

LOCATION MAP
SCALE: 1" = 800'

TABULATION OF SHEETS

SHEET NUMBERS	DESCRIPTION
1	TITLE PLAN
2 *	RECORD PLAN (TO BE RECORDED)
3	EXISTING FEATURES PLAN
4	SITE PLAN
5	LANDSCAPE PLAN
6	LANDSCAPE DETAIL PLAN
7	EROSION CONTROL PLAN
8 *	(TO BE RECORDED) EROSION CONTROL DETAIL PLAN & POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
9	EROSION CONTROL DETAIL PLAN (TO BE RECORDED)
10-13 *	(TO BE RECORDED) POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
14	DOTTERER ROAD - CONSTRUCTION IMPROVEMENT PLAN
15	NITTANY WAY - CONSTRUCTION IMPROVEMENT PLAN
17	CURB RAMP ENLARGEMENT PLAN
18	STORM SEWER PROFILE PLAN
19	STORM SEWER DETAIL PLAN
20-21	SANITARY SEWER DETAIL PLAN GENERAL CONSTRUCTION DETAIL PLANS

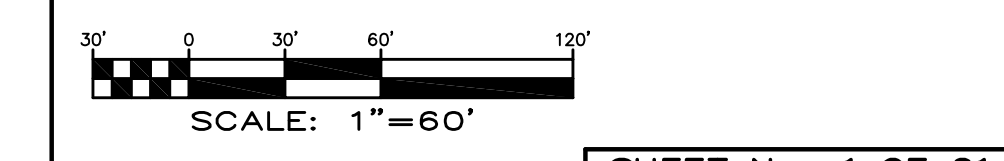
* - SHEETS 2, 8, 10, 11, 12 & 13 - (TO BE RECORDED)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

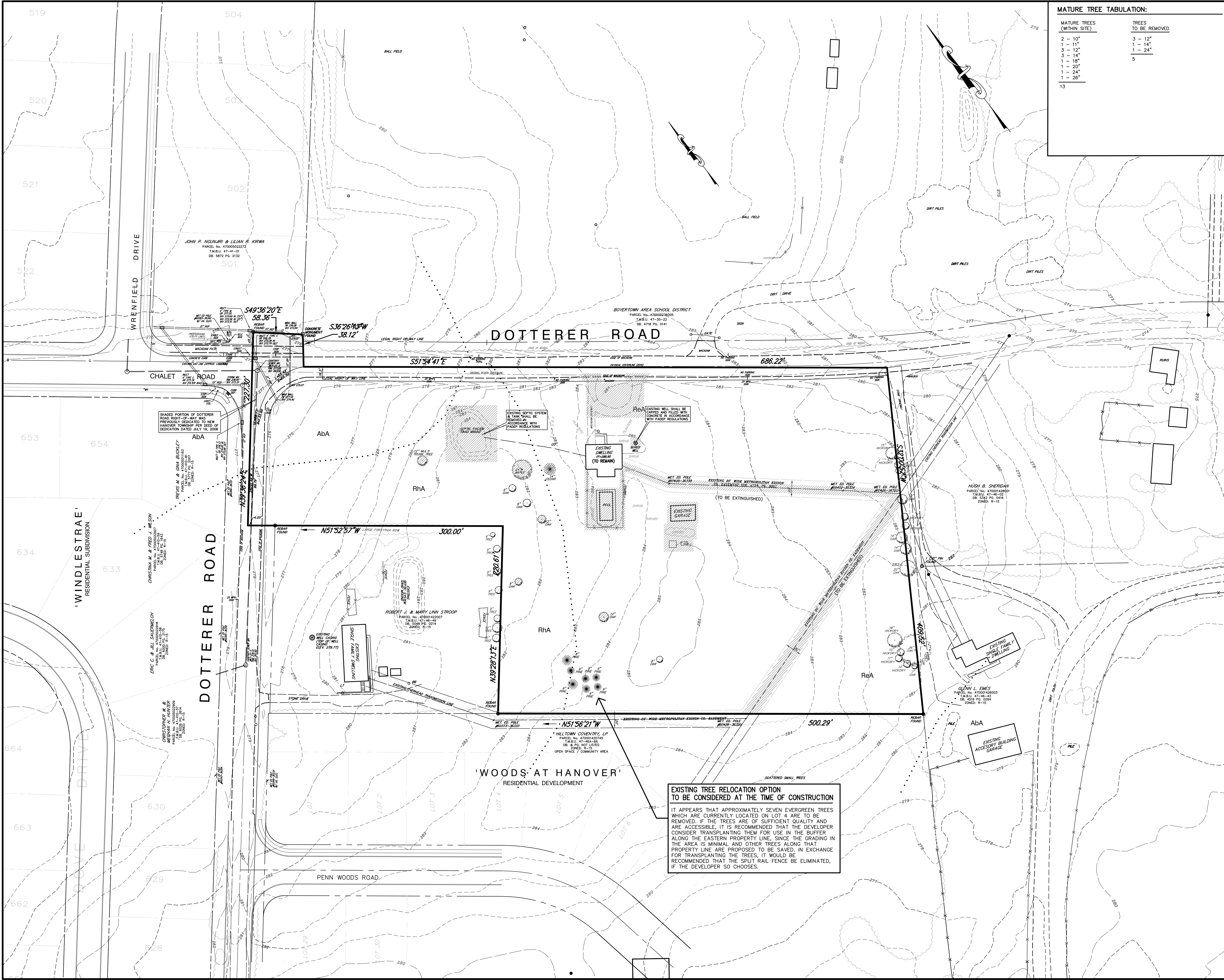
REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

TITLE SHEET
'PACER'S GAIT'
PREPARED FOR
MIKELEN, LLC.
SITUATE IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE



MIKELEN, LLC.
'PACER'S GAIT'
RESIDENTIAL SUBDIVISION
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA



MATURE TREE TABULATION:

MATURE TREES (WITHIN SITE)	TREES TO BE REMOVED
2 - 10"	3 - 12"
1 - 11"	1 - 14"
3 - 12"	1 - 24"
3 - 14"	5
1 - 16"	
1 - 20"	
1 - 24"	
1 - 26"	
13	

SITE CAPACITY CALCULATIONS

1 - BASE SITE AREA	5.7894 ACRES
TOTAL SITE AREA	5.7894 ACRES
MINUS ULTIMATE R.O.W.'S	0.9081 ACRES
BASE SITE AREA	4.9081 ACRES
2 - LAND WITH RESOURCE RESTRICTION AND RESOURCE PROTECTION LANDS	
RESOURCE PROTECTION LAND	0 ACRES
OPEN SPACE RATIO	0 ACRES
FLOODWAY**	0 ACRES
FLOOD FRINGE*	0 ACRES
100 YR. FLOOD*	0 ACRES
FLOODPLAIN SOILS	0 ACRES
1% - 2% SLOPES	0 ACRES
2%+ SLOPES	0 ACRES
WOODLANDS	0 ACRES
WATERCOURSES	0 ACRES
WETLANDS	0 ACRES
POND SHORE AREAS	0 ACRES
WETLANDS MARCHES	0 ACRES
TOTAL LAND WITH RESOURCE RESTRICTIONS	0 ACRES
RESOURCE PROTECTION LAND	0 ACRES
3 - RECREATION LAND	
BASE SITE AREA	4.9081 ACRES
MINUS LAND WITH RESOURCE RESTRICTIONS	0 ACRES
REMAINDER	4.9081 ACRES
MULTIPLY BY 1/3 MINIMUM OPEN SPACE RATIO	0.3333**
RECREATION LAND	0.6542 ACRES
4 - COMBINE RESOURCE PROTECTION LAND AND RECREATION LAND	
RESOURCE PROTECTION LAND	0 ACRES
ADD RECREATION LAND	0.6542 ACRES
RESOURCE PROTECTION LAND AND RECREATION LAND	0.6542 ACRES
5 - STANDARD MINIMUM OPEN SPACE	
BASE SITE AREA	4.9081 ACRES
MULTIPLY BY OPEN SPACE RATIO	N/A ***
STANDARD MINIMUM OPEN SPACE	N/A ***
6 - REQUIRED OPEN SPACE	
THE GREATER OF RESOURCE PROTECTION LAND AND RECREATION LAND OR THE STANDARD MINIMUM OPEN SPACE	0.6542 ACRES
7 - NET BUILDABLE SITE AREA	
BASE SITE AREA	4.9081 ACRES
MINUS REQUIRED OPEN SPACE	0.6542 ACRES
NET BUILDABLE SITE AREA	4.2539 ACRES
8 - NUMBER OF DWELLING UNITS	
BASE SITE AREA	4.9081 ACRES
MULTIPLY BY MAXIMUM DENSITY	3.0 DU/ACRE***
NUMBER OF DWELLING UNITS	14
9 - IMPERVIOUS SURFACE	
BASE SITE AREA	4.9081 ACRES
MULTIPLY BY MAXIMUM IMPERVIOUS SURFACE RATIO	N/A ***
IMPERVIOUS SURFACE	N/A ***
10 - SITE CAPACITY SUMMARY	
REQUIRED OPEN SPACE (6)	0.6542 ACRES
NET BUILDABLE SITE AREA (7)	4.2539 ACRES
MAXIMUM NUMBER OF DWELLING UNITS (8)	14

***PROPOSED OPEN SPACE WITHIN R-15 RESIDENTIAL - NOT APPLICABLE
 ***PROPOSED IMPERVIOUS SURFACE RATIO WITHIN R-15 RESIDENTIAL - NOT APPLICABLE

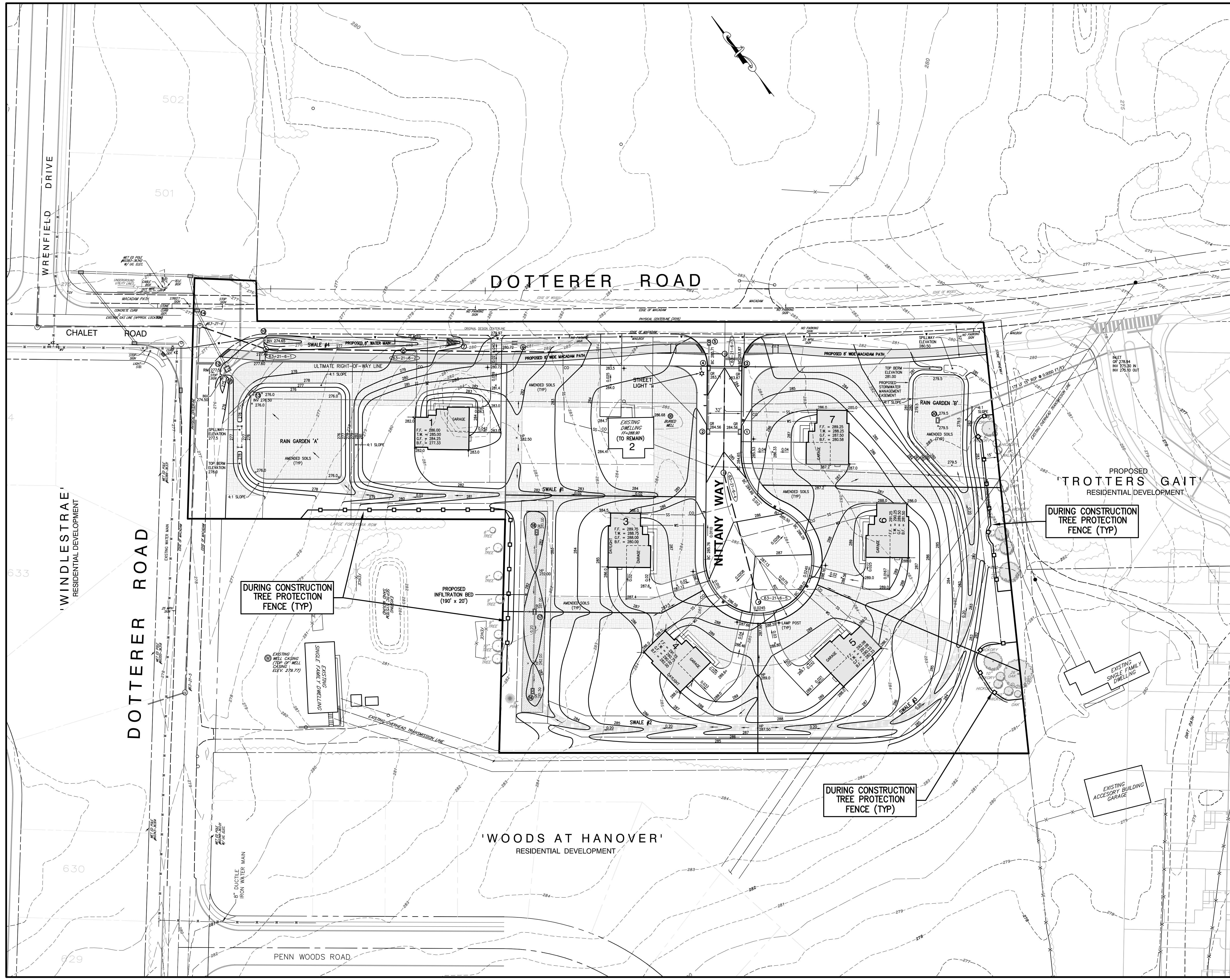
- GENERAL NOTES:**
- BOUNDARY ESTABLISHED FROM A BOUNDARY SURVEY BY URWILER & WALTER, INC. IN MARCH 2006.
 - AERIAL TOPOGRAPHY PERFORMED BY PROMAPS, INC. MARCH 2006.
 - AERIAL SURVEY SUPPLEMENTED WITH ROADWAY CROSS-SECTION SURVEY PERFORMED BY URWILER & WALTER, INC. IN MARCH 2006.
 - TRACT AREA: 5.769 ACRES GROSS, 4.908 ACRES NET
 - BENCHMARK: REGIONAL ELEVATION - 253.2' DESCRIPTION OF LOCATION: RM406 CHISEL SQUARE IN SOUTHEAST CONCRETE WINDOW WALL OF BRIDGE ON CHURCH STREET OVER SWAMP CREEK AT INTERSECTION WITH REIFFENSDYER ROAD. DATUM - NATIONAL GEODETIC VERTICAL DATUM OF 1929 BENCHMARK: LOCAL ELEVATION - 288.50' DESCRIPTION OF LOCATION: FIRST FLOOR ELEVATION OF EXISTING DWELLING LOCATED ON LOT #8. DATUM - NATIONAL GEODETIC VERTICAL DATUM OF 1929
 - SOILS DATA OBTAINED FROM USDA-NATURAL RESOURCES CONSERVATION SERVICES-HEB SOIL SURVEY-NATURAL COOPERATIVE SOIL SURVEY. ABA - ABBOTTSTOWN SILT LOAM, 0 TO 3 PERCENT SLOPES R4A - REAVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES R5A2 - REAVILLE SHALY SILT LOAM, 0 TO 3 PERCENT SLOPES MODERATELY ERODED
 - NO PORTION OF THIS SITE WERE CLASSIFIED AS A WETLAND OR REGULATED WATERS BY THE ACEQ OR PA DEP AS DETERMINED BY DEL VAL SOIL & ENVIRONMENTAL CONSULTANTS INC. PER LETTER DATED MARCH 16, 2006.
 - LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING ACT 187 THREE DAYS PRIOR TO EXCAVATION. REFERENCE PENNSYLVANIA ACT 187. REFERENCE NUMBER: 1146084 (DOTTERER ROAD)

LEGEND

EXISTING CONTOURS	---
EXISTING STORM SEWER	---
EXISTING SOILS	---
EXISTING TREE LINE	---
TO BE REMOVED	---
REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

EXISTING FEATURES PLAN
"PACER'S GAIT"
 PREPARED FOR
MIKELN, LLC.
 SITUATE IN
 NEW HANOVER TOWNSHIP
 MONTGOMERY COUNTY, PENNSYLVANIA
 JULY 9, 2007
 PROJECT No. 16086
 FILE: 16086-BASE

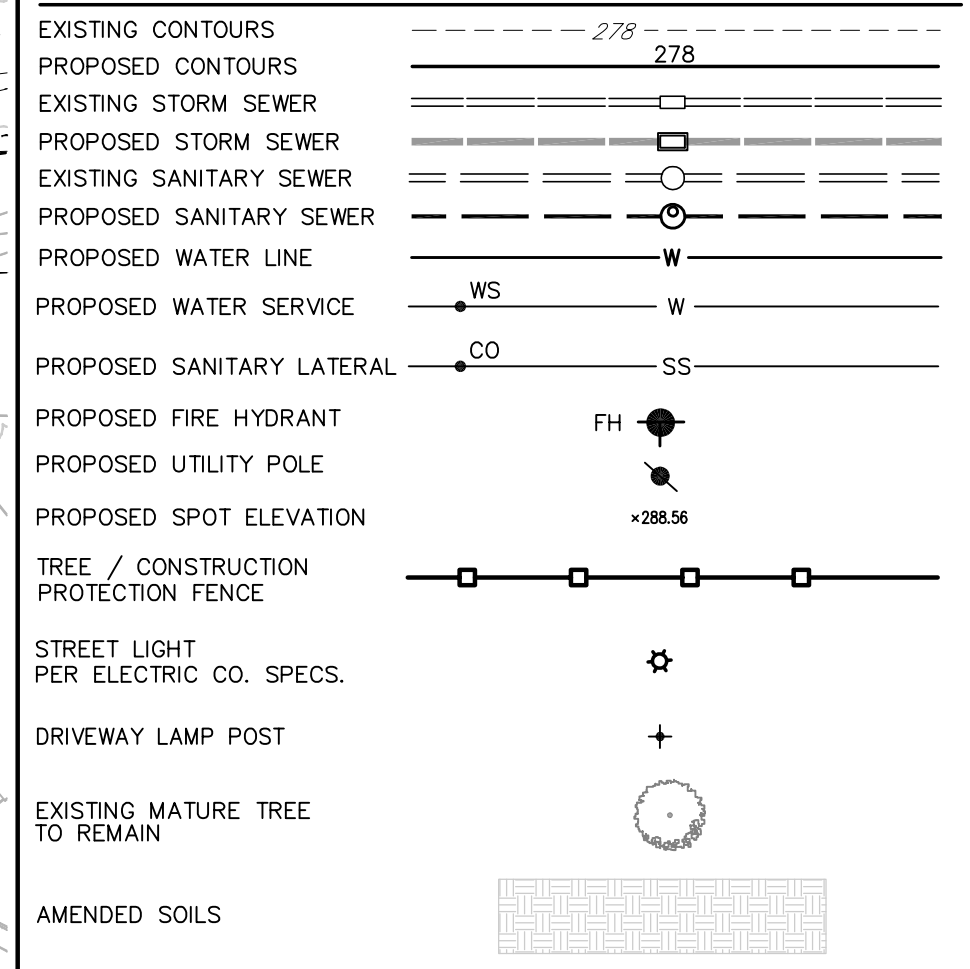
EXISTING TREE RELOCATION OPTION TO BE CONSIDERED AT THE TIME OF CONSTRUCTION
 IT APPEARS THAT APPROXIMATELY SEVEN EVERGREEN TREES WHICH ARE CURRENTLY LOCATED ON LOT 4 ARE TO BE REMOVED. IF THE TREES ARE OF SUFFICIENT QUALITY AND ARE ACCESSIBLE, IT IS RECOMMENDED THAT THE DEVELOPER CONSIDER TRANSPLANTING THEM FOR USE IN THE BUFFER ALONG THE EASTERN PROPERTY LINE, SINCE THE GRADING IN THE AREA IS MINIMAL AND OTHER TREES ALONG THAT PROPERTY LINE ARE PROPOSED TO BE SAVED. IN EXCHANGE FOR TRANSPLANTING THE TREES, IT WOULD BE RECOMMENDED THAT THE SPLIT RAIL FENCE BE ELIMINATED, IF THE DEVELOPER SO CHOOSES.



GENERAL NOTES

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO STANDARDS AND SPECIFICATION AS ESTABLISHED BY NEW HANOVER TOWNSHIP AND PENNDOT PUBLICATION 408.
2. ALL SANITARY SEWER WILL BE CONSTRUCTED IN ACCORDANCE WITH THE NEW HANOVER TOWNSHIP AUTHORITY SPECIFICATIONS.
3. THE PROPOSED PUBLIC WATER FACILITIES SHALL CONFORM TO CURRENT STANDARDS OF SUPERIOR WATER COMPANY.
4. ALL UTILITIES OUTSIDE OF DEDICATED RIGHT-OF-WAY WILL BE INCLUDED IN A 20' WIDE EASEMENT.
5. NO LATERALS SHOULD BE DIRECTLY CONNECTED TO MANHOLES WITHOUT THE PRIOR APPROVAL OF THE ENGINEER UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE APPROVED PLANS.
6. ALL DROP MANHOLES WITH OUTSIDE DROPS ARE TO UTILIZE DIP PIPE AND FITTINGS.
7. WHERE 10' HORIZONTAL SEPARATION OF THE WATER LINE FROM THE SANITARY SEWER LINE CANNOT BE MAINTAINED, THE UTILITIES WILL BE VERTICALLY SEPARATED A MINIMUM OF 18" AND CONSTRUCTED IN SEPARATE TRENCHES.
8. ALL SANITARY SEWER TO BE PVC EXCEPT AS NOTED ON THE DRAWINGS.
9. NO OBSTRUCTIONS SHALL BE PLACED WITHIN THE CLEAR SIGHT TRIANGLES.
10. BASEMENTS ARE PROPOSED FOR ALL UNITS. NO SANITARY SEWER SERVICE FOR BASEMENTS IS PROPOSED.
11. HANDICAP RAMPS WILL BE LOCATED AT ALL INTERSECTIONS.

LEGEND



TYPICAL HOUSE MODEL

- SUSSEX REGENCY
- 2 CAR GARAGE
- NO SUNROOM
- 8' BASEMENT

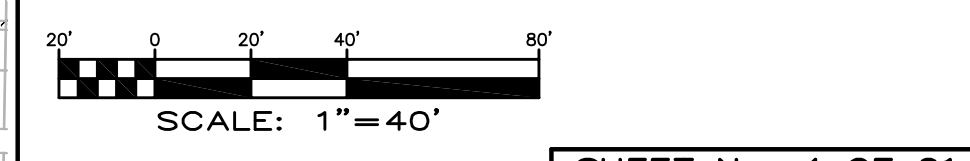
LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

DATE	REVISIONS DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP. PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP. PLANNER LTR 3-31-08
	TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP. PLANNER LTR 9-4-07
	TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

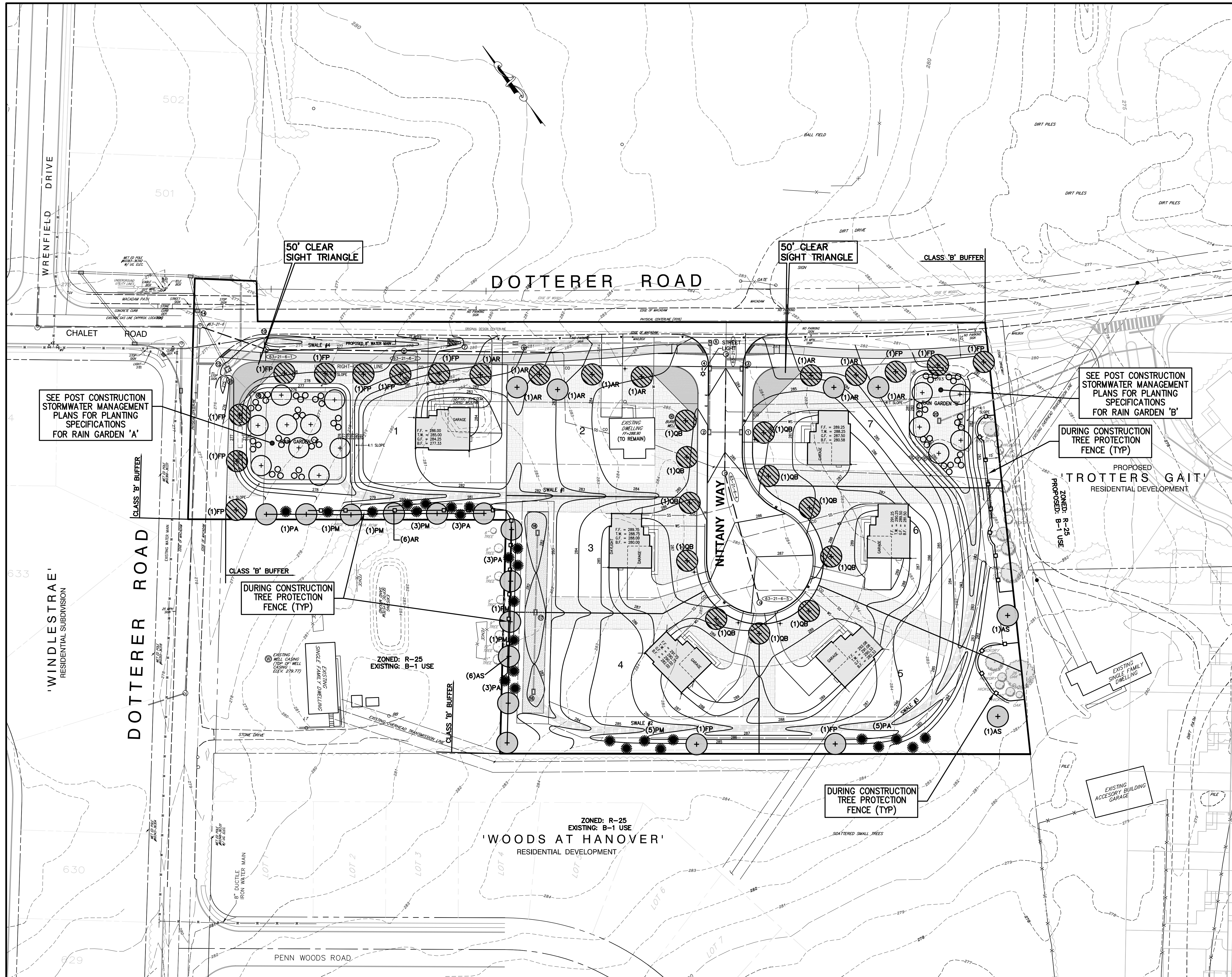
SITE PLAN "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.
 SITUATE IN
 NEW HANOVER TOWNSHIP
 MONTGOMERY COUNTY, PENNSYLVANIA

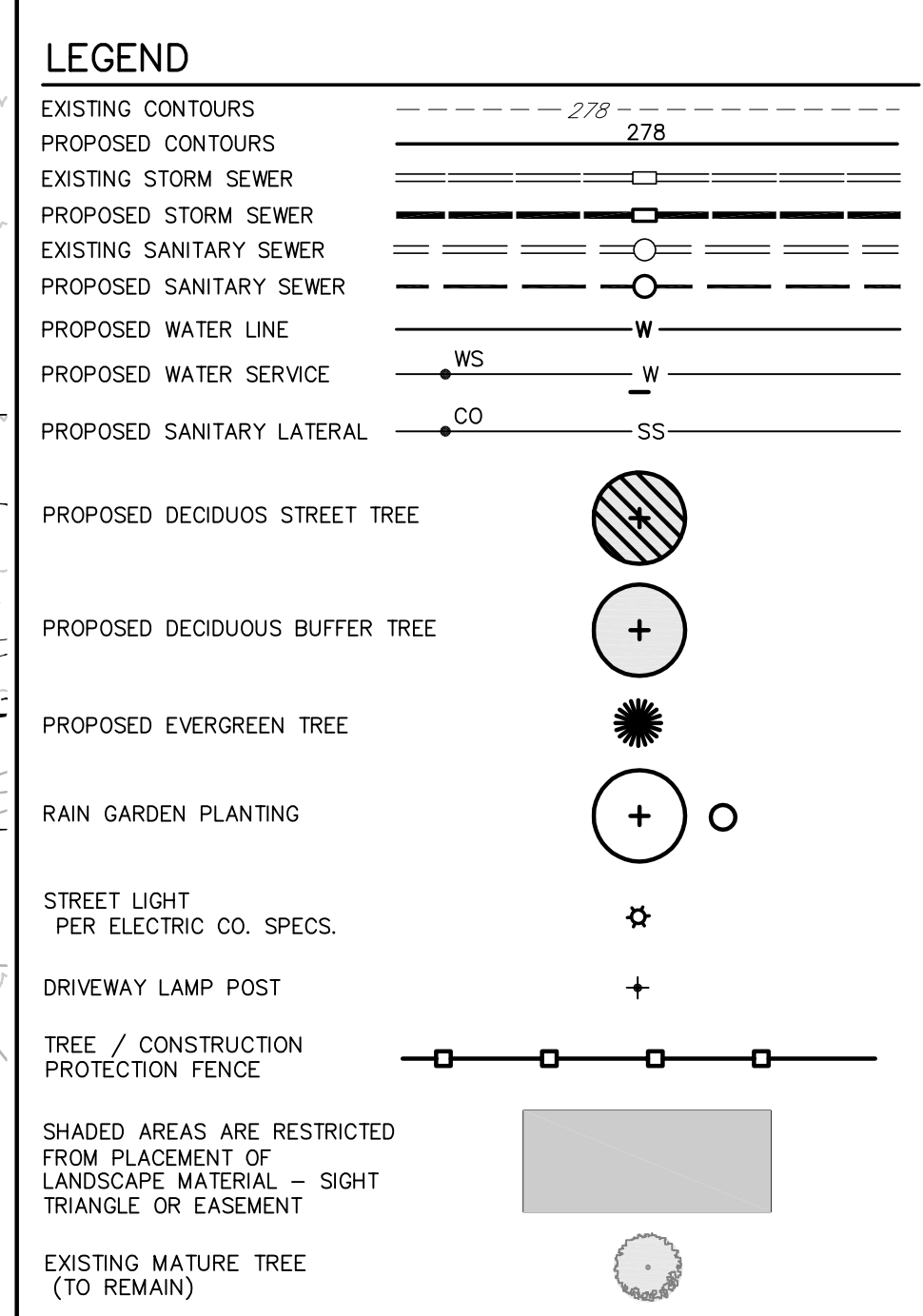
JULY 9, 2007
 PROJECT No. 16086
 FILE: 16086-BASE



SHEET No. 4 OF 21



- GENERAL NOTES**
1. ALL REFUSE & RECYCLABLE COLLECTION WILL BE DONE BY CURB SIDE PICK UP IN FRONT OF EACH UNIT
 2. ALL SIGNS MUST CONFORM WITH PROVISIONS OF NEW HANOVER TOWNSHIP ZONING ORDINANCE ARTICLE XIX
 3. THE STREET LIGHTS, AS DEPICTED, MUST BE KEPT CLEAR OF VEGETATION IN ORDER TO CONTINUE TO PROVIDE THE SIGHT DISTANCES AS INTENDED.
 4. REFER TO SHEET 6 FOR LANDSCAPE CHART, DETAILS AND SPECIFICATIONS.
 5. SEEDING OF ALL DISTURBED AREAS THROUGHOUT THE PROJECT AREA SHALL BE SEEDED AND MULCHED IN ACCORDANCE WITH THE SEEDING AND MULCHING SPECIFICATIONS ON SHEET 20.



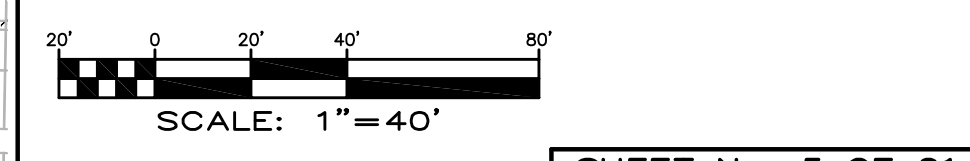
EXISTING TREE RELOCATION OPTION TO BE CONSIDERED AT THE TIME OF CONSTRUCTION

IT APPEARS THAT APPROXIMATELY SEVEN EVERGREEN TREES WHICH ARE CURRENTLY LOCATED ON LOT 4 ARE TO BE REMOVED. IF THE TREES ARE OF SUFFICIENT QUALITY AND ARE ACCESSIBLE, IT IS RECOMMENDED THAT THE DEVELOPER CONSIDER TRANSPLANTING THEM FOR USE IN THE BUFFER ALONG THE EASTERN PROPERTY LINE, SINCE THE GRADING IN THE AREA IS MINIMAL AND OTHER TREES ALONG THAT PROPERTY LINE ARE PROPOSED TO BE SAVED. IN EXCHANGE FOR TRANSPLANTING THE TREES, IT WOULD BE RECOMMENDED THAT THE SPLIT RAIL FENCE BE ELIMINATED, IF THE DEVELOPER SO CHOOSES.

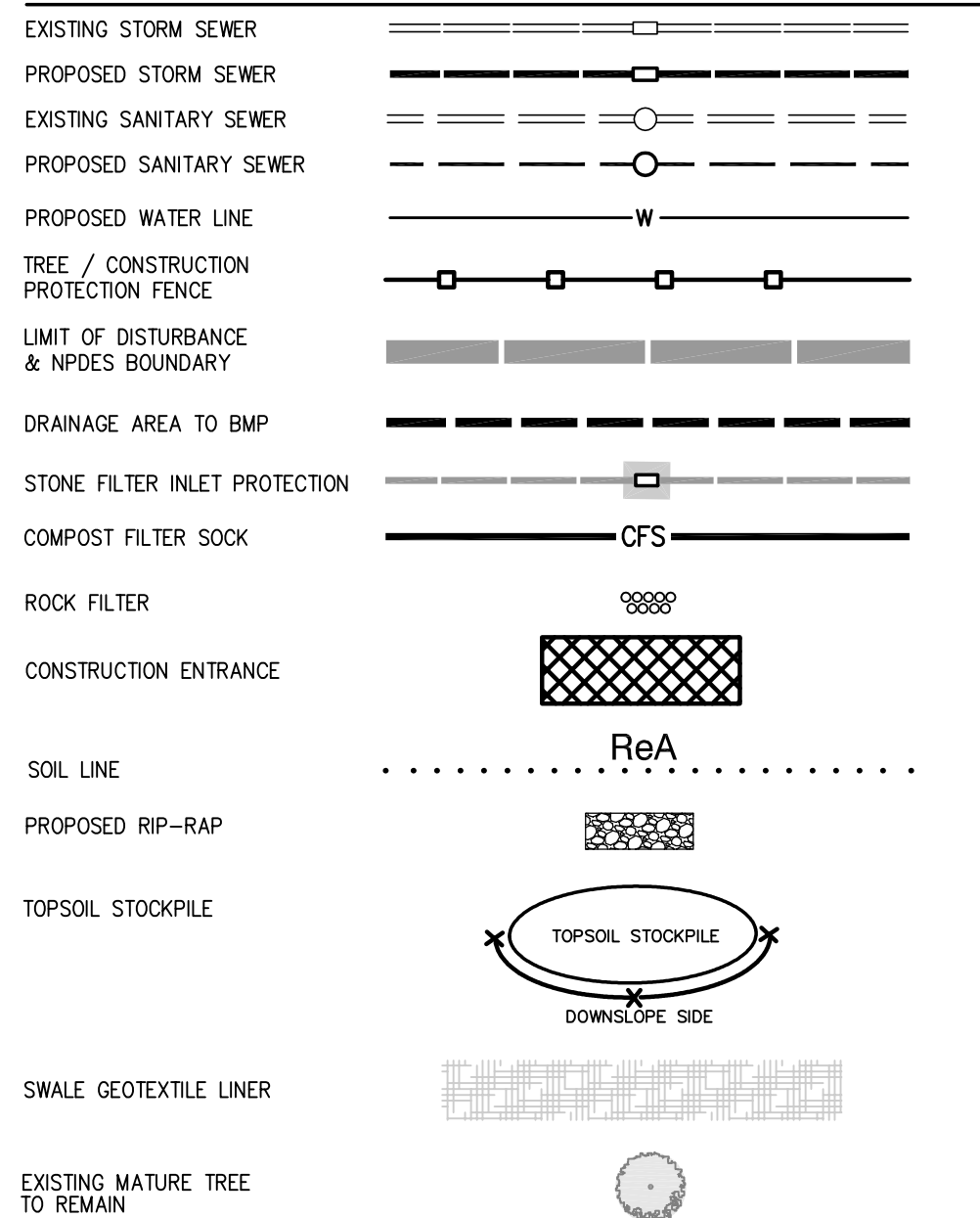
LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

DATE	REVISIONS DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP. PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP. PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP. PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

LANDSCAPE PLAN
"PACER'S GAIT"
 PREPARED FOR
MIKELN, LLC.
 SITUATE IN
 NEW HANOVER TOWNSHIP
 MONTGOMERY COUNTY, PENNSYLVANIA
 JULY 9, 2007
 PROJECT No. 16086
 FILE: 16086-BASE



LEGEND



Drainage Area	Total Drainage Area (acres)	Inlet Protection Type
1	0.40	Stone Inlet Protection
2	0.48	Stone Inlet Protection
3	0.12	Stone Inlet Protection
4	0.04	Stone Inlet Protection
6	0.51	Stone Inlet Protection
16	0.32	Stone Inlet Protection
17	0.31	Stone Inlet Protection
18	0.10	Stone Inlet Protection

EROSION CONTROL PLAN NOTES

THE EROSION CONTROL PLAN MINIMIZES THE EXTENT AND DURATION OF EARTH DISTURBANCE.

1. TO MINIMIZE THE EXTENT OF DISTURBANCE, THE CONTRACTOR WILL FIELD ESTABLISH THE LOD WITH COMPOST FILTER SOCK PRIOR TO CONSTRUCTION. THESE FENCES ACT AS A BARRIER, WHICH LIMIT SITE DISTURBANCES.
2. THE STAGING AND EARTH MOVING SEQUENCE SPECIFIES TIME LIMITS (DURATIONS) THAT EXPOSED AREAS MAY REMAIN NON-VEGETATED.

THE EROSION CONTROL PLAN MAXIMIZES PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION. LISTED BELOW ARE THE PROCEDURES USED FOR PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION:

1. PROPOSED IS COMPOST FILTER SOCK THAT LIMITS CONSTRUCTION ACTIVITIES TO THE AREA OF DISTURBANCE AND MINIMIZES ENCROACHMENT OF EXISTING TREES. IN ADDITION, COMPOST FILTER SOCK RETAINS SEDIMENT AND POLLUTANTS PRIOR TO STORMWATER DISCHARGING FROM THE PROPERTY.

THE EROSION CONTROL PLAN MINIMIZES SOIL COMPACTION. ESTABLISHMENT OF THE LOD USING COMPOST FILTER SOCK MINIMIZES SOIL COMPACTION BY RESTRICTING VEHICULAR TRAFFIC TO THE PROPOSED AREA OF DISTURBANCE.

LAND DEVELOPMENT PLANNING AND DESIGN MINIMIZES THE AREA OF PERMANENT IMPERVIOUS AREAS. THE APPLICANT THROUGH SITE PLANNING WITH INPUT WITH NEW HANOVER TOWNSHIP ASSISTED IN MINIMIZING THE TOTAL AREA OF DISTURBANCE AND IMPERVIOUS COVER.

THE FOLLOWING WILL MINIMIZE THERMAL IMPACTS: PRESERVE EXISTING VEGETATION, LANDSCAPING TREES, PERMANENT GROUND COVER, SOIL AMENDMENTS, INFILTRATION BEDS, TWO (2) RAIN GARDENS AND VEGETATIVE SWALES.

PAST AND HISTORIC LAND USES - URBAN - RESIDENTIAL
PRESENT LAND USE - URBAN - RESIDENTIAL
FUTURE LAND USES - URBAN - RESIDENTIAL

THE CONTRACTOR SHALL INSPECT PROPOSED EROSION CONTROL AND OTHER BMPs AFTER EACH RAINFALL EVENT OR WEEKLY AND PROVIDE MAINTENANCE WHEN NECESSARY. THE CONTRACTOR SHALL PREPARE A WRITTEN REPORT THAT DOCUMENTS THE INDIVIDUAL CONDUCTING THE INSPECTION, DATE AND TIME OF INSPECTION AND MAINTENANCE PROVIDED; WHICH INCLUDES, BUT NOT LIMITED TO CLEANING, REPAIR, REPLACEMENT, REGRADING AND RESEEDING OF DISTURBED AREAS.

THE FOLLOWING "OTHER MEASURES" WILL CONTROL, PREVENT AND MINIMIZE STORMWATER RUNOFF:

1. PRESERVE EXISTING FOREST AND BRUSH AREAS.
2. MINIMIZE THE AREA OF DISTURBANCE.
3. PERMANENT VEGETATIVE GROUND COVER.
4. MULTIPLE RAIN GARDENS.
5. INFILTRATION BED
6. LANDSCAPING
7. AMENDED SOILS

PROPOSED EROSION CONTROL DEVICES:

1. ROCK CONSTRUCTION ENTRANCES: THE PRIMARY FUNCTION OF THIS BMP IS TO RETAIN SILTS, CLAYS AND OTHER MATERIALS ON-SITE.
2. COMPOST FILTER SOCK: THE PRIMARY FUNCTION OF THIS BMP IS TO RETAIN SEDIMENT AT ITS SOURCES. A SECONDARY FUNCTION WILL BE RATE AND VOLUME CONTROL.
3. ROCK RIPRAP: THE PRIMARY FUNCTION IS ENERGY REDUCTION AND MINIMIZATION OF SEDIMENT ENTRAINMENT INTO THE WATER COLUMN.
4. INLET PROTECTION: THE PRIMARY FUNCTION OF THIS BMP IS TO RETAIN SEDIMENT AT ITS SOURCES.

CHAPTER 93 - TROUT STOCK FISHERY (TSF) AND MIGRATORY FISHERY (MF)
CATEGORY 4 OF PA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT
SOURCE: REMOVAL OF VEGETATION AND URBAN RUNOFF/ STORM SEWER, CAUSE: FLOW ALTERATIONS AND WATER / FLOW VARIABILITY
CATEGORY 5 OF PA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT
SOURCE: REMOVAL OF VEGETATION, URBAN RUNOFF/ STORM SEWER, RECREATION AND MUNICIPAL POINT SOURCE
CAUSE: SILTATION AND PATHOGENS.

ENVIRONMENTAL DUE DILIGENCE DEFINITION

TAKEN FROM "INSTRUCTIONS FOR A GENERAL (PAG-2) OR INDIVIDUAL NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES", PREPARED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DATED MAY 2007

THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS:

"INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECT TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY 'MANAGEMENT OF FILL'."

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT www.pacode.com

CLEAN FILL DEFINITION

TAKEN FROM "INSTRUCTIONS FOR A GENERAL (PAG-2) OR INDIVIDUAL NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES", PREPARED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DATED MAY 2007

"UNCONTAMINATED, NON-WATER SOLUBLE, NON-COMPOSTABLE INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREGGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM USED ASPHALT DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)"

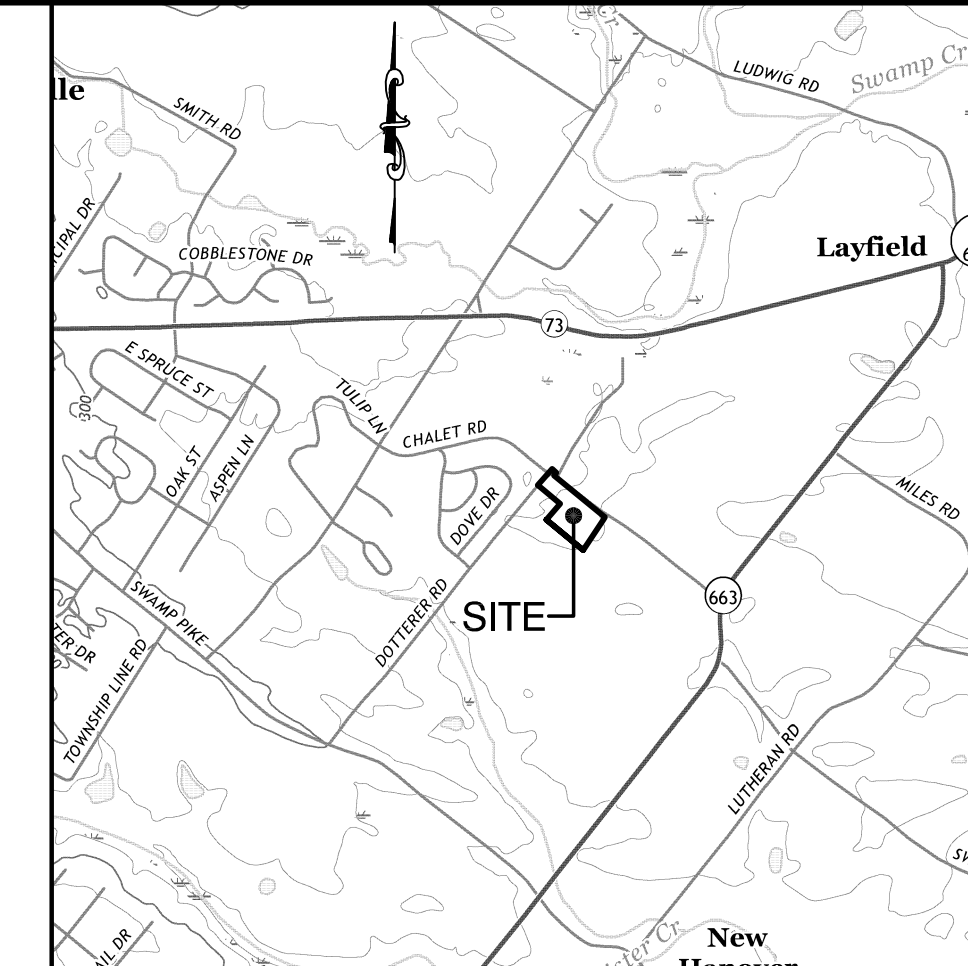
CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY 'MANAGEMENT OF FILL'.

