

FINAL LAND DEVELOPMENT PLAN

FOR

KRUMSVILLE ROAD CONVENIENCE STORE

FOR

HARMIKE INVESTMENTS, LLC

TOWNSHIP OF GREENWICH, BERKS COUNTY, PENNSYLVANIA

MAY 6, 2019

LAST REVISED: AUGUST 28, 2023

BERKS COUNTY PLANNING COMMISSION

BERKS COUNTY RECORDER OF DEEDS

OWNER'S AND ADDRESSES

- | | |
|--|--|
| 1. SITE - HARMIKE INVESTMENTS, LLC
1497 KRUMSVILLE ROAD
LENHARTSVILLE, PA. 19534 | 14. HARRY & NANCY W. HUMES
36 ZETTMAYER ROAD |
| 2. KONSTANTINOS A. TANTAROA JR.
1501 KRUMSVILLE ROAD | 15. MICHAEL D. & BARBARA V. MILLER
25 ZETTMAYER ROAD |
| 3. DANIEL C. DRY
35 BOWER ROAD | 16. SCOTT J. KERSHNER
46 ZETTMAYER ROAD |
| 4. KUTZTOWN AREA HIGH SCHOOL
1457 KRUMSVILLE ROAD | 17. SCOTT J. KERSHNER
46 ZETTMAYER ROAD |
| 5. ROY J. & SUSAN J. KISTLER
1427 KRUMSVILLE ROAD | 18. NEW JERUSALAM ZION UCC
1456 KRUMSVILLE ROAD |
| 6. BONNIE K. BONITA
1423 KRUMSVILLE ROAD | 19. KEN W. MERKEL
1430 KRUMSVILLE ROAD |
| 7. EARL R. OSTERSTOCK
BOWER ROAD | 20. JOYCE C. DIETRICH &
SHIRLEY M. TALLMAN
KRUMSVILLE ROAD |
| 8. JEFFERY L. & KAY L. GERNERT
BOWER ROAD | 21. NATHAN W. TALLMAN &
DAVID C. DIETRICH
KRUMSVILLE ROAD |
| 9. FRANK WILLIAM DONCHEZ JR.
36 BOWER ROAD | 22. DIETRICH FAMILY FARM L.P.
OLD ROUTE 22 |
| 10. GERALD & DENISE SCHULER
30 BOWER ROAD | 23. DIETRICH FAMILY FARM L.P.
660 OLD ROUTE 22 |
| 11. DAVIS T. & KIM L. ROTHERMEL
20 BOWER ROAD | 24. COSTAS & DESPINA EFTHYMIADIS
650 OLD ROUTE 22 |
| 12. MICHELLE L. MOSHER
10 BOWER ROAD | 25. STEPHEN M. SCHMAYER
1536 KRUMSVILLE ROAD |
| 13. KONSTANTINOS A. TANTAROA JR.
BOWER ROAD | 26. THOMAS W. VAN DUREN
696 OLD ROUTE 22 |

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22 SHEETS IN SET	

LIST OF SUPPLEMENTAL PLANS	
SHEET NO.	TITLE
(CS 1.1 - ES 10.4) 7 SHEETS	EROSION & SEDIMENTATION CONTROL PLAN LANDWORKS CIVIL DESIGN (LAST REV. 5/19/23)
(CS 1.1 - SW 12.3) 6 SHEETS	POST-CONSTRUCTION & STORMWATER MANAGEMENT PLAN LANDWORKS CIVIL DESIGN (LAST REV. 5/19/23)
(1 - 21) 21 SHEETS	HIGHWAY OCCUPANCY PERMIT PLANS SYSTEM DESIGN ENGINEERING, INC. (LAST REV. 1/9/23)
(1 - 10) 10 SHEETS	EROSION & SEDIMENTATION CONTROL PLAN SYSTEM DESIGN ENGINEERING, INC. (LAST REV. 5/18/23)

CONDITIONAL USE APPROVAL:

AT THEIR MAY 7, 2018 REGULAR MEETING, THE TOWNSHIP OF GREENWICH BOARD OF SUPERVISORS APPROVED CONDITIONAL USE ALLOWING A CONVENIENCE STORE WITH FUELING FACILITIES WITHIN THE COMMERCIAL DISTRICT (C) ZONE.

CONDITIONS AS FOLLOWS:

- THE APPLICANT SHALL OBTAIN ANY APPLICABLE AND REQUIRED ZONING RELIEF UNDER THE TOWNSHIP OF GREENWICH ZONING ORDINANCE;
- THE APPLICANT SHALL PREPARE, SUBMIT, AND RECEIVE APPROVAL OF A LAND DEVELOPMENT PLAN UNDER THE APPLICABLE TOWNSHIP OF GREENWICH ORDINANCES, INCLUDING THE APPLICABLE TOWNSHIP STORMWATER ORDINANCES, AND ANY OTHER APPLICABLE LAW;
- THE APPLICANT SHALL OBTAIN ANY NECESSARY PENNDOT HIGHWAY OCCUPANCY PERMIT(S);
- THE APPLICANT SHALL MEET ANY APPLICABLE BUILDING CODE REQUIREMENTS FOR THE PROPOSED USE;
- THE APPLICANT SHALL NOT ALLOW ANY INDIVIDUAL TO PARK ON ANY PUBLIC ROADWAY FOR ACCESS TO THE PROPERTY;
- THE APPLICANT SHALL PAY FOR, INSTALL, AND MAINTAIN SIGNAGE TO THE SATISFACTION OF THE TOWNSHIP IN REGARD TO THE PUBLIC ROADWAY PARKING RESTRICTION. ANY SIGNAGE POSTED BY THE APPLICANT IN REGARD TO THIS CONDITION WILL NOT COUNT AGAINST THE APPLICANT'S PERMITTED SIGN USAGE UNDER THE TOWNSHIP OF GREENWICH ORDINANCES;
- THE APPLICANT SHALL NOT PERMIT ANY TRACTOR TRAILERS ON ITS PROPERTY WITH THE EXCEPTION OF FUEL DELIVERY TRUCKS; **
- THE APPLICANT SHALL NOT ALLOW THE IDLING OF DIESEL VEHICLES, VEHICLES IN EXCESS OF 5,000 POUNDS, OR ANY OTHER VEHICLES THAT CREATE A SAFETY CONCERN TO THE TOWNSHIP, AS PERMITTED BY LAW, WITH THE EXCEPTION OF DELIVERY VEHICLES FOR THE APPLICANT'S PROPOSED USE;
- THE APPLICANT SHALL POST SIGNAGE IN REGARD TO THE RESTRICTION OF TRACTOR TRAILERS AND IDLING ON THE PROPERTY, AS STATED IN THE PREVIOUS CONDITIONS. ANY SIGNAGE POSTED BY THE APPLICANT IN REGARD TO THIS CONDITION WILL NOT COUNT AGAINST THE APPLICANT'S PERMITTED SIGN USAGE UNDER THE TOWNSHIP OF GREENWICH ORDINANCES;
- SHOULD THE APPLICANT CHOOSE TO ADVERTISE THAT DIESEL FUEL IS SOLD ON ITS PROPERTY, SAID ADVERTISEMENT SHOULD STATE "AUTO-DIESEL" INSTEAD OF "DIESEL";
- THE APPLICANT SHALL COMPLY WITH ANY APPLICABLE REGULATION, CODE, ORDINANCE, OR LAW IN THE PLANNING AND OPERATION OF ITS PROPOSED USE;
- APPLICANT IS BOUND BY AND SHALL COMPLY WITH ALL OF THE TESTIMONY, APPLICANT'S EXHIBITS AND THE EVIDENCE PRODUCED AT THE HEARING;
- IMPLEMENTATION OF THE RELIEF GRANTED HEREBY SHALL BE COMMENCED NO LATER THAN ONE (1) YEAR FROM THE DATE HEREOF.

** AT THE MAY 7, 2018 BOARD OF SUPERVISORS MEETING, CONDITION #7 WAS MODIFIED ALLOW FUEL AND DELIVERY TRUCKS ASSOCIATED WITH THE CONVENIENCE STORE USE.

REQUESTED WAIVERS / DEFERRAL:

AT A MEETING ON NOVEMBER 4, 2019 THE TOWNSHIP OF GREENWICH BOARD OF SUPERVISORS APPROVED THE FOLLOWING WAIVER REQUESTS FROM THE TOWNSHIP OF GREENWICH SUBDIVISION AND LAND DEVELOPMENT ORDINANCE:

- WAIVERS:**
- SECTION 4.1(G) - DRIVEWAY SITE DISTANCE
 - APPENDIX VI, SECTION 4, §4.1(M) MINIMUM/MAXIMUM DRIVEWAY RADI
 - ARTICLE VI, SECTION 602.3 - CURBING (KRUMSVILLE ROAD)
- DEFERRALS:**
- ARTICLE VI, SECTION 602.4 - SIDEWALK

LIST OF UTILITIES

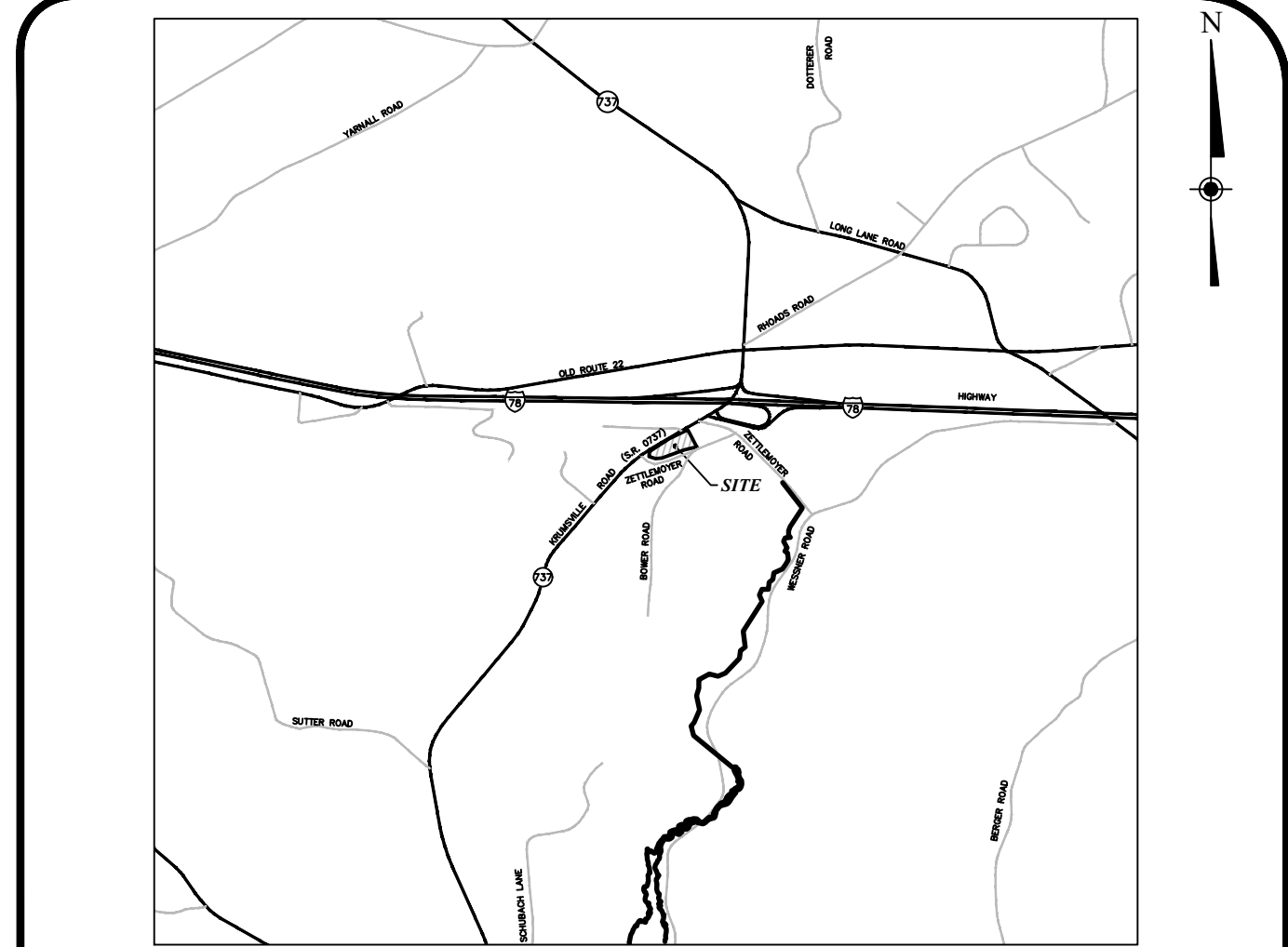
- | | |
|--|--|
| TOWNSHIP OF GREENWICH
775 OLD ROUTE 22
LENHARTSVILLE, PA. 19534
(610) 756-6707 | SUNOCO PIPELINE
525 FRITZTOWN ROAD
SINKING SPRINGS, PA 19608
(610) 670-3200 |
| PEG BANDWIDTH
107 ST. FRANCIS STREET
SUITE 1800
MOBILE, AL 36602
(251) 622-1170 | MED-ED FIRSTENERGY CORP.
78 S. MAIN ST.
AKRON, OH. 44308-1890
1 (888) 544-4817
CONTACT: OFFICE PERSONNEL |
| SVC. ELECT. CATV
6400 PERKIOMEN AVE.
PO BOX 8
BIROSBORO, PA 19508
(610) 582-3094 | VERIZON NORTH
2441 W. GRANDVIEW BLVD.
ERIE, PA. 16506
CONTACT: MICHAEL GEARY
MICHAEL.GEARY@VERIZON.COM |

LEGAL OWNER: / APPLICANT:

HARMIKE INVESTMENTS, LLC
PARCEL ID: 45-5445-01-18-3596
SOURCE OF TITLE: INSTRUMENT NO. 2016005220
TRACT AREA: 1.9085 ACRES
(AFTER RIGHT-OF-WAY TAKE)
CONTACT: MR. VIKRAM SINGH
5 JASON COURT
PARLIN, NJ 08859
(646) 541-1054

SITE ADDRESS:

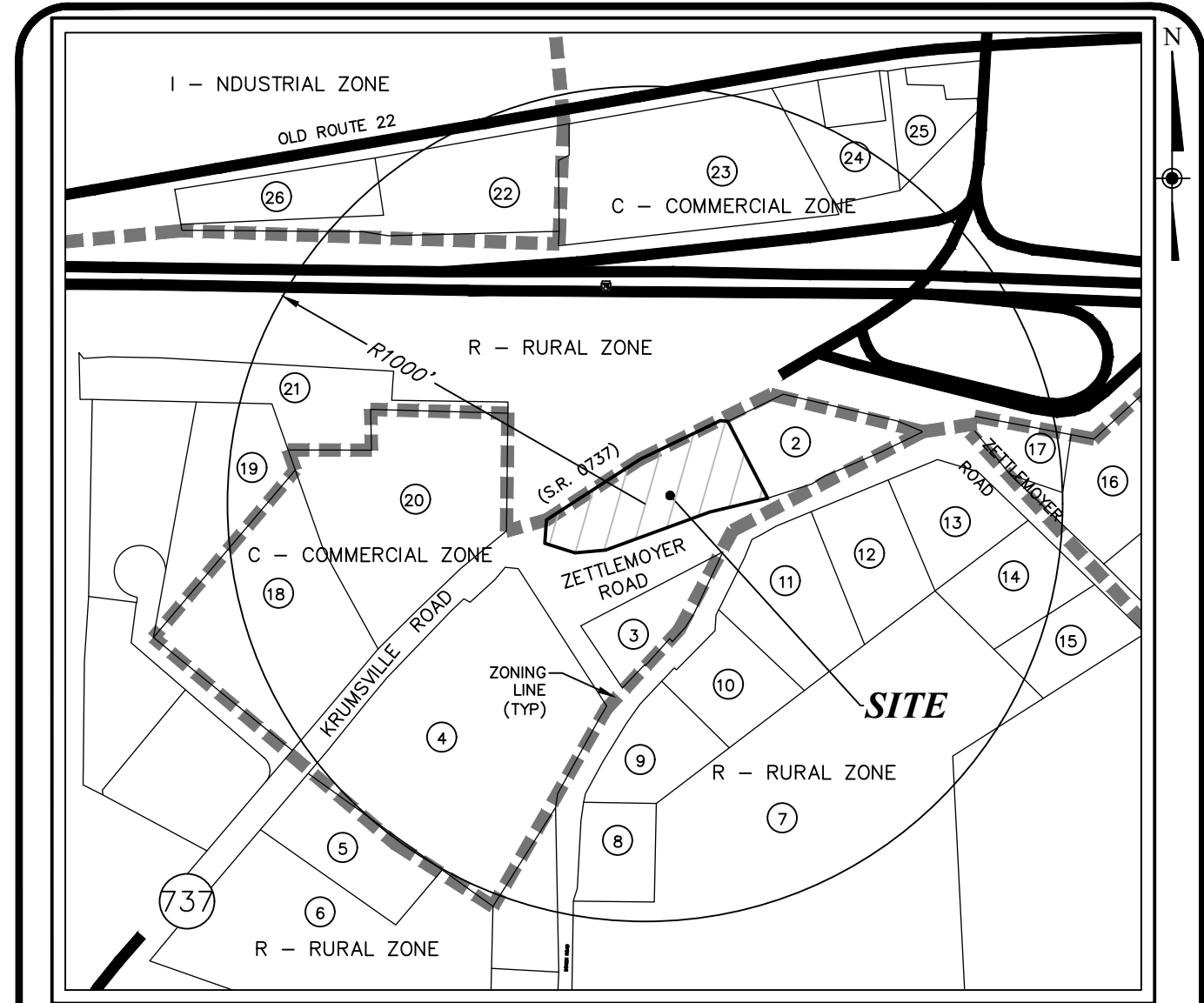
1497 KRUMSVILLE ROAD
LENHARTSVILLE, PA 19534



LOCATION MAP

SCALE: 1" = 800'

UNIFORM PARCEL IDENTIFIER: # 45-000-13-0013



SITE LOCATION MAP

SCALE: 1" = 400'

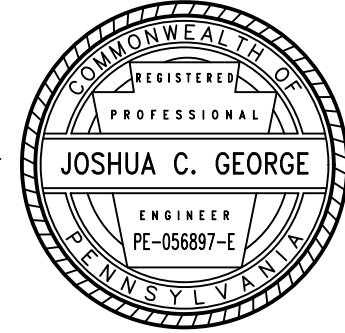
TOWNSHIP OF GREENWICH PLANNING COMMISSION

ENGINEER'S CERTIFICATION

AT A MEETING HELD ON _____, 20____, THE PLANNING COMMISSION OF TOWNSHIP OF GREENWICH, RECOMMENDED FOR APPROVAL THE SUBDIVISION/LAND DEVELOPMENT PLAN OF THE PROPERTY OF HARMIKE INVESTMENTS, LLC, AS SHOWN HEREON.

I JOSHUA C. GEORGE, P.E. ON THIS DATE 8/28/23, HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE MAIDEN CREEK WATERSHED ACT 167 STORMWATER MANAGEMENT ORDINANCE.

AUGUST 28 20 23
JOSHUA C. GEORGE, P.E.
REG. NO. PE-056897-E



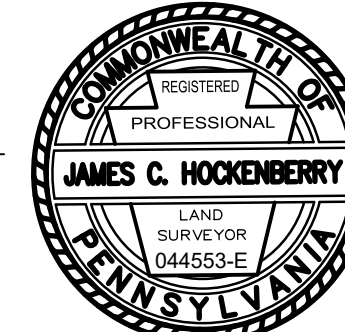
TOWNSHIP OF GREENWICH BOARD OF SUPERVISORS

CERTIFICATION OF ACCURACY

AT A MEETING ON _____, 20____, THE GOVERNING BODY OF THE TOWNSHIP OF GREENWICH, BY RESOLUTION DULY ENACTED, APPROVED THE SUBDIVISION/LAND DEVELOPMENT PLAN OF THE PROPERTY OF HARMIKE INVESTMENTS, LLC, AS SHOWN HEREON.

I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON, AS WELL AS ALL DRAWINGS BEARING MY SEAL, ARE TRUE AND CORRECT TO THE ACCURACY REQUIRED BY THE TOWNSHIP OF GREENWICH SUBDIVISION AND LAND DEVELOPMENT ORDINANCE, AND WERE PREPARED BY ME OR UNDER MY DIRECTION AND WHICH I ACCEPT FULL RESPONSIBILITY.

AUGUST 28 20 23
JAMES C. HOCKENBERRY, P.L.S.
REG. NO. 044553-E



CERTIFICATE OF OWNERSHIP, ACKNOWLEDGEMENT OF PLAN AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF BERKS

ON THIS THE _____ DAY OF _____, 20____, BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED VIKRAM SINGH, WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT HE IS THE PRESIDENT OF HARMIKE INVESTMENTS, LLC, WHICH IS THE OWNER OF THE PROPERTY SHOWN ON THIS PLAN, THAT THE LAND DEVELOPMENT PLAN THEREOF WAS MADE AT HIS/ITS DIRECTION, AND THAT HE ACKNOWLEDGES THE SAME TO BE HIS/ITS ACT AND PLAN DESIRES THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW, AND THAT ALL STREETS AND OPEN SPACES, SHOWN AND NOT HERETOFORE DEDICATED ARE HEREBY DEDICATED TO THE PUBLIC USE.

IN WITNESS WHEREOF, I HERETO SET MY HAND AND OFFICIAL SEAL:

NOTARY PUBLIC

MY COMMISSION EXPIRES:

ACT 287

LANDWORKS CIVIL DESIGN, LLC HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT 287 OF 1974, OF THE PENNSYLVANIA LEGISLATURE, IT HAS PERFORMED THE FOLLOWING IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THESE DRAWINGS:

- PURSUANT TO SECTION 4, CLAUSE (2) OF SAID ACT, LANDWORKS CIVIL DESIGN, LLC REQUESTED FROM EACH USER'S OFFICE DESIGNATED ON SUCH LIST PROVIDED BY THE ONE CALL SYSTEM NOTIFICATION, THE INFORMATION PRESCRIBED BY SECTION 2, CLAUSE (4) OF SAID ACT, NOT LESS THAN (10) NOR MORE THAN (90) WORKING DAYS BEFORE FINAL DESIGN IS TO BE COMPLETED.
- PURSUANT TO SECTION 4, CLAUSE (5) OF SAID ACT, LANDWORKS CIVIL DESIGN, LLC HAS MET THEIR OBLIGATIONS OF CLAUSE (2) BY CALLING THE ONE CALL SYSTEM SERVING THE LOCATION WHERE EXCAVATION IS TO BE PERFORMED.
- PURSUANT TO SECTION 4, CLAUSE (3) OF SAID ACT, LANDWORKS CIVIL DESIGN, LLC HAS SHOWN UPON THESE DRAWINGS "THE POSITION AND TYPE OF EACH LINE, AS DERIVED PURSUANT TO THE REQUEST MADE AS REQUIRED BY CLAUSE (2), THE SERIAL NUMBER PROVIDED BY THE ONE CALL SYSTEM, THE TOLL-FREE ONE CALL SYSTEM PHONE NUMBER, AND THE NAME OF THE USER, THE USER'S DESIGNATED OFFICE ADDRESS AND PHONE NUMBER AS SHOWN ON THE LIST REFERRED TO IN SECTION 4, CLAUSE (5) OF SAID ACT."

AND LANDWORKS CIVIL DESIGN, LLC DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID REQUEST AND AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE, BUT LANDWORKS CIVIL DESIGN, LLC IS REFLECTING SAID INFORMATION ON THESE DRAWINGS ONLY DUE TO THE REQUIREMENTS OF THE SAID ACT NO. 181 OF 2006.

DATE: 05/08/2016

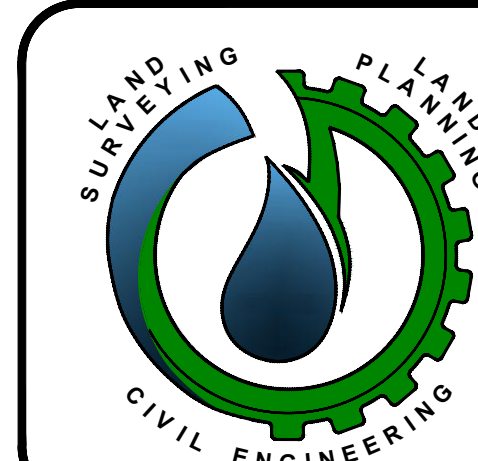
ONE CALL SYSTEM SERIAL NUMBER: #20161272269

CALL BEFORE YOU DIG
PENNSYLVANIA LAW REQUIRES
(9) WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND (10) WORKING
DAYS IN DESIGN STAGE - STOP CALL



PROJECT NO.
22-0117-001

SHEET #
CS 1.1



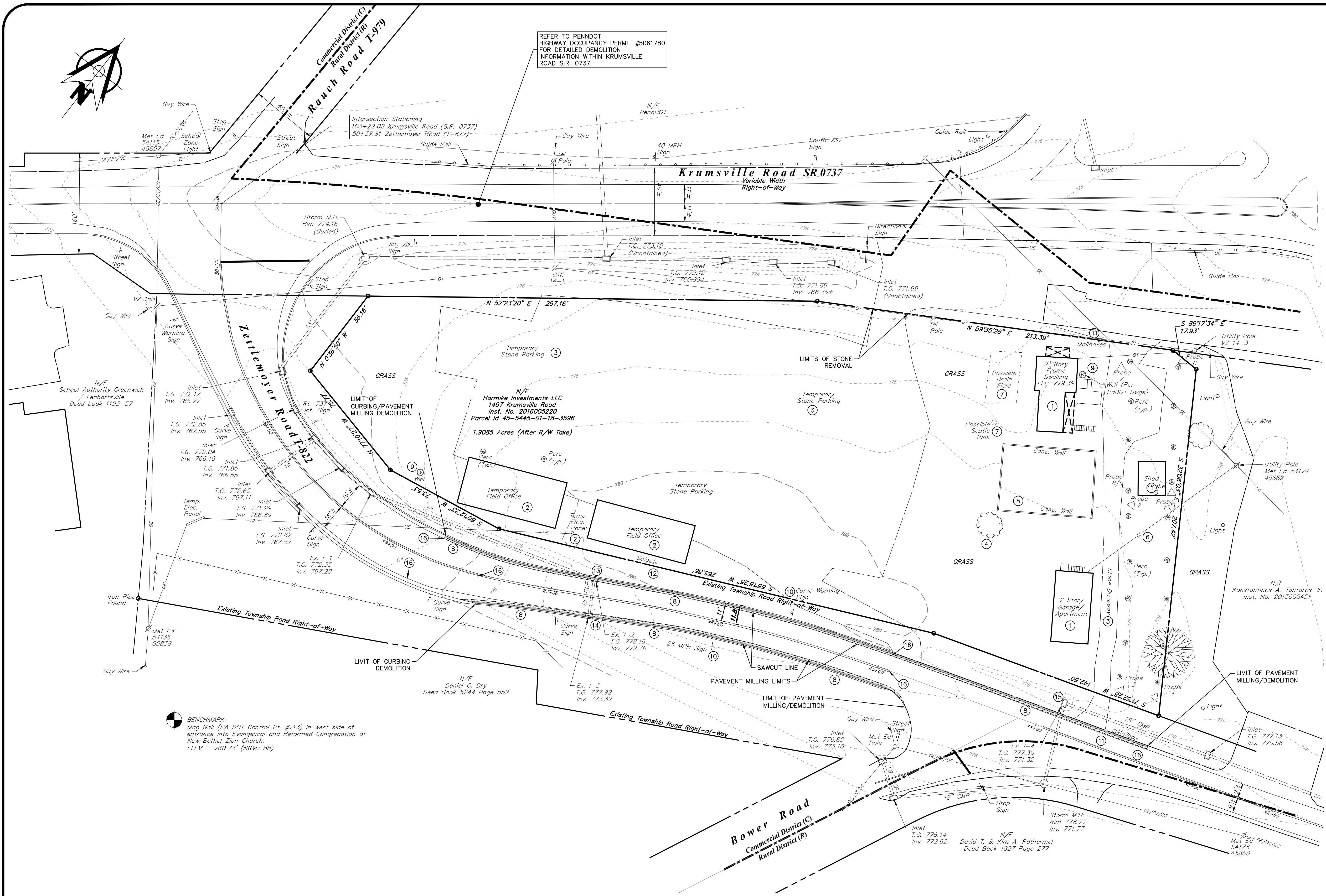
LANDWORKS
Civil Design, LLC
land development consultants

3461 MARKET STREET - SUITE 302 CAMP HILL, PA 17011
1406 3RD AVENUE - SUITE 200 YORK, PA 17403
p (717) 891-1195 www.landworkscsd.com



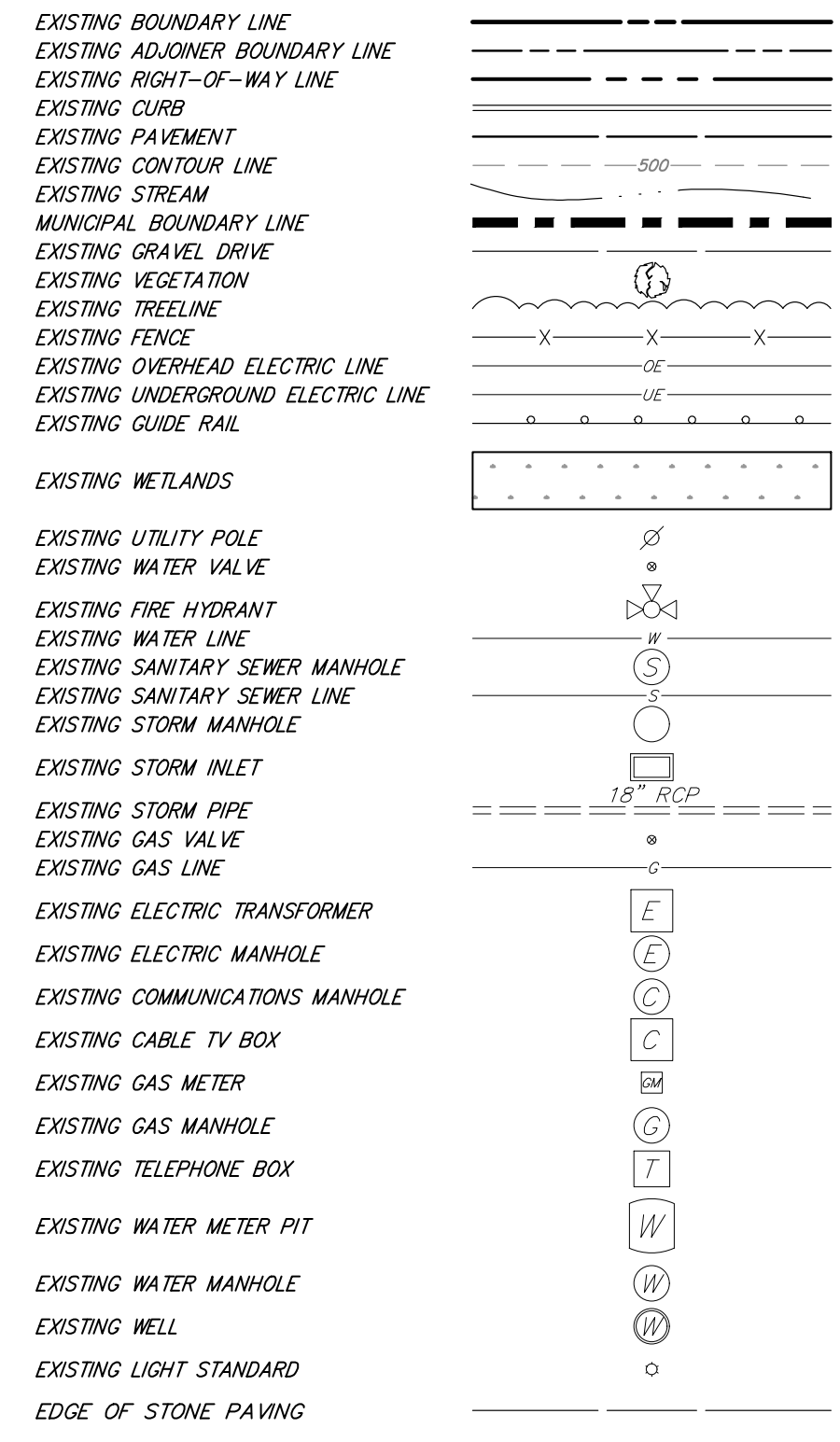
REFER TO PENNDOT HIGHWAY OCCUPANCY PERMIT #5061780 FOR DETAILED DEMOLITION INFORMATION WITHIN KRUMSVILLE ROAD S.R. 0737

Intersection Stationing
103+22.02 Krumsville Road (S.R. 0737)
50+37.81 Zettlemoyer Road (T-822)



BENCHMARK:
Mag Nail (PA DOT Control Pt. #713) in west side of entrance into Evangelical and Reformed Congregation of New Bethel Zion Church.
ELEV = 760.73' (NGVD 88)

LEGEND



PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
CHECKED -	JCG

NO.	DATE	REVISION
11	08/28/23	REVISED PER TWP. COMMENTS
10	06/19/23	REVISED PER BCCD COMMENTS
9	04/20/23	REVISED PER PADOT HOP PLANS
8	1/11/22	REVISED PER BCCD NPDES COMMENTS
7	06/30/22	ADDED PROPOSED H.O.P. IMPROVEMENTS
6	09/14/21	ADDED E.V. CHARGING STATIONS
5	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS

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CIVIL DESIGN, LLC
land development consultants

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DEMOLITION LEGEND

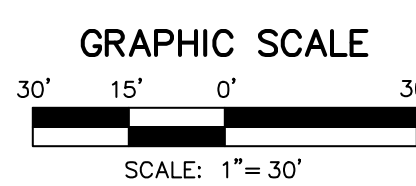
ITEM NO.	DESCRIPTION	DEMOLITION CRITERIA
1	EXISTING BUILDINGS	TO BE REMOVED
2	EXISTING FIELD OFFICES AND ELECTRICAL SERVICE	TO BE REMOVED BY PENNDOT SITE CONTRACTOR
3	STONE DRIVEWAY & STONE & CONCRETE PARKING	TO BE REMOVED
4	LANDSCAPING	TO BE REMOVED
5	CONCRETE WALL	TO BE REMOVED
6	ELECTRICAL SERVICE	TO BE REMOVED
7	SEPTIC SYSTEM	TO BE REMOVED
8	EXISTING CURB AND PAVEMENT	SAW CUT AND REMOVED
9	EXISTING WELL	TO BE CAPPED AND ABANDONED
10	EXISTING SIGN	TO BE RELOCATED
11	EXISTING MAILBOXES	TO BE REMOVED OR RELOCATED
12	EXISTING WATER SPIGOT	TO BE REMOVED
13	EXISTING INLET	REMOVE INLET TOP AND REPLACE WITH SOLID TOP AND MANHOLE LID
14	EXISTING INLET	REMOVE
15	EXISTING INLET	REMOVE INLET TOP / REPLACE WITH TYPE 'M' TOP
16	LIMITS OF ROADWAY STRIPING	TO BE REMOVED

GENERAL NOTES

- BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION DEPICTED ON THIS PLAN HAS BEEN DERIVED FROM A FIELD SURVEY BY JAMES HOCKENBERRY, PLS PERFORMED IN JANUARY, 2018.
- HORIZONTAL DATUM: NAD 83 (N.S.R.S. 2007 PA SOUTH ZONE GRID)
- VERTICAL DATUM: NAVD 88
- THE TOTAL AREA OF THE SUBJECT PROPERTY IS 1.9085 ACRES AFTER RIGHT-OF-WAY TAKING.
- THE LOCATION OF UTILITIES AS SHOWN ON THIS PLAN IS BASED ON ABOVE GROUND INDICATIONS, FIELD OBSERVATIONS, RECORD DRAWINGS AND THE RESULT OF A PA ONE CALL NOTIFICATION. AS SUCH, THE ACTUAL LOCATION OF UNDERGROUND UTILITIES MAY VARY FROM THAT SHOWN ON THE PLAN.
- PRIOR TO ANY EARTHMOVING ACTIVITIES ON THE PROPERTY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES IN ACCORDANCE WITH ACT 287 TO VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES.
- ONLY THOSE PROPERTY CORNERS THAT WERE FOUND OR SET AS PART OF THIS SURVEY ARE NOTED AS SUCH ON THE SURVEY PLAN.
- THERE ARE NO REGULATORY WETLANDS ON THE SUBJECT PROPERTY.
- THERE ARE NO REGULATORY FLOODPLAIN AREAS LOCATED ON THE SUBJECT PROPERTY PER BERKS COUNTY FLOOD INSURANCE RATE MAP NO. 42201C0185G DATED JULY, 3 2012.
- THE PLAN WAS COMPLETED WITHOUT THE BENEFIT OF A TITLE REPORT AND AS SUCH MAY BE SUBJECT TO UNKNOWN EASEMENTS, RIGHTS-OF-WAY, COVENANTS AND OTHER ENCUMBRANCES EITHER RECORDED OR UNRECORDED.

DEMOLITION NOTES:

- ANY MATERIALS/STRUCTURES REMOVED FROM THE PROJECT AREA SHALL BE DISPOSED OF IN A PROPER AND RESPONSIBLE MANNER, SUBJECT TO APPROVAL BY THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES/STRUCTURES THAT ARE TO REMAIN.
- ALL STRUCTURES/LINES/PIPES IDENTIFIED "TO BE REMOVED" THAT ARE WITHIN TEN (10) FEET OF ANY PROPOSED OR FUTURE BUILDING SHALL BE REMOVED IN THEIR ENTIRETY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT ALL DEMOLITION AND/OR EARTH MOVING BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS AS SET FORTH IN THE FEDERAL CLEAN STREAMS LAW OR ANY OTHER FEDERAL STATE OR MUNICIPAL REGULATIONS.
- DURING DEMOLITION AND CONSTRUCTION OF THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC AROUND THE CONSTRUCTION AREA.
- ALL EXISTING TREES & SHRUBS WHICH INTERFERE WITH THE PROPOSED SITE LAYOUT AS DESIGNED SHALL BE REMOVED.
- PROJECT ENGINEER SHALL BE CONTACTED UPON THE DISCOVERY OF ALL SUB-SURFACE ANOMALIES (WELLS, UTILITIES, ETC.) NOT IDENTIFIED HEREON.
- ALL BUILDING MATERIALS AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE PA. DEPARTMENT ENVIRONMENTAL PROTECTION'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE CHAPTER 260, §8200.1 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.



FINAL


EXISTING CONDITIONS & DEMOLITION PLAN
FOR
KRUMSVILLE ROAD CONVENIENCE STORE
FOR
HARMIKE INVESTMENTS, LLC
GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.	22-0117-001
DATE:	05-06-19
SCALE:	1" = 30'
SHEET	EX 2.1

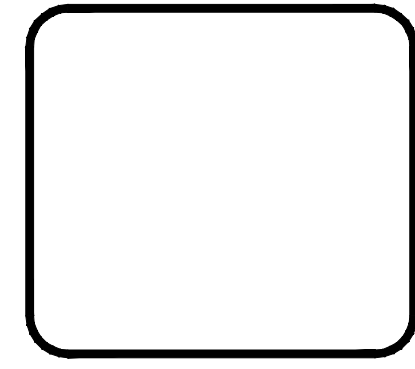
PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
CHECKED -	JCG

NO.	DATE	REVISION
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4		
3		
2		
1		

LANDWORKS
CIVIL DESIGN, LLC
land development consultants

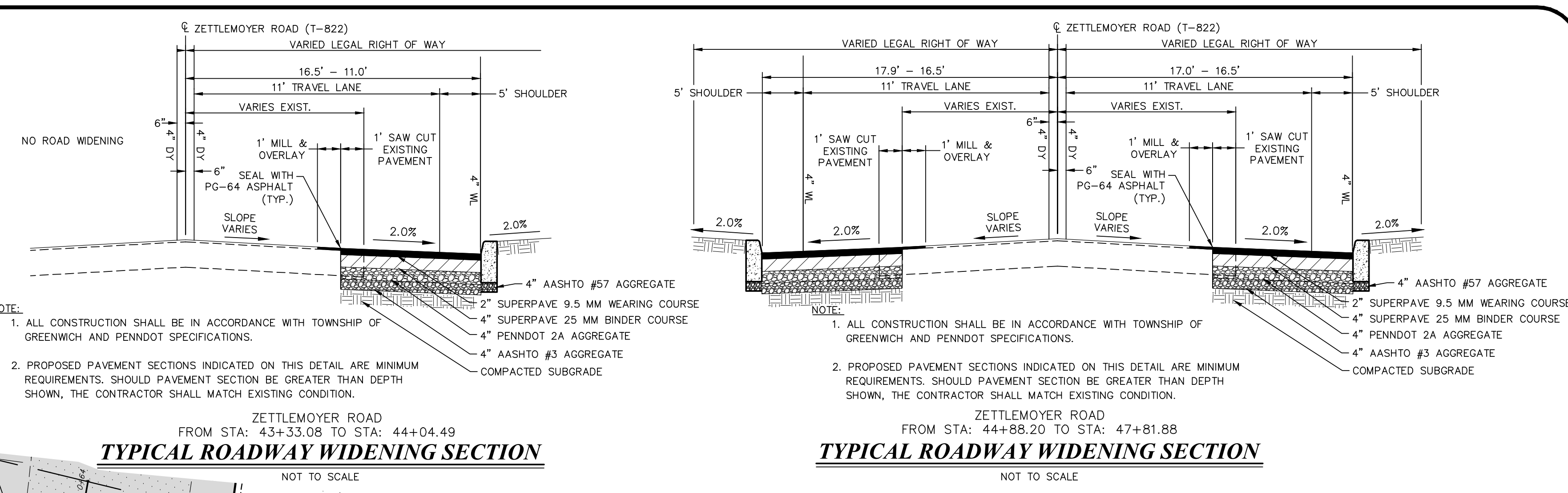


3641 MARKET STREET - SUITE 302 • CAMP HILL, PA 17011
P (717) 579-0074
www.landworksllc.com



ZETTMEOYER ROADWAY IMPROVEMENT PLAN
FOR
KRUMSVILLE ROAD CONVENIENCE STORE
FOR
HARMIKE INVESTMENTS, LLC
GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.	22-0117-001
DATE:	05-06-19
SCALE:	1" = 20'
SHEET	SP 3.2

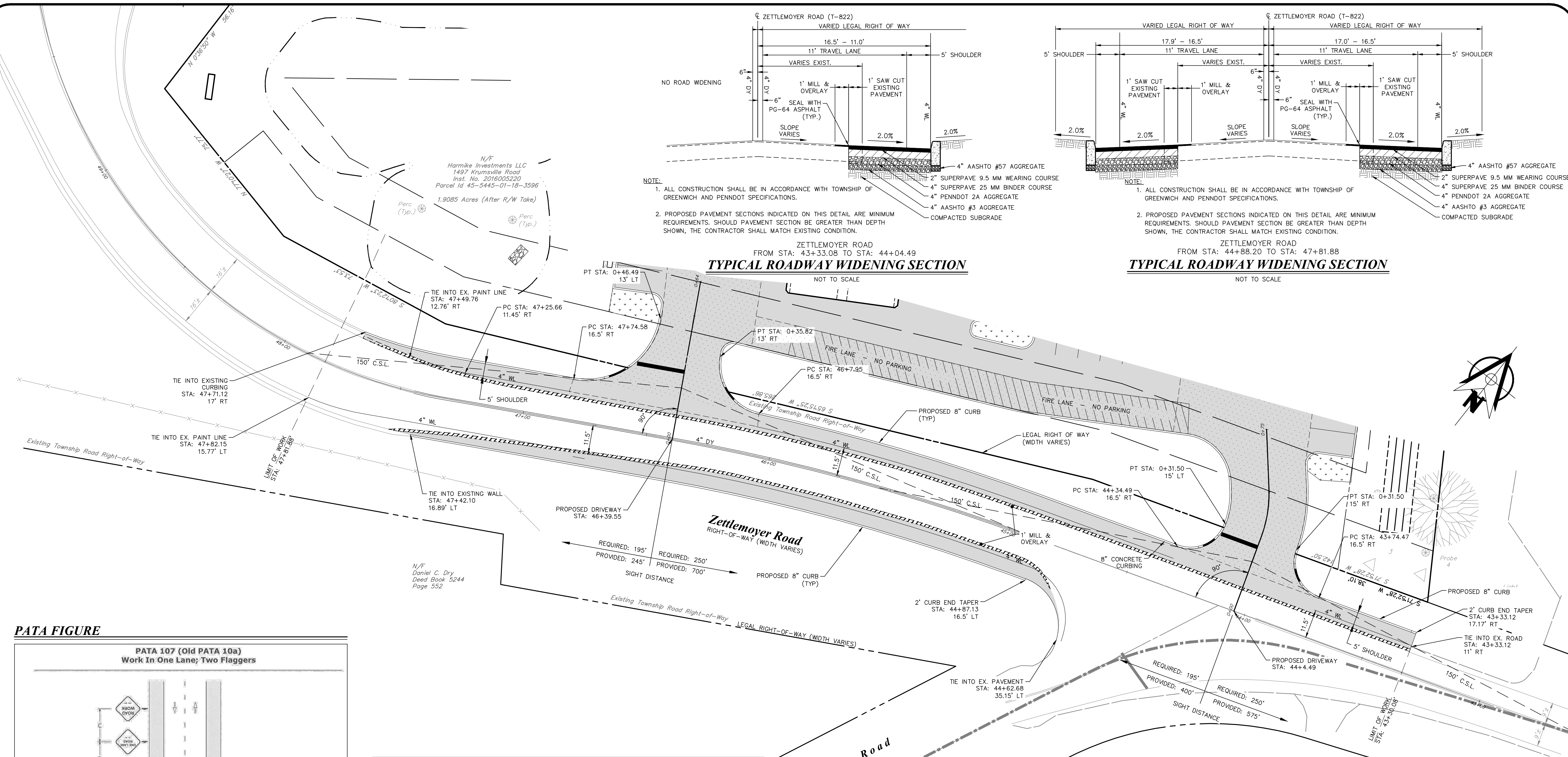


NOTE:
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWNSHIP OF GREENWICH AND PENNDOT SPECIFICATIONS.
2. PROPOSED PAVEMENT SECTIONS INDICATED ON THIS DETAIL ARE MINIMUM REQUIREMENTS. SHOULD PAVEMENT SECTION BE GREATER THAN DEPTH SHOWN, THE CONTRACTOR SHALL MATCH EXISTING CONDITION.

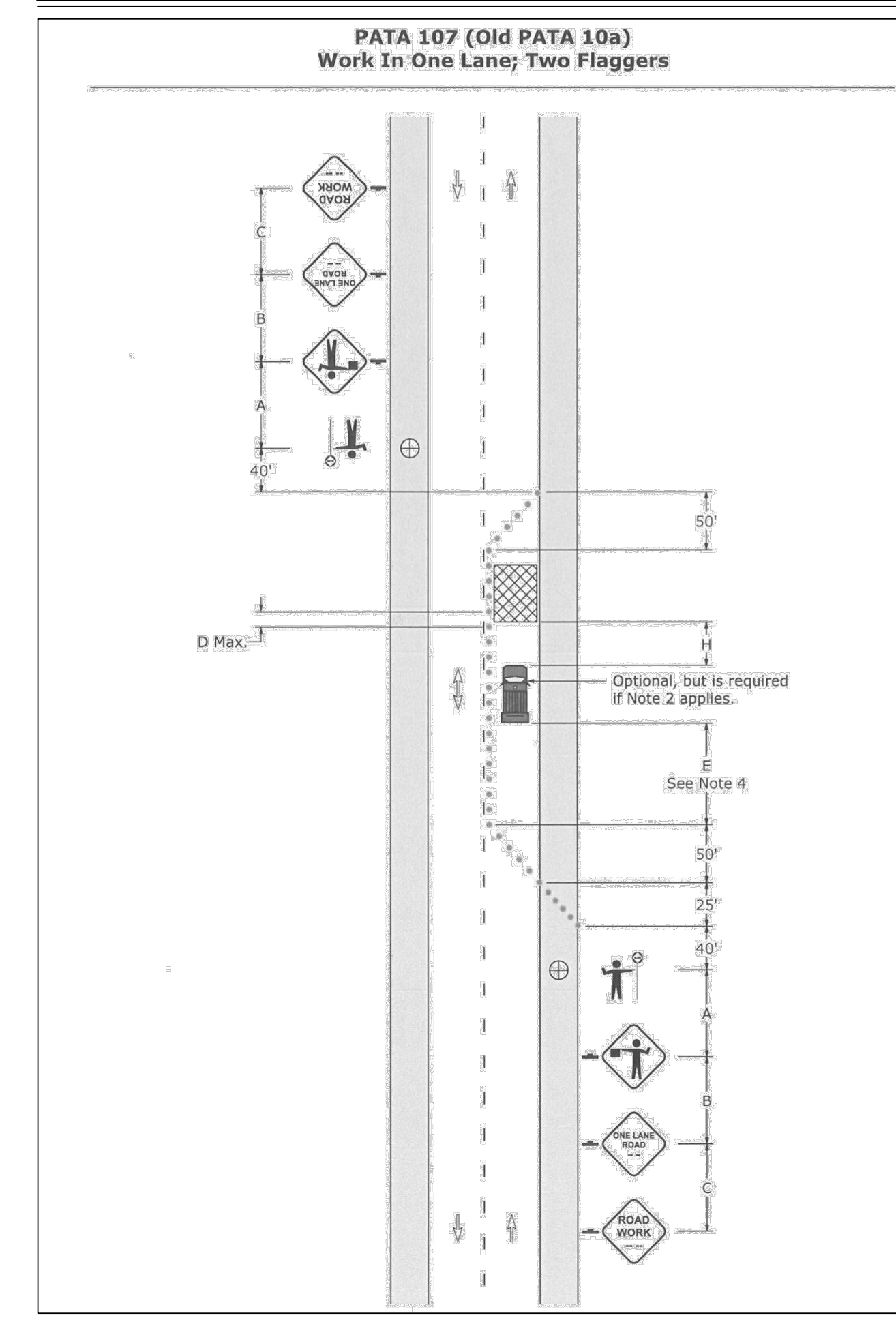
NOTE:
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2. PROPOSED PAVEMENT SECTIONS INDICATED ON THIS DETAIL ARE MINIMUM REQUIREMENTS. SHOULD PAVEMENT SECTION BE GREATER THAN DEPTH SHOWN, THE CONTRACTOR SHALL MATCH EXISTING CONDITION.

TYPICAL ROADWAY WIDENING SECTION
FROM STA: 43+33.08 TO STA: 44+04.49

TYPICAL ROADWAY WIDENING SECTION
FROM STA: 44+88.20 TO STA: 47+81.88



PATA FIGURE



Sign Spacing Chart

Condition	A	B	C	F
Feet	Feet	Feet	Feet	Feet
Urban 35 MPH or less	100	100	100	100
Urban Greater than 35 MPH	350	350	350	350
Rural	500	500	500	500

Distance and Spacing Quick Reference Chart

Speed MPH	W Feet	L Feet	1/2L			1/3L			D Feet	E Feet	H Feet				
			Feet	Feet	Feet	Feet	Feet	Feet							
25	10	105	55	35	11	115	60	40	6	6	6	50	155	150	
30	10	150	75	50	6	11	165	85	55	7	6	6	60	200	150
35	10	205	105	70	7	11	225	115	75	8	6	6	70	250	150
40	10	270	135	90	8	11	295	150	100	9	6	6	80	305	150
45	10	340	170	110	9	11	375	195	120	10	6	6	90	360	150
50	10	420	210	135	10	11	465	245	140	11	6	6	100	420	250
55	10	510	255	165	11	11	565	300	170	12	6	6	110	495	250

Taper Length Formulas

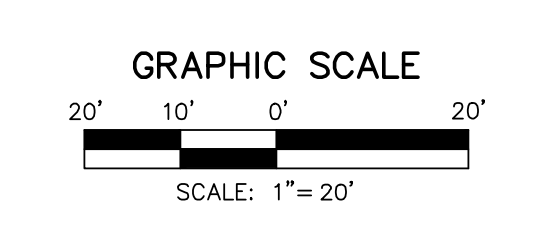
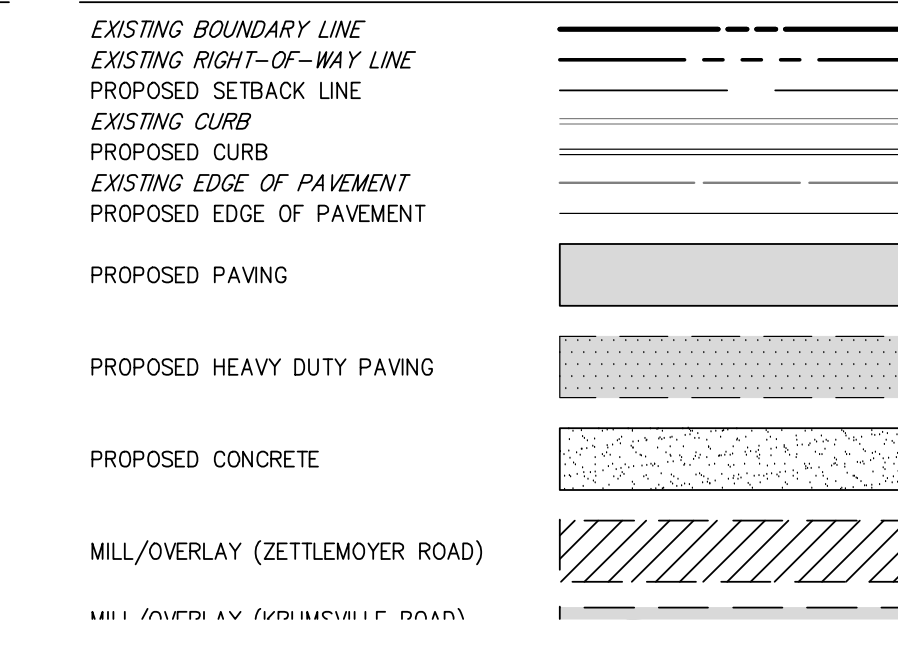
S	L
:40 MPH or less	$L = \frac{WS^2}{60}$
:45 MPH or more	$L = WS$

S = Regulatory Speed Limit
W = Width of Offset
L = Length

MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) NOTES

- THIS WORK CONSISTS OF THE MAINTENANCE AND PROTECTION OF TRAFFIC AND THE PROTECTION OF TRAFFIC AND THE PROTECTION OF THE PUBLIC WHEN APPROACHING AND DEPARTING THE CONSTRUCTION AREA AND WITHIN THE LIMITS OF CONSTRUCTION.
- THE CONTRACTOR SHALL ENSURE THAT ONE (1) LANE REMAINS OPEN AT ALL TIMES.
- FURNISH, ERECT, PLACE AND MAINTAIN TRAFFIC CONTROL SIGNS AND DEVICES. MAINTAIN TRAFFIC DURING HOURS OF CONSTRUCTION AND AT ALL OTHER TIMES CONSISTENT WITH THE METHODS INDICATED ON THESE DRAWINGS AND THE FOLLOWING:
 - PENNDOT PUBLICATION 35;
 - PENNDOT PUBLICATION 46;
 - PENNDOT PUBLICATION 72M;
 - PENNDOT PUBLICATION 111;
 - PENNDOT PUBLICATION 212;
 - PENNDOT PUBLICATION 213;
 - PENNDOT PUBLICATION 236;
 - PENNDOT PUBLICATION 408; AND
 - MUTCD CURRENT EDITION.
- REMOVE THESE DEVICES IMMEDIATELY UPON COMPLETION OF THE WORK.
- COVER OR REMOVE ALL CONFLICTING SIGNS AND ERADICATE ALL CONFLICTING PAVEMENT MARKINGS.
- MOUNT ALL LONG-TERM ADVANCE WARNING SIGNS ON TYPE III BARRICADES UNLESS OTHERWISE NOTED OR INSTRUCTED BY TOWNSHIP OFFICIAL.
- ALL SIGNS AND DEVICES TO BE MAINTAINED IN NEW CONDITION.
- DRIVEWAYS WILL BE KEPT ACCESSIBLE AT ALL TIMES. LOCATE ALL SIGNS SO THAT SIGHT DISTANCES WILL NOT BE OBSTRUCTED AT DRIVEWAYS AND LOCAL ROADS.
- ALL CHANNELIZING DEVICES, BARRICADES, AND SIGNS SHALL HAVE TYPE III OR BETTER PRISMATIC RETROREFLECTIVE SHEETING. SHEETING SHALL BE APPROVED AND LISTED IN PENNDOT PUBLICATION 35 (BULLETIN 15).
- CONTRACTOR SHALL NOTIFY LOCAL EMERGENCY AUTHORITIES (E.G., POLICE, FIRE, MEDICAL), AFFECTED BUSINESSES, RESIDENCES, SCHOOL DISTRICT(S), AT LEAST FOURTEEN DAYS PRIOR TO ANY SIGNIFICANT TRAFFIC IMPACTS (E.G., LATERAL WIDTH RESTRICTIONS LESS THAN 16 FEET, DETOURS).
- MAINTENANCE AND PROTECTION OF TRAFFIC DURING THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE PATA DRAWING 107 (OLD PATA 10a) IN THE CURRENT PENNDOT PUBLICATION 213, "TEMPORARY TRAFFIC CONTROL GUIDELINES".
- DROP OFFS CREATED BY CONSTRUCTION OPERATIONS SHALL BE TREATED CONSISTENT WITH PUBLICATION 408, SECTION 901.3(J).
- REMOVE ALL SHORT-TERM WORK ZONE TRAFFIC CONTROL SIGNING UPON COMPLETION OF THAT DAY'S WORK PERIOD.
- RESTRICTING TRAFFIC FLOW WITHIN THE WORK AREA SHALL BE MINIMIZED TO PREVENT TRAFFIC CONGESTION AND UNSAFE TRAFFIC CONDITIONS.

