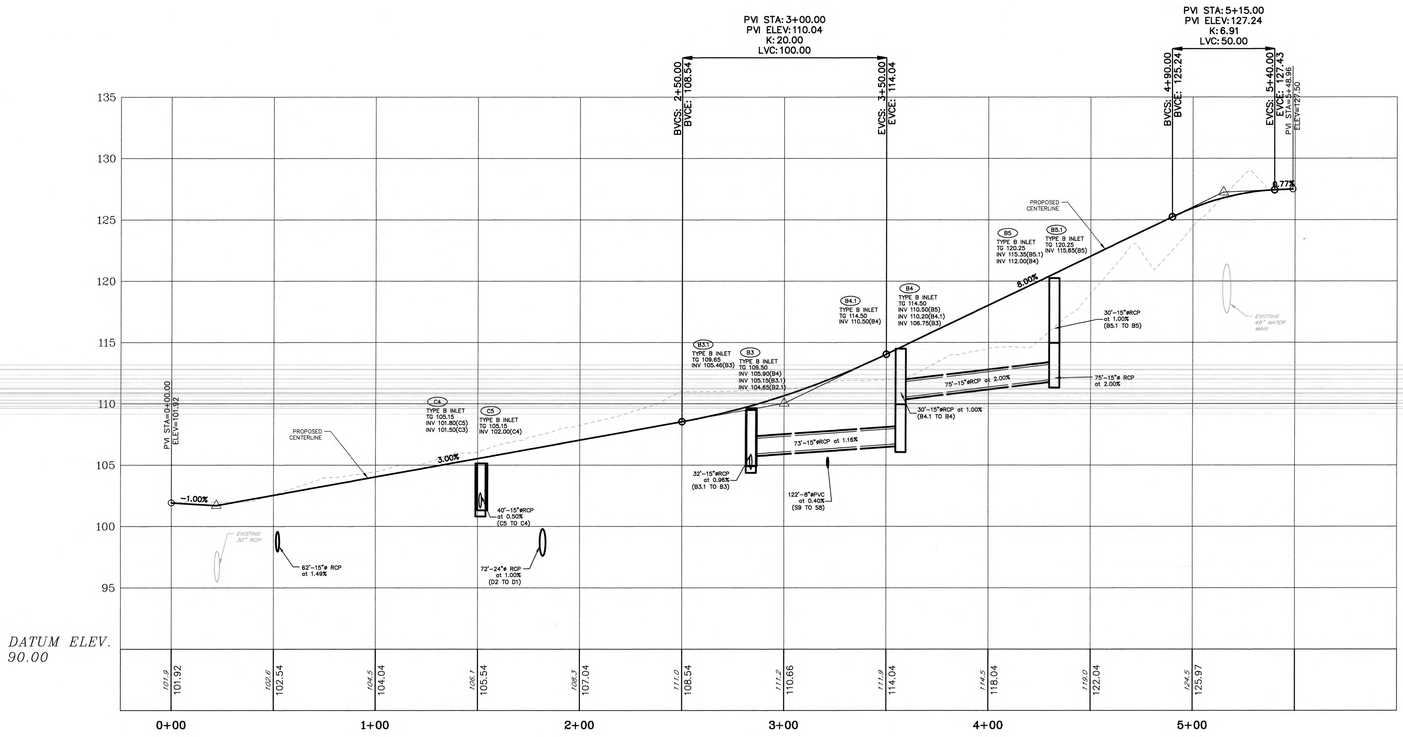
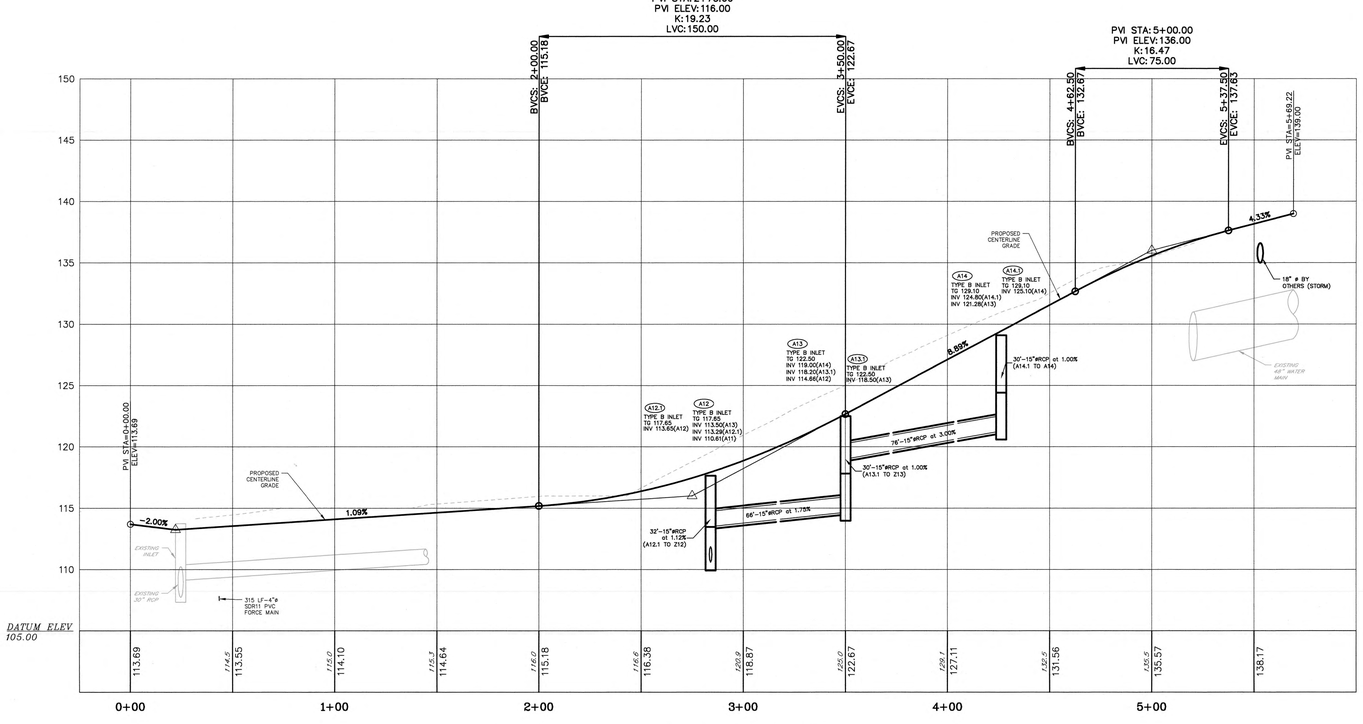


VILLAGE DRIVE ROAD PROFILE
H: 1"=30'
V: 1"= 5'



BRECKNELL WAY ROAD PROFILE
H: 1"=30'
V: 1"= 5'

VERTICAL GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.

HORIZONTAL GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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REVISIONS	
1) COMPLETENESS REVS	4/30/18
2) TOWNSHIP REVS.	9/28/18
3) RESOLUTION COMPLIANCE	3/15/19
4) RESOLUTION COMPLIANCE	11/01/19
5) RESOLUTION COMPLIANCE	2/07/20

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...

SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK at MONTGOMERY

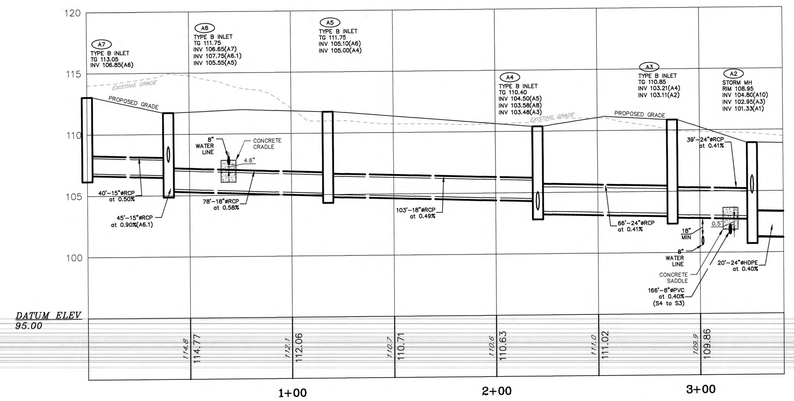
MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

ROAD PROFILES-1

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY	NF	DATE OF ISSUE	SCALE: AS NOTED
DSGN BY	CJS	MARCH 16, 2018	JOB # 2015.063
CHKD. BY	ST	REV 5) FEBRUARY 7, 2020	DWG # RP-1
APPRO. BY	ST		SHEET # 17

C:\Dwg\2015\063\RP-1.dwg Fri, Feb 07, 2020 - 12:48pm



A1 TO A7 PROFILE
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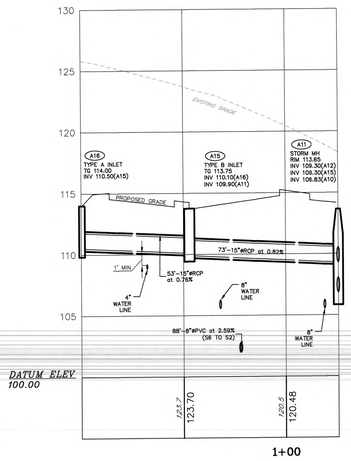
V: 1"= 5'



A11 TO A16 PROFILE
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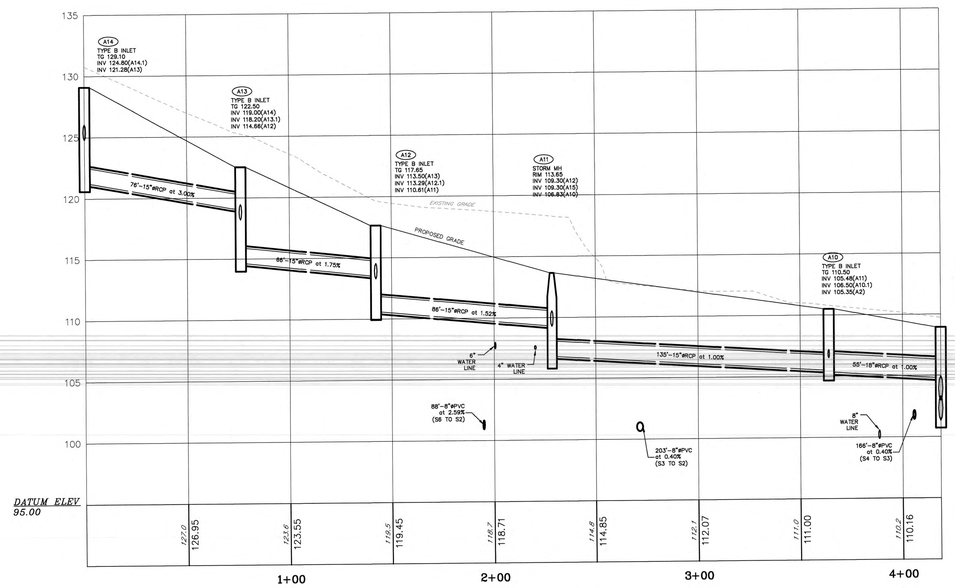

A2 TO A14 PROFILE
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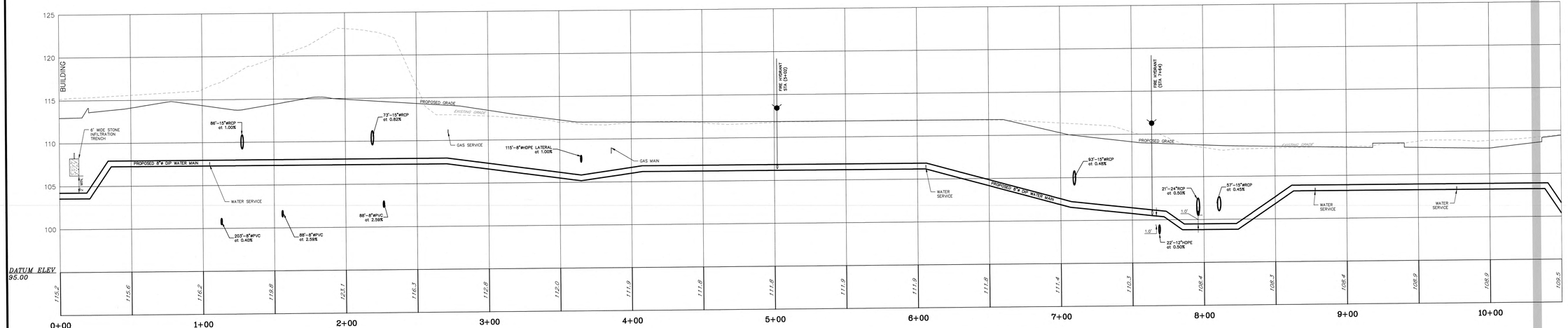

WATERLINE-2 PROFILE
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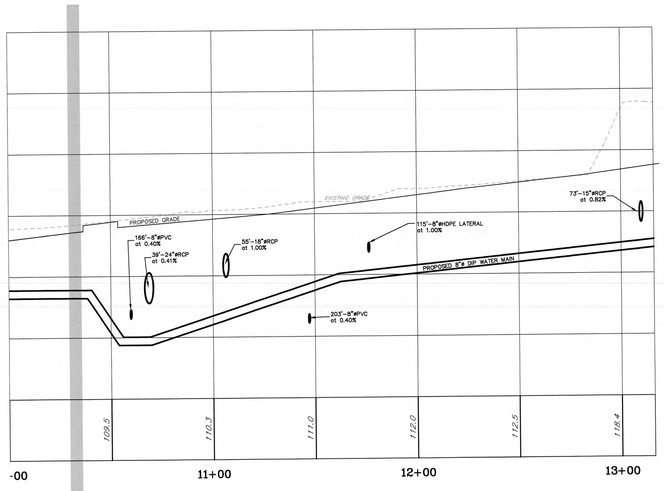
V: 1"= 5'



WATERLINE-2 PROFILE
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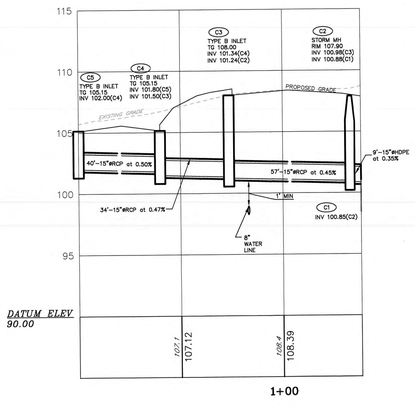
V: 1"= 5'



C1 TO C5 PROFILE
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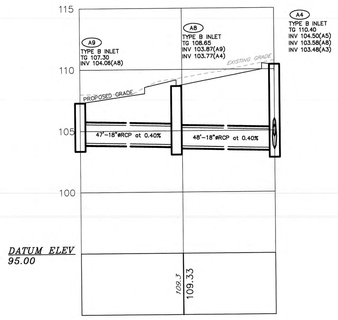
V: 1"= 5'



A4 TO A9 PROFILE
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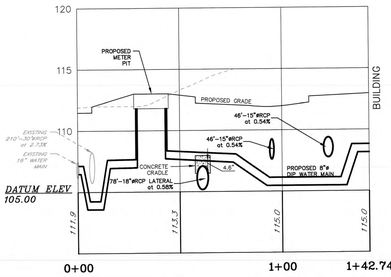
V: 1"= 5'



WATERLINE-1 PROFILE
H: 1"=30'
V: 1"= 5'

VERTICAL GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.

HORIZONTAL GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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2) COMPLETENESS REVS	6/15/18
3) TOWNSHIP REVS	9/28/18
4) RESOLUTION COMPLIANCE	3/15/19
5) RESOLUTION COMPLIANCE	11/01/19
6) RESOLUTION COMPLIANCE	2/07/20
7) RESOLUTION COMPLIANCE	07/16/20

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SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43611

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VILLAGE WALK at MONTGOMERY

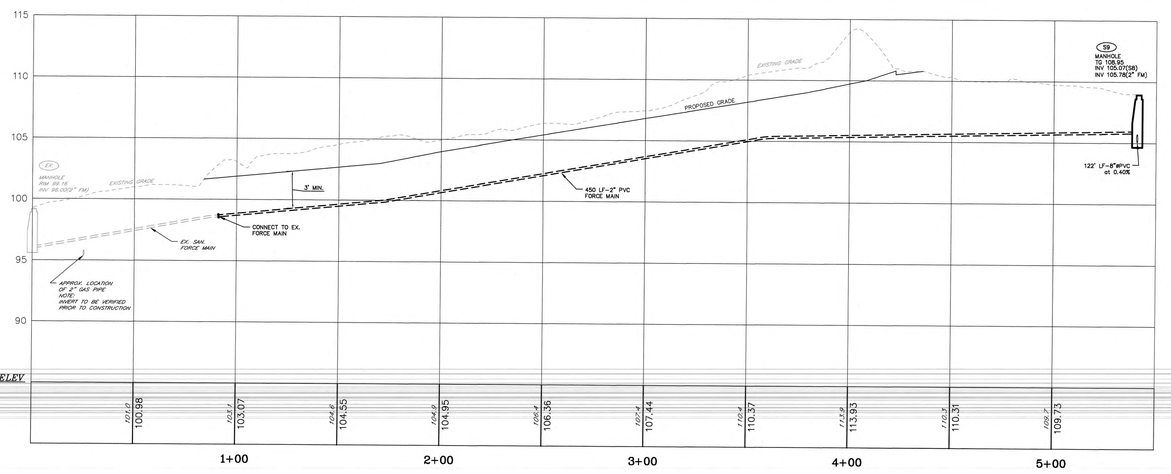
MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

UTILITY PROFILES-1

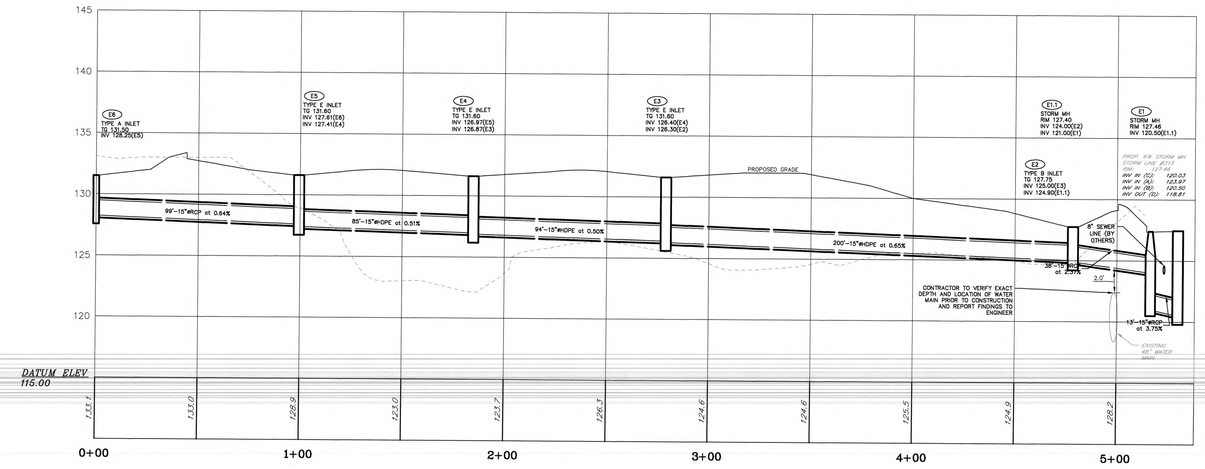
BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY	NF	DATE OF ISSUE	SCALE: AS NOTED
DSGN BY	CJS	MARCH 16, 2018	JOB # 2015.063
CHKD. BY	ST	REV 7) JULY 16, 2020	DWG # UP-1
APPRD. BY	ST		SHEET # 18

C:\Proj\2015\063-Village Walk\2015063-Base.dwg FLOYD 7/16/2020 10:22:24 AM by chris SCALE



2–INCH FORCE MAIN PROFILE
H: 1"=30'
V: 1"= 5'



E6–E1 PROFILE
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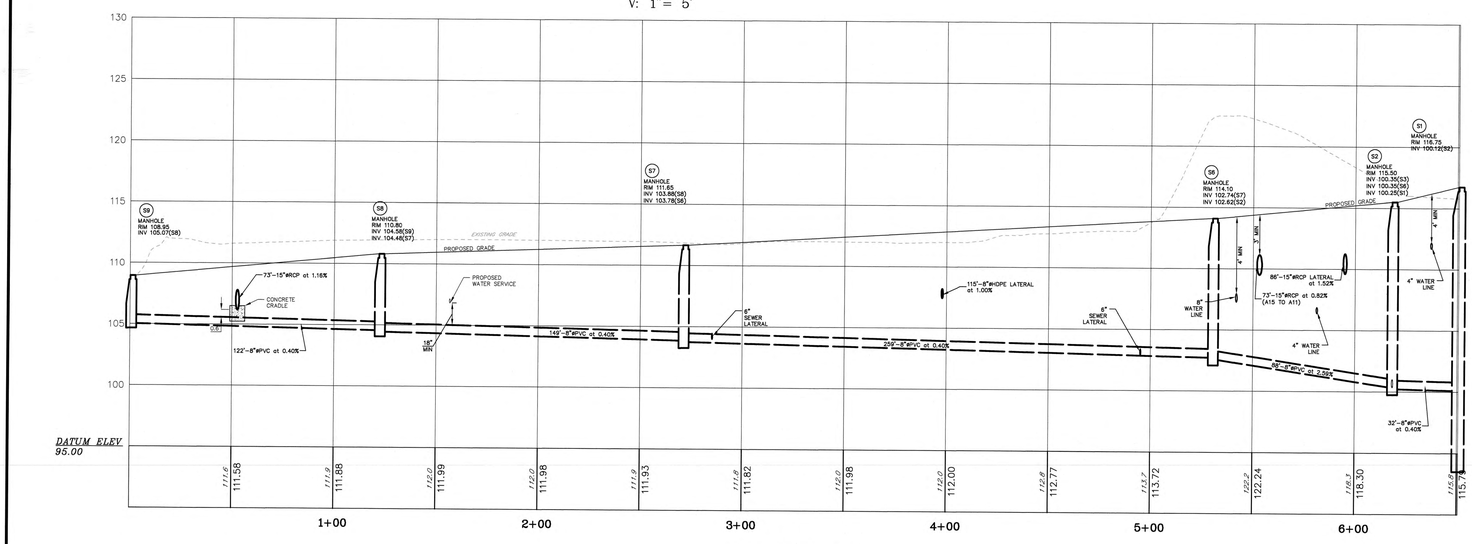
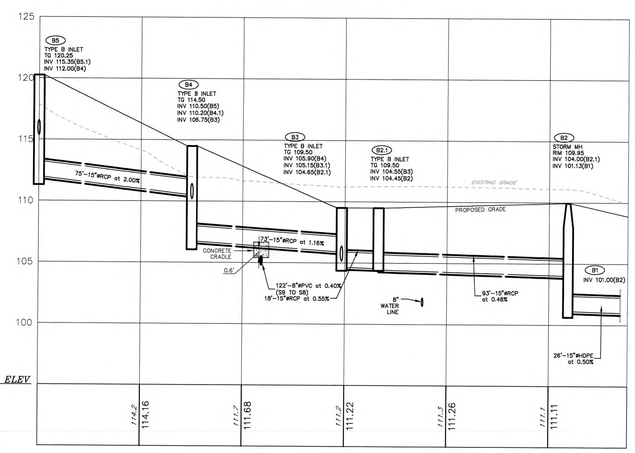
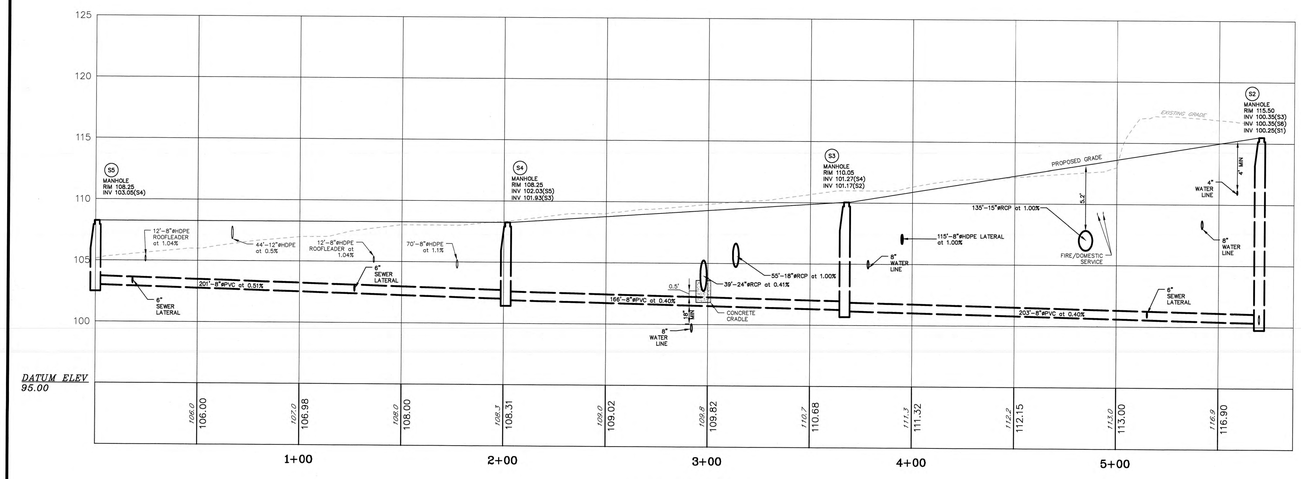
V: 1"= 5'



S1 TO S9 PROFILE
H: 1"=30'
V: 1"= 5'



B1 TO B5 PROFILE
H: 1"=30'
V: 1"= 5'



S2 TO S5 PROFILE
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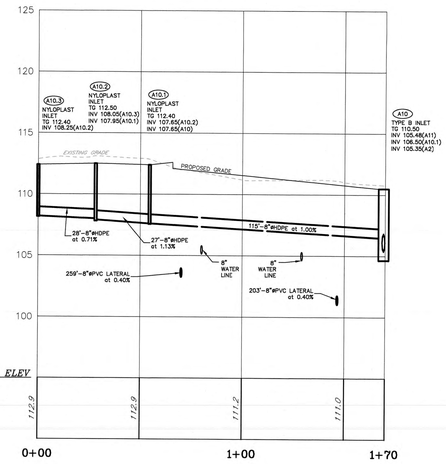
V: 1"= 5'



A10–A10.3 PROFILE
H: 1"=30'
V: 1"= 5'

VERTICAL GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.

HORIZONTAL GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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3) TOWNSHIP REVS	9/28/18
4) TWA SUBMISSION	2/11/19
5) RESOLUTION COMPLIANCE	3/15/19
6) TOWNSHIP SEWER REVS	10/31/19
7) RESOLUTION COMPLIANCE	11/01/19
8) RESOLUTION COMPLIANCE	2/07/20
9) RESOLUTION COMPLIANCE	07/16/20

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SCOTT H. TURNER
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NJPE#43811

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VILLAGE WALK at MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

UTILITY PROFILES–2

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY RM
DSGN BY CJS
CHKD. BY ST
APPRD. BY ST

DATE OF ISSUE
MARCH 16, 2018
REV 9) JULY 16, 2020

SCALE: AS NOTED
JOB # 2015.063
DWG # UP–2
SHEET # 19

C:\Proj\2015.063-Village Walk\2015.063-BASE.dwg PLOTTED: 7/16/2020 12:22 PM BY: CHRIS SZALAY

SURVEY

SILT FENCE (TYP)

LIMIT OF DISTURBANCE (TYP)

INLET PROTECTION (TYP)

RESIDENTIAL STORAGE AREA
1,100 SF

9-STORY MIXED-USE BUILDING
1ST FLOOR RETAIL/COMMERCIAL
31,720 SF
2ND FLOOR RESIDENTIAL
3RD FLOOR RESIDENTIAL

1ST FLOOR RETAIL FF 115.00
2ND FLOOR RESIDENTIAL FF=133.00
3RD FLOOR RESIDENTIAL FF=143.67

1ST FLOOR RETAIL FF 113.00
2ND FLOOR RESIDENTIAL FF=133.00
3RD FLOOR RESIDENTIAL FF=143.67

LOADING AREA 12' x 35'

TEMPORARY STOCKPILE (TYP)

RETAIL/RESTAURANT BUILDING 1/2 STORY 7,875 SF

PROPOSED PUMP STATION W/MASONRY ENCLOSURE (SEE DETAIL)

STONE CONSTRUCTION ACCESS

SEE DOT PLANS FOR CONSTRUCTION DETAIL WITHIN THE DOT R.O.W.

U.S. HIGHWAY ROUTE 206
VARIABLE R.O.W.

CONNECT FORCE MAINS FROM VS II AND III TO 8"PVC LATERAL FOR PHASE 1 – LATERAL TO BE REUSED FOR ANCHOR STORE IN PHASE 2

EXISTING FORCE MAINS FROM VS II AND III TO BE REMOVED

LIMIT OF EX. FORCE MAIN FROM VILLAGE SHOPPER I, II, III TO BE ABANDONED/REMOVED.

EXISTING FORCE MAIN FROM BLOCK 28005, LOT 59 TO REMAIN.

EXISTING FORCE MAIN FROM BLOCK 28005, LOT 59 TO REMAIN

LIMIT OF DISTURBANCE (TYP)

PROPOSED FORCE MAIN TO CONNECT TO EXISTING MANHOLE INV 114.7

CUT AND PLUG FORCE MAINS FROM VILLAGE SHOPPER I, II, III. FORCE MAIN FROM LOT 59 TO REMAIN ACTIVE.

20' WIDE PRIVATE SANITARY SEWER EASEMENT

SILT FENCE (TYP)

TREE PROTECTION (TYP)

LIMIT OF DISTURBANCE (TYP)

PROPOSED STUB FOR PHASE II CONNECTION

PROPOSED STUB FOR FUTURE CONNECTION TO WATER (SEE DETAIL)

PROPOSED DOGHOUSE CLEANOUT RIM 112.50 INV 106.75

136 LF CONCRETE RETAINING WALL – SEE ARCH./STRUCTURAL PLANS FOR DETAILED DESIGN

END CONCRETE RETAINING WALL– SEE DETAIL HEIGHT VARIES BLOCK WALL TW 129.00 BW 124.00

HIGH/LOW CONCRETE RETAINING WALL– SEE DETAIL HEIGHT VARIES BLOCK WALL

VILLAGE SHOPPER III

EXISTING PUMP STATION FROM VILLAGE SHOPPER III

EXISTING FORCE MAIN FROM WELLS FARGO BANK

NO PARKING FIRE LANE

WETLANDS DELINEATION LINE

50' WETLAND BUFFER (TYP.)

BhnB HSG B

RoyB HSG C

RorAt HSG C

AREA OF DISTURBANCE:
260,810 SF (6.0 AC±)

AREA OF COMPACTION:
28,954 SF (0.7 AC±)

LEGEND

RECOMMENDED SOIL COMPACTION TEST LOCATION (APPROX. 1 PER ¼ ACRE)

SOIL COMPACTION TESTING AREAS

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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DWG BY:

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5) RESOLUTION COMPLIANCE	11/01/19
6) RESOLUTION COMPLIANCE	02/7/20
7) RESOLUTION COMPLIANCE	07/16/20

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VILLAGE WALK at MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

SOIL EROSION AND SEDIMENT CONTROL PLAN–PHASE 1

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY	NF	DATE OF ISSUE	SCALE: 1"=30'
DSGN BY	CJS	MARCH 16, 2018	JOB # 2015.063
CHKD. BY	ST	REV 7) JULY 16, 2020	DWG # SE-1
APPRD. BY	ST		SHEET # 20

C:\Dwg\2015.063-Village Walk\2015.063_BASE.dwg PLOTTED: 7/16/2020 12:37 PM BY: CHRIS SZALAY

SURVEY

LIMIT OF DISTURBANCE (TYP)

INLET PROTECTION (TYP)

SILT FENCE (TYP)

STONE CONSTRUCTION ACCESS

TREE PROTECTION (TYP)

LIMIT OF DISTURBANCE (TYP)

SILT FENCE (TYP)

INLET PROTECTION (TYP)

U.S. HIGHWAY ROUTE 206
VARIABLE R.O.W.

RESIDENTIAL STORAGE AREA
1,100 SF

3-STORY MIXED-USE BUILDING
1ST FLOOR RETAIL/COMMERCIAL
31,792 SF
2ND FLOOR RESIDENTIAL
3RD FLOOR RESIDENTIAL

ANCHOR RETAIL BUILDING
12,000 SF
RETAIL FF=113.00

TEMPORARY STOCKPILE (TYP)

RETAIL/RESTAURANT BUILDING B
5,726 SF
FF=109.00

RETAIL/RESTAURANT BUILDING A
5,750 SF
FF=109.00

RETAIL RESTAURANT BUILDING B
5,726 SF

VILLAGE SHOPPER III

FUTURE RETAINING WALL WHEN LANDBANKED PARKING AREA IS CONSTRUCTED

FUTURE GRADING WITHIN LANDBANKED PARKING AREA

PROPOSED UNDERGROUND DETENTION BASIN #2 IF LANDBANKED PARKING REQUIRED

20' WIDE PRIVATE SANITARY SEWER EASEMENT

EXISTING FORCE MAIN FROM VILLAGE SHOPPER III TO BE ABANDONED IN PLACE. TO BE REMOVED IS LANDBANKED PARKING IS CONSTRUCTED

CUT AND CAP EX. FORCE MAIN.

CONNECT TO EX. FORCE MAIN

450 LF +/- 8" PVC FORCE MAIN

ASH 12"-8" PVC FORCE MAIN

FROM VILLAGE SHOPPER III TO BE REALIGNED

CUT SANITARY FORCE MAIN TO BE REMOVED IN PHASE 2 - CUT AND CAP

CONSTRUCT DOGHOUSE MANHOLE OVER EXISTING FORCE MAIN FROM BANK

EXISTING PUMP STATION FROM VILLAGE SHOPPER III

EXISTING PUMP STATION FROM WELLS FARGO BANK

EXISTING FORCE MAIN FROM WELLS FARGO BANK

EXISTING FORCE MAIN TO BE REMOVED

EXISTING 1-STORY MASONRY BUILDING 2,100 SF

1 STORY MASONRY BUILDING 2,438 SF

EXISTING 2-STORY MASONRY BUILDING 27,000 SF

EXISTING 2-STORY MASONRY BUILDING 27,000 SF

EXISTING 1-STORY MASONRY BUILDING 2,438 SF

EXISTING 1-STORY MASONRY BUILDING 2,100

STANDARD FOR PERMANENT STABILIZATION WITH SOD

DEFINITION

ESTABLISHING PERMANENT VEGETATION USING SOD.

PURPOSE

TO PERMANENTLY STABILIZE TOPSOIL WITH AN IMMEDIATE AESTHETIC COVERING, THUS ASSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT.

WATER QUALITY ENHANCEMENT

PROVIDES AN IMMEDIATE, PERMANENT VEGETATIVE COVER TO THE SOIL FROM THE IMPACTS OF WIND OR RAIN AND PREVENTS SOIL AND NUTRIENT LOSSES TO STREAMS AND OTHER STORMWATER CONVEYANCES FROM STORMWATER RUNOFF.

WHERE APPLICABLE

ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE WHERE AN IMMEDIATE, PERMANENT, VEGETATIVE COVER IS DESIRED. WATER (RAIN OR IRRIGATION) IS REQUIRED FOR SUCCESS; ACCESS TO IRRIGATION IS ESSENTIAL DURING DROUGHT.

