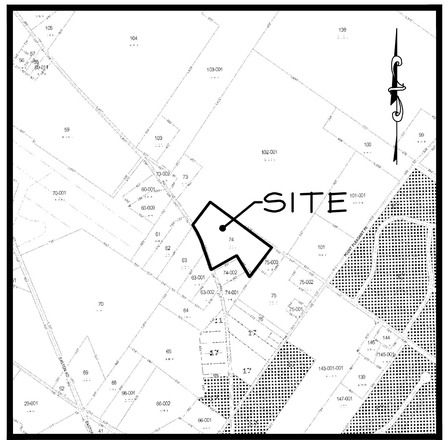
PRELIMINARY/FINAL LAND DEVELOPMENT PLANS
FOR
LIGHTHOUSE BAPTIST CHURCH

PLUMSTEAD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

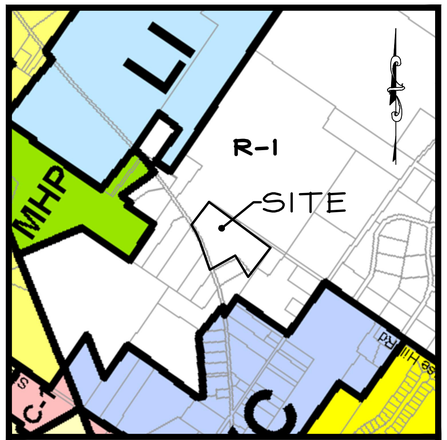
LOCATION MAP

800 0 800
SCALE: 1"=800'



TAX MAP

800 0 800
SCALE: 1"=800'



ZONING MAP

800 0 800
SCALE: 1"=800'

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* NOT INCLUDED IN CONSTRUCTION SET	

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP - CALL BEFORE YOU DIG!

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SERIAL NO. 20182602918

SITE & ADJACENT PROPERTY OWNER'S LIST

PARCEL NO.	OWNER OF RECORD
34-011-074	LIGHTHOUSE BAPTIST CHURCH OF BUCKS COUNTY
34-011-075-003	FOSTER, GARY S & JUSTINE R
34-011-075	FOSTER, WILLIAM & SONS
34-011-074-001	CAPALDI, BRIAN ERNEST
34-011-074-002	CAPALDI, BRIAN ERNEST
34-011-102-001	CENTRAL BUCKS SCHOOL DISTRICT

SITE & ADJACENT ZONING DISTRICTS

DESIGNATION	ZONING CLASSIFICATION
R - 1	RURAL RESIDENTIAL DISTRICT

APPLICANT/OWNER:
LIGHTHOUSE BAPTIST CHURCH
2622 DURHAM ROAD
BUCKINGHAM, PA 18912

ARCHITECT:
MANN-HUGHES ARCHITECTURE
11 DUANE ROAD & RT 611
DOYLESTOWN, PA 18901

SITE/CIVIL ENGINEER:
RENEW DESIGN GROUP
117 EAST BROAD STREET, SUITE 4
SOUDERTON, PA 18964

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
No. PE082384

REV. NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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renew LAND DEVELOPMENT SOLUTIONS

COVER

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER: 18015
SCALE: AS NOTED
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 1 of 24

① VIEW FROM TOHICKON MS PROPERTY LINE

② VIEW OLD EASTON RD

BASE LEGEND

EXISTING SYMBOL	DESCRIPTION
340	INDEX CONTOUR
359	CONTOUR
x 355.49	SPOT ELEVATION
BM=100.00	SITE BENCHMARK
GeB2	SOIL NAME / BOUNDARY
TP #	PERC TEST, TEST PIT, MONITORING WELL
	EPHEMERAL WATERCOURSE
PE	EPHEMERAL WATERCOURSE DELINEATION FLAG
	ADJOINING PROPERTY LINE
	PROPERTY LINE
	IRON PIN, MONUMENT, NAIL
	CARTWAY/EDGE OF PAVEMENT
DTL	STRIPING
	LEGAL/ULTIMATE RIGHT-OF-WAY
	ROAD SIGN
	MAILBOX
OU OU	OVERHEAD WIRES
	UTILITY POLE
	GUY WIRE
G G	GAS MAIN
S	SANITARY SEWER MANHOLE
	STORM SEWER
	ENDWALL
	TREE CANOPY LINE
	SCRUB/BRUSH LINE
	TREE
	WOODEN SPLIT RAIL FENCE
	LIMIT OF DISTURBANCE

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
NO. PE082394

REV. NO.	DATE	REVISION
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GRAPHIC SCALE IN FEET
50 0 50 100

renew LAND DEVELOPMENT SOLUTIONS

SITE ANALYSIS

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER: 18015
SCALE: 1" = 50'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 2 of 24

BASE LEGEND

EXISTING SYMBOL	DESCRIPTION
340	INDEX CONTOUR
359	CONTOUR
x 355.69	SPOT ELEVATION
BM=100.00	SITE BENCHMARK
GeB2	SOIL NAME / BOUNDARY
TP #	PERC TEST, TEST PIT, MONITORING WELL
	EPHEMERAL HATERCOURSE
PD	EPHEMERAL HATERCOURSE DELINEATION FLAG
	ADJOINING PROPERTY LINE
	PROPERTY LINE
	IRON PIN, MONUMENT, NAIL
	CARTWAY/EDGE OF PAVEMENT
DTL	STRIPING
	LEGAL/ULTIMATE RIGHT-OF-WAY
	ROAD SIGN
	MAILBOX
OU OU	OVERHEAD WIRES
	UTILITY POLE
	GUY WIRE
G G	GAS MAIN
S	SANITARY SEWER MANHOLE
	STORM SEWER
	ENDWALL
	TREE CANOPY LINE
	SCRUB/BRUSH LINE
	TREE
	WOODEN SPLIT RAIL FENCE
	LIMIT OF DISTURBANCE

SLOPE TABLE

SLOPE (min.)	SLOPE (max.)	COLOR	AREA (sq. ft.)
8.00%	15.00%		10152.44
15.00%	25.00%		4720.78
25.00%	100.00%		3166.50

COMMONWEALTH OF PENNSYLVANIA
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GRAPHIC SCALE IN FEET
40 0 40 80

renew
LAND DEVELOPMENT SOLUTIONS

RESOURCE CONSERVATION

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LO

PROJECT NUMBER: 18015
SCALE: 1" = 40'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 3 of 24

DEMOLITION LEGEND

DESCRIPTION	PROPOSED SYMBOL
VEGETATION TO BE REMOVED	
ASPHALT MILL & OVERLAY	
IMPERVIOUS TO BE REMOVED	
FEATURE TO BE REMOVED	—— TEXT
DEMO NOTE	TEXT

STREET ROAD T-390 (NOT OPEN)

OLD EASTON ROAD T-390

LAND N/F CENTRAL BUCKS SCHOOL DISTRICT APN 34-011-102-001 DB 2139, PG 1376 5073 OLD EASTON ROAD

PER WETLAND INVESTIGATION PERFORMED ON 9.13.2018 BY WETLANDS & ECOLOGY, INC., NO WETLANDS WERE FOUND. THE WATERCOURSE DELINEATED ON THIS PLAN, AS DETERMINED BY WETLANDS & ECOLOGY, INC., THROUGH FIELD INVESTIGATION AND CLARIFICATION IN A 3.14.2019 CORRESPONDENCE, IS AN EPHEMERAL WATERCOURSE

ULTIMATE RIGHT-OF-WAY LINE

LEGAL RIGHT-OF-WAY LINE

SITE BM ELEV.: 451.84

1,234 SF WOODED AREA TO BE REMOVED

3,580 SF WOODED AREA TO BE REMOVED

1,861 SF WOODED AREA TO BE REMOVED

ASPHALT TO BE MILLED & OVERLAID (HALF WIDTH OF OLD EASTON ROAD)

INV 462.37 12" CMP

INV 461.80 12" CMP

INV 461.71

BRUSH AREA TO BE REMOVED

ASPHALT TO BE REMOVED

ASPHALT TO BE REMOVED

BRUSH AREA TO BE REMOVED

CULTIVATED FIELD

Ab B

CwB

B

WOODED AREA

BRUSH AREA

PONDING AREA 25' DIA.

FENCE POSTS

SPLIT RAIL FENCE

TREE CLUMP

DWELLING

SHED

GRASS

GRAVEL

IRON PIPE FOUND & HELD

IRON PIPE FOUND

IRON PIPE FOUND BENT

ROD FOUND BENT

INV 483.18 4" PVC

INV 486.15 4" PVC

6" TREE W/ BPHS 1762 TAG

13" TREE W/ BPHS 1762 TAG

LAND N/F GARY S. & JUSTINE R. FOSTER APN 34-011-075-003 DB 850, PG 307 4950 BURT HILL ROAD

LAND N/F WILLIAM FOSTER & SONS APN 34-011-075 DB 1505, PG 2083 BURT HOUSE HILL ROAD

LAND N/F STEPHEN GARNICK APN 34-011-074-002 DB 5845, PG 1 4991 OLD EASTON ROAD

LAND N/F BRIAN ERNEST CAPALDI APN 34-011-074-001 DB 5844, PG 1 4974 OLD EASTON ROAD

LIGHTHOUSE BAPTIST CHURCH OF BUCKS COUNTY TPN# 34-011-074

MICHAEL & DOROTHY AUSTIN APN 34-011-063 5030 OLD EASTON ROAD

BRETT A. & LINDA MUSSELMAN APN 34-011-063-001 4998 OLD EASTON ROAD

PECO 5422A

PECO 5421 SUPPORT POLE W/GUY

UP 185 P SUPPORT POLE W/GUY

UP 190 P

UP NO#

UP 1100 (REAL RIGHT SIGHT LINE)

SCHOOL ZONE TRAFFIC SIGNAL ON CONCRETE PAD W/ SPEED LIMIT IS WHEN FLASHING SIGN

END SCHOOL ZONE SIGN

1"SN RIM 456.73

18"CO 125

5' TALL REBAR FOUND

PILE

SEE GENERAL INFORMATION SHEET FOR ALL PERTINENT NOTES AND LEGEND INFORMATION.

GRAPHIC SCALE IN FEET
40 0 40 80

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
No. PE082384

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renew LAND DEVELOPMENT SOLUTIONS

DEMOLITION

NEW: LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER: 18015
SCALE: 1" = 40'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 4 of 24

DEMOLITION NOTES

1. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AS WELL AS ALL FEDERAL, STATE AND LOCAL REGULATIONS. ANY DISCREPANCIES OR DEVIATIONS IDENTIFIED BY THE CONTRACTOR SHALL BE REPORTED TO THE ENGINEER IN WRITING FOR RESOLUTION PRIOR TO INITIATION OF ACTIVITY.
2. THE FIRM OR ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS AND OTHER FEDERAL, STATE, AND LOCAL REGULATIONS, TO ENSURE THE PUBLIC AND CONTRACTOR SAFETY.
3. PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS RESPONSIBLE FOR/TO:
   A. ENSURE COPIES OF ALL PERMITS AND APPROVALS ARE ON SITE FOR REVIEW.
   B. THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO SITE DISTURBANCE.
   C. ALL EXISTING UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE, SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.
   D. PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED DURING DEMOLITION ACTIVITIES.
   E. FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AND RELOCATION AS IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
   F. COORDINATE WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT OF THE AFFECTED PARTIES.
   G. A COMPLETE INSPECTION FOR CONTAMINANTS, BY A LICENSED ENVIRONMENTAL TESTING AGENCY, OF ALL BUILDINGS AND/OR STRUCTURES TO BE REMOVED SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS. ALL CONTAMINANTS SHALL BE REMOVED AND DISPOSED OF BY A FEDERALLY LICENSED CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. ALL ENVIRONMENTAL WORK INCLUDING HAZARDOUS MATERIAL SOILS, ASBESTOS, OR OTHER REFERENCED OR IMPLIED HEREIN IS SOLELY THE RESPONSIBILITY OF THE OWNER'S ENVIRONMENTAL CONSULTANT.
4. THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES AND ANY OTHER IMPROVEMENTS TO REMAIN ON OR OFF SITE.
5. IN ABSENCE OF SPECIFIC SPECIFICATION, THE CONTRACTOR SHALL PERFORM EARTH MOVING ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE IN ACCORDANCE WITH DIRECTION BY OWNER'S GEOTECHNICAL ENGINEER.
6. EXPLOSIVES SHALL NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
7. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL," AS WELL AS FEDERAL, STATE, AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS OR ROADWAY RIGHT-OF-WAYS.
8. CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
9. DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINES, WITHOUT WRITTEN PERMISSION OF THE OWNER, AND/OR APPROPRIATE GOVERNMENT AGENCY.
10. USE DUST CONTROL MEASURES TO LIMIT THE AMOUNT OF AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR TO WITHIN FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
11. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
12. THE DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
13. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF HIS ACTIVITIES. ALL REPAIRS SHALL USE NEW MATERIAL. THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION.
14. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES. CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF HAZARDOUS/UNSUITABLE MATERIAL OFFSITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND LAWS.
15. THE CONTRACTOR SHALL COORDINATE SERVICE SHUTOFF AND DISCONNECT/REMOVAL PROCEDURES WITH EACH RESPECTIVE UTILITY COMPANY FOR THE EXISTING UTILITIES SHOWN TO BE REMOVED.
16. THE DEMOLITION PLAN IS NOT INTENDED TO SHOW EROSION CONTROL MEASURES. FOR SUCH GUIDELINES AND DETAILS, SEE THE EROSION AND SEDIMENT CONTROL PLAN AND DETAILS.

EXISTING DATA SOURCES

1. SURVEY DATA:

   TOPOGRAPHIC AND PLANIMETRIC INFORMATION SHOWN HEREON IS TAKEN FROM A PLAN PREPARED BY ASH ASSOCIATES, INC. DATED 01/17/19 AND IS BASED ON FIELD SURVEY DATED DECEMBER 27, 2018.

   THE VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988. SITE BENCHMARK ELEVATION IS 451.89'.

   THE MERIDIAN UTILIZED FOR THIS PLAN IS BASED UPON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 - SOUTH ZONE.

2. WETLANDS / WATERS OF THE COMMONWEALTH / WATERS OF THE UNITED STATES:

   AN ON-SITE INVESTIGATION WAS PERFORMED BY WETLAND & ECOLOGY IN SEPTEMBER 2018 TO EVALUATE THE SITE FOR THE PRESENCE OF FRESHWATER WETLANDS, WATERS OF THE COMMONWEALTH, AND/OR WATERS OF THE UNITED STATES. NO WETLANDS, WATERS OF THE COMMONWEALTH, AND/OR WATERS OF THE UNITED STATES WERE FOUND. AN EPHEMERAL WATERCOURSE WAS FOUND TO THE NORTH OF THE PROPERTY

3. FLOODPLAINS:

   AS DEPICTED ON FEMA FLOOD INSURANCE RATE MAP (FIRM) #42017C0282J, EFFECTIVE DATE MARCH 16,2015, 100-YEAR FLOOD LIMITS ARE NOT CONTAINED WITHIN THE SUBJECT TRACT.

4. GEOLOGIC FORMATIONS:

   AS DERIVED FROM HTTP://SOILMAP.PSU.EDU IN SEPTEMBER 2018, THE SUBJECT TRACT HAS BEEN DETERMINED TO CONTAIN THE FOLLOWING FORMATIONS:

   LOCKTONG FORMATION

5. SOILS:

   SOILS DATA SHOWN HEREON TAKEN FROM THE SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR BUCKS COUNTY, PENNSYLVANIA, AS PREPARED FOR THE U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, DATED FEBRUARY 5, 2018. THE SOILS ON-SITE INCLUDE:

   ABB - ABBOTTSTOWN SILT LOAM, 3 TO 8 PERCENT SLOPES
   CWB - CROTON SILT LOAM, OCCASIONALLY PONDED, 3 TO 8 PERCENT SLOPES

6. UTILITY OWNER ONE CALL RESPONDERS:

   CROWN CASTLE

   COMCAST CABLE COMMUNICATIONS

   BUCKS COUNTY WATER AND SEWER

   PECO ENERGY

   PPL ELECTRIC UTILITIES CORPORATION

   PLUMSTEAD TOWNSHIP

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SERIAL NO. 20182602918

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
NO. PE082384

REV. NO.	DATE	REVISION
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0 GRAPHIC SCALE IN FEET

renew LAND DEVELOPMENT SOLUTIONS

EXISTING FEATURES / DEMOLITION NOTES & DETAILS

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER: 18015

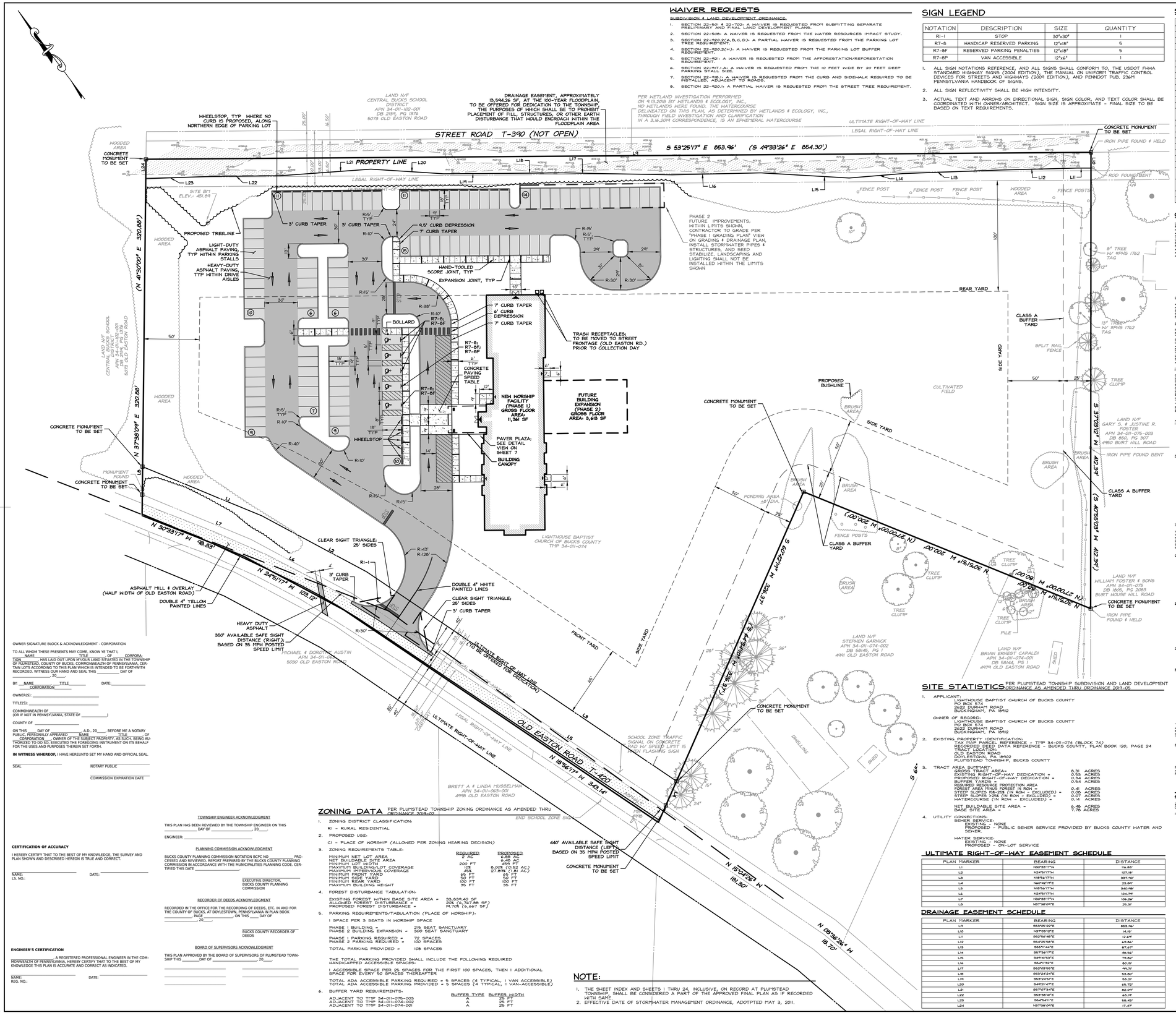
SCALE: AS NOTED

DRAWN BY: RDG

DESIGNED BY: RDG

DATE: 06/20/19

SHT NO. 5 of 24



WAIVER REQUESTS

SUBDIVISION & LAND DEVELOPMENT ORDINANCE:

1. SECTION 22-501 & 22-702: A WAIVER IS REQUESTED FROM SUBMITTING SEPARATE PRELIMINARY AND FINAL LAND DEVELOPMENT PLANS.
2. SECTION 22-508: A WAIVER IS REQUESTED FROM THE WATER RESOURCES IMPACT STUDY.
3. SECTION 22-920.2(A,B,C,D): A PARTIAL WAIVER IS REQUESTED FROM THE PARKING LOT TREE REQUIREMENT.
4. SECTION 22-920.2(H): A WAIVER IS REQUESTED FROM THE PARKING LOT BUFFER REQUIREMENT.
5. SECTION 22-921: A WAIVER IS REQUESTED FROM THE AFFORESTATION/REFORESTATION REQUIREMENT.
6. SECTION 22-917.1.A: A WAIVER IS REQUESTED FROM THE 10 FEET WIDE BY 20 FEET DEEP PARKING STALL SIZE.
7. SECTION 22-918.1: A WAIVER IS REQUESTED FROM THE CURB AND SIDEWALK REQUIRED TO BE INSTALLED, ADJACENT TO ROADS.
8. SECTION 22-920.1: A PARTIAL WAIVER IS REQUESTED FROM THE STREET TREE REQUIREMENT.

SIGN LEGEND

NOTATION	DESCRIPTION	SIZE	QUANTITY
R1-1	STOP	30"x30"	1
R7-8	HANDICAP RESERVED PARKING	12"x18"	5
R7-8F	RESERVED PARKING PENALTIES	12"x18"	5
R7-8P	VAN ACCESSIBLE	12"x6"	1

1. ALL SIGN NOTATIONS REFERENCE, AND ALL SIGNS SHALL CONFORM TO, THE USDOT FHWA STANDARD HIGHWAY SIGNS (2004 EDITION), THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (2004 EDITION), AND PENNDOT PUB. 236M PENNSYLVANIA HANDBOOK OF SIGNS.
2. ALL SIGN REFLECTIVITY SHALL BE HIGH INTENSITY.
3. ACTUAL TEXT AND ARROWS ON DIRECTIONAL SIGN, SIGN COLOR, AND TEXT COLOR SHALL BE COORDINATED WITH OWNER/ARCHITECT. SIGN SIZE IS APPROXIMATE - FINAL SIZE TO BE BASED ON TEXT REQUIREMENTS.

SITE LEGEND

EXISTING SYMBOL	DESCRIPTION	PROPOSED SYMBOL
	PROPERTY LINE	
o o •	IRON PIN, MONUMENT, NAIL	o o •
	BUILDING SETBACK LINE	
	BUILDING	
	BUILDING DOOR	
	CURB	
	CARTWAY/EDGE OF PAVEMENT	
	CONCRETE	
	ASPHALT PAVING (LIGHT DUTY)	
	ASPHALT PAVING (HEAVY DUTY)	
	ASPHALT MILL & OVERLAY	
	STRIPING	
	ACCESSIBLE PARKING	
	ULTIMATE RIGHT-OF-WAY	
--	SIGN	--
	WHEEL STOP	
	FENCE	
	MAILBOX	
	UTILITY POLE	
	GUY WIRE	
	TREE CANOPY LINE	
	STOP BAR	
	PEDESTRIAN CROSSWALK	
	TRAFFIC DIRECTION ARROWS	
	BOLLARD	•

OPERATION & MAINTENANCE

LIGHTHOUSE BAPTIST CHURCH, AS OWNER OF THE SITE, ITS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE OF ALL POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN AND NARRATIVE. ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES SHALL REMAIN IN PLACE AND SHALL BE MAINTAINED IN THE APPROVED DESIGN CONDITION. FACILITIES SHALL BE INSPECTED BY A QUALIFIED INSPECTOR AT LEAST ANNUALLY AND AFTER EVERY STORM EVENT EXCEEDING 1" BY A QUALIFIED INSPECTOR. SHALL OCCUR AT LEAST ANNUALLY. MONTHLY MONITORING FOR THE FIRST YEAR AFTER THE SITE HAS BEEN STABILIZED IS RECOMMENDED. IF RESTORATION ACTIVITIES ARE REQUIRED, A SCHEDULE INDICATING THE DATE WHEN THE RESTORATION ACTIVITIES WILL BE STARTED AND COMPLETED SHALL BE COMPLETED. INSPECTIONS SHALL, AT A MINIMUM, INCLUDE:

- INSPECTING FOR DAMAGE TO THE FACILITY OR ITS APPURTENANCES.
- INSPECT EMERGENCY AND EFFERGENCY SPILLWAY FOR EROSION, SEEPS OR LEAKS, FAILURE OF SLOPE PROTECTION OR RIPRAP AND ADEQUATE GROUND COVER.
- ENSURE THE EFFERGENCY SPILLWAY IS CLEAR OF OBSTRUCTIONS AND DEBRIS.
- INSPECT BASINS FOR SEDIMENT ACCUMULATION AND REMOVE IF NECESSARY.
- MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES.
- ENSURE INLET AND OUTLET DEVICES ARE FREE OF DEBRIS AND OPERATIONAL.
- INSPECT OUTFALLS FOR RIPRAP FAILURES AND SLOPE EROSION.
- INSPECT FACILITIES FOR UNDESIRABLE VEGETATIVE OR WOODY GROWTH.

OBSTRUCTIONS AND DEBRIS

ALL STORMWATER MANAGEMENT FACILITIES SHALL BE CLEARED OF ALL DEBRIS AND LITTER ON A REGULAR BASIS AND AFTER ALL MAJOR STORM EVENTS. ADDITIONALLY, FLOATING DEBRIS SHALL BE REMOVED, AND THE FACILITY SHALL BE INSPECTED FOR VISIBLE POLLUTION OR SHORELINE PROBLEMS, ERODED CHANNELS OR AREAS OF EXCESSIVE EROSION NEAR THE FACILITY SHALL BE BACKFILLED AND STABILIZED IMMEDIATELY.

SEDIMENT ACCUMULATION

MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES. REMOVE SEDIMENT IF STORAGE VOLUMES HAVE BEEN REDUCED SIGNIFICANTLY OR THE PROPER FUNCTIONING OF ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT FACILITIES AT LEAST ONCE EVERY 5 YEARS (OR EVERY 2 TO 10 YEARS FOR DRY DETENTION BASINS AND EVERY 5 TO 15 YEARS FOR WET POND FACILITIES) AND SHALL EITHER BE REMOVED FROM THE SITE OR DISPOSED OF ON-SITE AT AN APPROVED DISPOSAL AREA. MAINTENANCE OF CATCH BASINS AND INLETS IS BEST DONE MONTHLY WITH A VACUUM TRUCK. DISPOSAL OF SEDIMENT MUST BE PERFORMED IN ACCORDANCE WITH STATE AND LOCAL ENVIRONMENTAL REQUIREMENTS. PRIOR TO ON-SITE DISPOSAL OF SEDIMENT, THE OWNER SHALL ACQUIRE THE APPROPRIATE EARTH DISTURBANCE PERMITS FROM THE MUNICIPALITY AND/OR THE CONSERVATION DISTRICT.

INFILTRATION FACILITIES

OBSERVATIONS SHALL BE MADE TO DETERMINE THE LENGTH OF TIME NEEDED FOR RETAINED WATER TO BE INFILTRATED INTO THE SOIL AND TO ENSURE THAT DRAWDOWN OBSERVATIONS ARE MADE BY READING THE WATER LEVEL IN THE INLET BOX(ES) OF THE UNDERGROUND SYSTEM(S) SEVERAL TIMES OVER A PERIOD OF TWO (2) DAYS AFTER A LARGE STORM EVENT. THE FIRST OBSERVATIONS SHALL OCCUR SHORTLY AFTER THE STORM EVENT TO VERIFY THAT WATER IS NOT BACKED UP INTO THE UNDERGROUND SYSTEM. THE SECOND OBSERVATION SHALL OCCUR IN THE EVENT OF 0.5-INCHES OR MORE OF MONTHLY, AS DETERMINED BY LOCAL WEATHER CONDITIONS, AT A MINIMUM, OBSERVATIONS SHALL BE MADE TWICE THE FIRST YEAR AND YEARLY THEREAFTER. IF INFILTRATION FACILITIES ARE NOT DEWATERING WITHIN 72 HOURS MAKE CERTAIN THAT THE SOIL HAS NOT BECOME CLOGGED WITH SEDIMENT AND THAT THE INFILTRATION FACILITY IS NOT DEWATERING CONTRARY TO THE DESIGN. IN THE EVENT THE FACILITY IS NOT DEWATERING CONTACT THE DESIGN ENGINEER, FOR APPROVED CORRECTIVE MEASURES OR ALTERNATIVE BMP INSTALLATION.

AT A MINIMUM, OPERATION AND MAINTENANCE PROCEDURES FOR INFILTRATION BEDS SHALL INCLUDE:

- ALL CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST 2 TIMES PER YEAR.
- THE OVERLYING VEGETATION OF SUBSURFACE INFILTRATION FEATURES SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE.
- VEHICULAR ACCESS ON SUBSURFACE INFILTRATION AREAS SHOULD BE PROHIBITED, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. IF ACCESS IS NEEDED, USE OF PORTABLE, TURF REINFORCEMENT SHOULD BE CONSIDERED.

MANAGED RELEASE CONCEPT BASIN

- UPGRADIENT CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED ANNUALLY, OR MORE OFTEN IF HISTORICAL MAINTENANCE RECORDS SUGGEST A MORE FREQUENT CLEANING.
- THE VEGETATION (FOR THE MRC BMP AND CONTRIBUTING DRAINAGE AREA) SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED.
- CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. MOW ONLY AS FREQUENTLY AS NEEDED.
- INSPECT AT LEAST TWO TIMES PER YEAR AFTER RUNOFF EVENTS GREATER THAN 0.5 INCH AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN THE DESIGN PARAMETERS ESTABLISHED. A PROFESSIONAL ENGINEER SHOULD CLEARLY IDENTIFY WHAT THESE PARAMETERS ARE.
- AT LEAST TWO TIMES PER YEAR, OR MORE IF HISTORICAL MAINTENANCE INDICATE IT IS NECESSARY, INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION OF SIDE SLOPES, WATER CONTAMINATION/SPILLS, AND INSTABILITY. LEAF AND DEBRIS SHOULD BE REMOVED FROM THE SURROUNDING AREAS AT LEAST ANNUALLY.
- IF NEEDED, REMOVE ACCUMULATED SEDIMENT AS REQUIRED TO MAINTAIN INFILTRATION THROUGH THE RECS SOIL MEDIA AND TO MAINTAIN WATER QUALITY FUNCTIONALITY. RESTORE ORIGINAL CROSS SECTION, PROPERLY DISPOSE OF SEDIMENT.

VEGETATED AREAS

VEGETATED AREAS SHALL BE MAINTAINED WITH A MINIMUM UNIFORM VEGETATIVE 70% PERENNIAL COVER AND SHALL NOT BE ALLOWED TO BECOME A NUISANCE DUE TO WEEDS OR OTHER UNDESIRABLE VEGETATION. VEGETATED AREAS THAT HAVE BUT MUST BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. AN ANCHORING METHOD SHOULD THEN BE USED TO HOLD SEED AND MULCH IN PLACE. THIS IS ESPECIALLY IMPORTANT AROUND WATER COURSES, IN SWALES, IN AREAS OF CONCENTRATED FLOWS, AND ON STEEP SLOPES.

OUTLET STRUCTURES:

- DURING LOW WATER CONDITIONS, CONCRETE SPILLWAY STRUCTURES SHALL BE INSPECTED TO DETERMINE THE CONDITION OF THE CONCRETE AND THE JOINTS ON BOTH SIDES OF THE WEIR. CONCRETE SHALL TO IDENTIFY ANY CRACKS, SPALLING, BROKEN OR LOOSE SECTIONS. ANY CRACKED, SPALLED, BROKEN OR LOOSE SECTIONS SHALL BE CLEANED AND REPLACED WITH AN APPROPRIATE CONCRETE PATCHING MATERIAL. A PROFESSIONAL ENGINEER SHALL BE CONSULTED TO REPAIR EXTENSIVE LEAKAGE, SPALLS OR FRACTURES.
- ANY REPAIRS MADE TO THE PRINCIPAL SPILLWAY (RISER OR BARREL) SHALL BE REVIEWED BY A PROFESSIONAL ENGINEER. VERTICAL TRENCHING TO EXPOSE THE BARREL SHALL NOT BE ALLOWED UNDER ANY CIRCUMSTANCES. THE TRENCH SIDE SLOPES SHALL BE STEPPED BACK AT A 2:1 SLOPE, MINIMUM.

EARTH EMBANKMENT:

- ALL ANIMAL BURROWS SHALL BE BACKFILLED AND COMPACTED AND BURROWING ANIMALS SHALL BE REMOVED FROM THE AREA.
- ALL TREES, WOODY VEGETATION, AND OTHER DEEP-ROOTED GROWTH, INCLUDING STUMPS AND ASSOCIATED ROOT SYSTEMS, SHALL BE REMOVED FROM THE EMBANKMENT TOE AND ABUTMENT CONTACTS. THE ROOT SYSTEMS SHALL BE EXTRACTED AND THE EXCAVATED AREAS BACKFILLED AND COMPACTED WITH MATERIAL SIMILAR TO THE SURROUNDING EARTH. ALL TREES AND SIGNIFICANT WOODY GROWTH WITHIN THE EMBANKMENT - ANY VINE COVER AND BRUSH SHALL BE REMOVED FROM THE EMBANKMENT TO ALLOW FOR INSPECTIONS.

SOIL AMENDMENTS:

- THE SOIL RESTORATION PROCESS MAY NEED TO BE REPEATED OVER TIME DUE TO COMPACTION BY USE AND/OR SETTLING. SEE SOIL AMENDMENT DETAIL FOR COMPACTION REMEDIATION AND REINSTALLATION OF SOIL AMENDMENTS.

RE-VEGETATE AND RE-FOREST DISTURBED AREAS:

- WOODLAND AREAS PLANTED WITH PROPER COVER CROP MAY REQUIRE ANNUAL MOWING IN ORDER TO CONTROL INVASIVE SPECIES.
- APPLICATION OF A CAREFULLY SELECTED HERBICIDE AROUND THE PROTECTIVE TREE SHELTERS/TUBES MAY BE NECESSARY. REINFORCEMENT OF SELECTED NON-NATIVE SPECIES MAY BE NECESSARY. SUPPLEMENTAL IRRIGATION MAY BE NECESSARY FOR THE FIRST 2 TO 3 YEARS OF GROWTH AND MAY BE NECESSARY FOR UP TO 5 YEARS, UNTIL TREE GROWTH AND TREE CANOPY BEGINS TO FORM, NATURALLY INHIBITING WEED GROWTH.
- REPLANTING OF THE WOODLAND SHOULD BE UNDERTAKEN INTERMITTENTLY TO DETERMINE IF REPLACEMENT TREES SHOULD BE PROVIDED.
- A SEASONAL MOWING OF MEADOW MAY BE REQUIRED, ALTHOUGH CARE MUST BE TAKEN TO MAKE SURE THAT ANY MANAGEMENT IS COORDINATED WITH ESSENTIAL RESEEDING AND OTHER IMPORTANT ASPECTS OF PLANTATION RE-ESTABLISHMENT.

THE OWNERS, HEIRS, AND/OR ASSIGNS OF THE PROJECT SITE SHALL MAINTAIN OWNERSHIP OF AND BE RESPONSIBLE FOR THE MAINTENANCE OF THE STORM SEWER SYSTEM AND DETENTION FACILITY. IN THE EVENT SAID OWNERS, HEIRS, AND/OR ASSIGNS FAIL TO PROPERLY MAINTAIN THE FACILITY, THE TOWNSHIP SHALL PERFORM THE NECESSARY WORK OR MAINTENANCE AT THE EXPENSE OF THE OWNERS AFTER PROPER NOTIFICATION OF THE OWNERS.

EROSION AND SEDIMENTATION POLLUTION CONTROL SPECIALISTS' CONTACTS:

BUCKS COUNTY CONSERVATION DISTRICT: (215) 345-7577

PADEP SOUTHEAST REGIONAL OFFICE: (484) 250-5900

FOR ADDITIONAL INFORMATION REGARDING MAINTENANCE OF SPECIFIC STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES, SEE THE PENNSYLVANIA STORMWATER BEST MANAGEMENT PRACTICES MANUAL, DEP DOCUMENT NUMBER 363-0300-002.

ZONING VARIANCE GRANTED (04/21/2017)

ZONING ORDINANCE
AS AMENDED THROUGH ORDINANCE NO. 01-09-18-1, DATED 09/18/2001)

1. SECTIONS 27-202 AND 27-602 - A CONDITIONAL USE ZONING VARIANCE HAS GRANTED TO ALLOW A CHURCH USE (1) WITHIN THE R1 - RURAL RESIDENTIAL ZONING DISTRICT; SUBJECT TO THE PRIOR CONSTRUCTION OF THE EASTBOUND ROAD IMPROVEMENTS; SUBJECT TO THE FOLLOWING ELEVEN (11) CONDITIONS PROPOSED BY THE ZONING HEARING BOARD:
   - 1.1. THE CHURCH SHALL NOT CONDUCT (AS AGREED UPON BY THE APPLICANT) ANY SCHOOL OR DAYCARE PROGRAM (OTHER THAN THE CUSTOMARY SUNDAY SCHOOL SERVICES ON SUNDAY MORNINGS).
   - 1.2. THE CHARACTER OF THE USE SHALL BE CONSISTENT WITH THE ACTIVITIES AND SCHEDULE DESCRIBED AT THE HEARING AND AS NOTED IN DETAIL ABOVE.
   - 1.3. THE SEATING CAPACITY OF THE AUDITORIUM SHALL NOT EXCEED CAPACITY FOR 300 PEOPLE.
   - 1.4. NO PARKING SHALL BE APPROPRIATE AND CONSISTENT WITH THE RESIDENTIAL CHARACTER OF THE NEIGHBORHOOD.
   - 1.5. THE ARCHITECTURAL DESIGN OF THE CHURCH BUILDING SHALL BE APPROPRIATE AND CONSISTENT WITH THE RESIDENTIAL CHARACTER OF THE NEIGHBORHOOD.
   - 1.6. THE APPLICANT SHALL COMPLY WITH THE SETBACK REQUIREMENTS OF THE ORDINANCE
   - 1.7. THE APPLICANT SHALL PROVIDE ADDITIONAL BUFFER PLANTINGS, INCLUDING THE EXISTING TREES TO BE PRESERVED, ALONG EAST OLD EASTON ROAD TO THE NORTH AND EASTERN PROPERTY LINES, SUBJECT TO REVIEW AND APPROVAL OF TOWNSHIP PERSONNEL WITH THE INTENT TO SHIELD THE USE FROM NEIGHBORING RESIDENTIAL PROPERTIES.
   - 1.8. OUTSIDE LIGHTING SHALL BE DESIGNED TO MITIGATE AGAINST LIGHT "POLLUTION" AND THE LIGHTING/LIGHTING PLAN SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF TOWNSHIP PERSONNEL.
   - 1.9. THE LOCATION OF THE ACCESS DRIVE SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE TOWNSHIP ENGINEER TO INSURE SAFE INGRESS AND EGRESS FROM THE PROPERTY, AND TO MINIMIZE THE IMPACT UPON NEIGHBORS IMMEDIATELY ACROSS OLD EASTON ROAD.
   - 1.10. THE APPLICANT SHALL PROCEED WITH THE REQUIRED CONDITIONAL USE APPLICATION TO THE TOWNSHIP UNLESS SUCH APPLICATION OR SUBMISSION IS WAIVED BY THE TOWNSHIP BOARD OF SUPERVISORS.
   - 1.11. THE APPLICANT SHALL FILE A LAND DEVELOPMENT PLAN WITH THE TOWNSHIP NO LATER THAN THREE YEARS FROM THE DATE OF THIS WRITTEN DECISION, OTHERWISE PURSUANT TO SECTION 27-2101 THE VARIANCES GRANTED SHALL EXPIRE.

