



LOCATION MAP

GRAPHIC SCALE
400 200 0 400
SCALE: 1"=400'
SCALE IN FEET

ACT 287 LIST OF UTILITIES

THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF ACT 287 OF 1974 AS AMENDED BY ACT 187 OF 1996 AND ACT 50 OF 2017 FOR NOTIFICATION OF UTILITIES BEFORE EXCAVATION IN CONTRACT AREA. THE ONE UNDERGROUND UTILITIES LOCATION CALL NUMBER IS 1-800-242-1776. DESIGN SERIAL NUMBER IS 20193172821, SUBMITTED ON 11/13/2019.

UTILITIES AND RESPONSES PROVIDED BY PA ONE CALL:

(AH) WINDSTREAM
925 MARTHA'S WAY
HARRISBURG, PA 17103
CONTACT: LOCATE DESK PERSONNEL
EMAIL: locate.desk@windstream.com

(AX) PENNSYLVANIA AMERICAN WATER
600 WEEKEE DR.
MECHANICSBURG, PA 17055
CONTACT: MICHAEL GENNOE
EMAIL: michael.gennoe@amwater.com

(CT) FRONTIER COMMUNICATIONS OF PA INC.
637 W. 17TH MARCH STREET
SHICKSHINNY, PA 18655
CONTACT: JOHN BUGDONOVITCH
EMAIL: john.bugdonovitch@fr.com

(HC) VERIZON PENNSYLVANIA LLC
1028 HAY STREET
PITTSBURGH, PA 15221
CONTACT: DEBORAH BARUM
EMAIL: deborah.d.bello@verizon.com

(LA) LOWER ALLEN TOWNSHIP AUTHORITY
120 LINCOLN ROAD
NEW CUMBERLAND, PA 17070
CONTACT: BRIAN KAUFFMAN
EMAIL: bkauffman@latwp.org

(LAL) LOWER ALLEN TOWNSHIP
2233 GETTYSBURG ROAD
CANTON, PA 17519
CONTACT: DANIEL FLINT
EMAIL: dflint@ctwp.org

(PDR) PPL ELECTRIC UTILITIES CORPORATION
501 NEW YORK ST.
WILKES-BARRE, PA 18702
CONTACT: MARK SANTAYANA
EMAIL: mcsantayana@pplweb.com

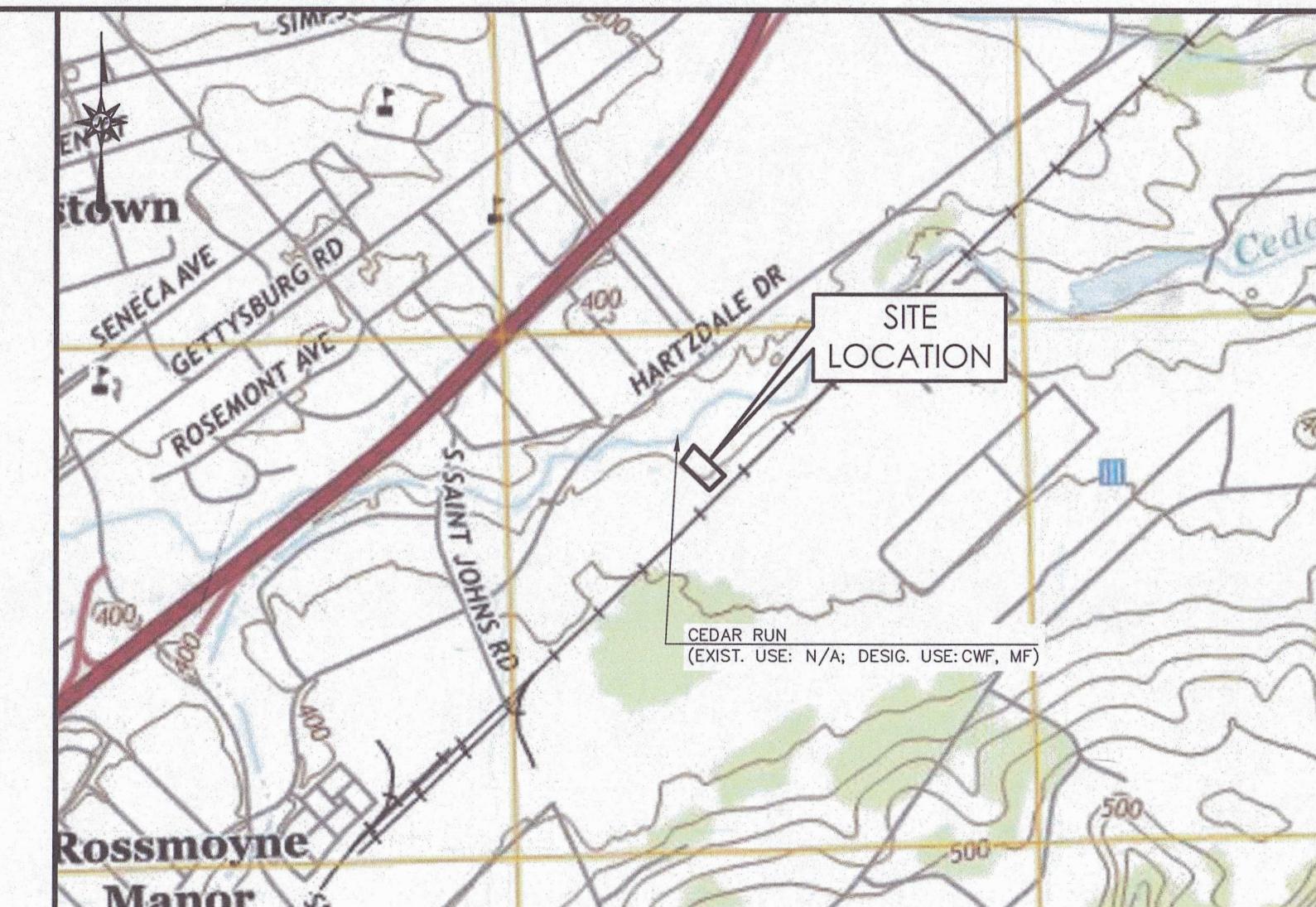
(SB) COMCAST
401 SPRUCE STREET
HARRISBURG, PA 17109
CONTACT: MICHAEL SWIEGARD
EMAIL: mike_swiegard@comcast.com

(TW) CENTURY LINK
122 BALTIMORE STREET PO BOX 896
HANOVER, PA 17331
CONTACT: LEO HILBERT
EMAIL: leo.c.hilbert@centurylink.com

(U) UGI UTILITIES INC
1301 AIP DRIVE
MIDDLETON, PA 17057
CONTACT: STEPHEN BATEMAN
EMAIL: sbateman@ugi.com

PRELIMINARY / FINAL LAND DEVELOPMENT PLAN FOR 3709 HARTZDALE DRIVE

3709 HARTZDALE DRIVE
LOWER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PA



VICINITY MAP
LEMOYNE, PA USGS QUAD
GRAPHIC SCALE
1000 500 0 1000
SCALE: 1"=1000'
SCALE IN FEET

MODIFICATIONS & WAIVERS REQUESTED

THE APPLICANT IS HEREBY REQUESTING THE FOLLOWING WAIVERS OF THE
TOWNSHIP OF LOWER ALLEN SUBDIVISION AND LAND DEVELOPMENT
ORDINANCE AND STORMWATER MANAGEMENT ORDINANCE:

\$192-30 PRELIMINARY PLAN SUBMISSION

PREPARED FOR:

Mr. William R. Grace
d/b/a/W.R. Grace Properties

P.O. Box 301
New Cumberland, PA 17070
(717) 579-1337

PREPARED BY:

BL
Companies
ARCHITECTURE
ENGINEERING
ENVIRONMENTAL
LAND SURVEYING

2601 Market Place, Suite 350
Harrisburg, PA 17110
(717) 651-9850
(717) 651-9858 Fax

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGEMENT OF PLAN, AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF Cumberland SS
ON THIS, THE 21st DAY OF October, 2021, BEFORE ME W.R. Grace Properties THE UNDERSIGNED
OFFICER, PERSONALLY APPEARED WR Grace, KNOWN TO ME (OR SATISFACTORILY PROVEN TO
BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT, AND

ACKNOWLEDGED THAT WR Grace EXECUTED THE SAME FOR THE PURPOSES THEREIN CONTAINED.

IN WITNESS WHEREOF, I HEREBUTO
SET MY HAND AND OFFICIAL SEAL

Commonwealth of Pennsylvania Seal
LAW OFFICES OF AMERICA - Notary Public
Dauphin County
My Commission Expires 10/20/2023
Commissioner Number 154054

OWNER William R. Grace

NOTARY Janice L. Marchese

MY COMMISSION EXPIRES Aug 28, 2023

LANDOWNERS

William R. Grace
P.O. Box 301
New Cumberland, PA 17070
(717) 579-1337

DEVELOPER / APPLICANT

Mr. William R. Grace d/b/a/W. Grace Properties
P.O. Box 301
New Cumberland, PA 17070
(717) 579-1337

DATES

ISSUE DATE: JULY 22, 2020
REVISIONS: DECEMBER 11, 2020
JANUARY 25, 2021
AUGUST 17, 2021

PLAN PURPOSE

THE PURPOSE OF THIS PLAN IS TO PERMIT THE
CONSTRUCTION OF A ±1,970 S.F. WAREHOUSE
AND ASSOCIATED SITE IMPROVEMENTS ON LANDS
LOCATED IN LOWER ALLEN TOWNSHIP.

CV-1 No. 01 of 14

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CUMBERLAND COUNTY PLANNING DEPARTMENT REVIEW CERTIFICATION

REVIEWED THIS 5 DAY OF August, 2020 BY THE CUMBERLAND COUNTY PLANNING
DEPARTMENT.

LOWER ALLEN TOWNSHIP BOARD OF COMMISSIONERS APPROVAL

APPROVED BY THE BOARD OF COMMISSIONERS, LOWER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PA.
APPROVED THE 20th DAY OF August, 2020

CONDITIONS OF APPROVAL COMPLETED THIS 1st DAY OF December, 2021

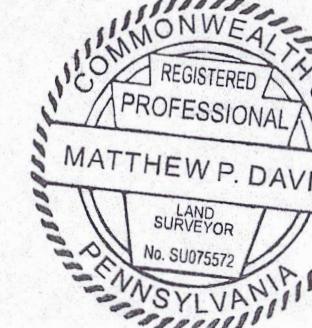
James W. V. V. James R. Guadale
PRESIDENT SECRETARY

CERTIFICATION OF ACCURACY

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE SURVEY
AND PLAN SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT.

Matthew P. Davis
MATTHEW P. DAVIS, P.L.S.
P.L.S. SU-75572

10-18-2021
DATE



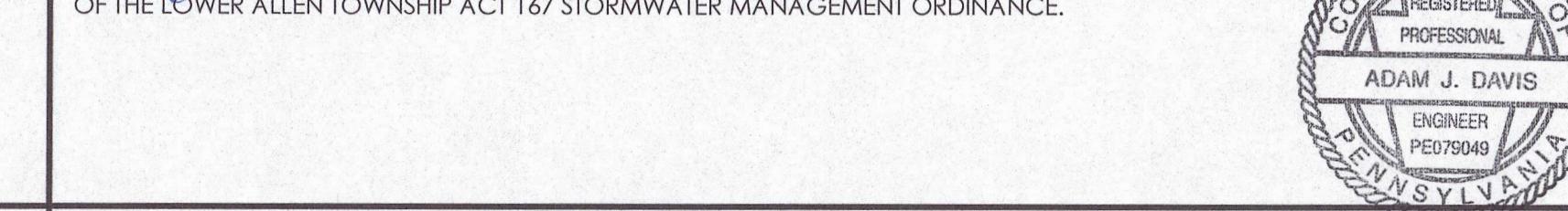
RECORDER OF DEEDS CERTIFICATE

RECORDED IN THE CUMBERLAND COUNTY COURTHOUSE

RECORDED THIS 1st DAY OF February, 2021

LOWER ALLEN TOWNSHIP ACT 167 STORMWATER DESIGN CERTIFICATION

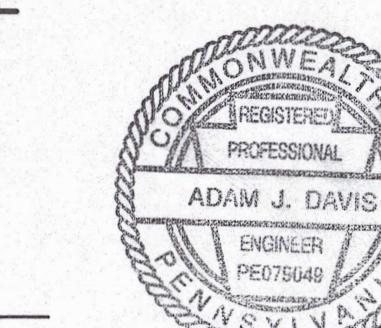
Adam J. Davis, DESIGN ENGINEER, ON THIS DATE October 20, 2021
HAVE REVIEWED AND HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA
OF THE LOWER ALLEN TOWNSHIP ACT 167 STORMWATER MANAGEMENT ORDINANCE.



ENGINEER'S CERTIFICATION

I, ADAM J. DAVIS, P.E., A REGISTERED PROFESSIONAL ENGINEER IN THE
COMMONWEALTH OF PENNSYLVANIA, HEREBY CERTIFY THAT TO THE BEST OF MY
KNOWLEDGE THIS PLAN IS ACCURATE AND CORRECT AS INDICATED.

Adam J. Davis
ADAM J. DAVIS
REG. NO. PE 075049



SITE PLAN NOTES

- ALL CONSTRUCTION SHALL COMPLY WITH LOWER ALLEN TOWNSHIP, PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PENNDOT STANDARDS AND SPECIFICATIONS. IN THE EVENT OF CONFLICTING STANDARDS AND SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
- THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL COUNTY AND TOWNSHIP CONSTRUCTION PERMITS, INCLUDING PENNDOT PERMITS AND SEWER AND WATER CONNECTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE CIVIL ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO BIDDING.
- ALL CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN COMPLETE DRAWING PLAN SETS FOR BIDDING AND CONSTRUCTION. PLAN SETS SHALL NOT BE DISASSEMBLED INTO PARTIAL PLAN SETS FOR USE BY CONTRACTORS AND SUBCONTRACTORS OF INDIVIDUAL TRADES. IT SHALL BE THE CONTRACTOR'S AND SUBCONTRACTOR'S RESPONSIBILITY TO OBTAIN COMPLETE PLAN SETS FOR USE IN BIDDING AND CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE SITE ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS.
- CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.
- THE CONTRACTOR SHALL SUBMIT SHOT DRAWINGS OF ALL PRODUCTS, MATERIALS, PER PLANS AND SPECIFICATIONS TO THE OWNER AND CIVIL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION & SEDIMENTATION CONTROL PLAN NOTES/DETAILS.
- ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE STRUCTURE.
- DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
- DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN OVER SCALED DIMENSIONS.
- THE WORD "MEET" ON THIS PLAN MEANS CONTRACTOR TO MATCH AND TIE TO EXISTING SURFACE ELEVATION. THE WORD "PROVIDE" ON THE PLAN SET MEANS CONTRACTOR TO PROVIDE, FURNISH, AND INSTALL.
- ALL NOTES AND DIMENSIONS DESIGNATED "TYPICAL" OR "TYP" APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
- IF PLANS AND OR SPECIFICATIONS ARE IN CONFLICT, THE MOST STRINGENT SHALL APPLY.
- THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING.
- SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE OWNER AND ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, TRAFFIC CONTROLLERS AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE LOCAL GOVERNING AUTHORITIES OR AS REQUIRED BY PERMIT STIPULATIONS.
- REFER TO DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
- TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO PENNDOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SIGN SHALL BE INSTALLED PLUMB WITH THE EDGE OF THE SIGN 2' OFF THE FACE OF THE CURB, AND WITH 7' VERTICAL CLEARANCE UNLESS OTHERWISE DETAILED OR NOTED.
- THE CONTRACT LIMIT IS THE LIMIT OF DISTURBANCE LINE UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR SHALL ABBEY BY ALL OSHA FEDERAL STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID BY THE CONTRACTOR.
- THE CONTRACTOR SHALL SUBMIT A SHOT DRAWING OF THE PAINT MIXTURE PRIOR TO STRIPPING. ALL PAINT STRIPPING SHALL HAVE A MINIMUM OF 2 COATS OF PAINT.
- PAVEMENT MARKING KEY:

4" SYDL	4" SOLID YELLOW DOUBLE LINE	4" SRL	4" SOLID RED LINE
4" SYL	4" SOLID YELLOW LINE	12" SWSB	12" SOLID WHITE STOP BAR
24" SYL	24" SOLID YELLOW LINE	24" SWSB	24" SOLID WHITE STOP BAR
4" SWL	4" SOLID WHITE LINE	6" BWL	6" BROKEN WHITE LINE
24" SWL	24" SOLID WHITE LINE	6" AWL	6" AUXILIARY WHITE LINE
6" SWL	6" SOLID WHITE LINE		

- PARKING SPACES SHALL BE STRIPED WITH 4" SYL. HATCHED AREA SHALL BE STRIPED WITH 4" SYL AT A 45° ANGLE, 2' ON CENTER. HATCHING SYMBOLS, AND STRIPING FOR HANDICAPPED SPACES SHALL BE PAINTED BLUE. OTHER MARKINGS SHALL BE PAINTED WHITE OR AS NOTED.
- STOP BAR AND STOP LEGEND MARKINGS SHALL BE HOT THERMOPLASTIC TYPE IN ACCORDANCE WITH PENNDOT SPECIFICATIONS, UNLESS WHERE EPOXY RESIN PAVEMENT MARKINGS ARE INDICATED.
- THE CONTRACTOR SHALL REMOVE CONFUCING PAVEMENT MARKINGS BY METHOD APPROVED BY PENNDOT.
- THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE A TOPOGRAPHIC SIGNED AND SEALED AS-BUILT SURVEY BY A STATE LICENSED LAND SURVEYOR AND RECORD DRAWINGS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES AND STORMWATER MANAGEMENT FACILITIES) TO THE OWNER AND THE TOWNSHIP AT THE END OF CONSTRUCTION AND IN CONFORMANCE WITH THE SPECIFICATIONS.
- THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
- THE CONTRACTOR SHALL COMPLY WITH CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, SITE ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING PROCESS.
- NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLAN IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
- THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
- CONSTRUCTION OCCURRING ON THIS SITE SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND CHAPTER 16 OF NFPA 1, UNIFORMED FIRE CODE.
- NEW BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS PLACED IN A POSITION TO BE PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY PER THE NFPA CODE.
- ANY COMPONENTS TO REMAIN OR BE PROTECTED THAT ARE DAMAGED DURING DEMOLITION AND/OR SALVAGE OPERATIONS SHALL BE REPLACED IN KIND AT THE EXPENSE OF THE CONTRACTOR.
- ALL EXISTING AND PROPOSED EASEMENTS ON OR AFFECTING THE SITE ARE SHOWN ON THE PLANS.
- A COPY OF THE APPROVAL FROM THE PA DEPARTMENT OF LABOR AND INDUSTRY, WHERE APPLICABLE, SHALL BE PROVIDED BEFORE A BUILDING PERMIT IS ISSUED.
- NEITHER THE DEPARTMENT NOR ANY MUNICIPALITY TO WHICH PERMIT-ISSUING AUTHORITY HAS BEEN DELEGATED UNDER THE "STATE HIGHWAY LAW" SHALL BE LIABLE IN DAMAGES FOR ANY INJURY TO PERSONS OR PROPERTY ARISING OUT OF THE ISSUANCE OR DENIAL OF A DRIVEWAY PERMIT, OR FOR FAILURE TO REGULATE ANY DRIVEWAY. FURTHERMORE, THE TOWNSHIP SHALL NOT BE HELD LIABLE FOR DAMAGES TO PERSONS OR PROPERTY ARISING OUT OF THE ISSUANCE OR DENIAL OF A DRIVEWAY PERMIT BY THE DEPARTMENT.
- CONTRACTOR TO ERECT AND INSTALL "BL COMPANIES" SIGN PRIOR TO CONSTRUCTION. COORDINATE LOCATION WITH TOWNSHIP AND ENGINEER. CONTRACTOR TO MAINTAIN SIGN DURING CONSTRUCTION AND RETURN SIGN TO ENGINEER AFTER COMPLETION OF SITE CONSTRUCTION.
- NO PARKING FINE ZONES, FIRE LANES AND/OR SIGNAGE SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE DISTRICT FIRE MARSHAL AND SHALL BE PROVIDED TO THE SATISFACTION TO THE TOWNSHIP/FIRE MARSHAL.
- A FIRE DEPARTMENT ACCESS BOX (KNOX BOX) SHALL BE INSTALLED. THIS BOX WILL BE REQUIRED TO CONTAIN KEYS TO THE BUILDING, GATES, FIRE PROTECTION SYSTEM AND OTHER AREAS REQUESTED BY THE FIRE DEPARTMENT.
- PURSUANT TO SECTION 420 OF THE ACT OF JUNE 1, 1945 (P.L. 1242, No. 428), AS AMENDED, A HIGHWAY OCCUPANCY PERMIT WILL BE REQUIRED BEFORE ANY IMPROVEMENTS ARE INITIATED WITHIN A STATE HIGHWAY (IF ANY).