METHODS AND MATERIALS

1. HIGH QUALITY CULTIVATED SOD IS PREFERRED OVER NATIVE OR PASTURE SOD.

2. SOD SHOULD BE FREE OF BROADLEAF WEEDS AND UNDESIRABLE COARSE AND FINE WEED GRASSES.

3. SOD SHOULD BE OF UNIFORM THICKNESS, TYPICALLY 5/8 INCH, PLUS OR MINUS 1/4 INCH, AT TIME OF CUTTING (EXCLUDES TOP GROWTH.).

4. SOD SHOULD BE VIGOROUS AND DENSE AND BE ABLE TO RETAIN ITS OWN SHAPE AND WEIGHT WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP FROM THE UPPER 10 PERCENT OF THE STRIP. BROKEN PADS AND ROLLS OR TORN AND UNEVEN ENDS WILL NOT BE ACCEPTABLE.

5. FOR DROUGHTY SITES, A SOD OF TURF-TYPE TALL FESCUE OR TURF-TYPE TALL FESCUE MIXED WITH KENTUCKY BLUEGRASS IS PREFERRED OVER A 100% KENTUCKY BLUEGRASS SOD; ALTHOUGH NOT WIDELY AVAILABLE, A SOD OF FINE FESCUE IS ALSO ACCEPTABLE FOR DROUGHTY SITES.

6. ONLY MOIST, FRESH, UNHEATED SOD SHOULD BE USED. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 24 HOURS OR LESS DURING SUMMER MONTHS.

1. SITE PREPARATION

A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR LIMING, FERTILIZING, INCORPORATION OF ORGANIC MATTER, AND OTHER SOIL PREPARATION PROCEDURES. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.

B. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 6 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES.

SEE THE STANDARD FOR TOPSOILING FOR TOPSOIL AND AMENDMENT REQUIREMENTS.

C. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS

2. SOIL PREPARATION

A. UNIFORMLY APPLY GROUND LIMESTONE, AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET USING 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ½ THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ½ RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING. APPLY LIMESTONE AT THE RATE OF 2 TONS/ACRE UNLESS SOIL TESTING INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES. TABLE 6-1 IS A GENERAL GUIDELINE FOR LIMESTONE APPLICATION RATES.

B. WORK LIME, AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED.

C. REMOVE FROM THE SURFACE ALL OBJECTS THAT WOULD PREVENT GOOD SOD TO TOPSOIL CONTACT AND REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS, OR OTHER UNSUITABLE MATERIAL.

D. INSPECT SITE JUST BEFORE SODDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED IN ACCORDANCE WITH THE ABOVE.

3. SOD PLACEMENT

A. SOD STRIPS SHOULD BE LAID ON THE CONTOUR, NEVER UP AND DOWN THE SLOPE, STARTING AT THE BOTTOM OF THE SLOPE AND WORKING UP. ON STEEP SLOPES, THE USE OF LADDERS WILL FACILITATE THE WORK AND PREVENT DAMAGE TO THE SOD. DURING PERIODS OF HIGH TEMPERATURE, LIGHTLY IRRIGATE THE SOD IMMEDIATELY PRIOR TO LAYING THE SOD.

B. PLACE SOD STRIPS WITH SNUG, EVEN JOINTS (SEAMS) THAT ARE STAGGERED. OPEN SPACES INVITE EROSION.

C. LIGHTLY ROLL OR TAMP SOD IMMEDIATELY FOLLOWING PLACEMENT TO INSURE SOLID CONTACT OF ROOT MAT AND SOIL SURFACE. DO NOT OVERLAP SOD. ALL JOINTS SHOULD BE BUTTED TIGHTLY TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS AND INVASION OF WEEDS.

D. ON SLOPES GREATER THAN 3 TO 1, SECURE SOD TO SURFACE SOIL WITH WOOD PEGS, WIRE STAPLES BIODEGRADABLE PLASTIC SPIKES, OR SPLIT SHINGLES (8 TO 10 INCHES LONG BY 3/4 INCH WIDE).

E. SURFACE WATER CANNOT ALWAYS BE DIVERTED FROM FLOWING OVER THE FACE OF THE SLOPE, BUT A CAPPING STRIP OF HEAVY JUTE OR PLASTIC NETTING, PROPERLY SECURED, ALONG THE CROWN OF THE SLOPE AND EDGES WILL PROVIDE EXTRA PROTECTION AGAINST LIFTING AND UNDERCUTTING OF SOD. THE SAME TECHNIQUE CAN BE USED TO ANCHOR SOD IN WATER-CARRYING CHANNELS AND OTHER CRITICAL AREAS. WIRE STAPLES MUST BE USED TO ANCHOR NETTING IN CHANNEL WORK.

F. IMMEDIATELY FOLLOWING INSTALLATION, SOD SHOULD BE WATERED UNTIL WATER PENETRATES THE SOIL LAYER BENEATH SOD TO A DEPTH OF 1 INCH. MAINTAIN OPTIMUM WATER FOR AT LEAST TWO WEEKS.

4. TOPDRESSING – SINCE SOIL ORGANIC MATTER AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTIONS 1 AND 2IN THIS STANDARD, A FOLLOW-UP TOPDRESSING IS NOT MANDATORY, EXCEPT WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP, TOPDRESSING SHALL THEN BE APPLIED. TOPDRESS WITH 10-0-10 OR EQUIVALENT AT 400 POUNDS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.

TABLE 6–1

LIMESTONE [1] APPLICATION RATE BY SOIL TEXTURE

SOIL TEXTURE	TONS/ACRE	LBS./1000 SQ. FT.
CLAY, CLAY LOAM AND HIGH ORGANIC SOIL	3	135
SANDY LOAM, LOAM, SILT LOAM	2	90
LOAMY SAND, SAND	1	45

1. Pulverized dolomitic limestone is preferred for most soils south of the New Brunswick–Trenton line; however, this should be confirmed by soil testing.

STANDARD FOR PERMANENT VEGETATIVE COVER

DEFINITION
ESTABLISHMENT OF PERMANENT VEGETATIVE COVER ON EXPOSED SOILS WHERE PERENNIAL VEGETATION IS NEEDED FOR LONG-TERM PROTECTION.

PURPOSE
TO PERMANENTLY STABILIZE THE SOIL, ENSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT.

WATER QUALITY ENHANCEMENT
SLOWS THE OVER-LAND MOVEMENT OF STORMWATER RUNOFF, INCREASES INFILTRATION AND RETAINS SOIL AND NUTRIENTS ON SITE.

WHERE APPLICABLE
ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE.

METHODS AND MATERIALS
1. SITE PREPARATION
A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.

B. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.

C. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.

D. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

2. SEEDBED PREPARATION
A. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET USING 10–10–10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE–HALF THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ONE–HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.

B. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING–TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED.

C. HIGH ACID PRODUCING SOIL SOILS HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5.0 OR MORE BEFORE INITIATING SEEDBED REPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID–PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

3. SEEDING
A. SELECT A MIXTURE FROM TABLE 4–3 OR USE A MIXTURE RECOMMENDED BY RUTGERS COOPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RETESTED.

1. SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE INSPECTION. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDED AREA AND MOWED ONCE.

2. WARM–SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 85O F AND ABOVE. SEE TABLE 4–3 MIXTURES 1 TO 7. PLANTING RATES FOR WARM–SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.

3. COOL–SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85OF. MANY GRASSES BECOME ACTIVE AT 65OF. SEE TABLE 4–3, MIXTURES 8–20. ADJUSTMENT OF PLANTING RATES TO COMPENSATE FOR THE AMOUNT OF PLS IS NOT REQUIRED FOR COOL SEASON GRASSES.

B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER, EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE–TEXTURED SOIL.

C. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED–TO–SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

D. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK, OR TRAILER–MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED, SHORT– FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4–MULCHING BELOW). HYDROSEEDING IS NOT A REFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

4. MULCHING
MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1–1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH–BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER–BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.

APPLICATION – SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND–SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.

ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.

1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS–CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

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

3. CRIMPER (MULCH ANCHORING COULTER TOOL) – A TRACTOR–DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OUT SOME OF THE BROADCAST LOAD FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR AND LEAVE PART STANDING UPRIGHT, THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.

4. LIQUID MULCH–BINDERS – MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.
(a) APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
(b) USE ONE OF THE FOLLOWING:
(1) ORGANIC AND VEGETABLE BASED BINDERS – NATURALLY OCCURRING, POWDER–BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURF GRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
(2) SYNTHETIC BINDERS – HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND, FOLLOWING APPLICATION OF MULCH, DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.
NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

B. WOOD–FIBER OR PAPER–FIBER MULCH – SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MADE SAFE AND MAY BE APPLIED BY A HYDROSEEDER. MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED, USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

C. PELLETIZED MULCH – COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO–POLYMERS, TACKIFIERS, FERTILIZERS, AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDED AREA AND WATERED, FORM A MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60–75 LBS/1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN AND RECREATION AREAS. SEEDED AREAS WHERE WIND–SEED FREE MULCH IS DESIRED, OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLICATION OF 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

5. IRRIGATION (WHERE FEASIBLE)
IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

6. TOPDRESSING
SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A – SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW–UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP, IN THAT INSTANCE, TOPDRESS WITH 10–10–10 OR EQUIVALENT AT 300 POUNDS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.

7. ESTABLISHING PERMANENT VEGETATIVE STABILIZATION
THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4–3 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE. NOTE THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

'WET TOLERANT' SEEDING SPECIFICATION

SEEDBED PREPARATION: FERTILIZER (10–10–10) 500 LB/AC
LIMESTONE 6,000 LB/AC

FOR UNMAINTAINED AREAS

SEEDING DATES:
ZONE 5b,6a (3/15–5/31); ZONE 6b (3/1–4/30);ZONE 7a,7b (2/1–4/30)
(IF DISTURBANCE IS OUTSIDE OF PLANTING DATES THEN SEED AREA WITH TEMPORARY SEEDING MIX. THE TARGET AREA MUST THEN BE RESEED WITH REQUIRED MIX WITHIN THE REQUIRED PLANTING DATES.)

SCS SEED MIX #9		
	DEERTONGUE	20 LB/AC
	REDTOP	2 LB/AC
	WILD RYE (ELYMUS)	15 LB/AC
	SWITCHGRASS	30 LB/AC

FOR MAINTAINED AREAS
(POND AND CHANNEL BANKS, BERMS AND DAMS)

SEEDING DATES:
(OPTIMAL) ZONE 5b,6a (8/1–10/1); ZONE 6b (8/15–10/15);ZONE 7a,7b (8/15–10/30)
(SEE TABLE 4–2 OF THE SCS STANDARDS FOR ADDITIONAL PLANTING DATES)

SCS SEED MIX #7		
	STRONG CREEPING RED FESCUE	130 LB/AC
	KENTUCKY BLUEGRASS	50 LB/AC
	PERENNIAL RYEGRASS	20 LB/AC
	OR REDTOP	10 LB/AC
	W/ WHITE CLOVER	5 LB/AC

FOR MAINTAINED AREAS (DETENTION BASINS AND SWALES)

SEEDING DATES:
(OPTIMAL) ZONE 5b,6a (8/1–10/1); ZONE 6b (8/15–10/15);ZONE 7a,7b (8/15–10/30)
(SEE TABLE 4–2 OF THE SCS STANDARDS FOR ADDITIONAL PLANTING DATES)

SCS SEED MIX #14		
	TURF–TYPE TALL FESCUE	350 LB/AC
	(3 CULTIVAR BLEND)	
	KENTUCKY BLUEGRASS (BLEND)	30 LB/AC
	PERENNIAL RYEGRASS (BLEND)	30 LB/AC

MULCHING:
UNROTTED SALT HAY OR APPROVED EQUAL 1 1/2 to 2 TONS/AC

MULCH ANCHORING:
HYDROMULCH OR APPROVED EQUAL (USE RATES AS RECOMMENDED BY MANUFACTURER)

NOTES:
1) FOR ADDITIONAL REQUIREMENTS REFER TO THE SCS STANDARD FOR PERMANENT VEGETATIVE COVER.
2) THE FERTILIZER AND LIMESTONE RATES REPRESENT THE UNTESTED SCS REQUIRED RATES. FINAL RATES SUBJECT TO SOIL FERTILITY, pH ANALYSIS AND LAB RECOMMENDATIONS.

CONDITION OF ACCEPTANCE
1) NO EROSION SHALL EXIST.
2) BARE OR THIN SPOTS IN EXCESS OF 5 PERCENT OF ANY AREA WILL NOT BE ACCEPTABLE.
3) ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATED COVER (OF THE SEEDED SPECIES) AND MOWED ONCE.

STANDARD FOR TOPSOILING

DEFINITION

TOPSOILING ENTAILS THE DISTRIBUTION OF SUITABLE QUALITY SOIL ON AREAS TO BE VEGETATED.

PURPOSE

TO IMPROVE THE SOIL MEDIUM FOR PLANT ESTABLISHMENT AND MAINTENANCE.

WATER QUALITY ENHANCEMENT

GROWTH AND ESTABLISHMENT OF A VIGOROUS VEGETATIVE COVER IS FACILITATED BY TOPSOIL, PREVENTING SOIL LOSS BY WIND AND RAIN OFFSITE AND INTO STREAMS AND OTHER STORMWATER CONVEYANCES.

WHERE APPLICABLE

TOPSOIL SHALL BE USED WHERE SOILS ARE TO BE DISTURBED AND WILL BE REVEGETATED.

METHODS AND MATERIALS

1. MATERIALS

A. TOPSOIL SHOULD BE FRIABLE[1], LOAMY[2] FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES, AND CONTAIN NO TOXIC SUBSTANCE OR ADVERSE CHEMICAL OR PHYSICAL CONDITION THAT MAY BE HARMFUL TO PLANT GROWTH. SOLUBLE SALTS SHOULD NOT BE EXCESSIVE (CONDUCTIVITY LESS THAN 0.5 MILLIMHOS PER CENTIMETER. MORE THAN 0.5 MILLIMHOS MAY DESICCATE SEEDLINGS AND ADVERSELY IMPACT GROWTH). IMPORTED TOPSOIL SHALL HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES.

B. TOPSOIL SUBSTITUTE IS A SOIL MATERIAL WHICH MAY HAVE BEEN AMENDED WITH SAND, SILT, CLAY, ORGANIC MATTER, FERTILIZER OR LIME AND HAS THE APPEARANCE OF TOPSOIL. TOPSOIL SUBSTITUTES MAY BE UTILIZED ON SITES WITH INSUFFICIENT TOPSOIL FOR ESTABLISHING PERMANENT VEGETATION. ALL TOPSOIL SUBSTITUTE MATERIALS SHALL MEET THE REQUIREMENTS OF TOPSOIL NOTED ABOVE. SOIL TESTS SHALL BE PERFORMED TO DETERMINE THE COMPONENTS OF SAND, SILT, CLAY, ORGANIC MATTER, SOLUBLE SALTS AND PH LEVEL.

2. STRIPPING AND STOCKPILING

A. FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING.

B. STRIPPING SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.

C. WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING THE SOIL PH TO APPROXIMATELY 6.5.

D. A 4–6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.

E. STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF–SITE ENVIRONMENTAL DAMAGE.

F. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS PREVIOUSLY DESCRIBED HEREIN; SEE STANDARDS FOR PERMANENT (PG. 4–1) OR TEMPORARY (PG.7–1) VEGETATIVE COVER FOR SOIL STABILIZATION. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES.

3. SITE PREPARATION

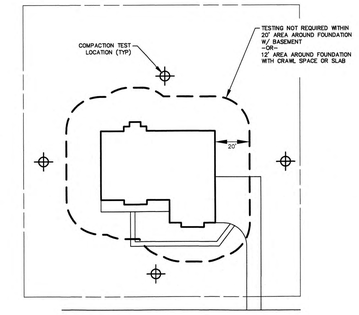
A. GRADE AT THE ONSET OF THE OPTIMAL SEEDING PERIOD SO AS TO MINIMIZE THE DURATION AND AREA OF EXPOSURE OF DISTURBED SOIL TO EROSION. IMMEDIATELY PROCEED TO ESTABLISH VEGETATIVE COVER IN ACCORDANCE WITH THE SPECIFIED SEED MIXTURE. TIME IS OF THE ESSENCE

B. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. SEE THE STANDARD FOR LAND GRADING, PG. 19–1.

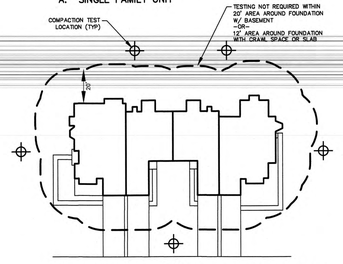
C. AS GUIDANCE FOR IDEAL CONDITIONS, SUBSOIL SHOULD BE TESTED FOR LIME REQUIREMENT. LIMESTONE, IF NEEDED, SHOULD BE APPLIED TO BRING SOIL TO A PH OF APPROXIMATELY 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES.

D. PRIOR TO TOPSOILING, THE SUBSOIL SHALL BE IN COMPLIANCE WITH THE STANDARD FOR LAND GRADING, PG. 19–1.

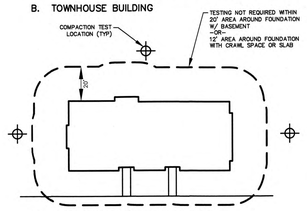
E. EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZAT



A. SINGLE FAMILY UNIT



B. TOWNHOUSE BUILDING



C. MULTIFAMILY HOUSING OR OTHER NON-RESIDENTIAL BUILDING/STRUCTURE

NOTE: SOIL COMPACTION TESTING LOCATIONS IDENTIFIED ARE RECOMMENDED LOCATIONS FOR GRADED/DISTURBED AREAS WITHIN THE VICINITY OF BUILDINGS AND STRUCTURES OR ON INDIVIDUAL LOTS. FOR GRADED/DISTURBED AREAS WITHIN OPEN OR COMMON SPACES, SOIL COMPACTION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE FREQUENCY LISTED IN THE LEGEND (SEE PLAN SHEETS).

TYPICAL SOIL COMPACTION TESTING LOCATIONS

N.T.S.

SOIL DE-COMPACTION AND TESTING REQUIREMENTS

SOIL COMPACTION TESTING REQUIREMENTS

1. SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL (SEE PERMANENT SEEDING AND STABILIZATION NOTES FOR TOPSOIL REQUIREMENTS) SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
2. AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION ARE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.
3. COMPACTION TESTING LOCATIONS ARE DENOTED ON THE PLAN. A COPY OF THE PLAN OR PORTION OF THE PLAN SHALL BE USED TO MARK LOCATIONS OF TESTS, AND ATTACHED TO THE COMPACTION REMEDIATION FORM, AVAILABLE FROM THE LOCAL SOIL CONSERVATION DISTRICT. THIS FORM MUST BE FILLED OUT AND SUBMITTED PRIOR TO RECEIVING A CERTIFICATE OF COMPLIANCE FROM THE DISTRICT.
4. IN THE EVENT THAT TESTING INDICATES COMPACTION IN EXCESS OF THE MAXIMUM THRESHOLDS INDICATED FOR THE SIMPLIFIED TESTING METHODS (SEE DETAILS BELOW), THE CONTRACTOR/OWNER SHALL HAVE THE OPTION TO PERFORM EITHER (1) COMPACTION MITIGATION OVER THE ENTIRE MITIGATION AREA DENOTED ON THE PLAN (EXCLUDING EXEMPT AREAS), OR (2) PERFORM ADDITIONAL, MORE DETAILED TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION. ADDITIONAL DETAILED TESTING SHALL BE PERFORMED BY A TRAINED, LICENSED PROFESSIONAL.

COMPACTION TESTING METHODS

A. PROBING WIRE TEST (SEE DETAIL)
B. HAND-HELD PENETROMETER TEST (SEE DETAIL)
C. TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED
D. NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)

NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A DRY WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL.

SOIL COMPACTION TESTING IS NOT REQUIRED IF/WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) OR SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.

PROCEDURES FOR SOIL COMPACTION MITIGATION

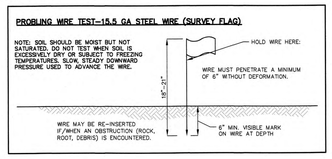
PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.). IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER MAYBE SUBSTITUTED SUBJECT TO DISTRICT APPROVAL.

SIMPLIFIED TESTING METHODS

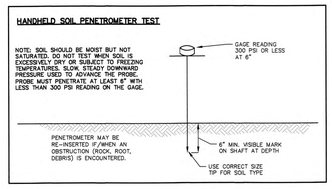
PROBLING WIRE TEST-15.5 GA STEEL WIRE (SURVEY FLAG)

NOTE: SOIL SHOULD BE MOIST BUT NOT SATURATED. DO NOT TEST WHEN SOIL IS EXCESSIVELY DRY OR SUBJECT TO FREEZING TEMPERATURES. SLOW, STEADY DOWNWARD PRESSURE USED TO ADVANCE THE WIRE.



HANDHELD SOIL PENETROMETER TEST

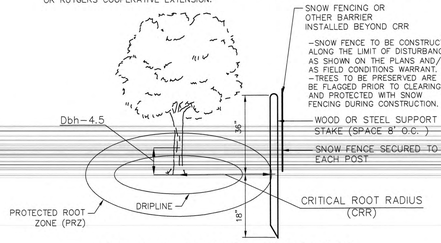
NOTE: SOIL SHOULD BE MOIST BUT NOT SATURATED. DO NOT TEST WHEN SOIL IS EXCESSIVELY DRY OR SUBJECT TO FREEZING TEMPERATURES. SLOW, STEADY DOWNWARD PRESSURE USED TO ADVANCE THE PROBE. PROBE MUST PENETRATE AT LEAST 6" WITH LESS THAN 300 PSI READING ON THE GAGE.



CRITERIA FOR PROTECTING REMAINING TREES:

1. GENERAL MECHANICAL DAMAGE – SEE BELOW FOR CORRECT ROOT ZONE CALCULATION AND PLACEMENT OF TREE PROTECTION.
2. BOX TREES WITHIN 25 FEET OF A BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD BE INSTALLED BEYOND THE CRITICAL ROOT RADIUS. TREE ROOT SYSTEMS COMMONLY EXTEND WELL BEYOND THE DRIP LINE.
3. BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
4. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE PROTECTED ROOT ZONE (PRZ).
5. DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR LICENSED TREE EXPERT.

NOTE: FOR MORE SPECIFIC TREE CHARACTERISTICS AND TREE LIMB REMOVAL, SEE THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY PUBLISHED BY THE NEW JERSEY DEPARTMENT OF AGRICULTURE-STATE SOIL CONSERVATION COMMITTEE OR CONSULT WITH A LICENSED PROFESSIONAL TREE EXPERT, SOIL CONSERVATION DISTRICT OR RUTGERS COOPERATIVE EXTENSION.



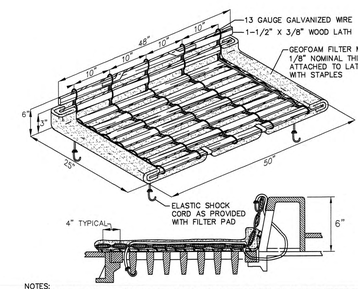
ESTIMATE A TREE'S PROTECTED ROOT ZONE (PRZ) BY CALCULATING THE CRITICAL ROOT RADIUS (CRR).

1. MEASURE THE DBH (DIAMETER OF TREE AT BREAST HEIGHT, 4.5 FEET ABOVE GROUND ON THE UPHILL SIDE OF TREE) IN INCHES.
2.
3. MULTIPLY MEASURED DBH BY 1.5 OR 1.0. EXPRESS THE RESULT IN FEET.

DBH X 1.5: CRITICAL ROOT RADIUS FOR OLDER, UNHEALTHY, OR SENSITIVE SPECIES.

DBH X 1.0: CRITICAL ROOT RADIUS FOR YOUNGER, HEALTHY OR TOLERANT SPECIES

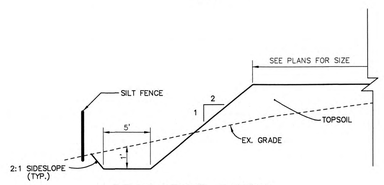
TREE PROTECTION



NOTES:
1. FURNISH AND INSTALL INLET FILTER PADS AS MANUFACTURED BY R.B.S. ENTERPRISES, OR APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PAD SHALL CONSIST OF 3/8" NORMAL THICKNESS GEOFOAM FILTER MEDIA ATTACHED TO FRAMEWORK. FRAMEWORK SHALL BE COMPRISED ON 1-1/2" x 3/8" x 48" WOOD LATH ON 4" CENTERS FOR A 5 WIRE GRID. FOAM SHALL BE ATTACHED TO LATH GRID WITH STAPLES. PAD SHALL BE ATTACHED TO GRATE WITH THE ELASTIC SHOCK CORD AND HOOKS.
2. THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FROM THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

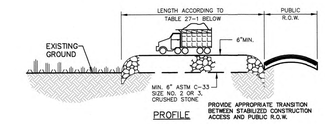
INLET PROTECTION DETAIL

N.T.S.

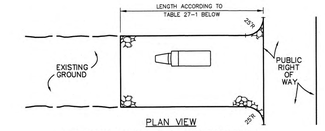


STOCKPILE DETAIL

N.T.S.



PROFILE



PLAN VIEW

NOTE: INDIVIDUAL LOT ACCESS POINTS MAY REQUIRE STABILIZATION. THICKNESS SHOWN IS FOR STONE CONSTRUCTION ENTRANCE ONLY (TYP.)

NOTES:
1. AT POORLY DRAINED LOCATIONS, SUBSURFACE DRAINAGE GRAVEL FILTER OR GEOTEXTILE SHALL BE INSTALLED BEFORE INSTALLING THE STABILIZED CONSTRUCTION ENTRANCE.
2. INDIVIDUAL LOT ENTRANCE AND EGRESS- AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOT INGRESS/EGRESS POINTS MAY REQUIRE A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF No. 3 STONE (1" TO 2") TO PREVENT OR MINIMIZE TRACKING OF SEDIMENTS. WIDTH OF THE STONE INGRESS/EGRESS SHALL BE EQUAL TO LOT ENTRANCE WIDTH AND SHALL BE A MINIMUM OF TEN FEET IN LENGTH.
3. TIRE WASHING- IF SPACE IS LIMITED, VEHICLE TIRES MAY BE WASHED WITH CLEAN WATER BEFORE ENTERING A PAVED AREA. A WASH STATION MUST BE LOCATED SUCH THAT WASH WATER WILL NOT FLOW ONTO PAVED ROADWAYS OR INTO UNPROTECTED STORM DRAINAGE SYSTEMS.
4. WHEN THE CONSTRUCTION ACCESS EXISTS ONTO A MAJOR ROADWAY, A PAVED TRANSITION AREA MAY BE INSTALLED BETWEEN THE MAJOR ROADWAY AND THE STONED ENTRANCE TO PREVENT LOOSE STONES FROM BEING TRANSPORTED OUT ONTO THE ROADWAY BY HEAVY EQUIPMENT ENTERING OR LEAVING THE SITE.
5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Table 27-1: Lengths of Construction Exits on Sloping Roadbeds

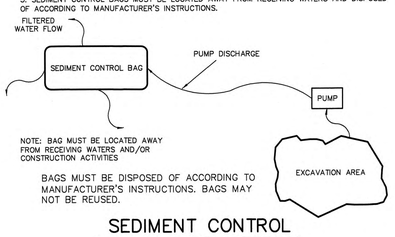
Percent Slope of Roadway	Length of Stone Required	
	Coarse Grained Soils	Fine Grained Soils
0 to 2%	50 ft	100 ft
2 to 5%	100 ft	200 ft
>5%	Entire surface stabilized with FABC base course[1]	

1. As prescribed by local ordinance or other governing authority.

STABILIZED CONSTRUCTION ACCESS

N.T.S.

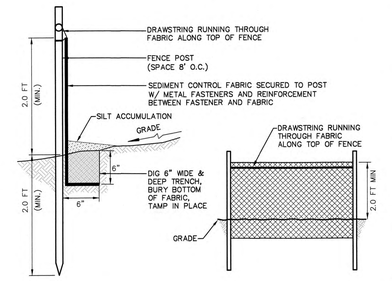
1. SILT CONTROL BAGS ARE CONTAINERS THROUGH WHICH SEDIMENT LADEN WATER IS PUMPED TO TRAP AND RETAIN THE SEDIMENT. A SILT CONTROL BAG IS TO BE USED ON SITES WERE EXCAVATIONS ARE DEEP, AND SPACES IS LIMITED AND WHERE DIRECT DISCHARGE OF SEDIMENT LADEN WATER TO STREAM AND STORM DRAINAGE SYSTEM IS TO BE AVOIDED.
2. CONTAINERS (BAGS) SHALL BE LOCATED FOR EASE OF CLEAN-OUT AND DISPOSAL OF THE TRAPPED SEDIMENT AND TO MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES AND PEDESTRIAN TRAFFIC. BAGS SHALL NOT BE PLACED DIRECTLY INTO RECEIVING WATERS.
3. SEDIMENT CONTROL BAGS MUST BE LOCATED AWAY FROM RECEIVING WATERS AND DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS.



BAGS MUST BE DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS. BAGS MAY NOT BE REUSED.

SEDIMENT CONTROL BAG FOR DEWATERING

N.T.S.



NOTES:
1) FENCE POSTS SHALL BE SPACE 8 FEET CENTER-TO-CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST TWO (2) FEET INTO THE GROUND AND EXTEND AT LEAST TWO (2) FEET ABOVE GROUND. POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1½ INCHES.
2) A METAL FENCE WITH 6-INCH OR SMALLER OPENINGS AND AT LEAST TWO (2) FEET HIGH MAY BE UTILIZED, FASTENED TO THE FENCE POSTS, TO PROVIDE REINFORCEMENT AND SUPPORT TO THE GEO-TEXTILE FABRIC WHERE SPACE FOR OTHER PRACTICES IS LIMITED AND HEAVY SEDIMENT LOADING IS EXPECTED.
3) A GEO-TEXTILE FABRIC, RECOMMENDED FOR SUCH USE BY THE MANUFACTURER, SHALL BE BURIED AT LEAST 6-INCHES DEEP IN THE GROUND. THE FABRIC SHALL EXTEND AT LEAST TWO (2) FEET ABOVE THE GROUND. THE FABRIC MUST BE SECURELY FASTENED TO THE POSTS USING A SYSTEM CONSISTING OF METAL FASTENERS (NAILS OR STAPLES) AND A HIGH STRENGTH REINFORCEMENT MATERIAL (NYLON WEBBING, GROMMETS, WASHERS ETC.) PLACED BETWEEN THE FASTENER AND THE GEO-TEXTILE FABRIC. THE FASTENING SYSTEM SHALL RESIST TEARING AWAY FROM THE POST. THE FABRIC SHALL INCORPORATE A DRAWSTRING IN THE TOP PORTION OF THE FENCE FOR ADDED STRENGTH

SILT FENCE

N.T.S.

FOR CLARIFICATIONS AND ADDITIONAL INFORMATION SEE THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, 7TH EDITION, JANUARY 2014, REVISED JULY 2017

THIS DRAWING IS FOR PERMIT PURPOSES ONLY AND NOT CONSTRUCTION UNLESS THIS BOX HAS BEEN CHECKED AND DATED.
☐CHKD BY: ____ DATE: ____

REVISIONS
1) COMPLETENESS REVS. 04/30/19
2) RESOLUTION COMPLIANCE 03/15/19

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...
SCOTT H. TURNER
PROFESSIONAL ENGINEER
N.J.P.E.#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK – MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL DETAILS – 2

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY JAN
DSGN BY CJS
CHKD. BY ST
APPRD. BY ST

DATE OF ISSUE
MARCH 16, 2018
REV 2) MARCH 15, 2019

SCALE: N.T.S.
JOB # 2015.063
DWG # SED-2
SHEET # 23

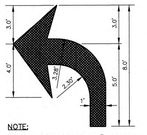
C:\Proj\2015.063\Village Walk\2015.063.01-05TEAL5.dwg PLOTTED: 3/15/2019 4:37 PM BY: HERMAN ORUZ

NOTE:
FOR PROPORTIONS SEE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS." FHWA

STOP BAR PAVEMENT MARKING
N.T.S.

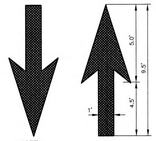
NOTE:
FOR PROPORTIONS SEE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS." FHWA

"ONLY" PAVEMENT MARKING
N.T.S.



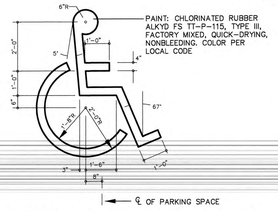
NOTE:
FOR PROPORTIONS SEE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS." FHWA

LEFT TURN ARROW DETAIL
N.T.S.

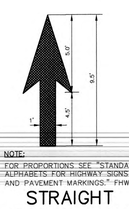


NOTE:
FOR PROPORTIONS SEE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS." FHWA

DOUBLE STRAIGHT ARROW DETAIL
N.T.S.

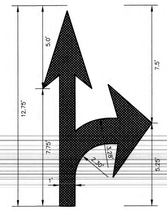


ACCESSIBLE PARKING DETAIL
N.T.S.



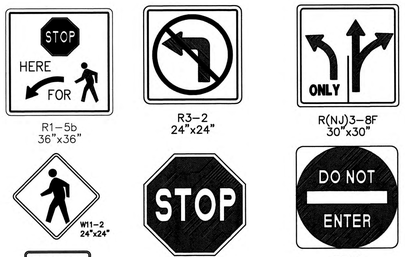
NOTE:
FOR PROPORTIONS SEE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS." FHWA

STRAIGHT ARROW DETAIL
N.T.S.

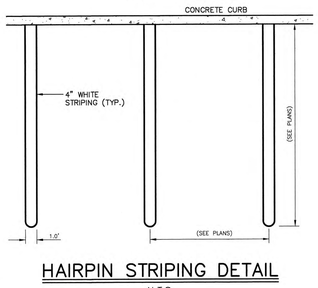


NOTE:
FOR PROPORTIONS SEE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS." FHWA

STRAIGHT/TURN ARROW DETAIL
N.T.S.



SIGN DETAILS
N.T.S.

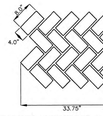


HAIRPIN STRIPING DETAIL
N.T.S.

ACCESSIBLE SIGN DETAIL
N.T.S.

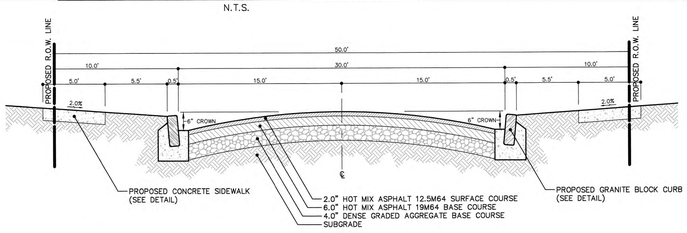
(ABUTTING CURB / VAN SPACE)
ADA PARKING STALL STRIPING
N.T.S.