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE

SOIL LEGEND

SOILS DATA OBTAINED FROM USDA-NATURAL RESOURCES CONSERVATION SERVICES-WEBSOIL SURVEY-NATURAL COOPERATIVE SOIL SURVEY.

AbA - ABBOTTSTOWN SILT LOAM, 0 TO 3% SLOPES, HSG: D
ReA - READINGTON SILT LOAM, 0 TO 3% SLOPES, HSG: C
RhA - READINGTON SILT LOAM, 0 TO 3% SLOPES, HSG: D



LOCATION MAP

SCALE: 1" = 200'

GENERAL NOTES

1. THIS PLAN IS TO BE USED IN CONJUNCTION WITH THE 'EROSION CONTROL REPORT' PREPARED FOR THE SITE.
2. ALL DIVERSION SWALES/BERMS, CHANNELS OF CONVEYANCE, AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.
3. REMOVAL AND DISPOSAL OF MATERIAL REMOVED FROM THE SILT FENCING AND OTHER EROSION CONTROL MEASURES, (NON-CONTAMINATED SOIL SHALL BE GRADED INTO THE SITE) (CONTAMINATED SOIL SHALL BE REMOVED/DISPOSED TO A LICENSED DISPOSAL FACILITY FOR CONTAINING WASTE PRODUCTS).
4. FOR DETAILS AND INFORMATION REGARDING EROSION CONTROL, REFER TO THE 'EROSION CONTROL DETAIL PLAN' SHEETS 8 & 9.
5. IN THE EVENT THAT FILL IS BROUGHT TO THE SITE, THE OPERATOR WILL BE RESPONSIBLE TO PERFORM ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT ALL IMPORTED FILL MEETS THE DEFINITION OF CLEAN FILL AS DESCRIBED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
6. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 280.1 ET SEQ. 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
7. SEDIMENT/SILT REMOVAL FROM DETENTION BASIN/RAIN GARDENS OR OTHER BMPs SHALL BE DISPOSED OF WITHIN LANDSCAPE AREAS ON-SITE. IF THE QUANTITY OF SEDIMENT/SILT EXCEEDS THE LANDSCAPE AREA ABILITY TO ACCEPT IT, DISPOSAL OF THIS MATERIAL WILL BE HAULED TO AN APPROVED CONSTRUCTION WASTE DISPOSAL SITE.
8. CONSTRUCTION WASTE INCLUDES MILLINGS, CONCRETE, BLOCK, WOOD, LANDSCAPING, SEDIMENT / SILT, ETC.
9. THE SITE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PPC PLAN/PREPARATION, PREVENTION AND CONTINGENCY PLAN) IN COMPLIANCE WITH PADEP REGULATIONS, AND HAVING THE APPROPRIATE PROVISIONS AVAILABLE ON SITE AT ALL TIMES.
9. TREE PROTECTION FENCE USED TO PROTECT INFILTRATION AREAS SHALL BE REMOVED AT TIME OF STABILIZATION.

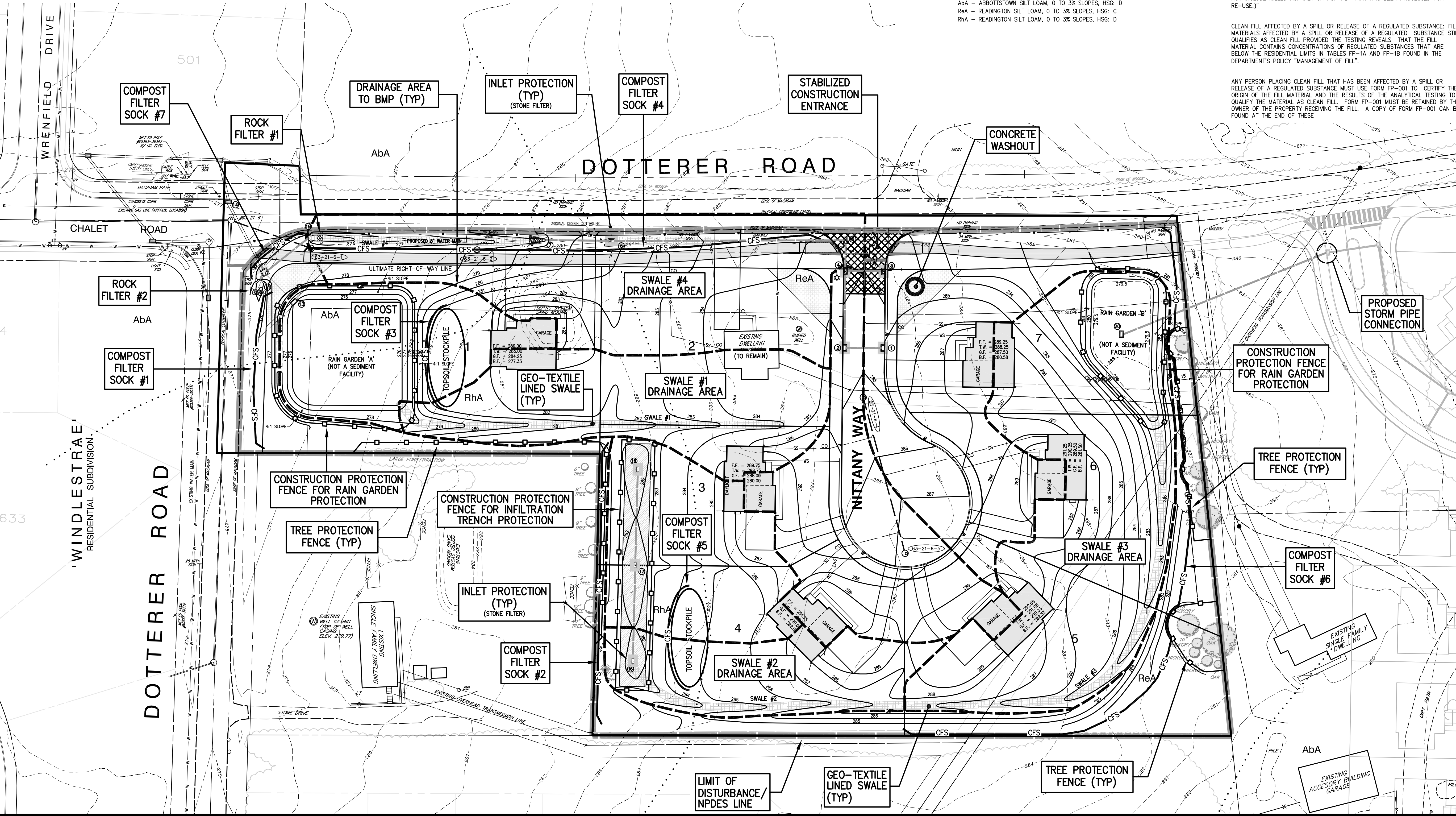
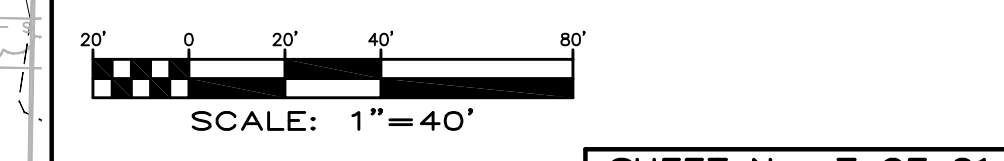
RECEIVING WATER: UNNAMED TRIBUTARY TO SWAMP CREEK
RECEIVING WATERSHED: PERKIOMEN
CHAPTER 93 CLASSIFICATION: TROUT STOCK FISHERY (TSF), MIGRATORY FISHERY (MF)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

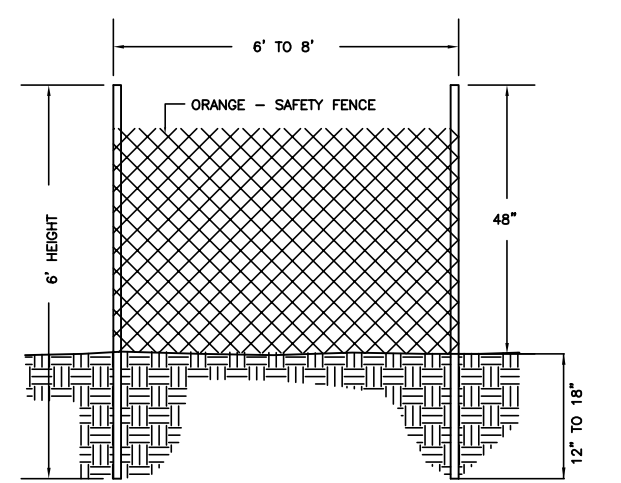
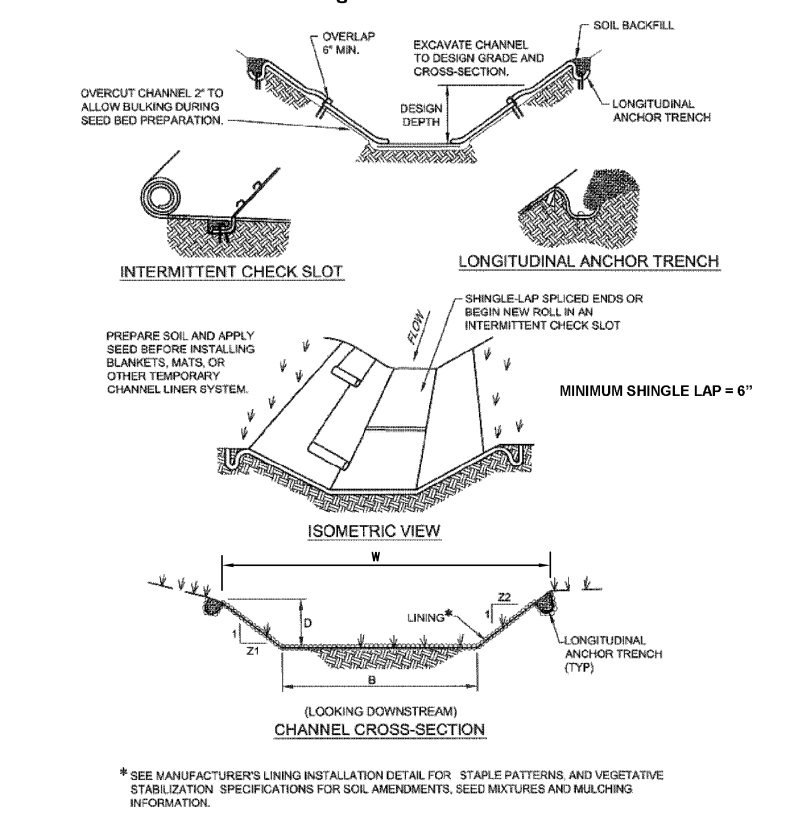
DATE	REVISIONS	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT	
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08	
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08	
	TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08	
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07	
	TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07	

EROSION CONTROL PLAN (1 OF 3) "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.
SITUATE IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA
JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE



STANDARD CONSTRUCTION DETAIL # 6-1 Vegetated Channel



TREE/INFILTRATION PROTECTION FENCE DETAIL NTS

- INSTALLATION NOTES**
- IT IS RECOMMENDED THAT A CONVENTIONAL METAL "T" OR "U" POST BE DRIVEN INTO THE GROUND TO A DEPTH OF 12 TO 18 INCHES. POSTS SHOULD BE SPACED EVERY 6 TO 8 FEET. NOTE: NOTCHED POSTS ARE IDEAL TO PREVENT THE FENCE FROM SLIPPING.
 - THREE WIRE TIES, WRAPPED AROUND A FENCE STRAND AND THE POST, ARE IDEAL IN SECURING THE FENCE TO THE POST. STANCHION WIRE OR RING MAY BE USED AS A TOP STRONGER AND WOVEN THROUGH THE TOP ROW OF STRANDS TO PREVENT POTENTIAL SAGGING.
 - TWO ROLLS OF SAFETY FENCE MAY BE OVERLAPPED AT THE INTERSECTION OF A POST AND SECURED WITH WIRE TIE.
 - DAILY INSPECT AND REPAIR TREE PROTECTION CONSTRUCTION FENCE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

CHANNEL	STATIONS	B (FT)	D (FT)	W (FT)	Z1 (FT)	Z2 (FT)	LINING
1	—	2	1.25	9.5	3	5	NAG P300*
2	—	2	1.25	9.5	3	3	NAG P300*
3	—	4	1.25	11.5	3	3	NAG P300*
4	—	3	1.25	10.5	3	3	NAG P300*

*NORTH AMERICAN GREEN P300 TURF REINFORCEMENT MAT

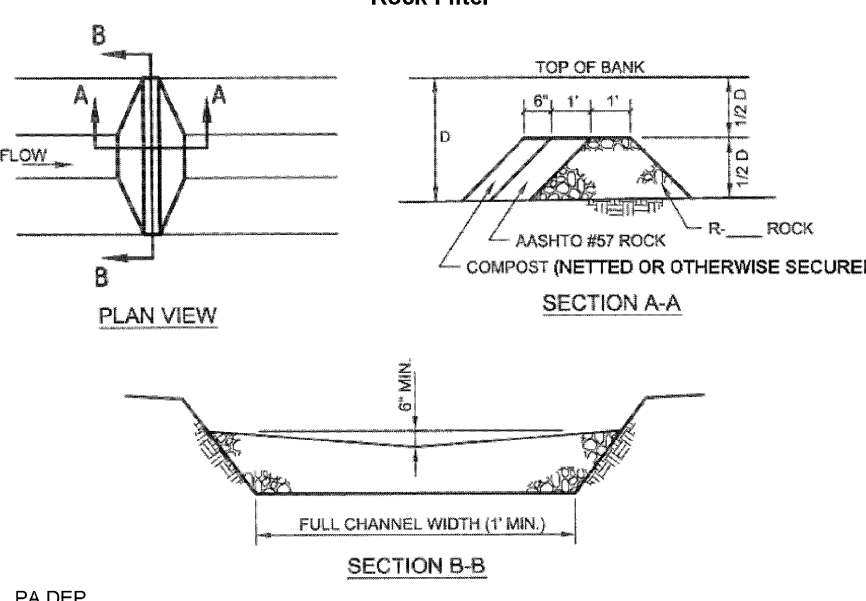
Anchor trenches shall be installed at beginning and end of channel in the same manner as longitudinal anchor trenches.

Channel dimensions shall be constantly maintained. Channel shall be cleaned whenever total channel depth is reduced by 25% at any location. Sediment deposits shall be removed within 24 hours of discovery or as soon as soil conditions permit access to channel without further damage. Damaged lining shall be repaired or replaced within 48 hours of discovery.

No more than one third of the shoot (grass leaf) shall be removed in any mowing. Grass height shall be maintained between 2 and 3 inches unless otherwise specified. Excess vegetation shall be removed from permanent channels to ensure sufficient channel capacity.

-INSPECT SWALE AFTER EACH RAINFALL EVENT-

STANDARD CONSTRUCTION DETAIL # 4-14 Rock Filter



FOR $3' \leq D$ USE R-4
FOR $2' \leq D < 3'$ USE R-3
NOT APPLICABLE FOR $D < 2'$

NOTE: This table is intentionally blank and should be filled in by the plan preparer.

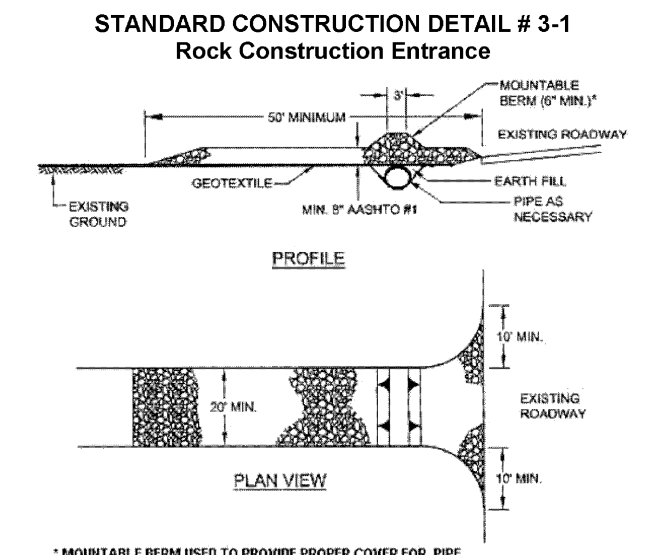
ROCK FILTER NO.	LOCATION	D (FT.)	RIPRAP SIZE
1	ENDWALL #10	1	R-3
2	ENDWALL #11	1	R-3

Sediment shall be removed when accumulations reach 1/2 the height of the filter.

Immediately upon stabilization of each channel, installer shall remove accumulated sediment, remove rock filter, and stabilize disturbed areas.

-INSPECT ROCK FILTERS AFTER EACH RAINFALL EVENT-

STANDARD CONSTRUCTION DETAIL # 3-1 Rock Construction Entrance



Modified from Maryland DOE

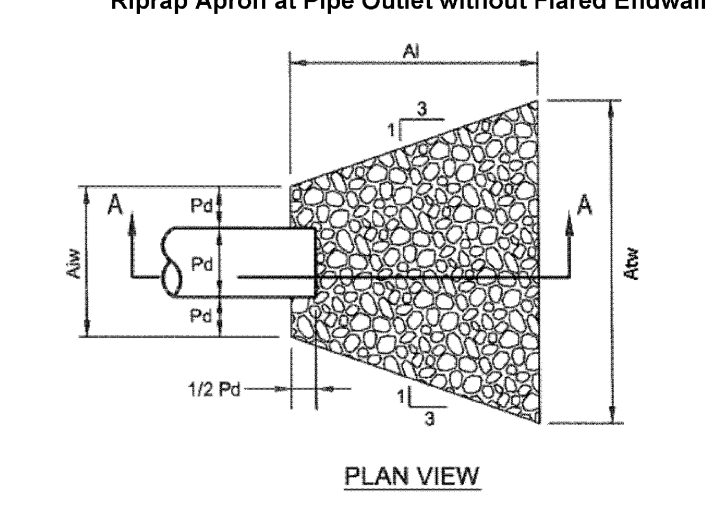
Remove topsoil prior to installation of rock construction entrance. Extend rock over full width of entrance.

Runoff shall be diverted from roadway to a suitable sediment removal BMP prior to entering rock construction entrance.

Mountable berm shall be installed wherever optional culvert pipe is used and proper pipe cover as specified by manufacturer is not otherwise provided. Pipe shall be sized appropriately for size of ditch being crossed.

MAINTENANCE: Rock construction entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on site for this purpose. All sediment deposited on paved roadways shall be removed and returned to the construction site immediately. If excessive amounts of sediment are being deposited on roadway, extend length of rock construction entrance by 50 foot increments until condition is alleviated or install wash rack. Washing the roadway or sweeping the deposits into roadway ditches, sewers, culverts, or other drainage courses is not acceptable.

STANDARD CONSTRUCTION DETAIL # 9-2 Riprap Apron at Pipe Outlet without Flared Endwall



NO.	PIPE DIA. Do (in)	TAIL WATER COND. (Max OR Min)	MAN. "n" FOR PIPE	PIPE SLOPE (FT/FT)	Q (CFS)	V* (FPS)	RIPRAP SIZE	Rt (in)	Ai (ft)	Aiw (ft)	Atw (ft)	Adapted from USDOT, FHA HEC-14	
												ES	7
ES 7	15	Min	0.012	0.005	5.58	5.64	R-4	18	8	3.75	9.25		

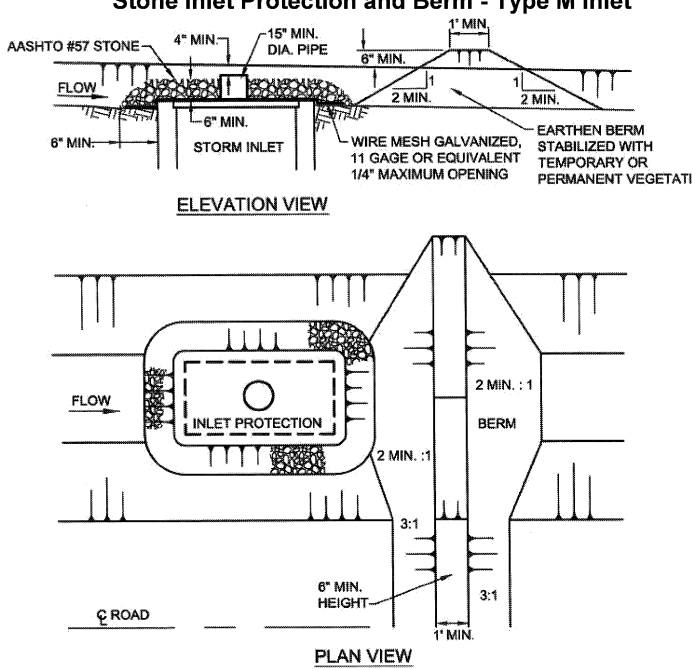
All aprons shall be constructed to the dimensions shown. Terminal widths shall be adjusted as necessary to match receiving channels.

All aprons shall be inspected at least weekly and after each runoff event. Displaced riprap within the apron shall be replaced immediately.

Extend riprap on back side of apron to at least 1/2 depth of pipe on both sides to prevent scour around the pipe.

INSPECT ROCK RIP ON A BI-ANNUAL BASIS. REPLACE STONE & GEOTEXTILE IF 50% OR MORE STONE IS DISPLACED BY FLOOD WATER OR THE ROCK RIPRAP SETTLES DUE TO UNDERMINING.

STANDARD CONSTRUCTION DETAIL # 4-20 Stone Inlet Protection and Berm - Type M Inlet



Inlet protection shall not be required for inlet tributary to sediment basin or trap. Berms shall be required for all installations not located at a low point.

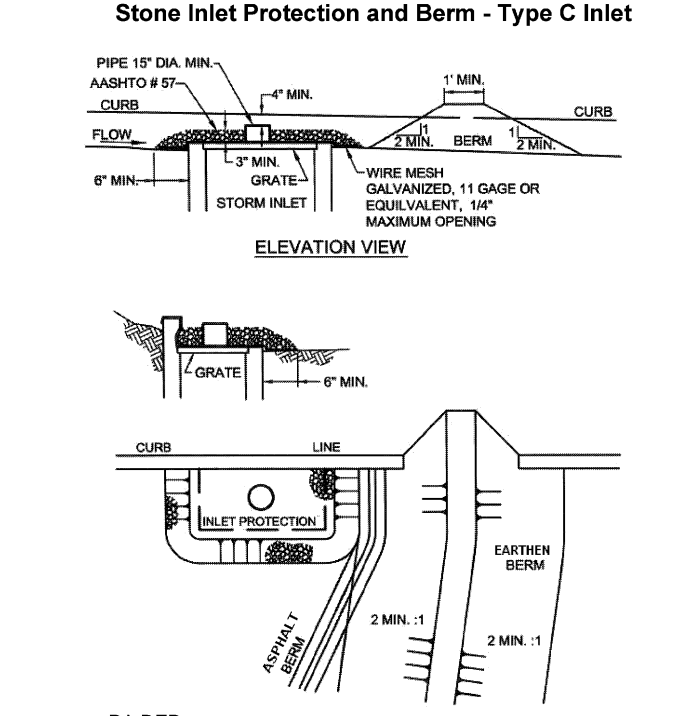
Roller earthen berm in roadway shall be provided and maintained immediately down gradient of the protected inlet until roadway is stoned. Road subbase berm on roadway shall be maintained until roadway is paved. Earthen berm in channel shall be maintained until permanent stabilization is completed or to remain permanently.

Stone inlet protection and berm for a Type M Inlet can be used in one acre maximum drainage area with 15" overflow pipe and 4" head. A perforated plate welded to a metal riser may not be substituted for the wire mesh. A slotted plate welded to the riser may be used in conjunction with the wire mesh if calculations are provided to show sufficient capacity of the inlet to accept the peak runoff for a 2-year storm event from the tributary drainage area. Top of pipe shall be at least 6 inches below adjacent roadway if ponded water would pose a safety hazard to traffic. Earthen berm shall be rolled.

Sediment shall be removed when it reaches half the height of the stone. Damaged or clogged installations shall be repaired or replaced immediately. For systems discharging to HQ or EV surface water, a 6 inch thick compost layer shall be securely anchored on outside and over top of stone. Compost shall meet the standards in Table 4.2.

-INSPECT INLET PROTECTION AFTER EACH RAINFALL EVENT-
-REPLACE STONE IF SYSTEM IS CLOGGED OR SEDIMENT REACHES HALF THE HEIGHT OF THE STONE-

STANDARD CONSTRUCTION DETAIL # 4-19 Stone Inlet Protection and Berm - Type C Inlet



Inlet protection shall not be required for inlet tributary to sediment basin or trap. Berms shall be required for all installations.

Roller earthen berm shall be provided and maintained immediately down gradient of the protected inlet until roadway is stoned. Road subbase berm shall be maintained until roadway is paved. A 6" minimum height asphalt berm shall be maintained until roadway surface receives final coat.

Stone inlet protection and berm for a Type C inlet can be used in one acre maximum drainage area with 15" overflow pipe and 4" head. A perforated plate welded to a metal riser may not be substituted for the wire mesh. A slotted plate welded to the riser may be used in conjunction with the wire mesh if calculations are provided to show sufficient capacity of the inlet to accept the peak runoff for a 2-year storm event from the tributary drainage area.

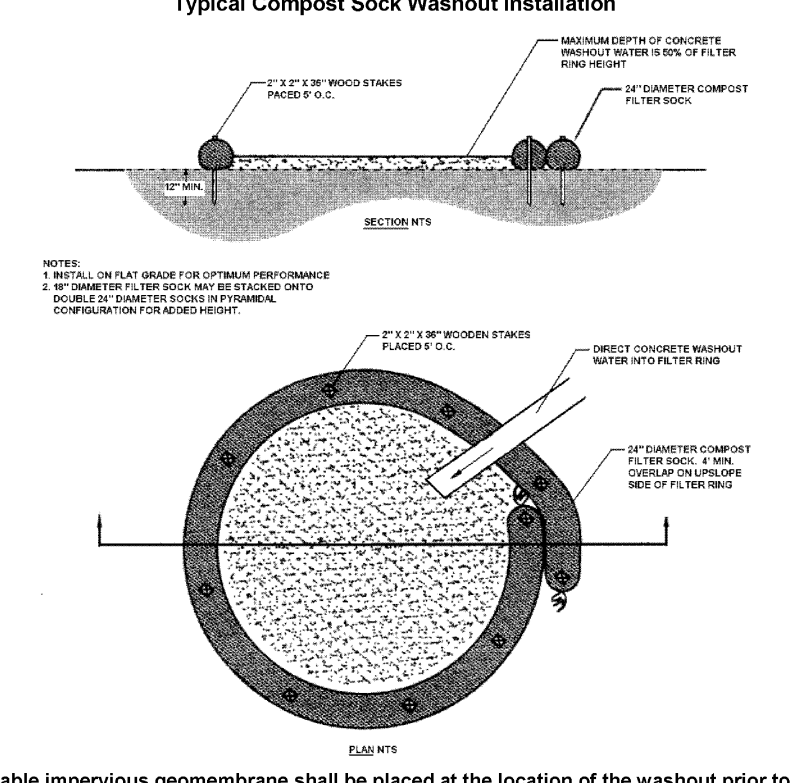
Sediment shall be removed when it reaches half the height of the stone. Damaged or clogged installations shall be repaired or replaced immediately.

For systems discharging to HQ or EV surface water, a 6 inch thick compost layer shall be securely anchored on outside and over top of stone. Compost shall meet the standards in Table 4.2.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

-INSPECT INLET PROTECTION AFTER EACH RAINFALL EVENT-
-REPLACE STONE IF SYSTEM IS CLOGGED OR SEDIMENT REACHES HALF THE HEIGHT OF THE STONE-

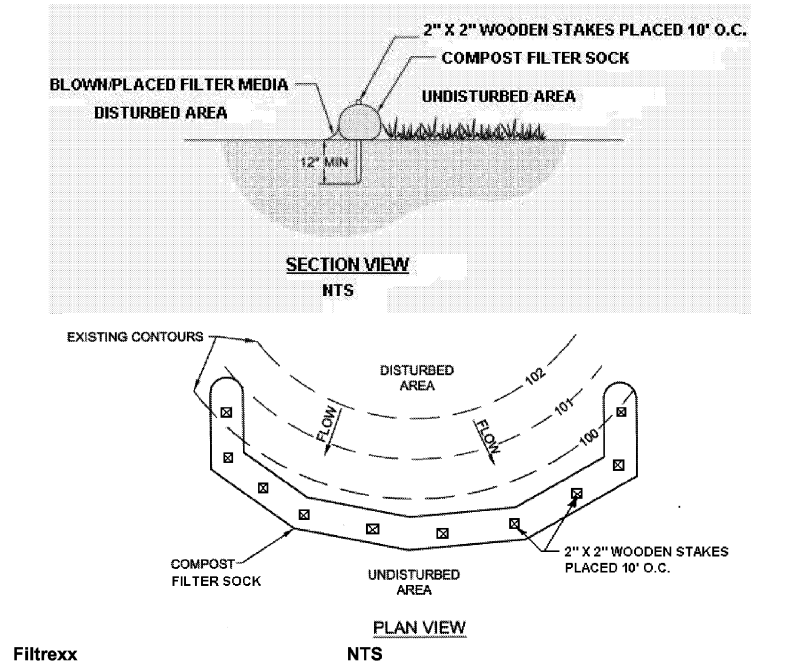
FIGURE 3-18 Typical Compost Sock Washout Installation



A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.

-INSPECT DAILY-
-CLEAN OUT WHEN CONCRETE WASHOUT MATERIAL EXCEEDS HALF THE HEIGHT OF THE COMPOST FILTER SOCK-

STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK



Sock fabric shall meet standards of Table 4.1. Compost shall meet the standards of Table 4.2.

Compost filter sock shall be placed at existing level grade. Both ends of the sock shall be extended at least 6 feet up slope at 45 degrees to the main sock alignment (Figure 4.1). Maximum slope length above any sock shall not exceed that shown on Figure 4.2. Stakes may be installed immediately downslope of the sock if so specified by the manufacturer.

Filter sock shall not be permitted to cross filter socks.

Accumulated sediment shall be removed when it reaches half the aboveground height of the sock and disposed in the manner described elsewhere in the plan.

Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection.

Biodegradable filter socks shall be replaced after 6 months; photodegradable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's recommendations.

Upon stabilization of the area tributary to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed. In the latter case, the mesh shall be cut open and the mulch spread as a soil supplement.

SOCK NO.	DIA. (in)	LOCATION	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (ft)
1	24	WESTERN PROPERTY BOUNDARY LINE	5	500
2	24	WESTERN PROPERTY BOUNDARY LINE	5	500
3	12	TOPSOIL PILE, LOT 1	25	50
4	12	WESTERN PROPERTY BOUNDARY LINE	2.5	225
5	12	TOPSOIL PILE, LOT 4	25	50
6	12	EASTERN PROPERTY BOUNDARY LINE	2	250
7	12	NORTHERN PROPERTY BOUNDARY LINE	12	100

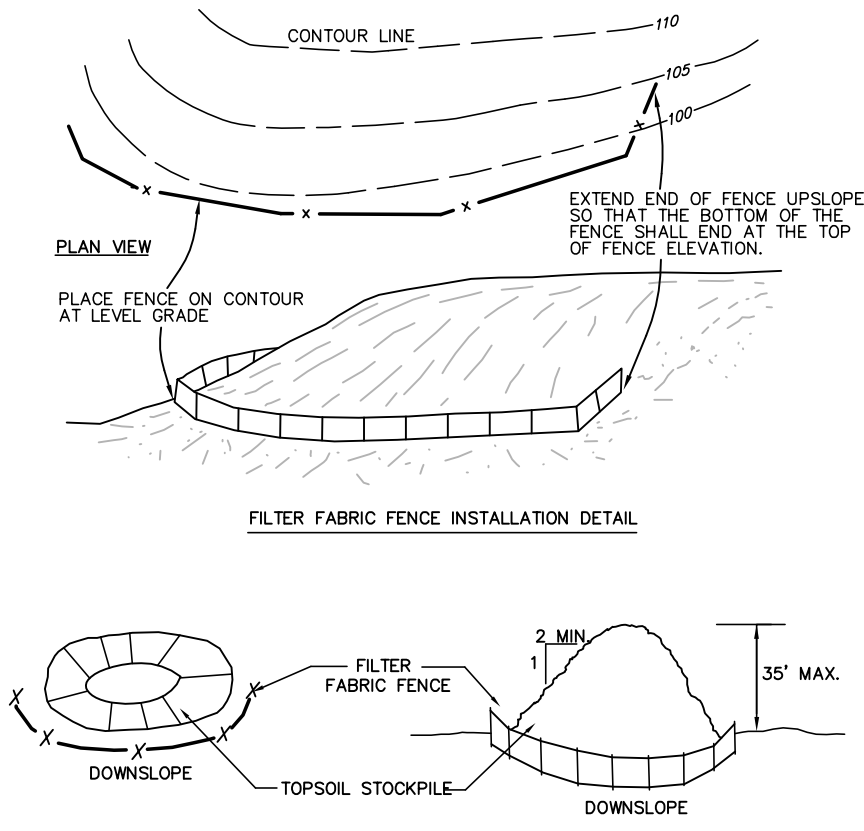
-INSPECT COMPOST FILTER SOCK AFTER EACH RAINFALL EVENT-

TABLE 4.1 Compost Sock Fabric Minimum Specifications

Material Type	Minimum				Heavy Duty Multi-Filament Polypropylene (HDMFPP)
	3 mil HDPE	5 mil HDPE	5 mil HDPE Polypropylene (MFPFP)	Photo-degradable	
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12"	18"	18"	18"	18"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength (ASTM G-155)		26 psi	26 psi	44 psi	202 psi
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

TABLE 4.2 Compost Standards

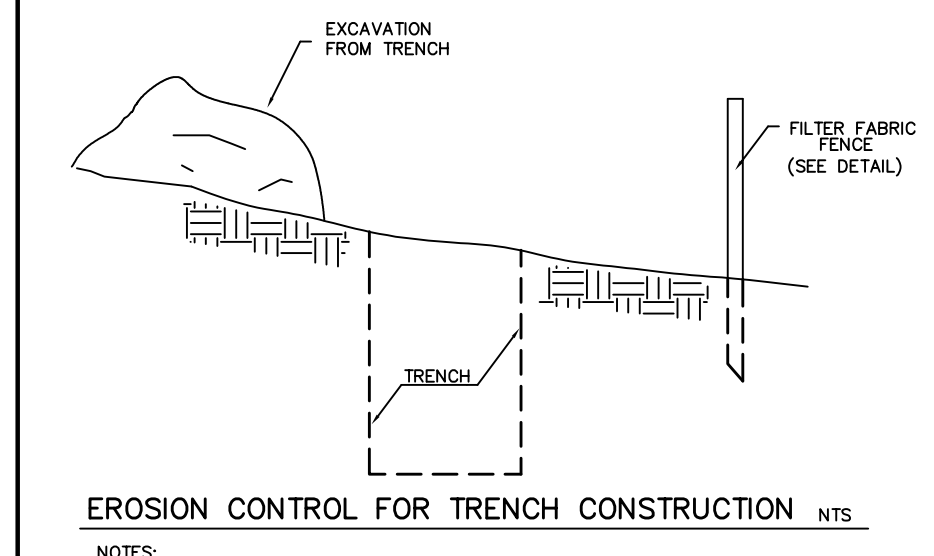
Organic Matter Content	80% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.0
Moisture Content	35% - 55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	5.0 dSm (mmhos/cm) Maximum



EROSION CONTROL DETAIL PLAN NTS

SILT FENCE MUST BE PLACED ON THE DOWNSLOPE SIDE OF ALL STOCKPILES.

IMMEDIATELY APPLY TEMPORARY SEEDING TO ALL STOCKPILES.



EROSION CONTROL DETAIL PLAN NTS

NOTES:

- INSTALL SILT FENCE
- EXCAVATE TRENCH AND PLACE EXCAVATION MATERIAL UPHILL OF TRENCH
- CONSTRUCT UTILITY LINE
- BACKFILL TRENCH IMMEDIATELY
- SEED AND MULCH DISTURBED AREAS.

THE SITE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PPC PLAN (PREPARATION, PREVENTION AND CONTINGENCY PLAN) IN COMPLIANCE WITH PADEP REGULATIONS, AND HAVING THE APPROPRIATE PROVISIONS AVAILABLE ON SITE AT ALL TIMES.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

EROSION CONTROL DETAIL PLAN (3 of 3) "PACER'S GAIT"

PREPARED FOR
MIKELEN, LLC.

SITUATE IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE

LEGEND

EXISTING CONTOURS	--- 278 ---
PROPOSED CONTOURS	--- 278 ---
EXISTING STORM SEWER	—○—
PROPOSED STORM SEWER	—○—
EXISTING SANITARY SEWER	—○—
PROPOSED SANITARY SEWER	—○—
PROPOSED WATER LINE	—○—
EXISTING EDGE OF TREES	—○—
SOIL LINE ReA
LIMIT OF DISTURBANCE & NPDES BOUNDARY	—■—
DRAINAGE AREA TO BMP	—■—
STORMWATER INFILTRATION TEST PIT LOCATION	▲ DT#1
PROPOSED WATER SERVICE	—WS—
PROPOSED SANITARY LATERAL	—CO—
PROPOSED FIRE HYDRANT	● FH
PROPOSED UTILITY POLE	○
PROPOSED DECIDUOUS STREET TREE	⊕
PROPOSED DECIDUOUS BUFFER TREE	⊕
PROPOSED EVERGREEN TREE	⊕
RAIN GARDEN PLANTING	⊕
PROPOSED ROOF DRAIN DISCONNECT	⊕
PROPOSED AMENDED SOILS	⊕

INFILTRATION RATE RESULTS

TEST PIT #	TEST DEPTH (INCHES)	INFILTRATION RATE (INCHES/HOUR)	LZ (INCHES)
1	36	1.38	62
2	48	4.21	80
3	SURFACE	0.09	24
4	36	0.06	72
5	36	0.04	75
6	SURFACE	4.21	84

SOIL LEGEND

SOILS DATA OBTAINED FROM USDA-NATURAL RESOURCES CONSERVATION SERVICES-WEB SOIL SURVEY-NATURAL COOPERATIVE SOIL SURVEY.

AbA - ABBOTTSTOWN SILT LOAM, 0 TO 3% SLOPES, HSG: D
 ReA - READINGTON SILT LOAM, 0 TO 3% SLOPES, HSG: C
 RnA - READINGTON SILT LOAM, 0 TO 3% SLOPES, HSG: C

GEOLOGIC FORMATION NOTE:

THE PATTERSON TRACT SUBDIVISION IS UNDERLAIN BY JURASSIC AND TRIASSIC FORMATIONS. THESE FORMATIONS CONSIST OF RED SANDSTONE, CONGLOMERATE AND SHALE AND DO NOT PRESENT OR CREATE A GEOLOGIC HAZARD.

RECEIVING STREAM - SWAMP CREEK

DESIGNATED USE - TROUT STOCK FISHERY / MIGRATORY FISHERY (TSF/MF)
 EXISTING USE - TROUT STOCK FISHERY / MIGRATORY FISHERY (TSF/MF)

CATEGORY 4 OF PA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT -

SOURCE: REMOVAL OF VEGETATION AND URBAN RUNOFF / STORM SEWER, CAUSE: FLOW ALTERATIONS AND WATER / FLOW VARIABILITY

CATEGORY 5 OF PA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT -

SOURCE: REMOVAL OF VEGETATION, URBAN RUNOFF / STORM SEWER, RECREATION AND MUNICIPAL POINT SOURCE
 CAUSE: SILTATION AND PATHOGENS.

MISCELLANEOUS NPDES NOTES

THE PCSWM PLAN MINIMIZES LAND CLEARING AND GRADING.

TO MINIMIZE THE EXTENT OF LAND CLEARING AND GRADING, THE CONTRACTOR WILL FIELD ESTABLISH THE LOD WITH COMPOST FILTER SOCK. THIS E&S BMP ACTS AS A BARRIER TO LIMIT SITE DISTURBANCES.

THE PCSWM PLAN MAXIMIZES PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION. LISTED BELOW ARE THE PROCEDURES FOR PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION:

PROPOSED DURING CONSTRUCTION IS INSTALLATION OF COMPOST FILTER SOCK WHICH MINIMIZES ENCROACHMENT ON EXISTING TREES.

THE PCSWM PLAN MINIMIZES SOIL COMPACTION. ESTABLISHMENT OF THE LOD USING COMPOST FILTER SOCK MINIMIZES SOIL COMPACTION BY RESTRICTING VEHICULAR TRAFFIC TO THE PROPOSED AREA OF DISTURBANCE.

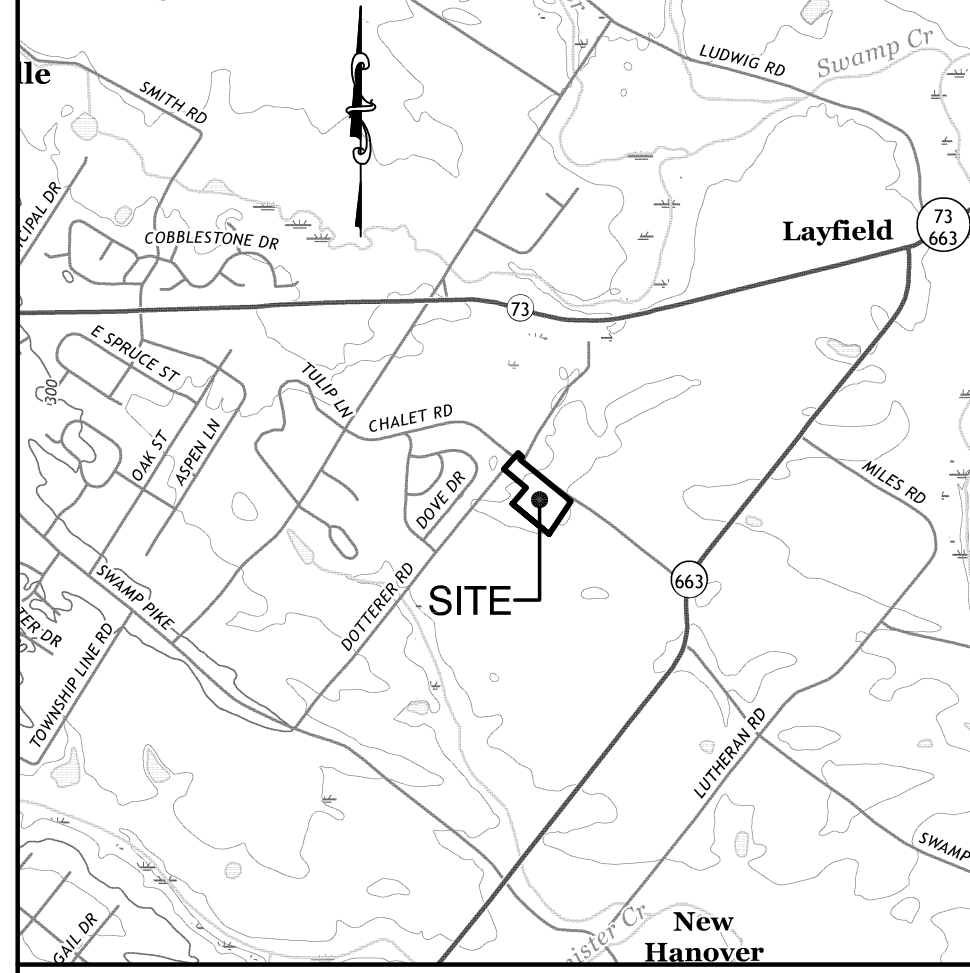
MINIMIZE IMPERVIOUS AREA: LAND DEVELOPMENT PLANNING AND DESIGN MINIMIZES THE AREA OF PERMANENT IMPERVIOUS AREAS. THE APPLICANT THROUGH SITE PLANNING WITH INPUT WITH NEW HANOVER TOWNSHIP ASSISTED IN MINIMIZING THE TOTAL AREA OF DISTURBANCE AND IMPERVIOUS COVER. FOR EXAMPLE, ORIGINALLY THIS PROJECT WAS AN EIGHT (8) LOT RESIDENTIAL, BUT NOW WILL BE A 7 LOT RESIDENTIAL SUBDIVISION.

