-specific training.

Routes of Exposure/General Precautions

Based on the location and nature of the chemical hazards and the scope of the proposed work, the main routes of exposure concern for this project are ingestion, inhalation and direct contact (dermal).

Ingestion – This route of exposure is considered to be minimal and primarily due to accidental ingestion or ingestion coupled with other oral activities such as smoking, eating or gum chewing. These activities should be prohibited in the work areas, and only conducted following proper decontamination. All soils should be kept sufficiently moist to minimize air entrainment. All workers should be instructed that the groundwater is not to be used for any purpose, including as a source of potable water. Care should be taken when working directly with the soils and groundwater or around machinery involved with the transportation of these to minimize the potential for inadvertent ingestion from

generated dusts, splashing, leaks or spraying of water. Proper PPE and personal hygiene should be practiced at all times.

Inhalation – Inhalation can occur through the breathing of vapors from volatilization of TPHs/VOCs. It can also occur due to the inhalation of dusts entrained in the air containing the contaminants. This exposure route can be controlled through work practices to control the generation of dust. Prior to disturbing or handling of soils, they should be wet with water to minimize air entrainment. Soil handling should be minimized to the extent possible. No activities that result in misting or dispersion of fine groundwater droplets should be conducted. Respiratory protection may be needed depending on the airborne levels of contaminants. Proper PPE and personal hygiene should be practiced at all times.

Skin/Eye Contact – Skin/Eye contact can occur through any exposed skin during handling of the soil or groundwater. Workers should minimize both their contact and their duration of contact with soil and groundwater. While handling these items, absorption of potential contaminants can be controlled through the use of PPE and practicing good industrial hygiene. No smoking, eating, drinking or gum chewing should occur in the active work areas (Exclusion Zone). Proper decontamination facilities including an emergency shower, wash stations, and an emergency eye wash station should be present on site at all times.

General Work Procedures

Work procedures should be designed to minimize soil and groundwater contact with site workers. In addition, the following general procedures should be followed during all tasks:

1. **All soils should be kept sufficiently moist to avoid the generation of dust during all soil disturbance, storage and transportation activities.** This is likely the most important procedure that can be implemented at the subject property to control exposures. During extreme cold weather for any exterior work, the application of water should be reevaluated due to the potential for freezing, which could cause an additional hazard or slips and falls.
2. Whenever possible, mechanical means should be used for the excavation and movement of soils and groundwater.
3. Any excavated soils that exhibit a petroleum product odor should be placed on plastic sheeting and covered as soon as possible.
4. Groundwater should not be dispersed at the site using a fine mist or aeration methods.
5. Whenever possible minimize the depths of excavation to the shallowest amount needed to avoid the introduction of groundwater into excavations or trenches.
6. Whenever possible, conduct shallower excavation related work prior to initiating activities requiring deeper excavation into the groundwater zone.
7. If personnel must enter trenches in which the worker breathing zone will be below ground level, then ventilation should be introduced.

8. There should be no eating, drinking, gum chewing or smoking within the active work areas (Exclusion Zone).
9. Proper PPE should be utilized at all times within the work areas (Exclusion Zones).
10. Workers should follow proper personal decontamination procedures upon leaving the work area.
11. All equipment should be properly decontaminated upon removal from the work area.

SECTION 6 – AIR MONITORING

AIR MONITORING

Based on the presence of the identified contaminants, the following air monitoring is recommended.

OSHA Exposure Monitoring
Based on the types of proposed work, its exterior nature, and engineering practices set forth in this HASP, worker airborne exposure above OSHA Permissible Exposure Limits (PELs), with the exception of workers who will be working in trenches greater than five feet in depth and petroleum odor impacted soils or groundwater are present in the trench. Workers in this scenario, will be required to wear respiratory protection. The use of respiratory protection should continue either the entire length of work, or, it can only be discontinued upon receipt of OSHA monitoring showing that their exposure is below the PEL for VOCs and metals. If any of the real time field monitoring action levels triggering the use of respiratory protection are reached for any tasks, then approximately 10% of the workers for each task shall be monitored for one or more of the following: VOCs and metals (lead, chromium and nickel).

Once the results of any OSHA exposure monitoring are received, the need for continued respiratory protection will be reevaluated. Field screening as described below will be conducted during the initial OSHA monitoring. The OSHA personal air sampling and the field screening monitoring levels will be reviewed by the EHSD and SHSO. If the OSHA personal air sampling results allow, respiratory protection will be discontinued. The field screening will continue throughout the work. Action levels for resuming respiratory protection, based on the field readings, will be established based on the correlation between field readings and the OSHA Personal monitoring. Preliminary field screening action levels are presented below.

Each subcontractor should evaluate their proposed work to determine if their site activities warrant employee exposure monitoring for OSHA regulatory purposes. Additional PPE and respiratory protection guidelines based on specific tasks are contained in Section 8.

Real Time Field Monitoring

Organic Vapors

TPHs/VOCs are present in the soils and groundwater at the subject site. While the higher concentrations of VOCs and TPHs are at deeper locations, these compounds can volatilize into the air and be breathed by a person into their lungs. A PID with a 10.6 eV probe should be utilized at the site during all work involving excavations into the ground, soil movement (cut and fill) and excavated soil/groundwater handling. The air monitoring should be conducted in the worker's breathing zone.

Preliminary Action Levels

Air Monitoring Frequency: At least every 15 minutes using a PID.
Action Level: 5 ppm
Response: Upgrade to Level C with ½ face air purifying respirator if:

- readings are greater than 5 ppm PID reading (above background), but less than 10 ppm for a 15-minute average,
- or greater than 5 ppm but less than 10 ppm for any 2 successive one-minute readings within a 15-minute period,
- or a noticeable chemical odor is encountered.

Air Monitoring Frequency: At least every 15 minutes using a PID.
Action Level: 10 ppm
Response: Upgrade to Level C with full face air purifying respirator if:

- readings are greater than 10 ppm PID reading (above background), but less than 50 ppm for a 15-minute average,
- or greater than 10 ppm but less than 50 ppm for any 2 successive one-minute readings within a 15-minute period.

Air Monitoring Frequency: At least every 15 minutes using a PID.
Action Level: 50 ppm
Response: Immediately stop work and evacuate the exclusion zone if

- readings greater than or equal to 50 ppm PID reading (above background) at any time.

If readings are greater than or equal to 50 ppm at any time, stop work and evacuate the exclusion zone. Perform a survey of the area to identify the source of elevated VOCs. Based on the results of the survey, the HASP will be reevaluated and if warranted,

increased PPE and respiratory protection and/or alteration of the work procedures considered. The EHSD and SHSO should be immediately notified.

If someone exhibits any of the characteristics of organic vapor exposure listed in Section 5 – Site Health and Safety Risks, then organic vapor exposure should be assumed. Work should stop, and all personnel should leave the exclusion zone. Persons experiencing or exhibiting these characteristics should be moved to a safe, well-ventilated area, and should not be permitted to operate equipment. The EHSD and SHSO should be notified.

Dust Monitoring
Contaminants may be present in the soils and dispersed into the air attached to dust particles. These particles can be breathed into the lungs. Particulate Monitoring will be conducted during all work involving excavations into the ground, soil movement (cut and fill) and excavated soil/groundwater handling using a handheld portable dust monitor. Visual observations will also be used to gauge dust levels. The readings should be conducted in the area of the workers breathing zone.

Air Monitoring Frequency: At least every 15 minutes using a real time Dust Monitor.
Action Level: 2.5 mg/m^3
Response: Upgrade to Level C with ½ face air purifying respirator if:

- readings are greater than 2.5 mg/m^3 (above background), but less than 5.0 mg/m^3 for a 15-minute average,
- or greater than 2.5 ppm but less than 5.0 ppm for any 2 successive one-minute readings within a 15-minute period,
- or **excessive** visible dust is observed.

Air Monitoring Frequency: At least every 15 minutes using a real-time dust monitor
Action Level: >5 mg/m^3
Response: Upgrade to Level C with Full face air purifying respirator if:

- readings are greater than 5.0 mg/m^3 (above background), but less than 25 mg/m^3 for a 15-minute average,
- or greater than 5 mg/m^3 but less than 25 mg/m^3 for any 2 successive one-minute readings within a 15-minute period,

Air Monitoring Frequency: At least every 15 minutes using a real-time dust monitor
Action Level: 25 mg/m^3
Response: Immediately stop work and evacuate the exclusion zone if

- readings greater than or equal to 25 mg/m^3 (above background) at any time.

If readings are greater than or equal to 25 mg/m^3, stop work and evacuate the exclusion zone. Perform a survey of the area to identify the source of elevated dust levels. Based on the results of the survey, the HASP will be reevaluated and if warranted, increased PPE and respiratory protection and/or alteration of the work procedures considered.

Explosive Vapors
Several VOCs are present in the soil and groundwater at the subject property. The higher TPH and VOC levels begin at approximately five feet below ground level. While their concentrations do not represent a significant explosion hazard, the presence of trenches or excavation pits greater than five feet deep represent an area for the possibility for the build-up of explosive vapors. A Lower Explosive Limit (LEL) Gas Meter should be present at the site to monitor for explosive gases prior to and during any work in trenches greater than five feet in depth. The meter readings should be collected at various levels within the trench (> 5 feet in depth), tunnel or pit.

Air Monitoring Frequency: Prior to entry and continuous upon entry using a LEL
Action Levels/Response:
Less than 5 % LEL – Proceed with normal work practices.

5% to **<10%** LEL: Limit all activities in the area to those that will not generate sparks; proceed with extreme caution.

Greater than 10% LEL All personnel will ***stop work and*** withdraw immediately to a designated safe area. Refer to the contingency plan in Appendix IV for additional instructions after evacuation. Do not re-enter the exclusion zone until clearance to do so has been issued by the site supervisor.

SECTION 7 – WORK ZONES

Based on the nature of the metals' contamination encompassing the entire site, the institution of different work zones at the property may be impractical during the initial cut and fill activities. During cut and fill activities, the entire site will be considered the Exclusion Zone. The area should be demarcated, and warning signs posted so that unauthorized personnel will not enter. If possible, during the initial cut and fill activities, the job trailer and central decontamination area should be set up off-site. If this is not possible, then the job trailer and central decontamination area should be set up in the up-wind location of the prevailing wind direction, which is to the southeast. Thus, they should be set up on the northwestern portion of the subject property. Once the cut and fill activities have been completed, further excavation will be conducted at select areas on the subject property and these areas can be established as exclusion zones.

Exclusion Zone

The Exclusion Zone is defined as the immediate regulated work area (area of subsurface excavation work or soil/groundwater handling and storage and extending a distance of 10 feet beyond the excavation/handling area. An exclusion zone should be set up any time there is penetration into the ground (i.e. trenching, excavation) or during any material (soil or groundwater) movement (i.e. loading/unloading).

The Exclusion Zone boundary will be clearly and conspicuously marked using boundary tape, cyclone fencing, or safety fencing and signs. The signs will specify that only trained and authorized personnel are allowed to enter. Authorization to enter can be obtained from the foreman/site supervisor. The entry and exit point will be established through the CRZ corridor. Entry will be limited to essential personnel or pre-approved visitors. In addition, any open trench or excavation will be protected with fencing during non- working hours.

Contamination Reduction Zone

The CRZ will be established as ingress and egress points to the Exclusion Zone and will consist of the most direct pathway from the exclusion zone to the decontamination facility. The CRZ will not be demarcated. Personnel should remove any gross contamination upon exiting the exclusion zone and proceed to the wash area. In the wash area, personnel will begin the sequential decontamination process. To prevent offsite migration of contamination and to facilitate personnel accountability, all personnel should proceed directly from the exclusion zone to the decontamination area.

For personnel conducting activities within Exclusion Zones containing the identified contaminated materials, hand, body and eye wash facilities will be provided. These will include at a minimum, a washing station with soap and hot and cold water. Prior to eating, drinking, and/or smoking, on-site workers are required to wash their hands thoroughly. In addition, food and beverage should be kept out of the work zone. All personnel will be required to wash their hand and faces prior to leaving the Site at the end of the workday or prior to taking breaks, such as lunch. All disposable protective equipment shall be left on the site and bagged for the appropriate disposal. Boots will be brushed to remove material from the site. The following minimum equipment will be present in the CRZs:

- Brushes with handles for boot cleaning (at exit of exclusion zone),
- Emergency eye wash station (central wash area)
- Water with hand/face wash/rinse basins,
- Hand soap and paper towels,
- Plastic garbage bags for used protective clothing.

To minimize the spread of contaminated materials, equipment will be cleaned upon

movement out of active work zones. Project vehicles will be cleaned for removal of material from the vehicle body and tires upon exiting the exclusion zone. Gross material should be removed immediately upon exit from the exclusion zone. The vehicle and all hand tools should then proceed through the CRZ corridor to a central wash station.

All waste material generated in the CRZ will be collected and effectively contained through the use of drums, bags, plastic sheeting, and/or tanks. All waste materials will be labeled as such and properly disposed of according to their hazard classifications.

Support Zone

The Support Zone is an uncontaminated zone where administrative and other support functions, such as first aid, equipment supply, emergency information, etc., are located. The Support Zone shall have minimal potential for significant exposure to contaminants (i.e., background levels). Employees will establish a Support Zone (if necessary) at the site before the start of site activities. The Support Zone would also serve as the entry point for controlling site access. The Support Zone may initially be inside the work zone during cut and fill activities, which will take place across the entire site.

SECTION 8 – PERSONAL PROTECTIVE EQUIPMENT (PPE)

Each contractor should provide the appropriate level of personnel protective equipment (PPE) for their job task. The following are minimum PPE, levels for various anticipated tasks at the subject property:

PERSONAL PROTECTION EQUIPMENT (PPE) (Excluding respiratory protection)

Level D:
Standard Work Clothing (long sleeves and full-length long trousers)
Reflective Vest
Hard Hat
Work Boots (Steel Toed)
Safety Glasses
Work Gloves

Level C:
Tyvek® Suit (or equivalent)
Inner Chemical Resistant Gloves
Outer protective gloves
Hard Hat
Chemical Resistant Work Boots (Steel Toed)
Safety Glasses

Level C Modified (with groundwater present):
Poly-coated Tyvek® Suit (or equivalent)
Chemical Resistant Inner Gloves
Outer Protective Gloves
Goggles/Face shield
Hard Hat
Chemical Resistant Waterproof Boots (Steel Toe)

PERSONAL PROTECTION EQUIPMENT (PPE) - RESPIRATORY PROTECTION

Based on the exterior nature of the work, workers will not be initially required to wear respiratory protection, unless they conduct work within trenches and evidence of petroleum odor-impacted soils are present. Workers in this type of environment will need to wear respiratory protection the entire time this work takes place, or until OSHA monitoring indicates their exposure is below the OSHA PEL. During work in any exclusion zone, if the applicable HASP air monitoring screening levels are exceeded or if visual or odor indications of impact are exceeded, then workers will be required to utilize respiratory protection.

If the screening levels for only TPHs/VOCs and/or dust levels are exceeded, then the workers will need to utilize either half-face air purifying respirators equipped with combination organic vapor/P100 cartridges, or depending on the airborne contaminant levels, full-face air purifying respirators equipped with combination organic vapor/P100 cartridges. Contractors should be prepared for the potential to institute respiratory protection at any time.

The respiratory protection will be reevaluated upon receipt of any OSHA personal air monitoring results, if collected. Field screening monitoring will continue following receipt of any OSHA personal air monitoring and action levels for the field screening results established for the guidance of up-grading or down-grading respiratory protection.

TASK SPECIFIC PERSONAL PROTECTION EQUIPMENT (PPE)

The Table below provides guidance on the minimal PPE for each of the anticipated tasks.

Task	PPE Level	Respiratory Protection
All Personnel not involved in the below activities	Level D	None
General Laborers	Level D	None
Cut and Fill Activities	Level D	None
Excavation Activities < 5 ft.	Level D	None
Excavation Activities >5 ft.	Level C	None
Any of the above activities when groundwater is present in their immediate work area are present	Modified Level C	None
Work inside any trench with petroleum odors present	Level C	½ face with Combo P100/Organic Vapor cartridges
Cut and Fill or any Excavation Activities with field Monitoring Above Action Levels	Level C	½ or full-face air purifying negative pressure respirator with P100 /Organic Vapor Cartridges
Either of the two immediately above tasks when groundwater is present in their immediate work area are present	Modified Level C	½ or full-face air purifying negative pressure respirator with P100 /Organic Vapor Cartridges

PERSONAL PROTECTION EQUIPMENT (PPE) – GENERAL INFORMATION

Disposable protective clothing is to be disposed of after each use. Disposable protective clothing must be replaced upon re-entry into Exclusion Zones, as applicable, or if the suit becomes damaged or saturated during use. Repairs to small rips may be made to protective clothing using duct tape.

All PPE will be maintained in good condition. Any PPE found to be torn, cut, punctured, or otherwise damaged will be disposed of immediately. After use and decontamination, respirators will be stored overnight in a closed container. The following day, the closed container will be transported to the PPE donning area for reuse.

All PPE will be donned prior to entering the work area. PPE will be donned with the assistance of a "buddy" to verify that equipment is worn properly. All PPE will be worn in accordance with the manufacturer's recommendations. At no time will a person remove the designated PPE while in the designated work zones. Disposable PPE will only be removed in the CRZ upon exiting the Exclusion Zone, as applicable. Personnel will utilize seating (during decontamination and doffing procedures) to prevent tripping and falling.

PPE will be inspected by employees prior to donning. Boots, gloves and disposable clothing found to be defective will not be worn and will be disposed. Defective respirators, safety glasses and hard hats will be reported to the Project Health and Safety Officer.

Periodic inspections and observations of personnel using PPE will be made by the SHSO to ensure that the PPE Program elements are being followed.

All contractors whose employees will wear respiratory protection must comply with the OSHA respiratory standard (40 CFR 1910.134). Only workers who have been certified by a physician as being physically capable of respirator usage will be issued a respirator. Respiratory protection may consist of half-mask air purifying respirators equipped with P100/organic vapor combination cartridges, or supplied air depending on project conditions. A Quantitative fit test is required prior to the use of a supplied air respirator. A Qualitative Fit Test must be conducted each time an air purifying respirator is donned.

All cartridges will be changed as needed. Increased airborne dust and contaminant concentrations and breathing rates may necessitate more frequent changes. Change will occur when personnel begin to experience increased breathing resistance, notice any unusual odor inside the cartridge or experience excessive heat generation in the cartridges. All cartridge changes will take place in the CRZ after decontamination of the exterior part of the PPE ensemble.

Respirators will be maintained by the employee to whom they are assigned. All respirators and associated equipment will be inspected and cleaned, as necessary, prior to use. Respirators will be decontaminated, cleaned and disinfected by the user during each decontamination episode. Harsh detergents and solvents must not be used to clean respirators. Cleaned respirators must be thoroughly dried before storing. Respirators will be checked periodically by the SHSO. Respirators will be stored in a clean, dry container and out of direct sunlight. Respirators must also be stored in such a way that the face-piece is not deformed.

No personnel will be permitted to wear a respirator with facial hair that interferes with the respirator's sealing surface.

The respirators specified for this Project have their limitations. Respiratory protection specified may not be worn in atmospheres immediately dangerous to life or health (IDLH), in contaminant concentrations exceeding 10 times the PEL of that contaminant, or in oxygen deficient atmospheres.

SECTION 9 – DECONTAMINATION

Personnel

Prior to leaving the exclusion zone, personnel should remove gross debris from the exterior of their PPE, especially their work boots. They should then proceed through the CRZ corridor to a central decontamination station which will be set up on site for all workers. The station should include both hot and cold water, soap and hand towels. All workers must at a minimum wash their hands, face and any other exposed surfaces with soap and water following work in the work areas (exclusion zones).

Workers should discard their outer protective clothing in this area. All decontamination water should be collected and properly disposed. There should be no eating, drinking, gum chewing or smoking within the decontamination area. All used suits, disposable equipment and hand towels should be bagged for proper disposal.

The station should include an eye washing station. If soils or groundwater come into contact with a person's eye(s), then the eye(s) should be flushed with running water for several minutes.

All site personnel should have access to both the washing and the emergency eye flushing station.

Equipment

A central equipment decontamination station should be established at the project site. All gross debris should be removed from any equipment used in the exclusion zone prior to being removed from the exclusion zone. The equipment should then be taken directly to the central decontamination station. The station should include sufficient water source, soap, brushes and hand towels. All equipment that comes into contact with soils and/or groundwater at the site should be properly decontaminated in this zone. This includes any vehicles used to transport soil or ground water. The tires of all vehicles that have entered the exclusion zone or are used to transport soils or groundwater should be cleaned of all residue prior to leaving the site. All decontamination water should be collected and properly disposed.

SECTION 10 – WASTE HANDLING

All soils should be handled in accordance with the written Soil & Groundwater Management Plan (SGMP), which is appended. **All excavated soils should be kept moist at all times to avoid any dust.** Stockpiled soils should be placed on impermeable synthetic material and covered with an impermeable synthetic material to avoid wind dispersion. Soil movement should be minimized to the extent possible. Exclusion Zones should be set-up around any soil loading and unloading areas

All groundwater should be handled in accordance with the written SGMP. In all cases, no excavated groundwater should be returned directly to the ground surface, storm water or municipal sewers, unless it has been tested and determined to be below regulatory standards and regulatory approval granted. Groundwater should not be dispersed at the site using a fine mist or aeration methods. Any groundwater from dewatering activities should be stored in a secured leak-proof container until it can be properly disposed.

The decontamination water used at the site should be collected and tested prior to any off-site disposal. Solid wastes, including protectives suits, gloves respirator cartridges, and paper towels, should be collected in a provided waste container and disposed of in accordance with applicable regulations.