GRADING AND DRAINAGE GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SPECIFICATIONS AND PUBLICATION 72, ROADWAY CONSTRUCTION STANDARDS, UNLESS OTHERWISE NOTED.
- WORK ZONE TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 213.
- A RIGHT-OF-WAY PERMIT IS REQUIRED BEFORE STARTING ANY WORK WITHIN THE PUBLIC STREET RIGHT-OF-WAY.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS. ALL PAVEMENT MARKINGS SHALL BE HOT THERMOPLASTIC.
- ALL STORM DRAINAGE PIPE SHALL BE SMOOTH INTERIOR UNLESS OTHERWISE NOTED.
- LOT OWNERS ARE REQUIRED TO MAINTAIN LOT GRADING AND SURFACE DRAINAGE PATTERNS AND CHARACTERISTICS IN ACCORDANCE WITH THE APPROVED PLAN.
- MANHOLE COVERS FOR STORM MANHOLES SHALL BE CAST WITH THE WORD "STORM" FOR IDENTIFICATION PURPOSE.
- CONSTRUCTION OF ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY AND WORK RELATED TO STORM DRAINAGE FACILITIES REQUIRES INSPECTION BY THE TOWNSHIP. PROVIDE A MINIMUM 48 HOURS NOTICE TO THE TOWNSHIP BEFORE STARTING WORK.
- CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION SITE MEETING WITH THE TOWNSHIP ENGINEER AT LEAST 48 HOURS PRIOR TO STARTING SITE CONSTRUCTION ACTIVITIES.
- SITE DISTURBANCE IS PERMITTED TO START ONLY IF AND WHEN SUFFICIENT TIME IS AVAILABLE TO STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PADEP REQUIREMENTS AND WITH THE APPROVED PLAN.
- THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. REFER TO EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND NOTES.
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY GOVERNMENT AND LOCAL AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY CONSTRUCTION PERMITS FROM THE TOWNSHIP REQUIRED TO PERFORM ALL REQUIRED WORK.
- THE CONTRACTOR SHALL COMPACT FILL IN 6" MAXIMUM LIFTS UNDER ALL PARKING, BUILDING, AND DRIVE AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST), OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- UNDERDRAINS SHALL BE ADDED, IF DETERMINED NECESSARY IN THE FIELD BY THE OWNER/GEOTECHNICAL ENGINEER, AFTER SUBGRADE IS ROUGH GRADED.
- CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY CUMBERLAND COUNTY CONSERVATION DISTRICT OR DEP PRIOR TO THE START OF WORK ON THE SITE.
- PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. GUIDELINES FOR SOIL EROSION AND SEDIMENTATION POLLUTION CONTROL MANUAL IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE APPROVED "EROSION AND SEDIMENTATION CONTROL PLAN" CONTAINED UNDER SEPARATE COVER.
- ALL CONSTRUCTION SHALL COMPLY WITH OWNER'S SPECIFICATIONS. ALL CONSTRUCTION WITHIN A DOT RIGHT OF WAY SHALL COMPLY WITH ALL DEPARTMENT OF TRANSPORTATION STANDARDS. WHERE SPECIFICATIONS OR STANDARDS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION OR STANDARD SHALL BE SUPERIOR.
- IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.
- ROOF DRAINAGE SHALL BE DIRECTED AND CONNECTED AS SHOWN IN THE CIVIL ENGINEERING GRADING AND DRAINAGE PLANS, SHOWN ON PLUMBING PLANS BY THE ARCHITECT.
- TRENCH EXCAVATIONS SHALL BE BACKFILLED DAILY AND TEMPORARY BERMS OR DIKES SHALL BE CONSTRUCTED AROUND ALL EXCAVATIONS, INCLUDING THOSE FOR UTILITY TRENCHES, BUILDING FOUNDATIONS, ETC. TO PREVENT THE ENTRY OF SURFACE WATER.

DEMOLITION NOTES

- CONTRACTOR SHALL SECURE ANY PERMITS, PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
- EROSION AND SEDIMENT CONTROLS AS SHOWN ON THE EROSION AND SEDIMENTATION PLAN SHALL BE INSTALLED BY THE DEMOLITION CONTRACTOR PRIOR TO START OF DEMOLITION, AND CLEARING AND GRUBBING OPERATIONS.
- REMOVE AND DISPOSE OF ANY DEMOLITION MATERIAL, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL, BY AN APPROVED HAULER. HAULER SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL AND STATE PERMITS REQUIRED FOR DEMOLITION WORK.
- THE CONTRACTOR SHALL PREPARE ALL MANIFEST DOCUMENTS AS REQUIRED PRIOR TO COMMENCEMENT OF DEMOLITION.
- THE CONTRACTOR SHALL ADHERE TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
- IF PLANS AND OR SPECIFICATIONS ARE IN CONFLICT, THE MOST STRINGENT SHALL APPLY.
- THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING.
- SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE OWNER AND ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
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24" SYL	24" SOLID YELLOW LINE	24" SWSB	24" SOLID WHITE STOP BAR
4" SWL	4" SOLID WHITE LINE	6" BWL	6" BROKEN WHITE LINE
24" SWL	24" SOLID WHITE LINE	6" AWL	6" AUXILIARY WHITE LINE
6" SWL	6" SOLID WHITE LINE		

- PARKING SPACES SHALL BE STRIPED WITH 4" SYL. HATCHED AREA SHALL BE STRIPED WITH 4" SYL AT A 45° ANGLE, 2' ON CENTER. HATCHING SYMBOLS, AND STRIPING FOR HANDICAPPED SPACES SHALL BE PAINTED BLUE. OTHER MARKINGS SHALL BE PAINTED WHITE OR AS NOTED.
- STOP BAR AND STOP LEGEND MARKINGS SHALL BE HOT THERMOPLASTIC TYPE IN ACCORDANCE WITH PENNDOT SPECIFICATIONS, UNLESS WHERE EPOXY RESIN PAVEMENT MARKINGS ARE INDICATED.
- THE CONTRACTOR SHALL REMOVE CONFUCING PAVEMENT MARKINGS BY METHOD APPROVED BY PENNDOT.
- THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE A TOPOGRAPHIC SIGNED AND SEALED AS-BUILT SURVEY BY A STATE LICENSED LAND SURVEYOR AND RECORD DRAWINGS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES AND STORMWATER MANAGEMENT FACILITIES) TO THE OWNER AND THE TOWNSHIP AT THE END OF CONSTRUCTION AND IN CONFORMANCE WITH THE SPECIFICATIONS.
- THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
- THE CONTRACTOR SHALL COMPLY WITH CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, SITE ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING PROCESS.
- NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLAN IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
- THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
- CONSTRUCTION OCCURRING ON THIS SITE SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND CHAPTER 16 OF NFPA 1, UNIFORMED FIRE CODE.
- NEW BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS PLACED IN A POSITION TO BE PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY PER THE NFPA CODE.
- ANY COMPONENTS TO REMAIN OR BE PROTECTED THAT ARE DAMAGED DURING DEMOLITION AND/OR SALVAGE OPERATIONS SHALL BE REPLACED IN KIND AT THE EXPENSE OF THE CONTRACTOR.
- ALL EXISTING AND PROPOSED EASEMENTS ON OR AFFECTING THE SITE ARE SHOWN ON THE PLANS.
- A COPY OF THE APPROVAL FROM THE PA DEPARTMENT OF LABOR AND INDUSTRY, WHERE APPLICABLE, SHALL BE PROVIDED BEFORE A BUILDING PERMIT IS ISSUED.
- NEITHER THE DEPARTMENT NOR ANY MUNICIPALITY TO WHICH PERMIT-ISSUING AUTHORITY HAS BEEN DELEGATED UNDER THE "STATE HIGHWAY LAW" SHALL BE LIABLE IN DAMAGES FOR ANY INJURY TO PERSONS OR PROPERTY ARISING OUT OF THE ISSUANCE OR DENIAL OF A DRIVEWAY PERMIT, OR FOR FAILURE TO REGULATE ANY DRIVEWAY. FURTHERMORE, THE TOWNSHIP SHALL NOT BE HELD LIABLE FOR DAMAGES TO PERSONS OR PROPERTY ARISING OUT OF THE ISSUANCE OR DENIAL OF A DRIVEWAY PERMIT BY THE DEPARTMENT.
- CONTRACTOR TO ERECT AND INSTALL "BL COMPANIES" SIGN PRIOR TO CONSTRUCTION. COORDINATE LOCATION WITH TOWNSHIP AND ENGINEER. CONTRACTOR TO MAINTAIN SIGN DURING CONSTRUCTION AND RETURN SIGN TO ENGINEER AFTER COMPLETION OF SITE CONSTRUCTION.
- NO PARKING FINE ZONES, FIRE LANES AND/OR SIGNAGE SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE DISTRICT FIRE MARSHAL AND SHALL BE PROVIDED TO THE SATISFACTION TO THE TOWNSHIP/FIRE MARSHAL.
- A FIRE DEPARTMENT ACCESS BOX (KNOX BOX) SHALL BE INSTALLED. THIS BOX WILL BE REQUIRED TO CONTAIN KEYS TO THE BUILDING, GATES, FIRE PROTECTION SYSTEM AND OTHER AREAS REQUESTED BY THE FIRE DEPARTMENT.
- PURSUANT TO SECTION 420 OF THE ACT OF JUNE 1, 1945 (P.L. 1242, No. 428), AS AMENDED, A HIGHWAY OCCUPANCY PERMIT WILL BE REQUIRED BEFORE ANY IMPROVEMENTS ARE INITIATED WITHIN A STATE HIGHWAY (IF ANY).

UTILITY CONSTRUCTION NOTES

- CONTRACTOR/OWNER IS RESPONSIBLE FOR CONTACTING THE LOCAL MUNICIPALITIES TO SECURE PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
- THE SITE UTILITY PLAN DETAILS SITE INSTALLED PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO DRAWINGS BY OTHERS FOR BUILDING CONNECTIONS. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE SEWERS CROSS-EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE SITE ENGINEER IN THE EVENT OF ANY DISCREPANCY OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY CO. AND LOWER ALLEN TOWNSHIP AUTHORITY STAFF REVIEW.
- THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY COMPANIES AND LOWER ALLEN TOWNSHIP AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY COMPANY.
- THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY COMPANIES AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION.
- ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT (UNLESS DEMOLISHED). AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE PLANS OR AS REQUIRED BY THE PENNDOT OR LOWER ALLEN TOWNSHIP.
- ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
- ALL UTILITIES SHALL BE CLEARED BY A MINIMUM OF 1.0'. ALL UTILITY POLES SHALL BE CLEARED BY A MINIMUM OF 2.0' OR TUNNELED IF REQUIRED.
- SANITARY LATERAL SHALL MAINTAIN 10' MIN. HORIZONTAL 1.5' VERTICAL MIN.) SEPARATION DISTANCE FROM WATER LINES, OR ADDITIONAL PROTECTION MEASURES WILL BE REQUIRED WHERE PERMITTED.
- RELOCATION OF UTILITY COMPANY FACILITIES SUCH AS POLES, TO BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FACILITY OWNERS.
- THE CONTRACTOR SHALL COMPACT THE PIPE BACKFILL IN 6" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABILE IN HIGH GROUNDFLOOR AREAS. A PIPE FOUNDATION SHALL BE USED IN AREAS OF ROCK EXCAVATION. STORM SEWERS MAY BE PLACED PRIOR TO PLACING FILL.
- CONTRACTOR TO PROVIDE SLEEVES UNDER FOOTINGS, PARKING AREAS, AND CURBS FOR UTILITY AND IRRIGATION CONNECTIONS.
- CONTRACTOR SHALL COORDINATE INSTALLATION FOR ELECTRICAL SERVICES TO PYLON SIGNS AND SITE LIGHTING WITH THE BUILDING ELECTRICIAN/ELECTRICAL CONTRACTOR.
- THE SITE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR PRE-CONSTRUCTION CONDITION OR BETTER.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEYS. IT IS NOT GUARANTEED CORRECT OR COMPLETE. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT PENNSYLVANIA ONE CALL 72 HOURS BEFORE COMMENCEMENT OF WORK AT (800) 242-1776 AND VERIFY ALL UTILITY AND DRAINAGE INFORMATION PROVIDED ON SHEET CV-1 AT LEAST THREE WEEKS PRIOR TO BEGINNING DEMOLITION.
- ALL RCP SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-76; ALL RCP SHALL BE CLASS IV UNLESS OTHERWISE SHOWN. JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.
- MANHOLE SECTIONS AND CONSTRUCTION SHALL CONFORM TO ASTM C-478.
- HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER 12" OR GREATER IN DIAMETER SHALL BE HI-Q SURE-LOK 10.8 PIPE AS MANUFACTURED BY HANOR INC. OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO M251. TYPE S, PIPE SECTIONS SHALL BE JOIN



LOCATION MAP
NOT TO SCALE

LEGEND

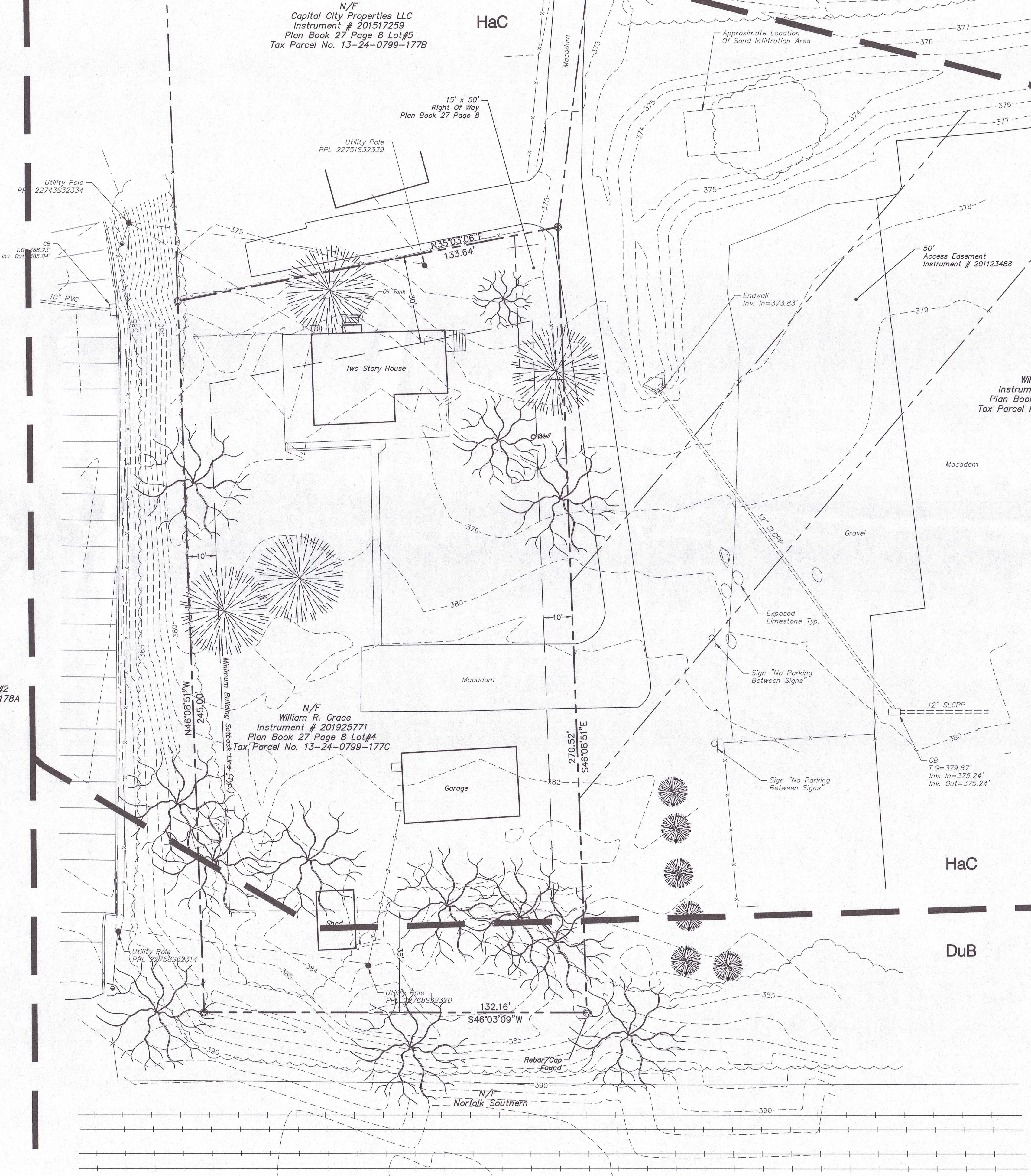
- Property Line
- Treeline
- Major Contour
- Minor Contour
- Fence
- Overhead Wires
- Underground Electric Line
- Sanitary Sewer
- Water Line
- Storm Sewer
- Handhole
- Utility Pole
- Catch Basin
- Manhole
- Sign
- Mail Box
- Existing Trees
- Existing Shrub

N/F
AMSI Investors
Deed Book 342 Page 559
Plan Book 60 Page 77 Lot#2
Tax Parcel No. 13-24-0799-178A

N/F
Capital City Properties LLC
Instrument # 201517259
Plan Book 27 Page 8 Lot#5
Tax Parcel No. 13-24-0799-177B

N/F
William R. Grace
Instrument # 200911778
Plan Book 27 Page 8 Lot#3
Tax Parcel No. 13-24-0801-002

N/F
William R. Grace
Instrument # 201925771
Plan Book 27 Page 8 Lot#4
Tax Parcel No. 13-24-0799-177C



SURVEY NOTES

1. THIS SURVEY WAS PERFORMED AND MAPPING PREPARED WITHOUT THE BENEFIT OF A TITLE SEARCH.
2. TOPOGRAPHIC INFORMATION SHOWN ARE BASED ON A FIELD SURVEY PERFORMED BY TERRAVIZ GEOSPATIAL COMPLETED IN NOVEMBER, 2019.
3. CONTOURS AND ELEVATIONS ARE BASED ON NATIONAL AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
4. BEARINGS ARE BASED ON PENNSYLVANIA STATE PLANE COORDINATES, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83).
5. UTILITY LOCATIONS ARE BASED ON SURFACE EVIDENCE AND LIMITED PA ONE-CALL MARKINGS EVIDENT AT THE TIME OF THE FIELD SURVEY. PA ONE-CALL SERIAL NO. 2019270153 AND 20193172821 WAS ASSIGNED ON NOVEMBER 13, 2019.
6. THE SUBJECT PROPERTY DESCRIBED ON THIS SURVEY DOES NOT LIE WITHIN THE 100-YEAR FLOODPLAIN AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) AND SHOWN ON THE FLOOD INSURANCE RATE MAP (FIRM) FOR LOWER ALLEN TOWNSHIP, MAP NO. 42041C0283E, EFFECTIVE DATE MARCH 16, 2009.