NOTE:
CONTRACTION JOINTS TO BE PLACED AT 60 FT O.C.
SAW CUT JOINTS AT 20 FT O.C. EACH WAY

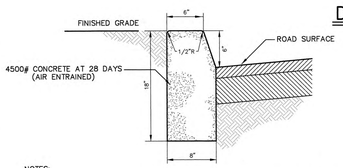


STAMPED CONCRETE PATTERN TO BE USED WHERE INDICATED ON PLANS

STAMPED CONCRETE PATTERN DETAIL
N.T.S.



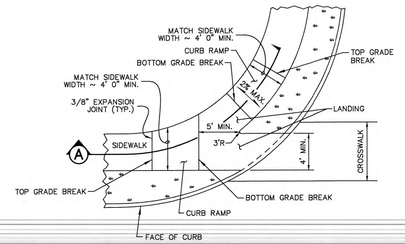
TYPICAL ROADWAY CROSS SECTION
N.T.S.



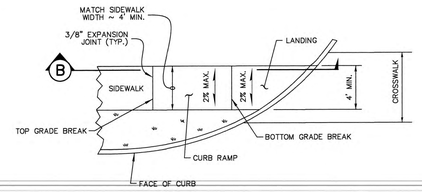
NOTES:
1) EXPANSION JOINTS TO BE 1/2" PREMOLDED, ASPHALT IMPREGNATED, JOINT FILLER MATERIAL, CUT TO FIT CROSS SECTION, RECESSED 1/4" FROM EXPOSED FACES AND ARE TO BE PLACED IN TRAVERSE JOINTS 20' O.C. MAX; BETWEEN CURB AND CONCRETE SIDEWALK OR PAVEMENT; AT ALL STRUCTURES; AND AT THE END OF EACH WORK DAY.
2) ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

(8"WIDE / 6"REVEAL)
STANDARD CONCRETE CURB (18")
(ADA RAMPS)
N.T.S.

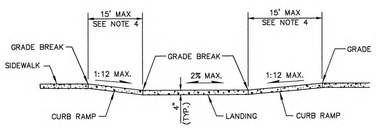
NOTES:
1. CURB RAMP SHALL BE PLACED WITHIN THE WIDTH OF THE ASSOCIATED CROSSWALK, OR AS SHOWN IN THE PLANS.
2. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE GRADE BREAK BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.
3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.
4. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.
5. CURB RAMPS AND LANDINGS SHALL RECEIVE BROOM FINISH.



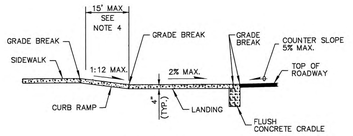
PLAN VIEW



PLAN VIEW

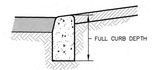


SECTION A

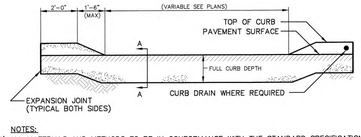


SECTION B

CURB RAMP
SINGLE DIRECTION PEDESTRIAN CROSSING
N.T.S.

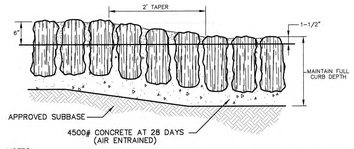


SECTION A–A



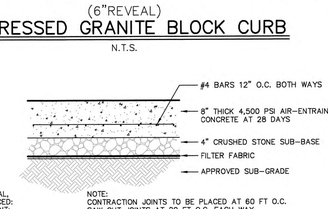
NOTES:
1) ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

FLUSH CURB
N.T.S.



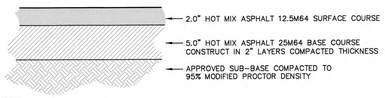
NOTES:
1) JOINTS SHALL BE 1/4"MAX FOR DRESSED BLOCK OR 3/8"MAX FOR QUARRY SPLIT BLOCK. ALL JOINTS ARE TO BE POINTED WITH 1:1 CEMENT SAND MORTAR.
2) ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

(6"REVEAL)
DEPRESSED GRANITE BLOCK CURB
N.T.S.



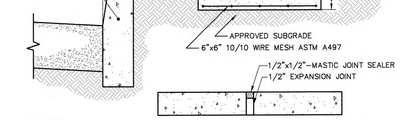
NOTE:
CONTRACTION JOINTS TO BE PLACED AT 60 FT O.C.
SAW CUT JOINTS AT 20 FT O.C. EACH WAY

CONCRETE SLAB DETAIL
N.T.S.



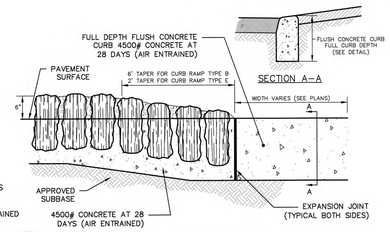
NOTES:
1) NOT A DESIGN PAVEMENT, SUBJECT TO ONSITE SOILS TESTING.
2) ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

(3 LAYER)
PAVEMENT SECTION
N.T.S.



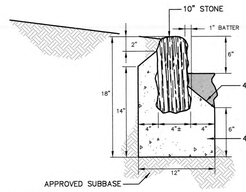
NOTES:
1) EXPANSION JOINTS TO BE LOCATED AT MAXIMUM OF 20' O.C.; AT ALL STRUCTURES; AND WHERE SIDEWALK ABUTS THE CURB.
2) EXPANSION MATERIALS TO BE 1/2" PREMOLDED, ASPHALT IMPREGNATED, JOINT FILLER.
3) TOOLED JOINTS TO BE SPACED EQUAL TO THE SIDEWALK WIDTH (6' MAX).
4) ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

CONCRETE SIDEWALK
N.T.S.



NOTES:
1. JOINTS SHALL BE 1/4" MAX FOR DRESSED BLOCK OR 3/8" MAX FOR QUARRY SPLIT BLOCK. ALL JOINTS ARE TO BE POINTED WITH 1:1 CEMENT SAND MORTAR.
2. EXPANSION JOINTS TO BE 1/2" PREMOLDED, ASPHALT IMPREGNATED, JOINT FILLER MATERIAL, CUT TO FIT CROSS SECTION, RECESSED 1/4" FROM EXPOSED FACES AND ARE TO BE PLACED IN TRAVERSE JOINTS 20' O.C. MAX; BETWEEN CURB AND CONCRETE SIDEWALK OR PAVEMENT; AT ALL STRUCTURES; AND AT THE END OF EACH WORK DAY.
3. ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

GRANITE TO FLUSH CURB TRANSITION
(ADA RAMPS)
N.T.S.



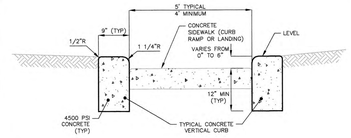
NOTES:
1) JOINTS SHALL BE 1/4"MAX FOR DRESSED BLOCK OR 3/8"MAX FOR QUARRY SPLIT BLOCK. ALL JOINTS ARE TO BE POINTED WITH 1:1 CEMENT SAND MORTAR.
2) ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

(6"REVEAL)
VERTICAL GRANITE BLOCK CURB
(SITE AND MUNICIPAL CURB)
N.T.S.

SEE STREET FURNITURE DETAIL PACKAGE FOR ADDITIONAL DETALS

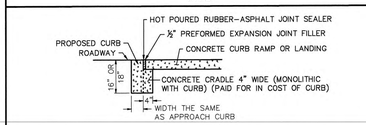
GENERAL ADA NOTES

1. PEDESTRIAN CURBS
   - PEDESTRIAN CURBS ARE PERMITTED WHEN ADJACENT TO NON-WALK AREAS OR ELEVATION DIFFERENCES WHICH CANNOT BE ACCOMMODATED BY FLARES OR GRADING.
2. CROSSWALKS
   - FOR CURB RAMPS THAT LEAD TO A SINGLE CROSSWALK, THE RAMP (EXCLUDING FLARES) TO BE FULLY INSIDE OF MARKED CROSSWALK LINES.
   - SHOULD BE PLACED A MINIMUM DISTANCE OF 4'–0" FROM STOP AND YIELD LINES.
   - FOR UN-SIGNALIZED AREAS, CROSSWALKS SHOULD BE PLACED A MINIMUM DISTANCE OF 20'–0" AWAY FROM ON ROAD PARKING ZONES. FOR SIGNALIZED AREAS, CROSSWALKS SHOULD BE PLACED A MINIMUM DISTANCE OF 30'–0" FROM ON ROAD PARKING ZONES.
   - PEDESTRIAN CROSSWALKS ARE 6'–0" MINIMUM MEASURED FROM INSIDE THE PAINTED EDGE TO INSIDE PAINTED EDGE AND THE INSIDE LINES MUST BE OUTSIDE THE PROJECTED CURB LINES.
   - AVOID USING THE PARALLEL LINE CROSSWALK DESIGN. INSTEAD USE THE LONGITUDINAL LINES AT 6'–0" LONG AND 1'–0" WIDE WITH A SPACING OF 1'–2" APART. SPACING SHOULD BE DESIGNED SO THE PAINTED AREAS AVOID THE WHEEL PATHS.
3. CURB RAMPS
   - CONSTRUCT CURB RAMPS WITH A MINIMUM 4'–0" X 4'–0" CLEAR SPACE BEFORE THE CURB FACE, WITHIN THE WIDTH OF THE CROSSWALK.
   - SLOPES THAT EXCEED 8.00%, OR CONTRACT DOCUMENTS AS APPLICABLE, WILL NOT BE ACCEPTED AND WILL BE RECONSTRUCTED.
   - PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.
   - TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVERSING THE HEIGHT OF CURB, RAMP LENGTH NOT TO EXCEED 15'–0". ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.
   - FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE.
   - FOR NEW CONSTRUCTION, ATTEMPT TO KEEP THE CROSS SLOPE AS FLAT AS POSSIBLE. DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP OR PEDESTRIAN ACCESSIBLE ROUTE (MEASURED PERPENDICULAR TO THE DIRECTION OF TRAVEL).
   - CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE.
   - CURB RAMP WIDTH IS 4'–0" MINIMUM.
   - AVOID CURB RAMP DESIGNS WHERE THE WIDTH OF THE CROSSWALK WILL NEED TO BE GREATER THAN 10'–0" WIDE.
   - ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 6" CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 6'–0" FOR A 12:1 SLOPE.
   - THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF 11.00%. THE COUNTER SLOPE OF THE GUTTER OR ROAD AT THE FOOT OF A CURB RAMP, LANDING OR BLENDED TRANSITION IS NOT TO EXCEED 8.00% AND IT IS NOT NECESSARY TO HAVE THE LENGTH GREATER THAN 15'–0".
   - WHEN TWO CROSSWALKS LEAD TO A SINGLE CURB RAMP, THE MAXIMUM RUNNING SLOPE IS 5% WITH A MAXIMUM 2% CROSS SLOPE. THESE TYPES OF RAMPS REQUIRE THE ENGINEERING DEPARTMENT'S APPROVAL AS THEY ARE NOT PREFERRED.
4. DEPRESSED CURBS
   - CONSTRUCT TOP OF PLAIN CEMENT CONCRETE DEPRESSED CURB TO BE FLUSH WITH ADJACENT SURFACES (RAMPS, SIDEWALKS, FLARES).
   - CONSTRUCT DEPRESSED CURB FOR CURB RAMPS FLUSH TO ADJACENT ROADWAY. GRADE EDGE OF ROAD ELEVATIONS AT THE FLOW LINE TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING. FOR LEVEL LANDINGS BEHIND DEPRESSED CURB, ADJUST SLOPES TO PROVIDE POSITIVE DRAINAGE. THE VERTICAL ALIGNMENT OF A CURB RAMP, EXCLUDING FLARES, SHALL BE PLANAR. GRADE BREAKS SHALL BE FLUSH AND PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN. RAMP TRANSITIONS BETWEEN WALKS, GUTTERS, LANDINGS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4" MAXIMUM).
   - WHEN TWO CROSSWALKS LEAD TO A SINGLE CURB RAMP, THE DEPRESSED CURB MUST EXTEND FROM THE OUTER MOST EDGE OF EACH CROSSWALK.
5. DETECTABLE WARNING SURFACES
   - NO SEPARATION BETWEEN DETECTABLE WARNING SURFACES FOR MEDIANS LESS THAN 4'–0" BETWEEN BACK OF CURBS.
   - PROVIDE DETECTABLE WARNING SURFACES (DWS) 24" MINIMUM (IN THE DIRECTION OF PEDESTRIAN TRAVEL) ACROSS FULL WIDTH OF RAMP AT THE GRADE BREAK NEAR STREET EDGE. PROVIDE DWS THAT CONTRAST VISUALLY WITH ADJACENT WALKWAY SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT FOR THE FULL WIDTH OF RAMP.
   - ALIGN DETECTABLE WARNING SURFACE TRUNCATED DOMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF THE RAMP AND PERPENDICULAR TO CURB WHEN APPROPRIATE.
   - DETECTABLE WARNING SURFACES SHALL BE SAFETY RED COLOR, EXCEPT IF THE MUNICIPALITIES HAVE ESTABLISHED AN ALTERNATIVE COLOR SCHEME.
   - FOR TWO CROSSWALKS LEADING TO A SINGLE CURB RAMP, THE DETECTABLE WARNING SURFACE MUST BE PLACED ALONG THE ENTIRE DEPRESSED CURB AND THE DOMES MUST BE PLACED IN SUCH A WAY THAT THE DIRECTION OF TRAVEL IS ORIENTED INTO THE CROSSWALK.
6. DRIVEWAYS
   - 5.00% MAXIMUM SLOPE FOR THE DRIVEWAY APRON.
   - 1 1/2" MAXIMUM VERTICAL CHANGE IN HEIGHT BETWEEN THE ROAD SURFACE AND THE DEPRESSED CURB AT THE DRIVEWAY APRON.
7. JOINTS
   - PROVIDE EXPANSION JOINT MATERIAL 1/2" THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.
   - SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.
8. LANDINGS (AKA TURNING SPACE)
   - LANDING AREA; APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP SHALL BE KEPT CLEAR OF OBSTRUCTIONS, UNLESS AN EXCEPTION IS GRANTED.
   - DO NOT EXCEED 2.00% SLOPE IN ALL DIRECTIONS.
   - LANDING AREA SHOULD BE 4'–0" X 4'–0" MINIMUM CLEAR SPACE. IF THE TURNING SPACE IS CONSTRAINED ON 2 OR MORE SIDES, IT MUST BE 4'x5' WITH THE 5' LENGTH ALONG THE UNOBSTRUCTED SIDE. FOR TWO CROSSWALKS LEADING TO A SINGLE CURB, THE LANDING AREA MUST HAVE A MINIMUM OF A 5'–0" DEPTH (INCLUDING THE DETECTABLE WARNING SURFACE) ALONG THE DEPRESSED CURB/ROADWAY.
   - ENGINEERING DEPARTMENT APPROVAL IS REQUIRED IF LANDING FOR TURNING MANEUVER IS NOT ON THE SIDEWALK, I.E. IF THE LANDING AREA "CLEAR SPACE" IS IN THE ROADWAY.
   - 4'x4' LANDINGS ARE REQUIRED AT EVERY ACCESSIBLE PEDESTRIAN SIGNAL/PUSHBUTTON LOCATION.
9. NON-WALK SURFACES
   - NON-WALK AREA IS AN OBSTRUCTION OR GRASS/NON-PAVED AREA ADJACENT TO THE PEDESTRIAN ACCESS ROUTE THAT IS NOT USED BY THE PEDESTRIAN FOR ACCESS.
10. PEDESTRIAN PUSHBUTTONS
    - THE DETAILS DEPICT PEDESTRIAN PUSHBUTTON POLES TO ILLUSTRATE THE RECOMMENDED PLACEMENT OF PEDESTRIAN PUSHBUTTONS. FOR ALTERATION PROJECTS, PROVIDE ACCESS TO EXISTING PEDESTRIAN PUSHBUTTONS TO THE MAXIMUM EXTENT FEASIBLE. INSTALL PEDESTRIAN PUSHBUTTON STUB POLES, WHERE APPLICABLE, SO AS NOT TO CREATE PEDESTRIAN OBSTRUCTIONS.
    - NEW CONSTRUCTION MUST COMPLY WITH RECOMMENDED LOCATIONS FOR ALTERATION PROJECTS LOCATE PEDESTRIAN PUSHBUTTONS, TO THE MAXIMUM EXTENT FEASIBLE (SEE 2009 MUTCD FIG 4E–3)
    - ADJACENT TO A LEVEL NON–SLIP SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR, AND WHERE THERE IS A NON–SLIP WHEELCHAIR ACCESSIBLE ROUTE TO THE RAMP
    - WITHIN 5'–0" OF THE CROSSWALK EXTENDED
    - BETWEEN 1'–6" AND 10'–0" OF THE EDGE OF CURB, SHOULDER OR PAVEMENT
    - PARALLEL TO THE CROSSWALK TO BE USED
    - MOUNT PEDESTRIAN PUSHBUTTON 42" ABOVE THE SIDEWALK OR FINISHED GRADE TO THE CENTER OF THE PUSHBUTTON AND 10" MAXIMUM LATERALLY FROM LANDING. IN ADDITION, THE PEDESTRIAN PUSHBUTTON MUST ALSO BE 5'–0" MINIMUM DISTANCE FROM THE CURB RAMP AND 2'–0" MINIMUM DISTANCE BETWEEN A CATCH BASIN AND THE PEDESTRIAN PUSHBUTTON.
11. SIDE FLARES
    - ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THERFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 6" CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 6'–0" FOR A 12:1 SLOPE.
    - SIDE FLARES 10.00% MAXIMUM SLOPE WHERE THE PEDESTRIAN PATH CROSSES THE CURB RAMP
    - SIDE FLARES MUST BE PARALLEL TO THE CURB LINE
    - CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE
    - GRADE GRASS AREAS OR OTHER NON–WALK AREAS AT 3:1 (1:3) MAXIMUM. DO NOT INSTALL CHEEK WALLS THAT INTERSECT THE PEDESTRIAN ACCESS ROUTE
    - SIDE FLARE WIDTH IS TYPICALLY 24" AND A MINIMUM OF 12".
12. SIDEWALKS
    - NOTE THE AREA CONSIDERED TO BE THE "PEDESTRIAN ACCESSIBLE ROUTE"
    - THE MAXIMUM SIDEWALK CROSS SLOPE IS 2.00% (MEASURED PERPENDICULAR TO THE DIRECTION OF TRAVEL). THE MAXIMUM GRADE IS 5.00%. FOR SIDEWALKS ALONG STREETS; HOWEVER, THE LONGITUDINAL GRADE OF THE SIDEWALK SHOULD BE CONSISTENT WITH THE GRADE OF THE ADJACENT ROADWAY. IF THE 5.00% GRADE IS NOT FEASIBLE DUE TO TOPOGRAPHY AND OTHER PHYSICAL CONSTRAINTS, THE LOWEST PRACTICAL GRADE GREATER THAN 5.00% SHOULD BE USED
    - SIDEWALK WIDTH MAY BE REDUCED TO 4'–0", WHEN PASSING AREAS 5'–0" X 5'–0" ARE PROVIDED EVERY 200'.
13. TRAVEL LANES
    - THE TRAVEL LANE IS DEFINED BY THE OUTSIDE EDGE OF THE WHITE PAVEMENT MARKING LINE. IF A WHITE PAVEMENT MARKING LINE DOES NOT EXIST, THE TRAVEL LANE IS DEFINED BY THE CONTRACT DOCUMENTS.
14. MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB HEIGHTS WHERE THE CURB IS LESS OR MORE THAN THE STANDARD 6" HEIGHT.
15. CONSTRUCTION MUST MEET THE STANDARDS CONTAINED HEREIN UNLESS OTHERWISE NOTED OR DIRECTED.
16. PREFERRED AND ALTERNATE TREATMENTS SHOULD NOT BE INTERMIXED WITHIN THE SAME INTERSECTION.
17. ALL HANDICAP RAMPS CONSTRUCTED IN THIS CONTRACT SHALL MEET ACCESSIBILITY REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.
18. THE CONTRACTOR IS REQUIRED TO CONTACT THE TRAFFIC ENGINEERING DEPARTMENT ABOUT THE CONSTRUCTION OF ALL HANDICAP CURB RAMPS AT SIGNALIZED INTERSECTIONS AND VERIFY THE STRIPING PLAN IS IN ACCORDANCE WITH THE MOST RECENT NO PASSING ZONE PLAN.
19. GRADE BREAKS
    - GRADE BREAKS AT THE TOP AND BOTTOM OF THE CURB RAMP SHALL BE PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN.
    - GRADE BREAKS ARE NOT PERMITTED ON THE SURFACE OF RAMP RUNS OR LANDING AREAS.
    - SURFACE SLOPES THAT MEET AT THE GRADE BREAKS SHALL BE FLUSH.
20. FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE.
21. ALL VERTICAL SURFACE DISCONTINUITIES SHALL NOT EXCEED 1/4" IN HEIGHT. ANY VERTICAL SURFACE DISCONTINUITY BETWEEN 1/4" AND 1/2" SHALL BE BEVELED AT A SLOPE NO GREATER THAN 50% ACROSS THE ENTIRE DISCONTINUITY.
22. HORIZONTAL OPENINGS IN GRATES AND JOINTS SHALL NOT EXCEED 1/2" IN DIAMETER AND THE GRATES SHALL BE PLACED SO THE LONG DIMENSION IS PERPENDICULAR TO THE DIRECTION OF TRAVEL.

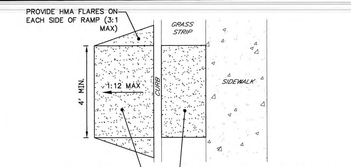


NOTE:
1. LONGITUDINAL JOINTS, 1/2" WIDE, SHALL BE PROVIDED BETWEEN CURBS AND ABUTTING SIDEWALKS, AND SHALL BE FILLED WITH PREFORMED BITUMINOUS TYPE JOINT FILLER. THE TOP OF ALL JOINT FILLER SHALL BE 1/2" BELOW THE TOP OF THE SIDEWALK AND FILLED WITH JOINT SEALER (SIKAFLEX–1A), OR AN APPROVED EQUAL.

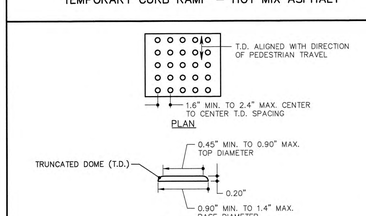
PEDESTRIAN CURB
(ADJACENT TO CURB RAMPS AND LANDINGS)
N.T.S.

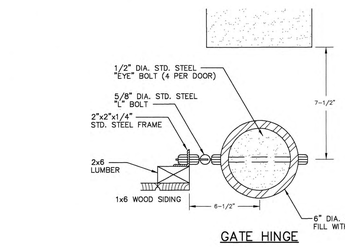


DROPPED CURB AND CRADLE

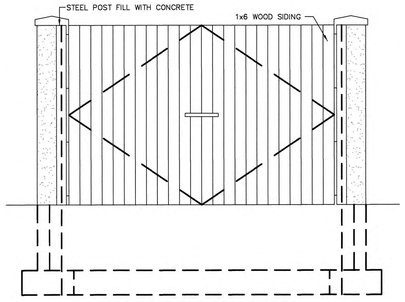


TEMPORARY CURB RAMP – HOT MIX ASPHALT

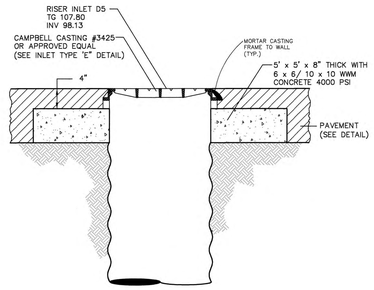

T.D. ALIGNED WITH DIRECTION OF PEDESTRIAN TRAVEL
1.6" MIN. TO 2.4" MAX. CENTER TO CENTER T.D. SPACING
PLAN
0.45" MIN. TO 0.90" MAX. TOP DIAMETER
TRUNCATED DOME (T.D.)
0.20"
0.90" MIN. TO 1.4" MAX. BASE DIAMETER



GATE HINGE

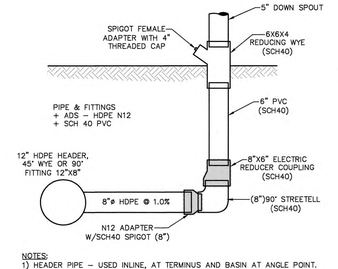


DUMPSTER ENCLOSURE GATE



DETENTION BASIN
RISER INLET DETAIL

N.T.S.



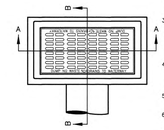
NOTES:
1) HEADER PIPE - USED INLINE, AT TERMINUS AND BASIN AT ANGLE POINT.
2) ALL PARKING LOT LOCATIONS TO BE H25 LOADING.
3) COVERS - SOLID

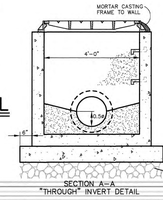
ROOF LEADER CONNECTION DETAIL

N.T.S.

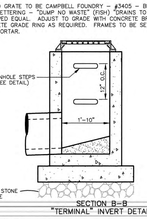
GENERAL NOTES:

1) INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE. WALLS SHALL BE 8" THICK IF BRICK AND 6" THICK IF CONCRETE. FOOTING SHALL BE 3500PSI CONCRETE. WALLS SHALL BE 4000PSI CONCRETE. INVERT (BENCHING) SHALL BE 2500 PSI CONCRETE.
2) IF WALL CONSTRUCTION IS BRICK OR BLOCK, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER TROWELED TO A SMOOTH FINISH.
3) WHEN THE DEPTH OF AN INLET THAT IS NOT PRECAST EXCEEDS 8' AS MEASURED FROM THE GRATE TO THE INVERT, THE WALL THICKNESS BELOW A DEPTH OF 8' SHALL BE INCREASED TO 12" THICK. THE FOUNDATION OVERHANG DIMENSION SHALL BE INCREASED TO 12" AND THE FOUNDATION THICKNESS SHALL BE INCREASED TO 12". MAXIMUM DEPTH FOR NON PRECAST CONSTRUCTION SHALL BE 13'.
4) INLET FOUNDATIONS WHICH ARE PRECAST SHALL BE PLACED ON A 6" THICK BED OF COMPACTED COURSE AGGREGATE SIZE NO.57 (3/4" CRUSHED STONE). THE COURSE AGGREGATE SHALL EXTEND 6" BEYOND THE HORIZONTAL LIMITS OF THE INLET FOUNDATION.
5) ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C478 AND ALL OTHER APPLICABLE STANDARDS.
6) DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.
7) FRAME AND GRATE TO BE CAMPBELL FOUNDRY - #3405 - BICYCLE SAFE GRATE W/LETTERING - "DUMP NO WASTE" (FISH) "DRAINS TO WATERWAY" OR APPROVED EQUAL. ADJUST TO GRADE WITH CONCRETE BRICK (MAX 12") OR CONCRETE GRADE RING AS REQUIRED. FRAMES TO BE SET IN FULL BED OF STIFF MORTAR.





SECTION A-A
"THROUGH" INVERT DETAIL



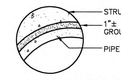
SECTION B-B
"TERMINAL" INVERT DETAIL

TYPE "A" INLET

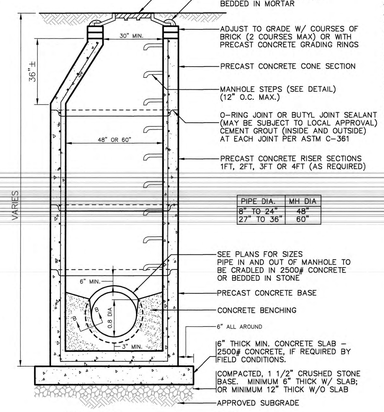
N.T.S.

MANHOLE NOTES:

1) ALL CONSTRUCTION SHALL MEET STANDARD SPECIFICATIONS, THE LATEST EDITION.
2) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.
3) EXTERIOR SURFACES SHALL BE PAINTED WITH TWO (2) COATS OF BITUMINOUS WATERPROOFING MATERIAL.
4) CONCRETE AND REINFORCEMENT TO BE IN ACCORDANCE WITH ASTM C478, THE LATEST EDITION.
5) DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.



SECTION B-B

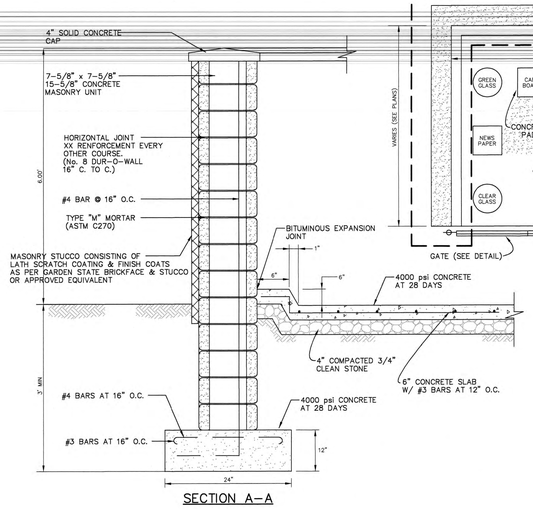


PIPE DIA.	MH DIA
8" TO 24"	48"
27" TO 36"	60"

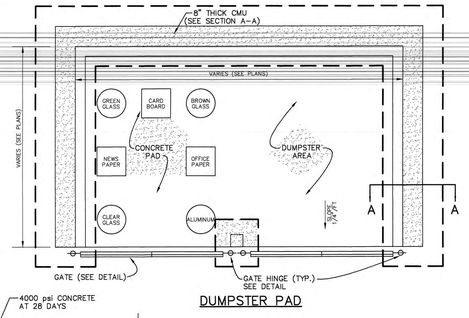
SECTION

CONCRETE MANHOLE (4'ø/5'ø STORM)

N.T.S.



SECTION A-A



DUMPSTER PAD

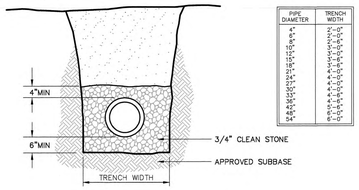
RECYCLING & DUMPSTER
ENCLOSURE DETAIL

N.T.S.

- TRENCHES IN EX./PROP. ROADWAY & PAVEMENT AREAS ARE TO BE BACKFILLED W/ DENSE GRADED AGGREGATE (PER DOT SPECS.) COMPACTED IN 6" LIFTS TO 95% MODIFIED PROCTOR DENSITY.

- TRENCHES IN UNIMPROVED AREAS TO BE BACKFILLED WITH SUITABLE MATERIAL UNLESS OTHERWISE ORDERED BY THE ENGINEER.

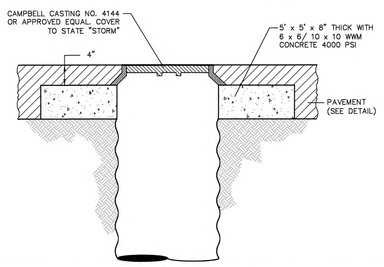
GENERAL NOTES:
1) ALL CONSTRUCTION SHALL MEET STANDARD DOT SPECIFICATIONS, THE LATEST EDITION.
2) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.



PIPE DIAMETER	TRENCH WIDTH
4"	2'-0"
6"	2'-0"
8"	2'-0"
10"	2'-0"
12"	2'-0"
15"	2'-0"
18"	2'-0"
21"	2'-0"
24"	2'-0"
27"	2'-0"
30"	2'-0"
36"	2'-0"
42"	2'-0"
48"	2'-0"
54"	2'-0"

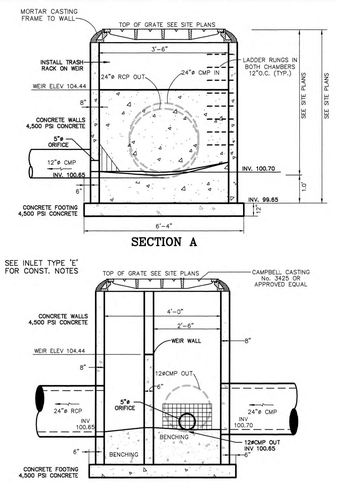
(STORM SEWER)
TRENCH DETAIL 'C'

N.T.S.



STORM CLEANOUT DETAIL

N.T.S.



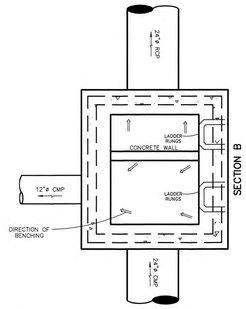
SECTION A

SECTION B

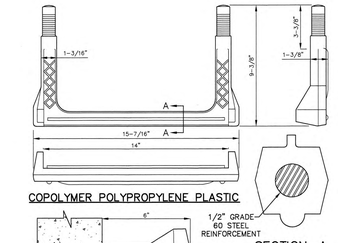
OUTLET CONTROL STRUCTURE DETAIL

N.T.S.

STRUCTURAL CALCULATIONS AND DETAILS FOR ANY OVERSIZED DRAINAGE STRUCTURES AND OUTLET CONTROL STRUCTURE SHALL BE SUBMITTED PRIOR TO ORDERING OR CONSTRUCTION.



SECTION A
PLAN VIEW



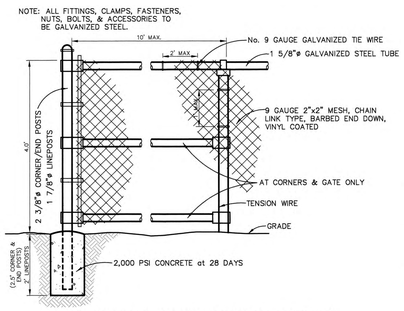
COPOLYMER POLYPROPYLENE PLASTIC

SECTION-A

NOTE:
MANHOLE STEPS TO BE COPOLYMER POLYPROPYLENE PLASTIC COATED STEEL BY M.A. INDUSTRIES, INC. OR APPROVED.

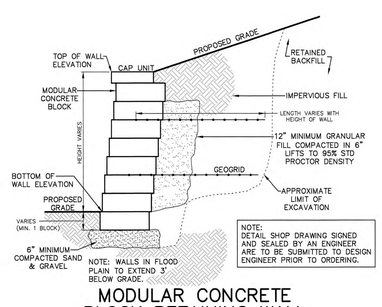
MANHOLE STEP DETAIL

N.T.S.



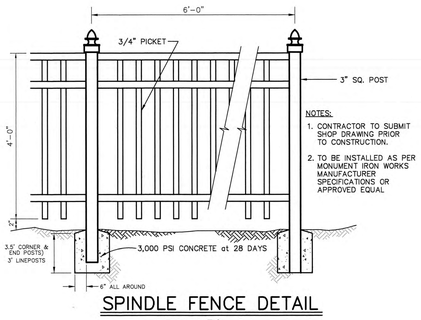
4' CHAIN LINK FENCE DETAIL

N.T.S.



MODULAR CONCRETE
BLOCK RETAINING WALL

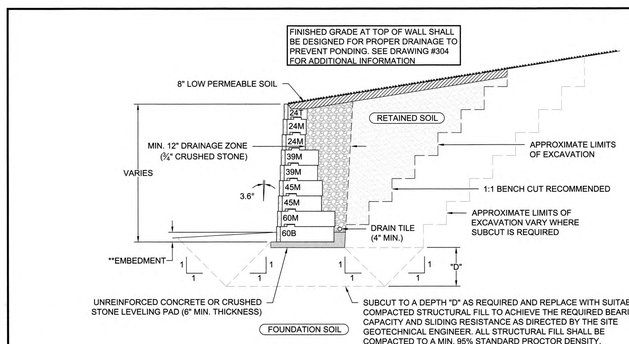
N.T.S.