SECTION 11 – EMERGENCY RESPONSE

In Case of Medical Emergency Call:

Ambulance, Fire and Police: 911

Hospital: **Grantsville Medical Center**
32 Corporate Drive
Grantsville, MD 21536
(301) 895-8750

Directions to Hospital: Turn right out of the site onto Main Street. Travel 0.2 miles and turn left onto MD-495 / S. Yoder Street. Travel 0.5 miles (over Interstate 68). Turn left onto N. Park Road. Travel approximately 300-feet, turn right onto Corporate Drive into the facility parking lot.

EMERGENCY TELEPHONE NUMBERS:

AGENCY	TELEPHONE NO.
General Contactor Supervisor	TBD
Environmental Health & Safety Director	TBD
Site Safety and Health Officer	TBD
Ambulance, Fire, Police	911
Grantsville Medical Center	(301) 895-8750
Environmental Medicine Resources	(404) 455-0818
National Poison Control Center	(800) 492-2414
Chemical Referral Center	(800) 262-8200
Professional Service Industries	(412) 922-4001 x382

Emergency Signal:

One long blast from an air horn will be the signal for all on-site personnel to immediately report to the support area.

Emergency Evacuation:

Based on the entire site being considered the Exclusion Zone, in case of an emergency, all personnel should immediately report to the Carquest Auto P{arts parking ;lot located across the intersection of Pennsylvania And Ravine Streets to the northwest. Further information will be provided by the SHSO at this time.

In all situations, when an on-site emergency results in evacuation of the site, personnel shall not reenter until:

1. The conditions created in the emergency have been corrected;
2. The hazards have been reassessed;
3. The Site Safety Plan has been reviewed; and
4. Site personnel have been briefed on any changes in the Site Safety Plan.

Emergency Equipment and PPE:

The following equipment will be maintained on-site:

Basic emergency and first aid equipment will be available in the Support Zone or the Contamination Reduction Zone. Such equipment shall include, at a minimum, a first aid kit, emergency eyewash, fire extinguishers (carbon dioxide or regular dry chemical), air horn, and other safety-related equipment.

Emergency Identification and Response:

Should any contaminants or suspected hazardous material be encountered on-site which were not identified in the Site Safety Plan, all further on-site activities will be suspended, and all on-site personnel evacuated at the discretion of the EHSD and SHSO.

Information to Report to Emergency Response Agency:

- Name of person reporting incident
- Location and phone number of person reporting
- Nature of emergency, incident

- Name of person injured or exposed
- Date, time and location of incident
- Action taken.

On-site personnel should report as much information as possible concerning the substance to the SHSO or the EHSD. If the substance cannot be identified, the EHSD and SHSO will use whatever resources are available to better characterize the unknown. The EHSD and SHSO should also determine:

- Appropriate control methods to prevent further spread/release of the hazard;
- Potential impacts of the substance to on-site personnel, the surrounding population, and the environment;
- Resources necessary to contain, stabilize, and clean up/remove the hazard;
- Appropriate authorities to notify.

Accidents:

The following standard emergency procedures will be used by on-site personnel in the event of an accident. The EHSD or the SHSO shall be notified and will be responsible for ensuring that the appropriate procedures are followed.

Personnel injury in the Exclusion Zone: Upon notification of an injury in the Exclusion Zone, the designated emergency signal shall be sounded. All site personnel shall assemble at the Support Zone. The rescue team will enter the Exclusion-Zone (if required) to remove the injured person. The EHSD and SHSO should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone. Appropriate first aid shall be administered, and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined. The accident will be documented in the daily logbook.

Personnel injury in the Support Zone: Upon notification of an injury in the Support Zone, the EHSD and SHSO will assess the nature of the injury and take appropriate action. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue. If the injury increases the risk to others, the designated emergency signal shall be sounded, and all site personnel shall move to the Support Zone for further instructions. Activities on-site will stop until the added risk is removed or minimized.

Fire/Explosion: Upon notification of a fire or explosion on-site, the designated emergency signal shall be sounded, and all site personnel assembled at a safe

area. The Fire Department shall be alerted, and all personnel moved to a safe distance from the involved area.

Personal Protection Equipment Failure: If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure: If any other equipment on-site fails to operate properly, the EHSD and SHSO shall be notified and then determine the effect of this failure on continuing operations on-site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

Natural Disasters:

Earthquakes, Tornadoes, High Winds, Floods, and Thunderstorms: Should any of these events be forecasted or occur, all work activities should be terminated immediately, and all personnel should evacuate the site via designated routes.

Emergency Response Follow-Up:

Following activation of the Emergency Response Plan, the EHSD will submit a written report documenting the incident. The SHSO field logbook will be maintained in such a manner that the report can be prepared from the logbook entries. The report may indicate that an update of this plan is necessary.

Emergency Response Pre-Planning:

Prior to commencing on-site work activities, the SHSO and EHSD will review the Emergency Response Plan with all site personnel.

SECTION 12 – EMPLOYEE TRAINING

A site-specific awareness-training program must be provided for all employees at the Project. Contaminated materials awareness-training shall be communicated to all employees according to the requirements of OSHA's Hazard Communication Standard for the Construction Industry, Title 29 CFR 1926.5. Contaminated materials awareness-training shall include but is not limited to chemicals of concern, health effects, applicable regulations, location of contaminated soil and groundwater, work practices to minimize exposure and decontamination procedures. In addition, training should include appropriate actions or communication lines if potential contact with the contaminated soil, dust/debris or groundwater is suspected.

For construction trades that conduct any excavation activities, including cut and fill activities, site specific training must be expanded from hazard awareness discussed above, to include, use and care of any provided personal protective equipment, employer sanctioned or provided exposure monitoring, any required medical surveillance program participation and access to medical and exposure records. The contractor may elect to use the 24-hour OSHA HAZWOPER training per 29 CFR 1910.120 as the training basis for any worker interacting with contaminated soil or groundwater at the site. Site specific hazard awareness and safety training must, however, comply with all applicable OSHA requirements. For each site construction trade, the site-specific hazard awareness and safety training must be modified as necessary to address their specific work requirements. In addition, the training must also be implemented as an extension of the contractor's standard safety and health program.

All contractors must have an OSHA "Competent Person" on-site at all times. A *Competent person* means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

All workers must sign the appropriate form that they have competed the required initial training. A record of all training must be maintained at the subject property and available for review by OSHA or the MDE. An initial and subsequent weekly tailgate safety meeting shall be conducted to go over any conditions or procedures encountered during prior work that may need to be changed or any new procedures that could be implemented to reduce exposure to the contaminated soil and/or groundwater.

Safety meetings shall also be conducted prior to continuing with work following any need to modify this health and safety plan.

Safety meetings shall also be conducted prior to continuing with work following any medical incident.

Copies of all training materials and training signatures should be collected and retained by the General Contractor on site. These materials should be transferred to the property owner at the completion of the project.

APPENDIX I

Figures

APPENDIX II

GRANTSVILLE MEDICAL CENTER DIRECTIONS

In Case of Medical Emergency Call:

Ambulance, Fire and Police: 911

Hospital: Grantsville Medical Center
32 Corporate Drive
Grantsville, MD 21536
(301) 895-8750

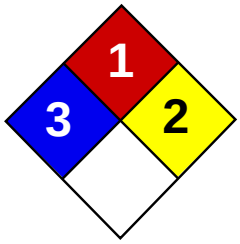
Directions to Hospital: Turn right out of the site onto Main Street. Travel 0.2 miles and turn left onto MD-495 / S. Yoder Street. Travel 0.5 miles (over Interstate 68). Turn left onto N. Park Road. Travel approximately 300-feet, turn right onto Corporate Drive into the facility parking lot.

EMERGENCY TELEPHONE NUMBERS:

AGENCY	TELEPHONE NO.
General Contactor Supervisor	TBD
Environmental Health & Safety Director	TBD
Site Safety and Health Officer	TBD
Ambulance, Fire, Police	911
Environmental Medicine Resources	(404) 455-0818
Satellite Paging	(800) 869-2337 ID X 5125
National Poison Control Center	(800) 492-2414
Chemical Referral Center	(800) 262-8200
Professional Service Industries	(412) 922-4001 x382

APPENDIX III

MSDS SHEETS



Material Safety Data Sheet
Arsenic MSDS

Section 1: Chemical Product and Company Identification

Product Name: Arsenic

Catalog Codes: SLA1006

CAS#: 7440-38-2

RTECS: CG0525000

TSCA: TSCA 8(b) inventory: Arsenic

CI#: Not applicable.

Synonym:

Chemical Name: Arsenic

Chemical Formula: As

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Arsenic	7440-38-2	100

Toxicological Data on Ingredients: Arsenic: ORAL (LD50): Acute: 763 mg/kg [Rat]. 145 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to kidneys, lungs, the nervous system, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances: Flammable in presence of open flames and sparks, of heat, of oxidizing materials.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Material in powder form, capable of creating a dust explosion. When heated to decomposition it emits highly toxic fumes.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable

protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.01 from ACGIH (TLV) [United States] [1995] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Lustrous solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 74.92 g/mole

Color: Silvery.

pH (1% soln/water): Not applicable.

Boiling Point: Not available.

Melting Point: Sublimation temperature: 615°C (1139°F)

Critical Temperature: Not available.

Specific Gravity: 5.72 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Reactive with oxidizing agents, acids, moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 145 mg/kg [Mouse].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH. Causes damage to the following organs: kidneys, lungs, the nervous system, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the original product.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Arsenic UNNA: UN1558 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Arsenic California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Arsenic Pennsylvania RTK: Arsenic Massachusetts RTK: Arsenic TSCA 8(b) inventory: Arsenic

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R22- Harmful if swallowed. R45- May cause cancer.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 1

Reactivity: 2

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 1

Reactivity: 2

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References:
-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. -Liste des produits purs tératogènes, mutagènes, cancérogènes. Répertoire toxicologique de la Commission de la Santé et de la Sécurité du Travail du Québec. -Material safety data sheet emitted by: la Commission de la Santé et de la Sécurité du Travail du Québec. -SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Guide de la loi et du règlement sur le transport des marchandises dangeureuses au canada. Centre de conformité internatinal Ltée. 1986.

Other Special Considerations: Not available.

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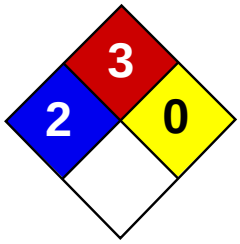

Health	2
Fire	3
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Benzene MSDS

Section 1: Chemical Product and Company Identification

Product Name: Benzene

Catalog Codes: SLB1564, SLB3055, SLB2881

CAS#: 71-43-2

RTECS: CY1400000

TSCA: TSCA 8(b) inventory: Benzene

CI#: Not available.

Synonym: Benzol; Benzine

Chemical Name: Benzene

Chemical Formula: C6-H6

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Benzene	71-43-2	100

Toxicological Data on Ingredients: Benzene: ORAL (LD50): Acute: 930 mg/kg [Rat]. 4700 mg/kg [Mouse]. DERMAL (LD50): Acute: >9400 mg/kg [Rabbit]. VAPOR (LC50): Acute: 10000 ppm 7 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of eye contact (irritant), of inhalation. Hazardous in case of skin contact (irritant, permeator), of ingestion. Inflammation of the eye is characterized by redness, watering, and itching.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. MUTAGENIC EFFECTS: Classified POSSIBLE for human. Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female [POSSIBLE]. The substance is toxic to blood, bone marrow, central nervous system (CNS). The substance may be toxic to liver, Urinary System. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 497.78°C (928°F)

Flash Points: CLOSED CUP: -11.1°C (12°F). (Setaflash)

Flammable Limits: LOWER: 1.2% UPPER: 7.8%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Explosive in presence of oxidizing materials, of acids.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards:
Extremely flammable liquid and vapor. Vapor may cause flash fire. Reacts on contact with iodine heptafluoride gas. Dioxygenyl tetrafluoroborate is as very powferful oxidant. The addition of a small particle to small samples of benzene, at ambient temperature, causes ignition. Contact with sodium peroxide with benzene causes ignition. Benzene ignites in contact with powdered chromic anhydride. Virgorous or incandescent reaction with hydrogen + Raney nickel (above 210 C) and bromine trifluoride.

Special Remarks on Explosion Hazards:
Benzene vapors + chlorine and light causes explosion. Reacts explosively with bromine pentafluoride, chlorine, chlorine trifluoride, diborane, nitric acid, nitryl perchlorate, liquid oxygen, ozone, silver perchlorate. Benzene + pentafluoride and methoxide (from arsenic pentafluoride and potassium methoxide) in trichlorotrifluoroethane causes explosion. Interaction

of nitryl perchlorate with benzene gave a slight explosion and flash. The solution of permanganic acid (or its explosive anhydride, dimaganese heptoxide) produced by interaction of permanganates and sulfuric acid will explode on contact with benzene. Peroxodisulfuric acid is a very powferful oxidant. Uncontrolled contact with benzene may cause explosion. Mixtures of peroxomonsulfuric acid with benzene explodes.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.5 STEL: 2.5 (ppm) from ACGIH (TLV) [United States] TWA: 1.6 STEL: 8 (mg/m3) from ACGIH (TLV) [United States] TWA: 0.1 STEL: 1 from NIOSH TWA: 1 STEL: 5 (ppm) from OSHA (PEL) [United States] TWA: 10 (ppm) from OSHA (PEL) [United States] TWA: 3 (ppm) [United Kingdom (UK)] TWA: 1.6 (mg/m3) [United Kingdom (UK)] TWA: 1 (ppm) [Canada] TWA: 3.2 (mg/m3) [Canada] TWA: 0.5 (ppm) [Canada]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor:
Aromatic. Gasoline-like, rather pleasant. (Strong.)

Taste: Not available.

Molecular Weight: 78.11 g/mole

Color: Clear Colorless. Colorless to light yellow.

pH (1% soln/water): Not available.

Boiling Point: 80.1 (176.2°F)

Melting Point: 5.5°C (41.9°F)

Critical Temperature: 288.9°C (552°F)

Specific Gravity: 0.8787 @ 15 C (Water = 1)

Vapor Pressure: 10 kPa (@ 20°C)

Vapor Density: 2.8 (Air = 1)

Volatility: Not available.

Odor Threshold: 4.68 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 2.1

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether, acetone.

Solubility:
Miscible in alcohol, chloroform, carbon disulfide oils, carbon tetrachloride, glacial acetic acid, diethyl ether, acetone. Very slightly soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, incompatibles.

Incompatibility with various substances: Highly reactive with oxidizing agents, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Benzene vapors + chlorine and light causes explosion. Reacts explosively with bromine pentafluoride, chlorine, chlorine trifluoride, diborane, nitric acid, nitryl perchlorate, liquid oxygen, ozone, silver perchlorate. Benzene + pentafluoride and methoxide (from arsenic pentafluoride and potassium methoxide) in trichlorotrifluoroethane causes explosion. Interaction of nitryl perchlorate with benzene gave a slight explosion and flash. The solution of permanganic acid (or its explosive anhydride, dimaganese heptoxide) produced by interaction of permanganates and sulfuric acid will explode on contact with benzene. Peroxodisulfuric acid is a very powferful oxidant. Uncontrolled contact with benzene may cause explosion. Mixtures of peroxomonsulfuric acid with benzene explodes.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 930 mg/kg [Rat]. Acute dermal toxicity (LD50): >9400 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 10000 7 hours [Rat].

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. MUTAGENIC EFFECTS: Classified POSSIBLE for human. Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female [POSSIBLE]. Causes damage to the following organs: blood, bone marrow, central nervous system (CNS). May cause damage to the following organs: liver, Urinary System.

Other Toxic Effects on Humans:
Very hazardous in case of inhalation. Hazardous in case of skin contact (irritant, permeator), of ingestion.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects (female fertility, Embryotoxic and/or foetotoxic in animal) and birth defects. May affect genetic material (mutagenic). May cause cancer (tumorigenic, leukemia)) Human: passes the placental barrier, detected in maternal milk.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation. It can be absorbed through intact skin and affect the liver, blood, metabolism,and urinary system. Eyes: Causes eye irritation. Inhalation: Causes respiratory tract and mucous membrane irritation. Can be absorbed through the lungs. May affect behavior/Central and Peripheral nervous systems (somnolence, muscle weakness, general anesthetic, and other symptoms similar to ingestion), gastrointestinal tract (nausea), blood metabolism, urinary system. Ingestion: May be harmful if swallowed. May cause gastrointestinal tract irritation including vomiting. May affect behavior/Central and Peripheral nervous systems (convulsions, seizures, tremor, irritability, initial CNS stimulation followed by depression, loss of coordination, dizziness, headache, weakness, pallor, flushing), respiration (breathlessness and chest constriction), cardiovascular system, (shallow/rapid pulse), and blood.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Benzene UNNA: 1114 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Benzene California prop. 65 (no significant risk level): Benzene: 0.007 mg/day (value) California prop. 65: This product contains the following ingredients

for which the State of California has found to cause cancer which would require a warning under the statute: Benzene Connecticut carcinogen reporting list.: Benzene Connecticut hazardous material survey.: Benzene Illinois toxic substances disclosure to employee act: Benzene Illinois chemical safety act: Benzene New York release reporting list: Benzene Rhode Island RTK hazardous substances: Benzene Pennsylvania RTK: Benzene Minnesota: Benzene Michigan critical material: Benzene Massachusetts RTK: Benzene Massachusetts spill list: Benzene New Jersey: Benzene New Jersey spill list: Benzene Louisiana spill reporting: Benzene California Director's list of Hazardous Substances: Benzene TSCA 8(b) inventory: Benzene SARA 313 toxic chemical notification and release reporting: Benzene CERCLA: Hazardous substances.: Benzene: 10 lbs. (4.536 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R11- Highly flammable. R22- Harmful if swallowed. R38- Irritating to skin. R41- Risk of serious damage to eyes. R45- May cause cancer. R62- Possible risk of impaired fertility. S2- Keep out of the reach of children. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S39- Wear eye/face protection. S46- If swallowed, seek medical advice immediately and show this container or label. S53- Avoid exposure - obtain special instructions before use.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Fisher Scientific
Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 24-Nov-2010 **Revision Date** 29-Jan-2018 **Revision Number** 3

1. Identification

Product Name **Chromium trioxide**

Cat No. : **A100-100; A100-212; A100-500**

CAS-No 1333-82-0
Synonyms Chromium trioxide; Chromic acid; Chromic anhydride

Recommended Use Laboratory chemicals.
Uses advised against

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Oxidizing solids	Category 1
Acute oral toxicity	Category 3
Acute dermal toxicity	Category 2
Acute Inhalation Toxicity - Dusts and Mists	Category 2
Skin Corrosion/irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Liver, Kidney, Blood.	

Label Elements

Signal Word
Danger

Hazard Statements
May cause fire or explosion; strong oxidizer

Toxic if swallowed
Fatal in contact with skin
Fatal if inhaled
Causes severe skin burns and eye damage
May cause an allergic skin reaction
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation
May cause genetic defects
May cause cancer
Suspected of damaging fertility
Causes damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not get in eyes, on skin, or on clothing
Do not breathe dust/fume/gas/mist/vapors/spray
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep/Store away from clothing/ other combustible materials
Take any precaution to avoid mixing with combustibles
Wear fire/flame resistant/retardant clothing
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN: Gently wash with plenty of soap and water
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
Rinse skin with water/shower
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
Rinse mouth
Do NOT induce vomiting
Fire
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Cancer and Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Chromium trioxide (CrO3)	1333-82-0	>95

4. First-aid measures

Eye Contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms and effects Causes burns by all exposure routes. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature
Explosion Limits
Upper No data available
Lower No data available
Oxidizing Properties Oxidizer

Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Oxidizer: Contact with combustible/organic material may cause fire. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Containers may explode when heated. May ignite combustibles (wood paper, oil, clothing, etc.). Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Highly toxic fumes
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
4	0	1	OX

6. Accidental release measures

Personal Precautions Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not get in eyes, on skin, or on clothing.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Keep combustibles (wood, paper, oil, etc) away from spilled material. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment. Use only under a chemical fume hood. Avoid dust formation. Keep away from clothing and other combustible materials. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store near combustible materials. Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Chromium trioxide (CrO3)	TWA: 0.05 mg/m³	(Vacated) Ceiling: 0.1 mg/m³ Ceiling: 0.1 mg/m³	IDLH: 15 mg/m³ TWA: 0.0002 mg/m³	TWA: 0.05 mg/m³ TWA: 0.5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Reddish-violet
Odor	Odorless
Odor Threshold	No information available
pH	1 50g/l aq.sol
Melting Point/Range	196 °C / 384.8 °F
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	2.700
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	
Decomposition Temperature	198 °C
Viscosity	Not applicable
Molecular Formula	Cr O3
Molecular Weight	99.99

10. Stability and reactivity

Reactive Hazard No

Stability Oxidizer: Contact with combustible/organic material may cause fire. Hygroscopic.

Conditions to Avoid Excess heat. Incompatible products. Exposure to moist air or water. Combustible material.

Incompatible Materials Bases, Alcohols, Amines, Ammonia, Hydrocarbons, Ketones, Acetone, Acid anhydrides, Metals, Reducing agents, Powdered metals, Strong reducing agents, Combustible material

Hazardous Decomposition Products Highly toxic fumes

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Chromium trioxide (CrO3)	LD50 = 80 mg/kg (Rat)	LD50 = 57 mg/kg (Rabbit)	LC50 = 0.217 mg/L (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Causes severe burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Chromium trioxide (CrO3)	1333-82-0	Group 1	Known	A1	X	A1

Mutagenic Effects Mutagenic Ames test: positive.

Reproductive Effects Possible risk of impaired fertility.

Developmental Effects No information available.

Teratogenicity Teratogenic effects have occurred in experimental animals.