REVISIONS
No. Date Desc. REV'D PER TOWNSHIP & COUNTY COMMENTS
1 12/1/2020 REV'D PER TOWNSHIP COMMENTS
2 08/17/2021 REV'D PER TOWNSHIP COMMENTS
3 08/17/2021 REV'D PER TOWNSHIP COMMENTS

Surveyed M.P.D.
Drawn M.P.D.
Reviewed M.P.D.
Scale 1" = 20'
Project No. 1901881
Date 11/15/2019

CAD File: EX190188101

Title EXISTING CONDITIONS MAP
Sheet No.

Graphic Scale

20 10 0 20
SCALE IN FEET

EX-1
No. 03 of 14

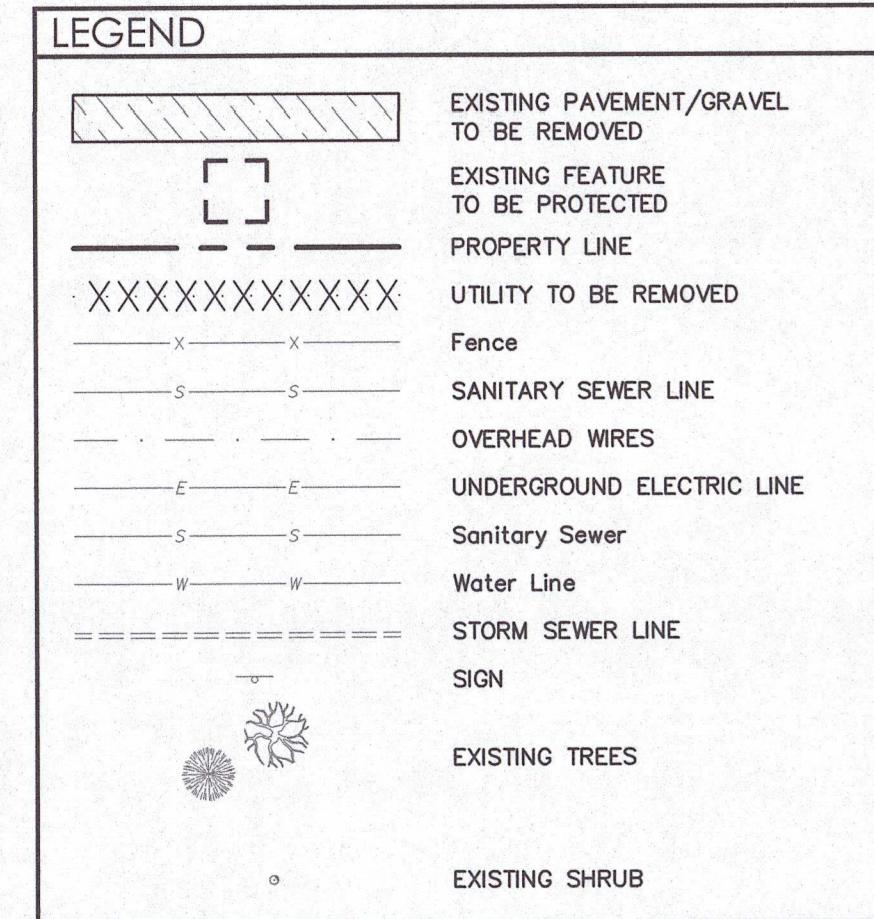
FOR PERMITTING PURPOSES ONLY NOT RELEASED FOR CONSTRUCTION



PENNSYLVANIA ACT 287 (1974) AS AMENDED BY PENNSYLVANIA ACT 190 (2004) REQUIRES NO LESS THAN THREE (3) WORKING DAYS AND NO MORE THAN (10) WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH. PA ONE-CALL SERIAL NO. 20191683266

Architecture
Engineering
Land Surveying
BL
Companies
2601 Market Place, Suite 350
Harrisburg, PA 17110
(717) 651-8550
(717) 651-9858 Fax

**PRELIMINARY / FINAL
LAND DEVELOPMENT PLAN**
3709 HARTZDALE DRIVE
LOWER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA



N/F
Capital City Properties LLC
Instrument # 201517259
Plan Book 27 Page 8 Lot#5
Tax Parcel No. 13-24-0799-177B

N/F
William R. Grace
Instrument # 200911778
Plan Book 27 Page 8 Lot#3
Tax Parcel No. 13-24-0801-002

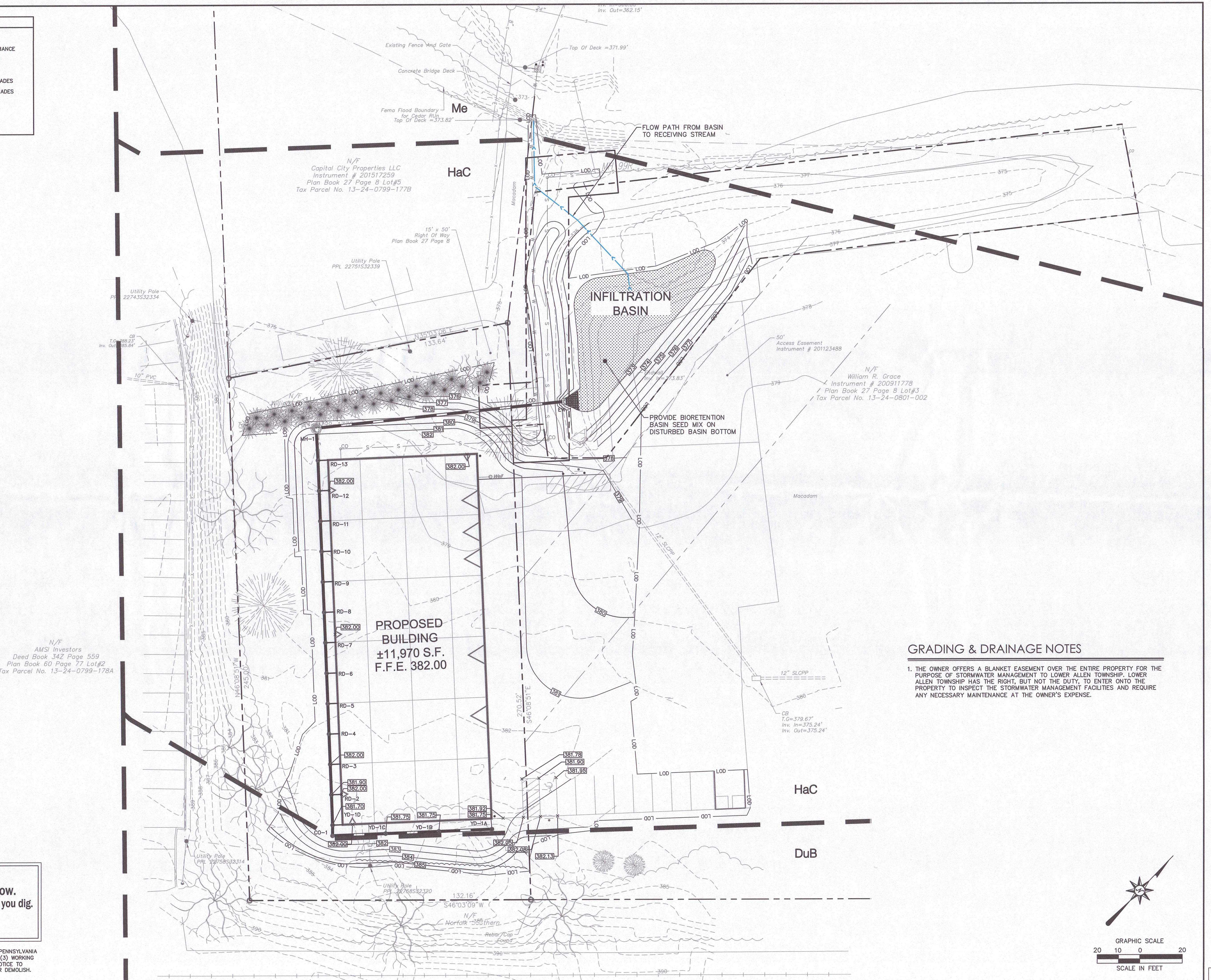
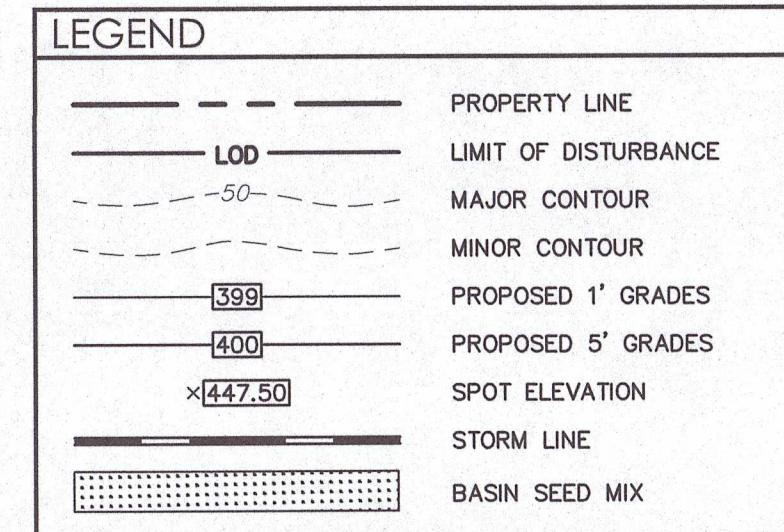
N/F
AMSI Investors
Deed Book 342 Page 559
Plan Book 60 Page 77 Lot#2
Tax Parcel No. 13-24-0799-178A

REMOVE AND DISPOSE OF ENTIRE BUILDING INCLUDING
BUT NOT LIMITED TO: WALLS, ROOF, SLABS, FLOORS,
FOUNDATIONS, ETC., ALL EXISTING UTILITIES, PIPES,
STEEL FRAMING, ETC. (ALL HAZARDOUS MATERIALS
TO BE REMOVED AND DISPOSED OF ACCORDINGLY
AND BY LICENSED HANDLER - SEE NOTES)
COORDINATE WITH UTILITY COMPANIES FOR
SPECIFICATIONS AND SCHEDULING OF DISCONNECTING
AND CAPPING EXISTING BUILDING CONNECTIONS.



PENNSYLVANIA ACT 287 (1974) AS AMENDED BY PENNSYLVANIA
ACT 199 (2004) REQUIRES NO LESS THAN THREE (3) WORKING
DAYS AND NO MORE THAN (10) WORKING DAYS NOTICE TO
UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH.
PA ONE-CALL SERIAL NO. 20191683266





PRELIMINARY / FINAL LAND DEVELOPMENT PLAN

3709 HARTZDALE DRIVE
LOWER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

REVISIONS
No. Date
1 12/11/2020
2 01/25/2021
3 08/17/2021
Desc. REVISED FOR TOWNSHIP & COUNTY COMMENTS
REVISED FOR TOWNSHIP & COUNTY COMMENTS
REVISED FOR TOWNSHIP & COUNTY COMMENTS

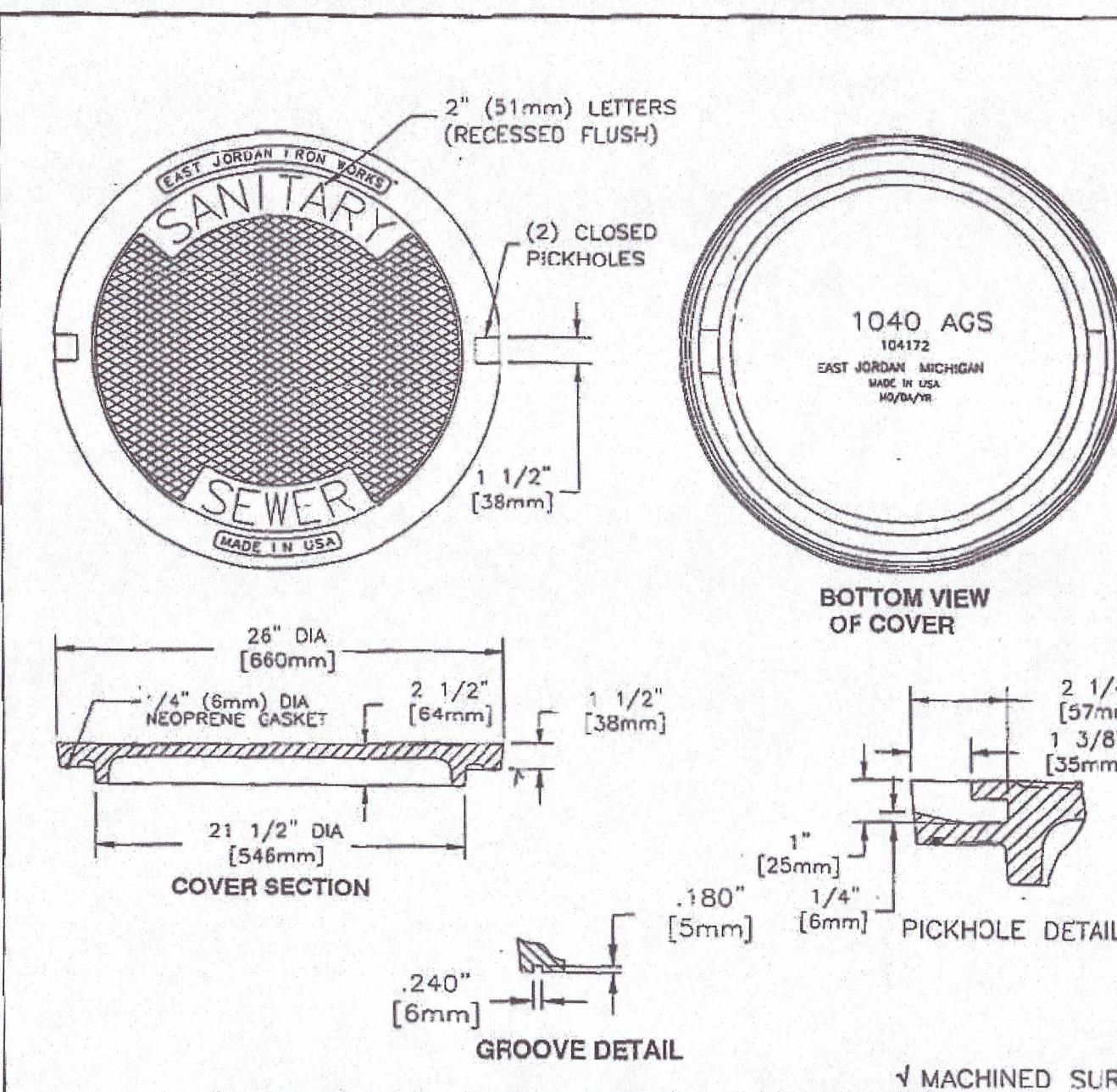
Designed C.J.S.
Drawn J.R.J.
Reviewed A.J.B.
Scale AS NOTED
Project No. 1901881
Date 07/22/2020
CAD File: DN190188101
Title

DETAIL SHEET

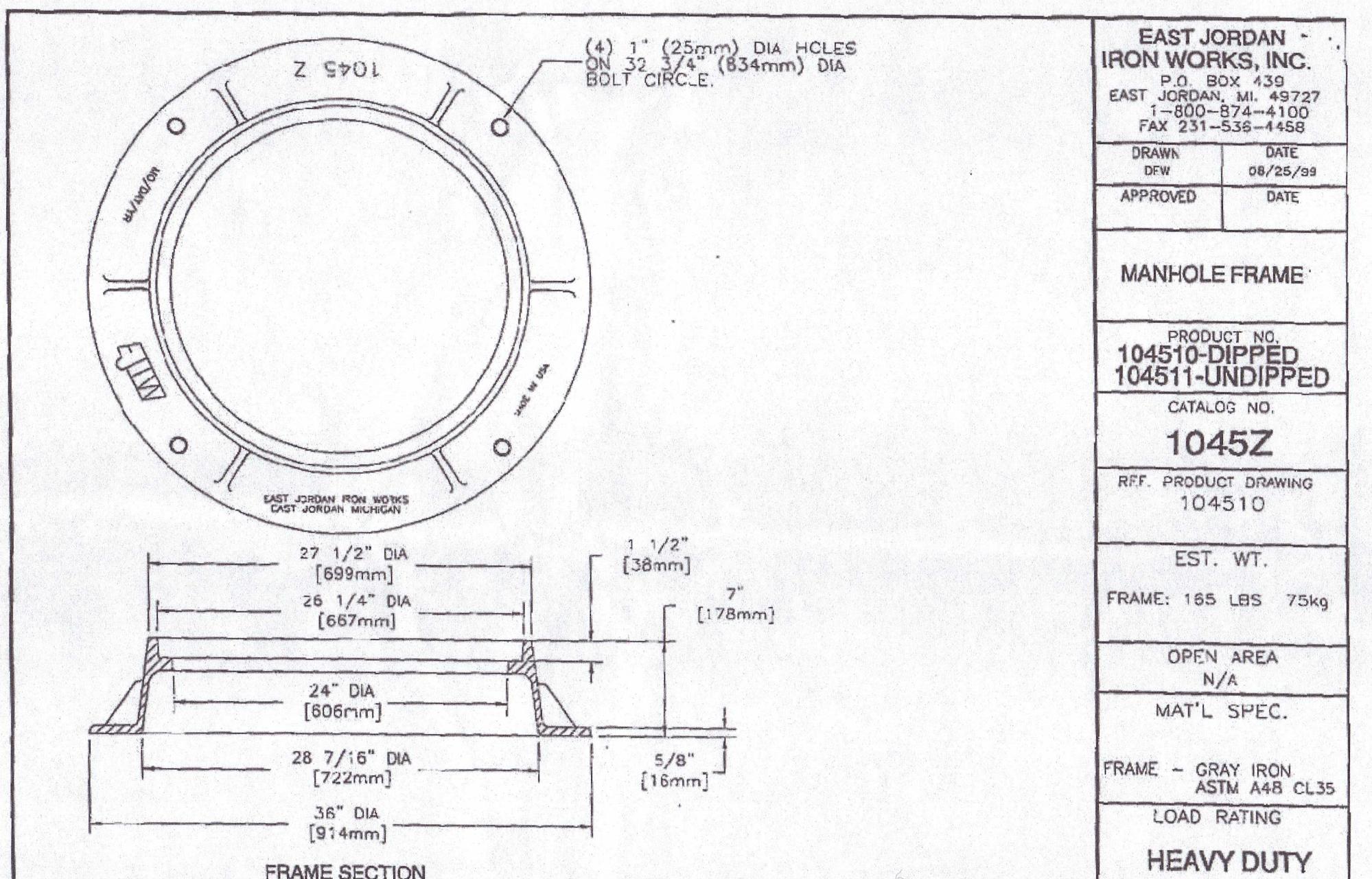
Sheet No.