   THE APPLICANT IS FURTHER SUBJECT TO THE FOLLOWING SEVEN (7) CONDITIONS RECOMMENDED BY THE TOWNSHIP PLANNING COMMISSION ON 06/15/17:

   A. THE APPLICANT SHALL COMPLY WITH ALL THE CONDITIONS AND RESTRICTIONS SET FORTH IN THE APRIL 21, 2017 ZONING HEARING BOARD DECISION.
   B. THE APPLICANT SHALL SUPPLEMENT THE BUFFER PLANTINGS ALONG THE FRONTAGE OF OLD EASTON ROAD AND ALONG THE SIDES OF THE PROPERTY THAT ABUT RESIDENTIAL PROPERTIES, ALL IN A MANNER AND FORM ACCEPTABLE TO THE TOWNSHIP AND CONSISTENT WITH THE CONDITIONAL USE PLAN PRESENTED TO THE TOWNSHIP.
   C. THE LAND DEVELOPMENT PLAN, AS WHEN SUBMITTED, SHALL BE GENERALLY CONSISTENT WITH THE CONDITIONAL USE PLAN PRESENTED TO THE TOWNSHIP.
   D. THE APPLICANT SHALL AGREE TO AN EASEMENT OVER, THRU, AND/OR ALONG THE APPLICANT'S PROPERTY IF DEEMED NECESSARY BY THE TOWNSHIP TO ADDRESS THE NEEDS OF THE TOWNSHIP'S TRAILS.
   E. THE APPLICANT SHALL COMPLY WITH ALL ZONING ORDINANCE REQUIREMENTS, UNLESS OTHERWISE GRANTED RELIEF, AND THE REQUIREMENTS OF THE SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AND THE STATE OF LAND DEVELOPMENT.
   F. THE APPLICANT SHALL SUBMIT FINAL SITE PLANS AND ENGINEERED PLANS SHALL BE PROVIDED AND COMPLIED WITH AT THE TIME OF LAND DEVELOPMENT APPLICATION AS DESCRIBED WITHIN THE ABOVE-REFERENCED ZONING HEARING BOARD DECISION.
   G. THE APPLICANT SHALL AGREE TO, EXECUTE, AND RECORD AGAINST THE PROPERTY A DECLARATION OF RESTRICTIONS AND COVENANTS, IN FORM AND CONTENT SATISFACTORY TO THE SOLICITOR, WHICH SHALL CONTAIN THE REQUIREMENTS AND CONDITIONS SET FORTH HEREIN AND/OR IN THE ABOVE-REFERENCED ZONING HEARING BOARD DECISION

ZONING DATA PER PLUMSTEAD TOWNSHIP ZONING ORDINANCE AS AMENDED THRU ORDINANCE 2019-05

1. ZONING DISTRICT CLASSIFICATION:
   - R1 - RURAL RESIDENTIAL
2. PROPOSED USE:
   - CI - PLACE OF WORSHIP (ALLOWED PER ZONING HEARING DECISION)
3. ZONING REQUIREMENTS TABLE:

	REQUIRED	PROPOSED
MINIMUM NET LOT AREA	2 AC	8.58 AC
NET BUILDABLE SITE AREA		6.48 AC
MINIMUM LOT WIDTH	200 FT	412.29 FT
MAXIMUM BUILDING/LOT COVERAGE	10%	8.00% (0.52 AC)
MAXIMUM IMPERVIOUS COVERAGE	45%	27.84% (1.81 AC)
MINIMUM FRONT YARD	65 FT	65 FT
MINIMUM SIDE YARD	50 FT	50 FT
MINIMUM REAR YARD	100 FT	100 FT
MAXIMUM BUILDING HEIGHT	35 FT	35 FT

4. FOREST DISTURBANCE TABULATION:

EXISTING FOREST WITHIN BASE SITE AREA =	33,539.40 SF
ALLOWED FOREST DISTURBANCE =	25% (+/-70,788 SF)
PROPOSED FOREST DISTURBANCE =	19,705 (+/-6,667 SF)

5. PARKING REQUIREMENTS/TABULATION (PLACE OF WORSHIP):

   1 SPACE PER 3 SEATS IN WORSHIP SPACE

PHASE 1 BUILDING =	225 SEAT SANCTUARY
PHASE 2 BUILDING EXPANSION =	300 SEAT SANCTUARY
PHASE 1 PARKING REQUIRED =	72 SPACES
PHASE 2 PARKING REQUIRED =	100 SPACES
TOTAL PARKING PROVIDED =	108 SPACES

   THE TOTAL PARKING PROVIDED SHALL INCLUDE THE FOLLOWING REQUIRED HANDICAPPED ACCESSIBLE SPACES:

   1 ACCESSIBLE SPACE PER 25 SPACES FOR THE FIRST 100 SPACES, THEN 1 ADDITIONAL SPACE FOR EVERY 50 SPACES THEREAFTER

   TOTAL ADA ACCESSIBLE PARKING REQUIRED = 5 SPACES (4 TYPICAL, 1 VAN ACCESSIBLE)
   TOTAL ADA ACCESSIBLE PARKING PROVIDED = 5 SPACES (4 TYPICAL, 1 VAN-ACCESSIBLE)

6. BUFFER YARD REQUIREMENTS:

	BUFFER TYPE	BUFFER WIDTH
ADJACENT TO TMP 34-011-075-003	A	25 FT
ADJACENT TO TMP 34-011-074-002	A	25 FT
ADJACENT TO TMP 34-011-074-001	A	25 FT

NOTE:

1. THE SHEET INDEX AND SHEETS 1 THRU 24, INCLUSIVE, ON RECORD AT PLUMSTEAD TOWNSHIP, SHALL BE CONSIDERED A PART OF THE APPROVED FINAL PLAN AS IF RECORDED WITH SAME.
2. EFFECTIVE DATE OF STORMWATER MANAGEMENT ORDINANCE, ADOPTED MAY 3, 2011.

SITE STATISTICS PER PLUMSTEAD TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AS AMENDED THRU ORDINANCE 2019-05

1. APPLICANT:
   LIGHTHOUSE BAPTIST CHURCH OF BUCKS COUNTY
   PO BOX 574
   2622 DURHAM ROAD
   BUCKINGHAM, PA 18912

   OWNER OF RECORD:
   LIGHTHOUSE BAPTIST CHURCH OF BUCKS COUNTY
   PO BOX 574
   2622 DURHAM ROAD
   BUCKINGHAM, PA 18912
2. EXISTING PROPERTY IDENTIFICATION:
   RECORDED DEED DATA REFERENCE - TMP 34-011-074 (BLOCK 74)
   RECORDED DEED DATA REFERENCE - BUCKS COUNTY, PLAN BOOK 120, PAGE 24
   TRACT LOCATION:
   OLD EASTON ROAD
   DOYLESTOWN, PA 18902
   PLUMSTEAD TOWNSHIP, BUCKS COUNTY
3. TRACT AREA SUMMARY:

GROSS TRACT AREA=	8.31	ACRES
EXISTING RIGHT-OF-WAY DEDICATION =	0.53	ACRES
PROPOSED RIGHT-OF-WAY DEDICATION =	0.34	ACRES
BUFFER YARDS =	0.54	ACRES
REQUIRED RESOURCE PROTECTION AREA		
FOREST AREA (NOT FOREST IN ROW =	0.41	ACRES
STEEP SLOPES 15%-25% (IN ROW = EXCLUDED) =	0.08	ACRES
STEEP SLOPES >25% (IN ROW = EXCLUDED) =	0.07	ACRES
WATERCOURSE (IN ROW = EXCLUDED) =	0.14	ACRES
NET BUILDABLE SITE AREA =	6.48	ACRES
BASE SITE AREA =	7.78	ACRES

4. UTILITY CONNECTIONS:
   SEWER SERVICE:
   - EXISTING - NONE
   - PROPOSED - PUBLIC SEWER SERVICE PROVIDED BY BUCKS COUNTY WATER AND SEWER

   WATER SERVICE:
   - EXISTING - NONE
   - PROPOSED - ON-LOT SERVICE

ULTIMATE RIGHT-OF-WAY EASEMENT SCHEDULE

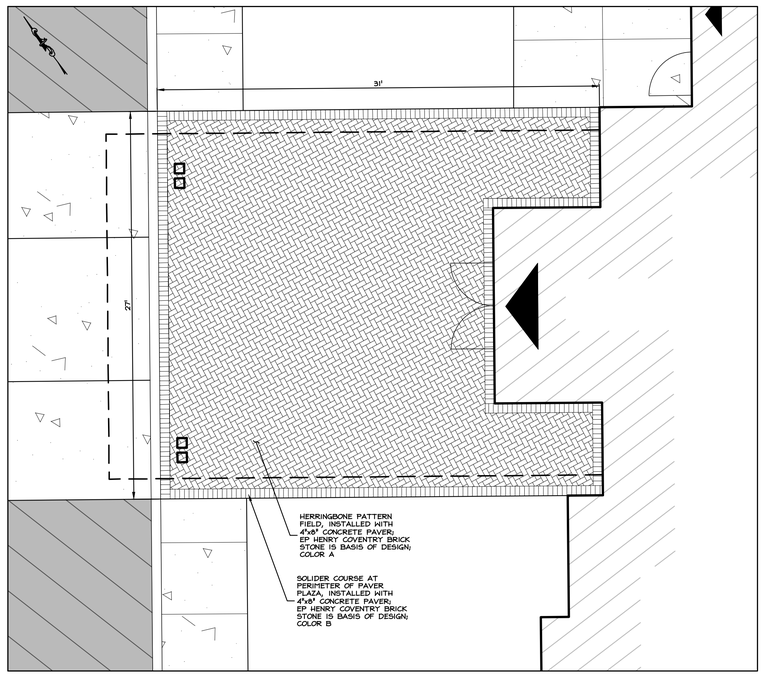
PLAN MARKER	BEARING	DISTANCE
L1	N30°33'17"W	98.83'
L2	N24°51'17"W	107.19'
L3	N18°56'17"W	357.90'
L4	N60°40'17"E	25.84'
L5	N18°56'17"W	340.98'
L6	N24°51'17"W	104.79'
L7	N30°33'17"W	106.26'
L8	N37°38'09"E	29.31'

DRAINAGE EASEMENT SCHEDULE

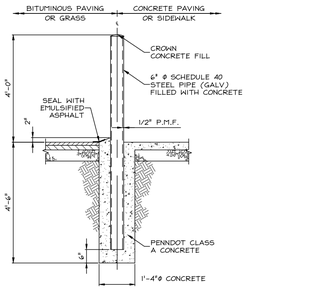
PLAN MARKER	BEARING	DISTANCE
L9	N59°35'29"E	853.76'
L10	N70°03'12"E	14.15'
L11	S52°54'48"E	12.69'
L12	S54°25'58"E	64.86'
L13	S55°11'44"E	87.67'
L14	S57°36'17"E	48.56'
L15	S49°41'53"E	74.82'
L16	S54°17'52"E	80.91'
L17	S52°03'55"E	99.71'
L18	S53°24'24"E	53.80'
L19	S53°24'51"E	53.21'
L20	S49°21'47"E	65.72'
L21	S57°07'34"E	62.09'
L22	S61°38'47"E	63.31'
L23	S64°54'11"E	58.45'
L24	N37°38'09"E	17.47'

OWNER SIGNATURE BLOCK & ACKNOWLEDGMENT - CORPORATION

TO ALL WHOM THESE PRESENTS MAY COME, KNOW YE



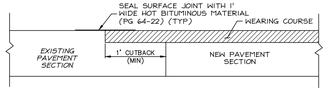
PAVER PLAZA DETAIL VIEW
SCALE: 1" = 5'



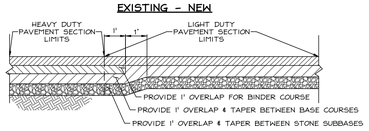
NOTES:

1. PREPARE AND PRIME GALVANIZED BOLLARDS IN ACCORDANCE WITH SHERWIN-WILLIAMS EXTERIOR PAINTING SPECIFICATION OR APPROVED EQUAL.
2. PREPARE AND APPLY EXTERIOR ALKYD GLOSS YELLOW PAINT IN ACCORDANCE WITH SHERWIN-WILLIAMS EXTERIOR PAINTING SPECIFICATION OR APPROVED EQUAL.

BOLLARD - PIPE
NOT TO SCALE



EXISTING - NEW

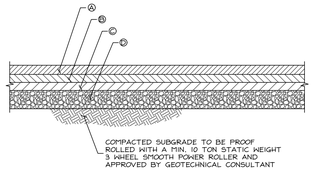


HEAVY DUTY - LIGHT DUTY

NOTES:

1. SEE DETAILED PAVEMENT SECTIONS FOR ADDITIONAL SECTION INFORMATION.

PAVEMENT TRANSITIONS
NOT TO SCALE



NOTES:

1. SEE PAVEMENT LEGEND FOR DESCRIPTIONS OF A, B, C, & D.

PAVEMENT - FLEXIBLE
NOT TO SCALE

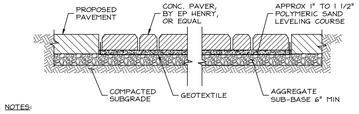
LIGHT-DUTY PAVING SECTION:

- (A) SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, PG 64-22, 0.0 TO <0.3 MILLION DESIGN ESALS, 9.5 MM MIXTURE, 1 1/2" DEPTH, SRL H
- (B) NOT APPLICABLE
- (C) SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BASE COURSE, PG 64-22, 0.0 TO <0.3 MILLION DESIGN ESALS, 25 MM MIXTURE, 3" DEPTH OR MATCH EXISTING (WHICHEVER IS GREATER)
- (D) SUBBASE (PENNDOT NO. 2A) 8" DEPTH OR MATCH EXISTING (WHICHEVER IS GREATER)

HEAVY-DUTY PAVING SECTION / PAVING WITHIN MUNICIPAL ROW:

- (A) SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, PG 64-22, 0.0 TO <0.3 MILLION DESIGN ESALS, 9.5 MM MIXTURE, 1 1/2" DEPTH, SRL H
- (B) SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BINDER COURSE, PG 64-22, 0.0 TO <0.3 MILLION DESIGN ESALS, 19.0 MM MIXTURE, 2" DEPTH
- (C) SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BASE COURSE, PG 64-22, 0.0 TO <0.3 MILLION DESIGN ESALS, 25 MM MIXTURE, 4" DEPTH OR MATCH EXISTING (WHICHEVER IS GREATER)
- (D) SUBBASE (PENNDOT NO. 2A) 8" DEPTH OR MATCH EXISTING (WHICHEVER IS GREATER)

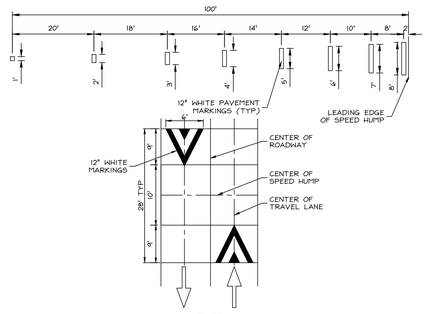
PAVEMENT LEGEND
NOT TO SCALE



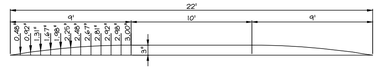
NOTES:

1. BASIS OF DESIGN IS COVENTRY BRICK PAVER, BY EP HENRY.
2. CONTRACTOR TO SUBMIT PRODUCT LITERATURE, INCLUDING COLOR SAMPLES, FOR APPROVAL BY RENEW DESIGN, PRIOR TO INSTALLATION.

PAVER - CONCRETE
NOT TO SCALE

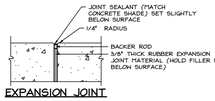


PLAN



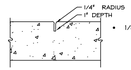
PROFILE

SPEED TABLE
NOT TO SCALE



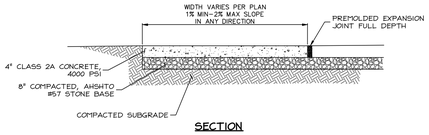
- PLACE 20' ON CENTER (MAX.) OR AS SHOWN ON PLANS.
- PLACE WHERE SIDEWALK ABUTS OTHER CONCRETE OR FIXED FEATURES (BUILDINGS, CURBS, ETC.)

EXPANSION JOINT



- 1/8" THICK TROWELED CONTROL JOINT

CONTROL JOINT



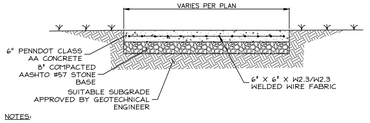
SECTION

NOTES:

1. ALL CONCRETE MUST BE AIR-ENTRAINED
2. CONCRETE INSTALLED DURING COLD-WEATHER CONDITIONS SHALL BE 5,000 PSI (28-DAY STRENGTH).
3. CONCRETE SHALL BE LIGHT BROOM FINISH, PERPENDICULAR TO DIRECTION OF TRAVEL.
4. CONTROL JOINTS SHALL BE IN LOCATIONS AS SHOWN ON PLAN EVERY 5'-7' ON CENTER IF NOT SHOWN
5. EXPANSION JOINTS SHALL BE PLACED IN LOCATIONS AS SHOWN ON PLAN OR EVERY 20' O.C. IF NOT SHOWN
6. ALL EXPOSED CONCRETE SHALL BE SEALED WITH AGURON CPT-2000 OR APPROVED EQUAL.
7. EXISTING CONCRETE TO BE REMOVED, ADJACENT TO EXISTING CONCRETE TO REMAIN, SHALL BE SAW CUT FULL DEPTH AT AN EXISTING CONTROL JOINT.
8. FOR USE WITHIN PEDESTRIAN TRAVEL AREAS.

IN PEDESTRIAN AREAS ONLY

PAVING - CONCRETE
NOT TO SCALE



NOTES:

1. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408.
2. ALL EXPOSED CONCRETE SHALL BE SEALED WITH AGURON CPT-2000 OR APPROVED EQUAL.
3. FOR USE WITHIN VEHICULAR TRAVEL AREAS. CLASS AA MINIMUM.

IN VEHICULAR AREAS ONLY

PAVING - CONCRETE
NOT TO SCALE

NOTES:

1. A PROFESSIONAL LAND SURVEYOR (PLS), LICENSED IN THE STATE OF THE PROJECT, SHALL INSTALL ALL PROPOSED MONUMENTATION INDICATED ON THE PLANS.
2. ACCURACY SHALL BE WITHIN 3/100 OF A FOOT.
3. MONUMENTS SHALL BE PLACED IN THE GROUND AFTER FINAL GRADING HAS BEEN COMPLETED.
4. A LETTER FROM THE PROFESSIONAL LAND SURVEYOR, STATING THAT ALL MONUMENTATION HAS BEEN INSTALLED PER PLAN AND MEET THE ACCURACY REQUIRED, SHALL BE SUBMITTED TO THE MUNICIPALITY.

SURVEY MONUMENTATION
NOT TO SCALE

GENERAL NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS, SPECIFICATIONS, AND REFERENCED DOCUMENTS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DRAWINGS AND DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS, SPECIFICATIONS, AND REFERENCED DOCUMENTS IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.
2. ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVEGROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL AND VERTICAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF THE PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974, AS AMENDED BY ACT 181 OF 2006, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. PA LAW REQUIRES THREE WORKING DAYS NOTICE FOR CONSTRUCTION PHASE. CALL THE PA ONE CALL SYSTEM AT 1-800-242-1776.
3. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS BY ALL OF THE PERMITTING AUTHORITIES.
4. ALL MATERIALS, PLANS, SPECIFICATIONS, AND REPORTS REFERENCED ARE TO BE CONSIDERED PART OF THE DESIGN DOCUMENTS. THE GENERAL CONTRACTOR IS RESPONSIBLE TO REVIEW ALL DOCUMENTS AND SHALL NOTIFY THE ENGINEER IMMEDIATELY IN WRITING IF ANY CONFLICTS OR DISCREPANCIES ARE DISCOVERED.
5. ALL APPLICABLE PROPOSED STRUCTURES AND FACILITIES SHALL COMPLY WITH "THE AMERICAN DISABILITIES ACT", "ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES", AND "THE PENNSYLVANIA UNIVERSAL ACCESSIBILITY ACT".
6. THIS PLAN SHALL NOT BE USED FOR BUILDING STAKEOUT PURPOSES. PROPOSED BUILDING LOCATION AS DEPICTED IS WITHIN ACCEPTABLE TOLERANCES FOR SITE WORK ONLY. PLEASE REFER TO ARCHITECTURAL/STRUCTURAL PLANS FOR EXACT BUILDING PLACEMENT.
7. THE BUILDING FOOTPRINTS DEPICTED HEREON HAVE BEEN TRANSPOSED FROM ARCHITECTURAL PLANS. FINAL BUILDING DIMENSIONS MAY VARY BUT SHALL ULTIMATELY CONFORM TO ALL APPLICABLE ZONING SETBACKS, IMPERVIOUS SURFACE COVERAGE RATIOS, ETC. FINAL BUILDING FOOTPRINTS WHICH SUBSTANTIALLY VARY FROM THE FOOTPRINTS HEREON SHALL BE SUBMITTED TO THE MUNICIPAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO REQUESTING A BUILDING PERMIT.
8. THE AREA WITHIN THE PROPOSED RIGHTS-OF-WAY OF OLD EASTON ROAD, OLD EASTON ROAD AND/OR THE PROPOSED ROAD(S) WITHIN THE DEVELOPMENT ARE HEREBY OFFERED FOR DEDICATION TO THE GOVERNING BODY HAVING JURISDICTION AT THE TIME OF PLAN RECORDING. OFFER OF DEDICATION TO THE ULTIMATE RIGHT-OF-WAY LINE SHALL RUN ON IN PERPETUITY IN FAVOR OF THE APPLICABLE GOVERNING AGENCY HAVING JURISDICTION AT THE TIME OF DEDICATION.
9. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH PENNDOT "PUBLICATION 408", LATEST EDITION, AND MUNICIPAL STANDARDS AND SPECIFICATIONS, WHICHEVER IS MORE RESTRICTIVE.
10. CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS AND COMPLETE ALL WORK INDICATED OR IMPLIED ON THE PROJECT PLANS AND/OR SPECIFICATIONS THAT ARE NOT EXISTING ON THE PROJECT SITE AND THAT ARE NOT SPECIFICALLY NOTED AS 'FUTURE' OR 'NOT IN CONTRACT (NIC)', 'BY OTHERS', OR 'BY OTHER CONTRACTORS'.
11. THE OWNERS, HEIRS, AND/OR ASSIGNS OF THE PROJECT SITE SHALL MAINTAIN OWNERSHIP OF AND BE RESPONSIBLE FOR THE MAINTENANCE OF THE STORM SEWER SYSTEM AND DETENTION FACILITY. IN THE EVENT SAID OWNERS, HEIRS, AND/OR ASSIGNS FAIL TO PROPERLY MAINTAIN SAID FACILITIES, THE MUNICIPALITY SHALL HAVE THE RIGHT TO PERFORM SAID MAINTENANCE AT THE EXPENSE OF THE OWNERS AFTER PROPER NOTIFICATION OF THE OWNERS.
12. THE OWNER/CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR ANY/ALL CERTIFICATIONS, INSPECTIONS, ETC. REQUIRED BY ALL GOVERNING JURISDICTIONAL AGENCIES DURING AND AFTER CONSTRUCTION FOR SIGN-OFF AND CERTIFICATE OF OCCUPANCY ISSUANCE INCLUDING BUT NOT LIMITED TO PROCUREMENT OF SERVICES, SCHEDULING OF FIELD OPERATIONS AND COORDINATION WITH REPRESENTATIVES OF THE APPROPRIATE PARTIES. CONTRACTOR IS RESPONSIBLE TO COORDINATE CERTIFICATIONS, SIGN-OFFS, ETC. NECESSARY FOR JOB CLOSEOUT AND ISSUANCE OF CERTIFICATE OF OCCUPANCY.
13. THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND IN CASE OF CONFLICT SHALL TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY SUCH DISCREPANCY BETWEEN GEOTECHNICAL REPORT AND PLANS, ETC.
14. THE PROPERTY SURVEY AS CERTIFIED SHALL BE CONSIDERED A PART OF THESE PLANS.
15. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO OUR OFFICE AT THE TIME OF PLAN PREPARATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE ENGINEER IN WRITING IF ACTUAL SITE CONDITIONS DIFFER FROM THAT SHOWN ON THE PLAN, OR IF THE PROPOSED WORK WOULD BE INHIBITED BY ANY OTHER EXISTING SITE FEATURES.
16. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
17. RAMPS ARE SHOWN WITH ARROWS POINTING DOWN THE SLOPE OF THE RAMP.
18. SPOT ELEVATIONS ALONG CURB LINES REPRESENT THE ELEVATION AT THE BOTTOM OF THE CURB LINE UNLESS NOTED OTHERWISE.
19. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL/BUILDING PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY LOCATIONS AND SITE LIGHTING ELECTRICAL CONDUIT DESIGN AND LAYOUT.
20. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL TOWN, COUNTY, STATE AND FEDERAL LAWS AND APPLICABLE CODES. CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF HAZARDOUS/UNSUITABLE MATERIAL OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES AND LAWS.
21. THE CONTRACTOR IS RESPONSIBLE FOR ALL SHORING REQUIRED DURING EXCAVATION AND SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS, AS WELL AS ADDITIONAL PROVISIONS TO ASSURE STABILITY OF CONTIGUOUS STRUCTURES, AS FIELD CONDITIONS DICTATE.
22. THE CONTRACTOR IS TO EXERCISE CARE WHEN PERFORMING WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES AND FACILITIES THAT ARE TO REMAIN. CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING THE APPROPRIATE MEASURES AS NECESSARY TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT TO REMAIN, AND PROVIDE A SAFE WORK AREA.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL REPLACE ALL SIGNAL INTERCONNECTION CABLE, CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION.
24. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO EXISTING ITEMS DURING CONSTRUCTION SUCH AS BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, SIDEWALK, ETC. REPAIR SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS. CONTRACTOR IS RESPONSIBLE TO PROVIDE DOCUMENTATION OF THE CONDITION OF EXISTING ITEMS TO THE OWNER'S DESIGNATED REPRESENTATIVE PRIOR TO CONSTRUCTION START.
25. CONCRETE SHALL HAVE THE MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS INDICATED IN SPECIFICATIONS AND REFERENCE DOCUMENTS UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND/OR GEOTECHNICAL REPORT.
26. THE ENGINEER IS NOT RESPONSIBLE FOR CONSTRUCTION METHODS/MEANS FOR COMPLETION OF THE WORK DEPICTED ON THESE PLANS NOR ANY CONFLICTS/SCOPE REVISIONS WHICH RESULT FROM THE SAME. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING METHODS/MEANS FOR COMPLETION OF THE WORK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND NOTIFICATION OF OWNER AND ENGINEER OF RECORD IN WRITING WHEN A CONFLICT IS IDENTIFIED.
27. NEITHER THE PROFESSIONAL ACTIVITIES OF RENEW DESIGN GROUP NOR THE PRESENCE OF RENEW DESIGN GROUP OR ITS EMPLOYEES AND SUB-CONSULTANTS AT A CONSTRUCTION/PROJECT SITE, SHALL RELIEVE THE CONTRACTOR OF ITS OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. RENEW DESIGN GROUP AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE CONTROL OVER THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES IN CONNECTION WITH THEIR WORK OR HEALTH OR SAFETY PROGRAMS OR PROCEDURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE ENGINEER OF RECORD HEREIN IS NOT RESPONSIBLE FOR JOB SITE SAFETY NOR HAS HE BEEN RETAINED FOR SUCH PURPOSES. RENEW DESIGN GROUP SHALL BE INDEMNIFIED BY THE CONTRACTOR AND SHALL BE MADE AN ADDITIONAL INSURED UNDER THE CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE.
28. RENEW DESIGN GROUP SHALL REVIEW AND COMMENT OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH THE DESIGN CONCEPT AND THE INFORMATION SHOWN IN THE CONSTRUCTION MEANS OR METHODS. COORDINATION OF THE WORK WITH OTHER TRADES AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. RENEW DESIGN GROUP'S REVIEW SHALL BE CONDUCTED WITH REASONABLE PROMPTNESS WHILE ALLOWING SUFFICIENT TIME TO PERMIT ADEQUATE REVIEW. REVIEW OF A SPECIFIC ITEM SHALL NOT INDICATE THAT RENEW DESIGN GROUP HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. RENEW DESIGN GROUP SHALL NOT BE RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS NOT BROUGHT TO THE ATTENTION OF RENEW DESIGN GROUP IN WRITING BY THE CONTRACTOR. RENEW DESIGN GROUP SHALL NOT BE REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OR CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
29. PARKING FACILITY AND VEHICULAR AND PEDESTRIAN WAY LIGHTING (EXCEPT FOR SAFETY AND SECURITY APPLICATIONS), FOR NONRESIDENTIAL USES SHALL BE AUTOMATICALLY EXTINGUISHED NO LATER THAN ONE HOUR AFTER THE CLOSE OF BUSINESS OR FACILITY OPERATION. WHEN SAFETY OR SECURITY LIGHTING IS PROPOSED FOR AFTER-HOURS ILLUMINATION, SUCH LIGHTING SHALL NOT BE IN EXCESS OF 50% OF THE ILLUMINATION LEVELS NORMALLY REQUIRED OR PERMITTED FOR THE LIGHTING APPLICATION.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
NO. PE082284

REV NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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SEE GENERAL INFORMATION SHEET FOR ALL PERTINENT NOTES AND LEGEND INFORMATION.

0 GRAPHIC SCALE IN FEET

renew LAND DEVELOPMENT SOLUTIONS

SITE NOTES & DETAILS

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LO

PROJECT NUMBER: 18015

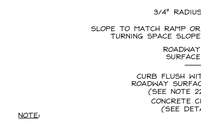
SCALE: AS NOTED

DRAWN BY: RDG

DESIGNED BY: RDG

DATE: 06/20/19

SHT NO. 7 of 24



NOTE:

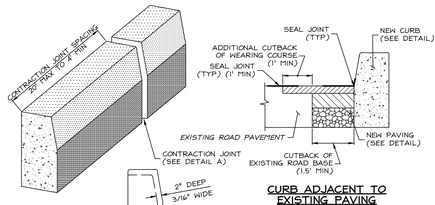
1. DIMENSIONS SHOWN ARE FOR 8" CONCRETE CURB. ALL DIMENSIONS SHALL BE ADJUSTED ACCORDINGLY FOR VARYING SIZE/TYPE OF CURB.

DEPRESSED CURB

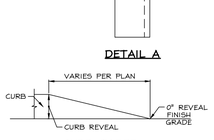
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTIONS 350, 409, 630, 676, 694, AND 695.
2. PROVIDE EXPANSION JOINT MATERIAL 1/2" THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.
3. CONSTRUCT CURB RAMPS WITH A MINIMUM 4'-0" X 4'-0" CLEAR SPACE BEYOND THE CURB FACE, WITHIN THE WIDTH OF THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE. SEE SHEET 7 FOR CROSSWALK DETAILS.
4. SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.
5. PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING SIDE FLARES.
6. MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB HEIGHTS WHERE THE CURB IS LESS THAN THE STANDARD 8" HEIGHT.
7. CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE.
8. TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVERSING THE HEIGHT OF CURB, RAMP LENGTH NOT TO EXCEED 15'-0". ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.
9. NON-WALK AREA IS AN OBSTRUCTED OR GRASS/NON-PAVED AREA ADJACENT TO THE PEDESTRIAN ACCESS ROUTE THAT IS NOT USED BY THE PEDESTRIAN FOR ACCESS.
10. THE DETAILS DEPICT PEDESTRIAN PUSHBUTTON POLES TO ILLUSTRATE THE RECOMMENDED PLACEMENT OF PEDESTRIAN PUSHBUTTONS. FOR ALTERATION PROJECTS, PROVIDE ACCESS TO EXISTING PEDESTRIAN PUSHBUTTONS TO THE MAXIMUM EXTENT FEASIBLE. INSTALL PEDESTRIAN PUSHBUTTON STUB POLES, WHERE APPLICABLE, SO AS NOT TO CREATE PEDESTRIAN OBSTRUCTIONS.
11. SEE TC-8609 FOR ADDITIONAL PEDESTRIAN PUSHBUTTON DETAILS NOT SHOWN.
12. FOR NEW CONSTRUCTION, DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP OR PEDESTRIAN ACCESS ROUTE.
13. FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE. THE SLOPES INDICATED IN THE DETAILS SHOW THE MAX SLOPE ALLOWABLE. SLOPES THAT EXCEED THOSE INDICATED IN THE DETAILS, OR CONTRACT DOCUMENTS AS APPLICABLE, WILL NOT BE ACCEPTED AND WILL BE RECONSTRUCTED.
14. CONSTRUCT SIDEWALKS AT A LONGITUDINAL SLOPE NOT TO EXCEED 5.00%. FOR ROADWAY PROFILE SLOPES THAT EXCEED 5.00%, CONSTRUCT PARALLEL SIDEWALKS ADJACENT TO ROADWAY AT A LONGITUDINAL SLOPE NOT TO EXCEED ROADWAY PROFILE SLOPE.
15. THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF 13.33%. THE COUNTER SLOPE OF THE GUTTER OR ROAD AT THE FOOT OF A CURB RAMP, TURNING SPACE OR BLENDED TRANSITION IS NOT TO EXCEED 5.00%. SEE SHEET 8 FOR DETAILS.
16. THE CONSTRUCTION STANDARDS DEPICTED ARE MOST APPROPRIATE FOR NEW CONSTRUCTION. ALL CONSTRUCTION MUST MEET THE STANDARDS CONTAINED HEREIN UNLESS OTHERWISE NOTED OR DIRECTED.
17. ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 6" CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 6'-0" FOR A 12:1 SLOPE.
18. SIDEWALK WIDTH MAY BE REDUCED TO 4'-0", WHEN PASSING AREAS 5'-0" X 5'-0" ARE PROVIDED EVERY 200'.
19. THE TRAVEL LANE IS DEFINED BY THE OUTSIDE EDGE OF THE WHITE PAVEMENT MARKING LINE. IF A WHITE PAVEMENT MARKING LINE DOES NOT EXIST, THE TRAVEL LANE IS DEFINED BY THE CONTRACT DOCUMENTS.
20. CONSTRUCT DEPRESSED CURB FOR CURB RAMPS FLUSH TO ADJACENT ROADWAY. GRADE EDGE OF ROAD ELEVATIONS AT THE FLOW LINE TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING FOR LEVEL TURNING SPACES BEHIND DEPRESSED CURB. ADJUST SLOPES TO PROVIDE POSITIVE DRAINAGE. AT THE JOINT BETWEEN DEPRESSED CURB AND ROADWAYS, REMOVE EXCESS JOINT SEALER AND COVER THE SEALED AREA WITH A LIGHT APPLICATION OF DRY SAND.
21. CHEEK WALLS ARE PERMITTED WHEN ADJACENT TO NON-WALK AREAS OR ELEVATION DIFFERENCES CANNOT BE ACCOMMODATED BY FLARES OR GRADING. GRADE GRASS AREAS OR OTHER NON-WALK AREAS AT 3:1 OR FLATTER. DO NOT INSTALL CHEEK WALLS THAT INTERSECT THE PEDESTRIAN PATH.
22. CONSTRUCT TOP OF PLAIN CEMENT CONCRETE DEPRESSED CURB TO BE FLUSH WITH ADJACENT SURFACES (RAMPS, SIDEWALKS, FLARES).
23. FOR CURB RAMPS THAT LEAD TO A SINGLE CROSSWALK, THE RAMP (EXCLUDING FLARES) TO BE FULL INSIDE OF MARKED CROSSWALK LINES. SEE SHEET 7 FOR DETAILS.
24. A 4'-0" MAXIMUM DIGITAL DISPLAY LEVEL WILL BE USED TO VERIFY THE SLOPES OF CURB RAMPS AND SIDEWALKS.
25. INSTALL DUMMY JOINTS WHERE RAMPS, TURNING SPACES, FLARES, AND SIDEWALKS ABUT.
26. CONSTRUCT DEPRESSED CURB SLOPE TO MATCH ROADWAY PROFILE AND HAVE A FLUSH CONNECTION. TRANSITION CURB RAMP CROSS SLOPE TO MATCH ROADWAY PROFILE AS GRADUALLY AS POSSIBLE, DO NOT EXCEED 3.00% PER 1'-0" CROSS SLOPE RATE OF CHANGE WHEN TRANSITIONING TO ROADWAY PROFILE.
27. DO NOT SCORE OR MAKE GROOVES ON SLOPED SURFACES. LINES SHOWN ON DETAILS ARE FOR ILLUSTRATION ONLY. SEE NOTE 5.

CURB RAMP - GENERAL INFORMATION

NOT TO SCALE

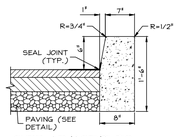


DETAIL A



CURB TAPER

CURB ADJACENT TO EXISTING PAVING



CURB ADJACENT TO NEW PAVING

NOTES:

1. CONCRETE SHALL BE PENNDOT CLASS 2A - 4,000 PSI (28-DAY STRENGTH) MINIMUM.
2. CONCRETE INSTALLED DURING COLD-WEATHER CONDITIONS SHALL BE 5,000 PSI (28-DAY STRENGTH).
3. 3/4" PREMOLDED EXPANSION JOINTS SHALL BE PLACED AT STRUCTURES AND AT THE END OF THE WORK DAY.
4. FLEXIBLE FORMS SHALL BE REQUIRED FOR ALL CURB RADII WITH A RADIUS OF LESS THAN 150 FEET.
5. WHERE THE SUBGRADE IS SOFT OR SPONGY, AS DETERMINED BY THE MUNICIPAL ENGINEER, A LAYER OF CRUSHED STONE NOT LESS THAN 4" THICKNESS SHALL BE PLACED UNDER THE CURB.
6. SEAL JOINT WITH 1" WIDE PG64-22 SEALANT OR APPROVED EQUAL (2" UP FACE OF CURB, 10" AWAY FROM CURB).
7. ALL EXPOSED CONCRETE SHALL BE SEALED WITH AQURON CPT-2000 OR APPROVED EQUAL.