STOT - single exposure Respiratory system
STOT - repeated exposure Liver Kidney Blood

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information No information available

Other Adverse Effects See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Chromium trioxide (CrO3)	Not listed	LC50: = 40 mg/L, 96h static (Colisa fasciatus)	Not listed	Not listed

Persistence and Degradability Soluble in water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1463
Proper Shipping Name CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class 5.1
Subsidiary Hazard Class 8; 6.1
Packing Group II

TDG

UN-No UN1463
Proper Shipping Name CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class 5.1
Subsidiary Hazard Class 8; 6.1
Packing Group II

IATA

UN-No	UN1463
Proper Shipping Name	CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class	5.1
Subsidiary Hazard Class	6.1, 8
Packing Group	II

IMDG/IMO

UN-No	UN1463
Proper Shipping Name	CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class	5.1
Subsidiary Hazard Class	6.1, 8
Packing Group	II

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Chromium trioxide (CrO3)	X	X	-	215-607-8	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)

Component	TSCA 12(b)
Chromium trioxide (CrO3)	Section 6

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Chromium trioxide (CrO3)	1333-82-0	>95	0.1

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Chromium trioxide (CrO3)	-	-	X	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chromium trioxide (CrO3)	X		-

OSHA Occupational Safety and Health Administration
Not applicable

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Chromium trioxide (CrO3)	5 µg/m³ TWA	-

	2.5 µg/m³ Action Level	

CERCLA Not applicable

California Proposition 65 This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Chromium trioxide (CrO3)	1333-82-0	Carcinogen Developmental Female Reproductive Male Reproductive	0.001 µg/day	Developmental Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chromium trioxide (CrO3)	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 24-Nov-2010
Revision Date 29-Jan-2018
Print Date 29-Jan-2018
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

cdhfinechemical.com

Ethyl Benzene CAS No 100-41-4	MATERIAL SAFETY DATA SHEET SDS/MSDS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : **Ethyl Benzene**

CAS-No. : 100-41-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet

Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi-10002
INDIA

Telephone : +91 11 49404040
Email : care@cdhfinechemical.com

1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Flammable liquids (Category 2), H225
Acute toxicity, Inhalation (Category 4), H332
Specific target organ toxicity - repeated exposure (Category 2), hearing organs, H373
Aspiration hazard (Category 1), H304
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

F	Highly flammable	R11
Xn	Harmful	R20, R48/20, R65

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008
Pictogram

Signal word Danger

Hazard statement(s)	
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H332	Harmful if inhaled.
H373	May cause damage to organs (hearing organs) through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P331	Do NOT induce vomiting.
Supplemental Hazard Statements	none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula	:	C_{8H10}
Molecular weight	:	106,17 g/mol
CAS-No.	:	100-41-4
EC-No.	:	202-849-4
Index-No.	:	601-023-00-4

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
Ethylbenzene			
CAS-No.	100-41-4	Flam. Liq. 2; Acute Tox. 4; STOT RE 2; Asp. Tox. 1; Aquatic Chronic 3; H225, H304, H332, H373, H412	<= 100 %
EC-No.	202-849-4		
Index-No.	601-023-00-4		

Hazardous ingredients according to Directive 1999/45/EC

Component		Classification	Concentration
Ethylbenzene			
CAS-No.	100-41-4	F, Xn, R11 - R20 - R48/20 - R65	<= 100 %
EC-No.	202-849-4		
Index-No.	601-023-00-4		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

hygroscopic
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -95 °C - lit.
f)	Initial boiling point and boiling range	136 °C - lit.
g)	Flash point	15,0 °C - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 6,7 %(V) Lower explosion limit: 1 %(V)

k)	Vapour pressure	13,3 hPa at 20,0 °C
l)	Vapour density	No data available
m)	Relative density	0,867 g/mL at 25 °C
n)	Water solubility	0,2 g/l at 25 °C - slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 3,6 at 20 °C
p)	Auto-ignition temperature	432,0 °C
q)	Decomposition temperature	No data available
r)	Viscosity	0,773 mm2/s at 20 °C -
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension 71,2 mN/m at 23 °C

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 3.500 mg/kg

LD50 Dermal - Rabbit - 15.433 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: Moderate skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Mild eye irritation

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Hamster
ovary
Result: negative

Mouse - male and female
Result: negative

Carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Ethylbenzene)

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Additional Information

Repeated dose toxicity - Rat - male and female - No observed adverse effect level - 75 mg/kg
RTECS: DA0700000

Central nervous system depression, Nausea, Headache, Vomiting, Ataxia., Tremors

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Menidia menidia (Atlantic silverside) - 5,1 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 1,8 - 2,4 mg/l - 48 h
Toxicity to algae	static test EC50 - Skeletonema costatum - 4,9 mg/l - 72 h

12.2 Persistence and degradability

Biodegradability: aerobic - Exposure time 28 d
Result: 70 - 80 % - Readily biodegradable

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Harmful to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1175	IMDG: 1175	IATA: 1175

14.2 UN proper shipping name

ADR/RID:	ETHYLBENZENE
IMDG:	ETHYLBENZENE
IATA:	Ethylbenzene

14.3 Transport hazard class(es)

ADR/RID: 3	IMDG: 3	IATA: 3

14.4 Packaging group

ADR/RID: II	IMDG: II	IATA: II

14.5 Environmental hazards

ADR/RID: no	IMDG Marine pollutant: no	IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Chronic	Chronic aquatic toxicity
Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
STOT RE	Specific target organ toxicity - repeated exposure

Full text of R-phrases referred to under sections 2 and 3

F	Highly flammable
Xn	Harmful
R11	Highly flammable.
R20	Harmful by inhalation.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R65	Harmful: may cause lung damage if swallowed.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.

Material Safety Data Sheet
Naphthalene

ACC# 16120

Section 1 - Chemical Product and Company Identification

MSDS Name: Naphthalene
Catalog Numbers: AC164210010, AC164210025, AC180200010, AC180200050, AC180202500, AC180900010, AC180902500, S76307, S763071, S93309, N134-500, N7-500
Synonyms: Coal tar camphor; Tar camphor; Naphthalin; White tar; Naphthene; Moth flakes: Moth balls.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
91-20-3	Naphthalene	>98	202-049-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid. Flash Point: 78 deg C.
Warning! Flammable solid. Harmful if inhaled or swallowed. Causes eye, skin, and respiratory tract irritation. May be harmful if absorbed through the skin. May cause blood abnormalities. Hygroscopic (absorbs moisture from the air).
Target Organs: Blood, respiratory system, eyes, skin.

Potential Health Effects

Eye: Naphthalene is an eye irritant. The vapor causes eye irritation at 15 ppm. Eye contact with the solid material may result in conjunctivitis, superficial injury to the cornea, diminished visual acuity, and other effects. It may cause cataracts.
Skin: Causes mild skin irritation. May be absorbed through the skin in harmful amounts. Incidence of skin hypersensitivity is not widespread in the general population &, based on the long history of use of naphthalene as a consumer product, this effect is mostly confined to industrial exposure where coal tar contamination may be present.
Ingestion: Harmful if swallowed. May cause liver and kidney damage. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, and death. May cause severe digestive tract irritation with abdominal pain,

nausea, vomiting and diarrhea. Ingestion of large quantities may cause severe hemolytic anemia and hemoglobinuria.
Inhalation: Harmful if inhaled. Causes respiratory tract irritation. Readily absorbed when inhaled. Material volatilizes at room temperature. Hemolytic anemia (destruction of red blood cells) is the primary health concern for humans exposed to naphthalene for either short or long periods of time. Other effects may include nausea, profuse perspiration, vomiting, kidney damage and liver damage. Optic neuritis (inflammation of the optic nerve) has been observed. Cataracts have also occurred.
Chronic: Prolonged or repeated skin contact may cause dermatitis. May cause liver and kidney damage. May cause anemia and other blood cell abnormalities. Animal studies have reported that fetal effects/abnormalities may occur when maternal toxicity is seen. Effects may be delayed. Chronic exposure may cause lung damage. Laboratory experiments have resulted in mutagenic effects. Chronic exposure may cause corneal injury, optical neuritis, blurred vision, and possible cataract formation. Chronic inhalation, skin absorption or ingestion of naphthalene have caused severe hemolytic anemia.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Individuals with a glucose-6-phosphate dehyrogenase deficiency are hypersensitive to the effects of naphthalene.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Flammable solid. Dusts may be an explosion hazard if mixed with air at critical proportions and in the presence of an ignition source. Volatile solid that gives off flammable vapors when heated.
Extinguishing Media: Water or foam may cause frothing. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: 78 deg C (172.40 deg F)
Autoignition Temperature: 526 deg C (978.80 deg F)
Explosion Limits, Lower:0.90 vol %
Upper: 5.90 vol %
NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Scoop up with a nonsparking tool, then place into a suitable container for disposal. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid breathing dust, mist, or vapor. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation.
Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Storage under a nitrogen blanket has been recommended. Store protected from moisture. Separate from oxidizing materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Naphthalene	10 ppm TWA; 15 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous r oute	10 ppm TWA; 50 mg/m3 TWA 250 ppm IDLH	10 ppm TWA; 50 mg/m3 TWA

OSHA Vacated PELs: Naphthalene: 10 ppm TWA; 50 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: white
Odor: mothball-like
pH: Not available.
Vapor Pressure: 0.05 mm Hg @ 20 deg C
Vapor Density: 4.4 (air=1)

Evaporation Rate:<1.0 (butyl acetate=1)
Viscosity: Not available.
Boiling Point: 218 deg C
Freezing/Melting Point:79 - 82 deg C
Decomposition Temperature:540 deg C
Solubility: Insoluble.
Specific Gravity/Density:0.9900g/cm3
Molecular Formula:C10H8
Molecular Weight:128.17

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Ignition sources, dust generation, moisture, excess heat, exposure to moist air or water, steam.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 91-20-3: QJ0525000
LD50/LC50:
CAS# 91-20-3:
Draize test, rabbit, eye: 100 mg Mild;
Inhalation, rat: LC50 = >340 mg/m3/1H;
Oral, mouse: LD50 = 316 mg/kg;
Oral, rat: LD50 = 490 mg/kg;
Skin, rabbit: LD50 = >20 gm/kg;
Skin, rat: LD50 = >2500 mg/kg;
.

Carcinogenicity:
CAS# 91-20-3:

- **ACGIH:** Not listed.
- **California:** carcinogen, initial date 4/19/02
- **NTP:** Suspect carcinogen
- **IARC:** Group 2B carcinogen

Epidemiology: Incidents in which blankets or clothing containing naphthalene caused acute hemolysis in infants, in some cases fatal, have been described.The percutaneous absorption and systemic intoxication with naphthalene can be facilitated by oily vehicles.
Teratogenicity: Naphthalene and its metabolites have been reported to cross the human placenta in amounts sufficient to cause fetal toxicity.Oral, rat: TDLo = 4500 mg/kg (female 6-15 day(s) after conception).Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus) and Specific Developmental Abnormalities - other developmental

abnormalities.Intraperitoneal, rat: TDLo = 5925 mg/kg (female 1-15 day(s) after conception) Specific Developmental Abnormalities - musculoskeletal system and cardiovascular (circulatory) system.
Reproductive Effects: No information available.
Mutagenicity: Micronucleus Test: Human, Lymphocyte = 30 mg/L.; Cytogenetic Analysis: Hamster, Ovary = 30 mg/L.; Sister Chromatid Exchange: Hamster, Ovary = 15 mg/L.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 1.60 mg/L; 96 Hr; Flow-through at 15 CFish: Fathead Minnow: LC50 = 6.14 mg/L; 96 Hr; Flow-through at 24.5 CWater flea Daphnia: EC50 = 2.16-8.60 mg/L; 48 Hr; UnspecifiedBacteria: Phytobacterium phosphoreum: EC50 = 0.93 mg/L; 30 min; Microtox testFish: Pink salmon: LC50 = 1.24 mg/L; 96 Hr; (fry) Static bioassay at 12°C Releases into water are lost due to volatilization, photolysis, adsorption, and biodegradation. The principal loss processes will depend on local conditions but half-lives can be expected to range from a couple of days to a few months. When adsorbed to sediment, biodegradation occurs much more rapidly than in the overlying water column. When spilled on land, naphthalene is adsorbed moderately to soil and undergoes biodegradation. However, in some cases it will appear in the groundwater where biodegradation still may occur if conditions are aerobic.
Environmental: Bioconcentration occurs to a moderate extent but since depuration and metabolism readily proceed in aquatic organisms, this is a short term problem. transport and disposal of fuel oil, coal tar, etc. In the atmosphere, naphthalene rapidly photodegrades (half-life 3-8 hr). Naphthalene shows low biological oxygen demand and is expected to cause little O2 depletion in aquatic systems.
Physical: Log P (oct) = 3.01 - 3.59
Other: Harmful to aquatic life in very low concentrations.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series:
CAS# 91-20-3: waste number U165.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	NAPHTHALENE, CRUDE	NAPHTHALENE
Hazard Class:	4.1	4.1
UN Number:	UN1334	UN1334
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 91-20-3 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 91-20-3: Effective 6/1/87, Sunset 6/1/97

Chemical Test Rules

CAS# 91-20-3: 40 CFR 799.5115

Section 12b

CAS# 91-20-3: Section 4

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 91-20-3: 100 lb final RQ; 45.4 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 91-20-3: immediate, delayed, fire.

Section 313

This material contains Naphthalene (CAS# 91-20-3, >98%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 91-20-3 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 91-20-3 is listed as a Hazardous Substance under the CWA. CAS# 91-20-3 is listed as a Priority Pollutant under the Clean Water Act. CAS# 91-20-3 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 91-20-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Naphthalene, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 91-20-3: 5.8 æg/day NSRL

European / International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN N

Risk Phrases:

R 22 Harmful if swallowed.
R 40 Limited evidence of a carcinogenic effect.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 36/37 Wear suitable protective clothing and gloves.

S 46 If swallowed, seek medical advice immediately and show this con
tainer or label.
S 60 This material and its container must be disposed of as hazardou
s waste.
S 61 Avoid release to the environment. Refer to special instructions
/safety data sheets.

WGK (Water Danger/Protection)

CAS# 91-20-3: 2

Canada - DSL/NDSL

CAS# 91-20-3 is listed on Canada's DSL List.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

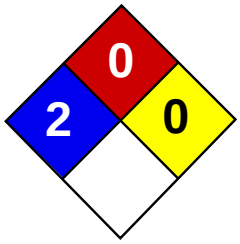
Canadian Ingredient Disclosure List

CAS# 91-20-3 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 5/14/1999
Revision #7 Date: 11/28/2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.



Health	2
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Nickel metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Nickel metal

Catalog Codes: SLN2296, SLN1342, SLN1954

CAS#: 7440-02-0

RTECS: QR5950000

TSCA: TSCA 8(b) inventory: Nickel metal

CI#: Not applicable.

Synonym: Nickel Metal shot; Nickel metal foil.

Chemical Name: Nickel

Chemical Formula: Ni

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Nickel metal	7440-02-0	100

Toxicological Data on Ingredients: Nickel metal LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of ingestion.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer), of ingestion, of inhalation (lung sensitizer). CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to skin. The substance may be toxic to kidneys, lungs, liver, upper respiratory tract. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Material in powder form, capable of creating a dust explosion. This material is flammable in powder form only.

Special Remarks on Explosion Hazards:
Material in powder form, capable of creating a dust explosion. Mixtures containing Potassium Perchlorate with Nickel & Titanium powders & infusorial earth can explode. Adding 2 or 3 drops of approximately 90% peroxyformic acid to powdered nickel will result in explosion. Powdered nickel reacts explosively upon contact with fused ammonium nitrate at temperatures below 200 deg. C.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Keep away from incompatibles such as oxidizing agents, combustible materials, metals, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 1 (mg/m3) from ACGIH (TLV) [United States] Inhalation Respirable. TWA: 0.5 (mg/m3) [United Kingdom (UK)] TWA: 1 (mg/m3) from OSHA (PEL) [United States] InhalationConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid. Lustrous solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 58.71 g/mole

Color: Silvery.

pH (1% soln/water): Not applicable.

Boiling Point: 2730°C (4946°F)

Melting Point: 1455°C (2651°F)

Critical Temperature: Not available.

Specific Gravity: Density: 8.908 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility:

Insoluble in cold water, hot water. Insoluble in Ammonia. Soluble in dilute Nitric Acid. Slightly soluble in Hydrochloric Acid, Sulfuric Acid.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, combustible materials, metals, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with strong acids, selenium, sulfur, wood and other combustibles, nickel nitrate, aluminum, aluminum trichloride, ethylene, p-dioxan, hydrogen, methanol, non-metals, oxidants, sulfur compounds, aniline, hydrogen sulfide, flammable solvents, hydrazine, and metal powders (especially zinc, aluminum, and magnesium), ammonium nitrate, nitryl fluoride, bromine pentafluoride, potassium perchlorate + titanium powder + indusorial earth.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP. Causes damage to the following organs: skin. May cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract.

Other Toxic Effects on Humans:
Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer), of ingestion.

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose/Conc: LDL [Rat] - Route: Oral; Dose: 5000 mg/kg LDL [Guinea Pig] - Route: Oral; Dose: 5000 mg/kg

Special Remarks on Chronic Effects on Humans: May cause cancer based on animal test data

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Nickel dust and fume can irritate skin. Eyes: Nickel dust and fume can irritate eyes. Inhalation: Inhalation of dust or fume may cause respiratory tract irritation with non-productive cough, hoarseness, sore throat, headache, vertigo, weakness, chest pain, followed by delayed effects, including tachypnea, dyspnea, and ARDS. Death due to ARDS has been reported following inhalation of high concentrations of respirable metallic nickel dust. Later effects may include pulmonary edema and fibrosis. Ingestion: Metallic nickel is generally considered not to be acutely toxic if ingested. Ingestion may cause nausea, vomiting, abdominal , and diarrhea. Nickel may damage the kidneys(proteinuria), and may affect liver function. It may also affect behavior (somnolence), and cardiovascular system (increased cornary artery resistance, decreased myocardial contractility, myocardial damage, regional or general arteriolar or venus dilation). Chronic Potential Health Effects: Skin: May cause skin allergy. Nickel and nickel compounds are among the most common sensitizers inducing allergic contact dermatitis. Inhalation: Chronic inhalation nickel dust or fume can cause chronic hypertrophic rhinitis, sinusitis, nasal polyps, perforation of the nasal septum, chronic pulmonary irritation, fibrosis, pulmonary edema, pulmonary eosinophilia, Pneumoconiosis, allergies (asthma-like allergy), and cancer of the nasal sinus cavities, lungs, and possibly other organs. Future exposures can cause asthma attacks with shortness of breath, wheezing, cough, and/or chest tightness. Chronic inhalation of nickel dust or fume may also affect the liver (impaired liver function tests), and blood (changes in red blood cell count). Ingestion: Prolonged or repeated ingestion of nickel can be a source chronic urticaria and other signs of allergy.

Chronic ingestion of NIckel may also affect respiration and cause pneumoconiosis or fibrosis. Note: In the general population, sensitization occurs from exposure to nickel-containing coins, jewelry, watches,

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the original product.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Nickel metal California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Nickel metal Connecticut hazardous material survey.: Nickel metal Illinois toxic substances disclosure to employee act: Nickel metal Illinois chemical safety act: Nickel metal New York release reporting list: Nickel metal Rhode Island RTK hazardous substances: Nickel metal Pennsylvania RTK: Nickel metal Michigan critical material: Nickel metal Massachusetts RTK: Nickel metal Massachusetts spill list: Nickel metal New Jersey: Nickel metal New Jersey spill list: Nickel metal Louisiana spill reporting: Nickel metal California Director's List of Hazardous Substances: Nickel metal TSCA 8(b) inventory: Nickel metal

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R40- Possible risks of irreversible effects. R43- May cause sensitization by skin contact. S22- Do not breathe dust. S36- Wear suitable protective clothing.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:42 PM

Last Updated: 05/21/2013 12:00 PM

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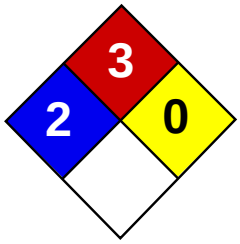

Material Safety Data Sheet
Toluene MSDS

Section 1: Chemical Product and Company Identification

Product Name: Toluene

Catalog Codes: SLT2857, SLT3277

CAS#: 108-88-3

RTECS: XS5250000

TSCA: TSCA 8(b) inventory: Toluene

CI#: Not available.

Synonym: Toluol, Tolu-Sol; Methylbenzene; Methacide; Phenylmethane; Methylbenzol

Chemical Name: Toluene

Chemical Formula: C6-H5-CH3 or C7-H8

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Toluene	108-88-3	100

Toxicological Data on Ingredients: Toluene: ORAL (LD50): Acute: 636 mg/kg [Rat]. DERMAL (LD50): Acute: 14100 mg/kg [Rabbit]. VAPOR (LC50): Acute: 49000 mg/m 4 hours [Rat]. 440 ppm 24 hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, the nervous system, liver, brain, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 480°C (896°F)

Flash Points: CLOSED CUP: 4.4444°C (40°F). (Setaflash) OPEN CUP: 16°C (60.8°F).

Flammable Limits: LOWER: 1.1% UPPER: 7.1%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards:
Toluene forms explosive reaction with 1,3-dichloro-5,5-dimethyl-2,4-imidazolididione; dinitrogen tetraoxide; concentrated nitric acid, sulfuric acid + nitric acid; N2O4; AgClO4; BrF3; Uranium hexafluoride; sulfur dichloride. Also forms an explosive mixture with tetranitromethane.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Toxic flammable liquid, insoluble or very slightly soluble in water. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 200 STEL: 500 CEIL: 300 (ppm) from OSHA (PEL) [United States] TWA: 50 (ppm) from ACGIH (TLV) [United States] SKIN TWA: 100 STEL: 150 from NIOSH [United States] TWA: 375 STEL: 560 (mg/m3) from NIOSH [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Sweet, pungent, Benzene-like.