LEGEND



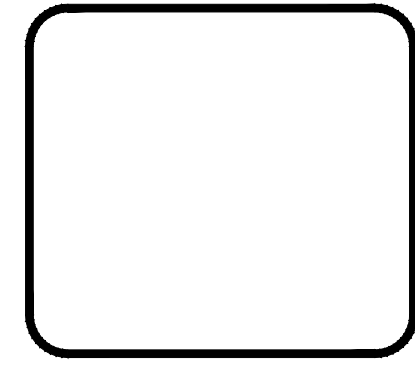
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PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
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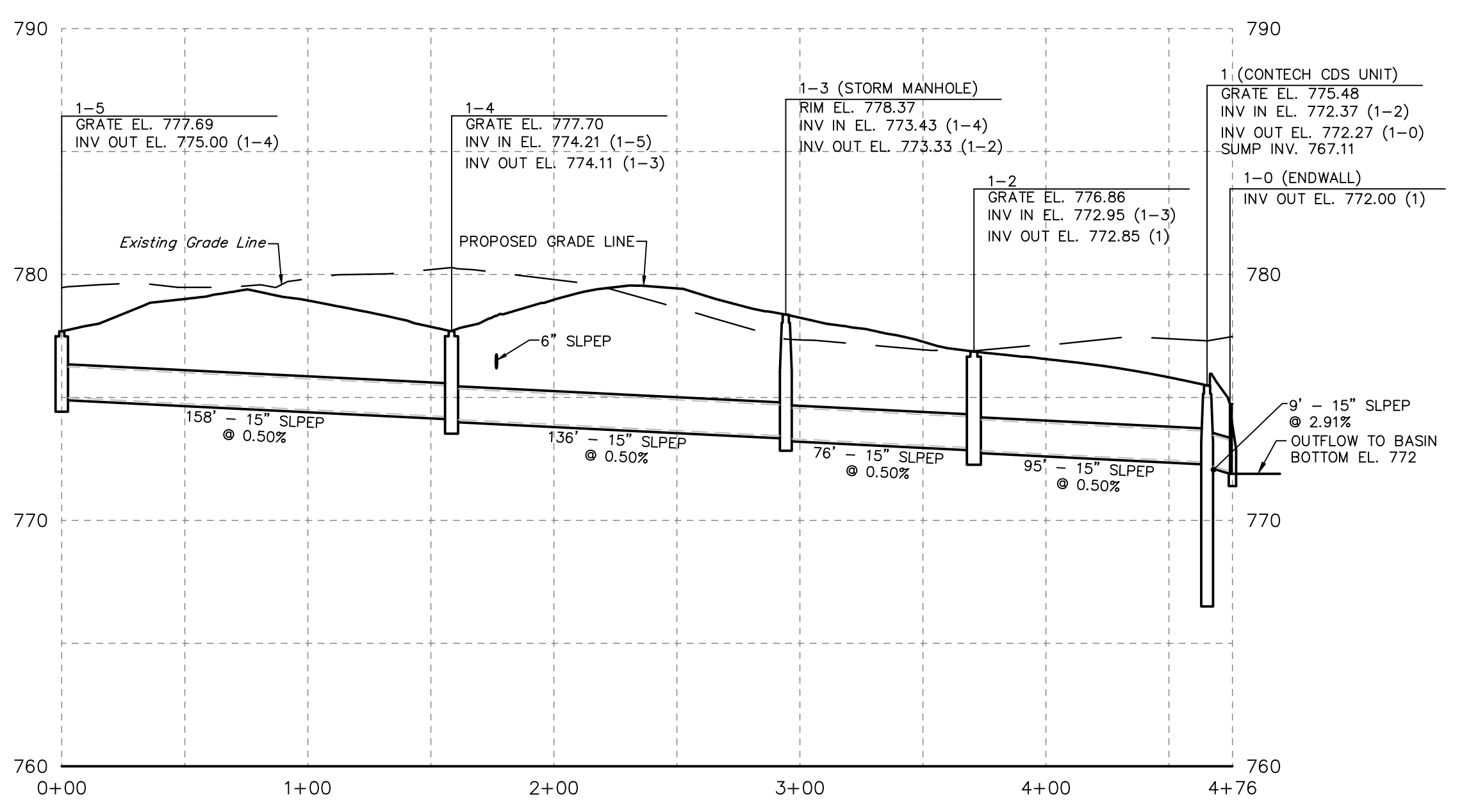
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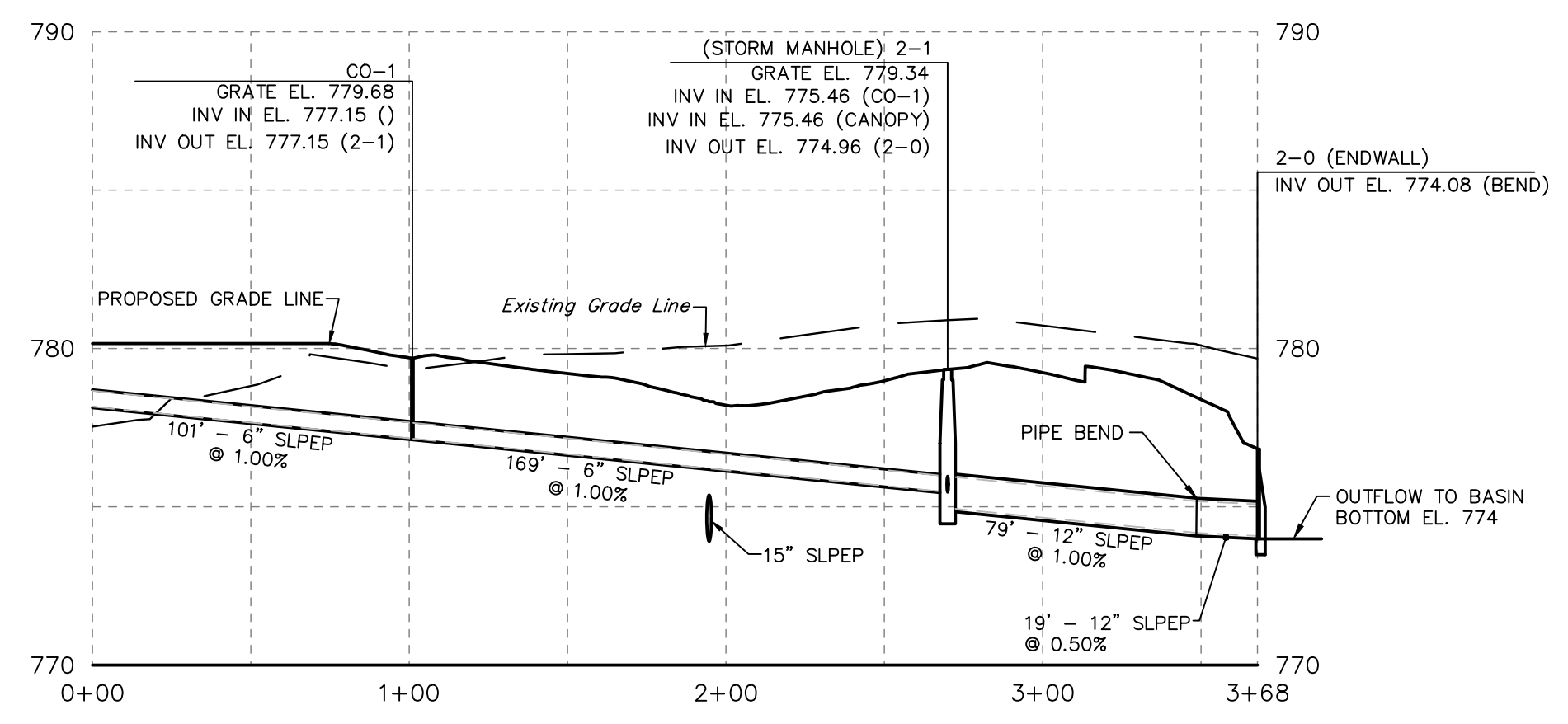


PROFILES
 FOR
KRUMSVILLE ROAD CONVENIENCE STORE
 FOR
 HARMIKE INVESTMENTS, LLC
 GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

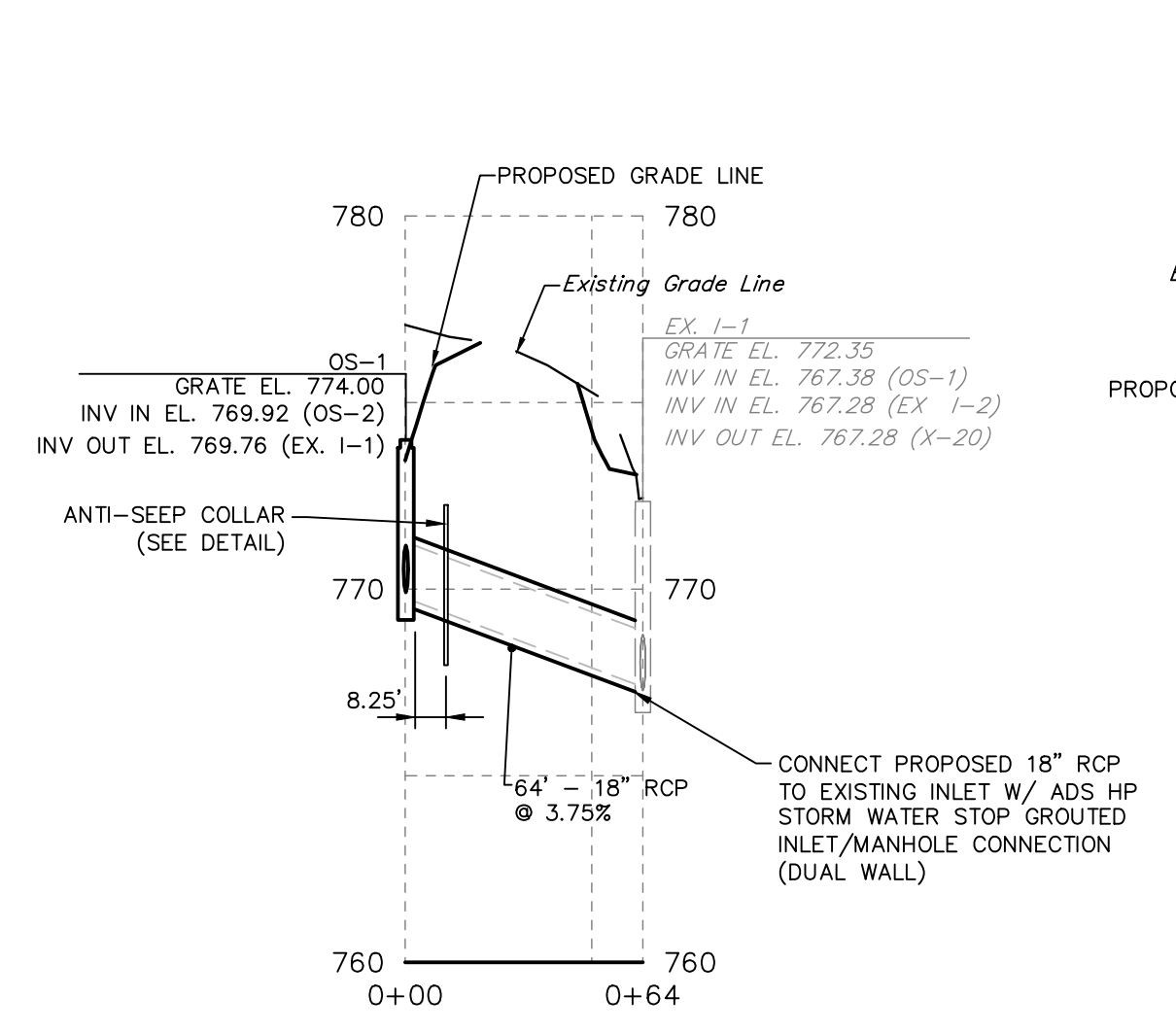
PROJECT NO.	22-0117-001
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SCALE:	AS SHOWN
SHEET	PR 5.1



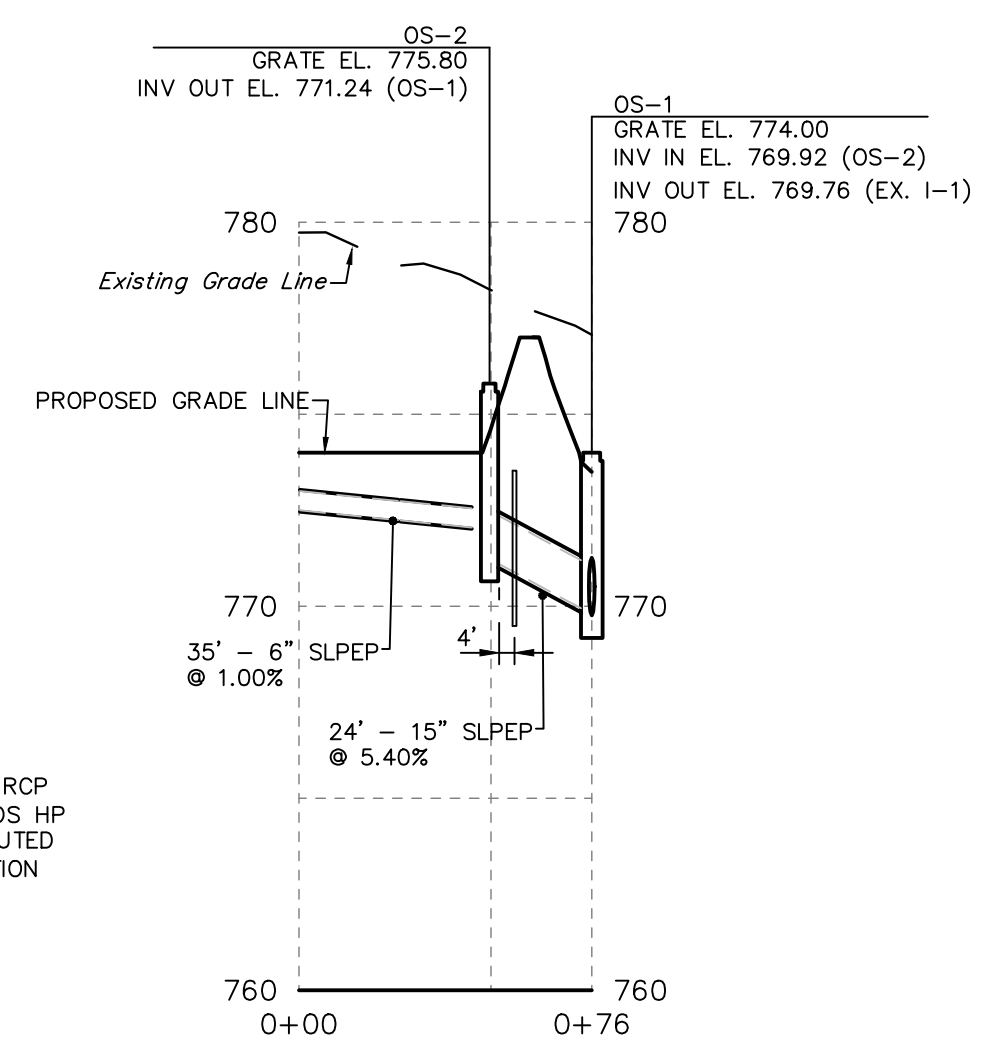
STORM SEWER PROFILE
I-5 TO I-0
 HOR: 1" = 50'
 VERT: 1" = 5'



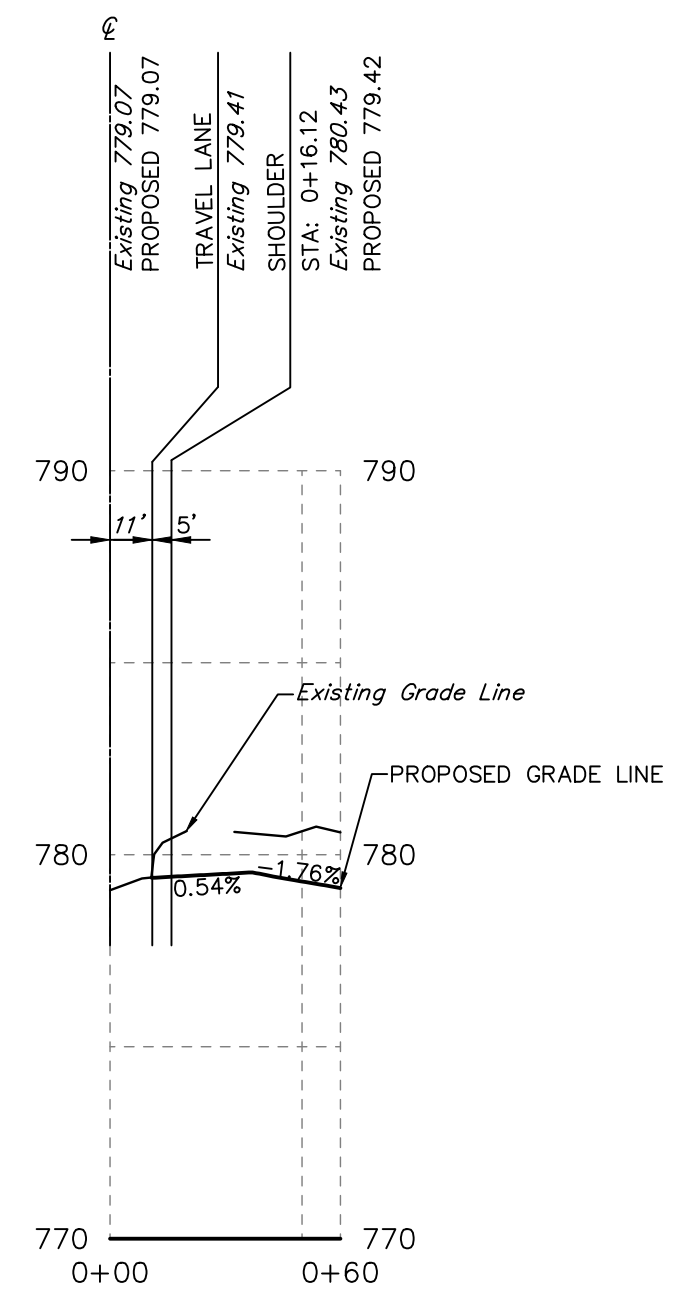
STORM SEWER PROFILE
ROOF LEADER TO 2-0
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 VERT: 1" = 5'



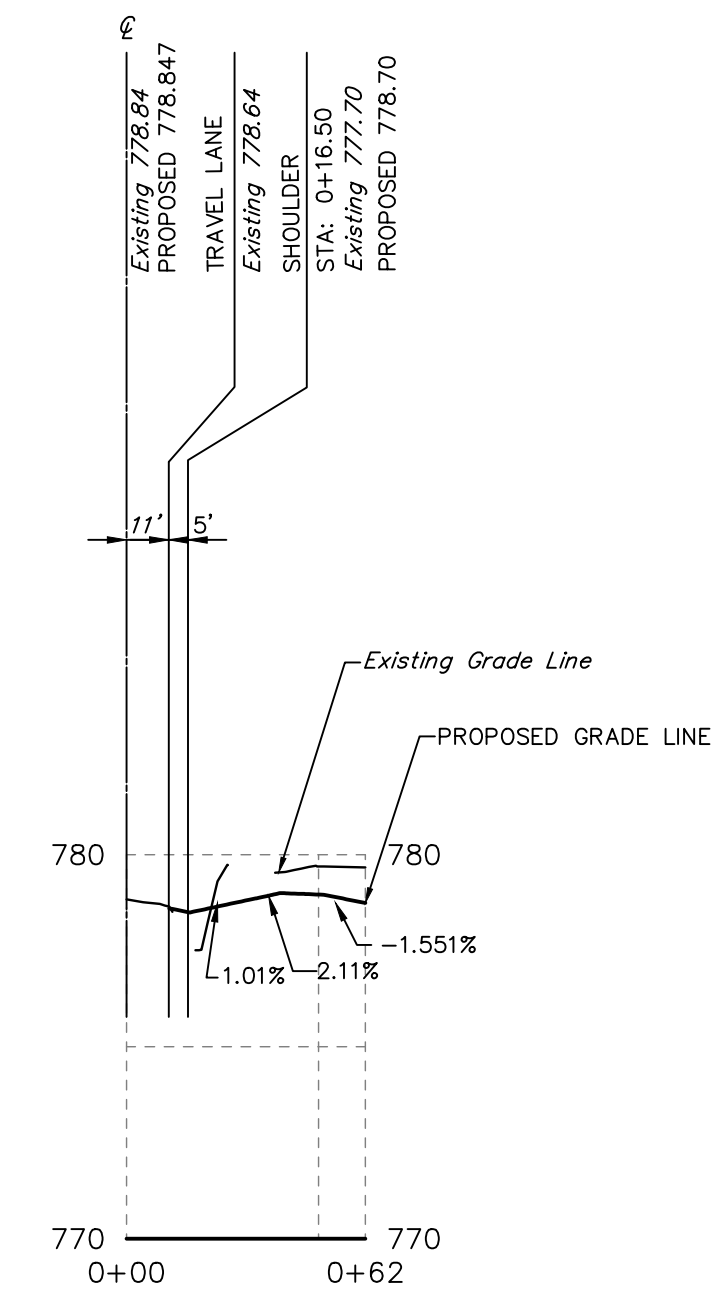
STORM SEWER PROFILE
OS-1 TO EX. I-1
 HOR: 1" = 50'
 VERT: 1" = 5'



STORM SEWER PROFILE
UNDERDRAIN TO OS-1
 HOR: 1" = 50'
 VERT: 1" = 5'



CENTERLINE PROFILE
WEST DRIVEWAY
 HOR: 1" = 50'
 VERT: 1" = 5'



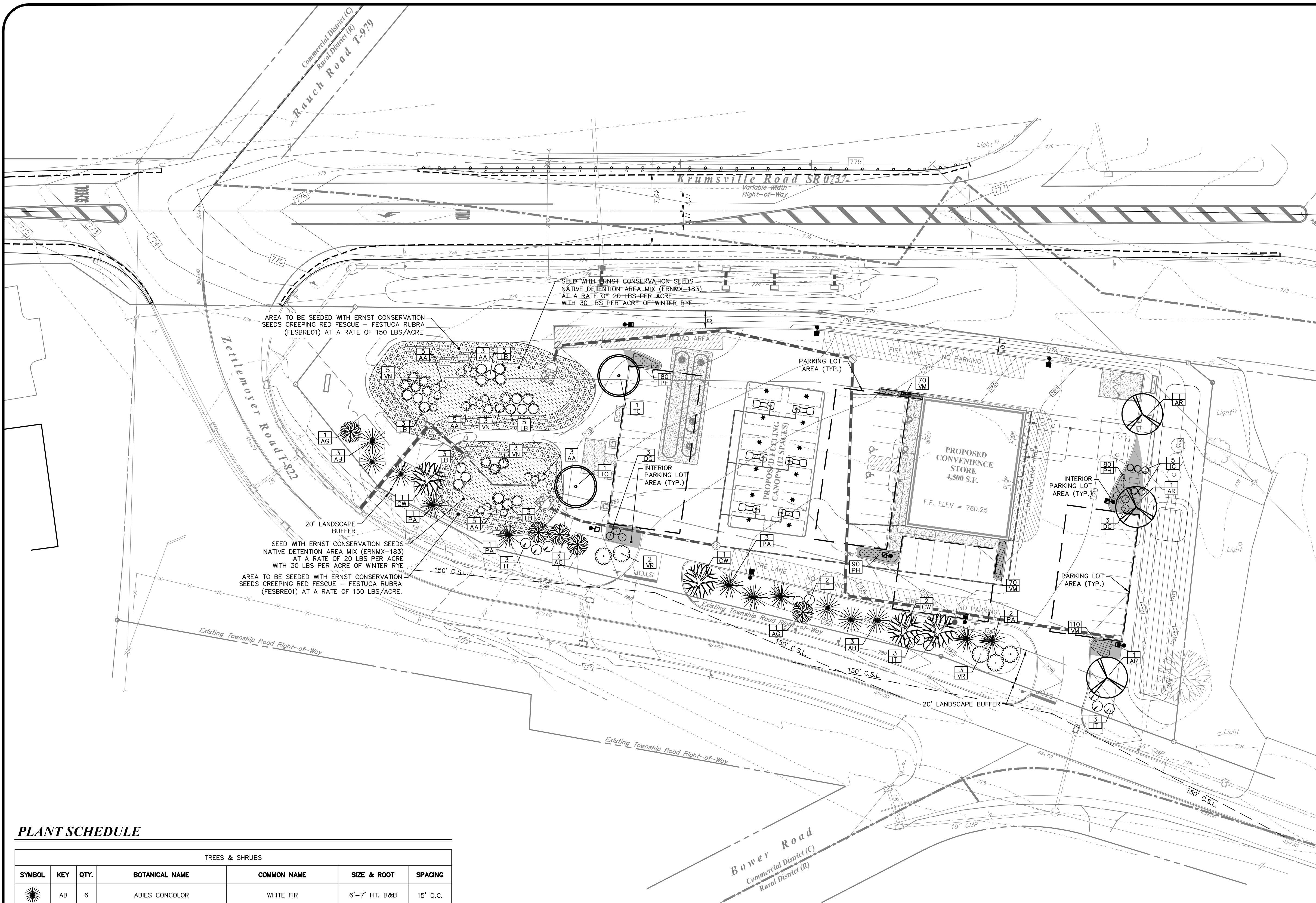
CENTERLINE PROFILE
EAST DRIVEWAY
 HOR: 1" = 50'
 VERT: 1" = 5'

PROFILE NOTES

1. ALL PIPE LENGTHS AND SLOPES SHOWN HEREON ARE COMPUTED FROM CENTER TO CENTER OF STRUCTURE UNLESS NOTED OTHERWISE. CONSTRUCT PIPE LENGTH BASED ON ACTUAL STRUCTURE DIMENSIONS.
2. ALL INLETS ADJACENT TO CURB SHALL BE TYPE C INLETS WITH AN 6 INCH CURB REVEAL. ALL OTHER INLETS SHALL BE TYPE M INLETS UNLESS NOTED OTHERWISE.
3. ALL INLET BOXES SHALL BE STANDARD PRECAST CONCRETE BOXES PER PENNDOT RC STANDARDS UNLESS NOTED OTHERWISE.
4. ALL PIPES SHALL ENTER THE END OR SIDE OF BOXES. NO CORNER CONNECTIONS SHALL BE PERMITTED.
5. A MINIMUM 12 INCHES OF VERTICAL CLEARANCE SHALL BE PROVIDED FOR ALL UTILITIES CROSSING SANITARY SEWER PIPES.

FINAL

DRAWING REFERENCE: L:\Projects\220117-01\KAD\22\Pre-Shell\PR5.1.dwg; 05/06/19 2:42:04 PM; PLOT FILE: L:\Projects\220117-01\KAD\22\Pre-Shell\PR5.1.dwg; 08/28/23 11:02:56 AM; PLOT FILE: L:\Projects\220117-01\KAD\22\Pre-Shell\PR5.1.dwg; 08/28/23 11:02:56 AM



LEGEND

EXISTING BOUNDARY LINE	---
EXISTING RIGHT-OF-WAY LINE	---
EXISTING CURB	---
PROPOSED CURB	---
EXISTING PAVEMENT	---
PROPOSED PAVEMENT	---
EXISTING VEGETATION	---
EXISTING TREELINE	---
PROPOSED EVERGREEN TREES	---
PROPOSED DECIDUOUS TREES	---
LANDSCAPE TAGS	---
PROPOSED LIGHT STANDARD	---
EXISTING LIGHT STANDARD	---
INTERIOR LANDSCAPING AREA	---
INTERIOR PARKING LOT AREA	---

LANDSCAPING NOTES

- PROPOSED TREES AND SHRUBS SHALL HAVE A NORMAL HABIT OF GROWTH; SHALL BE SOUND, HEALTHY, AND VIGOROUS; AND SHALL BE FREE FROM DISEASE, INSECTS, INSECT EGGS, AND LARVAE.
- ALL TREES MUST BE STRAIGHT TRUNKED AND FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED.
- PROPOSED TREES AND OTHER VEGETATION SHALL BE GROWN IN A CLIMATE SIMILAR TO THAT OF CENTRAL PENNSYLVANIA.
- ALL PLANT MATERIAL IS SUBJECT TO APPROVAL AND ACCEPTANCE FROM THE LANDSCAPE ARCHITECT BEFORE, DURING AND AFTER INSTALLATION.
- ALL PLANT MATERIAL SHALL BE HANDLED IN COMPLIANCE WITH ACCEPTED HORTICULTURAL PRACTICES AND STANDARDS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC., IN THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-2014.
- THE REQUIREMENTS FOR THE MEASUREMENTS, BRANCHING, QUALITY, BALLING AND BURLAPPING OF TREES SHALL FOLLOW THE CODE OF STANDARDS RECOMMENDED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC., IN THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-2014.
- TREES LESS THAN 3" IN CALIPER SHALL BE PROPERLY STAKED OR TREES MORE THAN 3" IN CALIPER SHALL BE GUIDED AND BE PROPERLY PROTECTED FOR A PERIOD OF ONE YEAR FROM THE DATE OF PLANTING.
- ANY NYLON ROPE USED IN BALLING THE TREE MUST BE CUT AND REMOVED FROM THE ROOT BALL.
- 3" HARDWOOD MULCH SHALL BE PLACED AROUND TREES AND SHRUBS. ISOLATED ISLANDS AND BED AREAS SHALL ALSO BE MULCHED. LIMITS OF MULCHING SHALL BE AS NOTED HEREON.
- A SYSTEM OF STAKING AND MATTING AND/OR NETTING SHALL BE INSTALLED IN SLOPE AROUND AREAS STEEPER THAN 3:1 TO BE MULCHED. SAID MATTING SHALL NOT INHIBIT VEGETATIVE GROWTH AND SHALL NOT BE VISIBLE TWO YEARS AFTER PLANTING.
- FERTILIZE ALL PLANTINGS IN ACCORDANCE WITH PENNDOT, PUBLICATION 408 SPECIFICATIONS IN SPRING ONLY. A SOIL TEST SHALL BE PERFORMED BY A QUALIFIED LABORATORY. ADJUSTMENT TO PLANT AND FERTILIZER MATERIAL AND APPLICATION SHALL BE MADE AS AUTHORIZED BY OWNER, UNDER THE DIRECTION OF THE DESIGN PROFESSIONAL, IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
- ALL DISTURBED OR DAMAGED AREAS SHALL BE REPAIRED AND REFINISHED WITH MATERIALS TO MATCH EXISTING ADJACENT SURFACES.
- ALL DISTURBED AREAS NOT LANDSCAPED, PAVED OR BUILT UPON SHALL RECEIVE 4" OF TOPSOIL, BE SEEDED, FERTILIZED AND MULCHED IN ACCORDANCE WITH PENNDOT SPECIFICATIONS, PUBLICATION 408 FOR THE FORMULA SPECIFIED UNLESS OTHERWISE NOTED. REFER TO SEEDING SPECIFICATIONS AND EROSION AND SEDIMENTATION CONTROL PLAN FOR REQUIREMENTS. WATER SEED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
- MULCH FOR GRASS SEED MIX MUST BE STRAW AS SPECIFIED IN PENNDOT PUBLICATION 408, EXCEPT THAT SLOPES STEEPER THAN 3:1 SHALL RECEIVE EROSION CONTROL BLANKETS/MATS AS SPECIFIED IN PENNDOT PUBLICATION 408.
- ALL STREET TREES AND DECIDUOUS TREES THAT OVERHAND PEDESTRIAN OR VEHICULAR ROUTES SHALL BE KEPT FREE OF BRANCHES AND FOLIAGE FROM THE GROUND LEVEL TO A HEIGHT OF AT LEAST 8' ABOVE SIDEWALKS AND 14' ABOVE STREETS.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THIS PLAN BEFORE PRICING THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING BUT NOT LIMITED TO: WATERING, MULCHING, STAKING AND GUYING, SPRAYING, FERTILIZING, ETC.) WITHIN PLANTING BEDS AND LAWN AREAS UNTIL THE WORK IS ACCEPTED BY THE OWNER.
- SEE DETAIL SHEET FOR LANDSCAPE PLANTING DETAILS.
- THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF LANDSCAPING MATERIALS WITH WINDOWS AND DOOR LOCATIONS, SITE UTILITIES AND OTHER IMPROVEMENTS TO AVOID CONFLICTS DURING CONSTRUCTION.
- THE PLANTING SCREEN SHALL BE PERMANENTLY MAINTAINED BY THE LANDOWNER AND ANY PLANT MATERIAL THAT DOES NOT LIVE SHALL BE REPLACED WITHIN ONE (1) YEAR.

PLANT SCHEDULE

TREES & SHRUBS						
SYMBOL	KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE & ROOT	SPACING
☀	AB	6	ABIES CONCOLOR	WHITE FIR	6'-7' HT. B&B	15' O.C.
☀	AG	5	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	6'-7" CLUMP, B&B	12' O.C.
☀	AR	3	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL. B&B	AS SHOWN
☀	CW	4	CRATAEGUS VIRIDIS 'WINTER KING'	WINTER KING HAWTHORN	2-2 1/2" CAL. B&B	AS SHOWN
○	DG	6	DEUTZIA GRACILIS 'NIKKO'	SLENDER DEUTZIA	NO. 3 CONT. 12"-18" HT.	5' O.C.
○	IG	5	ILEX GLABRA 'NIGRA'	NIGRA INKBERRY	NO. 3 CONT. 18"-24" HT.	4' O.C.
○	IT	11	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET SWEETSPICE	18"-24" HT. NO. 3 CONT.	6' O.C.
☀	PA	7	PICEA ABIES	NORWAY SPRUCE	6'-7' HT. B&B	15' O.C.
○	TC	2	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	3" CAL. B&B	AS SHOWN
○	VR	5	VIBURNUM X RHYTIDOPHYLLOIDES 'ALLEGHANY'	ALLEGHANY LANTANAPHYLLUM VIBURNUM	3'-4" HT. NO. 7 CONT.	10' O.C.
GROUND COVER						
☀	PH	250	PENNISETUM ALOPECUROIDES 'HAEMEL'	FOUNTAIN GRASS	FLATS	18" O.C.
☀	VM	250	VINCA MINOR	PERIWINKLE	FLATS	18" O.C.

NOTES:
1. MAINTAIN SPACING AS INDICATED IN PLANT SCHEDULE.

PLANT SCHEDULE - SWM/BMP FACILITIES

TREES & SHRUBS						
SYMBOL	KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE & ROOT	SPACING
○	AA	21	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	BRIGHT RED CHOKEBERRY	NO. 3 CONT. 2"-3" HT.	4' O.C.
○	LB	19	LINDERA BENZON	SPICEBUSH	NO. 3 CONT. 18"-24" HT.	6' O.C.
○	VN	11	VIBURNUM NUJUM	POSSUMHAW VIBURNUM	NO. 3 CONT. 2"-3" HT.	6' O.C.

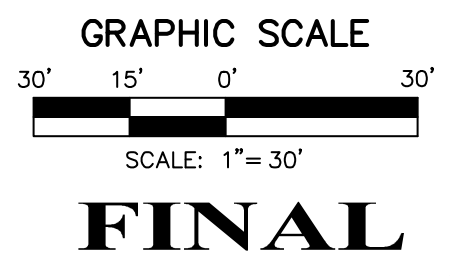
NOTES:
1. MAINTAIN SPACING AS INDICATED IN PLANT SCHEDULE.

SEEDING SCHEDULE - SWM/BMP FACILITIES

- AREA TO BE SEEDED WITH ERNST CONSERVATION SEEDS NATIVE DETENTION AREA MIX (ERNMX-183) AT A RATE OF 20 LBS/ACRE WITH 30 LBS/ACRE WINTER RYE.
- AREA TO BE SEEDED WITH ERNST CONSERVATION SEEDS CREEPING RED FESCUE - FESTUCA RUBRA (FESBRE01) AT A RATE OF 150 LBS/ACRE.

LANDSCAPING REQUIREMENTS

- BUFFER YARDS (\$502.2A.1):**
 - REQUIRED: 20 FT. BUFFER YARD ALONG ZETLEMOYER ROAD
 - PROPOSED: 20 FT. BUFFER YARD
- PARKING LOT LANDSCAPING (\$605.2):**
 - REQUIRED: A MINIMUM OF TEN (10) PERCENT OF THE PARKING LOT AREA SHALL BE LANDSCAPED. LANDSCAPING SHALL BE IN ADDITION TO REQUIRED BUFFER SCREENS.
 - PROPOSED: 12,951 S.F. OF PARKING LOT AREA X 10% = 1,295 S.F.
- PARKING LOT LANDSCAPING (\$605.3):**
 - REQUIRED: 1,320 S.F. (10.2%) INTERIOR LANDSCAPING AREA
 - PROPOSED: THE INTERIOR OF EACH PARKING LOT SHALL HAVE AT LEAST ONE (1) THREE-(3) INCH CALIPER DECIDUOUS SHADE TREE FOR EVERY TEN (10) PARKING SPACES IF THERE ARE NO EXISTING SHADE TREES TO SATISFY THIS REQUIREMENT. SHRUBS AND OTHER PLANTING MATERIAL SHALL BE USED TO COMPLEMENT THE TREES, BUT SHALL NOT BE THE SOLE CONTRIBUTION TO THE LANDSCAPING. THESE TREES SHALL BE IN ADDITION TO THOSE REQUIRED AS A BUFFER SCREEN.
- PARKING SPACES / 10 = 5 TREES**
- 5 TREES AND COMPLEMENTARY PLANTING MATERIALS**
- PARKING LOT LANDSCAPING (\$605.5A):**
 - REQUIRED: LANDSCAPED AREAS OF AT LEAST TEN (10) FEET IN WIDTH SHALL BE PROVIDED AROUND THE PERIPHERY OF THE PARKING LOT. SUCH AREAS SHALL, AS A MINIMUM, EXTEND THE FULL LENGTH AND WIDTH OF THE PARKING AREAS, EXCEPT FOR THE NECESSARY ACCESSWAYS, TO PREVENT ENCRoACHMENT OF MOVING VEHICLES INTO PARKING LOTS.
 - PROPOSED: 10 FT. WIDE LANDSCAPED AREA AROUND THE PERIPHERY OF THE PARKING LOT
- 10 FT. WIDE LANDSCAPED AREA AROUND THE PERIPHERY OF THE PARKING LOT**



PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
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LANDSCAPING PLAN
FOR
KRUMSVILLE ROAD CONVENIENCE STORE
FOR
HARMIKE INVESTMENTS, LLC
GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.	22-0117-001
DATE:	05-06-19
SCALE:	1" = 30'
SHEET	LS 6.1

REVISED: 05/06/19
DESIGNED: 05/06/19
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CADD: 05/06/19
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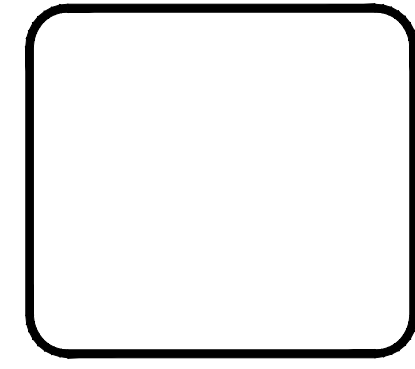
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- PROPOSED PAVEMENT
- EXISTING VEGETATION
- EXISTING TREELINE
- PROPOSED EVERGREEN TREES
- PROPOSED DECIDUOUS TREES
- LANDSCAPE TAGS
- PROPOSED LIGHT STANDARD
- EXISTING LIGHT STANDARD
- INTERIOR LANDSCAPING AREA

LIGHTING NOTES

- ALL EXTERIOR LIGHTING SHALL CONFORM TO THE REQUIREMENTS CONTAINED IN THE GREENWICH TOWNSHIP ZONING ORDINANCE AND BE SO LOCATED AND SHIELDED THAT ANY OBJECTIONABLE ILLUMINATION OR GLARE IS DIRECTED AWAY FROM ADJACENT AND ADJOINING PROPERTIES AND PUBLIC RIGHTS-OF-WAY.
- THE LIGHTING FIXTURES SHOWN ON THIS PLAN ARE FOR LAND DEVELOPMENT APPROVAL PURPOSES ONLY. FINAL LIGHTING AND SITE ELECTRICAL DESIGN SHALL OCCUR AT THE BUILDING DESIGN PHASE, INCLUDING BUILDING MOUNTED FIXTURES WHICH SHALL BE DESIGNED TO MINIMIZE GLARE. ANY ILLUMINATION DEVIATIONS FROM THIS PLAN SHALL BE REVIEWED AND APPROVED BY TOWNSHIP OF GREENWICH PRIOR TO INSTALLATION.
- VERIFY MOUNTING HEIGHT WITH THE POLE BASE.
- PROPOSED POLES SHALL MEET 100 MPH SUSTAINED WINDS.
- MANUFACTURER SPECIFICATIONS ARE AVAILABLE UPON REQUEST.
- LIGHTING INFORMATION PROVIDED BY ILLUMINATIONS INC.

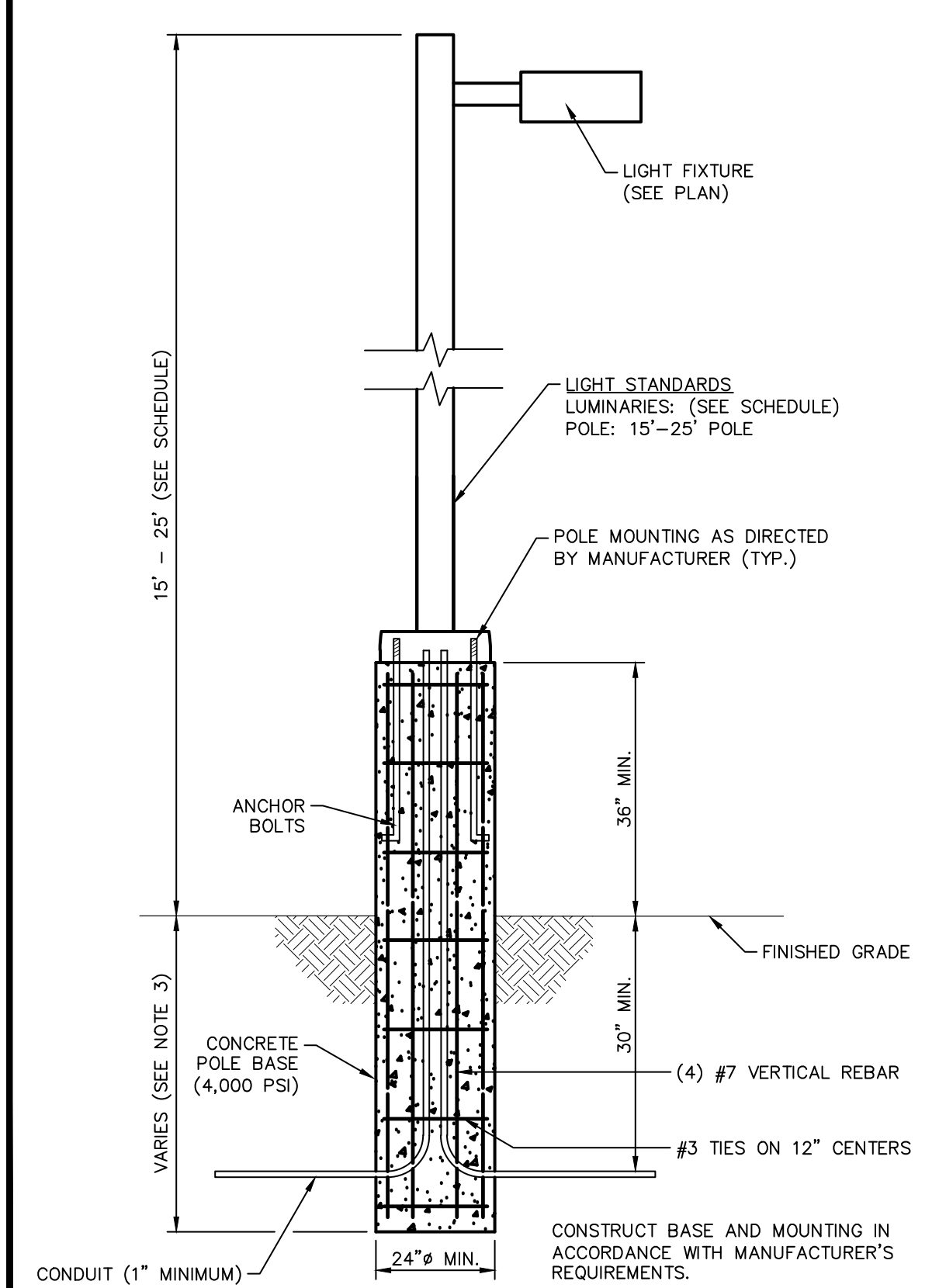
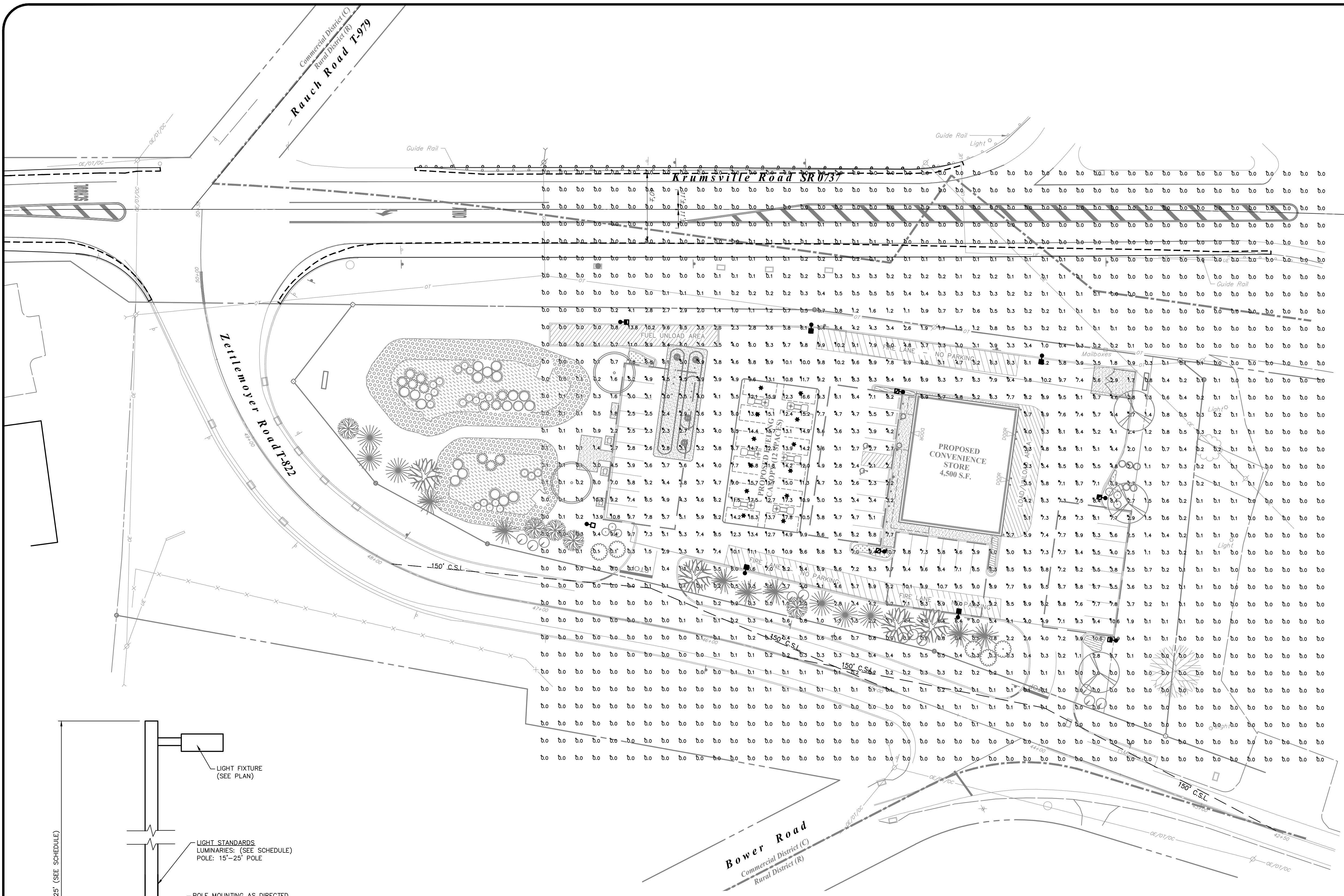
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PHOTOMETRICS PLAN
FOR
KRUMSVILLE ROAD CONVENIENCE STORE
FOR
HARMIKE INVESTMENTS, LLC
GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.
22-0117-001
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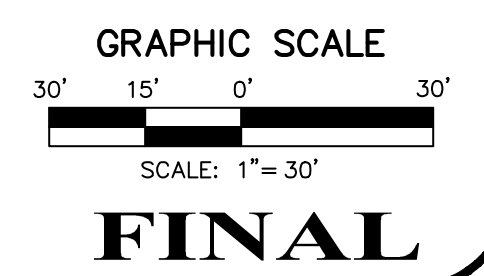


LUMINAIRE SCHEDULE

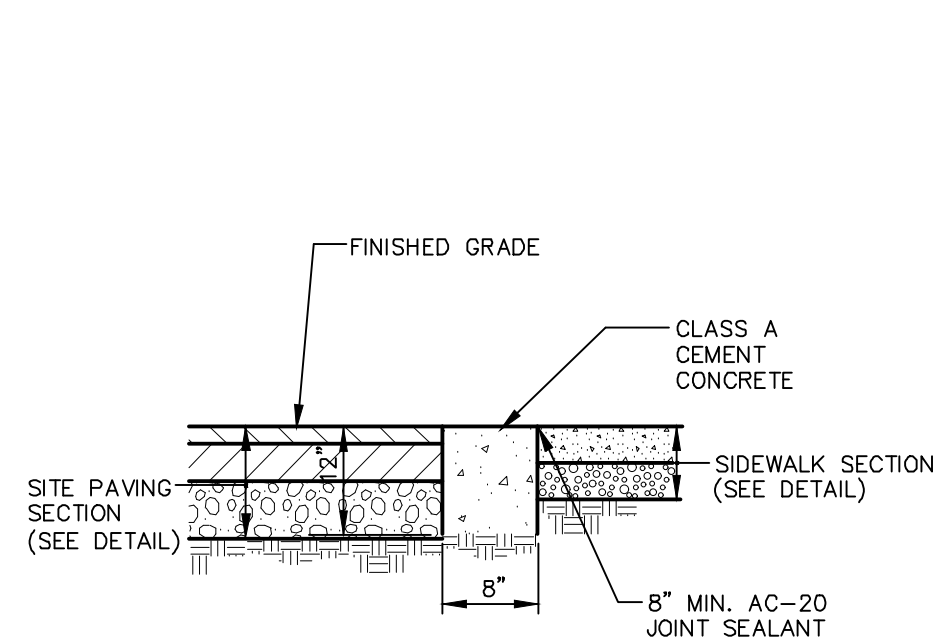
CALCULATION SUMMARY							
LABEL	LUMINAIRE SYMBOL	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
PARKING & BUIDLING	+	FC	1.9	18.3	0.0	N/A	N/A
SPILL	X	FC	7.0	18.3	2.1	3.3:1	8.71

LIGHTING SCHEDULE

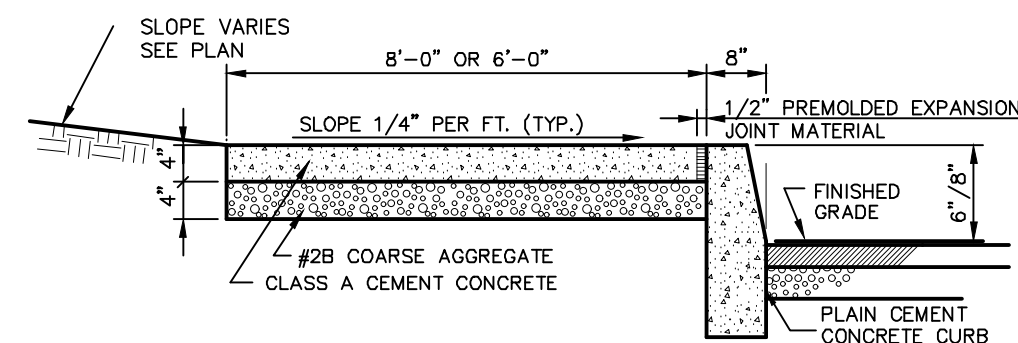
SYMBOL	QTY	CATALOG NUMBER	MANUFACTURER	LAMP	ARRANGEMENT	LLF	WATTAGE	MOUNTING HEIGHT (AFG)
+	4	DSX2 LED P6 40K BLC MVOLT	LITHONIA LIGHTING	LED	SINGLE	0.9	343.0	25'
+	2	DSX2 LED P6 40K LCCO MVOLT	LITHONIA LIGHTING	LED	SINGLE	0.9	343.0	25'
+	1	DSX2 LED P6 40K RCCO MVOLT	LITHONIA LIGHTING	LED	SINGLE	0.9	343.0	25'
*	12	D533 LED 50 40 UNV	DECO LIGHTING	-	SINGLE	0.9	50.12	-
+	1	DSX2 LED P8 40K TFTM MVOLT HS	LITHONIA LIGHTING	LED	SINGLE	0.9	431.0	25'
+	2	DSX1 LED P9 40K T5W MVOLT	LITHONIA LIGHTING	LED	SINGLE	0.9	241.0	15'



REFS: 1:0288-00-00-000-1, Drawing Board 17-0306-001, 17-0306-002, 17-0306-003, 17-0306-004, 17-0306-005, 17-0306-006, 17-0306-007, 17-0306-008, 17-0306-009, 17-0306-010, 17-0306-011, 17-0306-012, 17-0306-013, 17-0306-014, 17-0306-015, 17-0306-016, 17-0306-017, 17-0306-018, 17-0306-019, 17-0306-020, 17-0306-021, 17-0306-022, 17-0306-023, 17-0306-024, 17-0306-025, 17-0306-026, 17-0306-027, 17-0306-028, 17-0306-029, 17-0306-030, 17-0306-031, 17-0306-032, 17-0306-033, 17-0306-034, 17-0306-035, 17-0306-036, 17-0306-037, 17-0306-038, 17-0306-039, 17-0306-040, 17-0306-041, 17-0306-042, 17-0306-043, 17-0306-044, 17-0306-045, 17-0306-046, 17-0306-047, 17-0306-048, 17-0306-049, 17-0306-050, 17-0306-051, 17-0306-052, 17-0306-053, 17-0306-054, 17-0306-055, 17-0306-056, 17-0306-057, 17-0306-058, 17-0306-059, 17-0306-060, 17-0306-061, 17-0306-062, 17-0306-063, 17-0306-064, 17-0306-065, 17-0306-066, 17-0306-067, 17-0306-068, 17-0306-069, 17-0306-070, 17-0306-071, 17-0306-072, 17-0306-073, 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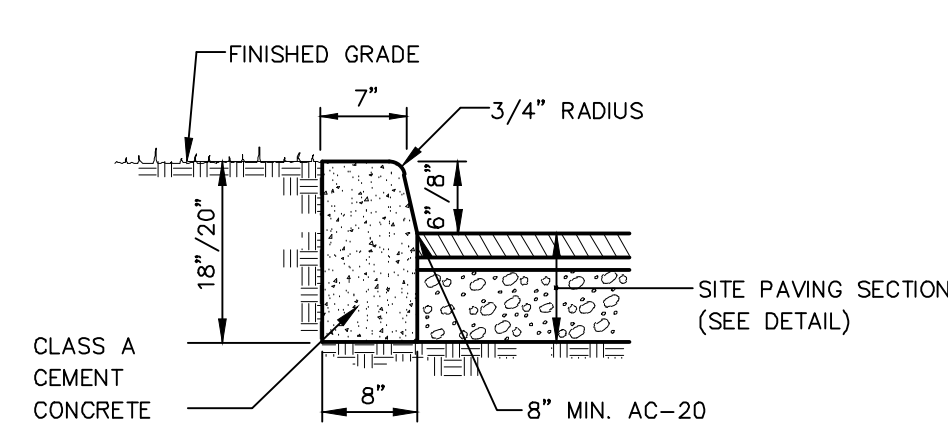


TYPICAL FLUSH CONCRETE CURB
NOT TO SCALE



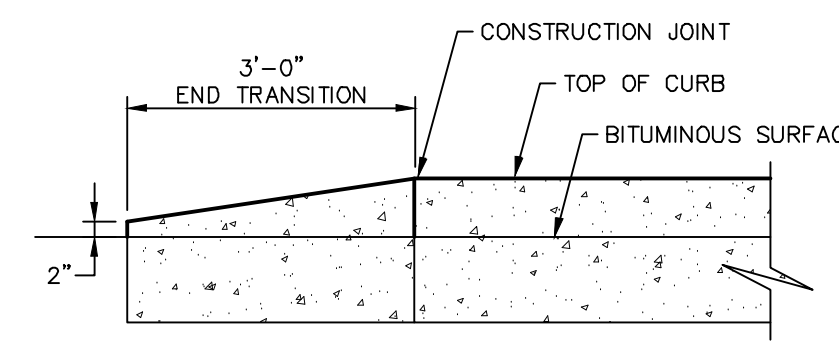
- NOTES:**
1. SIDEWALK TO HAVE MEDIUM BROOM FINISH PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAFFIC.
 2. CONSTRUCTION IN ACCORDANCE WITH PA D.O.T. SPECIFICATIONS.
 3. SEE SITE PLAN FOR SIDEWALK LOCATION.
 4. SEE SITE PLAN FOR 6" AND 8" CURB LOCATIONS.