DN-2
No. 09 of 14

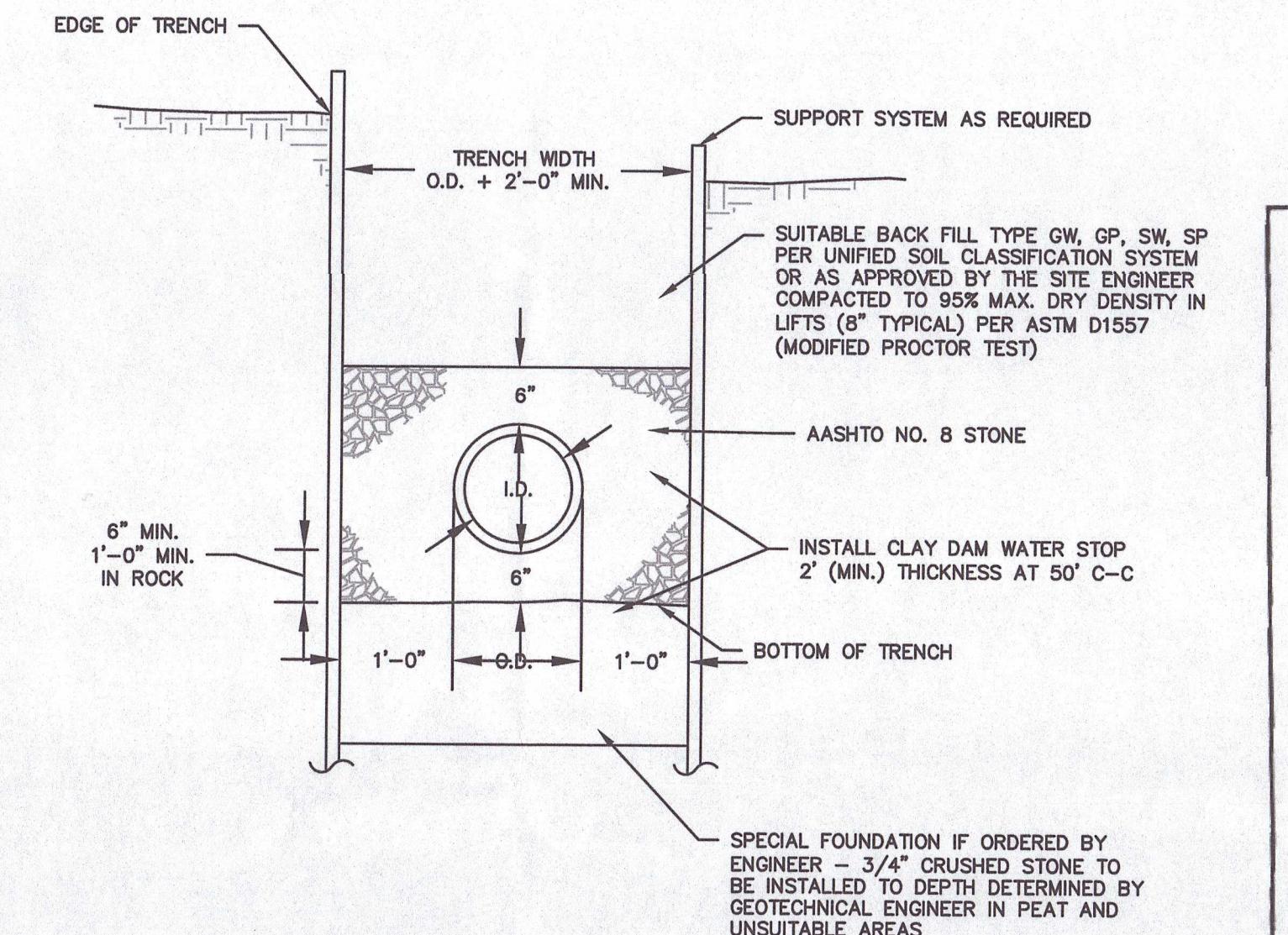
EAST JORDAN IRON WORKS, INC.
P.O. BOX 439
EAST JORDAN, MI 49727
1-800-874-4100
FAX 231-536-4458
DRAWN DATE 11/14/00
DEW APPROVED DATE
SPECIAL LETTERED COVFR
PRODUCT NO. 00104172
CATALOG NO. 1040AGS
REF. PRODUCT DRAWING 104172
EST. WT. COVER: 150 LBS 68kg
OPEN AREA N/A
MAT'L SPEC. COVER - GRAY IRON ASTM A48 CL35
LOAD RATING HEAVY DUTY



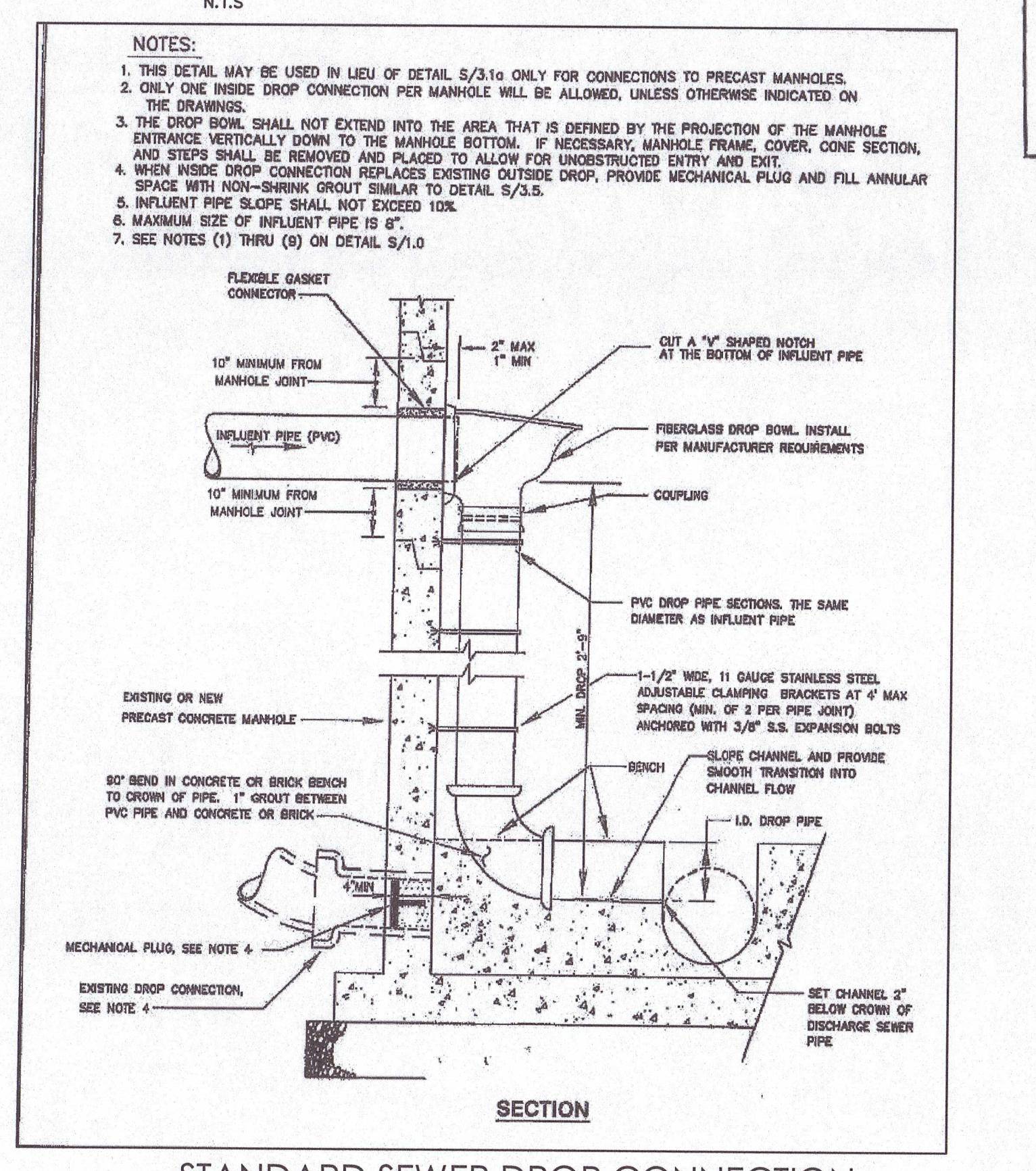
SPECIAL LETTERING MANHOLE COVER



STANDARD MANHOLE FRAME



**TYPICAL SANITARY SEWER
TRENCH SECTION**



STANDARD SEWER DROP CONNECTION

N.T.S.

SECTION

NOTES:

1. THIS DETAIL MAY BE USED IN LIEU OF DETAIL S/3.1a ONLY FOR CONNECTIONS TO PRECAST MANHOLES.
2. ONLY ONE INSIDE DROP CONNECTION PER MANHOLE WILL BE ALLOWED, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
3. THE DROP BOX SHALL NOT EXTEND INTO THE AREA THAT IS DEFINED BY THE PROJECTION OF THE MANHOLE ENTRANCE VERTICALLY DOWN TO THE MANHOLE BOTTOM. IF NECESSARY, MANHOLE FRAME, COVER, CONE SECTION, AND STEPS SHALL BE REMOVED AND PLACED TO ALLOW FOR UNOBSTRUCTED ENTRY AND EXIT.
4. THE CONNECTION PLACES EXISTING OUTSIDE DROP, PROVIDE MECHANICAL PLUG AND FILL ANNULAR SPACE WITH NON-SHRINK GROUT. SEE S/3.5.
5. INFILTRANT PIPE SLOPE SHALL NOT EXCEED 10%.
6. MAXIMUM SIZE OF INFILTRANT PIPE IS 8".
7. SEE NOTES (1) THRU (9) ON DETAIL S/1.0.

NOTES:

1. FIRE LINE PIPING AND SERVICE PIPING > 3" I.D. TO BE CLASS 52 DUCTILE IRON WITH RESTRAINED JOINTS 40 FT. EACH SIDE OF ALL FITTINGS, ELBOWS AND APPURTENANCES. DOMESTIC PIPING < 3" I.D. TO BE TYPE K COPPER PER ASTM B 88.
2. PIPING TO BE HYDROSTATIC PRESSURE AFTER INSTALLATION.

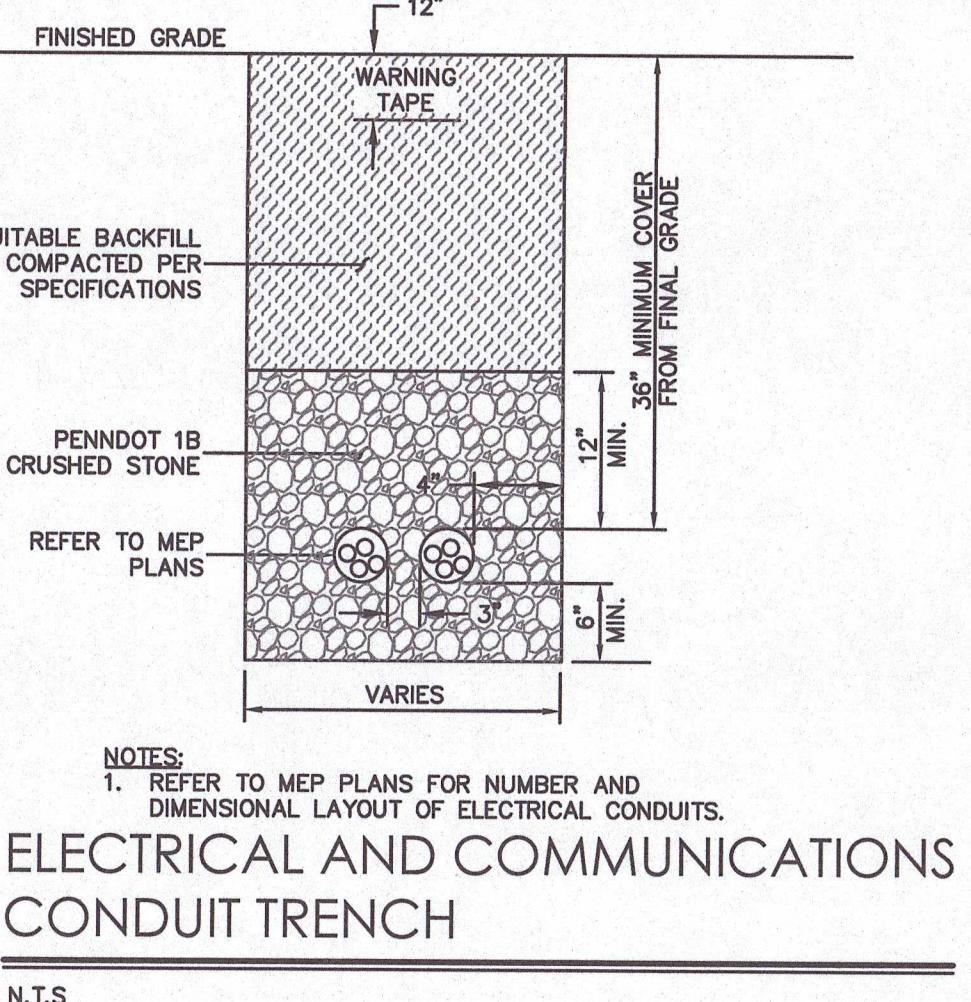
**TYPICAL WATER MAIN AND
SERVICE TRENCH DETAIL**

N.T.S.

SECTION

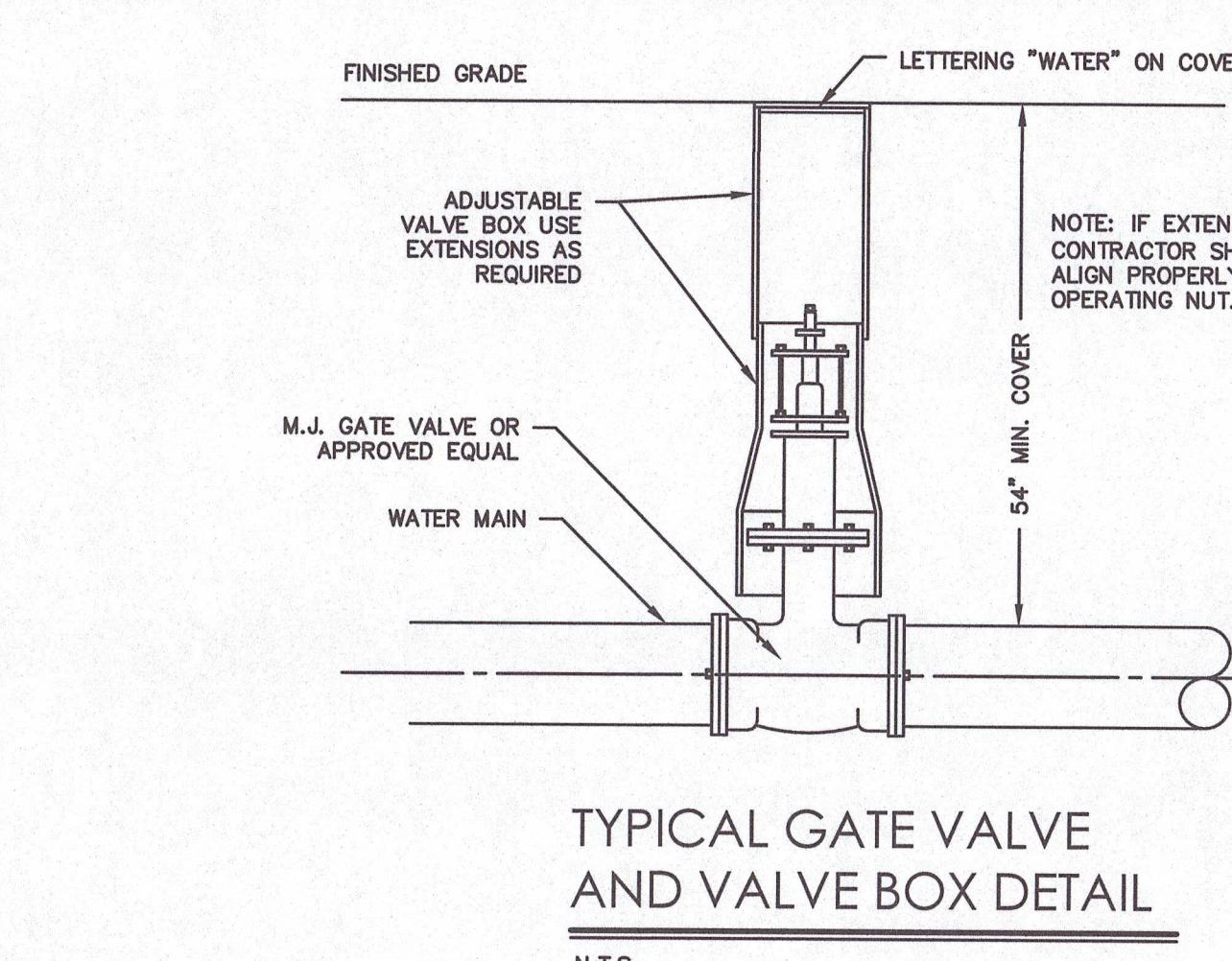
NOTES:

1. REFER TO MEP PLANS FOR NUMBER AND DIMENSIONAL LAYOUT OF ELECTRICAL CONDUITS.
2. REFER TO MEP PLANS FOR NUMBER AND DIMENSIONAL LAYOUT OF ELECTRICAL CONDUITS.