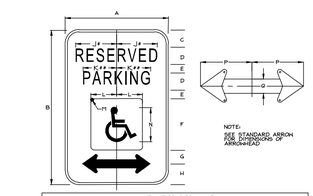
CURB - CONCRETE

NOT TO SCALE

THE RESERVED PARKING SIGN (R7-8) IS AUTHORIZED TO MARK THE LOCATION OF A PARKING SPACE WHICH IS RESERVED FOR HANDICAPPED PERSONS OR SEVERELY DISABLED VETERANS.

WHEN USED THE R7-8 SIGN SHOULD GENERALLY BE INSTALLED AT THE FRONT OF EACH RESERVED PARKING STALL, EXCEPT IN THE CASE OF PARALLEL PARKING, IT SHOULD BE INSTALLED AT INTERVALS NOT EXCEEDING 50' ALONG THE SIDE OF THE STALLS. WHEN INSTALLED AT THE FRONT OF THE STALL, THE BARRIER OUTLINE SHOULD BE PAINTED ON THE PAVEMENT.

THE RESERVED PARKING PENALTIES SIGN (R7-8F) SHALL BE POSTED IN CONJUNCTION WITH THE R7-8 SIGN. WHEN USED, THE R7-8F SIGN SHALL BE PLACED BELOW THE R7-8 SIGN.



DIMENSIONS - IN																
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	MAR-GIN	BOR-DER	BLANK STD.
12" x 18"	2	2C	1	1.6	1.6	2.4	4.8	4.3	3	0.4	4	3.8	0.8	0.4	0.4	B15-1206

* REDUCE SPACING 50%
** REDUCE SPACING 33%

COLOR:
LEGEND, ARROW AND BORDER: GREEN (REFLECTORIZED)
BACKGROUND AND SYMBOL: WHITE (REFLECTORIZED)
SYMBOL BACKGROUND: BLUE (REFLECTORIZED)

PENNDOT R7-8

HANDICAP RESERVED PARKING

NOT TO SCALE

THE RESERVED PARKING PENALTIES SIGN (R7-8F) SHALL BE INSTALLED WITH THE RESERVED PARKING SIGN (R7-8). WHEN USED, THE R7-8F SIGN SHALL BE PLACED BELOW THE R7-8 SIGN. IN ORDER TO IMPROVE VISIBILITY OF SIGNS INSTALLED AT THE FRONT OF RESERVED PARKING STALLS, A SUBSTANTIAL HEIGHT DIFFERENCE BETWEEN THE TOP OF THE SIGN OF APPROXIMATELY 3'-0" ABOVE THE PARKING STALL ELEVATION THAT BE USED.

DIMENSIONS - IN																
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	MAR-GIN	BOR-DER	BLANK STD.
12" x 18"	3	1C	1	2	3	2.4	2.3	3.6	4	4.6	0.4	0.4		0.4	0.4	B15-1208

COLOR:
LEGEND AND BORDER: RED (REFLECTORIZED)
BACKGROUND: WHITE (REFLECTORIZED)

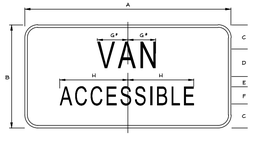
PENNDOT R7-8F

RESERVED PARKING PENALTIES

NOT TO SCALE

THE VAN ACCESSIBLE SIGN (R7-8P) MAY BE USED AS A SUPPLEMENTAL SIGN TO INDICATE THAT A PARKING SPACE SIGNED WITH THE RESERVED PARKING SIGN (R7-8) IS OF SUFFICIENT SIZE FOR USE BY THE DISABLED TO ACCOMMODATE VANS DISPLAYING A HANDICAPPED OR SEVERELY DISABLED VETERAN REGISTRATION PLATE OR PLACARD.

ONE IN EVERY EIGHT RESERVED PARKING SPACES FOR THE DISABLED, BUT NOT LESS THAN ONE, SHALL BE DESIGNATED WITH THE R7-8P SIGN. WHEN USED, THE R7-8P SIGN SHALL BE PLACED IMMEDIATELY BELOW THE RESERVED PARKING SIGN (R7-8).



DIMENSIONS - IN									
SIGN SIZE A x B	C	D	E	F	G	H	MAR-GIN	BOR-DER	BLANK STD.
12" x 6"	1.4	1.6D	0.6	1D	2.1	.4	0.4	0.4	B15-1206

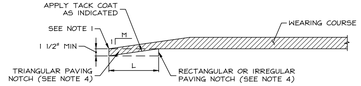
* INCREASE SPACING 50%

COLOR:
LEGEND AND BORDER: GREEN (REFLECTORIZED)
BACKGROUND: WHITE (REFLECTORIZED)

PENNDOT R7-8P

VAN ACCESSIBLE

NOT TO SCALE



NOTES:

1. PLACE EDGE FLUSH WITH EXISTING PAVEMENT AND SEAL EDGE AS SPECIFIED IN PUBLICATION 408, SECTION 401.3 (K) 3.
2. USE HIGHER APPROPRIATE CRITERIA IF A CROSS STREET HAS A FUNCTIONAL CLASSIFICATION OF COLLECTORS AND LOCAL ROADS OR HIGHER.
3. USE 85TH PERCENTILE SPEED, IF AVAILABLE. OTHERWISE, USE THE POSTED SPEED.
4. USE OF A TRIANGULAR PAVING NOTCH, AS SHOWN, IS PREFERRED. HOWEVER, THE NOTCH MAY BE RECTANGULAR OR IRREGULAR AS LONG AS THE MINIMUM DIMENSIONAL REQUIREMENTS ARE MET.
5. CONDITIONS OF HIGHWAY OR ROADWAY OCCUPANCY PERMITS SHALL SUPERSEDE THIS DETAIL.

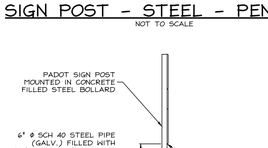
PAVING NOTCH

NOT TO SCALE

(A) JUSTIFICATION. THE STOP SIGN (R1-1) IS AUTHORIZED FOR USE ON THOSE STREETS OR HIGHWAYS WHICH INTERSECT WITH A THROUGH HIGHWAY OR AT A STOP INTERSECTION NOT DESIGNATED BY THE DEPARTMENT WITH REFERENCE TO STATE-DESIGNATED HIGHWAYS. THE STOP SIGN SHALL NOT BE INSTALLED ON A THROUGH HIGHWAY OR AT AN INTERSECTION WHERE AN ALTERNATE STOP SIGN USE IN WORK ZONES IS NOTED UNDER LANE TYPE CLOSURES. AT INTERSECTIONS WHERE ALL APPROACHES ARE CONTROLLED BY AN R1-1 SIGN, A SUPPLEMENTAL ALL-WAY PLAQUE (R1-3P) SHALL BE MOUNTED BELOW EACH R1-1 SIGN.

(B) AUTHORIZATION. BEFORE LOCAL AUTHORITIES DESIGNATE ANY HIGHWAY AS A THROUGH HIGHWAY OR STOP INTERSECTION WHICH WILL INTERSECT OR AFFECT A STATE-DESIGNATED HIGHWAY, APPROVAL OF SUCH DESIGNATION SHALL FIRST BE OBTAINED FROM THE DEPARTMENT. APPROVAL TO INSTALL R1-1 SIGNS TO HOME AREAS SHALL NOT REQUIRE THE APPROVAL OF THE DEPARTMENT OR LOCAL AUTHORITIES WHEN THE CONDITIONS STIPULATED IN THE DEPARTMENT'S TEMPORARY TRAFFIC CONTROL GUIDELINES ARE SATISFIED.

(C) SIZE. THE STANDARD SIZE R1-1 SIGN SHALL BE 30" X 30" FOR SINGLE LANE CONVENTIONAL HIGHWAYS AND 36" X 36" FOR MULTIPLE LANE CONVENTIONAL HIGHWAYS. THE SMALL SIZE R1-1 SIGN (24" X 24") MAY BE USED ON LOW SPEED STREETS WITH RESTRICTED VISUAL CONDITIONS AND VEHICLE USAGE THAT PROHIBITS THE INSTALLATION OF THE STANDARD SIZE R1-1. A SIGN THAT IS MOUNTED BACK-TO-BACK WITH A R1-1 SIGN SHOULD STAY WITHIN THE EDGES OF THE R1-1 SIGN. IF NECESSARY, THE SIZE OF THE R1-1 SIGN SHOULD BE INCREASED SO THAT ANY OTHER SIGN MOUNTED BACK-TO-BACK WITH IT REMAINS WITHIN THE EDGES OF THE R1-1 SIGN.



DIMENSIONS - IN					
SIGN SIZE A x A	B	C	D	BOR-DER	BLANK STD.
30" x 30"	10	10C	12.6	0.8	B1-30

* REDUCE SPACING 40%

COLOR:
LEGEND AND BORDER: WHITE (REFLECTORIZED)
BACKGROUND: RED (REFLECTORIZED)

PENNDOT R1-1

STOP

NOT TO SCALE

NOTES:

1. POSTS TO BE TYPE "B" BREAKAWAY CHANNEL BAR POSTS. (SEE PENNDOT TRAFFIC CONTROL SIGNING STANDARDS TC-7000 SERIES FOR INSTALLATION PROCEDURES.)
2. SIGN POST LOCATIONS TO BE SELECTED IN THE FIELD UNDER THE DIRECT SUPERVISION OF THE ENGINEER.
3. TO BE INSTALLED IN ACCORDANCE WITH PENNDOT PUB. 408, SECTION 932

SIGN POST - STEEL - PENNDOT

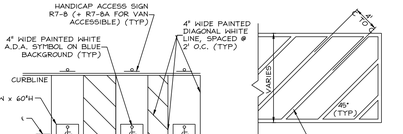
NOT TO SCALE

NOTES:

1. REFER TO PLAN SET FOR LOCATIONS OF PROPOSED BOLLARDS.
2. BOLLARDS SHALL BE PAINTED LIGHT GRAY AND MUST BE PERPETUALLY MAINTAINED/REPAINTED BY PROPERTY OWNER OR PARTY RESPONSIBLE FOR SITE MAINTENANCE.
3. PREPARE AND APPLY EXTERIOR ALKYD GLOSS LIGHT GRAY PAINT IN ACCORDANCE WITH SHERWIN-WILLIAMS EXTERIOR PAINTING SPECIFICATION OR APPROVED EQUAL.

BOLLARD - PIPE - SIGN POST

NOT TO SCALE



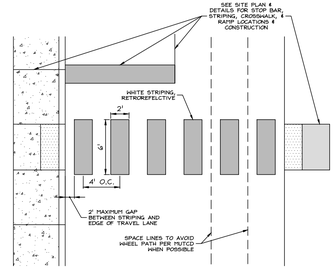
GORE STRIPING

NOTES:

1. GRADING THROUGH A.D.A. PARKING AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION.
2. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
3. CURB RAMPS, PAVEMENT MARKINGS, AND APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBLE GUIDELINES.

PARKING SPACE LAYOUT (A.D.A. ACCESSIBLE)

NOT TO SCALE

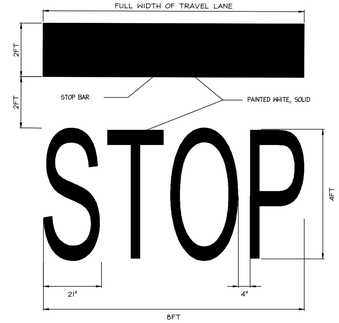


NOTES:

1. ALL DIMENSIONS AND LAYOUTS SHALL BE PER THE LATEST COPY OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

STRIPING - CROSSWALK

NOT TO SCALE

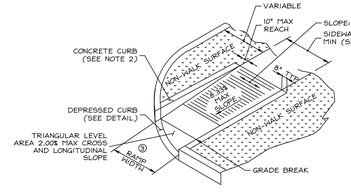


NOTES:

1. ALL DIMENSIONS AND LAYOUTS SHALL BE PER THE LATEST COPY OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. IF NO MARKED CROSS WALK IS TO BE INSTALLED, THE FRONT EDGE OF THE STOP BAR SHALL BE NO LESS THEN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING TRAVELED WAY.

STOPBAR WITH TEXT

NOT TO SCALE

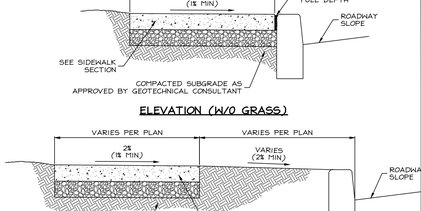


NOTES:

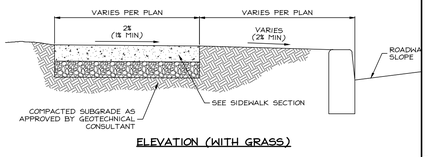
1. SIDEWALK WIDTH MAY BE REDUCED TO 4', WHEN PASSING AREAS 5' X 5' ARE PROVIDED EVERY 200'.
2. CHEEK WALLS ARE PERMITTED WHEN ADJACENT TO NON-WALK AREAS OR ELEVATION DIFFERENCES CANNOT BE ACCOMMODATED BY FLARES OR GRADING. GRADE GRASS AREAS OR OTHER NON-WALK AREAS AT 3:1 OR FLATTER. DO NOT INSTALL CHEEK WALLS THAT INTERSECT THE PEDESTRIAN PATH.
3. CURB RAMP WIDTH IS EQUAL TO SIDEWALK WIDTH WHEN THE SIDEWALK WIDTH IS GREATER OR EQUAL TO 4'-0".
4. PROVIDE A LEVEL TRIANGULAR AREA WHEN DIRECTIONAL RAMPS ARE INSTALLED ON A CURB RETURN TO TRANSITION THE GRADE BREAK.

CURB RAMP - TRIANGULAR LANDING

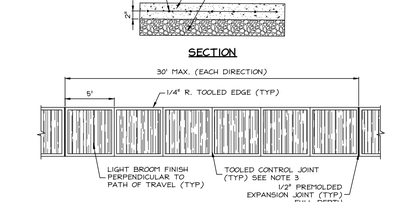
NOT TO SCALE



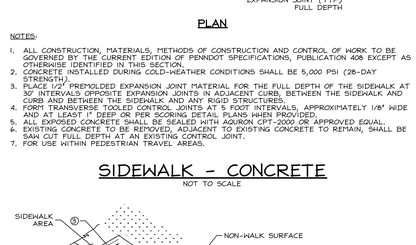
ELEVATION (W/O GRASS)



ELEVATION (WITH GRASS)



SECTION



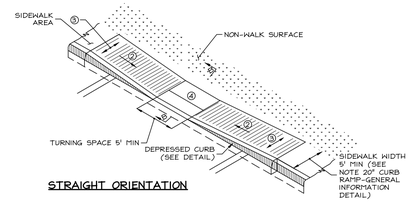
PLAN

NOTES:

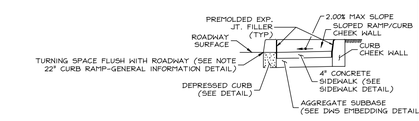
1. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408 EXCEPT AS OTHERWISE IDENTIFIED IN THIS SECTION.
2. CONCRETE INSTALLED DURING COLD-WEATHER CONDITIONS SHALL BE 5,000 PSI (28-DAY STRENGTH).
3. PLACE 1/2" PREMOLDED EXPANSION JOINT MATERIAL FOR THE FULL DEPTH OF THE SIDEWALK AT 5' INTERVALS OPPOSITE EXPANSION JOINTS IN ADJACENT CURB, BETWEEN THE SIDEWALK AND CURB AND BETWEEN THE SIDEWALK AND ANY RIGID STRUCTURES.
4. FORM TRANSVERSE TOOLED CONTROL JOINTS AT 5 FOOT INTERVALS, APPROXIMATELY 1/8" WIDE AND AT LEAST 1" DEEP OR PER SCORING DETAIL PLANS WHEN PROVIDED.
5. ALL EXPOSED CONCRETE SHALL BE SEALED WITH AQURON CPT-2000 OR APPROVED EQUAL.
6. EXISTING CONCRETE TO BE REMOVED, ADJACENT TO EXISTING CONCRETE TO REMAIN, SHALL BE SAW CUT FULL DEPTH AT AN EXISTING CONTROL JOINT.
7. FOR USE WITHIN PEDESTRIAN TRAVEL AREAS.

SIDEWALK - CONCRETE

NOT TO SCALE



STRAIGHT ORIENTATION



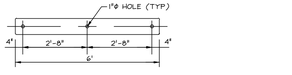
SECTION B-B

NOTES:

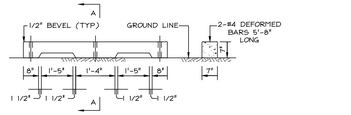
1. SIDE FLARES 10.00% MAX. SLOPE.
2. 8.33% MAX. RAMP SLOPE. SEE NOTE 8 IN CURB RAMP-GENERAL INFORMATION DETAIL.
3. SLOPE: ZERO ± 2.00%
4. CURB RAMPS REQUIRE A TURNING SPACE WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS SEE DETAILS FOR LOCATIONS AND DIMENSIONS.
5. SEE "CURB RAMP - GENERAL INFORMATION" FOR ADDITIONAL NOTES AND DETAILS.

CURB RAMP - TYPE 2

NOT TO SCALE



PLAN



ELEVATION SECTION A-A

NOTES:

1. CONCRETE SHALL HAVE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.
2. UNIT TO BE PINNED TO SURFACE WITH THREE 3/4"ø STEEL RODS, 24" MINIMUM IN LENGTH.
3. ALL BEVELS TO BE 1/2".
4. ALL ANGLES TO BE 45°.

WHEEL STOP - CONCRETE

NOT TO SCALE

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
NO. PE082284

REV. NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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SEE GENERAL INFORMATION SHEET FOR ALL PERTINENT NOTES AND LEGEND INFORMATION.

0 GRAPHIC SCALE IN FEET

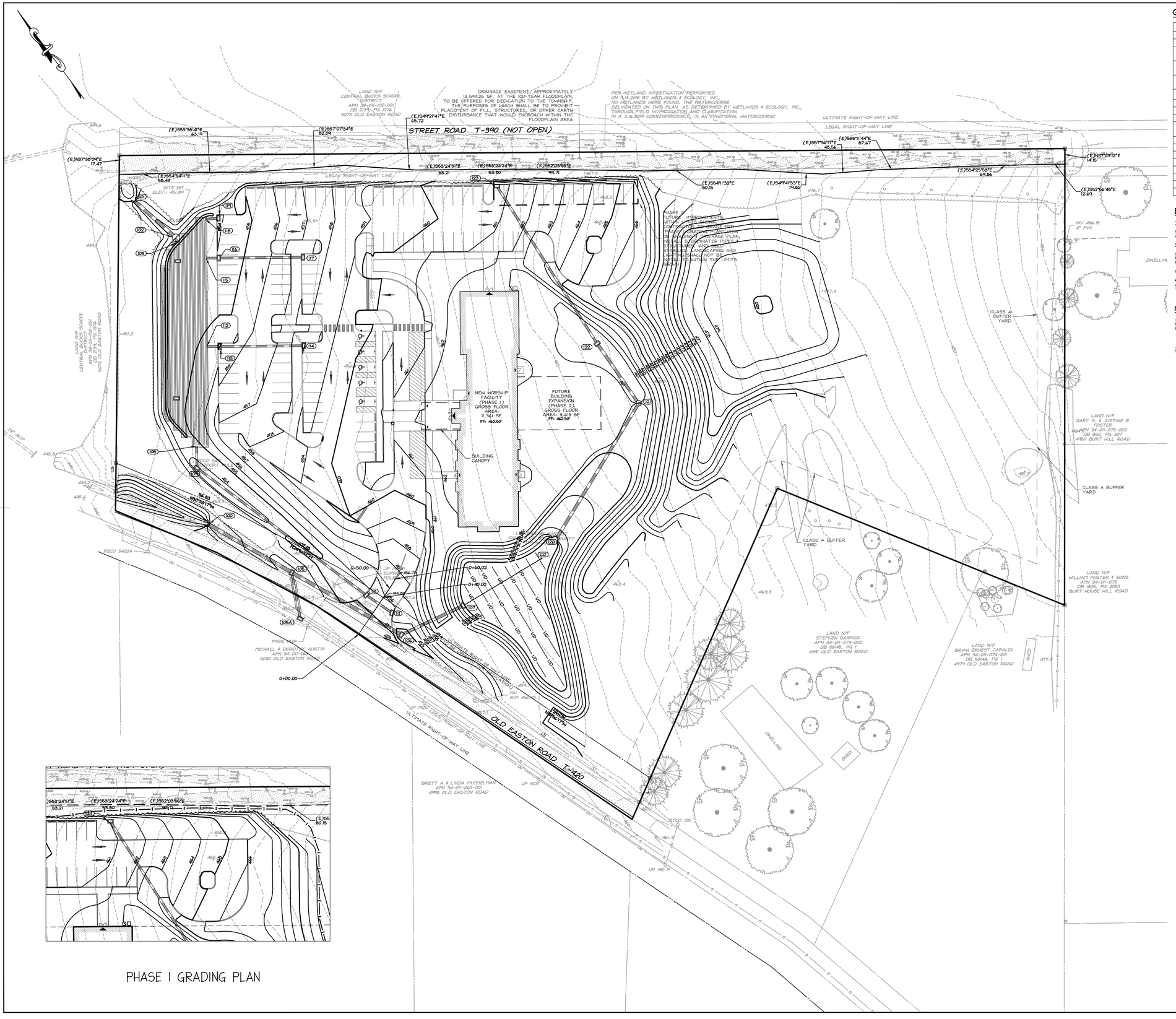
renew
LAND DEVELOPMENT SOLUTIONS

SITE NOTES & DETAILS

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LO

PROJECT NUMBER: 18015

SCALE:	AS NOTED
DRAWN BY:	RDG
DESIGNED BY:	RDG
DATE:	06/20/19
SHT NO.	8 of 24



PHASE 1 GRADING PLAN

GRADING LEGEND

EXISTING SYMBOL	DESCRIPTION	PROPOSED SYMBOL
	STORM SEWER	
	UNDERDRAIN	UD UD
	STORM INLET	
	STORM MANHOLE	
	ENDWALL	
	RIPRAP	
340	MAJOR CONTOUR	345
359	MINOR CONTOUR	366
x 355.69	SPOT ELEVATION	x 355.69
	SLOPE GRADE	2.00%
	TOP OF CURB	x TC-355.69
	BOTTOM OF CURB	x BC-355.69
	TOP OF WALL	x TW-355.69
	BOTTOM OF WALL	x BW-355.69
	TOP OF STAIRS	x TS-355.69
	BOTTOM OF STAIRS	x TS-355.69
	HIGH POINT OF SWALE	x HP-355.69
	LOW POINT OF SWALE	x LP-355.69

EARTHWORK ANALYSIS

TOPSOIL ANALSYS:

STRIPPED TOPSOIL = 6,716 CU.YD. (10" DEPTH IDENTIFIED IN INFILTRATION REPORT)
APPLIED TOPSOIL = 6,716 CU.YD. (APPLIED @ 15.75" DEPTH IN PROPOSED LAWN AREAS)

SUB-GRADE CUT / FILL ANALYSIS (EXCLUSIVE OF TOPSOIL):

CUT VOLUME = 11,028 CU.YD*.
FILL VOLUME = 11,028 CU.YD.
NET VOLUME = 0 CU.YD.

NOTE:

*CUT VOLUME INCLUDES THE EXCAVATIONS FOR PROPOSED PAVEMENT, BUILDING PAD, AND ADDITIONAL CUT IN PROPOSED LAWN AREAS, APPROXIMATELY 15.75", TO ENSURE STRIPPED TOPSOIL REMAINS ON SITE

GRADING STATEMENT

I, CHRISTOPHER A. MACINTYRE, P.E., CERTIFY THAT ALL PROPOSED SLOPES IN BOTH CUT AND FILL CONDITIONS, WHICH EXCEED 4:1 GRADE, WILL NOT ENDANGER ANY PROPERTY OR RESULT IN PROPERTY DAMAGE, DUE TO THE EROSION CONTROL MEASURES BEING TAKEN IN THIS PROJECT.

CHRISTOPHER A. MACINTYRE, P.E. (LICENSE NO.: PE082384) — DATE: 02/07/2020

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
NO. PE082384

REV NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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GRAPHIC SCALE IN FEET
40 0 40 80

renew LAND DEVELOPMENT SOLUTIONS

GRADING & DRAINAGE

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER: 18015
SCALE: 1" = 40'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 9 of 24

GRADING LEGEND

EXISTING SYMBOL	DESCRIPTION	PROPOSED SYMBOL
	STORM SEWER	
	UNDERDRAIN	UD UD
	STORM INLET	
	STORM MANHOLE	
	ENDWALL	
	RIPRAP	
340	MAJOR CONTOUR	345
359	MINOR CONTOUR	366
x 355.69	SPOT ELEVATION	x 355.69
	SLOPE GRADE	2.00%
	TOP OF CURB	x TC-355.69
	BOTTOM OF CURB	x BC-355.69
	TOP OF WALL	x TW-355.69
	BOTTOM OF WALL	x BW-355.69
	TOP OF STAIRS	x TS-355.69
	BOTTOM OF STAIRS	x TS-355.69
	HIGH POINT OF SWALE	x HP-355.69
	LOW POINT OF SWALE	x LP-355.69

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
NO. PE082384

REV. NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
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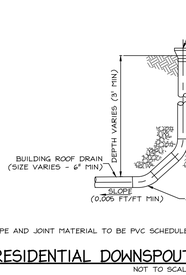
GRAPHIC SCALE IN FEET
20 0 20 40

renew
LAND DEVELOPMENT SOLUTIONS

GRADING & DRAINAGE DETAIL

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER: 18015
SCALE: 1" = 20'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 10 of 24

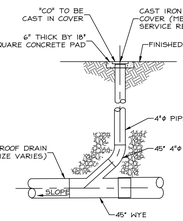


NOTES:

1. ALL PIPE AND JOINT MATERIAL TO BE PVC SCHEDULE 40.

NONRESIDENTIAL DOWNSPOUT LEADER CONNECTION

NOT TO SCALE

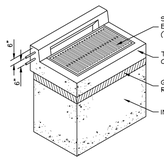


NOTES:

1. ALL PIPE AND JOINT MATERIAL TO MATCH TYPE OF ROOF DRAIN.

CLEANOUT - STORM

NOT TO SCALE

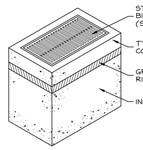


NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72M (RC-45M & RC-46M), LATEST REVISION.
2. ALL STRUCTURES AND ASSEMBLIES TO BE PRE-CAST, UNLESS OTHERWISE NOTED.
3. ADD "NO DUMPING - DRAINS TO WATERWAY" AND FISH SYMBOL TO CURB PIECE.

TYPE 'C' INLET

NOT TO SCALE

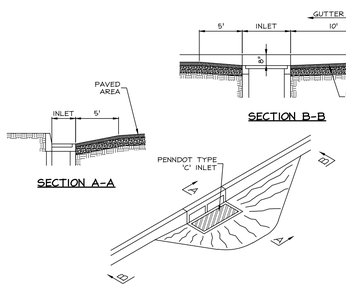


NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72M (RC-45M & RC-46M), LATEST REVISION.
2. ALL STRUCTURES AND ASSEMBLIES TO BE PRE-CAST, UNLESS OTHERWISE NOTED.
3. ADD "NO DUMPING - DRAINS TO WATERWAY" AND FISH SYMBOL TO TOP UNIT.

TYPE 'M' INLET

NOT TO SCALE

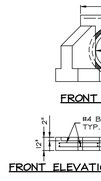


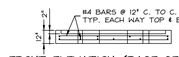
NOTES:

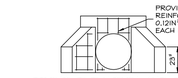
1. TOP OF GRATE ELEVATIONS, AS SHOWN ON THE PROJECTS PLANS, ARE MEASURED TO THE EXTENSION OF THE GUTTER LINE THROUGH THE GRATE AREA. TOP OF CURB OF INLET TOPS SHALL BE DETERMINED BY ADDING 6" TO THE TOP OF GRATE ELEVATION SHOWN.

INLET PAVING TAPER

NOT TO SCALE



FRONT ELEVATION

FRONT ELEVATION (BASE SECTION)



FRONT ELEVATION (HEAD & WINGWALL SECTION)

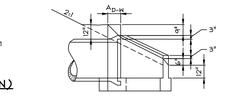
PIPE DIAMETER	SKEW =90° TO 60°			0 = 30°
D-W (IN.)	L D-W (FT.)	α (FT.)	W & W2 (FT.)	AD-W (IN.)
12	3.5	0	0.0	12
18	4.0	0	1.2	12
24	4.6	0	2.3	12
30	5.2	0	3.5	12
36	5.8	0	4.6	12
42	6.3	0	5.8	12
48	6.9	0	6.9	12
54	7.5	0	8.0	12
60	8.1	0	9.2	12
72	9.2	0	11.5	12

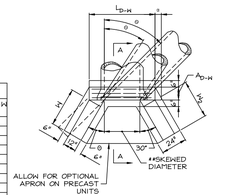
NOTES:

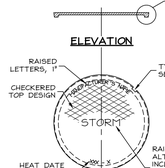
1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72-M (RC-31M), LATEST REVISION.
2. CHILD SAFETY GRATES SHALL BE PROVIDED ON ALL ENDWALLS. TRASH RACKS SHALL BE PROVIDED ON ALL HEADWALLS.

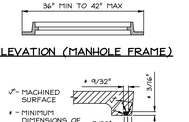
HEADWALL/ENDWALL - TYPE D-W

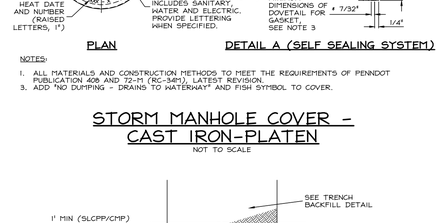
NOT TO SCALE









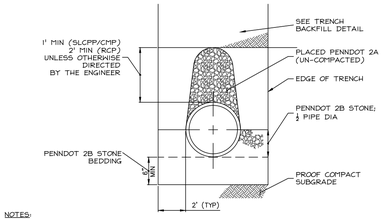


NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72-M (RC-31M), LATEST REVISION.
3. ADD "NO DUMPING - DRAINS TO WATERWAY" AND FISH SYMBOL TO COVER.

STORM MANHOLE COVER - CAST IRON-PLATEN

NOT TO SCALE

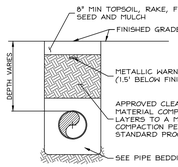


NOTES:

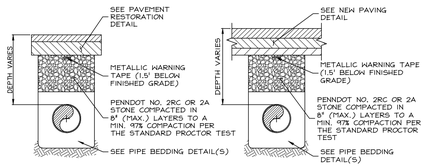
1. DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER IMPLEMENTATION OF SAFETY REQUIREMENTS IN CONFORMANCE TO ALL FEDERAL AND STATE DEPARTMENT OF LABOR AND OCCUPANCIONAL SAFETY ADMINISTRATION REGULATION.
2. FOLLOW 'PIPE INSTALLATION PROCEDURES' PER PENNDOT PUBLICATION 72M - RC-30M.

PIPE BEDDING - STORM SEWER

NOT TO SCALE



UNPAVED AREAS

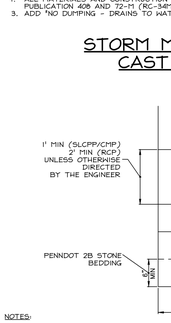


NOTES:

1. TRENCH COMPACTION TO BE TESTED, AT THE DEVELOPER'S EXPENSE, IN ACCORDANCE WITH PENNDOT PUB 408, LATEST REVISION, AS REQUIRED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
2. CLEAN FILL MUST BE APPROVED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION PRIOR TO PLACEMENT IN THE TRENCH.
3. AREAS AROUND MANHOLES, INLETS, AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
4. NO SLAG MATERIAL PERMITTED.
5. IF WATER IS ENCOUNTERED IN THE EXCAVATION TRENCH, AASHTO #57 AGGREGATE MUST BE USED.
6. ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408 AND 67 PA CODE SECTION 459.
7. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.

BACKFILL - TRENCH

NOT TO SCALE

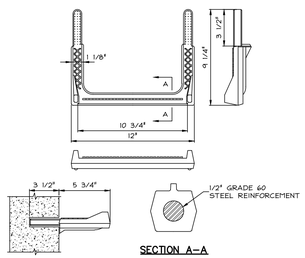


NOTES:

1. PLACE SUBBASE MATERIAL MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 350.2, IN LAYERS 4" THICK, COMPACTED TO A DENSITY SATISFACTORY TO THE ENGINEER AND INCIDENTAL TO THE MANHOLE PAY ITEM.
2. FOR ALL OTHER DESIGN REQUIREMENTS AND APPLICABLE NOTES, SEE PENNDOT RC-34M1.

STORM MANHOLE - PRECAST-FLAT TOP

NOT TO SCALE

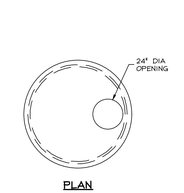


NOTES:

1. STEPS FOR ALL MANHOLES AND INLETS SHALL BE COPOLYMER POLYPROPYLENE PLASTIC MODEL NO. PS-4-B AS MANUFACTURED BY M.A. INDUSTRIES INC. OR APPROVED EQUAL.
2. THE PORTION TO BE EMBEDDED IN THE CONCRETE SHALL BE IN ACCORDANCE WITH THE LATEST O.S.H.A. STANDARDS (3 1/2" MINIMUM EMBEDMENT).
3. ALL MANHOLE STEPS TO MEET OR EXCEED ASTM AND O.S.H.A. STANDARDS.
4. VERTICAL SPACING OF STEPS TO BE 1'.

MANHOLE STEP - STEEL REINFORCED POLYPROPYLENE

NOT TO SCALE



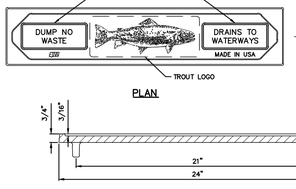


PLATE - NO DUMP

NOT TO SCALE

STORM - MANHOLE - 6' DIAMETER

NOT TO SCALE

GRADING NOTES

1. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS, REFERENCED DOCUMENTS, AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT REFERENCED IN THIS PLAN SET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING WITH SUITABLE MATERIALS AS SPECIFIED IN THE GEOTECHNICAL REPORT, ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM TEST D-1557. MOISTURE CONTENT AT THE TIME OF PLACEMENT SHALL BE SUBMITTED IN COMPACTION REPORT PREPARED BY A QUALIFIED GEOTECHNICAL ENGINEER, REGISTERED WITH THE STATE WHERE THE WORK IS PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBBASE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANIC AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE BY OWNER OR OWNER'S REPRESENTATIVE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).
2. PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS SHALL BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS WILL NOT BE PERMITTED.
3. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONSTRUCTION TOLERANCES SHALL BE +0.1' FOR GRADES OF ISLANDS, GUTTERS, AND CURBS; 1.0% ON ALL CONCRETE SURFACES; AND 1.5% MINIMUM ON ASPHALT AND 2.0% MINIMUM IN LANDSCAPED AREAS TO PREVENT PONDING. ANY DISCREPANCIES THAT MAY AFFECT THE PUBLIC SAFETY OR PROJECT COST MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITHOUT NOTIFICATION IS DONE SO AT THE CONTRACTOR'S OWN RISK.
4. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN 1:20 (5%) FOR A MINIMUM DISTANCE OF 10 FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET OF HORIZONTAL DISTANCE, A 5% SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER FROM THE FOUNDATION. SWALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF 2% WHERE LOCATED WITHIN 10 FEET OF THE BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF 2% AWAY FROM THE BUILDING.
5. PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 6" ABOVE EXISTING LOCAL ASPHALT GRADE UNLESS OTHERWISE NOTED. FIELD ADJUST TO CREATE A MINIMUM OF 0.75% GUTTER GRADE ALONG CURB FACE. ENGINEER TO APPROVE FINAL CURBING CUT SHEETS PRIOR TO INSTALLATION.
6. IN CASE OF DISCREPANCIES BETWEEN PLANS, THE SITE / RECORD PLAN WILL SUPERSEDE IN ALL CASES. THE ENGINEER OF RECORD MUST BE IMMEDIATELY NOTIFIED IN WRITING OF ANY CONFLICTS.
7. THE CONTRACTOR SHALL BE REQUIRED TO SECURE ALL NECESSARY PERMITS (INCLUDING DEP, ETC.) FOR ALL OFF-SITE HAUL AND/OR BORROW SITES. CONTRACTOR SHALL SUPPLY A COPY OF APPROVALS TO ENGINEER AND OWNER PRIOR TO INITIATING WORK.
8. BOTTOM OF WALL ELEVATIONS (BW) REPRESENT THE PROPOSED FINISHED GRADE AT THE FACE OF WALL AND DO NOT REPRESENT THE ACTUAL FOUNDATION GRADE OF THE PROPOSED WALL. ALL WALLS SHOWN HEREON MUST BE DESIGNED BY A STRUCTURAL ENGINEER AND APPROVED BY THE MUNICIPALITY PRIOR TO CONSTRUCTION.

STORMWATER NOTES

1. ROOF LEADERS SHALL BE CONNECTED DIRECTLY TO THE PROPOSED STORMWATER MANAGEMENT SYSTEM.
2. ALL DETENTION AND RETENTION BASIN EMBANKMENTS SHALL BE PLACED IN 8 INCH MAXIMUM LIFTS TO A MINIMUM 95% DRY DENSITY. PRIOR TO PROCEEDING TO THE NEXT LIFT, COMPACTION SHALL BE CHECKED BY THE MUNICIPAL ENGINEER OR AN APPROVED GEOTECHNICAL ENGINEER WHO SHALL PROVIDE THE MUNICIPAL ENGINEER WITH A WRITTEN REPORT. COMPACTION TESTS SHALL BE PERFORMED USING THE MODIFIED PROCTOR METHOD IN ACCORDANCE WITH ASTM D-1557-07. COMPACTION TESTS SHALL BE RUN ON THE LEADING AND TRAILING EDGE AS WELL AS THE TOP OF THE BERM.
3. ANTI-SEEP COLLARS SHALL BE INSTALLED AROUND THE PIPE BARREL WITHIN THE NORMAL SATURATION ZONE OF THE DETENTION BASIN BERMS. THE ANTI-SEEP COLLARS AND THEIR CONNECTIONS TO THE PIPE BARRELS SHALL BE WATERTIGHT. THE ANTI-SEEP COLLARS SHALL EXTEND A MINIMUM OF TWO FEET BEYOND THE OUTSIDE OF THE PRINCIPAL PIPE BARREL. THE MAXIMUM SPACING BETWEEN COLLARS SHALL BE FOURTEEN (14) TIMES THE MINIMUM PROJECTION OF THE COLLAR MEASURED PERPENDICULAR TO THE PIPE. A MINIMUM OF TWO (2) ANTI-SEEP COLLARS SHALL BE INSTALLED ON EACH OUTLET PIPE.
4. IF A CONFLICT ARISES DURING THE INSTALLATION OF ANY PART OF THE STORM SEWER SYSTEM THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY IN WRITING.