SIDEWALK ADJACENT TO CURB
NOT TO SCALE

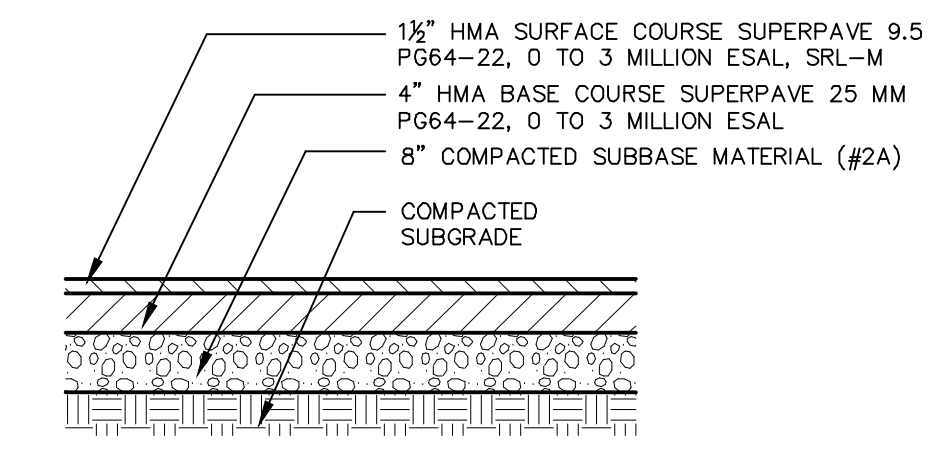


- CONSTRUCTION NOTE:**
1. CONSTRUCT CURBING IN ACCORDANCE WITH PENNDOT SPECIFICATIONS PUBLICATION 408 AND ROADWAY CONSTRUCTION DRAWINGS (RC-64).
 2. SEE SITE PLAN FOR 6" AND 8" CURB LOCATIONS.

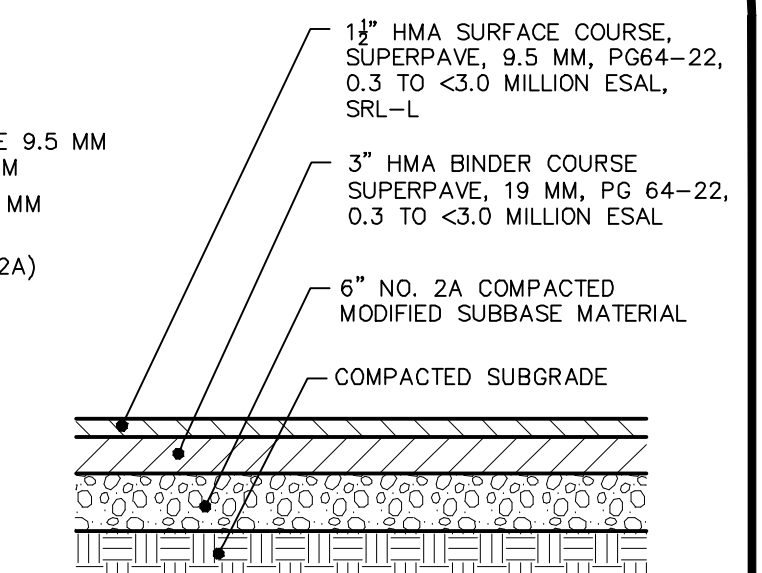
TYPICAL VERTICAL CONCRETE CURB
NOT TO SCALE



END CURB TRANSITION
NOT TO SCALE



TYPICAL HEAVY DUTY PAVING SECTION
NOT TO SCALE

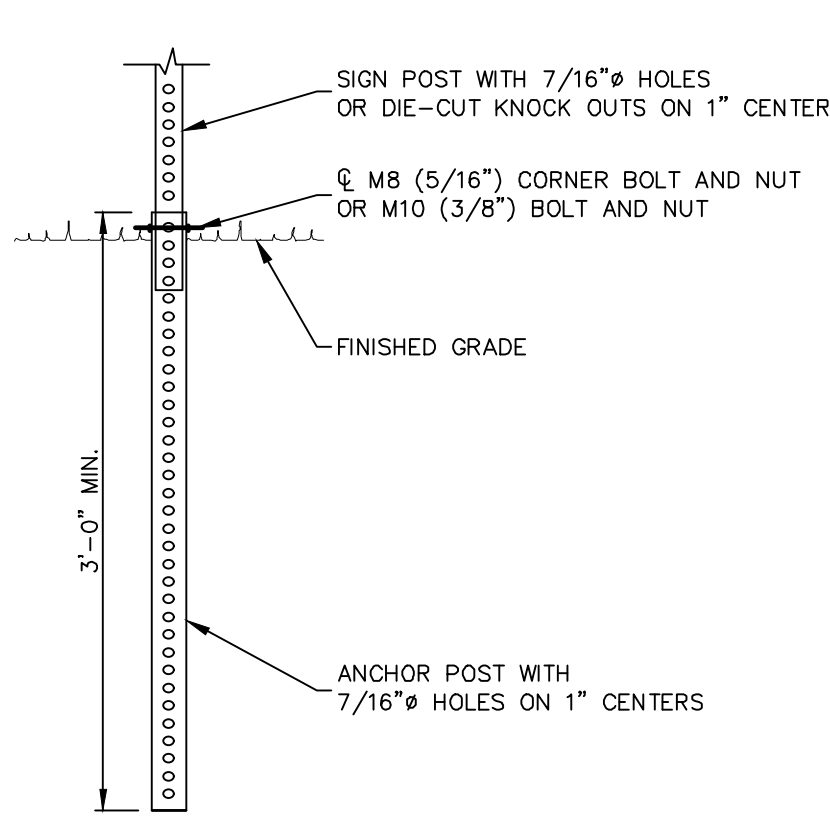


TYPICAL ON-SITE PAVING SECTION
NOT TO SCALE



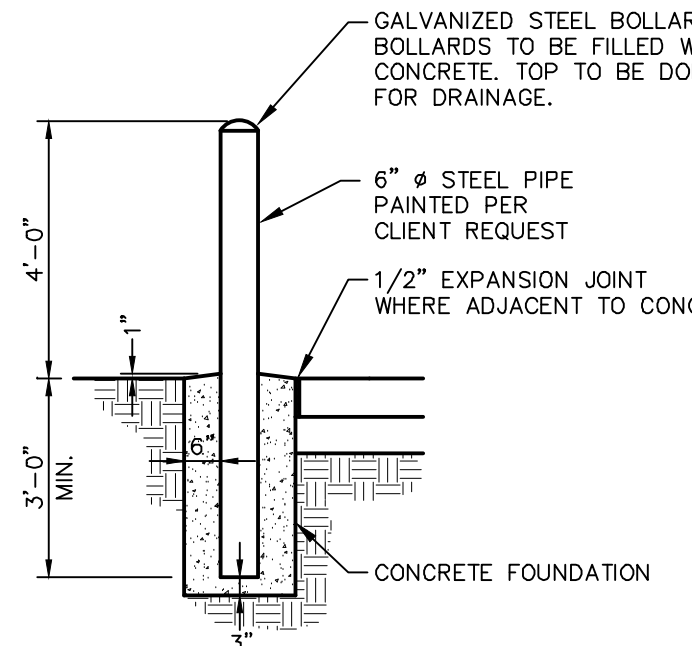
SIGN SHALL ADHERE TO PA DOT R1-1 30" x 30" STANDARDS
SIGNAGE

MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408.
SIGN POSTS AND SPLICE SLEEVES SHALL HAVE 7/16" DIAMETER HOLES OR DIE-CUT KNOCKOUTS ON 1" CENTERS ON ALL FOUR SIDES. ANCHOR POSTS AND ANCHOR SLEEVES SHALL HAVE 7/16" DIAMETER HOLES ON 1" CENTERS ON ALL FOUR SIDES.
BOLTS AND NUTS SHALL BE ASTM A 307, GRADE B.
DRIVE RIVETS MAY BE USED TO FASTEN SIGN BLANKS TO THE SIGN POST.

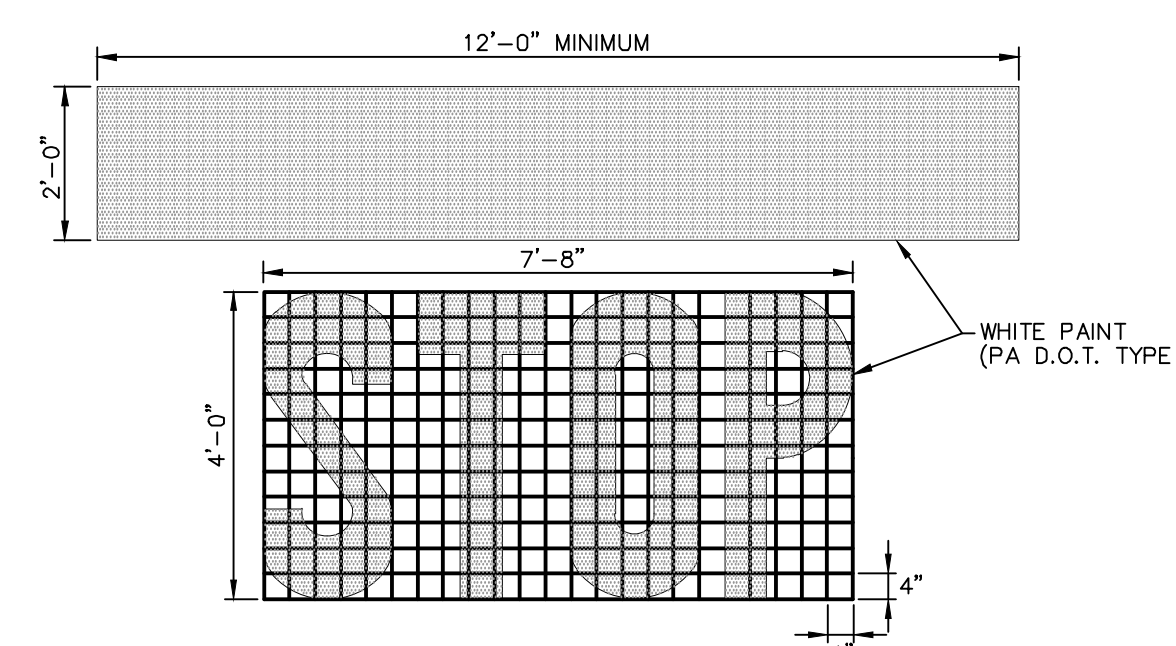


INSTALLATION DETAIL

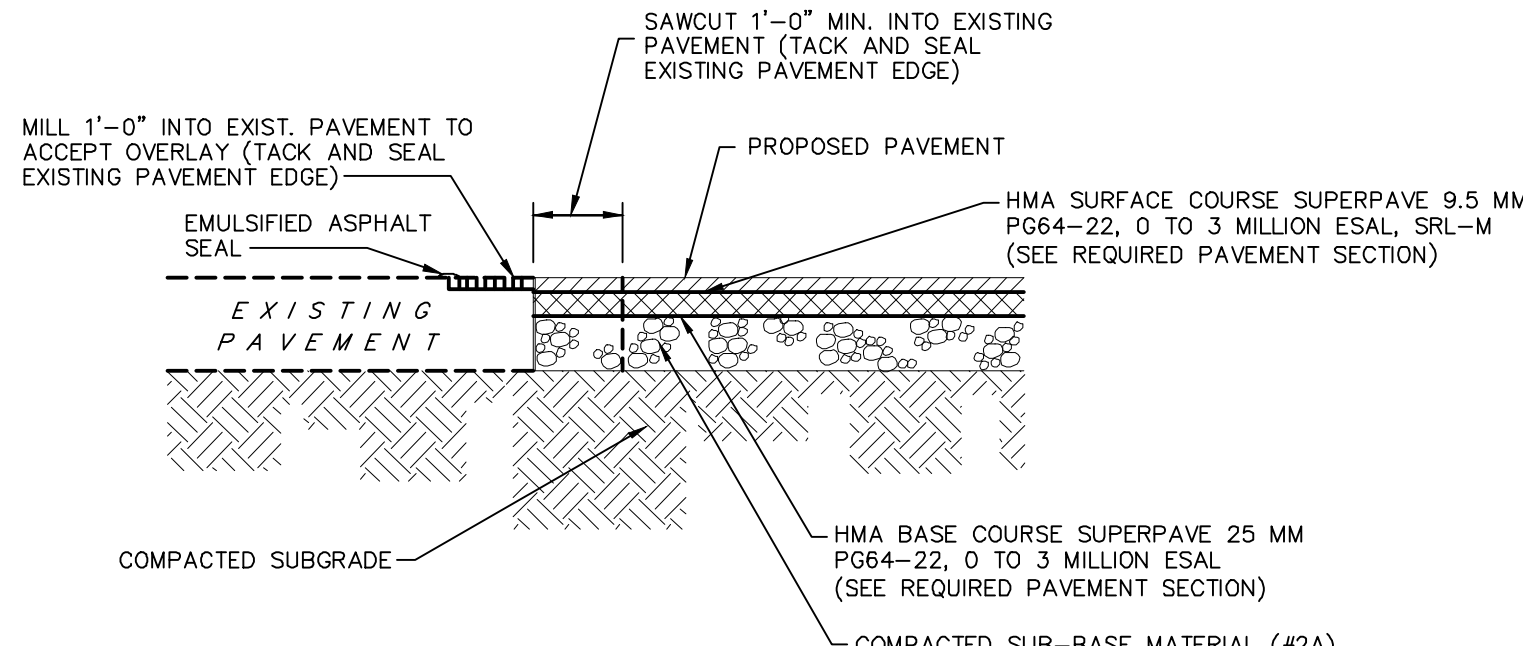
STOP SIGN & POST
NOT TO SCALE



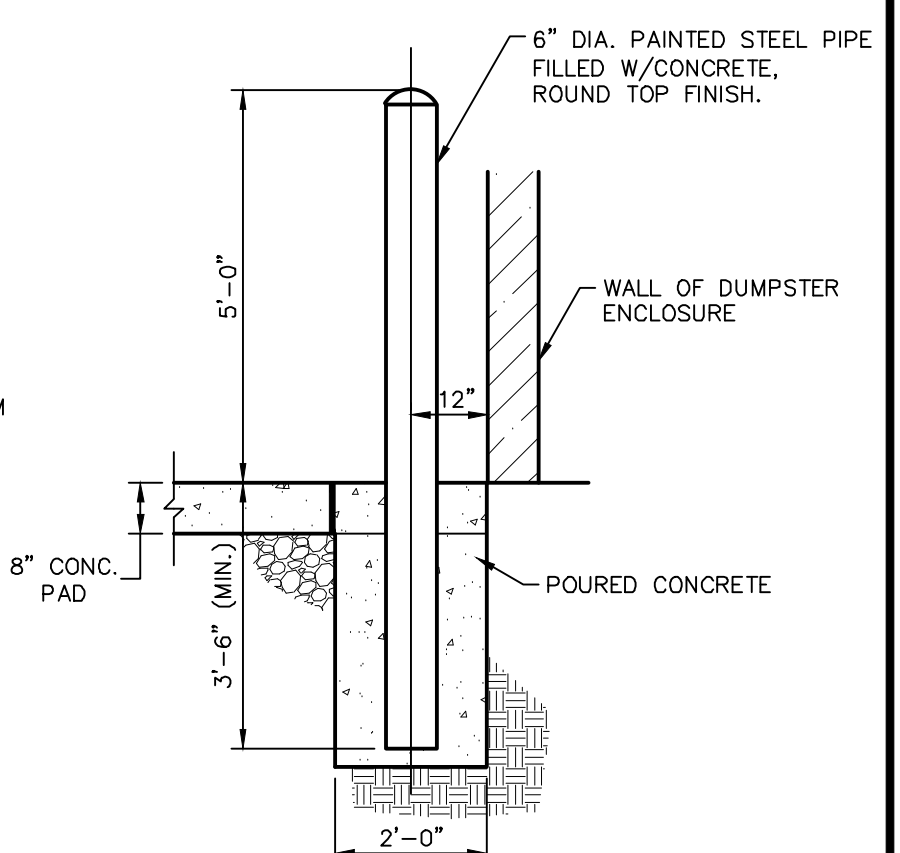
STEEL BOLLARD
NOT TO SCALE



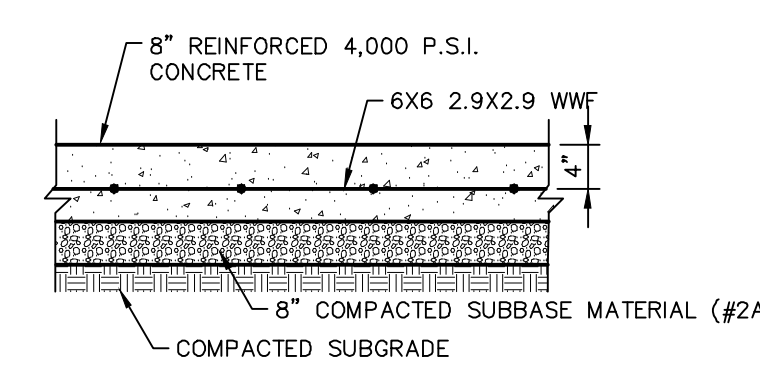
STOP BAR PAVEMENT MARKING DETAIL
NOT TO SCALE



TYPICAL SAW-CUT DETAIL
NOT TO SCALE

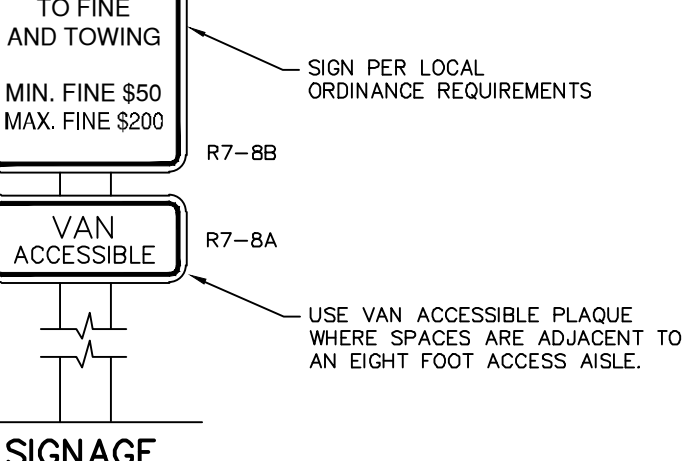
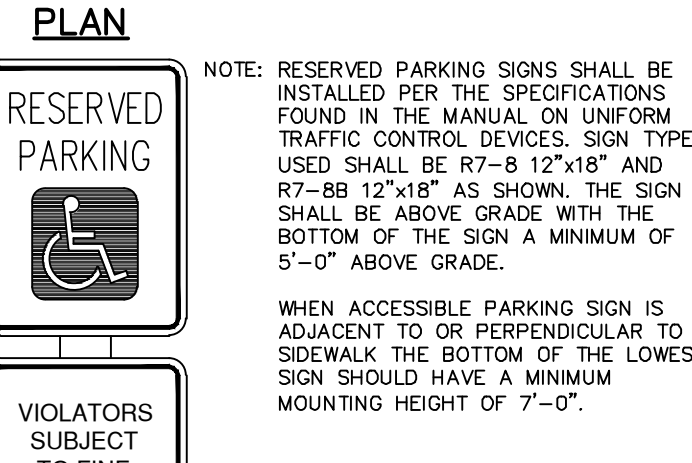
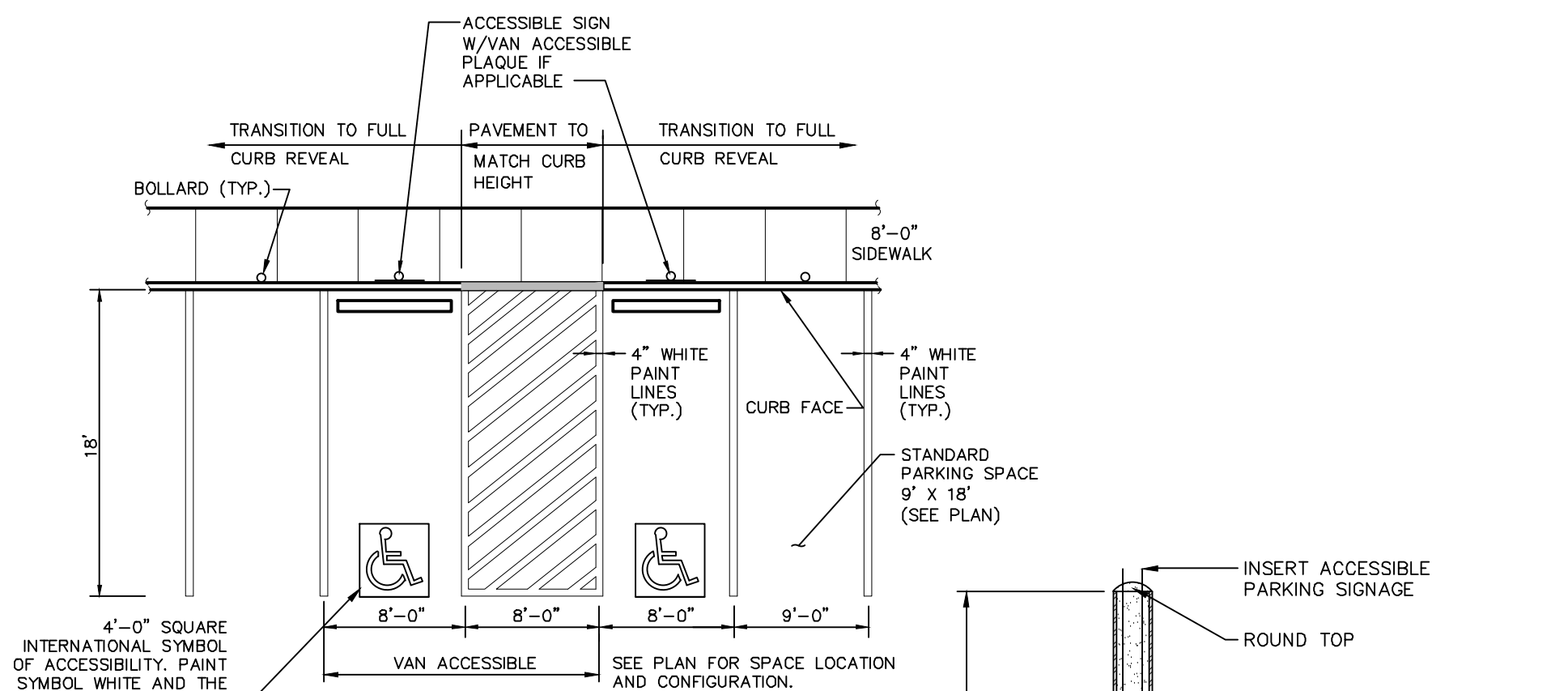


6" DIA. DUMPSTER BOLLARD
NOT TO SCALE

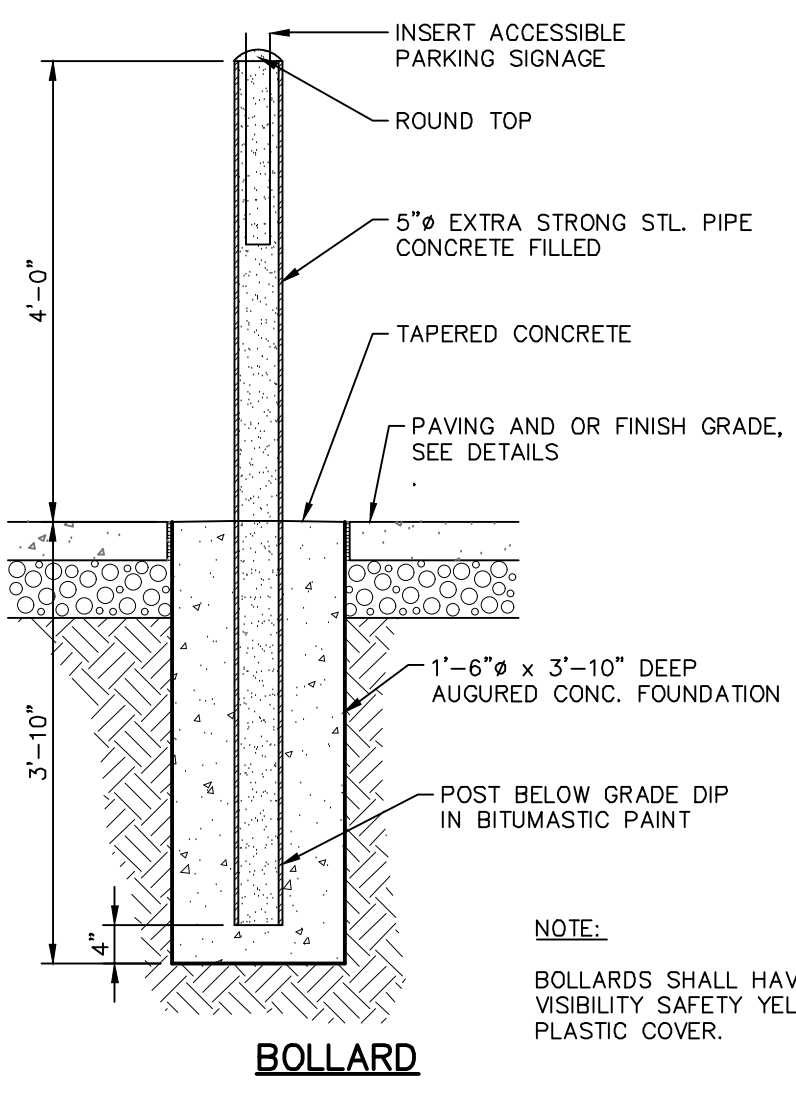


- NOTE:**
1. USE 1/2 INCH EXPANSION JOINTS ADJACENT TO RIGID STRUCTURES.

CONCRETE DUMPSTER PAD
NOT TO SCALE



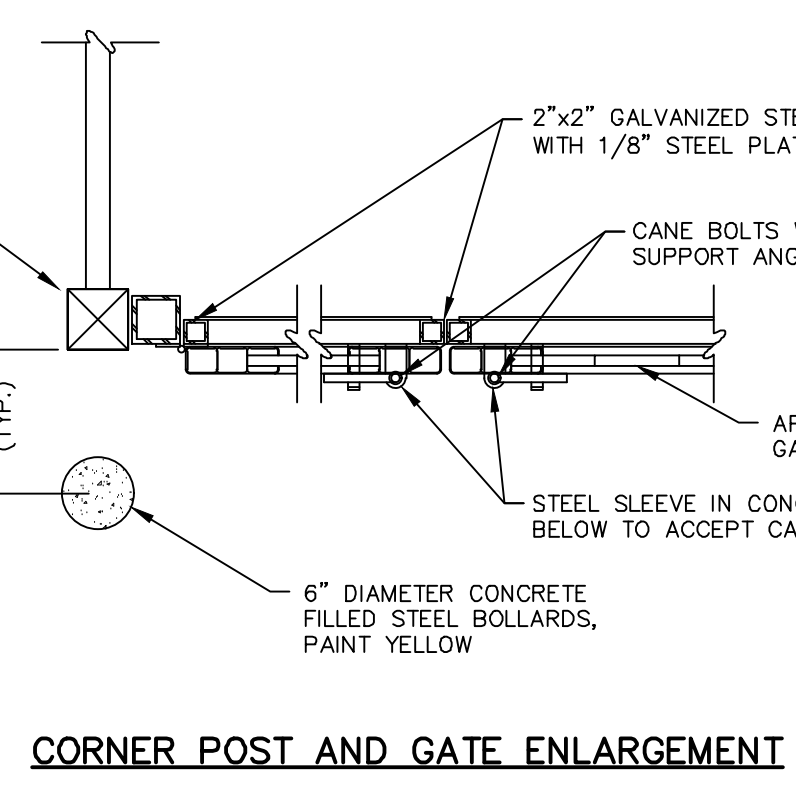
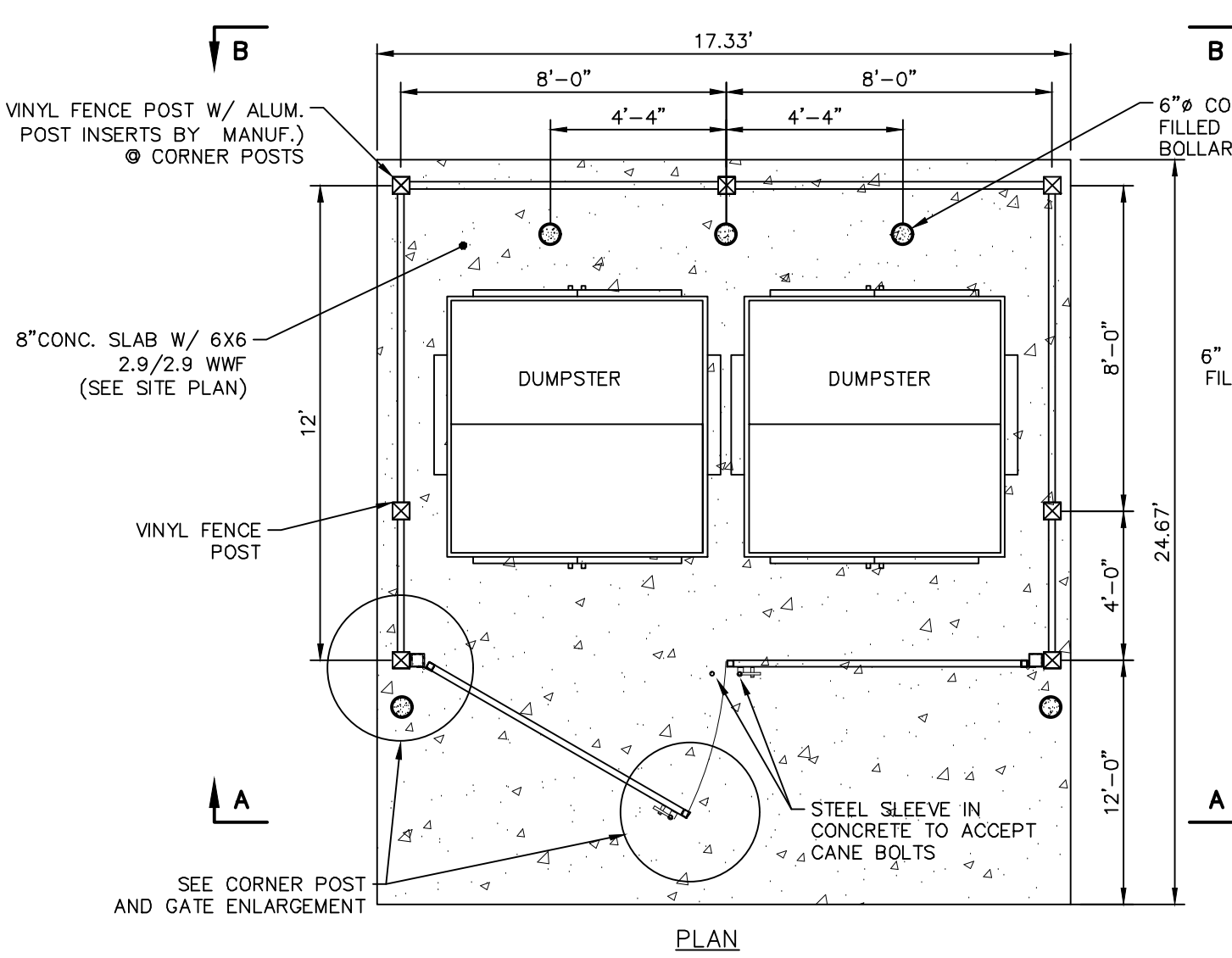
SIGNAGE



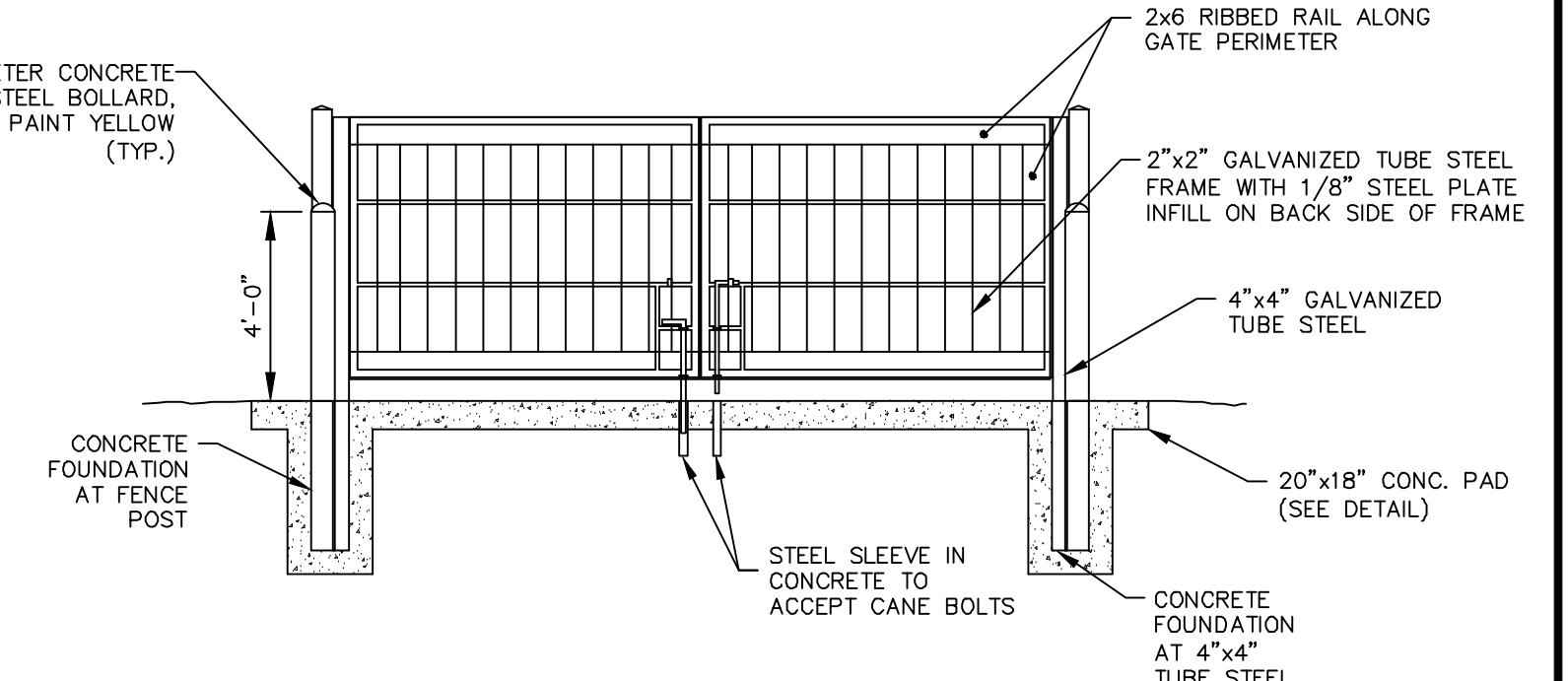
BOLLARD

- NOTE:**
- BOLLARDS SHALL HAVE HIGH VISIBILITY SAFETY YELLOW PLASTIC COVER.

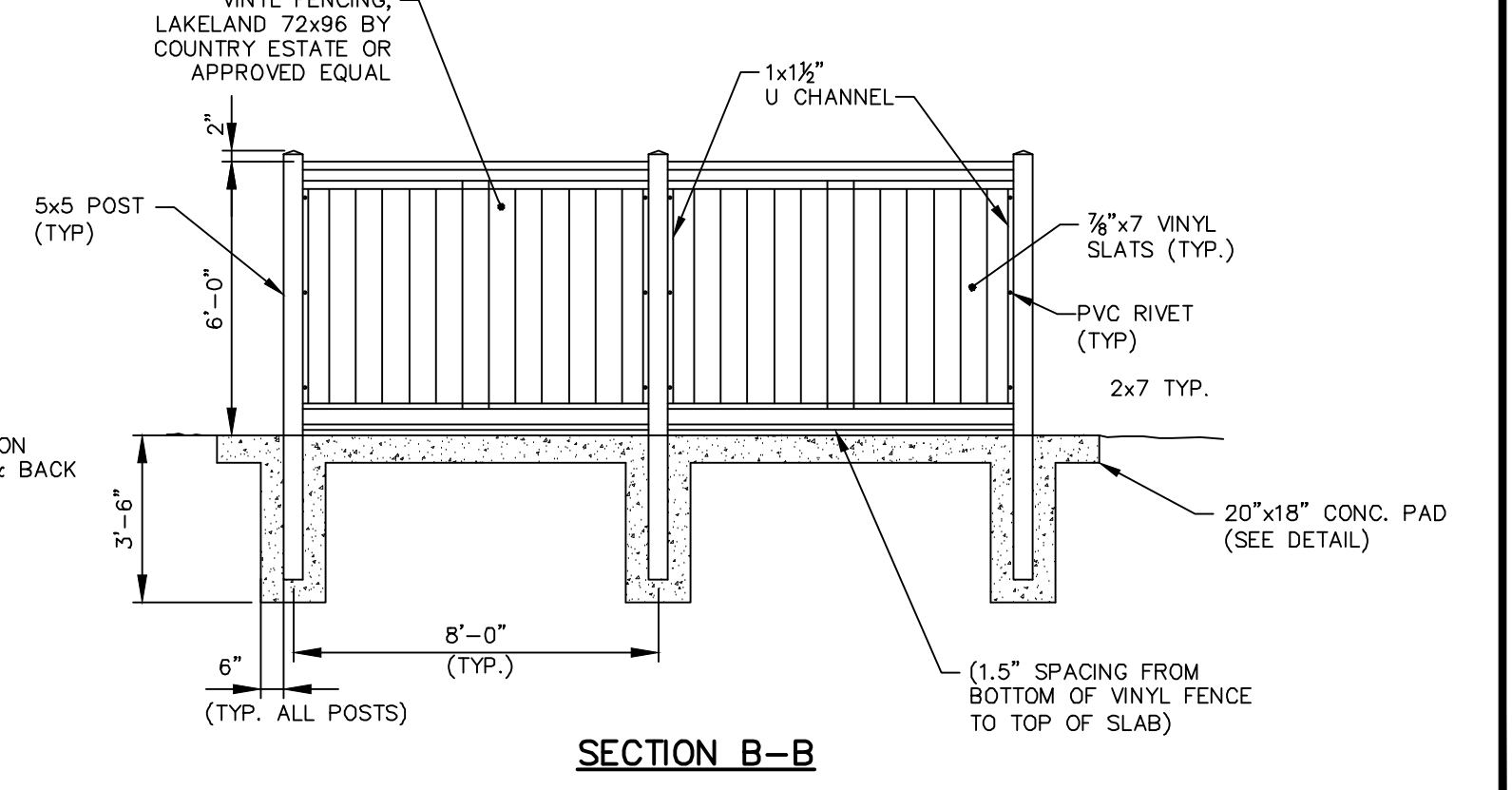
ACCESSIBLE & STANDARD PARKING SPACE
NOT TO SCALE



CORNER POST AND GATE ENLARGEMENT

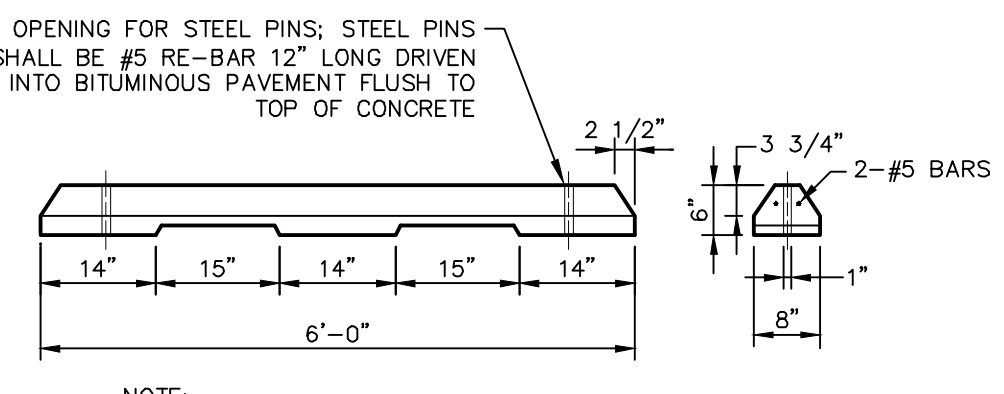


SECTION A-A



SECTION B-B

VINYL FENCING DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE



- NOTE:**
1. WHEEL STOP SHALL BE PLACED 2' FROM END OF PARKING SPACE & CENTERED

CONCRETE WHEEL STOP
NOT TO SCALE

PROJ. MGR. - AMN
DESIGN - AMN
CADD - AMN
CHECKED - JCG

NO.	DATE	REVISION
11	08/28/23	REVISED PER TYP. COMMENTS
10	05/19/23	REVISED PER BCDD COMMENTS
9	04/20/23	REVISED PER PROOT HOP PLANS
8	11/17/22	REVISED PER BCDD NPDES COMMENTS
7	09/08/22	ADDED PROPOSED H.O.P. IMPROVEMENTS
6	09/14/21	ADDED EV CHARGING STATIONS
5	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS

LANDWORKS
CIVIL DESIGN, LLC
land development consultants

3641 MARKET STREET - SUITE 302 • CAMP HILL, PA 17011
P (717) 579-0074
www.landworkscad.com

CONSTRUCTION DETAILS
FOR
KRUMSVILLE ROAD CONVENIENCE STORE
FOR
HARMIKE INVESTMENTS, LLC
GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

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FOR
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GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO. 22-0117-001
DATE: 05-06-19
SCALE: N.T.S.
SHEET CD 8.1

FINAL

PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
CHECKED -	JCG

NO.	DATE	REVISION
11	08/28/23	REVISED PER TYP. COMMENTS
10	05/19/23	REVISED PER BCDD COMMENTS
9	04/28/23	REVISED PER PROOT HOP PLANS
8	11/17/22	REVISED PER BCDD NOTES COMMENTS
7	09/30/22	ADDED PROPOSED H.O.P. IMPROVEMENTS
6	09/14/21	ADDED E.V. CHARGING STATIONS
5	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS
NO.	DATE	REVISION

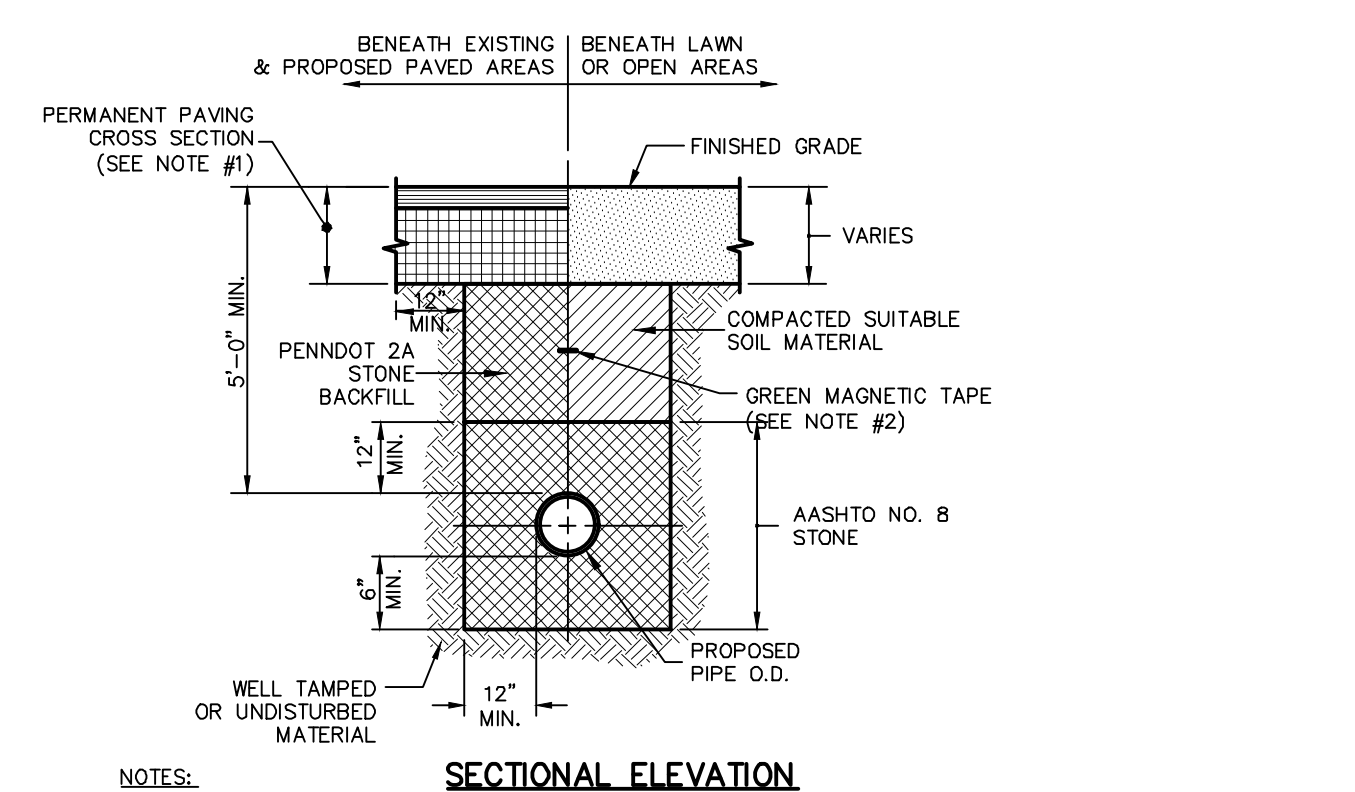
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CONSTRUCTION DETAILS
FOR
KRUMSVILLE ROAD CONVENIENCE STORE
FOR
HARMIKE INVESTMENTS, LLC
GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

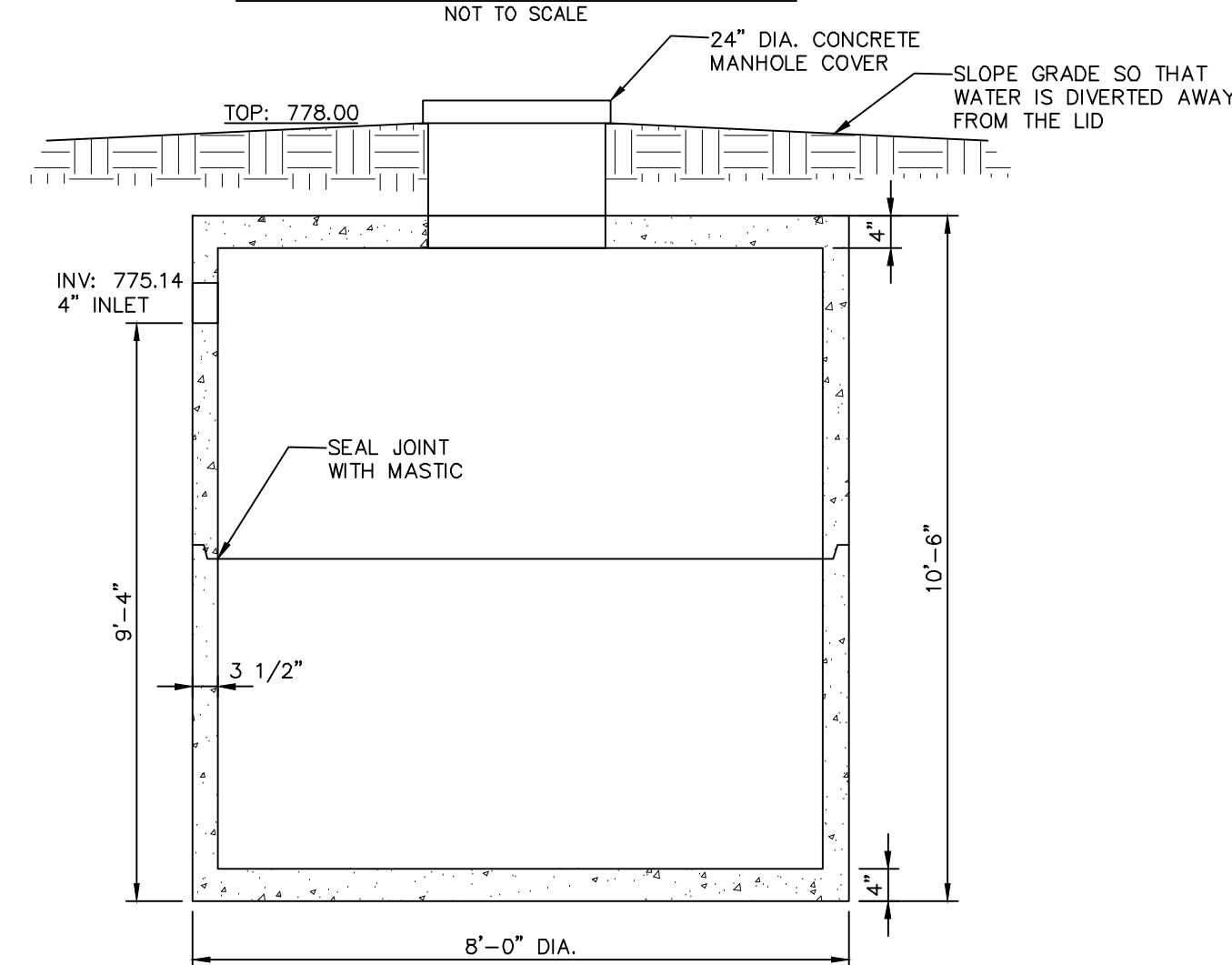
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PROJECT NO.	22-0117-001
DATE:	05-06-19
SCALE:	N.T.S.
SHEET	CD 8.2



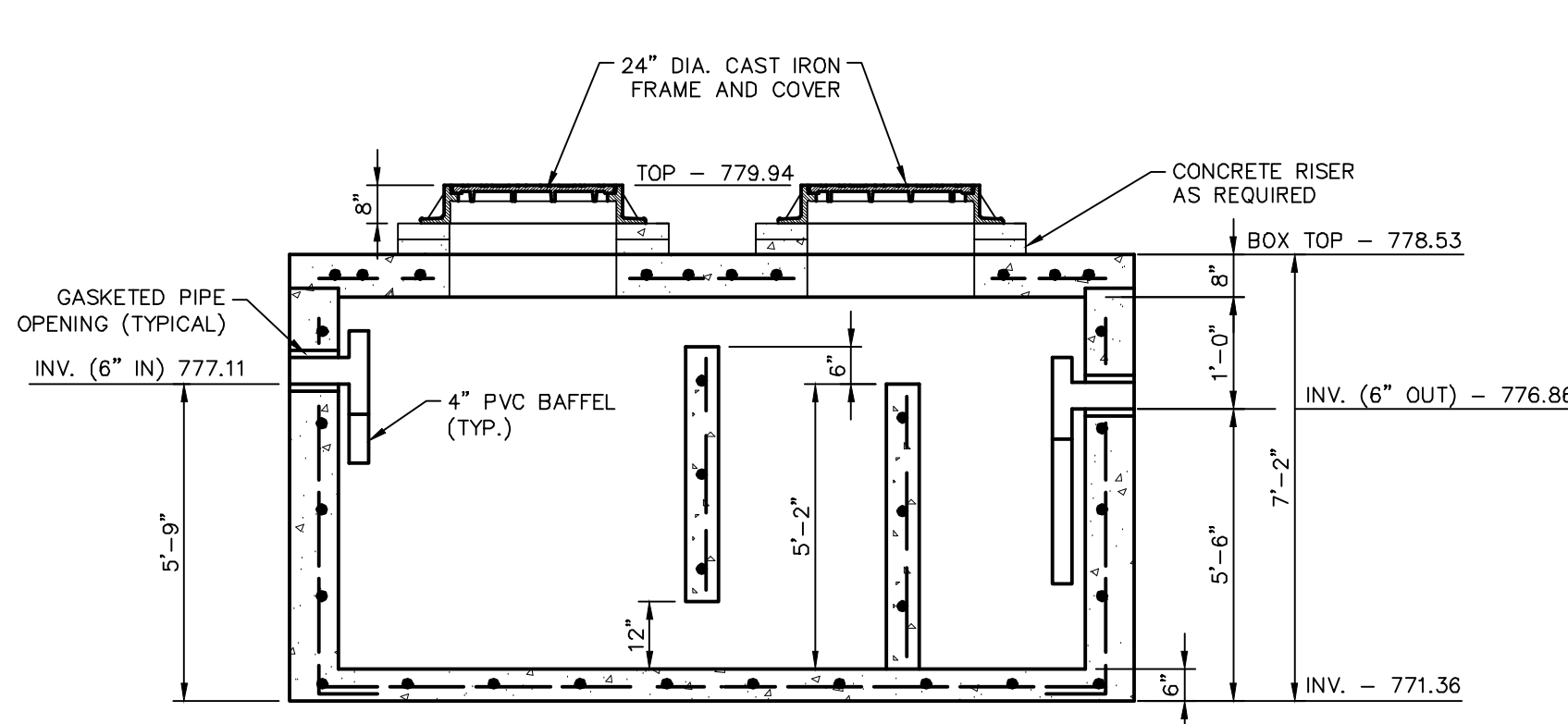
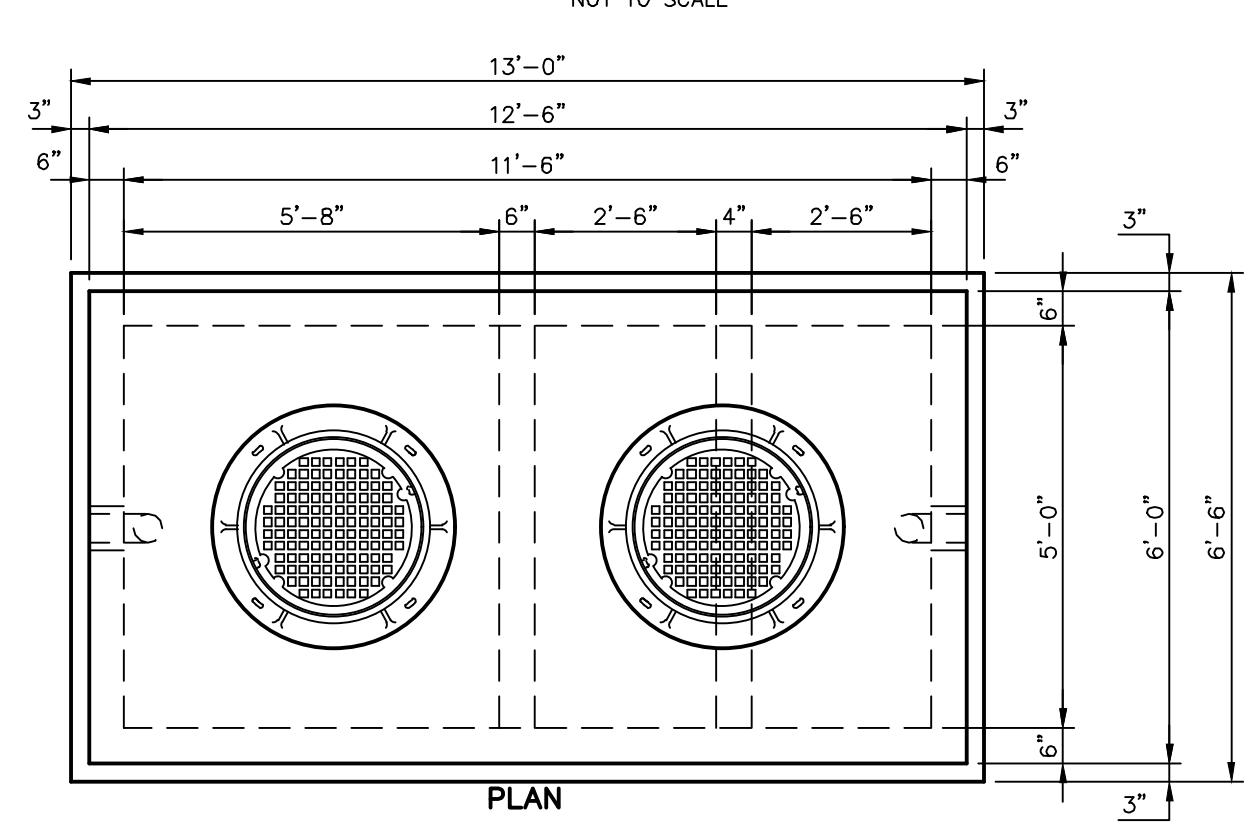
SANITARY SEWER TRENCH

NOT TO SCALE



SECTIONAL ELEVATION (REPLACEMENT AREA)
3000 GALLON HOLDING TANK

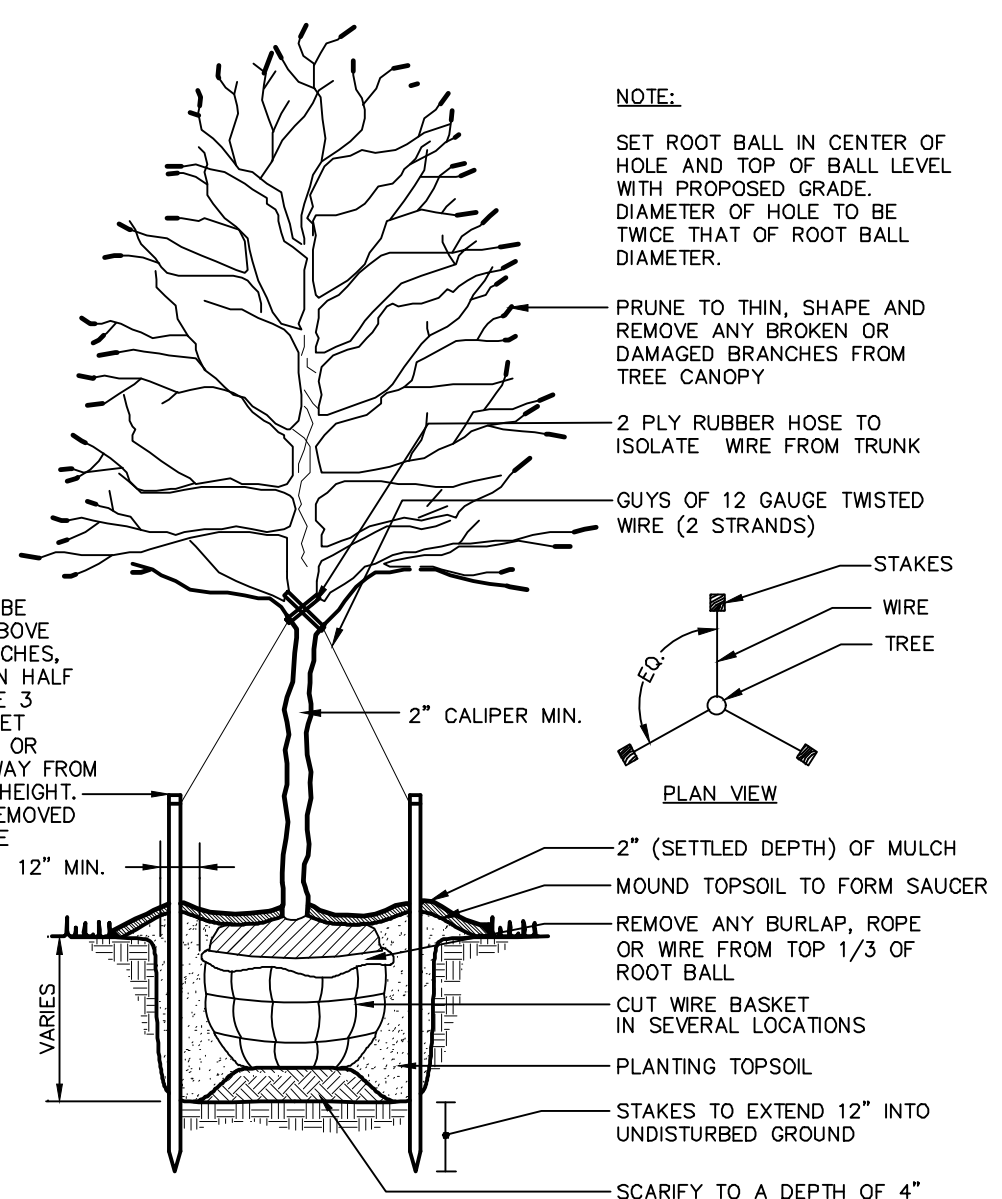
NOT TO SCALE



- NOTES:**
- CONCRETE TO BE 5000 PSI MIN. @ 28 DAYS.
 - REINFORCEMENT PER ASTM A615, GRADE 60.
 - DESIGNED FOR H-20 TRAFFIC LOADING, WITH 1' TO 5' OF GROUND COVER.