THE FOLLOWING OTHER STRUCTURAL AND NON-STRUCTURAL BMPs WILL BE USED TO MITIGATE INCREASES IN STORMWATER VOLUME, PEAK FLOW RATES AND THERMAL IMPACTS: PRESERVE VEGETATION (WHEREVER POSSIBLE), ROOF DRAIN DISCONNECTS, AMENDED SOILS, DETENTION BASIN, RAIN GARDENS, INFILTRATION BED, LANDSCAPING INCLUDING WITH DECIDUOUS AND CONIFEROUS TREES, VEGETATED SWALES AND PERENNIAL GROUND COVER.

DESIGN OF THE STORMWATER FACILITIES WITH AN OUTLET STRUCTURE SPECIFICALLY DESIGNED TO CONTROL THE 2 YEAR RUNOFF VOLUME, SO THAT IT INFILTRATES BETWEEN 24 AND 72 HOURS. THIS OUTLET STRUCTURE DESIGN CONTROLS RUNOFF FROM THE PROJECT SITE AND ELIMINATES INCREASES IN THE PEAK FLOW RATES.

PAST AND HISTORIC LAND USES - URBAN - RESIDENTIAL
 PRESENT LAND USE - URBAN - RESIDENTIAL
 FUTURE LAND USES - URBAN - RESIDENTIAL.

- GENERAL NOTES**
- SITE (OR SITE RELATED CONSTRUCTION) SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS AND REGULATIONS. URWILER & WALTER, INC. WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR LIABILITY ARISING FROM THE FAILURE OF ANY PARTY TO CONFORM WITH THE APPLICABLE OSHA STANDARDS AND REGULATIONS.
 - ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO STANDARDS AND SPECIFICATION AS ESTABLISHED BY NEW HANOVER TOWNSHIP AND PENNDOT PUBLICATION 408.
 - CONSTRUCTION WASTE INCLUDES MILLINGS, CONCRETE, BLOCK, WOOD, LANDSCAPING, SEDIMENT / SILT, ETC.
 - THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ. 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
 - SEDIMENT/SILT REMOVAL FROM BMPs SHALL BE DISPOSED OF WITHIN LANDSCAPE AREAS ON-SITE. IF THE QUANTITY OF SEDIMENT/SILT EXCEEDS THE LANDSCAPE AREA ABILITY TO ACCEPT IT, DISPOSAL OF THIS MATERIAL WILL BE HAULED TO AN APPROVED CONSTRUCTION WASTE DISPOSAL SITE.
 - EXISTING LAND USES: AGRICULTURE, BRUSH, MEADOW, AND WOODLANDS.
 - ALLOWABLE IMPERVIOUS SURFACE AREA:
 PROPOSED IMPERVIOUS SURFACE AREA: 35,295 SQ. FT.
 - TREE PROTECTION FENCE USED TO PROTECT INFILTRATION AREAS SHALL BE REMOVED AT TIME OF STABILIZATION.



USGS LOCATION MAP
 SCALE: 1" = 2000'

CRITICAL STAGE NOTE:

ESTABLISH LIMIT OF DISTURBANCE AND PRESERVATION OF FOREST. INSTALLATION OF INFILTRATION BED, RAIN GARDENS, AMENDED SOILS, ENGINEERED FILTER MEDIA, AND LANDSCAPING.

OWNER OF RECORD / APPLICANT

MIKELN, LLC
 P.O. BOX 243
 FAIRVIEW VILLAGE, PA 19409
 TAX PARCEL NO. 470004424005
 TAX MAP, BLOCK & UNIT: 47-46-01
 DEED BOOK 6035, PAGE 2366

RESPONSIBLE PARTY

MIKELN, LLC

BMP (O&M) OPERATIONS AND MAINTENANCE OF STORMWATER CONTROLS STATEMENT

I/WE, _____, ACKNOWLEDGE THAT ANY REVISIONS TO THE APPROVED POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN MUST BE APPROVED BY NEW HANOVER TOWNSHIP (AND THE CONSERVATION DISTRICT AND/OR DEP) AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE CONSERVATION DISTRICT FOR DETERMINATION OF ADEQUACY, AS APPLICABLE. THE STORMWATER CONTROLS AND BMPs ARE FIXTURES THAT CAN NOT BE ALTERED OR REMOVED WITHOUT THE APPROVAL BY THE MUNICIPALITY.

SIGNATURE _____
 DATE _____
 I (DESIGN ENGINEER) _____ ON THIS DATE HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE NEW HANOVER TOWNSHIP STORMWATER CONTROL ORDINANCE.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

REVISIONS

DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & MCCD LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

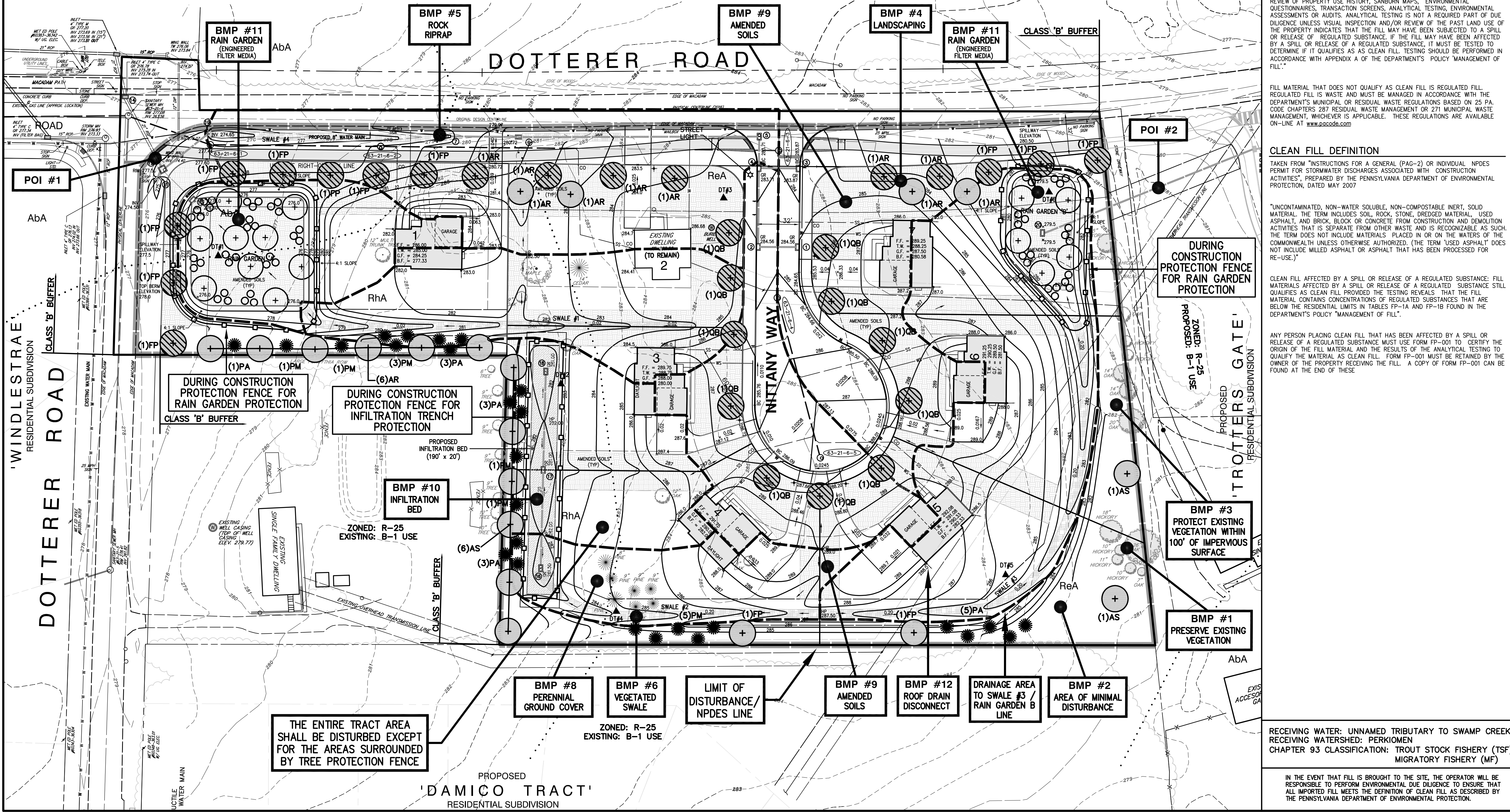
(TO BE RECORDED)
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (1 OF 5)
 "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.
 SITUATE IN
 NEW HANOVER TOWNSHIP
 MONTGOMERY COUNTY, PENNSYLVANIA

JULY 9, 2007
 PROJECT No. 16086
 FILE: 16086-BASE

RECEIVING WATER: UNNAMED TRIBUTARY TO SWAMP CREEK
 RECEIVING WATERSHED: PERKIOMEN
 CHAPTER 93 CLASSIFICATION: TROUT STOCK FISHERY (TSF), MIGRATORY FISHERY (MF)

URWILER & WALTER, INC.
 CIVIL ENGINEERS & SURVEYORS
 P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA 18084
 PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



THE ENTIRE TRACT AREA SHALL BE DISTURBED EXCEPT FOR THE AREAS SURROUNDED BY TREE PROTECTION FENCE

DURING CONSTRUCTION PROTECTION FENCE FOR RAIN GARDEN PROTECTION

DURING CONSTRUCTION PROTECTION FENCE FOR RAIN GARDEN PROTECTION CLASS 'B' BUFFER

DURING CONSTRUCTION PROTECTION FENCE FOR INFILTRATION TRENCH PROTECTION

BMP #3 PROTECT EXISTING VEGETATION WITHIN 100' OF IMPERVIOUS SURFACE

BMP #1 PRESERVE EXISTING VEGETATION

BMP #8 PERENNIAL GROUND COVER

BMP #6 VEGETATED SWALE

LIMIT OF DISTURBANCE/NPDES LINE

BMP #9 AMENDED SOILS

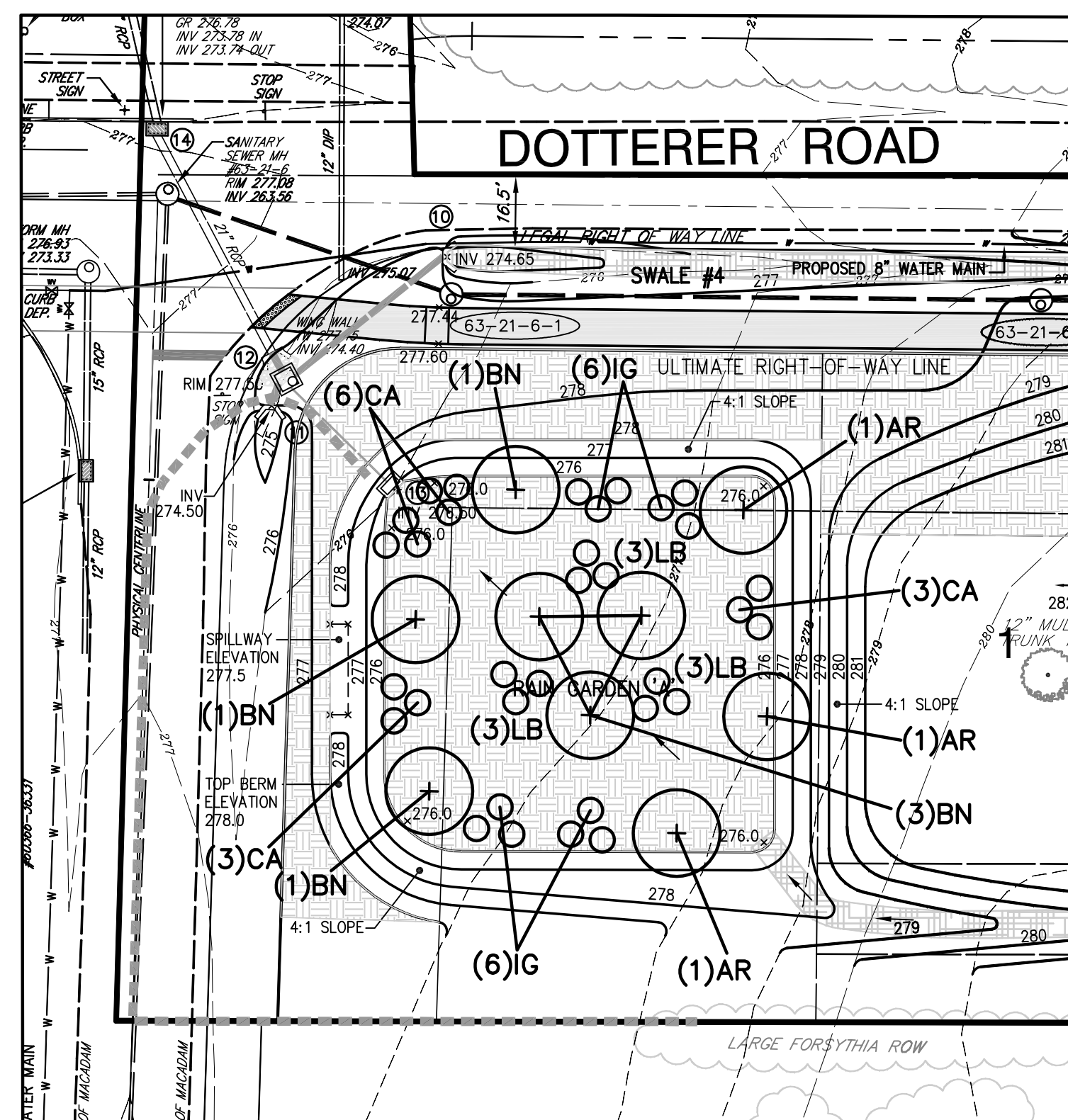
BMP #12 ROOF DRAIN DISCONNECT

DRAINAGE AREA TO SWALE #3 / RAIN GARDEN B LINE

BMP #2 AREA OF MINIMAL DISTURBANCE

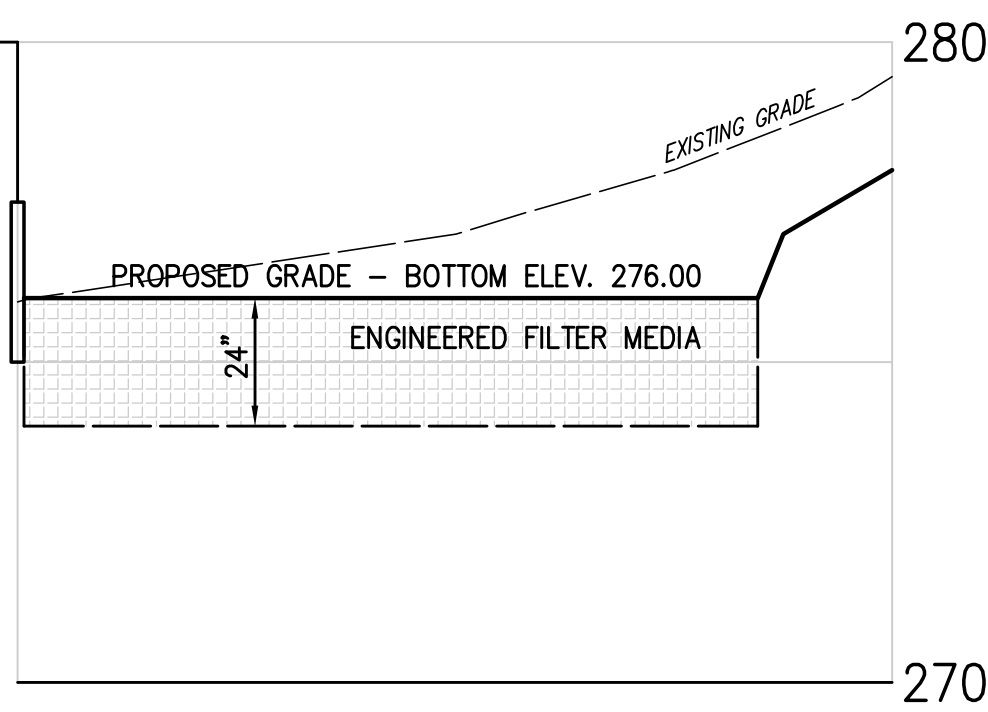
PROPOSED 'DAMICO TRACT' RESIDENTIAL SUBDIVISION

SCALE: 1" = 40' P - 2 SHEET No. 10 OF 21

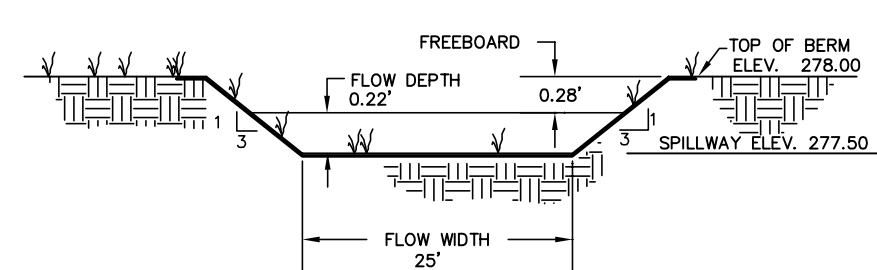


RAIN GARDEN 'A'
SCALE: 1"=30'

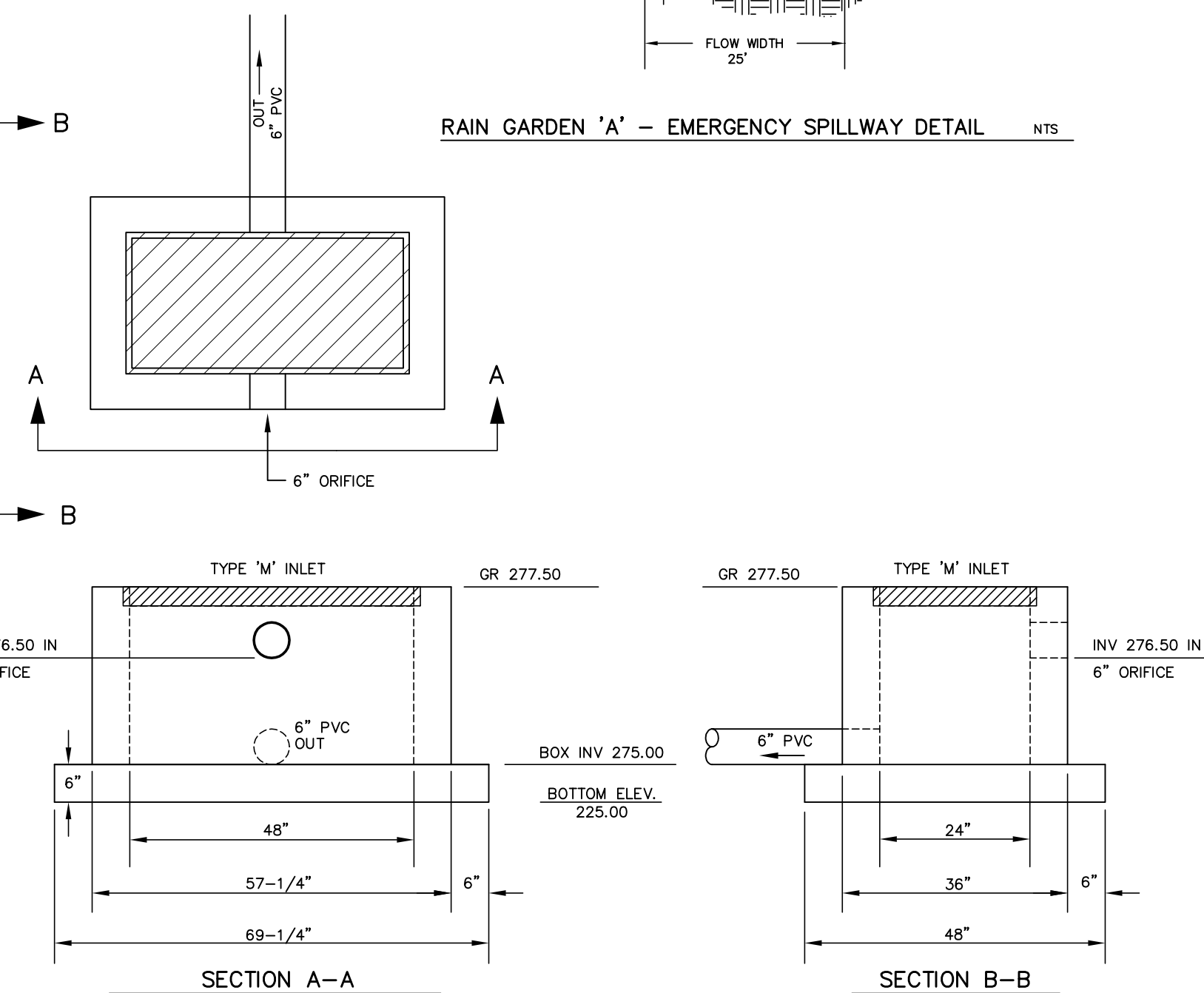
PROPOSED MONOLITHIC
OUTLET STRUCTURE #13
STANDARD BOX W/M TOP
GR 277.50
INV. 276.50 IN (6" ORIFICE)
INV. 275.00 OUT



RAIN GARDEN 'A' PROFILE
SCALE: HORZ. 1"= 40'
VERT. 1"= 4'

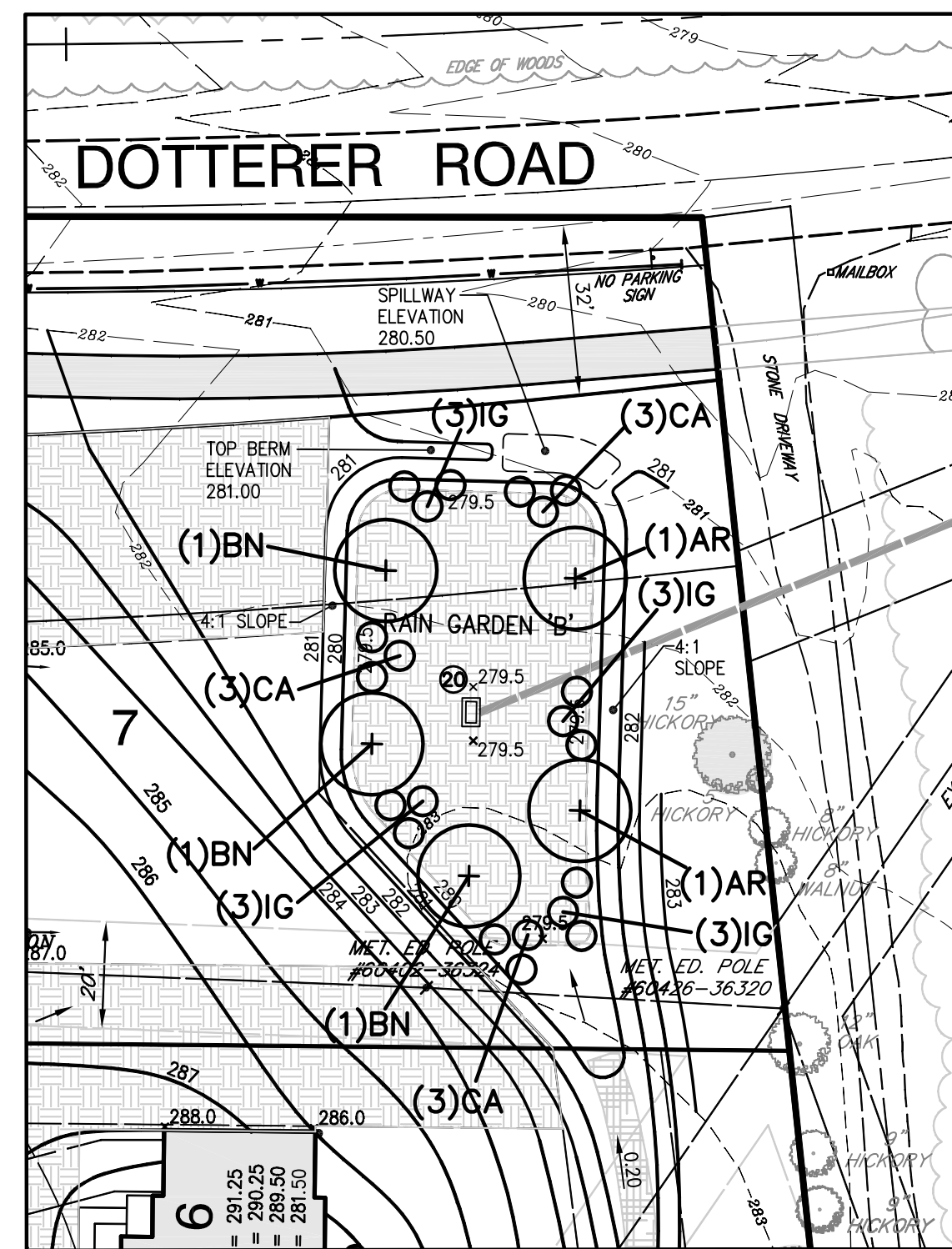


RAIN GARDEN 'A' - EMERGENCY SPILLWAY DETAIL NTS



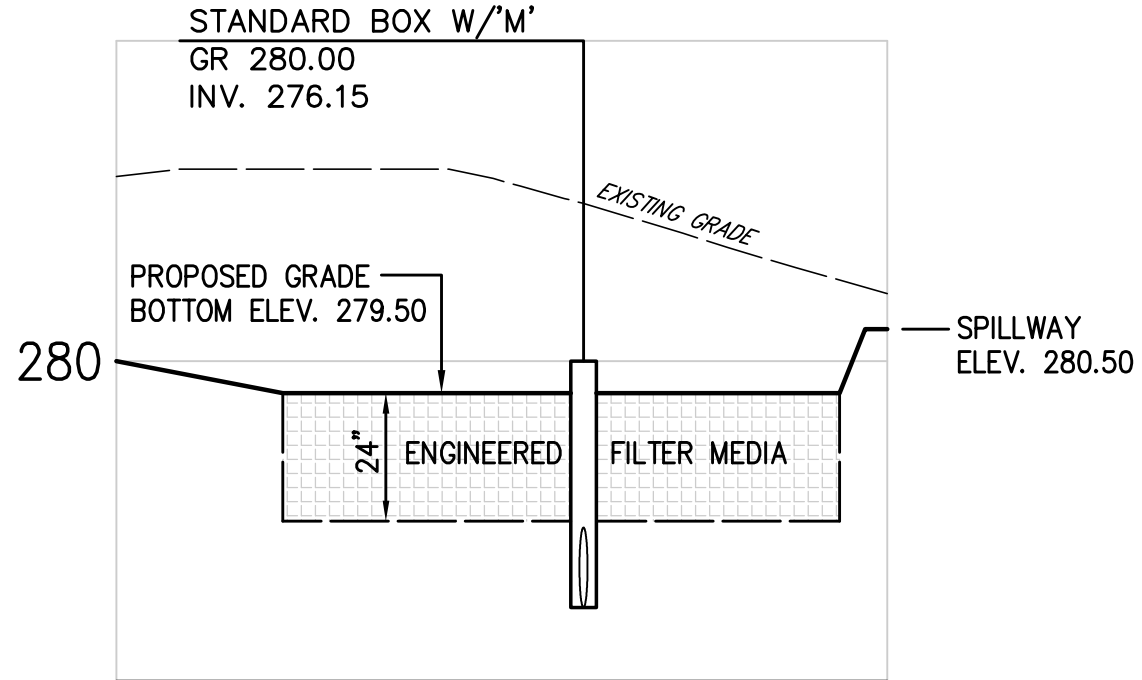
**MONOLITHIC OUTLET STRUCTURE #13
PRECAST CONCRETE STANDARD INLET BOX w/GRATE DETAIL**
SCALE: 1"=2'

NOTES:
1. PROVIDE 2"x8" KEY AROUND PERIMETER WITH MORTAR.

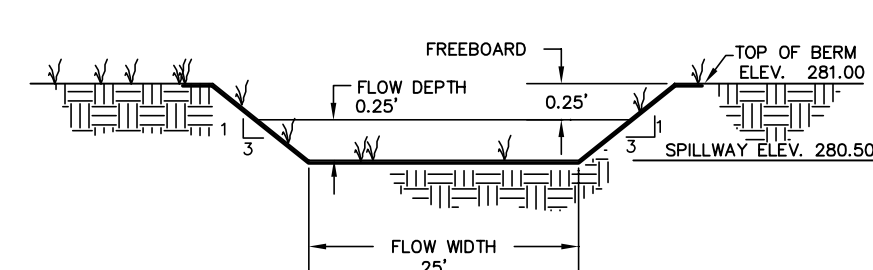


RAIN GARDEN 'B'
SCALE: 1"=30'

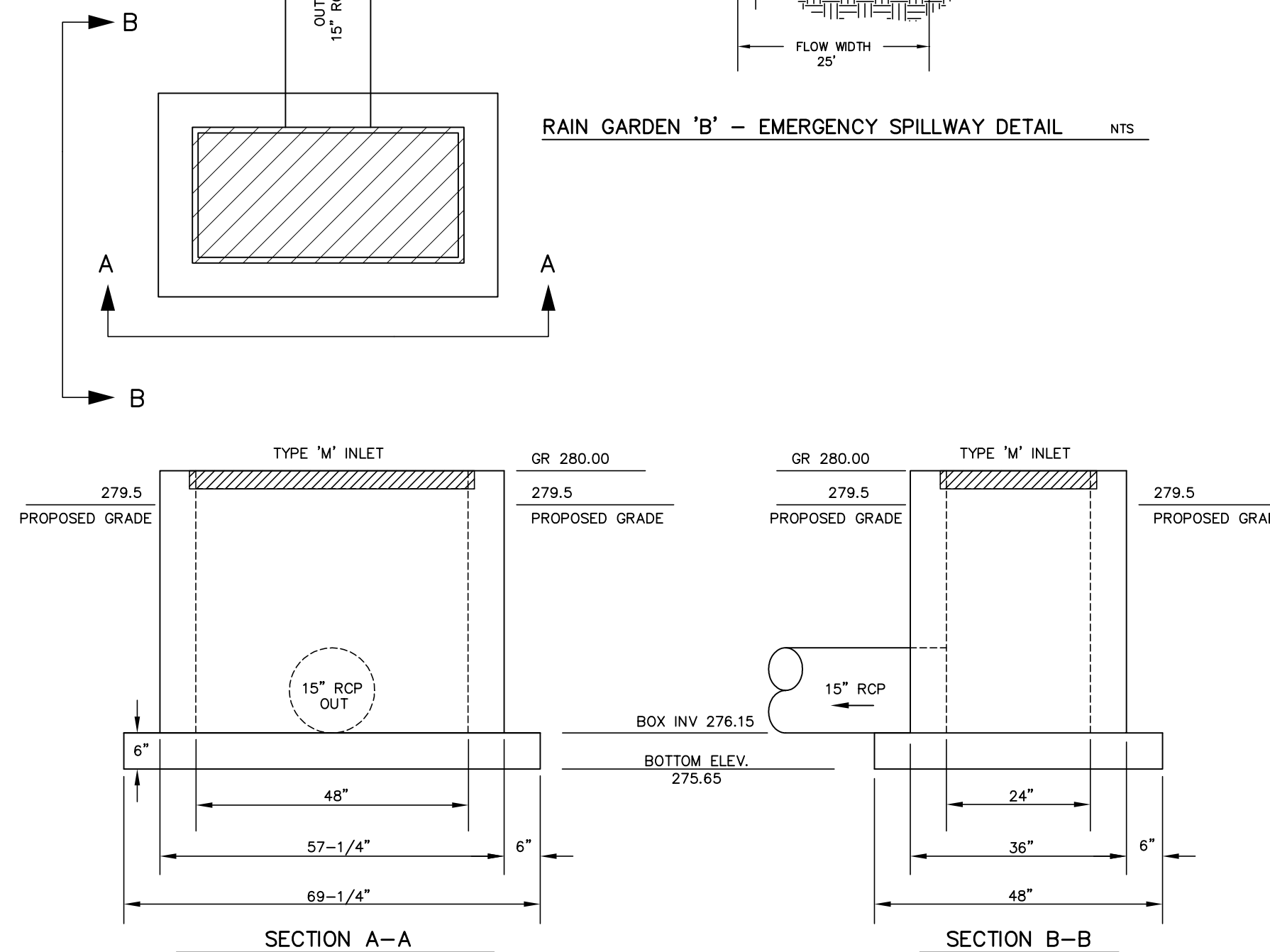
PROPOSED MONOLITHIC
OUTLET STRUCTURE #20
STANDARD BOX W/M
GR 280.00
INV. 276.15



RAIN GARDEN 'B' PROFILE
SCALE: HORZ. 1"= 40'
VERT. 1"= 4'

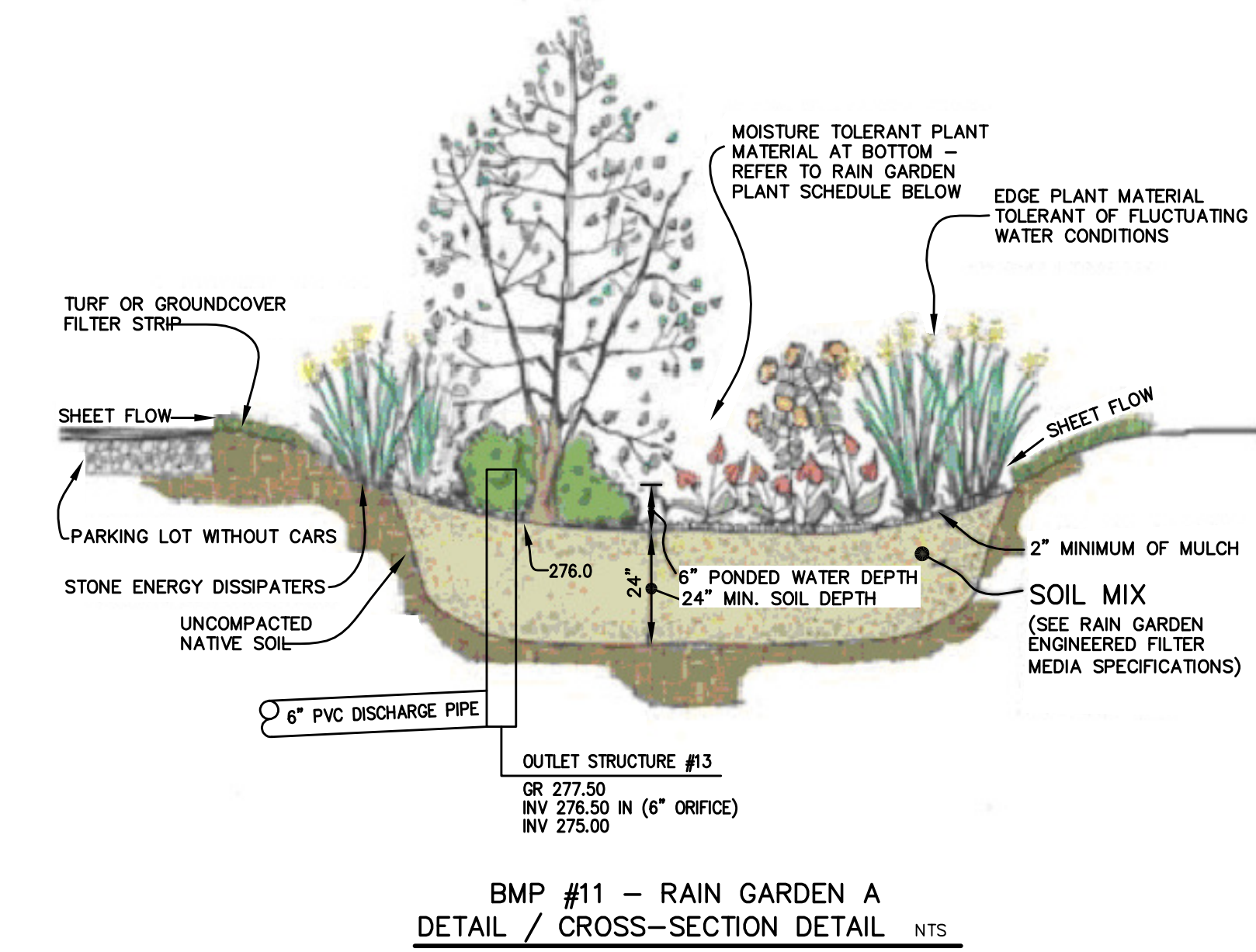


RAIN GARDEN 'B' - EMERGENCY SPILLWAY DETAIL NTS



**MONOLITHIC OUTLET STRUCTURE #20
PRECAST CONCRETE STANDARD INLET BOX w/GRATE DETAIL**
SCALE: 1"=2'

NOTES:
1. PROVIDE 2"x8" KEY AROUND PERIMETER WITH MORTAR.



**BMP #11 - RAIN GARDEN A
DETAIL / CROSS-SECTION DETAIL** NTS

NOTES:
1. RAIN GARDEN DETAIL TAKEN FROM THE 'PENNSYLVANIA STORMWATER BEST
MANAGEMENT PRACTICES MANUAL'.
2. A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL INSPECT THE CONSTRUCTION
OF THE RAIN GARDENS.

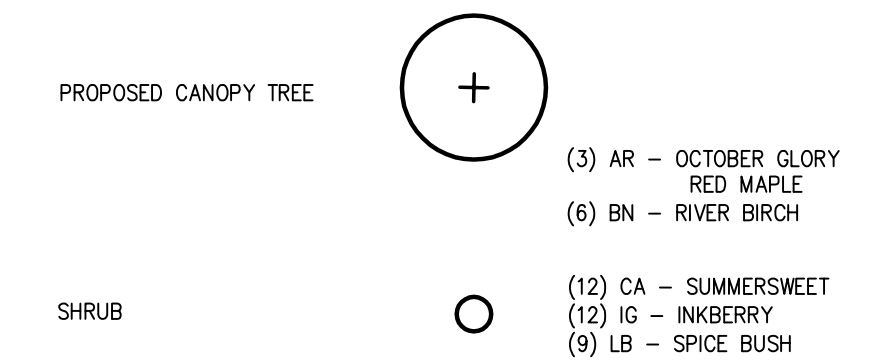
RAIN GARDEN 'A' CHART

MIN. SURFACE AREA	7,000 S.F. @ ELEV. 276.0
MIN. VOLUME	7,685 @ ELEV. 277.00
BERM ELEVATION	278.0
BERM WIDTH	3 FEET MIN.
MIN. SIDE SLOPES	4 : 1
INVERT/TOP OF MULCH ELEVATION	276.0
PONDING DEPTH	6 INCHES
PLANTING SPEC'S	10 TREES 23 SHRUBS
SOIL MIX DEPTH	24 INCHES
DISCHARGE TO	INLET

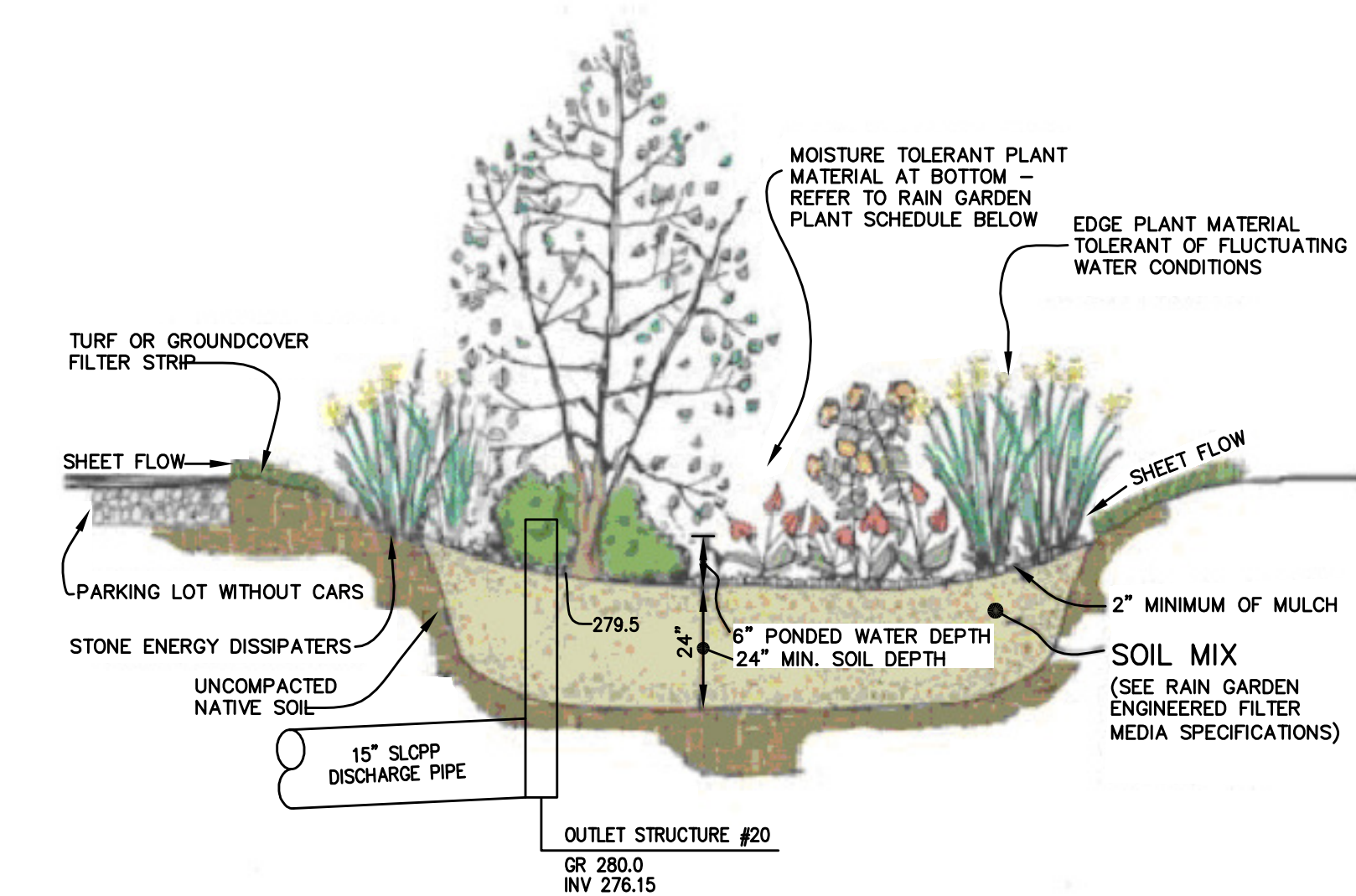
RAIN GARDEN PLANTINGS

RAIN GARDEN LANDSCAPING REQUIREMENTS:
RAIN GARDEN = 1432 SQUARE FEET
10 TREES
23 SHRUBS
(TREE AND SHRUB PLACEMENT TO BE FIELD SET BY LANDSCAPE CONTRACTOR)

PLANTINGS LEGEND - PER RAIN GARDEN



RAIN GARDEN AMENDED SOIL MIX
50% SOIL BASE (TOPSOIL)
20% SAND
30% ORGANIC MATERIAL (COMPOST OR MUSHROOM SOIL)



**BMP #11 - RAIN GARDEN B
DETAIL / CROSS-SECTION DETAIL** NTS

NOTES:
1. RAIN GARDEN DETAIL TAKEN FROM THE 'PENNSYLVANIA STORMWATER BEST
MANAGEMENT PRACTICES MANUAL'.
2. A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL INSPECT THE CONSTRUCTION
OF THE RAIN GARDENS.