Taste: Not available.

Molecular Weight: 92.14 g/mole

Color: Colorless.

pH (1% soln/water): Not applicable.

Boiling Point: 110.6°C (231.1°F)

Melting Point: -95°C (-139°F)

Critical Temperature: 318.6°C (605.5°F)

Specific Gravity: 0.8636 (Water = 1)

Vapor Pressure: 3.8 kPa (@ 25°C)

Vapor Density: 3.1 (Air = 1)

Volatility: Not available.

Odor Threshold: 1.6 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 2.7

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether, acetone.

Solubility:
Soluble in diethyl ether, acetone. Practically insoluble in cold water. Soluble in ethanol, benzene, chloroform, glacial acetic acid, carbon disulfide. Solubility in water: 0.561 g/l @ 25 deg. C.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources (flames, sparks, static), incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with strong oxidizers, silver perchlorate, sodium difluoride, Tetranitromethane, Uranium Hexafluoride. Frozen Bromine Trifluoride reacts violently with Toluene at -80 deg. C. Reacts chemically with nitrogen oxides, or halogens to form nitrotoluene, nitrobenzene, and nitrophenol and halogenated products, respectively.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 636 mg/kg [Rat]. Acute dermal toxicity (LD50): 14100 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 440 24 hours [Mouse].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC. May cause damage to the following organs: blood, kidneys, the nervous system, liver, brain, central nervous system (CNS).

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose: LDL [Human] - Route: Oral; Dose: 50 mg/kg LCL [Rabbit] - Route: Inhalation; Dose: 55000 ppm/40min

Special Remarks on Chronic Effects on Humans:
Detected in maternal milk in human. Passes through the placental barrier in human. Embryotoxic and/or foetotoxic in animal. May cause adverse reproductive effects and birth defects (teratogenic). May affect genetic material (mutagenic)

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes mild to moderate skin irritation. It can be absorbed to some extent through the skin. Eyes: Cauess mild to moderate eye irritation with a burning sensation. Splash contact with eyes also causes conjunctivitis, blepharospasm, corneal edema, corneal abraisons. This usually resolves in 2 days. Inhalation: Inhalation of vapor may cause respiratory tract irritation causing coughing and wheezing, and nasal discharge. Inhalation of high concentrations may affect behavior and cause central nervous system effects characterized by nausea, headache, dizziness, tremors, restlessness, lightheadedness, exhilaration, memory loss, insomnia, impaired reaction time, drowsiness, ataxia, hallucinations, somnolence, muscle contraction or spasticity, unconsciousness and coma. Inhalation of high concentration of vapor may also affect the cardiovascular system (rapid heart beat, heart palpitations, increased or decreased blood pressure, dysrhythmia,), respiration (acute pulmonary edema, respiratory depression, apnea, asphyxia), cause vision disturbances and dilated pupils, and cause loss of appetite. Ingestion: Aspiration hazard. Aspiration of Toluene into the lungs may cause chemical pneumonitis. May cause irritation of the digestive tract with nausea, vomiting, pain. May have effects similar to that of acute inhalation. Chronic Potential Health Effects: Inhalation and Ingestion: Prolonged or repeated exposure via inhalation may cause central nervous system and cardiovascular symptoms similar to that of acute inhalation and ingestion as well liver damage/failure, kidney damage/failure (with hematuria, proteinuria, oliguria, renal tubular acidosis), brain damage, weight loss, blood (pigmented or nucleated red blood cells, changes in white blood cell count), bone marrow changes, electrolyte imbalances (Hypokalemia, Hypophostatemia), severe, muscle weakness and Rhabdomyolysis. Skin: Repeated or prolonged skin contact may cause defatting dermatitis.

Section 12: Ecological Information

Ecotoxicity:
Ecotoxicity in water (LC50): 313 mg/l 48 hours [Daphnia (daphnia)]. 17 mg/l 24 hours [Fish (Blue Gill)]. 13 mg/l 96 hours [Fish (Blue Gill)]. 56 mg/l 24 hours [Fish (Fathead minnow)]. 34 mg/l 96 hours [Fish (Fathead minnow)]. 56.8 ppm any hours [Fish (Goldfish)].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Toluene UNNA: 1294 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Toluene California prop. 65 (no significant risk level): Toluene: 7 mg/day (value) California prop. 65 (acceptable daily intake level): Toluene: 7 mg/day (value) California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Toluene Connecticut hazardous material survey.: Toluene Illinois

toxic substances disclosure to employee act: Toluene Illinois chemical safety act: Toluene New York release reporting list: Toluene Rhode Island RTK hazardous substances: Toluene Pennsylvania RTK: Toluene Florida: Toluene Minnesota: Toluene Michigan critical material: Toluene Massachusetts RTK: Toluene Massachusetts spill list: Toluene New Jersey: Toluene New Jersey spill list: Toluene Louisiana spill reporting: Toluene California Director's List of Hazardous Substances.: Toluene TSCA 8(b) inventory: Toluene TSCA 8(d) H and S data reporting: Toluene: Effective date: 10/04/82; Sunset Date: 10/0/92 SARA 313 toxic chemical notification and release reporting: Toluene CERCLA: Hazardous substances.: Toluene: 1000 lbs. (453.6 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R11- Highly flammable. R20- Harmful by inhalation. S16- Keep away from sources of ignition - No smoking. S25- Avoid contact with eyes. S29- Do not empty into drains. S33- Take precautionary measures against static discharges.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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APPENDIX IV

CONTAMINANT OSHA EXPOSURE LIMITS

OSHA PELs

Soil and Water Contaminants
Exposure Limits

Detected Compound	Applicable PEL/TLV (mg/m^3)	Agency
Arsenic	0.5	OSHA PEL
Benzo(a)pyrene	0.2[1]	OSHA PEL
Chromium	0.15	OSHA PEL
Cumene	245	OSHA PEL
Ethylbenzene	435	OSHA PEL
Naphthalene	50	OSHA PEL
Nickel	1	OSHA PEL
Toluene	750	OSHA PEL

1- As Coal Tar Pitch

APPENDIX V

HEAT AND COLD STRESS FACT SHEETS

OSHA® FactSheet

Protecting Workers from the Effects of Heat

At times, workers may be required to work in hot environments for long periods. When the human body is unable to maintain a normal temperature, heat illnesses can occur and may result in death. It is also important to consider that hot work environments may exist indoors. This fact sheet provides information to employers on measures they should take to prevent worker illnesses and death caused by heat stress.

What is Heat Illness?

The following are illnesses that may result from exposure to heat in the workplace.

Heat Stroke is the most serious heat-related health problem. Heat stroke occurs when the body's temperature regulating system fails and body temperature rises to critical levels (greater than 104°F). ***This is a medical emergency that may result in death!*** The signs of heat stroke are confusion, loss of consciousness, and seizures. Workers experiencing heat stroke have a very high body temperature and may stop sweating. If a worker shows signs of possible heat stroke, ***get medical help immediately***, and call 911. Until medical help arrives, move the worker to a shady, cool area and remove as much clothing as possible. Wet the worker with cool water and circulate the air to speed cooling. Place cold wet cloths, wet towels or ice all over the body or soak the worker's clothing with cold water.

Occupational Factors that May Contribute to Heat Illness

- High temperature and humidity
- Low fluid consumption
- Direct sun exposure (with no shade) or extreme heat
- Limited air movement (no breeze or wind)
- Physical exertion
- Use of bulky protective clothing and equipment

Heat Exhaustion is the next most serious heat-related health problem. The signs and symptoms of heat exhaustion are headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy sweating and a body temperature greater than 100.4°F. Workers with heat exhaustion should be removed from the hot area and given liquids to drink. Cool the worker with cold compresses to the head, neck, and face or have the worker wash his or her head, face and neck with cold water. Encourage frequent sips of cool water. Workers with signs or symptoms of heat exhaustion should be taken to a clinic or emergency room for medical evaluation and treatment. Make sure that someone stays with the worker until help arrives. If symptoms worsen, call 911 and get help immediately.

Heat Cramps are muscle pains usually caused by the loss of body salts and fluid during sweating. Workers with heat cramps should replace fluid loss by drinking water and/or carbohydrate-electrolyte replacement liquids (e.g., sports drinks) every 15 to 20 minutes.

Heat Rash is the most common problem in hot work environments. Heat rash is caused by sweating and looks like a red cluster of pimples or small blisters. Heat rash may appear on the neck, upper chest, groin, under the breasts and elbow creases. The best treatment for heat rash is to provide a cooler, less humid work environment. The rash area should be kept dry. Powder may be applied to increase comfort. Ointments and creams should ***not*** be used on a heat rash. Anything that makes the skin warm or moist may make the rash worse.

Prevention Made Simple: Program Elements

Heat Illness Prevention Program key elements include:

- A Person Designated to Oversee the Heat Illness Prevention Program
- Hazard Identification
- Water. Rest. Shade Message
- Acclimatization
- Modified Work Schedules
- Training
- Monitoring for Signs and Symptoms
- Emergency Planning and Response

Designate a Person to Oversee the Heat Stress Program

Identify someone trained in the hazards, physiological responses to heat, and controls. This person can develop, implement and manage the program.

Hazard Identification

Hazard identification involves recognizing heat hazards and the risk of heat illness due to high temperature, humidity, sun and other thermal exposures, work demands, clothing or PPE and personal risk factors.

Identification tools include: OSHA's Heat Smartphone App; a Wet Bulb Globe Thermometer (WBGT) which is a measure of heat stress in direct sunlight that takes into account temperature, humidity, wind speed, sun and cloud cover; and the National Weather Service Heat Index. Exposure to full sun can increase heat index values up to 15°F.

Water.Rest.Shade

Ensure that cool drinking water is available and easily accessible. (Note: Certain beverages, such as caffeine and alcohol can lead to dehydration.)

Encourage workers to drink a liter of water over one hour, which is about one cup every fifteen minutes.

Provide or ensure that fully shaded or air-conditioned areas are available for resting and cooling down.

Acclimatization

Acclimatization is a physical change that allows the body to build tolerance to working in the heat. It occurs by gradually increasing workloads and exposure and taking frequent breaks for water and rest in the shade. Full acclimatization may take up to 14 days or longer depending on factors relating to the individual, such as increased risk of heat illness due to certain medications or medical conditions, or the environment.

New workers and those returning from a prolonged absence should begin with 20% of the workload on the first day, increasing incrementally by no more than 20% each subsequent day.

During a rapid change leading to excessively hot weather or conditions such as a heat wave, even experienced workers should begin on the first day of work in excessive heat with 50% of the normal workload and time spent in the hot environment, 60% on the second day, 80% on day three, and 100% on the fourth day.

Modified Work Schedules

Altering work schedules may reduce workers' exposure to heat. For instance:

- Reschedule all non-essential outdoor work for days with a reduced heat index.
- Schedule the more physically demanding work during the cooler times of day;
- Schedule less physically demanding work during warmer times of the day;
- Rotate workers and split shifts, and/or add extra workers.
- Work/Rest cycles, using established industry guidelines.
- Stop work if essential control methods are inadequate or unavailable when the risk of heat illness is very high.

Keep in mind that very early starting times may result in increased fatigue. Also, early morning hours tend to have higher humidity levels.

Training

Provide training in a language and manner workers understand, including information on health effects of heat, the symptoms of heat illness, how and when to respond to symptoms, and how to prevent heat illness.

Monitoring for Heat Illness Symptoms

Establish a system to monitor and report the signs and symptoms listed on the previous page to improve early detection and action. Using a buddy system will assist supervisors when watching for signs of heat illness.

Emergency Planning and Response

Have an emergency plan in place and communicate it to supervisors and workers. Emergency plan considerations include:

- What to do when someone is showing signs of heat illness. This can make the difference between life and death.
- How to contact emergency help.
- How long it will take for emergency help to arrive and training workers on appropriate first-aid measures until help arrives.
- Consider seeking advice from a healthcare professional in preparing a plan.

Engineering Controls Specific to Indoor Workplaces

Indoor workplaces may be cooled by using air conditioning or increased ventilation, assuming that cooler air is available from the outside. Other methods to reduce indoor temperature include: providing reflective shields to redirect radiant heat, insulating hot surfaces, and decreasing water vapor pressure, e.g., by sealing steam leaks and keeping floors dry. The use of fans to increase the air speed over the worker will improve heat exchange between the skin surface and the air, unless the air temperature is higher than the skin temperature. However, increasing air speeds above 300 ft. per min. may actually have a warming effect. Industrial hygiene personnel can assess the degree of heat stress caused by the work environment and make recommendations for reducing heat exposure.

Additional information

For more information on this and other issues affecting workers or heat stress, visit: www.osha.gov/heat; www.cdc.gov/niosh/topics/heatstress; and www.noaa.gov/features/earthobs_0508/heat.html.

Workers have the right to working conditions that do not pose a risk of serious harm, to receive information and training about workplace hazards and how to prevent them, and to file a complaint with OSHA to inspect their workplace without fear of retaliation.

For more information about workers' rights, see OSHA's workers page at www.osha.gov/workers.html.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.

OSHA® Occupational Safety and Health Administration

www.osha.gov (800) 321-OSHA (6742)

U.S. Department of Labor

DTSEM FS-3743 08/2014

OSHA® QUICK CARD™

Protecting Workers from Cold Stress

Cold temperatures and increased wind speed (wind chill) cause heat to leave the body more quickly, putting workers at risk of cold stress. Anyone working in the cold may be at risk, e.g., workers in freezers, outdoor agriculture and construction.

Common Types of Cold Stress

Hypothermia

- Normal body temperature (98.6°F) drops to 95°F or less.
- **Mild Symptoms:** alert but shivering.
- **Moderate to Severe Symptoms:** shivering stops; confusion; slurred speech; heart rate/breathing slow; loss of consciousness; death.

Frostbite

- Body tissues freeze, e.g., hands and feet. Can occur at temperatures above freezing, due to wind chill. May result in amputation.
- **Symptoms**: numbness, reddened skin develops gray/white patches, feels firm/hard, and may blister.

Trench Foot (also known as Immersion Foot)

- Non-freezing injury to the foot, caused by lengthy exposure to wet and cold environment. Can occur at air temperature as high as 60°F, if feet are constantly wet.
- **Symptoms**: redness, swelling, numbness, and blisters.

Risk Factors

- Dressing improperly, wet clothing/skin, and exhaustion.

For Prevention, Your Employer Should:

- Train you on cold stress hazards and prevention.
- Provide engineering controls, e.g., radiant heaters.
- Gradually introduce workers to the cold; monitor workers; schedule breaks in warm areas.

For more information:

OSHA® Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

OSHA 3156-02R 2014

OSHA® QUICK CARD™

How to Protect Yourself and Others

- Know the symptoms; monitor yourself and co-workers.
- Drink warm, sweetened fluids (no alcohol).
- Dress properly:
  - Layers of loose-fitting, insulating clothes
  - Insulated jacket, gloves, and a hat (waterproof, if necessary)
  - Insulated and waterproof boots

What to Do When a Worker Suffers from Cold Stress

For Hypothermia:

- Call 911 immediately in an emergency.
- To prevent further heat loss:
  - Move the worker to a warm place.
  - Change to dry clothes.
  - Cover the body (including the head and neck) with blankets, and with something to block the cold (e.g., tarp, garbage bag). Do **not** cover the face.
- If medical help is more than 30 minutes away:
  - Give warm, sweetened drinks if alert (no alcohol).
  - Apply heat packs to the armpits, sides of chest, neck, and groin. Call 911 for additional rewarming instructions.

For Frostbite:

- Follow the recommendations "**For Hypothermia**".
- Do not rub the frostbitten area.
- Avoid walking on frostbitten feet.
- Do not apply snow/water. Do not break blisters.
- Loosely cover and protect the area from contact.
- Do not try to rewarm the area unless directed by medical personnel.

For Trench (Immersion) Foot:

- Remove wet shoes/socks; air dry (in warm area); keep affected feet elevated and avoid walking. Get medical attention.

For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

APPENDIX VI

SAFETY MEETING ATTENDANCE RECORDS

Safety Meeting Record
Proposed Dollar General
129, 131, 133 E. Main Street
Grantsville, MD

Meeting Date: _____

Trainer/Supervisor: _____

Topic(s): _____

Check type of meeting below

- Initial Training
- Daily Tailgate Meeting
- Routine Weekly Meeting
- Special Meeting Due to Introduction of New Work
- Special Meeting Due to Accident of Close Call

Record of Attendance

Name:	**Signature**

APPENDIX VII

SOIL AND GROUND WATER MANAGEMENT PLAN

APPENDIX E

SOIL & GROUNDWATER MANAGEMENT PLAN

Intertek-PSI
850 Poplar Street
Pittsburgh, PA 15220

Tel +1 412.922.4001
Fax +1 412.922.4043
intertek.com/building

April 22, 2020

PTV 1075 LLC
400 Penn Center Boulevard
Bldg. 4, Suite 1000
Pittsburgh, Pennsylvania 15235

Attn: Mr. Ben Syput
Project Design Manager

Re: Soil and Groundwater Management Plan - Draft
Proposed Grantsville Dollar General
Grantsville, Maryland
Project No. 08163843-3

Dear Mr. Syput:

In accordance with our agreement, Professional Service Industries, Inc. (PSI) has completed a Soil and Groundwater Management Plan for the above referenced project in accordance with our agreement. Please review the plan and provide any comments you may have. The plan will be finalized following receipt of any comments.

Thank you for choosing PSI as your consultant for this important project. If you have any questions, or if we can be of additional service, please call us at (412) 922-4000.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

David Christner
Environmental Professional

Patricia St. Peter LPG (IN)
Principal Consultant

SOIL & GROUNDWATER MANAGEMENT PLAN

For the

PROPOSED GRANTSVILLE DOLLAR GENERAL
129, 131 AND 133 E. MAIN STREET
GRANTSVILLE, MD 21536

Prepared for

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1 INTRODUCTION

This Soil and Groundwater Management Plan (SGMP) has been prepared to provide guidance in handling the soils and groundwater during construction activities at the Proposed Dollar General Retail Building site at 129, 131 and 133 E. Main Street in Grantsville, Maryland. The subject property has been shown to have been impacted by metals, total petroleum hydrocarbons, semi-volatile organic compounds (SVOCs) and Volatile Organic Compounds (VOCs). This plan was deigned to be utilized in conjunction with a Site-Specific Health & Safety Plan (HASP) that has also been prepared by PSI. The two plans together are designed to protect the health & safety of construction workers, future occupants and the environment. It is also being prepared as part of the Remedial Action Plan for the property as part of the Maryland Department of the Environment (MDE) Voluntary Clean-up Program (VCP).

1.1 SITE DESCRIPTION

The subject property for this SGMP consists of the property located at 129, 131 and 133 E. Main Street in Grantsville, Garret County, Pennsylvania. The subject property consists of two adjoining parcels of land totaling 0.67 acre.

The western Tax Parcel (Map 008A Grid 0016 Parcel 0049) which contains two addresses (131 and 133 E. Main Street) is owned by Gregory Lawson/Roger Resh Life Int. The Garrett County Tax Assessment Office provides the address for this portion as 161 E. Main Street; however, that specific address is located further west of the subject property and may have been the property owner's physical address. The western portion of the subject property is currently a vacant grass-covered lot with a gravel driveway.

The eastern Tax Parcel (Map 008A Grid 0016 Parcel 130) which contains one address (129 E. Main Street) is owned by Norman & Hazel Beitzel. The eastern portion of the subject property is improved with an approximately 1,500 square foot (SF), two-story with basement residential home and approximately one-third of a 600 SF garage. There is an asphalt / grass-covered drive that goes to the existing detached garage. There is an active 1,000-gallon underground heating oil tank located adjacent to the east side of the house.

Current use(s) of surrounding property include: Ravine Street, followed by a residential property and medical/dentist office building to the north; residential properties, followed by Church Street to the east; E. Main Street (Rt. 40 Alt.), followed by residential properties and Thomas Tax Service to the south; and Pennsylvania Avenue, followed by residential properties to the west, with an Auto Parts store to the northwest. Figure 1.0, which is appended, shows an aerial photograph with the location of the subject property outlined.

There are no surface water bodies on the subject property. The nearest surface water body is an unnamed stream that is located approximately 115 feet north of the subject property. The stream enters an underground culvert at this point and flows to the east-southeast. It emerges aboveground approximately 200 feet to the east-northeast of the subject property.

The client has indicated that they will be purchasing the property and demolishing the existing buildings. The protocols detailed in this SGMP are also to be followed during any future soil disturbance at the subject property.

As described below, chemical impacts have been identified within the soil and groundwater on the subject property. Contractors must adhere to the soil management protocols outlined herein during any construction activities at the subject property that include excavation into the soils.

1.2 SUMMARY OF PREVIOUS ENVIRONMENTAL STUDIES

The following prior environmental investigations were conducted at the subject property and the information reviewed and incorporated into this SGMP report. A Phase I ESA was conducted at the subject property in accordance with ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (the Practice). The Phase I ESA Report, dated March 14, 2019 identified the following evidence of recognized environmental conditions (REC):

On-Site Recognized Environmental Conditions

- There was a gasoline station and auto service garage located on the western portion of the subject property from at least 1922 until approximately the late 1990's when the garage burnt down. It is not known if the garage was vacant prior to burning down. The 1922 and 1930 Sanborn Maps identify underground storage tanks (USTs) on the southwestern portion of the site. The status of the USTs is not known. This facility operated prior to the implementation of current environmental regulations. Based on the lack of information on the USTs, the length of time the facility operated as a gasoline station and auto service garage, and the facility present prior to the implementation of current environmental regulations, the former gasoline station and auto service garage would be considered a REC in relation to the subject property.
- There is a 500-gallon underground storage tank (UST) located outside the residential home (eastern parcel). The UST contains home heating oil. There were no reported releases with the UST. The age of the UST was not reported. The UST is not equipped with automatic leak or spill detection. No tightness testing has been conducted. USTs with 1,100-gallon capacity or less that are used to store petroleum products at a private residence or farm are exempt from most Maryland oil control regulations. However, these systems must comply with

closure requirements when no longer used as a fuel source. Due to its underground location and lack of automatic leak detection, PSI cannot rule out the possibility of a latent release from the tank, thus it is considered to represent evidence of a REC.

