AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN-PHASE 3

LOT 15.04 ~ BLOCK 44

SITUATED IN

MANCHESTER TOWNSHIP, OCEAN COUNTY, N.J.

PREPARED FOR

MARBLE ARCH HOMES, INC.
110 HILLSIDE BLVD., SUITE 1
LAKEWOOD, NEW JERSEY, 08701

PREPARED BY

FWH ASSOCIATES, P.A.

CIVIL ENGINEERS LAND SURVEYORS
LANDSCAPE ARCHITECTS SITE PLANNERS
1856 ROUTE 9 TOMS RIVER NEW JERSEY 08755 (732)797-3100

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CLASSIFIED AND APPROVED AS AN AMENDED MAJOR SITE PLAN BY THE MANCHESTER TOWNSHIP PLANNING BOARD ON

_____
CHAIRPERSON

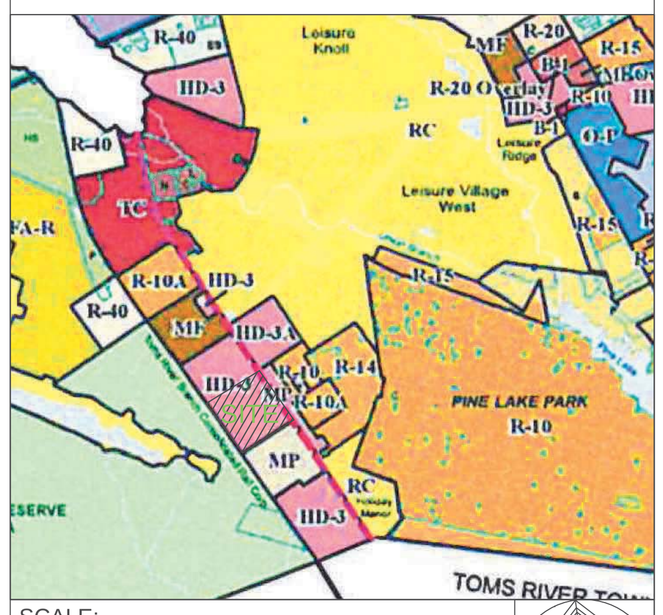
ATTEST:

SECRETARY _____ DATE _____

PLANNING BOARD ENGINEER _____ DATE _____

MUNICIPAL CLERK _____ DATE _____

ZONING MAP

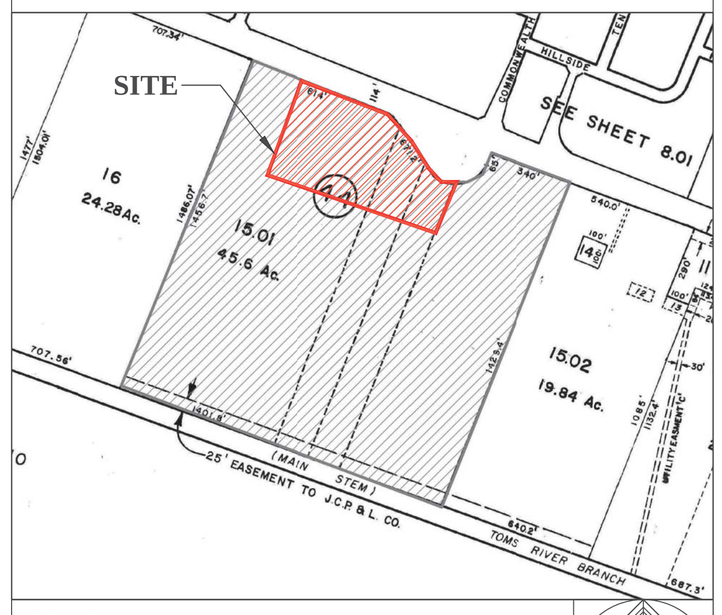


SCALE:
N.T.S.

GENERAL LOCATION MAP

SCALE:
N.T.S.

KEY MAP



SCALE:
1"=600'

DATE	REVISION	DRAWN	CHECKED	RELEASED

TITLE SHEET

AMENDED PRELIMINARY AND FINAL MAJOR SITEPLAN - PHASE 3
LOTS 15.04 ~ BLOCK 44
TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY, N.J.

FWH ASSOCIATES, P.A.
CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS
RESERVE SPECIALISTS
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Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

DRAWN BY: MSM	DATE: 07/31/22
DESIGNED BY: JS	SCALE: N.T.S.
CHECKED BY: JS	DRAWER NO.: MC-284
RELEASED BY: BPM	PROJECT NO.: 1221.0031
SHEET NO.: 1 OF 20	

May 27, 2022 Client # 1221.0031
List of adjoiners within 200 feet
Block 44 Lot 15.01/ Owner(s
15.04

Block 43.05	Lot 3.01	Danbury Apple LLC 128 Merrit Dr Oradell, NJ 07649
Block 42.01	Lot 12	Krupnick, Feldman & Izbiky et als PO Box 109 Lakewood, NJ 08701
Block 42.05	Lot 8	1980 Route 37, LLC 90 W. Sylvania Ave Neptune City, NJ 07753
Block 43.04	Lot 12	Kaier, William & Jane 1590 Beaver Hollow Rd Toms River, NJ 08755
Block 43.04	Lot 13	HMI, LLC 2016 Hwy 37 Manchester, NJ 08759
Block 43.04	Lot 15	Chapman, David 2048 Hwy 37 Manchester, NJ 08759
Block 43.04	Lot 16	Alyssa Inc. 2064 Hwy 37 West Manchester, NJ 08759
Block 43.04	Lot 17	2080 Route 37 West LLC 1594 Lakewood Rd Unit 14 Toms River, NJ 08755
Block 44	Lot 15.01	2065 Highway 37 Owners LLC Etal 143 Rte 70 Toms River, NJ 08755
Block 44	Lot 15.02	Pine Acres Mobile Home Park 157 70th St Avalon, NJ 08202
Block 44	Lot 15.03	2065 Highway 37 Owners LLC Etal 143 Rte 70 Toms River, NJ 08755
Block 44	Lot 15.05	2065 Highway 37 Owners LLC Etal 143 Rte 70 Toms River, NJ 08755
Block 44	Lot 16	Four and One Leasing Co Inc Etal 4000 Route 66 Unit 5 Tinton Falls, NJ 07753
Block 75.01	Lot 1QF	EETTSA LLC 4000 Route 66 Tinton Falls, NJ 07753
Block 200	Lot 1	Consolidated Rail Corp. 6 Penn Center Plaza Philadelphia, PA 19103

Comcast
830 Route 37 West
Toms River, NJ 08755

Manchester Township
Clerk's Office
1 Colonial Drive
Manchester, NJ 08759

NJ Natural Gas
PO Box 1464
Wall, NJ 07719

Verizon, Eng Dept
PO Box 152206
Irving, TX 75015

NJ DEP
CN 401
Trenton, NJ 08625

Ocean County MUA
PO Box P
Bayville, NJ 08721

GPU
400 Lincoln Street
Phillipsburg, NJ 08865

NJDOT
Route 79 & Daniels Way
Freehold, NJ 07728

Ocean County Road Dept
119 Hooper Avenue
Toms River, NJ 08753

GENERAL NOTES:

1. THE SUBJECT PROPERTY IS KNOWN AS LOT 15.04 IN BLOCK 44 AS SHOWN ON THE OFFICIAL TAX MAP OF THE MUNICIPALITY OF MANCHESTER, OCEAN COUNTY, NJ
2. THE PROPERTY IS LOCATED IN THE HD 3 ZONE AND CONTAINS A TOTAL TRACT AREA OF 6.579 ACRES
3. EXISTING USE: VACANT (PREVIOUS ASPHALT PLANT)
4. PROPOSED USE: SELF-STORAGE FACILITY
5. APPLICANT: MARBLE ARCH HOMES, INC.
   110 HILLSIDE BOULEVARD, SUITE 1
   LAKEWOOD, NJ 08701
6. OWNER: 2065 HIGHWAY 37 OWNERS LLC AND 2065 HIGHWAY 37 MANCHESTER LLC
   143 RT 70
   TOMS RIVER, NJ 07728
7. OUTBOUND INFORMATION AND TOPOGRAPHIC INFORMATION TAKEN FROM A PLAN ENTITILED "BOUNDARY & TOPOGRAPHIC SURVEY 2065 N.J.S.H ROUTE 37 LOT 15.01 BLOCK 44 SITUATED IN TOWNSHIP OF MANCHESTER, OCEAN COUNTY, NEW JERSEY" PREPARED BY FWH ASSOCIATES P.A DATED 8-3-18 SIGNED BY WILLIAM P. SCHEMEL PROFESSIONAL LAND SURVEYOR
8. PHYSICAL LOCATION OF FEATURES PROVIDED BY VERTEX AERIAL MAPPING DATED 2-4-17
9. VERTICAL DATUM: NAVD 1988, DERIVED FROM GPS OBSEREVATIONS
10. BENCHMARK: TOP OF MONUMENT EAST BOUND N.J.S.H ROUTE 37
    ELEVATION: 75.72
11. FRESH WATER WETLANDS HAVE BEEN IDENTIFIED ONSITE
12. NO 100 YEAR FLOOD PLAINS ARE KNOWN TO EXIST ON THE SITE PER THE FLOOD INSURANCE RATE MAP FOR THE MUNICIPALLITY OF MANCHESTER, OCEAN COUNTY, NJ
13. SOIL TEST PIT LOGS ARE PROVIDED IN A REPORT ENTITLED "STORMWATER MANAGEMENT REPORT BLOCK 44, LOT 15.01", PREPARED FWH ASSOCIATES P.A.
14. MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:
    A. CURRENT PREVAILING MUNICIPAL, COUNTY, AND/OR STATE AGENCY SPECIFICATIONS, STANDARDS, CONDITIONS, AND REQUIREMENTS.
    B. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
    C. CURRENCT MANUFACTURER SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
15. GAS, ELECTRIC, LIGHTING, CABLE TELEVISION, AND ELECTRICAL SERVICE PLANS, IF REQUIRED, SHALL BE PREPARED BY THE RESPECTIVE UTILITY COMPANIES THAT SERVICE THE AREA PRIOR TO SITE CONSTRUCTION AND SHALL BE INSTALLED PER ORDINANCE REQUIREMENTS.
16. TELEPHONE, ELECTRIC, AND GAS LINES WILL BE INSTALLED UNDERGROUND. CROSSINGS OF PROPOSED PAVEMENTS WILL BE INSTALLED PRIOR TO THE CONSTRUCTION OF PAVEMENT BASE COURSE.
17. THE SIZE AND LOCATION OF STRUCTURES WITHIN 200' ARE APPROXIMATE.
18. ALL TRAFFIC CONTROL, SIGNAGE AND STRIPING SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. LATEST EDITION, CHAPTER 108.
19. CURBS SHALL BE DEPRESSED FLUSH WITH PAVEMENT, AND HANDICAPPED ACCESSIBLE RAMPS INSTALLED WHERE SIDEWALKS AND CROSSWALKS INTERSECT SAME. DETECTABLE WARNINGS SHALL BE INCLUDED ON HANDICAP ACCESSIBLE RAMPS LOCATED ON PUBLIC ROADWAYS AND WHERE OTHERWISE DIRECTED BY A REGULATORY AGENCY HAVING JURISDICTION.
20. THE CONTRACTOR IS DIRECTED TO THE FACT THAT THE APPROXIMATE LOCATIONS OF KNOWN UTILITY STRUCTURES AND FACILITIES THAT MAY BE ENCOUNTERED WITHIN AND ADJACENT TO THE LIMITS OF THE WORK ARE SHOWN ON THE PLANS. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED BY THE ENGINEER, AND THE CONTRACTOR IS ADVISED TO VERIFY IN THE FIELD ALL THE FACTS CONCERNING THE LOCATION OF THESE UTILITIES PRIOR TO CONSTRUCTION.
21. STREET SURFACES AND OTHER SURFACES DISTURBED BY THE CONSTRUCTION OF FACILITIES FOR THIS PROJECT SHALL BE RESTORED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWNSHIP OF MANCHESTER, THE COUNTY OF OCEAN AND THE STATE OF NJ.
22. THE OWNER WILL SECURE ALL NECESSARY PERMITS FROM MUNICIPAL, COUNTY, OR STATE AGENCIES PRIOR TO THE START OF CONSTRUCTION.
23. THE OWNER OR HIS REPRESENTATIVE SHALL DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR THE CONSTRUCTION SITE SAFETY DURING THE COURSE OF THE SITE IMPROVEMENT PURSUANT TO N.J.A.C. 5: 23-2.21(e) OF THE NEW JERSEY UNIFORM CONSTRUCTION CODE AND CFR 1926.3 (OSHA COMPETENT PERSON).
24. THE CONTRACTOR SHALL PROTECT VEGETATION IN AREAS THAT ARE TO BE LEFT IN THE NATURAL STATE.
25. ANY DRAINAGE STRUCTURE THAT IS TO BE LEFT UNCOVERED FOR MORE THAN 8 HOURS SHALL BE PROTECTED WITH BARRICADES IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES OR OSHA STANDARDS.
26. APPLICANT SHALL SUBJECT THE SITE TO TITLE 39 TRAFFIC ENFORCEMENT SO THAT THE MANCHESTER TOWNSHIP POLICE MAY ENFORCE THE PARKING AND FIRE LANE RESTRICTIONS.

GRADING AND DRAINAGE NOTES

1) THE CONTRACTOR SHALL PROTECT VEGETATION IN AREAS THAT ARE TO BE LEFT IN THE NATURAL STATE.
2) ALL STRUCTURES TO BE SET ON A COMPACTED BASE, 6" THICK OF CLEAN CRUSHED STONE CONFORMING TO NJDOT #57 COARSE AGGREGATE.
3) ALL STORM STRUCTURES TO BE PRECAST REINFORCED CONCRETE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4) ALL STORM SEWER TO BE CLASS III, WALL B, AS PER ASTM C-76 WITH RUBBER "O" RING JOINTS CONFORMING TO ASTM C-443. UNLESS OTHERWISE SPECIFIED.
5) ALL PRECAST DRAINAGE STRUCTURES SHALL CONTAIN REINFORCING STEEL AND BE DESIGNED FOR HS-20 LOADING.
6) ANY DRAINAGE STRUCTURE THAT IS TO BE LEFT UNCOVERED FOR MORE THAN 8 HOURS SHALL BE PROTECTED WITH BARRICADES IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES OR OSHA STANDARDS.
7) HDPE STORM PIPE SHALL COMPLY WITH THE CURRENT AASHTO DESIGNATION M294, TYPE S OR SP, AND SHALL CONFORM TO ASTM D3350 WITH SMOOTH INTERIOR WALLS.
8) CONDUIT OUTLET PROTECTION SHALL BE INSTALLED PRIOR TO THE CONSTRUCTION OF ANY PIPE RUN.
9) ALL JOINTS SHALL BE MORTARED WITH 2:1 SAND MORTAR UNLESS OTHERWISE NOTED ON THE PLANS.
10) THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATLEY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE OR INEFFECTIVE.
11) ANY WASTE, DEBRIS OR ANY OTHER SIMILAR MATERIAL FOUND ON SITE OR GENERATED BY OPERATIONS DURING CONSTRUCTION SHALL BE PROPERLY REMOVED AND DISPOSED OF BY THE DEVELOPER IN ACCORDANCE WITH ALL APPLICABLE LAWS & REGULATIONS.
12) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA LAW AND STATE GOVERNING SAFETY CODES.
13) ANY AND ALL AGGREGATE ASSOCIATED WITH THE EXISTING ASPHALT ONSITE WILL BE REMOVED AND 2 FT. OF ROTOTILLING OR SCARIFICATION TO THE SAME DEPTH WILL OCCUR TO ENSURE PROPER INFILTRATION OCCURS BENEATH THE FORMED DRIVEWAY SURFACE.
14) DURING CLEARING AND GRADING OF THE SITE, MEASURES MUST BE TAKEN TO ELIMINATE SOIL COMPACTION AT THE LOCATION OF ALL PROPOSED INFILTRATION BMPS. THE LOCATION OF THE PROPOSED INFILTRATION BMPs MUST BE CORDONED OFF DURING CONSTRUCTION TO PREVENT COMPACTION OF THE SUBSOIL BY CONSTRUCTION EQUIPMENT OR STOCKPILES.
15) EXCAVATION AND CONSTRUCTION OF AN INFILTRATION BMP MUST BE PERFORMED USING EQUIPMENT PLACED OUTSIDE THE LIMITS OF THE BMP. HEAVY MACHINERY, RUBBER-TIRED VEHICLES OR OTHER VEHICLES EXERTING A GROUND PRESSURE IN EXCESS OF EIGHT POUNDS PER SQUARE INCH SHALL NOT BE PERMITTED TO PASS OVER THE INFILTRATION BMP AREA.
16) THE USE OF A PROPOSED INFILTRATION BMP AS A SEDIMENT BASIN DURING CONSTRUCTION IS DISCOURAGED, HOWEVER, WHEN UNAVOIDABLE, EXCAVATION OF THE PROPOSED INFILTRATION BMP MUST BE AT LEAST TWO FEET ABOVE THE FINAL DESIGN ELEVATION OF THE BOTTOM, UNLESS THE LOCAL SOIL EROSION AND SEDIMENT CONTROL DISTRICT, TOWNSHIP ENGINEER AND/OR DESIGN ENGINEER APPROVE AN ALTERNATE CONDITION, (I.E., THE EXCAVATION OF THE INFILTRATION BMP TO THE ELEVATION OF THE TOP OF THE 6" SAND LAYER WITH FILTER FABRIC PROVIDED ACROSS THE BOTTOM AREA).
17) EXCAVATION TO THE FINAL DESIGN ELEVATION OF THE INFILTRATION BMP BOTTOM MAY ONLY OCCUR AFTER ALL CONSTRUCTION WITHIN ITS DRAINAGE AREA IS COMPLETED AND THE DRAINAGE AREA IS STABILIZED. IF CONSTRUCTION OF THE INFILTRATION BMP CANNOT BE DELAYED, BERMS MUST BE PLACED AROUND THE PERIMETER OF THE BMP DURING ALL PHASES OF CONSTRUCTION TO DIVERT ALL FLOWS AWAY FROM THE BMP. THE BERMS MAY NOT BE REMOVED UNTIL ALL CONSTRUCTION WITHIN THE DRAINAGE AREA IS COMPLETED, AND THE AREA IS STABILIZED.
18) REMOVAL OF ANY ACCUMULATED SEDIMENT AND FILTER FABRIC FROM ANY INFILTRATION BMP SHALL TAKE PLACE ONLY AFTER ALL CONTRIBUTING DRAINAGE AREA TO THE BMP HAS BEEN FULLY STABILIZED. SOIL TESTING SHALL BE CONDUCTED WITHIN THE BMP BOTTOM AREA PRIOR TO THE PLACEMENT OF THE K5 SAND LAYER OR SOIL BEDDING. PLACEMENT OF THE K5 SAND LAYER OR SOIL BEDDING SHALL NOT TAKE PLACE UNTIL THE DESIGN ENGINEER HAS REVIEWED AND APPROVED THE COMPLETED SOIL TESTING RESULTS.
19) TRACKED EQUIPMENT MAY BE USED FOR THE PURPOSES OF BACKFILLING AND FINAL GRADING PROVIDED THAT THIS EQUIPMENT DOES NOT EXERT A PRESSURE ON THE UNDERLYING SOIL IN EXCESS OF EIGHT POUNDS PER SQUARE INCH.
20) THE BOTTOM 6" SAND LAYER MUST CONSIST OF K5 SAND WITH A MAXIMUM OF 15% FINES AND A MINIMUM PERMEABILITY RATE OF 20 INCHES PER HOUR. PRIOR TO INSTALLATION, THE SAND MUST BE TESTED AND CERTIFIED BY THE DESIGN ENGINEER THAT IT MEET THE SPECIFICATIONS FOR K5 SAND.
21) PERMANENT STABILIZATION OF THE BASIN EMBANKMENTS INCLUDES THE TOP OF BANK.
22) POST-CONSTRUCTION SOIL TESTING MUST BE PERFORMED ON THE AS-BUILT INFILTRATION BMPs IN ACCORDANCE WITH THE "CONSTRUCTION AND POST-CONSTRUCTION OVERSIGHT AND SOIL HYDRAULIC CONDUCTIVITY TESTING" SECTION IN CHAPTER 12 OF THE NJ BEST MANAGEMENT PRACTICES MANUAL. WHERE AS-BUILT SOIL TESTING YIELDS A LOWER PERMEABILITY RATE THAN THE DESIGN PERMEABILITY RATE CORRECTIVE ACTION MUST BE TAKEN TO ACHIEVE THE DESIGN PERMEABILITY RATE AND STORMWATER MANAGEMENT DESIGN CRITERIA. POST-CONSTRUCTION SOIL TESTING RESULTS SHALL BE INCLUDED IN THE INFILTRATION BMPs OPERATION AND MAINTENANCE MANUAL.
23) THE FINAL BASIN DESIGN SHALL BE CERTIFIED BY THE DESIGN ENGINEER INDICATING THE STORMWATER FACILITY HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND APPROPRIATE DETENTION SIZE AND VOLUME OF STORAGE IS PROVIDED. THE CERTIFICATION SHOULD INCLUDE A TABLE COMPARING THE DESIGN STORAGE VOLUMES TO THE AS-BUILT CONDITIONS.
24) AS-BUILT DRAWINGS OF THE INFILTRATION BMPs SHALL BE PREPARED BY A NJ LICENSED LAND SURVEYOR AND SUBMITTED TO THE REVIEW AGENCY WITH JURISDICTION. A COPY OF THE AS-BUILT DRAWING SHALL BE INCLUDED IN THE INFILTRATION BMPs OPERATION AND MAINTENANCE MANUAL.
25) THE PROPERTY ASSOCIATION WILL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE STORMWATER MANAGEMENT FACILITIES. THE STORMWATER MANAGEMENT OPERATIONS AND MAINTENANCE MANUAL PROVIDES DETAILS ON THE NECESSARY MAINTENANCE PROCEDURES.

Block 44, Lot 15.04
Zone: HD-3 Highway Development District (2065 Route 37 Redevelopment Plan)

STANDARD	**REQUIREMENT**	**PROVIDED**
Minimum Project Area	Entire Redevelopment Area	45.43 Ac
Maximum Project Lot Coverage	65%	24.50%
	REQUIREMENT	**PROVIDED (Lot 15.04)**
COMMERCIAL USE:		
Minimum Lot Area	2 Acres	6.579 Acres
Minimum Lot Frontage	200 Ft.	217.29 Ft.
Minimum Lot Depth	200 Ft.	430.81
Maximum Lot Coverage (per lot)	75%	23.1%
Minimum Front Yard Setback	50 Ft.	96 Ft.
Minimum Side Yard Setback	50 Ft.	76 Ft.
Minimum Rear Yard Setback	50 Ft.	NA.
Maximum Building Height	40 Ft. (3 Stories)	40 Ft. and 3 Stories
Minimum Setback from Parking Area to Lot Line	10 Ft.	10 Ft.
Minimum Setback from all existing or proposed roads	50 Ft.	96 Ft.
Minimum Setback to Redevelopment Area Boundary	50 Ft.	102.9 Ft.
Commercial Parking:		
Self-Storage Facility 0.2 spaces per 1,000 sf		18 Required, 20 Provided
ADA Required Parking Spaces		2 Required, 2 Provided
EV Required Parking		1 Required, 1 Provided

WATER DISTRIBUTION NOTES:

1) ALL WATER MAIN TO BE C900 PVC PIPE. PROPER PIPE COVERAGE IS TO BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
2) ALL WATER MAINS SHALL BE INSTALLED AT A DEPTH TO OBTAIN A MINIMUM OF FOUR (4.0) FEET OF COVER TO THE TOP OF THE PIPE.
3) THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE OR INEFFECTIVE.
4) THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY INCLUDING PROVISION OF ALL APPROPRIATE SAFETY DEVISED AND TRAINING REQUIRED.
5) THE DEPARTMENT OF UTILITIES SHALL BE NOTIFIED AT LEAST 72 HOURS BEFORE ANY CONSTRUCTION IS TO COMMENCE ON THE WATER SYSTEMS.
6) ALL TRENCHES SHALL BE BACKFILLED AT THE END OF EACH DAY.
7) THE CONTRACTOR SHALL COORDINATE APPROPRIATE TRAFFIC CONTROL WITH THE MANCHESTER TOWNSHIP POLICE DEPARTMENT.
8) ALL CURB STOPS SHALL BE LOCATED IN NON-PAVED AREAS WITHIN THE PUBLIC RIGHT-OF-WAY.
9) PRIOR TO SCHEDULING INSTALLATION OF PROPOSED WATER MAIN TO THE EXISTING WATER MAIN, THE CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILITIES VIA TEST PITS. THE CONTRACTOR SHALL NOTIFY MANCHESTER TOWNSHIP DEPARTMENT OF UTILITIES AT LEAST 48 HOURS IN ADVANCE PRIOR TO PERFORMING TEST PITS.
10) WATER MAINS ARE TO BE LOCATAED 10 FEET FROM UTILITY POLES, SIGNS AND SMALL ANCILLARY STRUCTURES.
11) WORK FOR CONNECTING TO EXISTING WATER MAINS VIA OPEN CUT SHALL BE SCHEDULED AT LEAST 72 HOURS IN ADVANCE TO ALLOW FOR SCHEDULING OF THE TOWNSHIP'S WATER SYSTEM OPERATOR TO SHUT DOWN THE SECTION OF EXISTING MAIN FOR THE REQUIRED WORK.
12) SHUTDOWNS SHALL BE SCHEDULED DURING OFF PEAK HOURS.
13) ALL NEW COMPONENTS OF THE CONNECTION TO EXISTING WATER MAINS SHALL BE THOROUGHLY DISINFECTED PRIOR TO THE ADDITION TO THE WATER SYSTEM.
14) THE DURATION OF DISRUTION OF PUBLIC WATER SERVICE SHALL NOT EXCEED 4 HOURS.
15) ALL PVC PIPE SHALL BE INSTALLED WITH TRACER WIRE.
16) THE WATER METER SHALL BE LOCATED WITHIN THE BUILDING. MANCHESTER TOWNSHIP REQUIRES THE METER SHALL BE A SENSUS OMNI METER OR APPROVED EQUAL AND SHALL BE NSF APPROVED TO THE LATEST STANDARD.