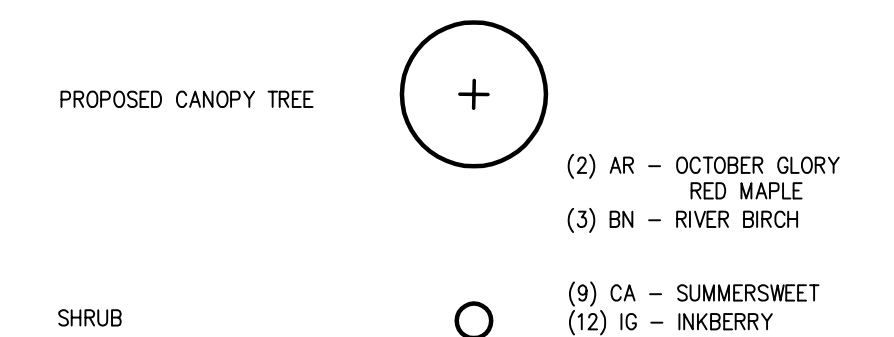
RAIN GARDEN 'B' CHART

MIN. SURFACE AREA	3,335 S.F. @ ELEV. 279.5
MIN. VOLUME	3,742 @ ELEV. 280.50
BERM ELEVATION	281.0
BERM WIDTH	3 FEET MIN.
MIN. SIDE SLOPES	4 : 1
INVERT/TOP OF MULCH ELEVATION	279.5
PONDING DEPTH	6 INCHES
PLANTING SPEC'S	10 TREES 23 SHRUBS
SOIL MIX DEPTH	24 INCHES
DISCHARGE TO	INLET

RAIN GARDEN PLANTINGS

RAIN GARDEN LANDSCAPING REQUIREMENTS:
RAIN GARDEN = 1432 SQUARE FEET
10 TREES
23 SHRUBS
(TREE AND SHRUB PLACEMENT TO BE FIELD SET BY LANDSCAPE CONTRACTOR)

PLANTINGS LEGEND - PER RAIN GARDEN



RAIN GARDEN AMENDED SOIL MIX
50% SOIL BASE (TOPSOIL)
20% SAND
30% ORGANIC MATERIAL (COMPOST OR MUSHROOM SOIL)

RAIN GARDEN CONSTRUCTION SEQUENCE AND INSTALLATION:

- INSTALL CONSTRUCTION SAFETY / TREE PROTECTION FENCING SURROUNDING RAIN GARDEN AREA.
- INITIAL EXCAVATION CAN BE PERFORMED DURING ROUGHSITE GRADING BUT SHALL BE CARRIED TO WITHIN ONE (1) FOOT OF THE FINAL BOTTOM ELEVATION.
- EXCAVATE RAIN GARDEN TO PROPOSED INVERT DEPTH AND SCARIFY THE EXISTING SOIL SURFACES. (DO NOT COMPACT EXISTING SOILS).
- UPON COMPLETION OF SUB-GRADE WORK, THE ENGINEER (OR THEIR REPRESENTATIVE) SHALL BE NOTIFIED AND SHALL INSPECT AT THEIR DISCRETION BEFORE PROCEEDING WITH THE RAIN GARDEN INSTALLATION.
- INSTALL OUTLET STRUCTURES.
- BACKFILL RAIN GARDEN WITH AMENDED SOIL (ENGINEERED FILTER MEDIA) AS SHOWN ON PLANS AND SPECIFICATIONS, OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT, LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.
- PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.
- COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS, LEAVING SPACE FOR UPPER LAYER OF MULCH, COMPOST OR TOPSOIL AS SPECIFIED ON PLANS.
- PLANT VEGETATION ACCORDING TO PLANTING PLAN / SCHEDULE.
- MULCH AND INSTALL EROSION PROTECTION AT SURFACE FLOW ENTRANCES WHERE NECESSARY.
- WATER VEGETATION AT THE END OF EACH DAY FOR TWO WEEKS AFTER PLANTING IS COMPLETED, OR AS DETERMINED NECESSARY PER SITE AND OR WEATHER CONDITIONS.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR. 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

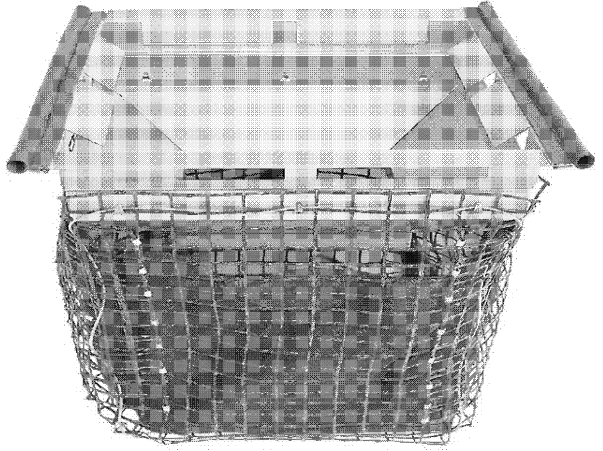
**(TO BE RECORDED)
POST CONSTRUCTION STORMWATER
MANAGEMENT PLAN (2 OF 5)
"PACER'S GAIT"**

PREPARED FOR
MIKELEN, LLC.

SITUATE IN
**NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA**

JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE

SCALE: AS SHOWN
P - 3
SHEET No. 11 OF 21



FloGard[®]+PLUS
Catch Basin Insert Filter

FloGard[®]+PLUS Catch Basin Insert Filter

GENERAL FILTER CONFIGURATION

FloGard[®]+PLUS catch basin insert filter shall provide solids filtration through geotextile filter screen on the liner and hydrocarbon separator shall be placed over the filter. Hydrocarbon separator shall be placed in an approved location of the entry to the filter. The filter will allow bleed-through by debris and sediment without restriction to the drainage system.

The filter conforms to the dimensions of the inlet in which it is applied, allow removal and replacement of all internal components and flow complete expansion and closing in the field.

FLOW CAPACITY

The filter provides two internal high-flow bypass locations that in total exceed the inlet peak flow capacity. Filter shall provide filtered flow capacity in excess of the required "first flush" treatment flow. Unit shall not impede flow into or through the catch basin when properly sized and installed.

MATERIALS

Filter support frame shall be constructed of type 304 stainless steel. Filter screen when used in place of filter liner shall be type 304 or 316 stainless steel with an apparent opening size of not less than 0.5 mm. Filter liner when used in place of filter screen shall be woven polypropylene geotextile fabric liner with an apparent opening size (AOS) of not less than 40 U.S. mesh as determined by ASTM D 4753. Filter liner and include support backbone of polypropylene geotextile with stainless steel cable reinforcement.

Filter frame shall be rated at a minimum 25-year service life. All other materials, with the exception of the hydrocarbon separator, shall have a rated service life in excess of 2 years.

FloGard[®]+PLUS TEST RESULTS SUMMARY

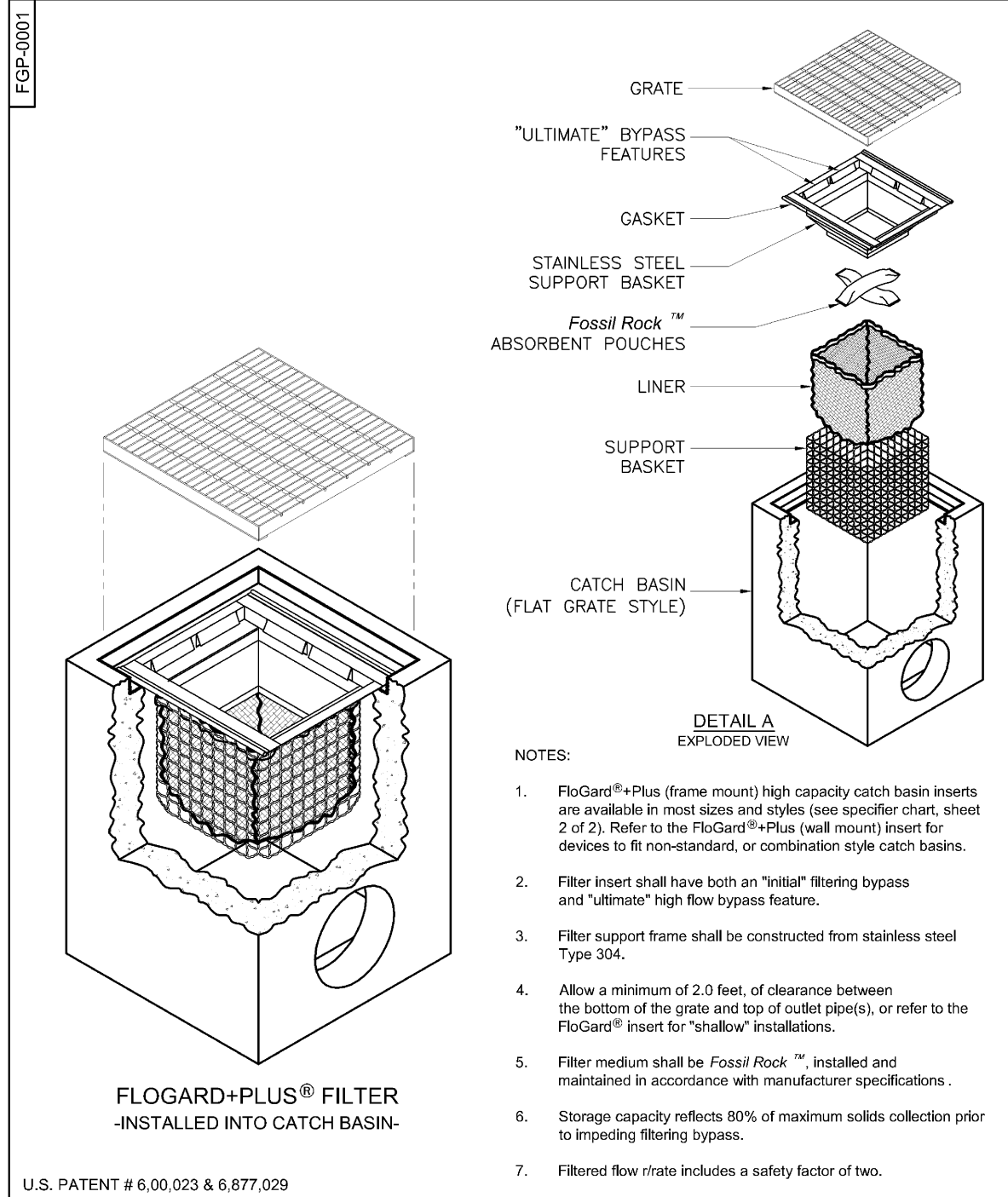
Testing Agency	% TSS Removal	% Oil and Grease Removal	% PAH Removal
ULCA	80	70 to 80	
U of Auckland Turlington & Taylor Ltd. (for city of Auckland)	78 to 85		
U of Hawaii (for city of Honolulu)	80	20 to 40	

FEATURES

- Easy to install, inspect and maintain
- Can be retrofitted to existing drain catch basins or used in new projects
- Economical and efficient
- Catches pollutants where they are easiest to catch for the field
- No standing water - minimizes vector, bacteria and odor problems
- Can be incorporated as part of a "Treatment Train"

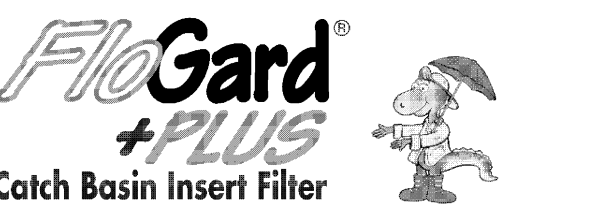
BENEFITS

- Lower maintenance, inspection and maintenance costs
- Removes maintenance applications
- Higher return on investment
- Allows for installation on small and confined sites
- Minimizes vector, bacteria and odor problems
- Can be used to target specific pollutants



FLOGARD+PLUS FILTER
INSTALLED INTO CATCH BASIN.

U.S. PATENT # 6,000,023 & 6,877,029



FloGard[®]+PLUS
Catch Basin Insert Filter

INSTALLATION AND MAINTENANCE

Filter shall be installed and maintained in accordance with manufacturer's general instructions and recommendations.

PERFORMANCE

Filter shall provide 85% removal of total suspended solids (TSS) from treated flow with a particle size distribution consistent with typical urban street deposited sediment. Filter shall capture at least 70% of oil and grease and 40% of total phosphorus (TP) associated with organic debris from treated flow. Unit shall provide for retention of trapped pollutants, including debris, sediment, and floating trash and hydrocarbons, from bypass flow and that re-entrance and loss of pollutants is minimized during peak flow events.

FloGard[®]+PLUS COMPETITIVE FEATURE COMPARISON

Feature	FloGard+PLUS	Other Inlet Filter Types**
Flow Rate	10	45%
Removal Efficiency	7	7
Service Life	10	3
Installation - Ease of Handling / Installation	4	6
Ease of Inspection & Maintenance	7	2



GENERAL SPECIFICATIONS FOR MAINTENANCE OF FLO-GARD+PLUS CATCH BASIN INSERT FILTERS

Federal, State and Local Clean Water Act regulations and those of insurance carriers require that stormwater filtration systems be maintained and serviced on a recurring basis. The intent of the regulations is to ensure that the systems, on a continuing basis, efficiently remove pollutants from stormwater runoff thereby preventing pollution of the nation's water resources. These specifications apply to the FloGard+PLUS Catch Basin Insert Filter.

RECOMMENDED FREQUENCY OF SERVICE:

Drainage Protection Systems (DPS) recommends that installed Flo-Gard+Plus Catch Basin Insert Filters be serviced on a recurring basis. Ultimately, the frequency depends on the amount of runoff, pollutant loading and interference from debris (leaves, vegetation, cars, paper, etc.), however, it is recommended that each installation be serviced a minimum of three times per year, with a change of filter medium once per year. DPS technicians are available to do an on-site evaluation, upon request.

RECOMMENDED TIMING OF SERVICE:

DPS guidelines for the timing of service are as follows:

- For areas with a definite rainy season: Prior to, during and following the rainy season.
- For areas subject to year-round rainfall: On a recurring basis (at least three times per year).
- For areas with winter snow and summer rain: Prior to and just after the snow season and during the summer rain season.
- For installed devices not subject to the elements (w/overheads, parking garages, etc.): On a recurring basis (no less than three times per year).

SERVICE PROCEDURES:

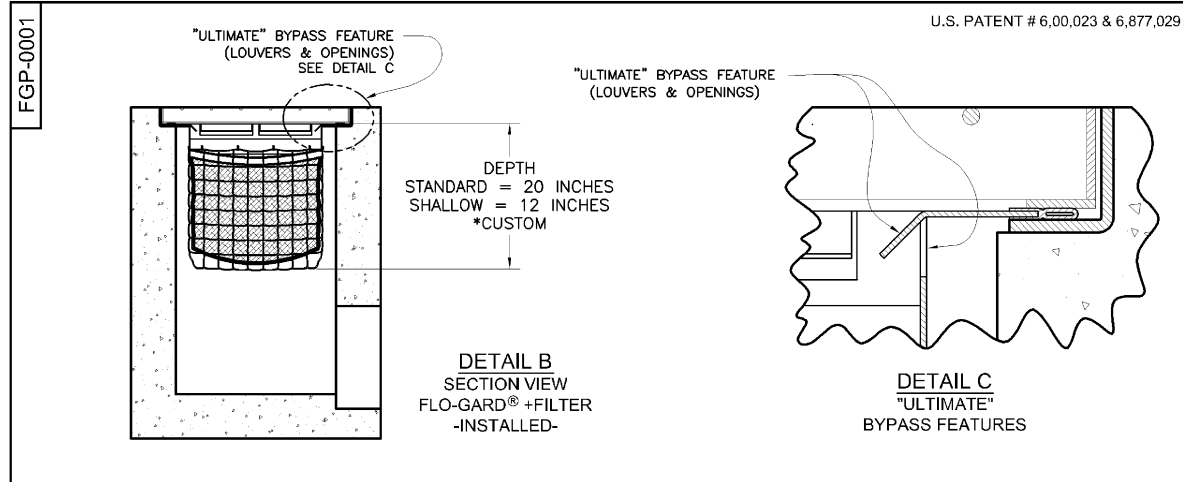
- The catch basin grate shall be removed and set to one side. The catch basin shall be visually inspected for debris and possible illegal dumping. If illegal dumping has occurred, the proper authorities and property owner representative shall be notified as soon as practical.
- Using an industrial vacuum, the collected materials shall be removed from the liner. (Note: DPS uses a truck-mounted vacuum for servicing Flo-Gard+Plus catch basin inserts.)
- When all of the collected materials have been removed, the filter medium pouches shall be removed by unsnapping the tether from the D-ring and set to one side. The filter liner, gaskets, stainless steel frame and mounting brackets shall be inspected for continued serviceability. Minor damage or defects found shall be corrected on-the-spot and a notation made on the Maintenance Record. More extensive deficiencies that affect the efficiency of the filter (torn liner, etc.), if approved by the engineer representative, will be corrected and an invoice submitted to the representative along with the Maintenance Record.
- The filter medium pouches shall be inspected for defects and continued serviceability and replaced as necessary and the pouch tethers re-attached to the liner's D-ring. See below.
- The grate shall be replaced.

REPLACEMENT AND DISPOSAL OF EXPOSED FILTER MEDIUM AND COLLECTED DEBRIS

The frequency of filter medium pouch change will be in accordance with the existing DPS Customer Maintenance Contract. DPS recommends that the medium be changed at least once per year. During the appropriate service, or if so determined by the service technician during a non-scheduled service, the filter medium pouches will be replaced with new pouches. Once the exposed pouches and debris have been removed, DPS has provisions and must dispose of it in accordance with local, state and federal agency requirements.

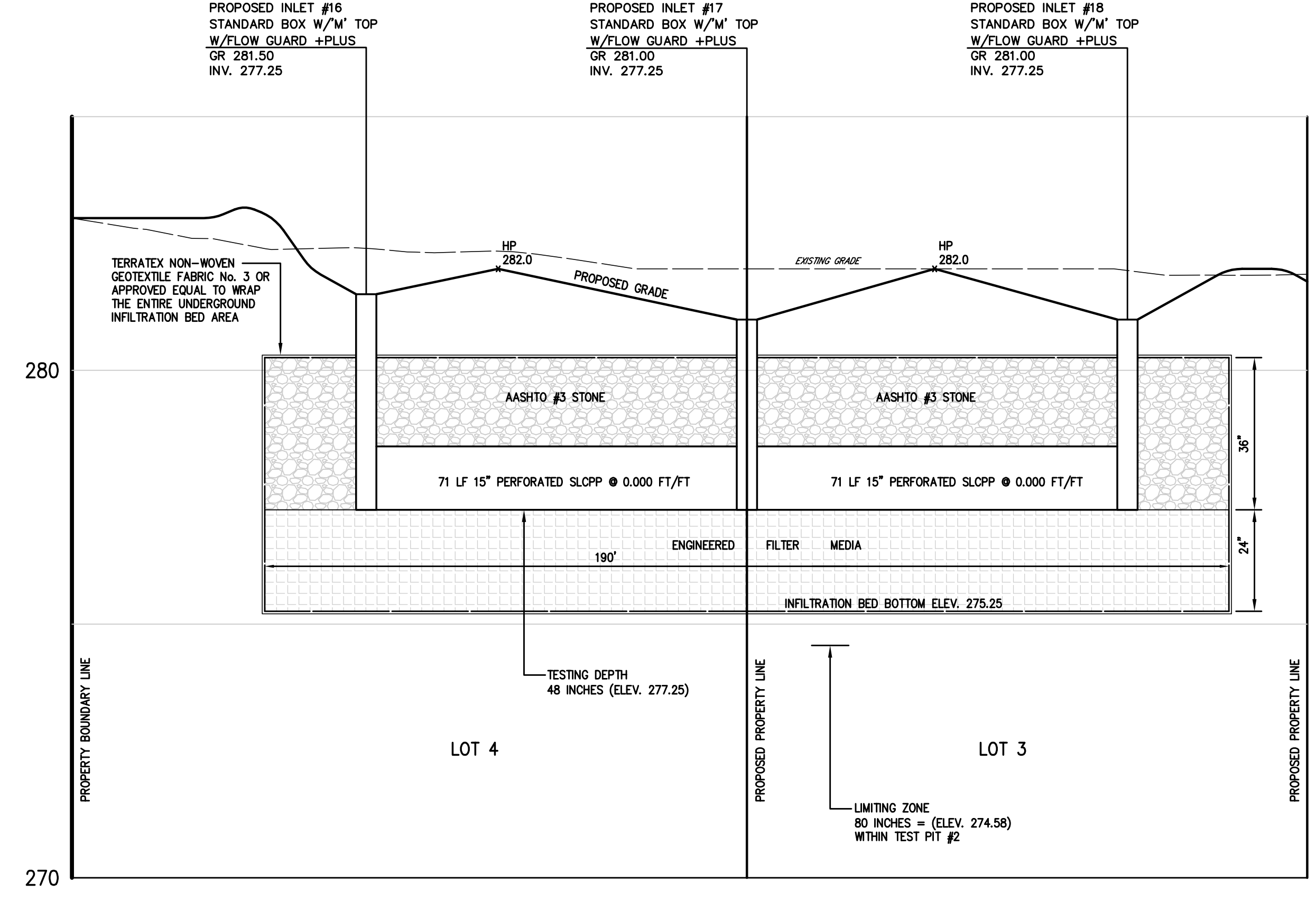
DPS also has the capability of servicing all manner of catch basin inserts and catch basins without inserts, underground separators, stormwater interceptors and other catch devices.

All DPS personnel are highly qualified technicians and are certified space trained and certified. Call us at 1888-950-8262 for further information and assistance.

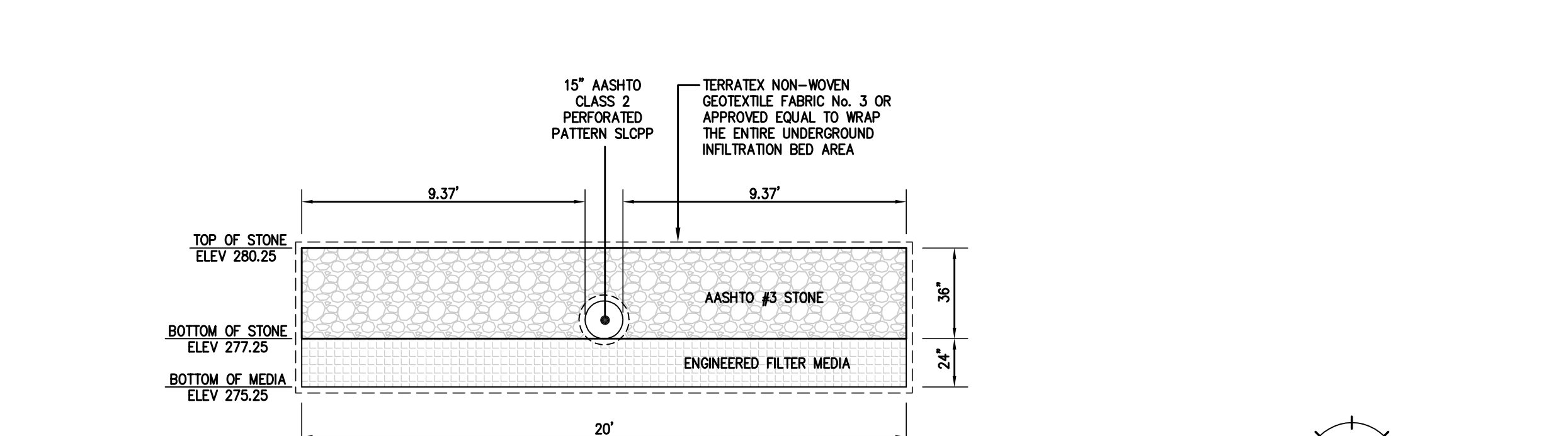


* MANY OTHER STANDARD & CUSTOM SIZES & DEPTHS AVAILABLE UPON REQUEST.

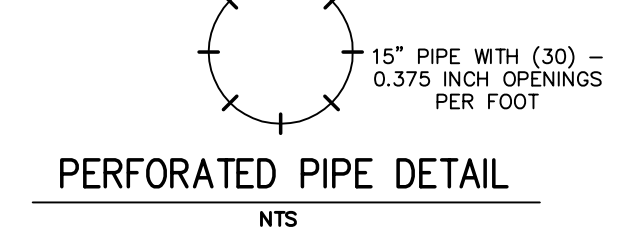
MODEL NO.	STANDARD & SHALLOW DEPTH	STANDARD DEPTH	MODEL NO.	SHALLOW DEPTH
STANDARD DEPTH	INLET ELEV. (ft.) GRATE D.D. (ft.) TOTAL BYPASS (ft.) SOILS STORAGE CAPACITY (cu. ft.) FILTERED FLOW CAPACITY (g.p.m.) (15% min. flow)	INLET ELEV. (ft.) GRATE D.D. (ft.) TOTAL BYPASS (ft.) SOILS STORAGE CAPACITY (cu. ft.) FILTERED FLOW CAPACITY (g.p.m.) (15% min. flow)	SHALLOW DEPTH (ft.)	SOILS STORAGE CAPACITY (cu. ft.) FILTERED FLOW CAPACITY (g.p.m.) (15% min. flow)
FGP-10F	12 x 12 12 X 14 2.8	0.3	FGP-10SF	15 - 25
FGP-15DF	15 x 30 15 X 36 6.9	2.3	FGP-15DFB	1.3 - 9
FGP-16F	16 x 18 16 X 19 4.7	0.8	FGP-16FB	45 - 4
FGP-18DF	18 x 24 18 X 26 8.0	1.5	FGP-18DFB	85 - 7
FGP-18F	18 x 18 18 X 20 4.7	0.8	FGP-18FB	45 - 4
FGP-18DF	18 x 19 18 X 21 5.9	2.1	FGP-18DFB	1.2 - 8
FGP-18DF	18 x 22 18 X 24 9.0	1.5	FGP-18DFB	85 - 7
FGP-18DF	18 X 36 18 X 40 6.9	2.3	FGP-18DFB	1.3 - 9
FGP-20DF	18 x 22 20 X 24 6.9	1.2	FGP-20DFB	7 - 85
FGP-21DF	22 x 22 22 X 24 6.1	2.2	FGP-21FB	1.25 - 85
FGP-21DF	21 X 40 24 X 40 9.1	4.3	FGP-21DFB	2.45 - 1.35
FGP-21DF	19 X 48 22 X 48 9.8	4.7	FGP-21DFB	2.7 - 1.5
FGP-24DF	24 X 24 24 X 27 6.1	2.2	FGP-24FB	1.25 - 85
FGP-24DF	24 X 30 28 X 30 7.0	2.0	FGP-24DFB	1.6 - 1.05
FGP-24DF	24 X 36 24 X 40 8.0	3.4	FGP-24DFB	1.95 - 1.15
FGP-24DF	24 X 48 28 X 48 9.3	4.4	FGP-24DFB	2.5 - 1.35
FGP-30F	28 X 28 32 X 32 6.3	2.2	FGP-30FB	1.25 - 85
FGP-30F	24 X 36 28 X 40 6.3	4.2	FGP-30DFB	2.4 - 1.3
FGP-30F	30 X 30 30 X 34 6.1	3.6	FGP-30FB	2.05 - 1.15
FGP-30F	36 X 36 38 X 40 9.1	4.6	FGP-30FB	2.65 - 1.35
FGP-36DF	38 X 48 40 X 48 11.5	6.6	FGP-36DFB	3.9 - 1.85
FGP-48F	48 X 48 48 X 54 13.2	6.5	FGP-48FB	1.45 - 2.35
FGP-80DF	24 X 24 28 X 28 6.1	2.2	FGP-80DFB	1.25 - 85



PROPOSED INFILTRATION BED #1
SCALE: HORIZ: 1"=20'
VERT: 1"=2'



SECTION VIEW INFILTRATION BED #1 DETAIL
SCALE: HORIZ: 1"=4'
VERT: 1"=4'



INFILTRATION BED CONSTRUCTION SEQUENCE

- PROTECT INFILTRATION BED AREA FROM COMPACTION PRIOR TO INSTALLATION.
- INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
- INSTALL INFILTRATION BED DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT LADEN WATER FROM ENTERING INLETS AND PIPES.
- EXCAVATE INFILTRATION BED "USING A BACKHOE" TO A UNIFORM, LEVEL UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE.
- PLACE NONWOVEN GEOTEXTILE ALONG BOTTOM AND SIDES OF BED*. NONWOVEN GEOTEXTILE ROLLS SHOULD OVERLAP BY A MINIMUM OF 16 INCHES WITHIN THE BED. FOLD BACK AND SECURE EXCESS GEOTEXTILE DURING STONE PLACEMENT.
- INSTALL INLET / STORM SEWER PIPING SYSTEM.
- PLACE UNFORMALLY GRADED, CLEAN-WASHED AGGREGATE (AASHTO No. 3) IN 8-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.
- INSTALL CONTINUOUSLY 8-INCH PERFORATED PIPE AS INDICATED ON PLANS. BACKFILL WITH UNFORMALLY GRADED, CLEAN-WASHED AGGREGATE IN 8-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.
- FOLD AND SECURE NONWOVEN GEOTEXTILE OVER INFILTRATION BED, WITH MINIMUM OVERLAP OF 16-INCHES.
- SEED AND STABILIZE TOPSOIL, WHERE APPLICABLE.
- DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.
- ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.

DATE	REVISIONS DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP, ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCDD LTR. 9-25-08
8-25-08	TWP, ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP, SWR, ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCDD LTR. 6-12-08
10-15-07	TWP, ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP, SWR, ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

(TO BE RECORDED)
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (3 OF 5)
"PACER'S GAIT"

PREPARED FOR
MIKELEN, LLC.

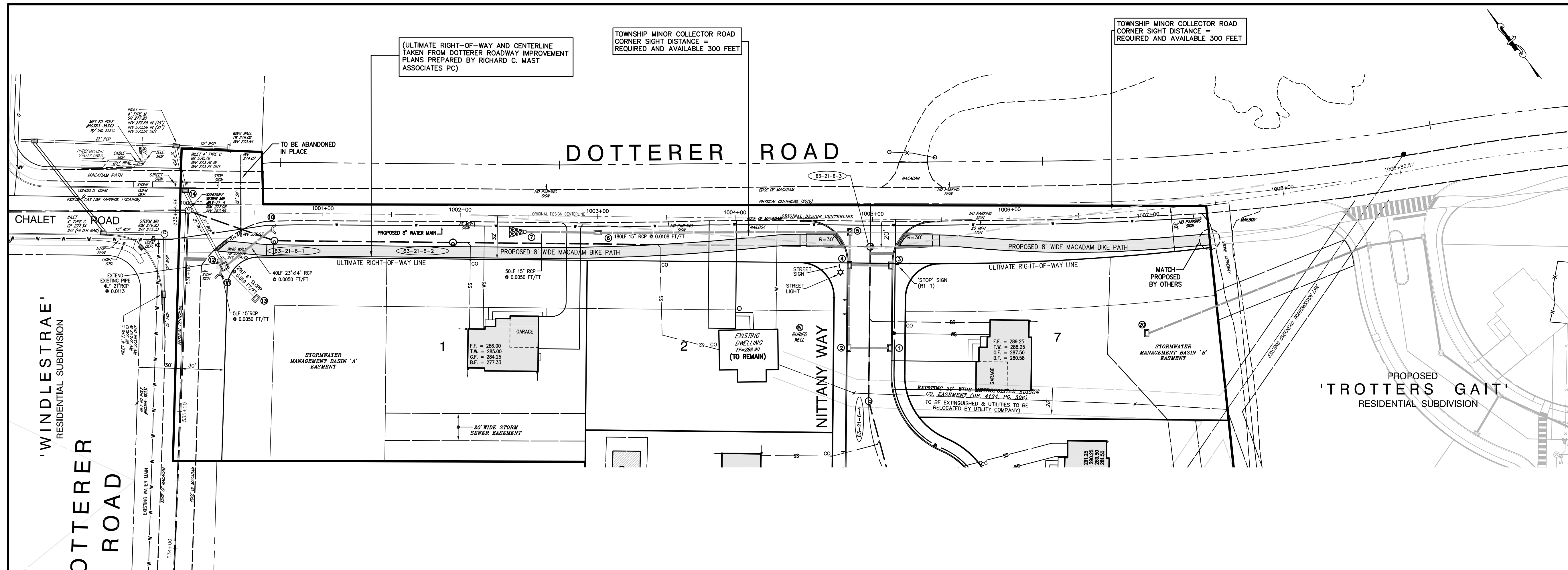
SITUATE IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUNNYSIDE, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

Stormwater BMP Information Chart 5.8 revised March 15, 2016

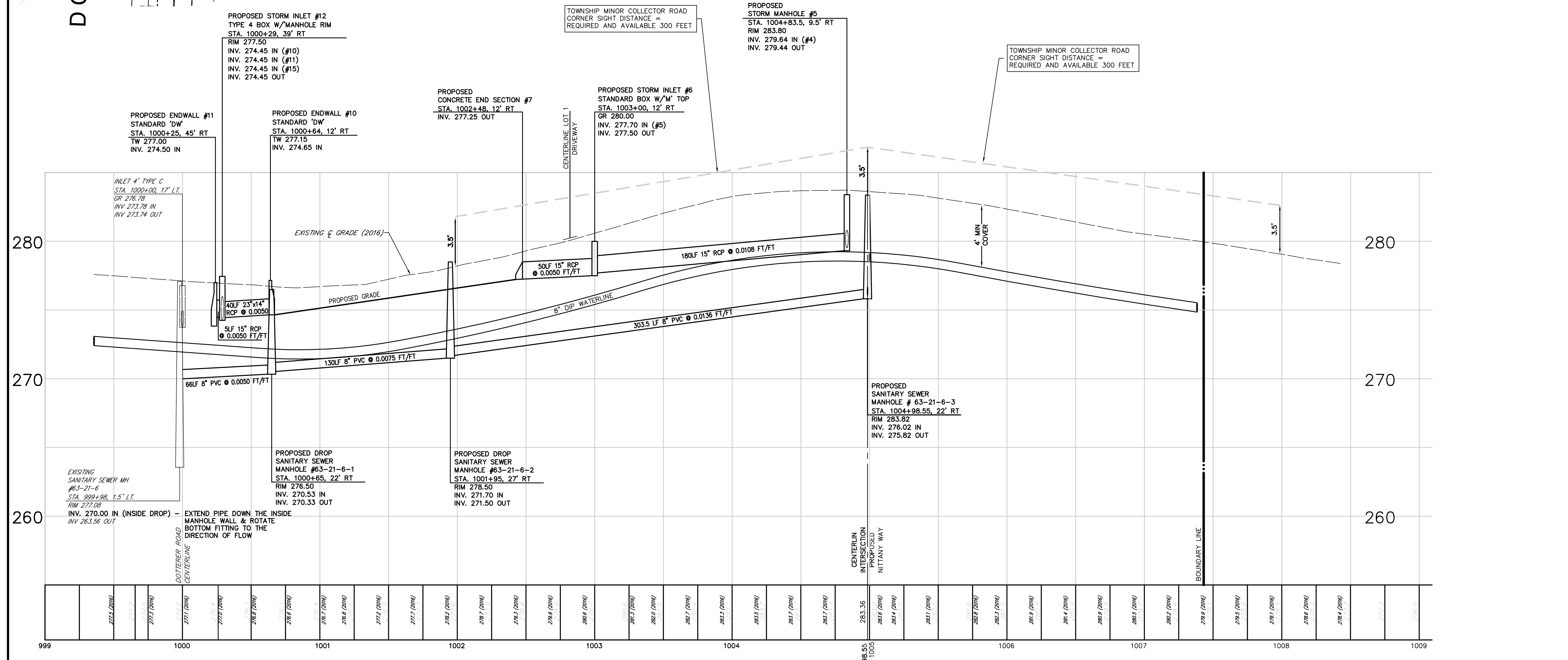
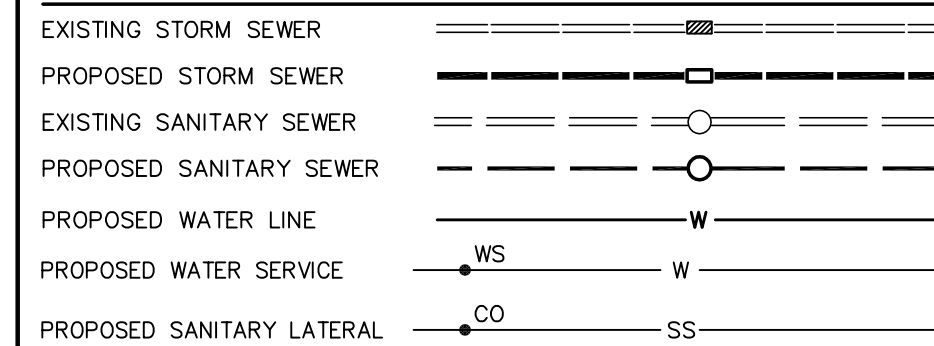
BMP #	Infiltration Information				Drainage Information					BMP Information					
	Measured Infiltration (g.p.m./ft.)	Factor of Safety (Min. of 2)	Design Infiltration Rate (g.p.m./ft.)	Designing Time (hrs)	Total Water Tables (ft.)	Total Discharge Area to BMP (sq. ft.)	Infiltration Gaps (ft.)	Total Discharge Loading (lb./ft.)	Interconnected Loading (lb./ft.)	Volume of Runoff (ft.)	Volume of Runoff (ft.)	Volume of Runoff (ft.)	Volume of Runoff (ft.)	Elevation (ft.)	Elevation (ft.)
BMP 5.4.1															
BMP 5.4.2															
BMP 5.4.3															
BMP 5.4.4															
BMP 5.4.5															
BMP 5.4.6															
Other															



GENERAL NOTES

- SANITARY SEWER PIPE LENGTHS DETAIL DISTANCE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- REFER TO SHEET 18 FOR SANITARY SEWER DETAILS AND NOTES.
- ALL MATERIALS USED AND ALL CONSTRUCTION METHODS EMPLOYED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR SANITARY SEWER EXTENSIONS FOR NEW HANOVER TOWNSHIP.
- THERE SHALL BE A MINIMUM LATERAL SEPARATION OF 10 FEET BETWEEN WATER MAINS AND SANITARY SEWERS. SHOULD IT BE NECESSARY FOR A SANITARY SEWER TO CROSS UNDER A WATER MAIN, THERE SHALL BE AT LEAST 18 INCHES OF VERTICAL SEPARATION; OTHERWISE THE SANITARY SEWER MUST BE ENCASED IN 6 INCHES OF CONCRETE FOR A DISTANCE OF 10 FEET ON BOTH SIDES OF THE AREA IN QUESTION.
- STORM SEWER PIPE LENGTHS DETAIL DISTANCE FROM OUTSIDE EDGE OF STRUCTURE TO OUTSIDE EDGE OF STRUCTURE.
- ALL REINFORCED CONCRETE PIPE (RCP) STORM SEWER SHALL HAVE 'O' RING JOINTS
- BICYCLE SAFE GRATES SHALL BE INSTALLED ON ALL INLETS LOCATED IN PAVED AREAS.