NOTES:
1. CONTRACTOR TO SUBMIT SHOP DRAWING PRIOR TO CONSTRUCTION.
2. TO BE INSTALLED AS PER MONUMENT IRON WORKS MANUFACTURER SPECIFICATIONS OR APPROVED EQUAL

SPINDLE FENCE DETAIL

N.T.S.



**EMBEDMENT SHOULD BE THE GREATER OF 6" OR H/20 FOR WALLS WITH LEVEL GRADE AT THE TOE. REFER TO RECON'S EMBEDMENT RECOMMENDATION DOCUMENT FOR ADDITIONAL INFORMATION FOR WALLS WITH A TOE SLOPE CONDITION.

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Disclaimer: This drawing has been prepared by ReCon Wall Systems, Inc. and to the best of its knowledge, accurately represents the product use in the application that it is illustrated. This drawing is intended for conceptual purposes only. Anyone making use of this drawing does so at their own risk and assumes all liability for such use. Final design for construction purposes must be completed by a Registered Professional Engineer who is familiar with the product and who has taken into account specific site conditions.

ReCon™ Retaining Walls

DRAWING #103

TYPICAL GRAVITY WALL CROSS SECTION

RECON WALL SYSTEMS, INC.
7600 W. 27th STREET, #229
ST. LOUIS PARK, MN 55426
952-922-0027
www.reconwalls.com

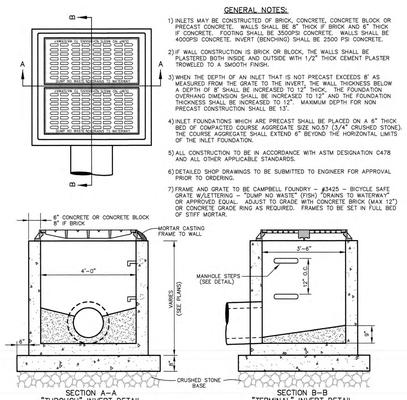
NOTE: SEE RETAINING WALL DESIGN PLANS PREPARED BY CIVIL DESIGN PROFESSIONALS FOR SITE SPECIFIC DETAILED ANALYSIS AND DESIGN OF RECON RETAINING WALLS.

GRAVITY RETAINING WALL

N.T.S.

GENERAL NOTES:

1) INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE. WALLS SHALL BE 8" THICK IF BRICK AND 6" THICK IF CONCRETE. FOOTING SHALL BE 3500PSI CONCRETE. WALLS SHALL BE 4000PSI CONCRETE. INVERT (BENCHING) SHALL BE 2500 PSI CONCRETE.
2) IF WALL CONSTRUCTION IS BRICK OR BLOCK, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER TROWELED TO A SMOOTH FINISH.
3) WHEN THE DEPTH OF AN INLET THAT IS NOT PRECAST EXCEEDS 8' AS MEASURED FROM THE GRATE TO THE INVERT, THE WALL THICKNESS BELOW A DEPTH OF 8' SHALL BE INCREASED TO 12" THICK. THE FOUNDATION OVERHANG DIMENSION SHALL BE INCREASED TO 12" AND THE FOUNDATION THICKNESS SHALL BE INCREASED TO 12". MAXIMUM DEPTH FOR NON-PRECAST CONSTRUCTION SHALL BE 13'.
4) INLET FOUNDATIONS WHICH ARE PRECAST SHALL BE PLACED ON A 6" THICK BED OF COMPACTED COURSE AGGREGATE SIZE NO.57 (3/4" CRUSHED STONE). THE COURSE AGGREGATE SHALL EXTEND 6" BEYOND THE HORIZONTAL LIMITS OF THE INLET FOUNDATION.
5) ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C478 AND ALL OTHER APPLICABLE STANDARDS.
6) DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.
7) FRAME AND GRATE TO BE CAMPBELL FOUNDRY - #2618 CURB INLET - NJ TYPE B - WITH BICYCLE SAFE GRATE AND TYPE "N" ECO CURB PIECE W/LETTERING "DUMP NO WASTE" (FISH) "DRAINS TO WATERWAY". ADJUST TO GRADE WITH CONCRETE BRICK (MAX 12") OR CONCRETE GRADE RING AS REQUIRED. FRAMES TO BE SET IN FULL BED OF STIFF MORTAR.



SECTION A-A
"THROUGH" INVERT DETAIL

SECTION B-B
"TERMINAL" INVERT DETAIL

TYPE "E" INLET

N.T.S.

GENERAL NOTES:

1) INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE. WALLS SHALL BE 8" THICK IF BRICK AND 6" THICK IF CONCRETE. FOOTING SHALL BE 3500PSI CONCRETE. WALLS SHALL BE 4000PSI CONCRETE. INVERT (BENCHING) SHALL BE 2500 PSI CONCRETE.
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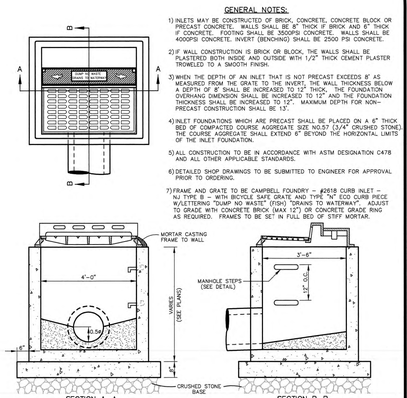
5) ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C478 AND ALL OTHER APPLICABLE STANDARDS.
6) DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.
7) FRAME AND GRATE TO BE CAMPBELL FOUNDRY - #2625 - BICYCLE SAFE GRATE W/LETTERING - "DUMP NO WASTE" (FISH) "DRAINS TO WATERWAY" OR APPROVED EQUAL. ADJUST TO GRADE WITH CONCRETE BRICK (MAX 12") OR CONCRETE GRADE RING AS REQUIRED. FRAMES TO BE SET IN FULL BED OF STIFF MORTAR.



SECTION A-A
"THROUGH" INVERT DETAIL

SECTION B-B
"TERMINAL" INVERT DETAIL

TYPE "B" INLET

N.T.S.

REVISIONS	
1) COMPLETENESS REVS	04/30/18
2) TOWNSHIP REVS	09/28/18
3) RESOLUTION COMPLIANCE	03/15/19
4) TWA COMMENTS	04/05/19
5) RESOLUTION COMPLIANCE	11/1/19
6) RESOLUTION COMPLIANCE	02/07/20
7) RESOLUTION COMPLIANCE	07/16/20

THIS DRAWING IS FOR PERMIT PURPOSES ONLY AND IS NOT TO BE CONSTRUCTED AND UTILIZED UNLESS BOX BELOW IS CHECKED AND DATED.
☐ CHKD BY: ____ DATE: ____

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...

SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK - MONTGOMERY

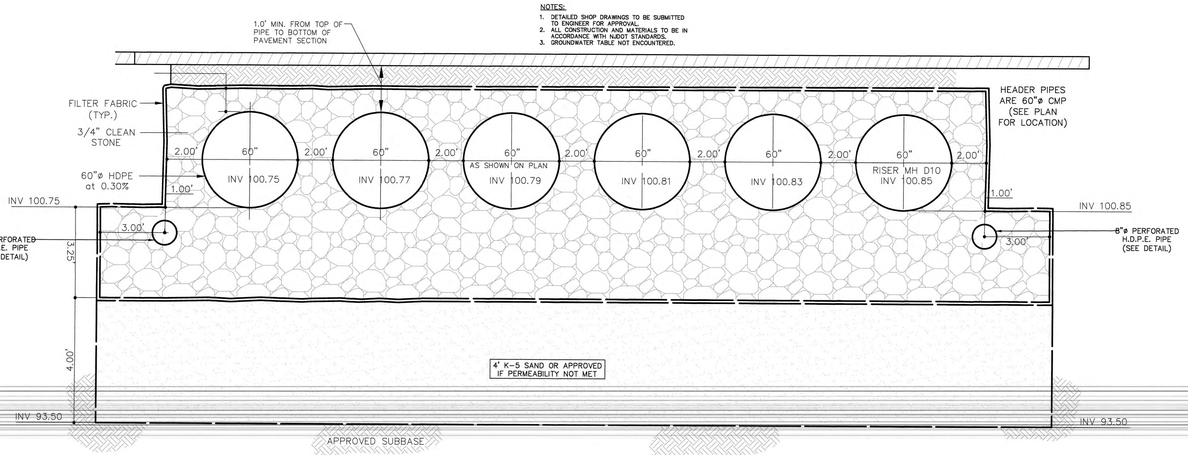
MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

CONSTRUCTION DETAILS-2

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

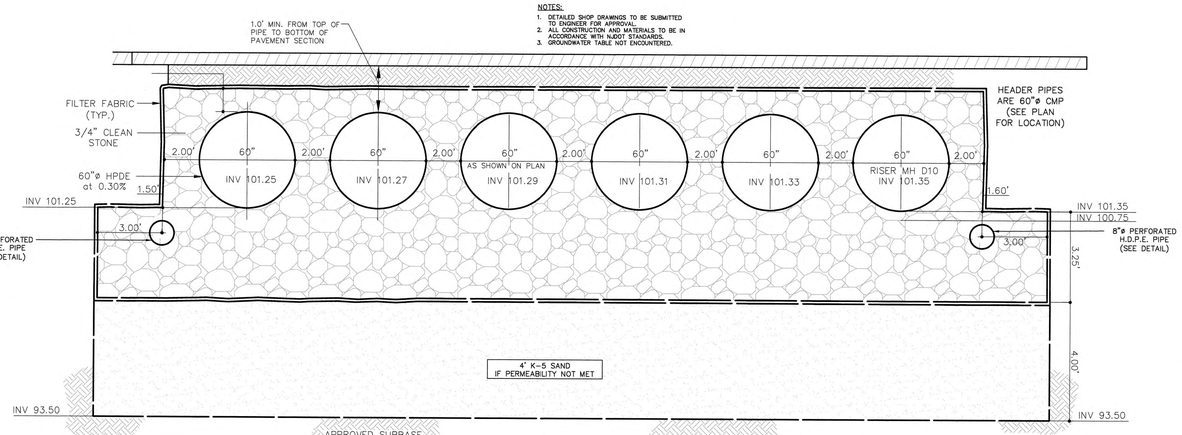
DRWN. BY	PJ	DATE OF ISSUE	SCALE: N.T.S.
DSGN BY	CJS	MARCH 16, 2018	JOB # 2015.063
CHKD. BY	ST	REV 7) JULY 16, 2020	DWG # DE-2
APPRD. BY	ST		SHEET # 25

O:\Arch\2015\063-Village Walk\2020\063-07-DETAILS.dwg PLOTTED: 7/16/2020 11:17 AM BY: CHRIS STALEY



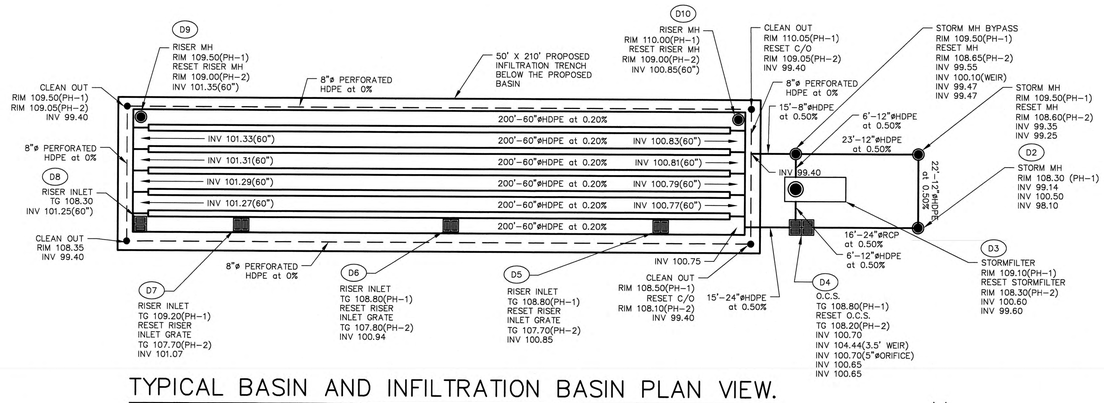
TYPICAL BASIN AND INFILTRATION TRENCH CROSS SECTION–DOWNSTREAM

N.T.S.



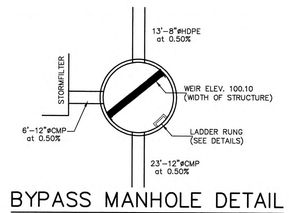
TYPICAL BASIN AND INFILTRATION TRENCH CROSS SECTION–UPSTREAM

N.T.S.



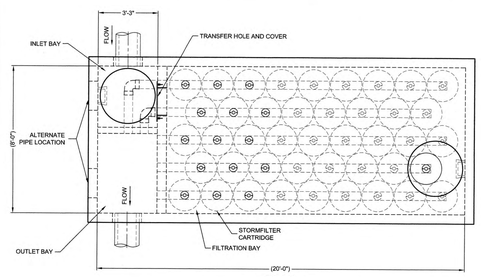
TYPICAL BASIN AND INFILTRATION BASIN PLAN VIEW.

N.T.S.



BYPASS MANHOLE DETAIL

N.T.S.

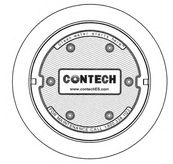


PLAN

STORMFILTER DESIGN TABLE

- THE 8' x 20' PEAK DIVERSION STORMFILTER TREATMENT CAPACITY VARIES BY CARTRIDGE COUNT AND LOCALLY APPROVED SURFACE AREA SPECIFIC FLOW RATE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.
- THE PEAK DIVERSION STORMFILTER IS AVAILABLE IN A LEFT INLET (AS SHOWN) OR RIGHT INLET CONFIGURATION.
- ALL PARTS AND INTERNAL ASSEMBLY PROVIDED BY CONTECH UNLESS OTHERWISE NOTED.

CARTRIDGE HEIGHT	27"		18"		LOW DROP	
SYSTEM HYDRAULIC DROP (H - REQ'D. MIN.)	3.00'		2.3'		1.8'	
HEIGHT OF WEIR (W)	3.00'		2.25'		1.75'	
TREATMENT BY MEDIA SURFACE AREA	2 gpm/ft²	1 gpm/ft²	2 gpm/ft²	1 gpm/ft²	2 gpm/ft²	1 gpm/ft²
CARTRIDGE FLOW RATE (gpm)	22.5	11.25	15	7.5	10	5



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

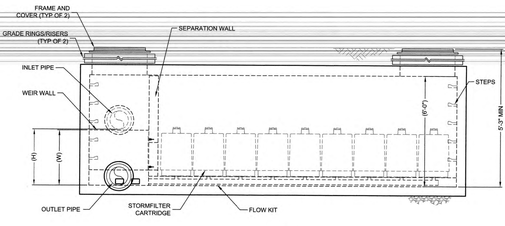
STRUCTURE ID	*
WATER QUALITY FLOW RATE (cfs)	*
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED	*
CARTRIDGE FLOW RATE	*
MEDIA TYPE (CSF, PERLITE, ZPG)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE	*	*	*
OUTLET PIPE	*	*	*

INLET BAY RIM ELEVATION	*
FILTER BAY RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:



ELEVATION

PERFORMANCE SPECIFICATION
FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES**. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **.37 SECONDS**. SPECIFIC FLOW RATE SHALL BE **2 GPM/SF (MAXIMUM)**. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **.6 GPM/CF OF MEDIA (MAXIMUM).**

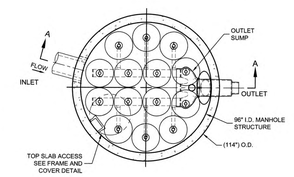
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com
4. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
5. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
F. CONTRACTOR TO REMOVE THE TRANSFER HOLE COVER WHEN THE SYSTEM IS BROUGHT ONLINE.

The Patented Technology in StormFilter® is Protected by U.S. Patents: www.contechES.com/stormfilter/patents

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

THE STORMWATER MANAGEMENT STORMFILTER
8' x 20' PEAK DIVERSION STORMFILTER
STANDARD DETAIL



PLAN VIEW
STANDARD OUTLET RISER
FLOWMT- 43A

STORMFILTER DESIGN NOTES

STORMFILTER TREATMENTCAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (14). VOLUME SYSTEM IS ALSO AVAILABLE WITH MAXIMUM 14 CARTRIDGES. ONE MANHOLE STORMFILTER PEAK HYDRAULIC CAPACITY IS 1.8 CFS. IF THE SITE CONDITIONS EXCEED 1.8 CFS AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION						
CARTRIDGE HEIGHT	27"		18"		LOW DROP	
RECOMMENDED HYDRAULIC DROP (H)	3.00'		2.3'		1.8'	
SPECIFIC FLOW RATE (gpm/sf)	2 gpm/ft²	1 gpm/ft²	2 gpm/ft²	1 gpm/ft²	2 gpm/ft²	1 gpm/ft²
CARTRIDGE FLOW RATE (gpm)	22.5	11.25	15	7.5	10	5

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	*
WATER QUALITY FLOW RATE (cfs)	*
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED	*
CARTRIDGE FLOW RATE	*
MEDIA TYPE (CSF, PERLITE, ZPG, GAC, PHS)	*

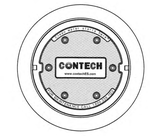
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	*	*	*
INLET PIPE #2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

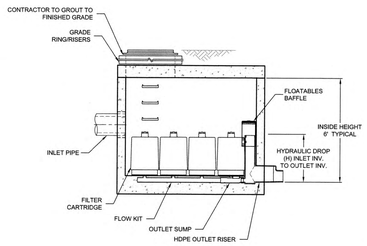
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



SECTION A-A

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR SITE SPECIFIC DRAWINGS WITH DETAILED VAULT DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
4. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
6. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 39 SECONDS.
7. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET PIPE(S).
5. CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER STUB. STORMFILTER EQUIPPED WITH A DUAL DIAMETER HDPE OUTLET STUB AND SAND COLLAR. IF OUTLET PIPE IS LARGER THAN 8 INCHES, CONTRACTOR TO REMOVE THE 8 INCH OUTLET STUB AT MOLDED IN OUTLET LINE. COUPLING BY FERNCO OR EQUAL AND PROVIDED BY CONTRACTOR.
6. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

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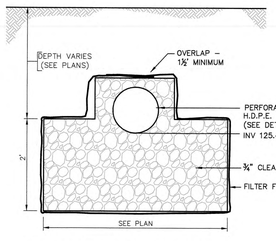
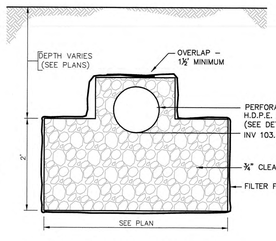
800-338-1122 513-645-7000 513-645-7993 FAX

SFMH96
STORMFILTER
STANDARD DETAIL



INFILTRATION TRENCH–1
N.T.S.



INFILTRATION TRENCH–2
N.T.S.

REVISIONS

	DATE
1) COMPLETENESS REVS	04/30/19
2) COMPLETENESS REVS	06/15/19
3) TWA SUBMISSION	01/31/19
4) RESOLUTION COMPLIANCE	03/15/19
5) TWA COMMENTS	04/05/19
6) RESOLUTION COMPLIANCE	11/1/19
7) RESOLUTION COMPLIANCE	02/7/20

THIS SUBMISSION IS FOR PERMIT PURPOSES ONLY - NOT FOR CONSTRUCTION UNTIL THIS BOX HAS BEEN CHECKED AND DATED.

CHKD BY: DATE:

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...

SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK – MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

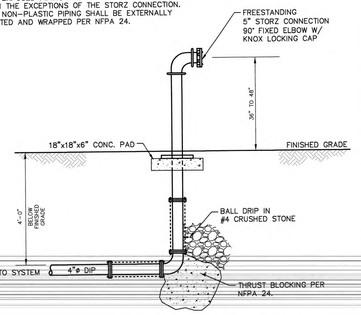
CONSTRUCTION DETAILS–3

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY	PJ	DATE OF ISSUE	SCALE: N.T.S.
DSGN BY	CJS	MARCH 16, 2018	JOB # 2015.063
CHKD. BY	ST	REV 7) FEBRUARY 7, 2020	DWG # DE-3
APPRD. BY	ST		SHEET # 26

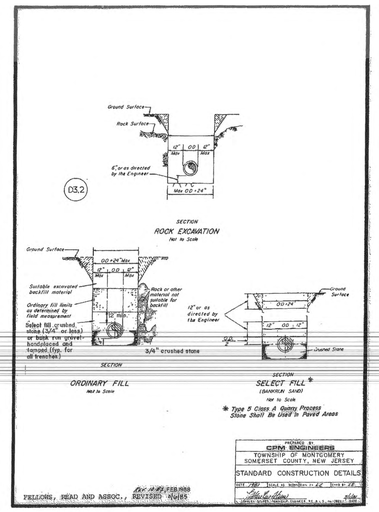
C:\Jobs\2015.063 - Village Walk 2015.063 - DE-3.dwg, Sheet1, PLOTTED: 2/20/2020 4:23 PM, BY: CHRIS SZALAY

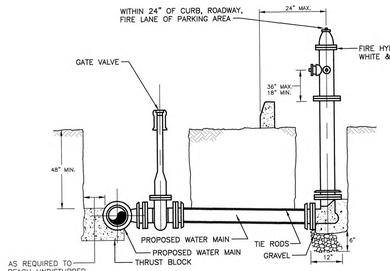
GENERAL NOTES
1. MINIMUM PIPE SIZE LEADING TO THE STORZ FDC SHALL BE DETERMINED BY HYDRAULIC CALCULATIONS, BUT SHALL BE A MINIMUM OF 4 IN. A 6 IN. MINIMUM IS REQUIRED FOR ALL SYSTEMS WITH A TOTAL DEMAND EXCEEDING 750 GPM.
2. KNOX STORZGUARD LOCKING CAPS ARE REQUIRED ON ALL CONNECTIONS.
3. ALL EXPOSED PIPING AND FITTINGS TO BE GALVANIZED WITH THE EXCEPTIONS OF THE STORZ CONNECTION.
4. ALL NON-PLASTIC PIPING SHALL BE EXTERNALLY COATED AND WRAPPED PER NFPA 24.



STORZ FIRE DEPARTMENT CONNECTION DETAIL (90 DEGREE)

N.T.S.

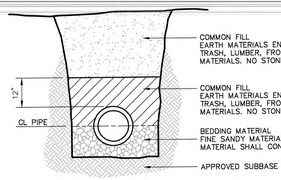




FIRE HYDRANT DETAIL

N.T.S.

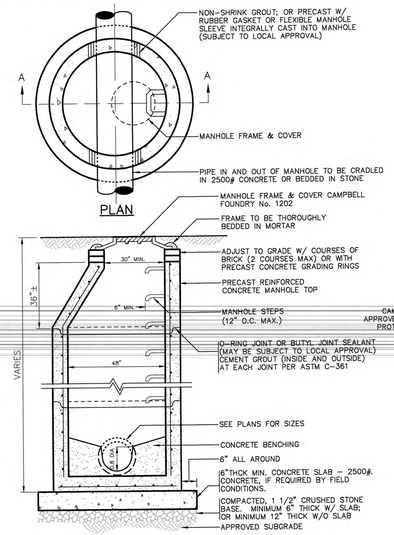
GENERAL NOTES:
1) ALL CONSTRUCTION SHALL MEET STANDARD DOT SPECIFICATIONS, THE LATEST EDITION.
2) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.



(WATER MAIN)
TRENCH DETAIL

N.T.S.

MANHOLE NOTES:
1) ALL CONSTRUCTION SHALL MEET STANDARD SPECIFICATIONS, THE LATEST EDITION.
2) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.
3) EXTERIOR SURFACES SHALL BE PAINTED WITH TWO (2) COATS OF BITUMINOUS WATERPROOFING MATERIAL.
4) CONCRETE AND REINFORCEMENT TO BE IN ACCORDANCE WITH ASTM C478, THE LATEST EDITION.
5) DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.

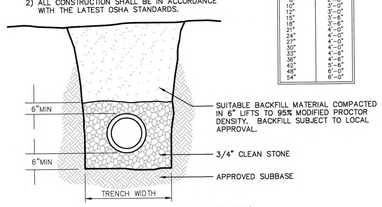


CONCRETE MANHOLE (48" SANITARY)

N.T.S.

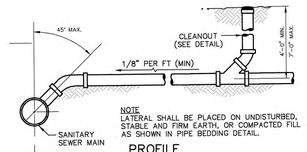
GENERAL NOTES:
1) ALL CONSTRUCTION SHALL MEET STANDARD DOT SPECIFICATIONS, THE LATEST EDITION.
2) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.

PIPE DIAMETER	TRENCH WIDTH
4"ø	2'-0"
6"ø	2'-0"
8"ø	2'-0"
10"ø	2'-0"
12"ø	2'-0"
15"ø	2'-0"
18"ø	2'-0"
21"ø	2'-0"
24"ø	2'-0"
30"ø	2'-0"
36"ø	2'-0"
42"ø	2'-0"
48"ø	2'-0"
54"ø	2'-0"
60"ø	2'-0"
66"ø	2'-0"
72"ø	2'-0"
78"ø	2'-0"
84"ø	2'-0"
90"ø	2'-0"
96"ø	2'-0"



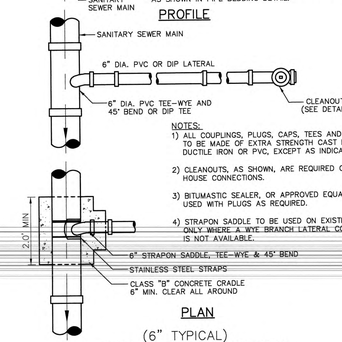
(SANITARY SEWER)
TRENCH DETAIL 'A'

N.T.S.



NOTE
LATERAL SHALL BE PLACED ON UNDISTURBED, STABLE AND FIRM EARTH, OR COMPACTED FILL AS SHOWN IN PIPE BEDDING DETAIL.

PROFILE



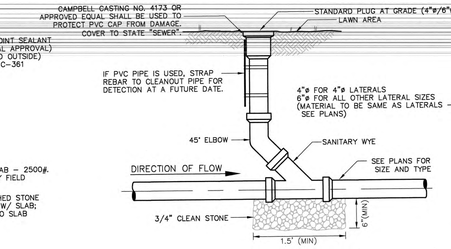
NOTES:
1) ALL COUPLINGS, PLUGS, CAPS, TEES AND FITTINGS TO BE MADE OF EXTRA STRENGTH CAST IRON, DUCTILE IRON OR PVC, EXCEPT AS INDICATED.
2) CLEANOUTS, AS SHOWN, ARE REQUIRED ON ALL HOUSE CONNECTIONS.
3) BITUMASTIC SEALER, OR APPROVED EQUAL, TO BE USED WITH PLUGS AS REQUIRED.
4) STRAPON SADDLE TO BE USED ON EXISTING MAINS ONLY WHERE A WYE BRANCH LATERAL CONNECTION IS NOT AVAILABLE.

PLAN

(6" TYPICAL)
LATERAL CONNECTION

N.T.S.

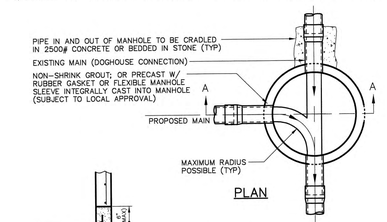
NOTES:
1) ALL CONSTRUCTION SHALL MEET STANDARD SPECIFICATIONS, THE LATEST EDITION.
2) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.



SANITARY CLEANOUT (IN–LINE)

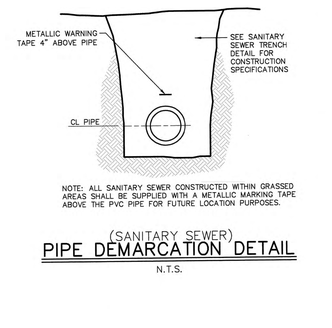
N.T.S.

MANHOLE NOTES:
1) ALL CONSTRUCTION SHALL MEET STANDARD SPECIFICATIONS, THE LATEST EDITION.
2) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.
3) EXTERIOR SURFACES SHALL BE PAINTED WITH TWO (2) COATS OF BITUMINOUS WATERPROOFING MATERIAL.
4) CONCRETE AND REINFORCEMENT TO BE IN ACCORDANCE WITH ASTM C478, THE LATEST EDITION.
5) DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.



CONCRETE MANHOLE (DOGHOUSE)

N.T.S.



NOTE: ALL SANITARY SEWER CONSTRUCTED WITHIN GRASSED AREAS SHALL BE SUPPLIED WITH A METALLIC MARKING TAPE ABOVE THE PVC PIPE FOR FUTURE LOCATION PURPOSES.

(SANITARY SEWER)
PIPE DEMARCATION DETAIL

N.T.S.

DIAMETER OF PIPE (d)	22 1/2° ELBOW	45° ELBOW	90° ELBOW	TEE CONNECTION	45° OWYE	PLUG
	A	A	A	A	A	A
4"	0.5	1.4	2.6	1.8	2.2	2.0
6"	1.5	3.0	6.0	4.0	4.5	4.5
8"	2.5	5.0	9.5	6.5	9.5	8.0
10"	4.1	8.0	13.0	9.5	12.5	12.5
12"	5.5	11.5	19.0	13.5	16.0	18.0
16"	9.0	18.0	33.0	23.0	27.0	32.0
20"	14.0	28.0	51.0	36.0	42.0	50.5

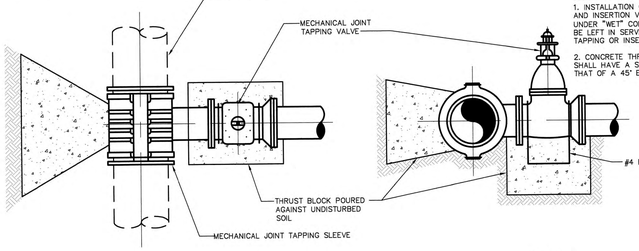
A–CONTACT BEARING AREA OF BLOCK WITH EARTH, SQUARE FEET

NOTES:
1. BEARING AREAS ARE BASED ON UNDISTURBED SOIL WITH A BEARING CAPACITY OF 1,000 POUNDS PER SQUARE FOOT FOR A LESSER SOIL BEARING CAPACITY THESE AREAS SHALL BE INCREASED ACCORDINGLY.
2. ALL CONCRETE THRUST BLOCKS SHALL BE CLASS "B" CONCRETE.
3. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH.
4. NO JOINT SHALL BE COVERED WITH CONCRETE.
5. APPROVED MECHANICAL JOINT RESTRAINTS ARE REQUIRED AT ALL VERTICAL BENDS AND MAY BE USED IN LIEU OF THRUST BLOCKS AT HORIZONTAL BENDS AT THE OPENING OF THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.
6. A BITUMASTIC COATING SHALL BE APPLIED TO ALL BOLTS, NUTS, WASHERS, RODS, THRUST RESTRAINT BOLTS AND ALL UNCOATED HARDWARE.
7. 6 MIL. POLY SHEATHING SHALL BE PLACED BETWEEN FITTINGS AND CONCRETE THRUST BLOCKS.

TABLE OF THRUST BLOCKS

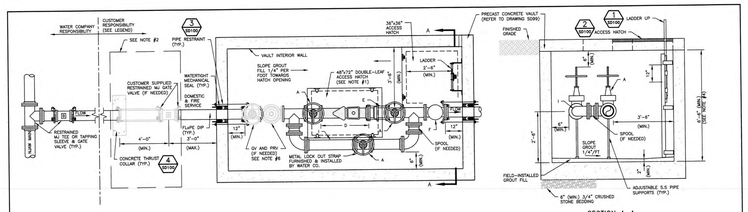
N.T.S.

TAPPING NOTES:
1. INSTALLATION OF TAPPING SLEEVE AND VALVE AND INSERTION VALVE SHALL BE CONDUCTED UNDER "WET" CONDITIONS. EXISTING MAINS SHALL BE LEFT IN SERVICE AT ALL TIMES DURING TAPPING OR INSERTION.
2. CONCRETE THRUST BLOCK UNDER VALVES SHALL HAVE A SOIL BEARING AREA EQUAL TO THAT OF A 45° ELBOW.



TAPPING SLEEVE AND VALVE

N.T.S.



PLAN

LEGEND:
COMPONENTS SHADED IN GRAY TO BE FURNISHED BY WATER CO.
A– DS&Y GATE VALVE WITH FLANGED ENDS (FURNISHED & INSTALLED BY CUSTOMER)
D– MULTI-USE METER ASSEMBLY– METERS WITH FLANGED ENDS (FURNISHED BY WATER CO., INSTALLED BY CUSTOMER)
E– DISMANTLING JOINT TO HAVE FLANGED ENDS WITH JOINT RESTRAINT (FURNISHED & INSTALLED BY CUSTOMER)
F– SWING CHECK WITH FLANGED ENDS (FURNISHED & INSTALLED BY CUSTOMER)
I– BYPASS SIZE SHALL BE NO GREATER THAN ONE STANDARD PIPE SIZE SMALLER THAN DOMESTIC SERVICE SIZE AND SHALL HAVE METAL STRAP FOR LOCKING OUT BYPASS VALVE (STRAP FURNISHED & INSTALLED BY WATER CO.).

BACKFLOW DEVICE:
A BACKFLOW DEVICE IS REQUIRED BY THE NJDEP. THE BACKFLOW DEVICE IS FURNISHED & INSTALLED BY CUSTOMER. THE BACKFLOW DEVICE CANNOT BE INSTALLED INSIDE THE VAULT OR ANY CONFINED SPACE. IT MAY BE INSTALLED IN AN INSULATED HEATED ABOVEGROUND ENCLOSURE OR INSIDE THE BUILDING. THE BACKFLOW DEVICE MUST BE PLACED BEFORE THE FIRST CONNECTION. IF IN BUILDING, LOCATION MUST BE APPROVED BY NJAW PRIOR TO ANY INSTALLATION. REFER TO DRAWING D201-0601-SD94.