SANITARY SEWER NOTES:

1) THE DEPARTMENT OF UTILITIES SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF SEWER INSTALLATION. NO SEWERS SHALL BE INSTALLED WITHOUT INSPECTION BY THE AUTHORITY'S ENGINEER.
2 THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE OR INEFFECTIVE.
3) THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY INCLUDING PROVISIONS OF ALL APPROPRIATE SAFETY DEVISED AND TRAINING REQUIRED.
4) ALL SANITARY SEWER TO BE 8" SDR-35 PVC PIPE UNLESS OTHERWISE SPECIFIED. FITTINGS SHALL BE SDR 35 AND SHALL CONFORM TO ASTM-D3034. THE POLYVINYL CHLORIDE COMPOUNDS FOR THE PIPE SHALL HAVE A CELL CLASSIFICATION OF 12454-B (WITH MINIMUM TENSILE MODULUS OF 500,000 PSI) AS DEFINED IN ASTM-D1784.
5) PROPER PIPE COVERAGE IS TO BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION. ALL SANITARY SEWER LENGTHS SHOWN HEREON ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
6) THE SANITARY SEWER SHALL BE SEPERATED FROM ALL WATER MAINS BY A MINIMUM OF TEN (10) FEET HORIZONTALLY AND EIGHTEEN (18) INCHES VERTICALLY. WHENEVER A CROSSING MAY OCCUR, THE WATER MAIN SHOULD BE LOCATED ABOVE THE SANITARY SEWER BY EIGHTEEN (18) INCHES, MINIMUM. IF THIS SEPERATION CANNOT BE MET, THE WATER MAIN MUST BE PROTECTED WITH A CONCRETE CRADLE AND THE SANITARY SEWER MAIN SHALL BE DUCTILE IRON PIPE WITH WATERTIGHT JOINTS AT A MINIMUM DISTANCE OF TEN (10) FEET FROM EACH SIDE OF THE WATERMAIN.
7) SIZE OF THE SEWER LATERAL LINES ARE TO BE 6", UNLESS OTHERWISE SPECIFIED.
8) ALL SANITARY LATERALS ARE TO BE SCHEDULE 40 PVC.
9) ALL TRENCHES SHALL BE BACKFILLED AT THE END OF EACH DAY.
10) THE CONTRACTOR SHALL COORDIATE APPROPRIATE TRAFFIC CONTROL WITH THE MANCHESTER TOWNSHIP POLICE DEPARTMENT.
11) PRIOR TO SCHEDULING INSTALLATION OF PROPOSED SEWER MAIN TO THE EXISTING SEWSER MAIN, THE CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILTIES VIA TEST PITS. THE CONTRACTOR SHALL NOTIFY MANCHESTER TOWNSHIP DEPARTMENT OF UTILITIES AT LEAST 48 HOURS IN ADVANCE PRIOR TO PERFORMING TEST PITS.
12) SEWER MAINS ARE TO BE LOCATED 10 FEET FROM UTILITY POLES, SIGNS AND SMALL ANCILLARY STRUCTURES.
13) ALL PVC PIPE SHALL BE INSTALLED WITH TRACER WIRE.

DATE	REVISION	DRAWN	CHECKED	RELEASED

PROJECT NOTES

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3
LOT 15.04 ~ BLOCK 44
TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

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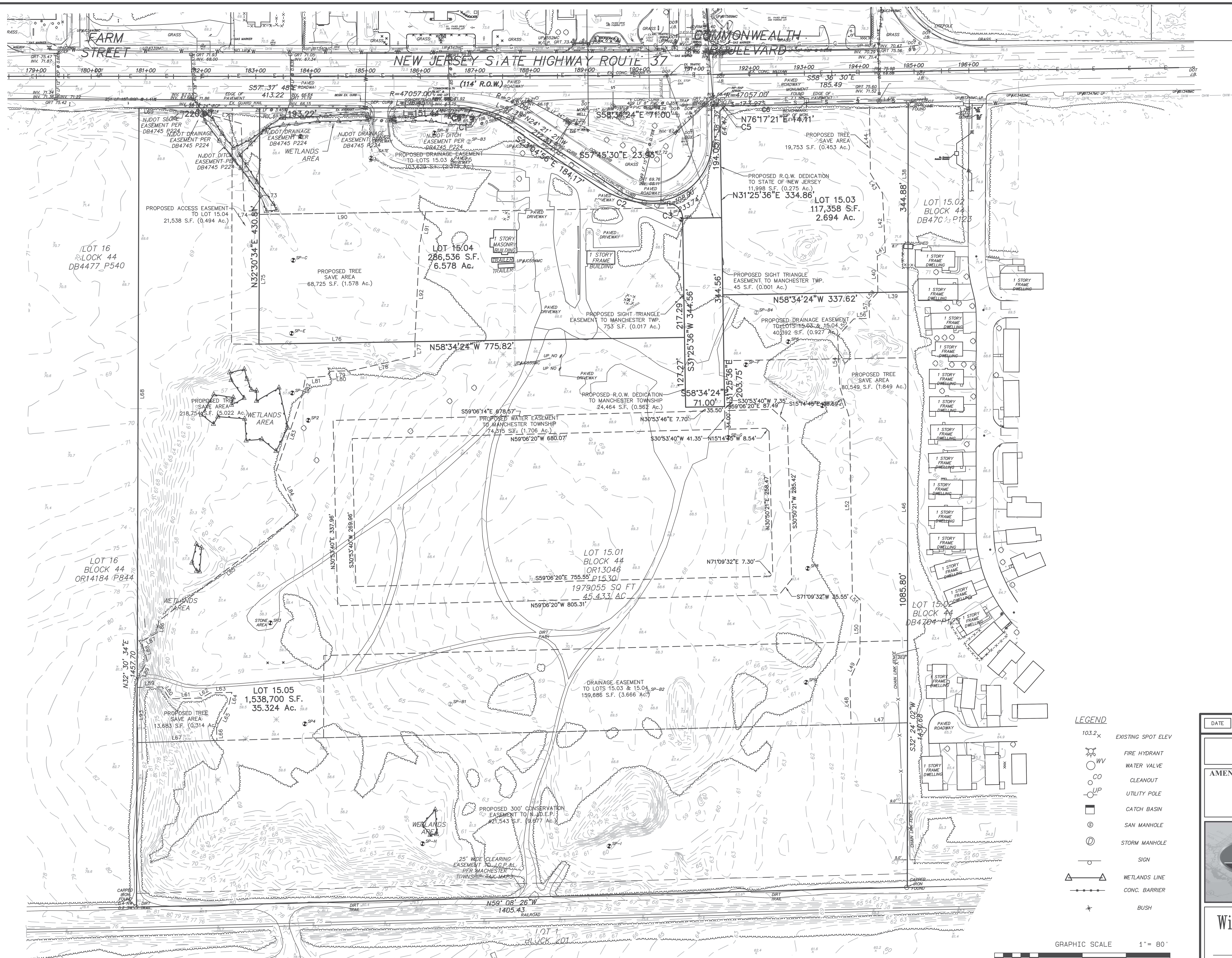
Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

DRAWN BY: CSM	DATE: 07/31/22
DESIGNED BY: JS	SCALE: N.T.S.
CHECKED BY: JS	DRAWER NO.
RELEASED BY: BPM	PROJECT NO.: 1221.0031
SHEET NO.: 2	OF: 20



HORIZONTAL DATUM
N.J.S.P.C.S 1983

VERTICAL DATUM
NAVD 1988

LEGEND

Symbol	Description
103.2×	EXISTING SPOT ELEV
	FIRE HYDRANT
WV	WATER VALVE
CO	CLEANOUT
UP	UTILITY POLE
	CATCH BASIN
	SAN MANHOLE
	STORM MANHOLE
	SIGN
	WETLANDS LINE
	CONC. BARRIER
	BUSH

GRAPHIC SCALE 1" = 80'

0 80 160 240

DATE	REVISION	DRAWN	CHECKED	RELEASED

EXISTING CONDITIONS PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

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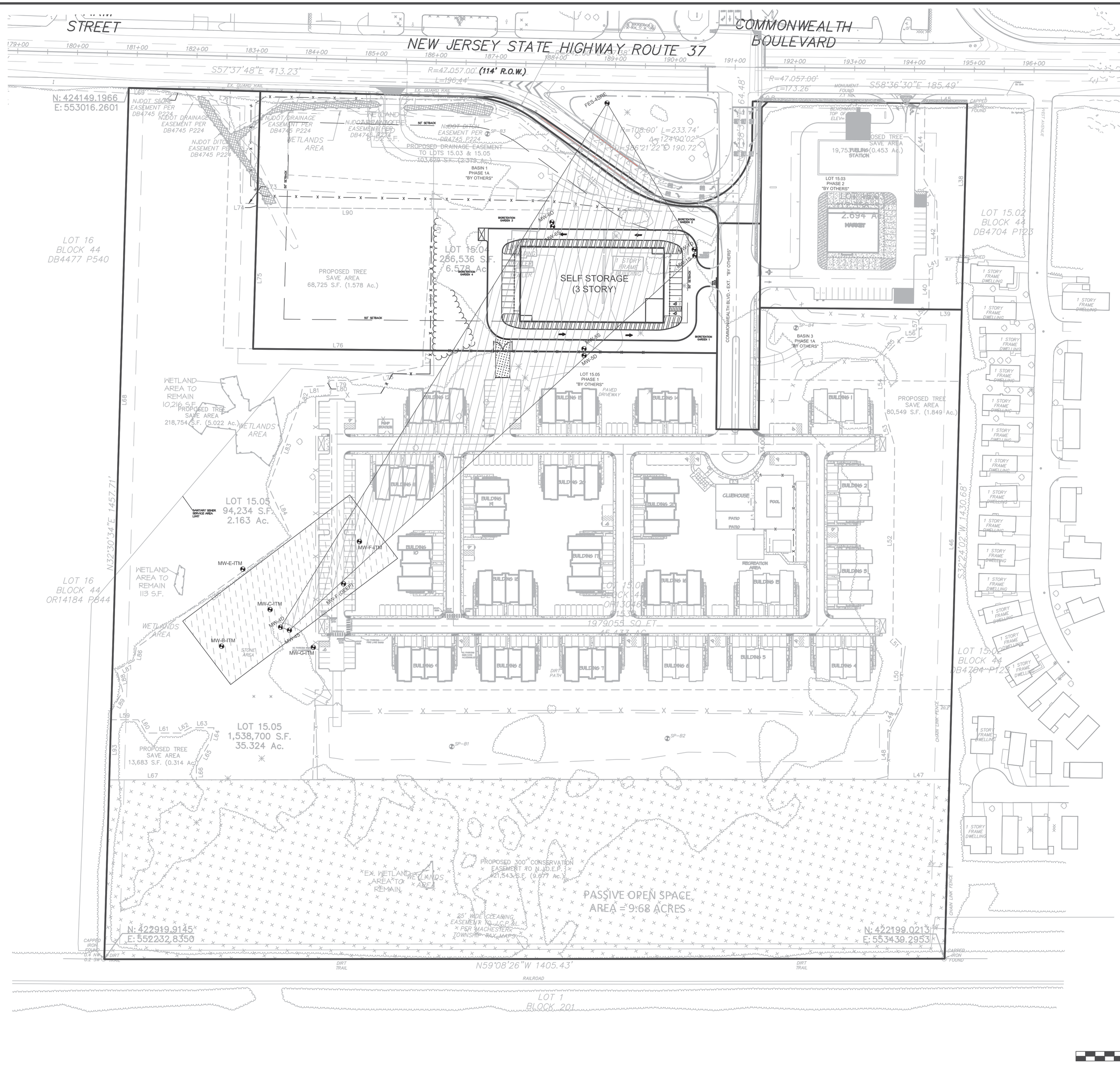
RESERVE SPECIALISTS
ARCHITECTS

FWHASSOCIATES.COM

1856 Rt. 9, Toms River, NJ 08755 T: 732.797.3100 F: 732.797.3223

William P. Schemel
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 36275

DRAWN BY CSM	DATE 07/31/22
DESIGNED BY JS	SCALE 1"=80'
CHECKED BY JS	DRAWER NO.
RELEASED BY BPM	PROJECT NO. 1221.0031
SHEET NO. 3	OF 20



Block 44, Lot 15.04
Zone: HD-3 Highway Development District (2065 Route 37 Redevelopment Plan)

STANDARD	REQUIREMENT	PROVIDED
Minimum Project Area	Entire Redevelopment Area	45.43 Ac
Maximum Project Lot Coverage	65%	24.50%
	REQUIREMENT	PROVIDED (Lot 15.04)
COMMERCIAL USE:		
Minimum Lot Area	2 Acres	6.579 Acres
Minimum Lot Frontage	200 Ft.	217.29 Ft.
Minimum Lot Depth	200 Ft.	430.81
Maximum Lot Coverage (per lot)	75%	23.1%
Minimum Front Yard Setback	50 Ft.	96 Ft.
Minimum Side Yard Setback	50 Ft.	76 Ft.
Minimum Rear Yard Setback	50 Ft.	NA.
Maximum Building Height	40 Ft. (3 Stories)	40 Ft. and 3 Stories
Minimum Setback from Parking Area to Lot Line	10 Ft.	10 Ft.
Minimum Setback from all existing or proposed roads	50 Ft.	96 Ft.
Minimum Setback to Redevelopment Area Boundary	50 Ft.	102.9 Ft.

Commercial Parking:

Self-Storage Facility 0.2 spaces per 1,000 sf	18 Required, 20 Provided
ADA Required Parking Spaces	2 Required, 2 Provided
EV Required Parking	1 Required, 1 Provided

PROPOSED IMPERVIOUS SURFACE ON-SITE

Planning Area	Net Land Area	Allowable Impervious	Proposed Impervious
Suburban (SSA)	39.0 Ac	11.7 Ac (30%)	11.06 Ac (28.36%)
Suburban (NSA)	6.43 Ac	0.32 Ac (5%)	0.0 Ac (0%)

PROPOSED TREE PRESERVATION ON-SITE

Planning Area	Net Land Area	Existing Net Forested Area	Required Tree Preservation (Forested)	Existing Net Unforested Area	Required Tree Preservation (Unforested)	Total Required Tree Preservation	Total Proposed Tree Preservation
Suburban (SSA)	39.0 Ac	17.34 Ac	6.07 (35%)	21.66 Ac	1.08 Ac (5%)	7.15 Ac	10.80 Ac
Suburban (NSA)	6.43 Ac	6.43 Ac	4.50 (70%)	0.0 Ac	0 Ac	4.50 Ac	4.66 Ac

PROPOSED HERBACEOUS & SHRUB PLANTING ON-SITE

Planning Area	Net Land Area	Allowable Impervious	Required Tree Preservation	Allowable Herb / Shrub	Proposed Herb / Shrub
Suburban (SSA)	39.0 Ac	11.70 Ac	7.15 Ac	20.15 Ac	17.14 Ac
Suburban (NSA)	6.43 Ac	0.32 Ac	4.50 Ac	1.61 Ac	1.77 Ac

DATE	REVISION	DRAWN	CHECKED	RELEASED

O□ERALL SITE PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.
CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
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Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

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SHEET NO.	OF
4	20

SITE PLAN

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LOT 15.04 ~ BLOCK 44

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Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

GRAPHIC SCALE 1"=30'
0 30 60 90

BUILDING 14
BUILDING 13
BUILDING 12
LOT 15.05 "BY OTHERS"
PHASE 1
BASIN 3 "BY OTHERS"
PHASE 1A
COMMONWEALTH BLVD. - EXT. "BY OTHERS"
50' SETBACK
SIX(6) FT. HIGH VINYL BUFFER FENCE
START SIX(6) FT. HIGH VINYL BUFFER FENCE
END SIX(6) FT. HIGH PRIVACY FENCE AT VINYL BUFFER FENCE
GATE W/ KNOX BOX
EMERGENCY ACCESS TO LOT 15.05
NO PARKING FIRE LANE SIGN
START SIX(6) FT. HIGH PRIVACY FENCE
BIORETENTION GARDEN 1
BIORETENTION GARDEN 2
BIORETENTION GARDEN 3
BIORETENTION GARDEN 4
SELF STORAGE (3 STORY)
LOT 15.04
286,536 S.F.
6.578 AC.
50' SETBACK
90.00'
240'
50.00'
73.43'
125'
R=80'
R=30'
20'
25'
18'
12'
8'
30'
10'
40'
OFFICE
DOOR
STAIRS
CONCRETE BOLLARDS 5' O.C.
SLIDING DOORS
CONCRETE SIDEWALK
ONE WAY SIGN
DO NOT ENTER SIGN
STOP SIGN
H/C PARKING SIGN (VAN ACCESSIBLE)
EV CHARGER W/SIGNAGE
TRASH ENCLOSURE 10'X20'
2% DRAINAGE CURB CUT
START DEP. END DEP. CURB
YELLOW FIRE LANE STRIPING
SOLID 12" WIDE YELLOW LINE @ 45° ANGLE ?
APART
2' DRAINAGE CURB CUT
PAVED DRIVEWAY
PAVED ROADWAY
PAVEMENT MARKING
SIGHT TRIANGLE EASEMENT
PROPOSED DRAINAGE EASEMENT TO LOTS 15.03 & 15.05
103,629 S.F. (2.379 AC.)
NO ACCESS PERMITTED
(114' R.O.W.)
NEW JERSEY STATE HIGHWAY ROUTE 37
COMMONWEALTH BOULEVARD
RAMP F
CROSSWALK
LOT 15.03 "BY OTHERS"
PHASE 2
BASIN 1 "BY OTHERS"
PHASE 1A
MARKET
FUELING STATION
FIRE LANE NO PARKING
EV
ONLY

NEW JERSEY STATE HIGHWAY ROUTE 37

(114' R.O.W.)

NO ACCESS PERMITTED

185+00 186+00 187+00 188+00 189+00 190+00 191+00 191+40

EX. CONC. MEDIAN

2" RNMC 4-2/C#14

2" RNMC FIBER-OPTIC CABLE "T"

3" RMC (2) FIBER-OPTIC CABLE "T"

76 LF 6" PVC @ 0.30%

RAMP F

CROSSWALK

EX. TRAFFIC SIGNAL POLE

DOT J.B.

DOT BOX

CONC. W/ ELEC. EQUIP.

ONLY

PAVED ROADWAY

PAVED DRIVEWAY

GRASS

CONC. CURB

EX. HYDRANT

EX. LIGHT POLE

EX. SIGN

EX. INLET TO BE REMOVED

"COMMONWEALTH BLVD" & "LAND LOFT TURNS" SIGNS

BEGIN EX. CURB

CONCRETE HEADER

NJDOT DRAINAGE EASEMENT PER DB4745 P224

WETLAND AREA TO BE FILLED 6752 S.F.

50' SETBACK

NJDOT DITCH EASEMENT PER DB4745 P224

GATE

SP-B3

PROPOSED DRAINAGE EASEMENT TO LOTS 15.03 & 15.05 103,629 S.F. (2.379 Ac.)

BIORETENTION GARDEN 3

BIORETENTION GARDEN 2

BIORETENTION GARDEN 4

BIORETENTION GARDEN 1

START SIX(6) FT. HIGH VINYL BUFFER FENCE

SIX(6) FT. HIGH VINYL BUFFER FENCE

LOT 15.04
286,536 S.F.
6.578 Ac.

SELF STORAGE
(3 STORY)

240'

125'

STAIRS

CONCRETE SIDEWALK

SLIDING DOORS

CONCRETE BOLLARDS 5' O.C.

30'

DOOR

40'

OFFICE

EV

50' SETBACK

SIGHT TRIANGLE EASEMENT

GATE W/ KNOX BOX

EMERGENCY ACCESS TO LOT 15.05

END SIX(6) FT. HIGH PRIVACY FENCE AT VINYL BUFFER FENCE

START SIX(6) FT. HIGH PRIVACY FENCE

BUILDING 12

BUILDING 13

BUILDING 14

UP#87341

UP#552MC W/L.P.

UP#552MC

UP#C2302MC

UP#C554MC

UP#C555MC

UP NO #

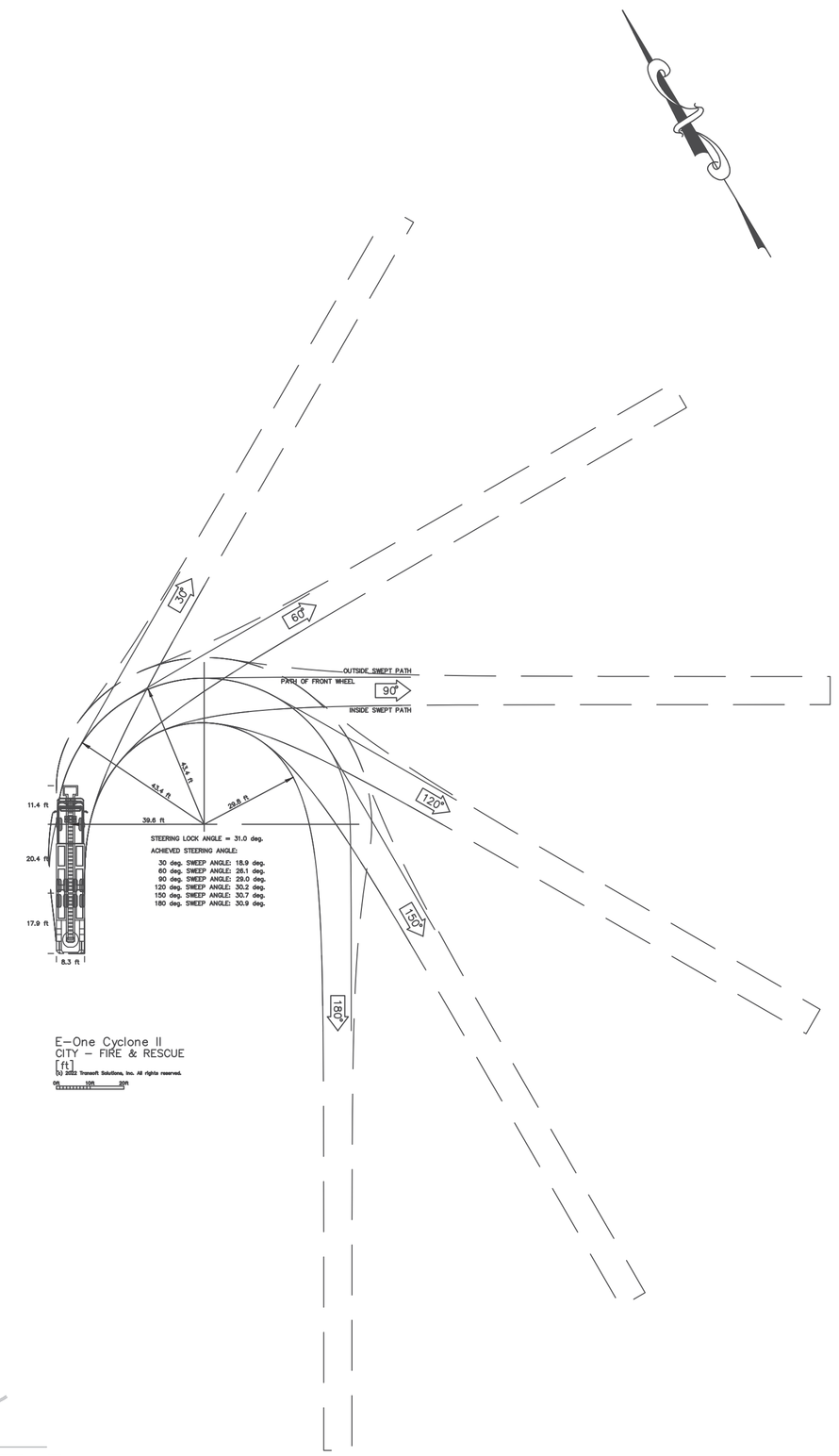
GAS MARKER

4+00

5+00

GRAPHIC SCALE 1"=30'

0 30 60 90



E-One Cyclone II
CITY - FIRE & RESCUE
(f1)

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DATE	REVISION	DRAWN	CHECKED	RELEASED

CIRCULATION PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.

Civil Engineers
Land Surveyors
Planners
Landscape Architects
Reserve Specialists
Architects

FWHassociates.com

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Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

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GRADING AND DRAINAGE PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3
LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
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GRAPHIC SCALE 1"=30'
0 30 60 90

LEGEND
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- PROPOSED STORM SEWER
- DIRECTION OF SURFACE WATER FLOW
- PROPOSED TREELINE
- SILT FENCE
- TREE PROTECTION FENCE

COMMONWEALTH BOULEVARD

NEW JERSEY STATE HIGHWAY ROUTE 37 (114' R.O.W.)