LEGEND

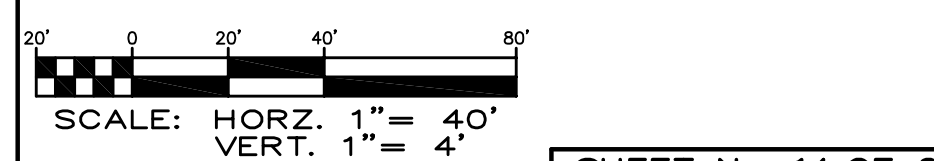


LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

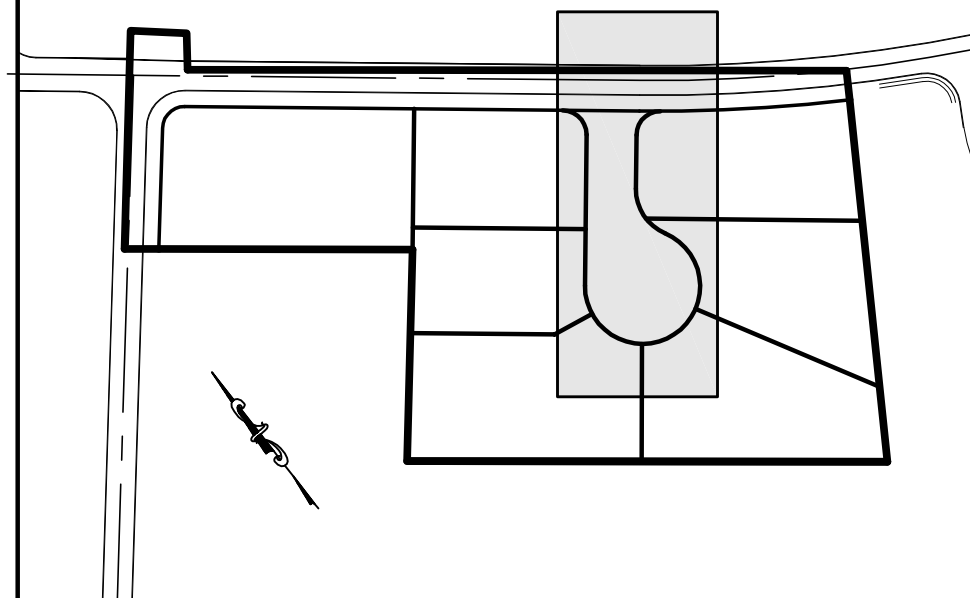
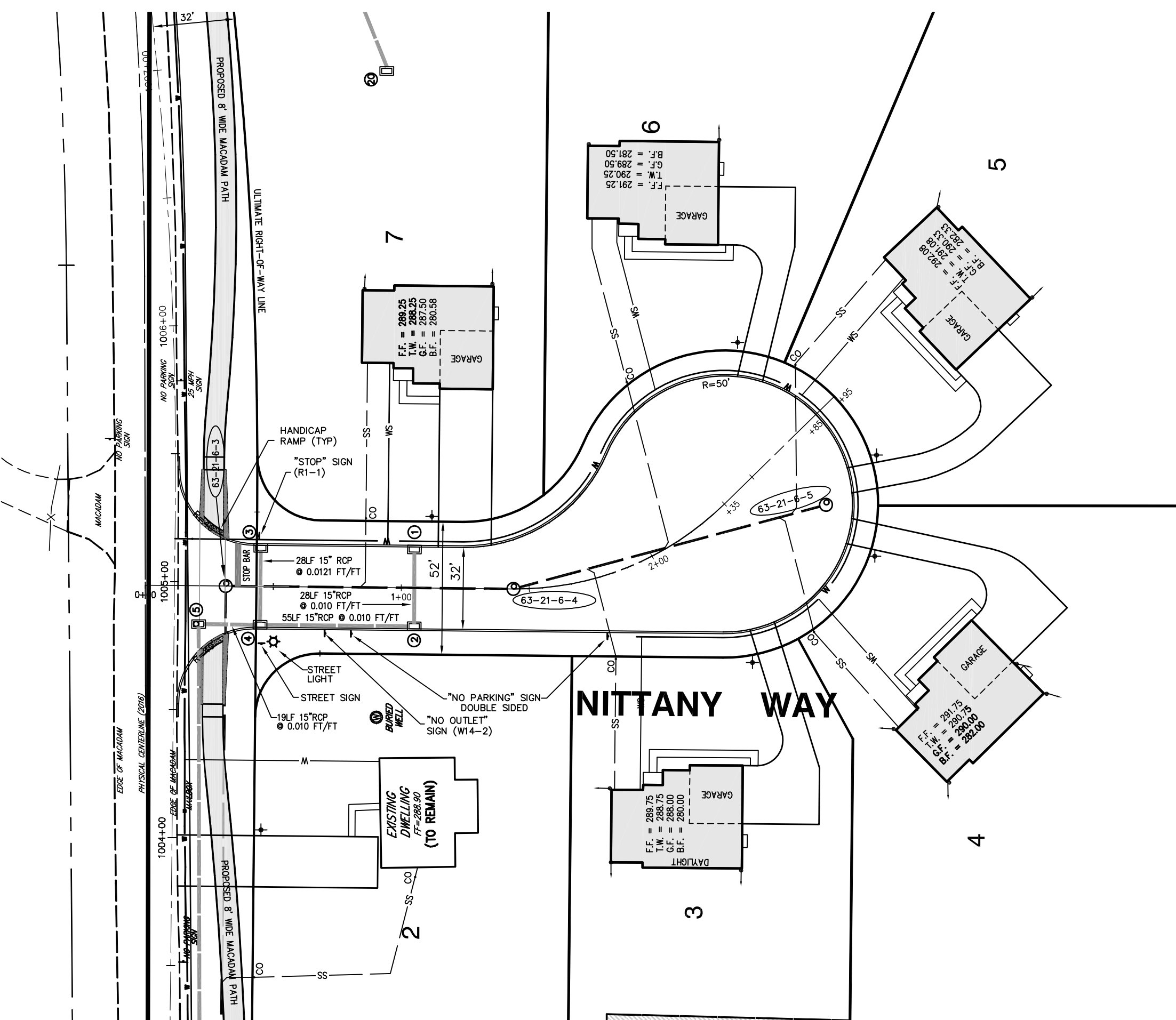
REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP. PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP. PLANNER LTR 3-31-08
	TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP. PLANNER LTR 9-4-07
	TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

DOTTERER ROAD CONSTRUCTION IMPROVEMENT PLAN "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.
 SITUATE IN
 NEW HANOVER TOWNSHIP
 MONTGOMERY COUNTY, PENNSYLVANIA
 JULY 9, 2007
 PROJECT No. 16086
 FILE: 16086-BASE



DOTTERER ROAD
(REFER TO SHEET 7)

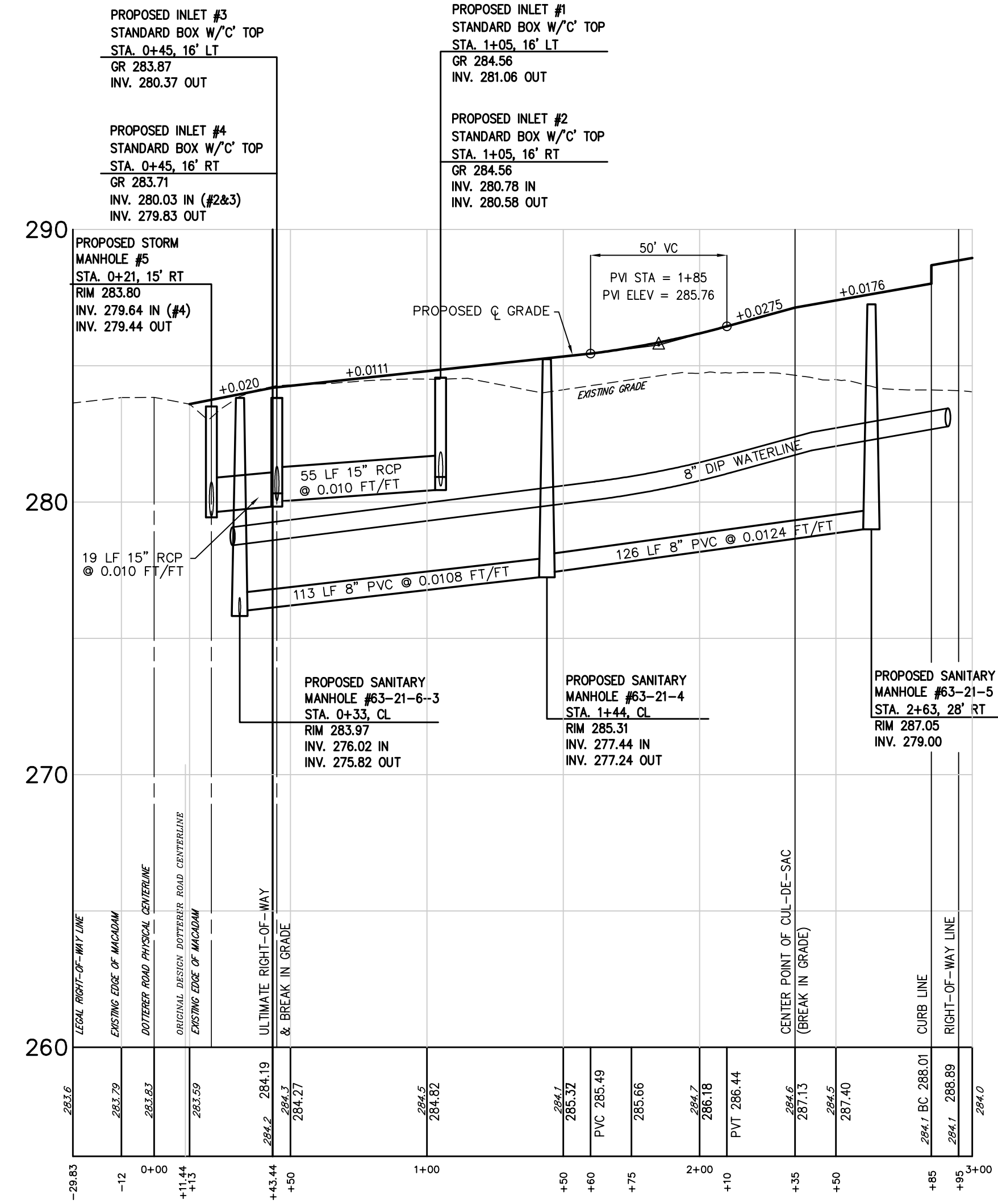
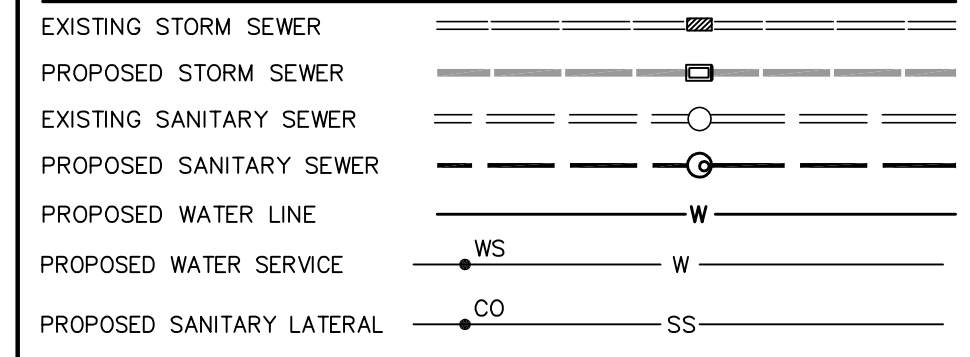


KEY LEGEND
SCALE: 1"=40'

GENERAL NOTES

- SANITARY SEWER PIPE LENGTHS DETAIL DISTANCE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- REFER TO SHEET 18 FOR SANITARY SEWER DETAILS AND NOTES.
- ALL MATERIALS USED AND ALL CONSTRUCTION METHODS EMPLOYED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR SANITARY SEWER EXTENSIONS FOR NEW HANOVER TOWNSHIP.
- THERE SHALL BE A MINIMUM LATERAL SEPARATION OF 10 FEET BETWEEN WATER MAINS AND SANITARY SEWERS. SHOULD IT BE NECESSARY FOR A SANITARY SEWER TO CROSS UNDER A WATER MAIN, THERE SHALL BE AT LEAST 18 INCHES OF VERTICAL SEPARATION; OTHERWISE THE SANITARY SEWER MUST BE ENCASED IN 6 INCHES OF CONCRETE FOR A DISTANCE OF 10 FEET ON BOTH SIDES OF THE AREA IN QUESTION.
- STORM SEWER PIPE LENGTHS DETAIL DISTANCE FROM OUTSIDE EDGE OF STRUCTURE TO OUTSIDE EDGE OF STRUCTURE.
- ALL REINFORCED CONCRETE PIPE (RCP) STORM SEWER SHALL HAVE 'O' RING JOINTS.
- BICYCLE SAFE GRATES SHALL BE INSTALLED ON ALL INLETS LOCATED IN PAVED AREAS.

LEGEND



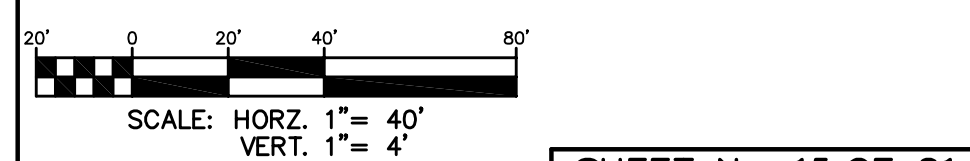
LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

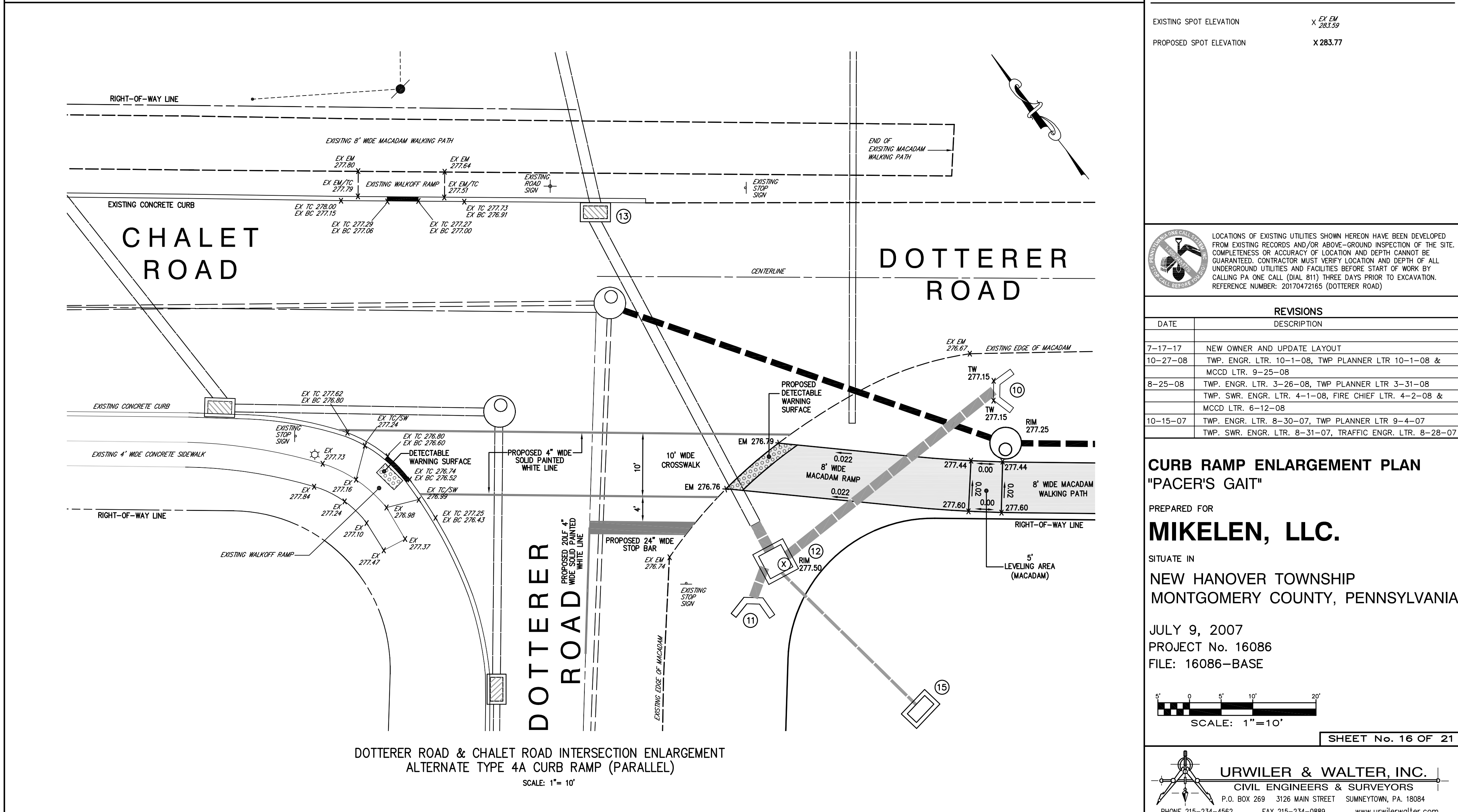
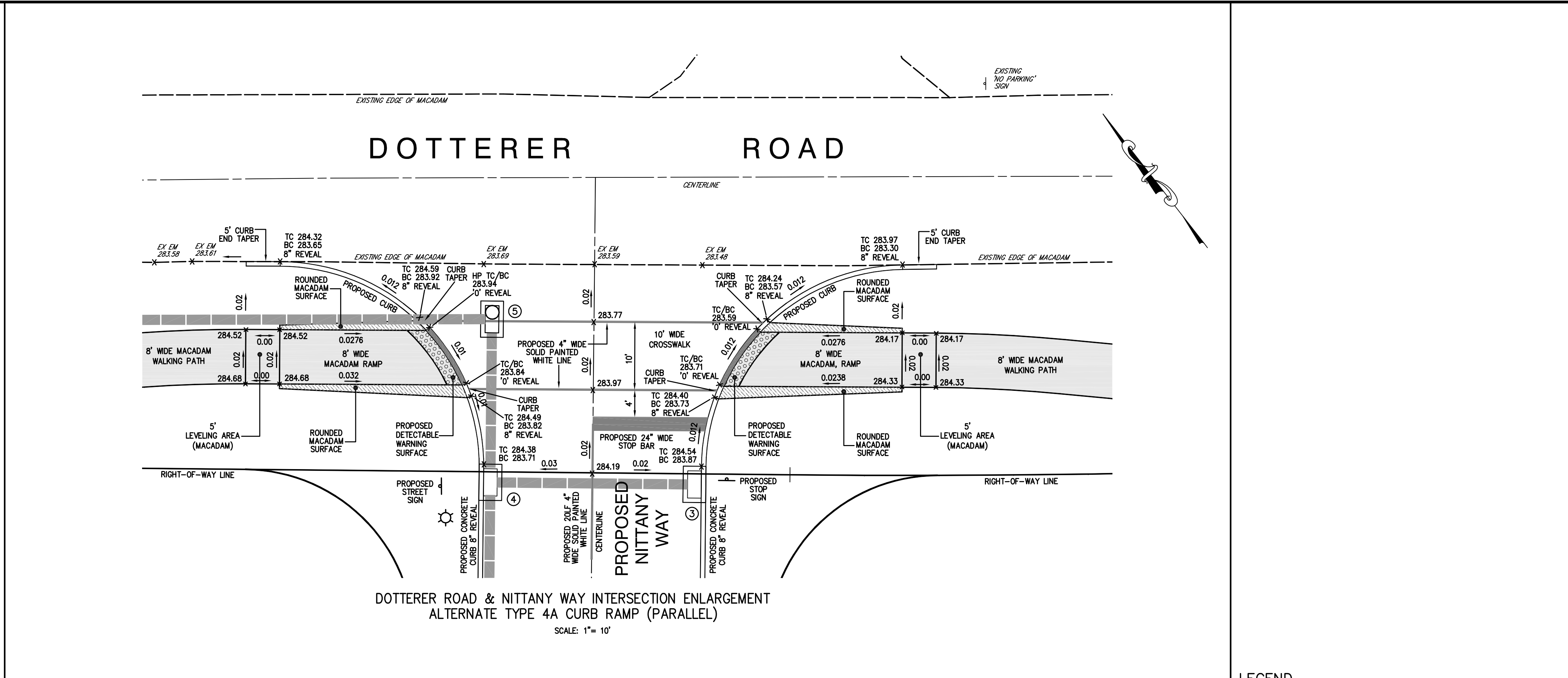
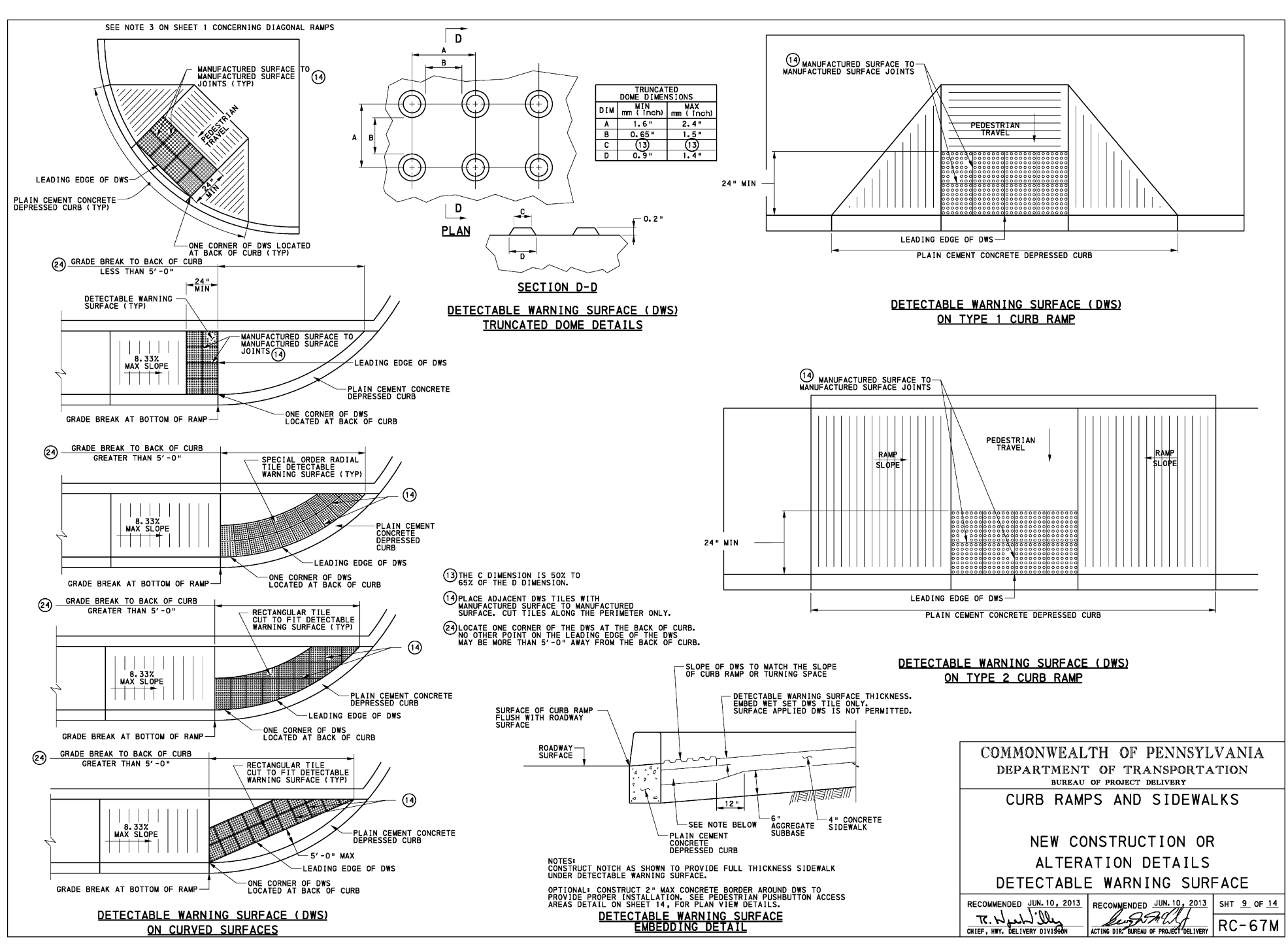
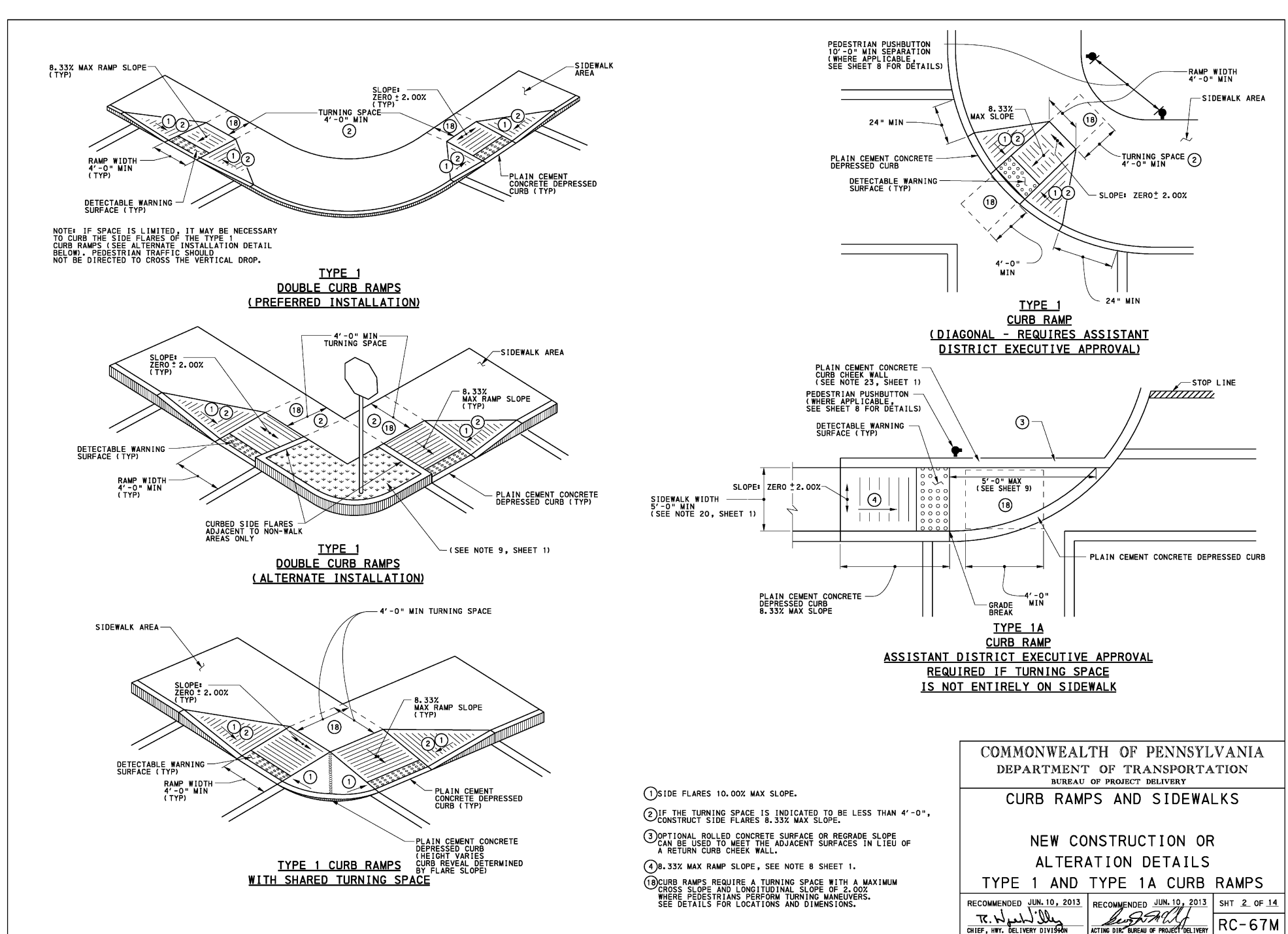
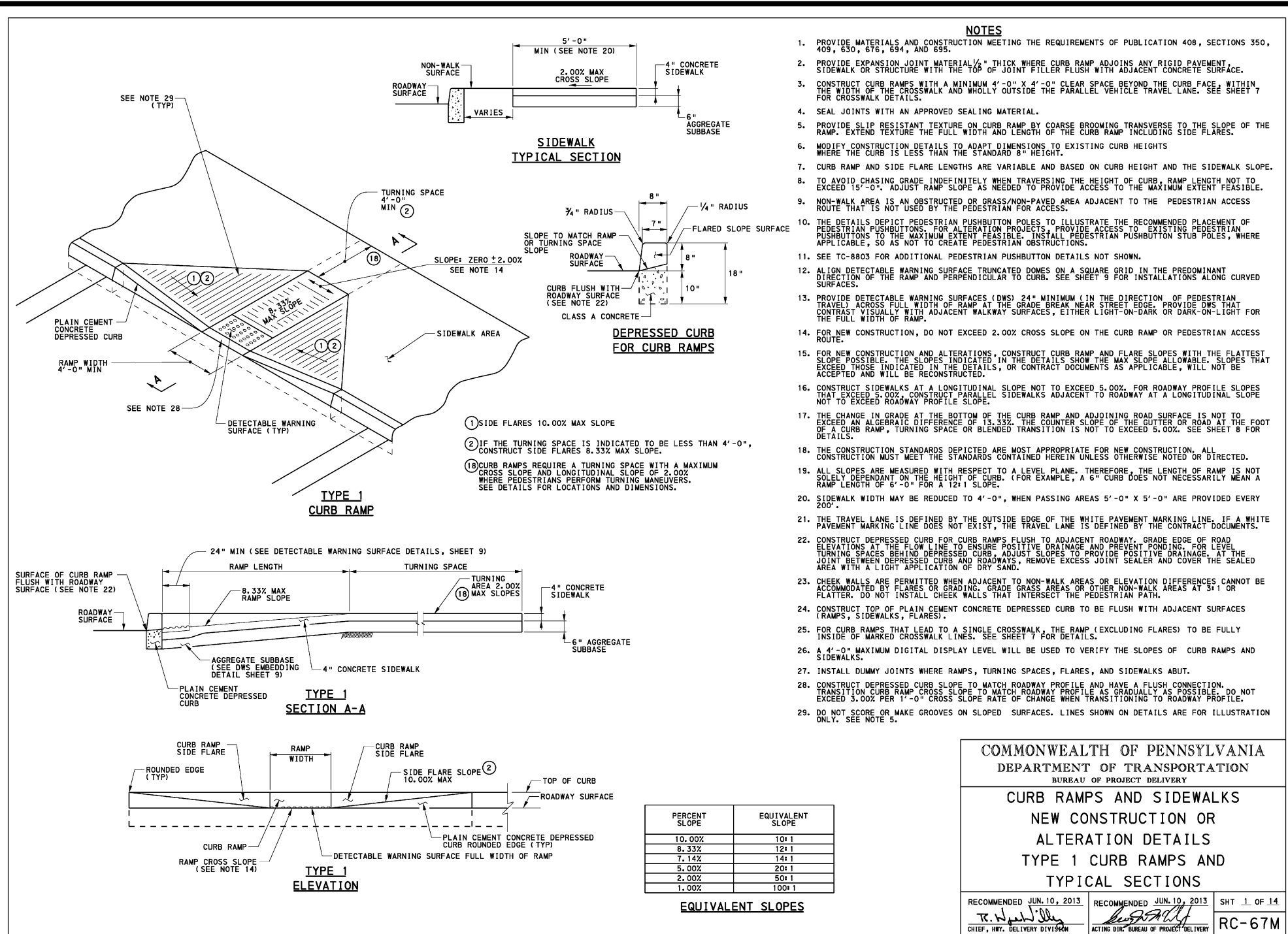
REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP. PLANNER LTR. 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP. PLANNER LTR. 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP. PLANNER LTR. 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

PROPOSED NITTANY WAY CONSTRUCTION IMPROVEMENT PLAN "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.
SITUATE IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE





LEGEND

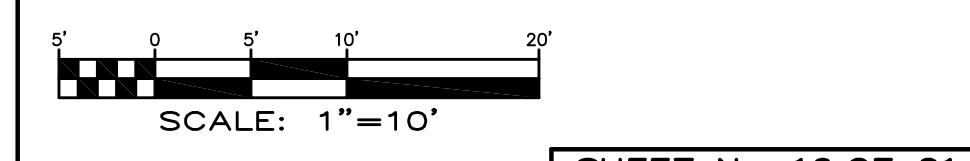
EXISTING SPOT ELEVATION	X EX EM 283.59
PROPOSED SPOT ELEVATION	X 283.77

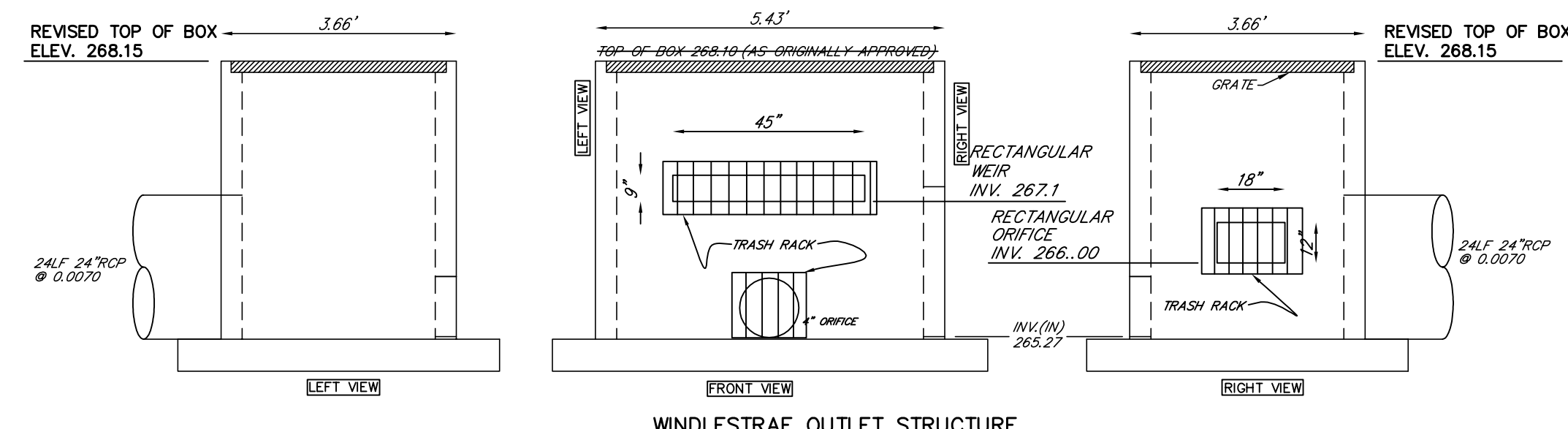
LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 2017042165 (DOTTERER ROAD)

REVISIONS

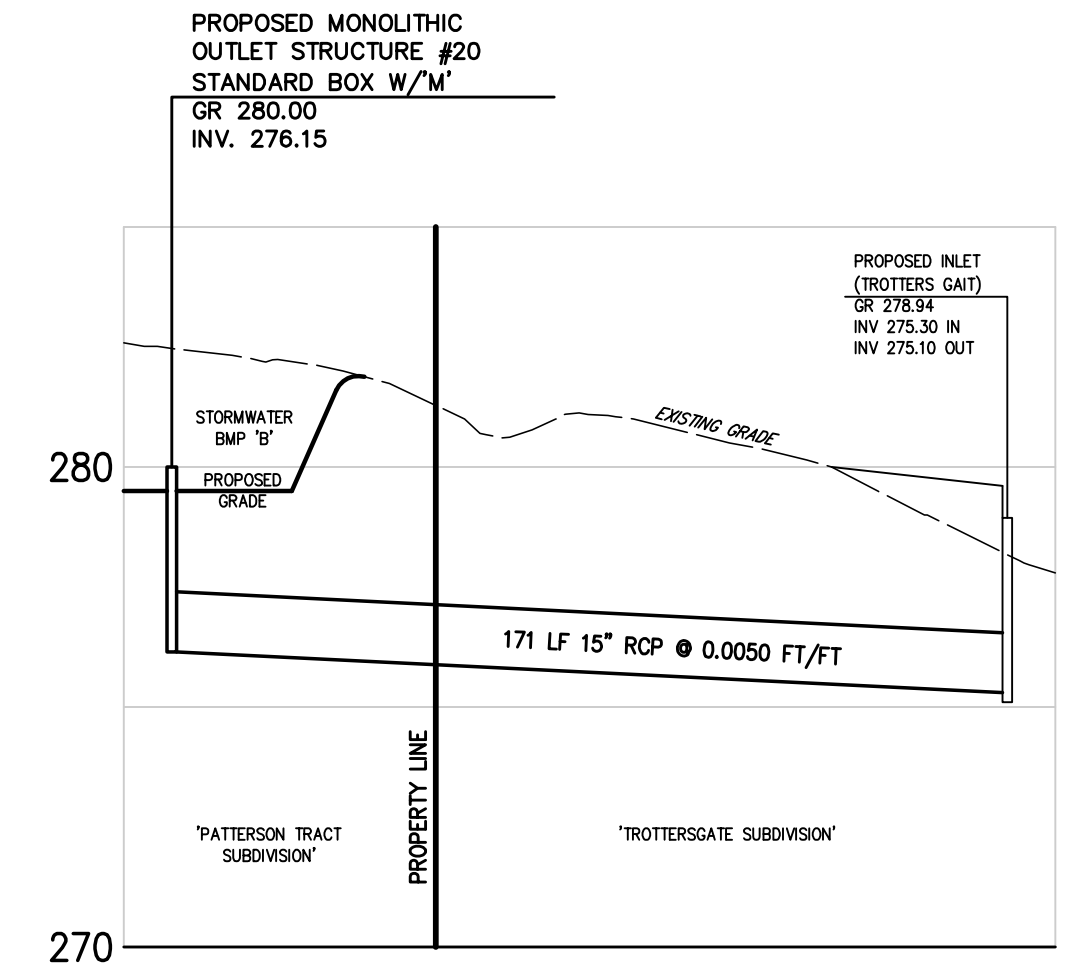
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

CURB RAMP ENLARGEMENT PLAN
"PACER'S GAIT"
 PREPARED FOR
MIKELN, LLC.
 SITUATE IN
 NEW HANOVER TOWNSHIP
 MONTGOMERY COUNTY, PENNSYLVANIA
 JULY 9, 2007
 PROJECT No. 16086
 FILE: 16086-BASE



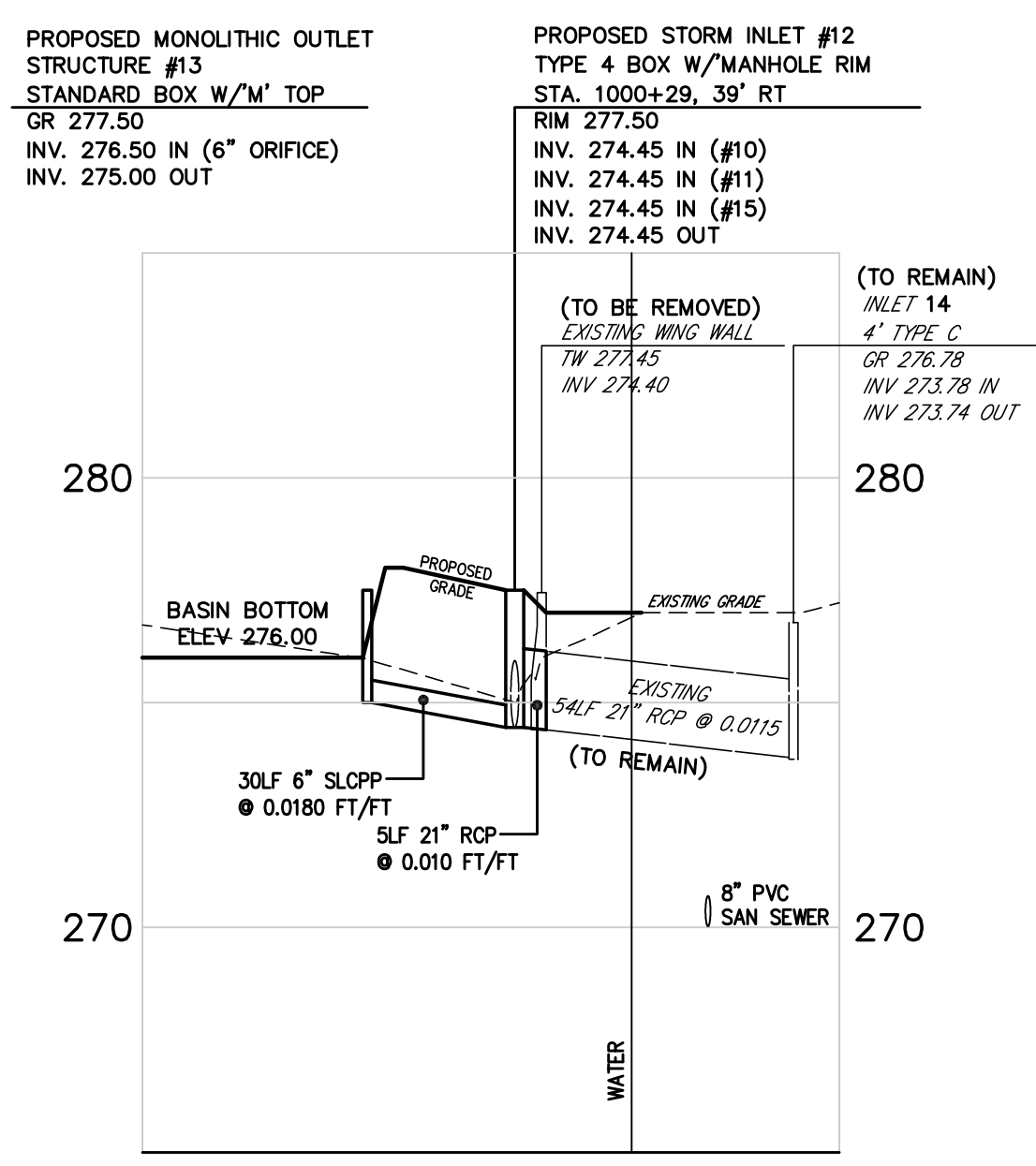


NOTE
 1. MODIFICATIONS TO BASIN 'B' OUTLET STRUCTURE FOR THE GAMBONE-PATTERSON TRACT SUBDIVISION. NO MODIFICATIONS TO BASIN BERM OR SPILLWAY REQUIRED



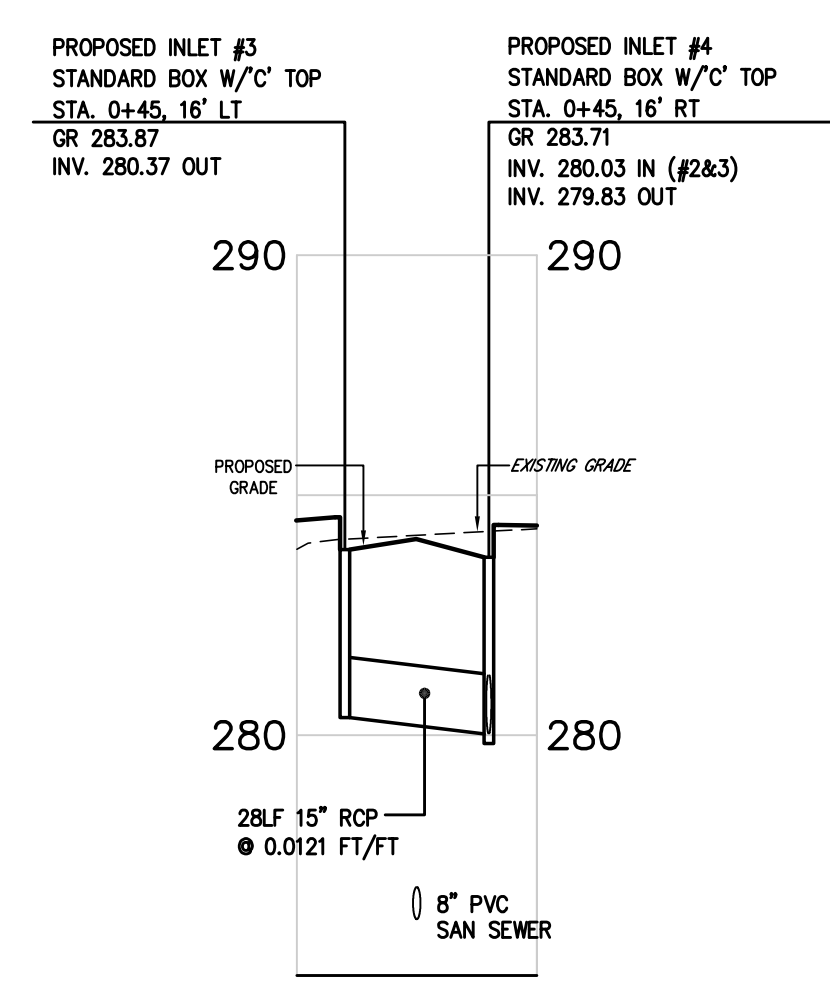
PROPOSED OUTLET STRUCTURE #20 TO PROPOSED INLET (TROTTERS GAIT) PROFILE

SCALE: HORZ. 1" = 40'
 VERT. 1" = 4'



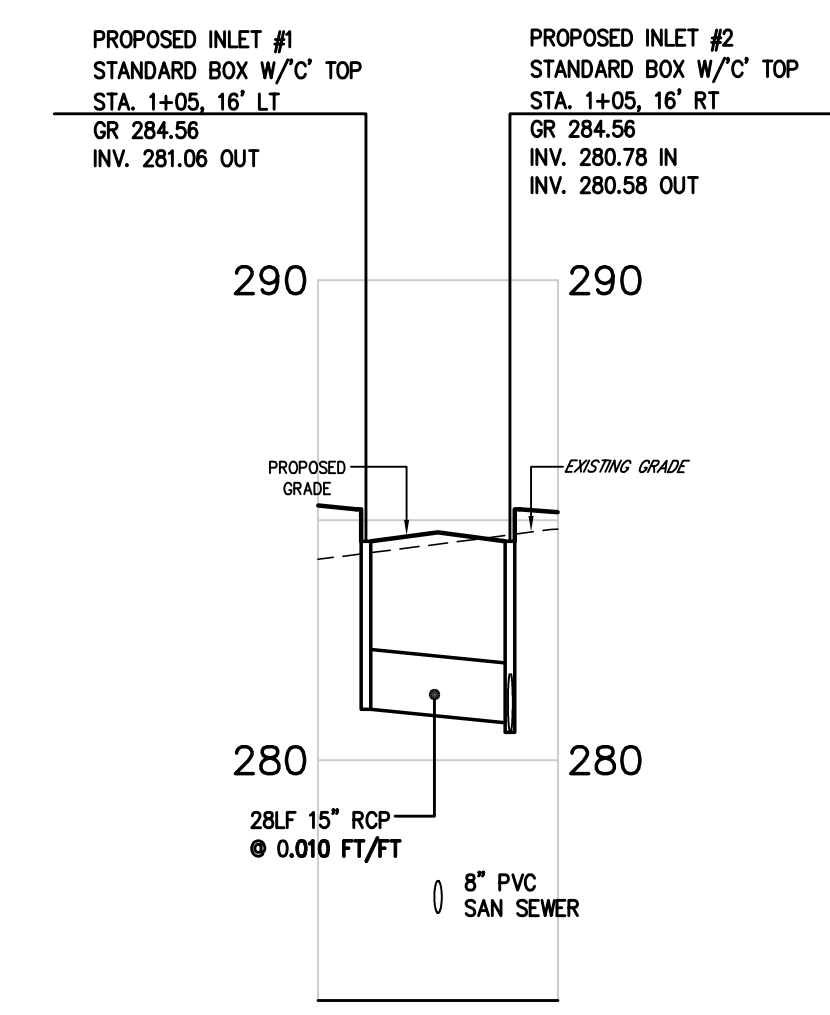
OUTLET STRUCTURE 13 TO EXISTING INLET 12 PROFILE

SCALE: HORZ. 1" = 40'
 VERT. 1" = 4'



INLET 3 TO INLET 4 PROFILE

SCALE: HORZ. 1" = 40'
 VERT. 1" = 4'



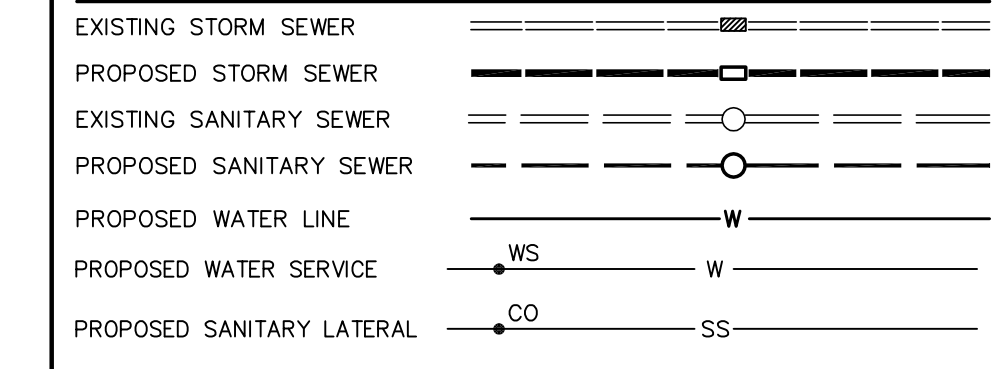
INLET 1 TO INLET 2 PROFILE

SCALE: HORZ. 1" = 40'
 VERT. 1" = 4'

GENERAL NOTES

- PIPE LENGTHS DETAIL DISTANCE FROM OUTSIDE EDGE OF STRUCTURE FOR STORM SEWER.
- THERE SHALL BE A MINIMUM LATERAL SEPARATION OF 10 FEET BETWEEN WATER MAINS AND SANITARY SEWERS. SHOULD IT BE NECESSARY FOR A SANITARY SEWER TO CROSS UNDER A WATER MAIN, THERE SHALL BE AT LEAST 18 INCHES OF VERTICAL SEPARATION; OTHERWISE THE SANITARY SEWER MUST BE ENCASED IN 6 INCHES OF CONCRETE FOR A DISTANCE OF 10 FEET ON BOTH SIDES OF THE AREA IN QUESTION.
- BICYCLE SAFE GRATES SHALL BE INSTALLED ON ALL INLETS LOCATED IN PAVED AREAS.
- ALL MATERIALS USED AND ALL CONSTRUCTION METHODS EMPLOYED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR SANITARY SEWER EXTENSIONS FOR NEW HANOVER TOWNSHIP.
- ALL REINFORCED CONCRETE PIPE (RCP) STORM SEWER SHALL HAVE 'O' RING JOINTS