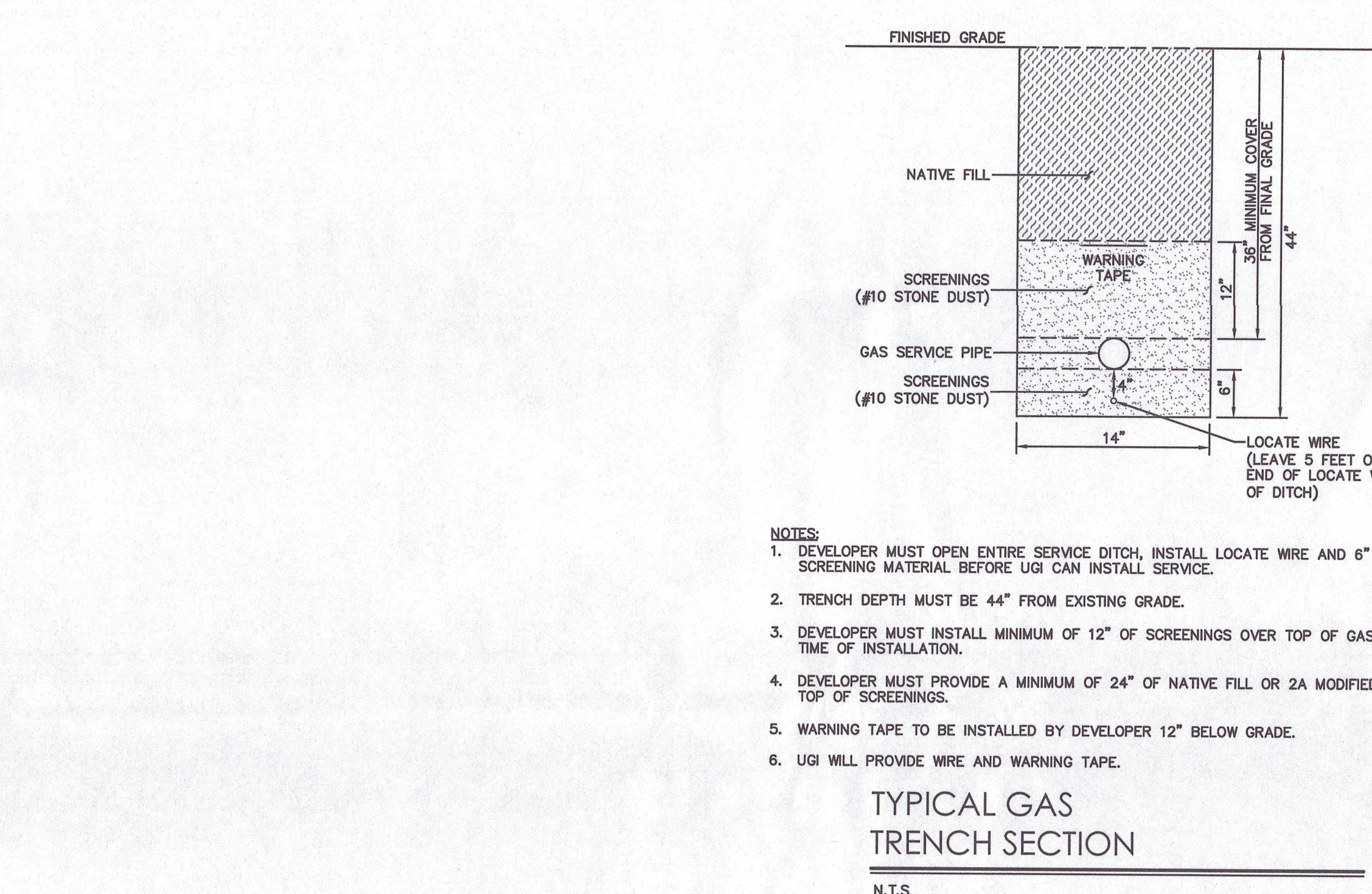
**ELECTRICAL AND COMMUNICATIONS
CONDUIT TRENCH**

N.T.S.



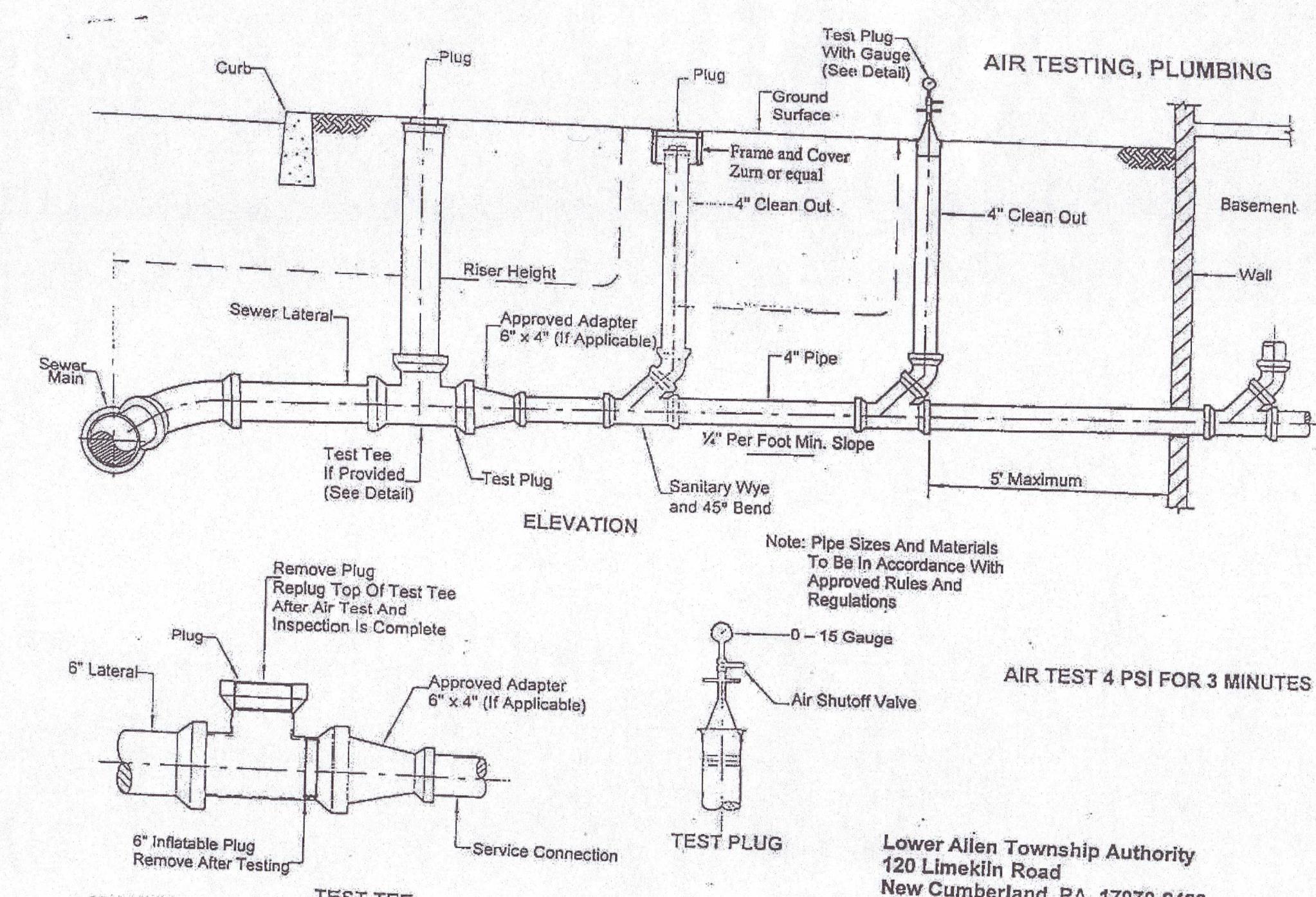
**TYPICAL GATE VALVE
AND VALVE BOX DETAIL**

N.T.S.



**TYPICAL GAS
TRENCH SECTION**

N.T.S.



STANDARD SEWER LATERAL

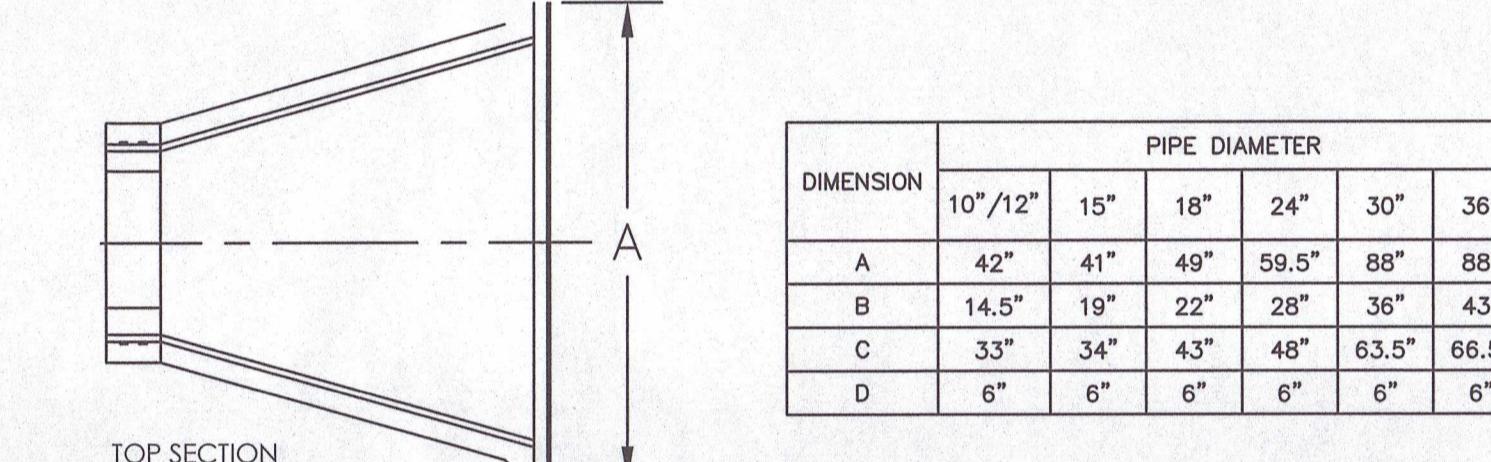
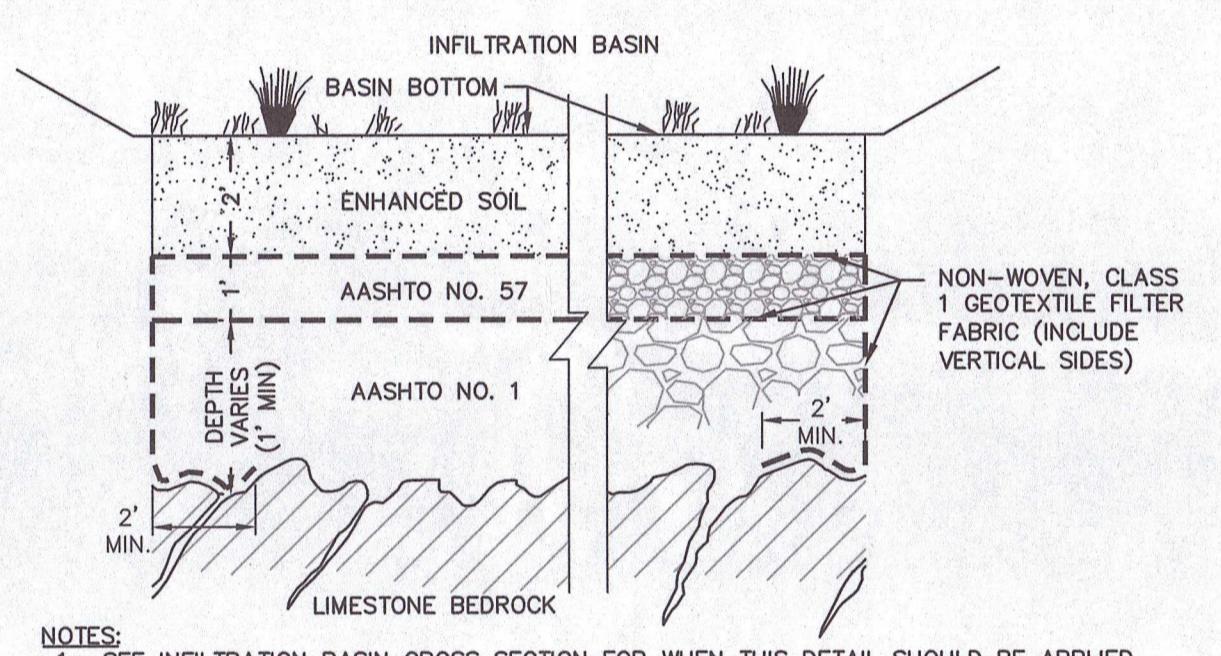
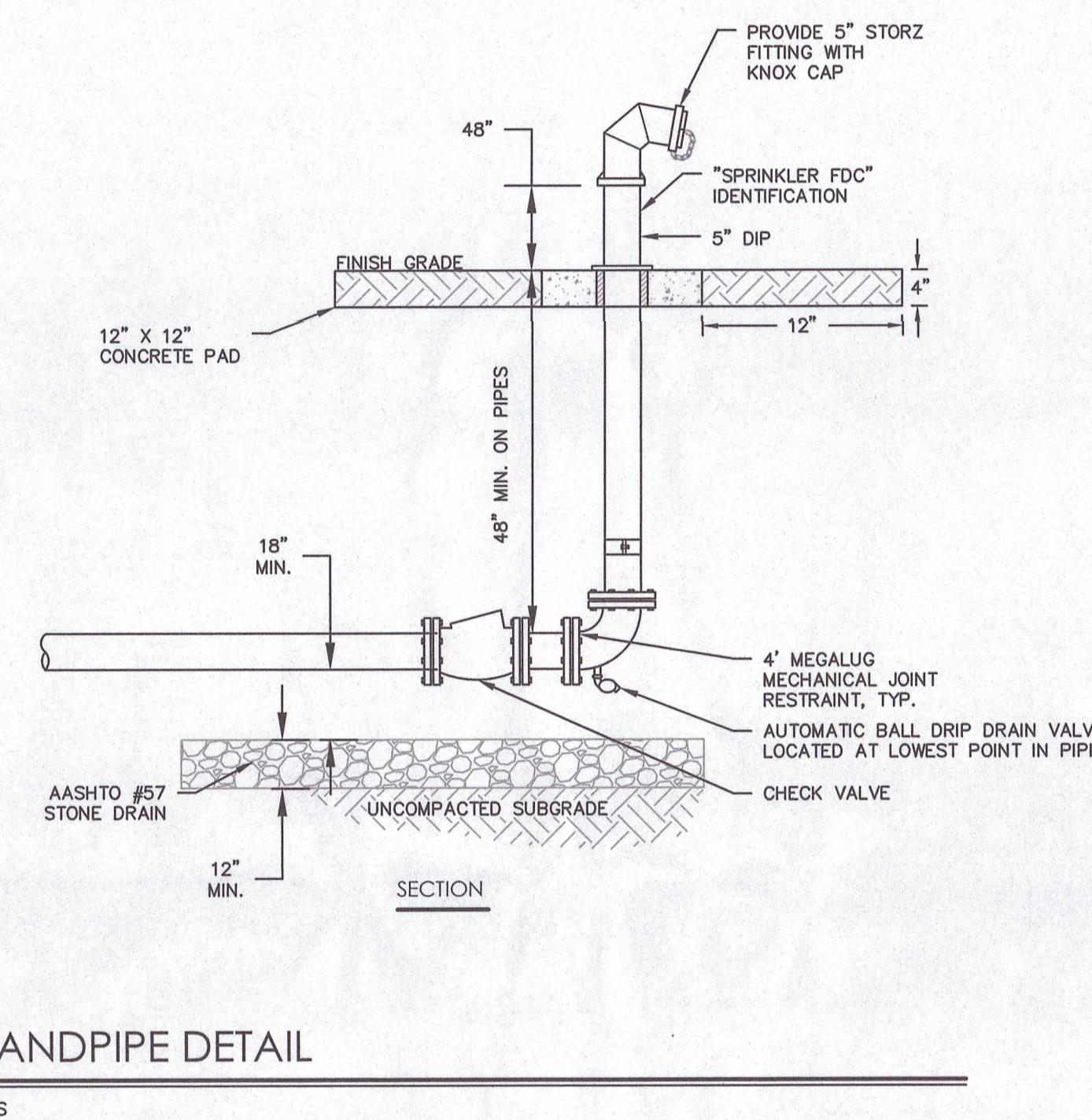
N.T.S.