LOT 15.03 "BY OTHERS" PHASE 2

LOT 15.05 "BY OTHERS" PHASE 1

BASIN 3 "BY OTHERS"

BASIN 1 "BY OTHERS"

COMMONWEALTH BLVD. - EXT. "BY OTHERS"

RAMP F

SELF STORAGE (3 STORY) FF 70.5

BUILDING 12

BUILDING 13

BUILDING 14

SANITARY SEWER SERVICE AREA LIMIT

PROPOSED DRAINAGE EASEMENT TO LOTS 15.03 & 15.05 103,629 S.F. (2.379 Ac.)

EX DRIVEWAY TO BE REMOVED

NJDOT DRAINAGE EASEMENT DEED DB4745 P224

NJDOT DITCH EASEMENT DEED DB4745 P224

AREA TO BE FILLED 6752 S.F.

FUELING STATION

MARKET

PARKING

FIRE LANE NO PARKING

CROSSWALK

UTILITY PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3
LOT 15.04 ~ BLOCK 44

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GRAPHIC SCALE 1"=30'
0 30 60 90

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM SEWER
- F.F. 75.00 PROPOSED FINISH FLOOR ELEVATION
- PROPOSED WATER SERVICE CURB STOP
- PROPOSED SANITARY SEWER CLEANOUT
- EXISTING WATER MAIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE SERVICE
- PROPOSED SANITARY SEWER SERVICE

LOT 15.04
286,536 S.F.
6.578 AC.

SELF STORAGE
(3 STORY)
FF 70.5

240'
125'
STAIRS
SLIDING DOORS
OFFICE
DOOR
30'
40'
EV
Inv. 68.25

SANITARY SEWER SERVICE LIMIT

0.5'-B4 (TYPE A)
T.G. 68.80
INV OUT: 61.45 PIPE – (106)

rip rap Apron
(See Detail)
H.W.-31 (BY OTHERS)
INV IN: 61.00 PIPE – (106)

OS-B03 (TYPE B)
T.G. 69.10
INV IN: 61.37 PIPE-25
INV OUT: 61.07 PIPE-29

O.S.-1 (BY OTHERS)
2 X 2' Orifice 63.0
T.Q. 66.5
INV. OUT: 62.85 PIPE – (107)

rip rap Apron
(See Detail)
H.W.-15 (BY OTHERS)
INV IN: 61.00 PIPE-29

C.B.-9 (TYPE E)
T.G. :69.10
INV IN: 61.75 PIPE-24
INV IN: 63.25 PIPE-12
INV OUT: 61.75 PIPE-26

OS-B01 (TYPE A)
T.G.:69.10
INV OUT: 64.54 PIPE-12

100 LF
6" PVC
@ 1.04%

CO 2
Inv. 67.21

65 LF
6" PVC
@ 1.04%

C.B.-4 (BY OTHERS)
T.G. : 70.30
INV IN: 62.88 PIPE-13
INV OUT: 62.08 PIPE-24

CO
Inv. 66.53

27 LF
6" PVC
@ 1.04%

SAN MH 2 (BY OTHERS)
RIM: 70.79
INV OUT: 65.94 PIPE – (90)

HYDRANT
(BY OTHERS)

220 LF 8" SDR-35 SAN. @ 0.35% PIPE – (90) (BY OTHERS)

SAN MH 1 (BY OTHERS)
RIM: 73.87
INV IN: 65.17 PIPE – (90)

76 LF 8" PVC @ 0.30%

C.B.-39 (BY OTHERS)
T.G. 67.50
INV IN: 61.95 PIPE – (49)
INV OUT: 61.95 PIPE – (49)

C.B.-38 (BY OTHERS)
T.G. 67.56, T.C. 68.06
INV IN: 61.64 PIPE – (49)
INV IN: 61.18 PIPE – (119)
INV OUT: 61.64 PIPE – (50)

C.B.-44 (BY OTHERS)
T.G. 67.56, T.C. 68.06
INV IN: 61.55 PIPE – (50)
INV IN: 64.09 PIPE – (54)
INV. OUT: 61.55 PIPE – (51)

WATER SERVICE
FIRE SERVICE

LOT 15.05
PHASE 1
"BY OTHERS"

BASIN 1
"BY OTHERS"

BASIN 3
"BY OTHERS"

LOT 15.03
PHASE 2
"BY OTHERS"

PROPOSED DRAINAGE EASEMENT
TO LOTS 15.03 & 15.05
103,629 S.F. (2.379 Ac.)

NJDOT DRAINAGE EASEMENT PER DB4745 P224
AREA TO BE FILLED AND GRADED
6752 SF

NJDOT DITCH EASEMENT PER DB4745 P224

EX DRIVEWAY TO BE REMOVED

RAMP F

NEW JERSEY STATE HIGHWAY ROUTE 37
(114' R.O.W.)

COMMONWEALTH BOULEVARD

MARKET

FIRE LANE NO PARKING

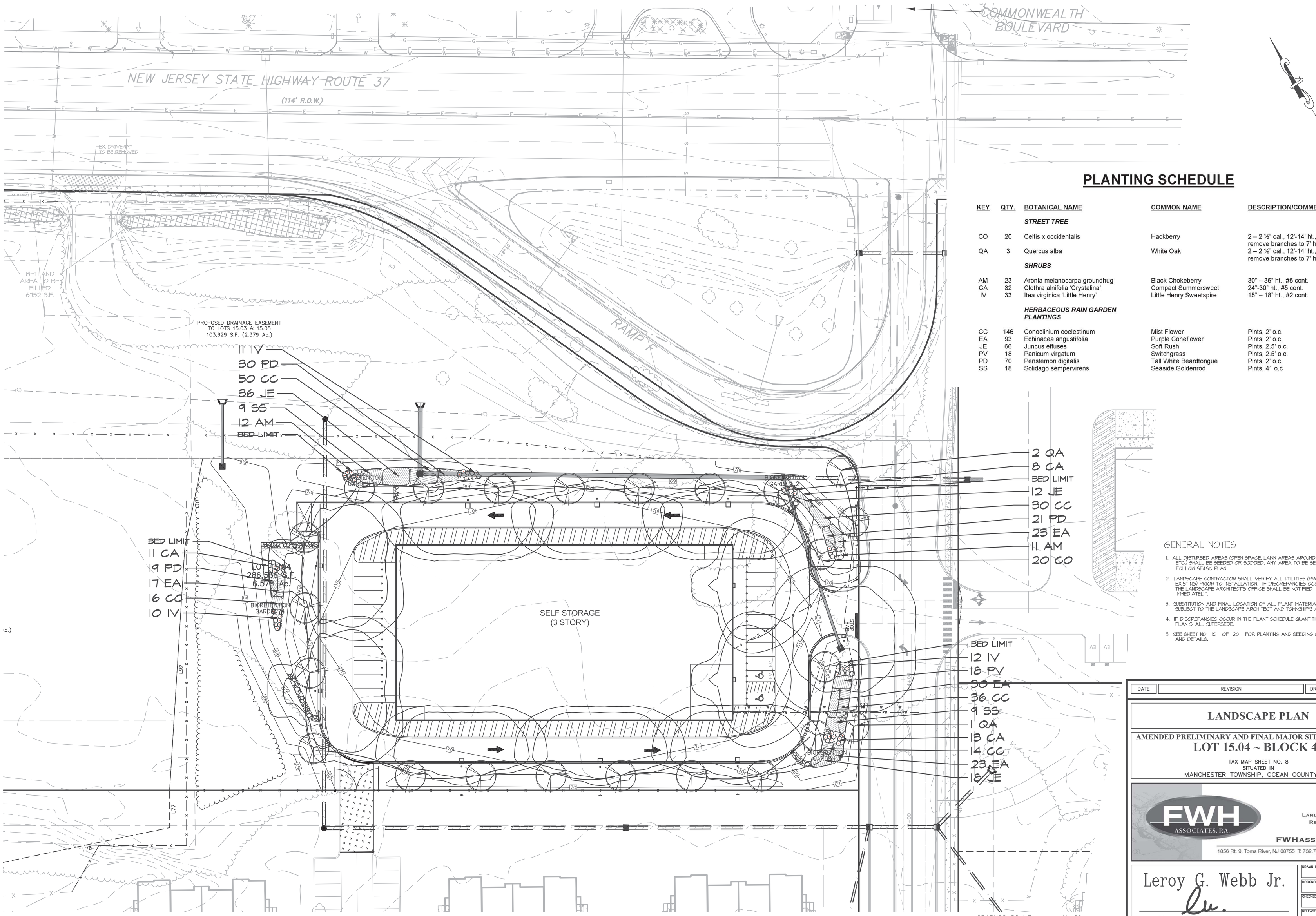
CROSSWALK

2" RMJC FIBER-OPTIC CABLE "T"

2" RMJC (2) FIBER-OPTIC CABLE "T"

2" RMJC 4-2/C#14

FUELING STATION



PLANTING SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	DESCRIPTION/COMMENTS
		STREET TREE		
CO	20	Celtis x occidentalis	Hackberry	2 – 2 ½" cal., 12'-14' ht., BB., remove branches to 7' ht.
QA	3	Quercus alba	White Oak	2 – 2 ½" cal., 12'-14' ht., BB., remove branches to 7' ht.
		SHRUBS		
AM	23	Aronia melanocarpa groundhug	Black Chokeberry	30" – 36" ht., #5 cont.
CA	32	Clethra alnifolia 'Crystalina'	Compact Summersweet	24"-30" ht., #5 cont.
IV	33	Itea virginica 'Little Henry'	Little Henry Sweetspire	15" – 18" ht., #2 cont.
		HERBACEOUS RAIN GARDEN PLANTINGS		
CC	146	Conoclinium coelestinum	Mist Flower	Pints, 2' o.c.
EA	93	Echinacea angustifolia	Purple Coneflower	Pints, 2' o.c.
JE	66	Juncus effuses	Soft Rush	Pints, 2.5' o.c.
PV	18	Panicum virgatum	Switchgrass	Pints, 2.5' o.c.
PD	70	Penstemon digitalis	Tall White Beardtongue	Pints, 2' o.c.
SS	18	Solidago sempervirens	Seaside Goldenrod	Pints, 4' o.c

GENERAL NOTES

1. ALL DISTURBED AREAS (OPEN SPACE, LAWN AREAS AROUND BUILDINGS ETC.) SHALL BE SEEDED OR SODDED. ANY AREA TO BE SEEDED SHALL FOLLOW SEESC PLAN.
2. LANDSCAPE CONTRACTOR SHALL VERIFY ALL UTILITIES (PROPOSED AND EXISTING) PRIOR TO INSTALLATION. IF DISCREPANCIES OCCUR, THE THE LANDSCAPE ARCHITECT'S OFFICE SHALL BE NOTIFIED IMMEDIATELY.
3. SUBSTITUTION AND FINAL LOCATION OF ALL PLANT MATERIAL IS SUBJECT TO THE LANDSCAPE ARCHITECT AND TOWNSHIP'S APPROVAL.
4. IF DISCREPANCIES OCCUR IN THE PLANT SCHEDULE QUANTITIES, THE PLAN SHALL SUPERSEDE.
5. SEE SHEET NO. 10 OF 20 FOR PLANTING AND SEEDING SCHEDULES, NOTES, AND DETAILS.

THIS PLAN TO BE USED FOR LANDSCAPING PURPOSES ONLY.

DATE	REVISION	DRAWN	CHECKED	RELEASED

LANDSCAPE PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
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Leroy G. Webb Jr.
Licensed Landscape Architect
N.J. Lic. No. AS00149
Professional Planner N.J. Lic. No. 4006

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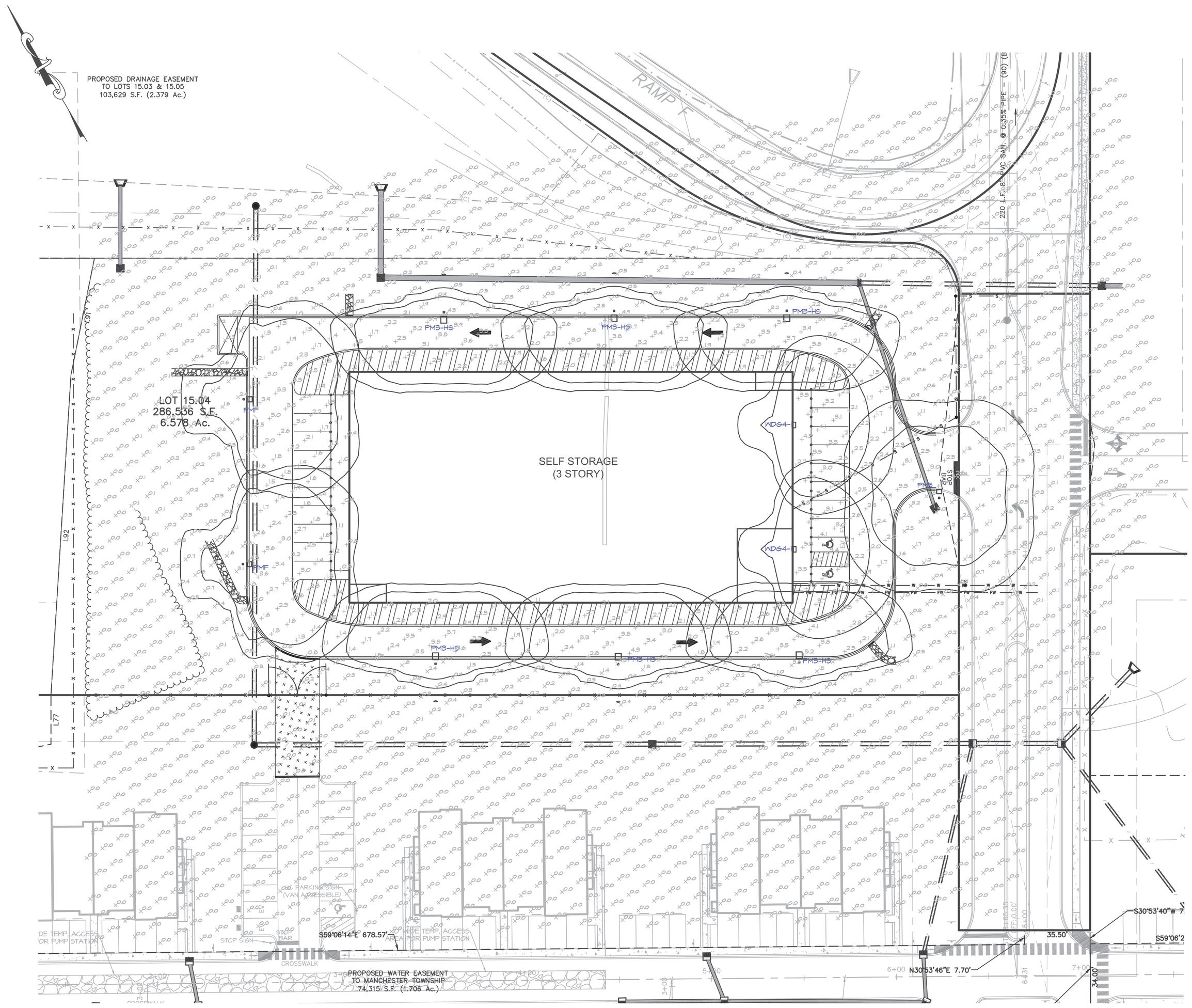

Lighting Schedule

Symbol	Label	Quantity	Mounting Height	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
	PM3-H5	6	20'	Lithonia Lighting	DSXI LED P5 40K T3M MVOLT SPA PER DLLxxxx H5 DDBXD w/ SSA 20 4G DM19AS FBC DDB	DSXI LED P5 40K T3M MVOLT with houseside shield	1	12460	0.9	138
	PMF	2	20'	Lithonia Lighting	DSXI LED P5 40K TFTM MVOLT SPA PER DLLxxxx H5 DDBXD w/ SSA 20 4G DM19AS FBC DDB	DSXI LED P5 40K TFTM MVOLT	1	15829	0.9	138
	PM5	1	20'	Lithonia Lighting	DSXI LED P5 40K T5M MVOLT SPA PER DLLxxxx H5 DDBXD w/ SSA 20 4G DM19AS FBC DDB	DSXI LED P5 40K T5M MVOLT	1	16435	0.9	138
	WDG4-1	2	22'	Lithonia Lighting	WDGE4 LED P1 70CRI RFT 40K MVOLT SRM PE DDBXD	WDGE4 LED WITH P1 - PERFORMANCE PACKAGE, 4000K, 70CRI, FORWARD THROW OPTIC	1	12050	0.9	76.21

Point to Point Calculation

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	×	0.2 fc	4.9 fc	0.0 fc	N/A	N/A
Paved Area	+	2.4 fc	5.2 fc	0.8 fc	6.5:1	3.0:1

GENERAL NOTES

1. ALL DISTURBED AREAS (OPEN SPACE, LAWN AREAS AROUND BUILDINGS ETC.) SHALL BE SEEDED OR SODDED. ANY AREA TO BE SEEDED SHALL FOLLOW SE1SC PLAN.
2. LIGHTING CONTRACTOR SHALL VERIFY ALL UTILITIES (PROPOSED AND EXISTING) PRIOR TO INSTALLATION. IF DISCREPANCIES OCCUR, THE ENGINEER'S OFFICE SHALL BE NOTIFIED IMMEDIATELY.
3. SUBSTITUTION AND FINAL LOCATION OF ALL LIGHTING IS SUBJECT TO TOWNSHIP'S APPROVAL.
4. IF DISCREPANCIES OCCUR IN THE SCHEDULE QUANTITIES, THE PLAN SHALL SUPERSEDE.
5. SEE SHEET 10 OF 20 FOR LIGHTING DETAILS

GRAPHIC SCALE 1"=30'

0 30 60 90

THIS PLAN TO BE USED FOR LIGHTING PURPOSES ONLY.

DATE	REVISION	DRAWN	CHECKED	RELEASED

LIGHTING PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

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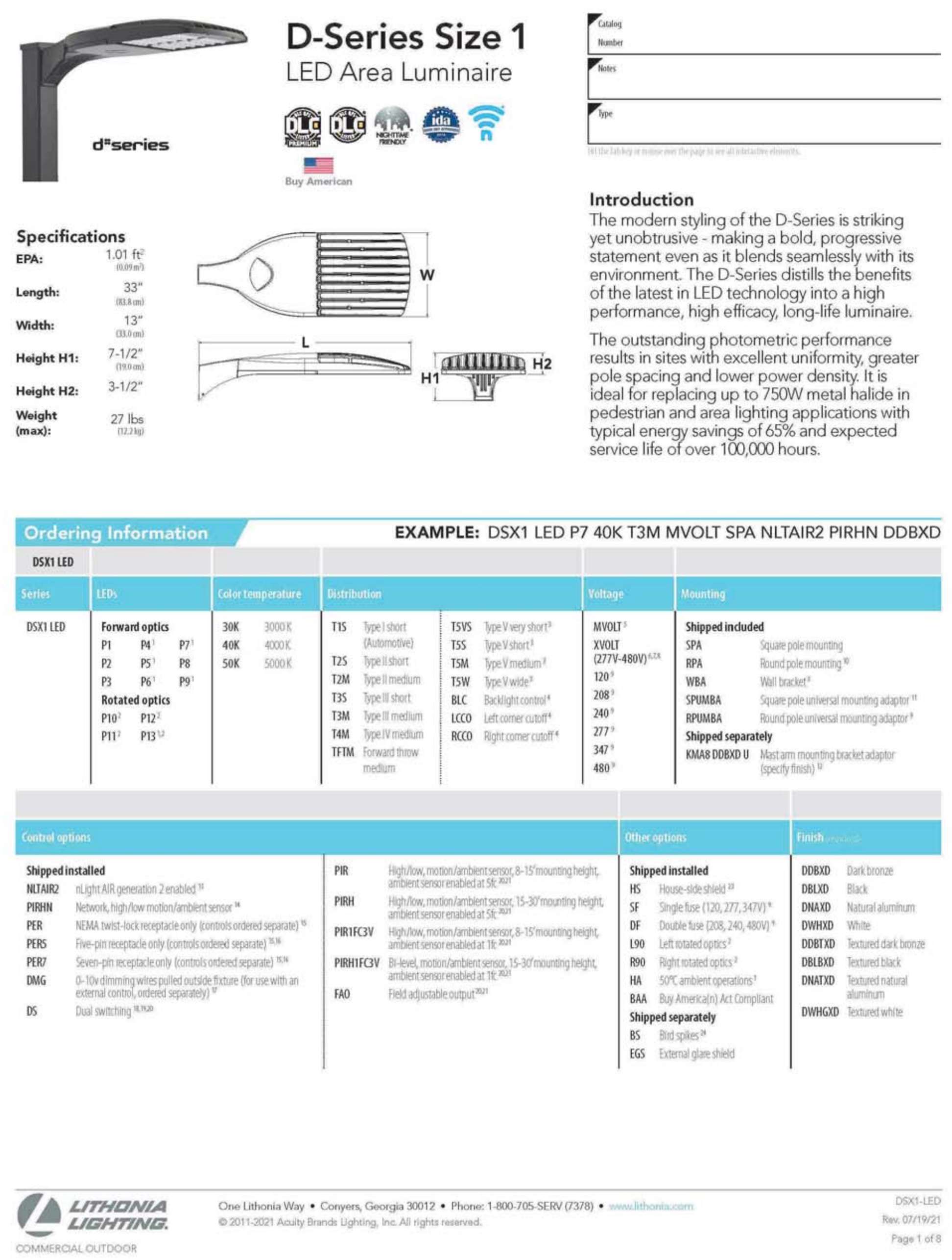
CSM	08/01/22
DESIGNED BY	SCALE
JS	1"=30'
CHECKED BY	DRAWER NO.
JS	
RELEASED BY	PROJECT NO.
BPM	1221.0031
SHEET NO.	OF
10	20



D-Series Size 1
LED Area Luminaire

Buy American

Specifications

EPA:	1.01 ft²
Length:	33"
Width:	13"
Height H1:	7-1/2"
Height H2:	3-1/2"
Weight (max):	27 lbs

Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information — EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

Series	LEDs	Color temperature	Distribution	Voltage	Mounting
DSX1 LED	Forward optics P1 P4 P7 P2 P5 P8 P3 P6 P9; Rotated optics P10 P12 P11 P13	30K 3000K; 40K 4000K; 50K 5000K	T1S Type I short (Automotive); T2S Type II short; T2M Type II medium; T3S Type III short; T3M Type III medium; T4M Type IV medium; TFTM Forward throw medium; T5VS Type V very short; T5S Type V short; T5M Type V medium; T5W Type V wide; BLC Backlight control; LCCO Left corner cutoff; RCCO Right corner cutoff	MVOLT; XVOLT (277V-480V); 120; 208; 240; 277; 347; 480	Shipped included: SPA Square pole mounting; RPA Round pole mounting; WBA Wall bracket; SPUMBA Square pole universal mounting adaptor; RPUMBA Round pole universal mounting adaptor; Shipped separately: KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish)

Control options		Other options	Finish
Shipped installed: NLTAIR2 nLight AIR generation 2 enabled; PIRHN Network, high/low motion/ambient sensor; PER NEMA twist-lock receptacle only (controls ordered separate); PER5 Five-pin receptacle only (controls ordered separate); PER7 Seven-pin receptacle only (controls ordered separate); DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately); DS Dual switching	PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc; PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc; PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc; PIRH1FC3V Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc; FAO Field adjustable output	Shipped installed: HS House-side shield; SF Single fuse (120, 277, 347V); DF Double fuse (208, 240, 480V); L90 Left rotated optics; R90 Right rotated optics; HA 50°C ambient operations; BAA Buy America(n) Act Compliant; Shipped separately: BS Bird spikes; EGS External glare shield	DDBXD Dark bronze; DBLXD Black; DNAXD Natural aluminum; DWHXD White; DDBTXD Textured dark bronze; DBLBXD Textured black; DNATXD Textured natural aluminum; DWHGXD Textured white

LITHONIA LIGHTING. COMMERCIAL OUTDOOR

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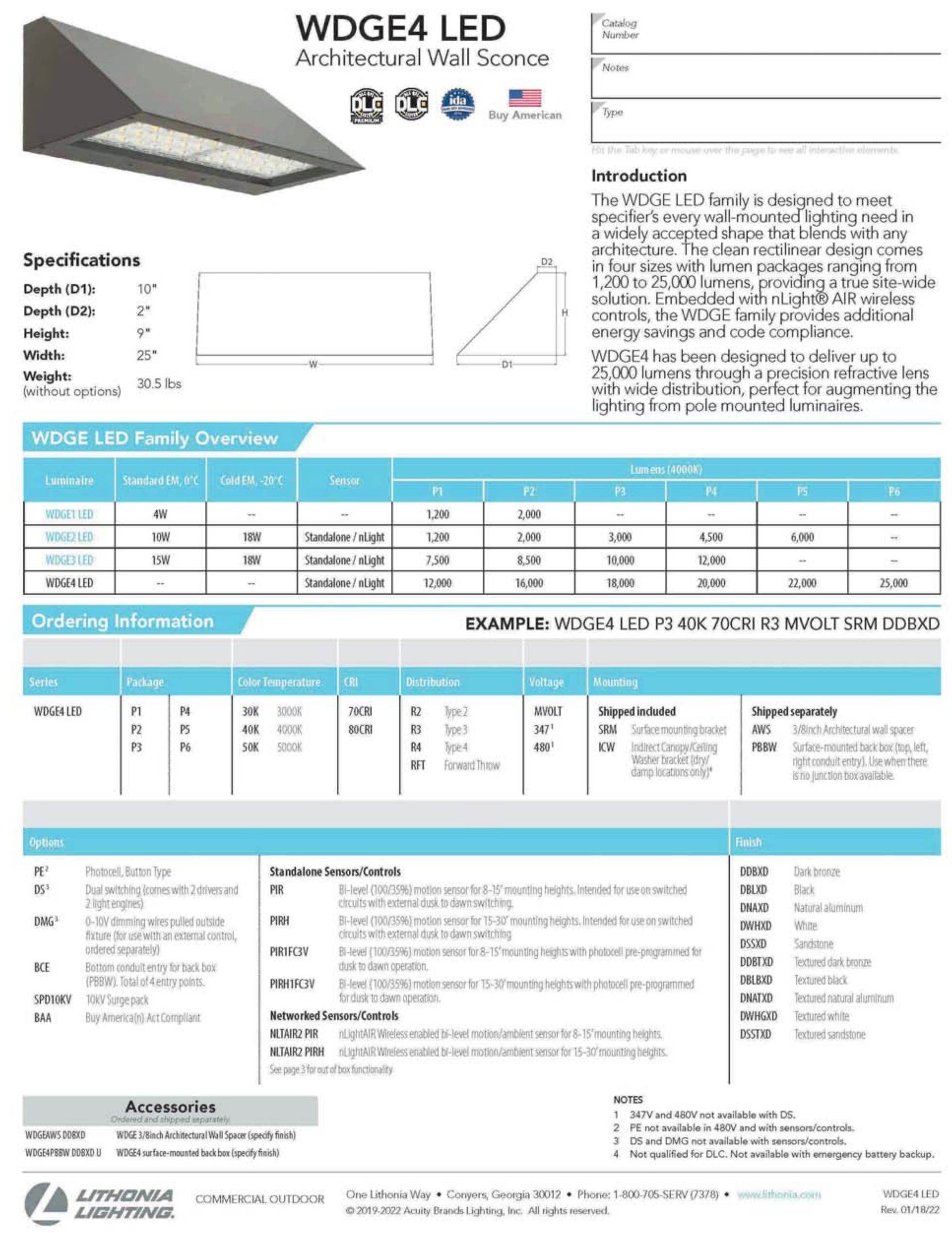
DSX1-LED Rev. 07/19/21 Page 1 of 8



WDGE4 LED
Architectural Wall Sconce

Buy American

Specifications

Depth (D1):	10"
Depth (D2):	2"
Height:	9"
Width:	25"
Weight: (without options)	30.5 lbs

Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE4 has been designed to deliver up to 25,000 lumens through a precision refractive lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information — EXAMPLE: WDGE4 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE4 LED	P1 P4; P2 P5; P3 P6	30K 3000K; 40K 4000K; 50K 5000K	70CRI; 80CRI	R2 Type 2; R3 Type 3; R4 Type 4; RFT Forward Throw	MVOLT; 347; 480	Shipped included: SRM Surface mounting bracket; ICW Indirect Canopy/Ceiling Washer bracket (dry/damp locations only); Shipped separately: AWS 3/8inch Architectural wall spacer; PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.