LEGEND



LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

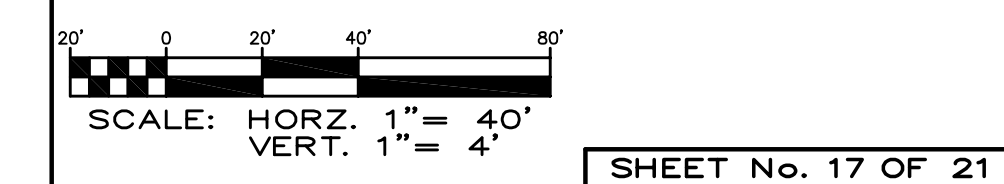
REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

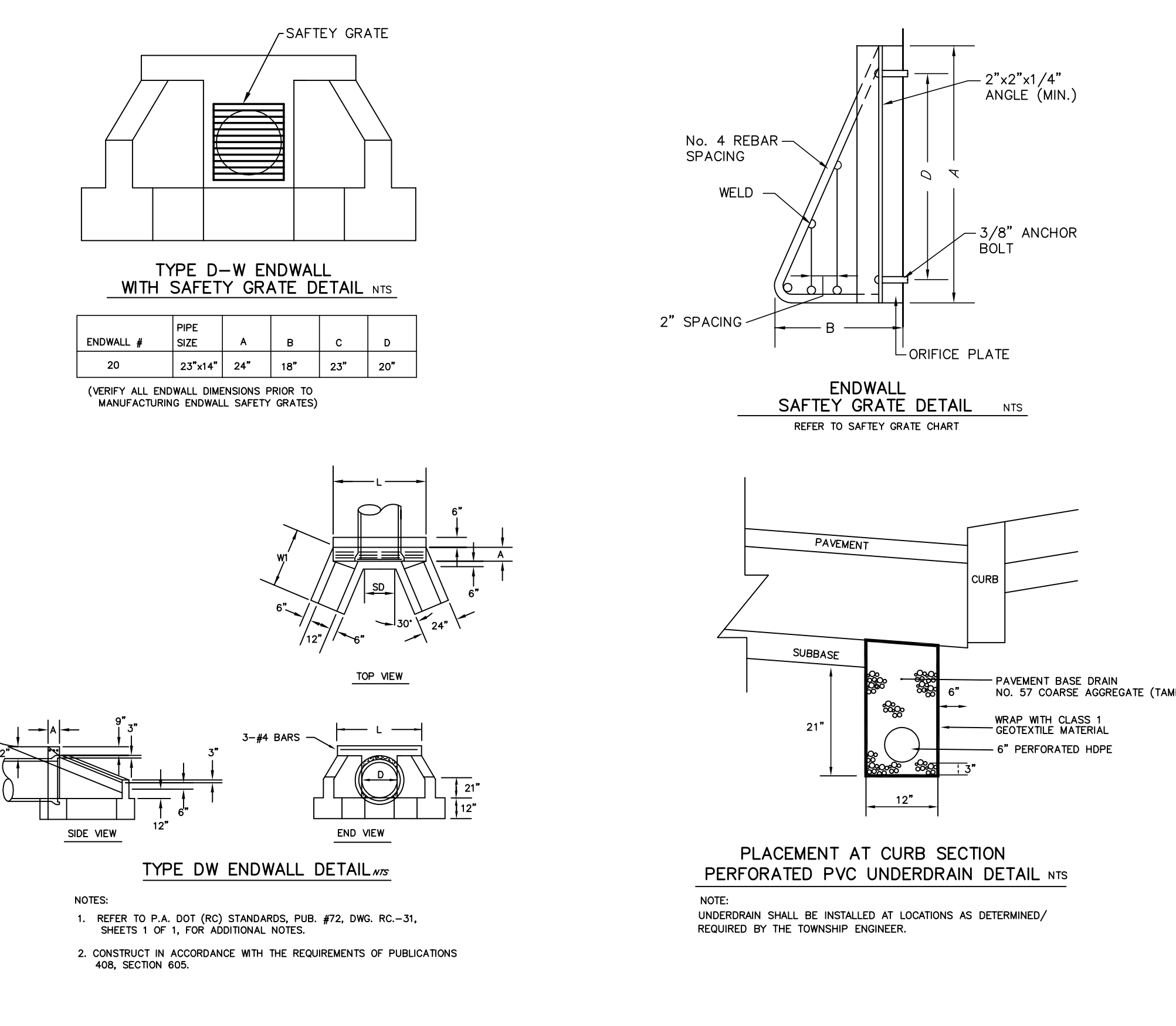
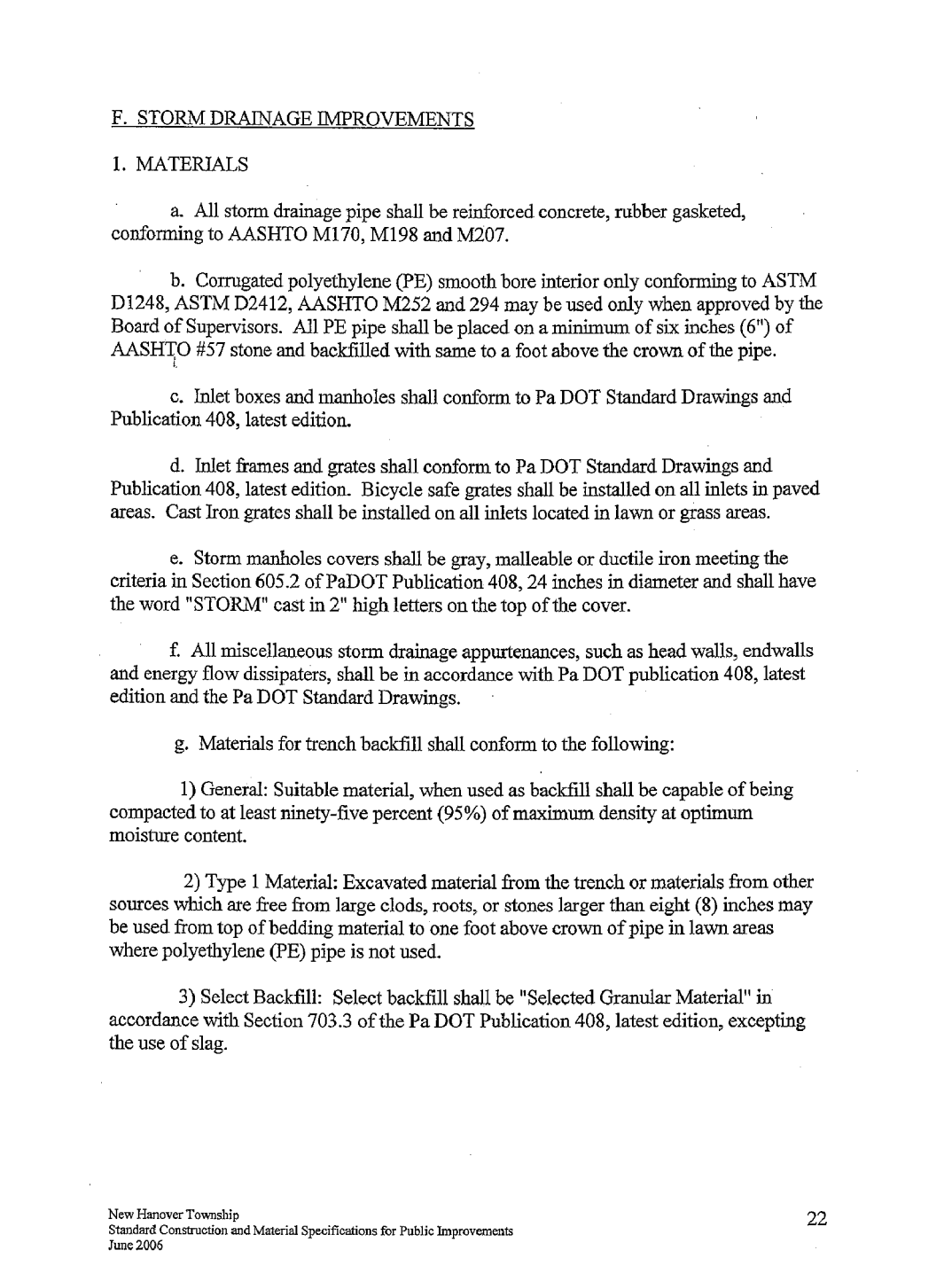
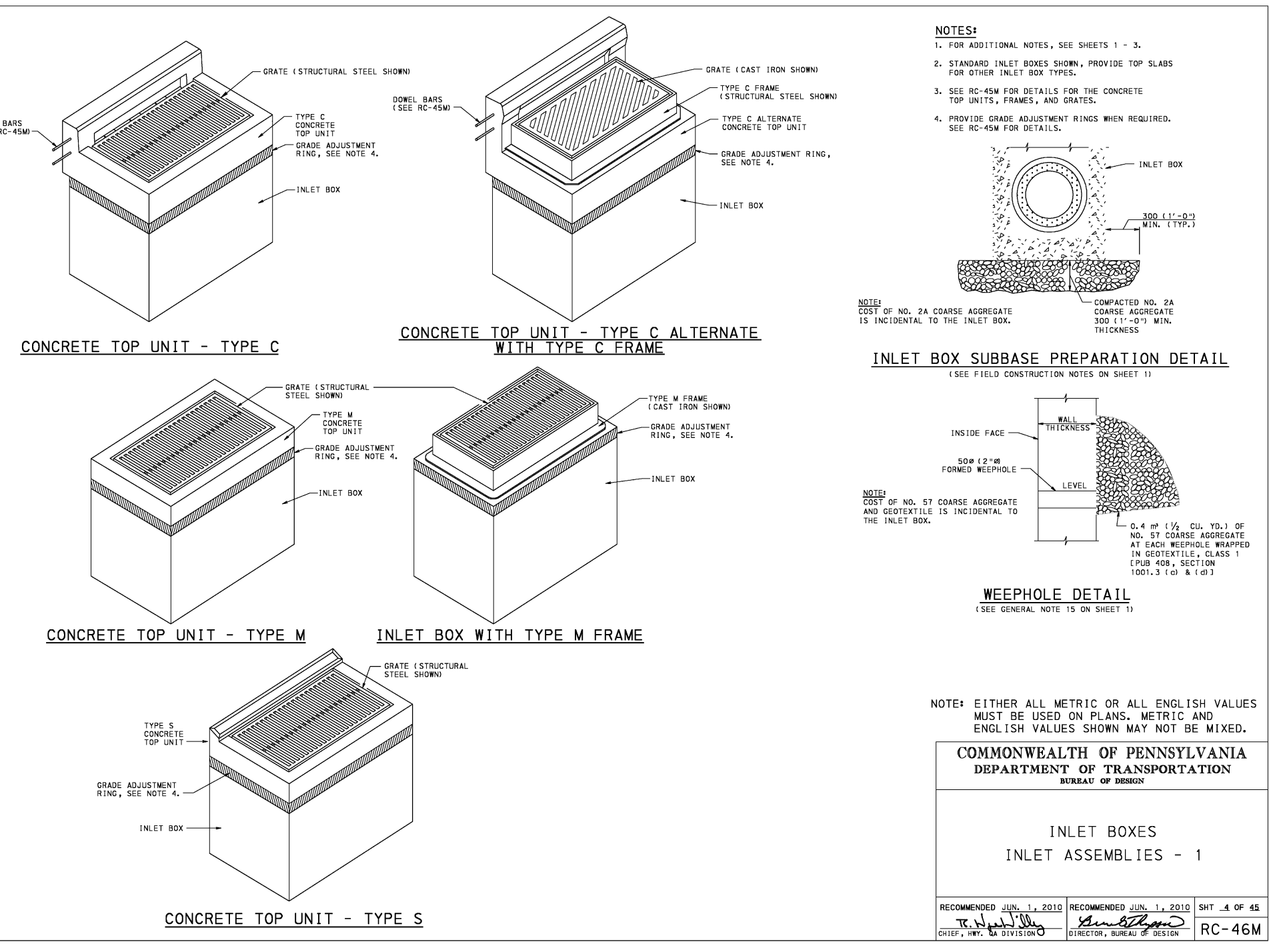
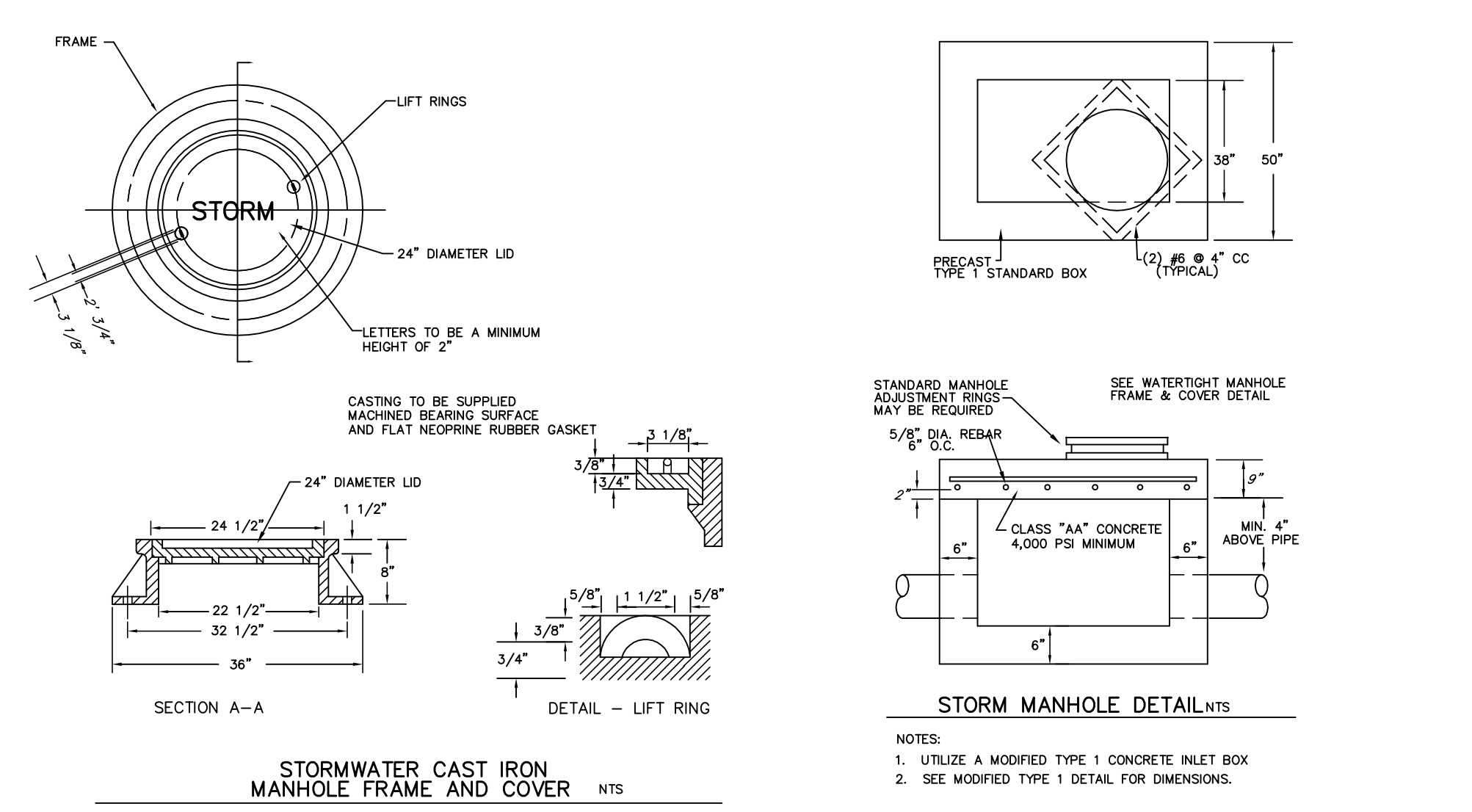
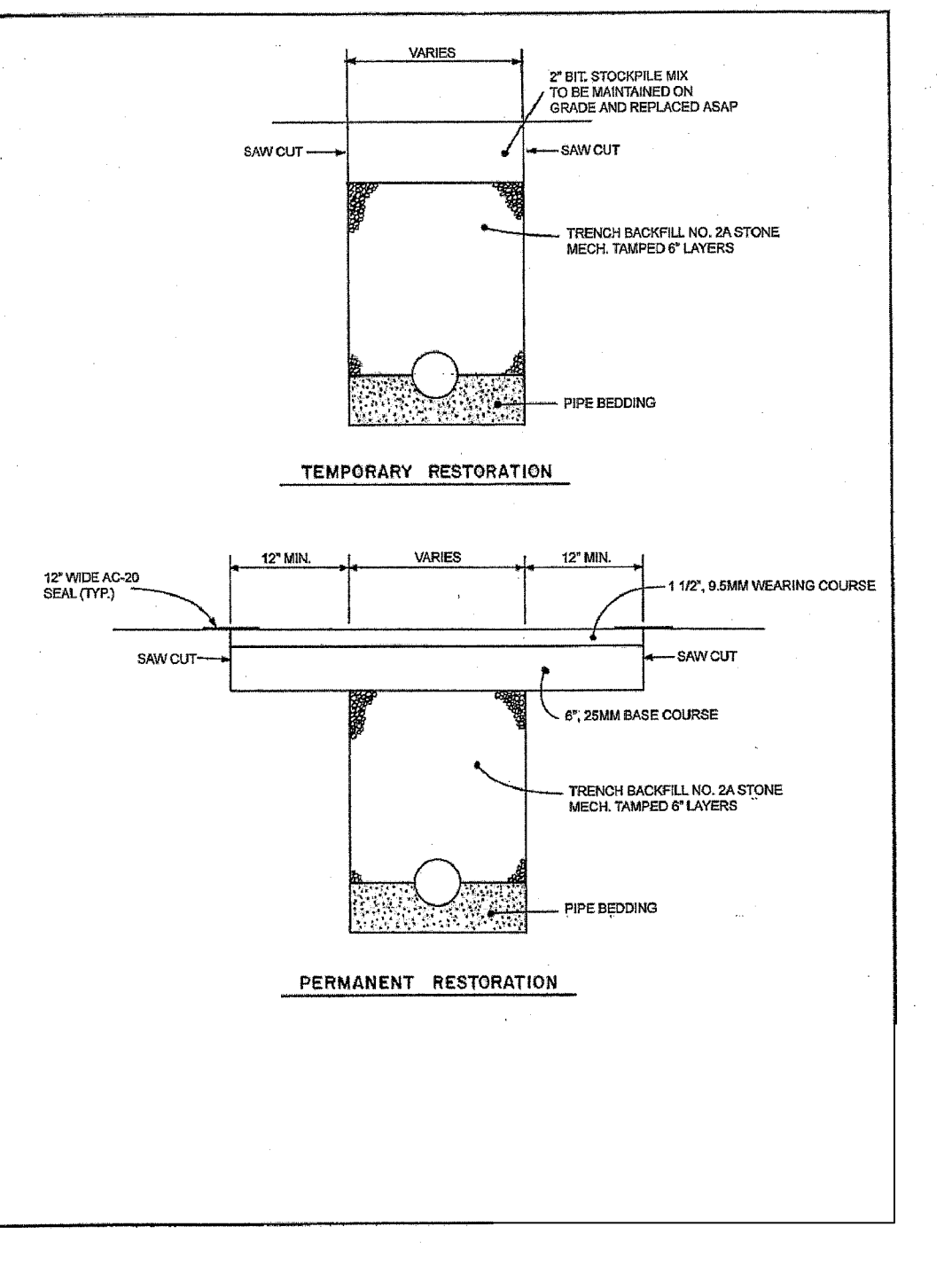
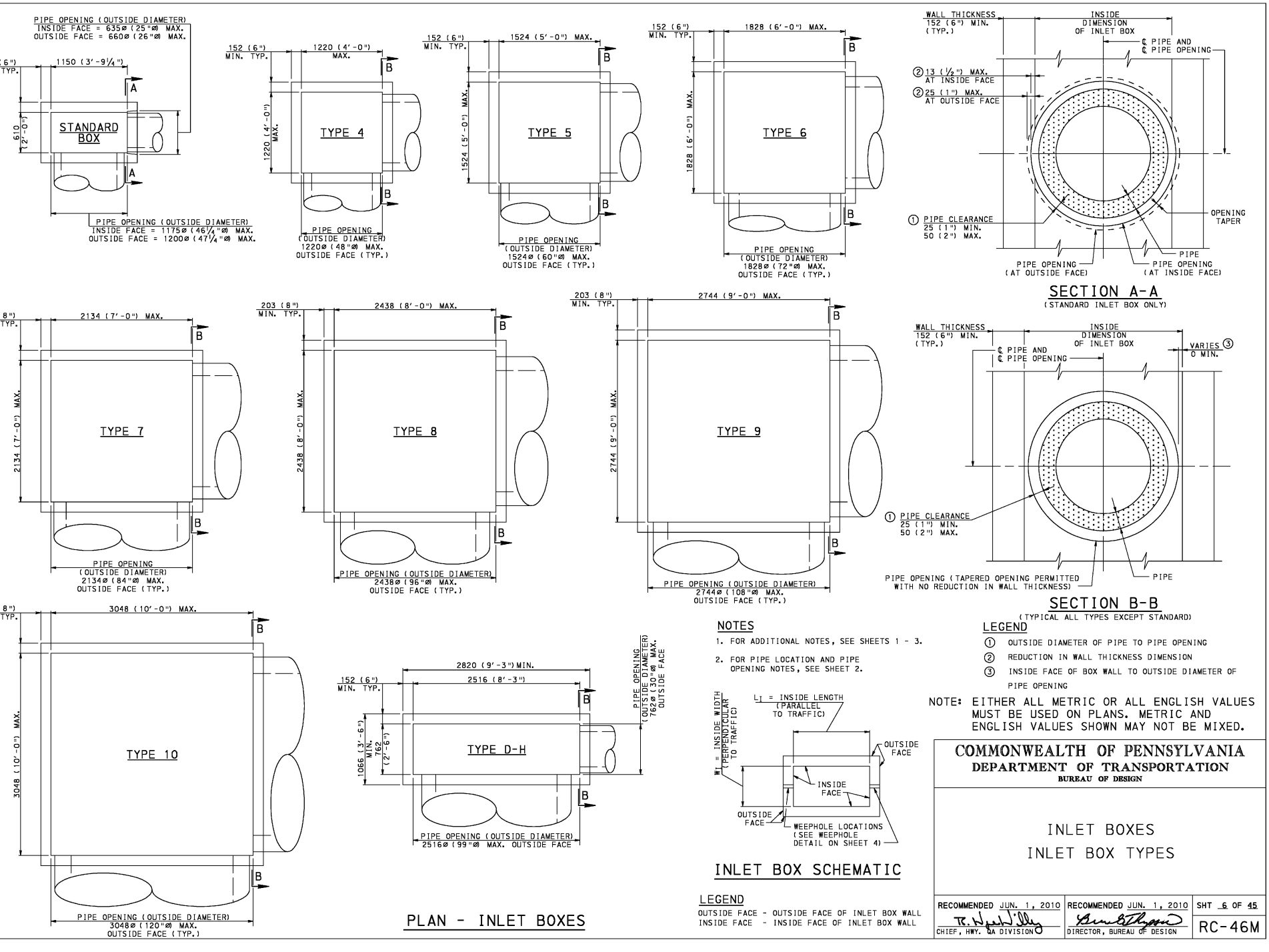
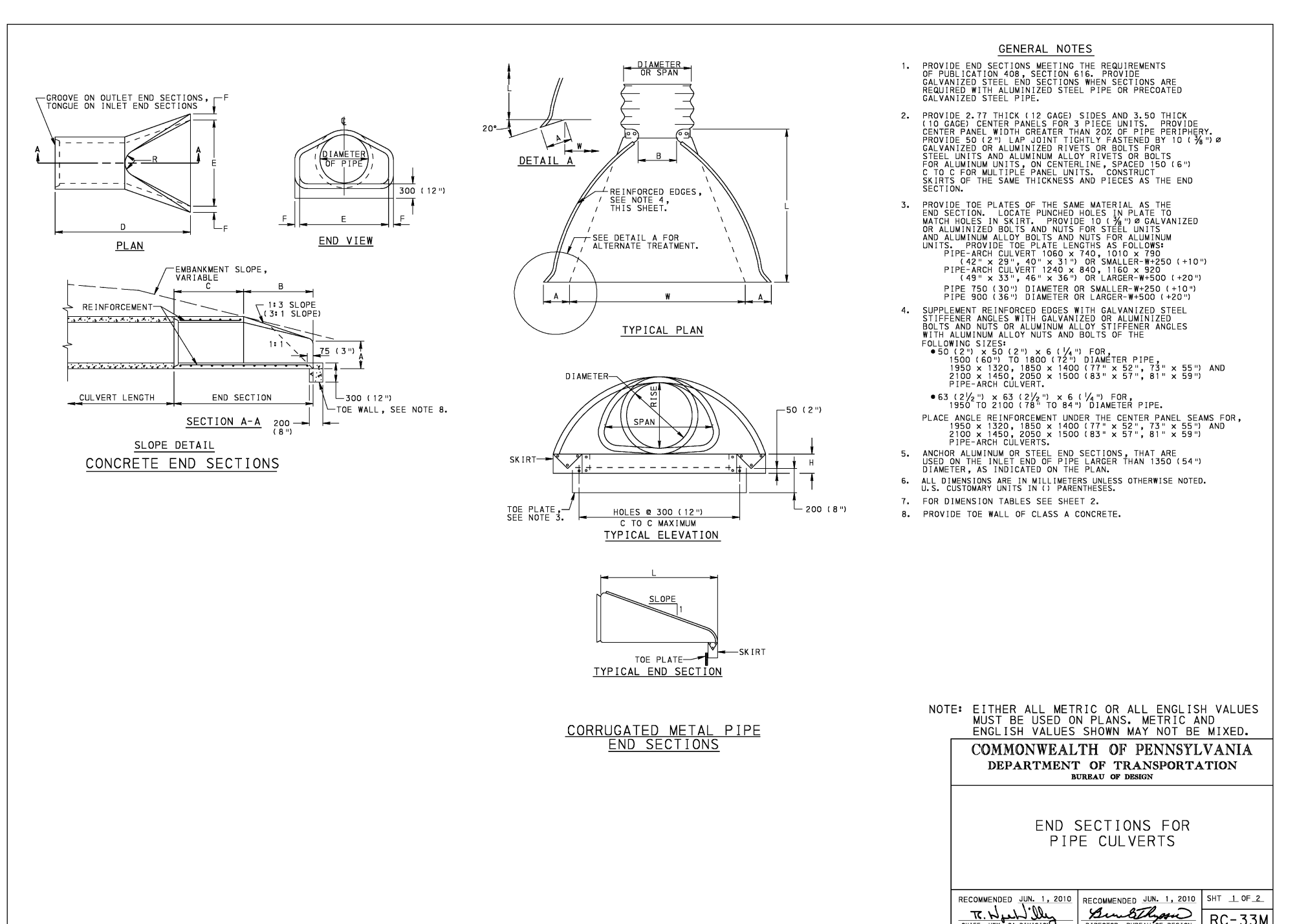
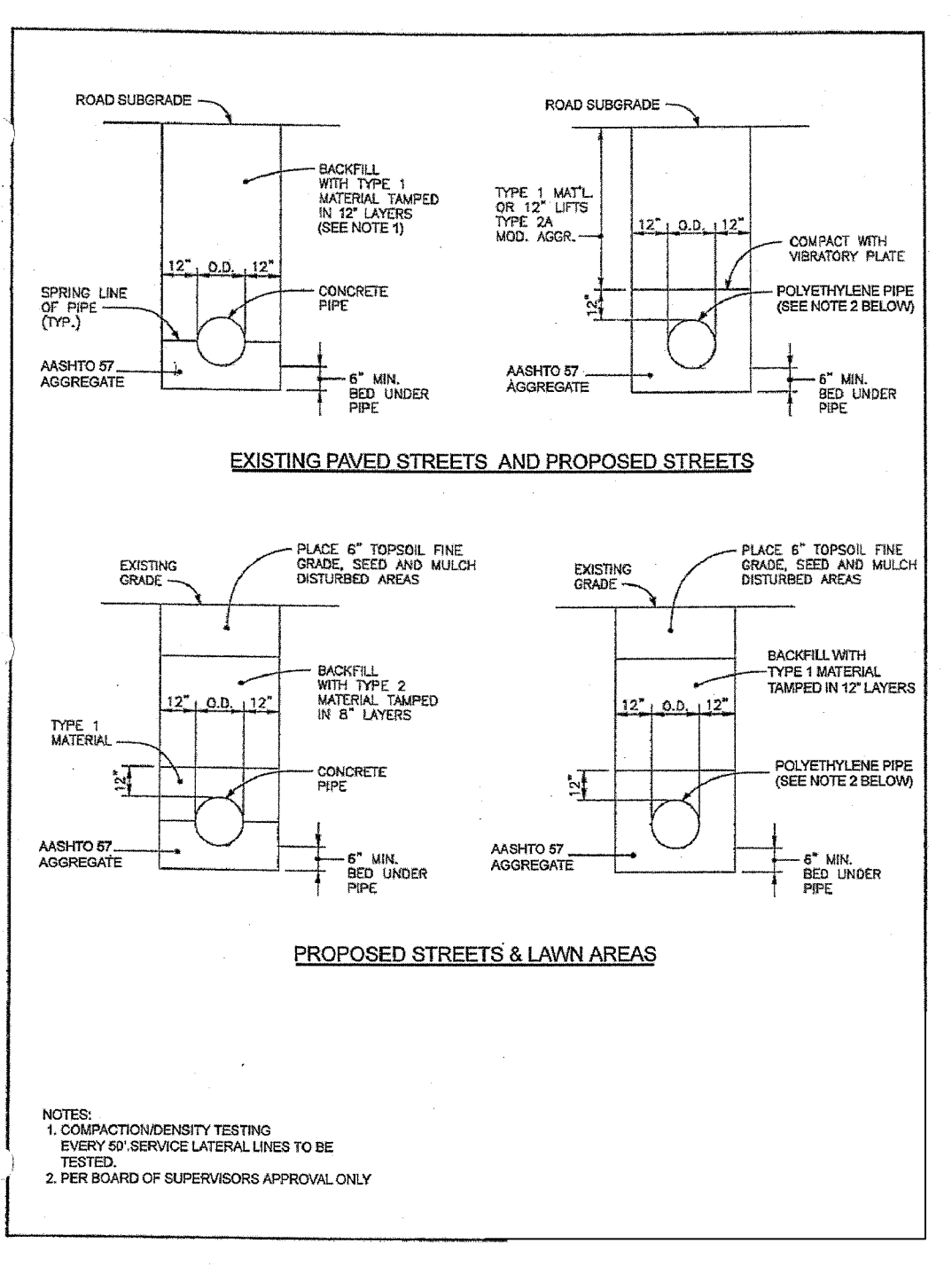
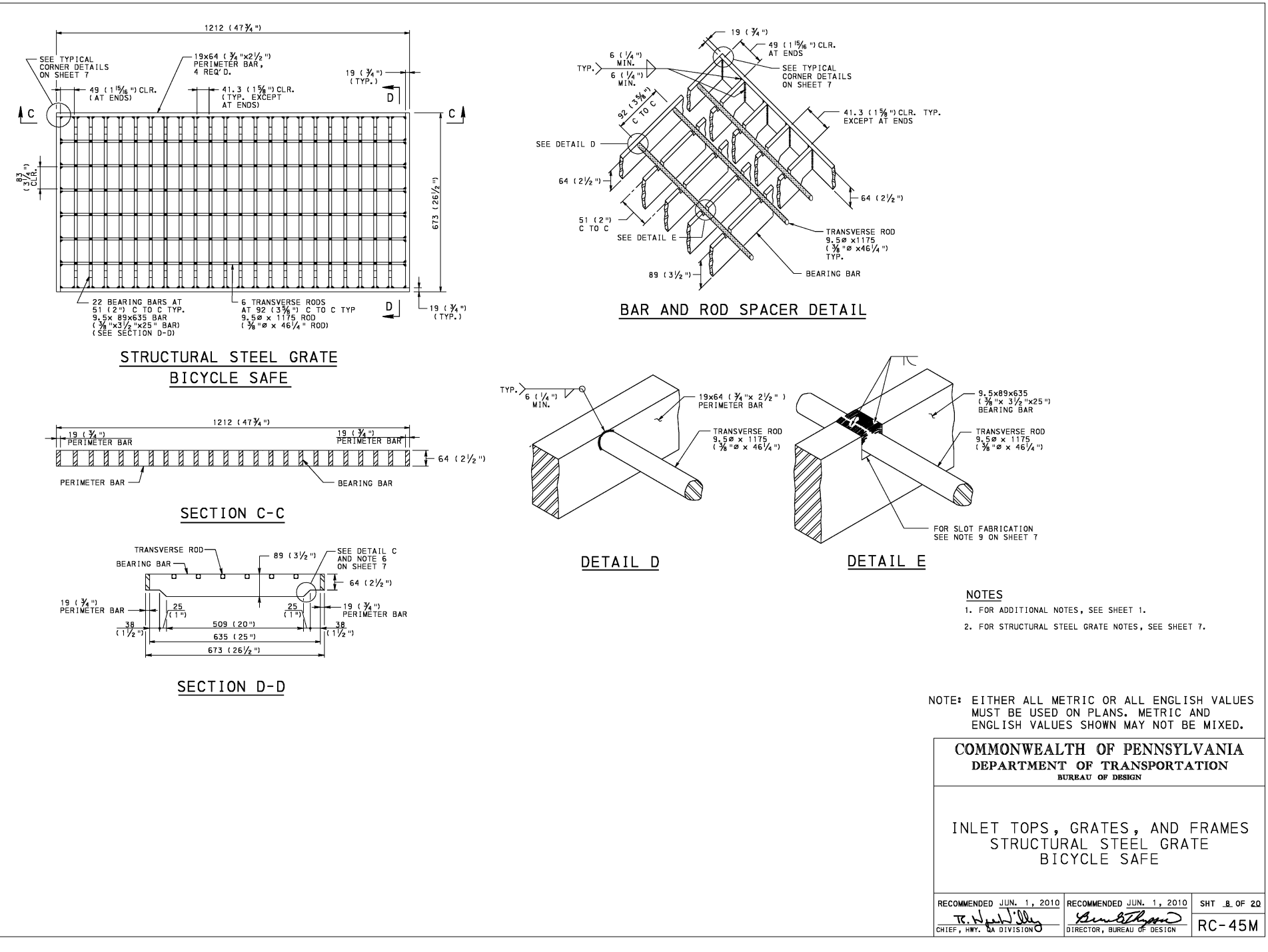
STORM SEWER PROFILE PLAN "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.

SITUATE IN
 NEW HANOVER TOWNSHIP
 MONTGOMERY COUNTY, PENNSYLVANIA

JULY 9, 2007
 PROJECT No. 16086
 FILE: 16086-BASE





- GENERAL NOTES**
- ALL REINFORCED CONCRETE PIPE (RCP) STORM SEWER SHALL HAVE "O" RING JOINTS
 - ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE NEW HANOVER TOWNSHIP "STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR PUBLIC IMPROVEMENTS" DATED JUNE 2006.
 - ALL INLETS MUST BE PROVIDED WITH A DECAL THAT READS "DRAINS TO CREEK"

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOT/REER ROAD)

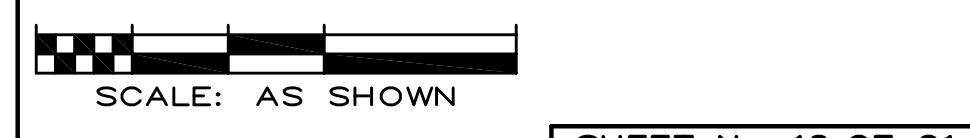
REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP. PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP. PLANNER LTR 3-31-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP. PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

STORM SEWER DETAIL PLAN "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.

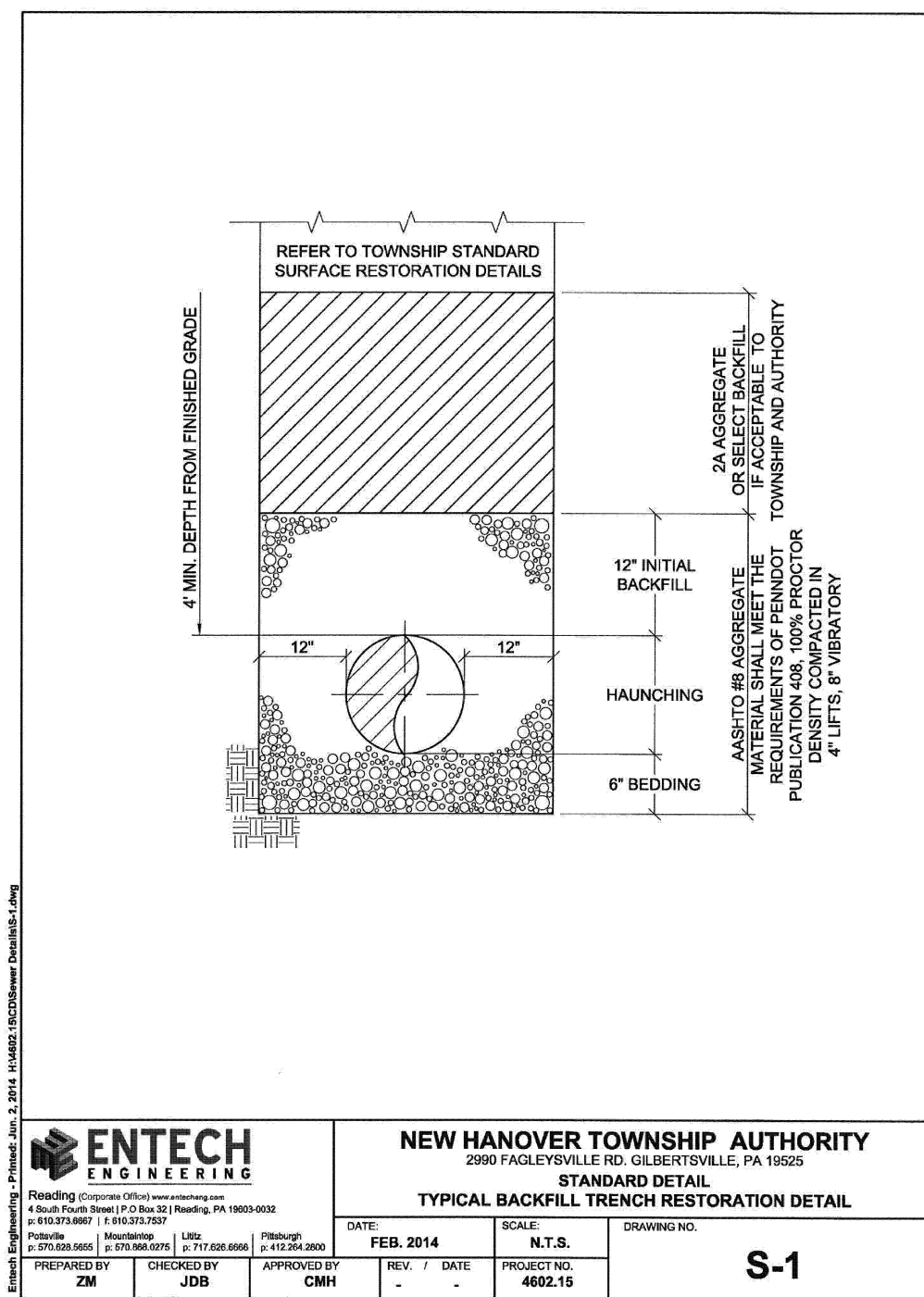
SITUATE IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE

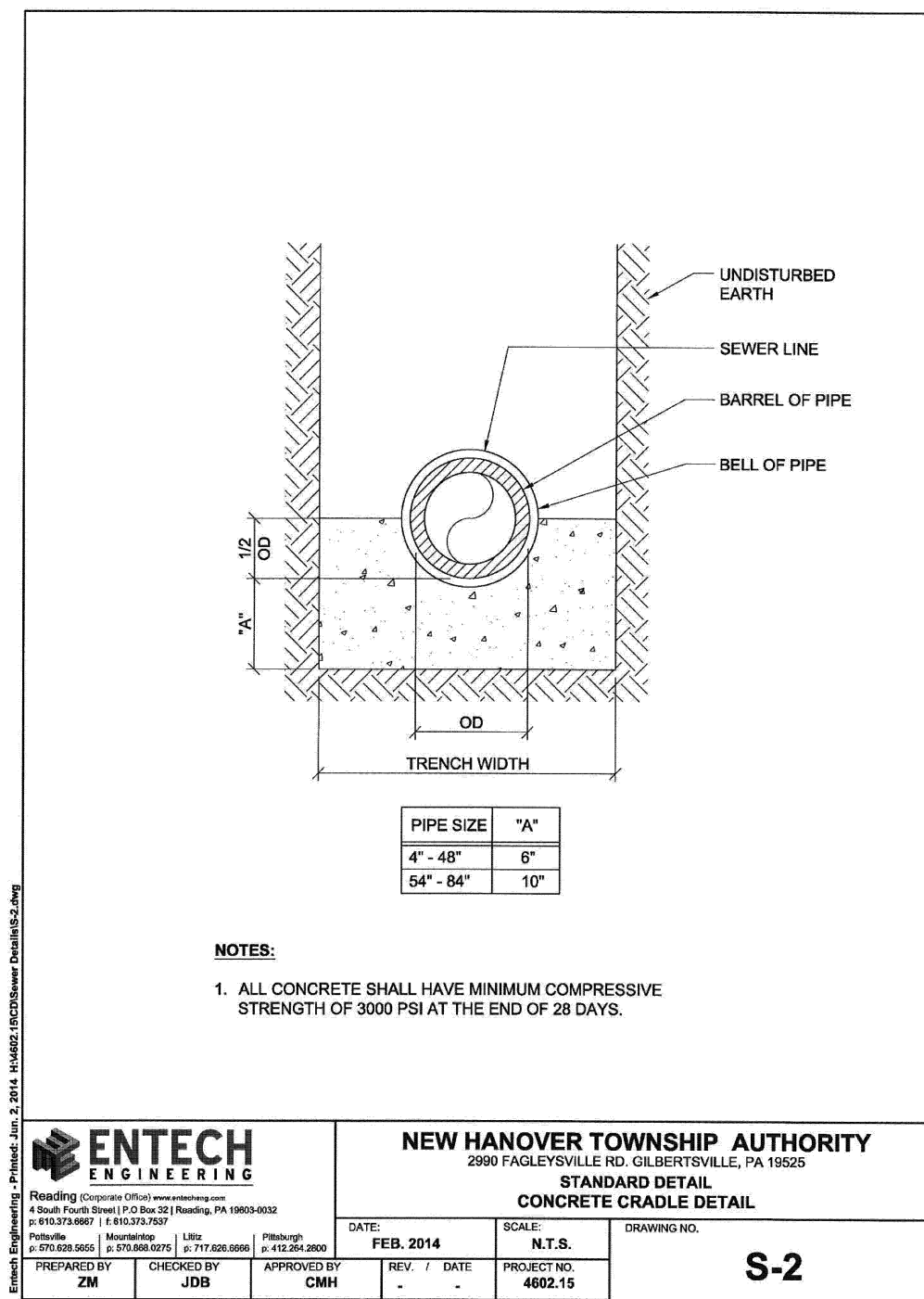


URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUNNYSIDE, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