OPERATION & MAINTENANCE PROGRAM FOR BMPs

1. THE PURPOSE OF THESE INSTRUCTIONS IS TO IDENTIFY THE OWNERSHIP AND MAINTENANCE ACTIVITIES ASSOCIATED WITH THE PROPOSED BMPs. THE AFOREMENTIONED FACILITIES SHALL BE THE RESPONSIBILITY OF THE PERMIT APPLICANT (PERMITTEE).
2. ALL PCSM BMPs WILL BE INSPECTED ACCORDING TO THE SCHEDULES LISTED BELOW. A WRITTEN REPORT MUST BE COMPLETED DOCUMENTING EACH INSPECTION AND ANY REPAIR, REPLACEMENT OR MAINTENANCE ACTIVITY.
3. SOIL, TRASH, DEBRIS OR OTHER MATERIALS REMOVED FROM PCSM BMPs SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO WASTES, UNUSED BUILDING MATERIALS OR OTHER MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
4. ALL DAMAGED OR NON-FUNCTIONAL BMPs SHALL BE REPAIRED IMMEDIATELY. ANY PCSM BMPs THAT CANNOT BE REPAIRED MUST BE REPLACED AS SOON AS PRACTICABLE.
5. THE ENTITY CONDUCTING THE INSPECTION SHALL BE REQUIRED TO SUBMIT A REPORT TO THE MUNICIPALITY ANNUALLY.
6. THE PERMIT APPLICANT SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF PERMANENT STORMWATER FACILITIES LOCATED ON THE SUBJECT PROPERTY. PERMANENT MAINTENANCE OF THE STORM SYSTEM AFTER ACCEPTANCE WILL PRIMARILY CONSIST OF ROUTINE CLEANING OF ACCUMULATED SEDIMENT AND DEBRIS BY FACILITY STAFF OR PRIVATE CONTRACTORS. THE SPECIFIC MAINTENANCE STEPS AND SCHEDULE ARE AS FOLLOWS:

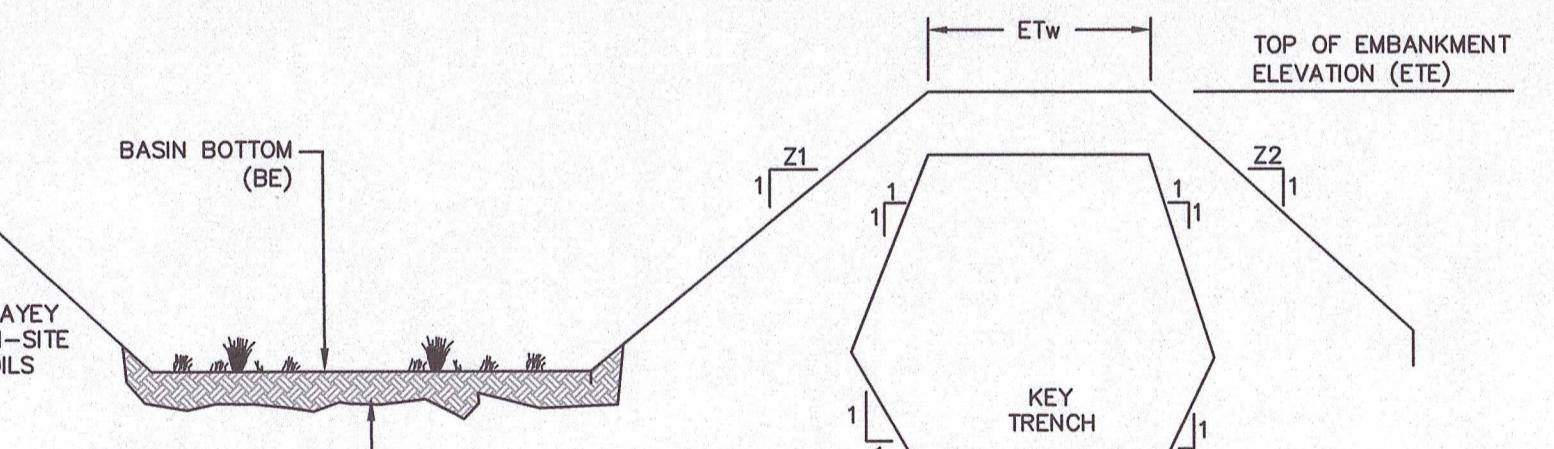
INfiltration Basin	
OPERATION & MAINTENANCE PROCEDURES	
ACTIVITY	SCHEDULE
DECOMPACT OR OTHERWISE AERATE THE BASIN BOTTOM TO A MINIMUM DEPTH OF 8'. SEED WITH PLANTING MIX SHOWN ON APPROVED PLANS. QUALIFIED PROFESSIONAL OR THEIR DESIGNEE SHALL ENSURE THAT DESIGN INFILTRATION RATE IS BEING ACHIEVED. BASIN 1: 0.50 TO 10.00 IN/HR	AT CONSTRUCTION OF PERMANENT FACILITY
FIRST GROWING SEASON-WHENEVER VEGETATION REACHES A HEIGHT OF 18-24", TRIM TO A HEIGHT OF 8". HAND PULL PROBLEM WEEDS. SECOND GROWING SEASON-PRIOR TO NEW SPRING GROWTH REACHING A HEIGHT OF 2", TRIM ALL VEGETATION DOWN TO 2"; HAND PULL PROBLEM WEEDS.	FIRST AND SECOND GROWING SEASONS, AND AS NEEDED
REMOVE LITTER AND DEBRIS. INSPECT FOR SEDIMENT BUILDUP, EROSION, AND VEGETATIVE CONDITIONS. STABILIZE ERODED BANKS. REPAIR UNDERCUT AND ERODED AREAS AT INFLOW AND OUTFLOW STRUCTURES, AND RESEED AS NECESSARY TO SUSTAIN STABILIZATION. CONTACT A QUALIFIED PROFESSIONAL IF SIGNIFICANT SEDIMENT BUILDUP (I.E. POND VOLUME HAS BEEN REDUCED BY 10%) OR EROSION HAS OCCURRED.	TWICE PER YEAR
INSPECT FACILITY FOR SIGNS OF WEINNESS OR DAMAGE TO STRUCTURES. NO CAVITIES ARE ALLOWED. IF DEAD OR DYING GRASS IS NOT PERTINENT, CHECK TO ENSURE THAT WATER IS PERCOLATING WITHIN THE DESIGN DEWATERING TIME (SEE BELOW).	TWICE PER YEAR
IF AFTER A 2-YEAR STORM EVENT, WATER HAS NOT INFILTRATED WITHIN THE DESIGN DEWATERING TIME (SEE BELOW), WAIT UNTIL AFTER THE NEXT 2-YEAR STORM EVENT TO SEE IF DESIGN DEWATERING TIME HAS BEEN ACHIEVED. IF THE TIME HAS NOT BEEN ACHIEVED, CONTACT A QUALIFIED PROFESSIONAL TO EVALUATE THE BMP AND CORRECT THE DETERMINED MALFUNCTION TO ACHIEVE DEWATERING TIMES AS FOLLOWS: BASIN 1: 24-72 HOURS	TWICE PER YEAR FOR FIRST THREE YEARS
1. VEGETATION ALONG THE SURFACE OF THE BASIN BOTTOM SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE. 2. VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF 95%. 3. VEHICLES SHOULD NOT BE PARKED OR DRIVEN ON BASIN BOTTOM, AVOID COMPACTION. 4. DURING PERIODS OF EXTENDED DROUGHT, INFILTRATION BASIN MAY REQUIRE WATERING.	

STORMWATER COLLECTION/CONVEYANCE	
OPERATION & MAINTENANCE PROCEDURES	
ACTIVITY	SCHEDULE
INLETS & CATCH BASINS SHOULD BE CLEANED OF DEBRIS. REPAIRS SHOULD BE MADE AS SOON AS PROBLEMS ARISE.	CLEAN ONCE PER YEAR & REPAIR AS NEEDED
INSPECT OUTFALL STRUCTURES QUARTERLY DURING 1ST YEAR & ONCE PER YEAR THEREAFTER	QUARTERLY & ONCE PER YEAR
COLLECTION/CONVEYANCE SYSTEMS SHOULD BE INSPECTED TWICE PER YEAR MINIMUM.	TWICE PER YEAR
GENERAL MAINTENANCE NOTES: 1. VACUUM TRUCKS MAY BE AN EFFICIENT CLEANING MECHANISM. 2. CATCH BASINS SHOULD BE CLEANED BEFORE HALF FULL.	



ENGINEERED FILL MATERIAL SECTION

N.T.S.



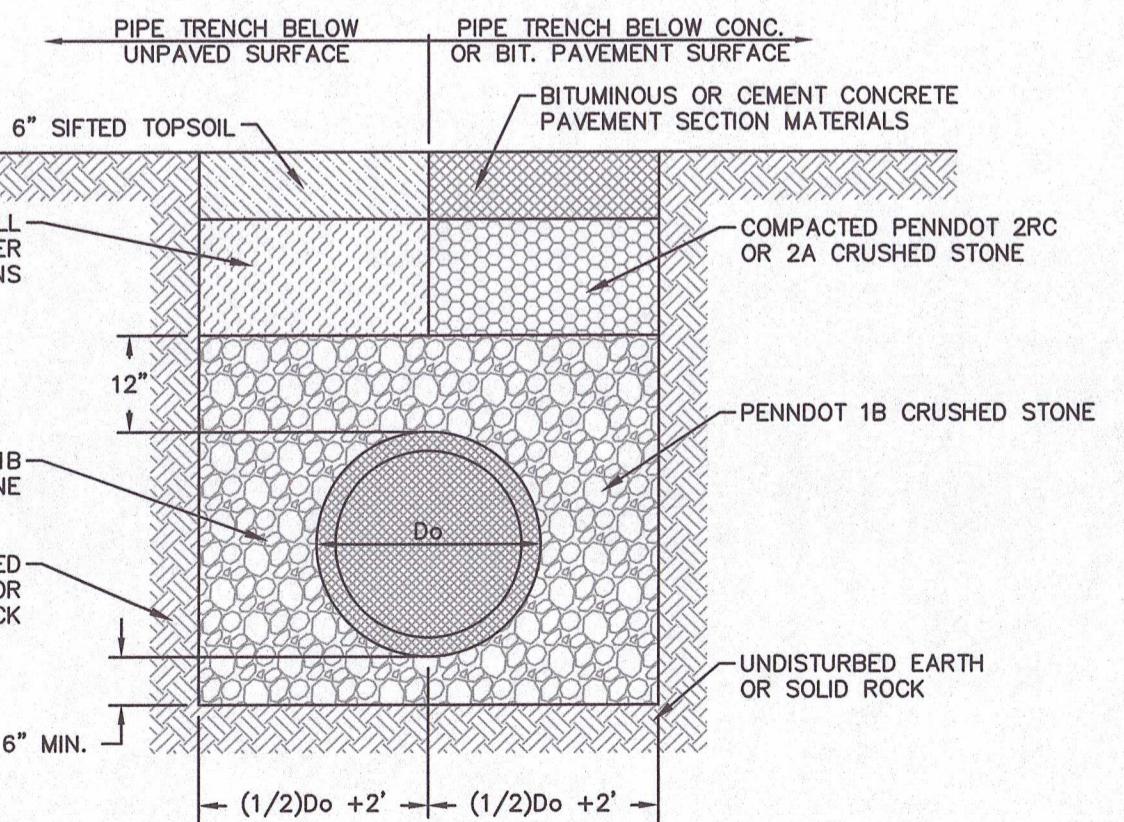
EMBANKMENT						
BASIN NO.	Z1 (FT)	Z2 (FT)	TOP ELEV. ETE (FT)	TOP WIDTH ETW (FT)	KEY TRENCH DEPTH (FT)	BOTTOM ELEV. BE (FT)
1	3	3	377.00	8.00	2.00	4.00
						373.00

NOTES:

1. MAINTAIN A MINIMUM DEPTH TO BEDROCK OF 2 FEET, WHERE POSSIBLE. DURING SITE CONSTRUCTION, VIRGIN SOIL SHALL BE PROTECTED FROM COMPACTION DUE TO HEAVY EQUIPMENT OPERATION OR STORAGE OF FILL OR CONSTRUCTION MATERIAL. INFILTRATION AND EROSION SHALL BE PREVENTED FROM CONSTRUCTION AREAS. EXCAVATION TO BEDROCK SHALL BE REMEDIED TO ENSURE SOIL COMPOSITION AND PLASTICITY. ADEQUATE DOCUMENTATION TO THIS EFFECT SHALL BE SUBMITTED FOR REVIEW BY THE LOWER ALLEN TOWNSHIP ENGINEER. ALL AREAS DESIGNATED FOR INFILTRATION SHALL NOT RECEIVE RUNOFF UNTIL THE CONTRIBUTORY DRAINAGE AREA HAS ACHIEVED FINAL STABILIZATION.
2. IF BEDROCK IS ENCOUNTERED DURING EXCAVATION TO BASIN BOTTOM, UTILIZE THE ENGINEERED FILL MATERIAL SECTION.

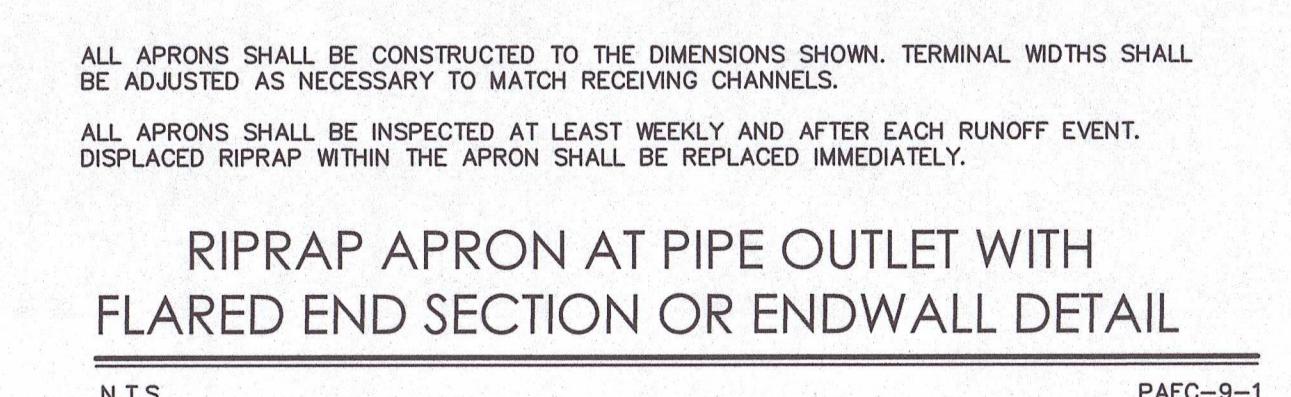
INFILTRATION BASIN CROSS SECTION

N.T.S.



STORM PIPE TRENCH SECTION

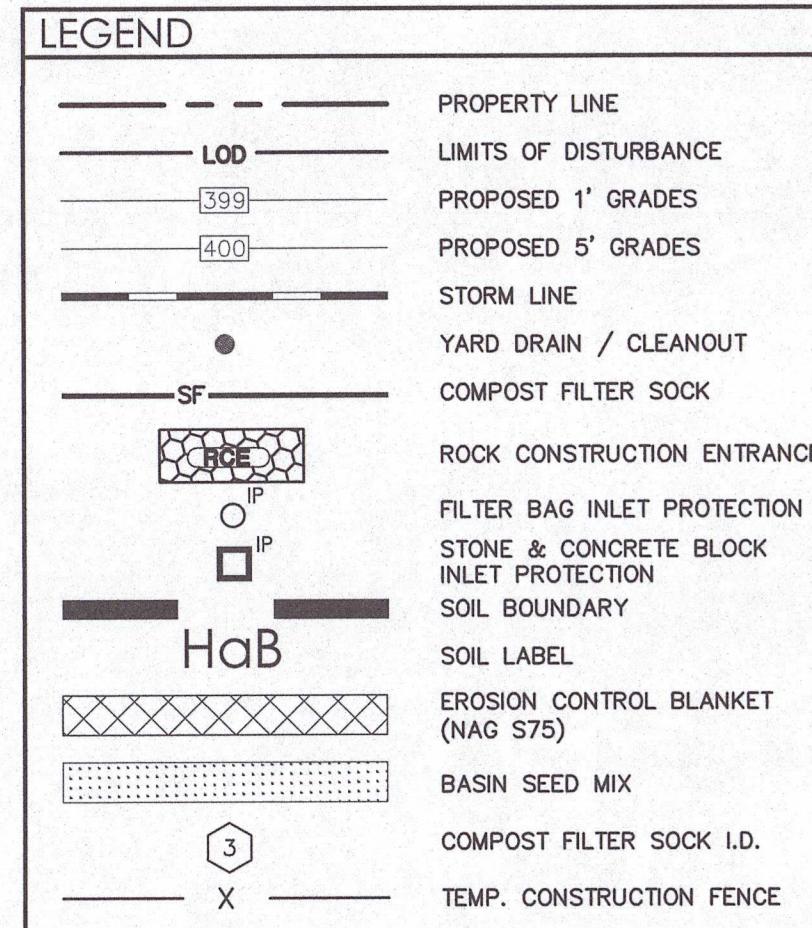
N.T.S.



RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL DETAIL

N.T.S.

PAEC-9-1

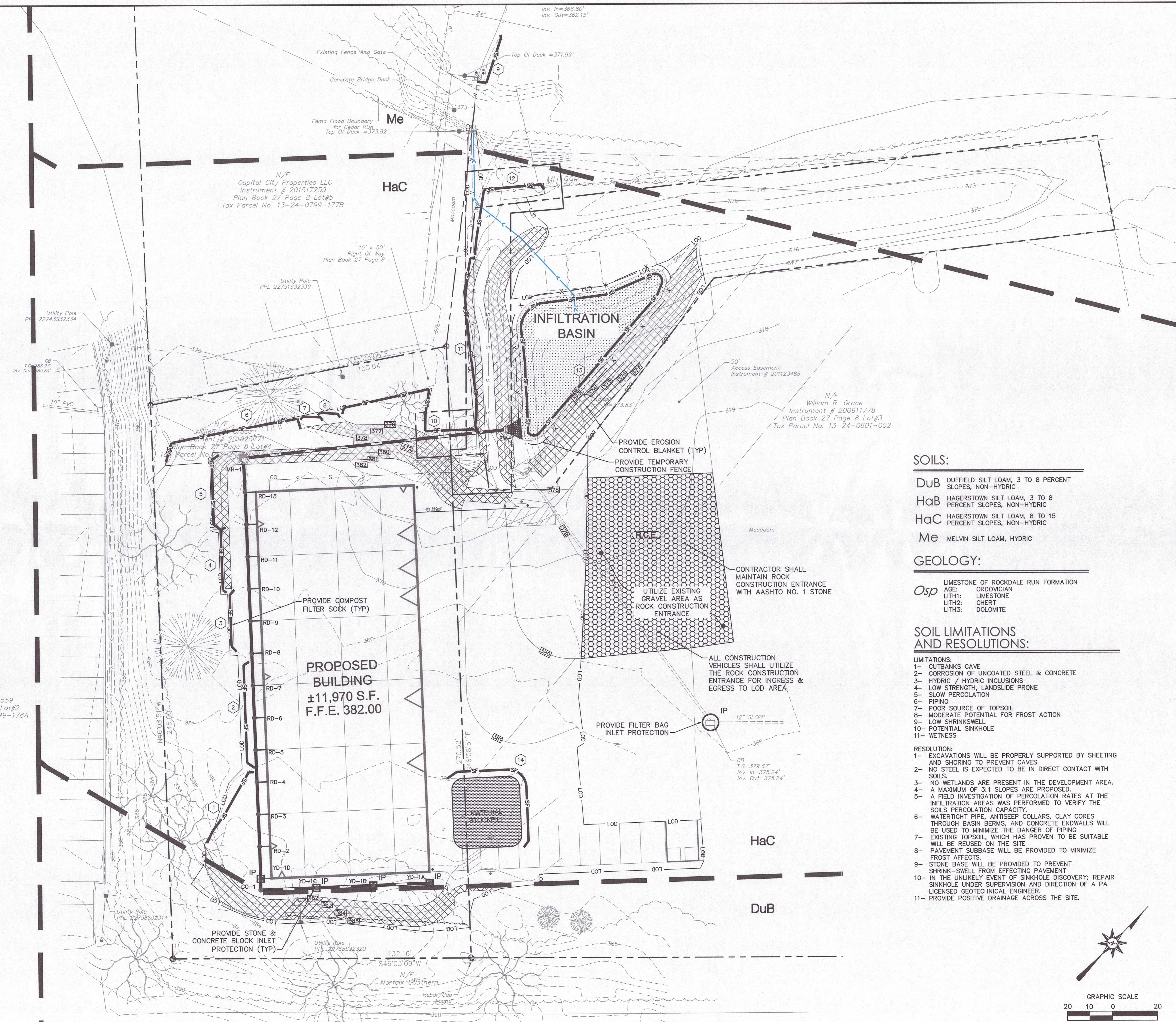


COMPOST FILTER SOCK TABLE

SOCK NO.	Dia. In.	LOCATION
1	12	southwest of building
2	12	southwest of building
3	12	west of building
4	12	west of building
5	12	west of building
6	12	northwest of building
7	12	northwest of building
8	12	northwest of building
9	12	below northern standpipe
10	12	north of building
11	12	west of basin
12	12	west of basin
13	12	bottom of basin
14	12	below material stockpile

LIMIT OF DISTURBANCE

THE PROPOSED 3709 HARTZDALE DRIVE PROJECT
LIMIT OF DISTURBANCE IS 0.99 ACRES.