NOTES:
1. VAULTS ARE REQUIRED BY NJAW FOR LARGE METERS (3" & LARGER) AND ARE TO BE FURNISHED AND INSTALLED BY CUSTOMER. ACCESS TO VAULT VIA ALUMINUM 36"x36" BILCO POW-4 TYPE, FLUSH, WATERTIGHT SIDEWALK DOOR W/ LADDER UP SAFETY POST OR EQUIVALENT, FOR SERVICE SIZES 8" & LARGER, A SECOND 48"x72" BILCO POW-3 HATCH IS REQUIRED TO BE CENTERED DIRECTLY OVER THE METER. THE VAULT SHALL BE SIZED TO ALLOW 4'-0" MIN. CLEARANCE AROUND METER. THE VAULT AND ANY ENCROACHMENTS WITHIN AREA AROUND VAULT MUST BE COMPLETELY WATERPROOFED. USE OF FLANGE & RODDING ON VAULTS ALL VALVE AND PIPING CONSTRUCTION IS SUBJECT TO WATER COMPANY APPROVAL PRIOR TO SERVICE.
2. IF VAULT IS >20 FEET FROM MAIN SHUTOFF VALVE, CUSTOMER IS REQUIRED TO INSTALL AN ADDITIONAL RESTRAINED MECHANICAL JOINT GATE VALVE & VALVE BOX WITHIN 3 FEET OF THE VAULT. IF VAULT IS >20 FEET FROM MAIN SHUTOFF VALVE, CUSTOMER IS REQUIRED TO INSTALL A DUAL GASKETED, MECHANICAL JOINT SLEEVE RESTRAINED WITH WEDGE ACTION RESTRAINING GLANDS WITHIN 3 FEET OF MAIN.
3. EXTERIOR VALVES & FITTINGS SHALL BE RESTRAINED WITH WEDGE ACTION RESTRAINING GLANDS, THUST COLLARS AND/OR 304 STAINLESS STEEL RODS/NUTS AND CLAMPS.
4. BASED ON THE LARGEST SIZE GATE VALVE REQUIRED, THE MINIMUM VAULT HEIGHT (INTERIOR DIMENSION) SHALL BE AS FOLLOWS:

DV SIZE	VAULT HEIGHT
4" TO 8"	7'-0"
10"	7'-6"
12"	7'-9"

5. VAULT PIPING TO BE DUCTILE IRON MEETING ANSI/AWWA C115/A21.15. THE USED OF FLANGED COUPLING ADAPTERS IS STRICTLY PROHIBITED.
6. THE CUSTOMER MUST INSTALL A WATER PRESSURE REDUCING VALVE WHERE REQUIRED BY STATE OF NEW JERSEY PLUMBING CODE. INSTALLATION RECOMMENDED WHERE AVERAGE PRESSURE IS GREATER THAN 80 PSI. WHERE A PRV IS REQUIRED IT SHALL BE PRECEDED BY AN ADDITIONAL DS&Y GATE VALVE.

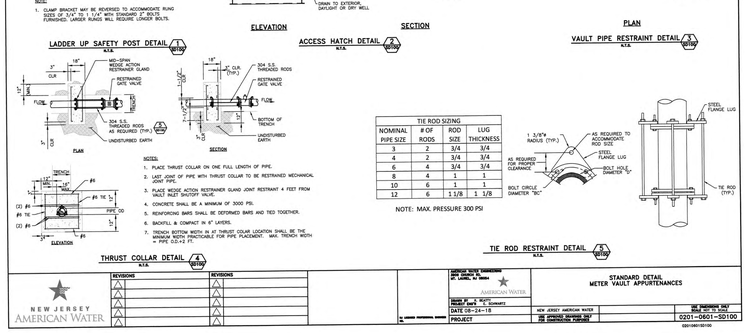
REVISIONS		REVISIONS	

NEW JERSEY AMERICAN WATER

STANDARD DETAIL
MULTI-USE SERVICE METER VAULT

DRAWN BY: M. SCHMITT
DATE: 08-24-18
PROJECT

NEW JERSEY AMERICAN WATER
SEE PRINCIPAL VALVE DRAWING FOR SIZE
D201-0601-SD92



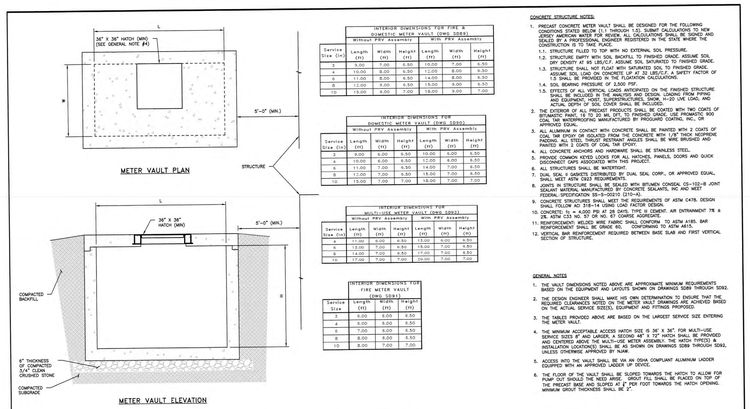
REVISIONS		REVISIONS	

NEW JERSEY AMERICAN WATER

STANDARD DETAIL
METER VAULT

DRAWN BY: M. SCHMITT
DATE: 08-24-18
PROJECT

NEW JERSEY AMERICAN WATER
SEE PRINCIPAL VALVE DRAWING FOR SIZE
D201-0601-SD99



INTERIOR DIMENSIONS FOR FIRE & DOMESTIC METER VAULT (DWG. SD93)
Without PRV Assembly | With PRV Assembly

Service Size (in)	Length (in)	Width (in)	Height (in)	Length (in)	Width (in)	Height (in)
3	9.00	6.00	6.50	10.00	6.00	6.50
4	10.00	8.00	6.50	12.00	8.00	6.50
6	11.00	7.00	6.50	15.00	8.00	6.50
8	12.00	9.00	6.50	18.00	9.00	6.50
10	13.00	9.00	7.00	18.00	9.00	7.00

INTERIOR DIMENSIONS FOR COMPACT METER VAULT (DWG. SD93)
Without PRV Assembly | With PRV Assembly

Service Size (in)	Length (in)	Width (in)	Height (in)	Length (in)	Width (in)	Height (in)
3	9.00	6.00	6.50	10.00	6.00	6.50
4	10.00	8.00	6.50	12.00	8.00	6.50
6	11.00	7.00	6.50	15.00	7.00	6.50
8	12.00	7.00	6.50	18.00	7.00	6.50
10	13.00	7.00	7.00	18.00	7.00	7.00

INTERIOR DIMENSIONS FOR MULTI-USE METER VAULT (DWG. SD92)
Without PRV Assembly | With PRV Assembly

Service Size (in)	Length (in)	Width (in)	Height (in)	Length (in)	Width (in)	Height (in)
4	11.00	9.00	6.50	13.00	9.00	6.50
6	13.00	9.00	6.50	16.00	9.00	6.50
8	14.00	9.00	6.50	17.00	9.00	6.50
10	17.00	9.00	7.00	20.00	9.00	7.00

INTERIOR DIMENSIONS FOR FIRE METER VAULT (DWG. SD93)

Service Size	Length (in)	Width (in)	Height (in)
3	6.00	6.00	6.50
4	6.00	6.00	6.50
6	8.00	8.00	6.50
8	8.00	8.00	6.50
10	8.00	7.00	7.00

CONCRETE STRUCTURE NOTES:
1. PRECAST CONCRETE METER VAULT SHALL BE DESIGNED FOR THE FOLLOWING CONDITIONS STATED BELOW (1) THROUGH (4). SUBMIT CALCULATIONS TO NEW JERSEY AMERICAN WATER FOR REVIEW. CALCULATIONS SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE CONSTRUCTION IS TO TAKE PLACE.
1.1. STRUCTURE FILLED WITH WATER AND NO EXTERNAL SOIL PRESSURE.
1.2. STRUCTURE FILLED WITH SOIL BACKFILL TO FINISHED GRADE, ASSUME SOIL DENSITY AT 95 LBS/CF. ASSUME SOIL SATURATED TO FINISHED GRADE.
1.3. STRUCTURE SHALL NOT FLOAT WITH SATURATED SOIL TO FINISHED GRADE, ASSUME SOIL LOAD ON CONCRETE UP AT 32 LBS/CF, A SAFETY FACTOR OF 1.5 AGAINST FLOATATION IS REQUIRED IN CALCULATIONS.
1.4. SOIL BEARING PRESSURE OF 2,500 PSF.
1.5. EFFECTS OF ALL VERTICAL LOADS ANTICIPATED ON THE FINISHED STRUCTURE SHALL BE INCLUDED IN THE ANALYSIS AND DESIGN. LOADING FROM ANY CONSTRUCTION EQUIPMENT SHALL BE INCLUDED IN THE LIVE LOAD AND INCLUDED WITH DEPTH OF SOIL COVER SHALL BE INCLUDED.
2. THE EXTERIOR OF ALL PRECAST PRODUCTS SHALL BE COATED WITH TWO COATS OF BITUMASTIC PAINT, 16 TO 20 MIL DFT, TO FINISHED GRADE. USE PROMASTIC 900 OR APPROVED EQUAL. CORRESPONDING MANUFACTURERS BY PROGUARD COATING, INC., OR APPROVED EQUAL.
3. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH 2 COATS OF ZINC CHROMATE PRIMER AND 2 COATS OF COAL TAR EPOXY. ALL STEEL IN CONTACT WITH CONCRETE INCLUDING ALL STEEL THRUST RESTRAINT ANGLES SHALL BE SHOP BLASTED AND PAINTED WITH 2 COATS OF COAL TAR EPOXY.
4. ALL CONCRETE ANCHORS AND HARDWARE SHALL BE STAINLESS STEEL.
5. PROVIDE COMPRESS KEYED LOCKS FOR ALL HATCHES, PANELS, DOORS AND QUICK OPENING ACCESS COVERS AS SHOWN ON PLANS.
6. ALL STRUCTURES SHALL BE WATERTIGHT.
7. DUAL SEAL II GASKETS DISTRIBUTED BY DUAL SEAL CORP., OR APPROVED EQUAL, SHALL MEET ASTM C923 REQUIREMENTS.
8. JOINTS IN STRUCTURE SHALL BE SEALED WITH BITUMEN CONSEAL CS-102-B JOINT SEALANT OR APPROVED EQUAL. NO MASTIC SEALANTS, NO MIG MEET FEDERAL SPECIFICATION SS-S-00210 (23)-93.
9. CONCRETE STRUCTURES SHALL MEET THE REQUIREMENTS OF ASTM C478, DESIGN SHALL FOLLOW ACI 318-14 USING LOAD FACTOR DESIGN.
10. CONCRETE: 1) A 4,000 PSI AT 28 DAYS, 2) 6% ENTRAINED AIR (ENTRAINED) TO A MAXIMUM SLUMP OF 4". 3) MAXIMUM WATER TO CEMENT RATIO OF 0.45.
11. REINFORCEMENT: WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. BAR REINFORCEMENT SHALL BE GRADE 60, CONFORMING TO ASTM A615.
12. VERTICAL BAR REINFORCEMENT REQUIRED BETWEEN BASE SLAB AND FIRST VERTICAL SECTION OF STRUCTURE.

GENERAL NOTES
1. THE VAULT DIMENSIONS NOTED ABOVE ARE APPROXIMATE MINIMUM REQUIREMENTS BASED ON THE EQUIPMENT AND LAYOUTS SHOWN ON DRAWINGS SD89 THROUGH SD92.
2. THE DESIGN ENGINEER SHALL MAKE HIS OWN DETERMINATION TO ENSURE THAT THE VAULT IS LARGE ENOUGH TO ACCOMMODATE THE EQUIPMENT AND PIPING PROVIDED BASED ON THE ACTUAL SERVICE SIZES, EQUIPMENT AND FITTINGS PROPOSED.
3. THE TABLES PROVIDED ABOVE ARE BASED ON THE LARGEST SERVICE SIZE ENTERING THE METER VAULT.
4. THE MINIMUM APPROPRIATE ACCESS HATCH SIZE IS 36" X 36". FOR MULTI-USE SERVICE SIZES 8" AND LARGER, A MINIMUM 48" X 72" HATCH SHALL BE PROVIDED AND CENTERED ABOVE THE MULTI-USE METER ASSEMBLY. THE HATCH TYPE(S) & INSTALLATION LOCATION(S) SHALL BE AS SHOWN ON DRAWINGS SD98 THROUGH SD92, UNLESS OTHERWISE APPROVED BY NJAW.
5. ACCESS INTO THE VAULT SHALL BE BY AN OSHA COMPLIANT UNDERGROUND LADDER EQUIPPED WITH AN ARRANGEMENT OF DEVICE.
6. THE FLOOR OF THE VAULT SHALL BE SLOPED TOWARDS THE HATCH TO ALLOW FOR DRAINAGE. THE MINIMUM SLOPE SHALL BE 1/4" PER FOOT. THERE SHALL BE A LOW POINT IN THE PRECAST BASE AND SLOPED AT 2" PER FOOT TOWARDS THE HATCH OPENING. MINIMUM GROUT THICKNESS SHALL BE 2".

CONC. COLLAR
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CONTROL PANEL(S):
- NEMA 4, (DEAD FRONT PANEL W/ S.S. PAD LOCK AND HASP), FOR INTERIOR PANELS SHALL INCLUDE:
- LIGHTNING ARRESTOR AHEAD OF CONTROL PANEL (IF REQUIRED BY CODE)
- NON-FUSIBLE SAFETY SERVICE DISCONNECT (INCOMING POWER)
- BREAKER TYPE BRANCH CIRCUIT PROTECTION
- DUPLEX SERVICE RECEPTACLES (20 AMP-GFI)
- INTRINSICALLY SAFE RELAYS
- MANUAL TRANSFER SWITCH (PRIME SOURCE TO GENERATOR)

PUMP CONTROLS:
- DUPLEX CONFIGURATION
- PUMP OVERLOAD PROTECTION
- HAND/OFF/AUTO SELECTOR FOR EACH PUMP
- AUTOMATIC ALTERATION OF PUMPS
- PUMP RUN LIGHTS
- INDIVIDUAL RUNTIME METERS
- AUTOMATIC TRANSFER FROM NON-OPERATING PUMP
- COMPLETE ELECTRICAL DRAWINGS TO BE SUBMITTED FOR APPROVAL PRIOR TO ORDERING

- ALARM SYSTEM (OMNISITE CRYSTAL BALL CELLULAR DIALER OR APPROVED EQUAL)

GENERATOR
SHALL INCLUDE A CONTROL PANEL WITH
- INDICATING LIGHTS
- JOG BUTTON
- AMMETER
- CYCLE METER
- VOLTMETER
- RUN TIME METER
- VOLTAGE DROP PROTECTION
- TIME DELAY AT START (0-60 SEC)
- TIME DELAY FOR LOAD TRANSFER (0-60 SEC)
- TIME DELAY FOR RETRANSFER (0-60 SEC)
- TIME DELAY TO OFF FOR COOL DOWN (0-60 SEC)
- AUTOMATIC TRANSFER SWITCH FOR TOTAL PACKAGE RESPONSIBILITY

ALARM SYSTEM
- ALARM LIGHT (RED-FLASHING)
- AUDIBLE ALARM WITH SILENCE BUTTON
- SIGN CONTAINING EMERGENCY CONTACT AND PHONE NUMBER SHALL BE PLACED ALONG WITH THE CONTROL PANEL IN AN OBVIOUS LOCATION
- BATTERY BACKUP FOR ALARM SYSTEM IN CASE OF POWER FAILURE

ALARM ON THE FOLLOWING CONDITIONS:
- HIGH HIGH WATER
- HIGH WATER
- LOW WATER
- PUMP FAILURE
- POWER FAILURE
- SINGLE PHASE POWER FAILURE
- SEAL FAILURE
- GENERATOR FAILURE (START FAILURE, PHASE FAILURE)
- COMMINUTOR FAILURE (MOTOR FAILURE, JAM)
- AUTOMATIC MIXING SYSTEM FAILURE

ALARM TO NOTIFY ONSITE MAINTENANCE PERSONNEL AND SUPERINTENDENT.

PUMP SPECIFICATIONS:
PUMPS SHALL BE: 2 NON-CLOG SUBMERSIBLE PUMPS

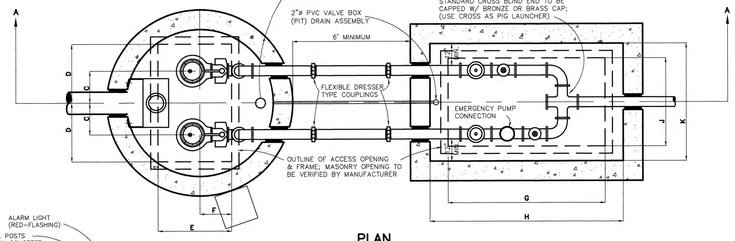
MANUFACTURER: FLYGT ;MODEL:NP 3102 SH 3~ADAPTIVE 455
SPEED: 1720 RPM ;DISCHARGE SIZE: 3 1/8" ;VOLTAGE: 200 VOLTS
FULL LOAD AMPS:15A PHASE: 3 HP: 5

OPERATING CONDITIONS: 112 GPM AT 24.7 FEET TDH

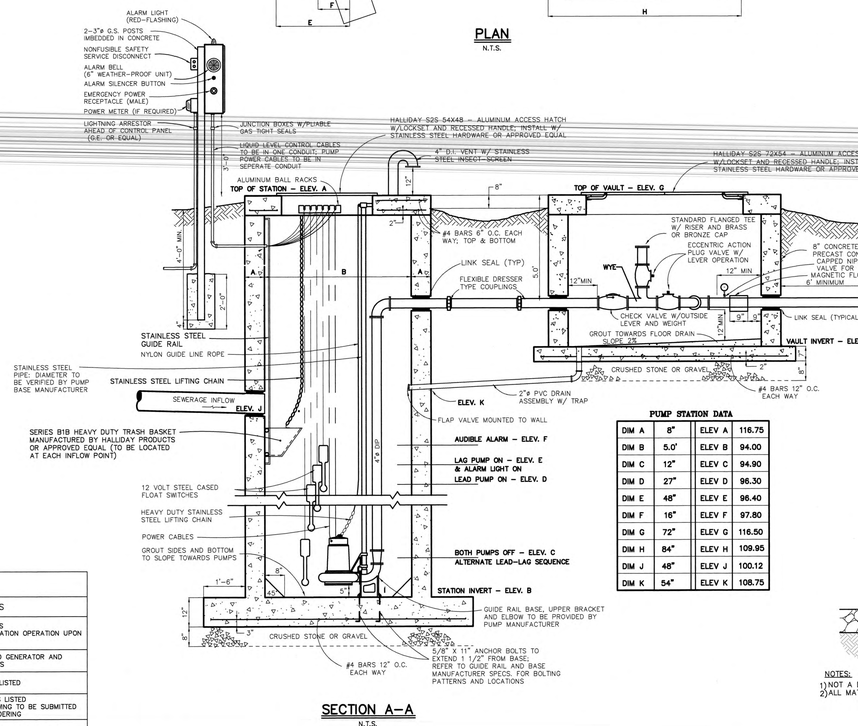
GENERAL NOTES:
1. ALL EXPOSED METAL SHALL BE PAINTED WITH 2 COATS OF CORROSION RESISTANT EPOXY PAINT.
2. WET WELL AND VALVE VAULT SHALL BE COATED WITH EP214 EPOXIMAST TYPE 351 INSIDE AND OUT (2 COATS, 9 MILS EACH).
3. BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
4. VALVE VAULT SHALL HAVE SEALED FLOOR AND DRAIN.
5. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL SHALL BE MADE WATERTIGHT WITH LINK SEALS.
6. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
7. ALL HARDWARE SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
8. FORCE MAIN SHALL HAVE RESTRAINED JOINTS OR THRUST BLOCKS.
9. ALL CONSTRICTION SHALL BE IN CONFORMANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
10. THE CONTRACTOR IS REQUIRED TO OBTAIN AND COMPLY WITH ALL REQUIRED CONSTRUCTION PERMITS.
11. PRECAST CONCRETE STRUCTURES ARE TO BE DESIGNED AND BUILT IN ACCORDANCE WITH ALL ASTM DESIGN STANDARDS. SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER PRIOR TO ORDERING.
12. A 6' HIGH SOLID VINYL FENCE SHALL BE PROVIDED AS A NOISE DAMPENER FOR THE ENCLOSURE.
13. IF NEED IT A CARBON SCRUBBER SHALL BE PROVIDED AT THE MANHOLE VENT TO HELP CONTROL ODORS.

PUMP STATION EQUIPMENT

EQUIPMENT	DESCRIPTION	MANUFACTURER	NOTES
GENERATOR	ONAN OR APPROVED EQUAL	CUMMINS ONAN (800)888-6626 MANUFACTURER DESIGN	-FUEL SOURCE: NATURAL GAS -SIZED TO MAINTAIN FULL STATION OPERATION UPON POWER FAILURE
AUTOMATIC TRANSFER SWITCH	ONAN OR APPROVED EQUAL	CUMMINS ONAN (800)888-6626 MANUFACTURER DESIGN	SIZED MATCHED TO PROPOSED GENERATOR AND STATION POWER REQUIREMENTS
PUMPS	NON-CLOG SUBMERSIBLE	FLYGT	SEE SPECIFIC REQUIREMENTS LISTED
CONTROL PANEL	NEMA 4 FOR EXTERIOR USE FLOAT SYSTEM LEVEL CONTROL	TO BE DETERMINED	-SEE SPECIFIC REQUIREMENTS LISTED -COMPLETE ELECTRICAL DRAWING TO BE SUBMITTED FOR APPROVAL PRIOR TO ORDERING
ALARM PANEL	OMNISITE CRYSTAL BALL CELLULAR DIALER	OMNISITE (317) 885-6330	VISUAL AND AUDIO ONSITE -TO ALARM ON ALL NOTED CONDITIONS ALARM -TO NOTIFY LOCAL OFFICIALS AS DIRECTED BY THE CITY AND ALSO TO NOTIFY SERVICE COMPANY REPRESENTATIVE.
FLOW METER	MAGNETIC FLOW METER	SPARLING TIGERMAG (800) 336-2741	REMOTE SENSING WITH RECORDER
WET WELL / VALVE BOX	PRECAST STRUCTURES	TO BE DETERMINED	TO BE DESIGNED IN ACCORDANCE WITH ALL ASTM REQUIREMENTS. BASE AND FIRST RISER SECTION TO BE CAST MONOLITHIC.
ACCESS HATCHES	ACCESS HATCHES (S2S) HALLIDAY PRODUCTS FOR APPROVED EQUAL	HALLIDAY PRODUCTS (800) 298-1027	-REFER TO PLANS FOR SIZES -ALL HATCHES TO INCLUDE SAFETY NETS
PORTABLE DAVIT CRANE	THERN SERIES 5124 PORTABLE DAVIT CRANE WITH M2 WINCH OPTION	THERN INCORPORATED (800) 843-7648	-USE WALL MOUNTED SOCKET BASE -STORE CRANE IN GENERATOR BUILDING



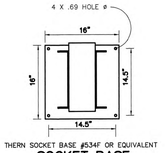
PLAN
N.T.S.



SECTION A-A
N.T.S.

PUMP STATION DATA

DIM A	8"	ELEV A	116.75
DIM B	5.0'	ELEV B	94.00
DIM C	12"	ELEV C	94.90
DIM D	27"	ELEV D	96.30
DIM E	48"	ELEV E	96.40
DIM F	16"	ELEV F	97.80
DIM G	72"	ELEV G	116.50
DIM H	84"	ELEV H	109.95
DIM J	48"	ELEV J	100.12
DIM K	54"	ELEV K	108.75



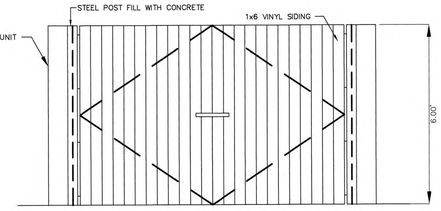
THERN SOCKET BASE #5.34" OR EQUIVALENT

SOCKET BASE
N.T.S.

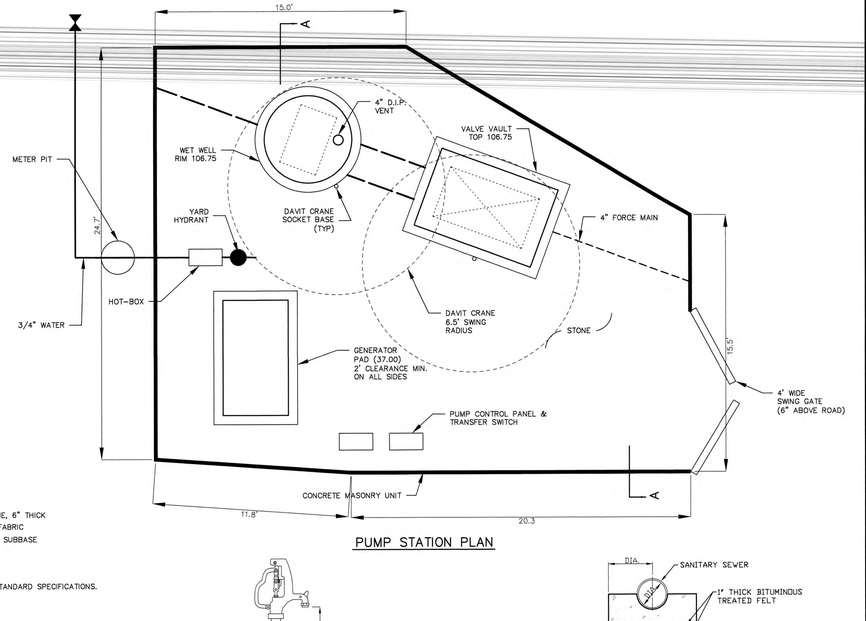
NOTES:
1) NOT A DESIGN SECTION, SUBJECT TO ONSITE SOILS TESTING.
2) ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

(PUMP STATION)
STONE SECTION
N.T.S.

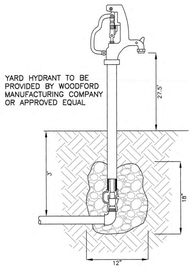
GATE HINGE



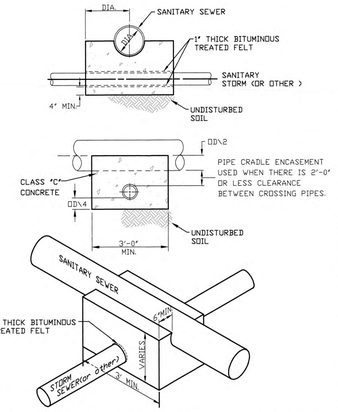
PUMP STATION GATE



PUMP STATION PLAN

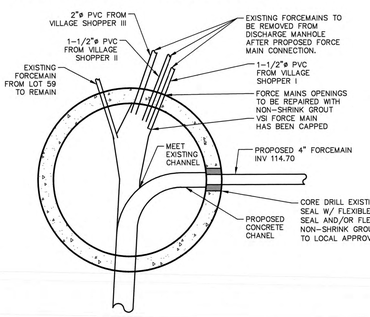


YARD HYDRANT DETAIL
N.T.S.

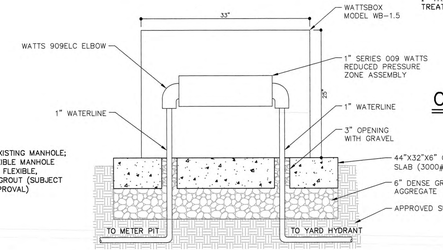


CONCRETE CRADLE ENCASEMENT
N.T.S.

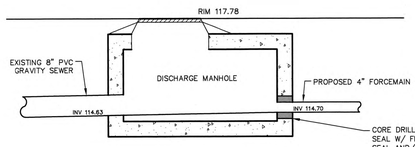
MANHOLE EX. 1 NOTES:
1) PRIOR TO CONNECTING THE PROPOSED SANITARY FORCE MAIN TO THE EXISTING MANHOLE EX. 1 ALONG ROUTE 206, THE EXISTING MANHOLE IS TO BE REPAIRED. THE OUTSIDE WILL BE PARGED AND INSIDE WILL BE POWERWASHED AND EPOXY COATED.



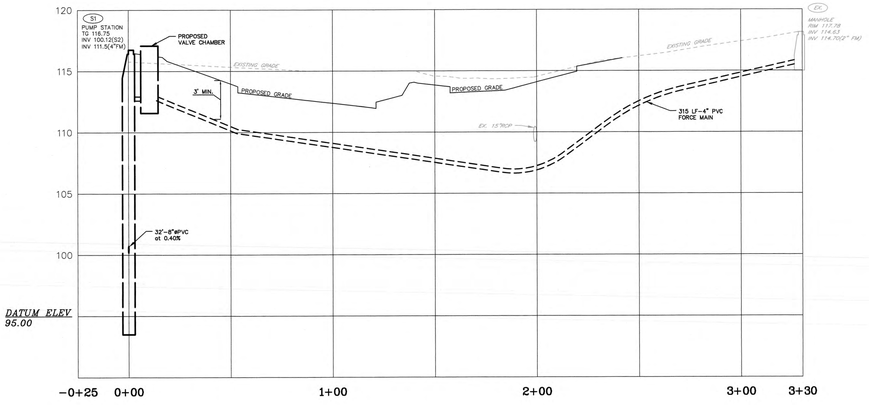
PLAN



HOTBOX WITH BACKFLOW PREVENTER
N.T.S.



FORCE MAIN CONNECTION TO MANHOLE EX. 1
N.T.S.



4-INCH FORCE MAIN PROFILE
H: 1"=30'
V: 1"= 5'

REVISIONS	
1) COMPLETENESS REVS	04/30/18
2) COMPLETENESS REVS	06/15/18
3) TOWNSHIP REVS	09/28/18
4) RESOLUTION COMPLIANCE	03/15/19
5) TWA COMMENTS	04/01/19
6) TOWNSHIP SEWER REV	10/31/19
7) RESOLUTION COMPLIANCE	02/07/20
8) TWA REVISIONS	02/26/20

THIS DRAWING IS FOR PERMIT PURPOSES ONLY AND NOT FOR CONSTRUCTION UNTIL SIGNED, SEALED AND DATED.
DATE:
CHKD BY:

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...

SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK - MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

CONSTRUCTION DETAILS-5

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY	PJ	DATE OF ISSUE	SCALE: N.T.S.
DSGN BY	CJS	MARCH 16, 2018	JOB # 2015.063
CHKD. BY	KRG	REV 8) FEBRUARY 26, 2020	DWG # DE-5
APPRD. BY	KRG		SHEET # 28

C:\Users\SCOTT\Desktop\MENLO\2015.063\DE-5.DWG PLOTTED: 2/26/2020 4:17 PM BY: MICHAEL DIAZ

CONTROL PANEL(S):
- NEMA 4, (DEAD FRONT PANEL W/ S.S. PAD LOCK AND HASP), FOR INTERIOR PANELS SHALL INCLUDE:
- LIGHTNING ARRESTOR AHEAD OF CONTROL PANEL (IF REQUIRED BY CODE)
- NON-FUSIBLE SAFETY SERVICE DISCONNECT (INCOMING POWER)
- BREAKER TYPE BRANCH CIRCUIT PROTECTION
- DUPLEX SERVICE RECEPTACLES (20 AMP-GFI)
- INTRINSICALLY SAFE RELAYS
- MANUAL TRANSFER SWITCH (PRIME SOURCE TO GENERATOR)

PUMP CONTROLS:
- DUPLEX CONFIGURATION
- PUMP OVERLOAD PROTECTION
- HAND/OFF/AUTO SELECTOR FOR EACH PUMP
- AUTOMATIC ALTERATION OF PUMPS
- PUMP RUN LIGHTS
- INDIVIDUAL RUNTIME METERS
- AUTOMATIC TRANSFER FROM NON-OPERATING PUMP
- COMPLETE ELECTRICAL DRAWINGS TO BE SUBMITTED FOR APPROVAL PRIOR TO ORDERING

- ALARM SYSTEM (OMNISITE CRYSTAL BALL CELLULAR DIALER OR APPROVED EQUAL)

GENERATOR
SHALL INCLUDE A CONTROL PANEL WITH
- INDICATING LIGHTS
- JOG BUTTON
- AMMETER
- CYCLE METER
- VOLTMETER
- RUN TIME METER
- VOLTAGE DROP PROTECTION
- TIME DELAY AT START (0-60 SEC)
- TIME DELAY FOR LOAD TRANSFER (0-60 SEC)
- TIME DELAY FOR RETRANSFER (0-60 SEC)
- TIME DELAY TO OFF FOR COOL DOWN (0-60 SEC)
- AUTOMATIC TRANSFER SWITCH FOR TOTAL PACKAGE RESPONSIBILITY

ALARM SYSTEM
- ALARM LIGHT (RED-FLASHING)
- AUDIBLE ALARM WITH SILENCE BUTTON
- SIGN CONTAINING EMERGENCY CONTACT AND PHONE NUMBER SHALL BE PLACED ALONG WITH THE CONTROL PANEL IN AN OBVIOUS LOCATION
- BATTERY BACKUP FOR ALARM SYSTEM IN CASE OF POWER FAILURE

ALARM ON THE FOLLOWING CONDITIONS:
- HIGH HIGH WATER
- HIGH WATER
- LOW WATER
- PUMP FAILURE
- POWER FAILURE
- SINGLE PHASE POWER FAILURE
- SEAL FAILURE
- GENERATOR FAILURE (START FAILURE, PHASE FAILURE)
- COMMUNITOR FAILURE (MOTOR FAILURE; JAM)
- AUTOMATIC MIXING SYSTEM FAILURE

ALARM TO NOTIFY ONSITE MAINTENANCE PERSONNEL AND SUPERINTENDENT.

PUMP SPECIFICATIONS:
PUMPS SHALL BE: 2 NON-CLOG SUBMERSIBLE PUMPS

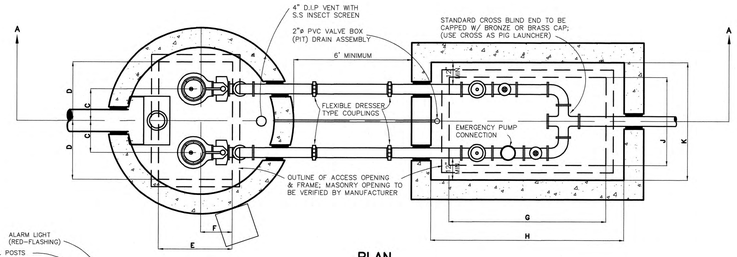
MANUFACTURER: FLYGT ;MODEL:NP 3102 SH 3~ADAPTIVE 455
SPEED: 1720 RPM ;DISCHARGE SIZE: 3 1/8" ;VOLTAGE: 200 VOLTS
FULL LOAD AMPS:15A PHASE: 3 HP: 5

OPERATING CONDITIONS: 112 GPM AT 24.7 FEET TDH

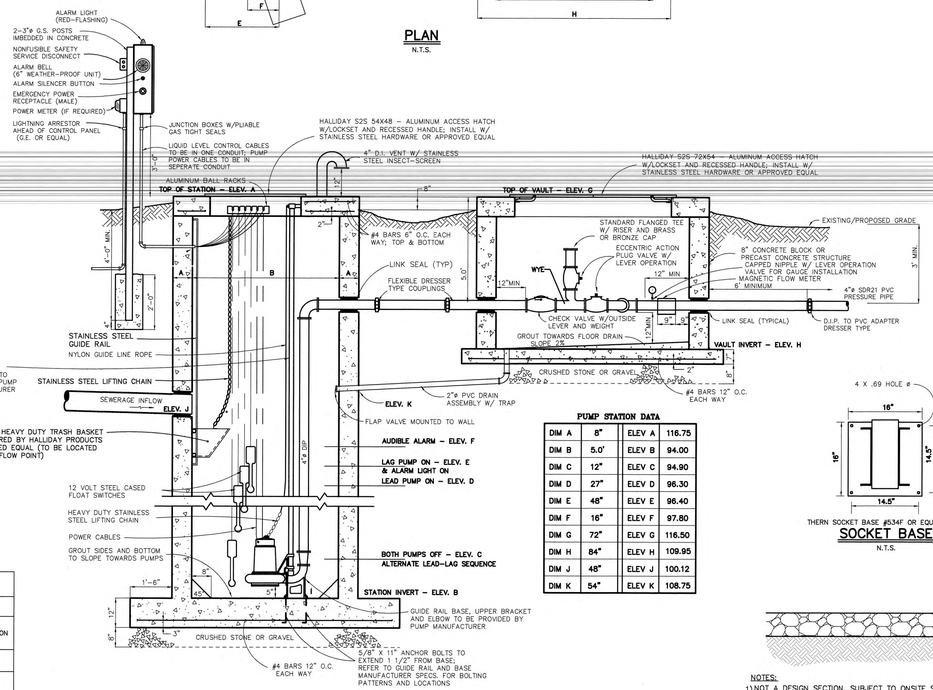
GENERAL NOTES:
1. ALL EXPOSED METAL SHALL BE PAINTED WITH 2 COATS OF CORROSION RESISTANT EPOXY PAINT.
2. WET WELL AND VALVE VAULT SHALL BE COATED WITH EP214 EPOXIMAST TYPE 351 INSIDE AND OUT (2 COATS, 9 MILS EACH).
3. BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
4. VALVE VAULT SHALL HAVE SEALED FLOOR AND DRAIN.
5. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL SHALL BE MADE WATERTIGHT WITH LINK SEALS.
6. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
7. ALL HARDWARE SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
8. FORCE MAIN SHALL HAVE RESTRAINED JOINTS OR THRUST BLOCKS.
9. ALL CONSTRICTION SHALL BE IN CONFORMANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
10. THE CONTRACTOR IS REQUIRED TO OBTAIN AND COMPLY WITH ALL REQUIRED CONSTRUCTION PERMITS.
11. PRECAST CONCRETE STRUCTURES ARE TO BE DESIGNED AND BUILT IN ACCORDANCE WITH ALL ASTM DESIGN STANDARDS, SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER PRIOR TO ORDERING.
12. A 6' HIGH SOLID VINYL FENCE SHALL BE PROVIDED AS A NOISE DAMPENER FOR THE ENCLOSURE.
13. IF NEED IT A CARBON SCRUBBER SHALL BE PROVIDED AT THE MANHOLE VENT TO HELP CONTROL ODORS.