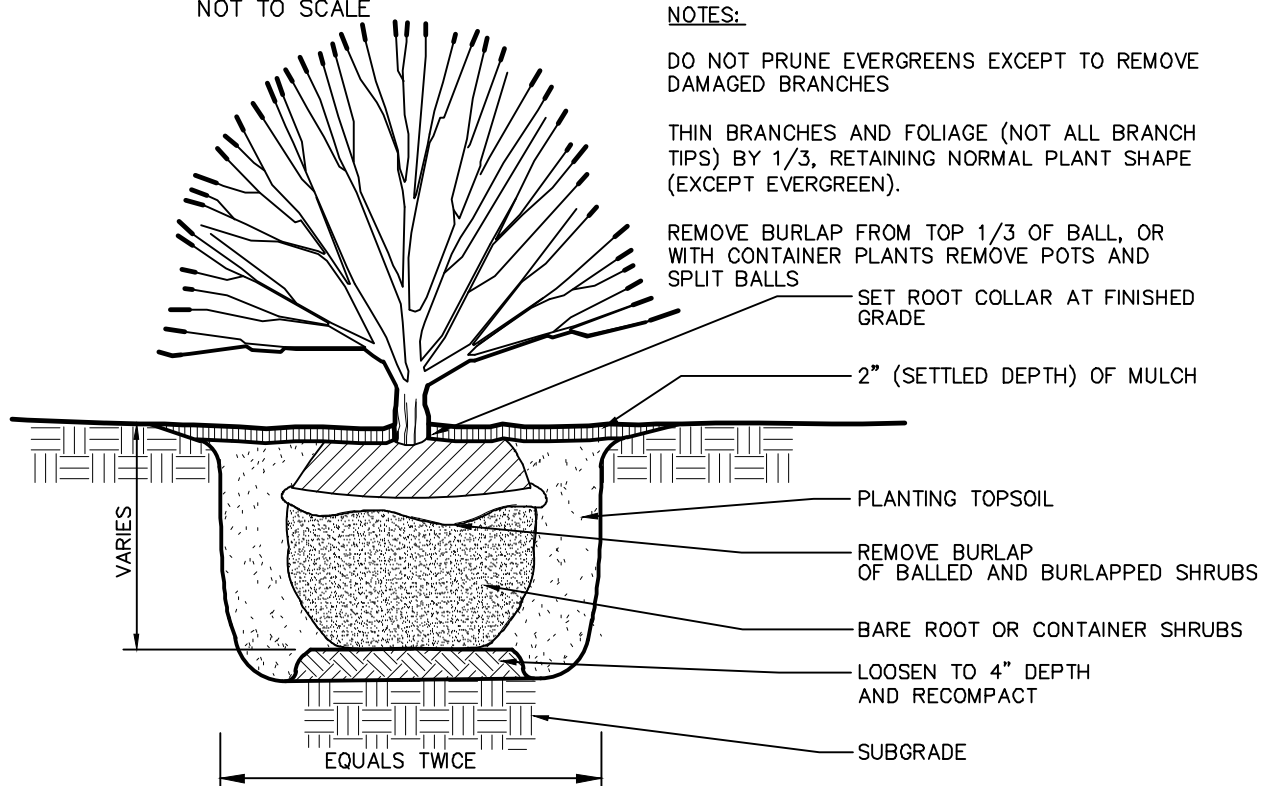
MONARCH PRODUCTS OR APPROVED EQUAL
2000 GALLON COMMERCIAL GREASE INTERCEPTOR

NOT TO SCALE



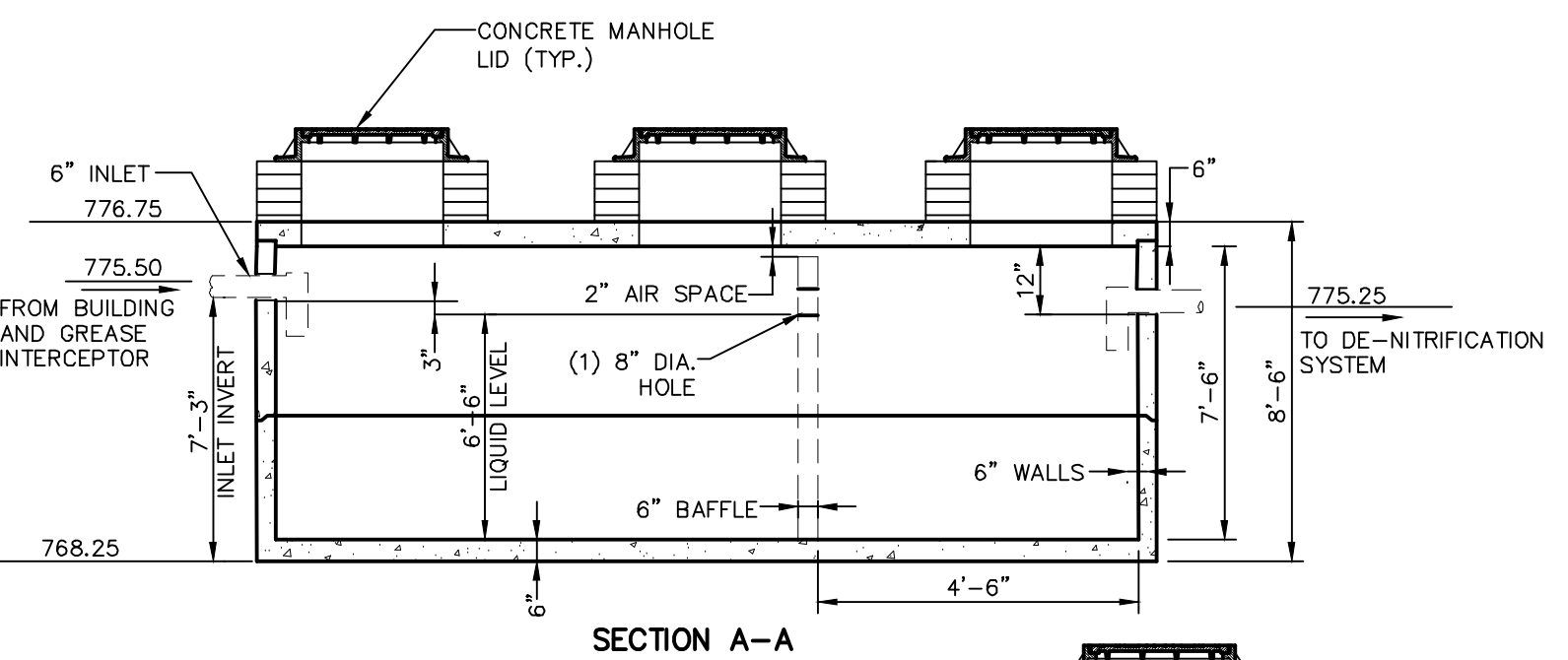
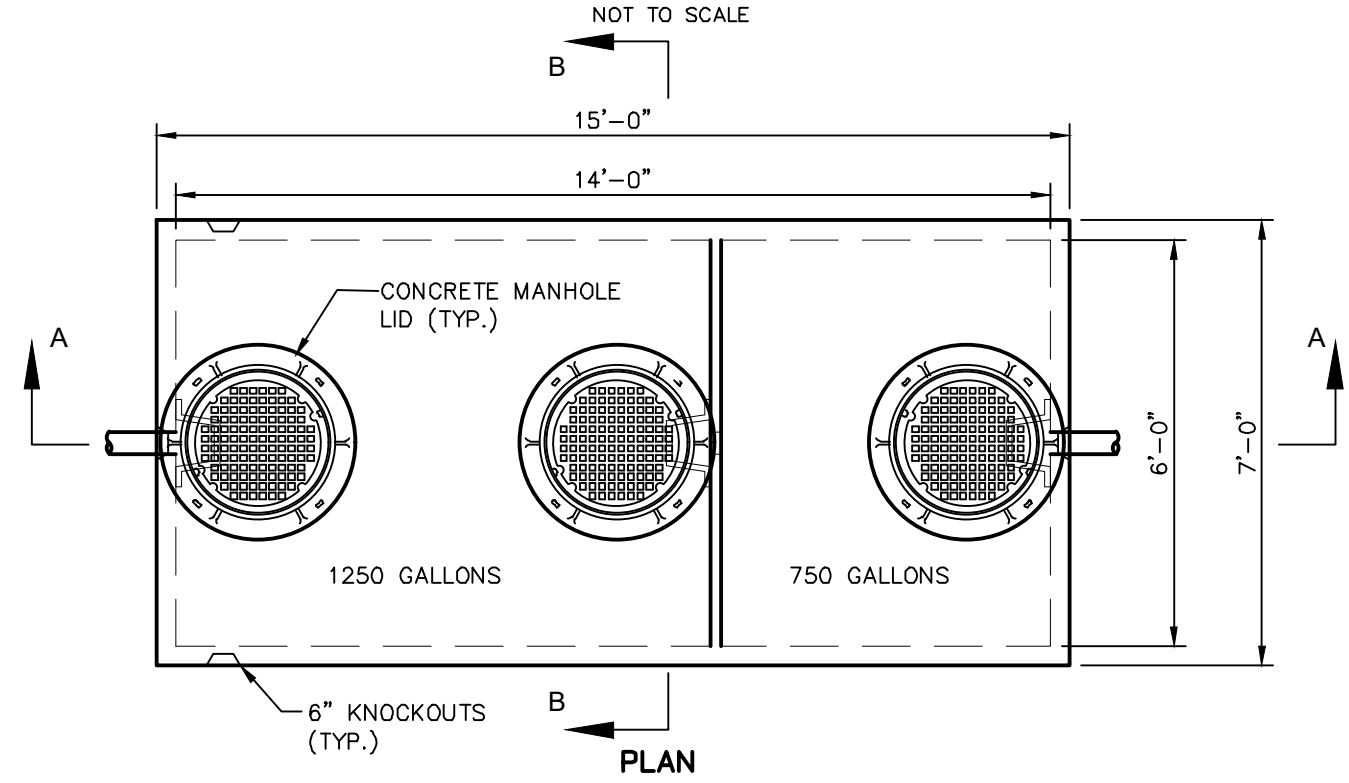
DECIDUOUS TREE PLANTING

NOT TO SCALE



SHRUB PLANTING

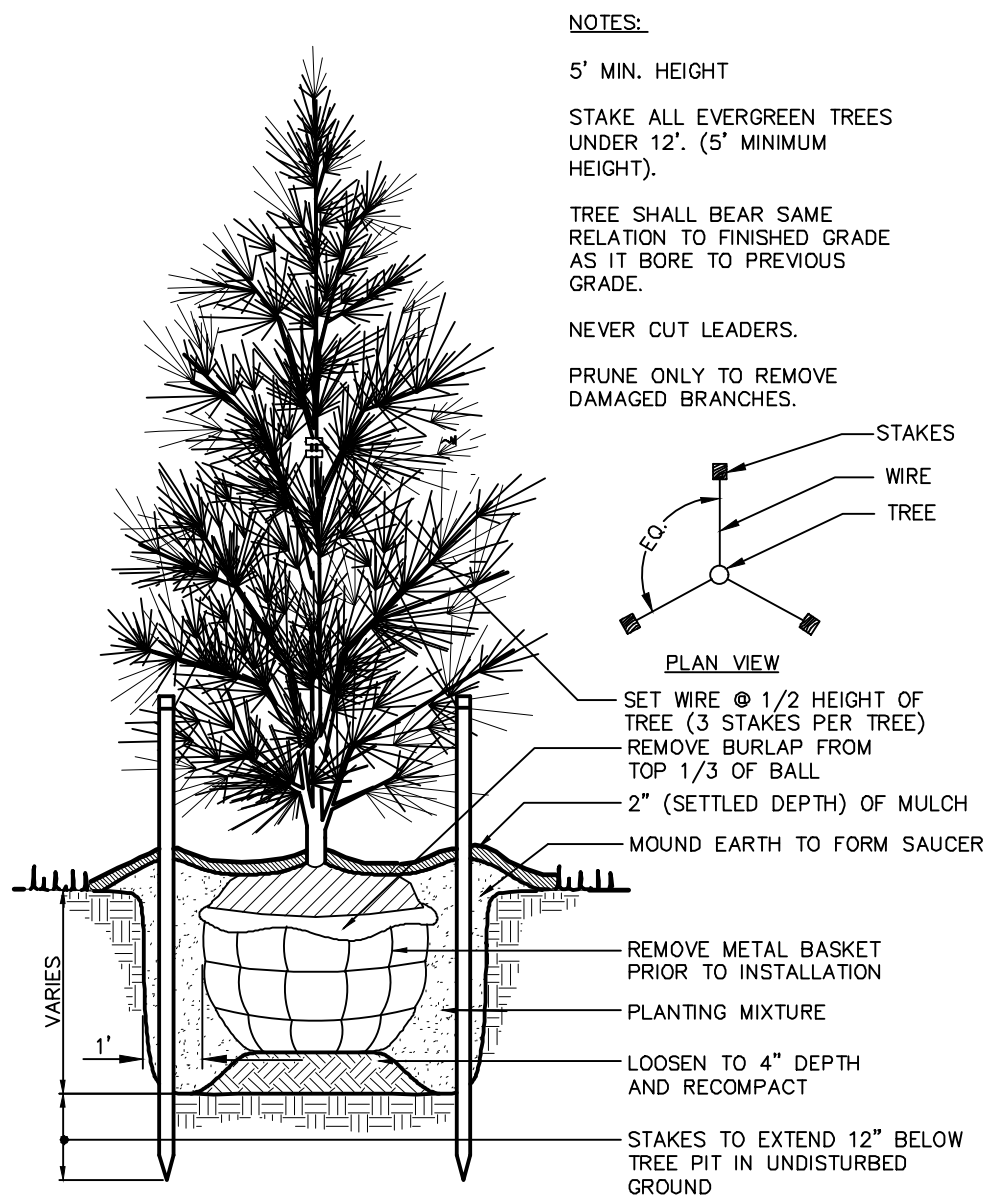
NOT TO SCALE



- DESIGN NOTES:**
- CONCRETE TO BE 5000 PSI MIN. @ 28 DAYS.
 - REINFORCEMENT PER ASTM A-615, GRADE 60.
 - STANDARD STEEL MANHOLE LID FOR COVER.
 - TANKS ARE DESIGNED TO MEET ASTM C858 AND ACI 318 AASHTO HS-20 TRAFFIC LOADING.
 - EARTH COVER TO BE 0 - 5 FEET MAXIMUM.
 - SEAL CONSTRUCTION JOINT WITH 1" DIA. BUTYL RUBBER OR APPROVED EQUAL.

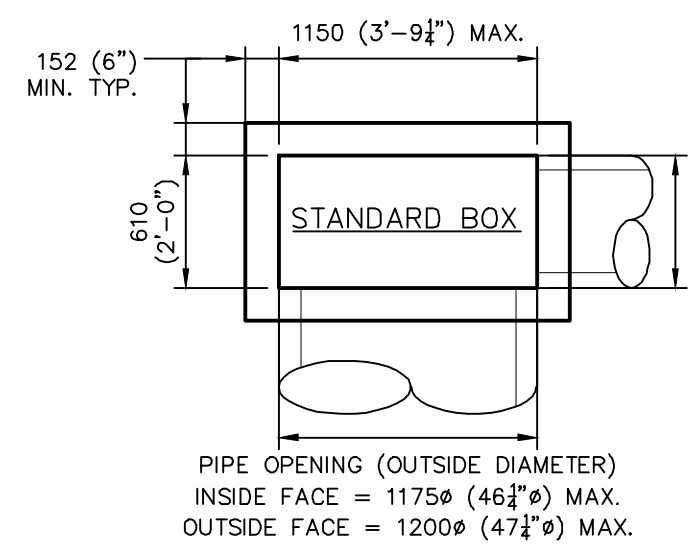
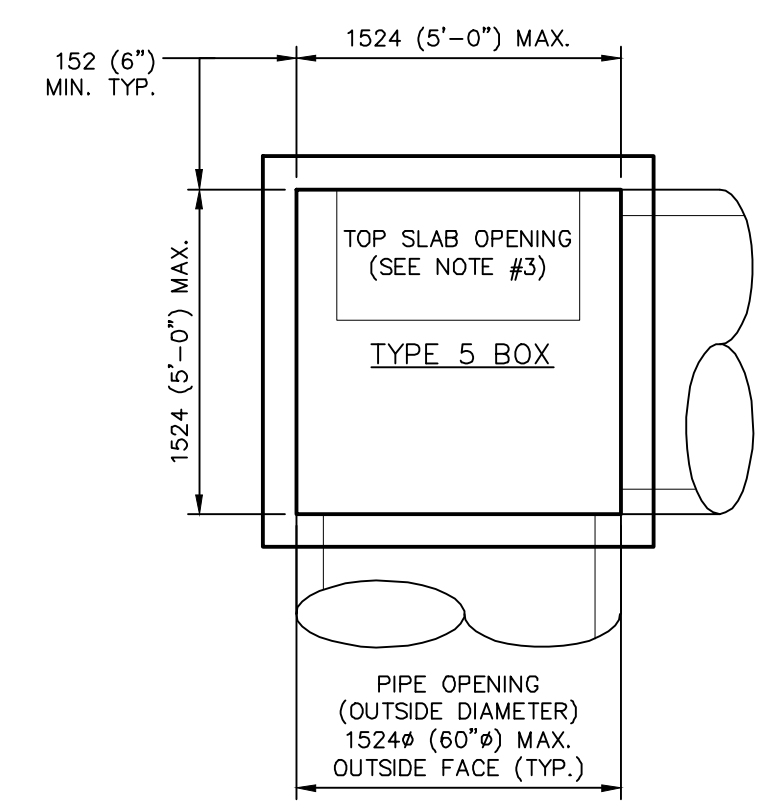
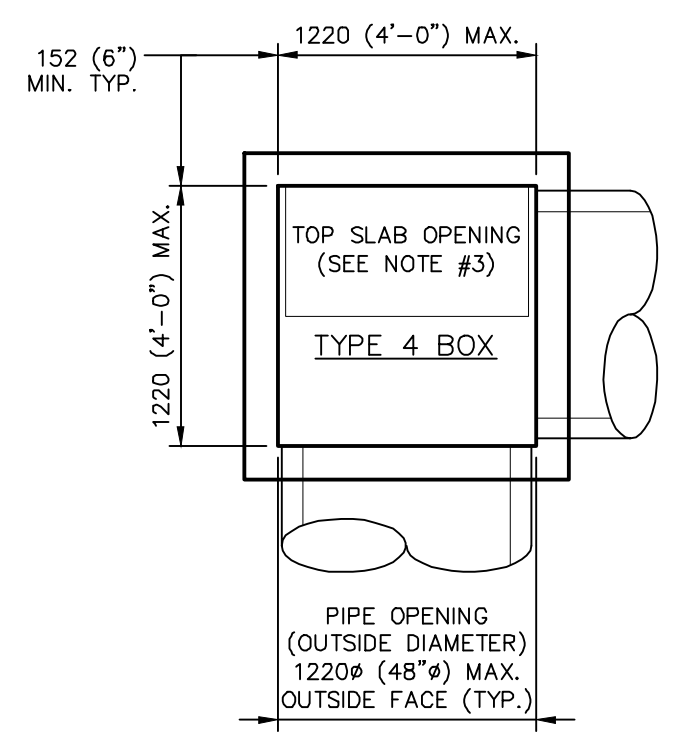
MONARCH PRECAST OR APPROVED EQUAL
2000 GALLON, 2-COMPARTMENT, PRECAST, SEPTIC TANK

NOT TO SCALE



EVERGREEN TREE PLANTING

NOT TO SCALE

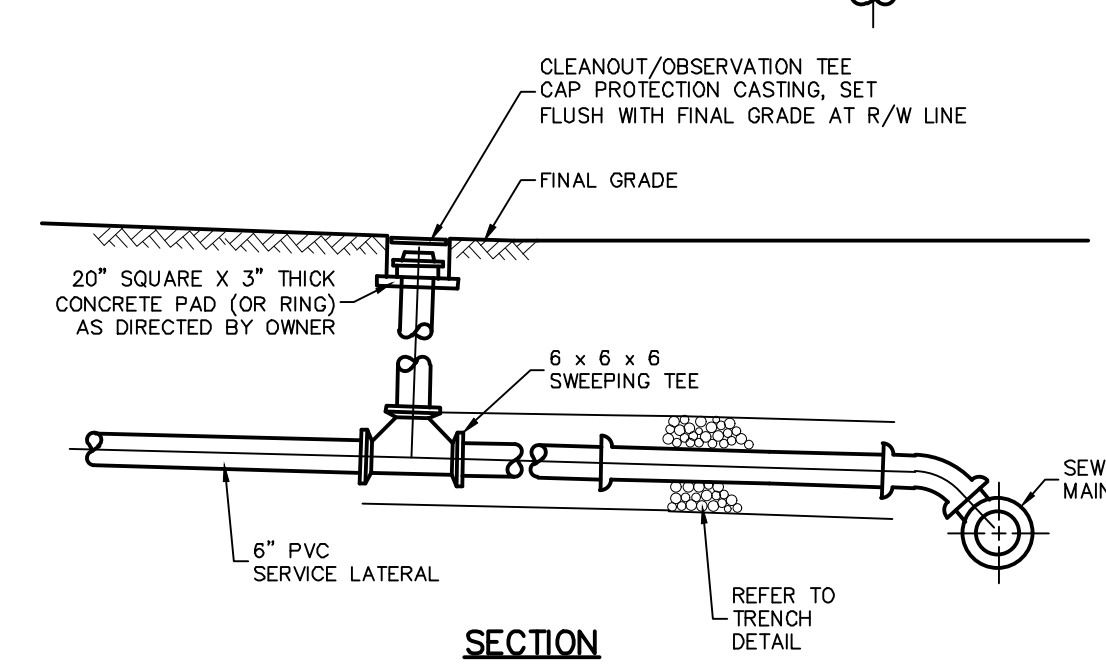
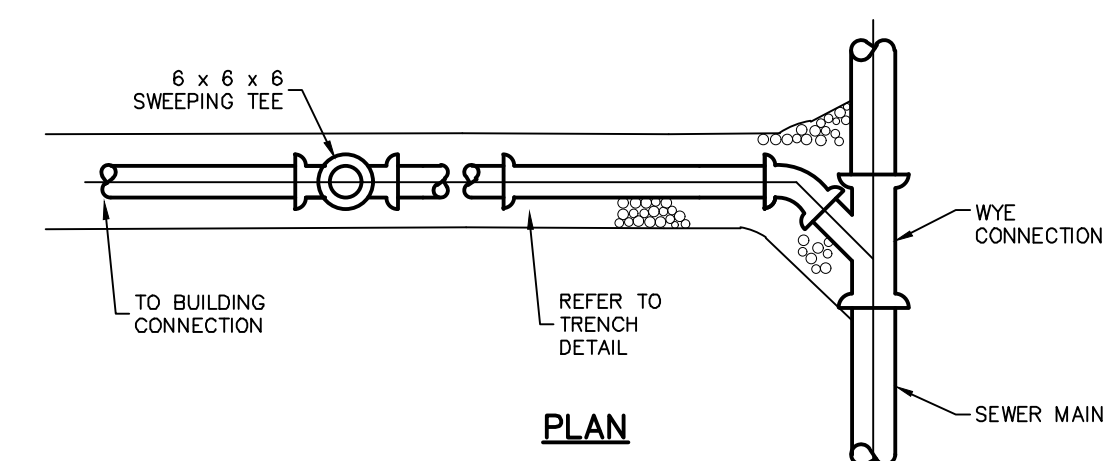


PIPE OPENING (OUTSIDE DIAMETER)
INSIDE FACE = 6.35" (25%) MAX.
OUTSIDE FACE = 6.60" (26%) MAX.

TYPICAL PENNDOT INLET BOXES & TOP SLAB TYPES

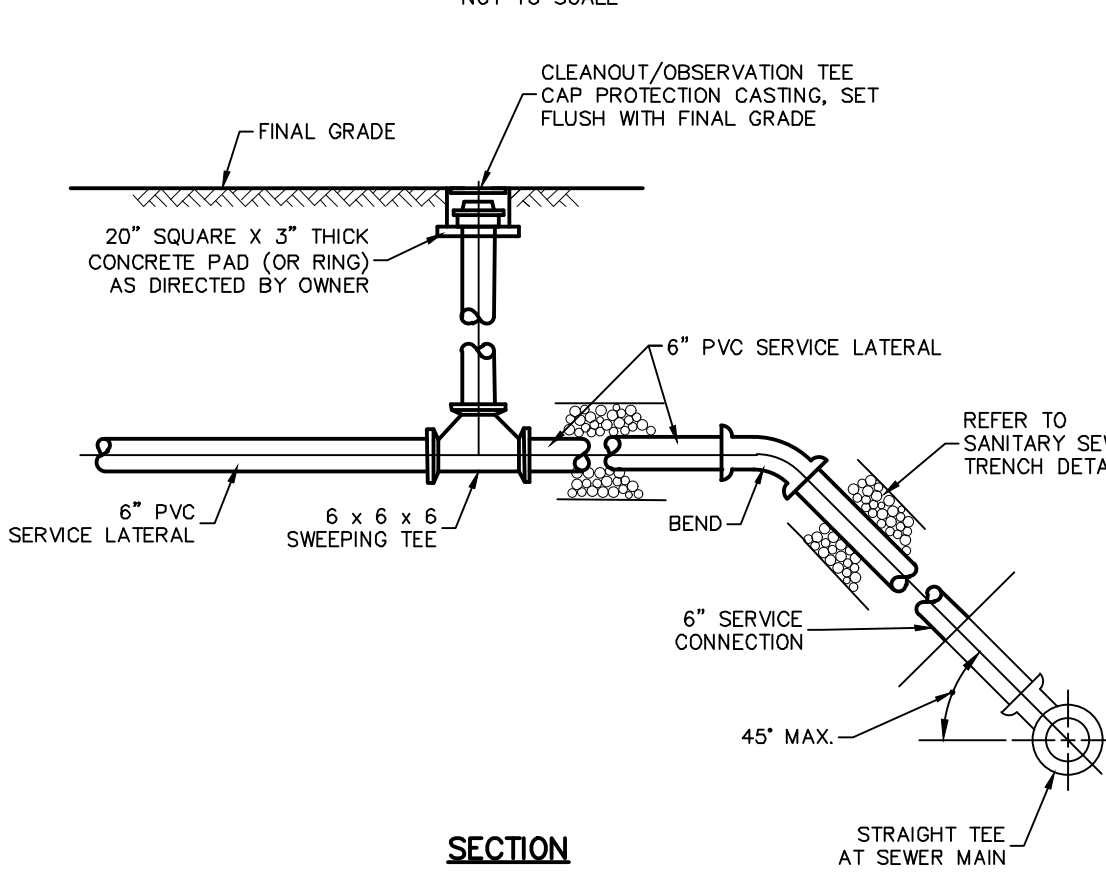
NOT TO SCALE

- NOTES:**
- CONSTRUCT IN ACCORDANCE WITH PA DOT SPECIFICATIONS (RC-46).
 - SEE GRADING & UTILITIES PLAN FOR INLET GRATE LOCATIONS.
 - SEE PROFILES FOR INLET TOP UNIT AND BOX TYPES.
 - ALL PIPES SHALL ENTER INLETS ALONG THE SIDES OR ENDS. NO CORNER ENTRY WILL BE PERMITTED.
 - PROVIDE MANHOLE STEPS IN ALL INLET BOXES OVER 5 FEET IN DEPTH.
 - ALL INLETS SHALL BE PROVIDED WITH STRUCTURAL STEEL BICYCLE SAFE GRATES PER PADOT RC-34M.



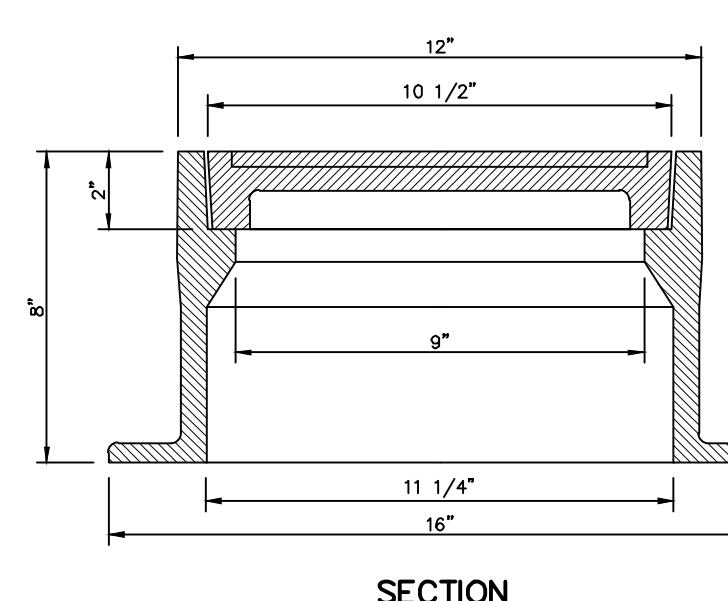
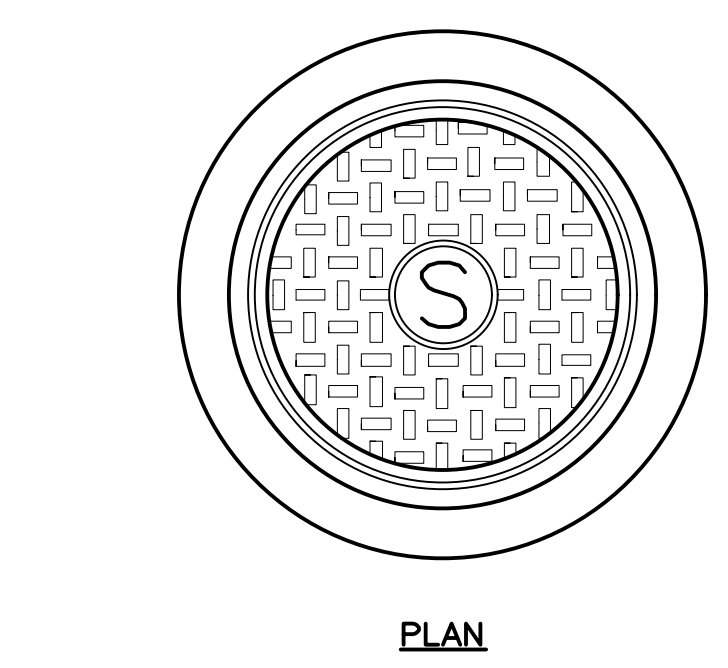
SERVICE LATERAL - NORMAL DEPTH

NOT TO SCALE



SERVICE LATERAL - DEEP SEWER

NOT TO SCALE

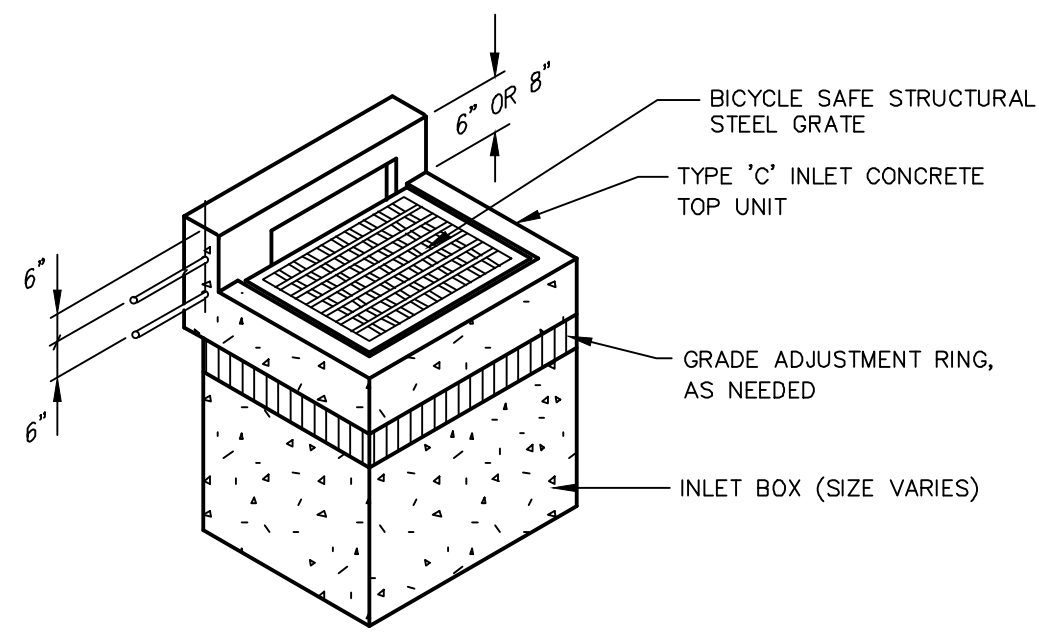


- NOTES:**
- MINIMUM WEIGHT OF 90 LBS.
 - FRAME AND COVER SHALL BE MODEL NO. 1565, MANUFACTURED BY EAST JORDAN IRON WORKS, INC. OR APPROVED EQUAL.
 - HS-20 LOAD RATING IS REQUIRED.
 - A 1/2 INCH HOLE WILL BE REQUIRED IN THE LID WHEN INSTALLED OVER A VENT.

CLEANOUT/OBSERVATION TEE CAP PROTECTION CASTING

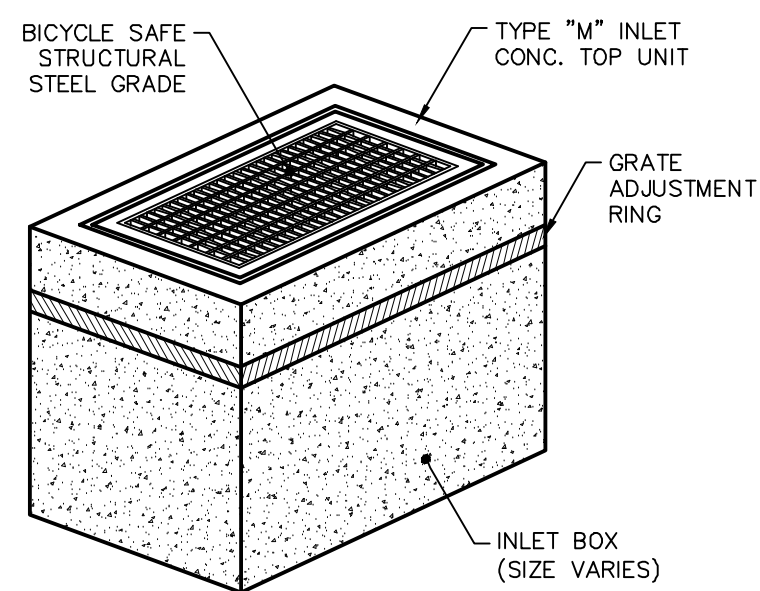
NOT TO SCALE

FINAL



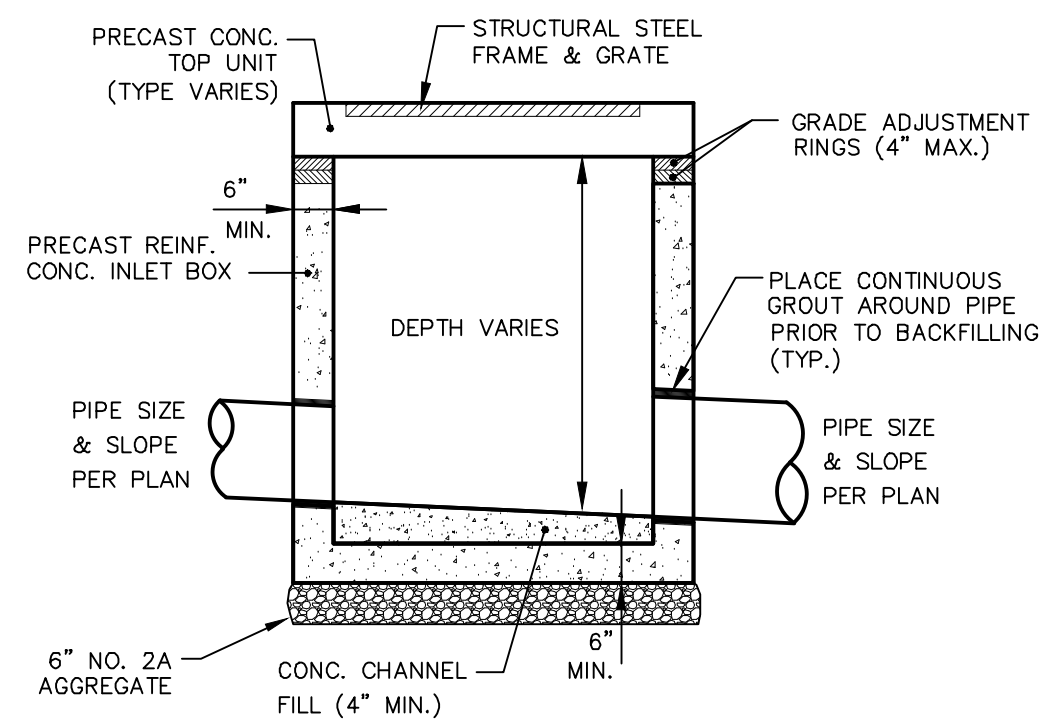
- NOTES:**
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST RELEASE OF PADOT PUBLICATION 408, SECTION 605 AND PUBLICATION 72M, RC-46M. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES.
 2. ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOMS.
 3. NO PIPES SHALL ENTER INLET BOX AT CORNER.
 4. THE USE OF MASTIC OR EQUIVALENT IS RECOMMENDED IN ALL INLETS LOCATED WITHIN GRASSED AREAS AND PCSM BMP AREAS TO PREVENT SOIL FROM WASHING INTO THE STORM SEWER OR INFILTRATION AREA THROUGH UNSEALED JOINTS IN THE INLET BOX AND TOP.

TYPE 'C' INLET
NOT TO SCALE



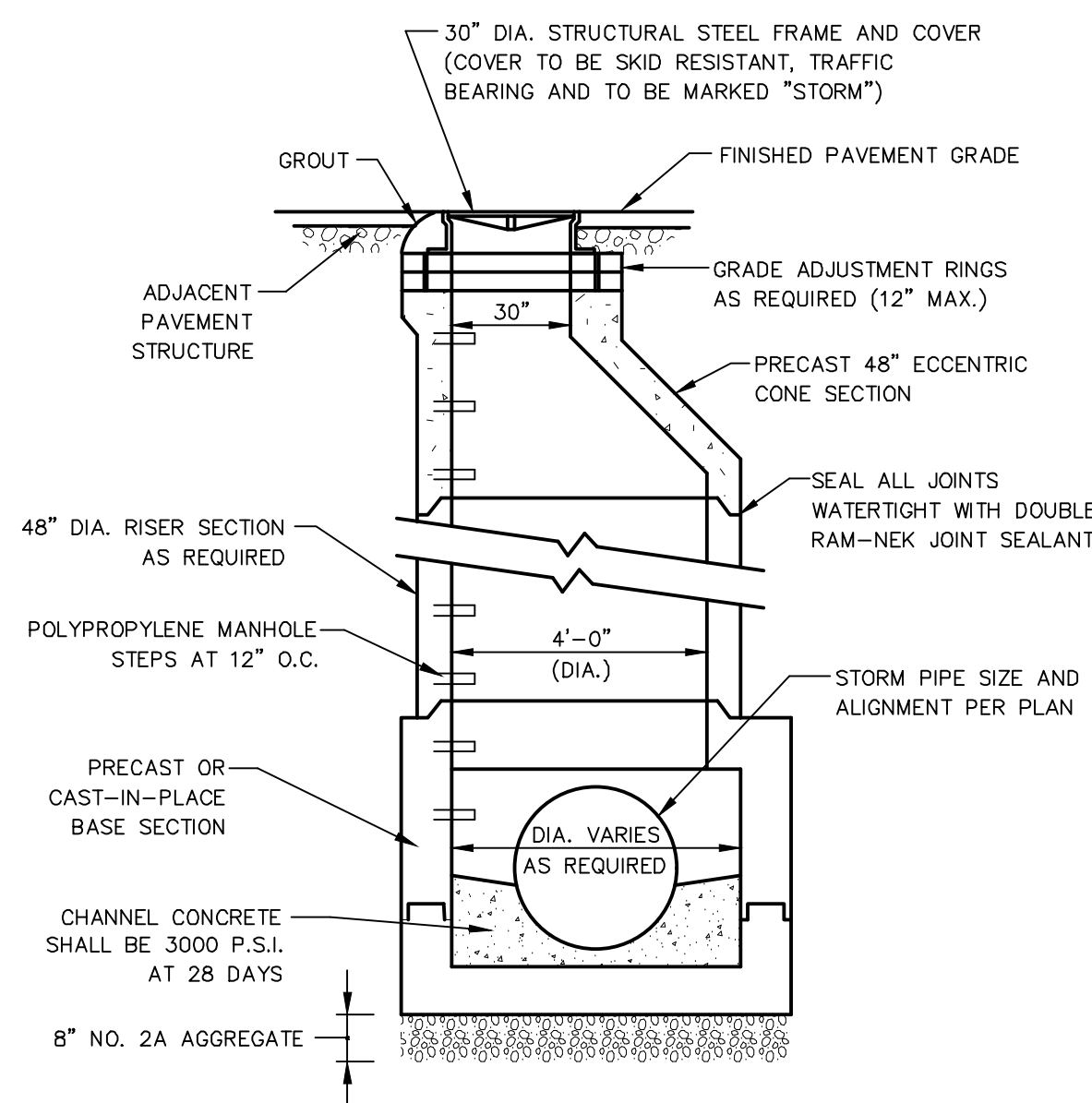
- NOTES:**
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST RELEASE OF PADOT PUBLICATION 408, SECTION 605 AND PUBLICATION 72M, RC-46M. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES.
 2. ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOMS.
 3. NO PIPES SHALL ENTER INLET BOX AT CORNER.
 4. THE USE OF MASTIC OR EQUIVALENT IS RECOMMENDED IN ALL INLETS LOCATED WITHIN GRASSED AREAS AND PCSM BMP AREAS TO PREVENT SOIL FROM WASHING INTO THE STORM SEWER OR INFILTRATION AREA THROUGH UNSEALED JOINTS IN THE INLET BOX AND TOP.

TYPE 'M' INLET
NOT TO SCALE



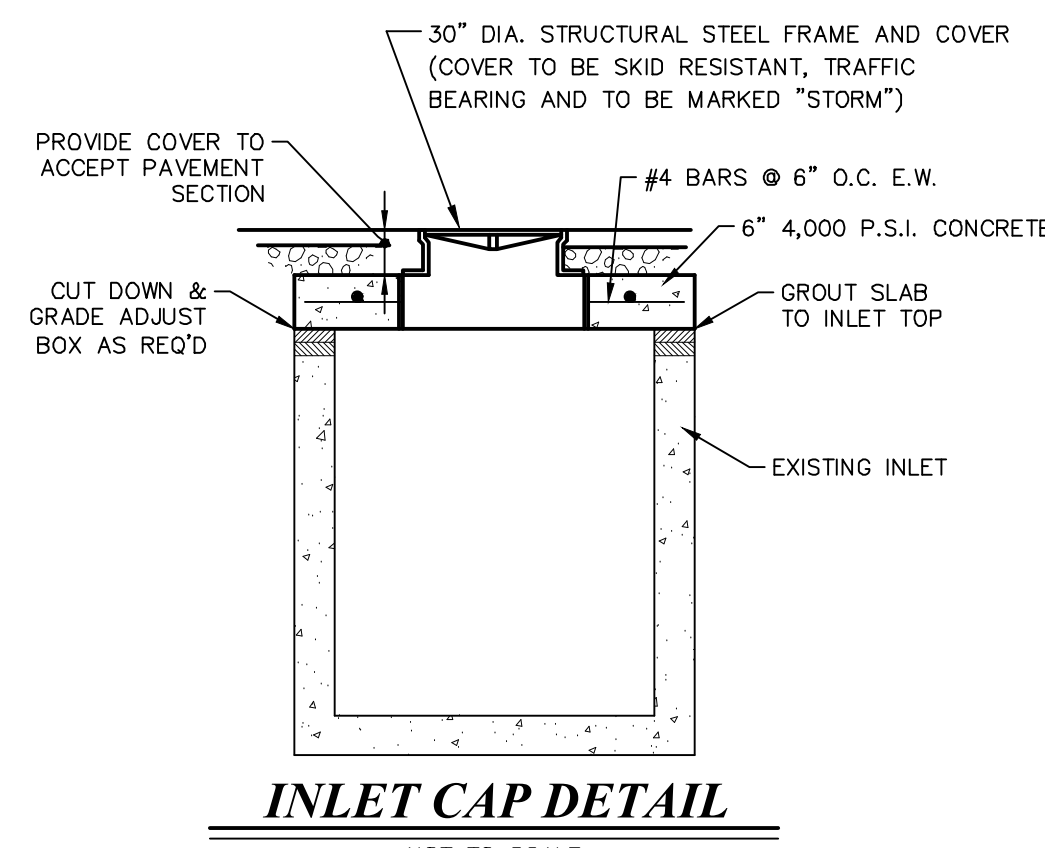
- NOTES:**
1. CONSTRUCT IN ACCORDANCE WITH PA DOT SPECIFICATIONS (RC-46).
 2. SEE PLAN FOR INLET AND BOX TYPE.
 3. ALL PIPES SHALL ENTER INLETS ALONG THE SIDES OR ENDS. NO CORNER ENTRY WILL BE PERMITTED.
 4. PROVIDE MANHOLE STEPS IN ALL INLET BOXES OVER 5 FEET IN DEPTH.
 5. ALL INLETS SHALL BE PROVIDED WITH STRUCTURAL STEEL BICYCLE SAFE GRATES PER PADOT RC-34M.
 6. THE USE OF MASTIC OR EQUIVALENT IS RECOMMENDED IN ALL INLETS LOCATED WITHIN GRASSED AREAS AND PCSM BMP AREAS TO PREVENT SOIL FROM WASHING INTO THE STORM SEWER OR INFILTRATION AREA THROUGH UNSEALED JOINTS IN THE INLET BOX AND TOP.

PRE-CAST INLET BOX
NOT TO SCALE

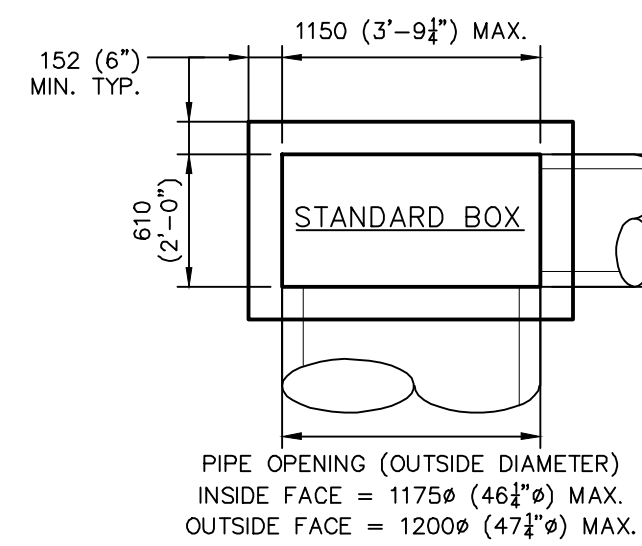
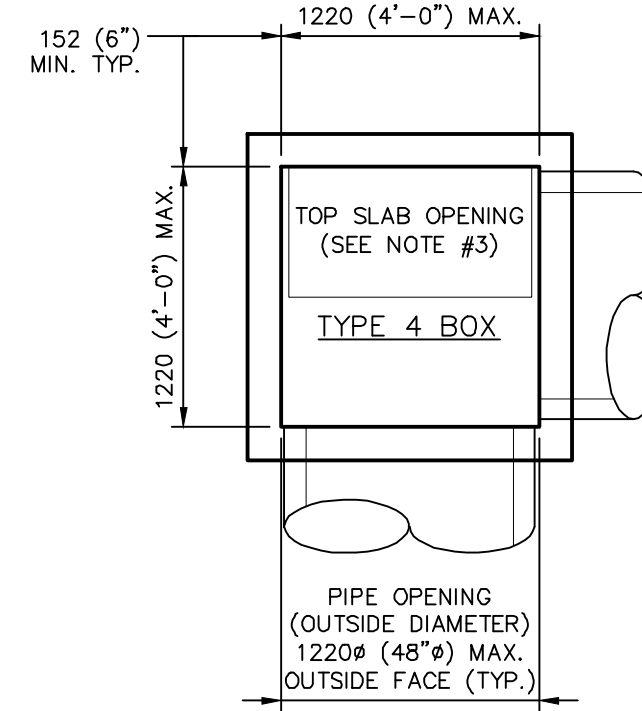


- NOTES:**
1. CONSTRUCT MANHOLE IN ACCORDANCE WITH PENNDOT PUBLICATION 72, RC-39 FOR PRECAST CONCRETE MANHOLES.
 2. ALL MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408.
 3. USE FLAT TOP MANHOLES WHERE DEPTHS ARE LESS THAN 6' DEEP.

TYPICAL STORM SEWER MANHOLE
NOT TO SCALE



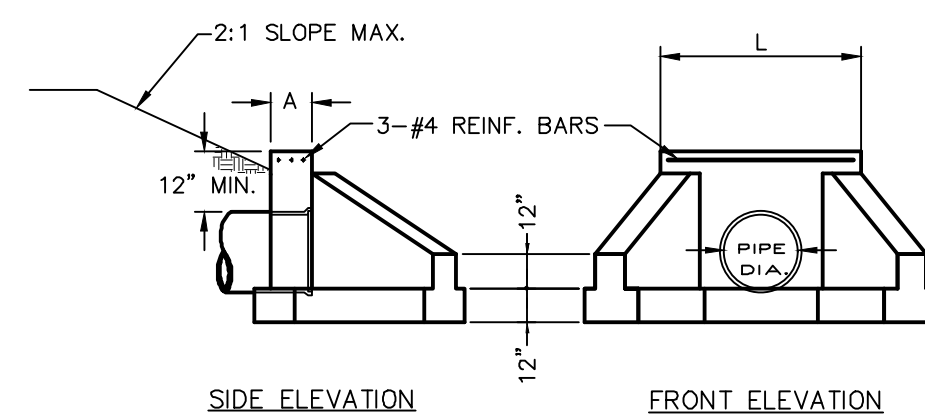
INLET CAP DETAIL
NOT TO SCALE



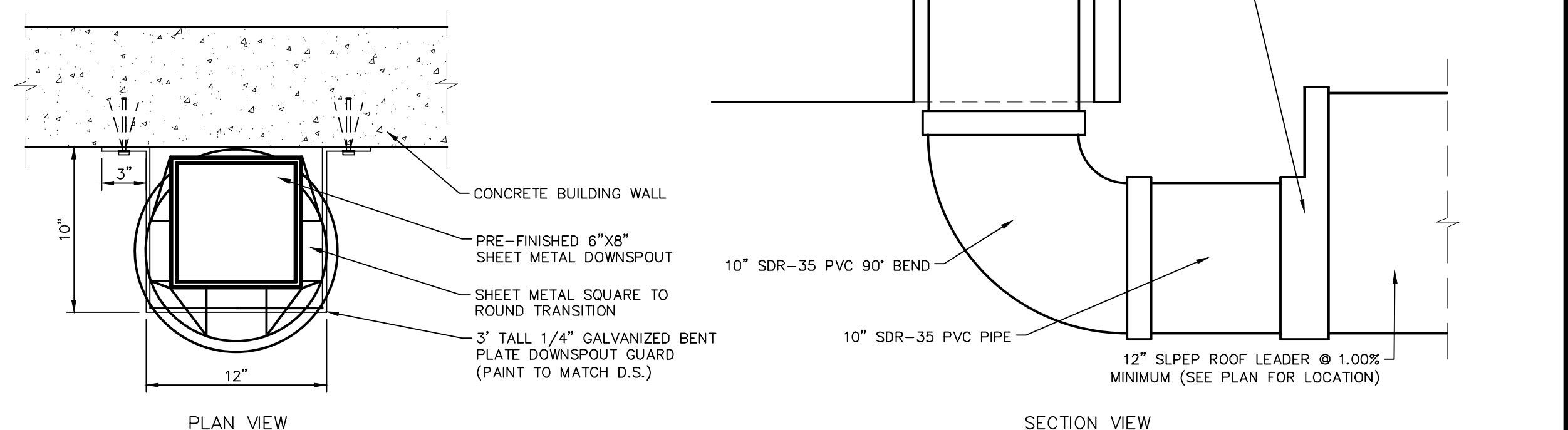
- NOTES:**
1. CONSTRUCT IN ACCORDANCE WITH PA DOT SPECIFICATIONS (RC-46).
 2. SEE GRADING & UTILITIES PLAN FOR INLET GRATE LOCATIONS.
 3. SEE PROFILES FOR INLET TOP UNIT AND BOX TYPES.
 4. ALL PIPES SHALL ENTER INLETS ALONG THE SIDES OR ENDS. NO CORNER ENTRY WILL BE PERMITTED.
 5. PROVIDE MANHOLE STEPS IN ALL INLET BOXES OVER 5 FEET IN DEPTH.
 6. ALL INLETS SHALL BE PROVIDED WITH STRUCTURAL STEEL BICYCLE SAFE GRATES PER PADOT RC-34M.

TYPICAL PENNDOT INLET BOXES & TOP SLAB TYPES
NOT TO SCALE

PIPE DIAMETER	L	W	A
15" & 18"	4.0'	4.0'	12"
24"	4.6'	4.25'	12"
30"	5.2'	4.4'	12"
36"	5.8'	4.6'	12"
42"	6.3'	5.8'	12"
48"	6.9'	6.9'	12"
54"	7.5'	8.0'	12"
60"	8.1'	9.2'	15"
72"	9.2'	11.5'	15"
(2) 60"	13.7'	9.2'	15"

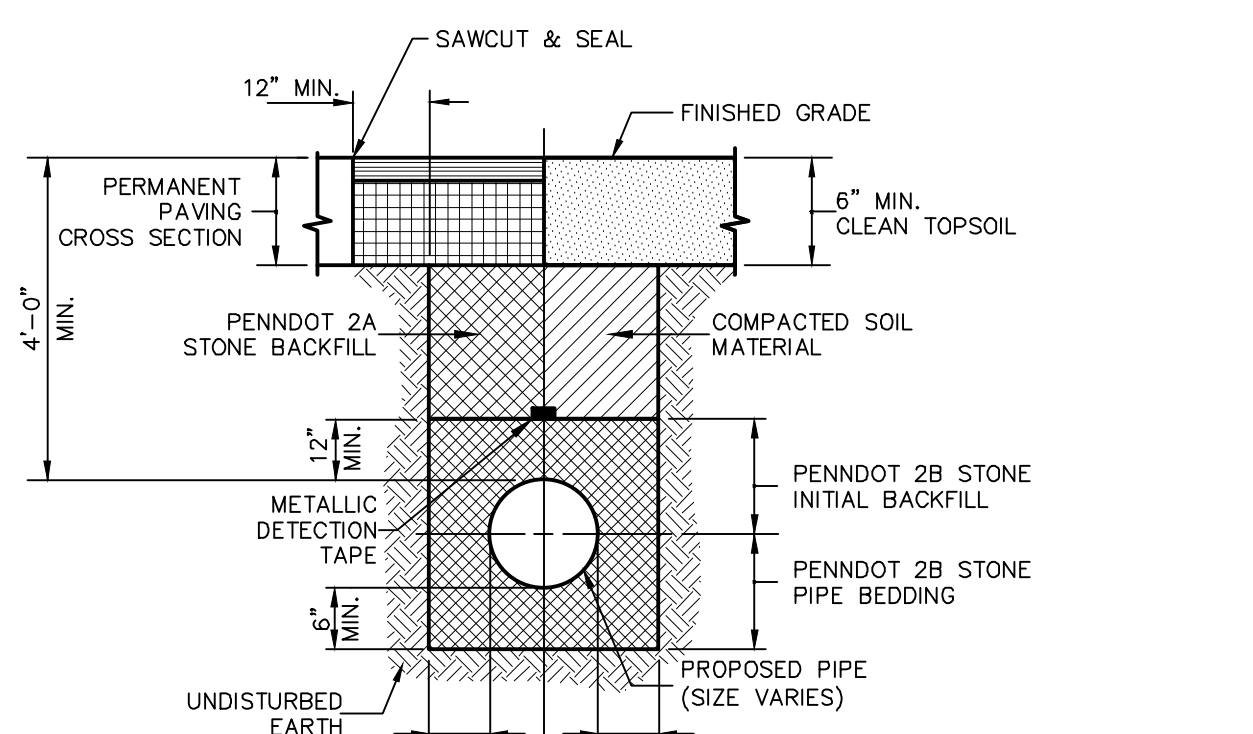


TYPE D-W ENDWALL
NOT TO SCALE

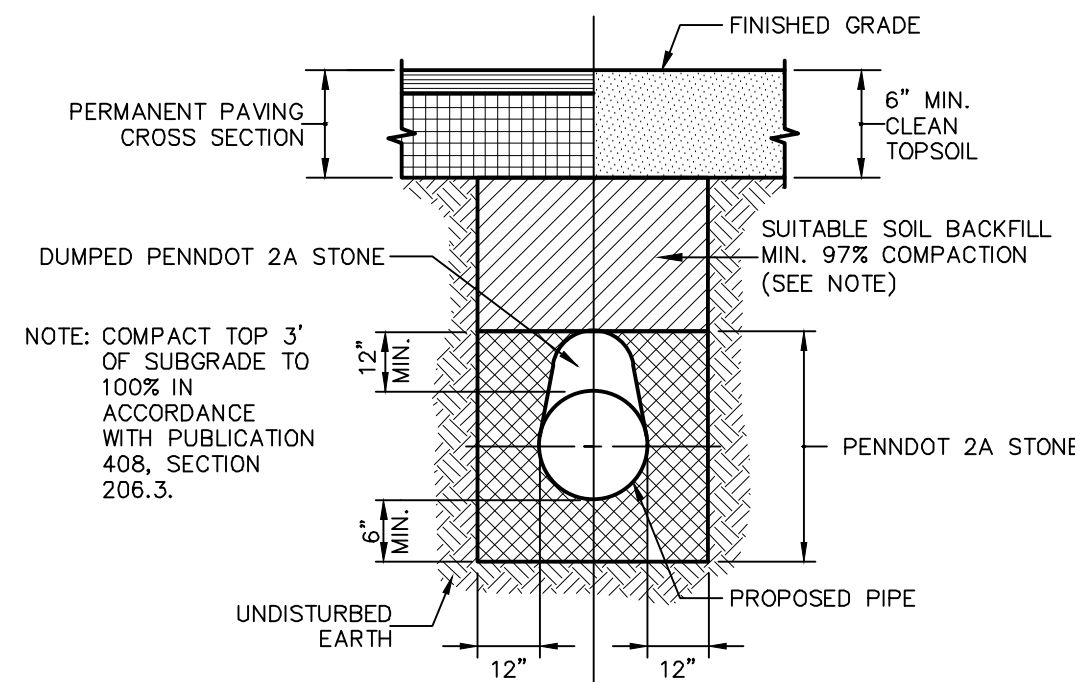


- NOTES:**
1. ALL PIPE CONNECTIONS SHALL BE NYLOPLAST WATER TIGHT CONNECTIONS OR APPROVED EQUAL.
 2. COORDINATE ROOF LEADER LOCATIONS WITH BUILDING ARCHITECTURAL PLANS.