ADA ACCESSIBILITY NOTES

AREAS DESIGNATED AS ACCESSIBLE ON PLAN SHALL BE INSTALLED IN COMPLIANCE WITH THE ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG), LATEST REVISION, AND MAY BE EVALUATED FOR COMPLIANCE FOLLOWING CONSTRUCTION. ANY AREAS NOT BUILT TO COMPLIANCE SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. THE ITEMS DESCRIBED ARE GENERAL GUIDELINES AND ARE NOT ALL-INCLUSIVE. BUILDING CODES, ETC. STILL APPLY.

ACCESSIBLE ROUTE

1. AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 1:20 (5.0%) IS CONSIDERED A RAMP AND SHALL COMPLY WITH RAMP GUIDELINES AS LISTED BELOW.
2. NOWHERE SHALL THE CROSS SLOPE OF AN ACCESSIBLE ROUTE EXCEED 1:48.

GROUND AND FLOOR SURFACES

1. CHANGES IN LEVEL UP TO 1/4 INCH MAY BE VERTICAL AND WITHOUT EDGE TREATMENT. CHANGES IN LEVEL BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2 (50.0%).
2. IF GRATINGS ARE LOCATED IN WALKING SURFACES, THEN THEY SHALL HAVE SPACES NO GREATER THAN 1/2 INCH WIDE IN ONE DIRECTION. IF GRATINGS HAVE ELONGATED OPENINGS, THEN THEY SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

PARKING AND PASSENGER LOADING ZONES

1. ACCESSIBLE PARKING SPACES SHALL HAVE A MINIMUM WIDTH OF 8 FT. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:48 (2.0%) IN ANY DIRECTION.
2. ACCESSIBLE PARKING SPACES SHALL BE DESIGNATED AS RESERVED BY A SIGN SHOWING THE SYMBOL OF ACCESSIBILITY. VAN ACCESSIBLE SPACES SHALL HAVE AN ADDITIONAL SIGN "VAN-ACCESSIBLE" MOUNTED BELOW THE SYMBOL OF ACCESSIBILITY. SUCH SIGNS SHALL BE LOCATED SO THEY CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE.
3. PROVIDE MINIMUM VERTICAL CLEARANCE OF 9.5 FT AT ACCESSIBLE PASSENGER LOADING ZONES AND ALONG AT LEAST ONE VEHICLE ACCESS ROUTE TO SUCH AREAS FROM SITE ENTRANCE(S) AND EXIT(S). AT ACCESSIBLE PARKING SPACES, PROVIDE MINIMUM VERTICAL CLEARANCE OF 8.17 FT AT THE PARKING SPACE AND ALONG AT LEAST ONE VEHICLE ACCESS ROUTE TO SUCH SPACES FROM SITE ENTRANCE(S) AND EXIT(S).
4. PASSENGER LOADING ZONES SHALL PROVIDE AN ACCESS AISLE AT LEAST 5 FT WIDE AND 20 FT LONG ADJACENT AND PARALLEL TO THE VEHICLE PULL-UP SPACE. VAN ACCESSIBLE SPACES SHALL PROVIDE AN ACCESS AISLE AT LEAST 8 FT WIDE AND 20 FT LONG ADJACENT AND PARALLEL TO THE VEHICLE PULL UP SPACE. IF THERE ARE CURBS BETWEEN THE ACCESS AISLE AND THE VEHICLE PULL-UP SPACE, THEN AN ACCESSIBLE CURB RAMP SHALL BE PROVIDED. VEHICLE STANDING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:48 IN ANY DIRECTION.

RAMP GUIDELINES

1. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION SHALL BE 1:12 (8.3%).
2. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20 (5.0%).
3. THE MINIMUM WIDTH OF A CURB RAMP SHALL BE 36 INCHES, EXCLUSIVE OF FLARED SIDES.
4. THE MAXIMUM SLOPE OF THE FLARE SHALL BE 1:10 (10.0%).

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0 GRAPHIC SCALE IN FEET

REV. NO.	DATE	REVISION
1	06/20/2019	LAND DEVELOPMENT SUBMISSION #1
2	07/27/2020	LAND DEVELOPMENT SUBMISSION #2

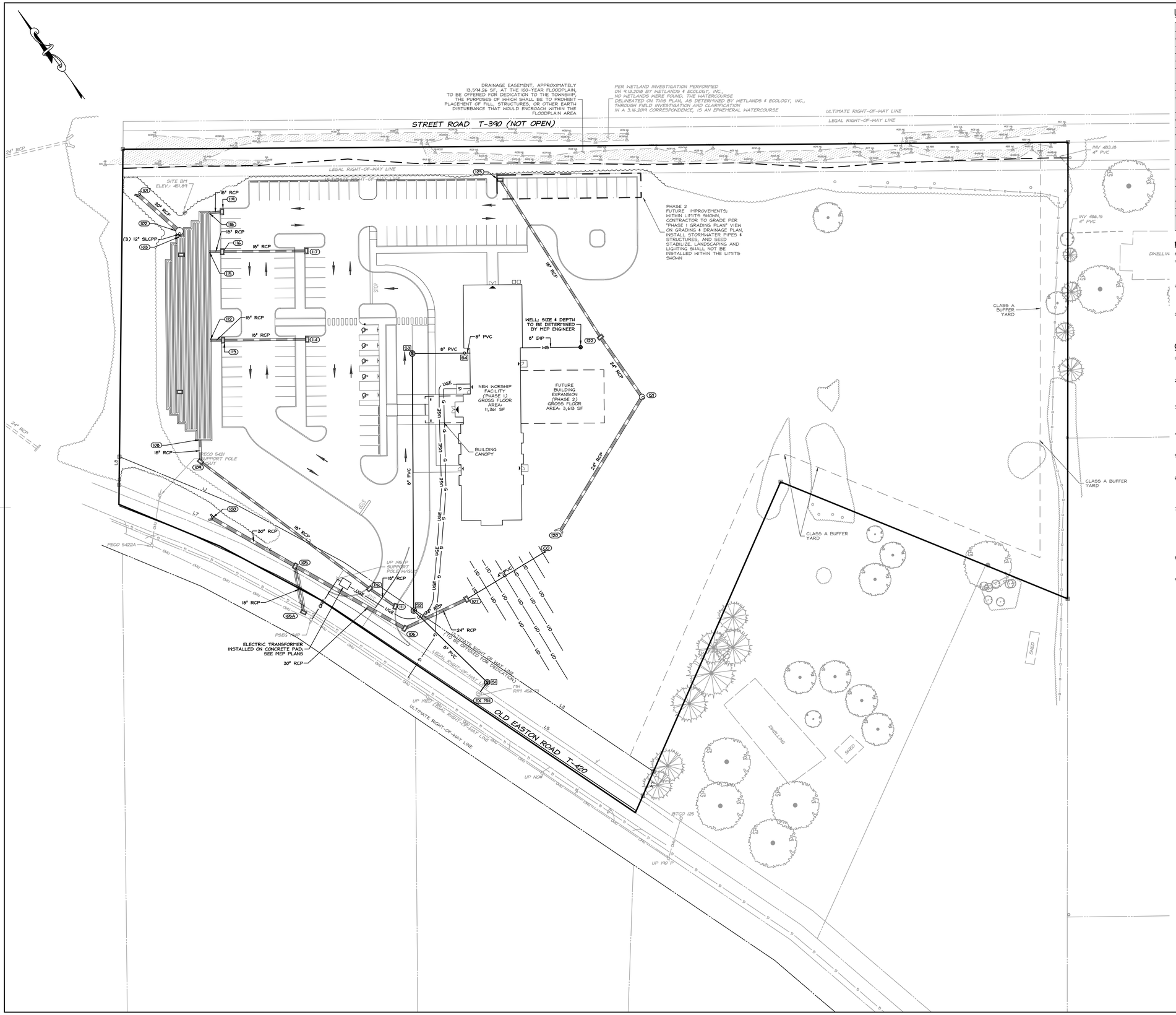
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
NO. PE082384

renew LAND DEVELOPMENT SOLUTIONS

GRADING & DRAINAGE NOTES & DETAILS

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LO

PROJECT NUMBER: 18015
SCALE: AS NOTED
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 11 of 24



UTILITY LEGEND

EXISTING SYMBOL	DESCRIPTION	PROPOSED SYMBOL
OU OU	OVERHEAD WIRES	OHU
	UNDERGROUND ELECTRIC	UGE
	CABLE TV LINE	CATV
	GUY WIRE	
	CABLE BOX	
	LIGHT POLE	(SEE LIGHTING PLAN)
G G	GAS MAIN	G G
SAN	SANITARY SEWER MAIN	
S	SANITARY SEWER MANHOLE	S
	SANITARY SEWER CLEANOUT	
	STORM SEWER	
UD UD	UNDERDRAIN	UD UD
	STORM MANHOLE	
	STORM INLET	
	ENDWALL	
	ROOF DRAINS	
	ROCK APRON	
W W	WATER MAIN	W W
W.V.	WATER VALVE	
	WELL	W

PIPE MATERIALS

PIPE MATERIALS SHALL BE THE FOLLOWING, UNLESS OTHERWISE NOTED:

1. STORM SEWER
   - 1.1. PIPE DIAMETERS 8" AND GREATER:
     - 1.1.1. SMOOTH LINED CORRUGATED POLYETHYLENE PIPE (SLCPP); ASTM F2306 WITH SMOOTH LINED INTERIOR, ADS N12 "HEGA GREEN" ST IB, OR APPROVED EQUAL.
   - 1.2. PIPE DIAMETERS LESS THAN 8":
     - 1.2.1. SCHEDULE 40 PVC.
2. POTABLE WATER
   - 2.1. PIPE DIAMETERS GREATER THAN 2":
     - 2.1.1. DOUBLE CEMENT LINED, THICKNESS CLASS 52, DUCTILE IRON PIPE WITH TYTON JOINTS AND COATED AND WRAPPED WITH 4 MIL COAT ANY EXTERNAL ASPHALT SEAL COAT IN ACCORDANCE WITH ANSI A21.4.
   - 2.2. PIPE DIAMETERS 2" AND SMALLER:
     - 2.2.1. TYPE K COPPER OF SIDR 7 POLYETHYLENE TUBING.
3. SANITARY SEWER
   - 3.1. PIPE DIAMETERS 8" AND GREATER:
     - 3.1.1. PSM SDR-26 PVC.
   - 3.2. PIPE DIAMETERS LESS THAN 8":
     - 3.2.1. SCHEDULE 40 PVC.

GENERAL UTILITIES NOTES

1. ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC. ARE TO BE INSTALLED UNDERGROUND. ALL NEW UTILITIES/SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE UTILITY/SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
2. THE LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, REMOVAL OR EXCAVATION. SANITARY SEWER AND ALL OTHER UTILITY SERVICE CONNECTION POINT CONFLICTS SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE ENGINEER.
3. ALL UTILITY EXTENSIONS FROM THE BUILDING BY OTHER TRADES SHALL BE CONNECTED TO THE CONTINUATION UTILITY LINES ON THE SITE. THE GENERAL CONTRACTOR SHALL MAKE THE CONNECTIONS AT A POINT 5' FROM THE BUILDING WALL WHERE OTHER TRADES HAVE ENDED THEIR WORK. THE GC SHALL COORDINATE SCHEDULING OF THESE CONNECTIONS WITH OTHER TRADES TO ASSURE THE SYSTEM IS COMPLETE WHEN FLOW WILL BEGIN IN THE LINES.
4. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. DEFINE AND LOCATE VERTICALLY AND HORIZONTALLY ALL ACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE NOT TO REMAIN. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING SITE ACTIVITY.
6. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY WORK AS IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATIONS THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SITE PLAN DOCUMENTS AND ARCHITECTURAL DESIGN FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, GREASE TRAP REQUIREMENTS/DETAILS, DOOR ACCESS, AND EXTERIOR GRADING. (THE UTILITY SERVICE SIZES ARE TO BE DETERMINED BY ARCHITECT.) THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES/SERVICES WITH THE INDIVIDUAL COMPANIES TO AVOID CONFLICTS AND ENSURE PROPER DEPTHS ARE ACHIEVED. IN ADDITION TO MEETING THE UTILITY OWNER REQUIREMENTS, THE UTILITY TIE-INS/CONNECTIONS SHALL BE COORDINATED. THIS SHALL BE COMPLETED PRIOR TO CONNECTING TO THE EXISTING UTILITY/SERVICE. WHERE CONFLICTS EXIST WITH THESE PLANS, THE ENGINEER OF RECORD SHALL BE NOTIFIED IN WRITING TO RESOLVE SAID CONFLICTS PRIOR TO CONSTRUCTION.
8. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS SHALL BE ADJUSTED, IF REQUIRED, TO MATCH THE GRADING AND UTILITY PLAN(S). THE SANITARY CLEANOUT TOPS SHALL BE REINSTALLED IN THE SAME MANNER AS THE ORIGINAL CLEANOUTS.
9. ALL UTILITY INSTALLATION (SANITARY SEWER, GAS, ETC.) WITHIN THE LEGAL RIGHT OF WAY OF OLD EASTON ROAD REQUIRES A ROAD OPENING PERMIT TO BE OBTAINED FROM PLUMSTEAD TOWNSHIP DEPARTMENT OF PUBLIC WORKS, PRIOR TO INSTALLATION.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
No. PE082384

REV NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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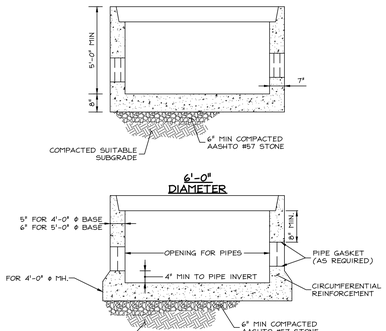
GRAPHIC SCALE IN FEET
40 0 40 80

renew LAND DEVELOPMENT SOLUTIONS

UTILITY

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER: 18015
SCALE: 1" = 40'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 12 of 24

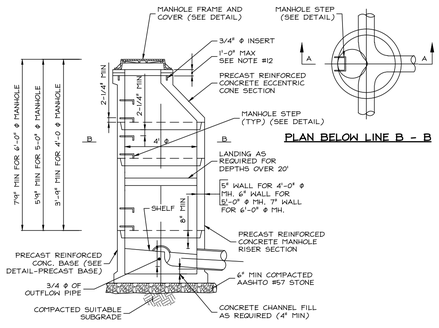


NOTE:

1. PROVIDE REINFORCING FOR HS-25 LOADING.

PRECAST SANITARY MANHOLE BASE

NOT TO SCALE



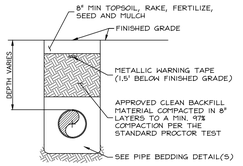
SECTION A-A

NOTES:

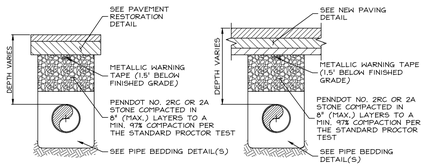
1. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO 3/4 OF THE DIAMETER OF THE SEWER.
2. THE SHELF SHALL SLOPE TOWARD THE INVERT CHANNEL AT A RATE OF 1" PER FOOT.
3. TYPE "B" MANHOLES (SHALLOW TYPE) TO BE PROVIDED WHERE REQUIRED BY DEPTH CONDITIONS.
4. FOR MANHOLES HAVING 5' DIA. AND 6' DIA. BASE, REDUCTION IN DIA. TO 4' SHALL START AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL WHERE DEPTH IS SUFFICIENT.
5. ALL MANHOLE FRAMES SHALL BE BOLTED TO THE CONE SECTION WITH FOUR 3/4" DIA. BOLTS WITH WASHERS AND NUTS, BOLTS TO BE AT 90° ON BOLT CIRCLE. FOR WATERTIGHT COVERS USE FOUR 3/4" DIA. BOLTS AT 90° ON THE BOLT CIRCLE.
6. ALL CONCRETE SHALL BE 4000 PSI MINIMUM, USING TYPE II PORTLAND CEMENT.
7. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECEIVE TWO COATS OF BITUMINOUS COATING, KOPPERS CO., INC. BITUMASTIC No. 300-M, TNEMEC 46H-413 TNEME TAR OR APPROVED EQUAL APPLIED AT 20 MIL MINIMUM THICKNESS.
8. INSTALL 2 LAYERS OF PLASTIC PREFORMED JOINT SEALANT BETWEEN ALL SECTIONS & UNDER FRAME.
9. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASTM C478
10. STEPS TO BE STEEL REINFORCED POLYPROPYLENE. (SEE DETAIL)
11. 4' DIA. MANHOLE - 8" TO 15" PIPE; 5' DIA. MANHOLE - 16" TO 27" PIPE; 6' DIA. MANHOLE - 30" TO 48" PIPES
12. WHEN TWO OR MORE GRADE ADJUSTMENT RINGS ARE USED, A WATERTIGHT PVC CONNECTOR SHALL BE INSTALLED BETWEEN THE FRAME AND THE CONE. CONNECTOR SHALL BE WATER-LOK CONNECTOR BFA ANTI-FLOATING BY A-LOK PRODUCTS INC. OR APPROVED EQUAL. GRADE ADJUSTMENT RINGS SHALL NOT EXCEED 1', EXTERIOR AND INTERIOR, WHERE APPROPRIATE, SHALL BE PARGED.
13. THE INTERIOR OF ALL MANHOLES SHALL BE EPOXY COATED IN ACCORDANCE WITH AUTHORITY SPECIFICATIONS. MANHOLES THAT RECEIVE FORCE MAIN DISCHARGE OR THAT ARE LOCATED ON INTERCEPTORS OR TRUNK SEWERS SHALL BE CONSTRUCTED WITH A PVC LINER.
14. MANHOLES EXCEEDING 20' DEEP SHALL BE A MINIMUM OF 5' DIAMETER, INCLUDE LANDING(S), AND BE FITTED WITH A 30" DIAMETER FRAME.

SANITARY MANHOLE - TYPE A

NOT TO SCALE



UNPAVED AREAS



EXISTING PAVED AREAS

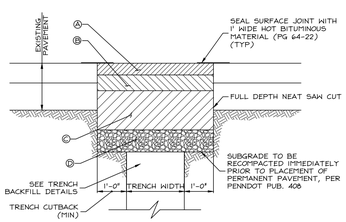
NEW ROADWAYS & PARKING AREAS

NOTES:

1. TRENCH COMPACTION TO BE TESTED, AT THE DEVELOPER'S EXPENSE, IN ACCORDANCE WITH PENNDOT PUB 408, LATEST REVISION, AS REQUIRED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
2. CLEAN FILL MUST BE APPROVED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION PRIOR TO PLACEMENT IN THE TRENCH.
3. AREAS AROUND MANHOLES, INLETS, AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
4. NO SLAG MATERIAL PERMITTED.
5. IF WATER IS ENCOUNTERED IN THE EXCAVATION TRENCH, AASHTO #57 AGGREGATE MUST BE USED.
6. ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408 AND 67 PA CODE SECTION 459.
7. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.

BACKFILL - TRENCH

NOT TO SCALE

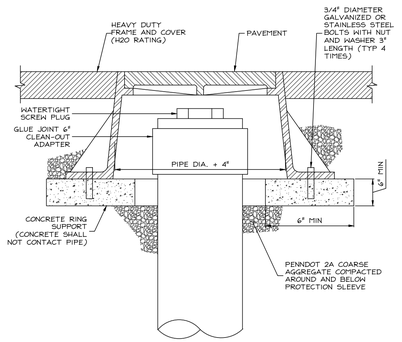


NOTES:

1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS STATED IN PENNDOT PUB. 408, SECT. 401.3(F).
2. TACK COAT MATERIAL SHALL BE APPLIED TO THE ENTIRE SURFACE PRIOR TO APPLICATION OF THE WEARING SURFACE UNLESS WAIVED BY PENNDOT.
3. ALL MATERIAL AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408, LATEST REVISION.
4. IF WORK IS COMPLETED WITHIN PENNDOT RIGHT OF WAY, SPECIAL CONDITIONS OF THE HIGHWAY OCCUPANCY PERMIT SHALL SUPERSEDE THIS DETAIL.
5. REFER TO PAVEMENT LEGEND FOR DESCRIPTIONS OF A,B,C AND D.

PAVEMENT RESTORATION - BITUMINOUS

NOT TO SCALE

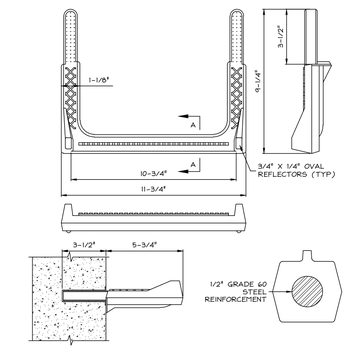


NOTES:

1. FRAME AND COVER SHALL BE NEENAH FOUNDRY COMPANY MODEL R-1976 OR APPROVED EQUAL.
2. CLEAN-OUT PROTECTION SLEEVES ARE TO BE INSTALLED FOR CLEAN-OUTS LOCATED IN PAVED AREAS, OR LESS THAN 3 FEET FROM A PAVED AREA.

CLEAN-OUT PROTECTION SLEEVE - FOR USE IN OR NEAR PAVED AREAS

NOT TO SCALE

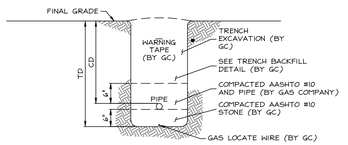


NOTES:

1. STEPS TO BE FABRICATED FROM COPOLYMER POLYPROPYLENE PLASTIC.
2. STEP SPACING SHALL BE 1 FOOT CENTER TO CENTER

POLYPROPYLENE MANHOLE STEP

NOT TO SCALE

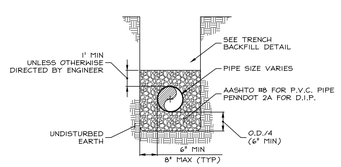


NOTES:

1. ALL BACKFILL AND BEDDING MATERIAL SHALL BE PROVIDED BY THE GENERAL CONTRACTOR (G.C.)
2. TRENCH DEPTH (TD) = COVER DEPTH (CD) + PIPE OD + 6".
3. COVER DEPTH (CD) > 24".

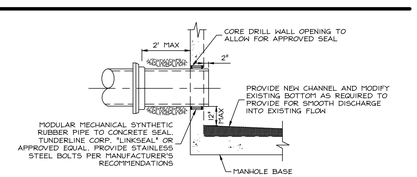
PIPE BEDDING - GAS

NOT TO SCALE



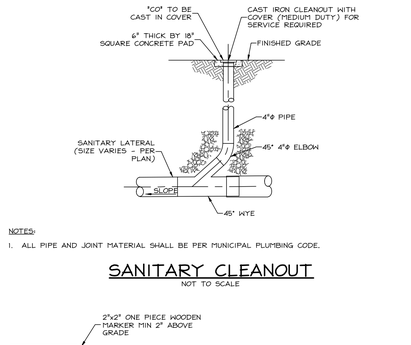
PIPE BEDDING - SANITARY MAIN AND LATERAL

NOT TO SCALE



PIPE CONNECTION - EXISTING MANHOLE

NOT TO SCALE

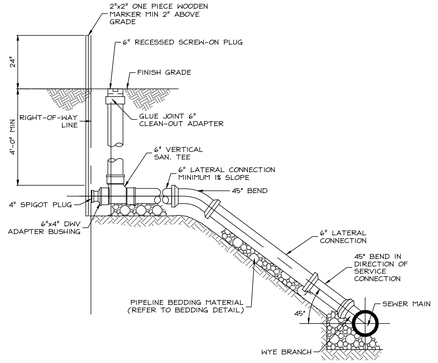


NOTES:

1. ALL PIPE AND JOINT MATERIAL SHALL BE PER MUNICIPAL PLUMBING CODE.

SANITARY CLEANOUT

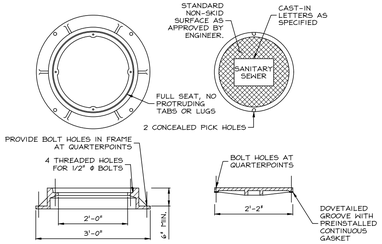
NOT TO SCALE



ELEVATION

SANITARY DEEP LATERAL CONNECTION

NOT TO SCALE



FRAME

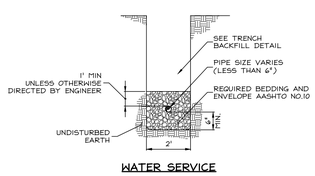
COVER

NOTES:

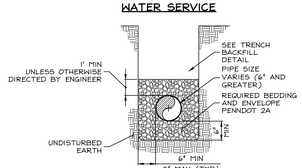
1. MANHOLE FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS PATTERN NO. 1045ZI (WATERTIGHT) WITH BOLT SHOWN COVER OR APPROVED EQUAL.
2. ALL MATERIAL SHALL BE GRAY CAST IRON, ASTM A48-83 CL35B.
3. CASTING SHALL BE DESIGNED FOR AASHTO HIGHWAY LOADING CLASS HS-20.
4. PROVIDE FOUR (4) ANCHOR BOLT HOLES IN FRAME TO ACCOMMODATE 3/4" ANCHOR BOLTS.
5. FRAMES SHALL BE WATERTIGHT AND COVER SHALL BE BOLTED WITH FOUR (4) 1/2" COUNTERSUNK STAINLESS STEEL BOLTS, MAKING A SEAL WITH RUBBER "O" RING GASKET, OR EQUAL.
6. COVER SHALL HAVE THE WORDS "SANITARY SEWER" CAST THEREON, LETTERING MINIMUM 2" HIGH.

WATERTIGHT SANITARY MANHOLE FRAME AND COVER

NOT TO SCALE



WATER SERVICE



WATER MAIN

PIPE BEDDING - WATER MAIN AND SERVICE

NOT TO SCALE

SANITARY SEWER NOTES

1. SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE BUCKS COUNTY WATER AND SEWER ("BCWSA") REQUIREMENTS, STANDARDS, AND SPECIFICATIONS AND IS SUBJECT TO INSPECTION BY THE SANITARY UTILITY OWNER AND ITS ENGINEER. THE SANITARY UTILITY OWNER WILL BE RESPONSIBLE FOR THE APPROVAL OF ALL MATERIALS IN CONNECTION WITH THE SANITARY SEWER.
2. SHOP DRAWINGS FOR ALL SANITARY SEWER APPURTENANCES WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING:
   A. A LIST OF THE PROPOSED SUPPLIERS FOR ALL MATERIALS TO BE USED IN CONNECTION WITH THE SEWER CONSTRUCTION.
   B. SHOP DRAWINGS OF THE PRECAST MANHOLES, MANHOLE STEPS AND MANHOLE FRAMES AND COVERS TO BE USED.
   C. CERTIFICATION FROM THE PIPE MANUFACTURER THAT THE PIPE MEETS OR EXCEEDS THE REQUIREMENT OF THE SANITARY UTILITY OWNER'S SPECIFICATIONS.
3. CONTRACTOR TO ENSURE THAT ALL SANITARY MAINS AND LATERALS HAVE A MINIMUM OF 18-INCH VERTICAL CLEARANCE OR 10 FT HORIZONTAL CLEARANCE BETWEEN ANY OTHER UTILITY CROSSING. OTHERWISE CONTRACTOR SHALL ENCASE MAIN OR LATERAL IN CONCRETE WITH A MINIMUM OF 10 LF ON EACH SIDE OF THE CROSSING. CLEANOUTS ARE TO BE PLACED AT MAXIMUM INTERVALS OF 100-FT AND AT ALL BENDS.
4. ALL SANITARY SEWER MANHOLES PROPOSED TO BE INSTALLED OR ADJUSTED WITHIN ANY EASEMENT PROPOSED OR EXISTING, SHALL BE INSTALLED WITH WATERTIGHT FRAMES AND COVERS. ANY MANHOLE TO BE INSTALLED OR ADJUSTED OUTSIDE OF PAVED AREAS SHALL BE INSTALLED A MINIMUM OF 6" ABOVE FINISH GRADE.
5. CONTRACTOR SHALL VERIFY ALL SIZES, MATERIALS, AND CONDITION OF EXISTING PIPES, TO BE REPLACED OR CONNECTED TO, PRIOR TO ORDERING MATERIALS.
6. ALL EXISTING MANHOLES SHALL BE TESTED PER SANITARY UTILITY OWNER STANDARDS TO ASSURE NO LEAKS EXIST WITHIN THE STRUCTURES.

WATER LINE NOTES

1. CONTRACTOR SHALL VERIFY ALL SIZES OF EXISTING PIPES, TO BE REPLACED OR CONNECTED TO, PRIOR TO ORDERING MATERIALS.
2. ALL WATER MAINS MUST BE SURVEY STAKED PRIOR TO CONSTRUCTION, WITH STAKES PROVIDED AT INTERVALS OF 50 FEET, AS WELL AS AT ALL FITTING LOCATIONS AND UTILITY CROSSINGS. STAKES SHALL BE MARKED WITH WRITTEN ELEVATIONS FOR BOTTOM OF WATER PIPE (INCLUDES BOTTOM OF OTHER UTILITY PIPE ELEVATIONS AND PIPE SIZE AT ALL UTILITY CROSSINGS TO VERIFY CLEARANCE). FIRE HYDRANTS AND WATER SERVICE CURB STOPS MUST ALSO BE FIELD STAKED AND ELEVATIONS INDICATING TOP-OF-CURB OR FINISHED GRADE SHOWN ON THE PLANS.
3. ALL WATER LINE VALVES, FITTINGS, ETC. SHALL BE INSTALLED WITH MECHANICAL JOINTS AND MEGALUG RESISTANT GLANDS.
4. ALL WATER LINE CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH THE UTILITY OWNER'S LATEST STANDARDS AND SPECIFICATIONS.
5. ALL POTABLE WATER PIPES SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET. POTABLE WATER AND SANITARY SEWER LINE CROSSINGS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF EIGHTEEN (18) INCHES OR A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. IF THESE CLEARANCES CANNOT BE MET, THE WATER LINE MUST THEN BE ENCASED IN CONCRETE FOR 10 LF ON EACH SIDE OF THE CROSSING. IF THE POTABLE WATER PASSES BENEATH THE SANITARY, NO MATTER HOW MUCH CLEARANCE, THE POTABLE WATER MUST BE ENCASED IN CONCRETE FOR 10 LF ON EACH SIDE OF THE CROSSING.
6. ALL WATER LINES ARE TO BE PRESSURE TESTED TO 1.5 TIMES THE WORKING PRESSURE OR 150 P.S.I., WHICHEVER IS GREATER, IN SECTIONS BETWEEN VALVES. THE TEST PRESSURE SHALL BE MAINTAINED FOR A PERIOD NOT LESS THAN 2 HOURS. SHOULD ANY PRESSURE TEST DISCLOSE AN INABILITY TO HOLD THE TEST PRESSURE, THE CONTRACTOR SHALL LOCATE AND CORRECT DEFECTS AND RETEST TO THE SATISFACTION OF THE UTILITY OWNER.
7. THE INSTALLATION OR REPAIR OF ANY UNDERGROUND FACILITIES OR PIPING WHICH CONNECTS TO OR FURNISHES WATER FOR THE FIRE PROTECTION SPRINKLER SYSTEM SHALL BE PERFORMED ONLY BY A LICENSED UTILITY CONTRACTOR, FIRE PROTECTION SPRINKLER CONTRACTOR, OR LICENSED PLUMBER. A COPY OF THE LICENSE OR CERTIFICATE OF COMPETENCY SHALL BE PROVIDED TO THE INSPECTOR AT THE FINAL INSPECTION.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
047 PE082384

REV. NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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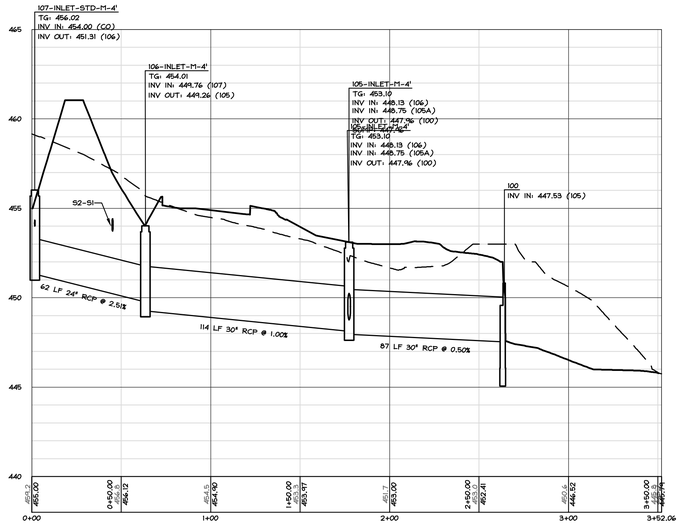
0 GRAPHIC SCALE IN FEET

renew LAND DEVELOPMENT SOLUTIONS

UTILITY NOTES & DETAILS

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LO

PROJECT NUMBER: 18015
SCALE: AS NOTED
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 13 of 24



107-100

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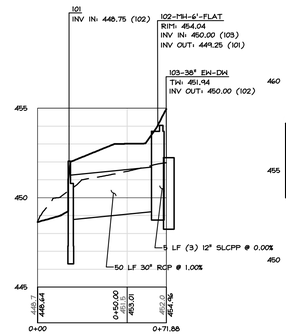

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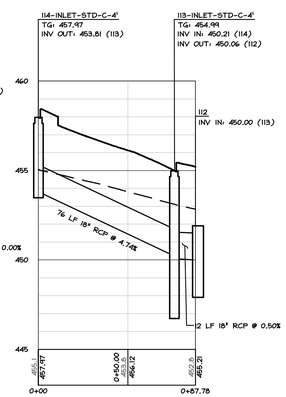

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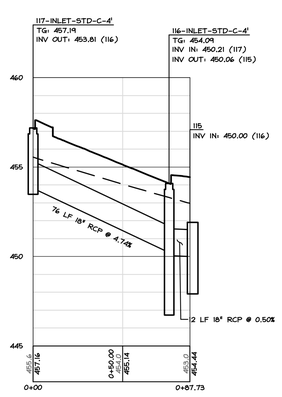

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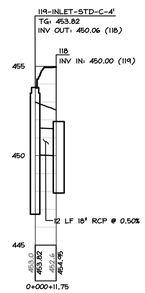

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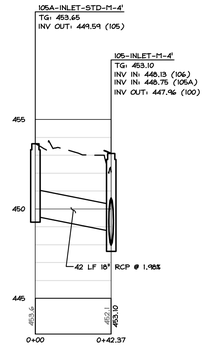

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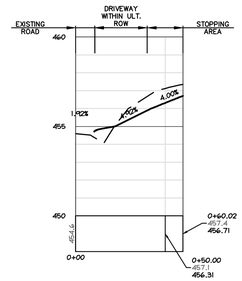
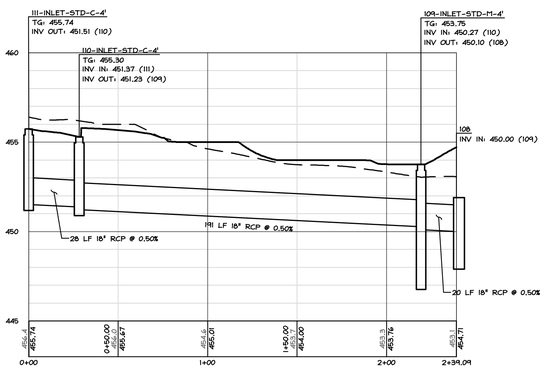


DRIVEWAY PROFILE

SCALE: 1" = H:<40>', V:<4>'

STRUCTURE LABEL LEGEND		
#-INLET-STD-M-4'-W/SNOUT		
1	2	3 4 5 6
1	STRUCTURE NUMBER	
2	STRUCTURE DESCRIPTION	
	INLET	INLET
	MH	STANDARD MANHOLE
	DHMH	DOGHOUSE MANHOLE
	DRMH	DROP MANHOLE
	YD	YARD DRAIN
	TD	TRENCH DRAIN
	EH	ENDWALL
	HW	HEADWALL
	OS	OUTLET STRUCTURE
	CO	CLEANOUT
3	BOTTOM TYPE/SIZE	
	STD	STANDARD BOX
	STD T1	STANDARD TYPE 1 BOX
	STD T2	STANDARD TYPE 2 BOX
	STD T3	STANDARD TYPE 3 BOX
	MOD T1	MODIFIED TYPE 1 BOX
	MOD T2	MODIFIED TYPE 2 BOX
	T4	PADOT 4' X 4' BOX
	T5	PADOT 5' X 5' BOX
	T6	PADOT 6' X 6' BOX
	T7	PADOT 7' X 7' BOX
	T8	PADOT 8' X 8' BOX
	T9	PADOT 9' X 9' BOX
	T10	PADOT 10' X 10' BOX
	TDH	PADOT TYPE D-H
	4'	4' MANHOLE
	5'	5' MANHOLE
	6'	6' MANHOLE
	8'	8' MANHOLE
	MOD	MODIFIED MANHOLE
	DH	TYPE DH
	D	TYPE D
4	TOP TYPE	
	M	TYPE M
	C	TYPE C
	S	TYPE S
	DH LEV	TYPE D-H LEVEL
	CONE	CONIC
	FLAT	FLAT
5	GRATE SIZE	
	2'	2' X 2'
	4'	2' X 4'
	6'	2' X 6'
6	SNOUTS	
	-SNOUT	WITH SNOUT

IF NOT NOTED, INLET GRATE SIZE SHALL BE 4'.