Options		Finish
PE Photocell, Button Type; DS Dual switching (comes with 2 drivers and 2 light engines); DMG 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately); BCE Bottom conduit entry for back box (PBBW). Total of 4 entry points; SPD10KV 10KV Surge pack; BAA Buy America(n) Act Compliant	Standalone Sensors/Controls: PIR Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching; PIRH Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching; PIR1FC3V Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation; PIRH1FC3V Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation. Networked Sensors/Controls: NLTAIR2 PIR nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights; NLTAIR2 PIRH nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights. See page 3 for out of box functionality	DDBXD Dark bronze; DBLXD Black; DNAXD Natural aluminum; DWHXD White; DSSXD Sandstone; DDBTXD Textured dark bronze; DBLBXD Textured black; DNATXD Textured natural aluminum; DWHGXD Textured white; DSSTXD Textured sandstone

Accessories (Ordered and shipped separately)

WDGEAWS DDBXD — WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE4PBBW DDBXD U — WDGE4 surface-mounted back box (specify finish)

NOTES
1 347V and 480V not available with DS.
2 PE not available in 480V and with sensors/controls.
3 DS and DMG not available with sensors/controls.
4 Not qualified for DLC. Not available with emergency battery backup.

LITHONIA LIGHTING. COMMERCIAL OUTDOOR

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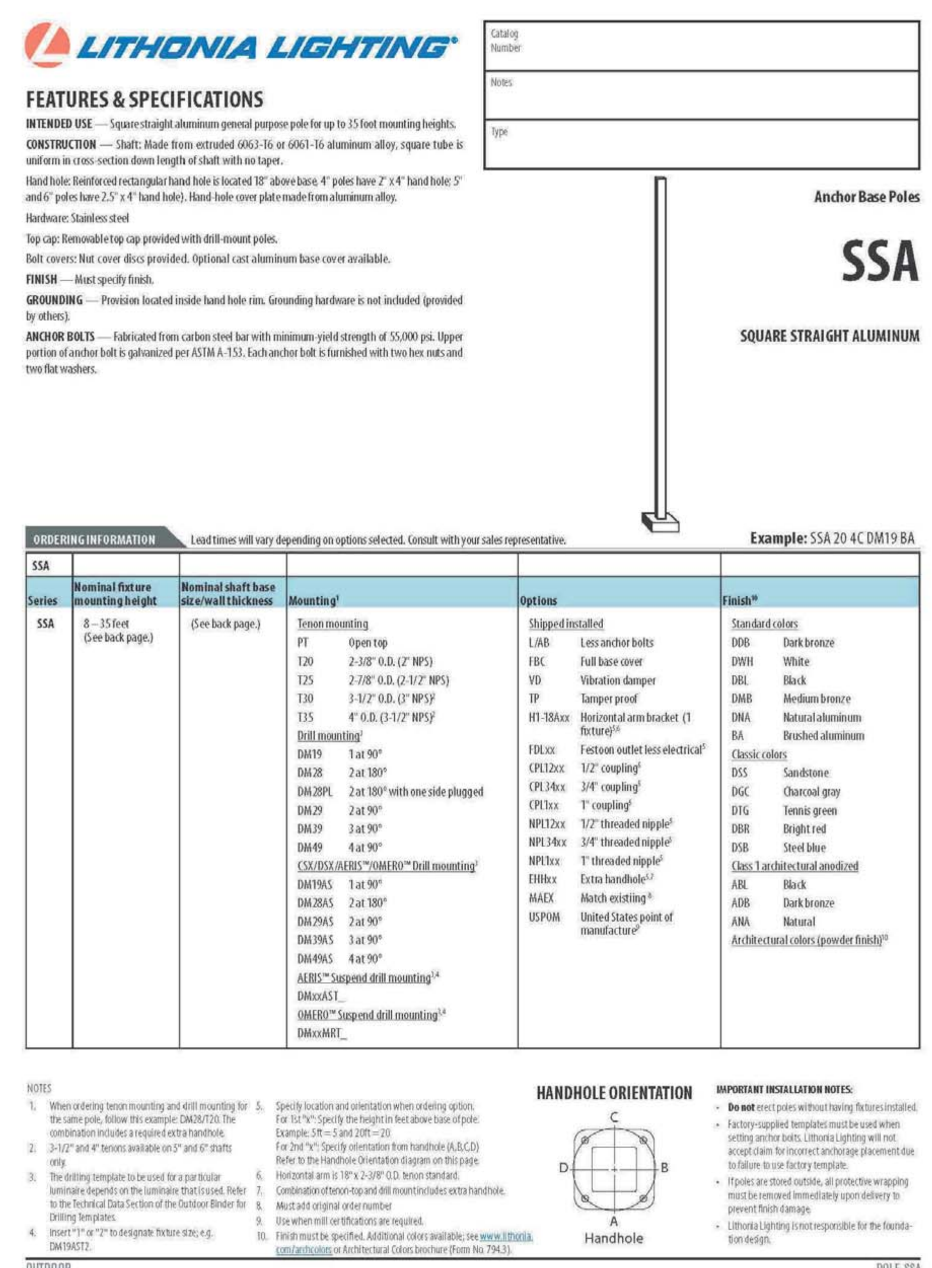
WDGE4 LED Rev. 01/18/22

WDG4-1 LIGHTING DETAIL NTS



LITHONIA LIGHTING.

FEATURES & SPECIFICATIONS

INTENDED USE — Square straight aluminum general purpose pole for up to 35 foot mounting heights.
CONSTRUCTION — Shaft: Made from extruded 6063-T6 or 6061-T6 aluminum alloy, square tube is uniform in cross-section down length of shaft with no taper.
Hand hole: Reinforced rectangular hand hole is located 18" above base. 4" poles have 2" x 4" hand hole; 5" and 6" poles have 2.5" x 4" hand hole). Hand hole cover plate made from aluminum alloy.
Hardware: Stainless steel
Top cap: Removable top cap provided with drill-mount poles.
Bolt covers: Nut cover discs provided. Optional cast aluminum base cover available.
FINISH — Must specify finish.
GROUNDING — Provision located inside hand hole rim. Grounding hardware is not included (provided by others).
ANCHOR BOLTS — Fabricated from carbon steel bar with minimum yield strength of 55,000 psi. Upper portion of anchor bolt is galvanized per ASTM A-153. Each anchor bolt is furnished with two hex nuts and two flat washers.

Anchor Base Poles

SSA

SQUARE STRAIGHT ALUMINUM

ORDERING INFORMATION — Lead times will vary depending on options selected. Consult with your sales representative. Example: SSA 20 4C DM19 BA

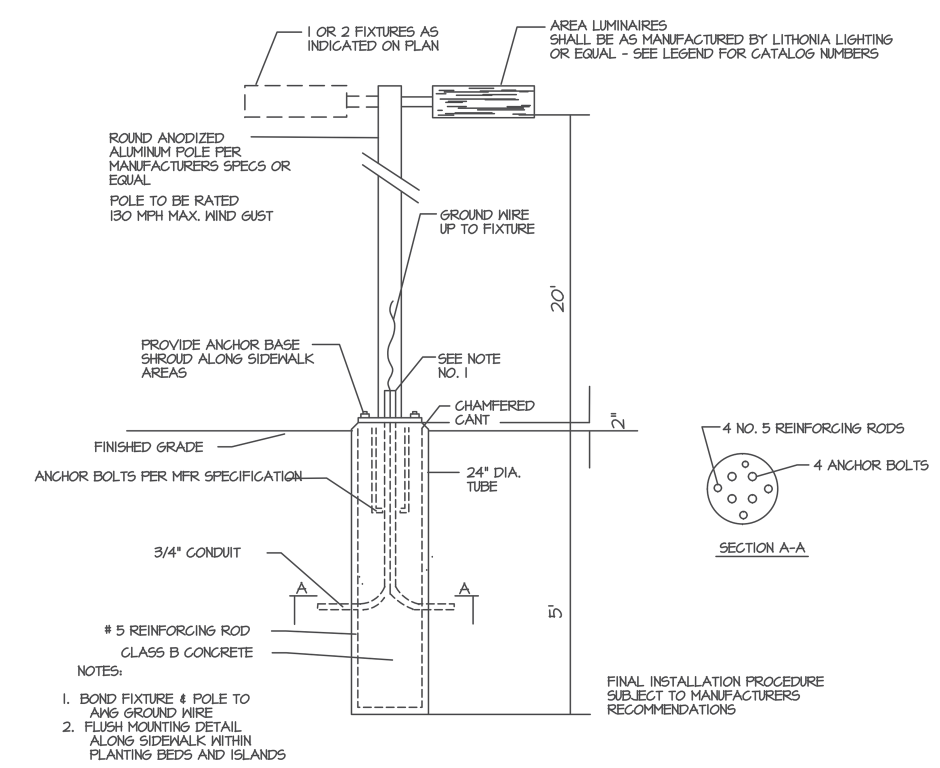
Series	Nominal fixture mounting height	Nominal shaft base size/wall thickness	Mounting	Options	Finish
SSA	8 – 35 feet (See back page.)	(See back page.)	Tenon mounting: PT Open top; T20 2-3/8" O.D. (2" NPS); T25 2-7/8" O.D. (2-1/2" NPS); T30 3-1/2" O.D. (3" NPS); T35 4" O.D. (3-1/2" NPS). Drill mounting: DM19 1 at 90°; DM28 2 at 180°; DM28PL 2 at 180° with one side plugged; DM29 2 at 90°; DM39 3 at 90°; DM49 4 at 90°; CSX/DSX/AERIS™/OMERO™ Drill mounting: DM19AS 1 at 90°; DM28AS 2 at 180°; DM29AS 2 at 90°; DM39AS 3 at 90°; DM49AS 4 at 90°; AERIS™ Suspend drill mounting; DMxxAST_; OMERO™ Suspend drill mounting; DMxxMRT_	Shipped installed: L/AB Less anchor bolts; FBC Full base cover; VD Vibration damper; TP Tamper proof; H1-18Axx Horizontal arm bracket (1 fixture); FDLxx Festoon outlet less electrical; CPL12xx 1/2" coupling; CPL34xx 3/4" coupling; CPL1xx 1" coupling; NPL12xx 1/2" threaded nipple; NPL34xx 3/4" threaded nipple; NPL1xx 1" threaded nipple; EHHxx Extra handhole; MAEX Match existing; USPOM United States point of manufacture	Standard colors: DDB Dark bronze; DWH White; DBL Black; DMB Medium bronze; DNA Natural aluminum; BA Brushed aluminum. Classic colors: DSS Sandstone; DGC Charcoal gray; DTG Tennis green; DBR Bright red; DSB Steel blue. Class 1 architectural anodized: ABL Black; ADB Dark bronze; ANA Natural. Architectural colors (powder finish)

HANDHOLE ORIENTATION (A, B, C, D — Handhole)

IMPORTANT INSTALLATION NOTES:
- Do not erect poles without having fixtures installed.
- Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use factory template.
- If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage.
- Lithonia Lighting is not responsible for the foundation design.

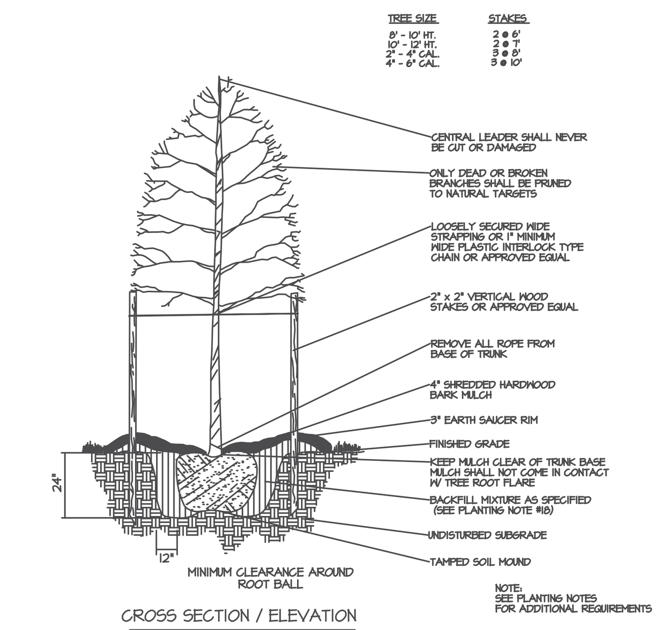
OUTDOOR — POLE-SSA

PM3-HS/PMF/PM5 LIGHTING DETAILS NTS



NOTES:
1. BOND FIXTURE & POLE TO AWG GROUND WIRE
2. FLUSH MOUNTING DETAIL ALONG SIDEWALK WITHIN PLANTING BEDS AND ISLANDS

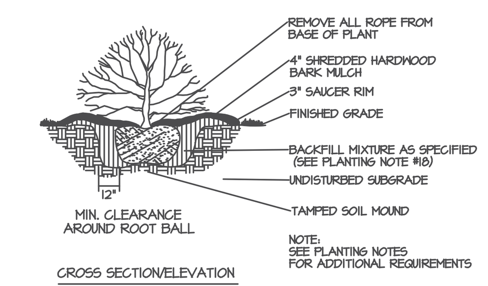
LIGHTING STANDARD DETAIL NTS



CROSS SECTION / ELEVATION

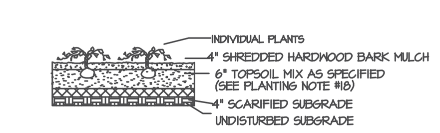
DECIDUOUS TREE PLANTING DETAIL NTS

NOTE: WIRE BASKETS ARE TO BE REMOVED PRIOR TO BACKFILLING THE PLANTING PIT

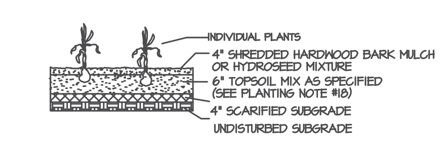


CROSS SECTION/ELEVATION

SHRUB PLANTING DETAIL NTS



GROUNDCOVER PLANTING N.T.S.



GRASS PLUG/PERENNIAL PLANTING N.T.S.

PLANTING NOTES

1. Plant material shall be furnished and installed as indicated; including all labor, materials, plants, equipment, incidentals, and clean up.
2. The Contractor shall be responsible for planting at correct grades and alignment.
3. Plants shall be typical of their species and variety; have normal growth habits; well-developed densely foliated branches, an abundant root system and be free from defects and injuries.
4. Contractor shall report any soil or drainage conditions considered detrimental to the growth of the plant material.
5. All plant material shall be guaranteed by the Contractor to be in vigorous growing condition. Provision shall be made for a growth guarantee of at least two (2) years for trees and shrubs. Replacements shall be made at the beginning of the first succeeding planting season. All replacements shall have a guarantee equal to that stated above.
6. 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 the plant material not planted from drying. Plants shall not remain unplanted for longer than a three (3) day period after delivery.
7. Quality and size of plants, spread of roots, and size of balls shall be in accordance with ANSI Z60.1 (Rev. 2014) "American Standard for Nursery Stock" as published by the American Horticultural Industry Association d/b/a AmericanHort.
8. 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, etc., shall be used for planting.
9. 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.
10. Planting operations shall be performed during periods within the planting seasons when weather and soil conditions are suitable and in accordance with accepted local practices. Planting seasons are defined as "Spring Planting Season" March 15 through May 15, "Fall Planting Season" Sept. 15 through Nov. 15. Planting is acceptable during other months if weather permits, the ground is not frozen and supplemental watering is provided in the summer.
11. No plant, except ground covers, shall be planted less than two (2) feet from existing structures and sidewalks.
12. Street trees shall be field adjusted to be a minimum distance of 15' from proposed street lighting.
13. 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 plants in the center of the pit.
14. Top pruning should be restricted to removing broken and damaged branches and developing a good tree structure. Main leader of trees must not be cut back. All pruning shall be done at the nursery prior to transplanting or transporting.
15. 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. All pruning cuts will be made to natural targets.
16. Trees shall be supported immediately after planting. All trees six (6) inches and over in caliper shall be guyed, unless otherwise noted. Smaller trees shall be staked and supported as indicated.
17. All planting beds shall receive 4" of shredded hardwood bark mulch treated with a pre-emergent herbicide. Mulch shall not be piled directly against the tree's root collar.
18. Topsoil mixture for backfilling planted areas shall consist of two-parts by volume loamy topsoil thoroughly mixed with one-part peat moss. Fertilizer will not be used for one year after planting.
19. The following "Fall Hazard Planting", tree species (bare root or B&B) will be planted during the Spring planting season only.

Acer rubrum	Liriodendron tulipifera
Betula vars.	Malus in leaf
Carpinus vars.	Nyssa Sylvatica
Celtis vars.	Ostrya
Cercidiphyllum vars.	Platanus x acerifolia
Crataegus vars.	Populus vars.
Fagus vars.	Prunus all stone fruit vars.
Halesia vars.	Pyrus vars.
Ilex opaca vars.	Quercus (all oaks except Q. palustris)
Ilex vars. (all treeform evergreen vars.)	Salix weeping vars.
Koelreuteria vars.	Tilia tomentosa vars.
Liquidambar vars.	Zelkova vars.

GENERAL NOTES

1. ALL DISTURBED AREAS (OPEN SPACE, LAWN AREAS AROUND BUILDINGS ETC.) SHALL BE SEEDED OR SODDED. ANY AREA TO BE SEEDED SHALL FOLLOW SE&SC PLAN.
2. LANDSCAPE CONTRACTOR SHALL VERIFY ALL UTILITIES (PROPOSED AND EXISTING) PRIOR TO INSTALLATION. IF DISCREPANCIES OCCUR, THE THE LANDSCAPE ARCHITECT'S OFFICE SHALL BE NOTIFIED IMMEDIATELY.
3. SUBSTITUTION AND FINAL LOCATION OF ALL PLANT MATERIAL IS SUBJECT TO THE LANDSCAPE ARCHITECT AND TOWNSHIP'S APPROVAL.
4. IF DISCREPANCIES OCCUR IN THE PLANT SCHEDULE QUANTITIES, THE PLAN SHALL SUPERSEDE.
5. SEE THIS SHEET FOR PLANTING AND SEEDING SCHEDULES, NOTES, AND DETAILS.

THIS PLAN TO BE USED FOR LANDSCAPE AND LIGHTING PURPOSES ONLY.

DATE	REVISION	DRAWN	CHECKED	RELEASED

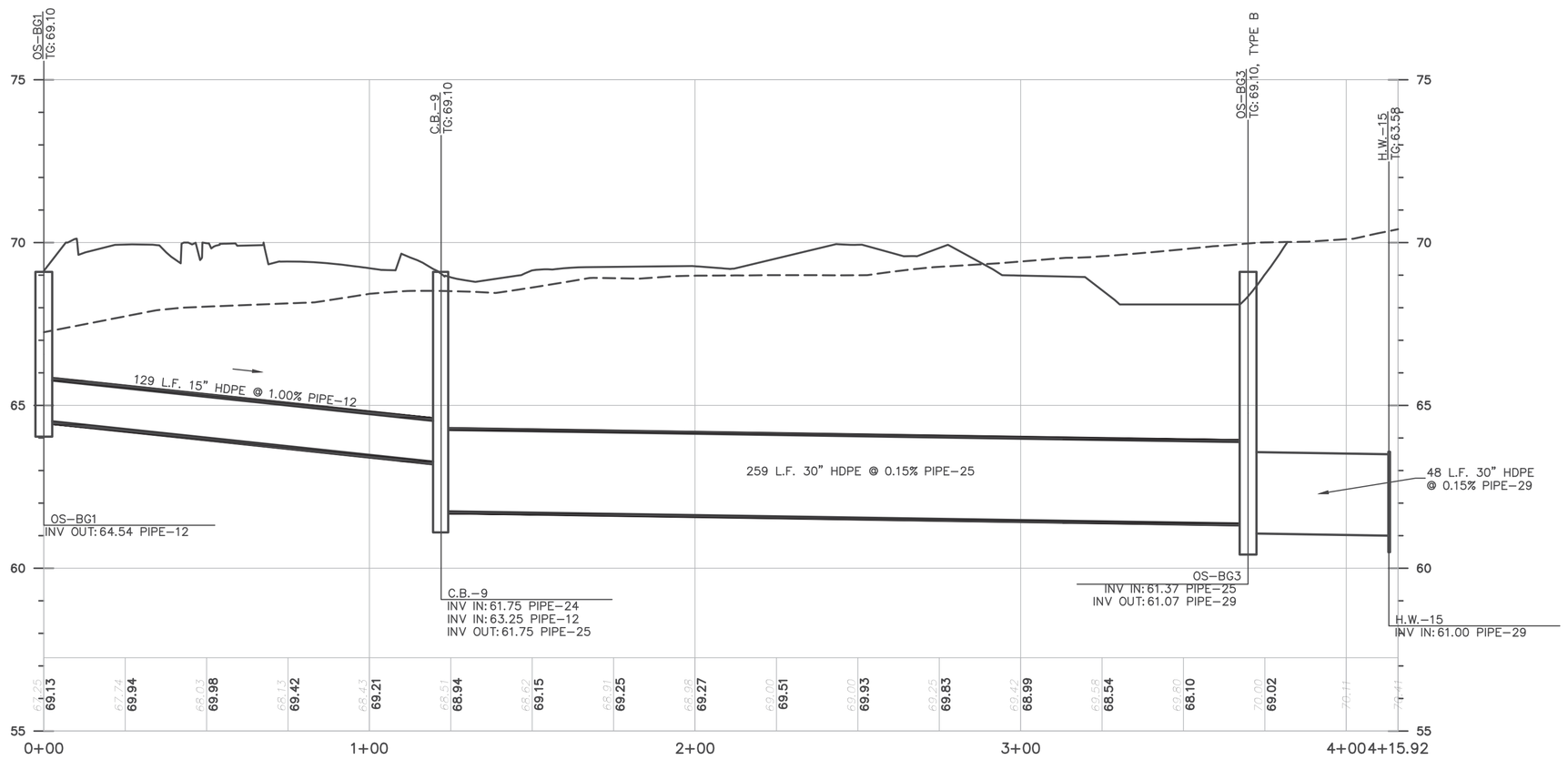
LANDSCAPE AND LIGHTING DETAILS

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3
LOT 15.04 ~ BLOCK 44
TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.
CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS
RESERVE SPECIALISTS
ARCHITECTS
FWHASSOCIATES.COM
1856 Rt. 9, Toms River, NJ 08755 T: 732.797.3100 F: 732.797.3223

Leroy G. Webb Jr.
Licensed Landscape Architect
N.J. Lic. No. AS00149
Professional Planner N.J. Lic. No. 4006

DRAWN BY: CSM	DATE: 08/01/22
DESIGNED BY: JS	SCALE: 1"=30'
CHECKED BY: JS	DRAWER NO.
RELEASED BY: BPM	PROJECT NO.: 1221.0031
SHEET NO.: 11	OF: 20



PROFILE OF O.S.-BG1 ~ H.W.-15
1" = 30' HORIZ. / 1" = 3' VERT.