Subsequent to the Phase I ESA, a Phase II ESA was designed to investigate the impact, if any, to the subject site from the identified recognized environmental conditions.

The scope of the Phase II ESA investigation included the conductance of a Geophysical Survey, advancement of five soil borings, installation of three temporary monitoring wells, and the collection and analysis of five soil and three groundwater samples. However, due to property boundary constraints and underground utilities, only four borings were conducted. In addition, due to the detection of groundwater in only one of the four borings, only one temporary monitoring well was installed, and one groundwater sample collected. The Phase II ESA, dated April 18, 2019, offered the following conclusions and recommendations:

INITIAL PHASE II ESA FINDINGS

- No evidence of current underground storage tanks (USTs) was found on the southwestern corner of the subject property (133 E. Main Street) in the area where historic Sanborn Maps showed USTs to be present.
- The presence of one heating oil UST was visually confirmed outside the southeast corner of the residential house at 129 E. Main Street.
- Petroleum product soil and groundwater impact above regulatory standards was found on the southwestern corner of the subject property in the area where the historic Sanborn Maps showed USTs to be present.
- The area of petroleum odor impacted soils and elevated PID readings appeared to be confined from approximately five feet to 11.5 feet below ground surface (bgs). The groundwater was found at approximately six feet bgs.
- No compounds were found in the soils from a soil boing conducted adjacent to and on the up-gradient side of the heating oil UST. Due to property boundaries and subsurface utilities, no sample could be collected on the down-gradient side of the heating oil tank. No groundwater was found in this area to a depth of 13’ below ground surface (bgs).

Additional Phase II ESA Findings

- Petroleum product soil impact above MDE regulatory standards was found at the location of the former USTs on the southwestern corner of the subject property.
- Petroleum product odor-impacted soils appear to be located beginning at 6’ bgs in the area of the former USTs; 12’ bgs to the north of the former UST area; and approximately 18’ bgs on the northern portion of the property.

- Petroleum product impact above MDE regulatory standards was found in the groundwater in all three deep soil borings. Groundwater appears to be located approximately 16 to 19 feet bgs.
- One SVOC compound, benzo (a) pyrene, above MDE regulatory standards, was found in the shallow soils at the existing heating oil UST.
- Arsenic and total chromium impact above the MDE arsenic and hexavalent chromium standards was found in the majority of the soils at the subject property above their respective MDE regulatory standards. The majority of the impact appeared to be consistent with natural background levels, with the exception of the arsenic concentration in soils at approximately five feet bgs on the western side of the subject property (Composite Sample 3).

Additional Phase II ESA Soil Gas Sampling Findings

- Numerous VOC compounds were detected in all three of the soil gas samples. The detected concentrations were below both the Tier I and Tier 2 EPA Risk-based concentrations for commercial properties.

Based on the prior investigations, the media of concern are both soils and groundwater. Tables summarizing the analytical results of the prior investigations is located in Appendix A. Maps, labeled as Figures 3, 4 and 5, showing the analytical results by location are appended in the Figures Section.

Soils: Specific Chemicals of Concern (COCs) above non-residential Maryland Department of the Environmental Generic Numeric Cleanup Standards in the soils include: heavy metals (arsenic, unspeciated chromium and nickel), ethylbenzene (VOC), Total Petroleum Hydrocarbon (TPH) – Gasoline Range Organics (GRO), TPH – Diesel Range Organics (DRO) and benzo(a)pyrene (polycyclic aromatic hydrocarbon).

The metals impact appears to be to both the surface and subsurface soils. The majority of the metals' concentrations appear to be consistent with background levels, with the exception of the arsenic concentrations found in the soils at a depth of 5' bgs in the area of the former auto repair garage; The petroleum product odor impacted soils appear to begin at a depth of approximately 5' bgs on the southwestern portion of the subject property in the area of the former USTs; at depths beginning at 12' bgs in the area northeast of the former UST field; and at depths beginning ap[proximately 18' bgs on the northern portion of the property. The PAH or SVOC impact appears to be limited to the surface soils in the vicinity of the current fuel oil UST on the southeastern portion of the property.

Groundwater: Specific Chemicals of Concern (COCs) above non-residential Maryland Department of the Environmental Generic Numeric Cleanup Standards in the groundwater include: heavy metals (unspeciated chromium), VOCs (benzene, ethylbenzene, isopropylbenzene, naphthalene, 1,2,4 and 1,3-5-trimethylbenzene,

toluene, 1,2,4 and 1,3,5 trimethlybenzene), TPH – GRO, TPH – DRO and benzo(a)pyrene (a polycyclic aromatic hydrocarbon or semivolatile organic compound).

Some apparent perched groundwater was found at approximately 6' bgs in the area of the former UST field during the initial Phase I ESA. Based on the overall investigation activities, PSI believes, this groundwater was likely sitting (perched) in a former UST pit that had been backfilled with rock and is not the true groundwater. Dedicated groundwater appeared to be located at depths ranging from 16 to 19 feet bgs on top of bedrock. Based on the amount of groundwater available for the groundwater sampling and its recharge rate during the sampling, groundwater appears to be limited, especially on the northern side of the subject property.

Identified Hazards – Contaminant Discussion

Metals – Lead was confirmed to be present in the soils and additional metals are also likely present in the fill/demolition debris. Routes of exposure concern for metals include inhalation, ingestion and direct contact (skin and eyes). These metals do not produce detectable odors; thus, it is difficult to detect their presence. They do not readily volatilize in the air; however, they can be entrained in the air in soil dust. Visible emissions of dust would be a good indicator that metals are present in the air.

Total Petroleum Hydrocarbons (TPH) and Volatile organic compounds (VOCs) are present in both the soil and groundwater. Several of these compounds are considered to be carcinogens. These compounds readily volatilize into the air and at higher concentrations can be detected by smell or with a photoionization detector (PID). Routes of exposure concern include inhalation, ingestion and direct contact (skin and eyes). These compounds could also be dispersed in the air via dust. Visible emissions of dust, elevated PID readings or odors would be a good indicator that VOCs are present in the air.

Semi-volatile organic compounds (SVOCs) are present in both the soil and groundwater. The majority of the SVOCs are in a group called polycyclic aromatic hydrocarbons (PAHs). These compounds are typically referred to as Coal Tar Pitches. Several of the SVOC compounds are considered carcinogens. These compounds do not readily volatilize; thus, it is difficult to detect these compounds via smell, or with a PID. Routes of exposure concern include inhalation, ingestion and direct contact (skin and eyes). These compounds could also be dispersed in the air via dust. Visible emissions of dust would be a good indicator that SVOCs are present in the air.

The Occupational Safety & Health Administration (OSHA) regulates worker exposure to contaminant concentrations in any amount.

1.3 PROPOSED CONSTRUCTION

The land use and restriction category for the property will be Tier 2B, restricted for commercial uses.

The proposed development includes the demolition of the existing two-story home and detached auto garage located on the subject property. The entire structure will be demolished, including the house foundation. The existing, currently unregulated, 1,000-gallon home heating oil UST will be removed. The existing underground municipal sewer line crossing the northwestern portion of the property will be relocated along the property perimeter. A new underground storm water pod will be installed. A new approximately 9,100 square foot, slab on-grade, one story retail store building will be constructed on the northern portion of the subject property. The majority of the remainder of the property will contain a paved asphalt parking lot and driveways and concrete pads and sidewalks. There will be a total of 26 parking spots. A retaining wall will be constructed around the majority of the property. There will be a trash enclosure on the northeastern corner. There will be approximately 7,140 square feet of land not covered by an impervious surface and covered with turfgrass or other landscaping.

The construction will require some cut and fill. One to three feet of soil will be cut from the southern and southwestern portions of the property and the soils filled on the remaining portions of the property Utilities will be placed in trenches. Some estimated depths of deeper excavation are summarized below.

Feature	**Location**	**Estimated Depth**
Current and Proposed Municipal Storm Water Line	Northwestern Portion	7’ bgs
Other utilities (water, sanitary sewer)	Across Site	4 to 5’ bgs
Storm Water Pod	Northeastern Portion	8’ bgs
Pylon Sign Structure	Southeastern Corner	8’ bgs
Building Footers	Northern Side	5.5 to 6’ bgs

2 SOIL HANDLING AND DISPOSAL

2.1 STORMWATER RUNOFF

Soils should be managed to minimize the potential for run-off to impact nearby surface water. Because the project will disturb greater than 5,000 square feet, an Erosion and Sedimentation Control Plan will need to be prepared and submitted to the Garrett County Soil Conservation District. The Plan will have to comply with the Garrett County Erosion and Sedimentation Control Ordinance and the State of Maryland Stormwater Management Act of 2007. An Engineer with local and/or state experience in completing E&S Plans is recommended to prepare the E&S Plan so that is complies with the regulations.

The E&S Plan should at a minimum include controls that will prevent the run-off of storm water from the subject property. Storm water from the subject property should not be directly discharged to the municipal sanitary or storm water sewers unless approval is obtained prior to such disposal.

The E&S Plan, once complete, should be appended to this report. All procedures for controlling storm water should be strictly adhered to.

2.2 SOIL HANDLING

The client has indicated that they will be demolishing the existing buildings at the subject property. They will also be removing a 1,000-gallon underground storage tank at the subject property. It is recommended that these activities be completed prior to the start of the overall soil excavation and grading activities. There are asbestos-containing materials located inside the house and on the garage exterior. The demolition debris should be properly disposed off-site in its entirety. Excavation of soils at this stage should be limited to only those soils that need to be excavated around the building and the UST in order to complete their demolition/removal.

The construction calls for a combination of cut and fill at the subject property. In general, soils will be cut from the western portion of the property and filled onto the eastern portion. The cut and fill activities should be conducted prior to the conductance of deeper excavations.

During the cut and fill and excavation activities, if petroleum odor-impacted soils are encountered, then these soils should be segregated from the remaining soils for off-site disposal. These petroleum odor-impacted impacted soils are all likely located greater than 5’ below ground surface”. The shallower petroleum impacted soils are located on the southwestern corner of the property and outlined on the attached Figure 6. Petroleum odor impacted soils are likely located at deeper depths outside of this area. The petroleum odor-impacted soils would preferentially be loaded directly onto tri-axle trucks for off-site disposal. The loads of all trucks leaving the subject property should be

covered with polyethylene sheeting or tarpaulin material to prevent physical movement from the truck load and prevent wind dispersion of the soils during transport. Due to the anticipated small amounts of odor-impacted soils, they may also be stockpiled at the subject property per the procedures in the following section. No additional excavation outside that required to complete construction activities should be conducted.

2.3 SOIL STOCKPILING

Any petroleum odor-impacted soils that are destined for off-site disposal and cannot be immediately removed from the subject property, should be stockpiled on-site. In addition, if other soils are awaiting re-use on other portions of the property, they should also be properly stockpiled until such time that they can be placed back on the property. The stockpiled soils should remain as close to their excavation area as possible. They should be located as far away from adjacent properties as feasible. The stockpiles should not be located near any surface water bodies or storm water sewer inlets. The materials should be placed on impermeable polyethylene sheeting, then covered with additional impermeable polyethylene sheeting. The sheeting should be weighed down to keep it from blowing away and exposing the stockpiled soils. The materials should be stockpiled in a manner to minimize the potential for stormwater run-off or blowing dust. Manipulation of the stockpiles (i.e. adding to the piles or taking soil from the piles) should be ceased when wind speeds exceed 15 mph or visible nuisance dust is being created. The stockpiles may be wetted in order to prevent nuisance dust, but water application should be controlled to prevent stormwater run-off concerns.

2.4 ON-SITE SOIL RE-USE

The soils, with the exception of any petroleum odor-impacted soils, may be re-used on the subject property as long as they are structurally suitable. These soils will have to be either placed under permanent cover (i.e. future buildings or paved asphalt parking lots) or if placed in any exposed areas, covered with a minimum of 2 feet of clean soil (fill) cover after placement. It should be noted that due to the subject property undergoing remedial activities as part of the MDE VCP, any clean fill imported to and used at the subject property must be approved by the MDE VCP prior to it being brought on-site.

2.5 OFF-SITE SOIL DISPOSAL

A small amount of petroleum odor-impacted soil is anticipated to be encountered in the proposed construction activities. These soils will need to be disposed off-site. The General Contractor must submit a soil disposal plan to the property owner prior to transporting any soils off-site. The soils should be properly characterized for off-site disposal. The owner will make available the analytical results of prior sampling of the soils; however, the selected landfill may request additional analyses. The wastes should be transported in accordance with all applicable Maryland Department of Transportation regulations. The waste disposal manifests must be provided to the property owner within 10-days following the off-site disposal.

2.6 IMPORTED SOILS

All soils or other fill material that will be imported onto the subject property must be approved by the MDE VCP prior to being brought on-site. Due to the proposed future commercial use of the subject property there are two options for the utilization of imported fill. The first option is to obtain an affidavit from the supplier of the fill stating that "the fill material has not been contaminated by controlled hazardous substances or oil". The second option is to have the proposed fill material sampled and tested. If the material meets the required commercial levels, it can then be used as clean fill. Sufficient time should be allowed for the testing and/or MDE VCP approval of the proposed fill.

Imported fill material should preferentially not be brought onto the site until such time as it is needed and can be applied directly to the area of use. If this is not feasible, then any imported clean fill should be properly stockpiled on site. It should be either directly placed on top of an impervious surface, or heavy-duty impervious polyethylene sheeting. Clean fill should never be placed directly on the virgin soils unless prior to its final placement. Stockpiled fill materials should be covered with heavy duty polyethylene sheeting.

2.7 ENVIRONMENTAL CONTROLS

2.7.1 DUST CONTROL

During any work, such as, but not limited to, excavation, grading, stockpiling, backfilling and loading, appropriate actions shall be undertaken to minimize dust emissions from the work area and soil stockpiles. All soils should be kept sufficiently moist in order to prevent visible dust emissions. Water for dust suppression should be obtained from an approved source. Groundwater from the subject property should not be utilized for this purpose. During conditions below 32º Fahrenheit, the use of water should be reevaluated so that it does not cause an additional slipping hazard. Soil stockpiles should be appropriately covered.

2.7.2 STORM WATER MANGEMENT/EROSION AND SEDIMENT CONTROL

An approved Erosion and Sedimentation Control Plan should be in place and followed to prevent any storm water runoff from the subject property to any surface water body, storm water management system or adjacent property. See Section 2.1 Stormwater Runoff for additional information and guidance.

2.7.3 EQUIPMENT DECONTAMINATION

All equipment used in the excavation, grading and backfilling activities at the subject property should be properly decontaminated prior to leaving the subject property. The

tires of all waste transportation trucks leaving the subject property should be rinsed off to prevent the off-site migration of soils from the subject property. The wash water should be collected and not allowed to run off the subject property.

2.8 POTENTIAL SOIL HANDLING HEALTH AND SAFETY CONCERNS

While the potential health effects for construction workers in handling the soil are considered to be low, a Health and Safety Plan (HASP) was prepared on the client's behalf to minimize any potential health impacts associated with handing of the impacted soils. This Soil and Groundwater Management Plan should be appended to the HASP. All construction workers at the subject property must receive training on the HASP and be familiar with it. The work procedures specified in the HASP should be followed during all soil disturbance and handling activities.

3 GROUNDWATER HANDLING AND DISPOSAL

3.1 GROUNDWATER HANDLING

Based on the depths to groundwater and the proposed locations and depths of excavation, groundwater is not anticipated to be encountered. However, the encountering of groundwater cannot be ruled out. If groundwater is encountered in any of the excavations, it should be left in place unless dewatering is necessary for the proposed construction activity (i.e. pipe installation). If dewatering is not necessary, then, the groundwater should remain in the excavation. The HASP prepared for this property specifies additional worker protection precautions that should be undertaken when groundwater is encountered. If dewatering of groundwater is required, it should be conducted with a closed system pump. All hoses used in the process should be free from leaks. The hoses should be inspected prior to initial use and at a minimum daily after that. Any hose showing indications of a leak, or a weak structure should be immediately replaced. The groundwater should be directly pumped into the appropriate containment vessel. Groundwater should not be dispersed onto the surface of the subject property or placed back into the excavation.

3.2 GROUNDWATER STORAGE

Any groundwater from dewatering activities should be stored in an appropriate aboveground storage tank until it can be disposed. The tank should be located as far away from adjacent properties as feasible. The tank should not be located near any surface water bodies or storm water sewer inlets. The tank should be inspected at a minimum once per day for any evidence of leaks or spills.

3.3 OFF-SITE SOIL DISPOSAL

A small amount of petroleum and metal impacted groundwater may be generated during dewatering activities during the proposed construction activities. This groundwater will need to be disposed off-site. In no instances should the groundwater be disposed onto the ground surface of the subject or adjoining properties or into any municipal storm or sanitary sewer. The General Contractor must submit a groundwater disposal plan to the property owner prior to transporting any groundwater waste off-site. The groundwater should be properly characterized for off-site disposal. The owner will make available the analytical results of prior sampling of the groundwater; however, the selected disposal facility may request additional analyses. The wastes should be transported in accordance with all applicable Maryland Department of Transportation regulations. The waste disposal manifests must be provided to the property owner within 10-days following the off-site disposal.

4 POST CONSTRUCTION MAINTENANCE

The subject property is enrolled in the MDE VCP. As part of the remediation of the subject property, there are several engineering controls being utilized to prevent direct contact exposure from future site occupants. These include the placement of an impervious cap on the majority of the subject property. The cap consists of the building structure, paved asphalt and concrete surfaces. A small amount of the property will not be covered with an impervious surface but finished with turfgrass or other landscaping. These areas must be covered with two feet of clean fill. Proper storm water runoff procedures should be in place at the end of construction in order to prevent erosion of the clean fill cap and/or damage to the impervious cap.

As part of the MDE VCP guidelines, the future property owner will be responsible for the inspection and maintenance of the impervious cap and clean fill barrier through the recording of an Environmental Covenant. These items must be inspected on an annual basis. Maintenance records must include the date of the inspection, name of the inspector, any noted issues and subsequent resolution of the issues. Maintenance records will be maintained in a designated area at the Site for Maryland Department of the Environment (MDE) inspection and review. The MDE must be notified within ten business days after the discovery of any needed repairs to the building slabs, asphalt, concrete or landscape caps. Repairs must be conducted as needed. Forms related to the inspection and notification are contained in Appendix E.