PENNSYLVANIA ACT 287 (1974) AS AMENDED BY PENNSYLVANIA ACT 199 (2004) REQUIRES NO LESS THAN THREE (3) WORKING DAYS AND NO MORE THAN (10) WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH.
PA ONE-CALL SERIAL NO. 20191683266

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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN

LAND DEVELOPMENT PLAN

3709 HARTZDALE DRIVE
LOWER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

Architecture
Engineering
Environmental
Land Surveying

The logo consists of the letters 'DBI' in a bold, sans-serif font. The 'D' is a vertical rectangle with a semi-circular cutout at the bottom. The 'B' is a vertical rectangle with a horizontal cutout in the middle. The 'I' is a simple vertical rectangle.

2601 Market Place, Suite 350
Harrisburg, PA 17110
(717) 651-9850
(717) 651-9858 Fax

No.	Date	Desc.
	12/11/2020	REVISED PER TOWNSHIP & COUNTY COMMENTS
	01/25/2021	REVISED PER TOWNSHIP COMMENTS
	08/17/2021	REVISED PER TOWNSHIP COMMENTS

designed	C.J.S.
drawn	J.R.J.
reviewed	A.J.B.
scale	1" = 20'
object No.	190188
date	07/22/2020

EROSION &
SEDIMENTATION
CONTROL PLAN

Sheet No

FC-1

No. 11 of 12

STANDARD E&S NOTES

- ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THESE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
- AT LEAST 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 PREPARED, THE PCS PLAN PREPARED, THE DESIGN PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCS PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.

CUMBERLAND COUNTY CONSERVATION DISTRICT
310 ALLEN ROAD, ROOM 301
CARLISLE, PA 17013
P: 717.240.7812

- AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPs SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
- AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT.
- ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
- ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, RECLADING, RESEEDING, REMULCHING AND RENETING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
- SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVED, OR SWEEP INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES OF COMPAKTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETERIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPAKTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHENEVER POSSIBLE PRIOR TO SEEDING.
- ALL FILLS SHALL BE COMPAKTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPAKTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- ALL EARTHEN FILLS SHALL BE PLACED IN COMPAKTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOIL, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
- FILL SHALL NOT BE PLACED OR SATURATED ON FROZEN SURFACES.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
- ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
- E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPs.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
- FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN THE 600 OF THE PENNSYLVANIA CRIMINAL LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

TEMPORARY SEEDING FOR SOIL STABILIZATION

1. SEEDING MIXTURE TYPE I (TOPSOIL STOCKPILES)	ANNUAL RYEGRASS (70%) PERENNIAL RYEGRASS (30%) SPECIES:
% PURE LIVE SEED:	95%
APPLICATION RATE:	4LBS./MSF
FERTILIZER TYPE:	10-10-10
FERTILIZER APPLICATION RATE:	12.5 LBS/1,000 SF
LIMING RATE:	40 LBS/1,000 SF
MULCH TYPE:	STRAW
MULCH RATE:	140 LBS/1,000 SF
ANCHOR MATERIAL:	EC3000 COPOLYMER TACKIFIER
ANCHORING METHOD:	SLURRY, MIX AND SPRAY
ANCHORING RATE OF APPLICATION:	3 LBS/ACRE
SEEDING DATE:	AS REQUIRED

SEED MIXTURES

CONFORMING TO THE PENNSYLVANIA SEED ACT OF 1965 (ACT NO. 187) AND AMENDMENTS, AND REGULATIONS OF THE PENNSYLVANIA DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY, HAVE THE PENNSYLVANIA DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY, CONDUCT PURITY AND GERMINATION ANALYSIS, FOLLOWING THE CURRENT RULES FOR TESTING SEEDS, OF THE ASSOCIATION OF OFFICIAL SEED ANALYSTS.

USE KENTUCKY BLUEGRASS, PERENNIAL RYEGRASS, CREEPING RED FESCUE, CHEWING FESCUE, HARD FESCUE, AND BIRDSFOOT TREFOIL SEED.

USE SEED, PRETESTED BY THE PENNSYLVANIA DEPARTMENT OF AGRICULTURE, IN 10-POUND (NET) WATERPROOF CONTAINERS, WITH A TAG ATTACHED TO EACH BAG.

USE A PREMIUM SEED WITH AN INSPECTION TAG, STAMPED, DATED, AND SIGNED BY THE DEPARTMENT OF AGRICULTURE INSPECTOR SEWN OR STAPLED TO THE OUTSIDE OF EACH BAG. DO NOT USE SEED FROM CONTAINERS THAT ARE NOT SEALED OR THAT HAVE BEEN STORED WITH HERBICIDES.

DO NOT USE SEED, UNLESS IT HAS BEEN INSPECTED AND SAMPLED, AS SPECIFIED, OR SAMPLED BY INDIVIDUAL SPECIES AND LOT NUMBER, AND MIXED, ON THE PROJECT, UNDER DEPARTMENT SUPERVISION.

DO NOT USE SEED WHICH HAS A TEST DATE OLDER THAN NINE MONTHS.

PERMANENT SEED MIXTURES:

%	PURE LIVE SEED - VARIETIES WITH SEEDING MIXTURE - MINIMUM 95%
ANCHOR MATERIAL-EC3000 COPOLYMER TACKIFIER	
ANCHORING METHOD-SLURRY, MIX AND SPRAY	
ANCHORING RATE OF APPLICATION: 3 LBS/ACRE	
SEEDING DATES: MARCH 15-MAY 30 AND AUGUST 15-OCTOBER 15	

BASIN PLANTING SEED MIX

Retention Basin Floor Mix - Low Maintenance (ERNMX-126)*	
Seeding Rate	20-40 lb per acre
Mix Type	Uplands & Meadows
Species List	20.0% <i>Puccinellia distans</i> , 'Fults' (Alkaligrass, 'Fults') 19.0% <i>Panicum clandestinum</i> , 'Tioga' (Deertongue, 'Tioga') 18.0% <i>Agristis stolonifera</i> (Creeping Bentgrass) 18.0% <i>Elymus virginicus</i> , PA Ecotype (Virginia Wildrye, PA Ecotype) 15.0% <i>Poa palustris</i> (Fowl Bluegrass) 5.0% <i>Carex virescens</i> , PA Ecotype (Fox Sedge, PA Ecotype) 3.0% <i>Juncus effusus</i> (Soft Rush) 2.0% <i>Carex scoparia</i> , PA Ecotype (Blunt Broom Sedge, PA Ecotype)

*OR APPROVED EQUAL

ERNMX-126 IS PROVIDED BY:

ERNST SEEDS
8884 MERCER PIKE, MEADVILLE, PA 16335
800-873-3321
[HTTPS://WWW.ERNSTSEED.COM/](https://WWW.ERNSTSEED.COM/)

MULCHING

MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN TABLE 11.6

STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR. NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.

POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45°F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.

SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.

MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING, LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.

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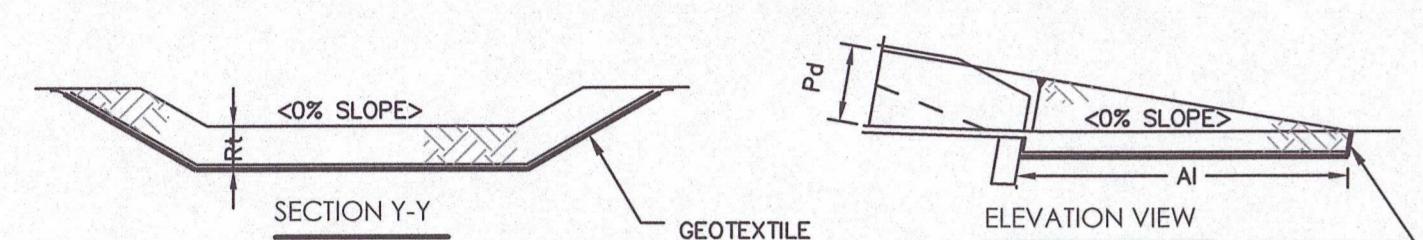
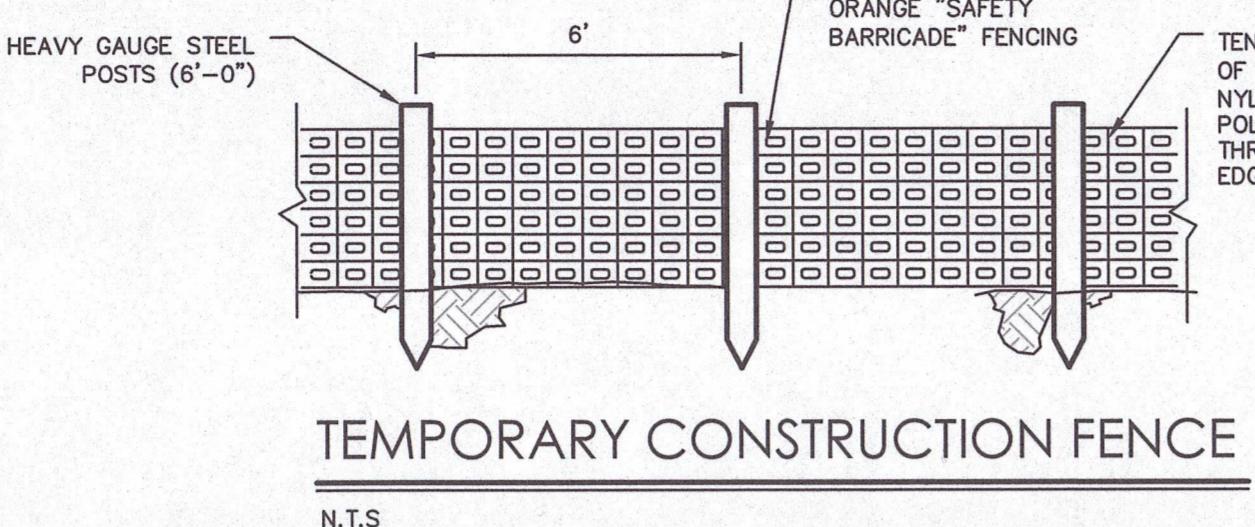
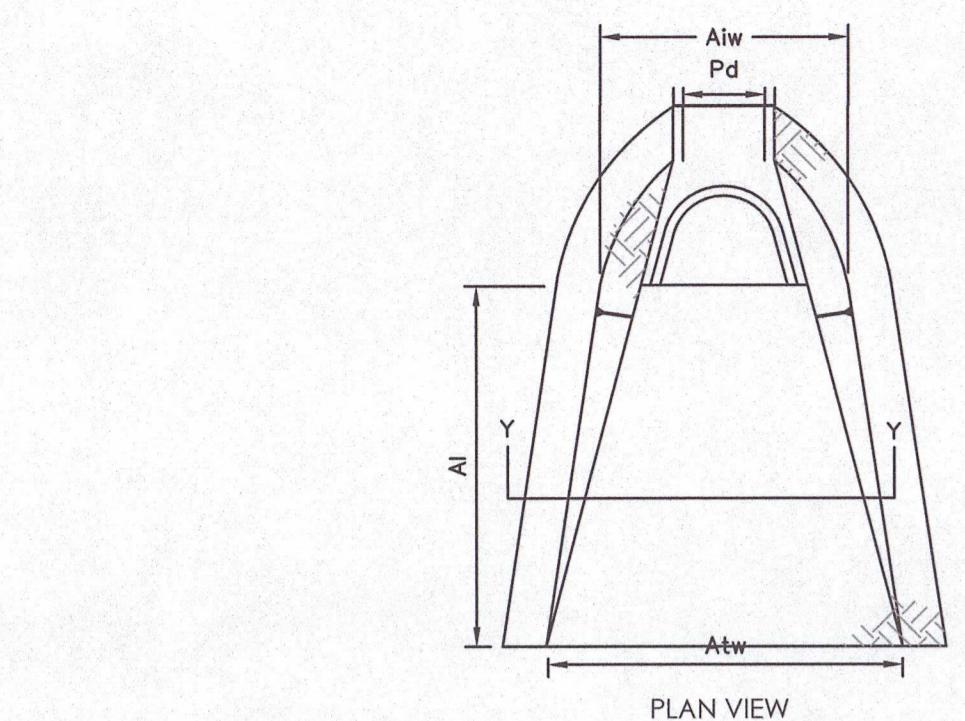
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SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.

MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING, LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.

STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP

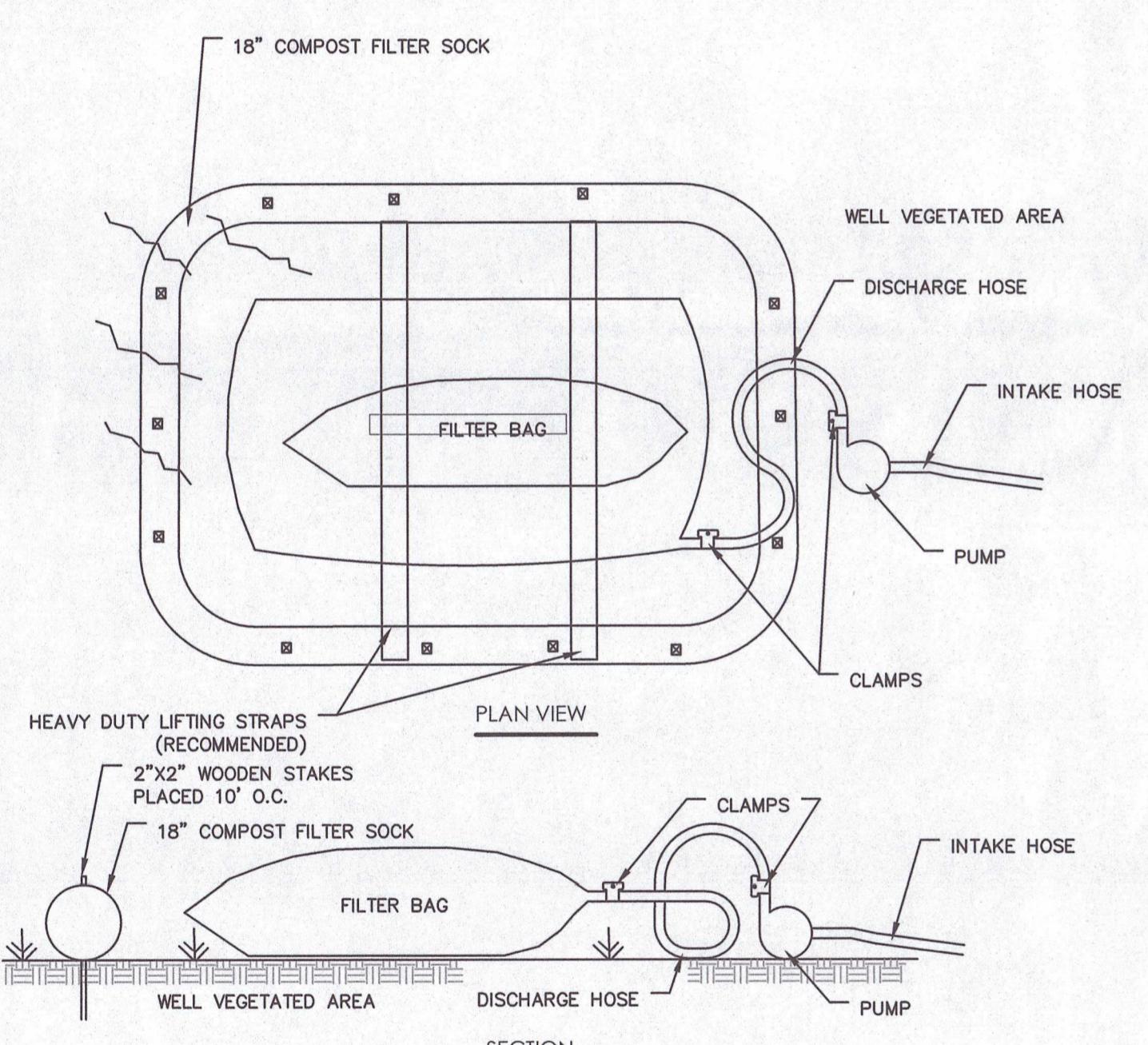


ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL DETAIL

N.T.S. PAEC-9-1



LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF BASINING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON SBASINS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HO OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

PUMPED WATER FILTER BAG WITH COMPOST SOCK RING DETAIL

N.T.S. PADEP-3-16

FILTER BAG INLET PROTECTION - TYPE M INLET DETAIL

N.T.S. PADEP-4-16

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength			26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-15)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

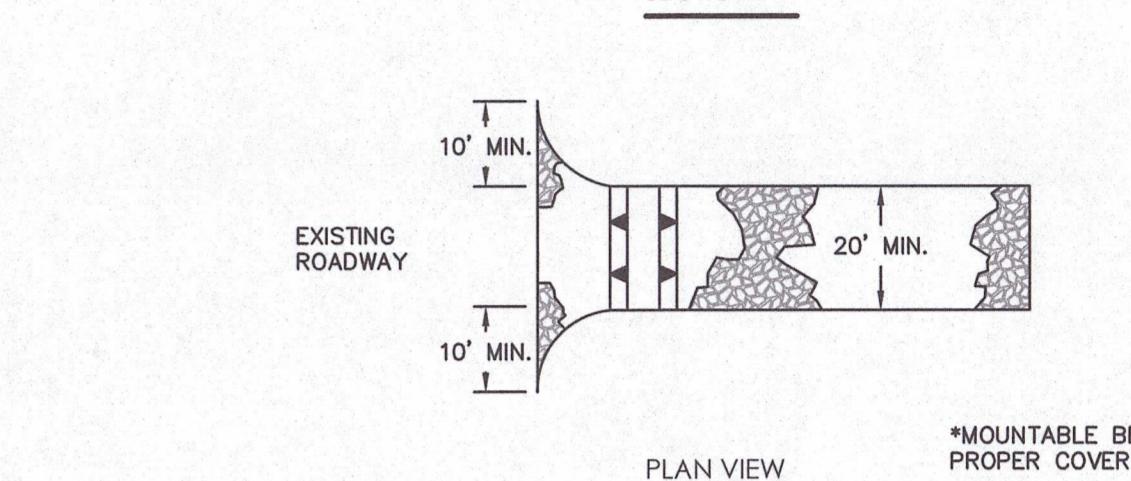
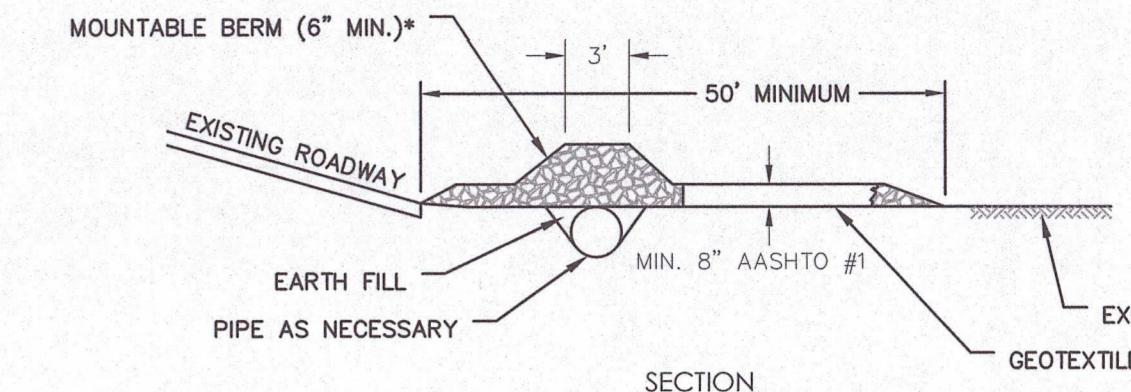
Two-ply systems

Inner Containment Netting

Outer Filtration Mesh

Sock fabrics composed of burlap may be used on projects lasting 6 months or less.