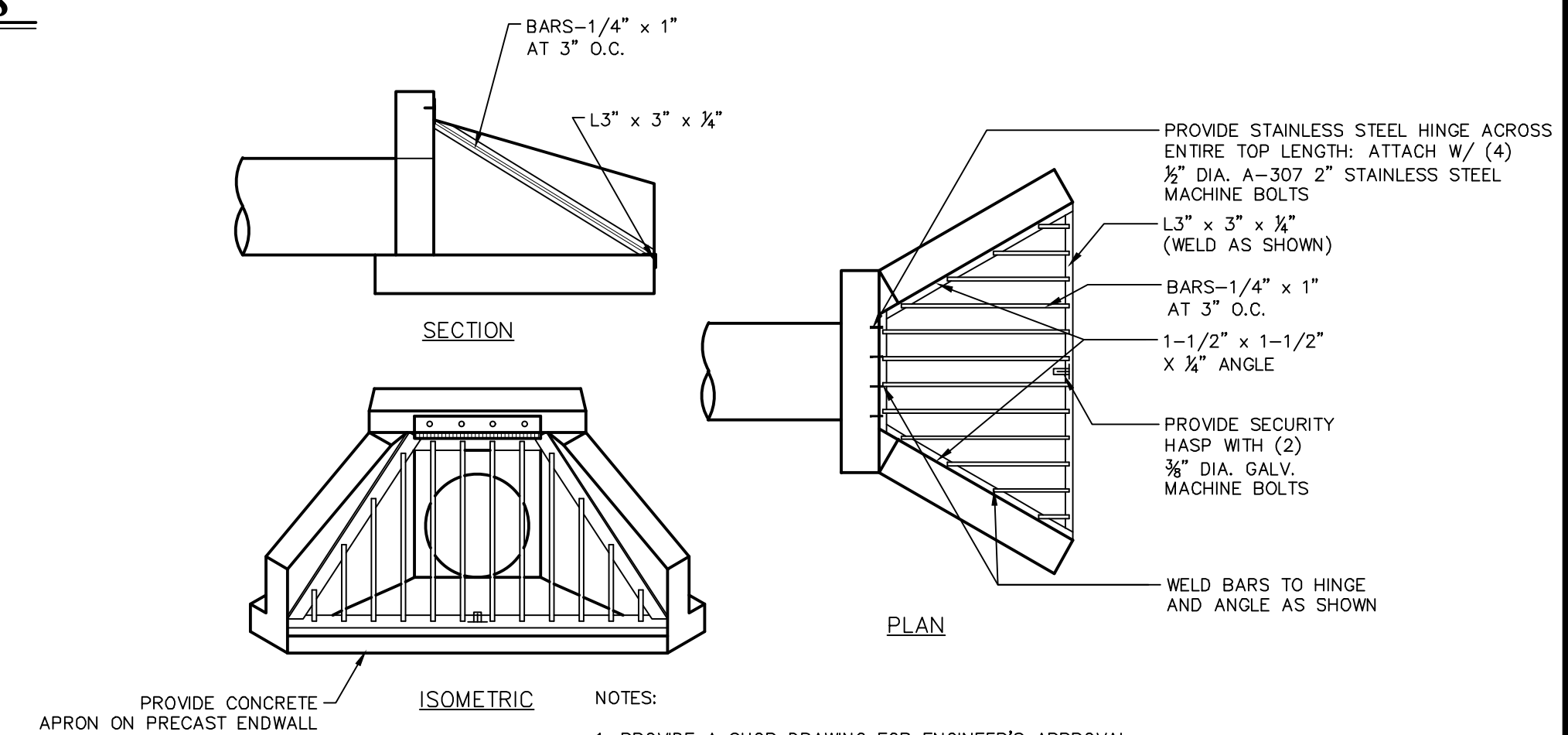
ROOF DOWNSPOUT CONNECTION
NOT TO SCALE



WATERLINE TRENCH FROM WELL
NOT TO SCALE



STORM SEWER TRENCH
NOT TO SCALE



- NOTES:**
1. PROVIDE A SHOP DRAWING FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.
 2. ALL ENDWALLS OF PIPES IN EXCESS OF 24-INCH DIAMETER MUST BE EQUIPPED WITH TRASH RACK.

ENDWALL TRASH RACK
NOT TO SCALE

PROJ. MGR. -	AMN
DESIGN -	AMN
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8	11/17/22	REVISED PER BCDD NPDES COMMENTS
7	06/08/22	REVISED PER BCDD NPDES COMMENTS
6	09/14/21	ADDED PROPOSED H.O.P. IMPROVEMENTS
5	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS
		ADDED E.V. CHARGING STATIONS
		ADDED PROPOSED H.O.P. IMPROVEMENTS
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GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

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SHEET	CD 8.3

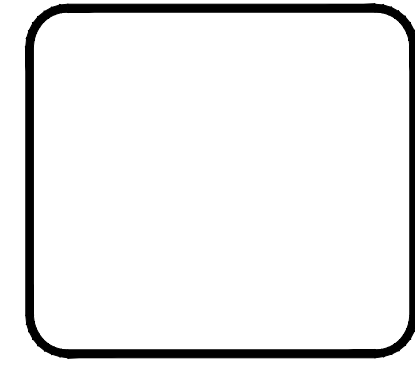
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10	05/19/23	REVISED PER BCDD COMMENTS
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8	11/17/22	REVISED PER BCDD NPDES COMMENTS
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4	02/28/20	REVISED PER PENNSYLVANIA DEP COMMENTS
NO.	DATE	REVISION

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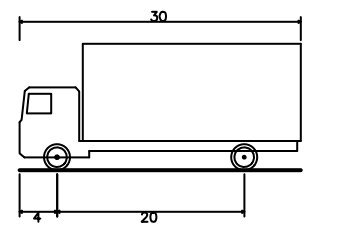
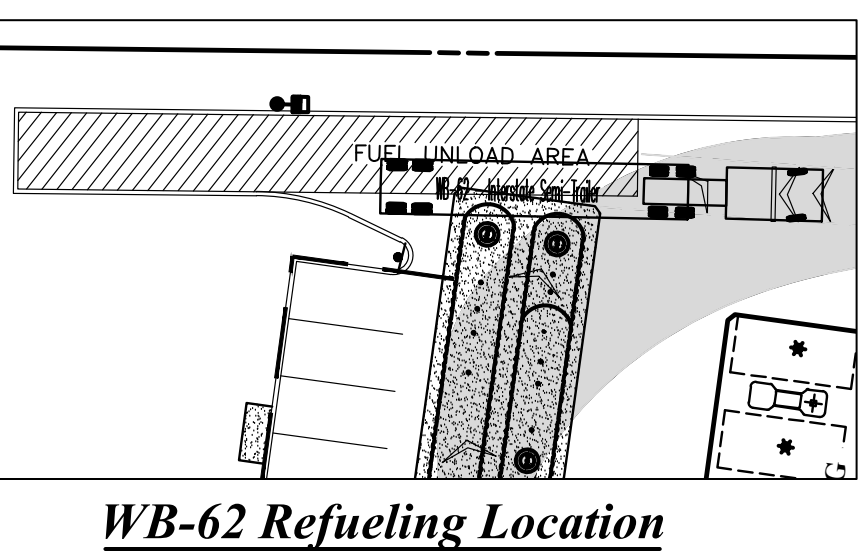
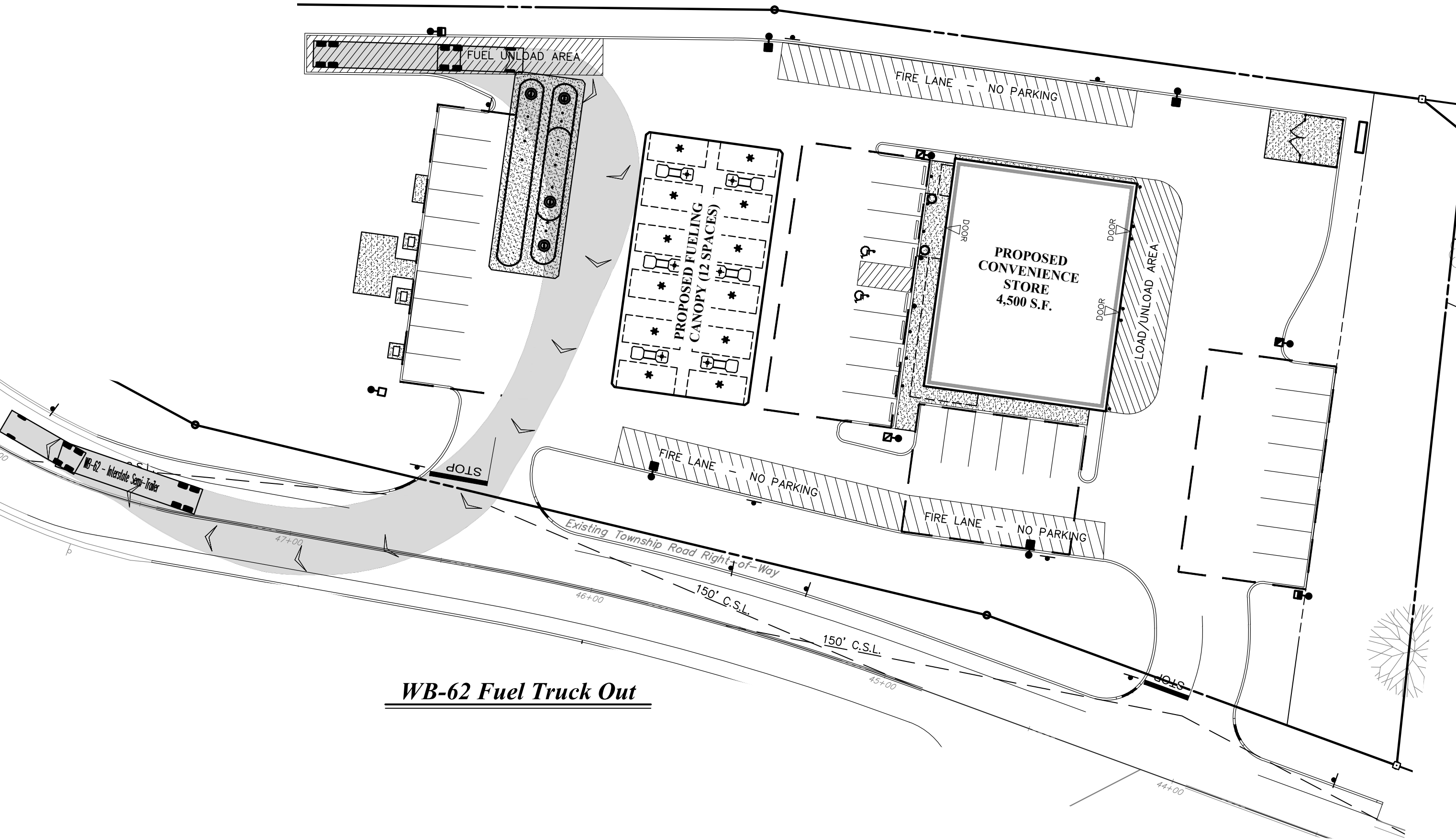
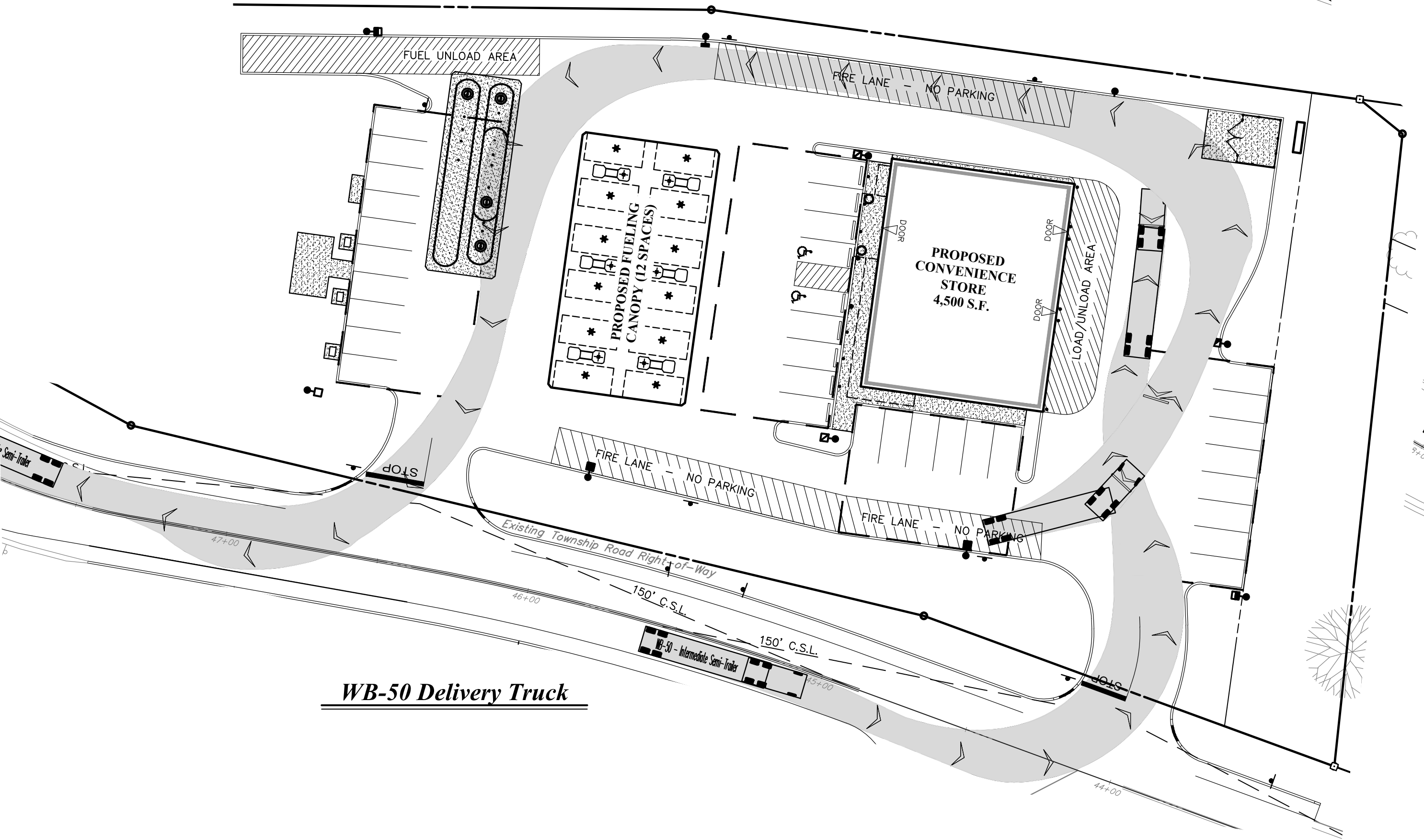
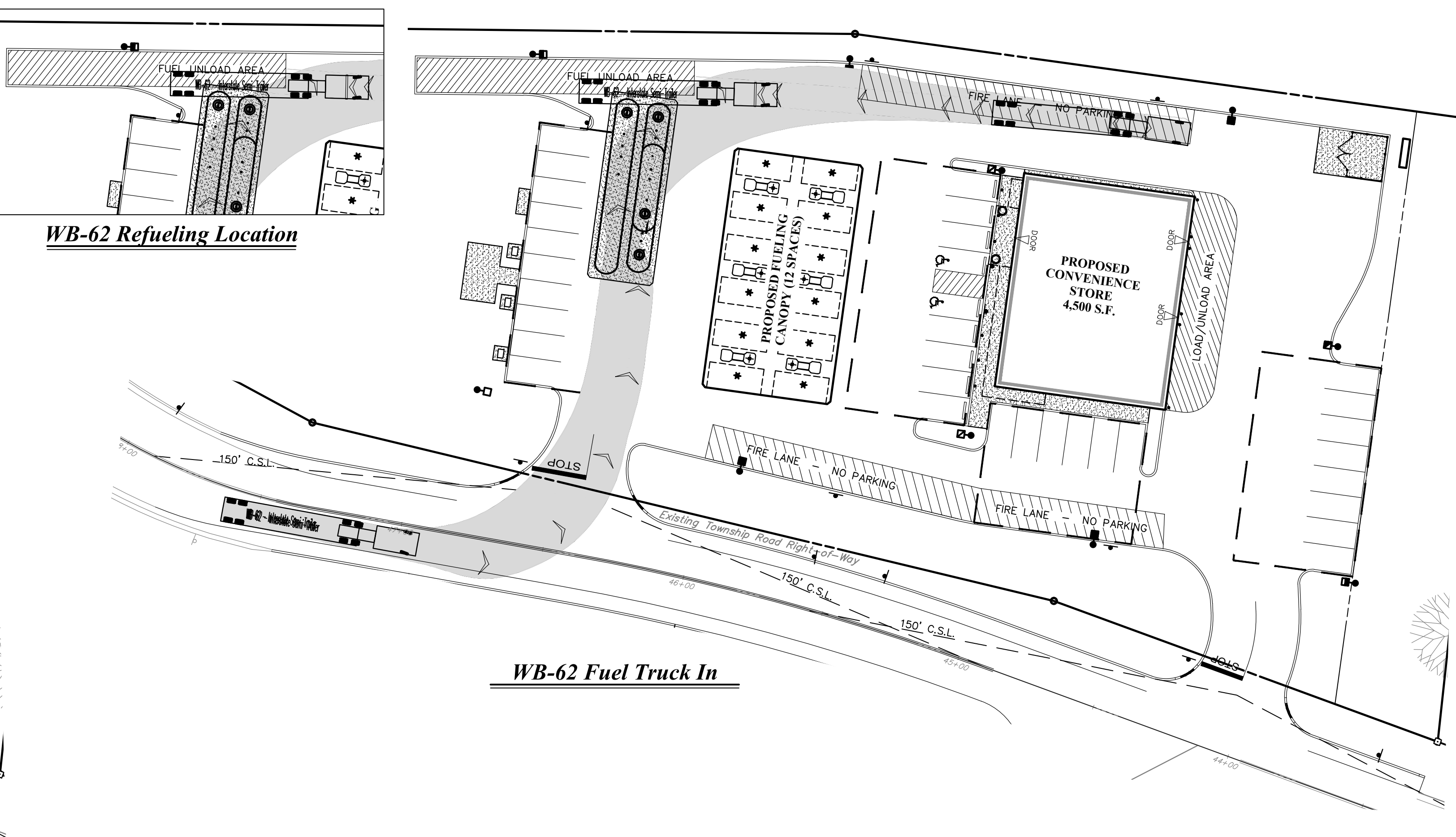
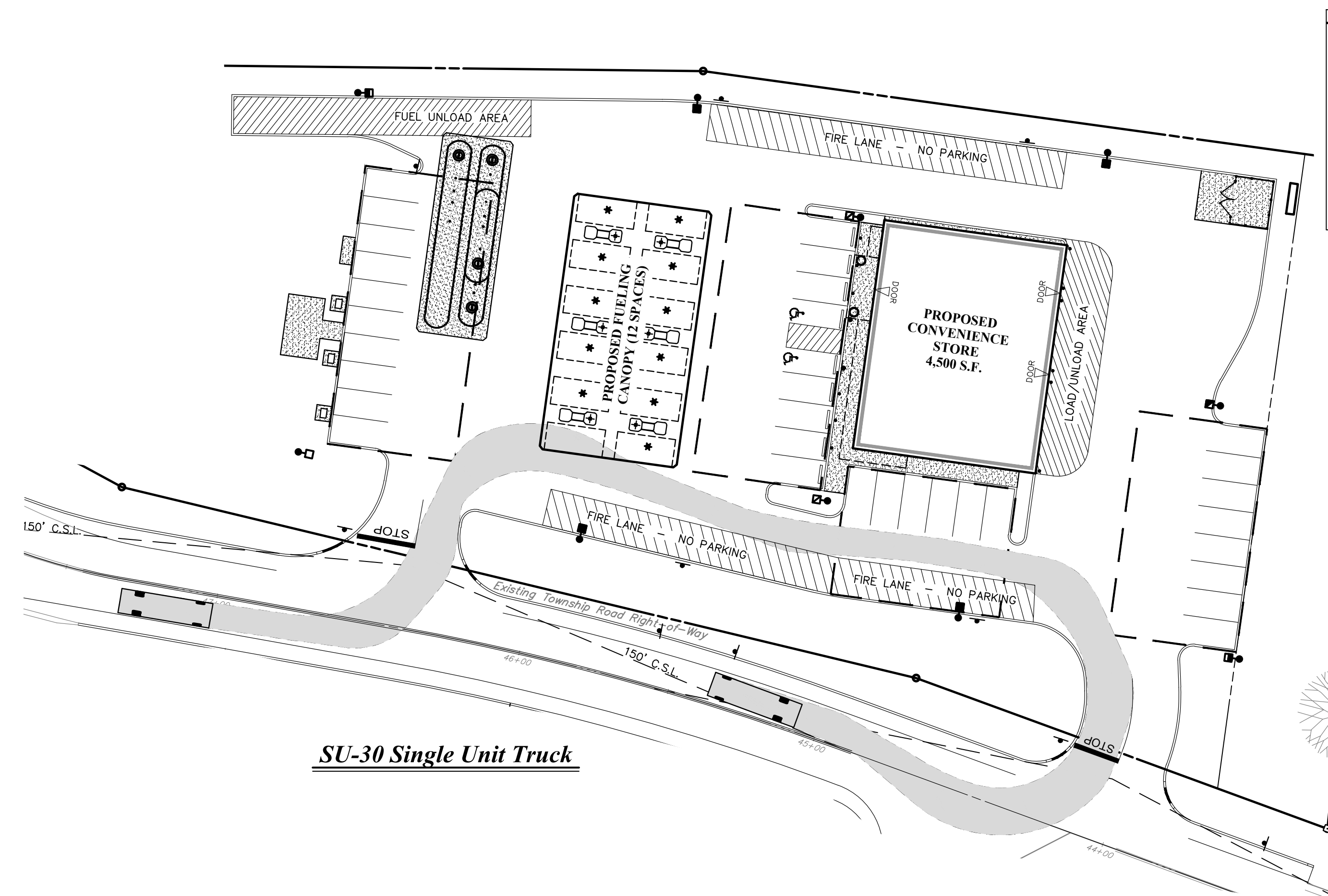
TRUCK MOVEMENT PLAN
 FOR
KRUMSVILLE ROAD CONVENIENCE STORE
 FOR
 HARMIKE INVESTMENTS, LLC
 GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.
22-0117-001

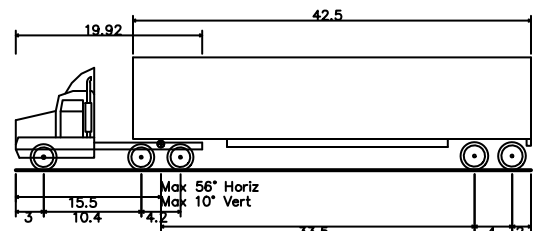
DATE: 05-06-19

SCALE: 1" = 30'

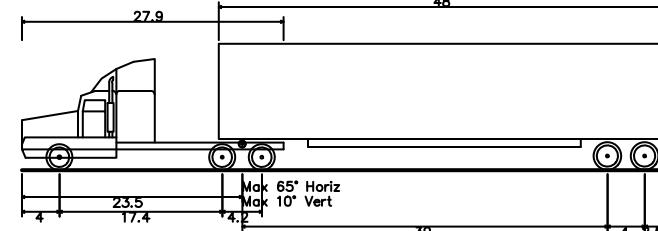
SHEET
CD 8.4



SU-30 - Single Unit Truck
 Overall Length 30.000ft
 Overall Width 8.000ft
 Overall Body Height 15.500ft
 Min Body Ground Clearance 1.367ft
 Truck Width 6.000ft
 Lock-to-lock time 6.00s
 Max Steering Angle (Virtual) 31.80°



WB-50 - Intermediate Semi-Trailer
 Overall Length 55.000ft
 Overall Width 8.500ft
 Overall Body Height 12.052ft
 Min Body Ground Clearance 1.334ft
 Max Truck Width 8.500ft
 Lock-to-lock time 6.00s
 Max Steering Angle (Virtual) 17.90°



WB-62 - Interstate Semi-Trailer
 Overall Length 69.000ft
 Overall Width 8.500ft
 Overall Body Height 15.500ft
 Min Body Ground Clearance 1.334ft
 Max Truck Width 8.500ft
 Lock-to-lock time 6.00s
 Max Steering Angle (Virtual) 28.40°

GRAPHIC SCALE
 30' 15' 0' 30'

SCALE: 1" = 30'


FINAL

REFS: 1.02880-00 - James S. Prohaska 2022 01 17 00:00:00 Drawing Board 1:20230506 - James S. Prohaska
 1.02880-00 - H. L. Prohaska 2022 01 17 00:00:00 Drawing Board 1:20230506 - H. L. Prohaska
 1.02880-00 - H. L. Prohaska 2022 01 17 00:00:00 Drawing Board 1:20230506 - H. L. Prohaska
 1.02880-00 - H. L. Prohaska 2022 01 17 00:00:00 Drawing Board 1:20230506 - H. L. Prohaska
 DRAWING REFERENCE: C:\Users\jprohaska\OneDrive\My Documents\2022\11\20221120\22-0117-001\22-0117-001.dwg
 PLOTTED: 1/20/23 11:59:04 am
 PRINTED:

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3		
2		
1		

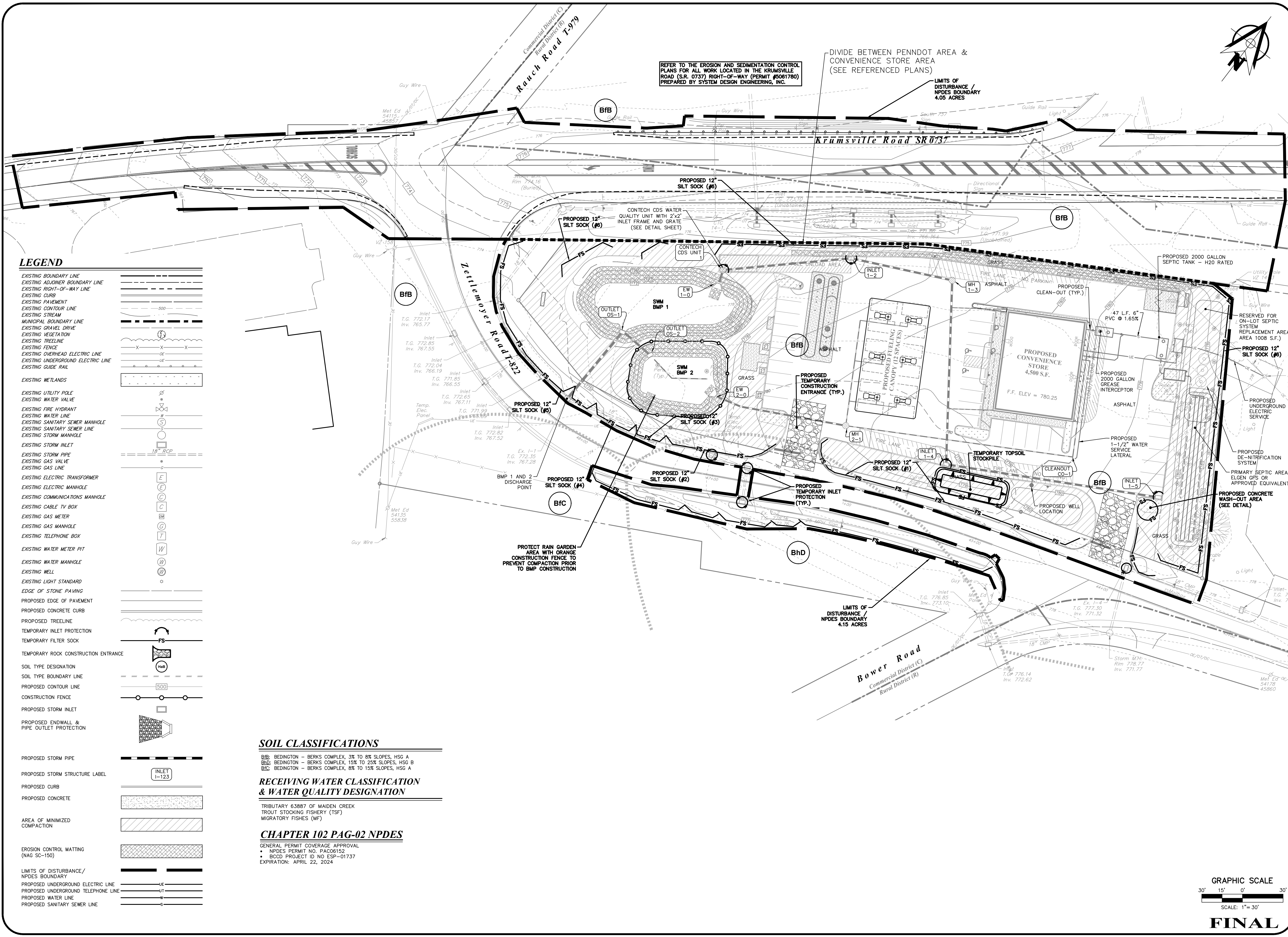
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EROSION & SEDIMENTATION CONTROL PLAN
 FOR
KRUMSVILLE ROAD CONVENIENCE STORE
 FOR
 HARMIKE INVESTMENTS, LLC
 GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.
22-0117-001
 DATE: 05-06-19
 SCALE: 1" = 30'
 SHEET
ES 9.1



REFER TO THE EROSION AND SEDIMENTATION CONTROL PLANS FOR ALL WORK LOCATED IN THE KRUMSVILLE ROAD (S.R. 0737) RIGHT-OF-WAY (PERMIT #061780) PREPARED BY SYSTEM DESIGN ENGINEERING, INC.

DIVIDE BETWEEN PENNDOT AREA & CONVENIENCE STORE AREA (SEE REFERENCED PLANS)

LIMITS OF DISTURBANCE / NPDES BOUNDARY 4.05 ACRES

PROTECT RAIN GARDEN AREA WITH ORANGE CONSTRUCTION FENCE TO PREVENT COMPACTION PRIOR TO BMP CONSTRUCTION

LIMITS OF DISTURBANCE / NPDES BOUNDARY 4.15 ACRES

LEGEND

- EXISTING BOUNDARY LINE
- EXISTING ADJOINER BOUNDARY LINE
- EXISTING RIGHT-OF-WAY LINE
- EXISTING CURB
- EXISTING PAVEMENT
- EXISTING CONTOUR LINE
- EXISTING STREAM
- MUNICIPAL BOUNDARY LINE
- EXISTING GRAVEL DRIVE
- EXISTING VEGETATION
- EXISTING TREELINE
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING GUIDE RAIL
- EXISTING WETLANDS
- EXISTING UTILITY POLE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM MANHOLE
- EXISTING STORM INLET
- EXISTING STORM PIPE
- EXISTING GAS VALVE
- EXISTING GAS LINE
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRIC MANHOLE
- EXISTING COMMUNICATIONS MANHOLE
- EXISTING CABLE TV BOX
- EXISTING GAS METER
- EXISTING GAS MANHOLE
- EXISTING TELEPHONE BOX
- EXISTING WATER METER PIT
- EXISTING WATER MANHOLE
- EXISTING WELL
- EXISTING LIGHT STANDARD
- EDGE OF STONE PAVING
- PROPOSED EDGE OF PAVEMENT
- PROPOSED CONCRETE CURB
- PROPOSED TREELINE
- TEMPORARY INLET PROTECTION
- TEMPORARY FILTER SOCK
- TEMPORARY ROCK CONSTRUCTION ENTRANCE
- SOIL TYPE DESIGNATION
- SOIL TYPE BOUNDARY LINE
- PROPOSED CONTOUR LINE
- CONSTRUCTION FENCE
- PROPOSED STORM INLET
- PROPOSED ENDWALL & PIPE OUTLET PROTECTION
- PROPOSED STORM PIPE
- PROPOSED STORM STRUCTURE LABEL
- PROPOSED CURB
- PROPOSED CONCRETE
- AREA OF MINIMIZED COMPACTION
- EROSION CONTROL MATTING (NAG SC-150)
- LIMITS OF DISTURBANCE / NPDES BOUNDARY
- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED UNDERGROUND TELEPHONE LINE
- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER LINE

SOIL CLASSIFICATIONS

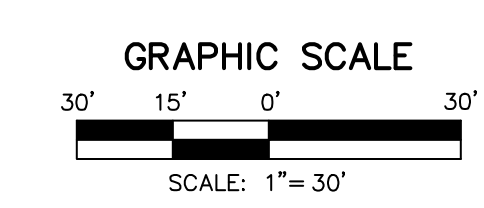
- BfB: BEDINGTON - BERKS COMPLEX, 3% TO 8% SLOPES, HSG A
- BhD: BEDINGTON - BERKS COMPLEX, 15% TO 25% SLOPES, HSG B
- BfC: BEDINGTON - BERKS COMPLEX, 8% TO 15% SLOPES, HSG A

RECEIVING WATER CLASSIFICATION & WATER QUALITY DESIGNATION

- TRIBUTARY 63887 OF MAIDEN CREEK
- TROUT STOCKING FISHERY (TSF)
- MIGRATORY FISHES (MF)

CHAPTER 102 PAG-02 NPDES

- GENERAL PERMIT COVERAGE APPROVAL
- NPDES PERMIT NO. PAC06152
- BCDD PROJECT ID NO ESP-01737
- EXPIRATION: APRIL 22, 2024



FINAL

REFS: 1:02080-000, 1:02080-001, 1:02080-002, 1:02080-003, 1:02080-004, 1:02080-005, 1:02080-006, 1:02080-007, 1:02080-008, 1:02080-009, 1:02080-010, 1:02080-011, 1:02080-012, 1:02080-013, 1:02080-014, 1:02080-015, 1:02080-016, 1:02080-017, 1:02080-018, 1:02080-019, 1:02080-020, 1:02080-021, 1:02080-022, 1:02080-023, 1:02080-024, 1:02080-025, 1:02080-026, 1:02080-027, 1:02080-028, 1:02080-029, 1:02080-030, 1:02080-031, 1:02080-032, 1:02080-033, 1:02080-034, 1:02080-035, 1:02080-036, 1:02080-037, 1:02080-038, 1:02080-039, 1:02080-040, 1:02080-041, 1:02080-042, 1:02080-043, 1:02080-044, 1:02080-045, 1:02080-046, 1:02080-047, 1:02080-048, 1:02080-049, 1:02080-050, 1:02080-051, 1:02080-052, 1:02080-053, 1:02080-054, 1:02080-055, 1:02080-056, 1:02080-057, 1:02080-058, 1:02080-059, 1:02080-060, 1:02080-061, 1:02080-062, 1:02080-063, 1:02080-064, 1:02080-065, 1:02080-066, 1:02080-067, 1:02080-068, 1:02080-069, 1:02080-070, 1:02080-071, 1:02080-072, 1:02080-073, 1:02080-074, 1:02080-075, 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EROSION AND SEDIMENTATION CONTROL MEASURES

THE PROPOSED SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SELECTED FOR THIS PROJECT WILL PRIMARILY CONSIST OF THE CONSTRUCTION OF STABILIZED CONSTRUCTION ENTRANCE, FILTER SOCK, INLET PROTECTION, EROSION CONTROL MATTING, PUMPED WATER FILTER BAGS AND TEMPORARY SEEDING AND MULCHING.

TEMPORARY CONTROL MEASURES:

- 1. REVIEW AND AUTHORIZATION BY THE BERKS COUNTY CONSERVATION DISTRICT SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF ANY EARTH DISTURBANCE ACTIVITIES.
2. TEMPORARY VEGETATION SHALL BE ESTABLISHED ON ALL SLOPES, ON STOCKPILED TOPSOIL AND ON ALL DISTURBED AREAS LEFT UNSTABILIZED FOR PERIODS LONGER THAN 4 DAYS. AREAS OF DISCONTINUED EARTHMOVING ACTIVITY SHALL ALSO BE IMMEDIATELY STABILIZED.
3. DURING CONSTRUCTION, THE AMOUNT OF DISTURBED SOILS SHALL BE KEPT TO A MINIMUM AND, WHENEVER POSSIBLE, A SUITABLE VEGETATIVE BUFFER WILL BE MAINTAINED AROUND ALL CONSTRUCTION AREAS.
4. ALL EARTHMOVING ACTIVITIES SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE THE AMOUNT OF DISTURBED AREA.
5. RESPONSIBILITY FOR IMPLEMENTING EROSION AND SEDIMENTATION CONTROL SHALL BE DESIGNATED TO A MINIMUM OF ONE INDIVIDUAL WHO WILL BE PRESENT AT THE PROJECT SITE DAILY.
6. ALL SOIL STOCKPILES ARE TO BE IMMEDIATELY SEEDED WITH A TEMPORARY GRASS COVER.
7. WHENEVER POSSIBLE, PLACE ALL EXCAVATED MATERIAL UPSLOPE FROM DISTURBED AREAS. STOCKPILES SHALL BE SET PARALLEL TO GRADE TO REDUCE RUNOFF.
8. UPON GENERAL COMPLETION OF THE FINAL GRADING, TOPSOIL SHALL BE PLACED AND FINAL-GRADING PASSES SHALL BE MADE PERPENDICULAR TO THE DIRECTION OF RUNOFF.
9. RE-SEED AND REESTABLISH ANY BARREN AND DISTURBED AREAS NOT HAVING ESTABLISHED GROUND COVER.
10. FILTER SOCK SHALL BE PLACED AT CRITICAL EROSION AREAS, AS SHOWN ON THE PLAN, IN ORDER TO PREVENT SEDIMENT FROM ENTERING INTO ADJACENT PROPERTIES, ROADWAY AND WATERWAYS.
11. FILTER SOCK SHALL BE PLACED END TO END, SECURELY STAKED IN PLACE, AND MAINTAINED UNTIL THE AREA IS STABILIZED.
12. WHERE DUST OR WIND EROSION IS A PROBLEM, THE UNSTABLE SURFACE(S) SHALL BE SPRINKLED WITH WATER OR OTHER SUITABLE DUST SUPPRESSOR; HOWEVER, WASHING OF ROADWAYS IS NOT PERMITTED.
13. ANY WATER PUMPED FROM ANY EXCAVATION, FOR ANY REASON, SHALL BE DIRECTED THROUGH A SEDIMENT FILTER BAG (DIRT BAG) CONFORMING TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
14. THE CONTRACTOR SHALL EMPLOY MEASURES DURING CONSTRUCTION TO PREVENT SPILLS OF FUELS OR LUBRICANTS. IF A SPILL OCCURS, IT SHALL BE CONTROLLED IMMEDIATELY TO PREVENT ITS ENTRY INTO NEARBY WATERWAYS.
15. WHEN THE ENGINEER, TOWNSHIP OFFICIAL, OR COUNTY CONSERVATION DISTRICT OFFICIAL DETERMINES THAT EROSION CONTROL MEASURES ARE NECESSARY, THAT WERE NOT FORESEEN IN THE DESIGN STAGE, SAID OFFICIAL SHALL ESTIMATE THE EROSION POTENTIAL AND SELECT MEASURES ON THE BASIS OF BOTH COST EFFECTIVENESS AND THE CONSEQUENCES OF THE EROSION AND THE PERMITTEE SHALL IMMEDIATELY COMPLY WITH SAID DIRECTIVES.
16. ANY TEMPORARY EROSION CONTROL MEASURE APPLIED TO EXPOSED SOIL SURFACES SHALL REMAIN FUNCTIONAL UNTIL VEGETATED COVER IS SUFFICIENTLY ESTABLISHED.
17. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE SUBJECT TO APPLICABLE REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, CHAPTER 102 RULES AND REGULATIONS.
18. SHOULD ANY ADDITIONAL EROSION OR SEDIMENTATION OCCUR DURING CONSTRUCTION, OR QUESTIONS REGARDING THE MAINTENANCE CONTROL PRACTICES ARISE, CONTACT THE BERKS COUNTY CONSERVATION DISTRICT AT (610) 372-4657.
19. PERMANENT SEEDING AND MULCHING WILL BE INCORPORATED INTO THE CONSTRUCTION PHASES DURING THE APPROVED PLANTING SEASON.
20. ALL AREAS DISTURBED BY CONSTRUCTION, OTHER THAN THOSE RECEIVING CONCRETE OR BITUMINOUS PAVING OR OTHER TYPE OF IMPERVIOUS COVER, SHALL BE STABILIZED BY APPLYING A SEED MIXTURE TO ESTABLISH AN EROSION RESISTANT STAND OF VEGETATION. TEMPORARY SEEDING SPECIFICATIONS ARE CONTAINED IN THIS REPORT.

PERMANENT CONTROL MEASURES:

- 1. PERMANENT SOIL PROTECTION WILL BE COMPLETED AS EARLY AS PRACTICAL.
2. ALL EXISTING STORM WATER DEVICES ARE TO BE INSPECTED DAILY AND CLEANED OUT AS NECESSARY.
3. ALL SEDIMENT CONTROL DEVICES ARE TO REMAIN UNTIL ALL DISTURBED AREAS ARE FULLY STABILIZED.
4. TEMPORARY AND PERMANENT SEEDING SHALL ADHERE TO THE SPECIFICATIONS PROVIDED IN THIS REPORT.
5. EACH STAGE OF EARTHMOVING ACTIVITIES MUST BE COMPLETED PRIOR TO INITIATING SUBSEQUENT STAGES.
6. ALL EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED WEEKLY AND AFTER ALL MEASURABLE PRECIPITATION EVENTS.
7. APPROVED SOIL EROSION AND SEDIMENTATION CONTROL PLANS AND NARRATIVE REPORTS MUST BE AVAILABLE AT THE SITE OF THE CONSTRUCTION ACTIVITY AT ALL TIMES.
8. IF FUEL OR OTHER DANGEROUS CHEMICALS ARE STORED ON SITE, THEN A PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLAN MUST BE DEVELOPED AND KEPT ON SITE.

LIMITATIONS AND RESOLUTIONS OF SOIL TYPES

IN GENERAL, THERE ARE NO KNOWN UNUSUAL SITE CHARACTERISTICS THAT ARE UNLIKE THOSE FOUND ELSEWHERE IN THE REGION WHERE SIMILAR SOILS ARE PRESENT. HOWEVER, REFERENCE IS HEREBY MADE TO THE SITE'S GEOTECHNICAL REPORT FOR ANY GEOTECHNICAL RECOMMENDATIONS PROVIDED SPECIFICALLY FOR THE SUBJECT PROJECT.

ANY ROCK ENCOUNTERED WILL BE RIPPED OR BLASTED AS NECESSARY, AND USED FOR COMPACTED FILL IN OTHER AREAS OR REMOVED FROM THE SITE.

SLOPE WILL NOT BE AN ADVERSE FACTOR TO CONSTRUCTION. SLOPES WILL BE RE-SHAPED PER THE PROPOSED GRADING PLAN AND TYPICALLY WILL BE 3:1 OR FLATTER. ANY ACCELERATED RUNOFF OR EROSION FROM SLOPES WILL BE HANDLED BY EROSION CONTROL MATTING AND SILT SOCK ON THE SITE.

DRAINAGE WITHIN THE PROJECT AREA WILL BE ACCOMMODATED BY PROPOSED GRADING, STORM PIPING AND SWALES. THE GROUND SURFACE WILL BE RESHAPED, COMPACTED AND STABILIZED CONSISTENT WITH THE PROPOSED GRADING PLAN CONTAINED HEREIN.

RECYCLING AND DISPOSAL OF CONSTRUCTION WASTE

ALL BUILDING MATERIALS AND CONSTRUCTION WASTE SHALL BE REMOVED FROM THE SITE AND RECYCLED AND/OR PROPERLY DISPOSED IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS, 25 PA CODE §260.1 ET SEQ., §271.1 ET SEQ., AND §287.1 ET SEQ. NO BUILDING MATERIAL OR CONSTRUCTION WASTE OR OTHER UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE PROJECT SITE.

ALL RECYCLING AND DISPOSAL OF CONSTRUCTION WASTE SHALL BE IN ACCORDANCE WITH LOCAL AND STATE RULES AND REGULATIONS FOR WASTE MANAGEMENT.

CONSTRUCTION WASTE INCLUDES BUT IS NOT LIMITED TO: EXCESS SOIL AND ROCK, BUILDING MATERIALS, CONCRETE AND CONCRETE WASH WATER, SANITARY WASTE AND ANY OTHER MATERIALS THAT COULD ADVERSELY IMPACT SURFACE OR GROUND WATER QUALITY.

ALL WASTES AND MATERIALS DEPOSITED IN AND REMOVED FROM POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) BMP FACILITIES AND FROM IMPERVIOUS AREAS (EX. SWEEPING OF STREETS & PARKING LOTS) DURING OPERATION AND MAINTENANCE SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET. SEQ., 271.1 ET. SEQ. NO WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

GEOLOGIC SOIL FORMATIONS & POTENTIAL POLLUTION

ACCORDING TO THE PENNSYLVANIA GEOLOGIC SURVEY GEOLOGIC MAP OF THE STATE OF PENNSYLVANIA, 1980, THE PROJECT SITE IS SITUATED IN AN AREA OF THE HAMBURG SEQUENCE (GEOLOGIC SYMBOL OHSQ).

THE PENNSYLVANIA GEOLOGIC SURVEY PUBLICATION, ENGINEERING CHARACTERISTICS OF THE ROCKS OF PENNSYLVANIA, SECOND EDITION, 1982, DESCRIBES THE ROCK IN THIS SEQUENCE AS TRANSPORTED ROCKS OF THE HAMBURG OVERTHRUST; GRAY, GREENISH-GRAY AND MAROON SHALE AND GRAYWACKE, SILTY AND SILICEOUS IN MANY PLACES.

SHALE PORTIONS OF THE FORMATION ARE THIN BEDDED, WHILE SANDSTONE AND LIMESTONE ARE THICK AND WELL BEDDED. FRACTURES IN THIS SEQUENCE FORM A SEAMY TO PLATY PATTERN, ARE WELL DEVELOPED, HIGHLY ABUNDANT, VARIABLY SPACED, OPEN AND STEEPLY DIPPING. THE SHALE IN THIS SEQUENCE IS MODERATELY RESISTANT TO WEATHERING AND IS MODERATELY TO HIGHLY WEATHERED TO A DEEP DEPTH, RESULTING IN LOOSE RUBBLE OF PENOL-LIKE FRAGMENTS TO RECTANGULAR PLATES. EXCAVATION OF THE SHALE BEDROCK OF THE HAMBURG SEQUENCE IS DESCRIBED AS MODERATELY EASY, WHILE THE SANDSTONE AND GRAYWACKE WILL BE MORE DIFFICULT.

IT IS NOT ANTICIPATED THAT ANY SINKHOLES WILL BE DISCOVERED DURING THE COURSE OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER AND CONSERVATION DISTRICT SHOULD ANY SINKHOLES BE DISCOVERED DURING CONSTRUCTION. SINKHOLES HAVE THE POTENTIAL TO CAUSE POLLUTION TO THE GROUNDWATER SHOULD ANY CONTAMINANTS BE DISCHARGED, WHETHER DIRECTLY OR INDIRECTLY, INTO THE SINKHOLE. REFERENCE IS ALSO MADE TO THE PROJECT'S GEOTECHNICAL REPORT, LOCATED UNDER A SEPARATE COVER, FOR ANY FURTHER SOIL ANALYSIS.

STAGING OF MAJOR CONSTRUCTION ACTIVITIES

THE FOLLOWING IS THE RECOMMENDED STAGING OF MAJOR CONSTRUCTION ACTIVITIES FOR THE PROJECT. ANY DEVIATIONS TO THE APPROVED EROSION AND SEDIMENTATION CONTROL MEASURES OR TO THE PROPOSED SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL REQUIRE APPROVAL BY THE BERKS COUNTY CONSERVATION DISTRICT PRIOR TO IMPLEMENTATION.

- PER NPDES REQUIREMENTS, UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 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.
• THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ALL EXISTING FACILITIES DURING ALL PHASES OF CONSTRUCTION.
• INITIAL EROSION AND SEDIMENTATION CONTROL MEASURES AND BMPS MUST BE CONSTRUCTED, STABILIZED, AND OPERATIONAL BEFORE ANY EARTH DISTURBANCE WHICH IS TRIBUTARY TO THOSE MEASURES BEGINS.
• CESSATION OF ACTIVITY FOR 4 DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION.
• THE CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN IN WHICH A LICENSED PROFESSIONAL OR DESIGNEE SHOULD BE PRESENT ON THE SITE FOR INSPECTION/FIELD VERIFICATION ARE IDENTIFIED IN THIS SEQUENCE.

- 1. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING, GRUBBING AND DEMOLITION) THE OWNER AND/OR OPERATORS SHALL NOTIFY THE CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
2. 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.
3. 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 PRIOR TO IMPLEMENTATION. CESSATION OF ACTIVITY FOR 4 DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION.
4. THE LIMITS OF EARTH DISTURBANCE (LOD) SHOULD BE FIELD MARKED PRIOR TO DISTURBANCE ACTIVITIES (E.G. SURVEY STAKES, POSTS & ROPE, CONSTRUCTION FENCE, ETC.).

- 5. INSTALL FILTER SOCK BARRIERS ALONG THE SITE'S PERIMETER AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. INSTALL INLET PROTECTION AT ALL EXISTING INLETS AS SHOWN ON THE PLAN. INSTALL CONSTRUCTION FENCE PROTECTION AROUND SWM BMP #2 AND MINIMIZE SOIL COMPACTION AREAS. WHERE POSSIBLE, INSTALL ROCK CONSTRUCTION ENTRANCES (RCE) AT ONE OR BOTH PROPOSED LOCATIONS. AS CONSTRUCTION OF PARKING AND DRIVEWAYS GET UNDERWAY, CONTRACTOR SHALL LEAVE ONE RCE INTACT UNTIL STONE SUBBASE IS INSTALLED ON OTHER DRIVEWAY, AT WHICH POINT BOTH CONSTRUCTION ENTRANCES CAN BE REMOVED.
A. CRITICAL STAGE: THE MINIMIZE SOIL COMPACTION AREAS DELINEATED BY CONSTRUCTION FENCE SHALL BE VERIFIED BY THE PROFESSIONAL ENGINEER OR DESIGNEE.

- 6. DEMOLISH EXISTING BUILDINGS, OLD FOUNDATION WALL AND REMOVE EXISTING SEPTIC SYSTEM AS INDICATED ON THE DEMOLITION PLAN AND THE UTILITIES PLAN. REMOVE ALL WASTE FROM THE SITE IN ACCORDANCE WITH THE DEB REGULATIONS.

- 7. PROCEED WITH BULK SITE EXCAVATION AND ROUGH GRADING ACTIVITIES WITHIN THE AREA OF THE PROPOSED BUILDING. UTILIZE TRACKED EQUIPMENT AND CONDUCT GRADING ACTIVITIES FROM OUTSIDE PROPOSED LAWN AREAS WHEN POSSIBLE TO MINIMIZE SOIL COMPACTION IN AREAS INDICATED ON THE PCSM PLAN THAT ARE NOT OTHERWISE ABLE TO BE PROTECTED BY CONSTRUCTION FENCE. BRING THOSE AREAS TO SUBGRADE ELEVATIONS WHILE MAINTAINING PERIMETER EROSION CONTROL MATTING TO THE AREAS INDICATED ON THE PLAN. AS AREAS OF THE SITE REACH SUBGRADE ELEVATION, APPROPRIATE STABILIZATION SHALL BE APPLIED TO FILL SLOPES, LAWN AREAS, ETC. TO MINIMIZE ACCELERATED EROSION.

- 8. CRITICAL STAGE: BEGIN EXCAVATION/GRADING OF THE SWM BMP #1 AND SWM BMP #2 AND ASSOCIATED INLET AND OUTLET SYSTEMS. CONSTRUCT THE PIPE OUTLET SYSTEMS FROM OS-2 TO OS-1 TO THE DOWNSTREAM STRUCTURE. CONSTRUCT ANTI-SEEP COLLARS AND CONCRETE CRADLES PER THE DETAILS PRESENTED ON THE PLAN. INSTALL THE PERMANENT EMBANKMENT BERMS, IMPERVIOUS CORES, EMERGENCY SPILLWAYS, AND EMERGENCY SPILLWAY LINING TO THE PERMANENT DESIGN SPECIFICATIONS. IMMEDIATELY STABILIZE EACH BMP'S SLOPES WITH THE PRESCRIBED PERMANENT SEEDING AND STABILIZATION SPECIFICATIONS.

- 9. CONTINUE WITH BULK EXCAVATION/GRADING OF THE SITE. BEGIN INSTALLATION OF STORMWATER CONVEYANCE (I.E., CONTECH CDS UNIT, INLETS, MANHOLES, OUTLET STRUCTURES AND PIPES) BEGINNING AT DOWNSTREAM CONNECTIONS AND WORKING UPSTREAM. ALL STORM SEWER CONSTRUCTION INCLUDES TRENCHING, BACKFILLING, AND APPLYING FINAL STABILIZATION. ALL AREAS DRAINING TO STORMWATER COLLECTION, CONVEYANCE AND MANAGEMENT FACILITIES SHALL BE IMMEDIATELY STABILIZED. IMMEDIATELY INSTALL INLET PROTECTION AROUND THE INLETS AND PROP THE INLET UP TOP WITH BRICKS TO ALLOW RUN-OFF TO ENTER THE STORM SEWER CONVEYANCE SYSTEM PRIOR TO CURB AND PAVING INSTALLATION. PROVIDE MASTIC OR EQUIVALENT IN ALL INLETS LOCATED WITHIN GRASSED AREAS TO PREVENT SOIL FROM WASHING INTO THE STORM SEWER THROUGH UNSEALED JOINTS IN THE INLET BOX AND TOP. ANY WATER PUMPED FROM STORM DRAIN TRENCHES SHALL BE DIRECTED TO A SEDIMENT REMOVAL FACILITY SUCH AS A FILTER BAG OR APPROVED EQUAL. ALL STORM DRAIN PIPING SHALL BE PERIODICALLY FLUSHED TO PREVENT EXCESSIVE SEDIMENT AND DEBRIS ACCUMULATION FROM BUILDING UP WITHIN PIPES AND STRUCTURES.

- A. CRITICAL STAGE: THE INSTALLATION OF THE CONTECH CDS UNIT SHALL BE VERIFIED BY THE PROFESSIONAL ENGINEER OR DESIGNEE.

- 10. BEGIN GENERAL BUILDING AND GAS CANOPY CONSTRUCTION.

- 11. INSTALL THE SEPTIC SYSTEM AS DESIGNED BY OTHERS. INSTALL PROPOSED WELL AND CONSTRUCT OTHER UTILITY SERVICE LINES. ANY WATER PUMPED FROM UTILITY TRENCHES SHALL BE DIRECTED TO A SEDIMENT REMOVAL FACILITY SUCH AS A FILTER BAG OR APPROVED EQUAL.

- 12. CONSTRUCT SITE CURBING AND PLACE SUBBASE MATERIAL TO STABILIZE THE SITE DRIVEWAYS AND PARKING AREAS AS SOON AS PRACTICABLE.

- 13. CONTINUE WITH GENERAL BUILDING CONSTRUCTION AND CONSTRUCTION OF OTHER LOCALIZED SITE ITEMS SUCH AS SITE LIGHTING, UTILITY CONNECTIONS, DUMPSTER PAD, ETC.