4.1 IMPERVIOUS CAP INSPECTION

Pavement covered area inspections are required at a minimum on an annual basis to document that the environmental cap integrity is being maintained. During the inspection, the environmental cap surface shall be observed for the following conditions:

1. Differential settlement and significant surface-water ponding
2. Erosion or cracking of the cap materials
3. Obstruction or blocking of drainage facilities

Environmental cap inspections may be performed by the Owner, Owner's staff or consultants/ representative. The inspection shall note any areas where repairs are necessary, and provide a written description, including photo documentation, of any cap defect to be repaired. Inspection forms and any resulting repair records are required to be maintained by the property owner. Where the inspections recommend that cap maintenance and repair be completed, such repairs will be completed as soon as practically possible, and in compliance with any recorded deed restriction(s). If an action is required and completed, documentation of the response action is required, and shall include the name of the company completing the work, a description of the work, and the date the work was completed. An example pavement inspection form is provided to

FIGURES

APPENDIX A – ANALYTICAL SUMMARY OF PRIOR INVESTIGATIONS

Soil Sample Analytical Results Summary
Proposed Grantsville DG
129, 131, 133 E. Main Street
Grantsville, MD 21536

Constituent	Reporting Units	Generic Numeric MDE Clean-Up Standards		Field Sample ID, Date Sampled, and Depth Sampled in feet below ground surface																					
		Residential	Non-Residential	B1	B1	B2	B3	B3	B4	B5	B5	B5	B6	B6	B6	B7	B7	B7	B8	B9	B10	B12	B12	Comp 1	Comp 2	Comp 3
				4/8/2019	4/8/2019	4/8/2019	4/8/2019	4/8/2019	4/8/2019	1/14/2020	1/14/2020	1/14/2020	1/14/2020	1/14/2020	1/14/2020	1/15/2020	1/15/2020	1/15/2020	1/14/2020	1/15/2020	1/15/2020	1/15/2020	1/15/2020	1/14/2020	1/14/2020	1/14/2020
				6.5	11	8	6.5	10	13	1	4.5	9	1.5	4.5	14	2	4.5	14	4.5	4.5	4.5	1.5	4.5	0-2	2 - 4	4 - 5
VOCs																										
Benzene	mg/kg	1.2	5.1	ND	ND	ND	ND	ND	ND	NA	0.691	4.77	NA	ND	0.519	NA	ND	ND	0.00159	0.00642	0.00161	NA	NA	NA	NA	NA
n-Butylbenzene	mg/kg	NA	NA	0.279	1.83	5.11	2.59	2.49	ND	NA	2.43	4.07	NA	ND	0.222	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
sec-Butylbenzene	mg/kg	NA	NA	0.234	1.4	3.1	1.17	0.216	ND	NA	0.972	1.79	NA	ND	0.121	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Tert-Butylbenzene	mg/kg	NA	NA	ND	ND	0.337	ND	ND	ND	NA	0.276	ND	NA	ND	0.0234	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Chloroform	mg/kg	0.32	1.4	ND	ND	ND	ND	ND	ND	NA	0.172	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Etylbenzene	mg/kg	5.8	25	0.0878	**30.4**	9.94	12	**29.4**	ND	NA	1.93	**48.5**	NA	ND	1.63	NA	ND	0.0085	0.0114	0.143	0.0145	NA	NA	NA	NA	NA
Isopropylbenzene	mg/kg	190	990	0.161	5.47	4.81	2.16	5.38	ND	NA	1.8	4.41	NA	ND	0.28	NA	ND	ND	ND	0.016	ND	NA	NA	NA	NA	NA
p-Isopropyltoluene	mg/kg	NA	NA	0.0462	0.534	1.69	0.576	1.05	ND	NA	0.161	0.902	NA	ND	0.062	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Naphthalene	mg/kg	3.8	17	1.95	7.06	6.78	5	6.33	ND	NA	4.2	1.78	NA	ND	0.714	NA	ND	ND	ND	0.0593	ND	NA	NA	NA	NA	NA
n-Propylbenzene	mg/kg	NA	NA	0.352	9.85	13.1	6.47	13.1	ND	NA	6.55	14.8	NA	ND	0.745	NA	ND	0.00866	ND	0.0599	ND	NA	NA	NA	NA	NA
Toluene	mg/kg	490	4,700	ND	1.77	ND	ND	ND	ND	NA	ND	5.59	NA	ND	0.155	NA	ND	ND	ND	0.0251	ND	NA	NA	NA	NA	NA
1,2-Trichloroethane	mg/kg	0.15	0.63	0.0507	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
1,2,4 Trimethylbenzene	mg/kg	30	180	0.122	67.4	74.9	33.7	67	ND	NA	0.911	7.84	NA	ND	2.15	NA	ND	0.0507	0.0207	0.344	0.0186	NA	NA	NA	NA	NA
1,2,3-Trimethylbenzene	mg/kg	NA	NA	0.245	13.5	15.1	8.55	16.9	ND	NA	10.2	24	NA	ND	0.649	NA	ND	0.00997	ND	0.0698	ND	NA	NA	NA	NA	NA
1,3,5 -Trimethylbenzene	mg/kg	27	150	ND	21.1	9.47	0.799	28.1	ND	NA	0.346	33.7	NA	ND	0.684	NA	ND	0.0172	0.00605	0.0879	ND	NA	NA	NA	NA	NA
Xylenes (Total)	mg/kg	58	250	ND	56.3	14.8	13.3	79.1	ND	NA	1.01	18.9	NA	ND	2.82	NA	ND	0.0343	0.061	0.767	0.0639	NA	NA	NA	NA	NA
Total Petroeum Hydrocarbons																										
Diesel Range Organics	mg/kg	230	620	253	135	**916**	200	189	ND	593	569	**687**	101	6.6	166	NA	9.27	40.4	NA	NA	NA	145	80.7	NA	NA	NA
Gasoline Range Organics	mg/kg	230	620	194	**1,960**	**2,400**	**1,030**	**1,700**	**ND**	**4.18**	**661**	**2,560**	ND	ND	147	NA	ND	7.74	NA	NA	NA	3.67	ND	NA	NA	NA
Polycyclic aromatic hydrocarbons																										
Anthracene	mg/kg	3	47	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	1.22	ND	ND	ND	ND
Benzo(a)anthracene	mg/kg	1.1	21	NA	NA	NA	NA	NA	NA	0.146	ND	ND	NA	NA	ND	0.565	ND	ND	NA	NA	NA	5.96	ND	ND	ND	ND
Benzo(a)pyrene	mg/kg	0.11	2.1	NA	NA	NA	NA	NA	NA	0.207	ND	ND	NA	NA	ND	0.637	ND	ND	NA	NA	NA	**6.63**	ND	ND	ND	ND
Benzo(b)fluoranthene	mg/kg	1.1	21	NA	NA	NA	NA	NA	NA	0.255	ND	ND	NA	NA	ND	0.878	ND	ND	NA	NA	NA	8.52	ND	ND	ND	ND
Benzo(k)fluoranthene	mg/kg	11	210	NA	NA	NA	NA	NA	NA	0.0989	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	2.97	ND	ND	ND	ND
Benzo(g,h,i)perylene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.125	ND	ND	NA	NA	ND	0.386	ND	ND	NA	NA	NA	3.89	ND	ND	ND	ND
Chrysene	mg/kg	110	2,100	NA	NA	NA	NA	NA	NA	0.137	ND	ND	NA	NA	ND	0.51	ND	ND	NA	NA	NA	4.8	ND	ND	ND	ND
Dibenz(a,h)anthracene	mg/kg	0.11	2	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	1.07	ND	ND	ND	ND
Fluoranthene	mg/kg	240	3,000	NA	NA	NA	NA	NA	NA	0.305	ND	ND	NA	NA	ND	0.785	ND	ND	NA	NA	NA	8.6	ND	ND	ND	ND
fluorene	mg/kg	240	3,000	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	0.0666	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	mg/kg	1.1	21	NA	NA	NA	NA	NA	NA	0.116	ND	ND	NA	NA	ND	0.425	ND	ND	NA	NA	NA	4.25	ND	ND	ND	ND
Naphthalene	mg/kg	3.8	17	NA	NA	NA	NA	NA	NA	0.137	4.54	3.86	NA	NA	0.522	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND
Phenanthrene	mg/kg	180	2,300	NA	NA	NA	NA	NA	NA	0.215	0.0484	0.0819	NA	NA	0.0522	ND	ND	ND	NA	NA	NA	1.61	ND	ND	ND	ND
Pyrene	mg/kg	180	2,300	NA	NA	NA	NA	NA	NA	0.254	ND	ND	NA	NA	ND	0.777	ND	ND	NA	NA	NA	7.32	ND	ND	ND	ND
Metals																										
Antimony	mg/kg	3.1	47	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	2.59	2.69	ND	2.79	2.4
Arsenic	mg/kg	0.63	3	NA	NA	NA	NA	NA	NA	**5.23**	**4.5**	**5.4**	NA	NA	**9.05**	**14**	ND	**13.1**	NA	NA	NA	**11.5**	**6.79**	**7.81**	**12.1**	**67.3**
Beryllium	mg/kg	16	230	NA	NA	NA	NA	NA	NA	0.556	0.71	1.33	NA	NA	1.4	0.881	1.64	1.83	NA	NA	NA	1.04	1.35	1.16	1.47	0.976
Cadmium	mg/kg	7.1	98	NA	NA	NA	NA	NA	NA	0.631	ND	1.29	NA	NA	ND	0.696	ND	ND	NA	NA	NA	1.75	ND	ND	ND	ND
Chromium(1)	mg/kg	0.3	6.3	NA	NA	NA	NA	NA	NA	**14.5**	**15.7**	**25.7**	NA	NA	**23.7**	**22.6**	**24.9**	**35.7**	NA	NA	NA	**19.9**	**23**	**26.8**	**24.9**	**26**
Copper	mg/kg	310	4,700	NA	NA	NA	NA	NA	NA	47.7	17.3	26.3	NA	NA	36.4	96.8	37.1	35.6	NA	NA	NA	27.6	27.9	28.1	37.5	34.9
Lead	mg/kg	322	400	NA	NA	NA	NA	NA	NA	322	12.3	28.2	NA	NA	23.7	113	21.9	27.1	NA	NA	NA	300	22	23.2	22.9	23.4
Mercury	mg/kg	0.341	2.3	NA	NA	NA	NA	NA	NA	0.341	ND	0.134	NA	NA	0.0366	0.105	ND	ND	NA	NA	NA	0.157	ND	0.0811	ND	0.0357
Nickel	mg/kg	15	150	NA	NA	NA	NA	NA	NA	15	21.1	**159**	NA	NA	38.8	21.6	40.2	37.5	NA	NA	NA	23.4	35.2	26.2	35.5	28.6
Selenium	mg/kg	39	580	NA	NA	NA	NA	NA	NA	ND	ND	6.16	NA	NA	2.92	ND	ND	ND	NA	NA	NA	2.65	ND	ND	ND	ND
Zinc	mg/kg	221	2,300	NA	NA	NA	NA	NA	NA	221	66.9	140	NA	NA	95.1	188	121	107	NA	NA	NA	574	90.6	81.8	95	82

NA = Not Analyzed; ND = Not Detected, **Bold** = Exceedence of the Non-Residentail MDE Clean-up Standard.

(1) Analysis did not differentiate the type of chromium (III or VI), MDE regulations have separate standards for chromium III and VI. The samples were assumed to be composed of chromium VI, which has a more stringent MDE standard.

Groundwater Sample Analytical Results Summary
Proposed Grantsville DG
129, 131, 133 E. Main Street
Grantsville, MD 21536

Constituent	Reporting Units	Generic Numeric MDE Clean-Up Standards Groundwater Standards Type I and II Aquifers	Field Sample ID, Date Sampled, Depth Sampled in feet below ground surface						
			B1H2O	B5H2O	B6H2O	B7H2O			
			4/8/2020	1/14/2020	1/14/2020	1/15/2020			
			6'	16.5'	18.5'	25.5'			
VOCs									
Benzene	ug/L	5	ND	**374**	**3,070**	ND			
Ethylbenzene	ug/L	700	392	409	**2,570**	ND			
Isopropylbenzene	ug/L	45	**149**	31	**132**	ND			
MTBE	ug/L	20	ND	ND	ND	3.11			
Naphthalene	ug/L	0.17	**112**	ND	**542**	ND			
n-Proylbenzene	ug/L	NA	343	77.8	233	ND			
Toluene	ug/L	1000	47.1	499	**1,270**	ND			
1,2,4 Trimethylbenzene	ug/L	5.6	**2,250**	**456**	**1,740**	ND			
1,2,3 Trimethylbenzene	ug/L	NA	513	163	551	ND			
1,3,5-Trimethylbenzene	ug/L	6	**563**	**138**	**504**	ND			
Xylenes	ug/L	10,000	1,320	1,800	10,000	ND			
TPH									
Diesel Range Organics	ug/L	47	**6,500**	**9,200**	**62,200**	**319**			
Gasoline Range Organics	ug/L	47	**12,100**	**17,700**	**67,200**	ND			
PAHs									
Acenaphthalene	ug/L	53	NA	ND	2.29	ND			
fluorene	ug/L	29	NA	ND	4.53	ND			
Naphthalene	ug/L	0.17	NA	**53.1**	**424**	ND			
Phenanthrene	ug/L	12	NA	ND	2.14	ND			
Dimethylphenol	ug/L	36	NA	16.8	31.2	ND			
Metals									
Chromium	ug/L	0.035	NA	**10.6**	ND	ND			
Lead	ug/L	15	NA	5.68	5.74	ND			
Nickel	ug/L	39	NA	17.4	17.9	ND			
Selenium	ug/L	50	NA	23	ND	ND			

NA = Not Analyzed; ND = None Detected, **Bold = Exceedence of applicable MDE Standard**

Soil Gas Sample Analytical Results Summary
Proposed Grantsville DG
129, 131, 133 E. Main Street
Grantsville, MD 21536

Constituent	Reporting Units	MDE Target Soil Gas Concentrations		Sample No., Sample Date and Depth below ground surface		
		Tier I	Tier 2	SG1	SG2	SG3
				3/5/2020	3/5/2020	3/5/2020
				5	5	5
VOCs						
Acetone	ug/M^3	13,700,000	68,500,000	ND	ND	43.5
Benzene	ug/M^3	1,600	8,000	1.54	1.59	3.55
Carbon Disulfide	ug/M^3	310,000	1,550,000	ND	0.915	ND
Chloromethane (methyl chloride)	ug/M^3	40,000	200,000	0.971	0.872	0.481
Cyclohexane	ug/M^3	440,000	2,200,200	46.1	3.37	ND
1,3 Dichlorobenzene	ug/M^3	1,120	5,600	43.6	40.8	1.97
Ethanol	ug/M^3	NA	NA	45.3	43.9	95.2
Trichlorofluoromethane	ug/M^3	310,000	1,550,000	1.37	1.48	1.28
Dichlorofluoromethane	ug/M^3	44,000	220,000	2.15	2.31	2.25
Heptane	ug/M^3	176,000	880,000	4.34	2	1.06
Hexane	ug/M^3	308,000	1,540,000	109	3.67	1.89
2-Butanone (MEK)	ug/M^3	2,200,000	11,000,000	5.31	5.57	ND
Methylene Chloride	ug/M^3	265,000	1,330,000	ND	0.906	ND
2-Propanol (Isopropanol)	ug/M^3	88,000	440,000	1,750	1,800	263
Propene	ug/M^3	1,320,000	6,600,000	119	26.3	6.78
Toluene	ug/M^3	2,200,000	11,000,000	20.2	20.5	34.6
1,2,4-Trimethylbenzene	ug/M^3	26,400	132,000	5.4	1.17	ND
2,2,4-Trimethylpentene	ug/M^3	NA	NA	ND	1.21	ND
Xylenes (Total)	ug/M^3	310,000	1,550,000	3.95	3.108	1.75
ND = Not Applicable, ND = Non=Detected						

APPENDIX B – MDE VCP CLEAN IMPORTED FILL FACT SHEET

MARYLAND
Department of the Environment

Facts About...

VCP - Clean Imported Fill Material

The purpose of the Voluntary Cleanup Program (VCP) is to encourage the cleanup and redevelopment of properties throughout Maryland. In many cases, fill materials are imported onto a property as part of the redevelopment process. As more properties are relying upon the use of imported fill materials, the VCP has prepared this guidance document for assisting participants who anticipate using imported fill material at VCP sites.

Introduction

No one wants to introduce new contamination onto a VCP site through the importation of fill material that is believed to be clean. This document was developed specifically for VCP participants who seek guidance on steps to take to minimize the possibility of importing contaminated fill onto VCP sites.

Overview

Because fill material may come from a variety of sources, it is important to determine that any material brought onto a VCP site not only meets engineering specifications for a particular use, but that it also passes some level of screening to ensure that it is, in fact, clean.

Residential or Commercial / Industrial Scenario

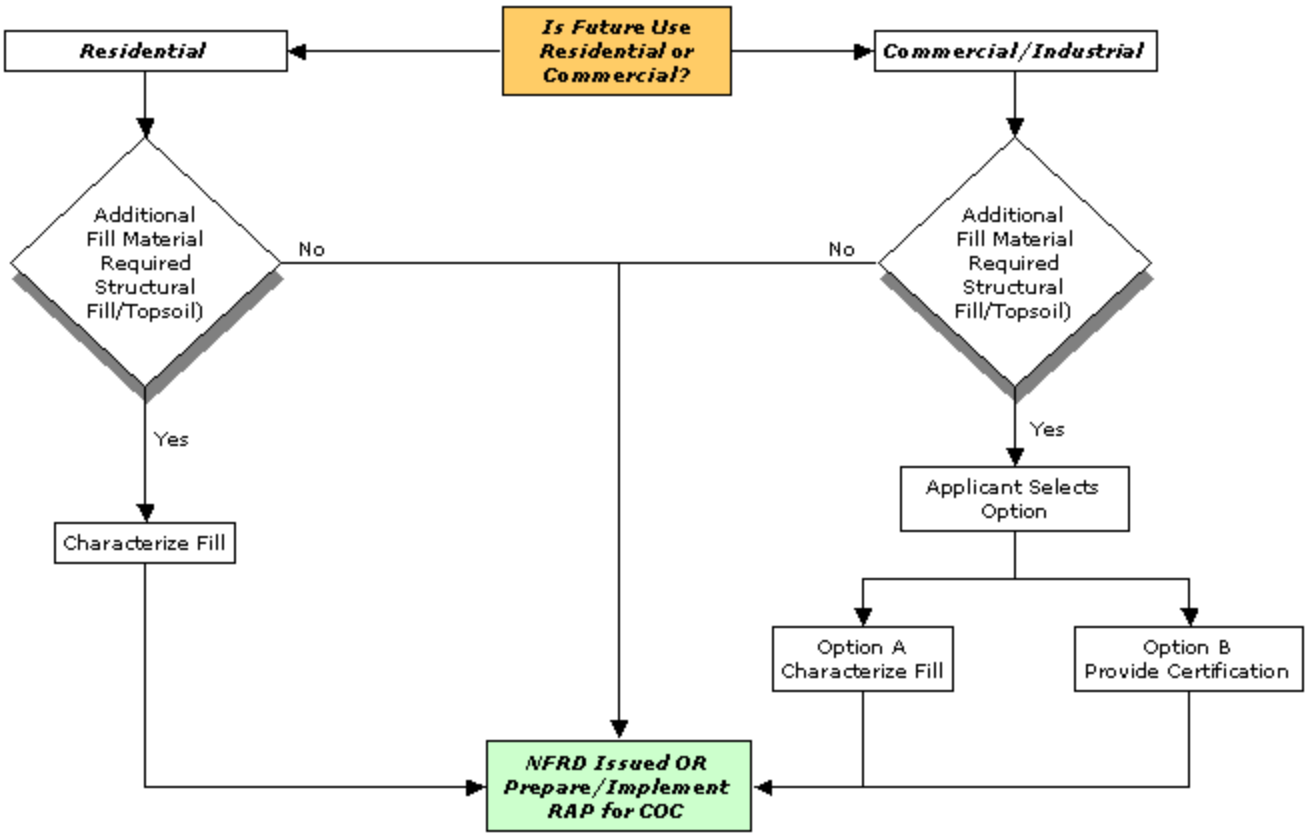
Depending upon the land use scenario, a VCP participant may be required to characterize the fill or provide a certification stating that the imported fill is not contaminated. As indicated in Exhibit 1, all imported fill materials for properties where the land use is determined to be residential must be characterized. In limited circumstances, the VCP may allow a participant to use imported fill material that has not been characterized for areas where no pathway will exist between the fill material and the property's end-users. In such circumstances, a Phase I Environmental Site Assessment conducted within a year from the date of scheduled delivery of fill material documenting that no recognized environmental conditions are present must be submitted to the VCP.

For commercial or industrial land uses, a VCP participant has the option of either characterizing the imported fill material or relying upon an affidavit from the vendor stating that the imported material has not been contaminated by controlled hazardous substances or oil. A template of the affidavit is attached to this guidance.

Selecting Fill Material

In general, the fill source area should be located in non-industrial areas, and not from sites undergoing an environmental cleanup. Non-industrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include pesticides, herbicides or metals. Unacceptable sources of fill material include industrial and/or commercial sites where

Exhibit 1: Use of Fill Material for Residential or Commercial/Industrial Decision Tree



hazardous materials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Commercial sites to avoid include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities, and agricultural supply stores. Industrial facilities to avoid include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, or other similar facilities.

Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Table 1: Potential Contaminants Based on the Fill Source Area	
Fill Source	*Target Compounds/Recommended Analyses**
Land near to an existing highway	• Lead (EPA method 6020 [Rev 0 – 9/9]) • PAHs (EPA method 8270C [Rev 3 – 12/96)
Land near a mining area or rock quarry	• Heavy Metals (EPA method 6020 [Rev 0 – 9/9]) • Asbestos (polarized light microscopy) • pH
Agricultural land	• Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A [Rev 1 – 12/96]) • Heavy Metals (EPA method 6020 [Rev 0 – 9/9])
Residential/acceptable commercial land	• VOCs (EPA Method 8260B (Rev 2 - 12/96); Note: The soil and sediment collection method has changed to EPA Method 5035) • SVOCs (EPA method 8270C) • TPH (modified EPA method 8015) • PCBs (EPA method 8082) • Heavy Metals including lead (EPA methods 6010B and 7471A) • Asbestos (OSHA Method ID-191)
*The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 3060A.	

Documentation and Analysis

In order to minimize the potential of introducing unacceptable fill material onto a site, it is necessary to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that an environmental professional, as defined by ASTM, should sign any such documentation. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use. The Department recommends using the analytical methods in Table 1 to determine whether potential contaminants are present in fill source areas.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the *Soil and Groundwater Cleanup Guidance Document, August 2001*. A standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports. When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. Table 2 can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I environmental site assessment may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with MDE. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I, it is recommended that the participant use Table 2 to determine the fill material sampling schedule. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses).

This sampling frequency may be modified upon consultation with the MDE if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding the criteria in *Soil and Groundwater Cleanup Guidance Document, August 2001* be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, MDE recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. It is not acceptable to composite samples for volatile and semi-volatile constituents. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, MDE recommends that a Phase I be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with MDE.

Table 2: Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area	*Sampling Requirements*
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 sub samples per location
Volume of Borrow Area Stockpile	*Samples per Volume*
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

APPENDIX C – SITE DEVELOPMENT PLAN

APPENDIX D – EROSION AND SEDIMENTATION PLAN

TEMPORARY CONTROL MEASURES

THE E&S CONTROL FACILITIES FOR THE PROPOSED DOLLAR GENERAL STORE PROJECT ARE SHOWN ON THE E&S CONTROL PLAN. CONTROL MEASURES SHOWN ON THIS PLAN ARE MINIMUM CONTROLS TO PROTECT OFFSITE AREAS FROM SEDIMENT–LADEN RUNOFF. ADDITIONAL CONTROLS MAY BE REQUIRED DEPENDING ON THE PROGRESS OF CONSTRUCTION AND VARYING CONDITIONS ENCOUNTERED.

A. STABILIZED CONSTRUCTION ENTRANCE/EXIT

A ROCK CONSTRUCTION ENTRANCE WILL BE PROVIDED AT THE LOCATION SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE STANDARD DETAIL TO REMOVE SEDIMENT/MUD FROM VEHICLES BEFORE ENTERING CITY ROADS.

INSTALLATION: TO CONSTRUCT THE PAD, PLACE A LAYER OF GEOTEXTILE AND AN INITIAL 2 TO 3 INCHES OF STONE ACROSS THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. THE STONE PAD SHOULD BE AT LEAST 50 FEET IN LENGTH, 20 FEET IN WIDTH, AND 8 INCHES THICK. COMPLETE THE PLACEMENT OF STONE TO THE REQUIRED THICKNESS.