DATE	REVISION	DRAWN	CHECKED	RELEASED

PROFILES

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3
LOT 15.04 ~ BLOCK 44

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Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

DRAWN BY	DATE
CSM	07/31/22
DESIGNED BY	SCALE
JS	1"=30'H; 1"=3'V
CHECKED BY	DRAWER NO.
JS	
RELEASED BY	PROJECT NO.
BPM	1221.0031
SHEET NO.	OF
12	20

DATE	REVISION	DRAWN	CHECKED	RELEASED

SOIL EROSION AND SEDIMENT CONTROL PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3
LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
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FWH ASSOCIATES, P.A.

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DRAWN BY	DATE
MSM	08/01/22
DESIGNED BY	SCALE
JS	1"=30'
CHECKED BY	DRAWER NO.
JS	
RELEASED BY	PROJECT NO.
BPM	1221.0031
SHEET NO.	OF
13	20

Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

GRAPHIC SCALE 1"=30'
0 30 60 90

LEGEND

EXISTING CONTOUR	75
PROPOSED CONTOUR	75
EXISTING SPOT ELEVATION	x 75.42
PROPOSED SPOT ELEVATION	x (87.5)
PROPOSED STORM SEWER	
PROPOSED FINISH FLOOR ELEVATION	F.F. 75.00
DIRECTION OF SURFACE WATER FLOW	
PROPOSED TREELINE	
SILT FENCE	x — x — x
TREE PROTECTION FENCE	
LIMIT OF DISTURBANCE	

NOTE: THE SOIL EROSION INSPECTOR MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR, IN ACCORDANCE WITH THE STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY

TREE PROTECTION FENCE

SILT FENCE (TYP.)

INLET PROTECTION (TYP.)

TEMPORARY TOP SOIL STOCKPILE W/ SILT FENCE

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

LIMIT OF DISTURBANCE 2.47 AC.

NEW JERSEY STATE HIGHWAY ROUTE 37

COMMONWEALTH BOULEVARD

RAMP F

PROPOSED DRAINAGE EASEMENT TO LOTS 15.03 & 15.05 103,629 S.F. (2.379 AC.)

NJDOT DRAINAGE EASEMENT PER DB4745 P224 AREA TO BE FILLED 6752 S.F.

EX DRIVEWAY TO BE REMOVED

(114' R.O.W.)

SELF STORAGE (3 STORY) FF 75.5

LOT 15.04 286,556 S.F. 6.578 AC.

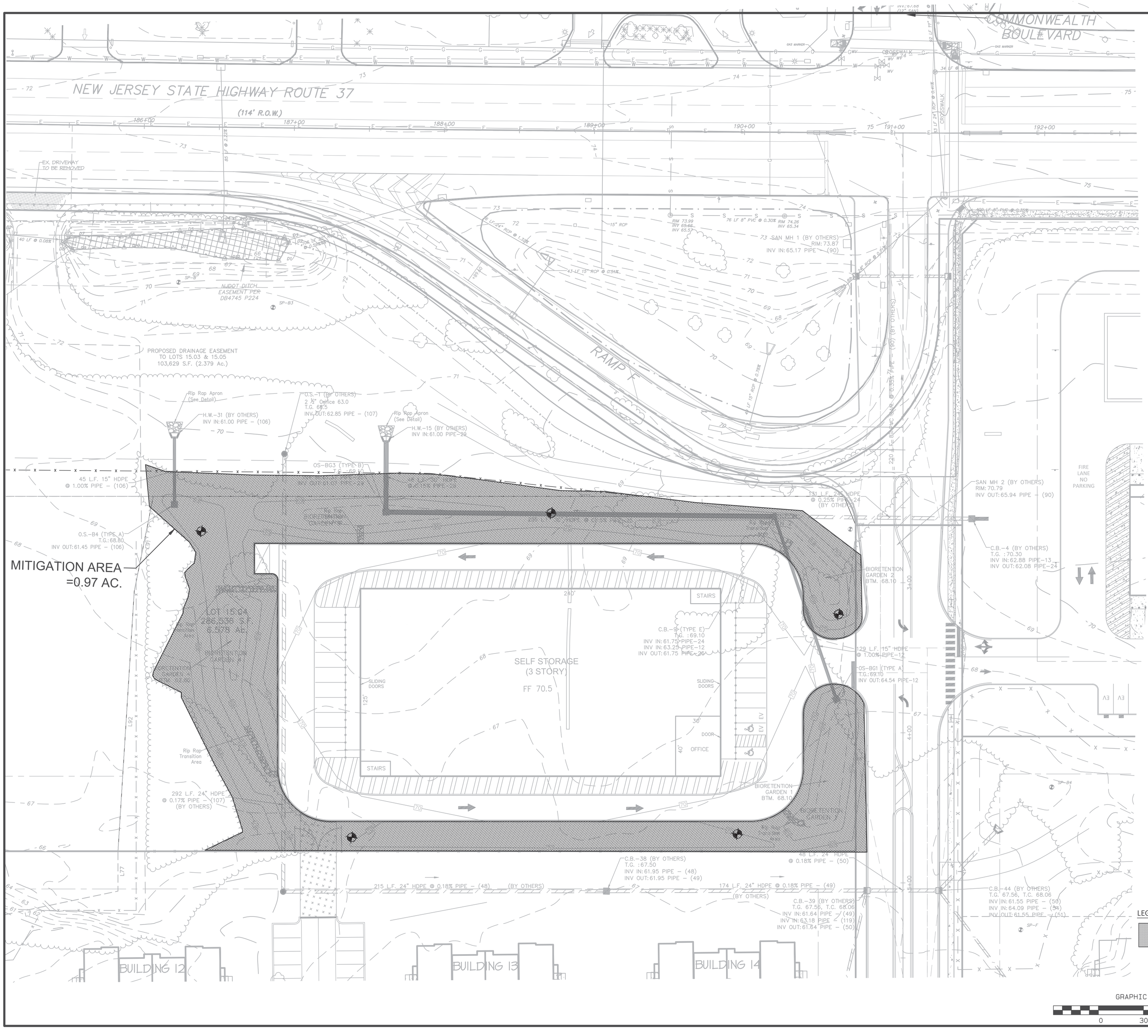
BUILDING 12

BUILDING 13

BUILDING 14

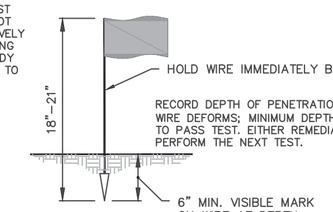
MARKET

FUELING STATION



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.

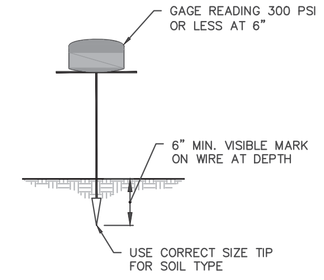
* WIRE MAY BE RE–INSERTED IF/WHEN AN OBSTRUCTION (ROCK, ROOT, DEBRIS) IS ENCOUNTERED



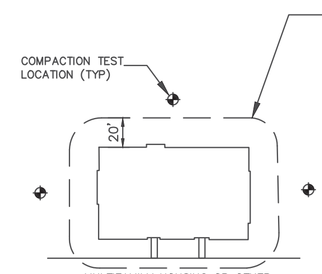
PROBING WIRE TEST
15.5 GA. STEEL WIRE (SURVEY FLAG)
N.T.S.

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. MEASURE DEPTH WHEN GAGE READING REACHES 300 PSI OR DEPTH OF 6"

* PENETROMETER MAY BE RE–INSERTED IF/WHEN AN OBSTRUCTION (ROCK, ROOT, DEBRIS) IS ENCOUNTERED.



HANDHELD SOIL PENETROMETER TEST
N.T.S.



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.

TYPICAL SOIL COMPACTION TESTING LOCATIONS
N.T.S.

SOIL DE-COMPACTION AND TESTING RE□□IREMENTS

A. SOIL COMPACTION TESTING RE□□IREMENTS

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. LOCATION ID'S SHALL BE USED TO COMPLETE 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.

B. COMPACTION TESTING METHODS

1. PROBING WIRE TEST (SEE DETAIL)

2. HAND-HELD PENETROMETER (SEE DETAIL)

3. TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL REQUIRED)

4. NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL REQUIRED)

5. 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.

6. DETAILED REQUIREMENTS FOR EACH COMPACTION TESTING METHOD CAN BE FOUND IN SECTION 19 "STANDARD FOR LAND GRADING" OF THE NJ STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION.

7. 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.

C. PROCED□□RES FOR SOIL COMPACTION MITIGATION

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

2. 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 MAY BE SUBSTITUTED SUBJECT TO DISTRICT APPROVAL.

DATE	REVISION	DRAWN	CHECKED	RELEASED

SOIL MITIGATION AND PREPARATION PLAN

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.

CIVIL ENGINEERS
LAND SURVEYORS
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LANDSCAPE ARCHITECTS
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DRAWN BY	DATE
MSM	08/01/22
DESIGNED BY	SCALE
JS	1"=30'
CHECKED BY	DRAWER NO.
JS	
RELEASED BY	PROJECT NO.
BPM	1221.0031
SHEET NO.	OF
14	20

Permanent Vegetative Cover for Soil Stabilization

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 Co-operative 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 of 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 soil as nearly as practical to a depth of 4 inches with a disc, springtooth harrow, or other suitable equipment. The final harrowing or discing operation should be on the general contour. Continue tillage until a reasonable uniform 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 or more before initiating seedbed preparation. See Standard for Management of High Acid Producing Soils for specific requirements.

3. SEEDING

A. Select a mixture from Table 4-2 or use 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 mixture are grasses and legumes which maximize growth at high temperatures, generally 85\176 F and above. See Table 4-3 (pg. 4-7), mixtures 1 to 5. 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 85\176 F. Many grasses become active at 65\176 F. See Table 4-3, mixtures 6-21. Adjustment of planting rates to compensate for the amount of Pure Live Seed 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 seeding 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 IV Mulching below) Hydroseeding is not a preferred seeding method because see and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep for conventional equipment to traverse or too obstructed with rocks, stumps, etc.

4. MULCHING

Mulching is required on all seeding. Mulch will insure 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 fee of seeds, or salt hay to be applied at the rate of 1 - 1/2 to 2 tons per acre (70 - 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 approximately 85% of the soil surface will be 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 cost

1. Peg and Twine. Drive 8 to 10 inch wooded pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be drived before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a cris-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 or cut stone of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it 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 anchore salt hay, hay or straw mulch.

a. Application 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 occuring, 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 turfgrass. Use at rates and wether conditions as recommended by the manufactorer to anchor mulch material. 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 to mulch, drying and curring shall no longer be soluble or dispersible in water. It 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 mulch - shall be wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder. This mulch shall not be mixed in the tank with seed. Use is limited to flatter slopes and duration optimum seeding periods in spring and fall.

C. Pelletized Mulch - Compressed and extruded paper and / or wood fiber product, which many contain co-plymers, tackifiers, fertilizers and coloring agents. The dry pellets, when applied to a seeded area and watered, forma mulch mat. Pelletized mulch shall be applied in accordance with the manufacturers recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-70 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 or renovation areas, seeded areas when weed-seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desired. Applying the full 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, and mulch is not used, supply new seedings with adequate water (a minimum of 1/4 inch 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 restw with the contractor. The timing of seeding, preparing the seedbed, applying nutrients, mulch and other management are essential. The seed application rates in Talbe 4-2 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.

Erosion control measures shall be designed and installed in accordance with the applicable standard contained herein.

The development and establishment of the plan shall include the following:

1. The cut face of earth excavations and fills shall be no steeper than the safe angle of repose for the materials encountered and flat enough for proper maintenance.

2. The permanently exposed faces of earth cuts and fills shall be vegetated or otherwise protected from erosion.

3. Provisions shall be made to safely conduct surface water to storm drains or suitable water courses and to prevent surface runoff from damaging cut faces and fill slopes

4. Subsurface drainage is to be provided in areas having a high-water table, to intercept seepage that would adversely affect slope stability, building foundations or create undesirable wetness. See Standard for Subsurface Drainage, pg. 32-1

5. Adjoining property shall be protected from excavation and filling operations.

6. Fill shall not be placed adjacent to the bank of a stream or channel, unless provisions are made to protect the hydraulic, biological, aesthetic and other environmental functions of the stream.

Permanent Stabilization with sod.

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" (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 diversion ditches, 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 1/2 the rate described above during seedbed preparation and repeat another 1/2" rate application of the same fertilizer withing 3 to 5 weeks after seeding. 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.

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 discing 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 seeding. 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 soil immediately prior to laying the sod.

B. Place sod strips with snug, even joints that are staggered. Open spaces invite erosion.

C. 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 in order to prevent voids which would cause drying of the roots.

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 channel work.

F. Immediately following installation, sod should be watered until moisture penetrates the soil layer beneath sod to a depth of 1 inch. Maintain optimum moisture for at least two weeks.

4. Topdressing - Since soil organic matter and slow release nitrogen fertilizer (water insoluble) are prescribed in Sections 1 and 2 in 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.

Topsoiling

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 slats 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 stabilization structures, channel stabilization measures, sedimentation basins, and waterways. See Standards 11 through 42.

4. Applying Topsoil

A. Topsoil should be handled only when it is dry enough to work without damaging soil structures; i.e., less than field capacity (see glossary).

B. A uniform application to an average depth of 5.0 inches, minimum of 4 inches, firmed in place is required. Alternative depths may be considered where special regulatory and/or industry design standards are appropriate such as on golf courses, sports fields, landfill capping, etc.. Soils with a pH of 4.0 and less or containing iron sulfide shall be covered with a minimum depth of 12 inches of soil having a pH of 5.0 or more, in accordance with the Standard for Management of High Acid Producing Soil (pg. 1-1).

C. Pursuant to the requirements in Section 7 of the Standard for Permanent Vegetative Stabilization, the contractor is responsible to ensure that permanent vegetative cover becomes established on at least 80% of the soils to be stabilized with vegetation. Failure to achieve the minimum coverage may require additional work to be performed by the contractor to include some or all of the following: supplemental seeding, re-application of lime and fertilizers, and/or the addition of organic matter (i.e. compost) as a top dressing. Such additional measures shall be based on soil tests such as those offered by Rutgers Cooperative Extension Service or other approved laboratory facilities qualified to test soil samples for agronomic properties.

[1]Friable means easily crumbles in the fingers, as defined in most soils texts
[2]Loamy means texture groups consisting of coarse loamy sands, sandy loam, fine and very fine sandy loam, loam, silt loam, clay loam, sandy clay loam and silty clay loam textures and having less than 35% coarse fragments (particles less than 2mm in size) as defined in the Glossary of Soil Science Terms, 1996, Soil Science Society of America.

Construction Specifications for Infiltration Structures

A back-up drainage system must be provided in case infiltration capacity fails or is exhausted.

The area planned for the structure should be roped off to prevent heavy equipment from compacting the underlying soils before the development site is graded.

To prevent compaction of the subsoil which will reduce its infiltration capacity, basins should be excavated with light earth moving equipment, preferably with tracks or over-sized tires rather than the normal rubber tires. Once the final construction phase is reached, the floor of the basin shall be deeply tilled with a rotary tiller or disc harrow and smoothed over with a leveling drag or equivalent grading equipment.

Within a week of construction, the floor and the side slopes of the basin should be seeded with water tolerant, low maintenance and rapid germinating grasses such as fescues. The condition of the newly established vegetation should be checked several times over the first few months, and, if necessary, remedial actions such as re-seeding, fertilizing and irrigation should be undertaken.

Maintenance for Infiltration Structures

Infiltration structures should be inspected on a routine basis (at least semi-annually) and after a major storm event. Important items to examine include: differential settlement, cracking, erosion, leakage or tree growth on the embankment (basins), the condition of the riprap in the inlet and pilot channels (basins), sediment accumulation and the density of grass. site design should re revaluated should clogging occur to determine the factors responsible for the problem.

These inspections should be used to determine the effectiveness of the regular maintenance schedule as well as to determine the timing of corrective maintenance procedures.

Buffers, side slopes and basin floors should be mowed at least twice a year. A routine should be developed for the removal of trash and debris. Grading and landscaping around facility inlets should be designed to facilitate mowing, trimming, debris removal and other general maintenance. Grass clippings and accumulated organic matter must be

SOIL EROSION AND SEDIMENT CONTROL NOTES

REV: FEBRUARY 19, 2019

1. The Ocean County Soil Conservation District shall be notified forty-eight (48) hours in advance of any land disturbance.
2. All work is to be done in accordance with the State Standards for Soil Erosion and Sediment Control in New Jersey.
3. All Soil Erosion and Sediment Control practices are to be installed prior to any major soil disturbance or in their proper sequence and maintained until permanent protection is established.
4. Any changes to the Certified Soil Erosion and Sediment Control Plans will require the submission of revised Soil Erosion and Sediment Control Plans to the District. The revised plans must meet all current "The Standards for Soil Erosion and Sediment Control in New Jersey, 7th Edition, January 2014, Revised July 2017. Link to 2014 Standards: http://www.state.nj.us/agriculture/divisions/anr/nrc/njerosion.html
5. N.J.S.A 4:24-39 et seq. requires that no Certificates of Occupancy be issued before there has been compliance with provisions of a certified plan for permanent measures. All site work, and all work around individual lots in subdivisions, must be completed prior to the District issuing a Report of Compliance for the issuance of a Certificate of Occupancy by the Municipality.
6. Any disturbed areas that will be left exposed more than sixty (60) days, and not subject to construction traffic, will immediately receive a temporary seeding. If the season prevents the establishment of temporary cover, the disturbed areas will be mulched with straw, or equivalent material within 14 days, at a rate of 2 to 2 ½ tons per acre, according to State Standard for Stabilization with Mulch Only.
7. Immediately following initial disturbance or rough grading, all critical areas subject to erosion (i.e. steep slopes and roadway embankments) will receive temporary seeding in combination with straw mulch or a suitable equivalent, at a rate of 1 ½ to 2 tons per acre, according to State Standards.
8. A sub-base course will be applied immediately following rough grading and installation of improvements to stabilize streets, roads, driveways, and parking areas. In areas where no utilities are present, the sub-base shall be installed within fifteen (15) days of the preliminary grading.
9. Any steep slopes (3:1 or greater) or any existing roadways receiving pipeline installation will be backfilled and stabilized daily, as the installation continues.
10. The Standard for Stabilized Construction Access requires the installation of a stone pad using clean crushed angular stone (ASTM C-33, size No. 2 or 3) at all construction driveways where vehicles will access paved roadways from unpaved areas of the site.
11. All sediment washed, dropped, spilled, or tracked onto roadways (public or private) or other impervious surfaces will be removed immediately.
12. Permanent vegetation is to be seeded or sodded on all exposed areas within ten (10) days after final grading. At the time of the final inspection, you are required to provide confirmation that the proper type and amount of seed, lime and fertilizer have been used for permanent stabilization work. Straw mulch is required on all seeding.
13. At the time that site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will not provide a suitable environment to support adequate vegetative ground cover shall be removed or treated in such a way that it will permanently adjust the soil conditions and render it suitable for vegetative ground cover. If the removal or treatment of the soil will not provide suitable conditions, non-vegetative means of permanent ground stabilization will have to be employed.
14. In accordance with the Standard for Management of High Acid Producing Soils, any soil having a pH of 4 or less or containing iron sulfides shall be covered with a minimum of twelve (12) inches of soil having a pH of 5 or more prior to seedbed preparation. Areas where trees or shrubs are to be planted shall be covered with a minimum of twenty-four (24) inches of soil having a pH of 5 or more.
15. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operational. Conduit outlet protection is not required in basins acting as sediment basins during construction.
16. Unfiltered dewatering is not permitted. Necessary precautions must be taken during all dewatering operations to minimize sediment transfer. Any dewatering methods used must be in accordance with the Standard for Dewatering.
17. Should the control of dust at the site be necessary, the site will be sprinkled until the surface is wet, temporary vegetative cover shall be established or mulch shall be applied as required by the Standard for Dust Control.
18. Stockpile and staging locations established in the field shall be placed within the limit of disturbance according to the certified plan. Staging and stockpiles not located within the limit of disturbance will require certification of a revised Soil Erosion and Sediment Control Plan. The District reserves the right to determine when certification of a new and separate Soil Erosion and Sediment Control Plan will be required for these activities.
19. All soil stockpiles are to be temporarily stabilized in accordance with Soil Erosion and Sediment Control note #6. Stockpiles should be situated so as to not obstruct natural drainage or cause off-site environmental damage.
20. The property owner shall be responsible for any erosion or sedimentation that may occur below stormwater outfalls or offsite as a result of construction of the project.

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

1. Site Preparation

A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulching application, and mulch anchoring. All grading should be done in accordance with the Standards for Land Grading, pg. 19-1. (See Mulching notes under Permanent Vegetative Cover for Soil Stabilization for mulching and mulch anchoring requirements.)

B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.

C. Immediately prior to seeding, the surface should be scarified 6" to 12" where there has been soil compaction. This practice is permissible only where there is no danger to underground utilities (cables, irrigation systems, etc.).

2. Seedbed Preparation

A. 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. Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-20-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. Apply limestone at a rate to be established based upon soil testing. 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.

B. Work lime and fertilizer into the soil 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 reasonable uniform seedbed is prepared.

C. Inspect seedbed just before seeding. If traffic has left the soil compacted, the area must be retilled in accordance with the above.

D. Soils high in sulfides or having a pH of 4 or less refer to Standard for Management of High Acid Producing Soils, pg. 1-1.

3. Seeding

A. Select seed recommendations from Table 7-2.

B. Refer to Permanent Vegetative Cover for Soil Stabilization Notes 3B through 3D.

4. Mulching

A. Refer to Permanent Vegetative Cover for Soil Stabilization Notes 4A through 4C.

5. This project is located in plant hardiness Zone 7a, b.

TABLE 7-2 *MANCHESTER TWP. - ZONE 6b

TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH.

SEED SELECTIONS	SEEDING RATE[1] (pounds) Per Acre	SEEDING RATE[1] (pounds) Per 1000 Sq. Ft.	OPTIMUM SEEDING DATE[3] Based on Plant Hardiness Zone: ZONE 5b, 6a	ZONE 6b	ZONE 7a, b	OPTIMUM SEED DEPTH[4] (Inches)
COOL SEASON GRASSES						
1. Perennial ryegrass	100	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5
2. Spring oats	86	2.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	1.0
3. Winter Barley	96	2.2	8/1-9/15	8/15-10/1	8/15-10/15	1.0
4. Annual ryegrass	100	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5
5. Winter Cereal Rye	112	2.8	8/1-11/1	8/1-11/15	8/1-12/15	1.0
WARM SEASON GRASSES						
6. Pearl millet	20	0.5	6/1-8/1	5/15-8/15	5/1-9/1	1.0
7. Millet (German or Hungarian)	30	0.7	6/1-8/1	5/15-8/15	5/1-9/1	1.0

* ← PREFERRED SEED MIXTURE

1 Seeding rate for warm season grass, selections 5 - 7 shall be adjusted to reflect the amount of Pure Line Seed (PLS) as determined by a germination test result. No adjustment is required for cool season grasses.
2 May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
3 Plant Hardiness Zone (see figure 7-1, pg. 7-4.)
4 Twice the depth for sandy soils

DUST CONTROL AND WIND EROSION

The following methods should be considered for controlling dust:

Mulches – See Standard of Stabilization with Mulches Only
Vegetative Cover – See Standard for: Temporary Vegetative Cover, Permanent Vegetative Cover for Soil Stabilization and Permanent Stabilization with Sod.
Spray-On Adhesives – On mineral soils (not effective on muck soils). Keep traffic off these areas.

Table 16-1 Dust Control Materials

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
Anionic asphalt emulsion	7:1	Coarse Spray	1200
Latex emulsion	12.5:1	Fine Spray	235
Resin in water	4:1	Fine Spray	300
Polyacrylamide (PAM) – spray on Polyacrylamide (PAM) – dry spread	Apply according to manufacturer's instructions. May also be used as an additive to sediment basins to flocculate and precipitate suspended colloids. See Sediment Basin standard, p. 26-1		
Acidulated Soy Bean Soap Stick	None	Coarse Spray	1200

Tillage – to roughen surface and bring clods to the surface. This is a temporary emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart and spring-toothed harrows are examples of equipment which may produce the desired effect.
Sprinkling – Site is sprinkled until the surface is wet.
Barriers – Solid board fences, snow fences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing.
Calcium Chloride – Shall be in the form of loose, dry granules or flakes fine enough to feed through commonly used spreaders at a rate that will keep surface moist but not cause pollution or plant damage. If used on steeper slopes, then use other practices to prevent washing into streams or accumulation around plants.
Stone – Cover surface with crushed stone or coarse gravel.