PUMP STATION EQUIPMENT

EQUIPMENT	DESCRIPTION	MANUFACTURER	NOTES
GENERATOR	ONAN OR APPROVED EQUAL	CUMMINS ONAN (800)888-6626 MANUFACTURER DESIGN	-FUEL SOURCE: NATURAL GAS -SIZED TO MAINTAIN FULL STATION OPERATION UPON POWER FAILURE
AUTOMATIC TRANSFER SWITCH	ONAN OR APPROVED EQUAL	CUMMINS ONAN (800)888-6626 MANUFACTURER DESIGN	SIZED MATCHED TO PROPOSED GENERATOR AND STATION POWER REQUIREMENTS
PUMPS	NON-CLOG SUBMERSIBLE	FLYGT	SEE SPECIFIC REQUIREMENTS LISTED
CONTROL PANEL	NEMA 4 FOR EXTERIOR USE FLOAT SYSTEM LEVEL CONTROL	TO BE DETERMINED	-SEE SPECIFIC REQUIREMENTS LISTED -COMPLETE ELECTRICAL DRAWING TO BE SUBMITTED FOR APPROVAL PRIOR TO ORDERING
ALARM PANEL	OMNISITE CRYSTAL BALL CELLULAR DIALER	OMNISITE (317) 885-6330	VISUAL AND AUDIO ONSITE -TO ALARM ON ALL NOTED CONDITIONS ALARM -TO NOTIFY LOCAL OFFICIALS AS DIRECTED BY THE CITY AND ALSO TO NOTIFY SERVICE COMPANY REPRESENTATIVE.
FLOW METER	MAGNETIC FLOW METER	SPARLING TIGERMAG (800) 336-2741	REMOTE SENSING WITH RECORDER
WET WELL / VALVE BOX	PRECAST STRUCTURES	TO BE DETERMINED	TO BE DESIGNED IN ACCORDANCE WITH ALL ASTM REQUIREMENTS, BASE AND FIRST RISER SECTION TO BE CAST MONOLITHIC.
ACCESS HATCHES	ACCESS HATCHES (S2S) HALLIDAY PRODUCTS FOR APPROVED EQUAL	HALLIDAY PRODUCTS (800) 298-1027	-REFER TO PLANS FOR SIZES -ALL HATCHES TO INCLUDE SAFETY NETS
PORTABLE DAVIT CRANE	THERN SERIES 5124 PORTABLE DAVIT CRANE WITH M2 WINCH OPTION	THERN INCORPORATED (800) 843-7648	-USE WALL MOUNTED SOCKET BASE -STORE CRANE IN GENERATOR BUILDING



PLAN
N.T.S.



SECTION A-A
N.T.S.

PUMP STATION DATA

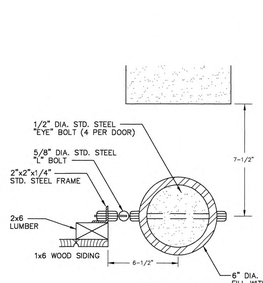
DIM A	8"	ELEV A	116.75
DIM B	5.0'	ELEV B	94.00
DIM C	12"	ELEV C	94.90
DIM D	27"	ELEV D	96.30
DIM E	48"	ELEV E	96.40
DIM F	16"	ELEV F	97.80
DIM G	72"	ELEV G	116.50
DIM H	84"	ELEV H	109.95
DIM J	48"	ELEV J	100.12
DIM K	54"	ELEV K	108.75

THERN SOCKET BASE #534F OR EQUIVALENT

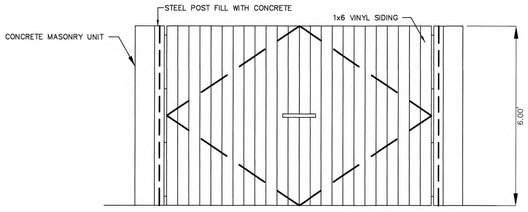
SOCKET BASE
N.T.S.

NOTES:
1) NOT A DESIGN SECTION, SUBJECT TO ONSITE SOILS TESTING.
2) ALL MATERIALS AND METHODS TO BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.

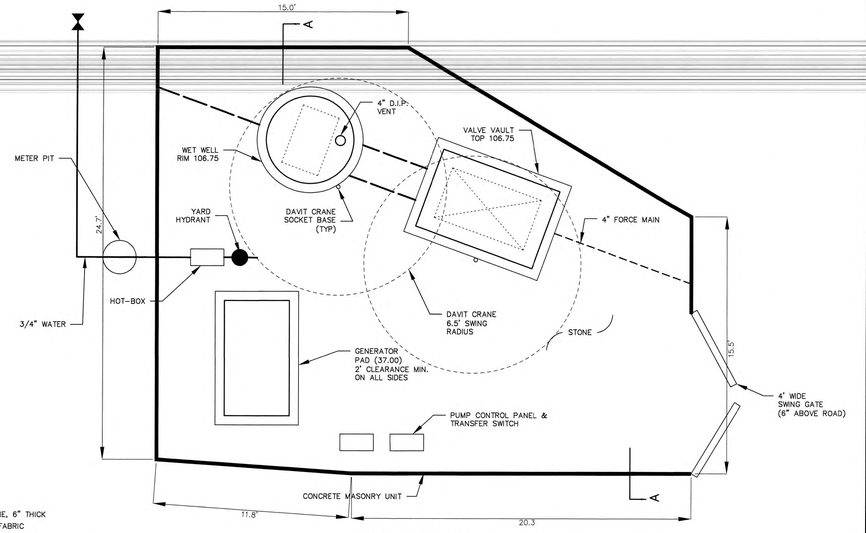
(PUMP STATION)
STONE SECTION
N.T.S.



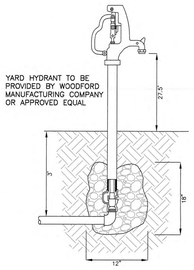
GATE HINGE



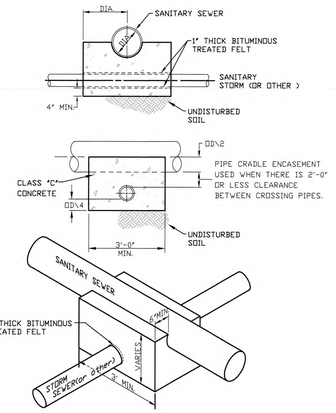
PUMP STATION GATE



PUMP STATION PLAN

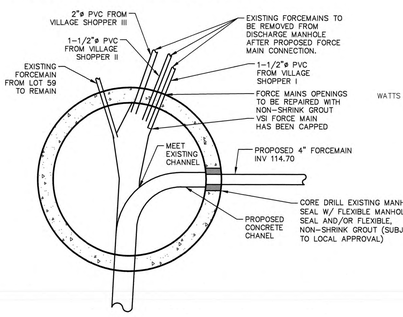


YARD HYDRANT DETAIL
N.T.S.

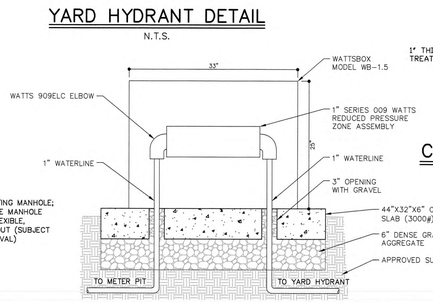


CONCRETE CRADLE ENCASEMENT
N.T.S.

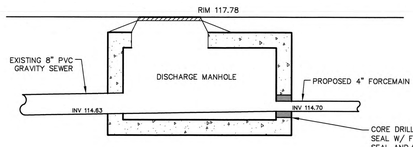
MANHOLE EX. 1 NOTES:
1) PRIOR TO CONNECTING THE PROPOSED SANITARY FORCE MAIN TO THE EXISTING MANHOLE EX. 1 ALONG ROUTE 206, THE EXISTING MANHOLE IS TO BE REPAIRED. THE OUTSIDE WILL BE PARGED AND INSIDE WILL BE POWERWASHED AND EPOXY COATED.



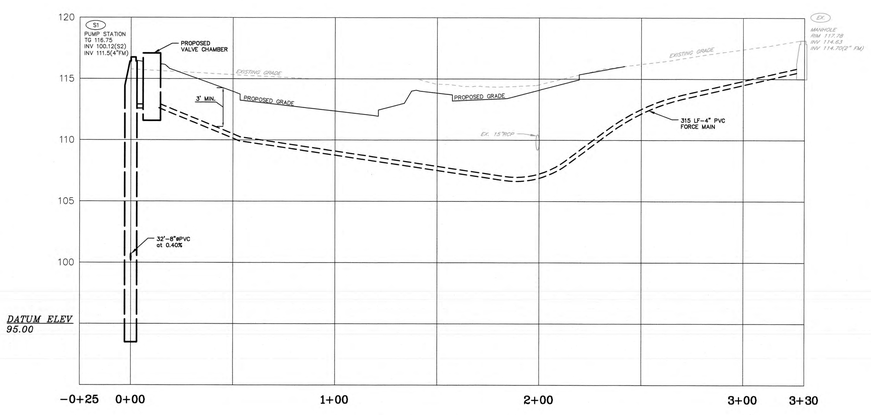
PLAN



HOTBOX WITH BACKFLOW PREVENTER
N.T.S.



FORCE MAIN CONNECTION TO MANHOLE EX. 1
N.T.S.



4-INCH FORCE MAIN PROFILE
H: 1"=30'
V: 1"= 5'

THIS DRAWING IS FOR PERMIT PURPOSES ONLY IF NOT SIGNED, SEALED AND DATED. THIS BOX HAS BEEN CHECKED AND DATED.
DATE:
CHKD BY:

REVISIONS	
1) COMPLETENESS REVS	04/30/18
2) COMPLETENESS REVS	06/15/18
3) TOWNSHIP REVS	09/28/18
4) RESOLUTION COMPLIANCE	03/15/19
5) TWA COMMENTS	04/01/19
6) TOWNSHIP SEWER REV	10/31/19
7) RESOLUTION COMPLIANCE	02/07/20
8) TWA REVISIONS	02/26/20

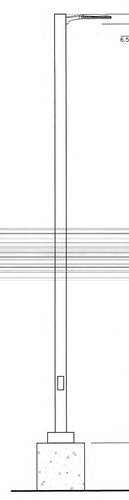
THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...
SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27851900

VILLAGE WALK - MONTGOMERY
MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY
CONSTRUCTION DETAILS-5
BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET:55 10.97 ACRES

DRWN. BY PJ
DSGN BY CJS
CHKD. BY KRG
APPRD. BY KRG
DATE OF ISSUE MARCH 16, 2018
REV 8) FEBRUARY 26, 2020
SCALE: N.T.S.
JOB # 2015.063
DWG # DE-5
SHEET # 28

©\ms\2015\063-Village Walk\2015.063.01-ECTAD.5.dwg PLOTTED: 2/26/2020 4:12 PM, BY HERMAN ORUZ



PHILIPS

GARDCO

Site & Area

PureForm

21" housing

Philips Gardco PureForm luminaires combine LED performance excellence and advanced LED thermal management technology with a distinct purity of style to provide outdoor area lighting that is both energy efficient and aesthetically pleasing. PureForm is defined by its high performance, sleek low profile design and rugged construction.

Project:

Location:

Cat.No.

Type

Qty

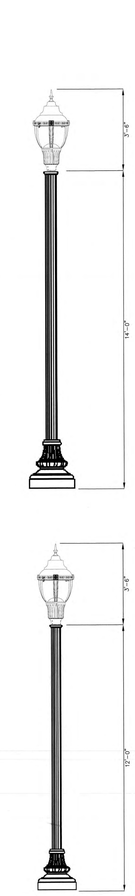
Notes:

Ordering guide

example: P21-AP0-A1-1-SM-130LA-NW-120-NP-PCB

Prefix	Controls	Arm	Mounting	Optical System[4]	Wattage	Color Temp	Voltage	Finish	Options
P21[1,2]									
P21= 21" Pole	Standard luminaire	Standard 9" Arm	Standard Mounting	Optical System Type	Wattage	Color Temp	Voltage	Finish	Options
	SM[3] 0-10v Dimming	A2[4] Short 9" Arm	1 23180.	1 Type 1	55LA 55 Watt	CW Cool White – 6000K (nominal)	120 120v	BRP Bronze Paint	TL Tool-Less entry and driver removal hardware
	APO Automatic Profile Dimming[3]	3@180 Short 9" Arm	4 23180.	2 Type 2	70LA 70 Watt	NW Neutral White – 4000K (nominal)	208 208v	BLK[5] Black Paint	TB Terminal block
	APO-MRO[3] APO with Motion Responsive Override pole mounted sensor	A3[4] Decorative 9" Arm	3@120 23180.	3 Type 3	90LA 90 Watt	30K 3000K CCT (nominal)	240 240v	WP[5] White Paint	F[6] Fusing
	APO-MRO[3] APO with Motion Responsive Override luminaire mounted sensor	MA Mast Arm Tilttip (requires 2¼" O.D. Mast Arm)	3@90 23180.	4 Type 4	105LA 105 Watt	40K 4000K CCT (nominal)	277 277v	NP Natural Paint	LF In-Line In-Pole Fusing
	MRI[3] Motion Response at 10% low, luminaire mount sensor		4@90 23180.	SM Type 5 Medium	NW 130LA 130 Watt	50K 5000K CCT (nominal)	347 347v	OC Optional Color Specify optional color or RAL (e.g. RAL7035)	PCB[7,8,9] Photocell Button
	MRSO[3] Motion Response at 10% low, pole mounted sensor (Remote wireless motion sensor required. See ordering info below.)			5 Type 5 Short	150LA 150 Watt	57K 5700K CCT (nominal)	480 480v		PCR[7,8,9,10] Photocell Receptacle only with 2 dimming connections
	LLC2[11] #2 lens for 17' mounting height			6 Type 5 Wide	150LA 150 Watt		UNV 120-277V 50Hz-60Hz		EHHS External Housewide Shield
	LLC3[11] #3 lens for 9-20' mounting heights			7 Type 6	175LA 175 Watt		HVU 347-480V 50Hz-60Hz		SPA1-2 Square Pole Adapter for use with 8 or 9.2 arms
	LLC4[11] #4 lens for 21-42' mounting heights			28L Type 2 with backlight (less shield)	200LA[12] 200 Watt				SPA3 Square Pole Adapter for use with 9.3 arms
				28L-BL Type 2 with backlight (less shield)					DL Diffusing Lens
				Optic Rotated Right (270°)					CLR[13] Clear Glass Lens
				2-270 Type 2					BD Bird Deterrent Spike Kit - Stainless steel, pole-installed, elastic bird deterrent spikes (field installed only).
				3-270 Type 3					
				28L-270 Type 2 with backlight (less shield)					
				BLC-270 Backlight Ctrl					
				28L-BL-270 Type 2 with backlight (less shield)					
				Optic Rotated Left (270°)					
				2-90 Type 2					
				3-90 Type 3					
				BLC-90 Backlight Ctrl					
				28L-90 Type 2 with backlight (less shield)					

1. Available 120–277V only (UNV, 120, 208, 240 & 277).
2. Available 120V or 277V only. MRSO and APO-MRO require one motion sensor per luminaire ordered separately. See page 2 for Accessories.
3. Available 120V to 277V only. Wattages 180LA and 200LA require outboarded sensor enclosure mounted to the arm of the luminaire (41 arm only).
4. Not available with A3 Arm Style.
5. LLC2/LLC3/LLC4 wireless system not configurable with PC/PCR/PCP/PCRP Options. See pages 6-7 for more info.
6. Fusing is standard in all voltages except when no adapter. If mounting to a square pole, specify Square Pole Adapter option SPA1-2 for 4(1A) arms, or SPA3 for A3 arms.
7. Available with A1 or A2 Arms only. Not available in P21-MRSO or P21-APO-MRO.
8. Luminaire door frame and optic assembly provided standard without glass lens. Specify CLR option for clear glass lens.
9. Available with 130LA or 200LA only.
10. PCR not available with 347V. Requires optical isolator prior to ordering.
11. 200LA and 180LA not available in 347V or 480V.
12. Available with A1 arm or with MA mounting only. Provide specific input voltage.
13. Not configurable with 480V. Voltage must be specified.
14. Works with 3-pin or 5-pin NEMA photocell/dimming device.
15. Available with APO, APR, MRI, MRO, MRSO, APO-MRI, APO-MRO, dimming will not be connected to NEMA receptacle.
16. Works with 3-pin or 5-pin NEMA photocell/dimming device and auxiliary contactors are not connected (for future use only).
17. Option reduces performance.



LE

cULus

Intertek

DIMENSIONAL DATA

HOLOPHANE
LEADER IN LIGHTING SOLUTIONS

Catalog Number

Notes

Type

WFCL2

Utility Washington Series Luminaire
Full Cutoff LED2

Mechanical
- Heavy grade A360 cast aluminum (<1% copper)
- Tool-less access with a captive loaded latch
- Hidden hinge door allowing the door to swing open and remain open
- Optional internal or external NEMA twist lock photocontrol receptacle. Housing contains a tempered glass window to allow light to reach cell for internal versions.
- Mount to slip-fitter that will accept 3" to 2-7/8" to 3-1/8" O.D. pole tenon
- Decorative top cover contains stainless steel hinge which secures entry the LED optical chamber
- Polyester power coat paint to ensure maximum durability
- Finish meets 10,000-hour salt spray testing
- Holophane and RAL Classic finishes.

Electrical
- All surge protection meets ANSI/IEEE C62.41.2 10kV/10kA.
- Standard SPD meets 10kV/5kA per ANSI C136.2-2015.
- 20KV Option meets 20kV/10kA per ANSI C136.2-2015.
- Quick disconnect connectors for ease of installation and maintenance.
- Three pole terminal block is standard, with optional pigtailed leads for ease of installation
- LED drivers meets maximum total harmonic distortion (THD) of 20% and are ROHS compliant. Minimum operating temperature is -40C. Electronic driver has an estimated minimum life of 100,000 hours at 25°C.

Optical
- IP65 rated optical compartment
- LED circuit board located in the top cover
- Asymmetric or Symmetric full cutoff distributions
- 2700K, 3000K, 4000K, and 5000K CCT
- 70CRI Standard

Control Options
- Field Adjustable Output (AO) module - Onboard device that adjusts the light output and input wattage to meet site specific requirements. The AO module is preset at the factory to position number 8 (see chart).
- Wireless remote control for maximum performance and/or multiple light level settings.
- Factory Programmed Driver (FPDxx) – Customize lumen output prior to manufacturing and still enable control leads so other options can also be used
- Long Life Photocontrols (PCLL) – 20 Year Life
- 3 and 7 pin photocontrol receptacles internally (P3, P7) or externally (P3E, P7E) mounted
- Part-night dimming (PND) enables luminaire to monitor and adjust 50% lumens based on season and geographic location, 8-day rolling average

Testing/Compliance
- UL 1598 - Wet Locations Safety Listing
- Suitable for ambient temperatures -40°C to 40°C

Manufacturing
- Manufactured in Crawfordsville, Indiana, ARRA compliant
- 100% electrical testing on all luminaires before shipment
- Ten (10) years minimum experience in manufacturing LED based products

Warranty
5 year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_Conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25°C.
Specifications subject to change without notice.

HOLOPHANE

WFCL2

Utility Washington Series Luminaire Full Cutoff LED2

ORDERING INFORMATION

Example: WFCL2 P20 30K AS GN L2 N P73

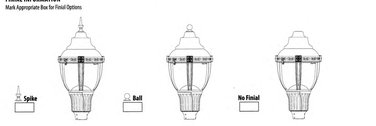
Series	Led performance package	LED Color temperature	Voltage	Housing color	Optics	Finial
WFCL2 Utility Washington LED FCO	P10 1,500 nominal lumens (amber only)	AM True amber	AS Auto-sensing voltage (120 thru 277)	BK Black	L2 Type 2 distribution full cutoff	N None
	P20 4,500 nominal lumens	27K 2700K CCT	50/60 HZ	GR Grey	L3 Type 3 distribution full cutoff	B Ball
	P30 6,500 nominal lumens	30K 3000K CCT	AR Auto-sensing voltage (347 thru 480) 50/60 HZ	GN Graphite	L4 Type 4 distribution full cutoff	S Spike
	P40 8,500 nominal lumens	40K 4000K CCT		PP Prime paint	L5 Type 5 distribution full cutoff	
	P50 11,500 nominal lumens	50K 5000K CCT		WH White		
				BZ Bronze		
				TDC RAL Color color (RAL**)		
				CMC Custom color match		

Options:	Option Compatibility Matrix on page 3 of 4
AO	Field Adjustable Output
DE	ROAM Hardware Decathlete and DCM Factory Installed
FPDxx	Factory Programmed Driver
P3	NEMA Twist Lock photocontrol receptacle - 3 PIN receptacle only.
P7	NEMA Twist Lock Dimming photocontrol receptacle - 7 PIN receptacle only.
PCS	DTL twistoff photocontrol for solid-state lighting 120-277V
PCLL	DTL long life twistlock photocontrol for solid-state R.S & AR
PND	Part-night dimming - down to 50%
P3A	DTL twistlock photocontrol 347V
P4B	DTL twistlock photocontrol 480V
P3E	NEMA Twist Lock Dimming Photocontrol Receptacle - 3 PIN, Externally mounted
P7E	NEMA Twist Lock Dimming Photocontrol Receptacle - 7 PIN, Externally mounted
RME	ROAM Node (External)
RME3	347V ROAM NODE (External)
RME4	480V ROAM NODE (External)
PSC	Shorting cap
WSS	House side shield
L14	L1 9 prewired leads
L15	15 prewired leads
L10	10 ft prewired leads
L20	20 ft prewired leads
L25	25 ft prewired leads
L30	30 ft prewired leads
NL181	NEMA Label 7" X 1"
NL252	NEMA Label 2" X 2"
20KV	20KV TRAA surge protection

Accessories (Order separately)	
XKCL2MSS1	Field Accessory - Louvered house side shield (Qty 1)
XKCL2MSS10	Field Accessory - Louvered house side shield (Bulk Qty 50)
XKCL2PSY10KA1	10kV/5kA Extreme surge 120-277V
XKCL2PSY10KA4	10kV/5kA Extreme surge 480V
XKCL2SPD20KA1	20kV/10kA Extreme surge 120-277V
XKCL2SPD20KA4	20kV/10kA Extreme surge 480V

FINIAL INFORMATION

Mark Appropriate Box for Finial Options



P21 PureForm LED area luminaire

21" housing

PureForm accessories (order separately)

PTF2-(f)
Pole top fitter fits 2-3/8-2 1/2" OD x 4" depth tenon with 1, 2, 3 or 4 luminaires at 90°

PTF3-(f)
Pole top fitter fits 3-1/2" OD x 6" depth tenon with 1, 2, 3 or 4 luminaires at 90°

PTF4-(f)
Pole top fitter fits 3 1/2–4" OD x 6" depth tenon with 1, 2, 3 or 4 luminaires at 90°

MS-A/120V – 120V Input Area Motion Sensor
For MRSO (Motion Responsive) or APO-MRO (Automatic Profile Dimming with Motion Response Override)

MS-A/277V – 277V Input Area Motion Sensor
For MRSO (Motion Responsive) or APO-MRO (Automatic Profile Dimming with Motion Response Override)

Note: Motion Sensors are ordered separately, with one per luminaire. Motion Sensors are not available with A2 or APO-MRO luminaires. See Luminaire Configuration information on page 5 for more details. Area motion sensor color is Arctic White. MRI and APO-MRI luminaires include an integral motion sensor.

PureForm Wireless system accessories (for wall or pole mount)[1,2,3,4]

LLCR2-(f)
Standalone wall or pole wireless controller with #2 Lens.

LLCR3-(f)
Standalone wall or pole wireless controller with #3 Lens.

LLCR4-(f)
Standalone wall or pole wireless controller with #4 Lens.

1. When using the wireless remote accessory option (LLCR-(f)) in a pole mount application, specify pole option (CL=Cluding Internal Threat, 3/4" size)
2. 120–277V only.
3. Must specify finish (f=specify matching finish)
4. Luminaire configuration must include 0-10V Dimming P21-DIM option when Wireless system accessories are specified

LED Wattage and Lumen values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp	Average System Watts	Type 2 Lumen Output	Type 2 Efficacy (LPW)	Type 2 BUG Rating	Type 2BL Lumen Output	Type 2BL Efficacy (LPW)	Type 2BL BUG Rating	Type 3 Lumen Output	Type 3 Efficacy (LPW)	Type 3 BUG Rating
55LA	48	350	4000K	54	6,663	122	B1-U0-G2	7,494	137	B2-U0-G3	6,807	122	B1-U0-G2
70LA	64	350	4000K	68	9,111	132	B2-U0-G2	10,229	148	B3-U0-G3	9,303	134	B2-U0-G2
90LA	80	350	4000K	88	11,615	132	B3-U0-G2	13,042	148	B3-U0-G3	11,823	134	B2-U0-G2
105LA	48	530	4000K	78	9,900	122	B1-U0-G2	10,938	137	B2-U0-G3	9,893	122	B1-U0-G2
130LA	64	530	4000K	103	13,042	127	B1-U0-G2	14,645	142	B4-U0-G4	13,048	127	B1-U0-G2
150LA	80	530	4000K	127	16,702	132	B2-U0-G2	18,776	148	B4-U0-G4	16,732	132	B2-U0-G2
160LA	80	640	4000K	152	19,403	120	B2-U0-G2	21,800	133	B4-U0-G4	18,451	120	B2-U0-G3
150LA	48	700	4000K	108	12,068	112	B1-U0-G2	13,550	125	B3-U0-G3	12,074	112	B1-U0-G2
140LA	64	700	4000K	137	16,471	120	B2-U0-G2	18,493	135	B4-U0-G4	16,479	120	B2-U0-G3
180LA	80	700	4000K	176	20,750	118	B2-U0-G2	23,276	132	B4-U0-G4	20,741	118	B2-U0-G3
200LA	80	800	4000K	205	22,950	112	B2-U0-G3	25,769	126	B4-U0-G4	22,963	112	B2-U0-G3

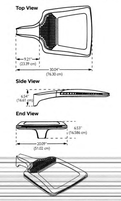
Ordering Code	Total LEDs	LED Current (mA)	Color Temp	Average System Watts	Type 4 Lumen Output[5]	Type 4 Efficacy (LPW)	Type 4 BUG Rating	Type 5M Lumen Output[5]	Type 5M Efficacy (LPW)	Type 5M BUG Rating	Type 5W Lumen Output[5]	Type 5W Efficacy (LPW)	Type 5W BUG Rating
55LA	48	350	4000K	54	6,544	121	B1-U0-G2	7,068	131	B2-U0-G0	7,351	135	B3-U0-G2
70LA	64	350	4000K	68	9,029	131	B2-U0-G2	9,738	141	B3-U0-G1	10,078	146	B4-U0-G2
90LA	80	350	4000K	88	11,511	131	B3-U0-G2	12,414	141	B3-U0-G1	12,855	146	B4-U0-G2
85LA	48	530	4000K	78	9,806	121	B1-U0-G2	10,144	130	B3-U0-G1	10,498	135	B4-U0-G2
105LA	64	530	4000K	103	12,927	126	B1-U0-G2	13,945	135	B3-U0-G2	14,431	140	B4-U0-G2
120LA	80	530	4000K	127	16,574	131	B2-U0-G2	17,874	141	B4-U0-G2	18,512	146	B4-U0-G2
105LA	80	640	4000K	152	19,076	118	B2-U0-G3	20,575	127	B4-U0-G2	21,715	134	B4-U0-G3
110LA	48	700	4000K	108	11,960	111	B1-U0-G2	12,899	119	B3-U0-G1	13,357	124	B4-U0-G2
140LA	64	700	4000K	137	16,343	119	B2-U0-G2	17,604	128	B4-U0-G2	18,290	134	B4-U0-G3
180LA	80	700	4000K	176	20,545	117	B2-U0-G3	22,157	126	B4-U0-G2	22,931	130	B3-U0-G3
200LA	80	800	4000K	205	22,746	111	B2-U0-G3	24,520	120	B4-U0-G2	24,817	121	B3-U0-G3

5. Wattage and lumen output may vary due to LED manufacturer forward volt specification and ambient temperature. Wattage shown is average for 120V through 277V input. Measured wattage may vary due to variation in input voltage.
6. Lumen values based on photometric tests performed in compliance with IESNA LM-79

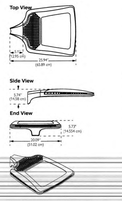
P21 PureForm LED area luminaire

21" housing

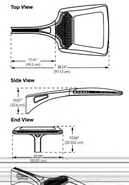
Dimensions – Standard Arm (A1)



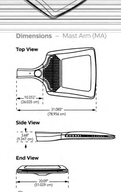
Dimensions – Short Arm (A2)



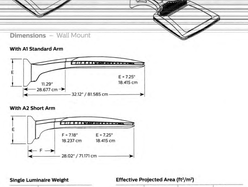
Dimensions – Decorative Arm (A3)



Dimensions – Mast Arm (MA)



Dimensions – Wall Mount



LUMEN AMBIENT TEMPERATURE (LAT) MULTIPLIERS

Use the factors to determine relative lumen output for average ambient temperatures from 0-40C (32-104F).

Ambient Temp (degrees C) Lumen Multiplier								
0	5	10	15	20	25	30	35	40
1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97

PROJECTED LED LUMEN MAINTENANCE

Data references the extrapolated performance projections for the platforms noted in ZSC ambient, based on 6,000 hours of IED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11). To calculate L27, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Package	Lumen Maintenance						
	25k hrs	36k hrs	50k hrs	60k hrs	75k hrs	100k hrs	270 Hrs
P20-P40	0.97	0.96	0.95	0.94	0.93	0.91	383,000
P50	0.96	0.94	0.93	0.91	0.90	0.87	367,667

Single Luminaire Weight

Mounting	Approx.Weight
A1	38 lbs / 17.237 kg
A2	37 lbs / 16.783 kg
A3	41.5 lbs / 18.824 kg
MA	38 lbs / 17.237 kg
W or WS	39 lbs / 17.69 kg

Effective Projected Area (ft²/m²)

Mounting	Single	Twin @ 180	3/4
A1	0.35 / 0.033	0.70 / 0.066	1.25 / 0.117
A2	0.30 / 0.028	0.60 / 0.056	1.10 / 0.103
A3	0.50 / 0.047	1.0 / 0.093	1.70 / 0.158
MA	0.35 / 0.033	N/A	N/A

SL LIGHTING FIXTURE DETAILS

N.T.S.

P21 PureForm LED area luminaire

21" housing

Dimensions – PureForm with wireless system (luminaire mounted controller)

Luminaire configuration information

P21
Philips Gardco PureForm LED standard luminaire providing constant wattage and constant light output when power to the luminaire is energized.

P21-DIM
Philips Gardco PureForm LED luminaire provided with 0 -10V dimming for CONNECTED IS a control system provided by philips or by others.

P21-APO
Philips Gardco PureForm LED luminaire with "Automatic Profile Dimming: Luminaire is provided with a programmed 0-10V driver. Programmed to go to 50% power, 50% light output after 5 minutes of no night time mid-point and remain at 50% for six (6) hours after night time mid-point. Mid-point is continuously recalculated by the programmed LED Driver based on the average mid-point of the last two full night cycles. Short duration cycles, and power interruptions are ignored and do not affect the determination of mid-point.

P21-APO is available in 120V – 277V input only.

P21-APO Dimming Profile:

100%	2 hours	6 hours	100%
	50%	50%	

Power On	Mid Point	Power Off

The P21-APO offers many of the advantages of a sophisticated control system, including an average energy savings of at least 33% versus constant wattage, constant light output systems, without the need for a control system.

P21-MRSO
Philips Gardco PureForm LED luminaire with motion response, providing a 50% power reduction on low and a commensurate reduction in light output. The power and light output reduction is accomplished utilizing the Philips DynaDimmer module; programmed for a constant 50% power. Power supplied by luminaire is then reduced by 50% and sent to line on the DynaDimmer takes the luminaire to high setting, 100% power and light output when motion is detected. The luminaire remains on high until no motion is detected for the motion sensor dwell period, after which the luminaire returns to low. Duration period is factory set at 15 minutes, and is field adjustable from 5 minutes up to 15 minutes.

This configuration is not available for use with wall mounted luminaires.

P21-MRSO is available in 120V–277V input only by the luminaire. Motion sensors require single voltage 120V or 277V input.

The Area PIR motion sensor is the WattStopper EW-200-120-W (120V input - MSA-120V) or the WattStopper EW-200-277-W (277V input - MSA-277V) One motion sensor per pole is required and is ordered separately. Motion sensors require single voltage 120V or 277V input.

The area motion detector provides coverage equal to up to 6 times the sensor height above ground, 270° from the front-center of the sensor.

Motion response requires that the pole include an additional hand hole 9 feet above the pole base, normally oriented 180° to the standard hand hole. For Philips Gardco poles, order the pole with the Motion Sensor Mounting (MSM) option which includes the hand hole and a special hand hole cover plate for the sensor with a 1/2" NPT receptacle centered on the hand hole cover plate into which the motion sensor mounts. Once the motion sensor is mounted in the hand hole cover plate, all wiring connections are completed in the pole. The plate (complete with motion sensor attached and wired) is then mounted to the hand hole. If poles are supplied by others, the customer is responsible for providing suitable mounting accommodations for the motion sensor in the pole.