111 - 108

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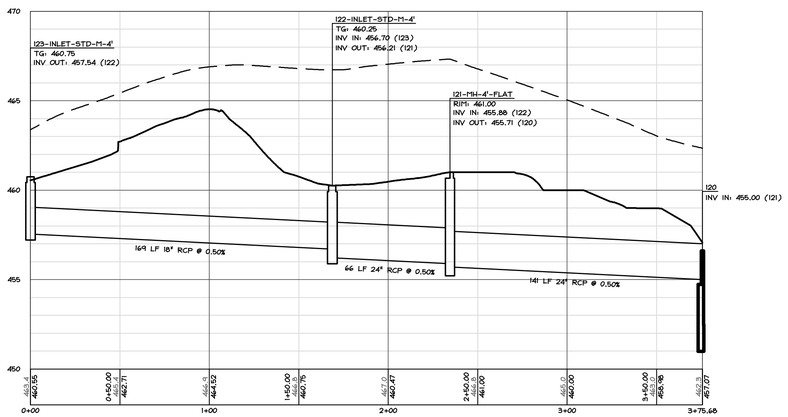

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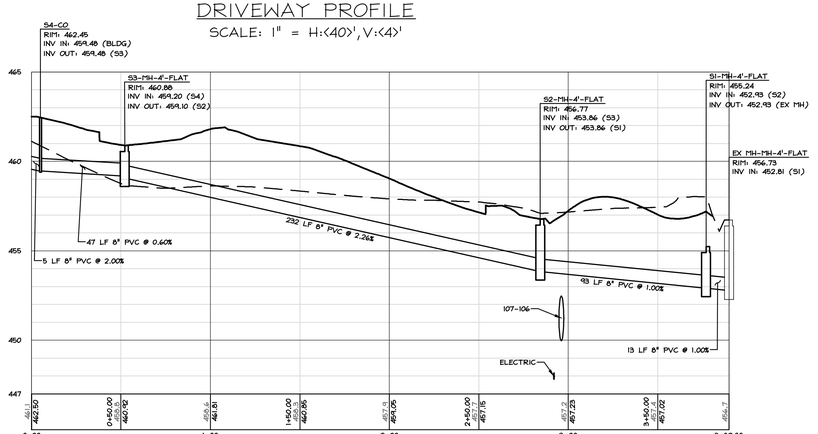

S4-EX MH

SCALE: 1" = H:<40>', V:<4>'

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REV. NO.	DATE	REVISION
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1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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40 (4) 0 40 (4) 80 (8)

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
NO. PE082384

renew LAND DEVELOPMENT SOLUTIONS

PROFILES

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LO

PROJECT NUMBER: 18015

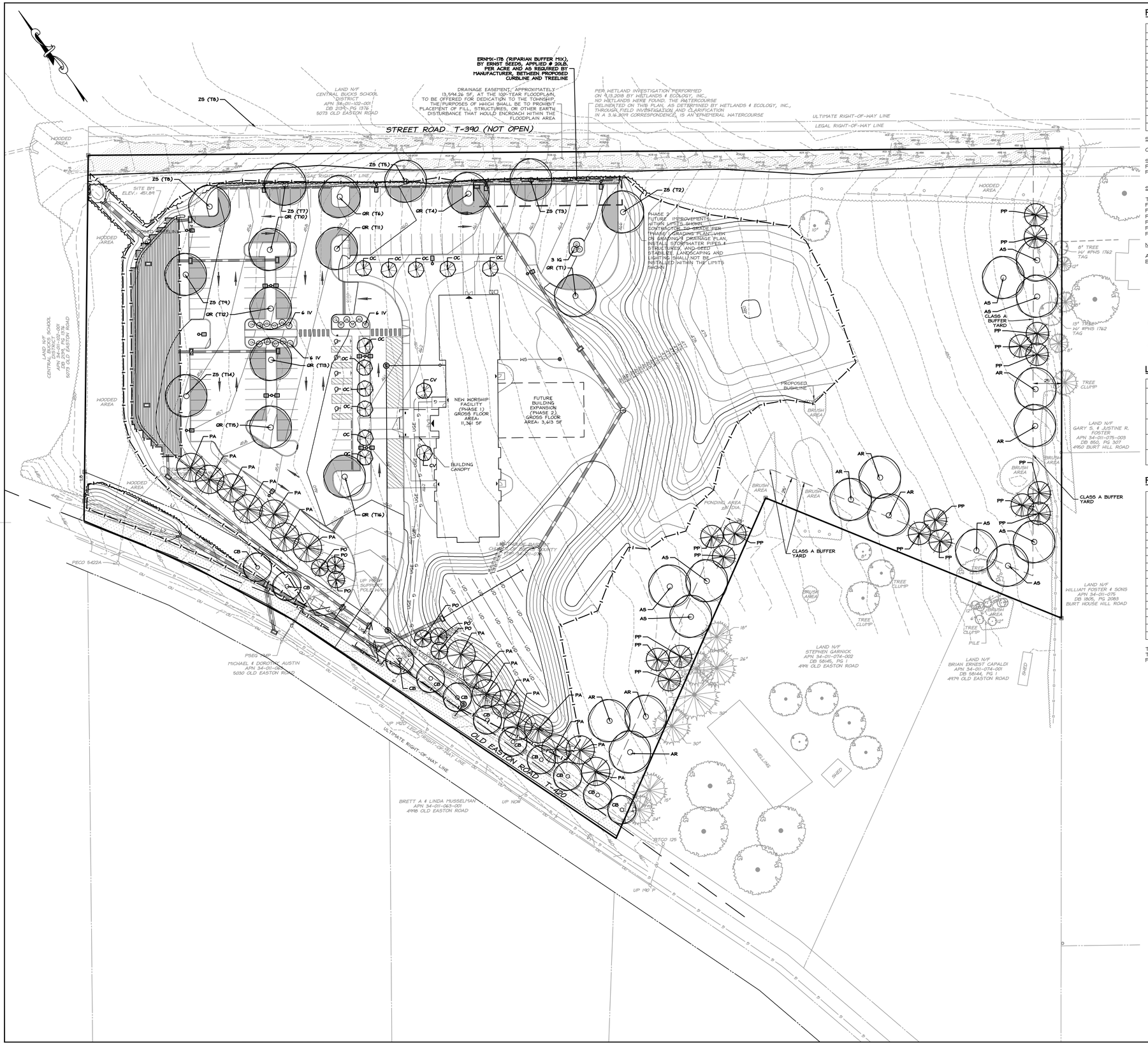
SCALE: 1"= 40'

DRAWN BY: RDG

DESIGNED BY: RDG

DATE: 06/20/19

SHT NO. 14 of 24



PLANTING SCHEDULE

SYM	QTY	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE	ROOT	REMARKS
TREES						
AS	9	ACER SACCHARUM	SUGAR MAPLE	2.5"-3" CAL	B&B	
AR	8	ACER RUBRUM	RED MAPLE	2.5"-3" CAL	B&B	
CB	11	CARPINUS BETULUS	EUROPEAN HORNBEAM	2.5"-3" CAL	B&B	
CV	2	CHIONANTHUS VIRGINICUS	FRINGE TREE	5'-6' HT	B&B	
PA	16	PICEA ABIES	NORWAY SPRUCE	8'-10' HT	B&B	
PO	6	PICEA OMORIKA	SERBIAN SPRUCE	8'-10' HT	B&B	
PP	17	PICEA PUNGENS	COLORADO BLUE SPRUCE	8'-10' HT	B&B	
OC	11	PRUNUS OKAME	OKAME CHERRY	2.5"-3" CAL	B&B	
QR	9	QUERCUS RUBRA	RED OAK	2.5"-3" CAL	B&B	
ZS	7	ZELKOVA SERRATA	JAPANESE ZELKOVA	2.5"-3" CAL	B&B	
LARGE SIZED SHRUBS						
IG	3	ILEX GLABRA	INKBERRY	24" HT	CONTAINER	
IV	18	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY	24" HT	CONTAINER	

SOUTHEASTERN PROPERTY LINE LANDSCAPING REQUIREMENTS:

CLASS A BUFFER YARD = 1 MEDIUM TO LARGE DECIDUOUS TREE PER 60 FEET, PLUS ONE EVERGREEN TREE PER 60 FEET.
SOUTHEASTERN PROPERTY LINE = 988 LINEAR FEET
PLANTS REQUIRED = 17 DECIDUOUS TREES + 17 EVERGREEN TREES
PLANTS PROVIDED = 17 DECIDUOUS TREES + 17 EVERGREEN TREES

STREET TREES:

TABULATION = 1 SMALL TREE PER 3 LINEAL FEET (LF) FRONTAGE
FRONTAGE SOUTH OF DRIVEWAY = 252 LF
FRONTAGE NORTH OF DRIVEWAY = 211 LF
PLANTS REQUIRED (SOUTH) = 9 TREES
PLANTS PROVIDED (SOUTH) = 9 TREES
PLANTS REQUIRED (NORTH) = 7 TREES
PLANTS PROVIDED (NORTH) = 2 TREES (PARTIAL WAIVER REQUESTED)

NOTES:

AS INDICATED IN THE PLUMSTEAD THP. ZONING ORDINANCE SECTION 27-2405(A,B,C), AS RELATED TO BUFFER YARDS, THE FOLLOWING SHALL APPLY:

A. BUFFER YARDS SHALL BE REQUIRED WHERE A NON-RESIDENTIAL ZONING DISTRICT (VC,C-1,C-2,C-3,LI, AND Q) ADJOINS A RESIDENTIAL ZONING DISTRICT (RP,R-0,R-1,R-2,R-3,R-4,R-5,VR, AND MHP) OR WHERE A RESIDENTIAL ZONING DISTRICT (RP,R-0,R-1,R-2,R-3,R-4,R-5,VR, AND MHP) ADJOINS PROPERTY PRESERVED IN PERPETUITY THROUGH THE PLUMSTEAD TOWNSHIP PRESERVATION PROGRAM OR THROUGH ANY PRIVATE, TOWNSHIP, COUNTY, STATE, OR FEDERAL LAND PRESERVATION PROGRAM OR ADJOINS TOWNSHIP, COUNTY, STATE, OR FEDERAL PARKLAND, EXCEPT THAT BUFFER YARDS ARE NOT REQUIRED FOR VR AND VC ZONING DISTRICT PROPERTIES ADJACENT TO EXISTING ROADS.

B. PARTS 3 THROUGH 18 OF THIS CHAPTER REQUIRE BUFFER YARDS FOR CERTAIN USES REGARDLESS OF ADJACENT ZONING. THE WIDTH AND PLANTING CONTENT OF THESE BUFFER YARDS ARE DEPENDENT ON THE PROPOSED USE, ADJACENT USES AND ADJACENT ROAD CLASSIFICATIONS.

C. BUFFER YARD AREAS SHALL NOT OVERLAP THE REQUIRED FRONT, SIDE, OR REAR YARDS NOR BE INCLUDED WITHIN THE AREA NECESSARY TO MEET MINIMUM LOT AREA REQUIREMENTS.

LANDSCAPE LEGEND

DESCRIPTION	PROPOSED SYMBOL
TREE/SHRUB	
PARKING LOT TREE SHADING	
ECOLOGY SEED MIX	
TREE CANOPY LINE	
TEMPORARY TREE PROTECTION FENCE	

PARKING LOT SHADE TABULATION

LABEL	BOTANICAL NAME	100% SHADING CREDIT (SF.)	75% SHADING CREDIT (SF.)	50% SHADING CREDIT (SF.)	25% SHADING CREDIT (SF.)
T1	QUERCUS RUBRA	-	-	-	240
T2	ZELKOVA SERRATA	-	-	-	240
T3	ZELKOVA SERRATA	-	-	-	240
T4	QUERCUS RUBRA	-	-	481	-
T5	ZELKOVA SERRATA	-	-	-	240
T6	QUERCUS RUBRA	-	-	481	-
T7	ZELKOVA SERRATA	-	-	-	240
T8	ZELKOVA SERRATA	-	-	-	240
T9	ZELKOVA SERRATA	-	-	-	240
T10	QUERCUS RUBRA	-	-	-	240
T11	QUERCUS RUBRA	-	-	-	240
T12	QUERCUS RUBRA	-	-	481	-
T13	QUERCUS RUBRA	-	-	481	-
T14	ZELKOVA SERRATA	-	-	-	240
T15	QUERCUS RUBRA	-	-	-	240
T16	QUERCUS RUBRA	-	-	-	240

TOTAL TREE SHADE = 4,804 SF
TOTAL PAVED AREA = 56,366 SF
PERCENT OF SHADE COVERAGE = 8.50%

REGISTERED PENNSYLVANIA LANDSCAPE ARCHITECT THOMAS ROBERT MOYER LA000990

REV. NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
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renew LAND DEVELOPMENT SOLUTIONS

LANDSCAPE

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER: 18015
SCALE: 1" = 40'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 15 of 24

LIGHTING FIXTURE SCHEDULE

LABEL	QTY	MANUFACTURER	ITEM SPECIFICATIONS	LIGHT LOSS FACTOR	CONNECTED LOAD	NO. LAMPS	LAMP TYPE	TOTAL LUMENS	REMARKS
T2	10	ARCHITECTURAL AREA LIGHTING	UCM-ANG-T2-32LED-3K-450	1	48 WATTS	1 X 32 DIODES	LED	4,608	POLE/FIXTURE ARM STYLE # FINISH TO BE SUBMITTED BY CONTRACTOR FOR APPROVAL BY OWNER; SEE DETAILS FOR BASE INSTALLATION
T5	4	ARCHITECTURAL AREA LIGHTING	UCM-ANG-T2-32LED-3K-450	1	96 WATTS	2 X 32 DIODES	LED	9,973	POLE/FIXTURE ARM STYLE # FINISH TO BE SUBMITTED BY CONTRACTOR FOR APPROVAL BY OWNER; SEE DETAILS FOR BASE INSTALLATION

NOTES:

1. ALL FIXTURES SPECIFIED ON THIS PLAN ARE DARK-SKY COMPLIANT AND MEET IESNA FULL CUTOFF CRITERIA.

LIGHTING LEGEND

DESCRIPTION	PROPOSED
SINGLE LUMINAIRE LIGHT	
DOUBLE LUMINAIRE LIGHT	
ISOLINE - 0.2 FOOTCANDLES	0.25 FC
ISOLINE - 0.5 FOOTCANDLES	0.5 FC
ISOLINE - 1 FOOTCANDLES	1 FC
FOOTCANDLE MARKER	0.3
MOUNTED HEIGHT	MH
POLE HEIGHT	PH

NOTES:

1. THE MOUNTED HEIGHT AND POLE LENGTH ARE INDICATED ON THE PLAN FOR EACH FIXTURE.

LIGHTING STATISTICS

LIT AREA	PARAMETER	MINIMUM	MAXIMUM	AVERAGE
PROPERTY BOUNDARY	ILLUMINANCE	0.00	2.10	0.20

* UNITS SHOWN IN THE ABOVE CHART ARE FOOTCANDLES (FC).

CHRISTOPHER T. SNYDER
COMMONWEALTH OF PENNSYLVANIA
THOMAS ROBERT GILLESPIE
LICENSED LANDSCAPE ARCHITECT
LA000350

REV. NO.	DATE	REVISION
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1
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40 0 40 80

renew
LAND DEVELOPMENT SOLUTIONS

LIGHTING

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PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
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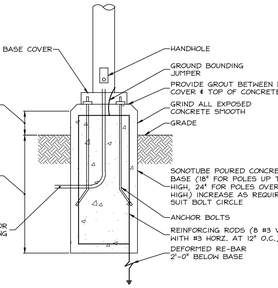
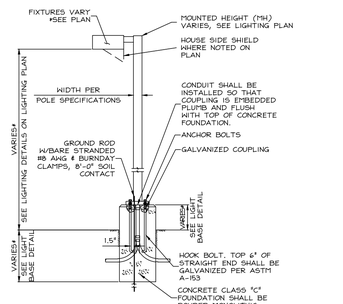


LIGHT BASE

NOT TO SCALE

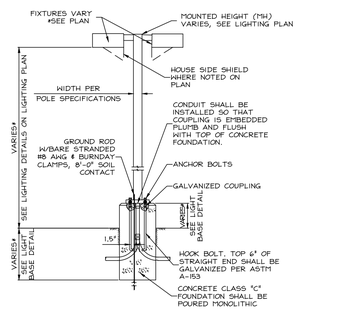


NOTES:

1. ALL CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE EMBEDDED PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.

LIGHT POLE

NOT TO SCALE

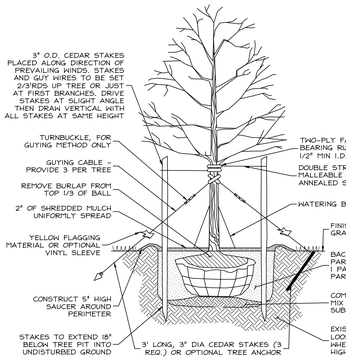


NOTES:

1. ALL CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE EMBEDDED PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.

DOUBLE-MOUNTED LIGHT POLE

NOT TO SCALE

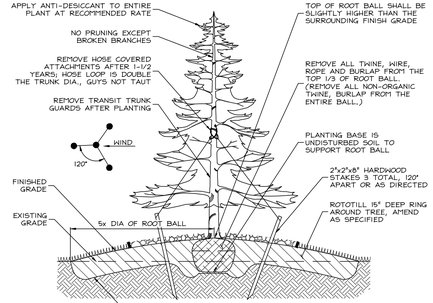


NOTES:

1. ALL TREES UNDER 3" IN CALIPER SHALL BE STAKED
2. ALL TREES 3" IN CALIPER AND GREATER SHALL BE GUYED.
3. ALL TREES SHALL BE PRUNED TO THIN AND SHAPE CANOPY LEADER OF TREE SHALL NEVER BE CUT.
4. TREE SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE IN THE NURSERY.

TREE PLANTING - DECIDUOUS

NOT TO SCALE

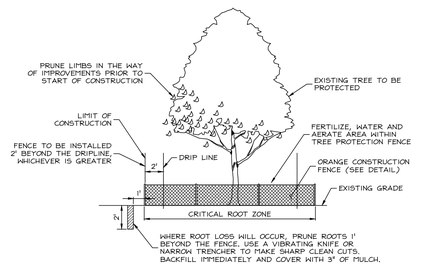


NOTES:

1. DO NOT FERTILIZE UNTIL LATE SPRING OF 2ND YEAR FOLLOWING PLANTING.
2. PLANTING SOIL AND MIX AND MULCH AS SPECIFIED. MULCH SHALL BE PLACED AT A DISTANCE EQUAL TO THE WIDTH OF THE DRIPLINE.
3. ON WINDY SITES 2 STAKES SHALL BE ON PREVAILING WIND SIDE.

TREE PLANTING - EVERGREEN

NOT TO SCALE

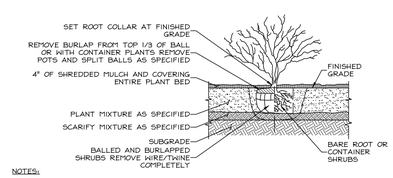


NOTES:

1. NO ENTRY, STORAGE, DISTURBANCE OR ALTERATION SHALL OCCUR IN AREA WITHIN TREE PROTECTION FENCE.

TREE PROTECTION AND PRUNING

NOT TO SCALE



NOTES:

1. DO NOT PRUNE EVERGREENS EXCEPT TO REMOVE DEAD AND BROKEN BRANCHES.
2. THIN BRANCHES AND FOLIAGE (NOT ALL BRANCH TIPS) BY 1/3, RETAINING NORMAL PLANT SHAPE (EXCEPT EVERGREEN).
3. SHRUB SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE IN THE NURSERY.

SHRUB PLANTING IN PLANTING BED

NOT TO SCALE

TREE PROTECTION NOTES

1. GRADE CHANGES AND EXCAVATION SHALL NOT ENCROACH UPON THE TREE PROTECTION ZONE.
2. NO TOXIC MATERIALS SHALL BE STORED WITHIN ONE HUNDRED (100) FEET OF A TREE PROTECTION ZONE, INCLUDING PETROLEUM-BASED AND/OR -DERIVED PRODUCTS.
3. THE AREA WITHIN THE TREE PROTECTION ZONE SHALL NOT BE BUILT UPON, NOR SHALL ANY MATERIALS BE STORED THERE EITHER TEMPORARILY OR PERMANENTLY. VEHICLES AND EQUIPMENT SHALL NOT BE PARKED IN THE TREE PROTECTION ZONE.
4. WHEN TREE STUMPS ARE LOCATED WITHIN TEN (10) FEET OF THE TREE PROTECTION ZONE, THE STUMPS SHALL BE REMOVED BY MEANS OF A STUMP GRINDER TO MINIMIZE THE EFFECT ON SURROUNDING ROOT SYSTEMS.
5. TREE ROOTS WHICH MUST BE SEVERED SHALL BE CUT WITH HAND OR SHARP POWER SAW METHODS ALIGNED RADIALLY. THIS METHOD REDUCES THE LATERAL MOVEMENT OF THE ROOTS DURING EXCAVATION, WHICH IF DONE BY OTHER METHODS COULD DAMAGE THE INTERTWINED ROOTS OF ADJACENT TREES.
6. WITHIN FOUR (4) HOURS OF ANY SEVERANCE OF ROOTS, ALL TREE ROOTS THAT HAVE BEEN EXPOSED AND/OR DAMAGED SHALL BE TRIMMED CLEANLY AND COVERED TEMPORARILY WITH MOIST PEAT MOSS, MOIST BURLAP OR OTHER MOIST BIODEGRADABLE MATERIAL TO KEEP THEM FROM DRYING OUT UNTIL PERMANENT COVER CAN BE INSTALLED.
7. TREES SHALL NOT BE USED FOR ROPING, CABLES, SIGNS OR FENCING. NAILS AND SPIKES SHALL NOT BE DRIVEN INTO TREES.
8. PRIOR TO CONSTRUCTION, THE TREE PROTECTION ZONE SHALL BE DELINEATED BY THE FOLLOWING METHODS:
   A. THE TREE PROTECTION ZONE THAT IS DELINEATED ON THE SITE PRIOR TO CONSTRUCTION SHALL CONFORM TO THE APPROVED DEVELOPMENT PLANS.
   B. ALL TREES SCHEDULED TO REMAIN SHALL BE MARKED; WHERE GROUPS OF TREES EXIST, ONLY THE TREES ON THE EDGE NEED TO BE MARKED.
   C. A FORTY-EIGHT-INCH-HIGH ORANGE BARRIER FENCE MOUNTED ON POSTS, LOCATED EIGHT (8) FEET ON CENTER, SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE.
   D. IN ADDITION TO THE TREE PROTECTION ZONE, TREES MAY BE LEFT STANDING AS PROTECTION BETWEEN THE TRUNKS OF THE TREES TO BE RETAINED AND THE LIMITS OF GRADING. WHEN ADDITIONAL TREES ARE USED AS PROTECTION, THE TREE PROTECTION ZONE ON THE APPROVED PLAN SHALL BE MARKED IN THE FIELD SO THAT THE ADDITIONAL BUFFER AREA IS DELINEATED. WHEN THIS METHOD OF PROTECTION IS USED, THESE ADDITIONAL TREES SHALL BE REMOVED AT THE TIME OF COMPLETION OF THE PROJECT.
   E. WHEN THE BARRIER FENCE HAS BEEN INSTALLED, IT SHALL BE INSPECTED AND APPROVED BY THE MUNICIPAL ENGINEER PRIOR TO COMMENCING CLEARING AND CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE MAINTAINED UNTIL ALL WORK/CONSTRUCTION HAS BEEN COMPLETED. ANY DAMAGES TO THE PROTECTIVE FENCING SHALL BE REPAIRED OR REPLACED BEFORE FURTHER CONSTRUCTION OCCURS.
   F. TREES BEING REMOVED SHALL NOT BE FELLED, PUSHED OR PULLED INTO A TREE PROTECTION ZONE OR INTO TREES THAT ARE TO BE RETAINED.

LANDSCAPE NOTES

1. GRADE CHANGES AND EXCAVATION SHALL NOT ENCROACH UPON TREE PROTECTION ZONES.
2. ALL EQUIPMENT AND TOOLS SHALL BE PLACED SO AS NOT TO INTERFERE OR HINDER THE PEDESTRIAN AND VEHICULAR TRAFFIC FLOW.
3. THE CONTRACTOR SHALL COORDINATE SUBMITTAL WITH LIGHTING AND/OR IRRIGATION CONTRACTORS REGARDING TIMING OF INSTALLATION OF PLANT MATERIAL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WHERE THE UNDERGROUND UTILITIES EXIST ON-SITE.
5. THE CONTRACTOR SHALL CALL THE PENNSYLVANIA ONE CALL SYSTEM (1-800-242-1776) A MINIMUM OF THREE DAYS PRIOR TO ANY EXCAVATION. THE CONTRACTOR IS ADVISED OF THE POSSIBILITY THAT UNDERGROUND UTILITIES MAY BE ENCOUNTERED AND THEIR LOCATIONS SHALL BE VERIFIED IN THE FIELD WITH THE OWNER OR GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF ANY DIGGING OPERATIONS. IN THE EVENT THEY ARE UNCOVERED, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE TO UTILITIES AND SUCH DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. RESPONSIBILITY FOR DAMAGE OF UNDERGROUND LINES SHALL NOT BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. IF UTILITY LINES ARE ENCOUNTERED IN EXCAVATION OF TREE PITS, OTHER LOCATIONS FOR TREES SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION.
7. EXCAVATION NEAR EXISTING UTILITIES TO BE CAREFULLY PERFORMED BY HAND. ALL TREES SHALL NOT BE LOCATED CLOSER THAN 10' OF ANY EXISTING OR PROPOSED UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED ON THE PLANS.
8. THIS PLAN IS TO BE USED FOR LANDSCAPING PURPOSES ONLY. THE CONTRACTOR SHALL EXAMINE ALL ENGINEERING DRAWINGS AND PLANS OF CONSTRUCTION FOR EXACT LOCATIONS OF UTILITIES, DRAINS ETC., AND NOTIFY THE OWNER ABOUT ANY DISCREPANCIES OR CONFLICTS BEFORE STARTING WORK.
9. LANDSCAPE PLANS SHALL NOT BE UTILIZED TO DETERMINE LOCATIONS, DIMENSIONS OR MEASUREMENTS OF OTHER PROPOSED SITE STRUCTURES. REFER TO APPROPRIATE DRAWINGS (ENGINEERING, ETC.) FOR OTHER INFORMATION.
10. EVERY POSSIBLE SAFEGUARD SHALL BE TAKEN TO PROTECT BUILDING SURFACES, EQUIPMENT AND FURNISHINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSONS OR PROPERTY WHICH MAY OCCUR AS A RESULT OF HIS NEGLIGENCE IN THE EXECUTION OF THE WORK.
11. IN THE EVENT OF VARIATIONS BETWEEN WRITTEN QUANTITIES SHOWN ON THE PLAN AND THE PLANT LIST, THE PLANS SHALL CONTROL. THE CONTRACTOR IS RESPONSIBLE FOR QUANTITIES SHOWN ON THE PLANS AND FOR THE COVERAGE SHOWN FOR SHRUB AND SEED QUANTITY TAKE-OFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING. THE CONTRACTOR SHALL FURNISH PLANT MATERIAL IN SIZES AS SPECIFIED IN PLANT LIST.
12. PLANTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS OR AS DESIGNATED IN THE FIELD. THE CONTRACTOR SHALL STAKE ALL PLANT MATERIAL LOCATED ON THE SITE FOR REVISAL. ALL LOCATIONS ARE TO BE REVIEWED BY LANDSCAPE ARCHITECT BEFORE EXCAVATION.
13. FIELD ADJUST PROPOSED PLANTING LOCATIONS WHERE NEEDED TO AVOID ANY DAMAGE TO EXISTING FACILITIES, AS WELL AS VEGETATION.
14. PLANTS SHALL CONFORM TO THE CURRENT "AMERICAN STANDARD FOR NURSERY STOCK" SPONSORED BY AND PUBLISHED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURE NOMENCLATURE, THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION, (FORMERLY AMERICAN ASSOCIATION OF NURSERYMEN-AAN), PARTICULARLY WITH REGARD TO SIZE, GROWTH, SIZE OF BALL, AND DENSITY OF BRANCH STRUCTURE. PLANT MATERIAL SHALL BE TAGGED AT THE SOURCE BY THE LANDSCAPE ARCHITECT UNLESS THIS REQUIREMENT IS SPECIFICALLY WAIVED. LOOSE, BROKEN, OR TRANSPLANTED BALLS WILL ALSO BE REJECTED.
15. ALL PLANT MATERIALS USED SHALL BE TRUE TO NAME AND SIZE IN CONFORMITY WITH THE PLANT LIST AND SHALL BE FREE FROM DISEASE, INSECTS, EGGS, LARVAE, AND PHYSICAL OR MECHANICAL DAMAGE OF VARIETY. PLANTS SHALL HAVE NORMAL, WELL-DEVELOPED BRANCHES & VIGOROUS ROOT SYSTEMS. THEY SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM DEFECTS, DISFIGURING KNOTS, ABRASIONS OF THE BARK, SUNSCALD, INJURIES, PLANT DISEASES, INSECT EGGS, BORERS AND ALL OTHER FORMS OF INFECTION. ALL PLANTS SHALL BE HARDY UNDER THE CLIMATIC CONDITIONS OF THE LOCALITY WHERE THEY HAVE BEEN NURSERY GROWN UNDER THE SAME CLIMATIC CONDITIONS AS THE PROJECT SITE.
16. PLANT NAMES SHALL AGREE WITH THE NOMENCLATURE "STANDARD PLANT NAMES" AS ADOPTED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURE NOMENCLATURE.
17. ALL PLANTS (B&B OR CONTAINER) SHALL BE PROPERLY IDENTIFIED BY WEATHER-PROOF LABELS SECURELY ATTACHED THERETO BEFORE DELIVERY TO PROJECT SITE. LABELS SHALL REMAIN ATTACHED THROUGHOUT THE GUARANTEE PERIOD AND SHALL NOT BE REMOVED UNTIL THE FINAL INSPECTION BY LANDSCAPE ARCHITECT OR AGENT IN CHARGE.
18. BALLED AND BURLAPPED, AND BALLED AND PLATFORM PLANTS, SHALL HAVE SOLID BALL OF EARTH SECURELY HELD IN PLACE BY BURLAP AND STOUT ROPE. MINIMUM BALL SIZES SHALL BE IN ACCORDANCE WITH THE STANDARD FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
19. THE LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATIONS, TO REJECT ANY AND ALL WORK AND MATERIAL WHICH, IN HIS OPINION, DOES NOT MEET THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. ALL REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
20. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE LANDSCAPE ARCHITECT AND PLUMSTEAD TOWNSHIP.
21. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR STABILITY AND CONDITIONS OF ALL THE PLANTS AND SHALL BE LEGALLY LIABLE FOR ANY DAMAGE CAUSED BY THEIR INSTABILITY OR FOR PLANT MATERIALS STAGGING. ALL TREES SHALL BE PLUMB AS INDICATED ON THE DOCUMENTS OR BY UTILIZING A METHOD APPROVED BY THE LANDSCAPE ARCHITECT.
22. ALL DISTURBED AREAS OF THE SITE NOT PLANTED WITH SHRUBS OR GROUND COVER SHALL BE FINE GRADED AND SEEDED.
23. ALL DISTURBED AREAS TO BE TOPSOILED SHALL HAVE A TOPSOIL DEPTH OF 5 INCHES TO BE SPREAD AND COMPACTED AS SPECIFIED IN THE PLUMSTEAD TWP. LAND DEVELOPMENT ORDINANCE FOR AREAS TO BE STABILIZED IN VEGETATED COVER, AS REQUIRED BY SECTION 22-1404.5 OF THE PLUMSTEAD TWP. LAND DEVELOPMENT ORDINANCE, AND SHALL BE FERTILIZED, SEEDED AND MULCHED WITH SMALL GRAIN STRAW. TOPSOIL SHALL BE NATURAL FRIABLE FERTILE SOIL CHARACTERISTIC OF PRODUCTIVE SOIL IN THE VICINITY. IT SHALL BE FREE OF LUMPS OF CLAY, STONES, ROOTS AND OTHER FOREIGN MATTER.
24. TOPSOIL IS NOT TO BE REMOVED FROM THE SITE, UNLESS OTHERWISE APPROVED BY THE TOWNSHIP ENGINEER IN ACCORDANCE WITH SECTION 22-1404 OF THE PLUMSTEAD TWP. LAND DEVELOPMENT ORDINANCE.
25. MULCH, 4" IN DEPTH, SHALL BE SHREDDED HARDWOOD BARK NOT EXCEEDING 2" IN GREATEST DIMENSION.
26. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISH GRADE AS IT BORE TO EXISTING GRADE AT THE NURSERY. ADJUST AS NEEDED TO MEET GRADE AT ROOT COLLAR. THE ROOT COLLAR SHALL NOT BE COVERED BY SOIL OR MULCH.
27. PLANTING SHALL BE CONDUCTED UNDER SEASONS WHICH ARE NORMAL FOR SUCH WORK. AT THE OPTION AND ON THE FULL RESPONSIBILITY OF THE CONTRACTOR, PLANTING OPERATIONS MAY BE CONDUCTED UNDER UNREASONABLE CONDITIONS. PLANTS SHALL ONLY BE INSTALLED IN PLANTING SEASONS. IN GENERAL, PLANT DURING THE FOLLOWING SEASONS UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT:

    DECIDUOUS TREES AND SHRUBS:
    WHEN PLANTS ARE DORMANT (FALL AND EARLY SPRING).

    BROADLEAF EVERGREEN TREES AND SHRUBS:
    WHEN THE FROST LEAVES THE GROUND UNTIL NEW GROWTH IS WELL DEVELOPED (SPRING).

    GROUNDCOVER:
    AFTER THE DANGER OF FROST HAS PAST (SPRING UNTIL EARLY SUMMER).

28. PRUNE OUT ONLY DEAD, DECAYED, BROKEN, CROSSING, AND INWARD-GROWING BRANCHES AND BRANCH STUBS. DO NOT CUT LEADERS. PAINTAIN AND/OR IMPROVE THE ATTRACTIVENESS OF EACH PLANT'S FULL FORM, CONSISTENT WITH ITS NATURAL GROWTH HABITS. EXCESSIVELY PRUNED PLANTS WILL BE REJECTED.
29. UNDER NO CIRCUMSTANCES SHOULD THE MAIN LEADER OF A DECIDUOUS OR EVERGREEN TREE BE TOPPED.
30. SHADE TREES LOCATED NEAR PEDESTRIAN OR VEHICULAR ACCESS SHOULD NOT BRANCH BELOW 7'.
31. TREES OVER SIX FEET IN HEIGHT ARE TO BE STAKED AT TIME OF INSTALLATION.
32. ALL PLANTS WITHIN CLEAR SIGHT TRIANGLES SHALL NOT EXCEED A MATURE HEIGHT OF 30" ABOVE ELEVATION OF CURB UNLESS OTHERWISE NOTED ON THE PLANS.
33. ALL SHRUB MASSES SHALL FORM PLANTING BEDS AND SHALL BE MULCHED ENTIRELY BETWEEN PLANTS.
34. ALL PROPOSED TREES TO BE INSTALLED EITHER ENTIRELY WITHIN OR ENTIRELY OUT OF PLANTING BEDS. PLANTING BED LINES SHALL BE CLEARLY DELINEATED. ALL SHRUBS AND GROUNDCOVERS AREAS SHALL BE PLANTED IN CONTINUOUSLY PREPARED BED AND TOP DRESSED WITH 4 INCH SHREDDED HARDWOOD OR BARK MULCH. MULCH SHALL HAVE BEEN AGED A MINIMUM OF SIX MONTHS.
35. ALL PLANTING BEDS ADJACENT TO LAWN, SOD, OR SEEDED AREAS SHALL BE SPADE EDGED.
36. PLANT MATERIAL SHOWN IN A MASS OR TOUCHING EACH OTHER SHALL BE ALIGNED TO GROW TOGETHER TO PERFORM AS A SCREEN OR A HEDGE. DO NOT PRUNE OR SHEER INTO INDIVIDUAL FREE-STANDING PLANTS.
37. CUT AND REMOVE BURLAP FROM TOP ONE-THIRD OF BALL ONLY IF NON-JUTE ROPING IS USED.
38. GUY WIRES SHALL BE LOCATED BETWEEN FIRST AND SECOND SETS OF BRANCHES. TREE STAKES AND GUY WIRES SHALL BE REMOVED BY THE CONTRACTOR AFTER ONE GROWING SEASON. GUY WIRES SHALL BE LOCATED SO THAT THEY WILL NOT PULL CROTCH APART.
39. PLANTS PLANTED IN ROWS SHALL BE MATCHED SPECIMENS AND BE UNIFORM IN SIZE AND FORM.
40. THE CONTRACTOR IS RESPONSIBLE FOR TESTING PROJECT SOILS. THE CONTRACTOR IS TO PERFORM SOIL TESTS AT THE SOURCE OF TOPSOIL AND ON-SITE SOILS TO VERIFY THAT THE SOILS ON THE SITE ARE ACCEPTABLE FOR THE PROPER GROWTH OF THE PROPOSED PLANT MATERIAL. SHOULD THE CONTRACTOR FIND POOR SOIL CONDITIONS, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE SOIL AMENDMENTS AS NECESSARY. THESE AMENDMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, FERTILIZERS, LIME, AND TOPSOIL. PROPER PLANTING SOILS MUST BE VERIFIED PRIOR TO PLANTING OF MATERIALS.
41. THE CONTRACTOR SHALL FERTILIZE ALL PLANT MATERIAL WITH 5-10-5 FERTILIZER, OR APPROVED EQUAL, AT THE RATE SPECIFIED BY THE MANUFACTURER. ALL TURF AREAS SHALL BE LIMED AND FERTILIZED IN ACCORDANCE WITH THE TYPE OF SOILS ON THE SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE SOIL'S ACIDITY TESTED BY A SOIL TEST CONDUCTED TO ESTABLISH THE SOIL'S LIME AND FERTILIZER RATES.
42. ALL PRECAUTIONS SHALL BE TAKEN TO PREVENT SPILLS AND RUNOFF OF EXCESSIVE QUANTITIES OF FERTILIZER, NUTRIENTS AND OTHER CHEMICALS.
43. ALL WATER APPLIED TO PLANTED OR TURF AREAS SHALL BE FREE FROM IMPURITIES HARMFUL TO VEGETATION AND SHALL NOT CONTAIN MORE THAN 2,000 PARTS PER MILLION OF WATER PER SQUARE INCH OF SOLUBLE SALTS. THE CONTRACTOR SHALL WATER PLANTS AND IRRIGATION. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE IRRIGATION TO ALL PLANT MATERIALS AND LAWN AREAS INSTALLED AS PART OF THIS CONTRACT DURING THE CONSTRUCTION TYPE PERIOD AND INCLUDING THE TIME PERIOD ESTABLISHED FOR PLANT MATERIAL GUARANTEE. WATER APPLIED DURING THE GUARANTEE PERIOD SHALL BE AT THE RATE OF 1 INCH OF WATER PER WEEK, WITH AN ALLOWANCE MADE FOR NATURAL PRECIPITATION AND RAINFALL.
44. ALL PLANTS ARE SHOWN SEMI-MATURE SIZE ON PLANS. SIZES INDICATED IN PLANT LIST ARE SIZES AT TIME OF INSTALLATION.
45. MAINTENANCE SHALL BEGIN AFTER EACH PLANT HAS BEEN INSTALLED AND SHALL CONTINUE UNTIL IN THE OPINION OF THE LANDSCAPE ARCHITECT THAT ESTABLISHMENT AND ACCEPTANCE INCLUDES PATCHING, PRUNING, WEEDING, FERTILIZING, MULCHING, REPLACEMENT OF MISSING OR DEAD PLANTS, AND ANY OTHER CARE NECESSARY FOR THE PROPER GROWTH OF THE PLANT MATERIAL. THE CONTRACTOR MUST BE ABLE TO PROVIDE CONTINUED MAINTENANCE IF REQUESTED BY THE OWNER.
46. ALL TREES, SHRUBS AND GROUNDCOVERS SHALL BE GUARANTEED FOR A PERIOD OF 18 MONTHS FROM DATE OF ACCEPTANCE BY THE MUNICIPALITY. IF ANY PLANTS ARE DEAD OR IN AN UNHEALTHY CONDITION BEFORE FINAL ACCEPTANCE OF THE PROJECT, THE LANDSCAPE ARCHITECT SHALL REJECT THE PLANTS AT THE TIME OF INSPECTION. REPLACEMENT PLANTS USED SHALL BE GUARANTEED FOR AN ADDITIONAL 90 DAYS.
47. ALL TREE PROTECTION AND REMOVAL ACTIVITIES SHALL COMPLY WITH STATE REGULATIONS AND LOCAL ORDINANCE REQUIREMENTS.
48. THE CONTRACTOR SHALL INSURE THAT HIS WORK DOES NOT INTERRUPT ESTABLISHED OR PROJECTED DRAINAGE PATTERNS.
49. MAINTAIN POSITIVE DRAINAGE OUT OF PLANTING BEDS AT A MINIMUM 2% SLOPE. ALL GRADES, DIMENSIONS, AND EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR ON SITE BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR OWNER.
50. THE CONTRACTOR SHALL INSURE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT BEDS AND PLANTERS.
51. PLANTING PITS SHALL BE MADE TO DRAIN, WHEREVER POOR DRAINAGE CONDITIONS OCCUR AND/OR WHERE DIRECTED BY THE LANDSCAPE ARCHITECT. WHEN APPROVED BY THE LANDSCAPE ARCHITECT, THE DEPTH OF PLANTING PITS MAY BE INCREASED BY 2" THROUGH THE ADDITION OF LOOSE AGGREGATE (3/4" TO 1 1/2" DIAMETER).
52. DURING PLANTING OPERATIONS, EXCESS WASTE MATERIALS, NOT INCLUDING TOPSOIL SHALL BE PROMPTLY AND FREQUENTLY REMOVED FROM THE SITE. DISPOSAL SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS.
53. THE CONTRACTOR SHALL DISPOSE OF STUMPS AND MAJOR ROOTS OF ALL PLANTS TO BE REMOVED. ANY DEPRESSIONS CAUSED BY REMOVAL OPERATIONS SHALL BE REFILLED WITH FERTILE, FRIABLE SOIL PLACED AND COMPACTED SO AS TO REESTABLISH PROPER GRADE FOR NEW PLANTING AND/OR LAWN AREAS.
54. UPON COMPLETION OF ALL LANDSCAPING, AN ACCEPTANCE OF THE WORK SHALL BE HELD. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR OWNER FOR SCHEDULING THE INSPECTION AT LEAST SEVEN (7) DAYS PRIOR TO THE ANTICIPATED INSPECTION DATE.
55. ALL TREES MUST BE PROTECTED FROM DAMAGE BY DEER, AFTER INSTALLATION.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
No. PE082284

REV. NO.	DATE	REVISION
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2

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0 GRAPHIC SCALE IN FEET

STREET ROAD T-390 (NOT OPEN)

EROSION CONTROL MATTING NAG S75 OR APPROVED EQUAL

LIMIT OF DISTURBANCE: 4.96 AC

NPDES PERMIT BOUNDARY: 6.31 AC

PER WETLAND INVESTIGATION PERFORMED ON 9.13.2018 BY WETLANDS & ECOLOGY, INC., NO WETLANDS WERE FOUND. THE WATERCOURSE DELINEATED ON THIS PLAN, AS DETERMINED BY WETLANDS & ECOLOGY, INC., THROUGH FIELD INVESTIGATION AND CLARIFICATION IN A 3.14.2019 CORRESPONDENCE, IS AN EPHEMERAL WATERCOURSE

LAND N/F CENTRAL BUCKS SCHOOL DISTRICT APN 34-011-102-001 DB 2391, PG 1376 5075 OLD EASTON ROAD

SITE BM ELEV.: 481.84

COMPOST FILTER SOCK #4

EROSION CONTROL MATTING NAG S75 OR APPROVED EQUAL

24" DIVERSION SOCK

NEW WORSHIP FACILITY (PHASE 1) GROSS FLOOR AREA: 11,341 SF

FUTURE BUILDING EXPANSION (PHASE 2) GROSS FLOOR AREA: 3,483 SF

BUILDING CANOPY

COMPOST FILTER SOCK #5

LIMIT OF DISTURBANCE: 4.96 AC

LAND N/F GARY S. & JUSTINE R. FOSTER APN 34-011-075-003 DB 850, PG 307 4950 BURT HILL ROAD

EROSION CONTROL MATTING NAG S75 OR APPROVED EQUAL

NPDES PERMIT BOUNDARY: 6.31 AC. LIMIT OF DISTURBANCE: 4.96 AC

COMPOST FILTER SOCK #1

COMPOST FILTER SOCK #3

CONCRETE WASHOUT

ROCK CONSTRUCTION ENTRANCE

CLEANOUT STAKE WITH ELEVATION #98.00 CLEARLY MARKED

SEDIMENT BASIN #1 DA-6.19 AC.