TABLE 4-3

PERMANENT VEGETATIVE MIXTURES, PLANTING RATES AND PLANTING DATES[1]

PLANTING DATES. *MANCHESTER TWP. - ZONE 6b. O = Optimal Planting period A = Acceptable Planting period. PLANT HARDINESS ZONES (see Figure 4-1)

SEED MIXTURE[2]	PLANTING RATE[3] lbs/acre	lbs/1000 sq. ft.	Zone 5b, 6a 3/15-5/31	Zone 5b, 6a 6/1-7/31	Zone 5b, 6a 8/1-10/1	Zone 6b 3/1-4/30	Zone 6b 5/1-8/14	Zone 6b 8/15-10/15	Zone 7a, 7b 2/1-4/30	Zone 7a, 7b 5/1-8/14	Zone 7a, 7b 8/15-10/30	MAINTENANCE LEVEL[4]	REMARKS
WARM SEASON SEED MIXTURES													
1A. For Pinelands National Reserve Seed mixtures see Table 4-4 page 4-17			O			O			O				
1. Switchgrass and/or Coastal panicgrass plus or Flatpea	15 15 ~~20~~ 20	.35 .35 ~~.45~~ .45	O			O			O			C-D	
2. Deertongue or Switchgrass Redtop	15 20 1 ~~10~~	.35 .45 .1 ~~.23~~	O			O			O			C-D	Use Deertongue if pH < 4.0. Switchgrass is superior wildlife plant. Use for waterways. Redtop provides quick cover.
3. Switchgrass Deertongue Little Bluestem Sheep fescue plus Partridge pea	15 10 20 20 10	.35 .25 .45 .45 .25	O			O			O			C-D	Pinelands mixture.
4. Switchgrass Big Bluestem Little Bluestem Sand lovegrass Coastal panicgrass	10 5 5 4 10	.25 .10 .10 .10 .25	O			O			O			C-D	Native warm-season mixture.
5. Bermudagrass Zoysiagrass (seed) Zoysiagrass (sprigs)	15 30	0.35 0.70	O			O			O			A-D	Bermudagrass has superior salt tolerance. Zoysia has greater wear tolerance
COOL SEASON SEED MIXTURES	130	3	A	A[5]	O	A	A[5]	O	A	A[5]	O		General low-maintenance mixture.
6. Fine Fescue (Blend) Hard Fescue Chewings fescue Strong Creeping Red Fescue Kentucky bluegrass Perennial ryegrass plus White clover (see note at right)	45 20 5	.1 ..5 .10										B-D	White clover can be removed when used to establish lawns
7. Strong Creeping red fescue Kentucky bluegrass Perennial ryegrass or Redtop plus White clover	130 50 20 10 5	3 1 .5 .25 .10	A	A[5]	O	A	A[5]	O	A	A[5]	O	B-D	Suitable waterway mix. Canada bluegrass more drought tolerant. Use Redtop for increased drought-tolerance.
8. Tall fescue (turf-type) or Strong Creeping red fescue or Perennial ryegrass Flatpea	30 30 30 25	.7 .7 .7 .60	O	A[6]		O	A[6]		O	A[6]		B-D	Tall fescue best selected for droughty conditions. Use Creeping red fescue in heavy shade. Use Flatpea to suppress woody vegetation.
9. Deertongue Redtop Wild rye (Elymus) Switchgrass	20 2 15 25	.45 .05 .35 .60	O			O			O			C-D	Native wet mix.

TABLE 4-3 (CONT.)

SEED MIXTURE	lbs/acre	lbs/1000 sq. ft.	Zone 5b, 6a 3/15-5/31	Zone 5b, 6a 6/1-7/31	Zone 5b, 6a 8/1-10/1	Zone 6b 3/1-4/30	Zone 6b 5/1-8/14	Zone 6b 8/15-10/15	Zone 7a, 7b 2/1-4/30	Zone 7a, 7b 5/1-8/14	Zone 7a, 7b 8/15-10/30	MAINTENANCE LEVEL	REMARKS
10. Tall fescue (turf-type) Perennial ryegrass or White clover (see note at right)	265 20 ~~10~~ 5	6 5 ~~.25~~ .10	O	A[5]	A[5]	O	A[5]	A[5]	O	A[5]	A[5]	C-D	white clover can be excluded on lawn sites
11 Kentucky Bluegrass Turf-type Tall fescue	~~15~~ 45 22	~~0.33~~ 1 5	A	A[5]	O	A	A[5]	O	A	A[5]	O	C-D	Filter strip use for nutrient uptake.
12. Turf-type Tall fescue (Blend of 3 cultivars)	350	8	A	A[5]	O	A	A[5]	O	A	A[5]	O	C-D	Use in a managed filter strip for nutrient uptake.
13. Hard Fescue and/or Chewing fescue and/or Strong creeping red fescue Perennial ryegrass Ky. bluegrass (blend)	175 45 45	4 1 1	A	A[5]	O	A	A[5]	O	A	A[5]	O	A-C	General lawn/recreation.
14. Tall fescue Ky. bluegrass (blend) Perennial ryegrass (blend)	265 20 20	6 0.50 0.50	A	A[5]	O	A	A[5]	O	A	A[5]	O	A-B	Athletic field/ 3 cultivar mix of Kentucky Bluegrass.
15. Hard fescue Chewings fescue Strong Creeping red fescue Perennial ryegrass	130 45 45 10	3 1 1 .25	A	A[5]	O	A	A[5]	O	A	A[5]	O	C-D	Low-maintenance fine fescue lawn mix.
16. Rough bluegrass Strong Creeping red fescue	90 130	2.0 3	A	A[5]	O	A	A[5]	O	A	A[5]	O	C-D	Moist shade.
17. Creeping bentgrass Creeping red fescue Alkali saltgrass	45 45 45	1 1 1	A	A[5]	O	A	A[5]	O	A	A[5]	O	B-D	Use bentgrass under wetter conditions. Saltgrass will only persistent under saline conditions.
18. Hard or Sheeps fescue N. E. wildflower mixture	25 12	0.60 0.35	O	A	O	O	A	O	O	A	O	C-D	Regional Wildflower mix Hydroseeding not recommended.
19. a. Smooth cordgrass b. Saltmeadow cordgrass	veg veg					O	Before July 1		O	Before July 1		D	Planted in the intertidal zone. Planted above mean high tide.
20. American Beachgrass Coastal Panicgrass	Veg 20	.45				Before April 1			O			D	Coastal Panicgrass may be interseeded between rows of beachgrass
21. a. Purpleosier willow b. Dwarf willow c. Redosier dogwood d. Silky dogwood	veg veg. veg. veg.		Before May 10			Before May 10			Before May 1			D	Also refer to Chapters 16 and 18 of USDA NRCS Engineering Field Handbook

* ← PREFERRED SEED MIXTURE

Table 4-3 Footnotes:

1. See Appendix B for descriptions of turf grass mixtures and cultivars. The actual amount of warm-season grass mixture used in Table 3 (seed mix 1-7) shall be adjusted to reflect the amount of PLS as determined by germination testing results. No adjustment is required for cool-season grasses (seed mixtures 8-20).

2. Seeding mixtures and/or rates not listed above may be used if recommended by the local Soil Conservation District, Natural Resources Conservation Service; recommendations of Rutgers Cooperative Extension may be used if approved by the Soil Conservation District. Legumes (white clover, flatpea, lespedeza) should be mixed with proper innoculant prior to planting.

3. 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 of the seeded area and mowed once. Grass seed mixture checked by the State Seed Analyst, New Jersey Department of Agriculture, Trenton, New Jersey, will assure the purchaser that the mixture obtained is the mixture ordered, pursuant to the N.J. State Seed Law, N.J.S.A. 4:8-17.13 et. seq.

O = optimal planting period A = acceptable planting period

4. Maintenance Level:

A: Intensive mowing, (2-4 days), fertilization, lime, pest control and irrigation (Examples – high-maintenance lawns, commercial and recreation areas, public facilities).

B: Frequent mowing, (4-7 days), occasional fertilization, lime and weed control (Examples - home lawns, commercial sites, school sites).

C: Periodic mowing (7-14 days), occasional fertilization and lime (Examples - home lawns, parks).

D: Infrequent or no mowing, fertilization and lime the first year of establishment (Examples - roadsides, recreation areas, public open spaces)

5. Summer seedings should only be conducted when the site is irrigated. Mixes including white clover require that at least six weeks of growing season remain after seeding to ensure establishment before freezing conditions.

Table 4-2
Permanent Stabilization Mixtures for Various Uses

Application	PLANTING MIXTURES BY SOIL DRAINAGE CLASS/[1] (see Table 4-3): Excessively Drained	Well to Moderately Well Drained	Somewhat Poorly to Poorly Drained
Residential/commercial lots	10, 12, 15	6, 10, 12, 13, 14, 15	16
Pond and channel banks, dikes, berms and dams	2, 5, 6, 10	5, 6, 7, 8, 9, 15	2, 8, 16, 17
Drainage ditches, swales, detention basins	2, 9, 11	2, 7, 9, 11, 12, 17	2, 9, 16, 17
Filter Strips	12	11, 12	11, 12
Grasses waterway, spillways	2, 3, 9, 10, 12	6, 7, 9, 10, 11, 12	2, 9, 11,12
Recreation areas, athletic fields	5, 12, 15, 18	12, 13, 14, 15, 18	16
Special Problem Sites			
Steep slopes and banks, roadsides, borrow areas	2, 3, 4 ,6	2, 3, 5, 7, 8, 9, 10, 15, 18	2, 9, 10, 11, 12
Sand and gravel pits, Sanitary landfills	1, 2, 3, 4, 6, 20	1, 2, 3, 4, 5, 6, 8, 15, 20	2, 8
Dredged material, spoilbanks, Borrow areas	2, 3, 6, 20	2, 3, 6, 11,	2,8
Streambanks & shorelines[2]	2, 8, 20, 21a	2, 8, 19b, 20, 21a, 21b	2, 8, 19a, 21a,b,c,d
Utility rights-of-way	3,7,180	3, 7	8, 9, 17

1. Refer to Soil Surveys for drainage class descriptions.
2. Refer to Soil Bioengineering Standard for additional seed mixtures.
3. Spillways only
4. See Appendix E for description of turf grasses and cultivars

STABILIZATION WITH MULCH ONLY

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 Standards for Land Grading.
B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.
2. Protective Materials
A. Unrotted small-grain straw, at 2.0 to 2.5 tons per acre, is spread uniformly at 90 to 115 pounds per 1,000 square feet and anchored with a mulch tool, liquid mulch binder, or netting tie down. Other suitable materials may be used if approved by the Soil Conservation District. The approved rates above have been met when the mulch covers the ground completely upon visual inspection, i.e. the soil cannot be seen below the mulch.
B. Synthetic or organic soil stabilizers may be used under suitable conditions and in quantities as recommended by the manufacturer.
C. Wood-fiber or paper-fiber mulch at the rate of 1,500 pounds per acre (or according to the manufacturer's requirements) may be applied by a hydroseeder.
D. Mulch netting, such as paper jute, excelsior, cotton, or plastic, may be used.
E. Woodchips applied uniformly to a minimum depth of 2 inches may be used. Woodchips will not be used on areas where flowing water could wash them into an inlet and plug it.
F. Gravel, crushed stone, or slag at the rate of 9 cubic yards per 1,000 sq. ft. applied uniformly to a minimum depth of 3 inches may be used. Size 2 or 3 (ASTM C-33) is recommended.
3. Mulch Anchoring – should be accomplished immediately after placement of hay or straw mulch to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area and steepness of slopes.
A. 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.
B. Mulch Nettings – Staples paper, cotton, or plastic nettings over mulch. Use degradable netting in areas to be mowed. Netting is usually available in rolls 4 feet wide and up to 300 feet long.
C. Crimper Mulch Anchoring Coulter Tool – A tractor-drawn implement especially designed to punch and anchor mulch into the soil surface. This practice affords maximum erosion control, but its use is limited to those slopes upon which the tractor can operate safely. Soil penetration should be about 3 to 4 inches. On sloping land, the operation should be on the contour.
D. Liquid Mulch-Binders
1. Applications should be heavier at edges where wind catches the mulch, in valleys, and at crests of banks. Reminder of area should be uniform in appearance.
2. Use one of the following:
a. Organic and Vegetable Based Binders – Naturally occurring, powder based, hydrophilic materials that mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membrane networks of insoluble polymers. The vegetable gel shall be physically harmless and not result in a phyto-toxic effect or impede growth of turfgrass. Vegetable based gels shall be applied at rates and weather conditions recommended by the manufacturer.
b. Synthetic Binders – High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied a rates and weather conditions recommended by the manufacturer and remain tacky until germination of grass.

ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL NOTES FOR PROJECTS WITH BASINS

1. Basin must be properly constructed and permanently stabilized, and conduit outlet protection installed, prior to the drainage system becoming operational.

2. The Standards for Soil Erosion and Sediment Control have specific requirements for topsoiling, the installation of sod, temporary and/or permanent vegetative cover and land grading. The text found on pages 6-2 (sec. 2D), 7-1 (sec. 1C), 8-2 (sec. 3D) and 19-2 (last paragraph) serve to help minimize soil compaction and reduce maintenance.

3. Ownership and responsibility for the operation and maintenance of the detention structure must be determined during design and shown on the plans and on the completed "Hydraulic and Hydrologic Data Base Summary Form." To be effective over a long period of time, the structure must be properly maintained.

MAINTAINING VEGETATION

Methods and Materials
A preventative maintenance program anticipates requirements and accomplishes work when it can be done with least effort and expense to insure adequate vegetative cover.

Maintenance should occur on a regular basis, consistent with favorable plant growth, soil and climatic conditions. This involves regular seasonal work for mowing, fertilizing, liming, watering, pruning, fire control, weed and pest control, reseeding and timely repairs.

The degree of preventative maintenance needed depends upon the type of vegetation and its proposed function or use.

1. Mowing is a recurring practice and its intensity depends upon the function of the ground cover. On high to moderate (A to B) maintenance areas such as lawns, certain recreation fields, and picnic areas, mowing will be frequent (2 to 7 day intervals) and typically at a height of 2.5 to 3 inches. Return clippings from mowing (mulching mower) to the turf to reduce the amount of fertilizer needed to maintain the turf by as much as 50%. Some turf mixtures can be managed as naturalized stands requiring only one (cool season mixtures) or two (warm season mixtures) mowings per year. Mowing of naturalized areas is typically done at heights no less than 4 inches and should not be done between April 1 and July 15th to avoid disturbing ground nesting birds. The large amount of clipping debris generated by mowing naturalized areas will need to be removed and/or dispersed so the vegetation is not smothered. Burning of naturalized areas is another procedure used to manage naturalized turfs. Low maintenance (D) areas may be left unmowed to permit natural succession. See pg. 4-14 footnote #4, Maintenance Levels A,B,C and D in the Standard for Permanent Vegetative Cover, Table 4-3.

2. Incorporation of organic matter (for example, mature compost) into the soil will substantially reduce the need for fertilizer and irrigation inputs.

3. Fertilizer and lime should be applied as needed to maintain a dense stand of desirable species. Frequently mowed areas and those on sandy soils will require more frequent fertilization but at lower nutrient rates per application.

4. Lime requirement should be determined by soil testing every 2 or 3 years. Fertilization may increase the need for liming. Contact the local county extension office for details on soil testing and fertilization and pest control recommendations online at http://njaes.rutgers.edu/county/.

5. Fertilization and additions of other soil amendments are not recommended for managing native vegetation such as in the Pinelands National Reserve. See the Standard for Permanent Vegetative Stabilization for specific requirements in the PNR.

6. Weed invasion may result from abusive mowing from inadequate fertilizing and liming. Many newly established grasses will not survive if mowed at heights below 2.5 inches and at intervals greater than 7 days. Brush invasion is a common consequence of lack of mowing. The amount of weeds or brush that can be tolerated in any vegetated area depends upon the intended use of the land. Drainage ways are subject to rapid infestation by weed and woody plans. These should be controlled, since they often reduce drainage way efficiency. Control of weeds or brush is accomplished by using herbicides or mechanical methods.

7. Fire hazard is greater where dry vegetation has accumulated. The taller the vegetation, the greater the hazard.

8. Prune trees and shrubs to remove dead or damaged branches. Remove undesirable or invasive plants to maintain integrity of the landscape and enhance quality of permanent vegetative cover.

DATE	REVISION	DRAWN	CHECKED	RELEASED

SOIL EROSION AND SEDIMENT CONTROL DETAILS

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.

CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS
RESERVE SPECIALISTS
ARCHITECTS

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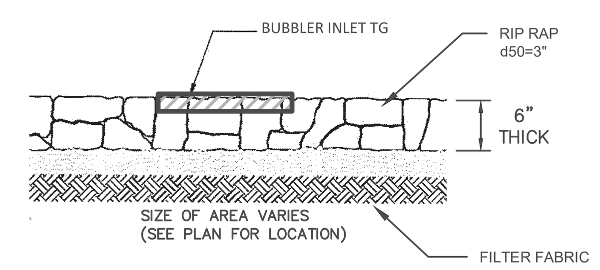
1856 Rt. 9, Toms River, NJ 08755 T: 732.797.3100 F: 732.797.3223

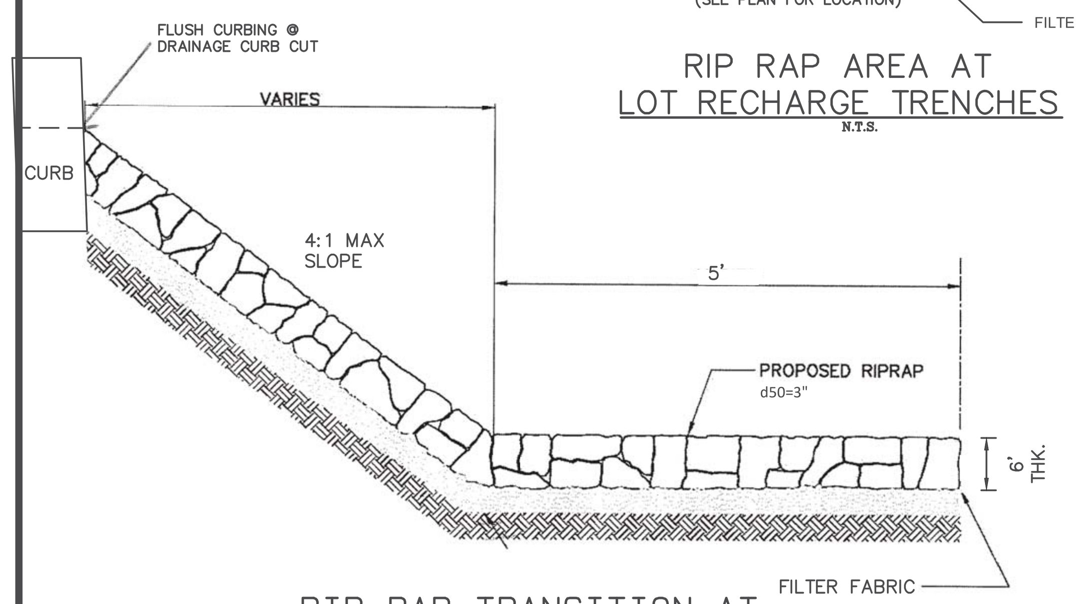
Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

DRAWN BY: MSM	DATE: 07/31/22
DESIGNED BY: JS	SCALE: N.T.S.
CHECKED BY: JS	DRAWER NO.
RELEASED BY: BPM	PROJECT NO.: 1221.0031
SHEET NO.: 15	OF: 20



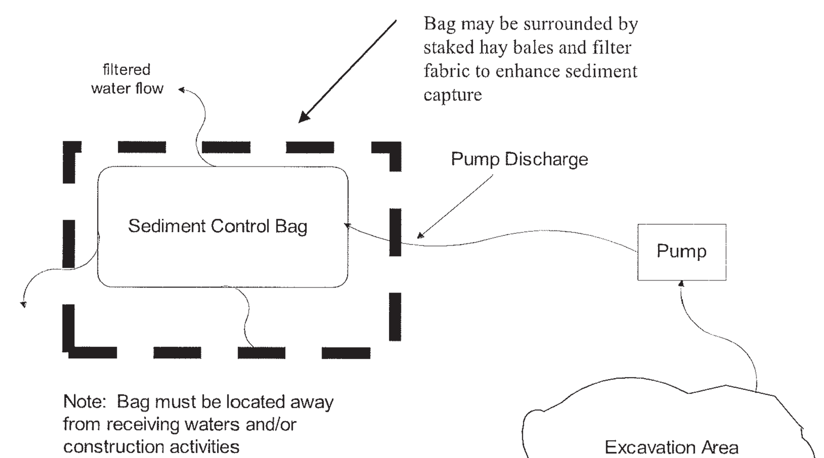
RIP RAP AREA AT LOT RECHARGE TRENCHES

N.T.S.



RIP RAP TRANSITION AT DRAINAGE CURB CUTS DETAIL

N.T.S.



Bags must be disposed of according to manufacturer's instructions. Bags may not be reused.

SEDIMENT CONTROL BAG FOR DEWATERING

N.T.S.

METHODS OF DEWATERING SEDIMENT BASINS

The dewatering methods shown here are inexpensive and operate automatically.

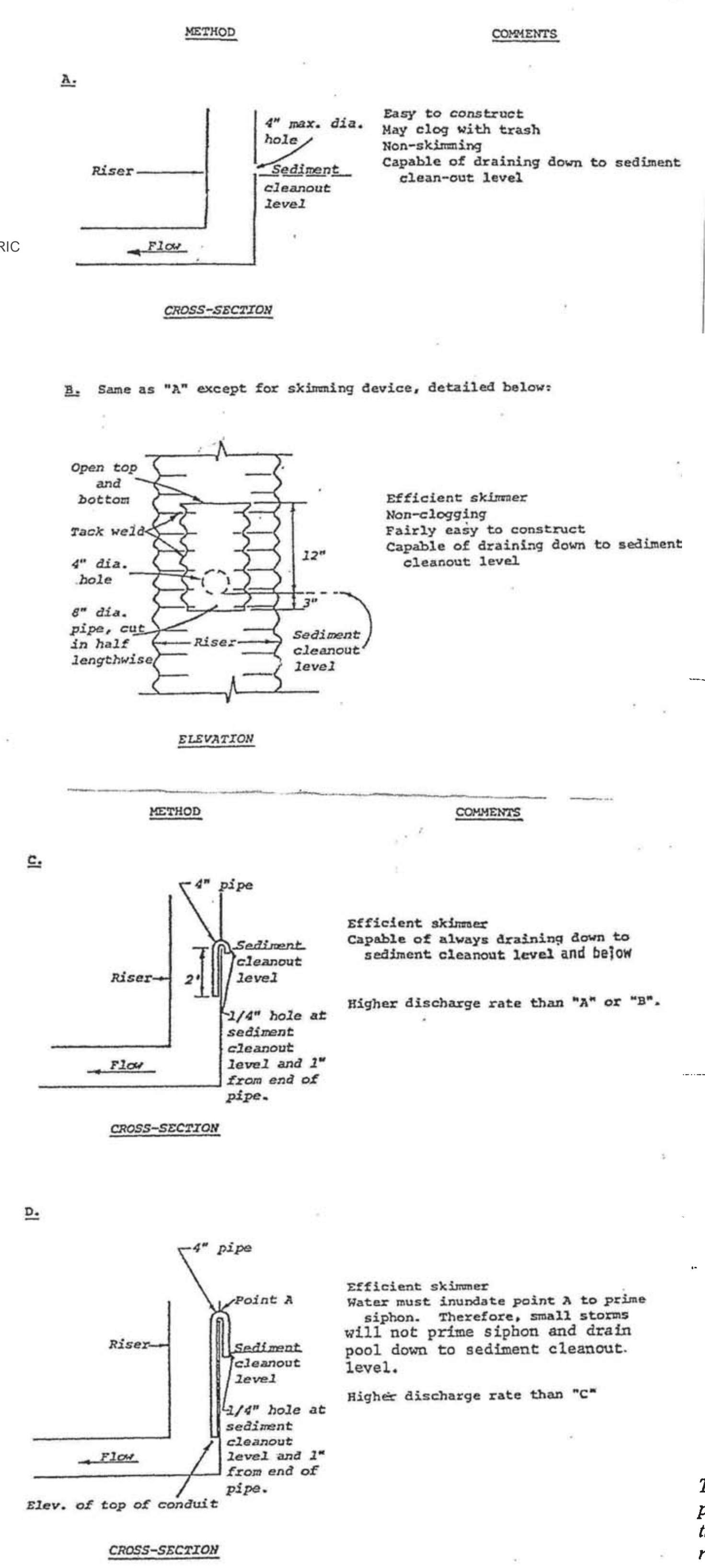
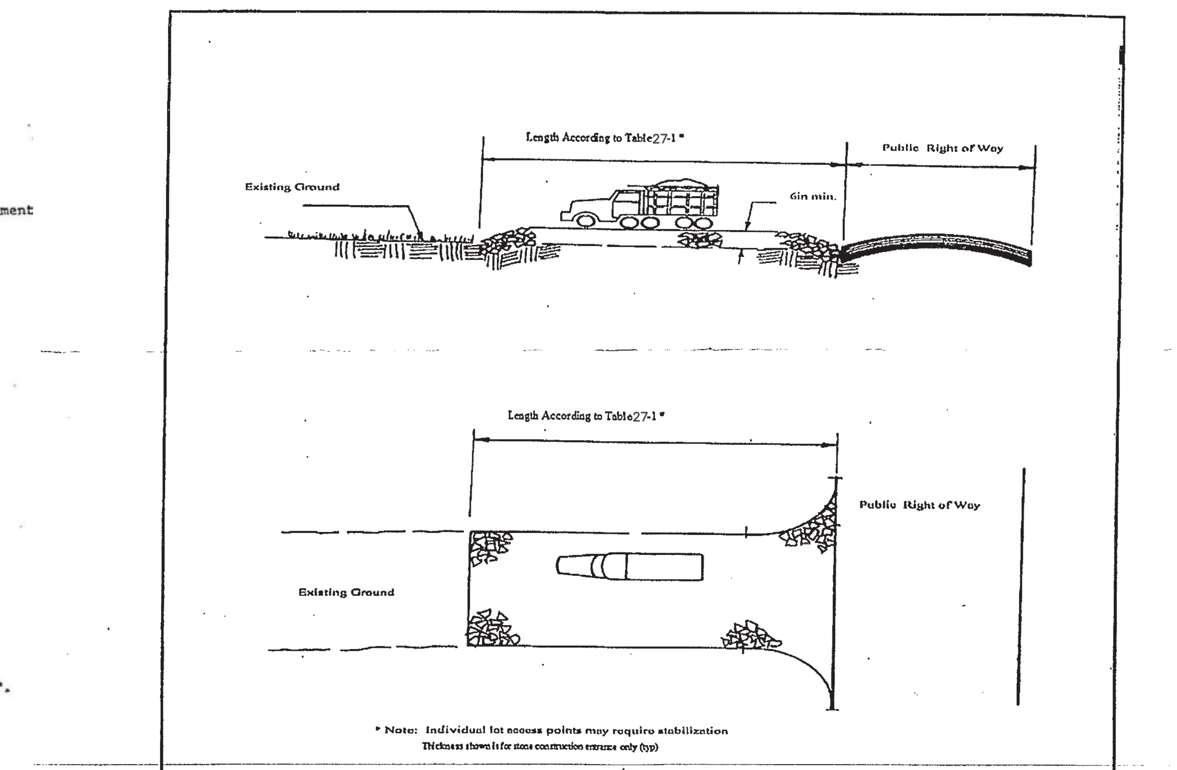


Table 27-1: Lengths of Construction Exits on Sloping Roadbeds

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 Hot Mix Asphalt Base Course, Mix I-2[1]	

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

STONE SIZE – NO. 2 (2-1/2" TO 1-1/2") OR NO. 3 (2 TO 1 INCH) CLEAN, CRUSHED, ANGULAR STONE



***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.*

***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.*

When the construction access exits 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.