TABLE 4.2 COMPOST STANDARDS	
ORGANIC MATTER CONTENT	25%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FLIBROS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MG/MOS/OM) MAXIMUM



*MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

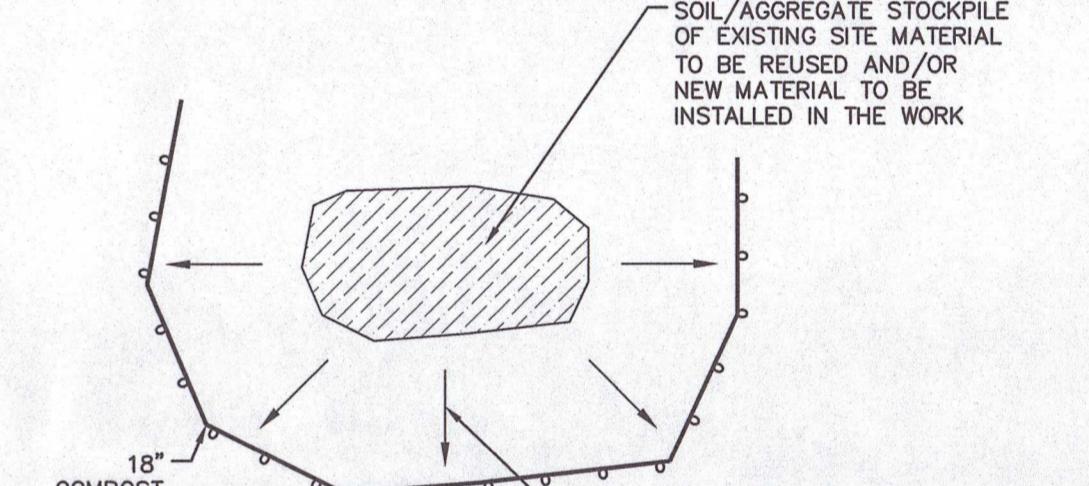
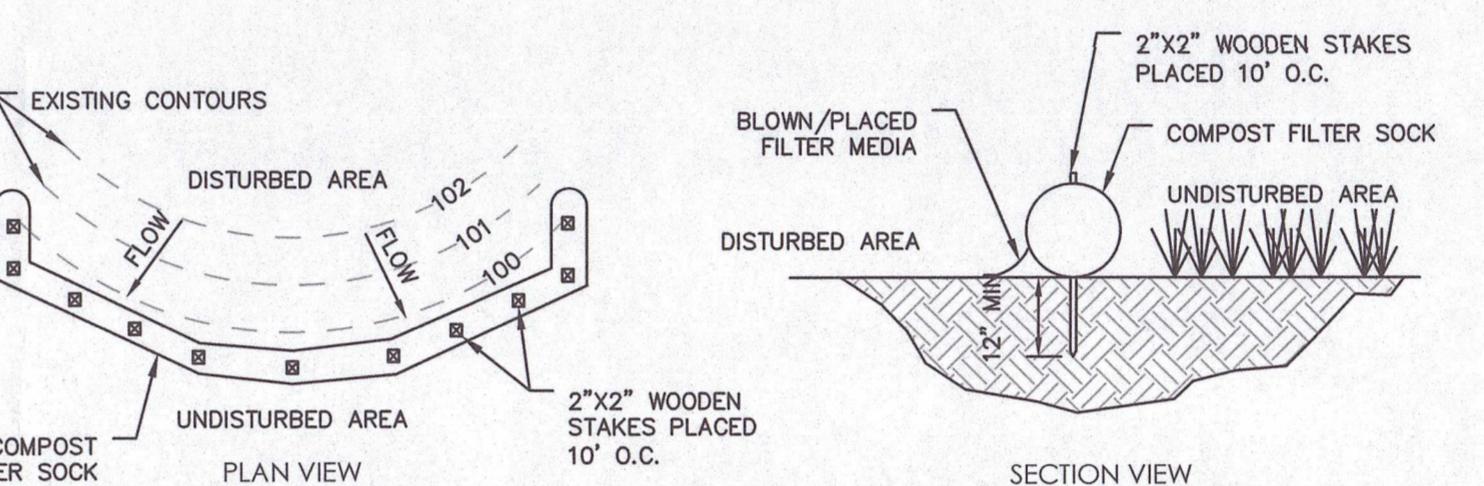
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF CONSTRUCTION ENTRANCE IS LOCATED ON A PAVED ROADWAY, THE ROADWAY SHALL BE MAINTAINED AS A ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE DETAIL

N.T.S. PADEP-3-1

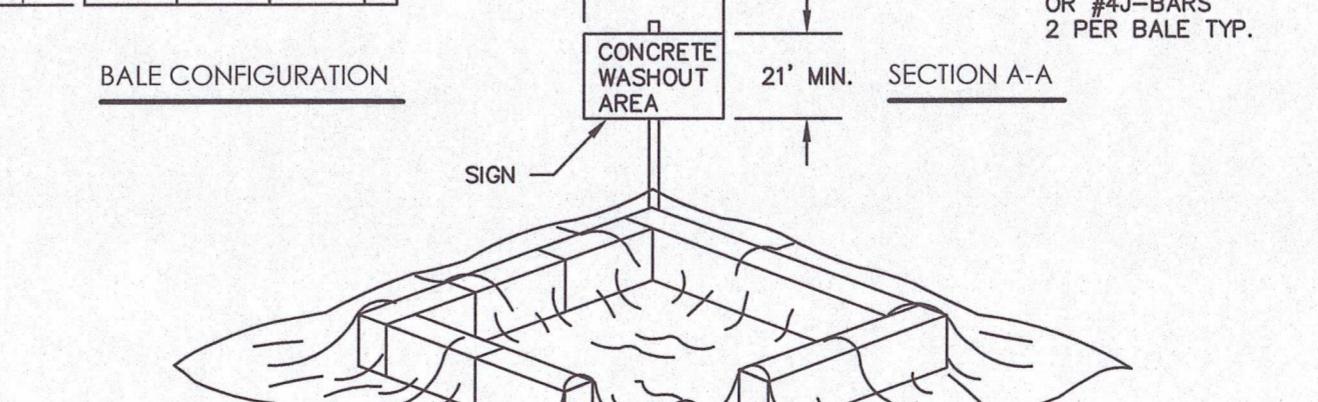
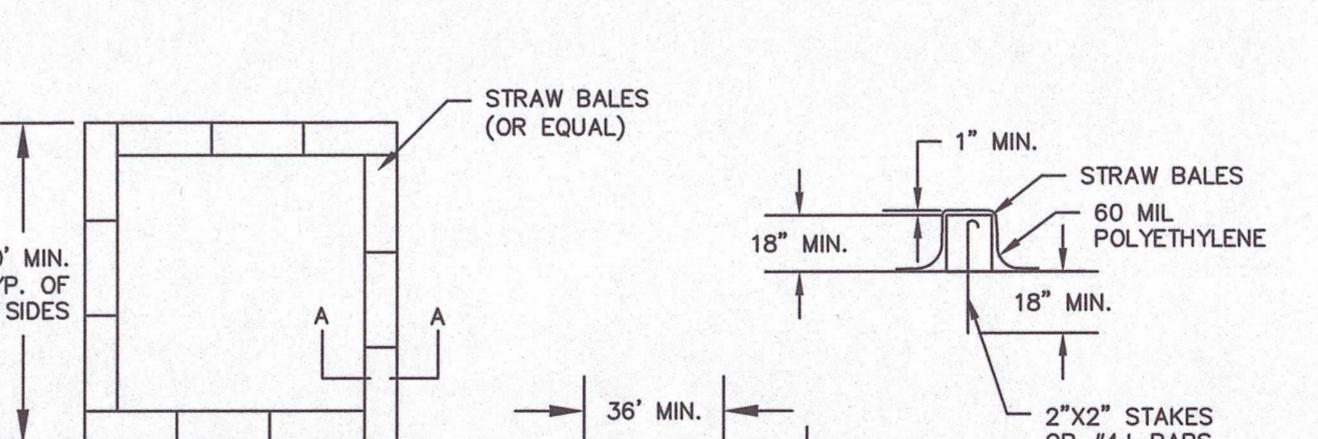
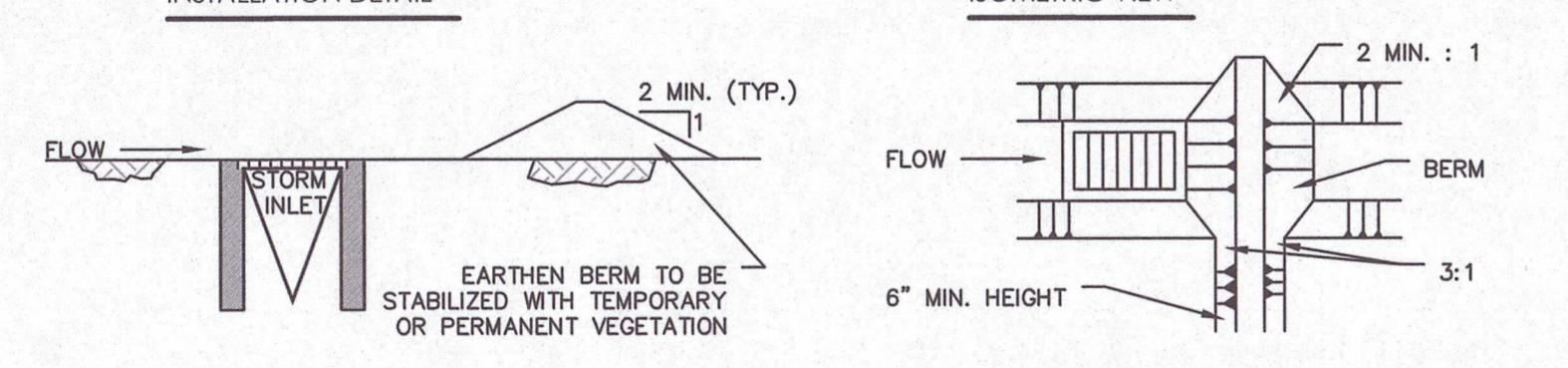
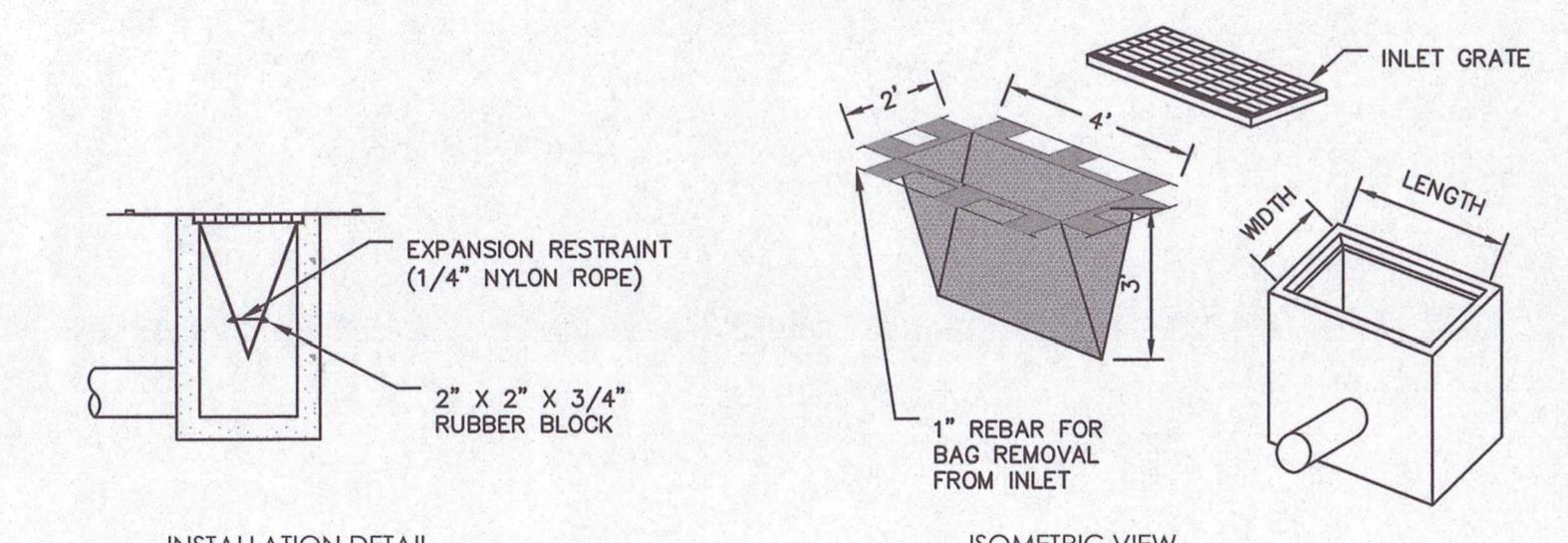


TEMPORARY TOPSOIL STOCKPILE

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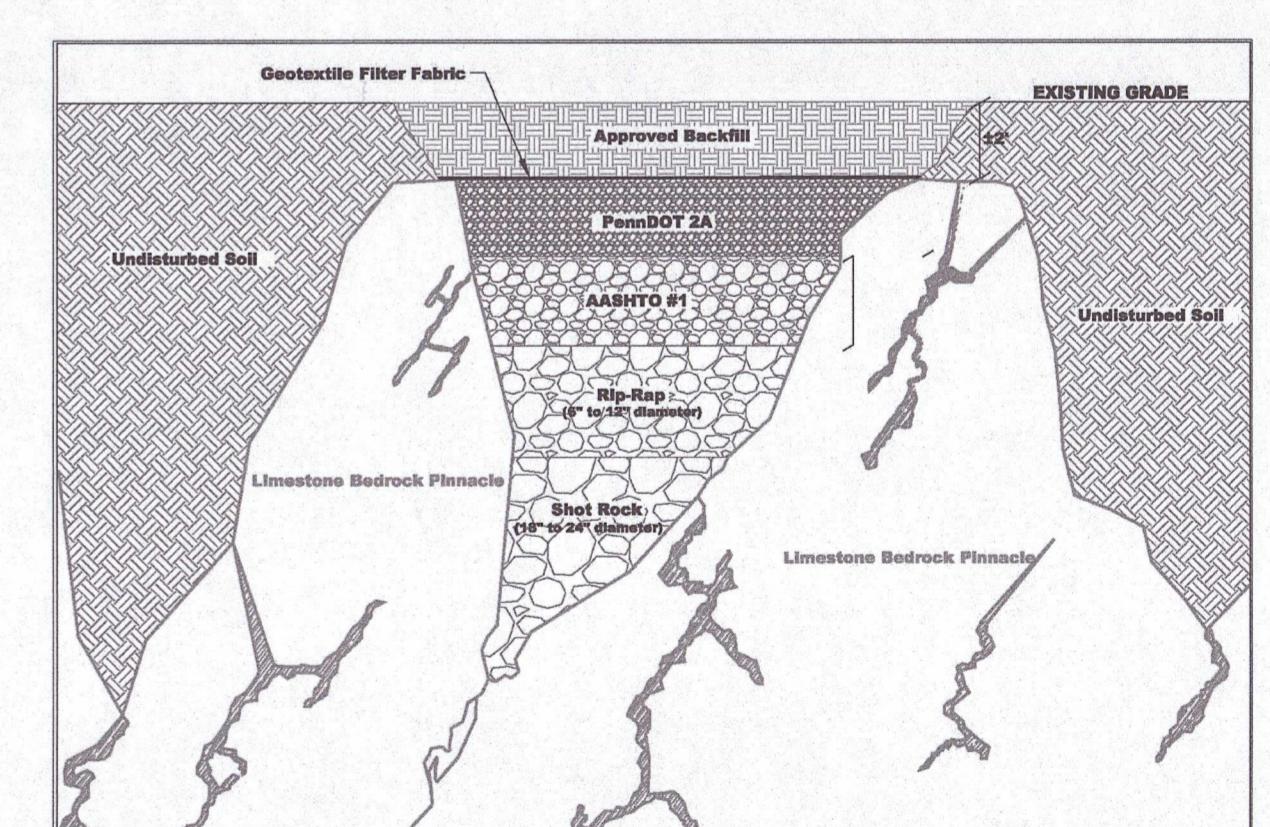
COMPOST FILTER SOCK DETAIL

N.T.S. PADEP-4-1



CONCRETE WASHOUT DETAIL

N.T.S.



NOTE:
1. SINKHOLE REMEDIATION METHODS USING DURING CONSTRUCTION SHALL BE RECOMMENDED BY OR OVERSEEN BY A PROFESSIONAL GEOLOGIST OR GEOTECHNICAL ENGINEER.

SINKHOLE REPAIR DETAIL

N.T.S.