BAFFLE

EROSION CONTROL MATTING NAG S75 OR APPROVED EQUAL

TEMPORARY RISER & BARREL

SILLWAY LINING CONCRETE CHECKER BLOCK

COMPOST FILTER SOCK #2

NPDES PERMIT BOUNDARY: 6.31 AC.

OLD EASTON ROAD T-400

LAND N/F MICHAEL & DOROTHY AUSTIN APN 34-011-062 5030 OLD EASTON ROAD

BRETT A & LINDA MUSSELMAN APN 34-011-063-001 4998 OLD EASTON ROAD

LAND N/F STEPHEN GARNICK APN 34-011-074-002 DB 5814S, PG 1 4991 OLD EASTON ROAD

LAND N/F BRIAN ERNEST CAPALDI APN 34-011-074-001 DB 5814S, PG 1 4979 OLD EASTON ROAD

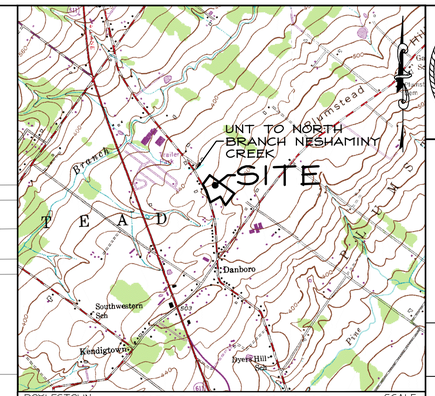
LAND N/F WILLIAM FOSTER & SONS APN 34-011-075 DB 1805, PG 2083 BURT HOUSE HILL ROAD

DWELLING

SHED

INV 483.18 4" PVC

INV 486.15 4" PVC



DOYLESTOWN QUADRANGLE

USGS LOCATION MAP

SCALE: 1"=2000'

EROSION & SEDIMENT CONTROL LEGEND

EXISTING SYMBOL	DESCRIPTION	PROPOSED SYMBOL
340	INDEX CONTOUR	340
359	CONTOUR	355
GeB2	SOIL NAME / BOUNDARY	
	ROCK APRON	
	TOPSOIL STOCKPILE	TSP
	INLET PROTECTION	IP
	ROCK CONSTRUCTION ENTRANCE	
	EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR APPROVED EQUAL) (ECB)	
	SPILLWAY LINING (NORTH AMERICAN GREEN P550 OR APPROVED EQUAL)	
	COMPOST SOCK (12")	CSI2
	LIMIT OF DISTURBANCE	
	NPDES BOUNDARY	
	TREE PROTECTION FENCE	

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SERIAL NO. 20182602918

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
No. PE082384

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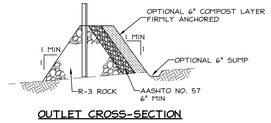
GRAPHIC SCALE IN FEET
40 0 40 80

renew
LAND DEVELOPMENT SOLUTIONS

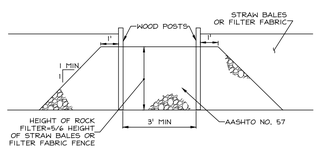
EROSION & SEDIMENT CONTROL

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LO

PROJECT NUMBER: 18015
SCALE: 1" = 40'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 18 of 24



OUTLET CROSS-SECTION



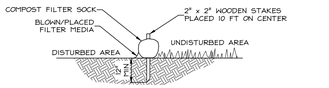
UP-SLOPE FACE

NOTES:

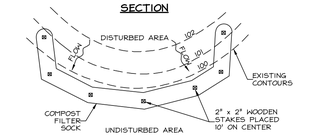
1. A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER WILL OCCUPY MORE THAN 1/4 ACRE OF CONTRIBUTING FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.
2. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

ROCK FILTER OUTLET

NOT TO SCALE



SECTION



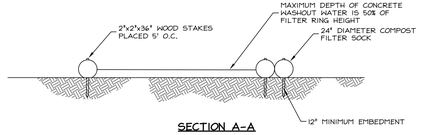
PLAN VIEW

NOTES:

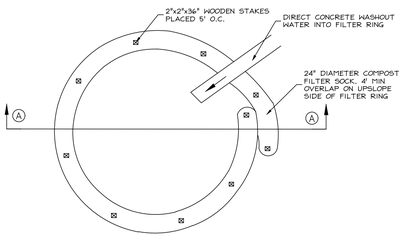
1. FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. COMPOST FILTER 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.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS. PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. 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.
8. ON PAVED SURFACES, WHERE STAKES CANNOT BE USED, CONCRETE MASONRY BLOCKS (8"x8"x12") SHALL BE PLACED BEING THE COMPOST SOCK AT THE SAME INTERVALS AS THE STAKES.

COMPOST FILTER SOCK

NOT TO SCALE



SECTION A-A



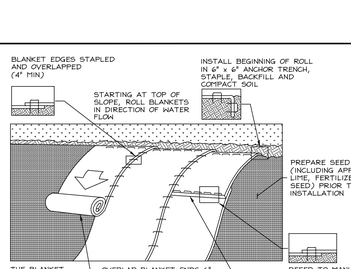
PLAN

NOTES:

1. WASHOUT SHALL BE INSTALLED ON FLAT GRADE.
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
3. ALTERNATE CONCRETE WASHOUTS (AS SHOWN IN THE PA DEP EROSION AND SEDIMENT CONTROL PROGRAM MANUAL) MAY BE USED WITH CONSERVATION DISTRICT/DEP APPROVAL.

CONCRETE WASHOUT

NOT TO SCALE

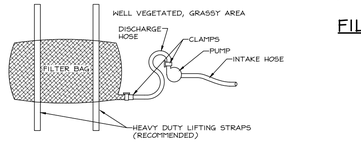


NOTES:

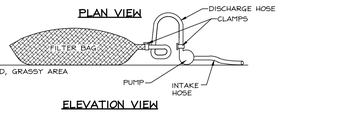
1. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKETS.
2. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
4. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE AS REQUIRED TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
5. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. 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

NOT TO SCALE



PLAN VIEW



ELEVATION VIEW

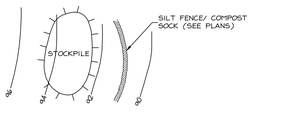
PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

NOTES:

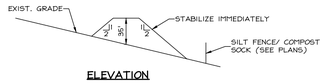
1. LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH DOUBLE STITCHED 1/2" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE ABOVE STANDARD SPECIFICATIONS.
2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
3. 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.
4. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
5. 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.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. INTAKES SHALL BE FLOATING AND SCREENED.
7. 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



PLAN



ELEVATION

NOTES:

1. INSTALL SILT FENCE/COMPOST SOCK DOWNSLOPE OF AREA OF STOCKPILE.
2. PLACE STOCKPILE IN AREAS SHOWN ON EROSION CONTROL PLAN WITHOUT BLOCKING NATURAL DRAINAGE PATTERNS.
3. FOLLOW DIMENSIONS SHOWN ABOVE. HEIGHT SHOULD NOT EXCEED 35 FT. SIDE SLOPES SHOULD NOT BE STEEPER THAN 2(H):1(V).
4. STABILIZE IMMEDIATELY PER THE "SEEDING SPECIFICATIONS."
5. LOCATION(S) AND SIZE(S) OF SOIL STOCKPILES ARE APPROXIMATE AND SHALL BE ADJUSTED PER FIELD AND CONSTRUCTION SEQUENCE CONDITIONS. CONTRACTOR SHALL VERIFY REQUIRED SIZE(S). REQUIREMENTS FROM THE STANDARDS DETAIL MUST BE FOLLOWED FOR STOCKPILES.

TOPSOIL STOCKPILE AND MAINTENANCE

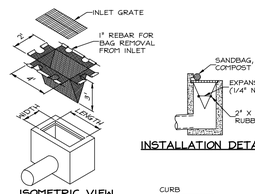
NOT TO SCALE

RECEIVING WATERCOURSE AND STREAM CLASSIFICATION

THE SITE DRAINS TO NESHAMINY CREEK, A TRIBUTARY TO DELAWARE RIVER. NESHAMINY CREEK IS DESIGNATED WWF, MF FOR WARM WATER FISHES, MIGRATORY FISHES, BY PA CODE, TITLE 25, CHAPTER 93.

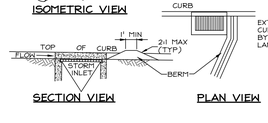
GEOLOGIC FORMATIONS/SOIL CONDITIONS

1. NO KNOWN GEOLOGIC FORMATIONS AND/OR SOIL CONDITIONS THAT PROMOTE POLLUTION ARE LOCATED ON-SITE.



ISOMETRIC VIEW

INSTALLATION DETAIL



SECTION VIEW

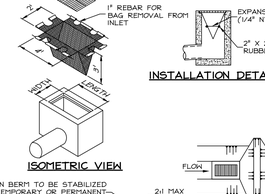
PLAN VIEW

NOTES:

1. MAXIMUM DRAINAGE AREA = 1/2 ACRE.
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
3. ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
4. 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.
5. INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED 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.
6. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

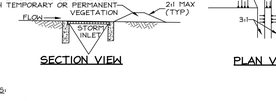
FILTER BAG INLET PROTECTION - TYPE C INLET

NOT TO SCALE



ISOMETRIC VIEW

INSTALLATION DETAIL



SECTION VIEW

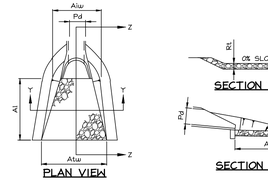
PLAN VIEW

NOTES:

1. MAXIMUM DRAINAGE AREA = 1/2 ACRE.
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
3. 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.
4. 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.
5. INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED 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.
6. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTER BAG INLET PROTECTION - TYPE M INLET

NOT TO SCALE



PLAN VIEW

SECTION Y-Y

SECTION Z-Z

OUTLET NO.	PIPE DIA PD (IN)	RIPRAP SIZE R-__	RIPRAP THICK. Rt (IN)	APRON LENGTH A1 (FT)	APRON INITIAL WIDTH A1w (FT)	APRON TERMINAL WIDTH A1w (FT)
100	30	4	18	12	8	13
101	30	4	12	12	8	13
120	24	4	12	9	6	10

NOTES:

1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
2. 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 OULET W FLARED END SECTION OR ENDWALL

NOT TO SCALE

E&S PLAN PREPARER INFORMATION

E&S PLAN PREPARED BY:
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RENEW DESIGN GROUP
117 E. BROAD STREET, SUITE 4, SOUDERTON, PA, 18964
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ANTICIPATED CONSTRUCTION WASTE

1. ANTICIPATED WASTE MATERIALS FROM SITE CONSTRUCTION, PCSM BMPS, DEMOLITION WORK AND BUILDING MATERIALS SHALL BE HANDLED UTILIZING THE RECYCLING AND DISPOSAL METHODS NOTES.

TEMPORARY SEEDING	
TYPE OF COVER AND SPECIES OR MIXTURES	AMOUNT PER 1,000 SF
50% ANNUAL RYE	5.0 LB
50% WINTER RYE	5.0 LB
TOTAL	10 LB

PERMANENT SEEDING	
TYPE OF COVER AND SPECIES OR MIXTURES	AMOUNT PER 1,000 SF
20% PENNFINE RYEGRASS	1.2 LB
50% KENTUCKY BLUEGRASS	3.0 LB
30% PENNLAWN FESCUE	1.8 LB
TOTAL	6 LB

RECOMMENDED FERTILIZATION RATE	
LIME	1 TON PER ACRE
FERTILIZER	500 LBS 10-10-10 PER ACRE
MULCH	3 TONS PER ACRE

RECOMMENDED FERTILIZATION RATE	
LIME	4 TONS PER ACRE
FERTILIZER	500 LBS 10-20-20 PER ACRE
MULCH	3 TONS PER ACRE

NOTES:

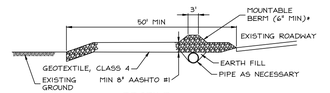
1. SEED SHALL BE A MINIMUM 90% PURITY AND 85% GERMINATION.
2. LIME SHALL BE AGRICULTURAL LIMESTONE AT 90% MINIMUM OF CARBONATES.

TOPSOIL APPLICATION:

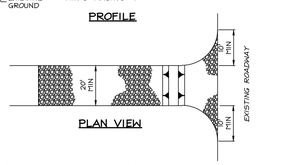
1. GRADED AREAS SHALL BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND THE PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE.
2. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH MATCHING EXISTING TOPSOIL (4 INCHES MINIMUM). SPREADING SHALL BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHALL BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM.
3. TOPSOIL SHALL NOT BE PLACED WHILE 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.

TOPSOIL APPLICATION & SEEDING SPECS

NOT TO SCALE



PROFILE



PLAN VIEW

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK 50 FEET FROM EXISTING ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPERLY COMPACTED AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: CONSTRUCTION ENTRANCE 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 EROSION & SEDIMENT CONTROL PROCEDURES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION./(E&S STD NOTE#1)
2. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL./(E&S STD NOTE#5)
3. 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./(E&S STD NOTE#7)
4. 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./(E&S STD NOTE#8)
5. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 4 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL./(E&S STD NOTE#9)
6. 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./(E&S STD NOTE#10)
7. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS./(E&S STD NOTE#11)
8. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD./(E&S STD NOTE#12)
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGION OFFICE OF DEPARTMENT./(E&S STD NOTE#14)
10. BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE CONSERVATION DISTRICT.
11. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
12. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART I, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.

EROSION AND SEDIMENT CONTROL METHODS

METHODS TO MINIMIZE EXTENT & DURATION OF DISTURBANCE

THE FOLLOWING METHODS HAVE BEEN UTILIZED AND INCORPORATED INTO THE PROPOSED DESIGN TO MINIMIZE THE EXTENTS AND DURATION OF LAND DISTURBANCE:

1. THE LIMITS OF DISTURBANCE HAVE BEEN MINIMIZED TO AREAS NECESSARY FOR PROPOSED CONSTRUCTION.
2. CONSTRUCTION SEQUENCE HAS BEEN PREPARED TO LIMIT THE DURATION OF DISTURBANCE AND REQUIRE STABILIZATION OF QUICKLY AS PRACTICABLE.
3. EXISTING STABILIZED AREAS HAVE BEEN MAINTAINED, AS PRACTICABLE, DURING CONSTRUCTION IN ORDER TO LIMIT SIMULTANEOUS DISTURBED AREAS.

METHODS TO MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES & VEGETATION

THE FOLLOWING METHODS HAVE BEEN UTILIZED AND INCORPORATED INTO THE PROPOSED DESIGN TO MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION:

1. EXISTING DRAINAGE FEATURES WILL BE PROTECTED BY METHODS DESCRIBED IN THE "METHODS TO PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF".
2. EXISTING VEGETATION REMOVALS HAVE BEEN MINIMIZED.
3. EXISTING VEGETATION REMOVALS, WHEN NECESSARY, HAVE BEEN SEQUENCED TO OCCUR AS LATE AS POSSIBLE.

METHODS TO MINIMIZE SOIL COMPACTION

THE FOLLOWING METHODS HAVE BEEN UTILIZED AND INCORPORATED INTO THE PROPOSED DESIGN TO MINIMIZE SOIL COMPACTION:

1. LIMITS OF DISTURBANCE HAVE BEEN MINIMIZED.
2. DURATION OF LAND DISTURBANCE HAS BEEN MINIMIZED IN THE CONSTRUCTION SEQUENCE.
3. AREAS OF PROPOSED STORMWATER INFILTRATION WILL BE SEGREGATED FROM CONSTRUCTION AREAS AS SOON AS PRACTICABLE.

METHODS TO PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF

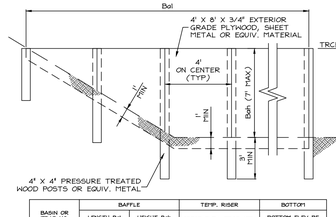
THE FOLLOWING METHODS HAVE BEEN UTILIZED AND INCORPORATED INTO THE PROPOSED DESIGN TO MINIMIZE THE GENERATION OF INCREASED STORMWATER RUNOFF:

1. HYDRAULIC EROSION CONTROL BMPS ARE SEQUENCED TO BE INSTALLED PRIOR TO CONSTRUCTION IN ORDER TO PROVIDE STORMWATER MANAGEMENT BENEFITS.
2. EXISTING IMPERVIOUS SURFACES ARE SEQUENCED TO BE REMOVED PRIOR TO INSTALLATION OF NEW IMPERVIOUS SURFACES.
3. DURATION OF EXPOSED DISTURBED SURFACES HAVE BEEN MINIMIZED IN ORDER TO ESTABLISH VEGETATION (AND REDUCED RUNOFF) AS QUICKLY AS POSSIBLE.
4. CONCENTRATION OF STORMWATER RUNOFF HAS BEEN MINIMIZED.

CONSTRUCTION SEQUENCE

AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN REPAIRER, THE PCSM PLAN REPAIRER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT./(E&S STD NOTE#3)

UPON INSTALLATION OR STABILIZATION OF ALL PERIMET



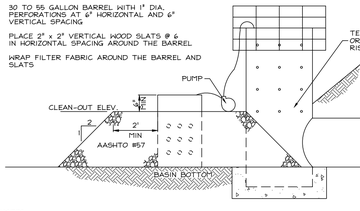
BASIN OR TRAP NO.	BAFFLE		TEMP. RISER	BOTTOM
	LENGTH Bwl (FT)	HEIGHT Bwh (FT)	CREST ELEV. TRCE (FT)	BOTTOM ELEV BE (FT)
1	115	4	458.00	454.00

NOTES:

1. SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.
2. AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION
3. IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.
4. BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.
5. SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.
6. DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.
7. BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

BAFFLE

NOT TO SCALE

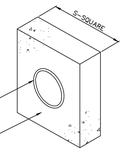


NOTES:

1. DEWATERING FACILITY SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF BASIN/TRAP.
2. PRIOR TO INITIATING OPERATION OF DEWATERING FACILITY, ALL ACCUMULATED SEDIMENT SHALL BE CLEANED FROM THE INSIDE OF THE BARREL.
3. DEWATERING FACILITY SHALL BE CONTINUOUSLY MONITORED DURING OPERATION. IF FOR ANY REASON THE DEWATERING FACILITY CEASES TO FUNCTION PROPERLY, IT SHALL BE IMMEDIATELY SHUT DOWN AND NOT RESTARTED UNTIL THE PROBLEM HAS BEEN CORRECTED.

SEDIMENT BASIN OR SEDIMENT TRAP SEDIMENT STORAGE DEWATERING FACILITY

NOT TO SCALE



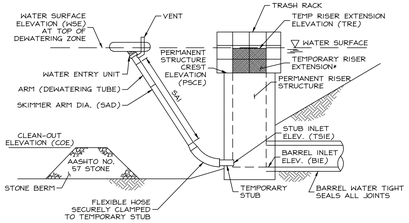
BASIN OR TRAP NO.	PIPE Ø (IN.)	S (IN.)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT.)	COLLAR SPACING (FT.)
1	24	6.5	3	7	28

NOTES:

1. ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
2. COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS

NOT TO SCALE



SECTION VIEW

BASIN NO.	WATER SURFACE ELEV. WSE (FT)	SKIMMER						
		ORIFICE		ARM			FLEXIBLE HOSE	
		DIA. (IN)	HEAD (FT)	DIA. SAd (IN)	LENGTH SAL (FT)	MAT'L	DIA. (IN)	LENGTH (IN)	MAT'L
1	459.00	3	4	4	6	PVC	4	24	RUBBER

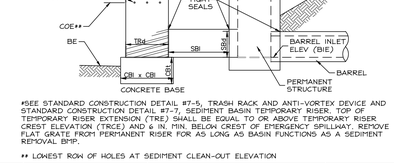
BASIN NO.	TEMPORARY STUB			PERMANENT RISER		RISER EXTENSION			BARREL	
	INSIDE DIA (IN)	INVERT ELEV TSI (FT)	MAT'L	CREST ELEV PSCE (FT)	HORIZ OPENING LENGTH El (IN)	HORIZ OPENING WIDTH Ew (IN)	CREST ELEV TRE (FT)	HORIZ OPENING LENGTH (IN)	HORIZ OPENING WIDTH (IN)	INLET ELEV BIE (FT)
1B	18	451.51	CMP	458.00	45	24	458.00	N/A	N/A	451.31

NOTES:

1. ALL ORIFICES ON PERMANENT RISER BELOW TEMPORARY RISER EXTENSION SHALL HAVE WATER-TIGHT TEMPORARY SEALS PROVIDED. TEMPORARY STUB INVERT ELEVATION SHALL BE SET AT OR BELOW SEDIMENT CLEAN-OUT ELEVATION.
2. A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.
3. SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.
4. ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.
5. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE STONE BERM. SEE STANDARD CONSTRUCTION DETAIL #7-3 FOR CONFIGURATION OF STONE BERM.

SKIMMER ATTACHED TO PERMANENT RISER

NOT TO SCALE



*SEE STANDARD CONSTRUCTION DETAIL #7-5, TRASH RACK AND ANTI-VORTEX DEVICE AND STANDARD CONSTRUCTION DETAIL #7-7, SEDIMENT BASIN TEMPORARY RISER. TOP OF TEMPORARY RISER EXTENSION (TRE) SHALL BE EQUAL TO OR ABOVE TEMPORARY RISER CREST ELEVATION (TRCE) AND 6 IN. MIN. BELOW CREST OF EMERGENCY SPILLWAY. REMOVE FLAT GRATE FROM PERMANENT RISER FOR AS LONG AS BASIN FUNCTIONS AS A SEDIMENT REMOVAL BMP.

** LOWEST ROW OF HOLES AT SEDIMENT CLEAN-OUT ELEVATION

BASIN NO.	TEMPORARY RISER			PERFORATIONS			CONCRETE BASE	
	DIA TRd (IN)	CREST ELEV TRCE (FT)	MAT'L	LOWEST ROW OF HOLES ELEV (FT)	NO. ROWS**	NO. HOLES PER ROW	VERT. SPACING OF ROWS (FT)	LENGTH AND WIDTH CBL (IN)	THICKNESS CBL (IN)
1	24	458.00	CMP	455.00	2	2	0.5	48	18

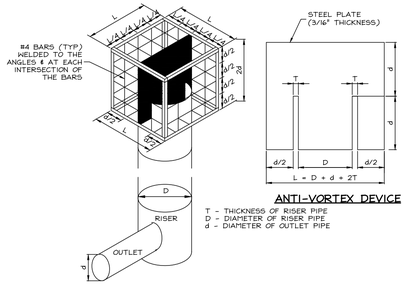
BASIN NO.	TEMPORARY STUB			PERMANENT STRUCTURE				BARREL INLET ELEV BIE (FT)
	DIA SBd (IN)	INVERT ELEV TSI (FT)	MAT'L	LENGTH SBL (FT)	CREST ELEV PSCE (FT)	CREST ELEV TRE (FT)	OUTLET ELEV BOE (FT)	
1	18	451.51	CMP	10	458.00	–	–	451.31

NOTES:

1. A MINIMUM OF 2-#8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.
2. CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.
3. EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.
4. CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

SEDIMENT BASIN/DENTION POND RISER STRUCTURES

NOT TO SCALE



ANTI-VORTEX DEVICE

T = THICKNESS OF RISER PIPE
D = DIAMETER OF RISER PIPE
d = DIAMETER OF OUTLET PIPE

TRASH RACK & ANTI-VORTEX DEVICE

NOT TO SCALE

RECYCLING OR DISPOSAL METHODS

1. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISPOSED OF AT THE SITE.*(ENS STD NOTE#3)*
2. EXCEPT FOR TOPSOIL TO BE MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN ON THE PROPERTY, DEMOLISHED OR EXCAVATED MATERIALS SHALL BE REMOVED FROM THE SITE. PAPER TO BE SLATED FOR RECYCLING FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ANY AND ALL APPLICABLE MUNICIPAL OR OTHER GOVERNMENTAL AGENCY CURRENT REGULATIONS. DEBRIS SHALL NOT BE PERMITTED TO ACCUMULATE ON THE JOB-SITE. DUST AND DIRT SHALL BE HELD TO A MINIMUM DURING DEMOLITION, BY WETTING DOWN, AS REQUIRED. ON SITE BURNING OF MATERIALS WILL NOT BE PERMITTED. AT THE COMPLETION OF WORK, THE ENTIRE AREA INVOLVED WILL BE CLEANED AND LEFT IN A NEAT CONDITION, FREE OF RUBBISH. RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THIS PROJECT SITE SHALL BE UNDERTAKEN IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES AND REGULATIONS.
3. SEDIMENT REMOVED FROM CONTROL FACILITIES AS A PART OF REGULAR MAINTENANCE SHALL BE DISPOSED OF UPSLOPE OF THE CONTROL FACILITY.
4. ALL OFF-SIGHT WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.*(ENS STD NOTE#1)*

RESPONSIBILITIES FOR FILL MATERIALS

1. THE OPERATOR MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT ANY NECESSARY FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL. ALL FILL MATERIAL MUST BE USED IN ACCORDANCE WITH PADEP'S POLICY "MANAGEMENT OF FILL", DOCUMENT NUMBER 258-2182-773. A COPY OF THIS POLICY IS AVAILABLE ONLINE AT WWW.DEPWEB.STATE.PA.US.
2. CLEAN FILL IS DEFINED AS UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSED, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONES, DREDGED MATERIAL, USED ASPHALT, BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM THE WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR IN 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.)
3. CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN PADEP'S POLICY "MANAGEMENT OF FILL".
4. 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.*(ENS STD NOTE#2)*
5. ENVIRONMENTAL DUE DILIGENCE: 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 SCREEN, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS.
6. 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 PADEP'S POLICY "MANAGEMENT OF FILL".
7. FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE PRINCIPAL OR RESIDUAL WASTE REGULATIONS IN 25 PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.
8. ALL OFF-SIGHT WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.*(ENS STD NOTE#1)*
9. 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 FILL.*(ENS STD NOTE#2)*
10. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.*(ENS STD NOTE#2)*
11. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.*(ENS STD NOTE#4)*

SOIL USE LIMITATIONS

THE INFORMATION LISTED BELOW WAS OBTAINED FROM THE USDA - NRCS, WEB SOIL SURVEY AVAILABLE AT WEBSOILSURVEY.NRCS.USDA.GOV. THIS INFORMATION WAS NOT OBTAINED FROM FIELD INVESTIGATION.

SOIL SYM	SOIL NAME	SLOPE (%)	HSG	HYDRIC RATING
AbB	ABBOTTSTOWN SILT LOAM	3-8	D	–
CwB	CROTON SILT LOAM	3-8	D	–

SOIL SYM	KF	T	RESTRICTIVE LAYER		REPRESENT. VALUE		
			DEPTH TO (IN)	TYPE	% SAND	% SILT	% CLAY
AbB	.32	3	>60	LITHIC BEDROCK	54.1	53.2	17.5
CwB	.43	3	40	LITHIC BEDROCK	11.7	63.3	25.0

SOIL SYM	DWELLINGS WITHOUT BASEMENTS	DWELLINGS WITH BASEMENTS	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS	SHALLOW EXCAVATIONS	LAWNS AND LANDSCAPING
AbB	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	SOMEWHAT LIMITED
CwB	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED

SOIL SYM	EMBANKMENTS, DIKES, AND LEVEES	PLAYGROUNDS	PATHS AND TRAILS	SEPTIC TANK ABSORPTION FIELDS	POTENTIAL AS A SOURCE OF ROADFILL	POTENTIAL AS A SOURCE OF TOPSOIL
AbB	VERY LIMITED	VERY LIMITED	SOMEWHAT LIMITED	VERY LIMITED	POOR	FAIR
CwB	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	POOR	POOR

SOILS NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	ERODIBLE TRAILS	DEPTH TO SATURATED ZONE / SEASONAL HIGH WATER	HYDRIC / HYDRIC INCLUSIONS	LOW STRENGTH / SHRINK-SWELL	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK - SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
AbB		X	C/S	-	X	-	X	X	X	X	X	X	-	-	-	X
CwB		X	C/S	-	X	-	X	X	X	X	X	X	-	-	-	X

SOILS RESOLUTIONS

1. CUTBANKS CAVE: FOR SOILS WHICH CAVE OR SLOUGH DUE TO EXCAVATION, BANKS SHALL BE SLOPED SHALLOWLY AND BRACING SHALL BE PROVIDED FOR TRENCHES OR OTHER EXCAVATIONS INVOLVING STEEP SLOPES.
2. SOILS THAT ARE CORROSIVE TO CONCRETE AND/OR STEEL: MAXIMIZE THE USE OF PLASTIC PIPE THROUGHOUT THE SITE INSTEAD OF REINFORCED CONCRETE OR CORRUGATED METAL PIPE. WHERE CONCRETE OR STEEL MUST BE USED, THE USE OF OVERLAYS OR SEALERS SUCH AS POLYMER CONCRETE OVERLAYS, LATEX MODIFIED CONCRETE, CONCRETE WITH SILICA FUME ADDED TO IT, EPOXY COATINGS, ACRYLIC SEALERS, SILANE SPRAYS, AND LINSEED OIL EMULSIONS SHALL BE USED TO PREVENT THE CORROSION OF CONCRETE OR STEEL.
3. DRY OR DROUGHTY SOILS: SELECT VEGETATIVE AND PLANT SPECIES TOLERANT OF DRY CONDITIONS.
4. ERODIBLE SOILS TYPES: FOR SOILS WITH ERODIBILITY VALUES HIGHER THAN 0.36, CONTRACTOR SHOULD INCORPORATE SOME OR ALL OF THE FOLLOWING STABILIZATION TECHNIQUES. IN PROPOSED CHANNELS, PROVIDE TEMPORARY LININGS UNTIL GRASS IS ESTABLISHED. PERMANENT GRASS REINFORCED LININGS THROUGH THE INSTALLATION OF SOD OR HOLLOW CORE MATTING OTHER THAN GRASSES. DECREASE CHANNEL GRADES AND INCREASE CHANNEL WIDTHS TO HELP REDUCE EROSION.
5. HIGH WATER TABLE / HEAVY/HYDRIC SOILS, FLOODING & WETNESS: SELECT VEGETATIVE AND PLANT SPECIES TOLERANT OF WET CONDITIONS. IF BUILDINGS ARE LOCATED IN SAID SOILS, PROVIDE SUMP PUMPS WITH BACK FLOW PREVENTION DEVICES IN BASEMENTS. IF HIGH WATER IS ENCOUNTERED DURING CONSTRUCTION, CONTRACTOR SHALL UTILIZE PUMPED WATER FILTRATION METHODS (I.E. DIRT BAG). FOR BASIN CONSTRUCTION IN AREAS OF WET SOILS, PREFERABLY RELOCATE STORMWATER AND SEDIMENT BASINS AND FACILITIES IN SOILS MORE CONDUCIVE TO SUCH FACILITIES. IF FACILITIES CANNOT BE RELOCATED, PROVIDE PUMPED WATER SEDIMENT REMOVAL FACILITIES FOR BASIN CONSTRUCTION, LIMIT RESERVOIR DEPTHS, AND LIMIT CLEAN OUT ELEVATIONS.
6. LOW STRENGTH AND LANDSLIDE PRONE SOILS: ON GRADES STEEPER THAN 3:1 SLOPES, AN EROSION CONTROL BLANKET OR TURF REINFORCEMENT SHALL BE USED TO PREVENT EROSION AND SLIDING OF SOIL. IN AREAS OF VERY LOW STRENGTH WHERE EXTRA REINFORCEMENT MAY BE NEEDED, SOIL NAILING, ANCHORS, GEOGRID, OR A SERIES OF MICROPILES CAN BE USED TO MAINTAIN THE INTEGRITY OF A SLOPE FACE.
7. SLOW PERCOLATING SOILS: TO MITIGATE SLOW PERCOLATION, SOILS SHALL BE EXCAVATED AND AMENDED WITH COMPOST MATERIALS. THE DESIGN ENGINEER SHALL BE CONTACTED TO REVISE METHODS AND MATERIALS.
8. SOILS PRONE TO INSTABILITY PIPING AND SEEPING: IF STORMWATER OR SEDIMENT IDENTIFICATION CAN NOT BE REROUTED TO OTHER SUITABLE SOILS TYPES, LINE EMBANKMENT SLOPE STEEPNESS, PROVIDE CLAY EMBANKMENT CORES AND IMPORT OTHER SOILS FOR CONSTRUCTION OF EMBANKMENT FACILITIES AS NECESSARY.
9. POOR SOURCE OF TOPSOIL / LOW PH: FOR SOILS WITH PH VALUES LOWER THAN 5.5, ADJUST PH BY APPLYING LIME AT RATES DETERMINED BY SOILS TESTING IN COMBINATION WITH SELECTING AND PLANTING VEGETATIVE SPECIES TOLERANT OF ACIDIC CONDITIONS AND LOW FERTILITY. INCORPORATE ADDITIONAL SOIL NUTRIENTS AT RATES DETERMINED BY SOIL TESTING IN COMBINATION WITH SELECTING AND PLANTING VEGETATIVE SPECIES TOLERANT OF LOW FERTILITY CONDITIONS.
10. SOILS UNSUITABLE FOR WINTER GRADING, PRONE TO FROST ACTION, OR DIFFICULT TO COMPACT: GRADING DURING PERIODS PRONE TO FROST SHOULD BE LIMITED. CONSTRUCTION OF STRUCTURAL EMBANKMENT SHOULD BE PERFORMED DURING THE PERIOD OF MAY TO OCTOBER IF FACILITIES CAN NOT BE RELOCATED TO AN AREA WITH MORE CONDUCIVE SOILS.
11. SHRINK/SWELL CONDITIONS IN EXPANSIVE SOILS: TO MITIGATE EXPANSIVE SOILS IN SMALL AREAS, SOIL THAT BE REMOVED AND REPLACED WITH NON-EXPANSIVE SOILS. IF THE EXTENT OF EXPANSIVE SOILS IS A LARGER AREA, SOIL STABILIZATION MAY BE USE IN WHICH ADDITIONAL SOIL CAN BE ADDED TO THE SOIL TO LIMIT SHRINK AND SWELL CONDITIONS SUCH AS CEMENT, RESINS, FLY ASH, POZZALANA, OR LIME TO BE APPROVED BY THE DESIGN ENGINEER.
12. SOILS SUSCEPTIBLE TO SINKHOLE AND SOLUTION CHANNEL/CHAMBER FORMATION: LOCATE SEDIMENT BASINS, TRAPS AND STORMWATER MANAGEMENT DETENTION, RETENTION AND INFILTRATION FACILITIES IN AREAS DESIGNATED WITH SOILS SUITABLE FOR SAID FACILITIES. IF THE FACILITIES CANNOT BE RELOCATED TO A MORE SUITABLE AREA, STANDING WATER DEPTHS AND RETENTION TIMES SHOULD BE LIMITED. IMPERMEABLE RESERVOIR LININGS SHOULD BE UTILIZED FOR WATER RETENTION FACILITIES, AND/OR STORMWATER DETENTION FACILITIES WITH EXTENSIVE HOLDING TIMES.
13. PONDING: IF SOILS HAVE COMPACTED OR SETTLED INTO AN UNPLANNED LOW POINT WHICH COLLECTS WATER, ADD SOIL TO THE LOW POINT AND REGRADE THE AREA TO ENSURE RUNOFF PROPERLY DRAINS AWAY FROM THE LOCATION. IF THE LAND IS SMALLOWLY SLOPED, AERATING MAY BE NECESSARY TO PROMOTE INFILTRATION INTO OVERLY COMPACTED SOILS.