MAINTENANCE: THE STABILIZED CONSTRUCTION ENTRANCE MUST BE MAINTAINED IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. THIS MAY REQUIRE ADDING STONE OR MAKING OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN A CLEAN SURFACE, THE MOUNTABLE BERM, AND THE SPECIFIED DIMENSIONS. ALL STONE OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO THE ADJACENT ROADWAY MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING THE ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NO ACCEPTABLE UNLESS THE WAS WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

B. TEMPORARY VEGETATIVE STABILIZATION

INSTALLATION: FERTILIZING, SEEDING, AND MULCHING WILL BE USED AS A TEMPORARY E&S CONTROL MEASURE ON ALL NON–PAVED DISTURBED AREAS. EXPOSED SOILS, NOT SUBJECT TO CONSTRUCTION TRAFFIC, SHALL NOT REMAIN UNSEEDED OR UNCOVERED BY MULCH FOR MORE THAN 4 DAYS, INCLUDING STOCKPILED SOIL MATERIALS. WITH REGARD TO THE TEMPORARY SEED MIX, REFER TO THE SEEDING MIXTURE TABLE PROVIDED ON THE E&S CONTROL PLAN DETAIL SHEET. UNLESS THE OWNER'S REPRESENTATIVE DIRECTS OTHERWISE, VEGETATION SHALL BE ESTABLISHED AS FOLLOWS.

1. SOIL PLACEMENT: SOIL SHALL BE PLACED TO THE DESIGN THICKNESS AND GRADE AND TRACKED AND ROLLED INTO PLACE IN A MANNER THAT WILL NO CAUSE EXCESSIVE COMPACTION. IF SOIL DENSITY IS VERIFIED IN THE FIELD, SOIL SHALL BE COMPACTED TO A DRY DENSITY BETWEEN 75 AND 100 POUNDS PER CUBIC FOOT AFTER CORRECTION TO ZERO PERCENT COARSE FRAGMENT (PARTICLES LARGER THAN 2 MILLIMETERS) CONTENT.
2. SOIL TESTING AND SOIL AMENDMENT (LIME AND FERTILIZER) RATES: UNLESS SOIL TEST RESULTS AND RECOMMENDATIONS FROM THE STATE AGRICULTURAL EXTENSION SERVICE LABORATORY (MARYLAND SPECTRAL SERVICES, INC. [410–247–7600] OR EQUIVALENT SOIL TESTING LABORATORY) INDICATE OTHERWISE, EVENLY APPLY: 1) AGRICULTURAL GRADE GROUND LIMESTONE AT A RATE OF 6 TONS PER ACRE (CALCIUM CARBONATE EQUIVALENT BASIS); 2) FERTILIZERS TO SUPPLY 100–200–200 POUNDS PER ACRE $N-P_2O_5-K_2O$ (EXAMPLE: 10–20–20 FERTILIZER AT A RATE OF 1000 POUNDS PER ACRE); AND 3) “BIOPAK” MICROBIAL SOIL INOCULANT (DISTRIBUTED BY PLANT HEALTH CARE, INC. [WWW.PLANTHEALTHCARE.COM OR 800–421–9051]). IF APPROVED PASTEURIZED PELLETIZED POULTRY MANURE (PASTEURIZED PPM) WITH AN ANALYSIS OF AT LEAST 4–2–3 (PERCENT $N-P_2O_5-K_2O$) IS USED, IT WILL BE ASSUMED THAT ONE TON MANURE WILL SUBSTITUTE FOR 60–40–60 POUNDS $N-P_2O_5-K_2O$ AVAILABLE IN THE FIRST YEAR. A PRE–APPROVED SOURCE OF PASTEURIZED PPM IS “MICRO–START 60” AS MANUFACTURED BY PERDUE AGRIRECYCLE, LLC (WWW.MICROSTART60.COM OR 302–628–2360).
3. SOIL AMENDMENT INCORPORATION: PROMPTLY TILL UNDER THE LIME AND FERTILIZER TO A DEPTH OF 2 TO 4 INCHES USING A DISK, HARROW, PLOW, ROTOTILLER OR OTHER SUITABLE EQUIPMENT. IF LIME REQUIREMENTS ARE LESS THAN 4 TONS PER ACRE OR SLOPES ARE TOO STEEP TO PERMIT SAFE TILLAGE, THE SOIL AMENDMENTS CAN BE MIXED INTO A HYDROMULCH SLURRY OR CAN BE TRACKED IN WITH A DOZER IN LIEU OF INCORPORATION. IF TRACKING THE SITE WITH A DOZER, TRACK IN A MANNER THAT LEAVES CLEAT MARKS PARALLEL TO SITE CONTOURS.
4. TEMPORARY SEEDING THAT WILL NOT BE FOLLOWED BY PERMANENT SEEDING, SUCH AS TOPSOIL STOCKPILES OR INTERIM GRADING PATTERNS, DOES NOT REQUIRE THE APPLICATION OF SLOW RELEASE FERTILIZER OR “BIOPAK” INOCULANT.
5. SEEDBED PREPARATION: JUST BEFORE SEEDING, PREPARE SEEDBED BY TRACKING, RAKING, OR OTHER APPROPRIATE METHOD AS NECESSARY TO BREAK UP SOIL CRUSTS. IF TRACKING THE SITE WITH A DOZER, TRACK IN A MANNER THAT LEAVES CLEAT MARKS PARALLEL TO SITE CONTOURS.
6. SEEDING: EVENLY APPLY THE TEMPORARY SEED MIXTURES USING HYDROSEEDING, BROADCAST, OR DRILL SEEDING METHODS THAT PLANT SEED LESS THAN ONE–QUARTER INCH BELOW THE GROUND SURFACE. APPLY LEGUME SEED INOCULANTS SPECIFICALLY MADE FOR THE LEGUME SEED TYPE BEING APPLIED AT FIVE TIMES THE MANUFACTURER'S RECOMMENDED RATE. USE NO SEED OR INOCULANT THAT HAS BEEN IMPROPERLY STORED OR EXPIRED, OR SEED OLDER THAN 9 MONTHS FROM THE SEED TEST DATE. IF HYDROSEEDING METHODS ARE USED, SEED, INOCULANTS, FERTILIZERS, AND POLYMER TACKIFIER/SOIL STABILIZER (BELOW) MAY BE APPLIED IN ONE APPLICATION, PROVIDED THAT SEED AND INOCULANTS ARE NOT HELD IN A SLURRY WITH FERTILIZERS FOR MORE THAN ONE HOUR.
7. MULCHING AND TACKING: PROMPTLY AFTER SEEDING, MULCH USING EITHER 1) “CURLEX” OR EQUIVALENT BRAND OF WOOD EXCELSIOR EROSION CONTROL BLANKET; 2) SYNTHETIC INDUSTRIES “TRM 450” OR NORTH AMERICAN GREEN “P–300” TURF REINFORCEMENT MAT; 3) STRAW APPLIED AT A RATE OF 6,000 POUNDS PER ACRE; OR 4) WOOD/CELLULOSE FIBER HYDROMULCH APPLIED WITH A HYDROSEEDER AT A RATE OF 3,000 POUNDS PER ACRE. WOOD/CELLULOSE FIBER HYDROMULCH MUST CONTAIN AT LEAST 50% VIRGIN WOOD FIBER. IF AT LEAST 1,000 POUNDS PER ACRE APPROVED PASTEURIZED PPM IS BEING APPLIED WITH A HYDROSEEDER, WOOD/CELLULOSE FIBER HYDROMULCH RATES MAY BE REDUCED TO 2,500 POUNDS PER ACRE.

IN SOME LOCATIONS SHOWN ON THE DRAWINGS, SUCH AS SLOPES STEEPER THAN 3:1 (H:V), EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT (TRM) MAY BE THE ONLY PERMISSIBLE MULCHING OPTION. INSTALL EROSION CONTROL BLANKETS/TRM PER MANUFACTURER'S INSTRUCTIONS. STAPLE BLANKET/TRM IN PLACE USING 6–INCH (MINIMUM) SOD STAPLES IN ROWS AT THE EDGES AND CENTERLINE OF THE BLANKET AND ON 24–INCH OR CLOSER CENTERS.

TACK STRAW IN PLACE USING EITHER: 1) A CRIMPER DISK; 2) WOOD/CELLULOSE FIBER HYDROMULCH APPLIED OVER THE STRAW AT A RATE OF 800 TO 1,000 POUNDS PER ACRE; OR 3) WATER SOLUBLE LINEAR POLYACRYLATE (SODIUM ACRYLATE/ACRYLAMIDE) COPOLYMER “POLYMER” AT A RATE OF AT LEAST 8 POUNDS PER ACRE APPLIED IN MIXTURE WITH WATER OVER THE STRAW. APPROVED POLYMER BRANDS INCLUDE “WATERSORB™ PAM” OR “HYDROPAM™” DISTRIBUTED BY POLYMERS, INC. (WWW.WATERSORB.COM OR 501–623–9995), “TERRAPAM™” DISTRIBUTED BY PLANT HEALTH CARE, INC. (WWW.PLANTHEALTHCARE.COM OR 800–421–9051), AND “HYDROGEL B™” DISTRIBUTED BY FINN CORPORATION (WWW.FINNCORP.COM OR 800–543–7166).

TACK WOOD/CELLULOSE FIBER HYDROMULCH IN PLACE USING “POLYMER” SPECIFIED ABOVE AT A RATE OF AT LEAST 4 POUNDS PER ACRE APPLIED IN A SLURRY WITH THE HYDROMULCH.

MAINTENANCE: WATER AS NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION. IN MOWED AREAS, MOW TO MAINTAIN GRASS HEIGHT BETWEEN 4 AND 6 INCHES TALL FOR FIRST TWO MONTHS OF GROWTH DURING THE ESTABLISHMENT YEAR, AND TO THE DESIRED HEIGHT THEREAFTER. IF STRING TRIMMERS ARE USED, TAKE MEASURES TO AVOID DAMAGE TO BARK OF TREES AND SHRUBS.

C. COMPOST FILTER SOCK

THE COMPOST FILTER SOCK AS MANUFACTURED BY FILTREXX, OR EQUIVALENT SHALL BE USED IN THE LOCATIONS INDICATED ON THE PLAN. REFER TO TABLE 4.1 AND TABLE 4.2, SHEET C903, FOR COMPOST STANDARDS.

INSTALLATION:
1. PLACE COMPOST FILTER SOCKS WHERE INDICATED AT LEVEL GRADE ALONG CONTOURS, PERPENDICULAR TO THE DIRECTION OF WATER FLOW. EXTEND BOTH ENDS AT LEAST 8' UP THE SLOPE AT 45 DEGREES TO MAIN SOCK ALIGNMENT.
2. USE WOODEN STAKES TO SECURE THE FILTER SOCKS. WOODEN STAKES MUST BE 2–INCHES BY 2–INCHES AND OF SUFFICIENT LENGTH THAT STAKES WILL BE EMBEDDED A MINIMUM 12–INCHES INTO THE SOIL AND BE EXPOSED 3–INCHES OUT OF THE FILTER SOCK. DRIVE THE STAKES THROUGH THE FILTER SOCK LEAVING NO MORE THAN 3 TO 4 INCHES OF THE STAKE OR PIN EXPOSED. PLACE STAKES EVERY 10 FEET. ADDITIONAL STAKES MAY BE REQUIRED.
3. WHEN MORE THAN ONE LENGTH OF FILTER SOCK IS USED, OVERLAP ENDS A MINIMUM OF 24–INCHES.
4. BACKFILL ALONG UPSLOPE SIDE OF FILTER SOCKS WITH LOOSE COMPOST, FILLING THE SEAM BETWEEN THE SOIL SURFACE AND FILTER SOCK.

MAINTENANCE: ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24–HOURS OF INSPECTION. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

D. STORM SEWER INLET PROTECTION

CURB AND GRATED INLETS ARE PROTECTED FROM THE INTRUSION OF SEDIMENT THROUGH A VARIETY OF MEASURES AS SHOWN ON THE DETAILS INCLUDED IN THE CONSTRUCTION DRAWINGS. THE PRIMARY MECHANISM IS TO PLACE CONTROLS IN THE PATH OF FLOW SUFFICIENT TO SLOW THE SEDIMENT–LADEN WATER TO ALLOW SETTLEMENT OF SUSPENDED SOILS BEFORE DISCHARGING INTO THE STORM SEWER. IT IS POSSIBLE THAT AS CONSTRUCTION PROGRESSES FROM STORM SEWER INSTALLATION THROUGH TO PAVING THAT THE INLET PROTECTION DEVICES WILL CHANGE.

INSTALLATION: THE INLET PROTECTION SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS AND IN ACCORDANCE WITH MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL.

MAINTENANCE: STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING, ACCUMULATED SEDIMENT NEEDS TO BE REMOVED AFTER EACH RAIN EVENT. IF THE INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE THE GEOTEXTILE AND STONE.

E. EROSION CONTROL BLANKET

NORTH AMERICAN GREEN SC150BN OR APPROVED EQUIVALENT EROSION CONTROL BLANKET WILL BE USED TO PREVENT EROSION FROM THE GRADING OPERATIONS AND INSTALLED ON PERMANENT SLOPES. THE EROSION CONTROL BLANKETS WILL PROVIDE EROSION PROTECTION AND ASSIST WITH VEGETATION ESTABLISHMENT FOR UP TO 12 MONTHS. AFTER A 12 MONTH PERIOD THE BLANKETS WILL BIODEGRADE LEAVING A STABLE VEGETATED ROOT STRUCTURE.

INSTALLATION:
1. PREPARE SOIL ON ALL ESTABLISHED TEMPORARY AND PERMANENT SLOPE AND ANY NECESSARY APPLICATION OF FERTILIZER AND SEED. SEE THE SEED MIXTURE TABLE LOCATED ON THE E&S CONTROL PLAN NOTES SHEET BEFORE INSTALLING EROSION CONTROL BLANKET.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE EROSION CONTROL BLANKET IN A 4 INCH BY 6 INCH WIDE TRENCH WITH APPROXIMATELY 12 INCHES OF BLANKET EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12 INCH PORTION OF THE EROSION CONTROL BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED APPROXIMATELY 12 INCHES APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE EROSION CONTROL BLANKET DOWN THE SLOPE. BLANKET WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES IN APPROPRIATE LOCATIONS AS RECOMMENDED BY THE MANUFACTURER.
4. THE EDGE OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2 TO 5 INCH OVERLAP.

MAINTENANCE: THE EROSION CONTROL BLANKETS SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL EVENT TO LOOK FOR SCOUR/WASHOUT AREAS. ANY SCOURED AREAS SHALL BE FIXED IMMEDIATELY BY COMPACTING SOIL IN THE WASHOUT AREA AND PLACING SEED. ANY DAMAGED EROSION CONTROL BLANKETS SHALL BE REPLACED IMMEDIATELY. BLANKETS SHALL BE MAINTAINED UNTIL A UNIFORM 70% PERENNIAL VEGETATION HAS BEEN ESTABLISHED.

F. CONSTRUCTION WASTE RECYCLING/DISPOSAL

CONSTRUCTION WASTES ARE REFUSE MATERIALS THAT ARE EXISTING ON–SITE OR GENERATED DURING THE COURSE OF CONSTRUCTION AND INCLUDE, BUT ARE NOT LIMITED TO, PAPER, PLASTIC, RUBBER, WOOD, TEXTILE, AND METAL PRODUCTS.

INSTALLATION: THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING WASTE RECYCLING/DISPOSAL AREAS ON THE E&S PLAN ONCE THEY HAVE BEEN DETERMINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL WASTE RECYCLING/DISPOSAL PERMITS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

MAINTENANCE: ALL CONSTRUCTION WASTE SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF AT A STATE–APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL/STATE CODES AND PERMIT REQUIREMENTS. THE BURNING OF WASTE MATERIALS WILL NOT BE PERMITTED.

G. PUMPED WATER FILTER BAGS

FILTER BAGS MAY BE USED TO FILTER WATER PUMPED FROM DISTURBED AREAS PRIOR TO DISCHARGING TO WATERS OF THE COMMONWEALTH. THEY MAY ALSO BE USED TO FILTER WATER PUMPED FROM THE SEDIMENT STORAGE AREAS OF SEDIMENT BASINS.

INSTALLATION: FILTER BAGS SHALL BE MADE FROM NON–WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH–STRENGTH, DOUBLE–STITCHED “J”–TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME HALF FULL. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.

BAGS SHALL BE LOCATED IN WELL VEGETATED (GRASSY) AREAS AND DISCHARGE ONTO STABLE EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH SHALL BE PROVIDED. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ONE–HALF THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

MAINTENANCE: PUMP AND FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY, AND SHALL NOT RESUME UNTIL THE PROBLEM IS CORRECTED. SEDIMENT REMOVED FROM THE FILTER BAG SHALL BE SPREAD ONSITE UPSTREAM FROM ESTABLISHED SEDIMENT CONTROLS, AND ALLOWED TO DRY. ONCE DRY, THE SEDIMENT MAY BE INCORPORATED ONSITE AS PART OF THE FILL.

H. SUPER SILT FENCE

SUPER SILT FENCE SHALL BE PROVIDED TO INTERCEPT SEDIMENT–LADEN SHEET FLOW RUNOFF ALLOWING THE DEPOSITION OF SEDIMENT TRANSPORTED FROM UPSLOPE.

INSTALLATION: THE SUPER SILT FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS AND IN ACCORDANCE WITH MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL.

MAINTENANCE: ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED WHEN BULGES DEVELOP IN THE FENCE OR WHEN SEDIMENT REACHES 25 PERCENT OF THE FENCE HEIGHT. THE GEOTEXTILE MUST BE REPLACED IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE..

BMP MAINTENANCE EROSION NOTES

IN ORDER TO ENSURE EFFECTIVE AND EFFICIENT OPERATION OF BMPS, ALL TEMPORARY RUNOFF E&S CONTROLS SHALL BE INSPECTED AT LEAST AT THE BEGINNING AND END OF EACH DAY AND AFTER EACH STORMWATER EVENT. ANY DAMAGED CONTROLS SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF IDENTIFICATION OF THE DEFICIENCY. THE CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE AND INSPECTIONS, AND SHALL MAINTAIN RECORDS OF ALL SUCH ACTIVITIES. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR OR REPLACEMENT AND MAINTENANCE ACTIVITIES SHALL BE LOGGED ONTO PADEP FORM 3800–FM–BCW0271D, DATED 05/2018 AND BE KEPT ONSITE AT ALL TIMES.

ALL MEASURES STATES ON THE SITE MAP, AND IN THE POST–CONSTRUCTION STORMWATER MANAGEMENT PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONING CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT. WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
2. ALL SEEDED AREA SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
3. THE CONSTRUCTION EXITS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS–OF–WAY.
4. THE TEMPORARY PARKING AND STORAGE AREAS SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
5. PRIOR TO LEAVING THE SITE, ALL VEHICLES SHALL BE CLEANED OF DEBRIS. ANY DEBRIS AND/OR SEDIMENT REACHING THE PUBLIC STREET SHALL BE CLEANED IMMEDIATELY BY A METHOD OTHER THAN FLUSHING.
6. ALL SEDIMENT REMOVED FROM EROSION CONTROL DEVICES LOCATED AROUND THE SITE SHALL BE DISPOSED OF EVENLY AMONG THE SITE. ONCE A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED AND THE TEMPORARY E&S CONTROLS ARE REMOVED, ALL ACCUMULATED SEDIMENT WILL BE DISPOSED OF AT A PADEP APPROVED FACILITY.

PERMANENT CONTROL MEASURES

A. PERMANENT VEGETATIVE STABILIZATION

INSTALLATION: FERTILIZING, SEEDING, AND MULCHING WILL BE USED AS A PERMANENT E&S CONTROL MEASURE ON ALL NON–PAVED DISTURBED AREAS. WITH REGARD TO THE PERMANENT SEED MIX, REFER TO THE SEEDING MIXTURE TABLE PROVIDED IN THE E&S CONTROL PLAN NOTES SHEET. UNLESS THE OWNER'S REPRESENTATIVE DIRECTS OTHERWISE, VEGETATION SHALL BE ESTABLISHED AS FOLLOWS:

1. SOIL PLACEMENT: SOIL SHALL BE PLACED TO THE DESIGN THICKNESS AND GRADE AND TRACKED AND ROLLED INTO PLACE IN A MANNER THAT WILL NOT CAUSE EXCESSIVE COMPACTION. IF SOIL DENSITY IS VERIFIED IN THE FIELD, SOIL SHALL BE COMPACTED TO A DRY DENSITY BETWEEN 75 AND 100 POUNDS PER CUBIC FOOT AFTER CORRECTION TO ZERO PERCENT COARSE FRAGMENT (PARTICLES LARGER THAN 2 MILLIMETERS) CONTENT.

2. SOIL TESTING AND SOIL AMENDMENT (LIME AND FERTILIZER) RATES: UNLESS SOIL TEST RESULTS AND RECOMMENDATIONS FROM THE STATE AGRICULTURAL EXTENSION SERVICE LABORATORY (MARYLAND SPECTRAL SERVICES, INC. [410–247–7600] OR EQUIVALENT SOIL TESTING LABORATORY) INDICATE OTHERWISE, EVENLY APPLY: 1) AGRICULTURAL GRADE GROUND LIMESTONE AT A RATE OF 6 TONS PER ACRE (CALCIUM CARBONATE EQUIVALENT BASIS); 2) FERTILIZERS TO SUPPLY 100–200–200 POUNDS PER ACRE $N-P_2O_5-K_2O$ (EXAMPLE: 10–20–20 FERTILIZER AT A RATE OF 1000 POUNDS PER ACRE); AND 3) "BIOPAK" MICROBIAL SOIL INOCULANT (DISTRIBUTED BY PLANT HEALTH CARE, INC. [WWW.PLANTHEALTHCARE.COM OR 800–421–9051]). IF APPROVED PASTEURIZED PELLETIZED POULTRY MANURE (PASTEURIZED PPM) WITH AN ANALYSIS OF AT LEAST 4–2–3 (PERCENT $N-P_2O_5-K_2O$) IS USED, IT WILL BE ASSUMED THAT ONE TON MANURE WILL SUBSTITUTE FOR 60–40–60 POUNDS $N-P_2O_5-K_2O$ AVAILABLE IN THE FIRST YEAR. A PRE–APPROVED SOURCE OF PASTEURIZED PPM IS "MICRO–START 60" AS MANUFACTURED BY PERDUE AGRIRECYCLE, LLC (WWW.MICROSTART60.COM <HTTP://WWW.MICROSTART60.COM> OR 302–628–2360).