Maintenance

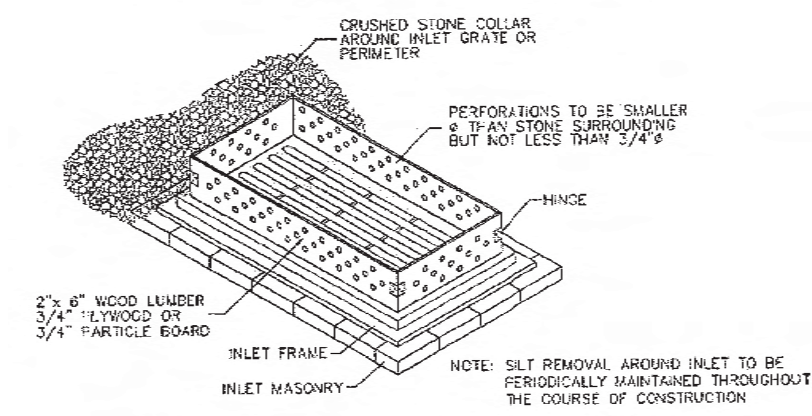
The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto roadways. This may require periodic top dressing with additional stone or additional length as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto roadways (public or private) or other impervious surfaces must be removed immediately.

Where accumulation of dust/sediment is inadequately cleaned or removed by conventional methods, a power broom or street sweeper will be required to clean paved or impervious surfaces. All other access points which are not stabilized shall be blocked off.

STABILIZED CONSTRUCTION ACCESS

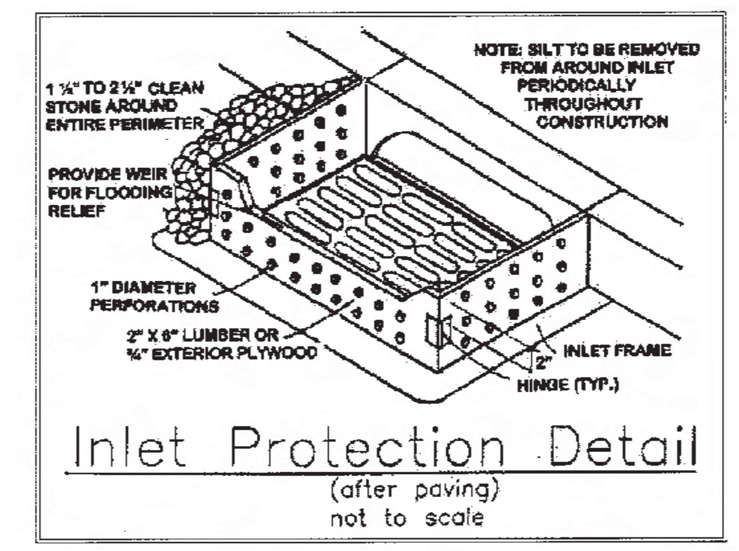
N.T.S.

Click the **back button or** the **Left Arrow** on your **Browser to return to the site.**



INLET SEDIMENT CONTROL STRUCTURE

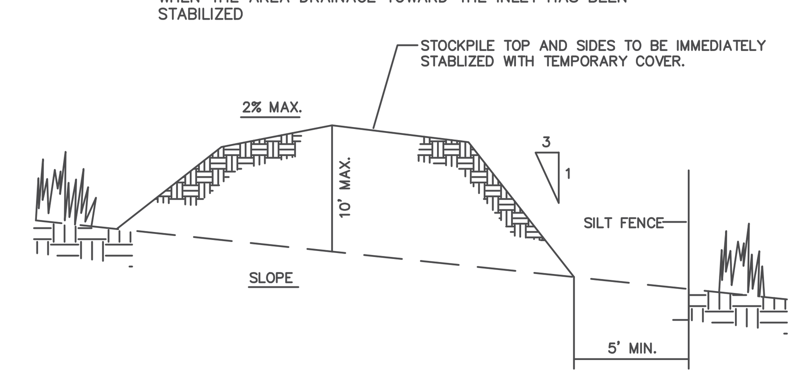
NOT TO SCALE



Inlet Protection Detail

(after paving)
not to scale

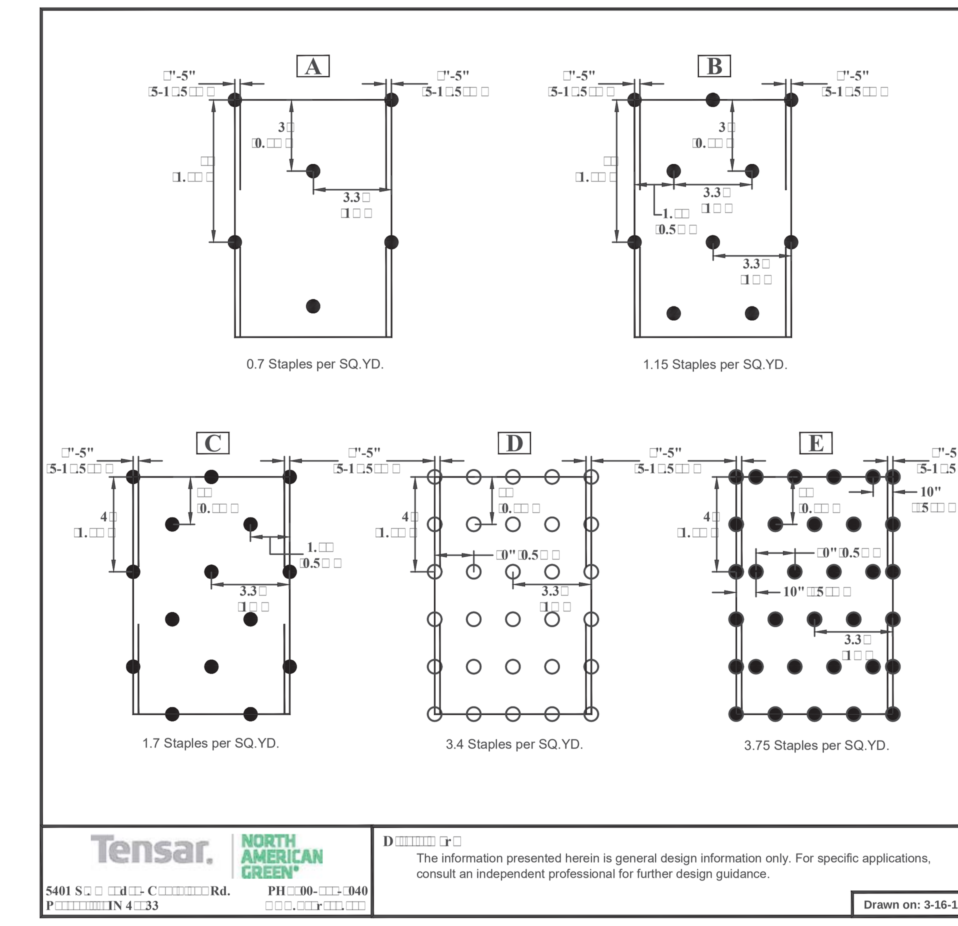
*MAINTENANCE, REPAIR AND REPLACEMENT SHALL BE MADE PROMPTLY, AS NEEDED. THE BARRIER SHALL BE REMOVED WHEN THE AREA DRAINAGE TOWARD THE INLET HAS BEEN STABILIZED



NOTES:
1. STOCKPILES TO BE PLACED AS DETERMINED IN THE FIELD
2. STOCKPILES NOT TO BE PLACED IN AREA WITH CONCENTRATED FLOW, WETLANDS, EXTREME SLOPE OR WITHIN 100' OF A NATURAL STREAM.

TEMPORARY TOPSOIL STOCKPILE DETAIL

N.T.S.

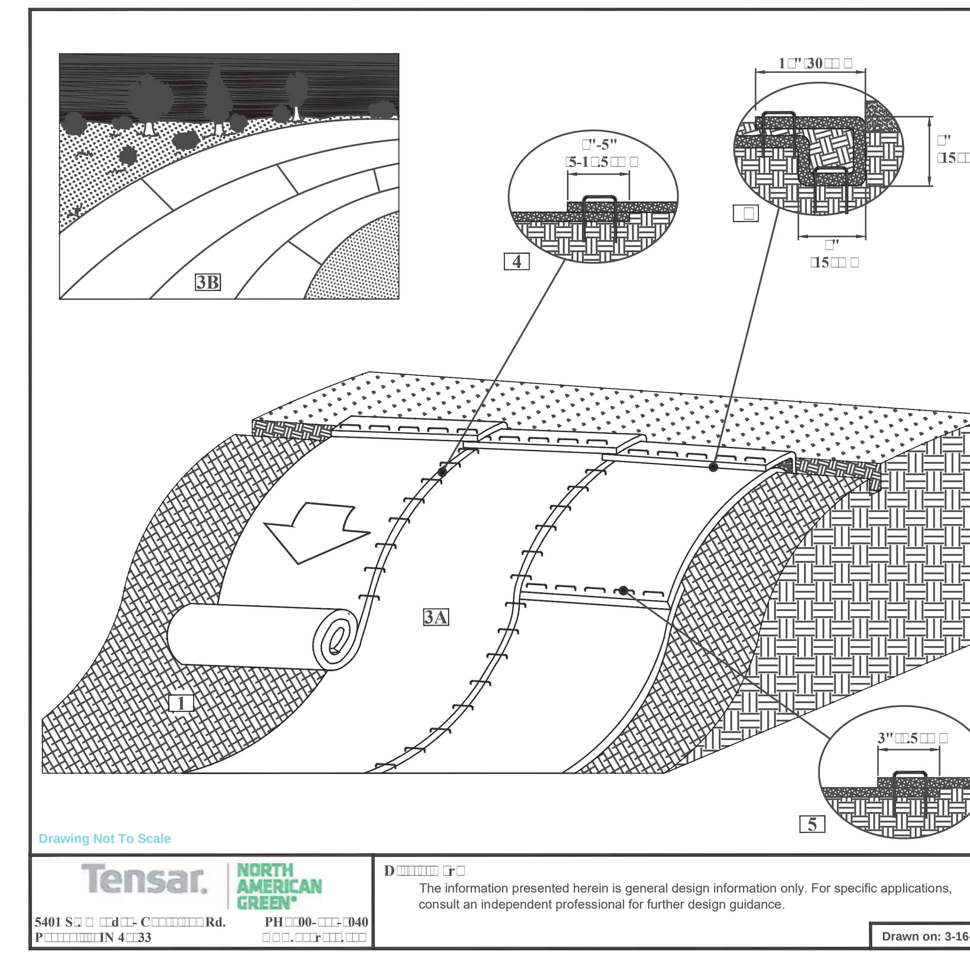


STAPLE PATTERN GUIDE

- 4:1 Slopes (A)
- 3:1 Slopes (B)
- 2:1 Slopes (C)
- 1:1 & Steeper Slopes (D)
- Medium/High Flow Channel (D)
- High Flow Channel And Shoreline (E)

NOTES:
* Use ECMDS® for more accurate staple pattern selection.

Drawing Not To Scale

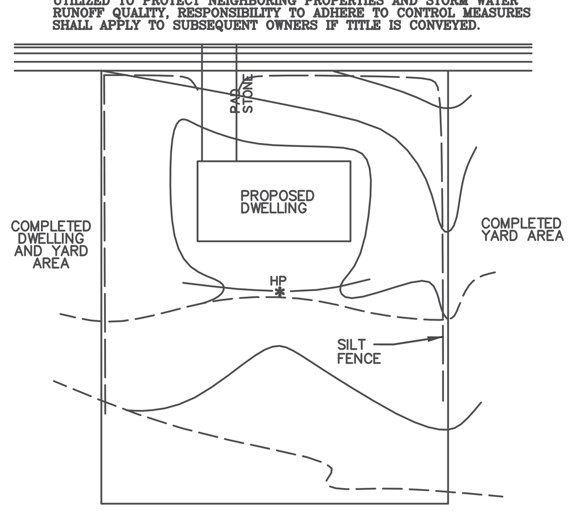


SLOPE INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12"(30cm) apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. The edges of parallel RECPs must be stapled with approximately 2" - 5" (5-12.5cm) overlap depending on the RECPs type.
5. Consecutive RECPs spliced down the slope must be end over end (Shingle style) with an approximate 3"(7.5cm) overlap. Staple through overlapped area, approximately 12"(30cm) apart across entire RECPs width.

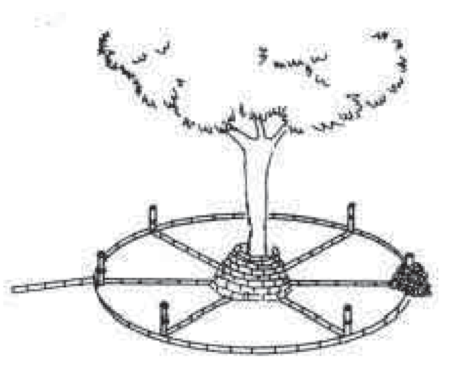
*NOTE:
In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.

IN THE EVENT A NEWLY PROPOSED DWELLING IS TO BE CONSTRUCTED IN AN AREA ADJOINING "COMPLETED" RESIDENCES AND YARD AREAS, PROPER SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE UTILIZED TO PROTECT NEIGHBORING PROPERTIES AND STORM WATER RUNOFF QUALITY. RESPONSIBILITY TO ADHERE TO CONTROL MEASURES SHALL APPLY TO SUBSEQUENT OWNERS IF TITLE IS CONVEYED.

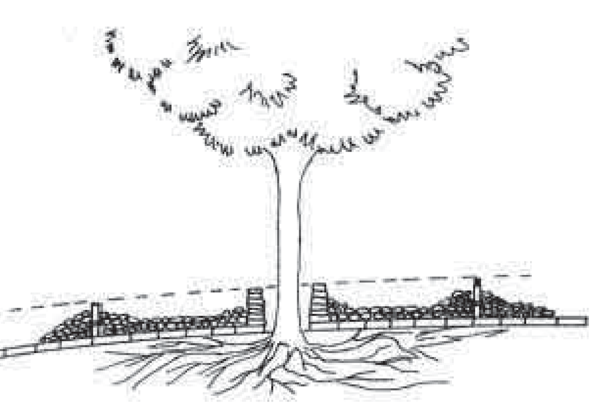


TYPICAL LOT CONTROL DETAIL

N.T.S.



Isometric



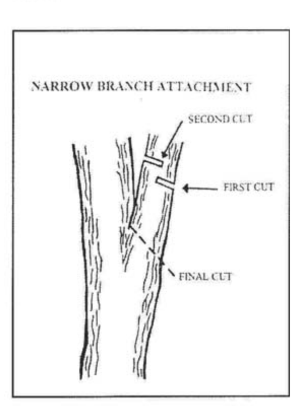
Section

Tree protection - tile and gravel will allow air circulation to root zone under a fill

TREE PROTECTION IN FILL AREAS

N.T.S.

Figure 9-2 - Removal of "V" Crotch Limb



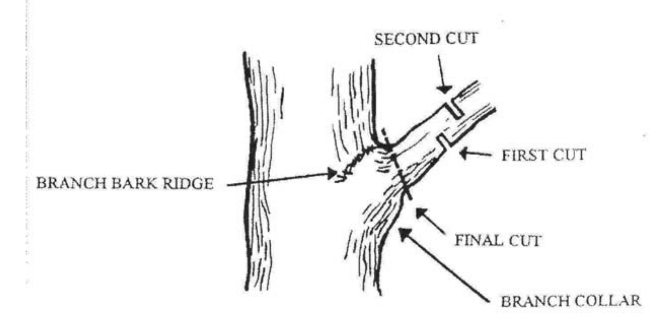
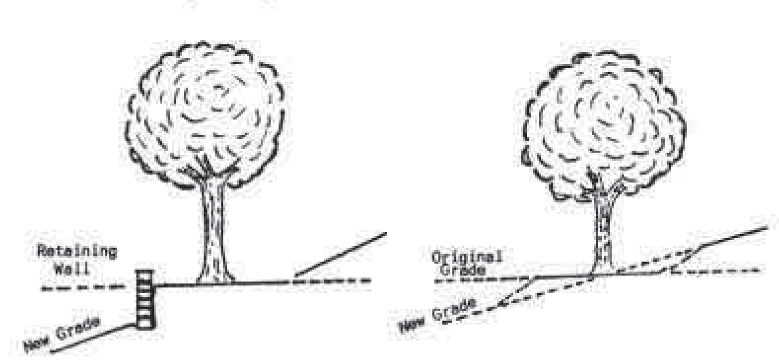


Figure 9-5: Tree Protection in Cut Areas

A retaining wall protects a tree from a lowered grade



TREE PROTECTION IN CUT AREAS

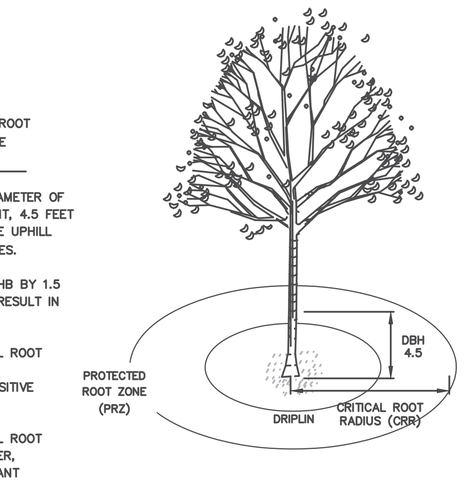
N.T.S.

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

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

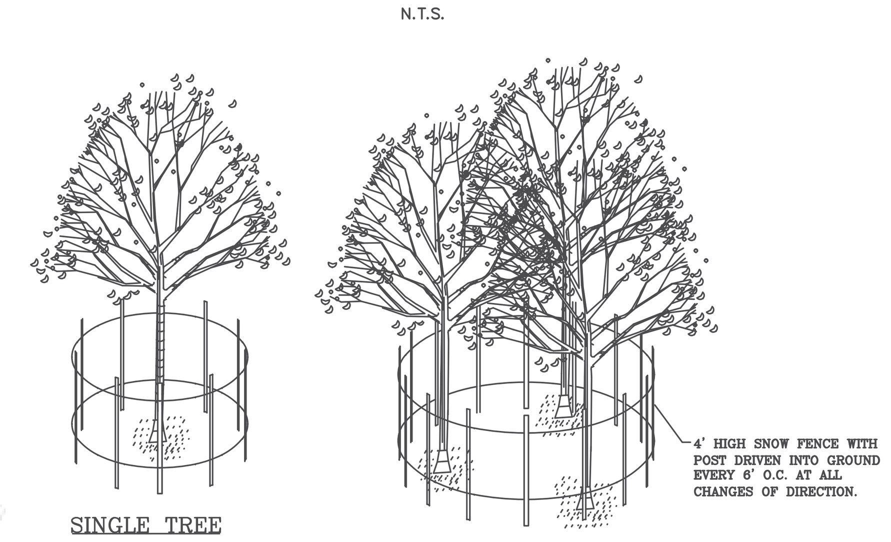
   DBH X 1.5: CRITICAL ROOT RADIUS FOR OLDER, UNHEALTHY OR SENSITIVE SPECIES.

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



ROOT PROTECTION DURING CONSTRUCTION DETAIL

N.T.S.



SINGLE TREE

MULTIPLE TREES

NOTES:
1. NO CONSTRUCTION ACTIVITY IS PERMITTED WITHIN THE PROTECTIVE FENCING.
2. AS CONSTRUCTION NEARS COMPLETION THE FENCING WILL BE REMOVED AS DIRECTED BY THE LANDSCAPE ARCHITECT.
3. AT THE COMPLETION OF CONSTRUCTION ALL TREES WILL BE PRUNED AS NECESSARY TO CORRECT ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY.

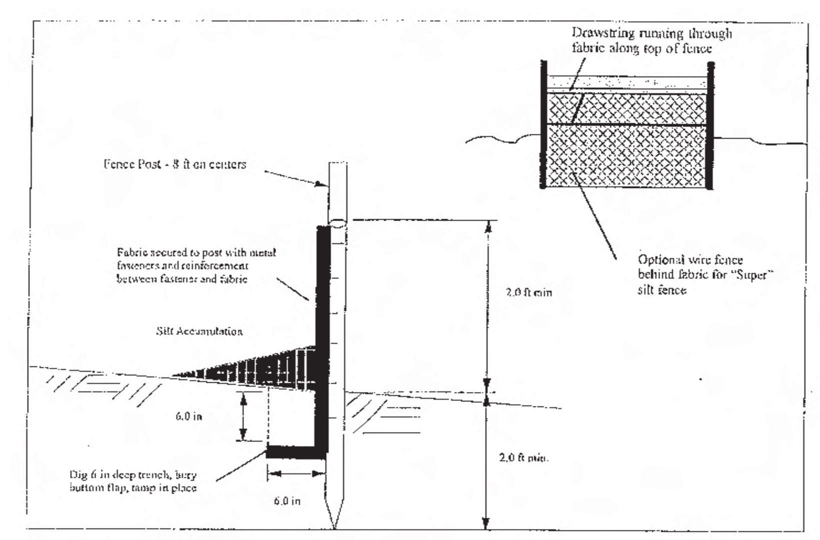
TREES TO BE PROTECTED DURING CONSTRUCTION WILL BE TAGGED

THE FINAL DETERMINATION OF THOSE TO BE PROTECTED WILL BE MADE BY THE LANDSCAPE ARCHITECT IN THE FIELD.

PROTECTIVE FENCING IS TO BE ERECTED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION AS DIRECTED BY THE LANDSCAPE ARCHITECT.

TEMPORARY TREE PROTECTION DETAIL

N.T.S.



C. *Requirements for silt fence:*

1. *Fence posts shall be spaced 8 feet center-to-center or closer. They shall extend at least 2 feet into the ground and extend at least 2 feet above ground (Fig. 23-2). Posts shall be constructed of hardwood with a minimum diameter thickness of 1 ½ inches.*
2. *"Super" silt fence - A metal fence with 6 inch or smaller mesh openings and at least 2 feet high may be utilized, fastened to the fence posts, to provide reinforcement and support to the geotextile fabric. Posts may be spaced less than 8 feet on center and may be constructed of heavier wood or metal as needed to withstand heavier sediment loading. This practice is appropriate where space for other practices is limited and heavy sediment loading is expected. "Super" silt fence is not to be used in place of properly designed diversions (pg 15-1) which may be needed to control surface runoff rates and velocities.*
3. *A geotextile 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 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 geotextile 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.*

Maintenance

1. *Sediment shall be removed from the upstream face of the barrier when it has reached a depth of ½ the barrier height.*
2. *Repair or replace barrier (fabric, posts, bales etc.) when damaged.*
3. *Barriers shall be inspected daily for signs of deterioration and sediment removal.*

SILT FENCE

N.T.S.