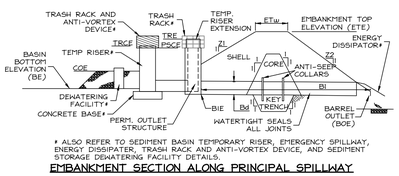
MAINTENANCE & STABILIZATION

1. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S.) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.*(ENS STD NOTE#6)*
2. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.*(ENS STD NOTE#5)*
3. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.*(ENS STD NOTE#3)*
4. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY TO THE SATISFACTION OF THE TOWNSHIP AND THE BUCKS COUNTY CONSERVATION DISTRICT. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.*(ENS STD NOTE#7)*
5. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER.
6. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REPLACING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.*(ENS STD NOTE#5)*
7. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.*(ENS STD NOTE#8)*

UTILITY TRENCH EXCAVATION/DISTURBANCE NOTES

1. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
2. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING SHALL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
3. ALL SOIL EXCAVATED FROM THE TRENCH SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
4. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
5. WATER WHICH ACCUMULATES IN THE OPEN TRENCH SHALL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND / OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA SHALL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
7. SEE SPECIFICATIONS AND DETAILS FOR BACKFILLING AND COMPACTION REQUIREMENTS IN UTILITY TRENCH. ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION SHALL BE AS PER THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT AND SHALL BE COORDINATED WITH THE APPLICABLE UTILITY COMPANY SPECIFICATIONS.
8. THE CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF OSHA DIRECTIVES, OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS REQUIRED TO MEET THE INTENT AND PERFORMANCE CRITERIA OF OSHA, AS WELL AS ANY OTHER ENTITY THAT HAS JURISDICTION FOR EXCAVATION AND/OR TRENCHING PROCEDURES.

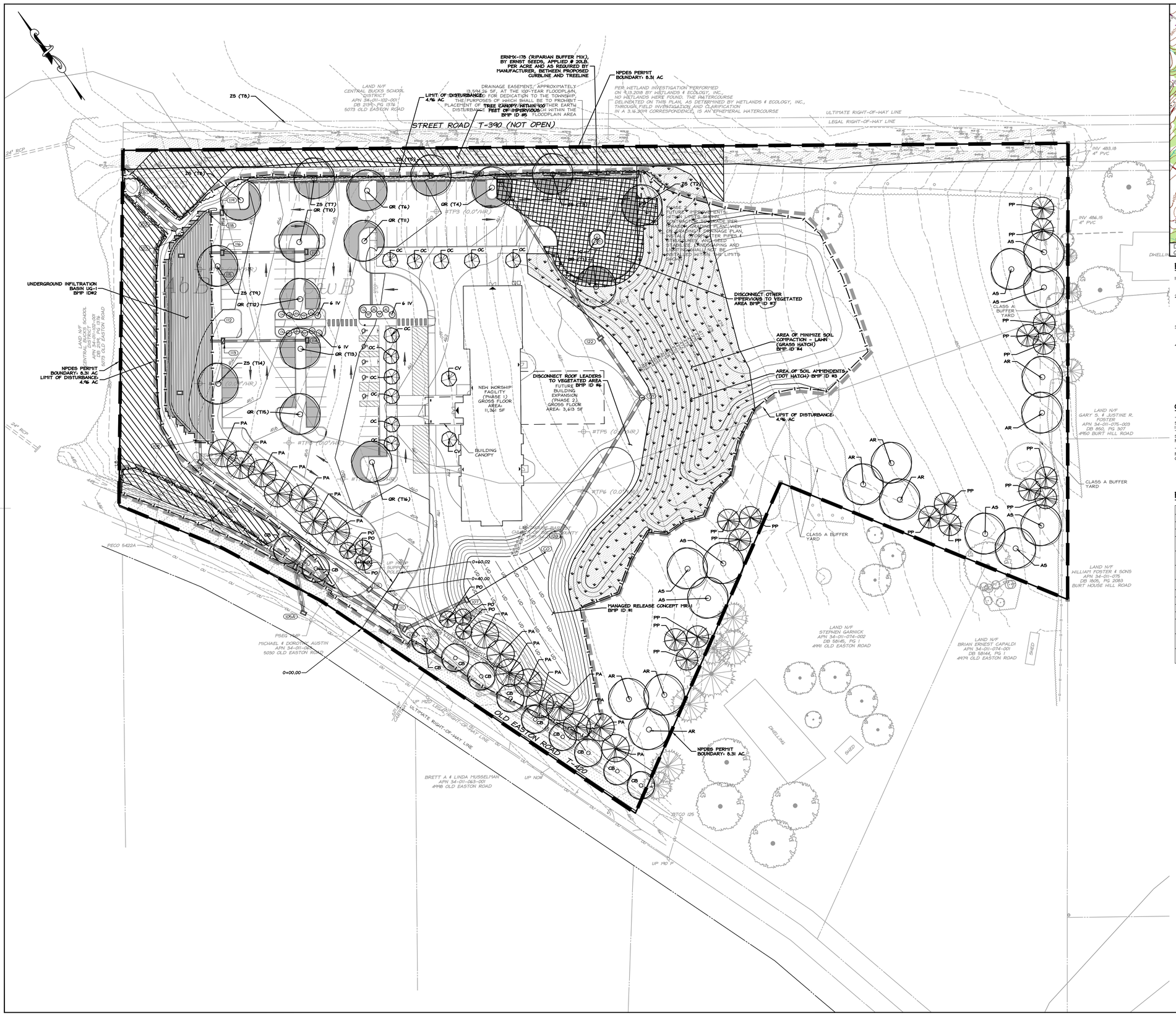
EMBANKMENT SECTION ALONG PRINCIPAL SPILLWAY

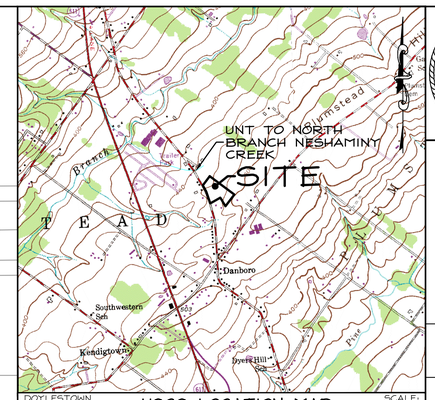


* ALSO REFER TO SEDIMENT BASIN TEMPORARY RISER, EMERGENCY SPILLWAY, ENERGY DISSIPATER, TRASH RACK AND ANTI-VORTEX DEVICE, AND SEDIMENT STORAGE DEWATERING FACILITY DETAILS.

EMBANKMENT SECTION ALONG PRINCIPAL SPILLWAY

BASIN NO.	Z1 (FT)	Z2 (FT)	TEMPORARY RISER					BARREL			
			D





PCSM AS-BUILT CONDITIONS

1. PCSM REPORTING AND RECORDKEEPING. THE PCSM PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.
2. LICENSED PROFESSIONAL OVERSIGHT OF CRITICAL STAGES. A LICENSED PROFESSIONAL OR A DESIGNEE SHALL BE PRESENT ONSITE AND BE RESPONSIBLE DURING CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN. THE CRITICAL STAGES MAY INCLUDE THE INSTALLATION OF UNDERGROUND TREATMENT OR STORAGE BMPS, STRUCTURALLY ENGINEERED BMPS, OR OTHER BMPS AS DEEMED APPROPRIATE BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.
3. THE CONTRACTOR SHALL PROVIDE FINAL AS-BUILT SURVEY OF ALL POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES AND ALL ASSOCIATED PIPES AND STRUCTURES, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL SURVEYOR.
4. FINAL CERTIFICATION. THE CONTRACTOR SHALL INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS:

   "I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA. C.S.A. §4904 TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORTANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES."

CRITICAL STAGES OF IMPLEMENTATION OF BMPs

THE DESIGN ENGINEER SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF WHEN THE CRITICAL STAGES ARE TO TAKE PLACE IN ORDER TO BE PRESENT FOR REQUIRED OBSERVATION OF BMP IMPLEMENTATION OF THE APPROVED PCSM PLAN. IN THE EVENT BMPS ARE INSTALLED WITHOUT THE DESIGN ENGINEER PRESENT, THE GENERAL CONTRACTOR ASSUMES RESPONSIBILITY FOR SECURING A LICENSED PROFESSIONAL FOR OBSERVATION, SIGNOFF AND FINALIZING THE NPDES PERMIT NOTICE OF TERMINATION.

THE FOLLOWING LIST IS A SUMMARY OF THE CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN FOR WHICH A LICENSED PROFESSIONAL, OR HIS/HER DESIGNEE, SHALL BE PRESENT ON SITE:

- INSTALLATION OF UNDERGROUND INFILTRATION BASIN UG-1.
- INSTALLATION OF MANAGED RELEASE CONCEPT BASIN MR-1.
- INSTALLATION OF SOIL AMMENDMENTS.

PCSM LEGEND

EXISTING SYMBOL	DESCRIPTION	PROPOSED SYMBOL
	STORM SEWER	
	UNDERDRAIN	— UD — UD —
	FOUNDATION DRAIN	— FD — FD —
	STORM INLET	
	STORM MANHOLE	
	ENDWALL	
	RIPRAP	
340	MAJOR CONTOUR	345
339	MINOR CONTOUR	346
x 355.69	SPOT ELEVATION	x 355.69
	DRAINAGE FLOW ARROW	
	SLOPE GRADE	3:1
	LIMIT OF DISTURBANCE	
	NPDES BOUNDARY	

GENERAL NOTES

1. THIS PLAN REPRESENTS A STORMWATER DESIGN FOR THE FULL BUILDOUT OF THE SITE. NO FURTHER STORMWATER MANAGEMENT FACILITIES ARE REQUIRED IN THE EVENT THE PARKING LOT EXTENSION IS CONSTRUCTED.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
No. PE082384

REV NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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SEE GENERAL INFORMATION SHEET FOR ALL PERTINENT NOTES AND LEGEND INFORMATION.

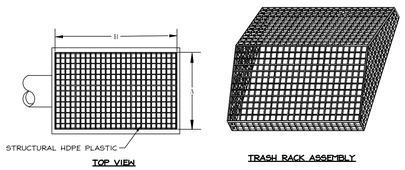
GRAPHIC SCALE IN FEET
0 40 80
40

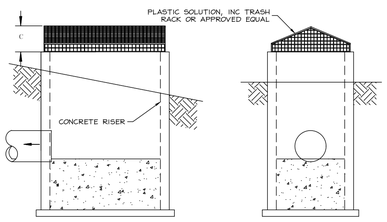
renew LAND DEVELOPMENT SOLUTIONS

POSTCONSTRUCTION STORMWATER MANAGEMENT

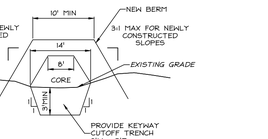
NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LO

PROJECT NUMBER: 18015
SCALE: 1" = 40'
DRAWN BY: RDG
DESIGNED BY: RDG
DATE: 06/20/19
SHT NO. 21 of 24



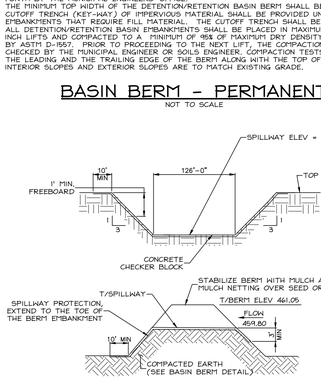


TRASH RACK - PEAKED ROOF
NOT TO SCALE

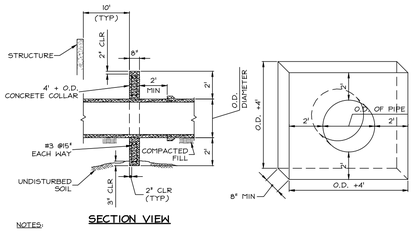


NOTES:
1. THE BERM SHALL BE TESTED FOR STRUCTURAL SOUNDNESS MEETING THE REQUIREMENTS SET FORTH BY THE MUNICIPALITY ENGINEERS' OFFICE.
2. THE MINIMUM TOP WIDTH OF THE DETENTION/RETENTION BASIN BERM SHALL BE AS NOTED. A CUTOFF TRENCH (KEY-WAY) OF IMPERVIOUS MATERIAL SHALL BE PROVIDED UNDER ALL EMBANKMENTS IN THE REGIONAL FILL MATERIAL. THE CUTOFF TRENCH SHALL BE SIZED AS NOTED.
3. ALL DETENTION/RETENTION BASIN EMBANKMENTS SHALL BE PLACED IN MAXIMUM OF EIGHT (8) INCH LIFTS AND COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR AS ESTABLISHED BY ASTM D-1557. PRIOR TO PROCEEDING TO THE NEXT LIFT, THE COMPACTION SHALL BE CHECKED BY THE MUNICIPAL ENGINEER OR SOILS ENGINEER. COMPACTION TESTS WILL BE RUN ON THE LEADING AND THE TRAILING EDGE OF THE BERM ALONG WITH THE TOP OF THE BERM.
4. INTERIOR SLOPES AND EXTERIOR SLOPES ARE TO MATCH EXISTING GRADE.

BASIN BERM - PERMANENT
NOT TO SCALE



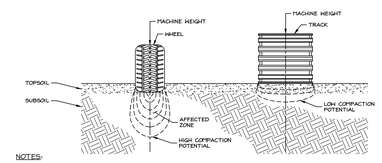
SPILLWAY - EMERGENCY PERMANENT
NOT TO SCALE



SECTION VIEW

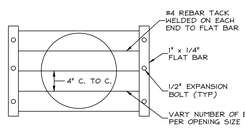
NOTES:
1. USE PENNDOT CLASS A CONCRETE.
2. MAINTAIN A MINIMUM 6" COVER OVER ANTI-SEEP COLLAR.
3. THE CONNECTION OF ANTI-SEEP COLLARS TO OUTLET PIPES SHALL BE WATERTIGHT.
4. O-RING GASKETS SHALL BE USED ON BASIN DISCHARGE PIPES THROUGH BERM AREAS.
5. MAXIMUM SPACING OF ANTI-SEEP COLLARS THROUGH BERM AREAS SHALL BE 40 FEET.
6. MINIMUM REINFORCEMENT SHALL BE PROVIDED USING #3 BARS @ 1'-3" HORIZONTAL AND VERTICAL SPACING.
7. PRECAST ANTI-SEEP COLLARS MAY BE USED (AS APPROVED BY MUNICIPAL ENGINEER) IN PLACE OF CAST-IN-PLACE COLLARS.
8. A QUALITY NON-SHRINK GROUT MATERIAL SHALL BE USED TO SEAL THE ANNULAR SPACE BETWEEN THE COLLAR AND THE PIPE SURFACE. THE GROUT SHALL BE INSTALLED FOR THE FULL THICKNESS OF THE COLLAR.

ANTI-SEEP COLLAR
NOT TO SCALE



NOTES:
1. WHEELED VEHICLES PRODUCE A GREATER LEVEL OF SOIL COMPACTION THAN TRACKED EQUIPMENT.
2. TRACKED VEHICLES ARE PREFERRED TO REDUCE OVERALL SOIL COMPACTION OF SITE.
3. WHEELED VEHICLES ARE NOT TO BE USED IN INFILTRATION-TYPE BASINS UNDER ANY CIRCUMSTANCES.
4. TRACKED VEHICLES WITH A MAXIMUM OF 10 psi GROUND PRESSURE ARE REQUIRED.

GROUND PRESSURE OF HEAVY EQUIPMENT
NOT TO SCALE



NOTES:
1. THE NUMBER OF ROWS AND LENGTH OF REBAR REQUIRED DEPENDS ON OPENINGS.
2. REBAR TO COVER THE ENTIRE SIZE OF THE OPENING.
3. TYPICAL FOR ALL OUTLET OPENING SHAPES (CIRCULAR SHOWN GRAPHICALLY).
4. ALL MATERIAL TO BE EPOXY COATED.
5. CHILD SAFETY GRATES SHALL BE PROVIDED ON ALL ENDWALLS. TRASH RACKS SHALL BE PROVIDED ON ALL HEADWALLS (SEE DETAIL).

CHILD SAFETY GRATE
NOT TO SCALE

SOIL TEXTURE	MAXIMUM BULK DENSITIES (G/CM3)
SANDS, LOAMY SANDS	1.60
SANDY LOAMS, LOAMS	1.40
SANDY CLAY LOAMS, LOAMS, CLAY LOAMS	1.40
SILT, SILT LOAMS	1.30
SILT LOAMS, SILTY CLAY LOAMS	1.10
SANDY CLAYS, SILTY CLAYS, SOME CLAY LOAMS (35-45% CLAY)	1.10
CLAYS (>45% CLAY)	1.10

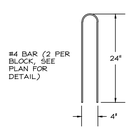
MAXIMUM BULK DENSITIES

NOTES:
1. ON-SITE TOPSOIL WITH AN ORGANIC CONTENT OF AT LEAST 4 PERCENT CAN BE PROPERLY STOCKPILED (TO MAINTAIN ORGANIC CONTENT) AND REUSED.

SPECIFICATIONS:
1. COMPOST MATERIALS SHALL MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 SECTION 867.2.
2. COMPOST DERIVED FROM OR OBTAINED FROM MUSHROOM GROWING OPERATIONS SHALL BE AGED AT LEAST 7 YEARS.
3. SUB-SOILING TO RELIEVE COMPACTION:
   A. AFTER EXCAVATION, THE SUBSOIL SHALL BE IN A LOOSE, FRIABLE CONDITION TO A DEPTH OF 20 INCHES BELOW FINAL TOPSOIL GRADE. THERE SHALL BE NO EROSION RILLS OR WASHOUTS IN THE SUBSOIL SURFACE EXCEEDING 3 INCHES IN DEPTH.
   B. TO ACHIEVE THIS CONDITION, SUBSOILING, RIPPING, OR SCARIFICATION OF THE SUBSOIL WILL BE REQUIRED AS DIRECTED BY THE OWNER'S REPRESENTATIVE, WHEREVER THE SUBSOIL HAS BEEN COMPACTED BY EQUIPMENT OPERATION OR HAS BECOME DRIED OUT AND CRUSTED, AND WHERE NECESSARY TO OBLITERATE EROSION RILLS. SUB-SOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN ALL AREAS WHERE PLANT ESTABLISHMENT IS PLANNED. SUB-SOILING SHALL BE PERFORMED BEFORE COMPOST PLACEMENT.
   C. SUBSOILED AREAS SHALL BE LOOSENED TO LESS THAN 200 PSI TO A DEPTH OF 20 INCHES BELOW FINAL TOPSOIL GRADE WHEN DIRECTED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL VERIFY THAT THE SUB-SOILING WORK CONFORMS TO THE SPECIFIED DEPTH.
   D. SUB-SOILING SHALL FORM A TWO-DIRECTIONAL GRID. CHANNELS SHALL BE CREATED BY A COMMERCIALLY AVAILABLE, MULTI-SHANKED, PARALLELOGRAM IMPLEMENT (SOLID-SHANK RIPPER). THE EQUIPMENT SHALL BE CAPABLE OF EXERTING A PENETRATION FORCE NECESSARY FOR THE SITE. NO DISC CULTIVATORS, CHISEL PLOWS, OR SPRING LOADED EQUIPMENT WILL BE ALLOWED. THE GRID CHANNELS SHALL BE SPACED 36 INCHES APART, DEPENDING ON EQUIPMENT, SITE CONDITIONS, AND THE SOIL MANAGEMENT PLAN. THE CHANNEL DEPTH SHALL BE A MINIMUM OF 20 INCHES OR AS SPECIFIED IN THE SOIL MANAGEMENT PLAN.
   E. LEVEL SUB-SOILED AREAS BY USE OF A YORK RAKE AND LIGHT TRACTOR.
   F. IF SOILS ARE SATURATED, THE CONTRACTOR SHALL DELAY OPERATIONS UNTIL THE SOIL WILL NOT HOLD A BALL WHEN SQUEEZED. ONLY ONE PASS SHALL BE PERFORMED ON ERODIBLE SLOPES GREATER THAN 3:1. WHEN ONLY ONE PASS IS USED (AND AS DIRECTED BY THE ENGINEER), WORK SHOULD BE DONE AT RIGHT ANGLES TO THE DIRECTION OF SURFACE DRAINAGE, WHENEVER PRACTICAL.
   G. EXCEPTIONS TO SUBSOILING INCLUDE AREAS WITHIN THE DRIP LINE OF ANY EXISTING TREES, OVER UTILITY INSTALLATIONS WITHIN 30 INCHES OF THE SURFACE, WHERE TRENCHING/DRAINAGE LINES ARE INSTALLED, WHERE COMPACTION IS BY SPECIFIED (ABUTMENTS, FOOTINGS, OR IN SLOPES) AND ON INACCESSIBLE SLOPES, AS APPROVED BY THE OWNER'S REPRESENTATIVE.
4. FINAL AMENDED SOIL QUALITY:
   A. ORGANIC CONTENT (BY VOLUME) - 8 TO 13%
   B. FINAL BULK DENSITIES SHALL MEET REQUIREMENTS LISTED ABOVE.

SOIL AMENDMENT & RESTORATION CONSTRUCTION SEQUENCE:
1. ALL OTHER CONSTRUCTION WITHIN THE TRIBUTARY AREA TO THE AREA TO BE AMENDED SHALL BE COMPLETED AND STABILIZED BEFORE BEGINNING SOIL RESTORATION.
2. INITIAL SOIL DISTURBANCE - FOR HIGHLY COMPACTED SITE, PERFORMED WITH EQUIPMENT AS SPECIFIED ABOVE:
3. UNIFORMLY BREAK-UP SUBSOIL - AS SPECIFIED ABOVE.
4. ROCK REMOVAL - PERFORMED WITH A MECHANICAL PICKER.
5. DISTRIBUTION OF IMPORTED MATERIAL SPREAD 1 INCH (ADJUST DEPTH OF COMPOST APPLIED TO ACHIEVE FINAL AMENDED SOIL QUALITY SPECIFICATIONS) OF APPROVED COMPOST AND 1 INCH OF SAND ON TOPSOIL. TILL COMPOST AND SAND INTO TOPSOIL WITH A ROTARY TILLER THAT IS SET TO A DEPTH OF 6 INCHES.
6. LIME AND FERTILIZER APPLICATION - AS DETERMINED BY SOIL TESTING.
7. SOIL INTEGRATION - 2 PASSES WITH ROTOTILLER IN PERPENDICULAR DIRECTIONS.
8. GRADING AND ROLLING OF SITE - TO ACHIEVE A UNIFORMLY SMOOTH SITE SURFACE.
9. SEED - AS DIRECTED IN SEEDING SPECIFICATIONS - USE OF HYDROSEED IS ACCEPTABLE.
10. PROVIDE SOIL SAMPLES PER PROJECT SPECIFICATIONS.

BMP 6.7.3
SOIL AMENDMENT & RESTORATION
NOT TO SCALE



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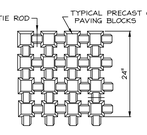
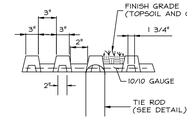


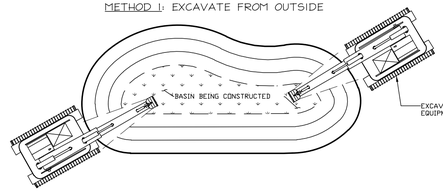
PLAN



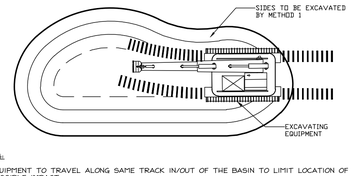
SECTION

SPILLWAY - EMERGENCY PAVING BLOCKS
NOT TO SCALE

METHOD 1: EXCAVATE FROM OUTSIDE

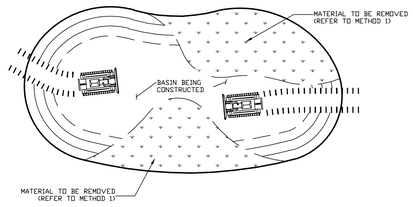


METHOD 2: ONE SET OF TRACKS IN AND OUT

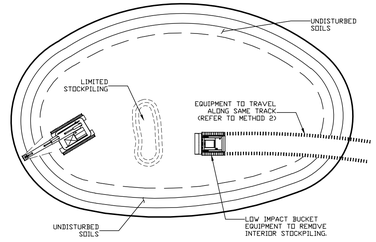


NOTES:
1. EQUIPMENT TO TRAVEL ALONG SAME TRACK IN/OUT OF THE BASIN TO LIMIT LOCATION OF POSSIBLE IMPACTS.
2. BASIN TO BE ENTERED FROM 1 SIDE ONLY.

METHOD 3: TWO SETS OF TRACKS IN AND OUT

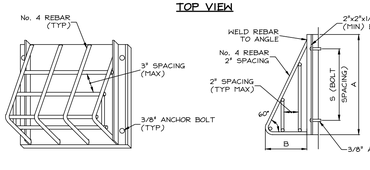


METHOD 4: LOW IMPACT INTERIOR STOCKPILING

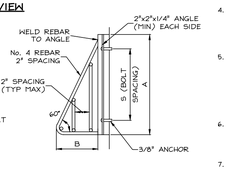


NOTES:
1. USE ONLY APPROX. 10 PSI OR LESS GROUND PRESSURE EXCAVATION EQUIPMENT WITHIN BASIN.
2. ONLY THE ABOVE METHODS SHALL BE USED TO CONSTRUCT BASIN.
3. TO FACILITATE FINIMPAL SOIL COMPACTION, TAKE AS FEW TRIPS AS POSSIBLE THROUGH BASIN.
4. WHEELED VEHICLES SHOULD NOT BE USED UNDER ANY CIRCUMSTANCES.
5. BASIN TO BE ISOLATED USING ORANGE CONSTRUCTION FENCE TO LIMIT ACCESS AND COMPACTION.
6. ALL SLOPES WITHIN BASIN SHALL RECEIVE EROSION CONTROL FENCE OR SOCK TO PREVENT SEDIMENT CONTAMINATION.

BASIN - CONSTRUCTION METHODS
NOT TO SCALE



ISOMETRIC VIEW



SIDE VIEW

STRUCTURE	A	B	C	S
-	-	-	-	-
-	-	-	-	-

TRASH RACK - PERMANENT
NOT TO SCALE

PCSM METHODS

IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, A POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN SHOULD BE DESIGNED TO INCORPORATE THE FOLLOWING REQUIREMENTS:

1. PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF:
   THE INCREASE TO THE RATE OF STORMWATER RUNOFF HAS BEEN PREVENTED TO THE MAXIMUM EXTENT PRACTICABLE THROUGH USE OF MINIMIZED IMPERVIOUS SURFACE AND MAINTAINING EXISTING VEGETATION.
2. MINIMIZE LAND CLEARING AND GRADING:
   LAND CLEARING AND GRADING HAS BEEN LIMITED TO THE MINIMUM AMOUNT NEEDED FOR THE PROPOSED PROJECTS PROGRAMING NEEDS.
3. MINIMIZE SOIL COMPACTION:
   SOIL COMPACTION HAS BEEN MINIMIZED BY REDUCING LIMITS OF CONSTRUCTION, MAINTAINING EXISTING VEGETATED AREAS, AND SEQUENCING IN CONSTRUCTION TO LIMIT THE DURATION OF SOIL DISTURBANCE.
4. MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION:
   EXISTING DRAINAGE FEATURES WILL BE PROTECTED BY METHODS DESCRIBED IN 'PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF'.
5. MINIMIZE IMPERVIOUS AREAS:
   IMPERVIOUS AREAS HAVE BEEN MINIMIZED BY REPAVING OR REPLACING EXISTING IMPERVIOUS AREAS WITH NO INCREASE IN SIZE AND PROPOSING THE MINIMUM AMOUNT OF IMPERVIOUS SURFACE NEEDED FOR THE PROJECT.
6. UTILIZE OTHER STRUCTURAL OR NONSTRUCTURAL BMPS THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF:
   THE TWO YEAR DESIGN STORM VOLUME INCREASE HAS BEEN SIGNIFICANTLY REDUCED THROUGH THE USE OF STRUCTURAL AND NON-STRUCTURAL BMPS.

GEOLOGIC FORMATIONS/SOIL CONDITIONS

1. NO KNOWN GEOLOGIC FORMATIONS AND/OR SOIL CONDITIONS THAT PROMOTE POLLUTION ARE LOCATED ON-SITE.

ANTICIPATED CONSTRUCTION WASTE

1. ANTICIPATED WASTE MATERIALS FROM SITE CONSTRUCTION, PCSM BMPS, DEMOLITION WORK AND BUILDING MATERIALS SHALL BE HANDLED UTILIZING THE RECYCLING AND DISPOSAL METHODS NOTES.

SOIL USE LIMITATIONS

THE INFORMATION LISTED BELOW WAS OBTAINED FROM THE USDA - NRCS, WEB SOIL SURVEY AVAILABLE AT WEBSOILSURVEY.NRCS.USDA.GOV. THIS INFORMATION WAS NOT OBTAINED FROM FIELD INVESTIGATION.

SOIL SYM	SOIL NAME	SLOPE (%)	HSG	HYDRIC RATING
AbB	ABBOTTSTOWN SILT LOAM	3-8	D	-
CwB	CROTON SILT LOAM	3-8	D	-

SOIL SYM	KF	T	RESTRICTIVE LAYER		REPRESENT. VALUE		
			DEPTH TO (IN.)	TYPE	% SAND	% SILT	% CLAY
AbB	.32	3	40	LITHIC BEDROCK, LITHIC BEDROCK	29.1	53.4	17.5
CwB	.43	3	40		11.7	63.3	25.0

SOIL SYM	DWELLINGS WITHOUT BASEMENTS	DWELLINGS WITH BASEMENTS	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS	SHALLOW EXCAVATIONS	LAWNS AND LANDSCAPING
AbB	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	SOMEWHAT LIMITED
CwB	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED

SOIL SYM	EMBANKMENTS, DIKES, AND LEVEES	PLAYGROUNDS	PATHS AND TRAILS	SEPTIC TANK ABSORPTION FIELDS	POTENTIAL AS A SOURCE OF ROADFILL	POTENTIAL AS A SOURCE OF TOPSOIL
AbB	VERY LIMITED	VERY LIMITED	SOMEWHAT LIMITED	VERY LIMITED	POOR	FAIR
CwB	VERY LIMITED	VERY LIMITED	VERY LIMITED	VERY LIMITED	POOR	POOR

SOILS NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	DEPTH TO SATURATED ZONE / SEASONAL HIGH WATER	HYDRIC / HYDRIC INCLUSIONS	LOW STRENGTH / LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK - SWELL POTENTIAL SHRINKAGE	PONDING	FLOODING
AbB	X	C/S	-	X	-	X	X	X	X	X	X	-	-	X
CwB	X	C/S	-	X	-	X	X	X	X	X	X	-	-	X

SOILS RESOLUTIONS

1. CUTBANKS CAVE: FOR SOILS WHICH CAVE OR SLOUGH DUE TO EXCAVATION, BANKS SHALL BE SLOPED ADEQUATELY AND SHORING SHALL BE PROVIDED FOR TRENCHES OR OTHER EXCAVATIONS INVOLVING STEEP SLOPES.
2. SOILS THAT ARE CORROSIVE TO CONCRETE AND/OR STEEL: MAXIMIZE THE USE OF PLASTIC PIPE THROUGHOUT THE SITE INSTEAD OF REINFORCED CONCRETE OR CORRUGATED METAL PIPE. WHERE CONCRETE OR STEEL MUST BE USED, THE USE OF OVERLAYS OR SEALERS SUCH AS POLYMER CONCRETE OVERLAYS, LATEX MODIFIED CONCRETE, CONCRETE WITH SILICA FUME ADDED TO IT, EPOXY COATINGS, ACRYLIC SEALERS, SILANE SPRAYS, AND LINSEED OIL EMULSIONS SHALL BE USED TO PREVENT THE CORROSION OF CONCRETE OR STEEL.
3. DRY OR DROUGHTY SOILS: SELECT VEGETATIVE AND PLANT SPECIES TOLERANT OF DRY CONDITIONS.
4. ERODIBLE SOILS TYPES: FOR SOILS WITH ERODIBILITY VALUES HIGHER THAN 0.36, CONTRACTOR SHOULD INCORPORATE SOME OR ALL OF THE FOLLOWING STABILIZATION TECHNIQUES. IN PROPOSED CHANNELS, PROVIDE TEMPORARY LININGS UNTIL GRASS IS ESTABLISHED. PERMANENT GRASS REINFORCED LININGS THROUGH THE INSTALLATION OF SOD OR SELECT PERMANENT LININGS OTHER THAN GRASSES. DECREASE CHANNEL GRADES AND INCREASE CHANNEL WIDTHS TO HELP REDUCE EROSION.
5. HIGH WATER TABLE, WET/HYDRIC SOILS, FLOODING & WETNESS: SELECT VEGETATIVE AND PLANT SPECIES TOLERANT OF WET CONDITIONS. IF BUILDINGS ARE LOCATED IN SAID SOILS, PROVIDE SUMP PUMPS WITH BACK FLOW PREVENTION DEVICES IN BASEMENTS. IF HIGH WATER IS ENCOUNTERED DURING CONSTRUCTION, CONTRACTOR SHALL UTILIZE PUMPED WATER FILTRATION METHODS (I.E. DIRT BAG). FOR BASIN CONSTRUCTION IN AREAS OF WET SOILS, PREFERABLY RELOCATE STORMWATER AND SEDIMENT BASINS AND FACILITIES IN SOILS MORE CONDUCIVE TO SUCH FACILITIES. IF FACILITIES CAN NOT BE RELOCATED, PROVIDE PUMPED WATER SEDIMENT REMOVAL FACILITIES FOR BASIN CONSTRUCTION, LIMIT RESERVOIR DEPTHS, AND LIMIT CLEAN OUT ELEVATIONS.
6. LOW STRENGTH AND LANDSLIDE PRONE SOILS: ON GRADES STEEPER THAN 3:1 SLOPES, AN EROSION CONTROL BLANKET OR TURF REINFORCEMENT SHALL BE USED TO PREVENT EROSION AND SLIDING OF SOIL. IN AREAS OF VERY LOW STRENGTH WHERE EXTRA REINFORCEMENT MAY BE NEEDED, SOIL NAILING, ANCHORS, GEOGRID, OR A SERIES OF MICROPILES CAN BE USED TO MAINTAIN THE INTEGRITY OF A SLOPE FACE.
7. SLOW PERCOLATING SOILS: TO MITIGATE SLOW PERCOLATION, SOILS SHALL BE EXCAVATED AND AMENDED WITH COMPOST MATERIALS. THE DESIGN ENGINEER SHALL BE CONTACTED TO REVIEW METHODS AND MATERIALS.
8. SOILS PRONE TO INSTABILITY PIPING AND SEEPING: IF STORMWATER OR SEDIMENT BASINS/TRAPS CAN NOT BE RELOCATED TO OTHER SUITABLE SOILS TYPES, LIMIT EMBANKMENT SLOPE STEEPNESS, PROVIDE CLAY EMBANKMENT CORES AND IMPORT OTHER SOILS FOR CONSTRUCTION OF EMBANKMENT FACILITIES AS NECESSARY.
9. POOR SOURCE OF TOPSOIL: LOW PH: FOR SOILS WITH PH VALUES LOWER THAN 5.5, ADJUST PH BY APPLYING LIME AT RATES DETERMINED BY SOILS TESTING IN COMBINATION WITH SELECTION AND PLANTING VEGETATIVE SPECIES TOLERANT OF ACIDIC CONDITIONS. LOW FERTILITY: INCORPORATE ADDITIONAL SOIL NUTRIENTS AT RATES DETERMINED BY SOIL TESTING IN COMBINATION WITH SELECTING AND PLANTING VEGETATIVE SPECIES TOLERANT OF LOW FERTILITY CONDITIONS.
10. SOILS UNSUITABLE FOR KINTER GRADING, PRONE TO FROST ACTION, OR DIFFICULT TO COMPACT: GRADING DURING PERIODS PRONE TO FROST SHOULD BE LIMITED. CONSTRUCTION OF STRUCTURAL EMBANKMENT SHOULD BE PERFORMED DURING THE PERIOD OF MAY TO OCTOBER IF FACILITIES CAN NOT BE RELOCATED TO AN AREA WITH MORE CONDUCIVE SOILS.
11. SHRINK/SWELL CONDITIONS IN EXPANSIVE SOILS: TO MITIGATE EXPANSIVE SOILS IN SMALL AREAS, SOIL MAY BE REMOVED AND REPLACED WITH NON-EXPANSIVE SOIL. IF THE EXTENT OF EXPANSIVE SOILS IS A LARGER AREA, SOIL STABILIZATION MAY BE USE IN WHICH ADDITIONAL MATERIALS CAN BE ADDED TO THE SOIL TO LIMIT THE SHRINK AND SWELL CONDITIONS SUCH AS, CEMENT, RESINS, FLY ASH, POZZALANA, OR LIME TO BE APPROVED BY THE DESIGN ENGINEER.
12. SOILS SUSCEPTIBLE TO SINKHOLE AND SOLUTION CHANNEL/CHAMBER FORMATION: LOCATE SEDIMENT BASINS, TRAPS AND STORMWATER MANAGEMENT DETENTION, RETENTION AND INFILTRATION FACILITIES IN AREAS DESIGNATED WITH SOILS SUITABLE FOR SAID FACILITIES. IF THE FACILITIES CANNOT BE RELOCATED TO A MORE SUITABLE AREA, STANDING WATER DEPTHS AND RETENTION TIMES SHOULD BE LIMITED. IMPERMEABLE RESERVOIR LININGS SHOULD BE UTILIZED FOR WATER RETENTION FACILITIES, AND/OR STORMWATER DETENTION FACILITIES WITH EXTENSIVE HOLDING TIMES.
13. PONDING: IF SOILS HAVE COMPACTED OR SETTLED INTO AN UNPLANNED LOW POINT WHICH COLLECTS WATER, ADD SOIL TO THE LOW POINT AND REGRADE THE AREA TO ENSURE RUNOFF PROPERLY DRAINS AWAY FROM THE LOCATION. IF THE LAND IS SHALLOWLY SLOPED, AERATING MAY BE NECESSARY TO PROMOTE INFILTRATION INTO OVERLY COMPACTED SOILS.