Mounting to a Philips Gardco Pole:

HOLOPHANE

WFCL2

Utility Washington Series Luminaire Full Cutoff LED2

OPTIONS MATRIX

Mounting	SELECTED OPTION (start here)															
	10	15	FPDxx	P3	P7	P3E	P7E	P3A	P4B	PME	PCLL	PCS	PND	P3C	RME	RME3	RME4	20KV
P10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
P20	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
P30	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
P40	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
P50	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N	N	Y	Y	Y
120	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
208	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
240	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
277	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
347	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
480	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
UNV	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
HVU	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
SC	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
BRP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
BLK	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
WP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
NP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
OC	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
TL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
TB	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
F*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
LF	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
PC**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
PCB***	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
PCR[2,3,4,5,6]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
EHHS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
SPA1-2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
SPA3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
DL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
CLR*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
BD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y

T = Valid Option Combination
F = Future ready (wired with "AO", but could accept control device with teal-key field wiring)
N = Must have one of three must be installed for for luminaire to operate
N = Combination Not available

ROAM OPTION DETAILS

DE – UL listed components without GPS capability, external antenna is black and includes ROAM capable node only, ROAM service package sold separately via Acuity Controls
RME – UL listed device without GPS capability, blue housing color, includes ROAM capable node only, ROAM service package sold separately via Acuity Controls and contact Acuity Controls for RME device with GPS capability or non-standard color
RME3 – UL listed device without GPS capability, green housing color, includes ROAM capable node only, ROAM service package sold separately via Acuity Controls and contact Acuity Controls for RME device with GPS capability or non-standard color
RME4 – UL listed device without GPS capability, yellow housing color, includes ROAM capable node only, ROAM service package sold separately via Acuity Controls and contact Acuity Controls for RME device with GPS capability or non-standard color

HOLOPHANE

WFCL2

Utility Washington Series Luminaire Full Cutoff LED2

PERFORMANCE DATA

LED Package	Distribution	System Watts	2700K Lumens	2700K LPW	3000K Lumens	3000K LPW	4000K Lumens	4000K LPW	5000K Lumens	5000K LPW
P20	L2	45	4174	93	4265	95	4701	104	4853	108
	L3	45	3756	83	3838	85	4230	94	4357	97
	L4	45	3968	88	4054	90	4468	99	4603	102
	L5	45	4120	92	4210	94	4640	103	4780	106
P30	L2	66	5952	90	6082	92	6703	102	6905	105
	L3	66	5355	81	5472	83	6031	91	6213	94
	L4	66	5657	86	5781	88	6371	97	6563	99
	L5	66	5874	89	6002	91	6615	100	6815	103

Accent

B9 Line-voltage

The LED Accent version brings landscape lighting to the next level. Designed for optimal LED performance, it provides the lighting professional with countless line-voltage options.

Component	Feature/Function
1.	Lens cap — Secured to shroud with two phillips screws.
2.	Exterior lens — Environmental barrier (sealing).
3.	Lens gasket — Molded gasket slips onto lens without tools or RTV.
4.	Optical lenses — Three clip on lenses 40 - NFLD, 40 - MFLD, 40 - WFLD.
5.	Switch — Simple customer access for dimming. Slides to 5 different preset light levels.
6.	Reflector — Designed for COB LEDs, provides UV protection.
7.	Heatsink — Attaches housing to base with screws.
8.	Housing gasket — Molded gasket provides seal for driver housing.
9.	Housing — Attaches to stem with screw, teeth to lock aiming angle.
10.	Aiming screw — Phillips-head screw, loosen slightly to adjust aiming.
11.	Driver — Class 2 dimmable 0-10V driver. Field replaceable.
12.	Mounting arm — Provides durable mounting for luminaire, teeth to lock aiming angle.
13.	Locking nut — Metal nut allows orientation of accent to be locked

Lighting applications

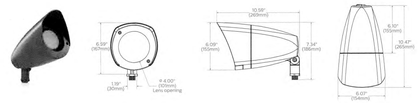
Spot lighting, Moon lighting (angled up light), Tree lighting (up and down), Up lighting, Mirror lighting, Shadowing, Grazing, Wall wash, Silhouetting, Sign lighting

FlexScape LED line-voltage

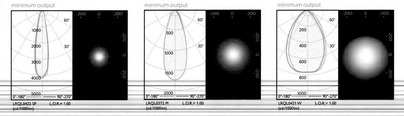
Ordering guide — Example: B90WA

Series	Lamping	CCT		Finish		Surge suppressor	
B9	D	–		A		blank	

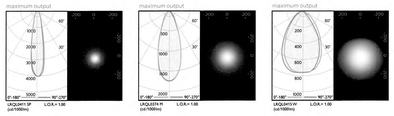
- **B9** Accent line-voltage luminaire
- **D** LED
- **W** Warm (3000K), **C** Cool (4000K)
- **A** Black, **H** Bronze
- **blank** None, **SPI** 120-277V, 10K



B9 Warm 3000 K



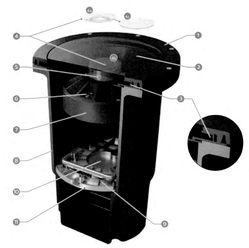
B9 Cool 4000 K



Inground

SL43 Line-voltage

The LED Inground model opens new horizons for line voltage architectural landscape lighting. It is designed for optimal LED performance and superior flexibility.



Component	Feature/Function
1.	Lens frame — Secured to housing with 8 captive screws.
2.	Molded lens — Exterior 3/8" thick tempered lens.
3.	Lens gasket — Molded gasket slips onto lens without tools or RTV.
4.	Optical lenses — Three clip on lenses 40 - NFLD, 40 - MFLD, 40 - WFLD.
5.	Reflector — Designed for COB LEDs, provides UV protection.
6.	Switch — Simple customer access for dimming. Slides to 5 different preset light levels.
7.	Heatsink — Enables aiming of the optics while transferring heat from COB for better thermal performance.
8.	Fixture housing — Separate compartments for field connection, driver and COB reflector assembly.
9.	Driver — Class 2 driver with 0-10v dimming. Field replaceable.
10.	Driver cover — Driver mounts directly to cover. Handle provided to easily remove from housing.
11.	Driver cover gasket — Molded gasket provides seal to driver compartment.

Lighting applications

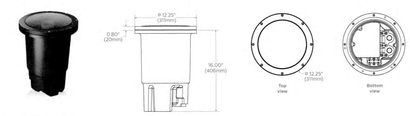
Grazing, Mirror lighting, Sign lighting, Spot lighting, Up lighting

FlexScape LED line-voltage

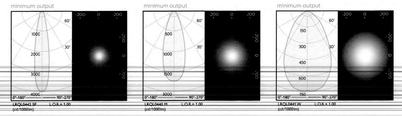
Ordering guide — Example: SL43WHWADA

Series	Finish	Color temperature	Lens	Options	Accessories	Surge suppressor
SL43		–				

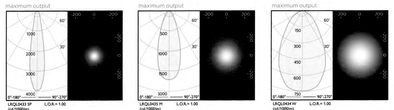
- **SL43** Inground line-voltage luminaire
- **BK** Black, **BZ** Bronze, **WH** White, **GR** Green, **GY** Gray, **NA** Natural aluminum, **CC** Custom
- **W** Warm (3000K), **C** Cool (4000K)
- **F** Clear flat, **ADA** Walk over, **LS** Linear spread, **CFL** Clear frosted
- **blank** None, **CR** Convex rockguard, **DS** Directional shield, **LFSS** Stainless steel lens frame
- **blank** None, **GM** Grout mask
- **blank** None, **SPI** 120-277V, 10K



SL43 Warm 3000 K



SL43 Cool 4000 K



PLANTING NOTES

THE FOLLOWING RECOMMENDED PLANTING PERIODS SHOULD BE ADHERED TO WHENEVER POSSIBLE: 1) BROADLEAF AND CONIFEROUS EVERGREEN TREES, SHRUBS, VINES AND GROUND COVERS SHALL BE PLANTED BETWEEN AUGUST 15th AND SEPTEMBER 15th AND BETWEEN APRIL 15th AND MAY 15th. DECIDUOUS TREES, SHRUBS, VINES, GROUND COVERS AND PERENNIALS SHALL BE PLANTED BETWEEN OCTOBER 15th AND NOVEMBER 15th AND BETWEEN MARCH 15th AND MAY 15th. THESE PLANTING SEASONS MAY BE EXTENDED OR SHORTENED ACCORDING TO PREVAILING WEATHER CONDITIONS, SOIL CONDITIONS, AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE.

2) THE PLANTING OPERATION INCLUDES ALL LABOR, MATERIALS, PLANTS, EQUIPMENT, SHIPPING, INCIDENTALS AND CLEAN-UP BY THE CONTRACTOR FOR THE INSTALLATION OF THE ENTIRE LANDSCAPE PLAN.

3) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT.

4) THE CONTRACTOR WILL EXAMINE ALL FIELD CONDITIONS FOR EXACT LOCATIONS OF UTILITIES, DRAINAGE SYSTEMS AND IRRIGATION SYSTEMS AND ADJUST PROPOSED PLANTINGS ACCORDINGLY. THE LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER DEPTH OF TOPSOIL IN ALL AREAS AND THE PROVISION OF POSITIVE DRAINAGE. THE CONTRACTOR SHALL NOTIFY THE CLIENT, ENGINEER, AND/OR LANDSCAPE ARCHITECT OF ANY DETRIMENTAL DRAINAGE HAZARD, INCLUDING BUT NOT LIMITED TO INSUFFICIENT TOPSOIL, ETC. PRIOR TO THE INSTALLATION OF ANY MATERIALS, INCLUDING LAWN AREAS.

5) THE CONTRACTOR WILL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF ALL SOIL OR DRAINAGE CONDITIONS WHICH THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. STATE CONDITION AND SUBMIT A PROPOSAL FOR CORRECTION IF FEASIBLE.

6) PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS; WELL DEVELOPED BRANCHES, DENSELY FOLIATED; VIGOROUS ROOT SYSTEMS AND BE FREE FROM DEFECTS AND INJURIES. QUALITY AND SIZE OF PLANTS, SPREAD OR ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE MOST RECENT ANSI Z60 "AMERICAN STANDARD FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.

7) PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE BALL ONLY.

8) GUARANTEE OF PLANT GROWTH: ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR FOR AT LEAST (2) YEARS FROM THE DATE OF LANDSCAPE INSPECTION FOR APPROVAL AND ANY PLANT MATERIAL THAT DOES NOT SURVIVE WITHIN THAT TIME PERIOD OR IS IN POOR CONDITION BASED UPON THE OPINION OF THE TOWNSHIP LANDSCAPE ARCHITECT SHALL BE REPLACED BY PLANT MATERIAL OF THE SAME SIZE AND SPECIES. REPLACEMENTS SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCEEDING PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THE ABOVE STATED.

9) INSOFAR AS IT IS PRACTICAL, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE (3) DAY PERIOD AFTER DELIVERY.

10) IF PLANT AVAILABILITY IS RESTRICTED, SUBSTITUTIONS MAY BE MADE WITHIN PLANT TYPE TO MAINTAIN SIMILAR GROWTH AND ORNAMENTAL QUALITIES UPON NOTIFICATION AND APPROVAL BY THE LANDSCAPE ARCHITECT.

11) PLANT LOCATIONS SHOWN ARE DIAGRAMMATIC. ALL PLANTS SHOWN SEMI-MATURE SIZE ON PLANS. THE STAKING LAYOUT OF ALL PLANTINGS WILL BE INSPECTED BY THE LANDSCAPE ARCHITECT PRIOR INSTALLATION AS REQUESTED BY OWNER.

12) AREAS DISTURBED BY LANDSCAPE OPERATIONS SHALL BE GRADED TO MATCH EXISTING. TOPSOIL AND SEED OR SOD AS REQUIRED.

13) NO PLANT, EXCEPT GROUND COVERS AND FOUNDATION'S PLANTS SHALL BE PLANTED LESS THAN TWO (2) FEET FROM EXISTING STRUCTURES AND SIDEWALKS.

14) ALL PLANTS SHALL BE PLANTED IN TOPSOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACKFILLING PROGRESSES. NOTHING BUT SUITABLE TOPSOIL FREE OF DRY SOD, STIFF CLAY, LITTER, STONES IN EXCESS OF 1", ANY TOXINS, ETC., SHALL BE USED FOR PLANTING.

15) SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH LEVEL THAT, AFTER SETTLEMENT, A NORMAL OR NATURAL RELATIONSHIP TO THE CROWN OF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE PLANT THE CENTER OF THE PIT.

16) IT IS ADVISABLE TO PRUNE APPROXIMATELY 1/3 OF THE GROWTH OF LARGE TREES (2" CALIPER AND OVER) BY THE REMOVAL OF SUPERFLUOUS BRANCHES, THOSE WHICH CROSS, THOSE WHICH RUN PARALLEL, ETC. MAIN LEADER TO TREES MUST NOT BE CUT BACK. LONG SIDE BRANCHES, HOWEVER, MUST BE SHORTENED. TREES WITH THE CENTRAL LEADER PRUNED WILL BE REJECTED.

17) EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE NATURAL CHARACTER OF PLANT. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.

18) ALL TREES SHALL BE SUPPORTED IMMEDIATELY AFTER PLANTING. ALL TREES SIX (6) INCHES AND OVER IN CALIPER SHALL BE GUYED, WHILE SMALLER TREES SHALL BE STAKED. ARBOR TREE TIES AND STAKES SHALL BE INSTALLED AS INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ARBOR TREE TIES ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE.

19) THE TRUNKS OF ALL TREES SHALL BE WRAPPED AS SOON AS POSSIBLE AFTER PLANTING ACCORDING TO STANDARD PROCEDURES AND IF REQUIRED BY TOWNSHIP.

20) MULCH FOR PLANTING BEDS SHALL BE DOUBLE SHREDDED HARDWOOD BARK MULCH UNLESS OTHERWISE SPECIFIED ON THE PLANS AND SHALL HAVE NO LEAVES, YOUNG GREEN GROWTH, BRANCHES, TWIGS GREATER IN DIAMETER OF 1/2" ± WEEDS, SHAVINGS OR FOREIGN MATERIAL SUCH AS STONES, ETC. SHALL BE MIXED WITH THE MULCH. ALL SHRUB MASSES SHALL BE PLANTED IN CONTINUOUS MULCHED BEDS WITH A COMPACTED DEPTH OF 3". NO MULCH SHALL BE PLACED AGAINST PLANT STEMS.

21) WATER APPLIED TO SEEDED OR SODDED AREAS, PLANTS OR PLANTED AREAS SHALL BE FREE FROM IMPURITIES INJURIOUS TO VEGETATION AND APPLIED AT A RATE OF FIVE GALLONS OF WATER PER SQUARE YARD OF PLANT PIT.

22) FALL PLANTING HAZARDS:
IT IS VERY RISKY TO TRANSPLANT THE FOLLOWING LIST OF TREES BARE ROOT OR B&B IN THE FALL:

PLATANUS ACERIFOLIA — BETULA VARIETIES
PRUNUS—ALL STONE FRUITS — PYRUS—ALL PEARS
CARPINUS VARIETIES — QUERCUS—ALL OAKS
CORNUS FLORIDA & VARS — SALIX—WEEPING VARS
CRATAEGUS VARIETIES — STYRAX JAPONICA
HALESIA — TILIA TOMENTOSA
KOELREUTERIA — ZELKOVA VARIETIES
LIQUIDAMBAR STYRACIFLUA — LIRIODENDRON TULIPIFERA

THE CONTRACTOR ASSUMES RESPONSIBILITY FOR PLANT SURVIVAL OF THESE MATERIALS IF MOVED DURING THE FALL SEASON.

23) TREES TO REMAIN ON-SITE TO BE SELECTIVELY THINNED AND PRUNED REMOVING ALL DEAD AND DISEASED LIMBS WHILE PROTECTED BY FENCING DURING CONSTRUCTION (SEE DETAIL). FENCE TO BE MAINTAINED DURING CONSTRUCTION BY CONTRACTOR.

24) THE PLANTING PLAN SHALL TAKE PRECEDENCE OVER THE PLANT SCHEDULE SHOULD ANY PLANT QUANTITY DISCREPANCIES OCCUR.

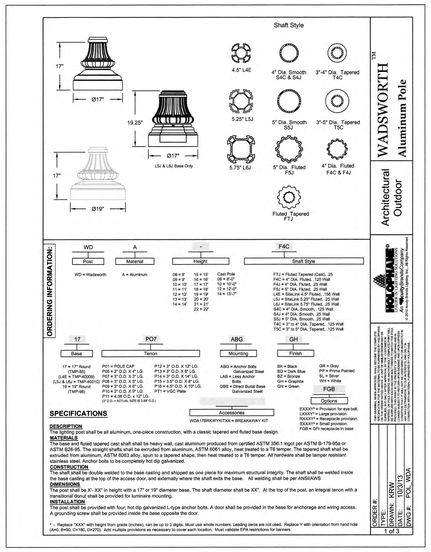
25) ALL STREET TREES AND SHADE TREES PLANTED NEAR PEDESTRIAN OR VEHICULAR ACCESS SHOULD NOT BE BRANCHED LOWER THAN 7'-0" ABOVE GRADE. ALL PLANT MATERIAL LOCATED WITHIN ANY SIGHT TRIANGLE EASEMENTS SHALL NOT EXCEED A MATURE HEIGHT OF 30" ABOVE THE ELEVATION OF THE ADJACENT CURB. ALL STREET TREES PLANTED IN ANY SIGHT TRIANGLE SHALL BE PRUNED AS MENTIONED ABOVE.

26) A MINIMUM 24" (UB24-2) DEEP ROOT BARRIER SHALL BE PROVIDED ALONG SIDEWALKS, PEDESTRIAN PLAZAS & CURBS WHERE STREET TREES ARE WITHIN 5'-0" OF THE SIDEWALK, ROADWAY CURB OR PEDESTRIAN PAVEMENT. FOR TREE PITS OR PLANTING ISLANDS, THE BARRIER SHOULD SURROUND THE PIT. FOR LINEAR APPLICATIONS, A MINIMUM OF 10' LF SHALL BE INSTALLED ON BOTH THE SIDEWALK SIDE AND CURB SIDE CENTERED ON THE TREE LOCATION.

27) SEE DETAIL DRAWINGS FOR TYPICAL PLANTING DETAILS.

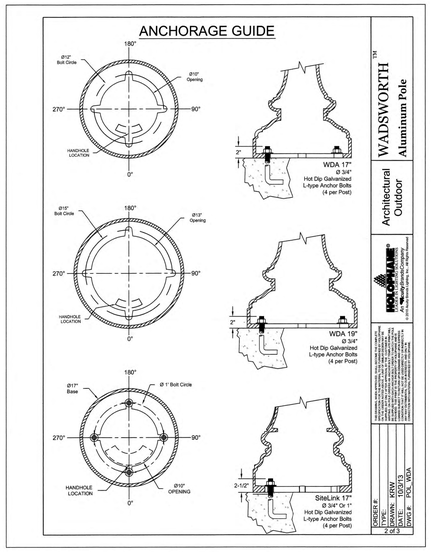
UPL LIGHTING FIXTURE DETAILS

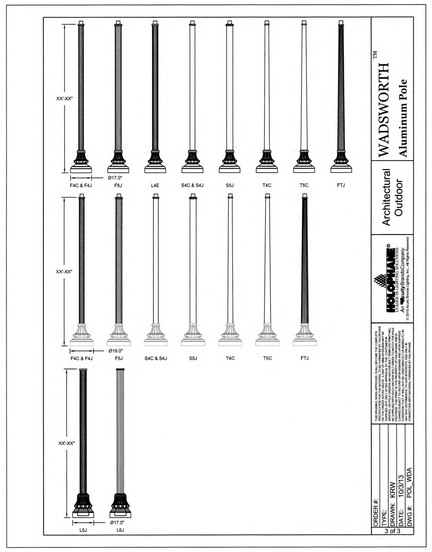
N.T.S.



DL FIXTURE POLE DETAILS

N.T.S.

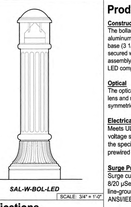




SAL-W-BOL-LED

Bollards (BOL) - Cast Aluminum (SAL)

***Bollard Height** 44"*
***Base Diameter** 13 1/2"*



Product Features

Construction
The bollard shall be made from cast ASTM 356.1 aluminum construction. One (1) access door in the base (3 1/2" x 4 1/2" minimum opening) shall be secured with stainless steel hardware. The top optical assembly shall create a weather tight chamber for the LED component(s), driver(s) and internal optics.

Optical
The optical assembly is comprised of a polycarbonate lens and reflector/refractor elements that produce a symmetrical or asymmetrical light distribution.

Electrical
Meets UL 1598 for safety. Bollard shall utilize voltage sensing 120-277V driver, suitably rated for the specified LED component(s). Bollard shall be prewired and factory tested.

Surge Protection
Surge current rating of 20 kA using standard 8/20 µSec wave. Protected line-neutral, line-ground, and neutral-ground in accordance with ANSI/IEEE 62.41, Category C3.

Installation
The bollard shall be provided with (4) Ø1/2" x 18" long "L-Type" anchor bolts. Each anchor bolt shall be supplied assembled with (2) nuts, (2) flat washers and (1) split lock washer. The bollard shall have a 8'12" bolt circle and requires a 3" anchor bolt projection. All anchorage hardware shall be fully galvanized.

Finish
The bollard shall be finished with a high performance coating consisting of high gloss Super Durable polyester powder coat paint. Paint shall be weather, corrosion, abrasion, and UV resistant in compliance with AAMA 2604-05. Color to be specified.

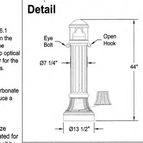
Specifications

Ambient Temperature
-40° C minimum to 35° C maximum (Luminaire not to operate at maximum temperature for a period of time longer than 2.5% of total operating hours.)

Rated Life @ 25° C Ambient Temperature
50,000 Hours at 70% lumen maintenance

Driver Specifications
- 120-277V power supply.
- Compatible with 0 to 10V lighting control systems.
- Complies with the requirements of UL and CSA.

Detail



Installation Details

Performance Data

Light Source and Distribution	System Watts	Delivered Lumens	Efficacy (lm/W)
LEDV18C-0.7A-STLVSM	26	2570	99
LEDV18C-0.7A-STLDWC	26	2501	96
LEDV18C-0.53A-STLVSM	18	1872	104
LEDV18C-0.53A-STLDWC	18	1823	101

Initial values shown above with 80 CRI and 3000K.

Ordering Information

Choose the **boldface** catalog references that best suit your needs.

Example:

SAL-W-BOL - LEDV18C-0.7A - 830 - STLDWC - EB - BK

Model	Light Source	CRI & Color Temperature	Distribution	Options	Finish
SAL-W-BOL	LEDV18C-0.7A 26 watts, 700mA LEDV18C-0.53A 18 watts, 530mA	827 80 CRI, 2700K 830 80 CRI, 3000K 835 80 CRI, 3500K 840 80 CRI, 4000K	STLVSM Type V STLDWC Type III	EB Eyebrow WC Open Hook see Orientation Guide	BK Black (Standard) BZ Bronze FG Federal Green

Consult factory for additional light source and color temperature options. Consult factory for custom finish.

Sentry ELECTRIC

SAL-W-BOL-LED
Sentry Electric LLC
185 Buffalo Avenue, Freeport, New York, 11520
Telephone: 516.379.4660 Fax: 516.378.0624
www.sentrylighting.com info@sentrylighting.com

B-12-12
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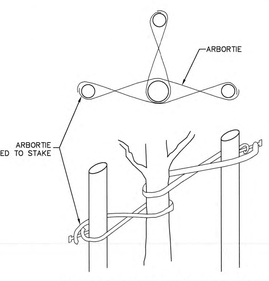
BL–1 BOLLARD LIGHT DETAIL

N.T.S.



STAKING DETAIL

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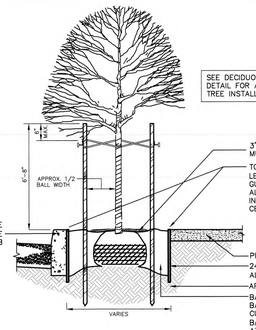
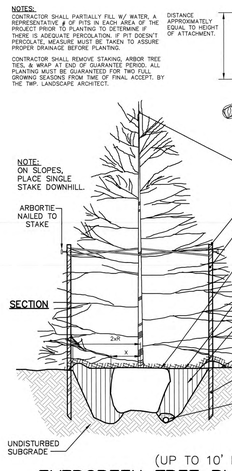


STREET TREE PLANTING WITH 24" DEEP ROOT CONTROL BARRIER

N.T.S.

NOTES:
– CONTRACTOR SHALL PARTIALLY FILL W/ WATER, A REPRESENTATIVE # OF PITS IN EACH AREA OF THE PROJECT PRIOR TO PLANTING TO DETERMINE IF THERE IS ADEQUATE PERCOLATION. IF PIT DOESN'T PERCOLATE, MEASURE MUST BE TAKEN TO ASSURE PROPER DRAINAGE BEFORE PLANTING.
– CONTRACTOR SHALL REMOVE STAKING, ARBOR TREE TIES, & WRAP AT END OF GUARANTEE PERIOD. ALL PLANTING MUST BE GUARANTEED FOR TWO FULL GROWING SEASONS FROM TIME OF FINAL ACCEPT. BY THE TWP. LANDSCAPE ARCHITECT.

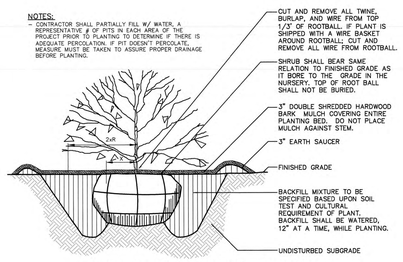


(UP TO 10' HT.)

EVERGREEN TREE PLANTING DETAIL

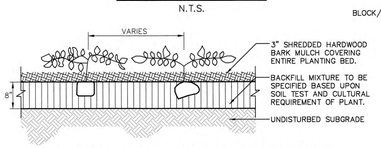
N.T.S.

NOTES:
– CONTRACTOR SHALL PARTIALLY FILL W/ WATER, A REPRESENTATIVE # OF PITS IN EACH AREA OF THE PROJECT PRIOR TO PLANTING TO DETERMINE IF THERE IS ADEQUATE PERCOLATION. IF PIT DOESN'T PERCOLATE, MEASURE MUST BE TAKEN TO ASSURE PROPER DRAINAGE BEFORE PLANTING.



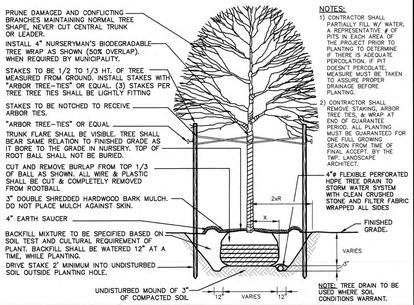
SHRUB PLANTING DETAIL

N.T.S.



GROUNDCOVER PLANTING DETAIL

N.T.S.

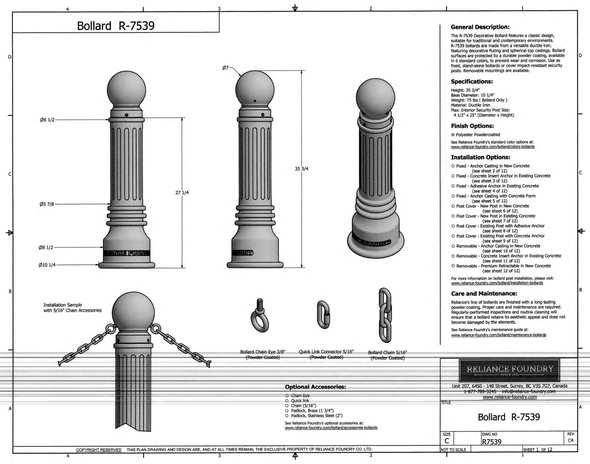


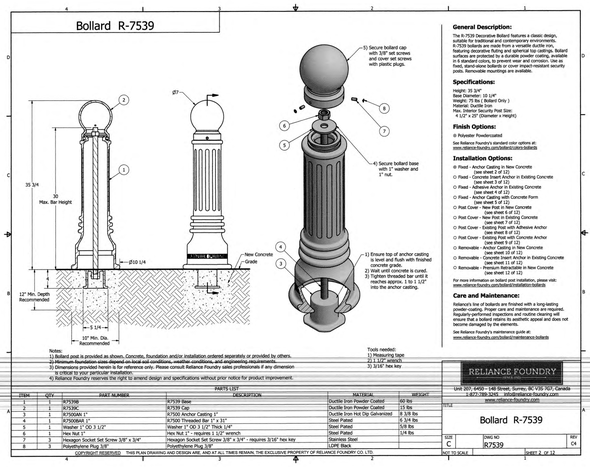
DECIDUOUS TREE PLANTING DETAIL

N.T.S.

THIS DRAWING IS FOR PERMIT PURPOSES ONLY IF NOT SIGNED AND DATED IN THIS BOX HAS BEEN CHECKED AND DATED.
CHKD BY:
DATE:

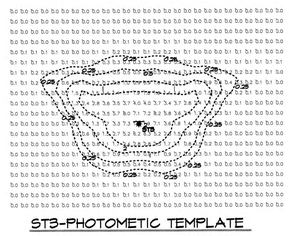
REVISIONS	
1) COMPLETENESS REVS	04/30/18
2) COMPLETENESS REVS	08/15/18
3) TOWNSHIP REVS	09/28/18
4) RESOLUTION COMPLIANCE	03/15/19
5) TWA COMMENTS	04/01/19
6) TOWNSHIP COMMENTS	09/27/19





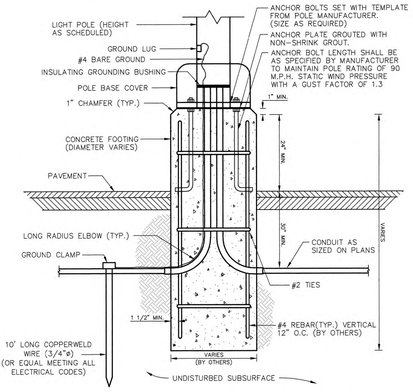
DECORATIVE BOLLARD DETIALS

N.T.S.



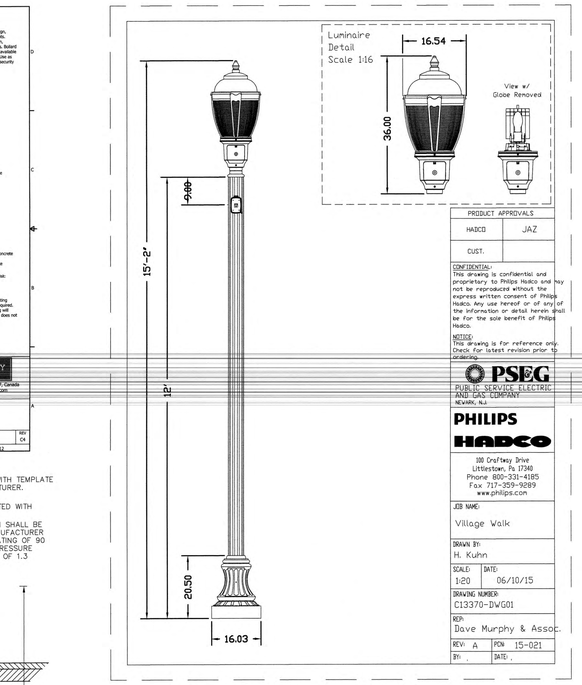
ST3-PHOTOMETIC TEMPLATE

MOUNTING HEIGHT= 18 FT. SCALE: NTS



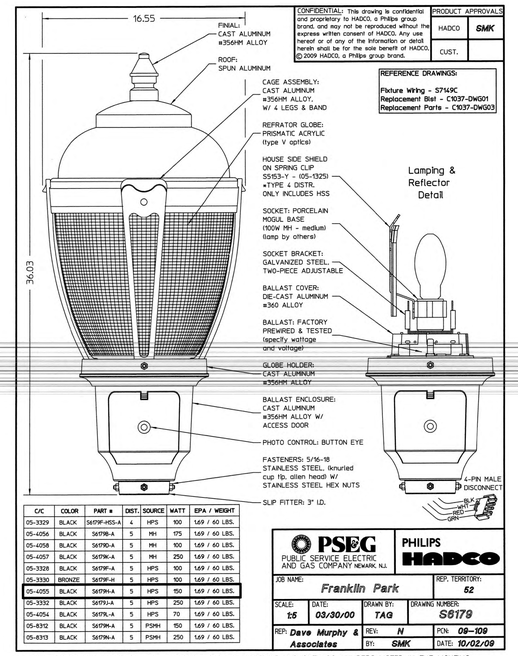
SITE LIGHTING FIXTURE POLE BASE DETAIL (IN PAVED AREAS)

N.T.S.



ST3 STREETLIGHT FIXTURE DETAIL–1

N.T.S.



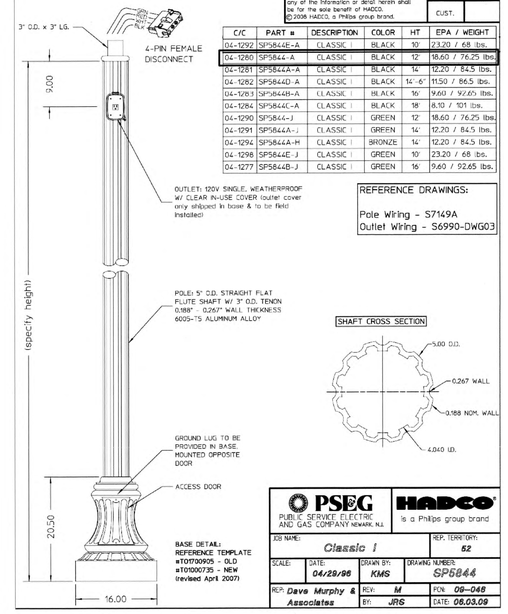
C/C	COLOR	PART #	DIST.	SOURCE	WATT	EPA / WEIGHT
05-3329	BLACK	S679F-HSS-A	4	HPS	100	1.69 / 60 LBS.
05-4056	BLACK	S679B-A	5	MH	175	1.69 / 60 LBS.
05-4058	BLACK	S679D-A	5	MH	100	1.69 / 60 LBS.
05-4057	BLACK	S679K-A	5	MH	250	1.69 / 60 LBS.
05-3328	BLACK	S679F-A	5	HPS	100	1.69 / 60 LBS.
05-3330	BRONZE	S679F-H	5	HPS	100	1.69 / 60 LBS.
05-4055	BLACK	S679H-A	5	HPS	150	1.69 / 60 LBS.
05-3332	BLACK	S679J-A	5	HPS	250	1.69 / 60 LBS.
05-4054	BLACK	S679L-A	5	HPS	70	1.69 / 60 LBS.
05-8312	BLACK	S679M-A	5	PSMH	150	1.69 / 60 LBS.
05-8313	BLACK	S679N-A	5	PSMH	250	1.69 / 60 LBS.

* CONTRACTOR SHALL CONFIRM THE PHOTOMETRIC TYPE, WATTAGE AND CATALOG NUMBERS LISTED IN THE LIGHTING SCHEDULE WITH PSE&G PRIOR TO ORDERING LIGHT FIXTURES.

PSE&G PUBLIC SERVICE ELECTRIC AND GAS COMPANY NEWARK, N.J. | PHILIPS HADCO
JOB NAME: Franklin Park | REP. TERRITORY: 52
SCALE: 1:5 | DATE: 03/30/00 | DRAWN BY: TAG | DRAWING NUMBER: S6179
REP: Dave Murphy & Associates | REV: N | PO#: 09-109 | BY: SMK | DATE: 10/02/09

ST3 STREETLIGHT FIXTURE DETAIL–2

N.T.S.