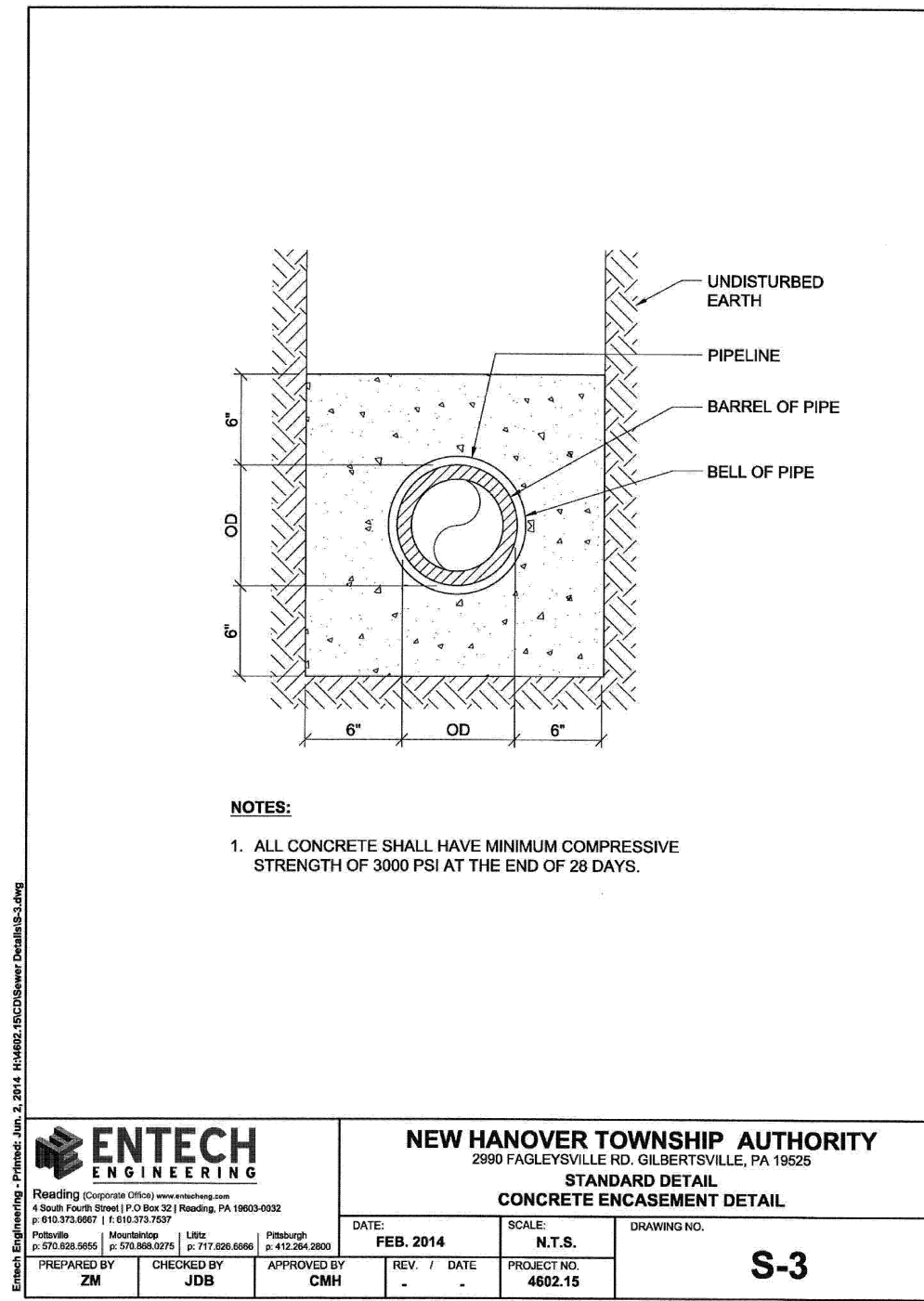
SHEET No. 18 OF 21



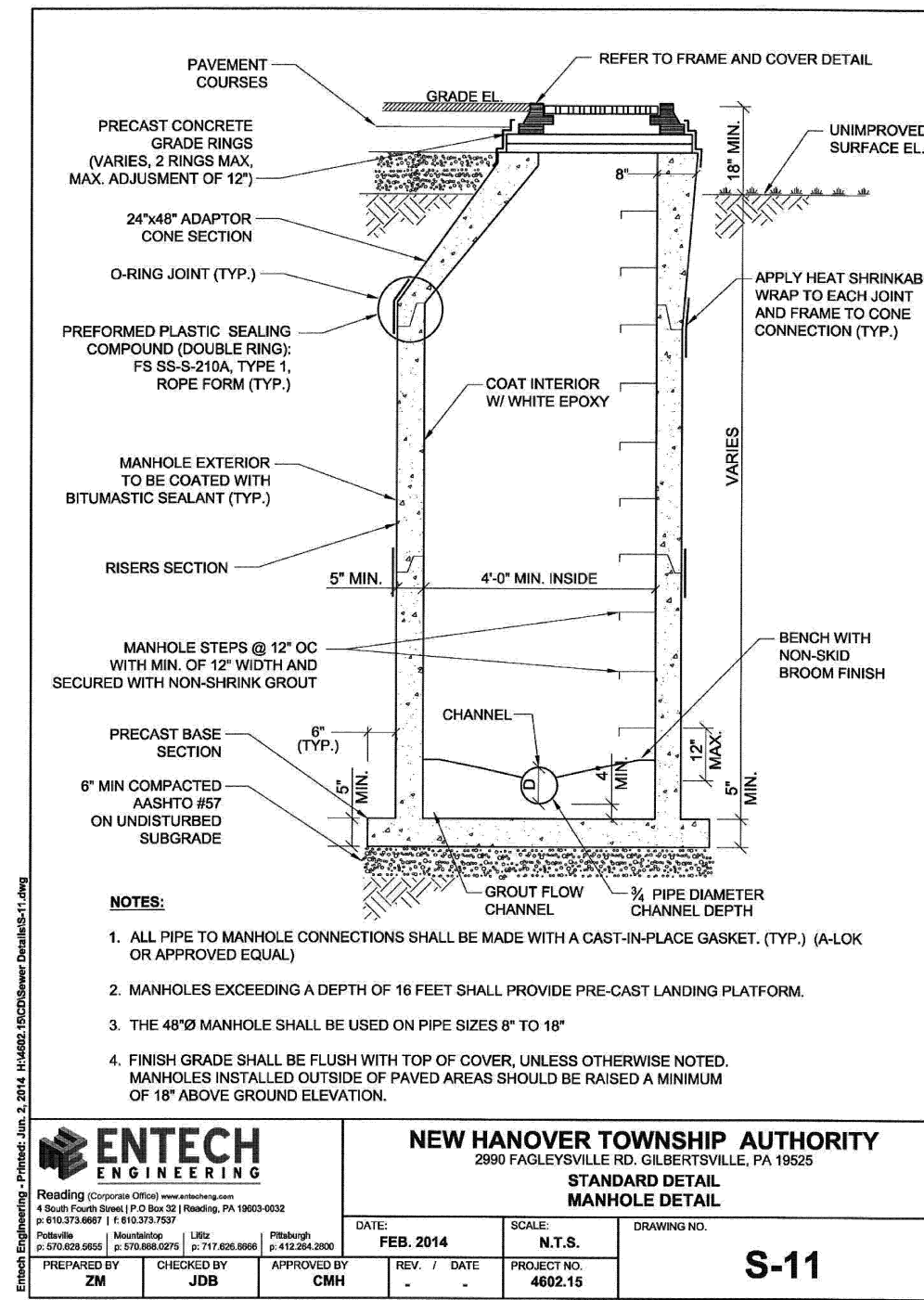
ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
TYPICAL BACKFILL TRENCH RESTORATION DETAIL		TYPICAL MANHOLE BASE CONFIGURATION DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-1	PROJECT NO. 4602.15	DRAWING NO. S-11



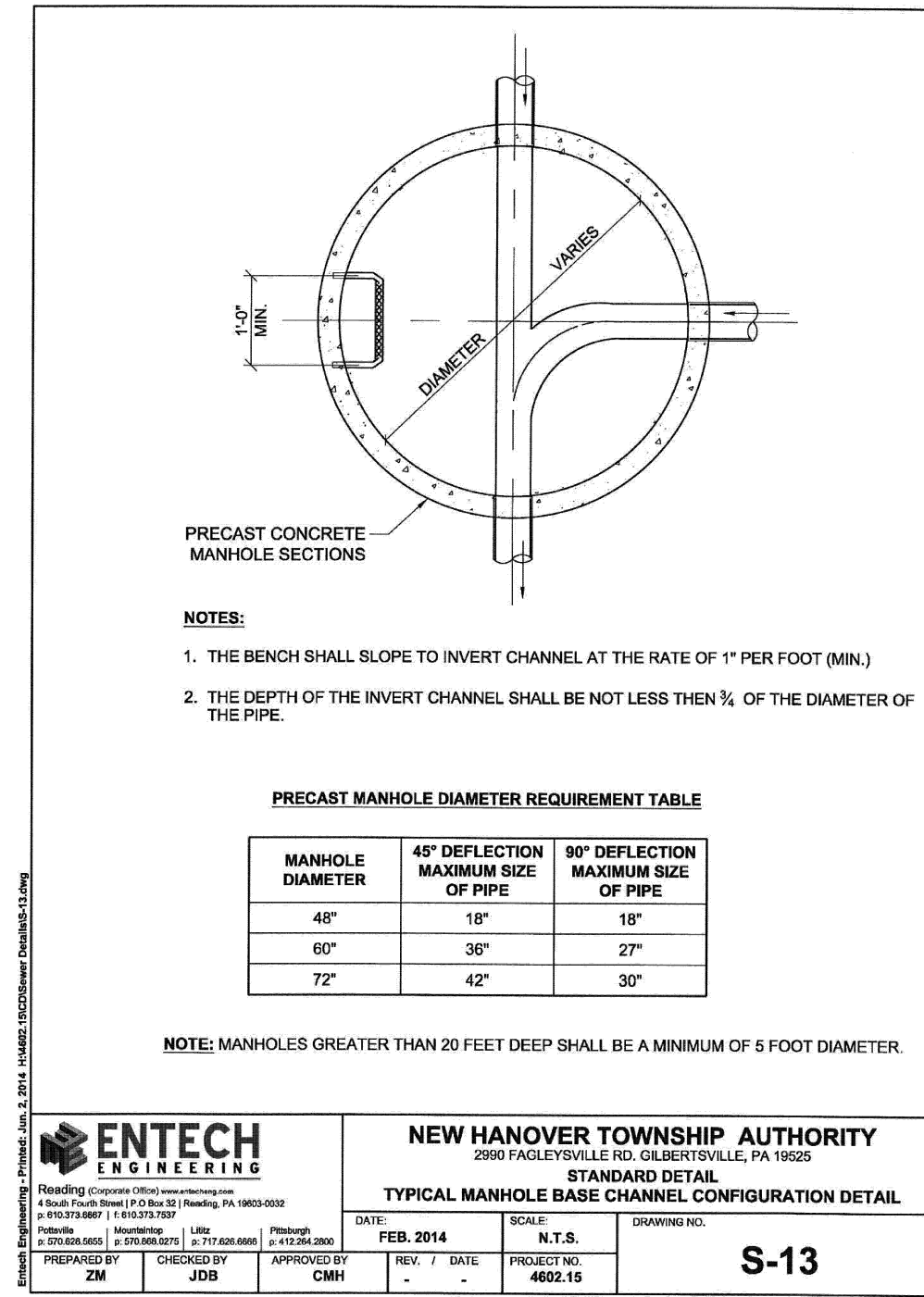
ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
CONCRETE CRADLE DETAIL		CONCRETE ENCASEMENT DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-2	PROJECT NO. 4602.15	DRAWING NO. S-3



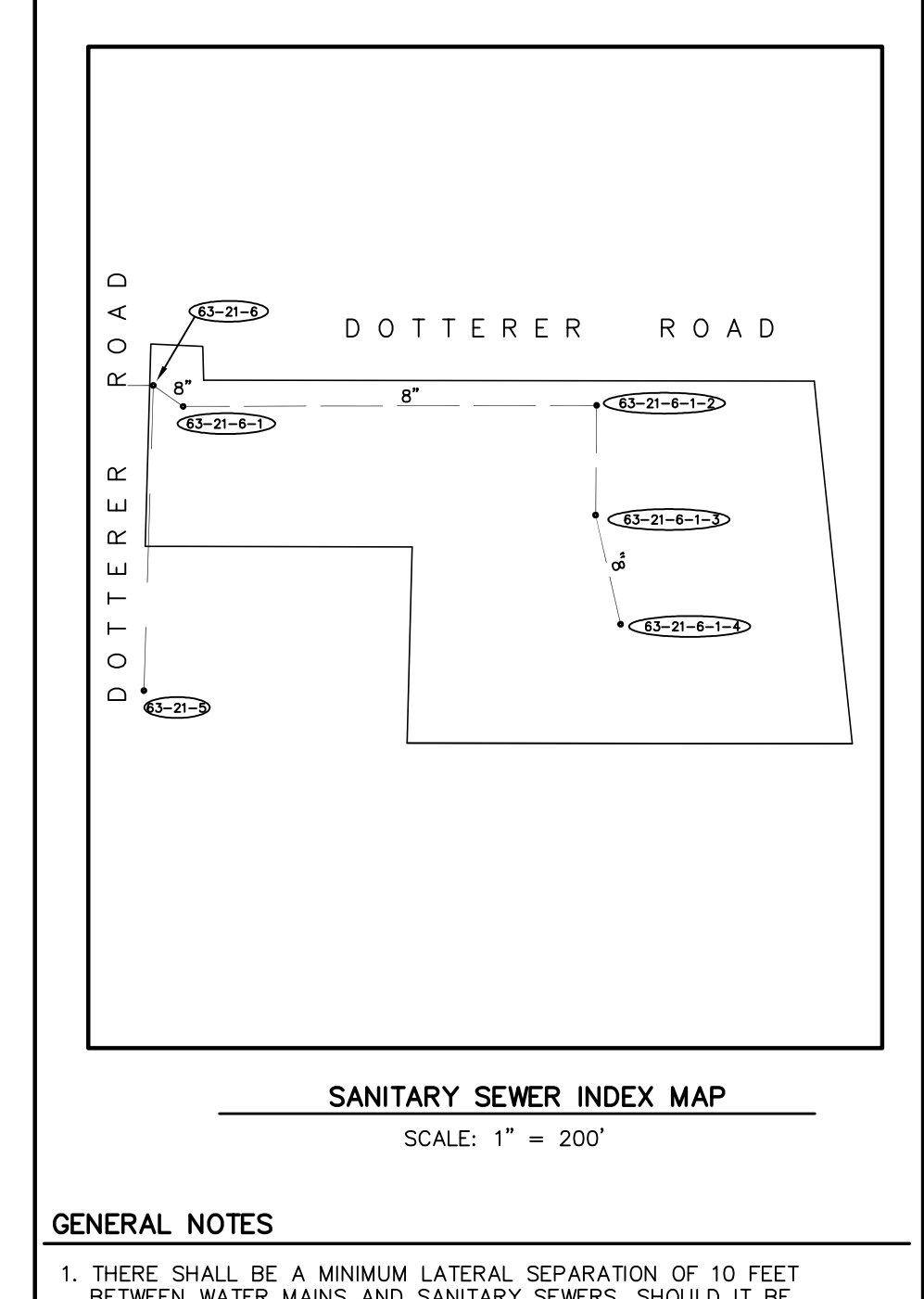
ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
CONCRETE ENCASEMENT DETAIL		MANHOLE DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-3	PROJECT NO. 4602.15	DRAWING NO. S-11



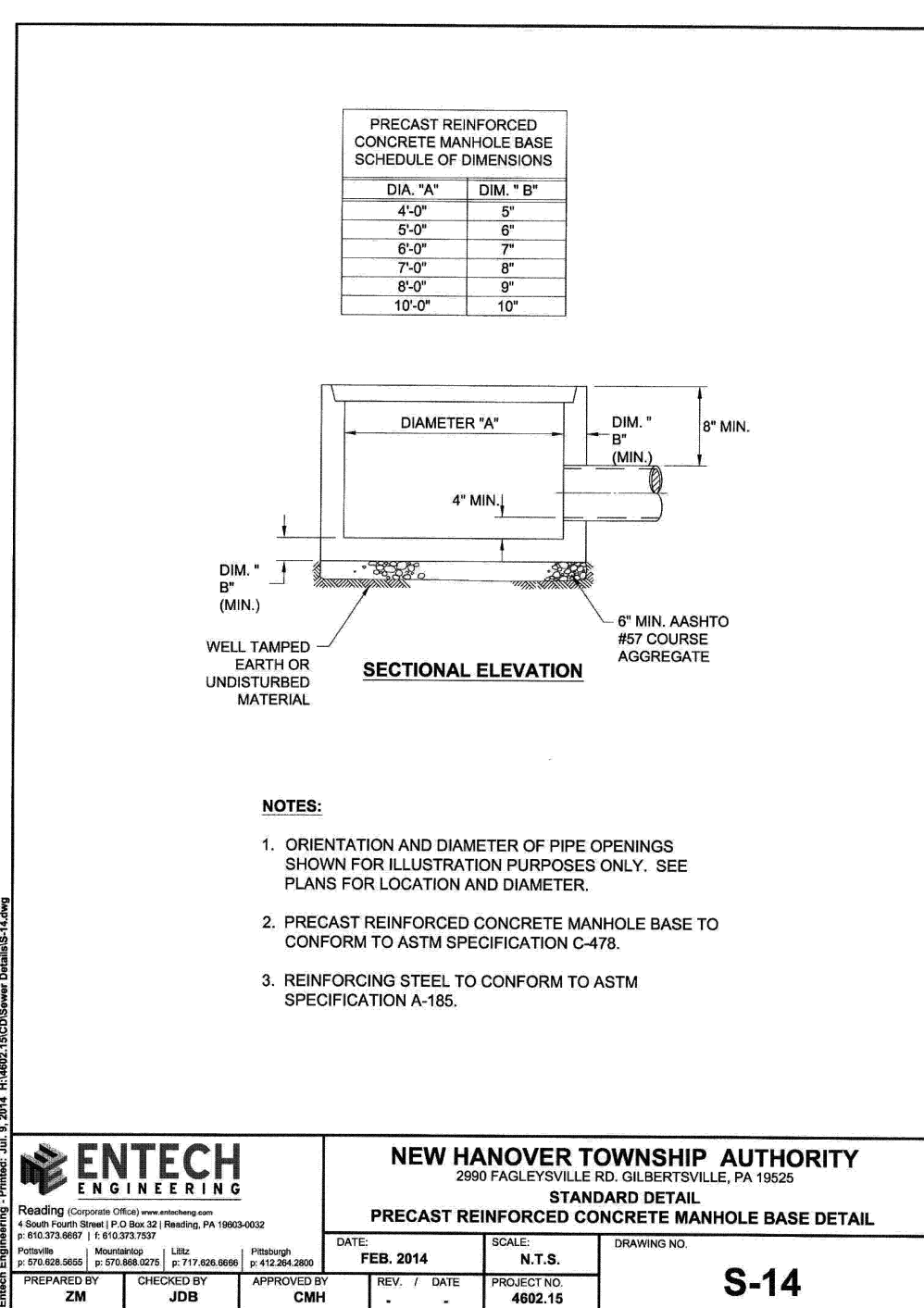
ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
MANHOLE DETAIL		TYPICAL MANHOLE BASE CONFIGURATION DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-11	PROJECT NO. 4602.15	DRAWING NO. S-13



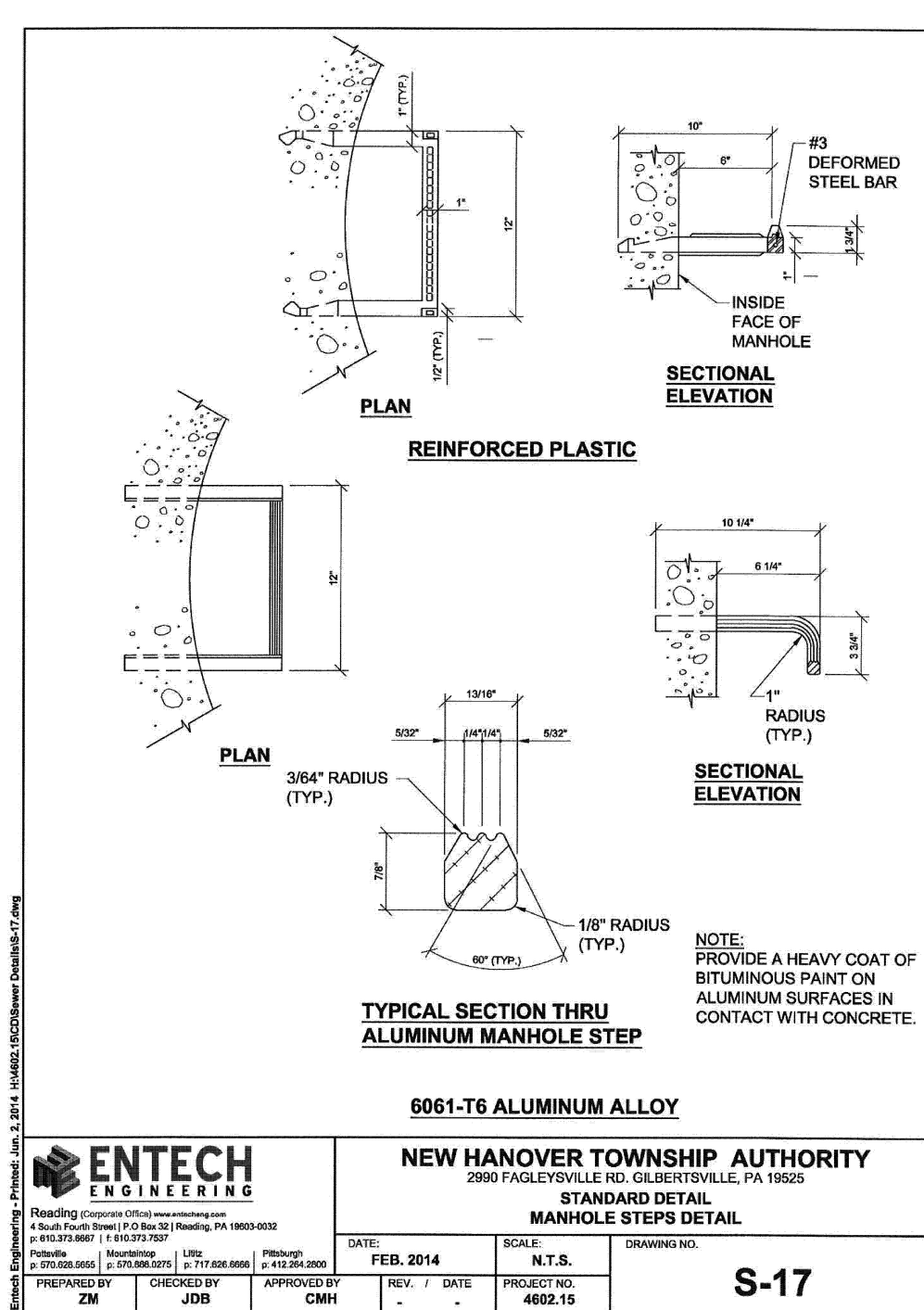
ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
TYPICAL MANHOLE BASE CONFIGURATION DETAIL		TYPICAL MANHOLE BASE CONFIGURATION DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-13	PROJECT NO. 4602.15	DRAWING NO. S-13



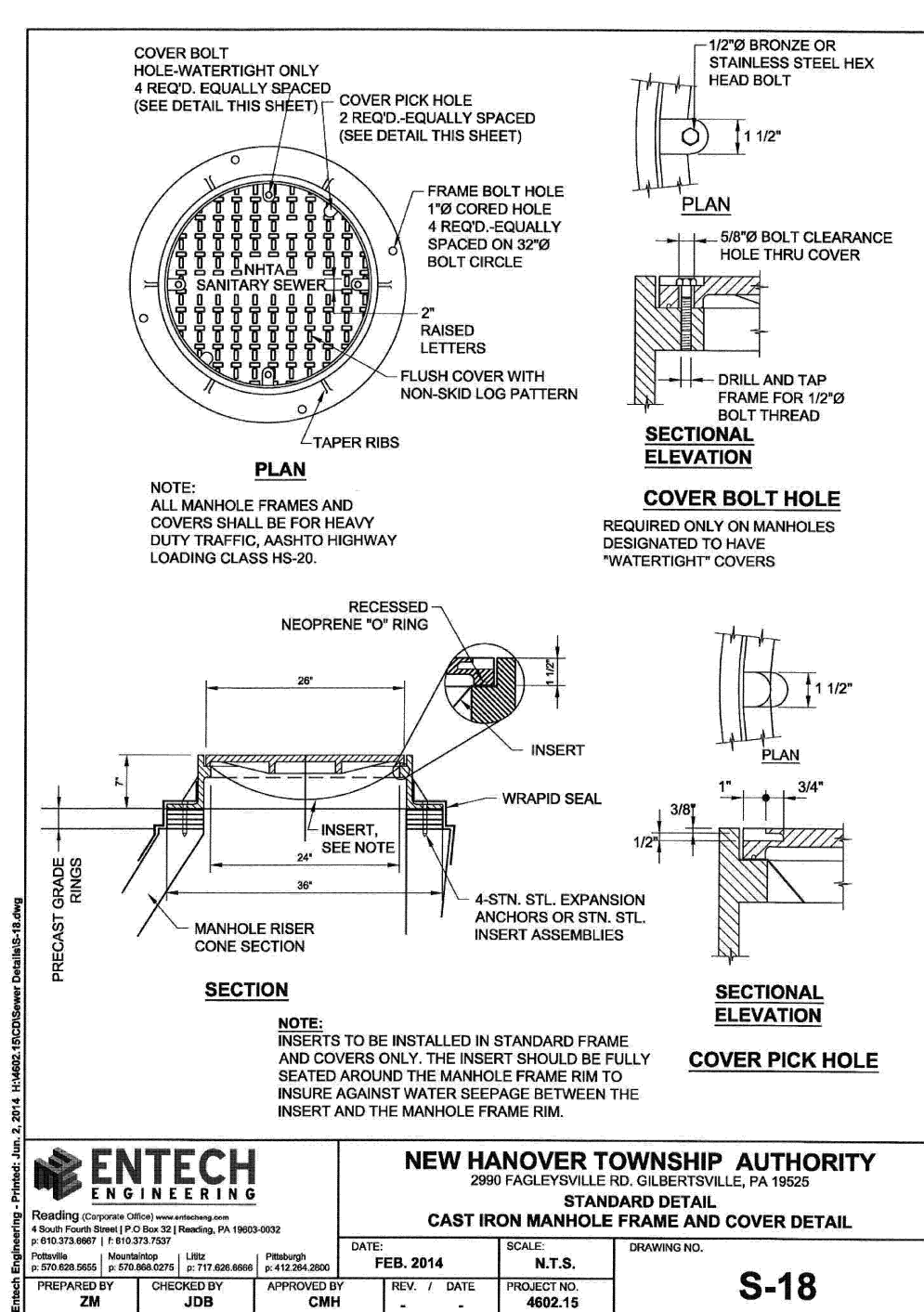
ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
TYPICAL MANHOLE BASE CONFIGURATION DETAIL		GENERAL NOTES	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-13	PROJECT NO. 4602.15	DRAWING NO. S-13



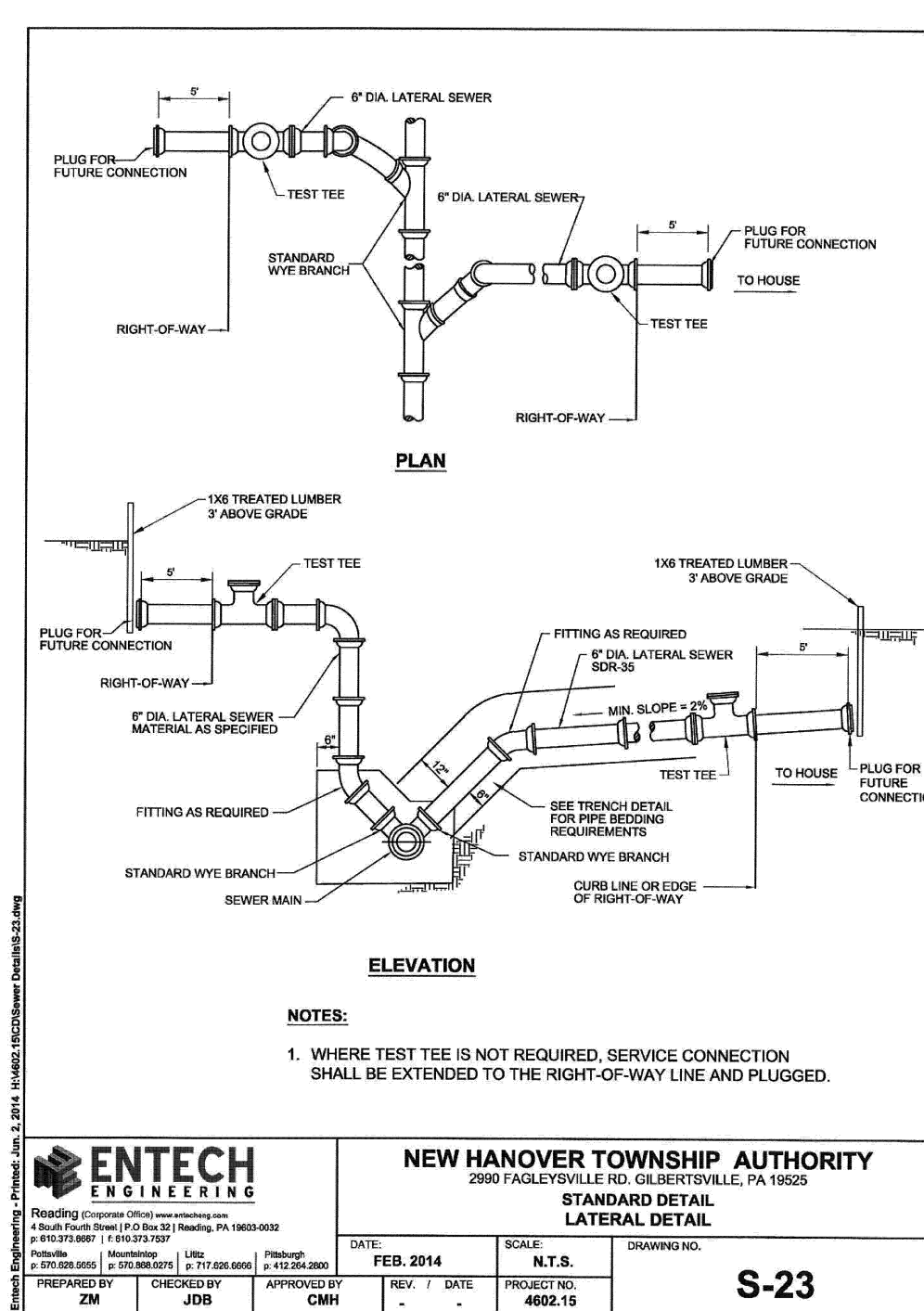
ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
PRECAST REINFORCED CONCRETE MANHOLE BASE DETAIL		MANHOLE STEPS DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-14	PROJECT NO. 4602.15	DRAWING NO. S-17



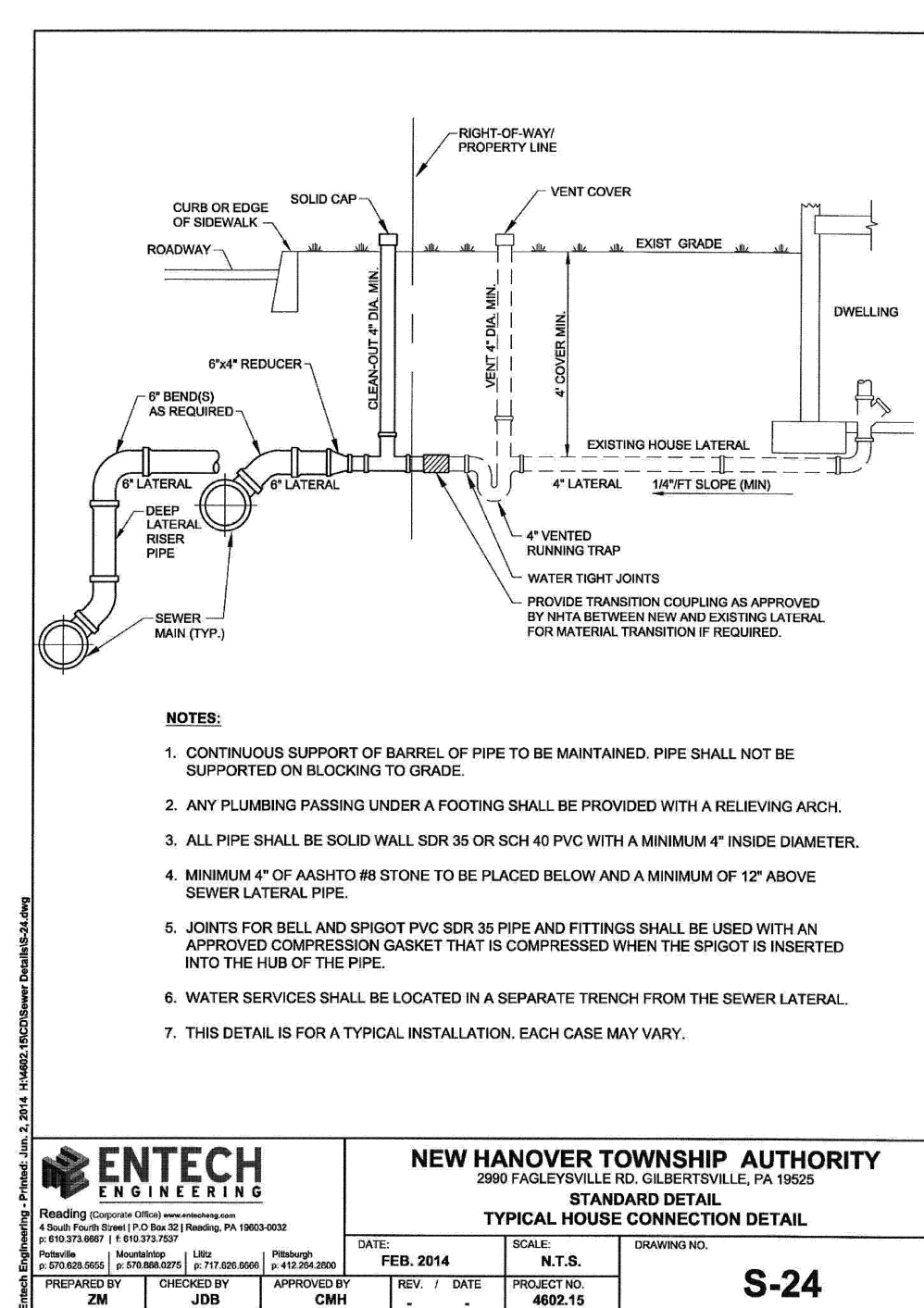
ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
MANHOLE STEPS DETAIL		CAST IRON MANHOLE FRAME AND COVER DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-17	PROJECT NO. 4602.15	DRAWING NO. S-18



ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
CAST IRON MANHOLE FRAME AND COVER DETAIL		LATERAL DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-18	PROJECT NO. 4602.15	DRAWING NO. S-23



ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
LATERAL DETAIL		TYPICAL HOUSE CONNECTION DETAIL	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-23	PROJECT NO. 4602.15	DRAWING NO. S-24



ENTECH ENGINEERING		NEW HANOVER TOWNSHIP AUTHORITY 2990 FAGLEYVILLE RD. GILBERTSVILLE, PA 19325	
STANDARD DETAIL		STANDARD DETAIL	
TYPICAL HOUSE CONNECTION DETAIL		REVISIONS	
DATE: FEB. 2014	SCALE: N.T.S.	DATE: FEB. 2014	SCALE: N.T.S.
PROJECT NO. 4602.15	DRAWING NO. S-24	PROJECT NO. 4602.15	DRAWING NO. S-24

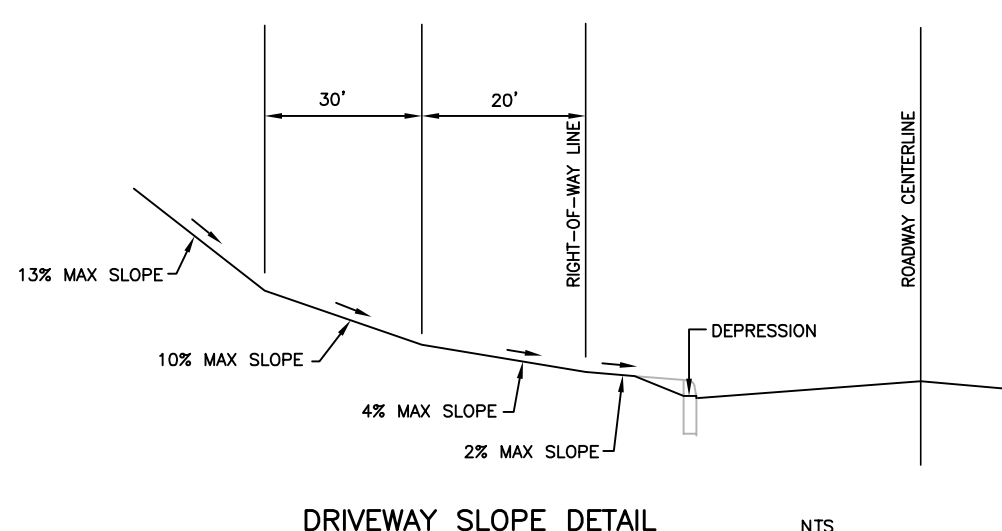
REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

SANITARY SEWER DETAIL PLAN
"PACER'S GAIT"
PREPARED FOR
MIKELN, LLC.
SITUATE IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA
JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE

SCALE: AS SHOWN

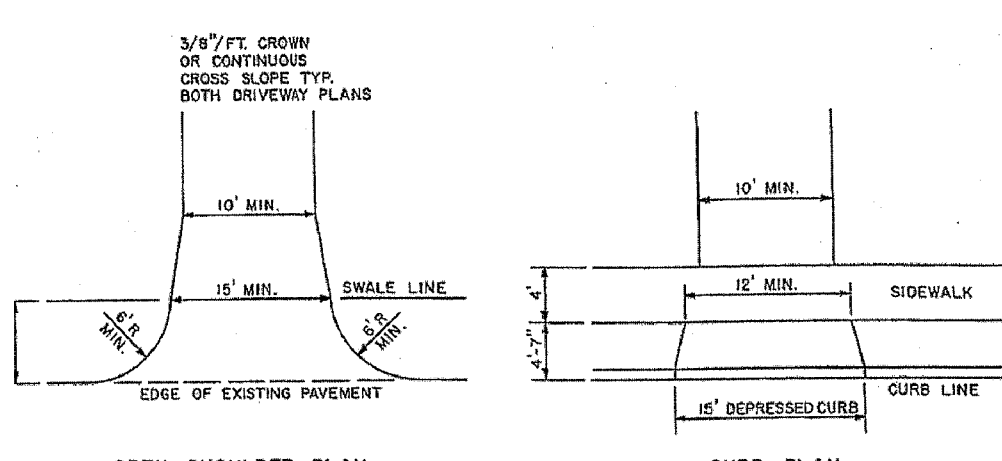
SHEET No. 19 OF 21

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

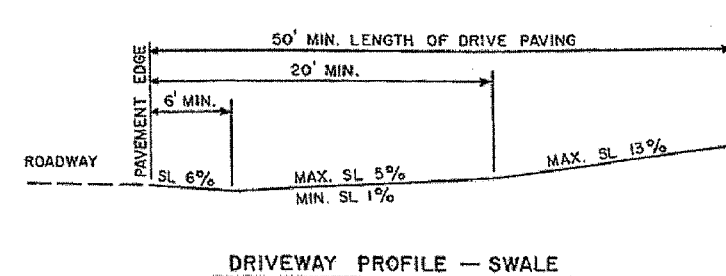


DRIVEWAY SLOPE DETAIL NTS

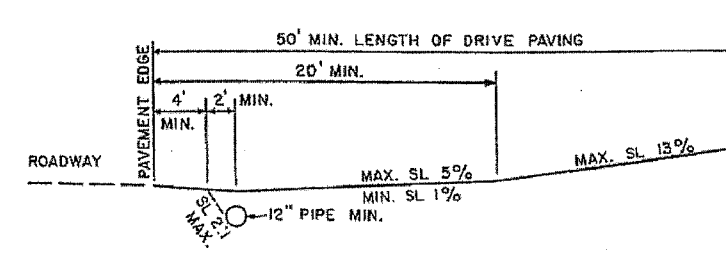
NOTE:
REFER TO THE NEW HANOVER TOWNSHIP 'CONSTRUCTION OF DRIVEWAYS'
ORDINANCE 07-06 FOR ADDITIONAL INFORMATION



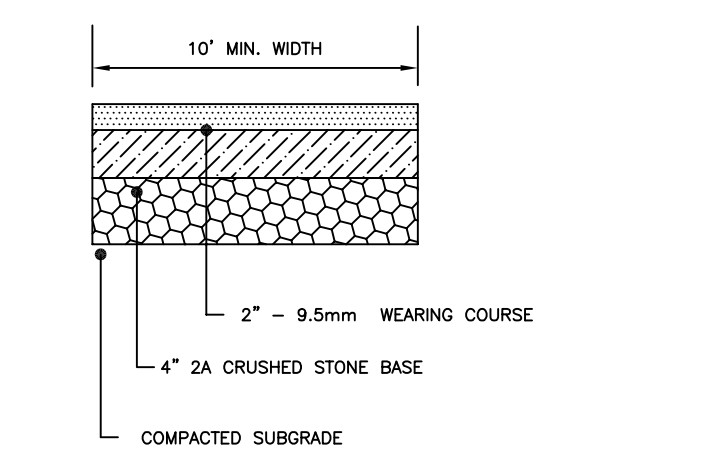
OPEN SHOULDER PLAN CURB PLAN



DRIVEWAY PROFILE - SWALE

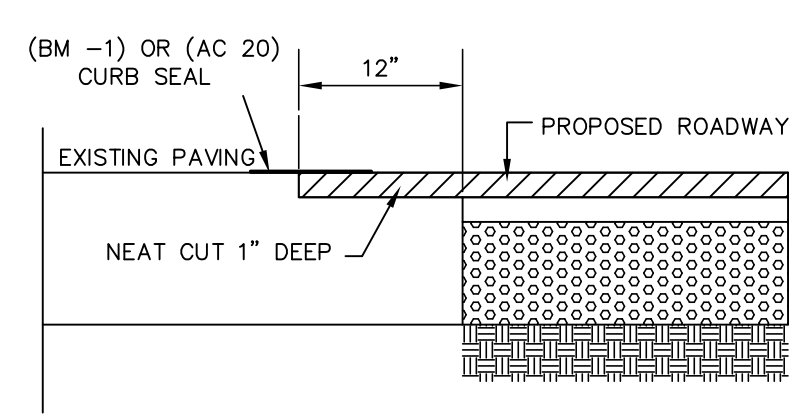


DRIVEWAY PROFILE - PIPE

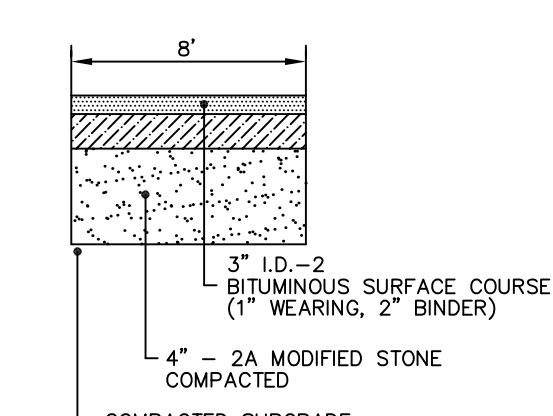


RESIDENTIAL DRIVEWAY PAVEMENT SECTION NTS

NOTE: 1. REFER TO PA DOT PUB. 408 FOR SPECIFICATIONS



MACADAM NEAT CUT DETAIL NTS

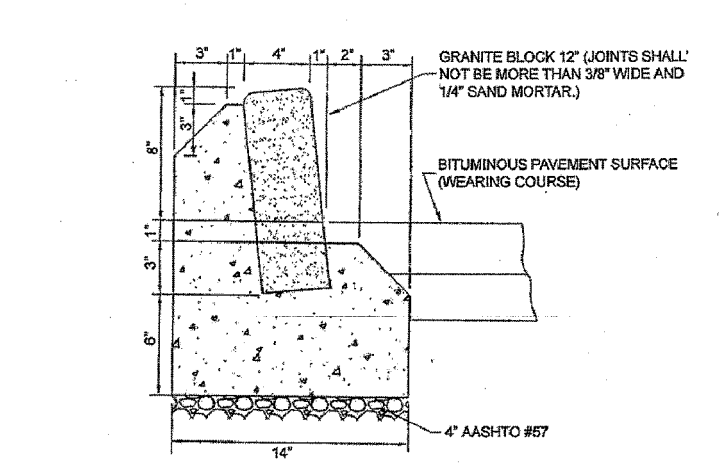


BIKE PATH DETAIL NTS

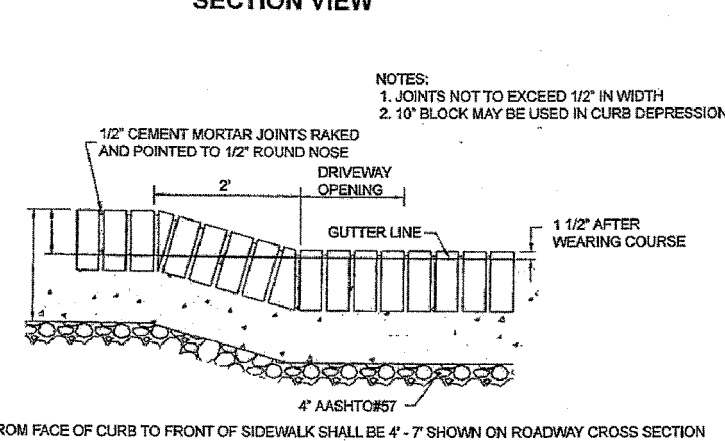
TAKEN FROM NEW HANOVER TOWNSHIP 'STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR PUBLIC IMPROVEMENTS' DATED JUNE 2006

B. BIKE PATHS, BIKE LANES AND BICYCLE ROUTES

- GENERAL
 - All subdivisions and land development projects shall be required to establish bike paths, bike lanes and bike routes, unless waived by the Board of Supervisors.
 - The entire design and construction of bike paths shall be in accordance with good engineering practice and shall be subject to the approval of the Township Engineer.
- EXCAVATION
 - The base edge of the bike path shall not be less than 4'-7" from the face of the curb along any street. Where this setback cannot be accomplished, a suitable physical barrier shall be provided.
 - The width of the path shall be 8 feet, however, the Board of Supervisors may permit variations in this width. The Board may also permit the installation of bicycle paths in a combined structure with, or to the side of, sidewalks.
 - Bicycle paths shall, as near as possible, follow the contour lines of the particular area where the paths are to be installed.
 - Curbs shall be installed to permit the crossing of intersecting streets. Curbs shall have a maximum slope of six to one with sides having maximum slope of one to one.
 - The vertical clearance from the bicycle path surface to overhead obstruction shall be not less than 10 feet.
 - The bicycle path shall be constructed of 4 inch Pa DOT 2A stone base with 2 inch asphalt binder course and 1 inch wearing course.
 - All bike paths shall be constructed in such a manner to ensure adequate and proper drainage and to prevent the bike path from being limited by surface drainage.
 - Unless specified otherwise all materials and construction procedures shall be in accordance with Pa DOT Publication 408, latest edition.