- 14. INSTALL BITUMINOUS PAVING ON THE SITE DRIVEWAYS AND PARKING AREAS ONCE MAJOR EXTERIOR BUILDING CONSTRUCTION AND ALL UTILITY CONSTRUCTION ARE SUBSTANTIALLY COMPLETED. INSTALL CONCRETE SIDEWALKS WHERE INDICATED.

- 15. CONDUCT FINE GRADING ACTIVITIES. INSTALL AMENDED SOILS AS SPECIFIED AND PLACE TOPSOIL ON ALL REMAINING AREAS AND APPLY PERMANENT SEEDING, SOIL SUPPLEMENTS, MULCHING AND MATTING WHERE APPLICABLE IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS PRESENTED ON THE PLAN. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS.

- 16. CRITICAL STAGE: EXCAVATE TO REMOVE COLLECTED SEDIMENTS AND RETURN THE BOTTOMS OF THE SWM BMPs TO THEIR DESIGN GRADES WITH THE SPECIFIC PLANTING SOIL MIXTURE. INSTALL FINAL LANDSCAPING AND PLANTINGS PER PROJECT REQUIREMENTS AND PROCEDURES PRESENTED ON THE APPROVED PCSM PLAN, IN ORDER TO ENSURE RAPID VEGETATION GROWTH. PLANTING AND SEEDING SHOULD BE DONE ONLY DURING THE GERMINATING SEASON.

- 17. CRITICAL STAGE: THE MINIMIZE SOIL COMPACTION AREAS SHALL BE VERIFIED FOR MINIMAL COMPACTION BY THE PROFESSIONAL ENGINEER OR DESIGNEE.

- 18. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE BERKS COUNTY CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL OF THE E&S BMPs. 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.

- 19. ONCE APPROVED BY THE COUNTY CONSERVATION DISTRICT, REMOVE ALL EROSION AND SEDIMENTATION CONTROL MEASURES. PERMANENTLY RE-SEED, MULCH, AND MAT WHERE APPLICABLE ANY REMAINING AREAS WHICH REMAIN DISTURBED OR HAVE NOT BEEN ESTABLISHED FROM PREVIOUS SEEDING APPLICATIONS IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS PRESENTED ON THE PLAN.

- 20. INSTALL SITE SIGNAGE, PAVEMENT MARKINGS, AND OTHER INCIDENTAL CONSTRUCTION ITEMS AS NECESSARY.

- 21. CONTACT THE BERKS COUNTY CONSERVATION DISTRICT TO REQUEST A FINAL SITE INSPECTION AS NECESSARY.

PER NPDES REQUIREMENTS, WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPs IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS. COMPLETION CERTIFICATES ARE NEEDED TO ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT AND THE APPROVED E&S AND PCSM PLANS.

CHAPTER 102 PAG-02 NPDES

GENERAL PERMIT COVERAGE APPROVAL
• NPDES PERMIT NO. PAC06152
• BCOD PROJECT ID NO ESP-01737
EXPIRATION: APRIL 22, 2024

SEEDING SPECIFICATIONS

VEGETATIVE STABILIZATION:

ALL DISTURBED AREAS THAT HAVE NOT OTHERWISE BEEN STABILIZED AND HAVE SIGNIFICANT POTENTIAL FOR EROSION SHOULD BE STABILIZED WITH VEGETATION. THIS INCLUDES GRADED AREAS WHERE IT IS ANTICIPATED THAT FUTURE EARTHMOVING WILL TAKE PLACE WITHIN THE COMING YEAR. AREAS THAT WILL BE SUBJECT TO EARTHMOVING WITHIN 12 MONTHS MAY BE STABILIZED WITH TEMPORARY SEED MIXTURES, PREDOMINANTLY ANNUAL GRASSES. ALL OTHERS SHOULD BE STABILIZED WITH PERMANENT SEED MIXTURES, PREDOMINANTLY PERENNIAL GRASSES. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON. HOWEVER, THE AREA WILL NOT BE CONSIDERED STABILIZED UNTIL A MINIMUM UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED.

AS DISTURBED AREAS WITHIN A PROJECT APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN. IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING IS COMPLETED BEFORE MAKING PREPARATIONS FOR SEEDING AND MULCHING IS NOT ACCEPTABLE.

TOPSOIL APPLICATION:

TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 8". REQUIRED SOIL AMENDMENTS SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4"-6". IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

SOIL AMENDMENTS:

- TEMPORARY SEEDING - APPLY AGRICULTURAL LIME AT A RATE OF 1 TON PER ACRE AND 10-10-10 FERTILIZER AT A RATE OF 500 LBS. PER ACRE.
• PERMANENT SEEDING - APPLY AGRICULTURAL LIME AT A RATE OF 6 TONS PER ACRE AND 10-10-20 FERTILIZER AT A RATE OF 1,000 LBS. PER ACRE.

NOTE: A COMPOST BLANKET WHICH MEETS THE ABOVE STANDARDS MAY BE SUBSTITUTED FOR THE SOIL AMENDMENTS.

SEEDING:

- TEMPORARY SEEDING SHALL CONSIST OF 100 PERCENT ANNUAL RYE GRASS AND SHALL CONFORM TO THE REQUIREMENTS OF THE PA DEPARTMENT OF TRANSPORTATION (PADOT) SPECIFICATIONS FOR FORMULA E SEED MIXTURE. SEED SHALL BE APPLIED AT A RATE OF 48.4 LBS./ACRE SEED SHALL BE APPLIED BETWEEN THE DATES OF MARCH 15TH TO OCTOBER 15TH.

- PERMANENT SEEDING SHALL CONSIST OF THE FOLLOWING:

- LAWN AREAS - SEED WITH 20% PERENNIAL RYEGRASS MIXTURE (A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NOT ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT), 30% CREEPING RED FESCUE OR CHEWING FESCUE, AND 50% KENTUCKY BLUEGRASS MIXTURE (A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NOT ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT). SEED SHALL BE APPLIED AT A RATE OF 101.6 LBS./ACRE SEED SHALL BE APPLIED BETWEEN THE DATES OF MARCH 15TH TO JUNE 1ST AND AUGUST 16TH TO OCTOBER 15TH.
□ SWM/BMP FACILITIES #1 &2 - SEED WITH ERNST CONSERVATION SEEDS NATIVE DETENTION AREA MIX (ERNM-183) AT A RATE OF 20 LBS./ACRE WITH 30 LBS./ACRE OF WINTER RYE. ALL OTHER AREAS SHALL BE SEEDDED WITH ERNST CONSERVATION SEEDS RAIN GARDEN MIX (ERNM-180) AT A RATE OF 40 LBS./ACRE WITH 30 LBS./ACRE OF WINTER RYE. REFERENCE THE PLANT SCHEDULES FOR THE PLACEMENT OF TREES AND SHRUBS WITHIN THESE FACILITIES.

NOTE: FILL SLOPES SHOULD BE SEEDDED AND MULCHED AT REGULAR VERTICAL INCREMENTS (15'-25' MAXIMUM) AS THE FILL IS BEING CONSTRUCTED. THIS WILL ALLOW THE BOTTOM OF THE FILL TO PROGRESS TOWARD STABILIZATION WHILE WORK CONTINUES ON THE UPPER PORTION, MAKING FINAL STABILIZATION EASIER TO ACHIEVE AND PROVIDING SOME VEGETATIVE BUFFERING AT THE BOTTOM OF THE SLOPE.

MULCHING:

- 1. MULCHING SHALL BE PROVIDED AS REQUIRED IN AREAS DIFFICULT TO VEGETATE, AND DURING OFF-SEASON OPERATIONS. MULCHING METHODS AND MATERIALS SHALL CONFORM TO THE FOLLOWING:

- A. MULCH MATERIALS SHALL BE UNROTTED SALT HAY, HAY OR SMALL GRAIN STRAW APPLIED AT THE RATE OF 3 TONS PER ACRE. MULCH BLOWER SHALL NOT GRIND OR CHOP THE MATERIAL. WOODCHIPS, FREE OF INSECTS AND DISEASE ARE PERMITTED AT A RATE OF 4-6 TONS PER ACRE.

- B. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% TO 95% OF THE SOIL SURFACE WILL BE COVERED.

- C. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE SLOPE.

- I. PEG AND TWINE - DRIVE 8" TO 10" PEGS TO WITHIN 2" TO 3" OF THE SOIL SURFACE EVERY 4' IN ALL DIRECTIONS. TAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE THE MULCH TO THE SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS OR SQUARE PATTERN, AND SECURE THE TWIN AROUND EACH BEG WITH TWO OR MORE ROUND TURNS.

- II. MULCH NETTING - STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE DEGRADABLE NETTING IN AREAS TO BE MOWED.

- III. MULCH MATERIALS AND BINDERS SHALL BE ROLLED IN PLACE BY TRACKED VEHICLE OR OTHER SUITABLE EQUIPMENT.

- D. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH. IN VALLEYS AND AT CRESTS OF BANKS, REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.

- E. WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 LBS PER ACRE, OR PER MANUFACTURER RECOMMENDATION, MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

- F. WHERE EXCESSIVE SOIL EROSION, TRACKING OR FLOWING OF SEDIMENT IS EVIDENT OR ANTICIPATED, A MINIMUM OF 4" OF CRUSHED STONE SHALL BE PLACED WITHIN THE AFFECTED AREA AND MAINTAINED UNTIL PERMANENT STABILIZATION IS PROVIDED. ADDITIONAL STONE SHALL BE PLACED AS REQUIRED UNTIL STABILIZATION IS ACHIEVED. CRUSHED STONE SHALL CONFORM TO AASTO DESIGNATION M43. SIZE NO. 2 (2-1/2" TO 1-1/2").

THERMAL IMPACTS ANALYSIS

AS REQUIRED BY CHAPTER 102.4(b)(5)(iii), MEASURES HAVE BEEN TAKEN IN ORDER TO IDENTIFY POTENTIAL THERMAL IMPACTS TO "SURFACE WATERS OF THE COMMONWEALTH" DURING EARTH DISTURBANCE, AND INCLUDING BMPs TO AVOID, MINIMIZE, OR MITIGATE POTENTIAL POLLUTION FROM THERMAL IMPACTS. PLANNED SITE FEATURES FOR THE PROJECT HAVE BEEN SELECTED AND DESIGNED TO MINIMIZE THERMAL IMPACTS, TO THE GREATEST EXTENT PRACTICABLE, WITHIN THE PROJECT'S DISTURBED AREA.

DURING CONSTRUCTION, EARTH DISTURBANCE ACTIVITIES WILL BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE AS A RESULT OF THE PROJECT'S SEQUENCE OF CONSTRUCTION WHICH WILL MINIMIZE THERMAL IMPACTS. INITIALLY, RUNOFF FROM A LARGE PORTION OF THE SITE IS CONTROLLED BY FILTER SOCK. THE FILTER SOCK WILL SLOW AND FILTER STORMWATER RUNOFF, ALLOWING FOR FURTHER INTERACTION TIME WITH UNDISTURBED GRASSED AREAS TO DECREASE STORMWATER TEMPERATURE. FURTHER, AS PART OF THE CONSTRUCTION SEQUENCE, AS FILL SLOPES ARE FORMED ON THE EXTERIOR OF THE SITE, THE SLOPES ARE REQUIRED BE IMMEDIATELY STABILIZED AND SEEDDED, ALLOWING FOR THERMAL COOLING AS THE PLANTINGS GERMINATE.

THIS COMBINATION OF SITE AREAS BEING CONTROLLED BY FILTER SOCK AND BEING IMMEDIATELY PLANTED WILL MITIGATE THERMAL IMPACTS TO THE DOWNSTREAM RECEIVING WATER TO THE GREATEST EXTENT PRACTICABLE.

CRITICAL STAGES OF BMP IMPLEMENTATION

THE FOLLOWING STAGES OF CONSTRUCTION REQUIRE A LICENSED PROFESSIONAL OR DESIGNEE TO BE PRESENT ON THE SIRE DURING CONSTRUCTION OF THE SPECIFIC ITEMS FOR INSPECTION AND/OR FIELD VERIFICATION. ALL OTHER STAGES OF CONSTRUCTION ARE NOT NECESSARY TO BE OBSERVED BY A LICENSED PROFESSIONAL OR DESIGNEE.

- 1. WHEN THE MINIMIZE SOIL COMPACTION AREAS ARE DELINEATED.
2. WHEN SWM BMPs #1 & #2 ARE BEING INSTALLED. THE OUTLET STRUCTURES, OUTLET PIPES, ANTI-SEEP COLLARS, CONCRETE CRADLES, PERMANENT EMBANKMENT BERM, IMPERVIOUS CORE, EMERGENCY SPILLWAY, EMERGENCY SPILLWAY LINING, AND DIMENSIONS OF THE BMPs SHALL BE VERIFIED AS THEY ARE INSTALLED.
3. WHEN THE CONTECH CDS UNIT IS INSTALLED.
4. WHEN THE SOIL MIXTURE AND PLANTINGS IN SWM BMPs #1 & #2 ARE BEING INSTALLED.
5. WHEN THE MAJORITY OF EARTH DISTURBANCE IS COMPLETED, THE MINIMIZE SOIL COMPACTION AREAS SHALL BE VERIFY FOR MINIMAL COMPACTION.

MAINTENANCE OF E&S CONTROL DEVICES

THE SOIL EROSION AND SEDIMENTATION CONTROLS UTILIZED IN THE DEVELOPMENT OF THIS PLAN SHALL BE ROUTINELY MAINTAINED IN ORDER TO KEEP THEM FUNCTIONING PROPERLY UNTIL SITE STABILIZATION OCCURS. THE CONTRACTOR SHALL PERFORM CERTAIN PERIODIC DUTIES IN ORDER TO ASSURE PROPER CONTROL. MAINTENANCE OF THE VARIOUS EROSION AND SEDIMENTATION CONTROLS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING GENERAL MAINTENANCE PROCEDURES OUTLINED BELOW. ANY SEDIMENTS REMOVED FROM TEMPORARY E&S BMPs SHALL BE RID OF DEBRIS, SPREAD OUT WITHIN THE LIMITS OF DISTURBANCE AND STABILIZED.

MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION MEASURES AFTER EACH SIGNIFICANT RUNOFF EVENT AND ON A WEEKLY BASIS BY A QUALIFIED PERSON TRAINED AND EXPERIENCED IN EROSION AND SEDIMENTATION CONTROL AND WHO HAS SITE SUPERVISION RESPONSIBILITIES, TO ASCERTAIN THAT THE EROSION CONTROL MEASURES ARE OPERATIONAL AND EFFECTIVE IN PREVENTING SEDIMENT FROM LEAVING THE SITE. WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE: A SUMMARY OF SITE CONDITIONS, BMPs AND COMPLIANCE, AND THE DATE, TIME, AND NAME OF THE PERSON CONDUCTING THE INSPECTION. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE INCLUDING THE COMPLIANCE ACTIONS, DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG SHALL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE CONSERVATION DISTRICT UPON REQUEST.

MISCELLANEOUS ADJUSTMENTS AND CORRECTIONS SHALL BE MADE TO ANY EROSION CONTROL STRUCTURE AS DEEMED NECESSARY BY THE ENGINEER, TOWNSHIP OFFICIAL OR COUNTY CONSERVATION DISTRICT REPRESENTATIVE IN ORDER TO CORRECT UNFORESEEN PROBLEMS CAUSED BY A STORM FLOW TO STABILIZATION.

FILTER SOCK:

- 1. THE FILTER SOCK SHALL BE INSPECTED WEEKLY AND AFTER EVERY PRECIPITATION EVENT. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED AS REQUIRED TO KEEP THE DEVICES FUNCTIONAL. IN ALL CASES, REMOVE DEPOSITS WHERE ACCUMULATIONS REACH 1/2 ABOVE THE GROUND HEIGHT OF THE DEVICE.
3. ALL UNDERCUTTING OR EROSION OF THE TOE ANCHOR OR BASE SHALL BE REPAIRED IMMEDIATELY WITH COMPACTED BACKFILL MATERIAL.
4. ADHERE TO ANY MANUFACTURER'S RECOMMENDATIONS FOR REPLACING FILTER SOCK.

- 5. ANY DEBRIS ACCUMULATED AT SILT SOCK BARRIERS SHALL BE REMOVED AND PROPERLY DISPOSED IN A RESPONSIBLE MANNER. BARRIERS SHALL BE CHECKED AND REALIGNED OR RESET AS REQUIRED. ANY DEBRIS OR SOLID WASTE MATERIAL ACCUMULATED FROM CONSTRUCTION ACTIVITIES SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROVED LANDFILL. CONSTRUCTION WASTE SHALL NOT BE BURIED ON THE SUBJECT SITE.

INLET PROTECTION:

- 1. THE INLET PROTECTION SHALL BE INSPECTED WEEKLY AND AFTER EVERY PRECIPITATION EVENT. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY.
2. STANDARD TYPE C AND TYPE M INLETS SHALL USE A WIRE MESH AND STONE INLET PROTECTION DEVICE AS PER THE STANDARD CONSTRUCTION DETAILS SHOWN ON THE APPROVED SOIL EROSION AND SEDIMENTATION CONTROL PLAN.
3. INLET PROTECTION DEVICES SHALL BE INSPECTED WEEKLY AND AFTER EACH MEASURABLE PRECIPITATION EVENT.
4. SEDIMENT SHALL BE REMOVED FROM THE DEVICE WHEN THE DEPTH OF SEDIMENT IS 1/3 OF THE TOTAL HEIGHT.
5. STONE WHICH BECOMES CHOKED WITH SEDIMENT AND IS NOT FUNCTIONAL SHALL BE REMOVED AND REPLACED WITH CLEAN STONE.
6. REMOVE INLET PROTECTION ONCE SUBBASE MATERIAL HAS BEEN INSTALLED AND PAVING OF THE SITE IS ABOUT TO OCCUR.

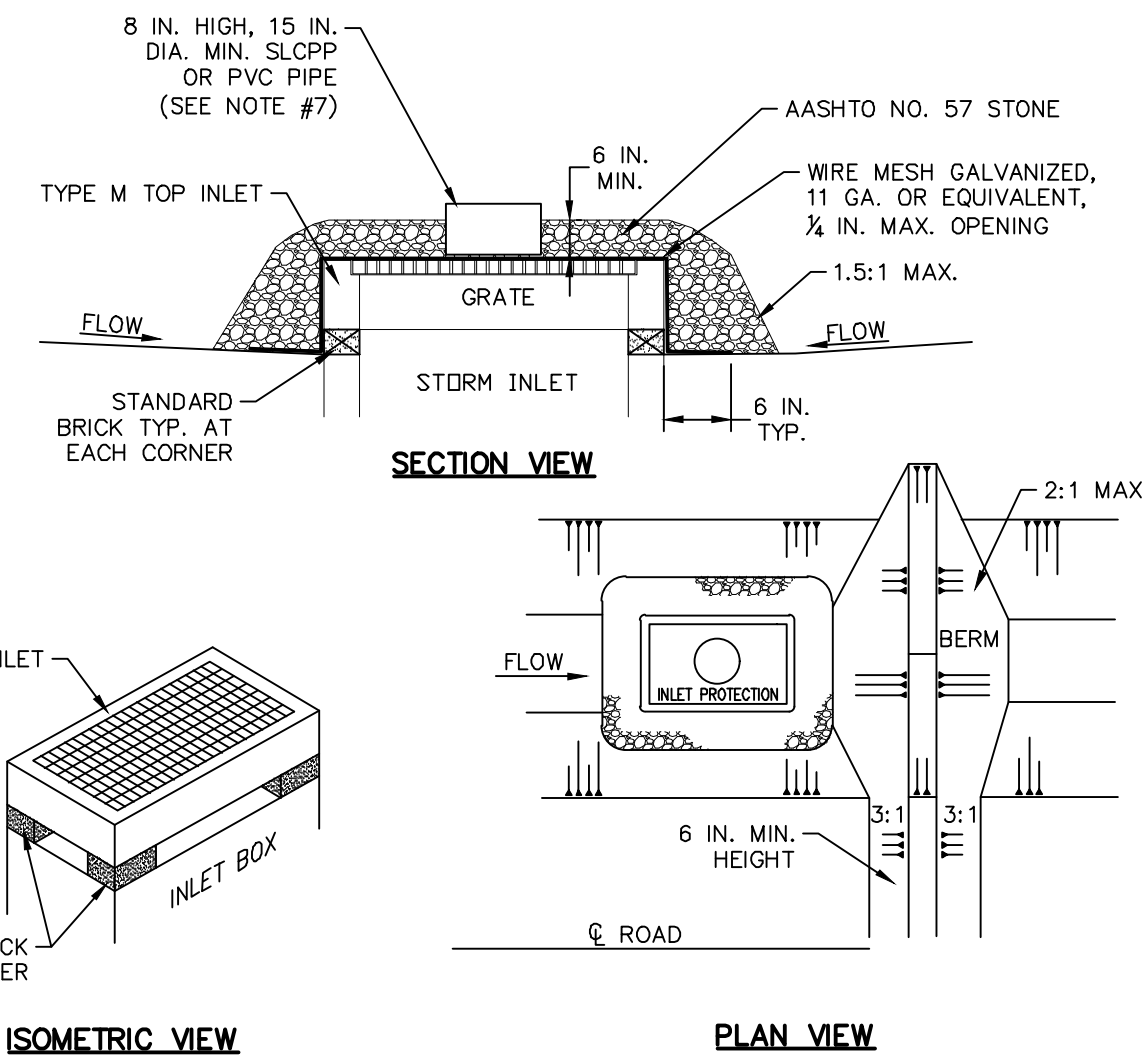
PUMPED WATER FILTER BAG:

- 1. FILTER BAGS SHALL BE INSPECTED DAILY. IMMEDIATELY DISPOSE OF BAGS WHICH ARE SPLIT OR TORN.
2. DO NOT USE BAGS WHICH ARE GREATER THAN 1/2 FULL. WHEN BAGS REACH THAT CAPACITY, THEY SHALL BE REPLACED AND THE SEDIMENT SHALL BE PROPERLY DISPOSED.
3. REGULARLY INSPECT THE OPERATION OF FILTER BAGS TO ENSURE THAT THEY ARE LOCATED ON RELATIVELY FLAT, WELL VEGETATED AREAS AND THAT THE OUTFLOW IS BEING DISCHARGED TO A STABLE, EROSION RESISTANT AREA.

ROCK CONSTRUCTION ENTRANCE:

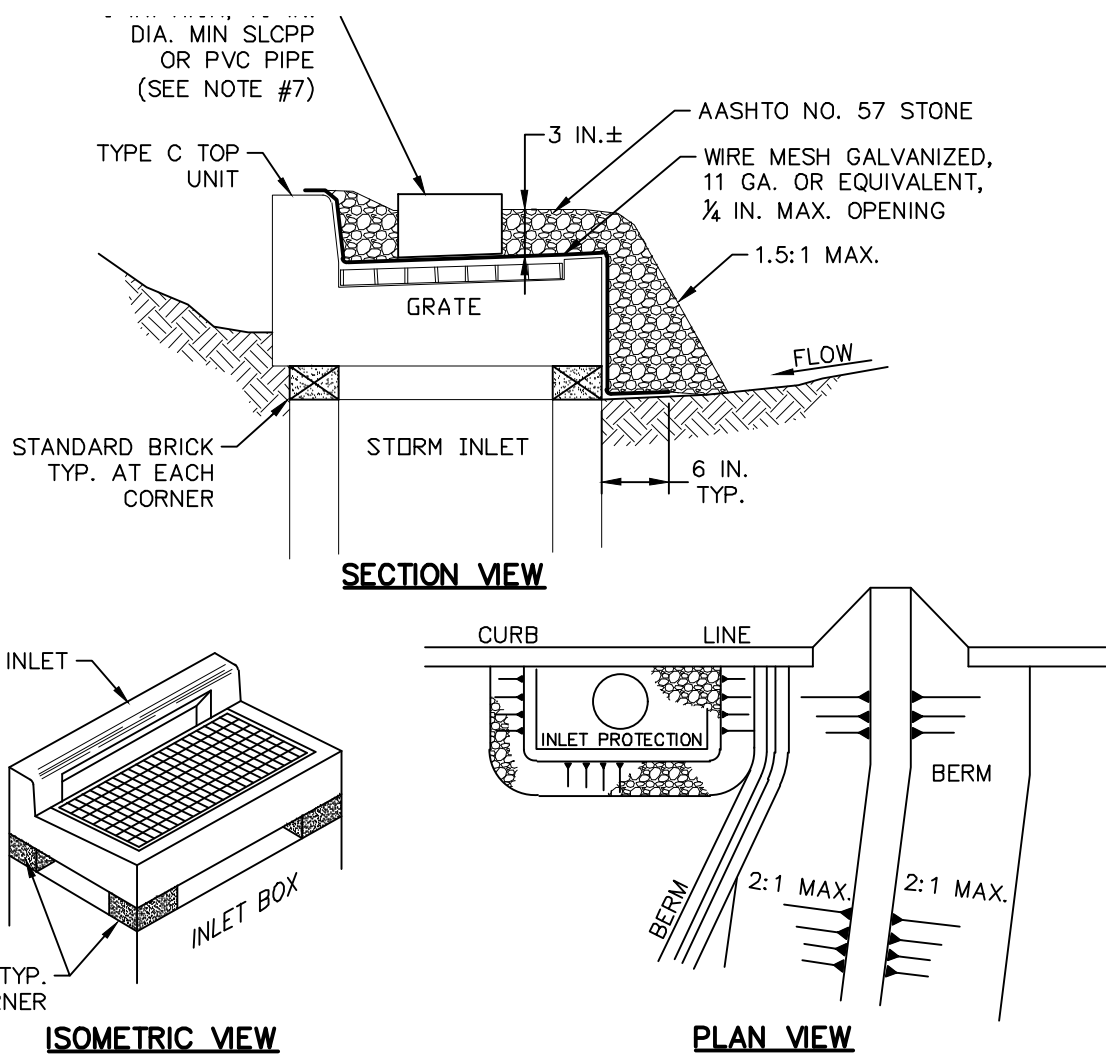
- 1. THE STRUCTURE'S THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS MUST BE REMOVED AND RETURNED TO THE SITE. WASHING OF THE ROADWAY IS NOT PERMITTED.
2. ROCK CONSTRUCTION ENTRANCES SHALL BE CLEANED AND REDRESSED WHEN VOIDS BECOME CHOKED WITH MUD AND SEDIMENT.
3. GEOTEXTILE FABRIC SHALL BE INSTALLED UNDER ALL ROCK CONSTRUCTION ENTRANCES TO KEEP SOIL FROM PUMPING AND PENETRATING INTO THE STRUCTURE.

CONCRETE WASHOUT:



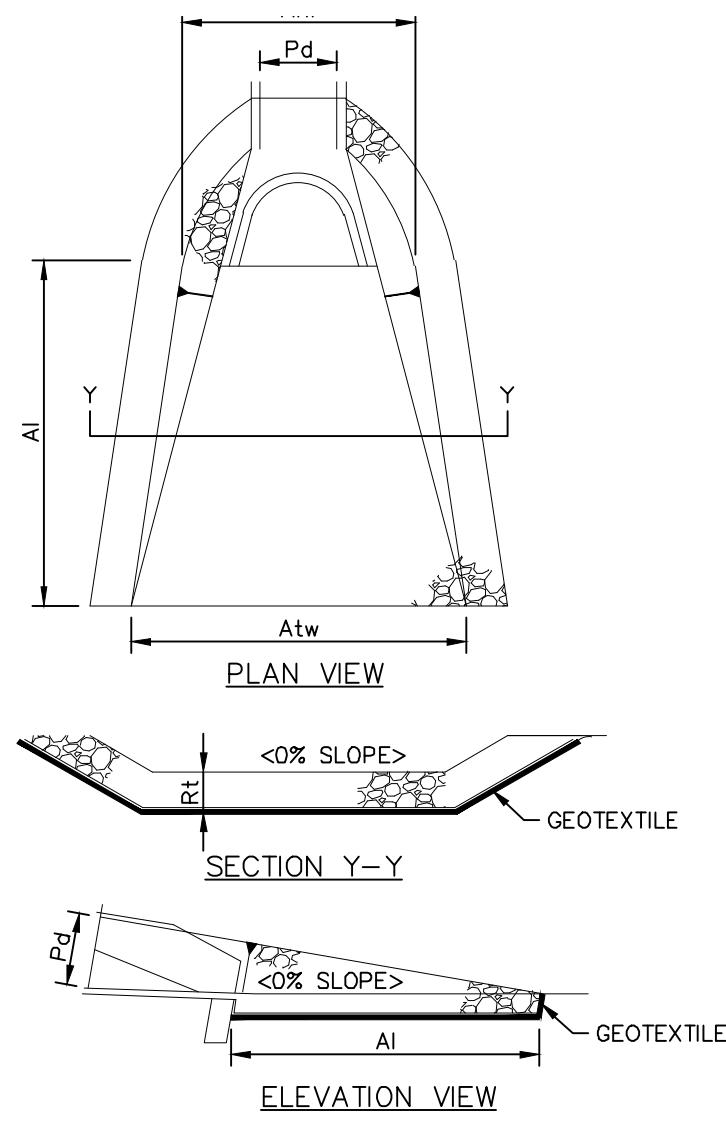
- NOTES:**
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP UNLESS OTHERWISE SPECIFIED ON THE PLAN. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT LOW POINTS.
 - ROLLED EARTHEN BERM SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. A 6" MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
 - STONE INLET PROTECTION AND BERM FOR A TYPE C INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15" OVERFLOW PIPE AND 4" HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA.
 - SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
 - FOR SYSTEMS DISCHARGING TO HO OR EV SURFACE WATER, A 6" THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2.
 - DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.
 - FILTER FABRIC SHALL BE PROVIDED ON THE OVERFLOW PIPE OPENING FOR ALL INLETS TRIBUTARY TO SUBSURFACE INFILTRATION TRENCHES, AS DEPICTED ON THE PLAN, IN ORDER TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THESE SYSTEMS.

**STONE INLET PROTECTION & BERM
ALTERNATE TYPE M INLET - NOT AT GRADE**
NOT TO SCALE



- NOTES:**
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP UNLESS OTHERWISE SPECIFIED ON THE PLAN. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT LOW POINTS.
 - ROLLED EARTHEN BERM SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. A 6" MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
 - STONE INLET PROTECTION AND BERM FOR A TYPE C INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15" OVERFLOW PIPE AND 4" HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA.
 - SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
 - FOR SYSTEMS DISCHARGING TO HO OR EV SURFACE WATER, A 6" THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2.
 - DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.
 - FILTER FABRIC SHALL BE PROVIDED ON THE OVERFLOW PIPE OPENING FOR ALL INLETS TRIBUTARY TO SUBSURFACE INFILTRATION TRENCHES, AS DEPICTED ON THE PLAN, IN ORDER TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THESE SYSTEMS.

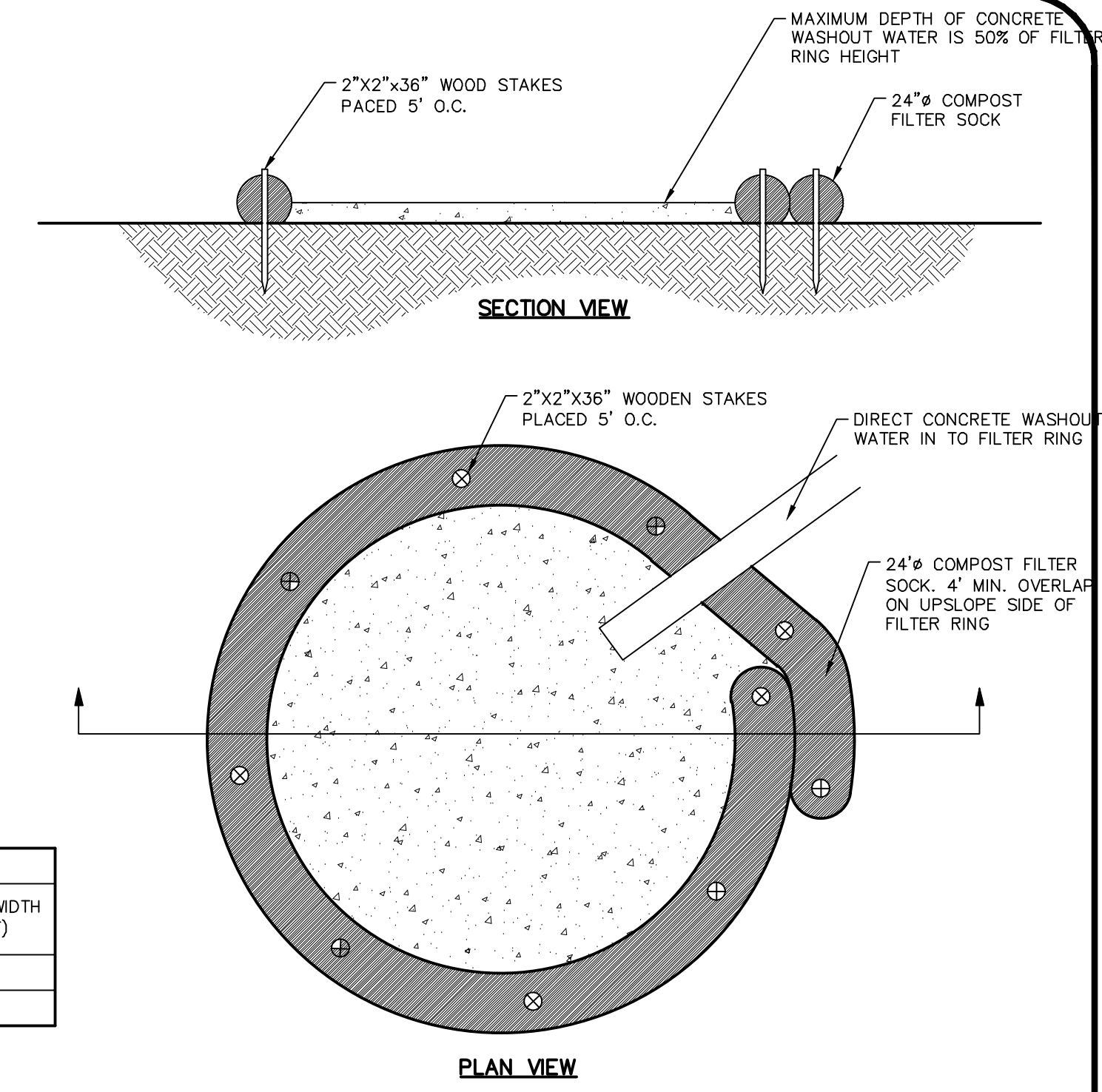
**STONE INLET PROTECTION & BERM
ALTERNATE TYPE C INLET - NOT AT GRADE**
NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON		
		SIZE (R-...)	THICK. RT (IN)	LENGTH Al (FT)	INITIAL WIDTH Alw (FT)	TERMINAL WIDTH Atw (FT)
1-0	15	3	9	8	3.75	7
2-0	12	3	9	4	3	4.6

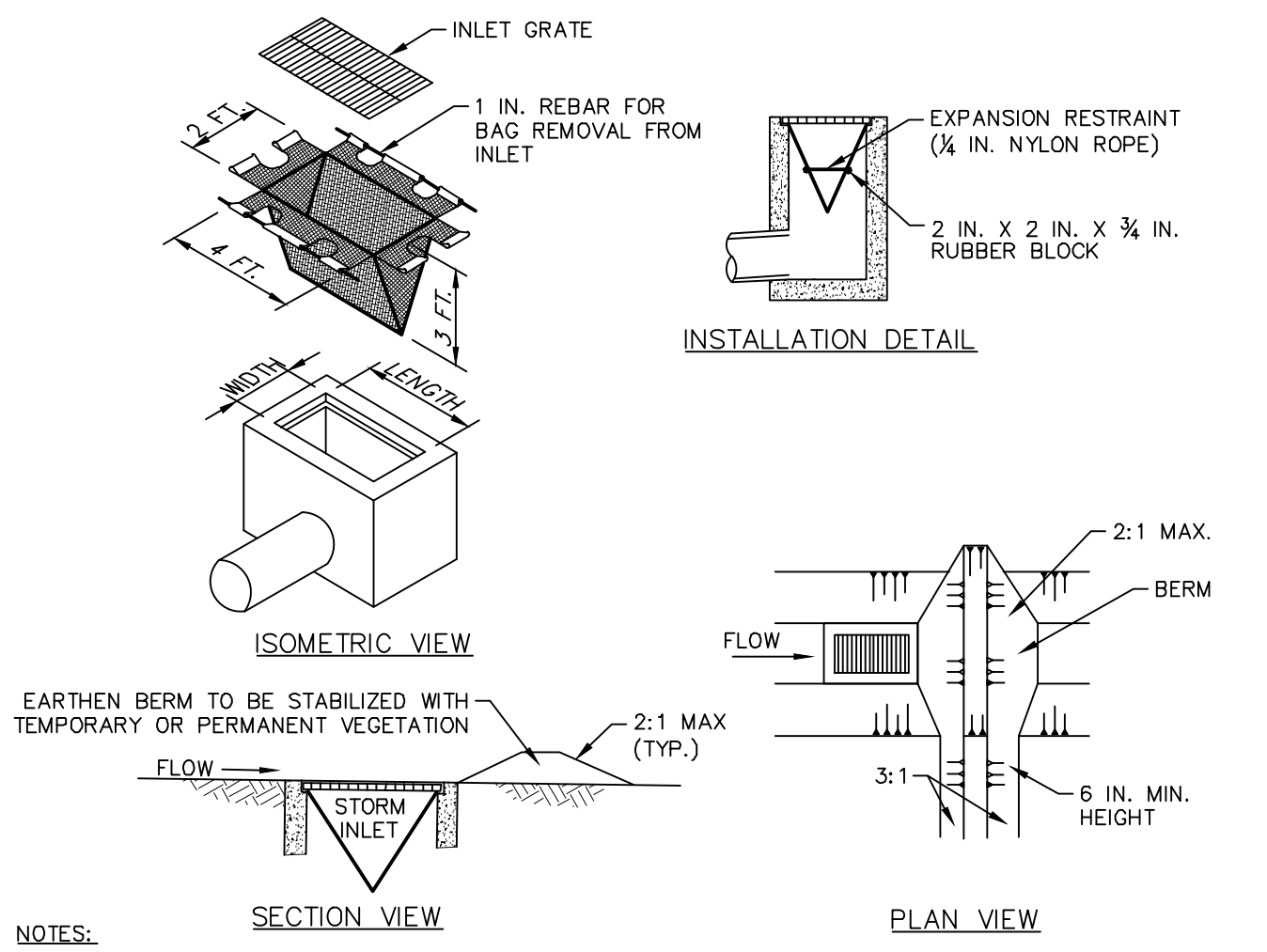
- NOTES:**
- ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
 - ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

**RIPRAP APRON AT
PIPE OUTLET WITH ENDWALL**
NOT TO SCALE



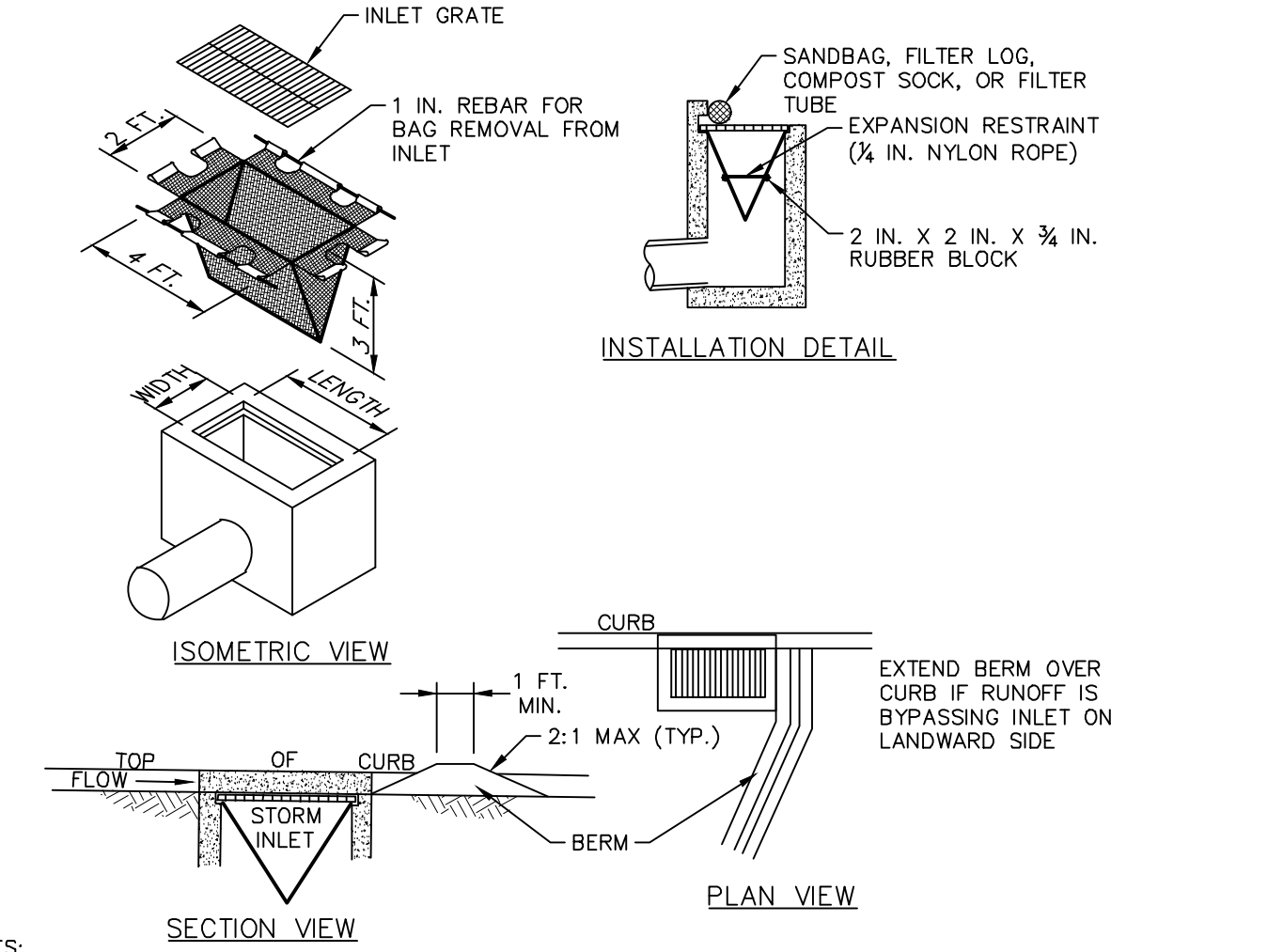
COMPOST SOCK WASHOUT DETAIL
NOT TO SCALE

- NOTES:**
- INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
 - 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN A PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
 - A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.
 - ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
 - ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
 - PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.



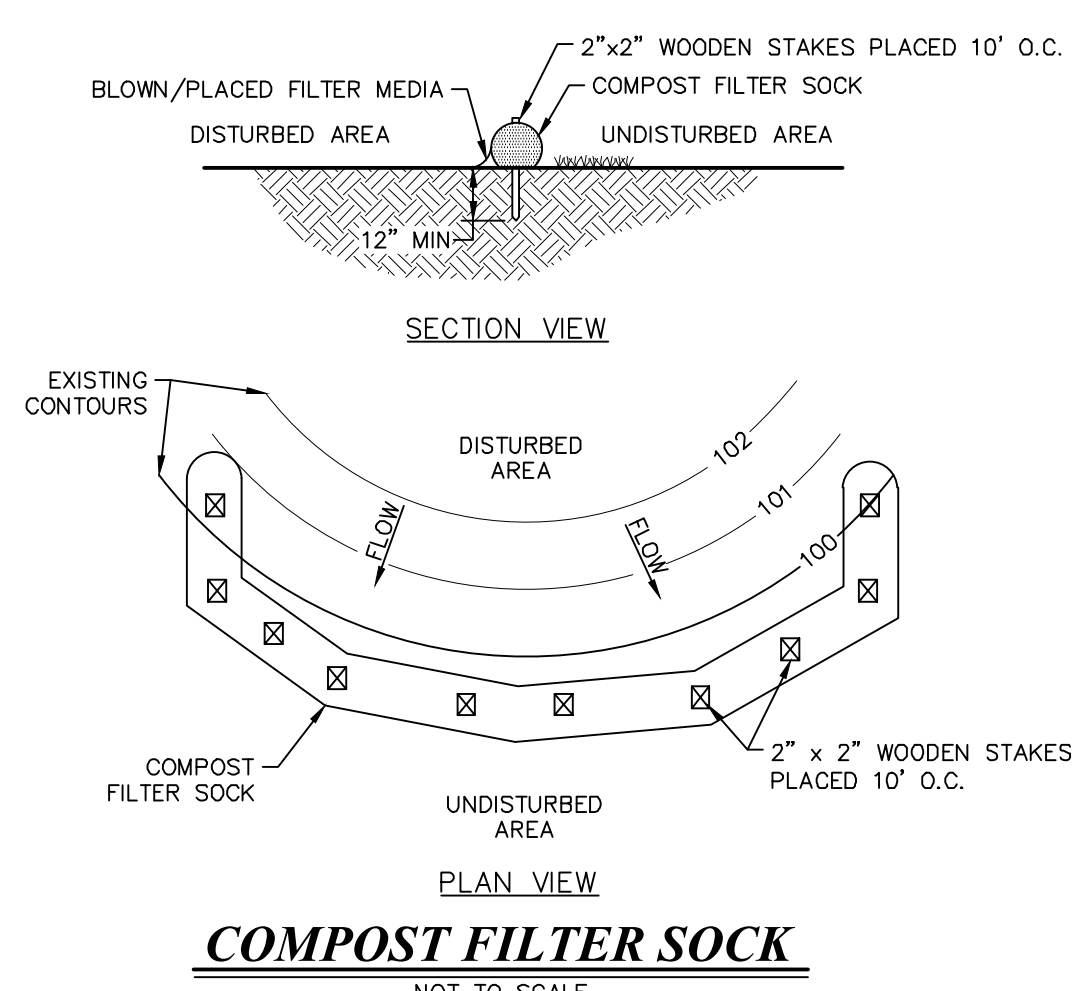
- NOTES:**
- MAXIMUM DRAINAGE AREA = 1/2 ACRE.
 - INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
 - ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.
 - AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
 - INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPLOYED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
 - DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTER BAG INLET PROTECTION - TYPE M INLET
NOT TO SCALE



- NOTES:**
- MAXIMUM DRAINAGE AREA = 1/2 ACRE.
 - INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
 - ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.
 - AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
 - INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPLOYED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
 - DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTER BAG INLET PROTECTION - TYPE C INLET
NOT TO SCALE



COMPOST FILTER SOCK
NOT TO SCALE

- GENERAL NOTES:**
- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
 - COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
 - TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
 - ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND 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.

MATERIAL TYPE	COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS				
	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	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"	3/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	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	HDPE BIAXIAL NET CONTINUOUSLY WOUND				
	FUSION-WELDED JUNCTURES				
OUTER FILTRATION MESH	3/4" x 3/4" MAX. APERTURE SIZE				
	COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)				
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

COMPOST STANDARDS	
ORGANIC MATTER CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
PH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM

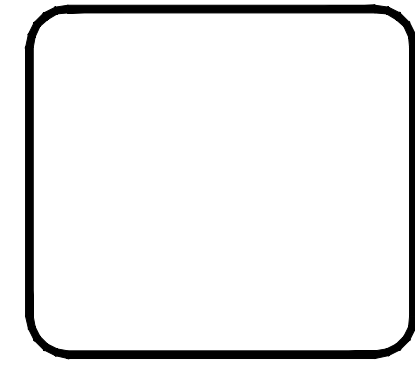
FINAL

PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
CHECKED -	JCG

NO.	DATE	REVISION
10	05/19/23	REVISED PER BCCD COMMENTS
9	04/20/23	REVISED PER PADOT HOP PLANS
8	11/17/22	REVISED PER BCCD NPDES COMMENTS
7	08/02/22	ADDED PROPOSED H.O.P. IMPROVEMENTS
6	09/14/21	ADDED EV CHARGING STATIONS
5	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS
4	02/28/20	REVISED PER PENNSYLVANIA DEP COMMENTS
		NO. DATE

LANDWORKS
CIVIL DESIGN, LLC
land development consultants

3641 MARKET STREET - SUITE 302 • CAMP HILL, PA 17011
P (717) 579-0074
www.landworksinc.com



EROSION & SEDIMENTATION CONTROL DETAILS
FOR
KRUMSVILLE ROAD CONVENIENCE STORE
FOR
HARMIKE INVESTMENTS, LLC
GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.	22-0117-001
DATE:	05-06-19
SCALE:	N.T.S.
SHEET	ES 10.2

SOIL LIMITATIONS & RESOLUTIONS

SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE / STEEL	DROUGHTY	EASILY ERODIBLE	FLOODING	DEPTH TO SATURATED ZONE / SEASONAL HIGH WATER TABLE	HYDRIC / HYDRIC INCLUSIONS	LOW STRENGTH / LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK / SWELL	POTENTIAL SINKHOLE	PONDING	NETNESS
BEDINGTON	X	C	X	X			X		X	X	X	X				
BERKS	X	C	X	X			X		X	X	X					

CUTBANKS CAVE: CONTRACTOR SHALL USE THE FOLLOWING CONSTRUCTION TECHNIQUES DESIGNED TO REDUCE OR ELIMINATE THE POTENTIAL FOR CUTBANK CAVING. AS DEFINED BY OSHA, PROTECTIVE SYSTEMS INCLUDE ONE OR MORE OF THE FOLLOWING DESIGNS:
 1. SLOPING THE GROUND TO REDUCE THE HEIGHT OF THE CUTBANK
 2. BENCHING THE GROUND TO REDUCE THE HEIGHT OF THE CUTBANK
 3. SHORING THE CUTBANK WITH SUPPORTS (PLANKING OR HYDRAULIC JACKS)
 4. SHIELDING THE CUTBANK (TRENCH BOX)
 5. ALL FILL PLACEMENT ACTIVITIES SHALL BE PERFORMED IN 8" LIFTS. ALL LIFTS SHALL BE COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT, PREPARED BY GTA ASSOCIATES, INC. (SEE BELOW TABLE)

CORROSIVE: CONCRETE SHALL BE DESIGNED AS NECESSARY TO RESIST CORROSION DUE TO EXPOSURE TO CORROSIVE SOILS.
 EROSION CONTROL MEASURES SHALL BE MONITORED ROUTINELY IN ACCORDANCE WITH PROVIDED SCHEDULE AND PROCEDURE UNTIL SITE IS COMPLETELY STABILIZED.
 UPON REACHING FINAL GRADE, STEEP SLOPES SHALL BE IMMEDIATELY STABILIZED, SEEDED AND MULCHED TO PREVENT EROSION. ALL SLOPES 3:1 OR STEEPER REQUIRE E&S MATTING AS SPECIFIED ON THE E&S PLANS.

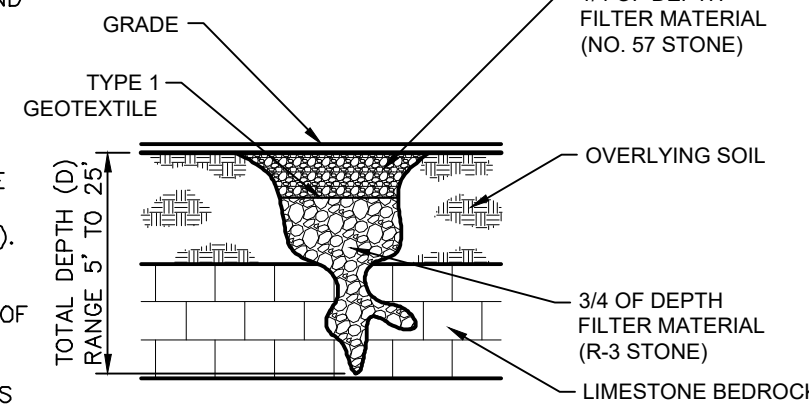
HYDRIC INCLUSIONS: EROSION CONTROL MEASURES SHALL BE MONITORED ROUTINELY IN ACCORDANCE WITH PROVIDED SCHEDULE AND PROCEDURE UNTIL SITE IS COMPLETELY STABILIZED.
 PRECAUTIONS SHOULD BE TAKEN TO PREVENT SLOPE FAILURE, AS DEFINED BY OSHA, PROTECTIVE SYSTEMS INCLUDE ONE OR MORE OF THE FOLLOWING DESIGNS:
 1. SLOPING THE GROUND TO REDUCE THE HEIGHT OF THE CUTBANK
 2. BENCHING THE GROUND TO REDUCE THE HEIGHT OF THE CUTBANK
 3. SHORING THE CUTBANK WITH SUPPORTS (PLANKING OR HYDRAULIC JACKS)
 4. SHIELDING THE CUTBANK (TRENCH BOX)
 5. ALL FILL PLACEMENT ACTIVITIES SHALL BE PERFORMED IN 8" LIFTS. ALL LIFTS SHALL BE COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT, PREPARED BY GTA ASSOCIATES, INC. (SEE BELOW TABLE)

SLOW PERCOLATION: CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AT ALL AREAS DURING AND AFTER CONSTRUCTION BY SLOPING ALL SURFACES, EXCEPT FOR THE BUILDING PAD AND BOTTOM SURFACES OF PCSM BMPs, A MINIMUM OF 1%. THE BOTTOM SURFACES OF PCSM BMPs SHALL BE SLOPED AS DESIGNED. WATER COLLECTED IN TRENCHES AND OTHER EXCAVATIONS DURING CONSTRUCTION SHALL BE REMOVED PRIOR TO CONTINUATION OR COMPLETION OF WORK WHERE WATER IS ENCOUNTERED.
 CONSTRUCT ANTI-SEEP COLLARS AS DESIGNED FOR EACH BASIN. BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE INSPECTED FOR SIGNS OF EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE IMMEDIATELY PERFORMED. ALL CONNECTIONS WITHIN BASIN DISCHARGE PIPES SHALL BE WATER TIGHT. ALL PIPING SHALL BE INSTALLED WITH STONE BACKFILL AROUND PIPING TO PREVENT CONTACT OF SOIL WITH PIPE MATERIALS.

PIPING: SOIL TESTS SHALL BE PERFORMED TO DETERMINE APPROPRIATE TOPSOIL FOR USE IN LAWN AREAS.
 CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AT ALL AREAS DURING AND AFTER CONSTRUCTION BY SLOPING ALL SURFACES, EXCEPT FOR THE BUILDING PAD AND BOTTOM SURFACES OF PCSM BMPs, A MINIMUM OF 1%. THE BOTTOM SURFACES OF PCSM BMPs SHALL BE SLOPED AS DESIGNED. WATER COLLECTED IN TRENCHES AND OTHER EXCAVATIONS DURING CONSTRUCTION SHALL BE REMOVED PRIOR TO CONTINUATION OR COMPLETION OF WORK WHERE WATER IS ENCOUNTERED.

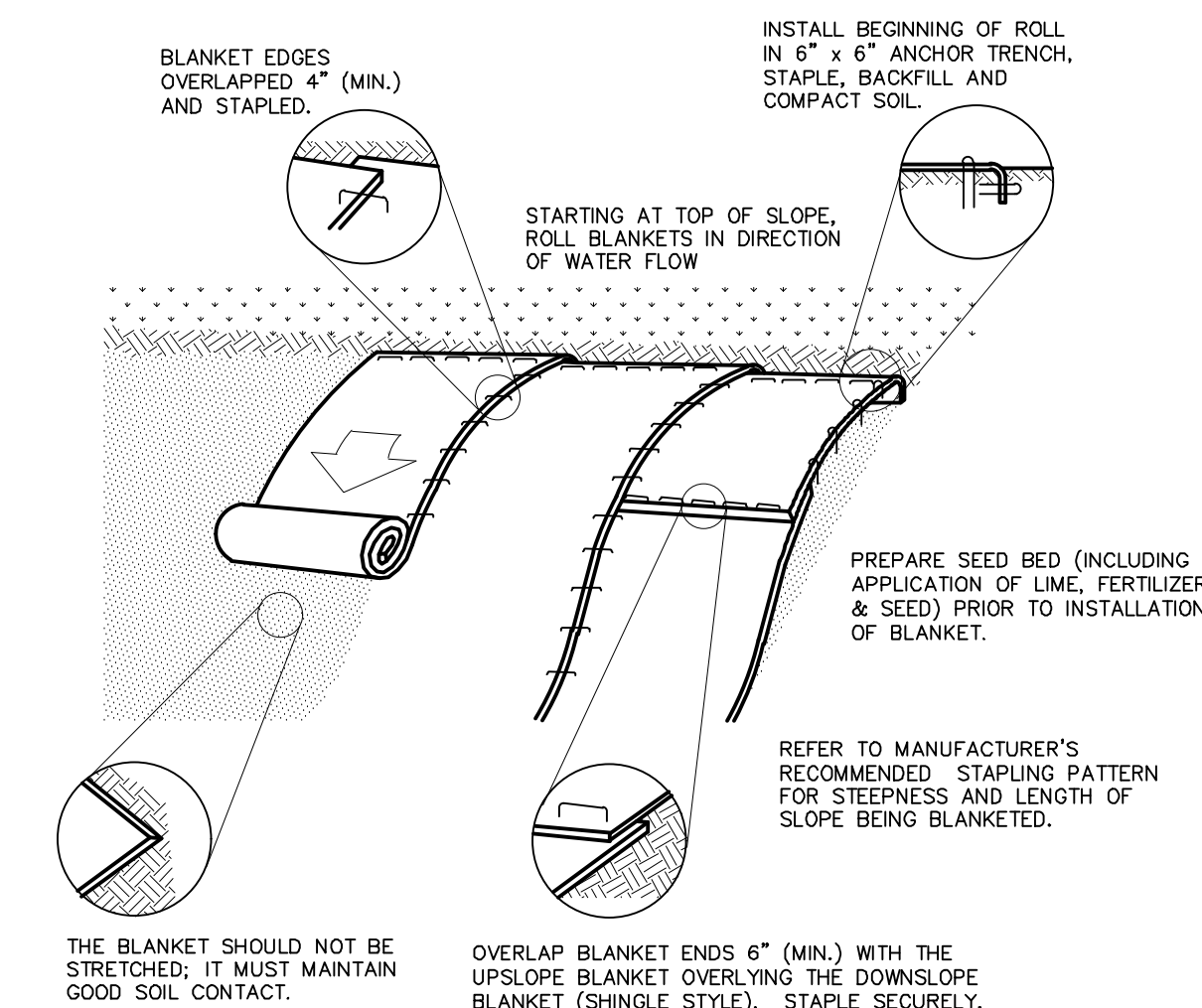
POOR SOURCE OF TOPSOIL: VEGETATION TO BE ESTABLISHED FOR EROSION CONTROL PURPOSES SHALL BE WATERED REGULARLY TO ENSURE ESTABLISHMENT OF VEGETATION.