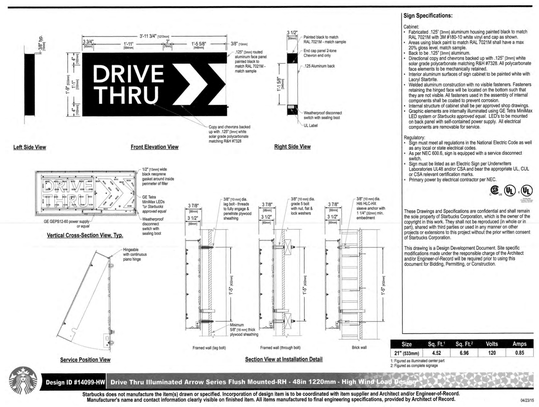


C/C	PART #	DESCRIPTION	COLOR	HT	EPA / WEIGHT
04-1292	SP5844E-A	CLASSIC I	BLACK	10'	23.20 / 68 lbs.
04-1280	SP5844-A	CLASSIC I	BLACK	12'	18.60 / 76.25 lbs.
04-1281	SP5844A-A	CLASSIC I	BLACK	14'	12.20 / 84.5 lbs.
04-1282	SP5844D-A	CLASSIC I	BLACK	14'-6"	11.50 / 86.5 lbs.
04-1283	SP5844B-A	CLASSIC I	BLACK	16'	9.60 / 92.65 lbs.
04-1284	SP5844C-A	CLASSIC I	BLACK	18'	8.10 / 101 lbs.
04-1290	SP5844-J	CLASSIC I	GREEN	12'	18.60 / 76.25 lbs.
04-1291	SP5844A-J	CLASSIC I	GREEN	14'	12.20 / 84.5 lbs.
04-1294	SP5844A-H	CLASSIC I	BRONZE	14'	12.20 / 84.5 lbs.
04-1298	SP5844E-J	CLASSIC I	GREEN	10'	23.20 / 68 lbs.
04-1277	SP5844B-J	CLASSIC I	GREEN	16'	9.60 / 92.65 lbs.

PSE&G PUBLIC SERVICE ELECTRIC AND GAS COMPANY NEWARK, N.J. | HADCO is a Philips group brand
JOB NAME: Classic I | REP. TERRITORY: 52
SCALE: | DATE: 04/29/98 | DRAWN BY: KMS | DRAWING NUMBER: SP5844
REP: Dave Murphy & Associates | REV: M | PO#: 09-046 | BY: JRS | DATE: 08.03.09

ST3 STREETLIGHT FIXTURE DETAIL–3

N.T.S.



DRIVE THRU SIGN BOX DETAIL

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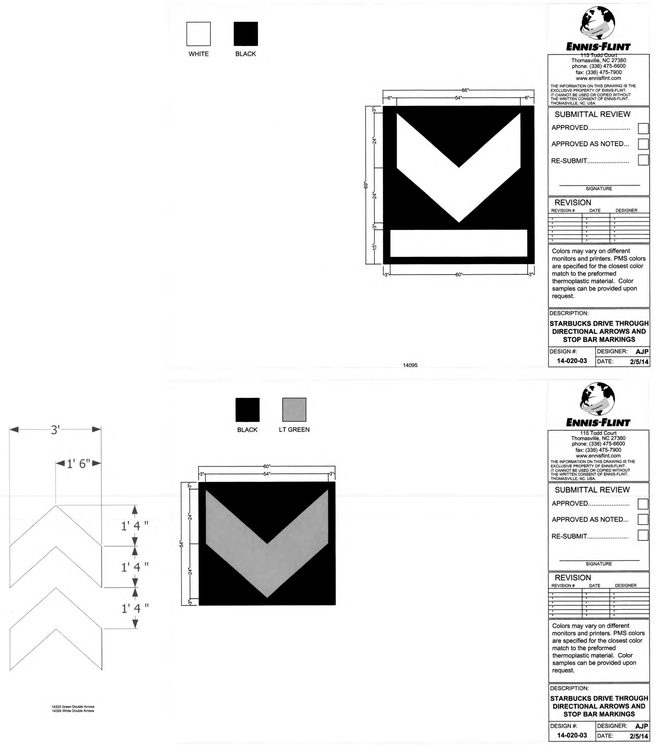
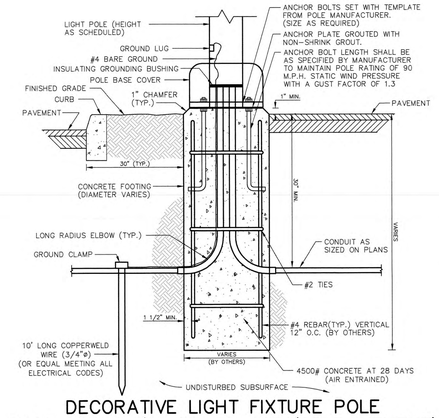


ST3 STREETLIGHT FIXTURE DETAIL–4

N.T.S.



SITE LIGHTING FIXTURE POLE BASE DETAIL (IN GRASSED ISLANDS)

N.T.S.

DECORATIVE LIGHT FIXTURE POLE BASE DETAIL (IN GRASS AND/OR PAVEMENT)

N.T.S.

THIS DRAWING IS FOR PERMIT PURPOSES ONLY. NOT FOR CONSTRUCTION UNTIL SIGNED AND RECEIVED AND DATED.
CHKD BY: DATE:

REVISIONS	
1) TWA COMMENTS	04/01/19
2) RESOLUTION COMPLIANCE	11/1/19
3) RESOLUTION COMPLIANCE	02/07/20

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...
SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK – MONTGOMERY

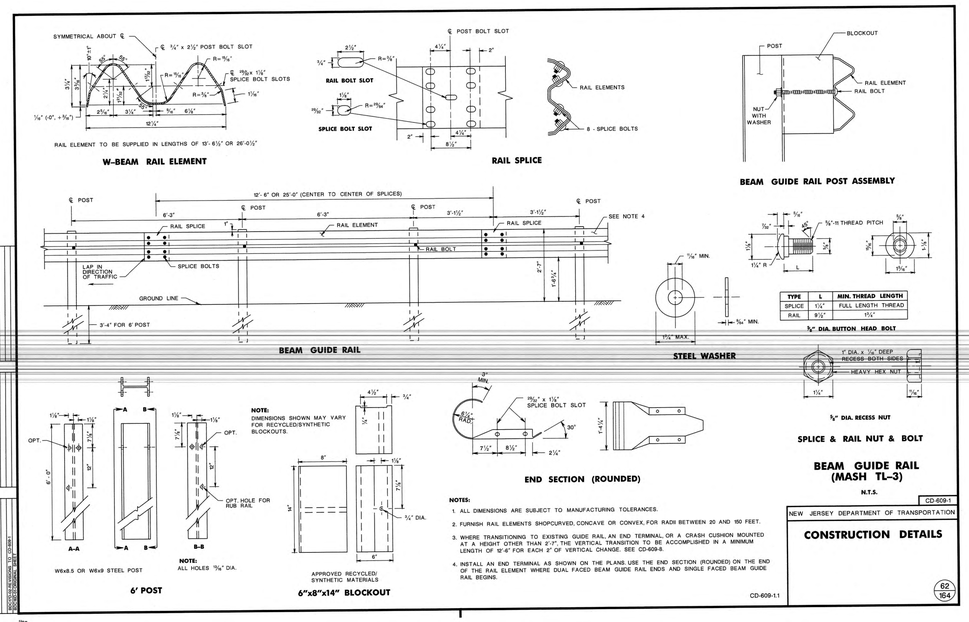
MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

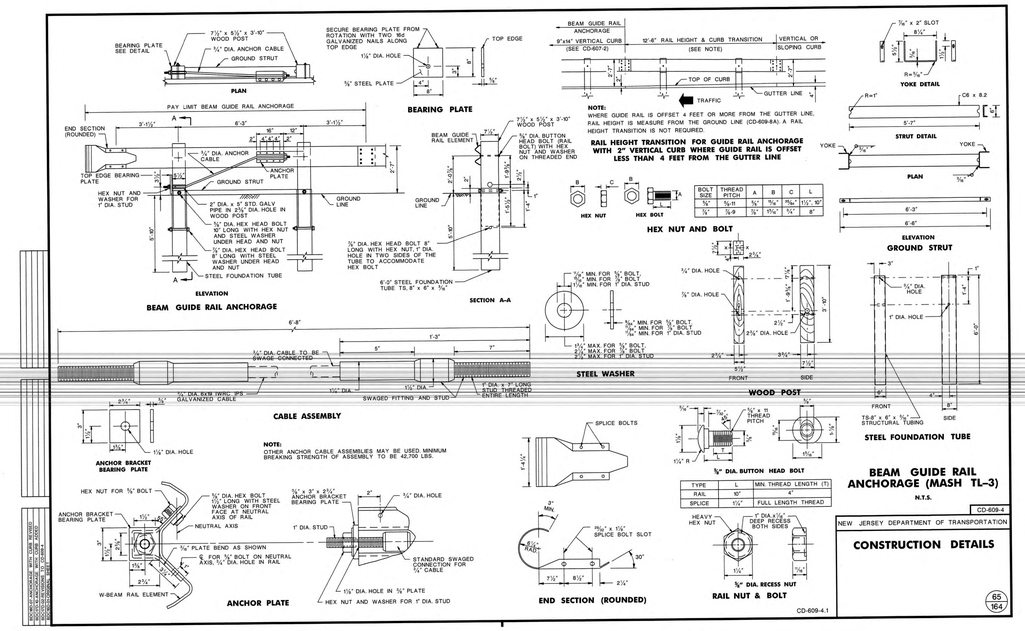
CONSTRUCTION DETAILS–8

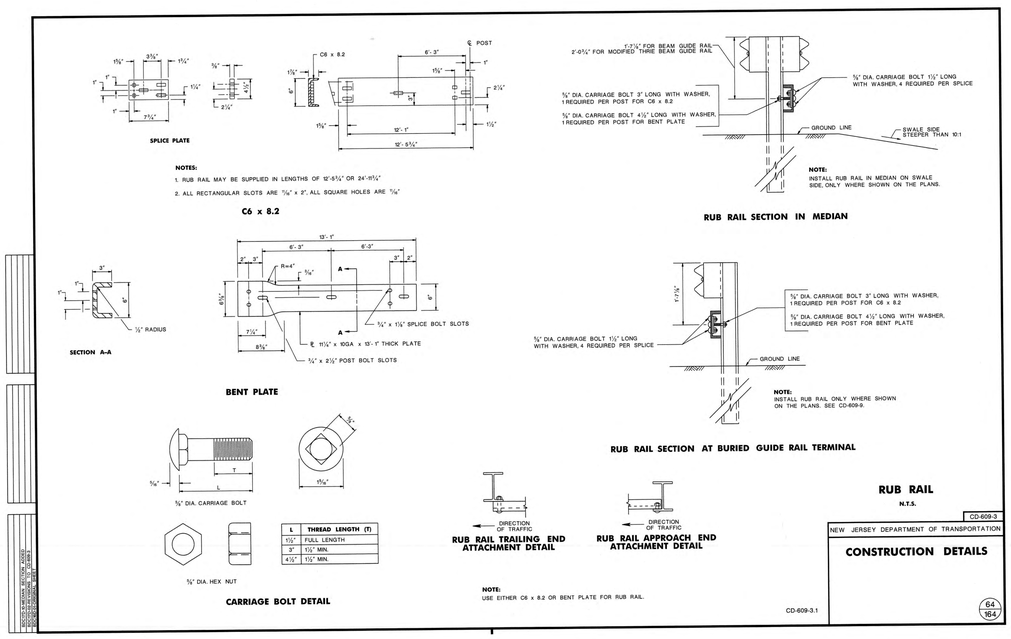
BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

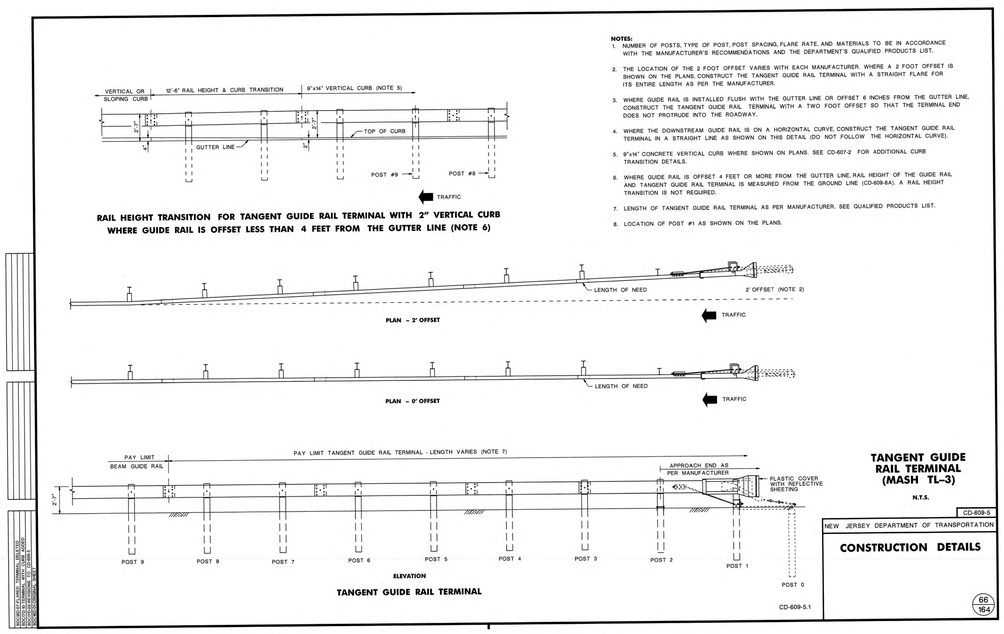
DRWN. BY DP | DSGN BY CJS | CHKD. BY ST | APPRD. BY ST
DATE OF ISSUE: MARCH 15, 2018 REV 3) FEBRUARY 7, 2020
SCALE: N.T.S. | JOB # 2015.063 | DWG # DE-8 | SHEET # 31

C:\eng\2015.063-Village Walk\2015.063.01-DETAILS.dwg









THIS DRAWING IS FOR PERMIT PURPOSES ONLY - NOT FOR CONSTRUCTION UNTIL THIS BOX HAS BEEN CHECKED AND DATED.
CHKD BY: DATE:

REVISIONS

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...
SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK – MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

CONSTRUCTION DETAILS–9

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY	DP	DATE OF ISSUE	SCALE: N.T.S.
DSGN BY	CJS	NOVEMBER 1, 2019	JOB # 2015.063
CHKD. BY	ST	–	DWG # DE–9
APPRD. BY	ST		SHEET # 32

C:\Work\2015.063-Village Walk\2015.063.01-DETAILS.dwg

SURVEY

FUTURE DEVELOPMENT
SHARBELL BUILDING COMPANY, LLC

BLOCK 28005
LOT 65
N/F LANDS OF KT CAPITAL, LLC
DB. 6393-757

TAMWORTH DRIVE

BLOCK 28005
LOT 57
DB 1300-197

BRECKNELL WAY
VARIABLE R.O.W.

VILLAGE DRIVE
VARIABLE R.O.W.

RESIDENTIAL STORAGE AREA
1,100 SF

3-STORY MIXED-USE BUILDING
1ST FLOOR RETAIL/COMMERCIAL
31,760 SF
2ND FLOOR RESIDENTIAL
3RD FLOOR RESIDENTIAL

LOADING AREA 2,460 SF

ANCHOR RETAIL BUILDING
12,000 SF

SERV. BAY

PHASE IB

PHASE IA

UNDERGROUND DETENTION BASIN #1

PHASE 2A

PHASE 1A

2D

1E

PHASE 2B

RETAIL/
RESTAURANT BUILDING B
5,726 SF

RETAIL/
RESTAURANT BUILDING A
5,752 SF

RETAIL RESTAURANT
BUILDING C/D
9,768 SF

BLOCK 28005
LOT 61
DB 1624-306

BLOCK 28005
LOT 59
DB 1479-787

U.S. HIGHWAY ROUTE 206
VARIABLE R.O.W.

PHASE 2A
SIGNALIZED
INTERSECTION

BLOCK 29002
LOT 46

BLOCK 29002
LOT 45

UNDERGROUND DETENTION BASIN #2

LANDBANKED PARKING

EXISTING TO REMAIN

VILLAGE SHOPPER III
VILLAGE SHOPPER 3
EXISTING 1-STORY MASONRY BUILDING
27,000 SF

1 STORY MASONRY BUILDING
8,436 SF

50' WETLAND BUFFER (TYP.)

WETLANDS DELINEATION LINE

STREAM ENCROACHMENT
BOOK 3 PAGE 194
DESTROYED ON MAP

BLOCK 28003
LOT 162

IRON PIPE FOUND 0.9'

RE-BAR FOUND 0.8'

IRON BAR W/CAP FOUND 0.6'

MONUMENT FOUND

BROKEN MONUMENT FOUND

EXISTING PARKING AREA

SEQUENCE	TASK	PARKING	NOTES
1A.1	CONSTRUCT DETENTION BASIN #1 RECONSTRUCT EXISTING PARKING AREA CONSTRUCT PHASE 1 OF SANITARY SEWER AND PUMP STATION. CONNECT FORCE MAIN TO EXISTING MANHOLE.	91 SPACES	40 EXISTING SPACES NEAR VSII TO BE TEMPORARILY DEMO'D FOR CONSTRUCTION OF UNDERGROUND BASIN
1A.2	PHASE 1 DEMOLITION OF VSI AND ADJACENT PARKING		
1A.3	PRELIMINARY GRADING INSTALL UTILITIES AND DRAINAGE CONNECT VSII, VSIII AND BANK TO GRAVITY SEWER, WATER MAIN AND OTHER UTILITIES AS NECESSARY	65 SPACES	74 EXISTING SPACES NEAR VSI AND VSII TO BE DEMO'D FOR CONSTRUCTION OF PHASE 1.
1A.4	CONSTRUCT BUILDING C&D, PARKING AREA, INNER LOOP ROAD AND RIGHT-IN RIGHT-OUT DRIVEWAYS BEGIN CONSTRUCTION OF MIXED-USE BUILDING		
1A.5	APPLY FOR C.O. FOR BUILDING C&D		
1B.1	PRELIMINARY GRADING OF PARKING AREA FOR RESIDENTIAL APARTMENTS INSTALL DRAINAGE	156 SPACES	DOES NOT INCLUDE RESIDENTIAL PARKING ALONG ROAD B. FINAL PARKING COUNT FOR PHASE 1 FOR THE FRONT RETAIL PORTION ONLY.
1B.2	COMPLETE CONSTRUCTION OF 3-STORY MIXED-USE BUILDING & UPPER PARKING AREA		
1B.3	APPLY FOR C.O. FOR MIXED-USE BUILDING		

CONSTRUCTION SEQUENCE- PHASE 2

PHASE	TASK	PARKING	NOTES
2A.1	RELOCATE TENANTS FROM VSII TO MIXED-USE BUILDING	156 SPACES	WHEN THE MIXED-USE BUILDING RECEIVES ITS C.O., TENANTS THAT PREVIOUSLY OCCUPIED VSII WILL BE MOVED INTO THE NEW BUILDING
2A.2	PHASE 2 DEMO OF VSII AND ASSOCIATED PARKING	91 SPACES	VSII AND THE EXISTING PARKING AREA INCLUDING 65 SPACES IN THE FRONT AND REAR OF THE BUILDING WILL BE DEMO'D. THE NEW PARKING AREA NEAR BUILDINGS C/D AND THE MIXED-USE BUILDING WILL BE IN USE.
2A.3	PRELIMINARY GRADING INSTALL UTILITIES AND DRAINAGE		
2A.4	CONSTRUCT ANCHOR RETAIL BUILDING, INTERMEDIATE LOOP ROAD, PARKING AREA AND DOT IMPROVEMENTS		
2A.5	CONSTRUCT ANCHOR RETAIL BUILDING & PARKING AREA BEGIN CONSTRUCTION OF BUILDINGS A & B		
2A.6	APPLY FOR C.O. FOR ANCHOR BUILDING		
2B.1	INSTALL DRAINAGE AND UTILITIES BEHIND BUILDINGS A&B	222 SPACES	THE REMAINDER OF THE PARKING INCLUDING 131 SPACES WILL BE CONSTRUCTED PRIOR TO BUILDINGS A & B BEING COMPLETED.
2B.2	CONSTRUCT BUILDINGS A&B		
2B.3	APPLY FOR C.O. FOR BUILDINGS A&B		
FUTURE PHASE (IF NECESSARY)	CONSTRUCT LANDBANKED PARKING & DETENTION BASIN #2		

NOTES:

1. PHASING PLAN IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION. A PRE-CONSTRUCTION MEETING MUST BE HELD WITH THE TOWNSHIP, INSPECTION ENGINEER, CONTRACTOR AND ALL OUTSIDE AGENCIES NECESSARY TO DETERMINE CONSTRUCTION SCHEDULING AND SEQUENCING.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

THE STATE OF NEW JERSEY REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.
1-800-272-1000 (N.J. ONE CALL) STOP CALL BEFORE YOU DIG!

THIS DRAWING IS FOR PERMIT PURPOSES ONLY IF NOT SIGNED, SEALED AND DATED.
CHKD BY: DATE:

REVISIONS	
1) RESOLUTION COMPLIANCE	11/01/19
2) RESOLUTION COMPLIANCE	2/01/20
3) RESOLUTION COMPLIANCE	07/16/20

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...

SCOTT H. TURNER
PROFESSIONAL ENGINEER
N.J.P.E.#43811

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PHONE: (732) 846-8585 FAX: (732) 846-9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK at MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

CONSTRUCTION PHASING PLAN

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY NF
DSGN BY CJS
CHKD. BY ST
APPRD. BY ST

DATE OF ISSUE
SEPTEMBER 28, 2018
REV 3) JULY 16, 2020

SCALE: 1"=30'
JOB # 2015.063
DWG # PHP-1
SHEET # 33

PLOTTED: 7/14/2020 1:31 PM BY: CHRIS STACHY
S:\Projects\2015\063-Village Walk\2015-063-BASE.dwg

SURVEY

LIGHT TO BE OWNED AND MAINTAINED BY PSE&G

RETAINING WALL AND GUIDERAIL TO BE OWNED AND MAINTAINED BY VILLAGE SHOPPES

DRAINAGE TO BE OWNED AND MAINTAINED BY THE TOWNSHIP WITHIN RIGHT-OF-WAY

LIGHT TO BE OWNED AND MAINTAINED BY VILLAGE SHOPPES

LIGHT TO BE OWNED AND MAINTAINED BY VILLAGE SHOPPES

ALL ON-SITE LIGHTS AND UTILITIES TO BE OWNED AND MAINTAINED BY VILLAGE SHOPPES

STORMWATER BASIN TO BE MAINTAINED BY VILLAGE SHOPPES

LIGHT TO BE OWNED AND MAINTAINED BY PSE&G

UTILITY TO BE MAINTAINED BY VILLAGE SHOPPES

RETAINING WALL AND GUIDERAIL TO BE OWNED AND MAINTAINED BY VILLAGE SHOPPES

DRAINAGE TO BE OWNED AND MAINTAINED BY THE TOWNSHIP WITHIN RIGHT-OF-WAY

UTILITY TO BE MAINTAINED BY VILLAGE SHOPPES

LIGHT TO BE MAINTAINED BY VILLAGE SHOPPES

LIGHT TO BE MAINTAINED BY VILLAGE SHOPPES

UTILITY TO BE MAINTAINED BY VILLAGE SHOPPES

DRAINAGE TO BE OWNED AND MAINTAINED BY THE TOWNSHIP WITHIN RIGHT-OF-WAY

LIGHT TO BE OWNED AND MAINTAINED BY PSE&G

LIGHT TO BE OWNED AND MAINTAINED BY PSE&G

RESIDENTIAL STORAGE AREA 1,100 SF

3-STORY MIXED-USE BUILDING
1ST FLOOR RETAIL/COMMERCIAL 31,700 SF
2ND FLOOR RESIDENTIAL
3RD FLOOR RESIDENTIAL

LOADING AREA 2,469 SF

ANCHOR RETAIL BUILDING 12,000 SF

SERV. BAY

RETAIL/RESTAURANT BUILDING C/D 6,786 SF

RETAIL/ RESTAURANT BUILDING B 5,726 SF

RETAIL/ RESTAURANT BUILDING A 5,752 SF

VILLAGE SHOPPER III
VILLAGE SHOPPER 3
EXISTING 1-STORY MASONRY BUILDING 27,000 SF

NO PARKING FIRE LANE

BhnB HSG B

RoyB HSG C

RorAt HSG C

U.S. HIGHWAY ROUTE 206
VARIABLE R.O.W.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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REVISIONS:
1) RESOLUTION COMPLIANCE 11/01/19
2) RESOLUTION COMPLIANCE 2/07/20
3) RESOLUTION COMPLIANCE 07/16/20

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION.
SCOTT H. TURNER
PROFESSIONAL ENGINEER
N.J.P.E.#43811

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VILLAGE WALK at MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

JURISDICTIONAL PLAN

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY NF
DSGN BY CJS
CHKD. BY ST
APPRD. BY ST

DATE OF ISSUE
SEPTEMBER 28, 2018
REV 3) JULY 16, 2020

SCALE: 1"=30'
JOB # 2015.063
DWG # JD-1
SHEET # 34

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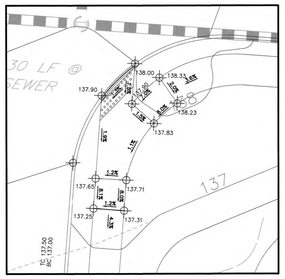
SURVEY



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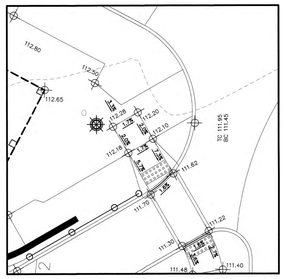

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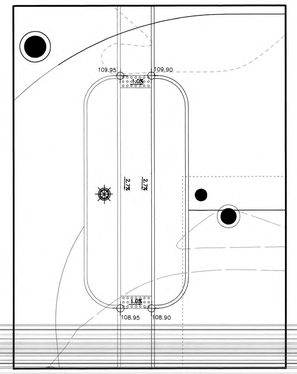

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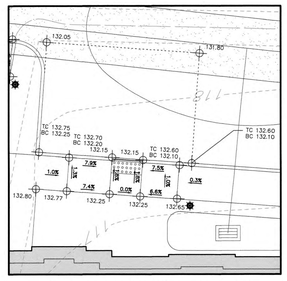

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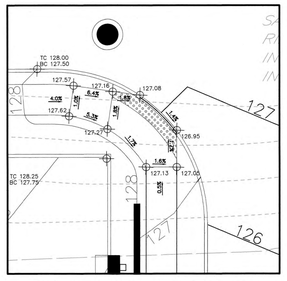

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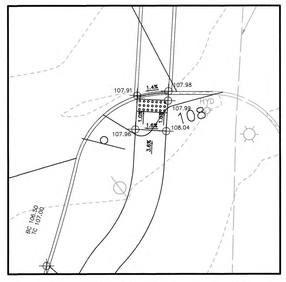

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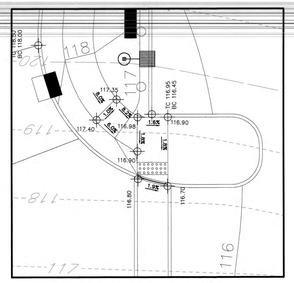

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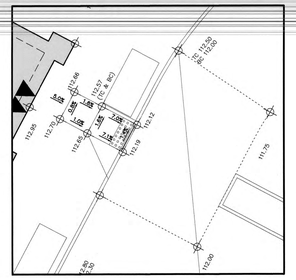

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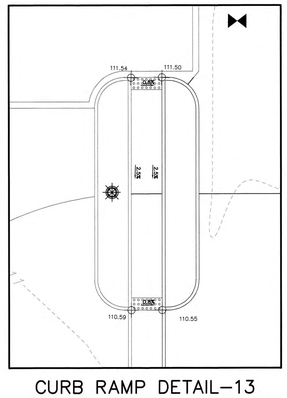

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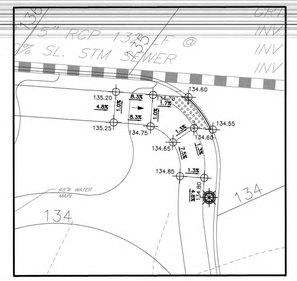

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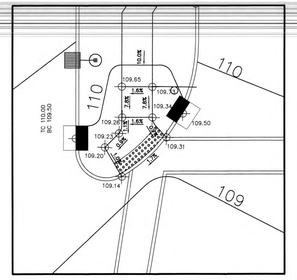

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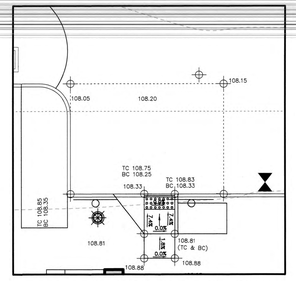

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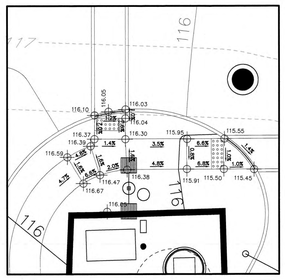

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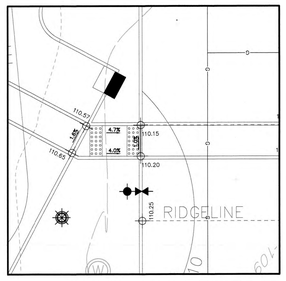

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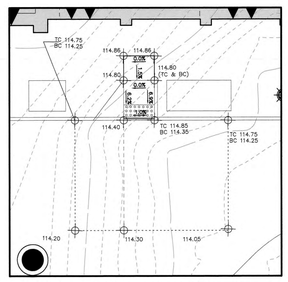

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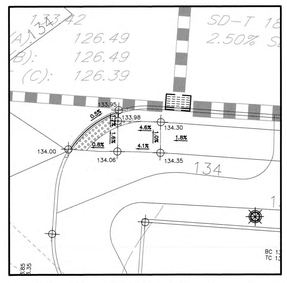

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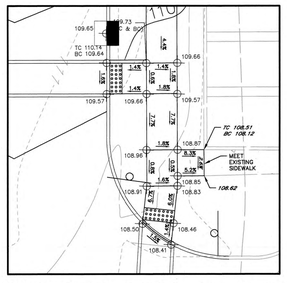

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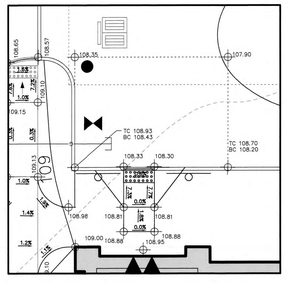

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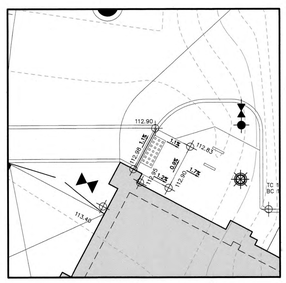

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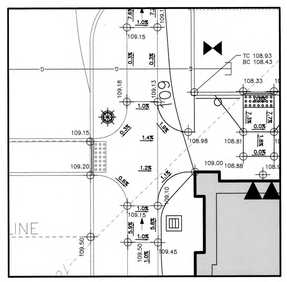

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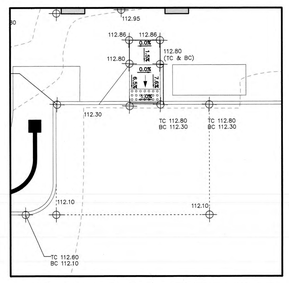

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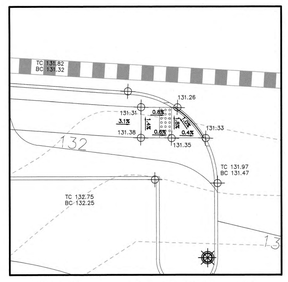

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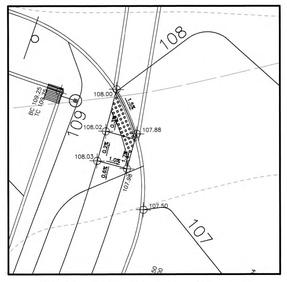

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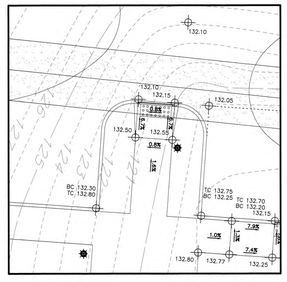

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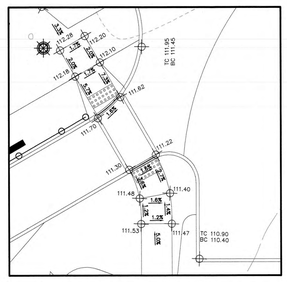

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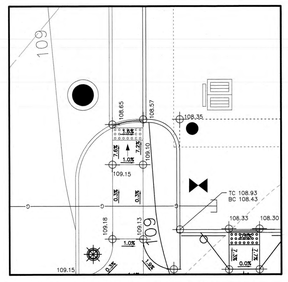

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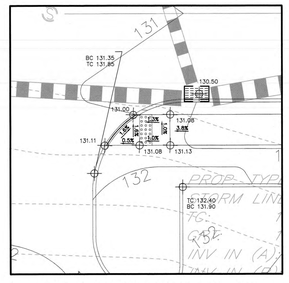

CURB RAMP DETAIL–20

NOTES:

1. ADA RAMPS WITHIN ROUTE 206 RIGHT–OF–WAY ARE SHOWN IN DETAIL ON THE NJDOT ACCESS PERMIT PLANS.
2. SEE GEOMETRY PLANS FOR CURB RAMP LOCATIONS.

THE STATE OF NEW JERSEY REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

THIS DRAWING IS FOR PERMIT PURPOSES ONLY IF NOT CHECKED AND DATED.

☐CHKD BY: DATE:

REVISIONS	
1) RESOLUTION COMPLIANCE	2/07/20
2) ENGINEERING REVS	06/17/20
3) RESOLUTION COMPLIANCE	07/16/20

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...

SCOTT H. TURNER
PROFESSIONAL ENGINEER
NJPE#43811

MENLO ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS AND PROFESSIONAL PLANNERS
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904
PHONE: (732) 846–8585 FAX: (732) 846–9439
CERTIFICATE OF AUTHORIZATION: 24GA27951900

VILLAGE WALK at MONTGOMERY

MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NEW JERSEY

ADA RAMP DETAILS

BLOCK 28005 LOTS 60, 65, 68 & 69 TAX MAP SHEET: 55 10.97 ACRES

DRWN. BY	DP	DATE OF ISSUE	SCALE: 1"=10'
DSGN BY	CJS	NOVEMBER 1, 2019	JOB # 2015.063
CHKD. BY	ST	REV 3) JULY 16, 2020	DWG # ADA–1
APPRD. BY	ST		SHEET # 35

C:\Proj\2015\063-Village Walk\2015-063-ADA.dwg PLOTTED: 7/16/2020 5:15 PM BY: GALAXY