CONSTRUCTION SEQUENCE

AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE ERS PLAN REPAIRER, THE PCSM PLAN REPAIRER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT. *(ERS STD NOTE#2)*

UPON INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.

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. *(ERS STD NOTE#3)*

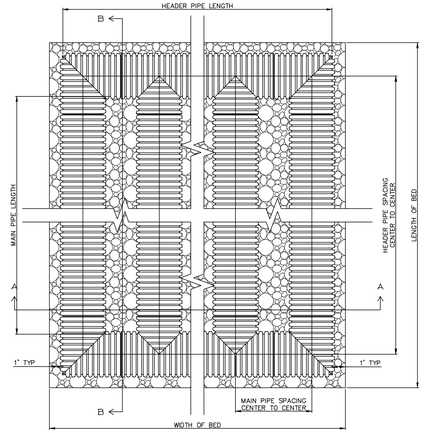
ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION. *(ERS STD NOTE#4)*

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 TO ACCOMMODATE MORE THAN ONE PHASE OF THE PROJECT UNITS THE ERS BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE ERS PLAN. *(ERS STD NOTE#6)*

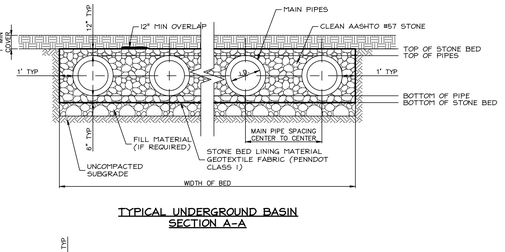
UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.

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 WITH 1 YEAR.

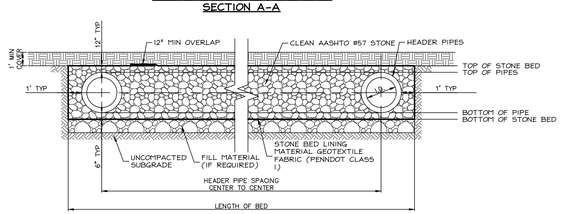
1. AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO- PERMITTEE SHALL PROVIDE NOTIFICATION TO THE AUTHORIZED CONSERVATION DISTRICT.
2. INSTALL ROCK CONSTRUCTION ENTRANCE (RCE) WHERE SHOWN ON PLANS. CONSTRUCTION VEHICLES MUST ENTER AND EXIT FROM THE ACCESS POINT. UTILIZE CONCRETE WASHOUT AREA AS REQUIRED.
3. PLACE IDENTIFICATION STAKES ALONG THE ENTIRE LIMIT OF DISTURBANCE AT 20 FOOT INTERVALS.
4. INSTALL TREE PROTECTION FENCE AROUND AREAS OF PROPOSED INFILTRATION AS SHOWN ON THE PLAN TO PREVENT COMPACTION AND AROUND TREES TO REMAIN AS SHOWN ON THE PLAN.
5. INSTALL ALL PERIMETER SEDIMENT CONTROL BMPS. INSTALL PIPE AND STRUCTURES UPSTREAM FROM ENDWALL 100 TO INLET 106. INSTALL INLET 105A AND 18" RCP CULVERT CROSSING OLD EASTON ROAD.
6. BEGIN CONSTRUCTION OF SEDIMENT BASIN BY INSTALLING PIPE 4 ANTI-SEEP COLLAR. EXCAVATE MATERIAL AND CONSTRUCT SEDIMENT BASIN BERM, SPILLWAY, OUTLET STRUCTURE, BAFFLE AND CLEAN-OUT STAKE.
7. BEGIN DEMOLITION OF AREAS SHOWN ON PLANS AS TO BE REMOVED.
8. STRIP AND STOCKPILE TOPSOIL IN AREAS IN PREPARATION FOR UTILITY, STORM FACILITY, PAVED AREA INSTALLATIONS AND ALONG CONSTRUCTION. PLACE STOCKPILES WHERE DESIGNATED ON PLAN.
9. BEGIN ROUGH GRADING OF SITE PAVING AREAS, BUILDING PAD AND GENERAL SITE GRADING.
10. INSTALL STORM CONVEYANCE FROM ENDWALL 120 UPSTREAM TO STRUCTURE 123.
11. ONCE A STABILIZED EMERGENCY ACCESS IS ESTABLISHED TO BUILDING PAD BEGIN BUILDING CONSTRUCTION AND CONTINUE GENERAL SITEWORK.
12. BEGIN CONSTRUCTION OF UNDERGROUND INFILTRATION BASIN #1.
13. INSTALL ALL STORM CONVEYANCE ENTERING UNDERGROUND INFILTRATION BASIN START



TYPICAL UNDERGROUND BASIN PLAN VIEW



TYPICAL UNDERGROUND BASIN SECTION A-A



TYPICAL UNDERGROUND BASIN SECTION B-B

BASIN NAME	STONE BED				MAIN PIPES					HEADER PIPES				
	WIDTH (FT)	LENGTH (FT)	LINING MATERIAL (PENNDOT CLASS 1)	REQUIRED FILL MATERIAL (IN)	NO. OF PIPES	DIAMETER (IN)	LENGTH (FT)	MATERIAL	CENTER TO CENTER SPACING (IN)	NO. OF PIPES	DIAMETER (IN)	LENGTH (FT)	MATERIAL	CENTER TO CENTER SPACING (FT)
UGI	50	150	NON-WOVEN	N/A	24	12	147	PERF. HDPE	25.50	2	12	48	PERF. HDPE	148

BASIN NAME	BOTTOM OF STONE BED ELEVATION (FT)	PIPE INVERT ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	TOP OF STONE BED ELEVATION (FT)	MINIMUM GRADE ELEVATION (FT)	INFILTRATION RANGE (FT)	DETENTION RANGE (FT)
UGI	449.50	450.00	451.00	452.00	454.00	449.50-450.50	450.50-451.50

NOTES:

1. ALL FILL, IF REQUIRED FOR UNDERGROUND BASIN CONSTRUCTION, SHALL BE AASHTO #57 OR APPROVED UNIFORMLY GRADED STONE COMPACTED AS DIRECTED.
2. SUBSURFACE INFILTRATION BED FILTER FABRIC AND STONE SHALL BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (I.E. CLEANING THE SOIL/SEDIMENT FROM THE FABRIC, STONE, BED, ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.
3. ALL STONE FOR THE CONSTRUCTION OF THE SUBSURFACE INFILTRATION BEDS SHALL BE UNIFORMLY GRADED AND CLEAN WASHED AGGREGATE.
4. THE BOTTOM OF ALL SUBSURFACE INFILTRATION BEDS SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.
5. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO SUBGRADE DURING CONSTRUCTION.

CONSTRUCTION REQUIREMENTS:

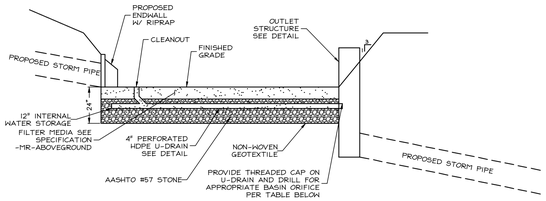
1. EXCAVATION FOR THE INFILTRATION FACILITY SHALL BE PERFORMED WITH EQUIPMENT THAT WILL NOT COMPACT THE BOTTOM OF THE SEEPAGE BED/TRENCH OR LIKE FACILITY.
2. THE BOTTOM OF THE BED AND/OR TRENCH SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF AGGREGATE.
3. ONLY CLEAN AGGREGATE, FREE OF FINES, SHALL BE ALLOWED.
4. THE TOP AND SIDES OF ALL SEEPAGE BEDS, TRENCHES, OR LIKE FACILITIES SHALL BE COVERED WITH DRAINAGE FILTRATION FABRIC.
5. PERFORATED DISTRIBUTION PIPES CONNECTED TO CENTRALIZED CATCH BASINS AND/OR MANHOLES WITH PROVISIONS FOR THE COLLECTION OF DEBRIS SHALL BE PROVIDED IN ALL FACILITIES. THE PERFORATED PIPES SHALL DISTRIBUTE STORMWATER THROUGHOUT THE ENTIRE SEEPAGE BED/TRENCH OR LIKE FACILITY.

SUBSURFACE INFILTRATION BED

NOT TO SCALE

CONSTRUCTION SEQUENCE - SUBSURFACE DETENTION BASIN

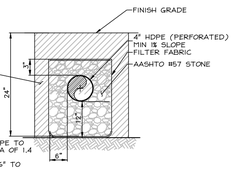
1. INSTALL AND MAINTAIN ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES (AS PER THE PENNSYLVANIA EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL) DURING CONSTRUCTION.
2. STAKE OUT AND EXCAVATE TO ELEVATION PER APPROVED PLANS. REMOVE OBJECTIONABLE MATERIAL ENCOUNTERED WITHIN THE EXCAVATION INCLUDING MATERIAL PROTRUDING FROM WALLS.
3. INSTALL 40 MIL PVC LINER ON BOTTOM AND UP SIDE WALLS TO TOP OF BASIN.
4. INSTALL MINIMUM 6" STONE BASE.
5. INSTALL ALL NECESSARY UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES.
6. UPON COMPLETION OF PIPE AND STONE INSTALLATION, WRAP THE TOP OF BASIN IN GEOTEXTILE FABRIC AND ENSURE THERE ARE NO VOIDS OR DAMAGE.
7. PLACE SIDE BACKFILL THEN TOP BACKFILL. BACKFILL SHOULD BE PLACED IN MAXIMUM 8" LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED.
8. PLACE FILL ONTO THE GEOTEXTILE IN MAXIMUM 12" LIFTS COMPACTED WITH A VIBRATORY PLATE OR WALK BEHIND ROLLER TO A MINIMUM OF 90% STANDARD PROCTOR DENSITY.
9. FINISH TO THE SURFACE AND COMPLETE WITH ASPHALT.
10. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURE UNTIL SITE IS FULLY STABILIZED.



BASIN	BOTTOM 24" FILTER ELEV (FT)	FINISHED GRADE (FT)	TG (FT)	UNDERDRAIN INVERT (FT)	U-DRAIN ORIFICE (IN)	SPILLWAY ELEVATION	TOP OF BERM ELEVATION
MR-1	453.00	255.00	459.00	454.00	1/2"	458.50	261.05

MANAGED RELEASE BMP

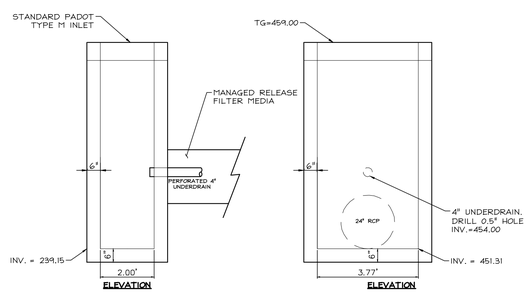
NOT TO SCALE



NOTE:
1. PERFORATED UNDERDRAIN PIPE TO PROVIDE MINIMUM INLET AREA OF 1.4 SQ.IN./LF
2. CIRCULAR PERFORATIONS 3/16" TO 3/8"
3. REFER TO PADOT PUB 408 SECTION 610.

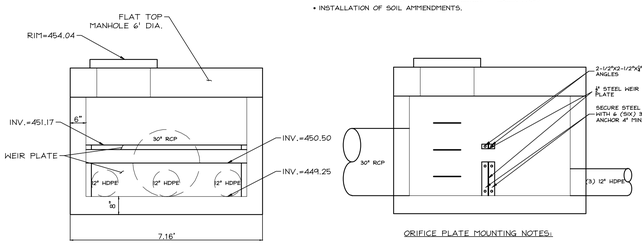
MANAGED RELEASE UNDERDRAIN

NOT TO SCALE



STRUCTURE 107

NOT TO SCALE



STRUCTURE 102

NOT TO SCALE

ORIFICE PLATE MOUNTING NOTES:

STEEL ORIFICE PLATE TO BE MOUNTED TO WALL USING 2-1/2"X2-1/2"X¼" ANGLES ON BOTH SIDES OF PLATE AND BOTTOM LEAVING A GAP FOR THE ORIFICE. BOLT TO WALL AND THROUGH ORIFICE PLATE AND ANGLE ON OTHER SIDE. NEOPRENE SEALING TAPE TO BE USED BETWEEN ANGLE AND WALL AND ANGLE AND PLATE ON INLET PIPE SIDE CREATING A WATERTIGHT SEAL.

SPECIFICATIONS - MRC - ABOVEGROUND BASIN

1. FOR MANAGED RELEASE AREA, AN IMPERMEABLE LINER SHALL BE PLACED AT BOTTOM ELEVATION AND 2 FOOT DEPTH OF FILTER MEDIA SHALL BE A THOROUGHLY MIXED BLEND OF THE FOLLOWING BASED ON PERCENT BY VOLUME RATIOS: 15% COMPOST MATERIAL WITH HIGH ORGANIC CONTENT, 25% SAND TYPE K-5, AND 60% ON-SITE NATIVE TOPSOIL, FREE OF GRASS AND ROOT CLODS. THE BLEND SHALL BE MIXED AND PLACED IN THE BASIN. NOT ROTO-TILLED IN THE BASIN. UNDERDRAIN SHALL BE INSTALLED, SEE DETAIL. THE BASIN PLANTING MATERIAL SHALL BE RAKED INTO A UNIFORM AND LEVEL CONDITION AT THE SPECIFIED GRADE. A 1" LAYER OF LEAF MULCH SHALL BE UNIFORMLY SPREAD ON THE SURFACE BEFORE OR AFTER PLANTINGS BUT AFTER IN SEEDED AREAS.
2. IMPERMEABLE LINER - SHALL BE BENTOMAT DN OR APPROVED EQUIVALENT NONWOVEN GEOSYNTHETIC CLAY LINER, APPROPRIATE FOR THE SOIL TYPE AND DEPTH CONDITIONS, PLACED ON THE FLOOR AND THE SIDES OF THE EXCAVATION.
3. ALL INLET JOINTS AND PIPE PENETRATIONS SHALL BE WATERTIGHT.

CONSTRUCTION SEQUENCE - MANAGED RELEASE CONCEPT - ABOVE GROUND

1. INSTALL TEMPORARY SEDIMENT CONTROL BMPS AS SHOWN ON THE PLANS.
2. COMPLETE SITE GRADING.
3. STABILIZE GRADING WITHIN THE LIMIT OF DISTURBANCE EXCEPT WITHIN THE MANAGED RELEASE BASIN AREA. SLOW RELEASE BASIN AREAS MAY BE USED AS TEMPORARY SEDIMENT TRAPS PROVIDED THAT THE PROPOSED FINISH ELEVATION OF THE BED IS 12 INCHES LOWER THAN THE BOTTOM ELEVATION OF THE SEDIMENT TRAP.
4. EXCAVATE MANAGED RELEASE BASIN TO PROPOSED INVERT DEPTH AND INSTALL BASIN IMPERMEABLE LINER. INSTALL PERMANENT OUTLET STRUCTURE AND OUTLET PIPING.
5. INSTALL FILTER MEDIA, PLANTINGS, MULCH, U-DRAIN MEDIA AND INSTALL 4" UNDERDRAIN AND VALVE AS SHOWN ON PLANS AND SPECIFICATIONS.
6. PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.
7. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS.
8. PLANT VEGETATION ACCORDING TO LANDSCAPE PLAN.
9. MULCH AND INSTALL EROSION PROTECTION AT SURFACE FLOW ENTRANCES WHERE NECESSARY.

SPECIFICATIONS - LANDSCAPE RESTORATION

1. PRESERVE ALL EXISTING HIGH QUALITY PLANT MATERIALS AND SOIL MANTLE WHEREVER POSSIBLE AND PROTECT THOSE AREAS DURING CONSTRUCTION. PRIOR TO ON-SITE DISPOSAL OF SEDIMENT.
2. REDUCE OR ELIMINATE CHEMICAL APPLICATIONS, FERTILIZER, AND CHEMICAL BASED PEST CONTROL PROGRAMS TO THE SITE, WHEREVER POSSIBLE.
3. TREES MUST BE NATIVE SPECIES WITH MINIMUM 2" CALIPER, MINIMUM TREE HEIGHT IS 6 FEET.
4. TREES SHALL BE MAINTAINED AND PROTECTED FOR THE LIFE OF THE PROJECT (50 YEARS) OR UNTIL REDEVELOPMENT OCCURS.
5. EROSION SHALL BE PROVIDED FOR THE REPLACEMENT OF ANY PROTECTED TREES USED FOR STORMWATER CREDIT THAT DIE WITHIN 5 YEARS OF CONSTRUCTION. DEAD TREES SHALL BE REPLACED WITHIN 6 MONTHS.

CONSTRUCTION SEQUENCE - LANDSCAPE RESTORATION

1. SELECT SITE
   - CONFIRM SITE IS SUITABLE FOR RESTORATION, SHOULD BE SUNNY, OPEN AND WELL-VENTILATED. MEADOW PLANTS REQUIRE AT LEAST A HALF A DAY OF FULL SUN.
   - OBTAIN LAND OWNER PERMISSION.
2. ANALYZE SITE
   - EVALUATE SITE'S PHYSICAL CONDITIONS (SOIL ATTRIBUTES, GEOLOGY, TERRAIN)
   - EVALUATE SITE'S VEGETATIVE FEATURES (DESIRABLE AND UNDESIRABLE SPECIES, NATIVE SPECIES, SENSITIVE HABITATS,) GOOD CANDIDATES FOR MEADOW PLANTINGS INCLUDE AREAS PRESENTLY IN TURF, CORNFIELDS, SOYBEAN FIELDS, ALFALFA FIELDS AND BARE SOILS FROM NEW CONSTRUCTION.
   - AREAS WITH A HISTORY OF INVASIVE WEED GROWTH MAY REQUIRE A FULL YEAR OR LONGER TO PREPARE FOR PLANTING.
   - BEWARE OF RESIDUAL HERBICIDES THAT MAY HAVE BEEN APPLIED TO AGRICULTURAL FIELDS. ALWAYS CHECK THE HERBICIDE HISTORY OF THE PAST 2-3 YEARS AND TEST THE SOILS IF IN DOUBT.
3. PLANT SELECTION
   - SELECT PLANS THAT ARE WELL ADAPTED TO THE SPECIFIC SITE CONDITIONS. MEADOW PLANTS MUST BE ABLE TO OUT COMPETE WEED SPECIES IN THE FIRST FEW YEARS AS THEY BECOME ESTABLISHED.
4. PREPARE SITE
   - REMOVE ANY OR EXISTING VEGETATION MUST BE ELIMINATED PRIOR TO SEEDING.
   - PERENNIAL WEEDS MAY REQUIRE YEARS OF MOWING, REPEATED SPRAYINGS WITH HERBICIDES, OR REPEATED TILLAGE WITH EQUIPMENT THAT CAN UPROOT AND KILL PERENNIAL WEEDS.
5. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHOULD BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE (OR EQUIVALENT) AND LIGHT TRACTOR. ALL FINE GRADING SHOULD BE DONE BY HAND. ALL BED BOTTOMS SHOULD BE AT LEVEL GRADE.
6. PLANTING DAY
   - PLANTING CAN TAKE PLACE FROM SPRING THAW THROUGH JUNE 30 OR FROM SEPTEMBER 1 THROUGH SOIL FREEZE-UP (DORMANT SEEDING)
   - PLANTING IN JULY AND AUGUST IS GENERALLY NOT RECOMMENDED DUE TO THE FREQUENCY OF DROUGHT DURING THIS TIME.
   - SEEDING CAN BE ACCOPPLISHED BY A VARIETY OF METHODS: NO-TILL SEEDER FOR MULTI-ACRE PLANTING, BROADCAST SEEDER; HAND BROADCAST FOR SMALL AREAS OF ONE ACRE OR LESS.
   - SEED QUALITY IS CRITICAL AND A SEED MIX SHOULD BE USED WITH A MINIMUM PERCENTAGE OF NON-SEED PLANT PARTS.

PCSM AS-BUILT CONDITIONS

1. PCSM REPORTING AND RECORDKEEPING. THE PCSM PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.
2. LICENSED PROFESSIONAL OVERSIGHT OF CRITICAL STAGES. A LICENSED PROFESSIONAL OR A DESIGNEE SHALL BE PRESENT ONSITE AND BE RESPONSIBLE DURING CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN. THE CRITICAL STAGES MAY INCLUDE THE INSTALLATION OF UNDERGROUND TREATMENT OR STORAGE BMPS, STRUCTURALLY ENGINEERED BMPS, OR OTHER BMPS AS DEEMED APPROPRIATE BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.
3. THE CONTRACTOR SHALL PROVIDE FINAL AS-BUILT SURVEY OF ALL POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES AND ALL ASSOCIATED PIPES AND STRUCTURES, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL SURVEYOR.
4. FINAL CERTIFICATION. THE CONTRACTOR SHALL INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS" WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS:

   "I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA C.S.A. §4904 TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMITY WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN. ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES."

RECYCLING OR DISPOSAL METHODS

1. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.*(ERS STD NOTE#6)*
2. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN ON THE PROPERTY, DEMOLISHED OR EXCAVATED MATERIALS SHALL BE REMOVED FROM THE SITE. MATERIALS SLATED FOR REMOVAL FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ANY AND ALL APPLICABLE MUNICIPAL OR OTHER GOVERNMENTAL AGENCY CURRENT REGULATIONS. DEBRIS SHALL NOT BE PERMITTED TO ACCUMULATE ON THE JOB-SITE. DUST AND DIRT SHALL BE HELD TO A MINIMUM DURING DEMOLITION, BY WETTING DOWN, AS REQUIRED. ON SITE BURNING OF MATERIALS WILL NOT BE PERMITTED. AT THE COMPLETION OF WORK, THE ENTIRE AREA INVOLVED WILL BE CLEAN AND LEFT IN A NEAT CONDITION, FREE OF RUBBISH. RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THIS PROJECT SITE SHALL BE UNDERTAKEN IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES AND REGULATIONS.
3. SEDIMENT REMOVED FROM CONTROL FACILITIES AS A PART OF REGULAR MAINTENANCE SHALL BE DISPOSED OF UPSLOPE OF THE CONTROL FACILITY.
4. ALL OFF-SIGHT WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.*(ERS STD NOTE#1)*

CRITICAL STAGES OF IMPLEMENTATION OF BMPs

THE DESIGN ENGINEER SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF WHEN THE CRITICAL STAGES ARE TO TAKE PLACE IN ORDER TO BE PRESENT FOR REQUIRED OBSERVATION OF BMP IMPLEMENTATION OF THE APPROVED PCSM PLAN. IN THE EVENT BMP'S ARE INSTALLED WITHOUT THE DESIGN ENGINEER PRESENT, THE GENERAL CONTRACTOR ASSUMES RESPONSIBILITY FOR SECURING A LICENSED PROFESSIONAL FOR OBSERVATION, SIGNOFF AND FINALIZING THE NPDES PERMIT NOTICE OF TERMINATION.

THE FOLLOWING LIST IS A SUMMARY OF THE CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN FOR WHICH A LICENSED PROFESSIONAL, OR HIS/HER DESIGNEE, SHALL BE PRESENT ON SITE:

- INSTALLATION OF UNDERGROUND INFILTRATION BASIN UG-1.
- INSTALLATION OF MANAGED RELEASE CONCEPT BASIN MR-1.
- INSTALLATION OF SOIL AMMENDMENTS.

OPERATION & MAINTENANCE

LIGHTHOUSE BAPTIST CHURCH, AS OWNER OF THE SITE, ITS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE OF ALL POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN AND NARRATIVE. ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES SHALL REMAIN IN PLACE AND SHALL BE MAINTAINED IN THE APPROVED DESIGN CONDITIONS. FACILITIES SHALL BE INSPECTED QUARTERLY AND AFTER ALL MAJOR STORM EVENTS. ADDITIONALLY, A DETAILED INSPECTION SHALL BE CONDUCTED BY THE SITE'S LANDSCAPE ARCHITECT OR DESIGNEE AT LEAST ONCE FOR THE FIRST YEAR AFTER THE SITE HAS BEEN STABILIZED TO RECOMMEND IF RESTORATION ACTIVITIES ARE REQUIRED. A SCHEDULE INDICATING THE DATE WHEN THE RESTORATION ACTIVITIES WILL BE STARTED AND COMPLETED SHALL BE COMPLETED. INSPECTIONS SHALL, AT A MINIMUM, INCLUDE:

- INSPECTING FOR DAMAGE TO THE FACILITY.
- INSPECTING EMBANKMENT AND EMERGENCY SPILLWAY FOR EROSION, SEEPS OR LEAKS, FAILURE OF SLOPE PROTECTION OR RIPRAP AND ADEQUATE GROUND COVER.
- ENSURE THE EMERGENCY SPILLWAY IS CLEAR OF OBSTRUCTIONS AND DEBRIS.
- NOTE SIGNS OF HYDROCARBON BUILD-UP AND ADDRESS APPROPRIATELY.
- MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES.
- ENSURE INLET AND OUTLET DEVICES ARE FREE OF DEBRIS AND OPERATIONAL.
- INSPECT OUTFALLS FOR RIPRAP FAILURES AND SLOPE EROSION.
- INSPECT FACILITIES FOR UNDESIRABLE VEGETATIVE OR WOODY GROWTH.

OBSTRUCTIONS AND DEBRIS

ALL STORMWATER MANAGEMENT FACILITIES SHALL BE CLEARED OF ALL DEBRIS AND LITTER ON A REGULAR BASIS AND AFTER ALL MAJOR STORM EVENTS. ADDITIONALLY, FLOATING DEBRIS SHALL BE REMOVED, AND THE FACILITY SHALL BE INSPECTED FOR VISIBLE POLLUTION OR BASELINE PROBLEMS. ERODED CHANNELS OR AREAS OF EXCESSIVE EROSION NEAR THE FACILITY SHALL BE BACKFILLED AND STABILIZED IMMEDIATELY.

SEDIMENT ACCUMULATION

MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES. REMOVE SEDIMENT IF STORAGE VOLUMES HAVE BEEN REDUCED SIGNIFICANTLY OR THE POOLS BECOME STAGNANT. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES ON A REGULAR BASIS (EVERY 2 TO 10 YEARS FOR DRY DETENTION BASINS AND EVERY 5 TO 15 YEARS FOR WET POND FACILITIES) AND SHALL EITHER BE REMOVED FROM THE SITE OR DISPOSED OF ON-SITE AT AN APPROVED DISPOSAL AREA. MAINTENANCE OF CATCH BASINS AND INLETS IS BEST DONE MONTHLY WITH A VACUUM TRUCK. ALL COLLECTED WASTE MUST BE HANDLED AND DISPOSED OF ACCORDING TO LOCAL ENVIRONMENTAL REQUIREMENTS. PRIOR TO ON-SITE DISPOSAL OF SEDIMENT, THE OWNER SHALL ACQUIRE THE APPROPRIATE EARTH DISTURBANCE PERMITS FROM THE MUNICIPALITY AND/OR THE CONSERVATION DISTRICT.

INFILTRATION FACILITIES

OBSERVATIONS SHALL BE MADE TO DETERMINE THE LENGTH OF TIME NEEDED FOR RETAINED WATER TO INFILTRATE INTO THE SOIL AFTER A STORM EVENT. THE OBSERVATIONS SHALL BE MADE BY READING THE WATER LEVEL IN THE INLET BOX(ES) OF THE UNDERGROUND SYSTEM(S) SEVERAL TIMES OVER A PERIOD OF TWO (2) DAYS AFTER A LARGE STORM EVENT. THE FIRST OF THESE OBSERVATIONS SHALL PROVIDE A RECORD OF HOW WELL THE SYSTEM IS WORKING WHEN COMPARING FUTURE OBSERVATIONS. MEASUREMENTS SHOULD BE TAKEN AFTER EACH RAIN EVENT OF 0.5-INCHES OR MORE, BUT NOT MORE FREQUENTLY THAN ONCE A WEEK, IF CONDITIONS ALLOW. A "STORM EVENT" IS DEFINED AS A RAIN EVENT THAT IS PRECEDED BY AT LEAST THE MIDST 72 HOURS BEFOREHAND. IF INFILTRATION FACILITIES ARE NOT DEWATERING WITHIN 72 HOURS MAKE CERTAIN TO FLUSH AND CLEAN BOTH UPSTREAM AND DOWNSTREAM STORM SYSTEM AND INFILTRATION FACILITY. IN THE EVENT THE FACILITY IS STILL NOT DEWATERING CONTACT THE DESIGN ENGINEER, FOR APPROVED CORRECTIVE MEASURES OR ALTERNATIVE BMP INSTALLATION.

AT A MINIMUM, OPERATION AND MAINTENANCE PROCEDURES FOR INFILTRATION BEDS SHALL INCLUDE:

- ALL CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST 2 TIMES PER YEAR.
- THE OVERLYING VEGETATION OF SUBSURFACE INFILTRATION FEATURES SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE.
- VEHICULAR ACCESS ON SUBSURFACE INFILTRATION AREAS SHOULD BE PROHIBITED, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. IF ACCESS IS NEEDED, USE OF PERMEABLE, TURF REINFORCEMENT SHOULD BE CONSIDERED.

MANAGED RELEASE CONCEPT BASIN

- UPGRADIENT CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED ANNUALLY, OR MORE OFTEN IF HISTORICAL MAINTENANCE RECORDS SUGGEST A MORE FREQUENT CLEANING.
- THE VEGETATION FOR THE MRC BMP AND CONTRIBUTING DRAINAGE AREA) SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED.
- CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS, MOW ONLY AS APPROPRIATE FOR VEGETATIVE SPECIES.
- INSPECT AT LEAST TWO TIMES PER YEAR, AFTER RUNOFF EVENTS GREATER THAN 1 INCH AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN THE DESIGN PARAMETERS (THE LICENSED PROFESSIONAL ENGINEER SHOULD CLEARLY IDENTIFY WHAT THESE PARAMETERS ARE).
- AT LEAST TWO TIMES PER YEAR, OR MORE IF HISTORICAL MAINTENANCE INDICATE IT IS NECESSARY, INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION, SIGNS OF WATER CONTAMINATION/SPILLS, AND INSTABILITY. LEAF LITTER NEEDS TO BE REMOVED ANNUALLY.
- AS NEEDED, REMOVE ACCUMULATED SEDIMENT AS REQUIRED TO MAINTAIN INFILTRATION THROUGH THE MRCS SOIL MEDIA AND TO MAINTAIN WATER QUALITY FUNCTIONALITY. RESTORE ORIGINAL CROSS SECTION. PROPERLY DISPOSE OF SEDIMENT.

VEGETATED AREAS

VEGETATED AREAS SHALL BE MAINTAINED WITH A MINIMUM UNIFORM VEGETATIVE 70% PERENNIAL VEGETATIVE COVER WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION. VEGETATED AREAS THAT WASH OUT MUST BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. AN ANCHORING METHOD SHOULD THEN BE USED TO HOLD SEED AND MULCH IN PLACE. THIS IS ESPECIALLY IMPORTANT AROUND WATER COURSES, IN SWALES, IN AREAS OF CONCENTRATED FLOWS, AND ON STEEP SLOPES.

OUTLET STRUCTURE:

- DURING LOW WATER CONDITIONS, CONCRETE SPILLWAY STRUCTURES SHALL BE INSPECTED TO DETERMINE IF WATER IS PASSING THROUGH ANY JOINTS OR OTHER STRUCTURE CONTACTS AND TO IDENTIFY ANY CRACKS, SPALLING, BROKEN OR LOOSE SECTIONS. ANY CRACKED, SPALLED, BROKEN OR LOOSE SECTIONS SHALL BE CLEANED AND REFILLED WITH AN APPROPRIATE CONCRETE PATCHING MATERIAL. A PROFESSIONAL ENGINEER SHALL BE CONSULTED TO REPAIR EXTENSIVE LEAKAGE, SPALLS OR FRACTURES.
- ANY REPAIRS MADE TO THE PRINCIPAL SPILLWAY (RISER OR BARREL) SHALL BE REVIEWED BY A PROFESSIONAL ENGINEER. VERTICAL TRENCHING TO EXPOSE THE BARREL SHALL NOT BE ALLOWED UNDER ANY CIRCUMSTANCES. THE TRENCH SIDE SLOPES SHALL BE STEPPED BACK AT A 2:1 SLOPE, MINIMUM.

EARTH EMBANKMENT:

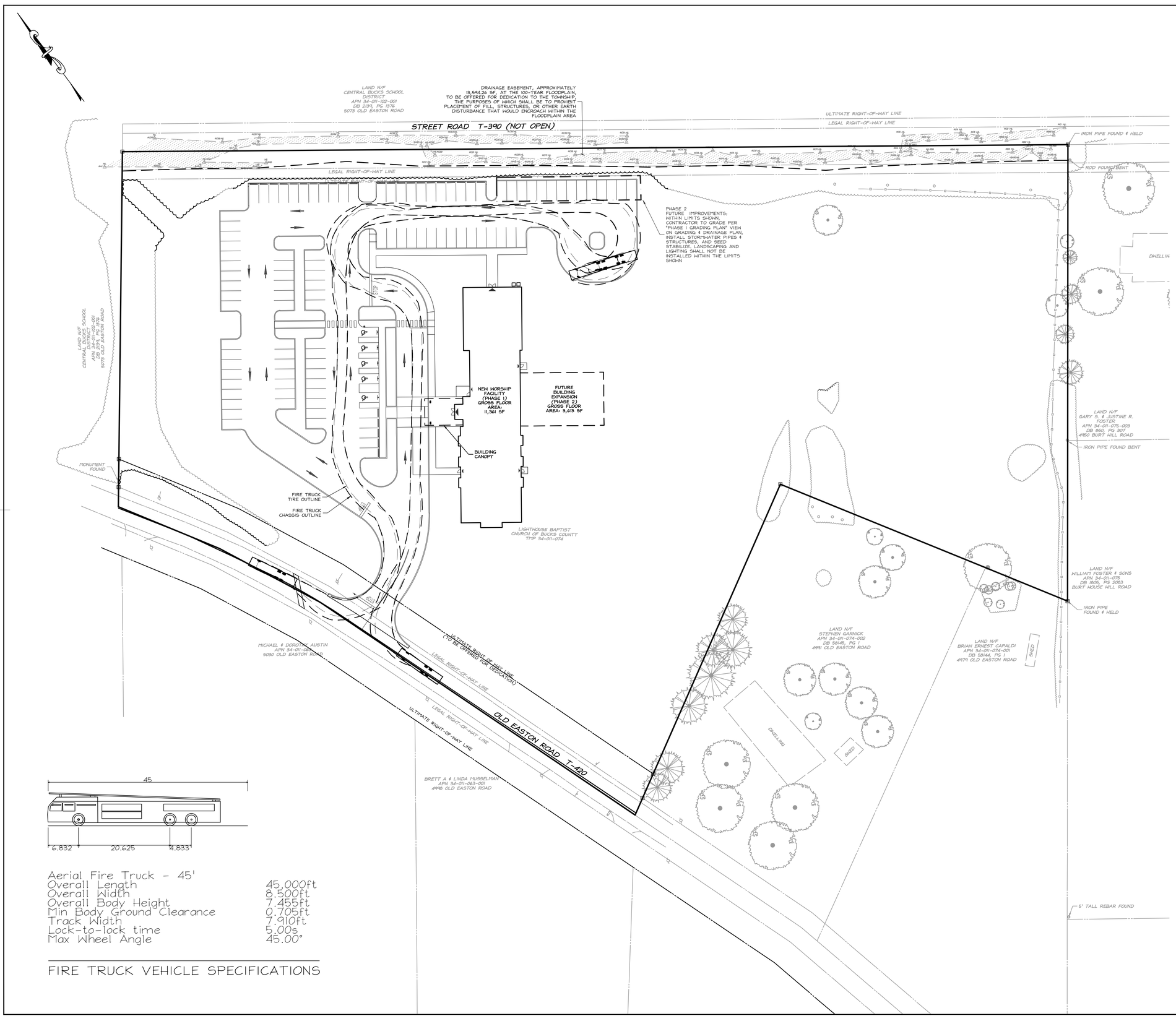
- ALL ANIMAL BURROWS SHALL BE BACKFILLED AND COMPACTED AND BURROWING ANIMALS SHALL BE REMOVED FROM THE AREA.
- ALL TREES, WOODY VEGETATION, AND OTHER DEEP-ROOTED GROWTH, INCLUDING STUMPS AND ASSOCIATED ROOT SYSTEMS, SHALL BE REMOVED FROM THE EMBANKMENT TOE AND ABUTMENT CONTACTS. THE ROOT SYSTEMS SHALL BE EXTRACTED AND THE EXCAVATED VOLUME REPLACED AND COMPACTED WITH MATERIAL SIMILAR TO THE SURROUNDING AREA. ALL SEEDLINGS SHALL BE REMOVED AT THE FIRST OPPORTUNITY. SIMILARLY, ANY VINE COVER AND BRUSH SHALL BE REMOVED FROM THE EMBANKMENT TO ALLOW FOR INSPECTIONS.

SOIL AMENDMENTS:

- THE SOIL RESTORATION PROCESS MAY NEED TO BE REPEATED OVER TIME DUE TO COMPACTION BY USE AND/OR SETTLING. SEE SOIL AMENDMENT DETAIL FOR COMPACTION REMEDIATION AND REINSTALLATION OF SOIL AMENDMENTS.

RE-VEGETATE AND RE-FOREST DISTURBED AREAS:

- WOODLAND AREAS PLANTED WITH PROPER COVER CROP MAY REQUIRE ANNUAL MOWING IN ORDER TO CONTROL INVASIVE SPECIES.
- APPLICATION OF A CAREFULLY SELECTED HERBICIDE AROUND THE PROTECTIVE TREE SHELTERS/TUBES MAY BE NECESSARY, REINFORCED BY SELECTIVE CUTTING/MANUAL REMOVAL IF NECESSARY. THIS INITIAL MAINTENANCE ROUTINE IS NECESSARY FOR THE FIRST 2 TO 3 YEARS OF GROWTH AND MAY BE NECESSARY FOR UP TO 5 YE



Aerial Fire Truck - 45'	
Overall Length	45.000ft
Overall Width	8.500ft
Overall Body Height	7.455ft
Min Body Ground Clearance	0.705ft
Track Width	7.910ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

FIRE TRUCK VEHICLE SPECIFICATIONS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER ALAN MACINTYRE
ENGINEER
No. PE082384

REV. NO.	DATE	REVISION
2	02/07/2020	LAND DEVELOPMENT SUBMISSION #2
1	06/20/19	LAND DEVELOPMENT SUBMISSION #1

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SEE GENERAL INFORMATION SHEET FOR ALL PERTINENT NOTES AND LEGEND INFORMATION.

GRAPHIC SCALE IN FEET
40 0 40 80

renew LAND DEVELOPMENT SOLUTIONS

TURNING ANALYSIS

NEW:
LIGHTHOUSE BAPTIST CHURCH
PLUMSTEAD TOWNSHIP
BUCKS COUNTY, PA
TOWNSHIP APPLICATION NO.: 2019-01 LD

PROJECT NUMBER:	18015
SCALE:	1" = 40'
DRAWN BY:	RDG
DESIGNED BY:	RDG
DATE:	06/20/19
SHT NO.	24 of 24