- REMOVE AND PROPERLY DISPOSE OF MATERIALS DUMPED IN AND AROUND THE SINKHOLE.
- EXCAVATE LOOSE MATERIAL FROM THE SINKHOLE AND TRY TO EXPOSE THE SOLUTION VOID(S) IN THE BOTTOM. ENLARGE THE SINKHOLE, AS NECESSARY TO ALLOW FOR INSTALLATION OF THE FILTER MATERIALS.
- PLACE A LAYER OF FILTER MATERIAL INTO THE SINKHOLE ALLOWING THE STONE TO FILL THE VOID(S) BELOW THE BOTTOM OF EXCAVATED SINKHOLE. THE SIZE SHOULD BE 1/4 TO 1/2 THE SIZE OF THE VOID(S). IN MOST CASES THIS MATERIAL COULD BE R-3 STONE.
- PLACE A LAYER OF THE SAME SIZE FILTER MATERIAL AT A THICKNESS OF ABOUT 3/4 D (D = TOTAL DEPTH) ABOVE THE SINKHOLE BOTTOM.
- PLACE A LAYER OF SMALLER SIZE FILTER MATERIAL OVER THE PREVIOUS LAYER AT A THICKNESS OF ABOUT 1/4 D (D = TOTAL DEPTH). BRING THIS LAYER TO THE SURFACE. THE SIZE SHOULD BE 1/4 TO 1/2 THE SIZE OF THE PREVIOUS LAYER. IN MOST CASES THIS MATERIAL COULD BE NO. 57 STONE.



SINKHOLE TREATMENT INVERTED FILTER

NOT TO SCALE



- NOTES:**
- EROSION CONTROL MATTING SHALL BE NORTH AMERICAN GREEN 50-150 OR APPROVED EQUAL.
 - SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
 - PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP SLOPE.
 - SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
 - BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
 - THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE

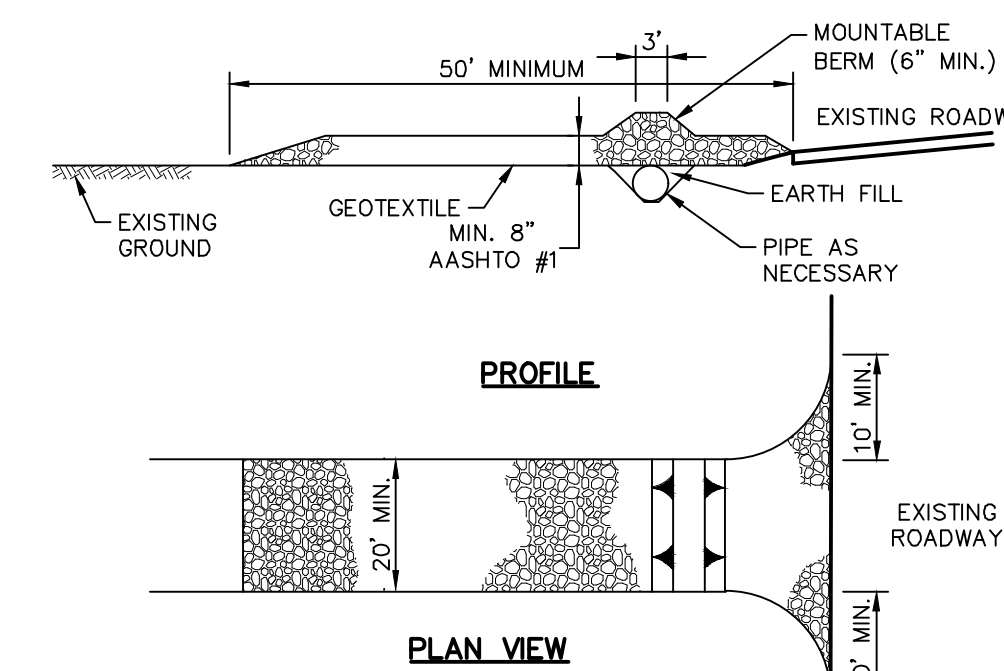
EROSION & SEDIMENTATION CONTROL NOTES

- STANDARD NOTES:**
- 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 BERKS COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE DISTRICT MAY REQUIRE WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
 - 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 CONSTRUCTION SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS DOCUMENT.
 - 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.
 - IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BMPs TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF DEP.
 - ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS. DISCHARGE POINTS SHOULD BE ESTABLISHED TO PROVIDE FOR MAXIMUM DISTANCE TO ACTIVE WATERWAYS.
 - 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, SHOVELLED, OR SWEEPED INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
 - ALL EXCAVATION FOR UTILITY LINE INSTALLATION SHALL BE LIMITED TO THE AMOUNT THAT CAN BE EXCAVATED, INSTALLED, BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY. ALL EXCAVATED MATERIAL SHALL BE DEPOSITED ON THE UPSLOPE SIDE OF THE TRENCH.
 - CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
 - UNTIL THE SITE IS STABILIZED, ALL E&S BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL E&S BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, MULCHING, MUST BE PERFORMED IMMEDIATELY. IF 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.
 - 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 PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS 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.
 - CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREGGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM USED ASPHALT DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)
 - ANY PLACEMENT OF CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL.
 - ENVIRONMENTAL DUE DILIGENCE MUST BE PERFORMED TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS, ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY MANAGEMENT OF CLEAN FILL.
- MATERIAL NOTES:**
- ALL BUILDING MATERIALS AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE CHAPTER 260, §§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 DEP 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 FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. CLEAN FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
 - FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, 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 ON SATURATED OR FROZEN SURFACES.

- PROTECTION OF INFILTRATION BMP'S:**
- COMPACTION OF THE BMP AREA SHALL BE AVOIDED AND MINIMIZED DURING CONSTRUCTION.
 - E&S BMP'S SHALL BE INSTALLED AND MAINTAINED DURING AND AFTER CONSTRUCTION OF THE INFILTRATION BMP'S TO PREVENT SEDIMENT FROM CLOGGING OR FILLING THE PCSM BMP OR STORAGE FACILITY.
 - TO THE MAXIMUM EXTENT PRACTICABLE, PCSM BMP'S SHOULD BE CONSTRUCTED AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED ON ALL CONTRIBUTING DRAINAGE AREAS.
- STABILIZATION NOTES:**
- STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2H:1V OR FLATTER.
 - AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 4 INCHES PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL 3:1 OR GREATER SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
 - UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.
 - STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE. STRAW MULCH SHOULD BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
 - ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED.
 - EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER, WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
 - 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.
 - TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION. WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETERMINAL TO PROPER GRADING AND SEEDBED PREPARATION, COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHENEVER POSSIBLE PRIOR TO SEEDING.

- SOIL LIMITATIONS AND RESOLUTIONS:**
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL.
 - ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE, OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
 - ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
 - FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, 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.
 - SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAINS OR OTHER APPROVED METHOD.

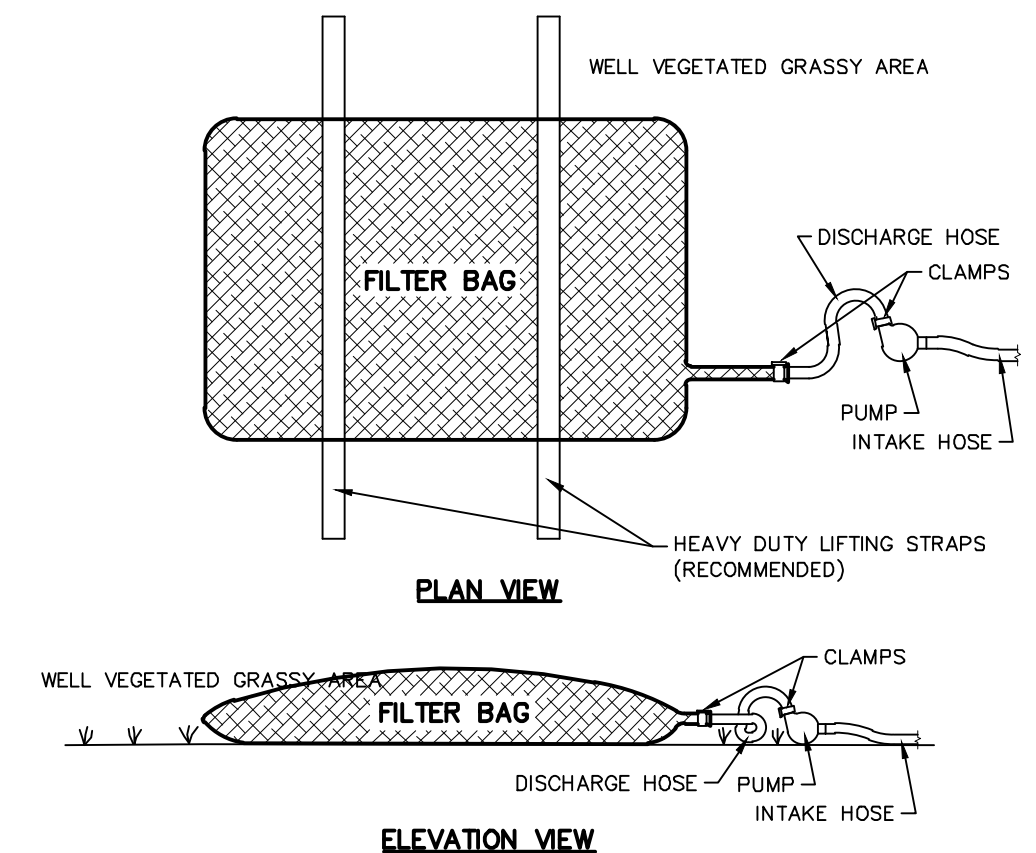
- NPDES PERMIT NOTES:**
- PERMITTEES REQUESTING A RENEWAL OF COVERAGE UNDER GENERAL PERMIT MUST SUBMIT TO THE BERKS COUNTY CONSERVATION DISTRICT AN ADMINISTRATIVELY COMPLETE AND ACCEPTABLE NOI AT LEAST 180 DAYS PRIOR TO THE EXPIRATION DATE OF THE COVERAGE.
 - ALL EARTHMOVING CONTRACTORS MUST BE ADDED AS CO-PERMITTEES TO THE NPDES PERMIT.
 - SITE INSPECTIONS AND MONITORING REPORTS - THE PERMITTEE AND CO-PERMITTEE(S) SHALL COMPLY WITH ALL OF THE MONITORING AND REPORTING REQUIREMENTS AS OUTLINED IN PART A.2 OF THE NPDES PERMIT. THE PERMITTEE AND CO-PERMITTEE(S) SHALL ENSURE THAT SITE INSPECTIONS ARE CONDUCTED AT LEAST WEEKLY AND AFTER EACH MEASURABLE PRECIPITATION EVENT BY QUALIFIED PERSONNEL. A WRITTEN REPORT SHALL BE KEPT FOR EACH INSPECTION IN ACCORDANCE WITH THE REQUIREMENTS OF PART A.2.A.
 - THE DEP "VISUAL INSPECTION CHECKLIST" SHOULD BE COMPLETED FOR EACH INSPECTION AND SHOULD BE AVAILABLE ON-SITE FOR INSPECTION BY DEP OR COUNTY CONSERVATION DISTRICT PERSONNEL.
 - AFTER ALL EARTHMOVING ACTIVITY HAS CEASED AND THE ENTIRE PERMITTED AREA IS PERMANENTLY STABILIZED, THE PERMITTEE MUST SUBMIT A NOTICE OF TERMINATION TO BERKS COUNTY CONSERVATION DISTRICT TO CLOSE OUT THE PERMIT. ALLOWING THE NPDES PERMIT TO EXPIRE IS DETERMINED TO BE A VIOLATION OF THE NPDES PERMIT.



- GENERAL NOTES:**
- 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 EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY. EXTEND LENGTH OF 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

NOT TO SCALE



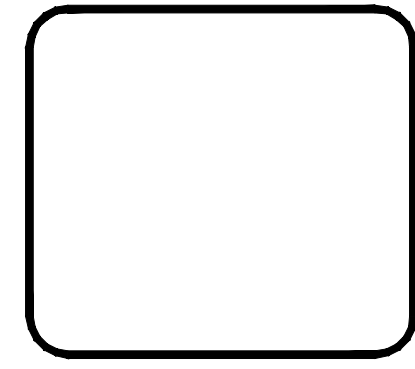
- GENERAL NOTES:**
- LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING 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 3/4 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS 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 CV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
 - THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
 - THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
 - FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.
- PUMPED WATER FILTER BAG**
NOT TO SCALE

PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
CHECKED -	JCG

NO.	DATE	REVISION
1	06/19/23	REVISED PER BCDD COMMENTS
2	04/20/23	REVISED PER PADOT HOP PLANS
3	11/17/22	REVISED PER BCDD NPDES COMMENTS
4	08/30/22	ADDED PROPOSED H.O.P. IMPROVEMENTS
5	09/14/21	ADDED EY CHARGING STATIONS
6	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS
7	02/26/20	REVISED PER PENNSYLVANIA DEP COMMENTS

LANDWORKS
CIVIL DESIGN, LLC
land development consultants

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EROSION & SEDIMENTATION CONTROL DETAILS

FOR
KRUMSVILLE ROAD CONVENIENCE STORE

FOR
HARMIKE INVESTMENTS, LLC

GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.
22-0117-001

DATE: 05-06-19

SCALE: N.T.S.

SHEET
ES 10.3

REVISED: 10/26/2022 09:44:44 AM BY: 10/26/2022 09:44:44 AM
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PLANT SCHEDULE - SWM/BMP FACILITIES

TREES & SHRUBS					
SYMBOL	KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE & ROOT SPACING
AA	21	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	BRILLIANT RED CHOKEBERRY	NO. 3 CONT. 2"-3" HT.	4' O.C.
LB	19	LINDERA BENZOIN	SPICEBUSH	NO. 3 CONT. 18"-24" HT.	6' O.C.
VN	11	VIBURNUM NUDEM	POSSUMHAW VIBURNUM	NO. 3 CONT. 2"-3" HT.	6' O.C.

NOTES:
1. MAINTAIN SPACING AS INDICATED IN PLANT SCHEDULE.



LIST OF PROPOSED BMPs

1. DETENTION BASIN
2. HYDRODYNAMIC SEPARATOR (CONTECH CDS UNIT)
3. STREET SWEEPING
4. RAIN GARDEN / BIORETENTION
5. MINIMIZE SOIL COMPACTION

CHAPTER 102 PAG-02 NPDES

GENERAL PERMIT COVERAGE APPROVAL
 • NPDES PERMIT NO. PAC06152
 • BCDD PROJECT ID NO ESP-01737
 EXPIRATION: APRIL 22, 2024

SEEDING SCHEDULE - SWM/BMP FACILITIES

AREA TO BE SEEDED WITH ERNST CONSERVATION SEEDS NATIVE DETENTION AREA MIX (ERNMX-183) AT A RATE OF 20 LBS/ACRE WITH 30 LBS/ACRE WINTER RYE.

RESPONSIBLE PARTY FOR STORMWATER OPERATION AND MAINTENANCE:

MR. VIKRAM SINGH
 5 JASON COURT
 PARLIN, NJ 08859
 (646) 541-1054

DIVIDE BETWEEN PENNDOT AREA & CONVENIENCE STORE AREA (SEE REFERENCED PLANS)

REFER TO THE EROSION AND SEDIMENTATION CONTROL PLANS FOR ALL WORK LOCATED IN THE KRUMSVILLE ROAD (S.R. 0737) RIGHT-OF-WAY (PERMIT #201780) PREPARED BY SYSTEM DESIGN ENGINEERING, INC.

LEGEND

EXISTING BOUNDARY LINE	---
EXISTING ADJACENT BOUNDARY LINE	---
EXISTING RIGHT-OF-WAY LINE	---
EXISTING CURB	---
EXISTING PAVEMENT	---
EXISTING CONTOUR LINE	---
EXISTING STREAM	---
MUNICIPAL BOUNDARY LINE	---
EXISTING GRAVEL DRIVE	---
EXISTING VEGETATION	---
EXISTING TREELINE	---
EXISTING FENCE	---
EXISTING OVERHEAD ELECTRIC LINE	---
EXISTING UNDERGROUND ELECTRIC LINE	---
EXISTING GUIDE RAIL	---
EXISTING WETLANDS	---
EXISTING UTILITY POLE	---
EXISTING WATER VALVE	---
EXISTING FIRE HYDRANT	---
EXISTING WATER LINE	---
EXISTING SANITARY SEWER MANHOLE	---
EXISTING SANITARY SEWER LINE	---
EXISTING STORM MANHOLE	---
EXISTING STORM INLET	---
EXISTING STORM PIPE	---
EXISTING GAS VALVE	---
EXISTING GAS LINE	---
EXISTING ELECTRIC TRANSFORMER	---
EXISTING ELECTRIC MANHOLE	---
EXISTING COMMUNICATIONS MANHOLE	---
EXISTING CABLE TV BOX	---
EXISTING GAS METER	---
EXISTING GAS MANHOLE	---
EXISTING TELEPHONE BOX	---
EXISTING WATER METER PIT	---
EXISTING WATER MANHOLE	---
EXISTING WELL	---
EXISTING LIGHT STANDARD	---
EDGE OF STONE PAVING	---
PROPOSED EDGE OF PAVEMENT	---
PROPOSED CONCRETE CURB	---
PROPOSED LANDSCAPE/TREELINE	---
TEMPORARY INLET PROTECTION	---
TEMPORARY FILTER SOCK	---
TEMPORARY ROCK CONSTRUCTION ENTRANCE	---
SOIL TYPE DESIGNATION	---
SOIL TYPE BOUNDARY LINE	---
PROPOSED CONTOUR LINE	---
CONSTRUCTION FENCE	---
PROPOSED STORM INLET	---
PROPOSED ENDWALL & PIPE OUTLET PROTECTION	---
PROPOSED STORM PIPE	---
PROPOSED STORM STRUCTURE LABEL	---
PROPOSED CURB	---
PROPOSED CONCRETE	---
PROPOSED UNDERGROUND ELECTRIC LINE	---
PROPOSED UNDERGROUND TELEPHONE LINE	---
PROPOSED WATER LINE	---
PROPOSED SANITARY SEWER LINE	---
LIMITS OF DISTURBANCE / NPDES BOUNDARY	---
AREA OF MINIMIZED COMPACTION	---
EROSION CONTROL MATTING (NAG SC-150)	---
EROSION CONTROL MATTING (NAG SC-150)	---

LEGEND

AREA TO APPLY S75 EROSION CONTROL MATTING	---
AREA TO APPLY AMENDED SOIL MIXTURE	---
AREAS OF STREET SWEEPING	---
PROPOSED STORM PIPE	---
PROPOSED STORM STRUCTURE LABEL	---
PROPOSED CURB	---
PROPOSED CONCRETE	---
PROPOSED UNDERGROUND ELECTRIC LINE	---
PROPOSED UNDERGROUND TELEPHONE LINE	---
PROPOSED WATER LINE	---
PROPOSED SANITARY SEWER LINE	---
LIMITS OF DISTURBANCE / NPDES BOUNDARY	---
AREA OF MINIMIZED COMPACTION	---
EROSION CONTROL MATTING (NAG SC-150)	---
EROSION CONTROL MATTING (NAG SC-150)	---

LEGEND

AREA TO APPLY S75 EROSION CONTROL MATTING	---
AREA TO APPLY AMENDED SOIL MIXTURE	---
AREAS OF STREET SWEEPING	---

SOIL CLASSIFICATIONS

BbB: BEDINGTON - BERKS COMPLEX, 3% TO 8% SLOPES, HSG A
 BbD: BEDINGTON - BERKS COMPLEX, 15% TO 25% SLOPES, HSG B
 BbC: BEDINGTON - BERKS COMPLEX, 8% TO 15% SLOPES, HSG A

RECEIVING WATER CLASSIFICATION & WATER QUALITY DESIGNATION

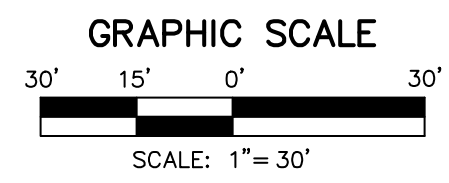
TRIBUTARY #3887 OF MAIDEN CREEK
 TROUT STOCKING FISHERY (TSF)
 MIGRATORY FISHES (MF)

CDS STORMWATER TREATMENT UNIT CHECKLIST

FREQUENCY	DRAINAGE SYSTEM FEATURE	PROBLEM	CONDITIONS TO CHECK FOR	RECOMMENDED ACTION
M&S	INLET CHAMBER	ACCUMULATION OF TRASH, DEBRIS AND SEDIMENT	TRASH BLOCKING INLET THROAT OPENING & SEDIMENT ACCUMULATION EXCEEDS 2 INCHES	REMOVE TRASH, DEBRIS AND SEDIMENTS. INLET THROAT OPENING SHOULD NOT BE BLOCKED BY ANY MATERIALS.
A	SCREEN	BLOCKAGE/DAMAGE	BIOLOGICAL GROWTH ON THE SURFACE OF THE SCREEN	POWERWASH SCREEN TO CLEAN THE SURFACE AND CONTACT CSS FOR REPAIR (BROKEN OR LOOSE)
M	SEPARATION CHAMBER	TRASH AND FLOATABLE DEBRIS ACCUMULATION	EXCESSIVE TRASH ACCUMULATION ON THE SURFACE IN SEPARATION CHAMBER	ASH OR OTHER FLOATABLE DEBRIS IN SEPARATION CHAMBER TO MINIMUM LEVEL
A	OIL BAFFLE	DAMAGED	BAFFLES CORRODING, CRACKING, WARPING, AND/OR SHOWING SIGNS OF FAILURE AS DETERMINED BY MAINTENANCE/INSPECTION PERSON.	BAFFLES REPAIRED OR REPLACED TO DESIGN SPECIFICATIONS.
M&S	OIL SORBENT	CONSUMED	CHANGE OF COLOR IN SORBENT (FRESH SORBENTS TYPICALLY APPEARS TO BE WHITE OR LIGHT YELLOW)	REMOVE SPENT OIL SORBENT AND REPLACE WITH NEW SORBENT.
M	SEDIMENT DEPTH IN THE SUMP	SEDIMENT ACCUMULATION	SEDIMENT ACCUMULATION EXCEEDS 75-85% SUMP DEPTH (VARIES DEPENDING ON THE MODEL, SEE ATTACHED TABLE)	SEDIMENT IN SUMP SHOULD BE REMOVED USING VACTOR TRUCK.
M	SEDIMENT DEPTH BEHIND THE SCREEN	SEDIMENT ACCUMULATION	SEDIMENT ACCUMULATION EXCEEDS 2 INCHES BEHIND THE SCREEN	SEDIMENT SHOULD BE REMOVED USING VACTOR TRUCK.
M	ACCESS COVER (MH, GRATE, CLEANOUT)	ACCESS COVER DAMAGED/NOT WORKING	ONE MAINTENANCE PERSON CANNOT REMOVE LID AFTER APPLYING 80 POUNDS OF LIFT. CORROSION OF DEFORMATION OF COVER.	COVER REPAIRED TO PROPER WORKING SPECIFICATIONS OR REPLACED.
A	INLET AND OUTLET PIPING	DAMAGED PIPING/LEAKING	ANY PART OF THE PIPES ARE CRUSHED OR DAMAGED DUE TO CORROSION AND/OR SETTLEMENT.	PIPE REPAIRED OR REPLACED.
A	CONCRETE STRUCTURE	CONCRETE STRUCTURE (MH OR DIVERSION VAULT) HAS CRACKS IN WALL, BOTTOM, AND DAMAGE TO FRAME AND/OR TOP SLAB.	CRACKS WIDER THAN 1/8 INCH OR EVIDENCE OF SOIL PARTICLES ENTERING THE STRUCTURE THROUGH THE CRACKS, OR MAINTENANCE/INSPECTION PERSONNEL DETERMINE THAT THE STRUCTURE IS NOT STRUCTURALLY SOUND.	STRUCTURE REPAIRED SO THAT NO CRACKS EXIST WIDER THAN 0.25 INCH AT THE JOINT OF INLET/OUTLET PIPE.
A	ACCESS LADDER	LADDER RUNGS UNSAFE	MAINTENANCE PERSON JUDGES THAT LADDER IS UNSAFE DUE TO MISSING RUNGS, MISALIGNMENT, RUST, OR CRACKS. LADDER MUST BE FIXED OR SECURED IMMEDIATELY.	LADDER MEETS DESIGN STANDARDS AND ALLOWS MAINTENANCE PERSONS SAFE ACCESS.

CHECKLIST LEGEND

SYMBOL	REVISION
M	MONTHLY FROM NOVEMBER THROUGH APRIL.
A	ONCE IN LATE SUMMER (PREFERABLE SEPTEMBER).
S	AFTER ANY MAJOR STORM (USE 1-INCH IN 24 HOURS AS A GUIDELINE).



ENGINEER'S CERTIFICATION

I JOSHUA C. GEORGE, P.E. ON THIS DATE, 05/06/19, HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE MAIDEN CREEK WATER SHED ACT 167 STORMWATER MANAGEMENT ORDINANCE.

STORMWATER ACKNOWLEDGMENT STATEMENT

I VIKRAM SINGH, HEREBY ACKNOWLEDGE THE STORMWATER FACILITIES LOCATED WITHIN MY PROPERTY AND AS INDICATED ON THIS PLAN TO BE A PERMANENT FEATURE THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL OF A REVISED PLAN BY TOWNSHIP OF GREENWICH.

PLAN REVISIONS STATEMENT

I, VIKRAM SINGH, ACKNOWLEDGE THAT ANY REVISIONS TO THE APPROVED STORMWATER MANAGEMENT PLAN MUST BE APPROVED BY BOTH THE TOWNSHIP AND THE BERKS COUNTY CONSERVATION DISTRICT.

PROJ. MGR. - AMN
DESIGN - AMN
CADD - AMN
CHECKED - JCG

NO.	DATE	REVISION
10	05/19/23	REVISED PER BCDD COMMENTS
9	04/20/23	REVISED PER PADOT HOP PLANS
8	11/17/22	REVISED PER BCDD NPDES COMMENTS
7	08/02/22	ADDED PROPOSED H.O.P. IMPROVEMENTS
6	09/14/21	ADDED BY CHARGING STATIONS
5	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS
4	02/28/20	REVISED PER PENNSYLVANIA DEP COMMENTS
		NO. DATE

LANDWORKS CIVIL DESIGN, LLC
 land development consultants

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 www.landworksllc.com

POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN FOR KRUMSVILLE ROAD CONVENIENCE STORE

FOR HARMIKE INVESTMENTS, LLC
 GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO. 22-0117-001
DATE: 05-06-19
SCALE: 1" = 30'
SHEET SW 11.1

FINAL

OWNERSHIP AND MAINTENANCE OF STORMWATER / BMP FACILITIES

OWNERSHIP AND MAINTENANCE OF ALL STORMWATER MANAGEMENT AND OTHER ON-SITE BMPs SHALL BE THE RESPONSIBILITY OF THE CURRENT PRIVATE PROPERTY OWNER. THE PROPERTY OWNER SHALL ALSO PRIVATELY OWN AND MAINTAIN SAID BMPs THEREAFTER TO ASSURE THAT THE CONDITION AND FUNCTIONALITY OF THE FACILITIES REMAINS AS DESIGNED AND INTENDED. THE OWNER SHALL ALSO BE RESPONSIBLE FOR INSPECTING AND MONITORING ALL SYSTEMS AND DOCUMENTING SAID ACTIVITY ON A REGULAR BASIS IN ACCORDANCE WITH THE FOLLOWING GENERAL PRACTICES:

- SWM BMP #2**
- INSPECTIONS
 - THE BMP SHOULD BE INSPECTED AT LEAST FOUR TIMES PER YEAR AND AFTER RAINFALL EVENTS EXCEEDING 1 INCH TO ENSURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS.
 - INSPECTIONS OF THE BMP SHALL INCLUDE BUT NOT BE LIMITED TO:
 - STRUCTURAL INTEGRITY AND OPERATION OF THE OUTLET STRUCTURE AND APPURTENANCES
 - COLLECTION, STORAGE AND RELEASE OF STORMWATER IN ACCORDANCE WITH THE BMP'S DESIGN
 - SEDIMENT AND DEBRIS ACCUMULATION IN BASIN BOTTOM, TRASH RACKS, OUTLET STRUCTURES, AND RIPRAP APRON
 - CONDITION AND GROWTH OF VEGETATION
 - GENERAL SAFETY AND OPERATION
 - SIGNS OF WATER CONTAMINATION/SPILLS
 - SLOPE STABILITY IN BERM
 - IN THE EVENT THAT A DEFICIENCY IS DISCOVERED DURING THE ABOVE INSPECTIONS, IMMEDIATE REMEDIATION SHOULD OCCUR IN ORDER TO RESTORE THE BMP TO FUNCTION IN ACCORDANCE WITH THE APPROVED DESIGN.
 - IF THE BMP IS FOUND TO BE HOLDING WATER FOR LONGER THAN 72 HOURS, THE DESIGN ENGINEER AND THE CONSERVATION DISTRICT SHALL BE IMMEDIATELY NOTIFIED TO BEGIN DESIGN OF REMEDIATION ACTIVITIES. IN ADDITION, THE BMP SHALL BE PUMPED OUT INTO THE FACILITY OUTLET STRUCTURE TO MANUALLY DEWATER THE FACILITY.
 - MAINTENANCE
 - SEDIMENT REMOVAL SHALL BE CONDUCTED WHEN BASIN IS COMPLETELY DRY. SEDIMENT SHOULD BE PROPERLY DISPOSED OF AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND RE-VEGETATED.
 - MOWING AND/OR TRIMMING OF VEGETATION SHOULD BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM, BUT ALL DETRITUS SHOULD BE REMOVED FROM THE BASIN.
 - INSPECT VEGETATION AREAS ANNUALLY FOR EROSION AND UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES.
 - VEGETATIVE COVER SHOULD BE MAINTAINED AT A MINIMUM OF 95%. IF VEGETATIVE COVER HAS BEEN REDUCED BY 10% OR MORE, VEGETATION SHOULD BE RE-ESTABLISHED.
 - SEQUENCE OF CONSTRUCTION
 - INSTALL ALL TEMPORARY E&S CONTROLS AND EXCAVATE THE FOOTPRINT OF THE BMP. ENSURE AREA IMMEDIATELY ADJACENT TO THE BASIN IS STABILIZED PRIOR TO BASIN CONSTRUCTION.
 - GRADE IN THE BASIN BOTTOM, INSTALL CLAY LINER, AND GRADE IN THE EMBANKMENT OF THE BMP.
 - INSTALL BASIN OUTLET STRUCTURE, INCLUDING CONCRETE GRADE AND ANTI-SLEEP COLLAR.
 - FINISH GRADING BMPs.
 - IMMEDIATELY STABILIZE THE FACILITY EMBANKMENT'S INTERNAL AND EXTERNAL SLOPES WITH PRESCRIBED PERMANENT SEED MIX, MULCH, MATING AND SLOPE PROTECTION (WHERE APPLICABLE) IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS PRESENTED ON THE PLAN. INSTALL PLANTINGS PER LANDSCAPE PLAN ONCE STABILIZATION IS ACHIEVED.

- SWM BMP #2**
- INSPECTIONS
 - THE BMP SHOULD BE INSPECTED AFTER RAINFALL EVENTS EXCEEDING 1 INCH TO ENSURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS.
 - INSPECTIONS OF THE BMP SHALL BE PERFORMED AT LEAST TWICE A YEAR AND INCLUDE BUT NOT BE LIMITED TO:
 - STRUCTURAL INTEGRITY AND OPERATION OF THE OUTLET STRUCTURE AND APPURTENANCES
 - COLLECTION, STORAGE AND RELEASE OF STORMWATER IN ACCORDANCE WITH THE BMP'S DESIGN
 - SEDIMENT AND DEBRIS ACCUMULATION
 - CONDITION AND GROWTH OF VEGETATION
 - GENERAL SAFETY AND OPERATION
 - SIGNS OF WATER CONTAMINATION/SPILLS
 - SLOPE STABILITY IN BERM
 - IN THE EVENT THAT A DEFICIENCY IS DISCOVERED DURING THE ABOVE INSPECTIONS, IMMEDIATE REMEDIATION SHOULD OCCUR IN ORDER TO RESTORE THE BMP TO FUNCTION IN ACCORDANCE WITH THE APPROVED DESIGN.
 - IF THE BMP IS FOUND TO BE HOLDING WATER FOR LONGER THAN 72 HOURS, THE DESIGN ENGINEER AND THE CONSERVATION DISTRICT SHALL BE IMMEDIATELY NOTIFIED TO BEGIN DESIGN OF REMEDIATION ACTIVITIES. IN ADDITION, THE BMP SHALL BE PUMPED OUT INTO THE FACILITY OUTLET STRUCTURE TO MANUALLY DEWATER THE FACILITY.
 - MAINTENANCE
 - VEGETATION CONTRIBUTING TO AND ADJACENT TO THE BMP SHALL BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLAN AND IN ACCORDANCE WITH MUNICIPAL ORDINANCES.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM THE BMP AS REQUIRED. PROPERLY DISPOSE OF SEDIMENT IN ACCORDANCE WITH PADEP REGULATIONS. RESTORE ORIGINAL CROSS-SECTION AND INFILTRATION RATE. FLOATABLE DEBRIS THAT MAY IMPACT THE OPERATION OF THE OUTLET STRUCTURE SHALL BE REMOVED IMMEDIATELY.
 - THE VEGETATION ALONG THE SURFACE OF THIS BMP SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON.
 - VEHICLES SHOULD NOT BE PARKED OR DRIVEN ON THE BMP, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS.
 - MOW ONLY AS APPROPRIATE FOR VEGETATIVE COVER SPECIES.
 - WHILE VEGETATION IS BEING ESTABLISHED, PRUNING AND WEEDING MAY BE REQUIRED.
 - MULCH SHOULD BE RE-SPREAD WHEN EROSION IS EVIDENT AND BE REPLISHED AS NEEDED. ONCE EVERY 2-3 YEARS, THE ENTIRE AREA MAY REQUIRE MULCH REPLACEMENT.
 - DURING PERIODS OF EXTENDED DROUGHT, BIORETENTION AREAS MAY REQUIRE WATERING.
 - SEQUENCE OF CONSTRUCTION
 - PRIOR TO UPSTREAM STABILIZATION, AREA OF BMP SHALL BE PROTECTED BY CONSTRUCTION FENCING TO AVOID COMPACTION OF SOILS.
 - INSTALL ALL TEMPORARY E&S CONTROLS AND EXCAVATE THE FOOTPRINT OF THE BMP. ENSURE AREA IMMEDIATELY ADJACENT TO THE BASIN IS STABILIZED PRIOR TO BASIN CONSTRUCTION.
 - GRADE IN THE BASIN BOTTOM AND EMBANKMENT OF THE BMPs. SCARIFY EXISTING SOIL SURFACES AND ENSURE THE IN-SITU SOILS ARE NOT COMPACTED.
 - BACKFILL RAIN GARDEN WITH AMENDED SOILS TO THE BMP BOTTOM FINAL ELEVATION.
 - INSTALL BASIN OUTLET STRUCTURE, INCLUDING CONCRETE GRADE AND ANTI-SLEEP COLLAR, AND INSTALL UNDERDRAIN. ENSURE UNDERDRAIN STOPS SHORT OF OUTLET STRUCTURE AS SHOWN ON THE PLAN.
 - FINISH GRADING BMP.
 - IMMEDIATELY STABILIZE THE FACILITY EMBANKMENT'S INTERNAL AND EXTERNAL SLOPES WITH PRESCRIBED PERMANENT SEED MIX, MULCH, MATING AND SLOPE PROTECTION (WHERE APPLICABLE) IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS PRESENTED ON THE PLAN. INSTALL PLANTINGS PER LANDSCAPE PLAN ONCE STABILIZATION IS ACHIEVED.

- STORM SYSTEM CONVEYANCE FACILITIES**
- STORM SYSTEM CONVEYANCE FACILITIES (INLETS, PIPING, ROOF LEADERS, SWALES, ETC.) SHOULD BE INSPECTED ANNUALLY FOR PROPER FUNCTION, OPERATION, STRUCTURAL CONDITION, ACCUMULATED SEDIMENT AND DEBRIS. ANY DEFICIENCIES SHALL BE DOCUMENTED AND REPORTED FOR MAINTENANCE.

- DRIVEWAY/PARKING AREA SWEEPING PROGRAM**
- USING A MECHANICAL BROOM MACHINE THAT IS CAPABLE OF PERMANENTLY REMOVING DEBRIS AND SEDIMENT FROM PAVEMENT SURFACES, FILTER SWEEP ALL PAVEMENT SURFACES A MINIMUM OF FOUR (4) TIMES PER YEAR. HIGH TRAFFIC AREAS, SUCH AS AREAS AROUND FUEL CANOPY, SHALL BE SWEEP MONTHLY.
 - PERFORM SWEEPING OPERATIONS AS AN EROSION AND SEDIMENTATION CONTROL FEATURE AS WELL AS AFTER THE SITE IS COMPLETELY STABILIZED.
 - ALL DEBRIS AND SEDIMENT REMOVED DURING SWEEPING OPERATIONS MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH DEP REGULATIONS.

- MINIMIZE SOIL COMPACTION**
- AREAS INDICATED FOR MINIMIZED SOIL COMPACTION SHOULD BE DELINEATED AND PROTECTED BY CONSTRUCTION FENCE WHEREVER POSSIBLE DURING CONSTRUCTION.
 - IN AREAS WHERE THE SOILS CANNOT BE ADEQUATELY PROTECTED FROM COMPACTION, SOIL RESTORATION MAY BE NECESSARY. SEE SEEDING SPECIFICATIONS - SOIL AMENDMENTS SECTION THIS SHEET IF SOIL RESTORATION IS NECESSARY.
 - AVOID FREQUENT MOWING OF AREAS OF MINIMIZED COMPACTION.
- HYDRODYNAMIC SEPARATOR - CONTECH CDS UNIT**
- MAINTENANCE AND INSPECTION
 - INSPECTIONS SHALL BE PERFORMED FOUR (4) TIMES DURING THE FIRST YEAR (ONCE PER QUARTER), HOWEVER INCREASED INSPECTION FREQUENCY MAY BE REQUIRED IF EXCESSIVE COLLECTION OF POLLUTANTS (E.G. TRASH AND SAND WHEN USED FOR WINTER Icing TREATMENT) ARE OBSERVED.
 - VISUAL INSPECTION SHOULD ASCERTAIN WHETHER SYSTEM COMPONENTS ARE IN WORKING ORDER AND THAT THERE ARE NO BLOCKAGES OR OBSTRUCTIONS IN THE INLET AND SEPARATION SCREEN.
 - INSPECTION SHOULD ALSO QUANTIFY THE ACCUMULATION OF HYDROCARBONS, TRASH, AND SEDIMENT IN SYSTEM. THIS CAN BE DONE WITH CALIBRATED DIPSTICK, TAPE MEASURE, OR OTHER MEASURING INSTRUMENT.
 - UNIT SHALL BE CLEANED WHEN LEVEL OF SEDIMENT HAS REACHED 75% OF CAPACITY IN THE ISOLATED SUMP OR WHEN AN APPRECIABLE LEVEL OF HYDROCARBONS AND TRASH HAS ACCUMULATED.
 - LEVEL OF SEDIMENT CAN BE DETERMINED BY MEASURING FROM FINISH GRADE DOWN TO THE TOP OF THE SEDIMENT PILE. CAREFULLY LOWERING THE MEASURING TOOL SO AS TO AVOID COMPACTION TOP OF THE SEDIMENT PILE. THIS MEASUREMENT CAN BE COMPARED TO AS-BUILT DRAWING OF THE UNIT TO DETERMINE WHETHER THE HEIGHT OF THE SEDIMENT PILE OFF THE BOTTOM OF THE SUMP FLOOR EXCEEDS 75% OF THE TOTAL HEIGHT OF ISOLATED SUMP.
 - REFERENCE SHEET 11-1 FOR AN INSPECTION AND MAINTENANCE CHECKLIST.
 - MAINTENANCE OF CDS STORMWATER TREATMENT SECTIONS AND ASSEMBLY STRUCTURE
 - ABOVE GROUND, IF ENTRY IS REQUIRED IT SHOULD BE PERFORMED BY QUALIFIED PERSONNEL.
 - REFER TO CDS UNIT OPERATION & MAINTENANCE GUIDELINE FOR MAINTENANCE DETAILS. TYPICALLY THE CDS UNIT SHOULD BE INSPECTED BEFORE AND AFTER RAINFALL SEASONS (NOVEMBER TO APRIL), AFTER ANY MAJOR STORMS (3-1 INCH WITHIN 24 HOURS) DURING WET SEASON AND IN THE EVENT OF CHEMICAL SPILLS.
 - CONTACT CONTECH STORMWATER SOLUTIONS (CSS) (800-548-4667) IF THERE IS ANY DAMAGE TO THE INTERNAL COMPONENTS OF CDS UNIT.
 - SEQUENCE OF CONSTRUCTION
 - INSTALL SUB-BASE FOR UNIT.
 - UTILIZING EQUIPMENT WITH SUFFICIENT LIFTING AND REACHING CAPACITY, SET THE CDS MANHOLE STRUCTURE AS REQUIRED.
 - INSTALL JOINT SEALANT BETWEEN ALL SEAM SECTION AND ASSEMBLY STRUCTURE.
 - INSTALL AND GROUT INLET AND OUTLET PIPES, MATCHING ELEVATIONS SHOWN ON CONTECH SUPPLIED PLAN. ALL PIPE CENTERLINES SHALL MATCH PIPE OPENING CENTERLINES. ENSURE UNIT IS WATER TIGHT, HOLDING WATER TO A MINIMUM OF THE FLOWLINE INVERT. ALL JOINTS BELOW PIPE INVERTS SHALL BE GROUTED.

PRIOR TO RECORDING THE APPROVED POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN, THE OWNER SHALL ALSO ENTER INTO A STORMWATER FACILITIES AND BMP MAINTENANCE AND MONITORING AGREEMENT WITH THE TOWNSHIP. THE AGREEMENT SHALL OUTLINE PROVISIONS FOR OWNERSHIP, MAINTENANCE AND CONTROL OF FACILITIES AS WELL AS PROVISIONS FOR ACCESS BY TOWNSHIP PERSONNEL FOR INSPECTION OF THE FACILITIES DEEMED CRITICAL TO THE PUBLIC WELFARE ON A REGULAR BASIS AND FOLLOWING MAJOR STORM EVENTS. MAINTENANCE AND OBSERVATION ACTIVITIES SHALL BE DOCUMENTED IN A REPORT AND SHALL BE MADE AVAILABLE FOR THE TOWNSHIP.

RECYCLING AND DISPOSAL OF CONSTRUCTION WASTE

ALL BUILDING MATERIALS AND CONSTRUCTION WASTE SHALL BE REMOVED FROM THE SITE AND RECYCLED AND/OR PROPERLY DISPOSED IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS, 25 PA. CODE §260.1 ET SEQ., §271.1 ET SEQ., AND §282.1 ET SEQ. NO BUILDING MATERIALS OR CONSTRUCTION WASTE OR OTHER UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE PROJECT SITE.

ALL RECYCLING AND DISPOSAL OF CONSTRUCTION WASTE SHALL BE IN ACCORDANCE WITH LOCAL AND STATE RULES AND REGULATIONS FOR WASTE MANAGEMENT.

CONSTRUCTION WASTE INCLUDES BUT IS NOT LIMITED TO: EXCESS SOIL AND ROCK, BUILDING MATERIALS, CONCRETE AND CONCRETE WASH WATER, SANITARY WASTE AND ANY OTHER MATERIALS THAT COULD ADVERSELY IMPACT SURFACE OR GROUND WATER QUALITY.

ALL WASTES AND MATERIALS DEPOSITED IN AND REMOVED FROM POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) BMP FACILITIES AND FROM IMPERVIOUS AREAS (EX. SWEEPING OF STREETS & PARKING LOTS) DURING OPERATION AND MAINTENANCE SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE §260.1 ET SEQ., §271.1 ET SEQ. WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

SEEDING SPECIFICATIONS

VEGETATIVE STABILIZATION.
ALL DISTURBED AREAS THAT HAVE NOT OTHERWISE BEEN STABILIZED AND HAVE SIGNIFICANT POTENTIAL FOR EROSION SHOULD BE STABILIZED WITH VEGETATION. THIS INCLUDES GRADED AREAS WHERE IT IS ANTICIPATED THAT FUTURE EARTHMOVING WILL TAKE PLACE WITHIN THE COMING YEAR. AREAS THAT WILL BE SUBJECT TO EARTHMOVING WITHIN 12 MONTHS MAY BE STABILIZED WITH TEMPORARY SEED MIXTURES, PREDOMINANTLY ANNUAL GRASSES. ALL OTHERS SHOULD BE STABILIZED WITH PERMANENT SEED MIXTURES, PREDOMINANTLY PERENNIAL GRASSES. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON. HOWEVER, THE AREA WILL NOT BE CONSIDERED STABILIZED UNTIL A MINIMUM UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED.

AS DISTURBED AREAS WITHIN A PROJECT APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN. IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING IS COMPLETED BEFORE MAKING PREPARATIONS FOR SEEDING AND MULCHING IS NOT ACCEPTABLE.

TOPSOIL APPLICATION:
TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 8". REQUIRED SOIL AMENDMENTS SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4"-8" IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDED PREPARATION.

SOIL AMENDMENTS:

- TEMPORARY SEEDING - APPLY AGRICULTURAL LIME AT A RATE OF 1 TON PER ACRE AND 10-10-10 FERTILIZER AT A RATE OF 500 LBS. PER ACRE.
- PERMANENT SEEDING - APPLY AGRICULTURAL LIME AT A RATE OF 6 TONS PER ACRE AND 10-20-20 FERTILIZER AT A RATE OF 1,000 LBS. PER ACRE.

NOTE: A COMPOST BLANKET WHICH MEETS THE ABOVE STANDARDS MAY BE SUBSTITUTED FOR THE SOIL AMENDMENTS.

SEEDING:

- TEMPORARY SEEDING SHALL CONSIST OF 100 PERCENT ANNUAL RYE GRASS AND SHALL CONFORM TO THE REQUIREMENTS OF THE PA DEPARTMENT OF TRANSPORTATION (PA DOT) SPECIFICATIONS FOR FORMULA E SEED MIXTURE. SEED SHALL BE APPLIED AT A RATE OF 48.4 LBS./ACRE SEED SHALL BE APPLIED BETWEEN THE DATES OF MARCH 15TH TO OCTOBER 15TH.
- PERMANENT SEEDING SHALL CONSIST OF THE FOLLOWING:
 - LAWN AREAS - SEED WITH 20% PERENNIAL RYEGRASS MIXTURE (A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NOT ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT), 30% CREEPING RED FESCUE OR CHEWINGS FESCUE, AND 50% KENTUCKY BLUEGRASS MIXTURE (A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NOT ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT). SEED SHALL BE APPLIED AT A RATE OF 101.6 LBS./ACRE SEED SHALL BE APPLIED BETWEEN THE DATES OF MARCH 15TH TO JUNE 1ST AND AUGUST 17TH TO OCTOBER 15TH.
 - SWM/BMP FACILITIES #1 & #2 - SEED WITH ERNST CONSERVATION SEEDS NATIVE DETENTION AREA MIX (ERNMX-183) AT A RATE OF 20 LBS./ACRE WITH 30 LBS./ACRE OF WINTER RYE. ALL OTHER AREAS SHALL BE SEEDED WITH ERNST CONSERVATION SEEDS RAIN GARDEN MIX (ERNMX-180) AT A RATE OF 40 LBS./ACRE WITH 30 LBS./ACRE OF WINTER RYE. REFERENCE THE PLANT SCHEDULES FOR THE PLACEMENT OF TREES AND SHRUBS WITHIN THESE FACILITIES.

NOTE: FILL SLOPES SHOULD BE SEEDED AND MULCHED AT REGULAR VERTICAL INCREMENTS (15-25' MAXIMUM) AS THE FILL IS BEING CONSTRUCTED. THIS WILL ALLOW THE BOTTOM OF THE FILL TO PROGRESS TOWARD STABILIZATION WHILE WORK CONTINUES ON THE UPPER PORTION, MAKING FINAL STABILIZATION EASIER TO ACHIEVE AND PROVIDING SOME VEGETATIVE BUFFERING AT THE BOTTOM OF THE SLOPE.

MULCHING:

- MULCHING SHALL BE PROVIDED AS REQUIRED IN AREAS DIFFICULT TO VEGETATE, AND DURING OFF-SEASON OPERATIONS. MULCHING METHODS AND MATERIALS SHALL CONFORM TO THE FOLLOWING:
 - MULCH MATERIALS SHALL BE UNROTTED SALT HAY, HAY OR SMALL GRAIN STRAW APPLIED AT THE RATE OF 3 TONS PER ACRE. MULCH BLOWER SHALL NOT GRIND OR CHOP THE MATERIAL. WOODCHIPS, FREE OF INSECTS AND DISEASE ARE PERMITTED AT A RATE OF 4-6 TONS PER ACRE.
 - MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% TO 95% OF THE SOIL SURFACE WILL BE COVERED.
 - MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE SLOPE.
 - PEG AND TWINE - DRIVE 8" TO 10" PEGS TO WITHIN 2" TO 3" OF THE SOIL SURFACE EVERY 4' IN ALL DIRECTIONS. TAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE THE MULCH TO THE SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS OR SQUARE PATTERN, AND SECURE THE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURN.
 - MULCH NETTING - STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE DEGRADABLE NETTING IN AREAS TO BE MOWED.
 - MULCH MATERIALS AND BINDERS SHALL BE ROLLED IN PLACE BY TRACKED VEHICLE OR OTHER SUITABLE EQUIPMENT.
 - APPLICATIONS SHOULD BE HEAVIER AT EDGES WERE WIND CATCHES THE MULCH. IN VALLEYS AND AT CRESTS OF BANKS, REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
 - WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 LBS PER ACRE, OR PER MANUFACTURER RECOMMENDATION, MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.
 - OTHER:
 - WHERE EXCESSIVE SOIL EROSION, TRACKING OR FLOWING OF SEDIMENT IS EVIDENT OR ANTICIPATED, A MINIMUM OF 4" OF CRUSHED STONE SHALL BE PLACED WITHIN THE AFFECTED AREA AND MAINTAINED UNTIL PERMANENT STABILIZATION IS PROVIDED. ADDITIONAL STONE SHALL BE PLACED AS REQUIRED UNTIL STABILIZATION IS ACHIEVED. CRUSHED STONE SHALL CONFORM TO AASHTO DESIGNATION M43. SIZE NO. 2 (2-1/2" TO 1-1/2").

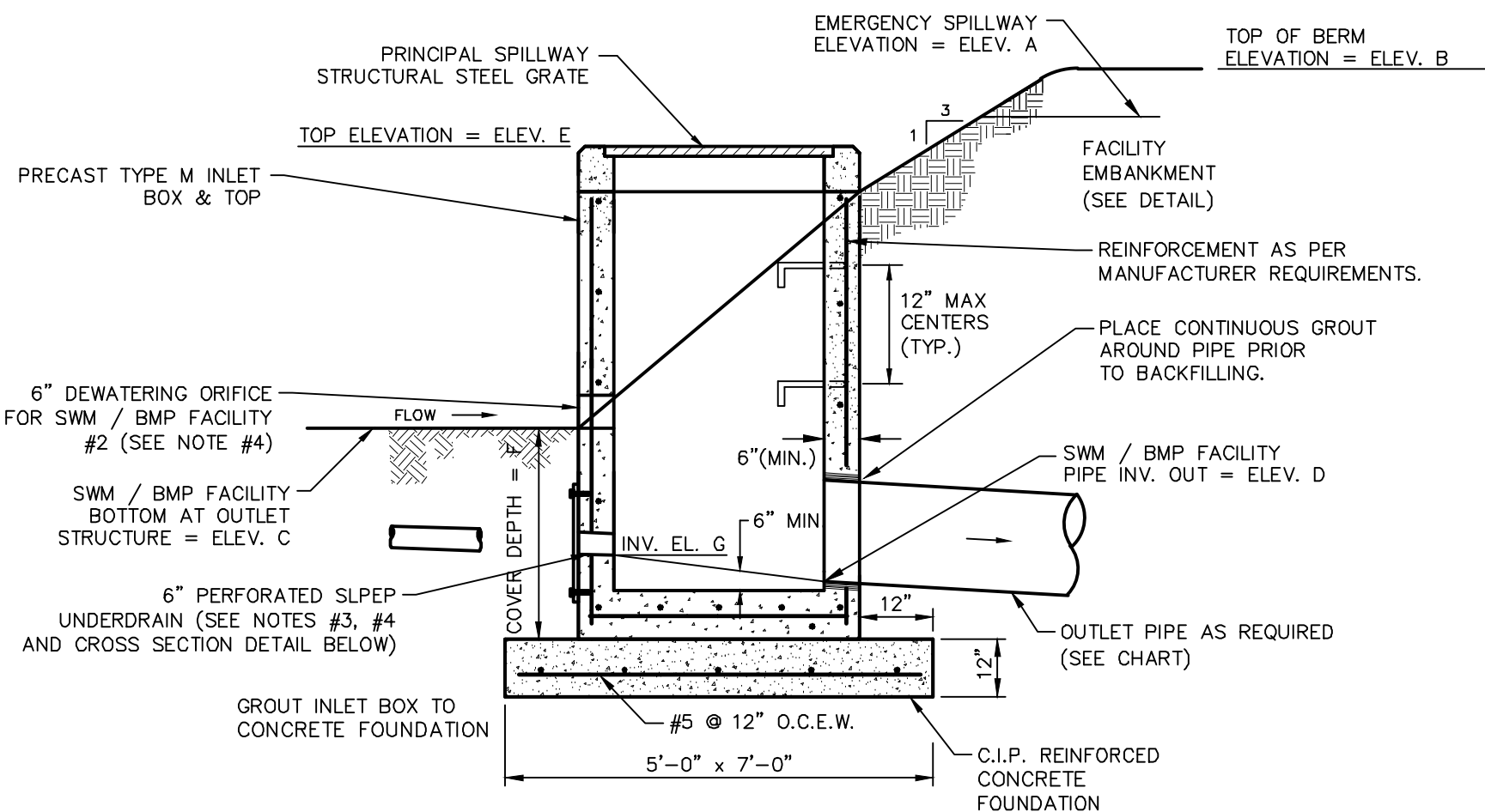
STAGING OF MAJOR CONSTRUCTION ACTIVITIES

THE FOLLOWING IS THE RECOMMENDED STAGING OF MAJOR CONSTRUCTION ACTIVITIES FOR THE PROJECT. ANY DEVIATIONS TO THE APPROVED EROSION AND SEDIMENTATION CONTROL MEASURES OR TO THE PROPOSED SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL REQUIRE APPROVAL BY THE BERKS COUNTY CONSERVATION DISTRICT PRIOR TO IMPLEMENTATION.

- PER NPDES REQUIREMENTS, UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPs AND AT LEAST 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ALL EXISTING FACILITIES DURING ALL PHASES OF CONSTRUCTION.
- INITIAL EROSION AND SEDIMENTATION CONTROL MEASURES AND BMPs MUST BE CONSTRUCTED, STABILIZED, AND OPERATIONAL BEFORE ANY EARTH DISTURBANCE WHICH IS TRIBUTARY TO THOSE MEASURES BEGINS.
- CESSATION OF ACTIVITY FOR 4 DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION.
- THE CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN IN WHICH A LICENSED PROFESSIONAL OR DESIGNEE SHOULD BE PRESENT ON THE SITE FOR INSPECTION/FIELD VERIFICATION ARE IDENTIFIED IN THIS SEQUENCE.
 - AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING, GRUBBING AND DEMOLITION), THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
 - 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 PRIOR TO IMPLEMENTATION. CESSATION OF ACTIVITY FOR 4 DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION.
 - THE LIMITS OF EARTH DISTURBANCE (LOD) SHOULD BE FIELD MARKED PRIOR TO DISTURBANCE ACTIVITIES (E.G. SURVEY STAKES, POSTS & ROPE, CONSTRUCTION FENCE, ETC.).
 - INSTALL FILTER SOCK BARRIERS ALONG THE SITE'S PERIMETER AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. INSTALL INLET PROTECTION ALONG ALL EXISTING INLETS AS SHOWN ON THE CONSTRUCTION FENCE PROTECTION AROUND SWM BMP #2 AND MINIMIZE SOIL COMPACTION AREAS, WHERE POSSIBLE. INSTALL ROCK CONSTRUCTION ENTRANCES (RCE) AT ONE OR BOTH PROPOSED LOCATIONS. AS CONSTRUCTION OF PARKING AND DRIVEWAYS GET UNDERWAY, CONTRACTOR SHALL LEAVE ONE RCE INTACT UNTIL STONE SUBBASE IS INSTALLED ON OTHER DRIVEWAY, AT WHICH POINT BOTH CONSTRUCTION ENTRANCES CAN BE REMOVED.
- A CRITICAL STAGE: THE MINIMIZE SOIL COMPACTION AREAS DELINEATED BY CONSTRUCTION FENCE SHALL BE VERIFIED BY THE PROFESSIONAL ENGINEER OR DESIGNEE.
- DEMOLISH EXISTING BUILDINGS, OLD FOUNDATION WALL AND REMOVE EXISTING SEPTIC SYSTEM AS INDICATED ON THE DEMOLITION PLAN AND THE UTILITIES PLAN. REMOVE ALL WASTE FROM THE SITE IN ACCORDANCE WITH THE DEP REGULATIONS.
- PROCEED WITH BULK SITE EXCAVATION AND ROUGH GRADING ACTIVITIES WITHIN THE AREA OF THE PROPOSED BUILDING. UTILIZE TRACKED EQUIPMENT AND CONDUCT GRADING ACTIVITIES FROM OUTSIDE PROPOSED LAWN AREAS WHEN POSSIBLE TO MINIMIZE SOIL COMPACTION IN AREAS INDICATED ON THE PCSM PLAN THAT ARE NOT OTHERWISE ABLE TO BE PROTECTED BY CONSTRUCTION FENCE. BRING THOSE AREAS TO SUBGRADE ELEVATION WHILE MAINTAINING PERIMETER E&S BMPs. APPLY EROSION CONTROL MATTING TO THE AREAS INDICATED ON THE PLAN. AS AREAS OF THE SITE REACH SUBGRADE ELEVATION, APPROPRIATE STABILIZATION SHALL BE APPLIED TO FILL SLOPES, LAWN AREAS, ETC. TO MINIMIZE ACCELERATED EROSION.
- CRITICAL STAGE: BEGIN EXCAVATION/GRADING OF THE SWM BMP #1 AND SWM BMP #2 AND ASSOCIATED INLET AND OUTLET SYSTEMS. CONSTRUCT THE PIPE OUTLET SYSTEMS FROM OS-2 TO OS-1 TO THE DOWNSTREAM STRUCTURE. CONSTRUCT ANTI-SLEEP COLLARS AND CONCRETE CRADLES PER THE DETAILS PRESENTED ON THE PLAN. INSTALL THE PERMANENT EMBANKMENT BERMS, IMPERVIOUS CORES, EMERGENCY SPILLWAYS, AND EMERGENCY SPILLWAY LEADS TO THE PERMANENT DESIGN SPECIFICATIONS. IMMEDIATELY STABILIZE EACH BMP'S SLOPES WITH THE PRESCRIBED PERMANENT SEEDING AND STABILIZATION SPECIFICATIONS.