3. SOIL AMENDMENT INCORPORATION: PROMPTLY TILL UNDER THE LIME AND FERTILIZER TO A DEPTH OF 2 TO 4 INCHES USING A DISK, HARROW, PLOW, ROTOTILLER OR OTHER SUITABLE EQUIPMENT. IF LIME REQUIREMENTS ARE LESS THAN 4 TONS PER ACRE OR SLOPES ARE TOO STEEP TO PERMIT SAFE TILLAGE, THE SOIL AMENDMENTS CAN BE MIXED INTO A HYDROMULCH SLURRY OR CAN BE TRACKED IN WITH A DOZER IN LIEU OF INCORPORATION. IF TRACKING THE SITE WITH A DOZER, TRACK IN A MANNER THAT LEAVES CLEAT MARKS PARALLEL TO SITE CONTOURS.

4. SEEDBED PREPARATION: JUST BEFORE SEEDING, PREPARE SEEDBED BY TRACKING, RAKING, OR OTHER APPROPRIATE METHOD AS NECESSARY TO BREAK UP SOIL CRUSTS. IF TRACKING THE SITE WITH A DOZER, TRACK IN A MANNER THAT LEAVES CLEAT MARKS PARALLEL TO SITE CONTOURS.

5. SEEDING: EVENLY APPLY THE PERMANENT SEED MIXTURES USING HYDROSEEDING, BROADCAST, OR DRILL SEEDING METHODS THAT PLANT SEED LESS THAN ONE–QUARTER INCH BELOW THE GROUND SURFACE: APPLY LEGUME SEED INOCULANTS SPECIFICALLY MADE FOR THE LEGUME SEED TYPE BEING APPLIED AT FIVE TIMES THE MANUFACTURER'S RECOMMENDED RATE. USE NO SEED OR INOCULANT THAT HAS BEEN IMPROPERLY STORED, EXPIRED, OR SEED OLDER THAN 9 MONTHS FROM THE SEED TEST DATE. IF HYDROSEEDING METHODS ARE USED SEED, INOCULANTS, FERTILIZERS, AND POLYMER TACKIFIER/SOIL STABILIZER (BELOW) MAY BE APPLIED IN ONE APPLICATION, PROVIDED THAT SEED AND INOCULANTS ARE NOT HELD IN A SLURRY WITH FERTILIZERS FOR MORE THAN ONE HOUR.

6. MULCHING AND TACKING: PROMPTLY AFTER SEEDING, MULCH USING EITHER: 1) "CURLEX" OR EQUIVALENT BRAND OF WOOD EXCELSIOR EROSION CONTROL BLANKET OR NORTH AMERICAN GREEN S150BN EROSION CONTROL BLANKET; 2) SYNTHETIC INDUSTRIES "TRM 450" OR NORTH AMERICAN GREEN "P–300" TURF REINFORCEMENT MAT; 3) STRAW APPLIED AT A RATE OF 6,000 POUNDS PER ACRE; OR 4) WOOD/CELLULOSE FIBER HYDROMULCH APPLIED WITH A HYDROSEEDER AT A RATE OF 3,000 POUNDS PER ACRE.

WOOD/CELLULOSE FIBER HYDROMULCH MUST CONTAIN AT LEAST 50% VIRGIN WOOD FIBER. IF AT LEAST 1,000 POUNDS PER ACRE APPROVED PASTEURIZED PPM IS BEING APPLIED WITH A HYDROSEEDER, WOOD/CELLULOSE FIBER HYDROMULCH RATES MAY BE REDUCED TO 2,500 POUNDS PER ACRE.

7. IN SOME LOCATIONS SHOWN ON THE DRAWINGS, SUCH AS SLOPES STEEPER THAN 3:1 (H:V), EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT (TRM) MAY BE THE ONLY PERMISSIBLE MULCHING OPTION. INSTALL EROSION CONTROL BLANKETS/TRM PER MANUFACTURER'S INSTRUCTIONS. STAPLE BLANKET/TRM IN PLACE USING 6–INCH (MINIMUM) SOD STAPLES IN ROWS AT THE EDGES AND CENTERLINE OF THE BLANKET AND ON 24–INCH OR CLOSER CENTERS.

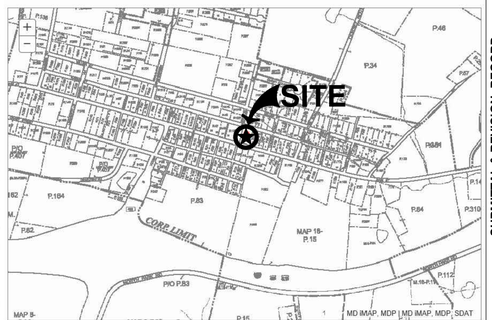
TACK STRAW IN PLACE USING EITHER: 1) A CRIMPER DISK; 2) WOOD/CELLULOSE FIBER HYDROMULCH APPLIED OVER THE STRAW AT A RATE OF 800–1,000 POUNDS PER ACRE; OR 3) WATER SOLUBLE LINEAR POLYACRYLATE (SODIUM ACRYLATE/ACRYLAMIDE) COPOLYMER "POLYMER" AT A RATE OF AT LEAST 8 POUNDS PER ACRE APPLIED IN MIXTURE WITH WATER OVER THE STRAW. APPROVED POLYMER BRANDS INCLUDE "WATERSORB PAM" OR "HYDROPAM" DISTRIBUTED BY POLYMERS, INC. (WWW.WATERSORB.COM OR 501–623–9995), "TERRAPAM" DISTRIBUTED BY PLANT HEALTH CARE, INC. (WWW.PLANTHEALTHCARE.COM OR 800–421–9051), AND "HYDROGEL B" DISTRIBUTED BY FINN CORPORATION (WWW.FINNCORP.COM OR 800–543–7166).

TACK WOOD/CELLULOSE FIBER HYDROMULCH IN PLACE USING "POLYMER" SPECIFIED ABOVE AT A RATE OF AT LEAST 4 POUNDS PER ACRE APPLIED IN A SLURRY WITH THE HYDROMULCH.

8. OVERSEEDING AND RESEEDING: WHEN THE SITE DEVELOPMENT STAGING OR SEASON WILL NOT PERMIT TIMELY SOWING OF THE PERMANENT SEED MIXTURE(S), PREPARE SOILS (FERTILIZERS AND LIME) AS FOR PERMANENT SEEDING, THEN SEED WITH TEMPORARY SEED MIXTURE AND MULCH, THEN OVERSOW THE PERENNIAL SEED MIXTURE INTO THE STUBBLE OF TEMPORARY VEGETATION AT THE NEXT APPROPRIATE SEEDING SEASON.

IF PERENNIAL SEED IS BEING SOWN INTO THE STUBBLE OF ACTIVELY GROWING TEMPORARY VEGETATION, MOW THE TEMPORARY VEGETATION TO REDUCE COMPETITION EITHER BEFORE OR IMMEDIATELY AFTER SOWING THE PERMANENT SEED.

MAINTENANCE: WATER AS NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION. IN MOWED AREAS, MOW TO MAINTAIN GRASS HEIGHT BETWEEN 4 AND 6 INCHES TALL FOR FIRST TWO MONTHS OF GROWTH DURING THE ESTABLISHMENT YEAR, AND TO THE DESIRED HEIGHT THEREAFTER. IF STRING TRIMMERS ARE USED, TAKE MEASURES TO AVOID DAMAGE TO BARK OF TREES AND SHRUBS.



VICINITY MAP

REFERENCE

1. GARRETT COUNTY, MD TAX MAP

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	01/13/2020	OUT-TO-BID PLAN SUBMISSION
2	02/07/2020	LAND DEVELOPMENT/GRADING PERMIT/ STORMWATER/ LOT CONSOLIDATION SUBMISSION TO COUNTY
3	04/28/2020	LAND DEVELOPMENT RESPONSE TO GARRETT COUNTY COMMENTS SUBMISSION & OTB ADDENDUM 1

CEC
Civil & Environmental Consultants, Inc.
333 Baldwin Road · Pittsburgh, PA 15205
412-429-2324 · 800-365-2324
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PTV 1075, LLC
GRANTSVILLE DOLLAR GENERAL STORE
161 MAIN STREET, GRANTSVILLE, MD 21550
GARRETT COUNTY, MARYLAND

EROSION & SEDIMENT
CONTROL NOTES

DATE: JANUARY 13, 2020
DRAWN BY: ADH
DWG SCALE: AS SHOWN
CHECKED BY: APW
PROJECT NO: 192-215
APPROVED BY: *CJR

PRELIMINARY
NOT FOR CONSTRUCTION

*HAND SIGNATURE ON FILE

STEPHEN H. DONALDSON
No. 18460

DRAWING NO.: C901
SHEET 15 OF 16

\\svr-pittsburgh\projects\2019\192-215\-CADD\Dwg\CV01\192215-CV01-C901.dwg{C901} LS:(2/17/2020 - awhalen) - LP: 4/28/2020 1:21 PM

APPENDIX E – POST CONSTRUCTION INSPECTION FORMS

PAVEMENT INSPECTION FORM

PAVEMENT INSPECTION FORM	Dollar General 129,131, 133 E. Main Street Grantsville, Maryland 21536
Date:	**Time:**
Weather Conditions:	
General Pavement Conditions:	

PAVEMENT CONDITION INDEX (PCI)

PCI		Characterization	Description
1		New crack-free surface	Black in color, smooth texture
2		Oxidation has started	Short hairline cracks start to develop. Dark gray color.
3		Oxidation in advanced state	Hairline cracks are longer and wider. Gray in color.
RESPONSE REQUIRED	4	Oxidation complete	Crack area 0.25 inch wide and crack lines have found base faults
	5	Moisture penetrating through 0.25 inch cracks. Loose material, stone and sand, evident	Texture of surface becoming rough. Preventative maintenance.
	6	Cracks widen and join	Cracks and shrinkage evident at curb and gutter lines.
	7	Potholes develop in low spots	Gatoring areas begin to break up. Overall texture very rough.
	8	Potholes developing	Pavement breaking up
	9	Heaving due to excessive moisture in base	Distorts entire surface
	10	General breakup of surface	

PAVEMENT INSPECTION FORM	**Dollar General** **129, 131 and 133 E. Main Street** **Grantsville, Maryland 21536**
CURB CONDITION	☐ Exists ☐ Sound ☐ Cracked ☐ Root Intrusion ☐ Deteriorated Comments: _____ _____
SIDEWALK CONDITION	☐ Exists ☐ Sound ☐ Cracked ☐ Root Intrusion ☐ Deteriorated Comments: _____ _____
RESPONSE REQUIRED[4]	
WORK COMPLETED	
PHOTOGRAPHS / FIGURES ATTACHED	
RESPONSE CONTRACTOR	Work Completed By: _____ Date: _____ Signature: _____

[4] Any inspection indicating a PCI of 4 or greater for any portion of the Site shall require maintenance activities, including milling and resurfacing of the pavement.

LANDSCAPE INSPECTION FORM

LANDSCAPE INSPECTION FORM	**Dollar General** **129, 131 and 133 E. Main Street** **Grantsville, Maryland 21536**
Date:	**Time:**
Weather Conditions:	
General Landscaping Description:	
GENERAL LANDSCAPE CONDITION	☐ Exists ☐ Sound ☐ Erosion ☐ Root Intrusion ☐ Healthy Plant Condition ☐ Signs of Mortality ☐ Animal Burrows Comments: _____
GROUND COVER	☐ Dry ☐ Damp ☐ Wet Comments: _____
TREES	☐ Exists ☐ Healthy ☐ Poor Health ☐ Dead ☐ Fallen Comments: _____
SHRUBS	☐ Exists ☐ Healthy ☐ Poor Health ☐ Dead ☐ Fallen Comments: _____
EROSION	☐ Exists ☐ Slight ☐ Moderate ☐ Significant Comments: _____
HOLES	☐ Exists ☐ Depth of Holes: _____ Comments: _____

LANDSCAPE INSPECTION FORM	**Dollar General** **129, 131 and 133 E. Main Street** **Grantsville, Maryland 21536**
RESPONSE REQUIRED	
WORK COMPLETED	
PHOTOGRAPHS / FIGURES ATTACHED	
RESPONSE CONTRACTOR	Work Completed By: _____ Date: _____ Signature: _____

APPENDIX F

SIGNED CERTIFICATES

PennTex VENTURES
Real Estate Development

400 Penn Center Boulevard
Building 4, Suite 1000
Pittsburgh, PA 15235

T: 724-420-5367
F: 724-420-5369

Certified Statement for County and Municipal Zoning Requirements
Maryland Department of the Environment
Voluntary Cleanup Program
Response Action Plan

Property Location: Proposed Retail Store
129, 131 and 133 E. Main Street
Grantsville, Maryland 21536

Participant Address: PTV 1075, LLC
400 Penn Center Boulevard
Bldg. 4, Suite 1000
Pittsburgh, PA 15235

The participant hereby certifies that the property meets all applicable county and municipal zoning requirements.

The participant acknowledges that there are significant penalties for falsifying any information required by MDE under Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland, and that this certification is required to be included in a response action plan for the Voluntary Cleanup Program pursuant to Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland.

Printed Name: Austin Weinman Title: Managing Member

Signature: _____

Date: 4/30/2020

PennTex VENTURES
Real Estate Development

400 Penn Center Boulevard
Building 4, Suite 1000
Pittsburgh, PA 15235

T: 724-420-5367
F: 724-420-5369

Written Agreement
Maryland Department of the Environment
Voluntary Cleanup Program
Response Action Plan

Property Location: Proposed Retail Store
129, 131 and 133 E. Main Street
Grantsville, Maryland 21536

Participant Address: PTV 1075, LLC
400 Penn Center Boulevard
Bldg. 4, Suite 1000
Pittsburgh, PA 15235

If the response action plan is approved by the Maryland Department of the Environment, the participant agrees, subject to the withdrawal provisions of Section 7- 512 of the Environment Article, to comply with the provisions of the response action plan. Participant understands that if he fails to implement and complete the requirements of the approved plan and schedule, the Maryland Department of the Environment may reach an agreement with the participant to revise the schedule of completion in the approved response action plan or, if an agreement cannot be reached, the Department may withdraw approval of the plan.

Printed Name: Austin Weinman Title: Managing Member

Signature: _____

Date: 4/30/2020

PennTex VENTURES
Real Estate Development

400 Penn Center Boulevard
Building 4, Suite 1000
Pittsburgh, PA 15235

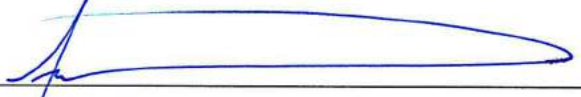
T: 724-420-5367
F: 724-420-5369

STATEMENT OF CERTIFICATION

PTV 1075, LLC - Inculpable Person
Proposed Retail Development
129, 131 and 133 E. Main Street
Grantsville, Maryland 21536

"I certify under penalty of law that the information provided in the *below referenced documents* are, to the best of applicant's knowledge and belief, accurate and complete. Applicant is aware that there are significant penalties for falsifying any information required by the Department under Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland, Voluntary Cleanup Program, and that the information in this application is required for the Voluntary Cleanup Program authorized by Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland. I certify I am an authorized representative of the applicant. I certify that all information on environmental conditions relevant to the property and known to the applicant is provided as part of this application."

Printed Name: Austin Weinman Title: Managing Member

Signature: 

Date: 4/30/2020

The document which is certified includes:

Response Action Plan, PTV 1075, LLC., Proposed Retail Property, 129, 131 and 133 E. Main Street, Grantsville, Maryland 21536, dated

APPENDIX G

CAP INSPECTION AND PROPERTY TRANSFER FORMS

PAVEMENT INSPECTION FORM

PAVEMENT INSPECTION FORM	Dollar General 129,131, 133 E. Main Street Grantsville, Maryland 21536
Date:	**Time:**
Weather Conditions:	
General Pavement Conditions:	

PAVEMENT CONDITION INDEX (PCI)

PCI		Characterization	Description
1		New crack-free surface	Black in color, smooth texture
2		Oxidation has started	Short hairline cracks start to develop. Dark gray color.
3		Oxidation in advanced state	Hairline cracks are longer and wider. Gray in color.
RESPONSE REQUIRED	4	Oxidation complete	Crack area 0.25 inch wide and crack lines have found base faults
	5	Moisture penetrating through 0.25 inch cracks. Loose material, stone and sand, evident	Texture of surface becoming rough. Preventative maintenance.
	6	Cracks widen and join	Cracks and shrinkage evident at curb and gutter lines.
	7	Potholes develop in low spots	Gatoring areas begin to break up. Overall texture very rough.
	8	Potholes developing	Pavement breaking up
	9	Heaving due to excessive moisture in base	Distorts entire surface
	10	General breakup of surface	

PAVEMENT INSPECTION FORM	**Dollar General** **129, 131 and 133 E. Main Street** **Grantsville, Maryland 21536**
CURB CONDITION	☐ Exists ☐ Sound ☐ Cracked ☐ Root Intrusion ☐ Deteriorated Comments: _____ _____
SIDEWALK CONDITION	☐ Exists ☐ Sound ☐ Cracked ☐ Root Intrusion ☐ Deteriorated Comments: _____ _____
RESPONSE REQUIRED[4]	
WORK COMPLETED	
PHOTOGRAPHS / FIGURES ATTACHED	
RESPONSE CONTRACTOR	Work Completed By: _____ Date: _____ Signature: _____

[4] Any inspection indicating a PCI of 4 or greater for any portion of the Site shall require maintenance activities, including milling and resurfacing of the pavement.

LANDSCAPE INSPECTION FORM

LANDSCAPE INSPECTION FORM	**Dollar General** **129, 131 and 133 E. Main Street** **Grantsville, Maryland 21536**
Date:	**Time:**
Weather Conditions:	
General Landscaping Description:	
GENERAL LANDSCAPE CONDITION	☐ Exists ☐ Sound ☐ Erosion ☐ Root Intrusion ☐ Healthy Plant Condition ☐ Signs of Mortality ☐ Animal Burrows Comments: _____
GROUND COVER	☐ Dry ☐ Damp ☐ Wet Comments: _____
TREES	☐ Exists ☐ Healthy ☐ Poor Health ☐ Dead ☐ Fallen Comments: _____
SHRUBS	☐ Exists ☐ Healthy ☐ Poor Health ☐ Dead ☐ Fallen Comments: _____
EROSION	☐ Exists ☐ Slight ☐ Moderate ☐ Significant Comments: _____
HOLES	☐ Exists ☐ Depth of Holes: _____ Comments: _____

LANDSCAPE INSPECTION FORM	**Dollar General** **129, 131 and 133 E. Main Street** **Grantsville, Maryland 21536**
RESPONSE REQUIRED	
WORK COMPLETED	
PHOTOGRAPHS / FIGURES ATTACHED	
RESPONSE CONTRACTOR	Work Completed By: _____ Date: _____ Signature: _____

RESPONSE ACTION PLAN or CERTIFICATE OF COMPLETION
TRANSFER AFFIDAVIT

(To be completed by transferee)

I, _____, am over eighteen years of age and competent to testify to the matters set forth in this Affidavit.

Reason for Affidavit: I am providing this Affidavit to the Maryland Department of Environment in order to satisfy the requirements of the Maryland Voluntary Cleanup Program (VCP), specifically Section 7-514 (c) of the Maryland Environmental Article, governing the transferability of Response Action Plans and/or Certificates of Completion under that program. I intend to have transferred to me a _____ (*please specify Response Action Plan or Certificate of Completion)* for the following property, now part of the Maryland VCP:

(*Identify property here*) _____
_____
_____
_____
_____

Certification of Position Regarding Environmental Contamination:
I hereby affirm, under penalty of perjury, that I, _____, the proposed transferee of the Response Action Plan or Certificate of Completion, have not caused or contributed to a release, discharge or threatened release of any contamination at the above referenced property. To date, my involvement with the above referenced property has been limited to the following: _____
_____
_____
_____
_____

Acknowledgment:
I acknowledge that any fraud or material misrepresentation in this Affidavit shall void the transfer of the Response Action Plan or Certificate of Completion pursuant to Section 7-514 (c) of the Maryland Environmental Article. I also acknowledge that this affidavit is made subject to the applicable civil and criminal laws of Maryland including Section 7-267 of the Environment Article of the Annotated Code of Maryland that provides for criminal penalties for false statements in required documents. The Maryland VCP application is a document required under Title 7 of the Environment Article of the Annotated Code of Maryland.

I acknowledge that nothing in this affidavit shall be construed to supersede, amend, modify or waive the exercise of any statutory right or remedy under state law with respect to any misrepresentation made.

I DO DECLARE AND AFFIRM UNDER PENALTY OF LAW, THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT.

Legal Name of Applicant: _____

Signature of Affiant: _____

Affiant's Name and Title: _____

_____

Date of Signature: _____

Sworn and subscribed before me this _____ day of _____, 20___.

Notary's Signature: _____

My Commission Expires: _____