SECTION VIEW



ELEVATION VIEW

1. BELGIAN BLOCK CURB SHALL NOT BE INSTALLED ALONG DOTTERER ROAD AND CURB RETURNS INTO PROPOSED ROAD

4. BASE, BINDER AND WEARING COURSES

- Base, binder and wearing courses shall consist of one or more layers of materials conforming to the requirement of the following section of Pa DOT Publication 408, latest edition.
 - Section 309 - Superpave Asphalt Mixture Design, HMA base course.
 - Section 409 - Superpave Asphalt Mixture Design, HMA binder course.
 - Section 409 - Superpave Asphalt Mixture Design, HMA wearing course.
- Plant Mixed HMA Base Course:
 - Superpave Asphalt Mixture Design HMA pavement courses shall be placed in layers as more fully described in Pa DOT Publication 408, latest edition, for each specific design, or as may be specified otherwise by the Township.
 - The subbase shall be properly prepared and primed as may be required for base course placement according to Pa DOT Publication 408, latest edition.
 - The base course shall be properly prepared and primed as may be required to receive subsequent courses. Prior to application of additional bituminous courses, existing base courses shall be inspected by the Township representative for defects such as fracture, racking or other signs of base failure, or potential failure. All areas of failure, or potential failure, shall be removed by saw cutting, and replaced, or repaired, to the satisfaction of the Township representative.
 - Bituminous Surface Course - The surface course shall consist of two (2) courses, binder course and wearing course, of hot-mixed, hot-laid, asphaltic concrete, constructed on a prepared base course. The bituminous surface course shall have a total thickness, after final compaction, as indicated in Table 1 or as specified by the Township Engineer or other persons designated by the Township Supervisors. All street pavement cross-sections, except where super-elevated for curves, shall have a slope from the center of the road to the gutter of a minimum of one-quarter (1/4) inch per foot to a maximum of one-half (1/2) inch per foot.

i) Materials - The materials shall conform to the requirements as given in Sections 309 and 409 of the Pa DOT Specifications 408, latest edition.

ii) Construction Methods - The surface coursing shall be applied in strict accordance with the requirements of PaDOT Publication Form 408, latest edition. No visible moisture shall be present prior to the laying of each course. Road surface temperature shall be 50 degrees F. or greater prior to the laying of a bituminous surface. The air temperature shall be 40 degrees F. or greater with the temperature rising. All bituminous surface courses shall have a total thickness after compaction as indicated in Table 1 or as specified by the Township Engineer or other persons designated by the Township Supervisors. All edges shall be kept straight and sharp, forming a clean-cut line between finished road and shoulder where shoulder construction is used.

iii) The binder course shall be installed immediately following the base course installation.

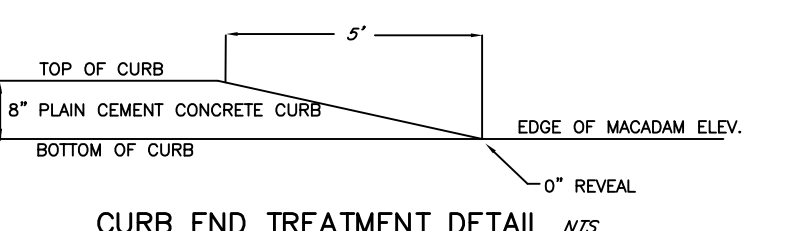
iv) Delivery Slips - New Hanover Township will require delivery slips for all materials used in the construction of streets.

v) Joints - Joints formed by binder or surface course laid adjacent to concrete curbs or other rigid structures shall be sealed with AC-20, twelve inch (12") width as directed by the Township Engineer.

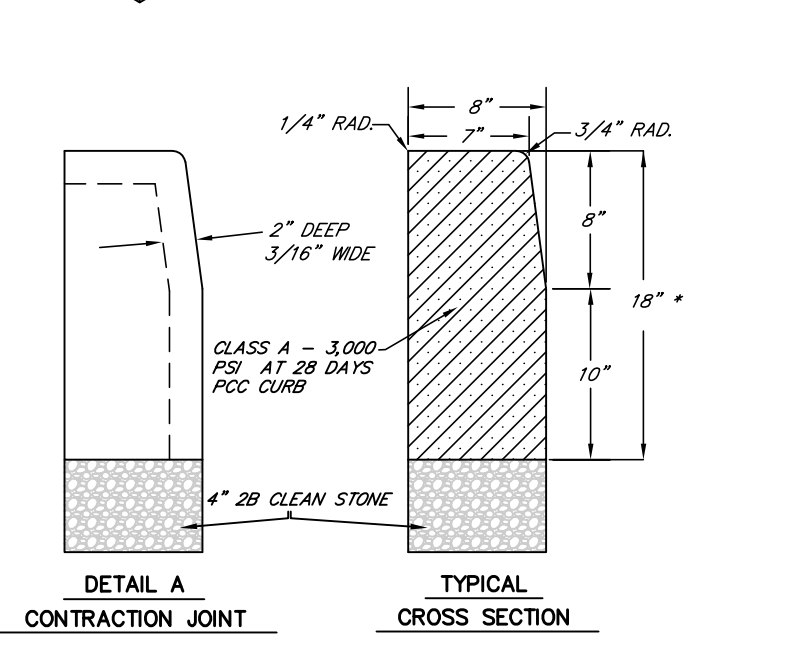
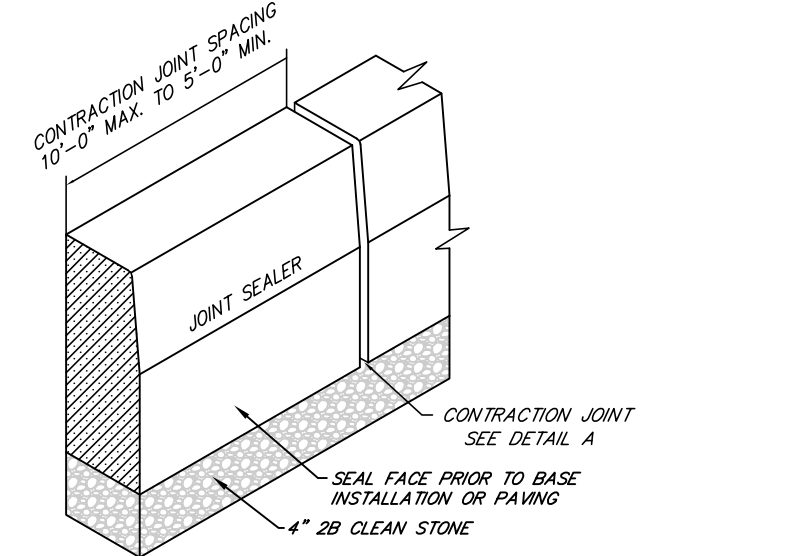
Table 1 - Minimum Street Construction Standards

	Local & Residential Streets	Collector & Arterial Streets
9.5mm Surface Course	1 1/2"	1 1/2"
19mm Dense Graded Binder Course	2"	2"
25mm Bituminous Concrete Base Course	3"	4"
FamDOT No. 2A Course Aggregate Subbase	4"	4"

- NOTES:
- All thickness specifications are for compacted materials.
 - Optional design cross-sections may be reviewed by the Township Engineer, and approved by the Township, provided the design has a Structural Number equal to or greater than that of the standard specification.
 - Permanent Curb-de-ice Street, Marginal Access Street, Service Street, and Off-Street Parking Construction shall conform to standards for Local and Residential Streets.
 - Binder Course to be installed immediately following base course installation.



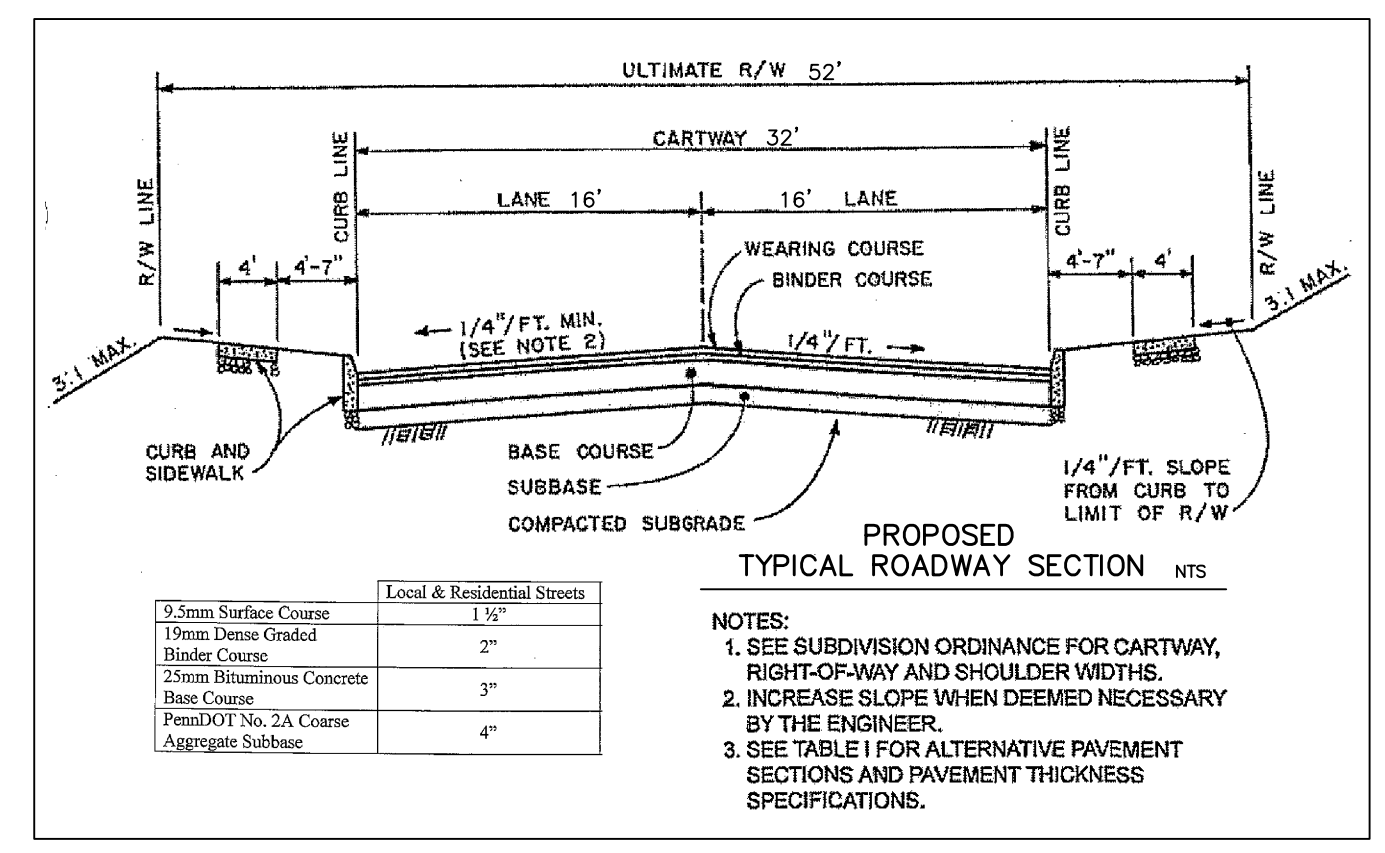
CURB END TREATMENT DETAIL NTS



PLAIN CEMENT CONCRETE CURB DETAIL NTS

PLAIN CEMENT CONCRETE CURB NOTES:

- PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408/2000, SECTION 630 FOR PLAIN CEMENT CONCRETE CURB AND DEPRESSION CURB.
- SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
- PLACE (3/4") THICK PREMOULDED EXPANSION JOINT FILLER MATERIAL SHALL BE PLACED AT 30 FOOT MAXIMUM SPACING TO FULL DEPTH OF CURB.
- CURB SHALL BE DOWELED OR PINNED INTO MILTS.



	Local & Residential Streets
9.5mm Surface Course	1 1/2"
19mm Dense Graded Binder Course	2"
25mm Bituminous Concrete Base Course	3"
FamDOT No. 2A Course Aggregate Subbase	4"

- NOTES:
- SEE SUBDIVISION ORDINANCE FOR CARTWAY, RIGHT-OF-WAY AND SHOULDER WIDTHS.
 - INCREASE SLOPE WHEN DEEMED NECESSARY BY THE ENGINEER.
 - SEE TABLE I FOR ALTERNATIVE PAVEMENT SECTIONS AND PAVEMENT THICKNESS SPECIFICATIONS.

2 EXECUTION

- All sidewalks, driveway aprons and curbs, except as may be otherwise provided in this section, shall be constructed of monolithic concrete. Said concrete shall meet PaDOT criteria for air entrained Class AA concrete with a compressive strength of 3,500 pounds per square inch (psi) in twenty-eight (28) days. Certification of the concrete mix shall be furnished if required by the Engineer. Belgian block curb may be substituted for concrete curb at locations approved by the Board of Supervisors.
 - The concrete curbs shall have a depth of not less than eighteen inches (18") and shall be eight inches (8") thick at the base and seven inches (7") thick at the top. Curbs shall be constructed with an eight inch (8") reveal and shall rest on a compacted bed of AASHTO No. 57 (Pa DOT 2B) crushed stone of a depth of not less than four inches (4") and a width of not less than twelve inches (12").
- The Belgian block curbs shall have a combined depth of block and concrete of not less than eighteen inches (18") and shall meet the dimensional standards as detailed in this section. Belgian block curbs shall be constructed with an eight inch (8") reveal and shall rest on a compacted bed of AASHTO No. 57 (Pa DOT 2B) crushed stone of a depth of not less than four inches (4").
 - Sidewalk Width and Location - The space between the street side of the curb and the street side of the paved edge of the sidewalk shall be four feet seven inches (4'-7"). The sidewalk paved width shall be four feet (4') in all new developments or street construction. The width of the sidewalk shall be increased to a minimum of eight feet (8') when it is in combination with a Bike Path. In existing developed sections of the Township, and where sidewalks have been constructed prior to the date of the sidewalk ordinance (Ordinance 95-4, enacted June 12, 1995), existing conditions shall be taken into consideration by the Township of New Hanover in applying the width and location regulations.
 - Drainage - Finished sidewalks shall have a grade from the inner edge of the sidewalk to the outer edge of the curbs of one quarter of an inch (1/4") to the foot.
 - Sidewalks shall not be less than four inches (4") in thickness and shall rest on a compacted bed of AASHTO No. 57 (Pa DOT 2B) crushed stone of a depth of not less than four inches (4"). For width and location of sidewalks see Section 3.
 - Mortar shall be used only in case of patching honeycombed concrete and then shall be one (1) part cement and two (2) parts of sand or its equal.
 - Sidewalk shall have clean cut joints, a minimum one inch (1") deep, every five (5) linear feet, and expansion joints every thirty (30) linear feet or less and at structures. Curbs shall have clean cut joints, a minimum of two inches (2") deep, every ten (10) linear feet, and expansion joints every sixty (60) linear feet or less, at structures, and at the end of a days work. Expansion joints shall be one half inches (1/2") thick with pre-molded expansion joint filler. Expansion joint material shall also be placed between any curb and driveway apron. All sidewalks shall have a floor finish except that any sidewalk on a grade of ten percent (10%) or greater shall have a broom finish.
 - Driveways over sidewalks shall be at least six inches (6") thick and shall include 6" X 6" by 10 gauge welded wire fabric. Driveways over sidewalks shall be constructed to rest on a compacted bed of AASHTO No. 57 (Pa DOT 2B) crushed stone of a depth of not less than four inches (4"). Widths shall be a minimum of ten feet (10') for single driveways and twenty feet (20') for double driveways, except as approved otherwise by the Board of Supervisors.
 - All joints between curb and bituminous pavement shall be sealed with AC-20.
 - The surface of all sidewalks, driveway aprons and curbs shall be treated with a non-discoloration sealing compound for the prevention of damage from salt. The sealing compound shall be Seal Tight (CS 309-25), as manufactured by W.R. Meadows, or an approved equal, and shall be applied in accordance with the manufacturer's specifications.
 - The curbing at fire hydrant locations must be painted yellow for a distance of 15 feet each side of the hydrant. The curbing need not be painted through driveway openings adjacent to hydrants.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 2017042165 (DOTTERER ROAD)

REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

GENERAL CONSTRUCTION DETAIL PLAN "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.
SITUATE IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

JULY 9, 2007
PROJECT No. 16086
FILE: 16086-BASE

SCALE: AS SHOWN

PATA 102 (Old PATA 7) - Notes

- If the work space is completely within a parking lane and parking is present, the taper or shadow vehicle is not required.
- For operations of 15 minutes or less:
 - The Road Work (W20-1) sign is not required.
 - All channelizing devices may be eliminated if a shadow vehicle is present.
- For divided highways and one-way highways where it is physically possible, advance warning signs should also be placed on the left-hand side of the roadway.
- When a shadow vehicle is not used, distance E is measured from end of taper to beginning of work space.

Signs



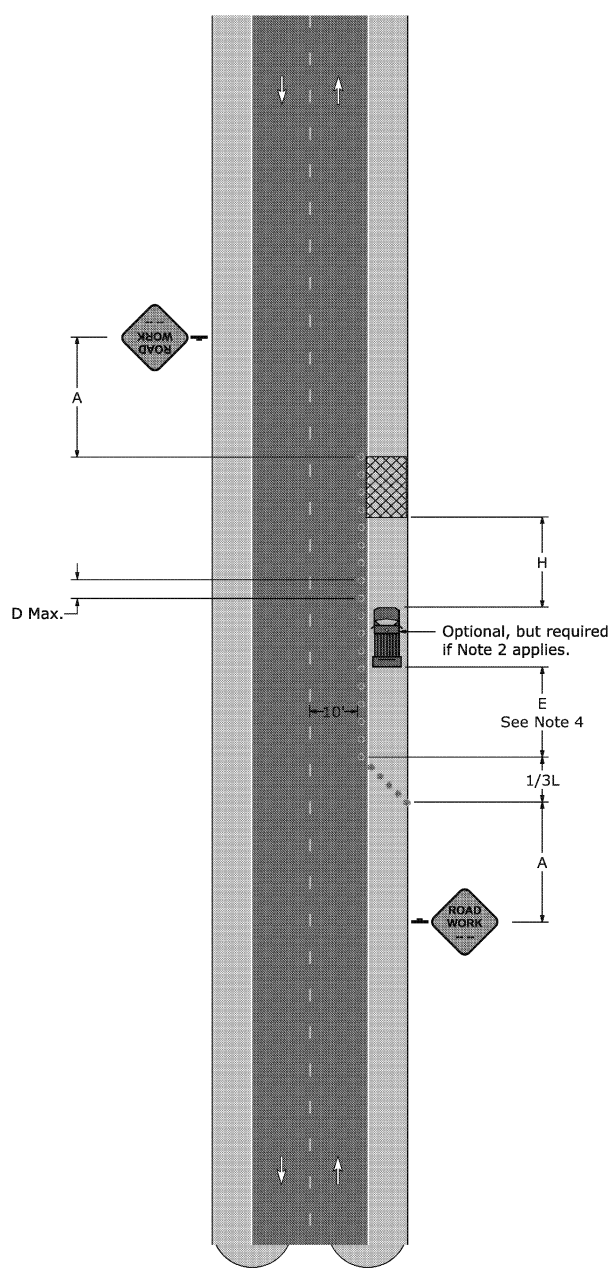
Sign Spacing Chart

Condition	Distance			Speed MPH	W Feet	L Feet	1/2L Feet	1/3L Feet	Min. Channelizing Devices Per Taper Type (Length)	D Feet	E Feet	H Feet
	A	B	F									
Urban 35 MPH or less	100	100	100	25	10	105	53	35	6	6	6	50
Urban Greater than 35 MPH	350	350	350	30	12	125	63	45	6	6	6	60
Rural	500	500	500	35	15	165	83	55	6	6	6	70
				40	18	195	103	65	6	6	6	80
				45	21	225	123	75	6	6	6	90
				50	24	255	143	85	6	6	6	100
				55	27	285	163	95	6	6	6	110
				60	30	315	183	105	6	6	6	120

Taper Length Formulas

$S = \text{Regulatory Speed Limit}$
 $W = \text{Width of Offset}$
 $L = \text{Length}$

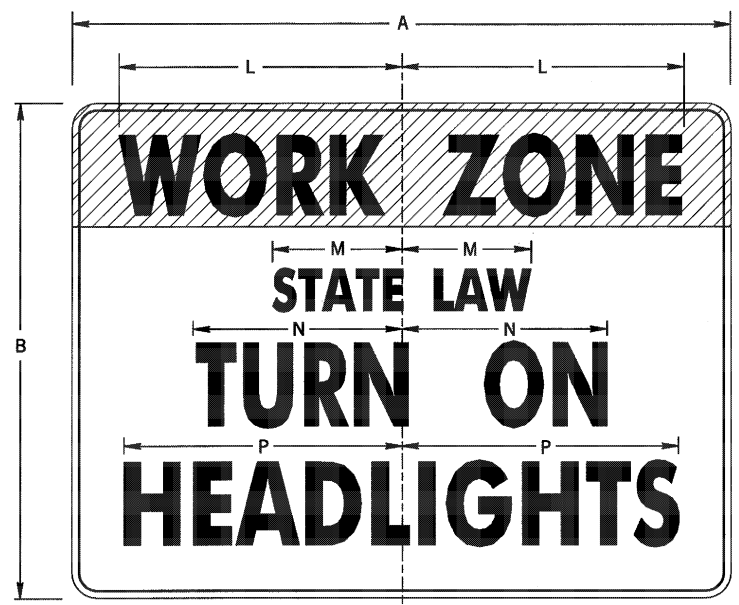
**PATA 102 (Old PATA 7)
Work Space On Or Beyond The Shoulder (Minor Roadway Encroachment)**



R22-1

WORK ZONE - TURN ON HEADLIGHTS SIGN

- Justification: The Work Zone - Turn on Headlights Sign (R22-1) shall be used in advance of work zones in accordance with Department guidelines. When used, the R22-1 sign should generally be installed the first sign approaching the work zone.
- Size: The 72" x 48" size should be used for long-term operations on expressways and freeways.



Sign Size A x B	C	D	E	F	G	H	J	K	L	M	N	P	MARK- SIGN	BOR- DER	BLANK STD.
36" x 36"	2.1	6C	3C	2.6	0.9	3	3.8	20.3	9.2	15.2	19.9	0.6	0.8	0.8	BS-4836
72" x 48"	2.7	8D	4D	4	1.3	3.3	4.7	31.7	14.6	23.7	30.7	0.6	0.8	0.8	---

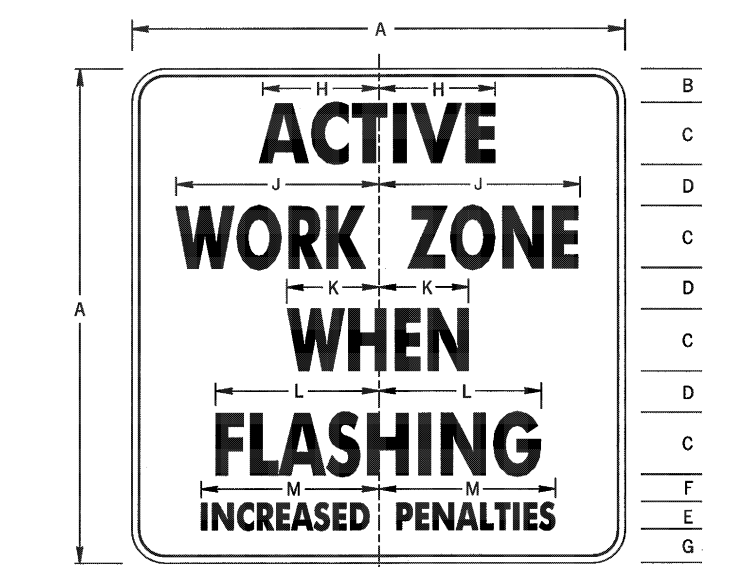
* REDUCE SPACING 20%.

OR:
 GEND AND BORDER: BLACK (NON-REFLECTORIZED)
 APPROVED FOR THE SECRETARY OF TRANSPORTATION
 By: *J. C. Row* Date: 02-29-12
 Chief, Traffic Engineering and Permits Section
 Bureau of Maintenance and Operations
 CKGROUND: TOP: ORANGE (REFLECTORIZED) BOTTOM: WHITE (REFLECTORIZED)

W21-19

ACTIVE WORK ZONE WHEN FLASHING SIGN

- Justification: The Active Work Zone When Flashing Sign (W21-19) shall be used in advance of an active work zone in accordance with Department guidelines to advise motorists that construction, maintenance or utility workers are on the roadway, berm or shoulder, and that increased penalties apply. The W21-19 sign is equipped with a flashing white light that is activated when workers are present and when flashing shall be visible both day and night by an ordinary observant person. When workers are not present for more than 15 minutes, the flashing sign shall be turned off.
- Placement: When used, the W21-19 sign shall be erected as close as practical to the beginning of the work zone, except motorists' safety should not be compromised by erecting the signs within transition 1 other locations where the sign could be especially distracting. When a work zone has more than one work zone and the active work zones are more than 1/4 mile apart, each active work zone shall be equipped individually with this sign.



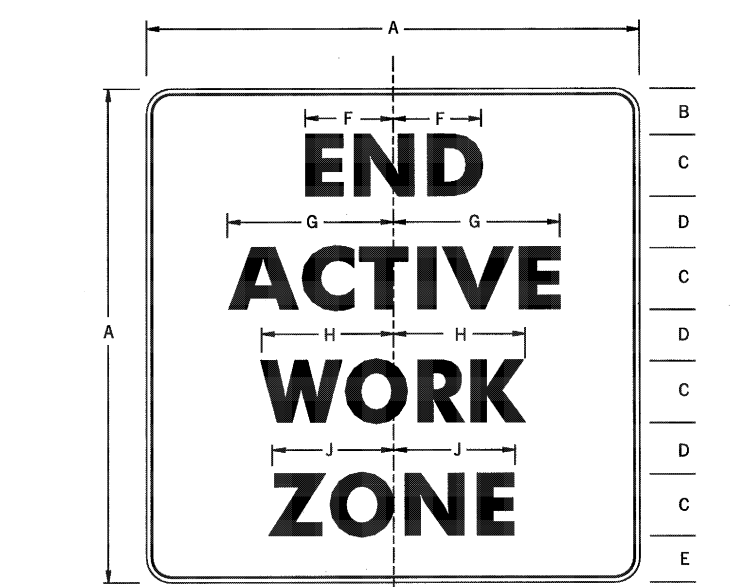
Sign Size A x B	B	C	D	E	F	G	H	J	K	L	M	MARK- SIGN	BOR- DER
36" x 36"	2.5	4.5C	3	2C	2	2.5	8.3	14.5	6.5	11.6	12.7	0.6	0.8
48" x 48"	3.5	6C	3.5	3C	3	4	11.2	19.3	8.7	15.5	19.1	0.6	1

OR:
 GEND AND BORDER: BLACK (NON-REFLECTORIZED)
 APPROVED FOR THE SECRETARY OF TRANSPORTATION
 By: *J. C. Row* Date: 02-29-12
 Chief, Traffic Engineering and Permits Section
 Bureau of Maintenance and Operations
 CKGROUND: ORANGE (REFLECTORIZED)

W21-20

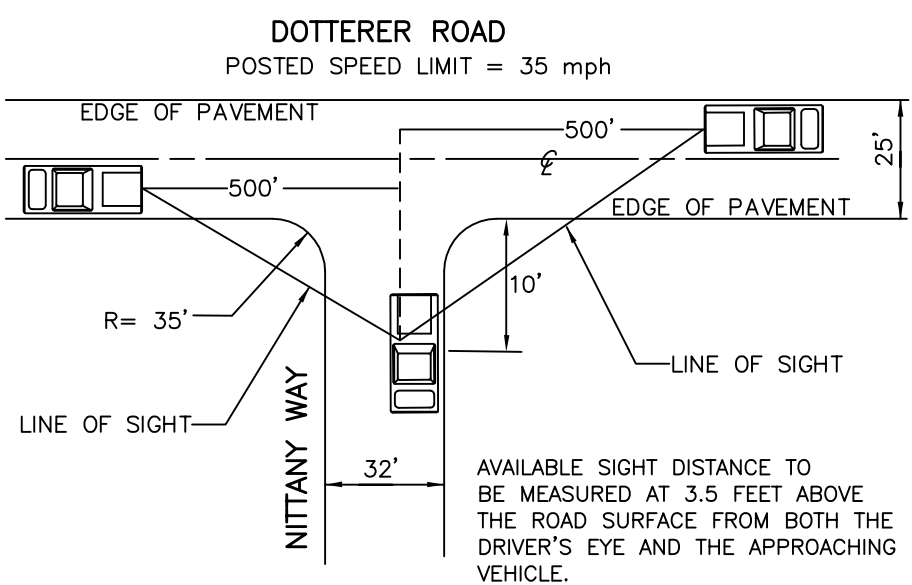
END ACTIVE WORK ZONE SIGN

- The End Active Work Zone Sign (W21-20) should be installed immediately at the end of each "active work zone" when signs are erected at the beginning of the active work zone to advise of increased penalties. When the W21-20 sign is not necessary at the End Road Work Sign (G20-2) or the End Work Area Sign (S0-3) is located at this location.



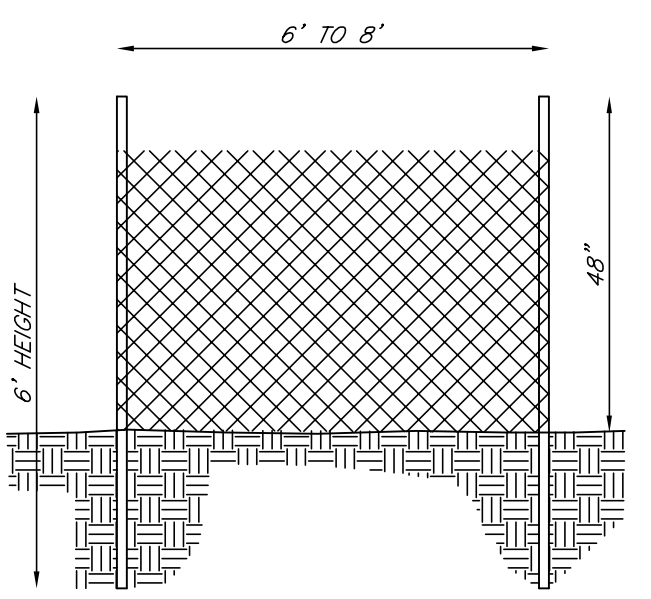
Sign Size A x B	B	C	D	E	F	G	H	J	K	L	M	MARK- SIGN	BOR- DER
36" x 36"	3.5	5E	3	3.5	7	13.2	10.5	9.6	0.6	0.6	0.8	---	---
48" x 48"	4.5	6E	5	4.5	8.4	16	12.6	11.6	0.6	0.6	0.8	---	---

OR:
 GEND AND BORDER: BLACK (NON-REFLECTORIZED)
 APPROVED FOR THE SECRETARY OF TRANSPORTATION
 By: *J. C. Row* Date: 02-29-12
 Chief, Traffic Engineering and Permits Section
 Bureau of Maintenance and Operations
 CKGROUND: ORANGE (REFLECTORIZED)



DOTTERER ROAD - SIGHT DISTANCE DETAIL NTS

- NOTES**
- ALL SIGHT DISTANCE OBSTRUCTIONS (INCLUDING BUT NOT LIMITED TO EMBANKMENTS AND VEGETATION) SHALL BE REMOVED BY THE DEVELOPER TO PROVIDE A MINIMUM OF 500 FEET OF SIGHT DISTANCE TO THE RIGHT AND 500 FEET OF SIGHT DISTANCE TO THE LEFT FOR DRIVER EXITING THE PROPOSED DRIVEWAY ONTO THE THROUGH HIGHWAY. THE DRIVER MUST BE CONSIDERED TO BE POSITIONED TEN FEET FROM THE NEAR EDGE OF THE CLOSEST HIGHWAY THROUGH TRAVEL LANE AT THE HEIGHT OF THREE FEET SIX INCHES (3'-6") ABOVE THE PAVEMENT SURFACE. THE POINT SIGHTED BY THE EXITING DRIVER SHALL BE THREE FEET SIX INCHES (3'-6") ABOVE THE PAVEMENT SURFACE LOCATED IN THE CENTER OF THE CLOSEST HIGHWAY TRAVEL LANE DESIGNATED FOR USE BY APPROACHING TRAFFIC. THIS SIGHT DISTANCE SHALL BE MAINTAINED BY THE OWNER. (SEE DIAGRAM)

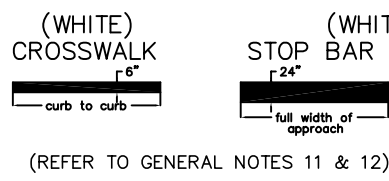


CONSTRUCTION PROTECTION FENCE DETAIL NTS

- INSTALLATION NOTES**
- IT IS RECOMMENDED THAT A CONVENTIONAL METAL "T" OR "U" POST BE DRIVEN INTO THE GROUND TO A DEPTH OF 12 TO 18 INCHES. POSTS SHOULD BE SPACED EVERY 6 TO 8 FEET. NOTE: NOTCHED POSTS ARE IDEAL TO PREVENT THE FENCE FROM SLIPPING.
 - THREE WIRE TIES, WRAPPED AROUND A FENCE STRAND AND THE POST, ARE IDEAL IN SECURING THE FENCE TO THE POST. TENSION WIRE OR ROPE MAY BE USED AS A TOP STRONGER AND WORKED THROUGH THE TOP ROW OF STRANDS TO PREVENT POTENTIAL SAGGING.
 - TWO ROLLS OF SAFETY FENCE MAY BE OVERLAPPED AT THE INTERSECTION OF A POST AND SECURED WITH WIRE TIES.

PAVEMENT MARKING - GENERAL NOTES

- MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DEPARTMENT'S SPECIFICATIONS, FORM 408.
- THESE PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE REGULATIONS GOVERNING THE DESIGN, LOCATION, AND OPERATION OF ALL OFFICIAL TRAFFIC SIGNS, SIGNALS, AND MARKINGS ON AND ALONG HIGHWAYS WITHIN THE COMMONWEALTH OF PENNSYLVANIA.
- ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED.
- THE CONTRACTOR SHALL PREPARE THE PAVEMENT SURFACE FOR THE PROPER ADHESION. ANY SWEEEPING OR REMOVAL OF DEBRIS, GRAVEL, DIRT, OR OTHER FOREIGN MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE NEW PAVEMENT MARKINGS, AND NO SEPARATE PAYMENT SHALL BE MADE THEREFOR.
- THE CONTRACTOR SHALL REMOVE ALL PREVIOUS PAVEMENT MARKINGS, WHICH IN THE OPINION OF THE ENGINEER CONFLICT WITH THE NEW PAVEMENT MARKINGS, UNLESS SPECIFICALLY STATED OTHERWISE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE NEW PAVEMENT MARKINGS, AND NO SEPARATE PAYMENT WILL BE MADE THEREFOR.
- THE CONTRACTOR SHALL NOTE ALL SPECIAL PROVISIONS OF THE CONTRACT AND SPECIFICALLY WITH REGARD TO THE RATE OF APPLICATION, MAINTENANCE OF TRAFFIC, RESTRICTED WORKING HOURS, AND/OR RESTRICTED WEATHER CONDITIONS. NO DEVIATIONS WILL BE PERMITTED.
- UNLESS SPECIFIED OTHERWISE, THE BASIS OF MEASUREMENT SHALL BE ALONG THE LONGITUDINAL CENTERLINE OF PAVEMENT MARKINGS. MEASUREMENT FOR LEGENDS SHALL BE PER MESSAGE, COMPLETE AND IN PLACE.
- PRIOR TO APPLICATION, THE CONTRACTOR SHALL FIELD CHECK AND LOCATE ALL PAVEMENT MARKINGS TO THE SATISFACTION OF THE ENGINEER.
- ALL MARKINGS IMPROPERLY APPLIED OR LOCATED SHALL BE COMPLETELY REMOVED AND CORRECTLY RE-APPLIED, AT THE SOLE EXPENSE OF THE CONTRACTOR.
- WHERE BITUMINOUS SEALANTS PREVENTS OR MAKES IMPRACTICAL THE EXTENDING OF LINES TO THE FACE OF THE CURB, THE CONTRACTOR SHALL EXTEND LINES TO EDGE OF SEALANT OR WITHIN ONE FOOT OF THE FACE OF CURB, WHICHEVER IS LESS.
- ALL LONG PAVEMENT MARKINGS SHALL BE EPOXY.
- ALL SHORT LINE AND PAVEMENT MARKING LEGENDS (SYMBOLS) ON BITUMINOUS PAVEMENT SHALL BE EPOXY.
- STOP LINE MARKINGS SHALL BE PLACED FOUR FEET (4') IN ADVANCE OF AND PARALLEL TO THE NEAREST CROSSWALK LINE. WHERE MARKED CROSSWALKS DO NOT EXIST, THE STOP LINE SHALL BE PLACED AT THE DESIRED STOPPING POINT, BUT NO MORE THAN THIRTY FEET (30'), OR LESS THAN FOUR FEET (4') FROM THE NEAREST EDGE OF THE INTERSECTION TRAVEL WAY.



- CROSSWALKS - NOTES**
- Crosswalk lines shall be solid white lines, 6 inches wide, marking both edges of the crosswalk area.
 - Crosswalk lines shall extend from face of curb to face of curb or edge of shoulder as applicable.
 - Lines forming a crosswalk shall be parallel.
 - The width of crosswalks is non-milly 6 ft.
 - When specified on the Plans, 24 inch wide consecutive white rectangles 8 ft. long shall be installed perpendicular to the direction of vehicular travel. Spacing shall be approximately 4 ft. c-c. They shall be located so as to avoid normal wheel paths.
- STOP BARS - NOTES**
- Stop bars, solid white lines being 24 inches wide, shall completely traverse all traffic lanes on each approach.
 - Stop bars shall be located at a minimum of 4 ft. in advance of and parallel to the crosswalk lines, unless specified otherwise on the Plans.
 - Cherons shall be used when specified on the Plans.

PROPOSED WATER MAIN LOCATION DETAIL NTS



LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20170472165 (DOTTERER ROAD)

REVISIONS	
DATE	DESCRIPTION
7-17-17	NEW OWNER AND UPDATE LAYOUT
10-27-08	TWP. ENGR. LTR. 10-1-08, TWP PLANNER LTR 10-1-08 & MCCD LTR. 9-25-08
8-25-08	TWP. ENGR. LTR. 3-26-08, TWP PLANNER LTR 3-31-08 & TWP. SWR. ENGR. LTR. 4-1-08, FIRE CHIEF LTR. 4-2-08 & MCCD LTR. 6-12-08
10-15-07	TWP. ENGR. LTR. 8-30-07, TWP PLANNER LTR 9-4-07 & TWP. SWR. ENGR. LTR. 8-31-07, TRAFFIC ENGR. LTR. 8-28-07

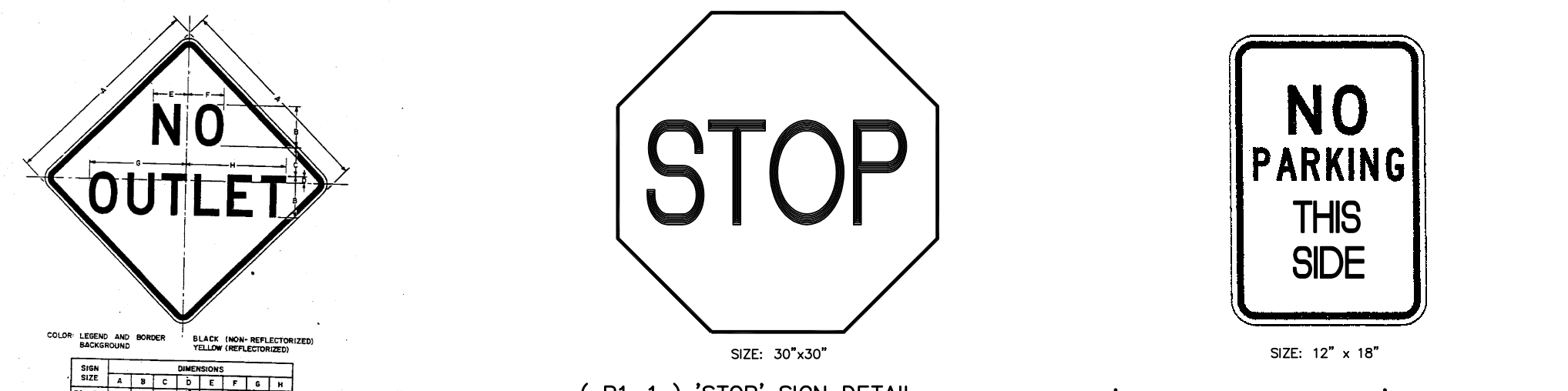
GENERAL CONSTRUCTION DETAIL PLAN "PACER'S GAIT"

PREPARED FOR
MIKELN, LLC.
 SITUATE IN
 NEW HANOVER TOWNSHIP
 MONTGOMERY COUNTY, PENNSYLVANIA
 JULY 9, 2007
 PROJECT No. 16086
 FILE: 16086-BASE



SCALE: AS SHOWN

(W14-2) 'NO OUTLET' SIGN DETAIL NTS



(R1-1) 'STOP' SIGN DETAIL NTS

- NOTES:**
- REFER TO PA, DOT PUB. 88 - OFFICIAL TRAFFIC-CONTROL DEVICES - TITLE 67, CHAPTER 211 - SECTION 211.52 FOR ADDITIONAL NOTES.
 - ALL SIGNAGE MUST BE INSTALLED ON PENNDOT STANDARD BREAKAWAY POSTS.

SIGNAGE - GENERAL NOTES

- REGULATORY AND ADVISORY SIGNAGE TO BE INSTALLED MUST UTILIZE HIGH INTENSITY DIAMOND GRADE REFLECTIVE MATERIAL IN ACCORDANCE WITH NEW PENNDOT STANDARDS FOR TOWNSHIP REGULATORY SIGNAGE.