STAGING OF MAJOR CONSTRUCTION ACTIVITIES (CONTINUED)

- CONTINUE WITH BULK EXCAVATION/GRADING OF THE SITE. BEGIN INSTALLATION OF STORMWATER CONVEYANCE (I.E., CONTECH CDS UNIT, INLETS, MANHOLES, OUTLET STRUCTURES AND PIPES) BEGINNING AT DOWNSTREAM CONNECTIONS AND WORKING UPSTREAM. ALL STORM SEWER CONSTRUCTION INCLUDES TRENCHING, BACKFILLING, AND APPLYING FINAL STABILIZATION. ALL AREAS DRAINING TO STORMWATER COLLECTION, CONVEYANCE AND MANAGEMENT FACILITIES SHALL BE IMMEDIATELY STABILIZED. IMMEDIATELY INSTALL INLET PROTECTION AROUND THE INLETS AND PROP THE INLET TOP UP WITH BRICK TO ALLOW RUN-OFF TO ENTER THE STORM SEWER CONVEYANCE SYSTEM PRIOR TO CURB AND PAVING INSTALLATION. PROVIDE MASTIC OR EQUIVALENT IN ALL INLETS LOCATED WITHIN GRASSED AREAS TO PREVENT SOIL FROM WASHING INTO THE STORM SEWER THROUGH UNSEALED JOINTS IN THE INLET BOX AND TOP. ANY WATER PUMPED FROM STORM DRAIN TRENCHES SHALL BE DIRECTED TO A SEDIMENT REMOVAL FACILITY SUCH AS A FILTER BAG OR APPROVED EQUAL. ALL STORM DRAIN PIPING SHALL BE PERIODICALLY FLUSHED TO PREVENT EXCESSIVE SEDIMENT AND DEBRIS ACCUMULATION FROM BUILDING UP WITHIN PIPES AND STRUCTURES.
 - A CRITICAL STAGE: THE INSTALLATION OF THE CONTECH CDS UNIT SHALL BE VERIFIED BY THE PROFESSIONAL ENGINEER OR DESIGNEE.
- BEGIN GENERAL BUILDING AND GAS CANOPY CONSTRUCTION.
- INSTALL THE SEPTIC SYSTEM AS DESIGNED BY OTHERS. INSTALL PROPOSED WELL AND CONSTRUCT OTHER UTILITY SERVICE LINES. ANY WATER PUMPED FROM UTILITY TRENCHES SHALL BE DIRECTED TO A SEDIMENT REMOVAL FACILITY SUCH AS A FILTER BAG OR APPROVED EQUAL.
- CONSTRUCT SITE CURBING AND PLACE SUBBASE MATERIAL TO STABILIZE THE SITE DRIVEWAYS AND PARKING AREAS AS SOON AS PRACTICABLE.
- CONTINUE WITH GENERAL BUILDING CONSTRUCTION AND CONSTRUCTION OF OTHER LOCALIZED SITE ITEMS SUCH AS SITE LIGHTING, UTILITY CONNECTIONS, DUMPSTER PAD, ETC.
- INSTALL BITUMINOUS PAVING ON THE SITE DRIVEWAYS AND PARKING AREAS ONCE MAJOR EXTERIOR BUILDING CONSTRUCTION AND ALL UTILITY CONSTRUCTION ARE SUBSTANTIALLY COMPLETED. INSTALL CONCRETE SIDEWALKS WHERE INDICATED.
- CONDUCT FINE GRADING ACTIVITIES, INSTALL AMENDED SOILS AS SPECIFIED AND PLACE TOPSOIL ON ALL REMAINING AREAS AND APPLY PERMANENT SEEDING, SOIL SUPPLEMENTS, MULCHING AND MATTING WHERE APPLICABLE IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS PRESENTED ON THE PLAN. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS.
- CRITICAL STAGE: EXCAVATE TO REMOVE COLLECTED SEDIMENTS AND RETURN THE BOTTOMS OF THE SWM BMPs TO THEIR DESIGN GRADES WITH THE SPECIFIC PLANTING SOIL MIXTURE. INSTALL FINAL LANDSCAPING AND PLANTINGS PER REQUIREMENTS AND PROCEDURES PRESENTED ON THE APPROVED PCSM PLAN. IN ORDER TO ENSURE RAPID VEGETATION GROWTH, PLANTING AND SEEDING SHOULD BE DONE ONLY DURING THE GERMINATING SEASON.
- CRITICAL STAGE: THE MINIMIZE SOIL COMPACTION AREAS SHALL BE VERIFIED FOR MINIMAL COMPACTION BY THE PROFESSIONAL ENGINEER OR DESIGNEE.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE BERKS COUNTY CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL OF THE E&S BMPs. 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.
- ONCE APPROVED BY THE COUNTY CONSERVATION DISTRICT, REMOVE ALL EROSION AND SEDIMENTATION CONTROL MEASURES, PERMANENTLY RE-SEED, MULCH, AND MAT WHERE APPLICABLE ANY REMAINING AREAS WHICH REMAIN DISTURBED OR HAVE NOT BEEN ESTABLISHED FROM PREVIOUS SEEDING APPLICATIONS IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS PRESENTED ON THE PLAN.
- INSTALL SITE SIGNAGE, PAVEMENT MARKINGS, AND OTHER INCIDENTAL CONSTRUCTION ITEMS AS NECESSARY.
- CONTACT THE BERKS COUNTY CONSERVATION DISTRICT TO REQUEST A FINAL SITE INSPECTION AS NECESSARY.
- PER NPDES REQUIREMENTS, WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPs IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS. COMPLETION CERTIFICATES ARE NEEDED TO ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT AND THE APPROVED E&S AND PCSM PLANS.

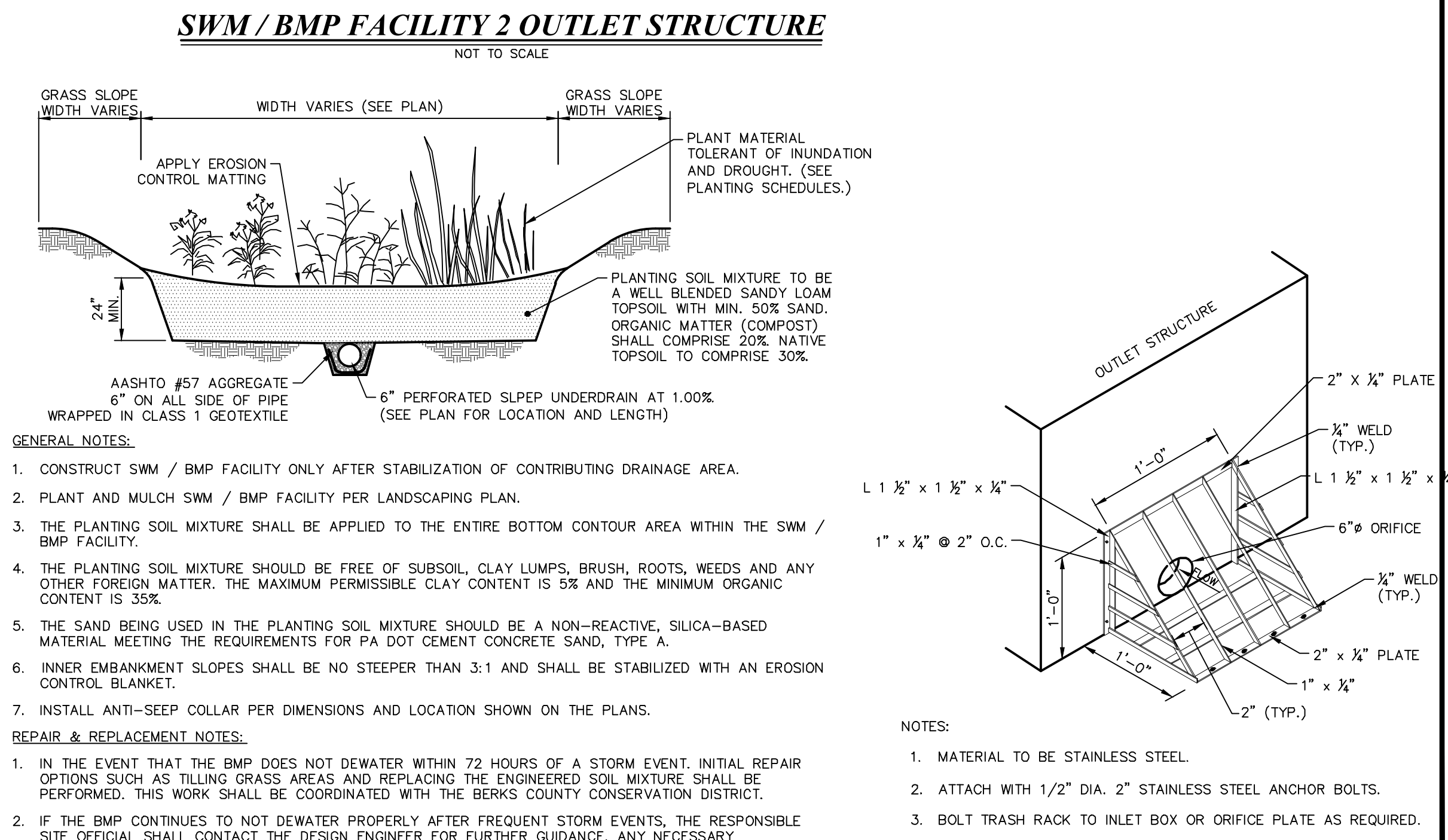


NOTES:

- PROVIDE FIELD PLACED CONCRETE FILL IN THE BOTTOM OF ALL OUTLET STRUCTURES. PROVIDE AN ADEQUATE FLOW CHANNEL FOR THE TRANSITION TO THE OUTLET PIPE. SHAPE BOX BOTTOM FOR POSITIVE DRAINAGE.
- CONSTRUCT THE REINFORCED CONCRETE FOUNDATION TO A DIMENSION 24 INCHES LARGER THAN THE OUTSIDE DIMENSIONS OF THE OUTLET STRUCTURE.
- PROVIDE PERFORATED SLEP UNDERDRAIN WITH CLEANOUT. SEE THE PLAN FOR LOCATION, SIZE, SLOPE, PIPE LENGTH AND CLEANOUT LOCATION. UNDERDRAIN SHOULD STOP APPROXIMATELY 3' SHORT OF OUTLET STRUCTURE AND BE CAPPED TO ALLOW FOR A FUTURE CONNECTION TO THE OUTLET STRUCTURE.
- PROVIDE A CONCRETE KNOCKOUT AT ELEVATION G TO ALLOW FOR THE UNDERDRAIN TO BE EASILY CONNECTED IF NECESSARY. PLACE PLYWOOD, BOLTED TO BOX, IN FRONT OF KNOCKOUT TO PROTECT AGAINST INGRESS OF RUNOFF. PLYWOOD TO BE REMOVED IF UNDERDRAIN NEEDS TO BE CONNECTED TO OUTLET STRUCTURE.

FACILITY #	A	B	C	D	E	F	G	OUTLET PIPE
2	776.00	777.00	774.00	771.24	775.80	2'-5"	772.02	24' OF 15" SLEP @ 5.4%

SWM / BMP FACILITY 2 OUTLET STRUCTURE



GENERAL NOTES:

- CONSTRUCT SWM / BMP FACILITY ONLY AFTER STABILIZATION OF CONTRIBUTING DRAINAGE AREA.
- PLANT AND MULCH SWM / BMP FACILITY PER LANDSCAPING PLAN.
- THE PLANTING SOIL MIXTURE SHALL BE APPLIED TO THE ENTIRE BOTTOM CONTOUR AREA WITHIN THE SWM / BMP FACILITY.
- THE PLANTING SOIL MIXTURE SHOULD BE FREE OF SUBSOIL, CLAY LUMPS, BRUSH, ROOTS, WEEDS AND ANY OTHER FOREIGN MATTER. THE MAXIMUM PERMISSIBLE CLAY CONTENT IS 5% AND THE MINIMUM ORGANIC CONTENT IS 35%.
- THE SAND BEING USED IN THE PLANTING SOIL MIXTURE SHOULD BE A NON-REACTIVE, SILICA-BASED MATERIAL MEETING THE REQUIREMENTS FOR PA DOT CEMENT CONCRETE SAND, TYPE A.
- INNER EMBANKMENT SLOPES SHALL BE NO STEEPER THAN 3:1 AND SHALL BE STABILIZED WITH AN EROSION CONTROL BLANKET.
- INSTALL ANTI-SLEEP COLLAR PER DIMENSIONS AND LOCATION SHOWN ON THE PLANS.

REPAIR & REPLACEMENT NOTES:

- IN THE EVENT THAT THE BMP DOES NOT DEWATER WITHIN 72 HOURS OF A STORM EVENT, INITIAL REPAIR OPTIONS SUCH AS TILLING GRASS AREAS AND REPLACING THE ENGINEERED SOIL MIXTURE SHALL BE PERFORMED. THIS WORK SHALL BE COORDINATED WITH THE BERKS COUNTY CONSERVATION DISTRICT.
- IF THE BMP CONTINUES TO NOT DEWATER PROPERLY AFTER FREQUENT STORM EVENTS, THE RESPONSIBLE SITE OFFICIAL SHALL CONTACT THE DESIGN ENGINEER FOR FURTHER GUIDANCE, ANY NECESSARY MODIFICATIONS TO THE BMP SHALL BE COORDINATED WITH THE BERKS COUNTY CONSERVATION DISTRICT.

SWM / BMP FACILITY 2 CROSS SECTION

PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
CHECKED -	JCG

NO.	DATE	REVISION
10	05/19/23	REVISED PER BCDD COMMENTS
9	04/20/23	REVISED PER PADOT HOP PLANS
8	11/17/22	REVISED PER BCDD NPDES COMMENTS
7	08/30/22	ADDED PROPOSED H.O.P. IMPROVEMENTS
6	09/14/21	ADDED E.V. CHARGING STATIONS
5	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS
4	02/28/20	REVISED PER PENNSYLVANIA DEP COMMENTS

LANDWORKS
EMBAKMENT
CIVIL DESIGN, LLC
land development consultants

3641 MARKET STREET - SUITE 302 • CAMP HILL, PA 17011
P (717) 279-1074
www.landworks-cd.com

POST-CONSTRUCTION STORMWATER MANAGEMENT DETAILS
FOR
KRUMSVILLE ROAD CONVENIENCE STORE
FOR
HARMIKE INVESTMENTS, LLC
GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.
22-0117-001
DATE: 05-06-19
SCALE: N.T.S.
SHEET
SW 12.1

REVISED: 12/20/23 09:00 AM BY: JCG
PRINTED: 12/20/23 12:00 PM BY: JCG

LIMITATIONS AND RESOLUTIONS OF SOIL TYPES

IN GENERAL, THERE ARE NO KNOWN UNUSUAL SITE CHARACTERISTICS THAT ARE UNLIKE THOSE FOUND ELSEWHERE IN THE REGION WHERE SIMILAR SOILS ARE PRESENT. HOWEVER, REFERENCE IS HEREBY MADE TO THE SITE'S GEOTECHNICAL REPORT FOR ANY GEOTECHNICAL RECOMMENDATIONS PROVIDED SPECIFICALLY FOR THE SUBJECT PROJECT.

ANY ROCK ENCOUNTERED WILL BE RIPPED OR BLASTED AS NECESSARY, AND USED FOR COMPACTED FILL IN OTHER AREAS OR REMOVED FROM THE SITE.

SLOPE WILL NOT BE AN ADVERSE FACTOR TO CONSTRUCTION. SLOPES WILL BE RE-SHAPED PER THE PROPOSED GRADING PLAN AND TYPICALLY WILL BE 3:1 OR FLATTER. ANY ACCELERATED RUNOFF OR EROSION FROM SLOPES WILL BE HANDLED BY EROSION CONTROL MATING AND SILT SOCK ON THE SITE.

DRAINAGE WITHIN THE PROJECT AREA WILL BE ACCOMMODATED BY PROPOSED GRADING, STORM PIPING AND SWALES. THE GROUND SURFACE WILL BE RESHAPED, COMPACTED AND STABILIZED CONSISTENT WITH THE PROPOSED GRADING PLAN CONTAINED HEREIN.

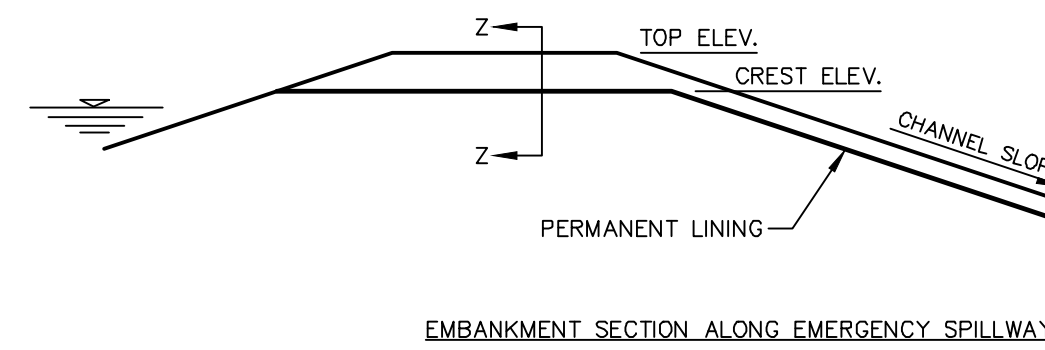
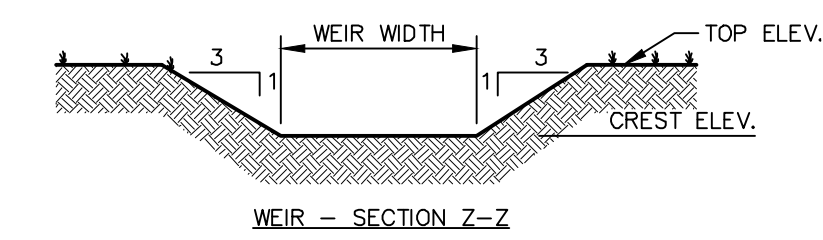
GEOLOGIC SOIL FORMATIONS & POTENTIAL POLLUTION

ACCORDING TO THE PENNSYLVANIA GEOLOGIC SURVEY GEOLOGIC MAP OF THE STATE OF PENNSYLVANIA, 1980, THE PROJECT SITE IS SITUATED IN AN AREA OF THE HAMBURG SEQUENCE (GEOLOGIC SYMBOL OHS6).

THE PENNSYLVANIA GEOLOGIC SURVEY PUBLICATION, ENGINEERING CHARACTERISTICS OF THE ROCKS OF PENNSYLVANIA, SECOND EDITION, 1982, DESCRIBES THE ROCK IN THIS SEQUENCE AS TRANSPORTED ROCKS OF THE HAMBURG OVERTHURST; GRAY, GREENISH-GRAY AND MAROON SHALE AND GRAYWACKE, SILTY AND SILICEOUS IN MANY PLACES.

SHALE PORTIONS OF THE FORMATION ARE THIN BEDDED, WHILE SANDSTONE AND LIMESTONE ARE THICK AND WELL BEDDED. FRACTURES IN THIS SEQUENCE FORM A SEAMY TO PLATY PATTERN, ARE WELL DEVELOPED, HIGHLY ABUNDANT, VARIABLY SPACED, OPEN AND STEEPLY DIPPING. THE SHALE IN THIS SEQUENCE IS MODERATELY RESISTANT TO WEATHERING AND IS MODERATELY TO HIGHLY WEATHERED TO A DEEP DEPTH, RESULTING IN LOOSE RUBBLE OF PENCIL-LIKE FRAGMENTS TO RECTANGULAR PLATES. EXCAVATION OF THE SHALE BEDROCK OF THE HAMBURG SEQUENCE IS DESCRIBED AS MODERATELY EASY, WHILE THE SANDSTONE AND GRAYWACKE WILL BE MORE DIFFICULT.

IT IS NOT ANTICIPATED THAT ANY SINKHOLES WILL BE DISCOVERED DURING THE COURSE OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER AND CONSERVATION DISTRICT SHOULD ANY SINKHOLES BE DISCOVERED DURING CONSTRUCTION. SINKHOLES HAVE THE POTENTIAL TO CAUSE POLLUTION TO THE GROUNDWATER SHOULD ANY CONTAMINANTS BE DISCHARGED, WHETHER DIRECTLY OR INDIRECTLY, INTO THE SINKHOLE. REFERENCE IS ALSO MADE TO THE PROJECT'S GEOTECHNICAL REPORT, LOCATED UNDER A SEPARATE COVER, FOR ANY FURTHER SOIL ANALYSIS.



FACILITY NO.	WEIR		LINING
	TOP ELEV.	WEIR WIDTH	
1	776.45	25'	N.A.G. S75BN
2	777.10	20'	N.A.G. S75BN

EMERGENCY SPILLWAY CHANNEL

NOT TO SCALE

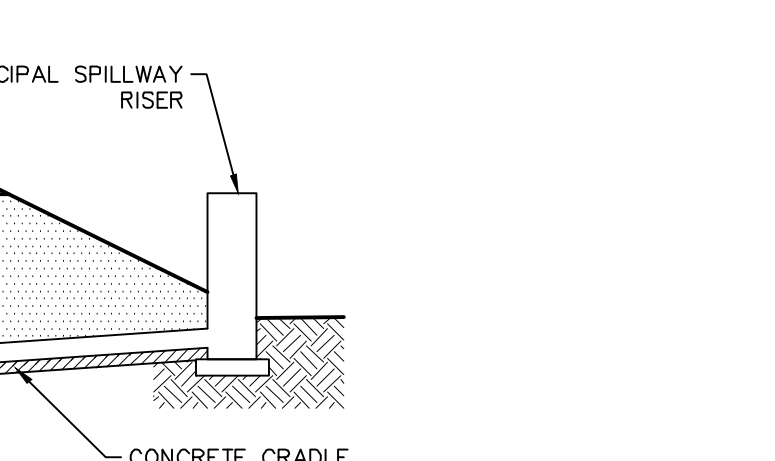
NOTES:

- ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATER-TIGHT.
- COLLAR SIZE AND SPACING SHALL BE AS INDICATED BELOW.

BASIN NO.	PIPE SIZE (IN.)	S (IN.)	NO. OF COLLARS	DISTANCE RISER TO 1ST COLLAR (FT.)
1	18	48	1	8.25
2	15	45	1	4.00

CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS

NOT TO SCALE



NOTES:

- 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 ENDWALL

NOT TO SCALE

OUTLET NO.	PIPE DIA Pd (IN.)	RIPRAP		APRON		
		SIZE (R-...)	THICK. Rt (IN)	LENGTH Al (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
1-0	15	3	9	8	3.75	7
2-0	12	3	9	4	3	4.6

SOIL LIMITATIONS & RESOLUTIONS

SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	FLOODING	DEPTH TO SATURATED ZONE (IN. ABOVE HIGH WATER TABLE)	HYDRIC/HYDRO INCLUSIONS	LOW STRENGTH/LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK/SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
BEDINGTON	X	C	X	X			X		X	X	X					
BERKS	X	C	X	X			X		X	X	X					

OUTBANKS CAVE:

CONTRACTOR SHALL USE THE FOLLOWING CONSTRUCTION TECHNIQUES DESIGNED TO REDUCE OR ELIMINATE THE POTENTIAL FOR CUTBANK CAVING, AS DEFINED BY OSHA, PROTECTIVE SYSTEMS INCLUDE ONE OR MORE OF THE FOLLOWING DESIGNS:

- SLOPING THE GROUND TO REDUCE THE HEIGHT OF THE CUTBANK
- BENCHING THE GROUND TO REDUCE THE HEIGHT OF THE CUTBANK
- SHORING THE CUTBANK WITH SUPPORTS (PLANKING OR HYDRAULIC JACKS)
- SHIELDING THE CUTBANK (TRENCH BOX)
- ALL FILL PLACEMENT ACTIVITIES SHALL BE PERFORMED IN 8" LIFTS. ALL LIFTS SHALL BE COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT, PREPARED BY GTA ASSOCIATES, INC. (SEE BELOW TABLE)

CORROSIVE:

CONCRETE SHALL BE DESIGNED AS NECESSARY TO RESIST CORROSION DUE TO EXPOSURE TO CORROSIVE SOILS.

EASILY ERODIBLE:

EROSION CONTROL MEASURES SHALL BE MONITORED ROUTINELY IN ACCORDANCE WITH PROVIDED SCHEDULE AND PROCEDURE UNTIL SITE IS COMPLETELY STABILIZED. UPON REACHING FINAL GRADE, STEEP SLOPES SHALL BE IMMEDIATELY STABILIZED, SEEDED AND MULCHED TO PREVENT EROSION. ALL SLOPES 3:1 OR STEEPER REQUIRE E&S MATTING AS SPECIFIED ON THE E&S PLANS.

HYDRIC INCLUSIONS:

SITE INVESTIGATIONS HAVE NOT SHOWN ANY SOILS WITH HYDRIC INCLUSIONS. PRECAUTIONS SHOULD BE TAKEN TO PREVENT SLOPE FAILURE, AS DEFINED BY OSHA, PROTECTIVE SYSTEMS INCLUDE ONE OR MORE OF THE FOLLOWING DESIGNS:

- SLOPING THE GROUND TO REDUCE THE HEIGHT OF THE CUTBANK
- BENCHING THE GROUND TO REDUCE THE HEIGHT OF THE CUTBANK
- SHORING THE CUTBANK WITH SUPPORTS (PLANKING OR HYDRAULIC JACKS)
- SHIELDING THE CUTBANK (TRENCH BOX)
- ALL FILL PLACEMENT ACTIVITIES SHALL BE PERFORMED IN 8" LIFTS. ALL LIFTS SHALL BE COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT, PREPARED BY GTA ASSOCIATES, INC. (SEE BELOW TABLE)

SLOW PERCOLATION:

CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AT ALL AREAS DURING AND AFTER CONSTRUCTION BY SLOPING ALL SURFACES, EXCEPT FOR THE BUILDING PAD AND BOTTOM SURFACES OF PCSM BMPs, A MINIMUM OF 1% THE BOTTOM SURFACES OF PCSM BMPs SHALL BE SLOPED AS DESIGNED. WATER COLLECTED IN TRENCHES AND OTHER EXCAVATIONS DURING CONSTRUCTION SHALL BE REMOVED PRIOR TO CONTINUATION OR COMPLETION OF WORK WHERE WATER IS ENCOUNTERED.

PIPING:

CONSTRUCT ANTI-SEEP COLLARS AS DESIGNED FOR EACH BASIN, BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE INSPECTED FOR SIGNS OF EROSION, PONDING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE IMMEDIATELY PERFORMED. ALL CONNECTIONS WITHIN BASIN DISCHARGE PIPES SHALL BE WATERTIGHT. ALL PIPING SHALL BE INSTALLED WITH STONE BACKFILL AROUND PIPING TO PREVENT CONTACT OF SOIL WITH PIPE MATERIALS.

POOR SOURCE OF TOPSOIL:

SOIL TESTS SHALL BE PERFORMED TO DETERMINE APPROPRIATE TOPSOIL FOR USE IN LAWN AREAS. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AT ALL AREAS DURING AND AFTER CONSTRUCTION BY SLOPING ALL SURFACES, EXCEPT FOR THE BUILDING PAD AND BOTTOM SURFACES OF PCSM BMPs, A MINIMUM OF 1% THE BOTTOM SURFACES OF PCSM BMPs SHALL BE SLOPED AS DESIGNED. WATER COLLECTED IN TRENCHES AND OTHER EXCAVATIONS DURING CONSTRUCTION SHALL BE REMOVED PRIOR TO CONTINUATION OR COMPLETION OF WORK WHERE WATER IS ENCOUNTERED.

FROST ACTION:

VEGETATION TO BE ESTABLISHED FOR EROSION CONTROL PURPOSES SHALL BE WATERED REGULARLY TO ENSURE ESTABLISHMENT OF VEGETATION.

DROUGHTY:

THE FOLLOWING STAGES OF CONSTRUCTION REQUIRE A LICENSED PROFESSIONAL OR DESIGNER TO BE PRESENT ON THE SITE DURING CONSTRUCTION OF THE SPECIFIC ITEMS FOR INSPECTION AND/OR FIELD VERIFICATION. ALL OTHER STAGES OF CONSTRUCTION ARE NOT NECESSARY TO BE OBSERVED BY A LICENSED PROFESSIONAL OR DESIGNER.

- WHEN THE MINIMIZE SOIL COMPACTION AREAS ARE DELINEATED.
- WHEN SWM BMPs #1 & #2 ARE BEING INSTALLED, THE OUTLET STRUCTURES, OUTLET PIPES, ANTI-SEEP COLLARS, CONCRETE CRADLES, PERMANENT EMBANKMENT BERM, IMPERVIOUS CORE, EMERGENCY SPILLWAY, EMERGENCY SPILLWAY LINING, AND DIMENSIONS OF THE BMPs SHALL BE VERIFIED AS THEY ARE INSTALLED.
- WHEN THE CONTECH CDS UNIT IS INSTALLED.
- WHEN THE SOIL MIXTURE AND PLANTINGS IN SWM BMPs #1 & #2 ARE BEING INSTALLED.
- WHEN THE MAJORITY OF EARTH DISTURBANCE IS COMPLETED, THE MINIMIZE SOIL COMPACTION AREAS SHALL BE VERIFY FOR MINIMAL COMPACTION.

PREPAREDNESS, PREVENTION AND CONTINGENCY PLANS

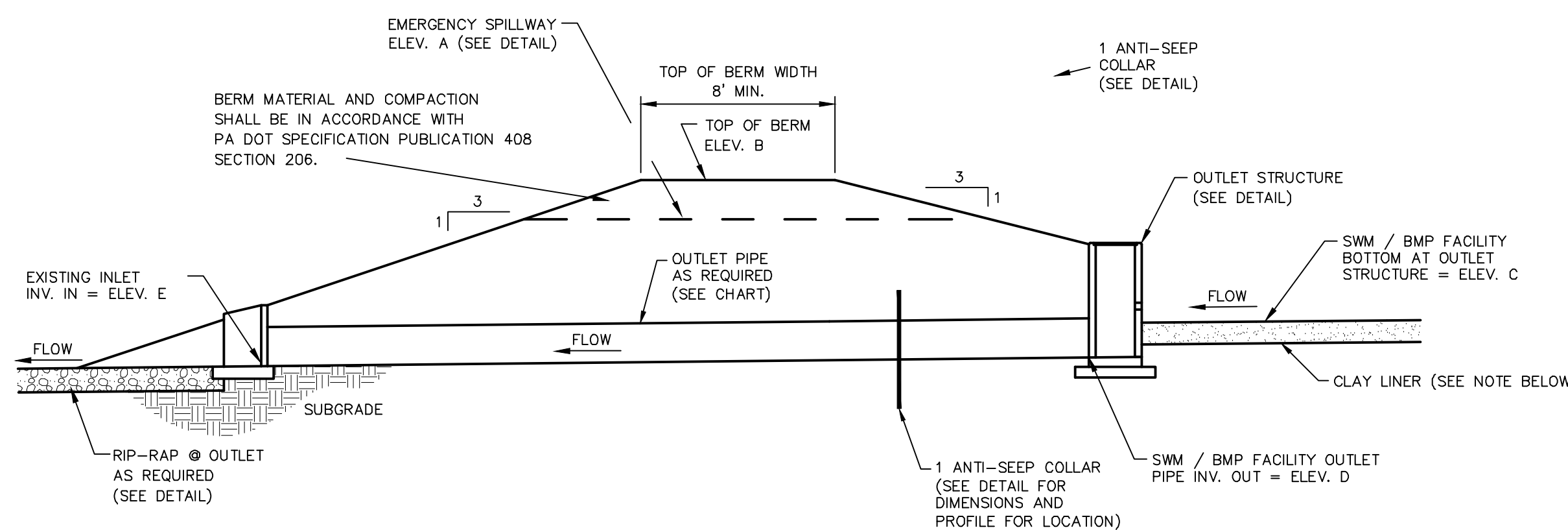
IF THE POTENTIAL EXISTS FOR CAUSING ACCIDENTAL POLLUTION OF AIR, LAND, OR WATER, OR FOR CAUSING ENDANGERMENT OF PUBLIC HEALTH AND SAFETY THROUGH ACCIDENTAL RELEASE OF TOXIC, HAZARDOUS, OR OTHER POLLUTING MATERIALS, THE PERMITTEE OR CO-PERMITTEE MUST DEVELOP A PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLAN. THE PPC PLAN SHALL BE DEVELOPED IN ACCORDANCE WITH APPLICABLE DEP REGULATIONS. THE PPC PLAN SHALL IDENTIFY AREAS WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WASTE MANAGEMENT AREAS, RAW MATERIAL STORAGE AREAS, TEMPORARY AND PERMANENT SPOILS STORAGE AREAS, MAINTENANCE AREAS, AND ANY OTHER AREAS THAT MAY HAVE THE POTENTIAL TO CAUSE NON-COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE NPDES PERMIT DUE TO THE STORAGE, HANDLING OR DISPOSAL OF ANY TOXIC OR HAZARDOUS SUBSTANCES SUCH AS OIL, GASOLINE, PESTICIDES, HERBICIDES, SOLVENTS, ETC. BMPs SHALL BE DEVELOPED AND IMPLEMENTED FOR EACH IDENTIFIED AREA. THE PPC PLAN SHALL BE MAINTAINED ON SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR REVIEW AT THE DEPARTMENT'S OR AUTHORIZED COUNTY CONSERVATION DISTRICT'S REQUEST.

FINAL

FACILITY #	A	B	C	D	E	F	G	H	OUTLET PIPE
1	775.25	776.45	772.00	769.76	774.00	2'-8"	772.00	769.92	63.5' OF 18" RCP @ 3.75%

SWM / BMP FACILITY 1 OUTLET STRUCTURE

NOT TO SCALE



FACILITY #	A	B	C	D	E	OUTLET PIPE
1	775.25	776.45	772.00	769.76	767.38	63.5' OF 18" RCP @ 3.75%

GENERAL NOTE:

- REFERENCE IS MADE TO THE SWM/BMP FACILITY CROSS SECTION DETAIL IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION WHICH REQUIRES AN ADDITIONAL CUTOFF TRENCH AND IMPERVIOUS CORE ON THE UPPER SIDE OF THE FACILITY.
- EMBANKMENT SIDE SLOPES SHALL BE A MAXIMUM OF 3:1 AND STABILIZED WITH AN EROSION CONTROL BLANKET.

SWM / BMP FACILITY 1 CROSS SECTION AT OUTLET STRUCTURE

NOT TO SCALE

COMPACTION NOTE:

- HOMOGENEOUS EMBANKMENT MATERIAL TO BE COMPACTED IN 8" LAYERS TO A MINIMUM FINAL DENSITY OF NOT LESS THAN 95% OF MAX. DRY WEIGHT AT OPTIMUM MOISTURE CONTENT.

LINER NOTE:

- BASIN SHALL BE LINED WITH A 1" THICK IMPERVIOUS CLAY LINER AND 6" OF TOPSOIL. LINER MATERIAL MUST BE UNIFIED CLASS, CH OR CL, AND COMPACTED TO 95% OF MAX. DENSITY. START CLAY LINER 2' BELOW BASIN BOTTOM

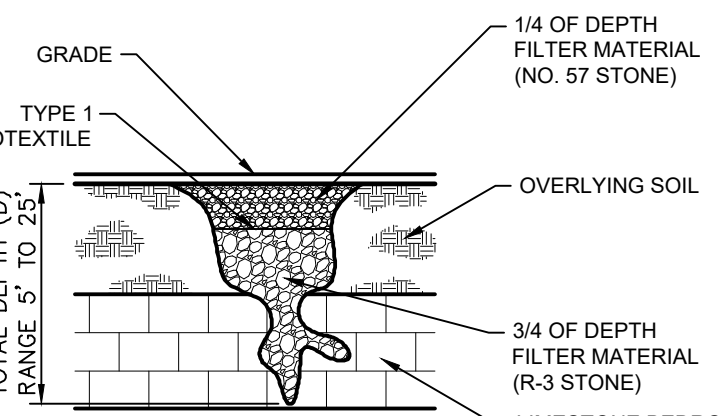
NOTES:

- A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
- ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE ON THE PLAN.

- REMOVE AND PROPERLY DISPOSE OF MATERIALS DUMPED IN AND AROUND THE SINKHOLE.
- EXCAVATE LOOSE MATERIAL FROM THE SINKHOLE AND TRY TO EXPOSE THE SOLUTION VOID(S) IN THE BOTTOM. ENLARGE THE SINKHOLE, AS NECESSARY TO ALLOW FOR INSTALLATION OF THE FILTER MATERIALS.
- PLACE A LAYER OF FILTER MATERIAL INTO THE SINKHOLE ALLOWING THE STONE TO FILL THE VOID(S) BELOW THE BOTTOM OF EXCAVATED SINKHOLE. THE SIZE SHOULD BE 1/4 TO 1/2 THE SIZE OF THE VOID(S). IN MOST CASES THIS MATERIAL COULD BE R-3 STONE.
- PLACE A LAYER OF THE SAME SIZE FILTER MATERIAL AT A THICKNESS OF ABOUT 3/4 D (D = TOTAL DEPTH) ABOVE THE SINKHOLE BOTTOM.
- PLACE A LAYER OF SMALLER SIZE FILTER MATERIAL OVER THE PREVIOUS LAYER AT A THICKNESS OF ABOUT 1/4 D (D = TOTAL DEPTH). BRING THIS LAYER TO THE SURFACE. THE SIZE SHOULD BE 1/4 TO 1/2 THE SIZE OF THE PREVIOUS LAYER. IN MOST CASES THIS MATERIAL COULD BE NO. 57 STONE.

SINKHOLE TREATMENT INVERTED FILTER

NOT TO SCALE



THERMAL IMPACTS ANALYSIS

AS REQUIRED BY CHAPTER 102.8(F)(13), MEASURES HAVE BEEN TAKEN IN ORDER TO IDENTIFY POTENTIAL THERMAL IMPACTS FROM POST-CONSTRUCTION STORMWATER TO SURFACE WATERS OF THE COMMONWEALTH AND AVOID, MINIMIZE, OR MITIGATE POTENTIAL POLLUTION FROM THERMAL IMPACTS BY UTILIZING ON-SITE BMPs. PLANNED SITE FEATURES FOR THE PROJECT HAVE BEEN SELECTED AND DESIGNED TO MINIMIZE THERMAL IMPACTS TO THE GREATEST EXTENT PRACTICABLE, WITHIN THE PROJECT'S DISTURBED AREA WHILE ALSO PROVIDING A MAIN OBJECTIVE OF BALANCING REQUIRED NEEDS FOR PROPERLY DESIGNED SITES WITH THE STEWARDSHIP AND PROTECTION OF ENVIRONMENTAL RESOURCES THAT EXIST ON THE PROPERTY.

TO MINIMIZE THERMAL IMPACTS RESULTING FROM THE SUBJECT PROJECT TO THE GREATEST EXTENT PRACTICABLE, SEVERAL ENHANCED STORMWATER MANAGEMENT FEATURES AND WATER QUALITY FEATURES HAVE BEEN PLANNED TO MITIGATE THERMAL IMPACTS FROM THE DEVELOPMENT. TWO (2) STORMWATER MANAGEMENT FACILITIES HAVE BEEN STRATEGICALLY LOCATED ON THE SITE TO MANAGE BOTH STORMWATER QUALITY AND QUANTITY. THESE BMPs HAVE BEEN DESIGNED TO COLLECT ALL HEATED ON-SITE IMPERVIOUS AREAS AND PROVIDING INFILTRATION/STORAGE FOR THE ENTIRE 2-YEAR STORM VOLUME INCREASE GENERATED BY THE SITE. FURTHER, STORMWATER RUNOFF FROM A MAJORITY OF THE SITE'S IMPERVIOUS SURFACES DISCHARGES INTO THE STORM SEWER CONVEYANCE SYSTEM WHICH IS THEN CONVEYED TO THE AFOREMENTIONED FACILITIES. IMMEDIATELY FOLLOWING A STORM EVENT, AS THE FIRST FLUSH RUNOFF IS CONVEYED TO THESE FACILITIES, IT TRAVELS IN A UNDERGROUND ENVIRONMENT EXPERIENCING THERMAL COOLING BEFORE REACHING THE BASINS. ONCE REACHING THE BASINS IT WILL BE STORED AND/OR INFILTRATED INTO THE GROUND IN A SHADDED/COOLED ENVIRONMENT DUE TO THE VARIOUS GRASSES BEING PLANTED WITHIN THE BASIN BEFORE BEING DISCHARGING INTO THE DOWNSTREAM RECEIVING WATERCOURSE. FURTHERMORE, THE PROJECT PROPOSES TO PLANT VARIOUS DECIDUOUS/EVERGREEN TREES WHICH WILL HELP SHADE IMPERVIOUS PARKING AREAS. THEREFORE, WITH THE ADDITION OF THESE PLANTINGS COUPLED WITH THE AFOREMENTIONED BMPs, THE PROPOSED PROJECT MITIGATES THERMAL IMPACTS GENERATED BY THE SITE TO THE GREATEST EXTENT PRACTICABLE.

PROJ. MGR. -	AMN
DESIGN -	AMN
CADD -	AMN
CHECKED -	JCG

NO.	DATE	REVISION
10	05/19/23	REVISED PER BCDD COMMENTS
9	04/20/23	REVISED PER PADOT HOP PLANS
8	11/17/22	REVISED PER BCDD NPDES COMMENTS
7	08/02/22	ADDED PROPOSED H.O.P. IMPROVEMENTS
6	09/14/21	ADDED BY CHARGING STATIONS
5	07/01/21	ADDED PROPOSED H.O.P. IMPROVEMENTS
4	02/28/20	REVISED PER PENNSYLVANIA DEP COMMENTS
		NO. DATE

LANDWORKS
CIVIL DESIGN, LLC
land development consultants



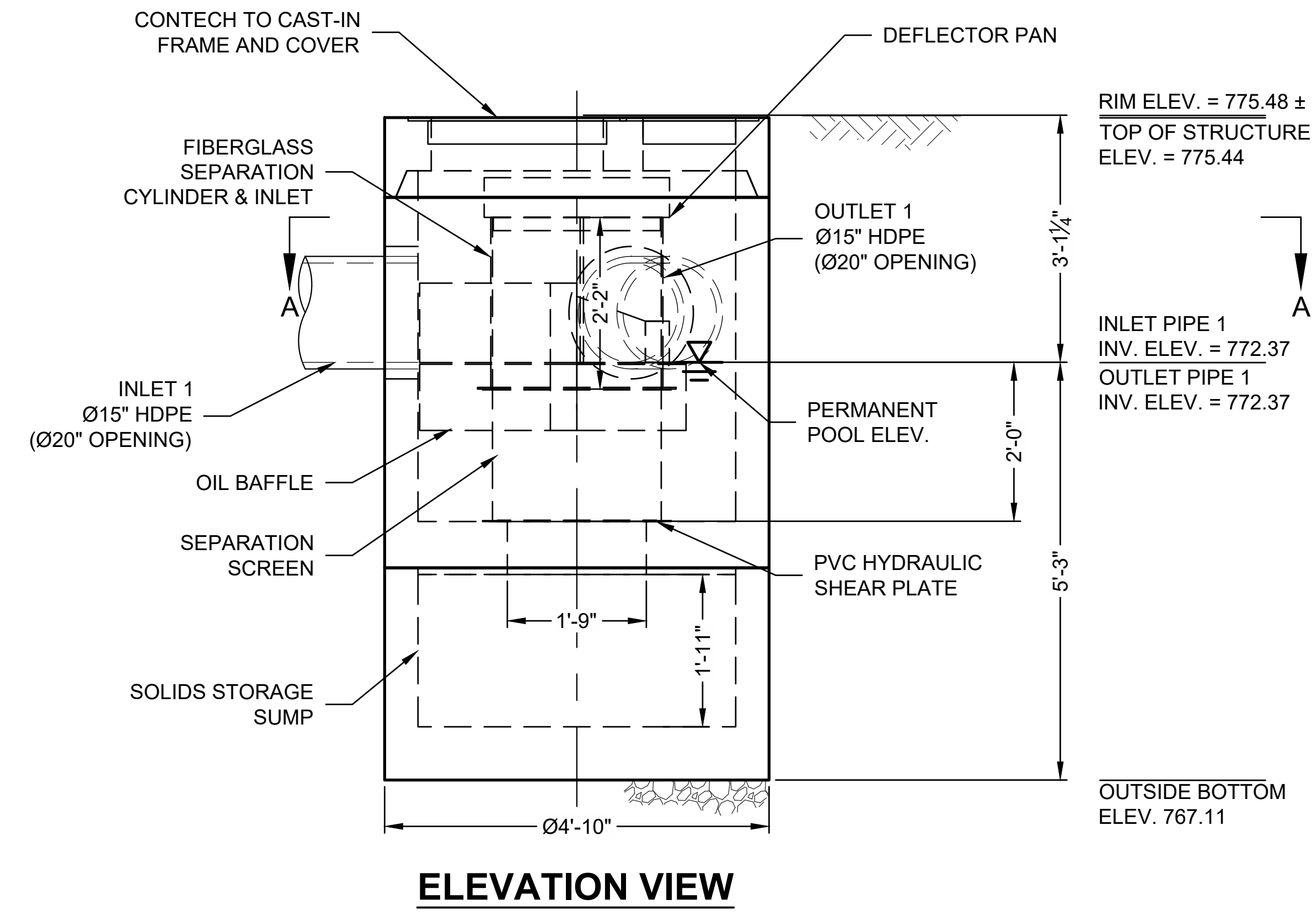
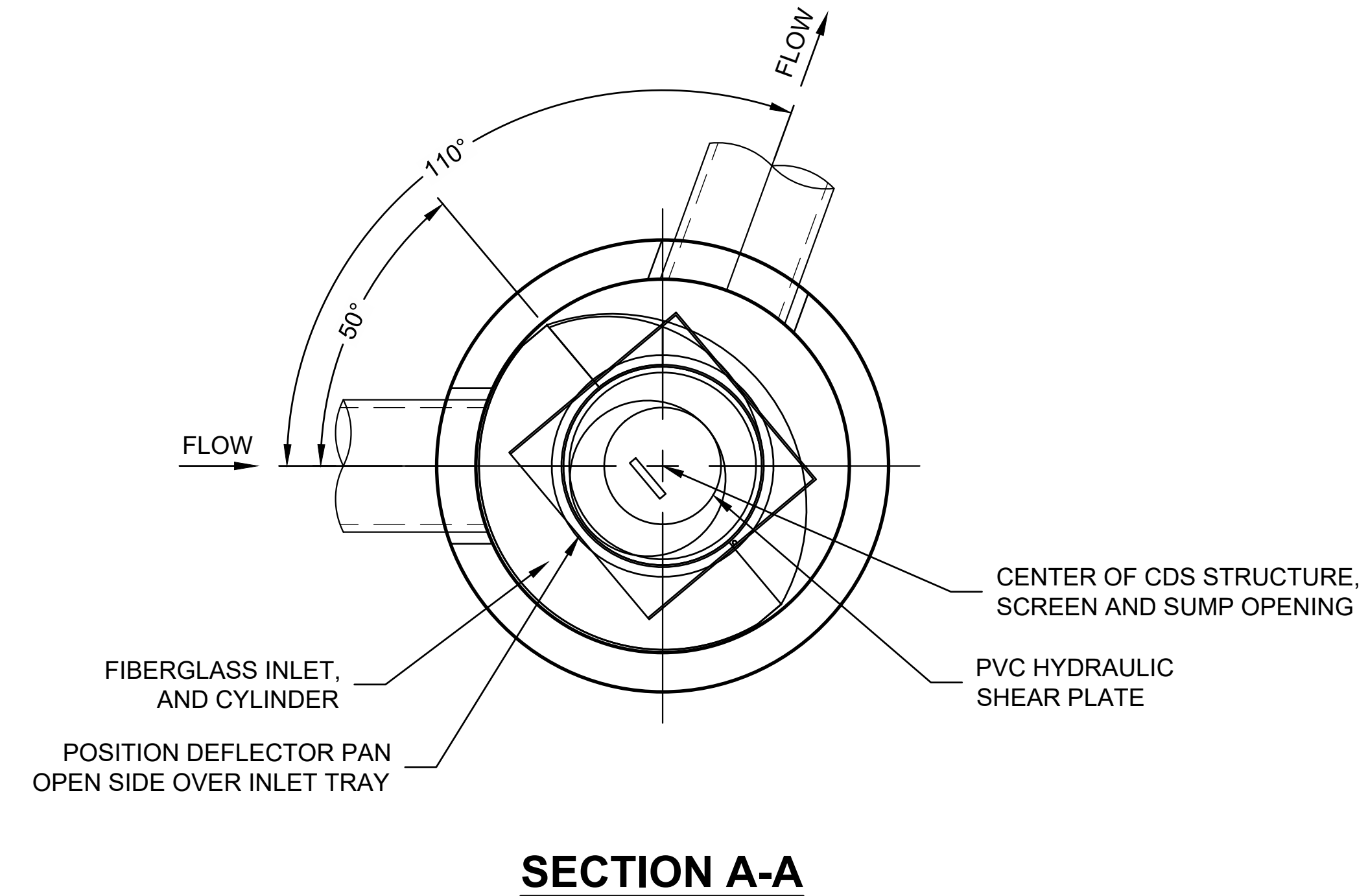
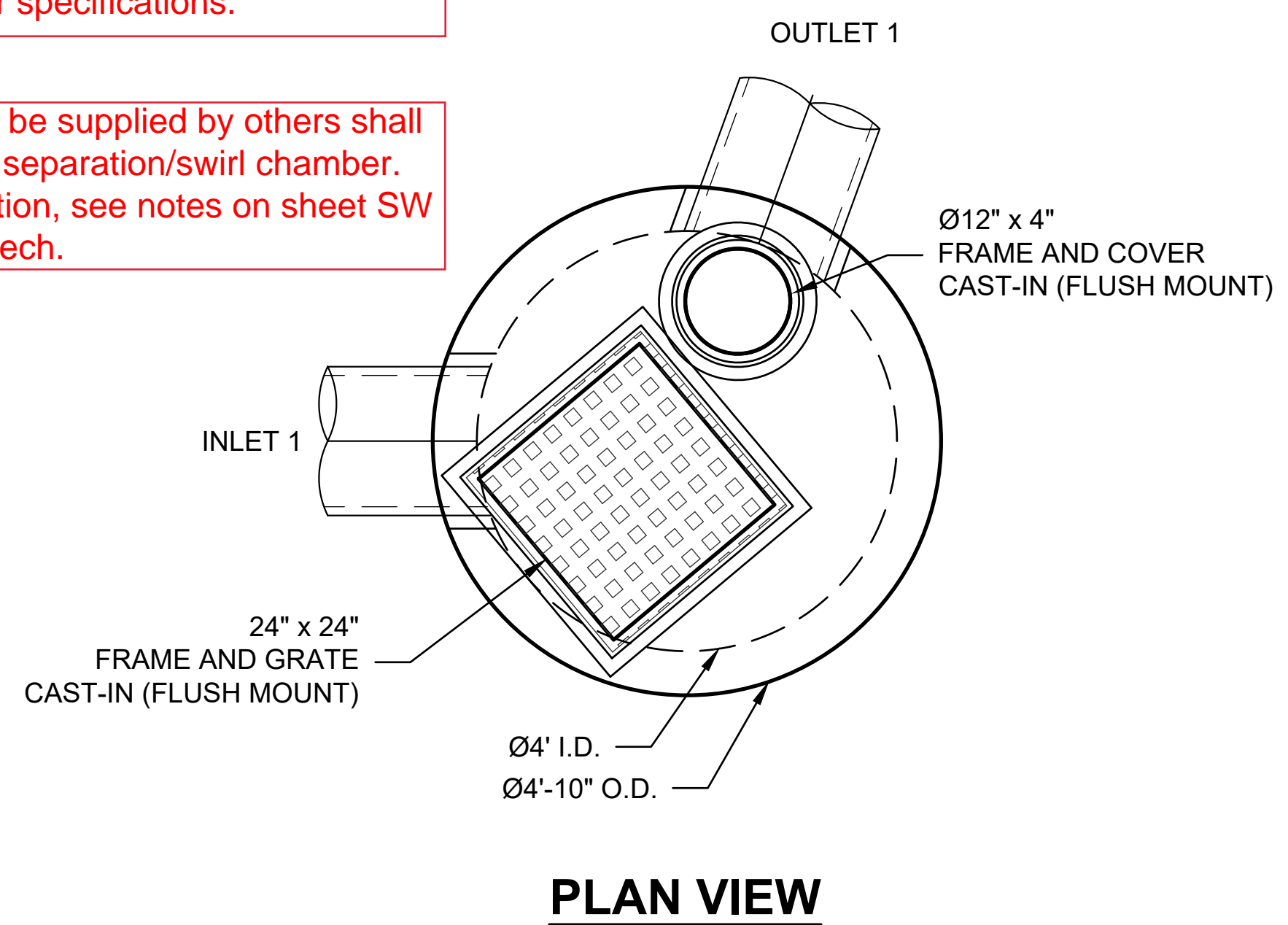
3641 MARKET STREET - SUITE 302 • CAMP HILL, PA 17011
P (717) 307-0074
www.landworksllc.com

POST-CONSTRUCTION STORMWATER MANAGEMENT DETAILS FOR KRUMSVILLE ROAD CONVENIENCE STORE FOR HARMIKE INVESTMENTS, LLC GREENWICH TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROJECT NO.	22-0117-001
DATE:	05-06-19
SCALE:	N.T.S.
SHEET	SW 12.2

All information shown hereon was provided by Contech Engineered Solutions Inc. Contractor to follow all manufacturer specifications.

Oil sorbent material to be supplied by others shall be included within the separation/swirl chamber. For additional information, see notes on sheet SW 11.1 and contact Contech.



MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET AND CYLINDER	CONTECH
1	2400 micron, 2' O.D. x 1.67' SEP. SCREEN	CONTECH
1	DEFLECTOR PAN	CONTRACTOR
1	3/16 INCH PVC HYDRAULIC SHEAR PLATE *	CONTECH
1	SEALANT FOR JOINTS (BY PRECASTER)	CONTRACTOR
1	24" x 24" FRAME & GRATE, EJ#45624050A01, OR EQUIV.	CONTECH
1	Ø12" x 4" FRAME & COVER, EJ#41610201, OR EQUIV.	CONTECH

* SEE HYDRAULIC SHEAR PLATE DETAIL

GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
- CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
- IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
- CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

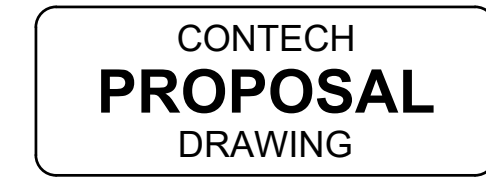
INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT

APPROXIMATE HEAVIEST PICK = 5500 LBS.
STRUCTURE IS DELIVERED IN 3 PIECES

MAX FOOTPRINT = Ø4'-10"



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MARK	DATE	REVISION DESCRIPTION	BY

CDS2015-4-C - 592352-10
 KRUMSVILLE ROAD CONVENIENCE STORE
 LENHARTSVILLE, PA
 for SYSTEM: WQU

CONTECH ENGINEERED SOLUTIONS LLC
 www.ContechES.com
 605 Global Way Suite 113, Linthicum, MD 21090
 888-740-3318 410-796-5505 866-376-8571 FAX

GDS
 THE PRODUCT HAS BEEN DESIGNED BY ONE OR MORE OF THE FOLLOWING ENGINEERS, ARCHITECTS, OR PROFESSIONALS:

DATE: 03/14/19	SCALE: 3/8" = 1'-0"
DESIGNED: KMS	DRAWN: BOL
CHECKED: ###	APPROVED: ###
PROJECT No.: 592352	SEQUENCE No.: 10
SHEET: 1	OF 1

TERR
 LAYOUT 1F
 2015-4-FGIS
 5873 / TE73575

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