DATE	REVISION	DRAWN	CHECKED	RELEASED

SOIL EROSION AND SEDIMENT CONTROL DETAILS

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.

CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS
RESERVE SPECIALISTS
ARCHITECTS

FWHASSOCIATES.COM

1856 Rt. 9, Toms River, NJ 08755 T: 732.797.3100 F: 732.797.3223

Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

DRAWN BY	DATE
MSM	07/31/22
DESIGNED BY	SCALE
JS	N.T.S.
CHECKED BY	DRAWER NO.
JS	
RELEASED BY	PROJECT NO.
BPM	1221.0031
SHEET NO.	OF
16	20

NOTES:

1. AT LEAST ONE CLEANOUT MUST BE PROVIDED ON EACH LATERAL.
2. A CLEANOUT WILL BE PROVIDED FOR EACH LATERAL BETWEEN THE CURB AND THE SIDEWALK.
3. IN GENERAL, OWNERSHIP AND MAINTENANCE OF LATERALS AND CLEANOUTS WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
4. THE LOCATION OF ALL CLEANOUTS MUST BE APPROVED BY THE TOWNSHIP PLUMBING DEPARTMENT.
5. ALL CLEANOUTS LOCATED WITHIN PAVEMENT OR CONCRETE MUST BE PROTECTED WITH A CC-6 BOX.

STANDARD CLEANOUT

N.T.S.

NOTES:
1. ALL COUPLINGS PLUGS & CAPS TO BE STD. FOR TYPE OF PIPE USED & INSTALLATION TO BE WATERTIGHT.
2. CLEANOUTS OR INSPECTION WYES ARE TO BE LOCATED 2' FROM THE CURB IN LOCATIONS WHERE CURBS EXIST. OTHERWISE CLEANOUTS SHALL BE LOCATED 1' INSIDE THE PROPERTY LINE.

PLAN

SECTION

TYPICAL SANITARY CONNECTION DETAIL

N.T.S.

** BALL VALVES AND COMPRESSION FITTINGS MAY BE ACCEPTED
++ 1 1/2" & 2" LINES REQUIRE DOUBLE STRAP TAPPING SADDLE FOR ALL SIZE LINES
SADDLES REQUIRED ON ALL TAPS FOR LINES LESS THEN 8" IN DIAMETER

1. CURB BOX SHALL NOT BE LOCATED IN THE SIDEWALK, ROADWAY OR CURB.
2. CURB BOX SHALL BE LOCATED BEHIND THE SIDEWALK FOR INTEGRAL CURB AND SIDEWALK.
3. THE DEPARTMENT OF UTILITIES RESPONSIBILITY FOR MAINTENANCE SHALL BE LIMITED TO THE WATER MAIN, CORPORATION STOP, SERVICE LINE TO AND INCLUDING THE CURB STOP. THE MAINTENANCE OF THE CONNECTION OF THE SERVICE FROM THE CURB STOP TO THE BUILDING SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND NOTIFICATION OF ALL APPROPRIATE AGENCIES.
5. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE DEPARTMENT OF UTILITIES AND THE TOWNSHIP PLUMBING DEPARTMENT FOR INSPECTION AT LEAST 48 HOURS IN ADVANCE OF THE WORK BEING PERFORMED.
6. SERVICE LINE SHALL BE A MINIMUM OF 1 INCH POLYETHYLENE FROM THE WATER MAIN TO THE OUTLET SIDE OF THE CURB STOP.

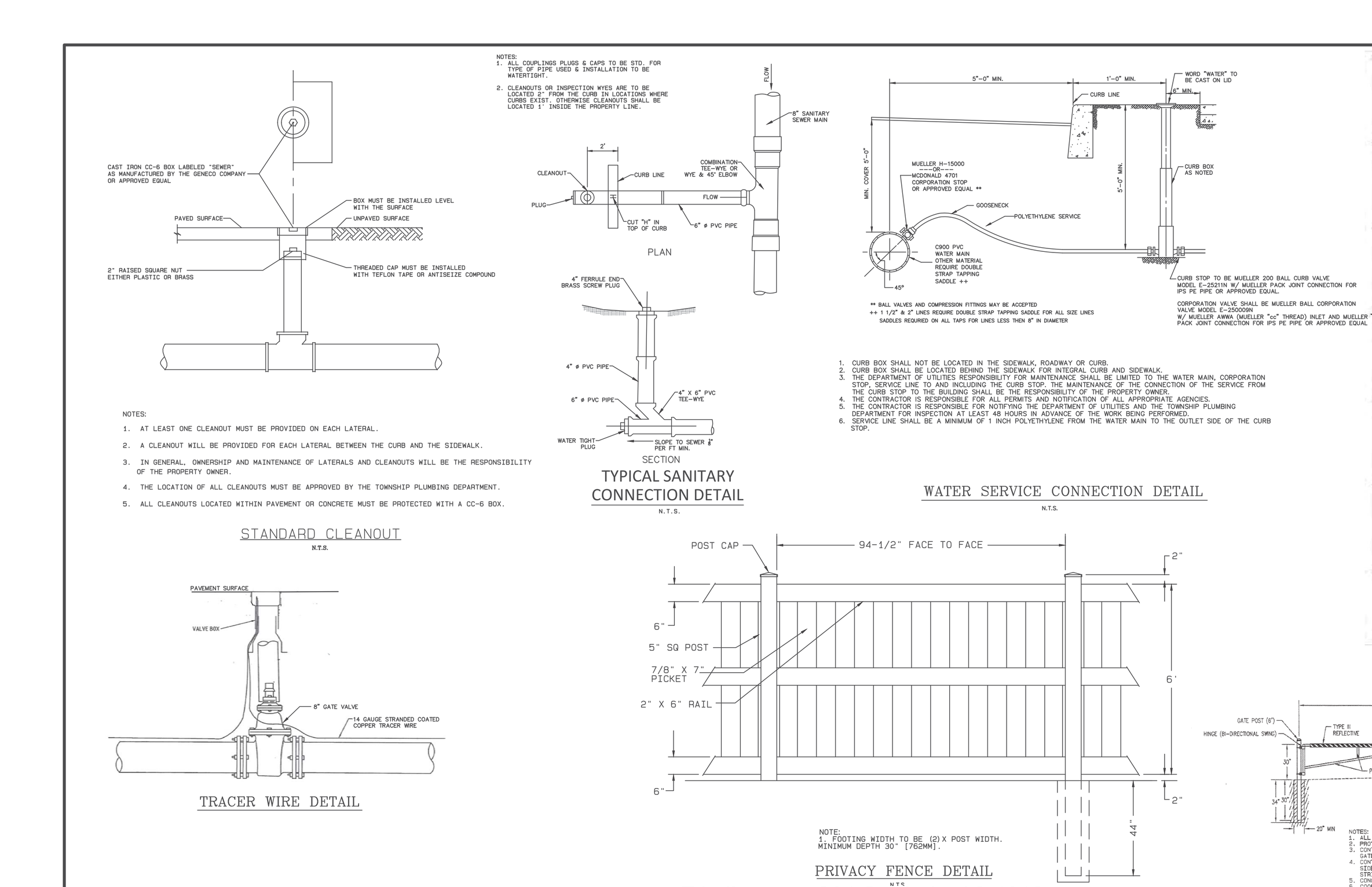
WATER SERVICE CONNECTION DETAIL

N.T.S.

NOTE:
1. FOOTING WIDTH TO BE (2) X POST WIDTH.
MINIMUM DEPTH 30" [762MM].

PRIVACY FENCE DETAIL

N.T.S.



Fixed Installation in New Concrete

Notes:

- Embedment details are for reference illustration only. Minimum foundation sizes depend on local soil conditions, weather conditions, and engineering requirements.
- Bollard post is provided as shown, with material detailed in legend below. Concrete, foundation and/or installation ordered separately or provided by others.
- This drawing is not drawn to scale. Dimensions provided herein is for reference only. Please consult Reliance Foundry sales professionals if any dimension is critical to your particular installation.
- Reliance Foundry reserves the right to amend design and specifications without prior notice for product improvement.

PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R7902 Fixed Bollard	R7902 Fixed Bollard Body	Steel Powder Coated	31 lbs
2	1	Polyethylene Plug 1/2"	Polyethylene Plug 1/2"	Polyethylene Plastic	
3	1	Steel Rebar	Steel Rebar 10 mm x 7"	Steel Epoxy Coated	3/8 lbs

BOLLARD DETAIL

N.T.S.

General Description:

Make a pronounced statement on entry to your streetscape, business, park, school or stadium with the contemporary and practical design of the model R-7902 steel bollard. A staple of the product line, it will complement the aesthetics of almost any architectural style. It can be embedded in new concrete or surface-mounted on existing concrete. For locations where access needs fluctuate, it can also be installed with removable or fold down mountings. The model R-7902 can be finished in one of seven different powder-coated color options and it is kept in stock, available to ship immediately.

For more information on bollard post installation, please visit: www.reliance-foundry.com/bollard/installation-bollards

Specifications:

Height: 36" (Above Grade)

Base Diameter: 4 3/8"

Weight: 31 lbs (Bollard Post Full Length)

Material: Steel (ASTM A36)

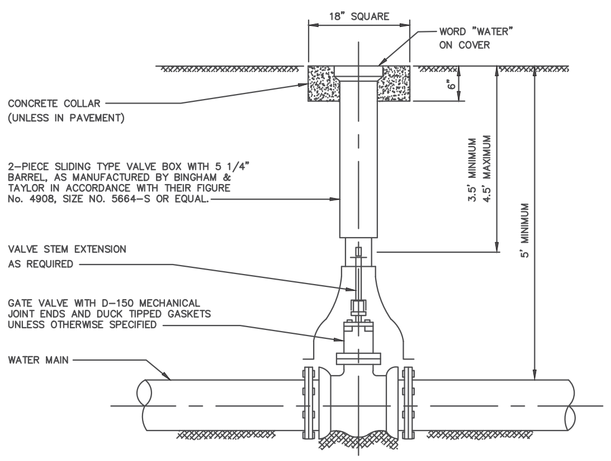
Finish Options:
- ✓ Polyester Powdercoated
  See Reliance Foundry's standard color options at www.reliance-foundry.com/bollard/colors-bollards

Mount Options:

- ○ Removable Receiver with Lid (see sheet 2 of 8)
- ○ Removable Receiver with Chain (see sheet 3 of 8)
- ✓ Fixed Embedded Mount (see sheet 4 of 8)
- ○ Flanged Surface Mount (see sheet 5 of 8)
- ○ Fold Down Mount (see sheet 6 of 8)
- ○ Removable Shallow Mount (see sheet 7 of 8)
- ○ Optional Chain Accessory (see sheet 8 of 8)

RELIANCE FOUNDRY
SINCE 1925
Unit 207, 6450 - 148 Street, Surrey, BC V3S 7G7, Canada
1-888-735-5680 info@reliance-foundry.com
www.reliance-foundry.com

TRACER WIRE DETAIL



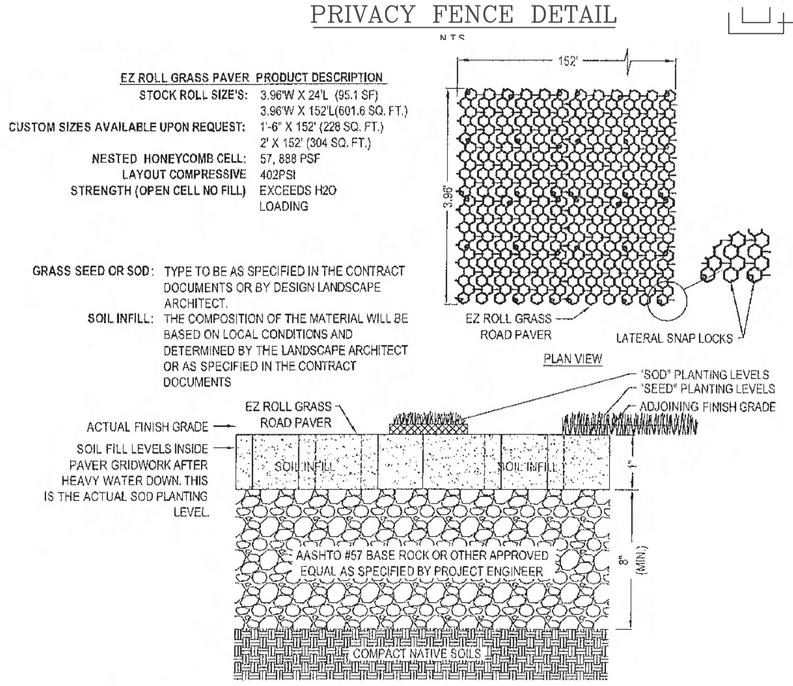
NOTES:

1. ALL GATE VALVES SHALL BE RESILIENT WEDGE GATE VALVE MANUFACTURED IN ACCORDANCE WITH AWWA C-515. GATE VALVES SHALL BE AS MANUFACTURED BY THE MUELLER CORP. OR EQUAL.
2. IF SPECIFIED ON THE DRAWINGS THE VALVE SHALL BE RESTRAINED TO FULL LENGTHS OF PIPE ON BOTH ENDS.
3. ALL VALVES ON STUB ENDS SHALL BE RESTRAINED TO A FULL LENGTH OF PIPE ON EACH SIDE OF THE VALVE UNLESS OTHERWISE SPECIFIED.
4. ALL VALVES SHALL BE "LEFT-HANDED" (COUNTER-CLOCKWISE TO OPEN).
5. IF AN OPERATING NUT IS MORE THAN 4.5 FEET BELOW THE GROUND SURFACE A VALVE STEM EXTENSION MUST BE INSTALLED TO BRING IT BETWEEN 3.5 FEET AND 4.5 FEET FROM THE GROUND SURFACE.
6. VALVE STEM EXTENSIONS SHALL BE ATTACHED TO THE OPERATING NUT BY PIN CONNECTION AND HAVE A GUIDE RING. THEY SHALL BE AS MANUFACTURED BY BINGHAM AND TAYLOR OR EQUAL.

GATE VALVE AND BOX

N.T.S.

EZ ROLL GRASS PAVER PRODUCT DESCRIPTION	
STOCK ROLL SIZE'S:	3.96'W X 24'L (95.1 SF)
	3.96'W X 152'L(601.6 SQ. FT.)
CUSTOM SIZES AVAILABLE UPON REQUEST:	1'-6" X 152' (228 SQ. FT.)
	2' X 152' (304 SQ. FT.)
NESTED HONEYCOMB CELL:	57, 888 PSF
LAYOUT COMPRESSIVE STRENGTH (OPEN CELL NO FILL):	402PSI
	EXCEEDS H2O LOADING
GRASS SEED OR SOD:	TYPE TO BE AS SPECIFIED IN THE CONTRACT DOCUMENTS OR BY DESIGN LANDSCAPE ARCHITECT.
SOIL INFILL:	THE COMPOSITION OF THE MATERIAL WILL BE BASED ON LOCAL CONDITIONS AND DETERMINED BY THE LANDSCAPE ARCHITECT OR AS SPECIFIED IN THE CONTRACT DOCUMENTS

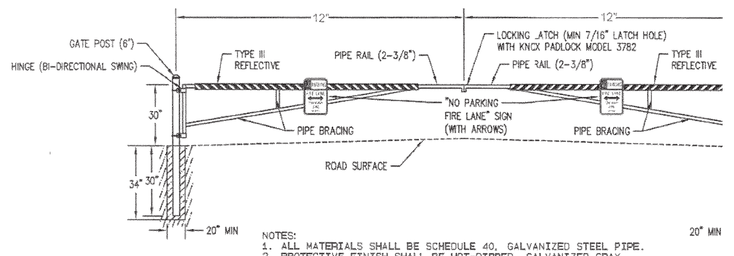


NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

EZ ROLL GRASS PAVERS

FIRE/HEAVY LOAD

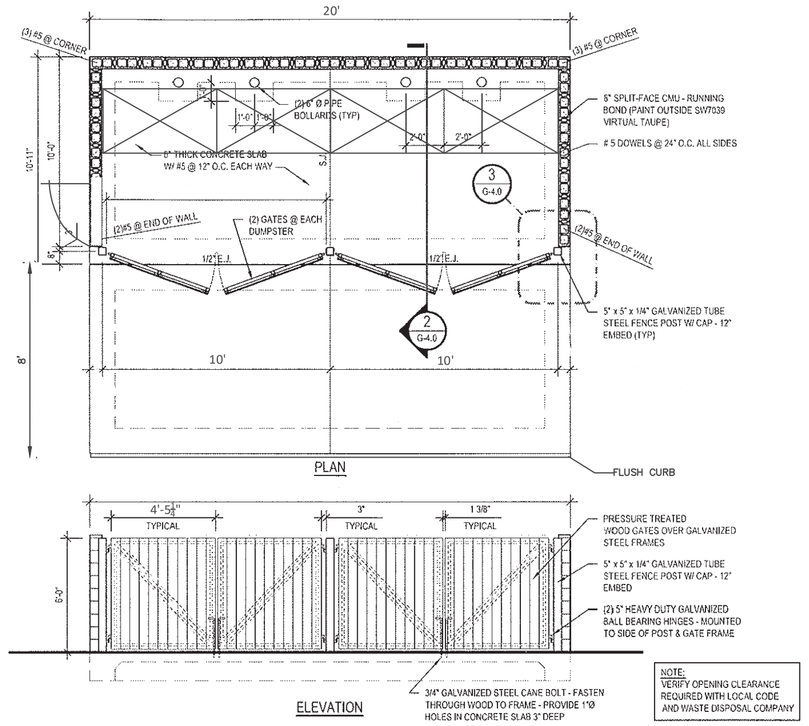
NDS
KEY COMPONENT
www.ndspro.com/55



NOTES:
1. ALL MATERIALS SHALL BE SCHEDULE 40, GALVANIZED STEEL PIPE.
2. PROTECTIVE FINISH SHALL BE HOT-DIPPED, GALVANIZED GRAY.
3. CONTRACTOR TO INSTALL PARKING, FIRE LANE SIGN ON EACH SIDE OF GATE.
4. CONTRACTOR TO INSTALL TYPE III REFLECTIVE STRIPING ON BOTH SIDES OF GATE. STRIPING SHALL BE ALTERNATING RED/WHITE STRIPES, 6" WIDE & AT 45° ANGLE
5. CONCRETE """"', BE 3,000 PSI.
6. COORDINATE INSTALLATION OF KNOX PADLOCK WITH FIRE DEPARTMENT.

EMERGENCY ACCESS GATE @ SECONDARY ACCESS AREA

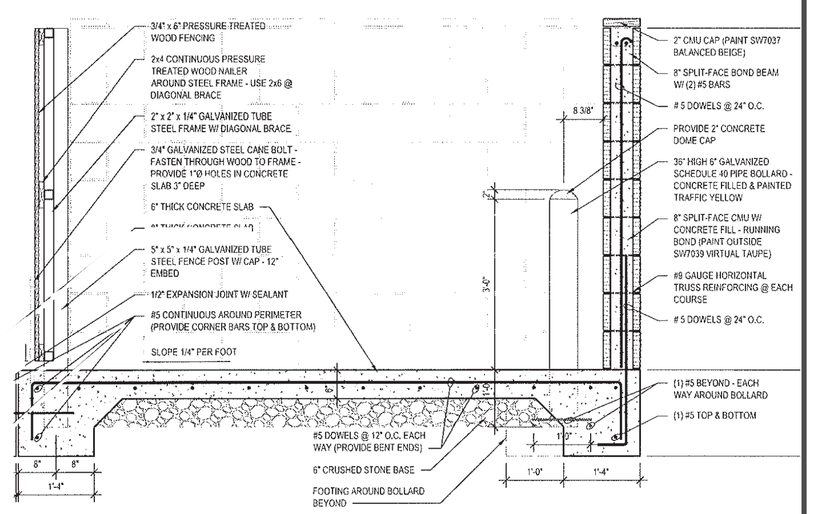
N.T.S.



DUMPSTER ENCLOSURE PLAN & ELEVATION

1 G-4.0 SCALE: 1/4"=1'-0"

NOTE: SHOP DRAWING FOR SPECIFIC COLORIZED DETAILS WILL BE PROVIDED TO THE TOWNSHIP IDENTIFYING PROPOSED COLORS,, MATERIALS AND FINISHES FOR APPROVAL PRIOR TO CONSTRUCTION.



2 G-4.0 CROSS SECTION
SCALE: 3/4"=1'-0"

DATE	REVISION	DRAWN	CHECKED	RELEASED

CONSTRUCTION DETAILS

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3
LOT 15.04 ~ BLOCK 44
TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.
CIVIL ENGINEERS
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PLANNERS
LANDSCAPE ARCHITECTS
RESERVE SPECIALISTS
ARCHITECTS
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Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

DRAWN BY	MSM
DESIGNED BY	JS
CHECKED BY	JS
RELEASED BY	BPM
DATE	07/31/22
SCALE	N.T.S.
DRAWER NO.	
PROJECT NO.	1221.0031
SHEET NO.	17
OF	20

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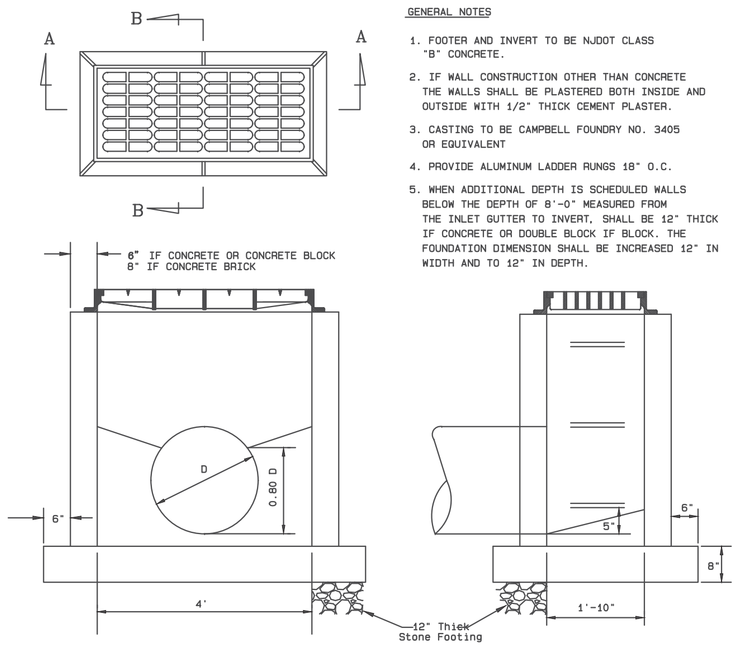
TITLE: Bollard Post, Model R-7902

SIZE C | DWG NO R-7902 | REV C2

NOT TO SCALE | SHEET 4 OF 8



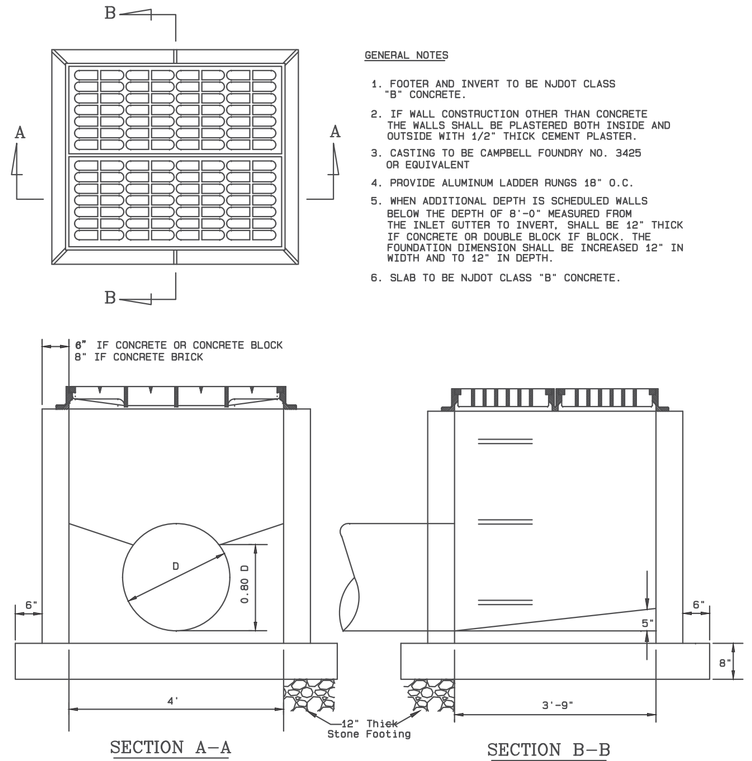
SECTION A–A
THROUGH INVERT DETAIL

SECTION B–B
TERMINAL INVERT DETAIL

GENERAL NOTES

1. FOOTER AND INVERT TO BE NJDOT CLASS "B" CONCRETE.
2. IF WALL CONSTRUCTION OTHER THAN CONCRETE THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER.
3. CASTING TO BE CAMPBELL FOUNDRY NO. 3405 OR EQUIVALENT
4. PROVIDE ALUMINUM LADDER RUNGS 18" O.C.
5. WHEN ADDITIONAL DEPTH IS SCHEDULED WALLS BELOW THE DEPTH OF 8'-0" MEASURED FROM THE INLET GUTTER TO INVERT, SHALL BE 12" THICK IF CONCRETE OR DOUBLE BLOCK IF BLOCK. THE FOUNDATION DIMENSION SHALL BE INCREASED 12" IN WIDTH AND TO 12" IN DEPTH.

TYPE "A" INLET
N.T.S.



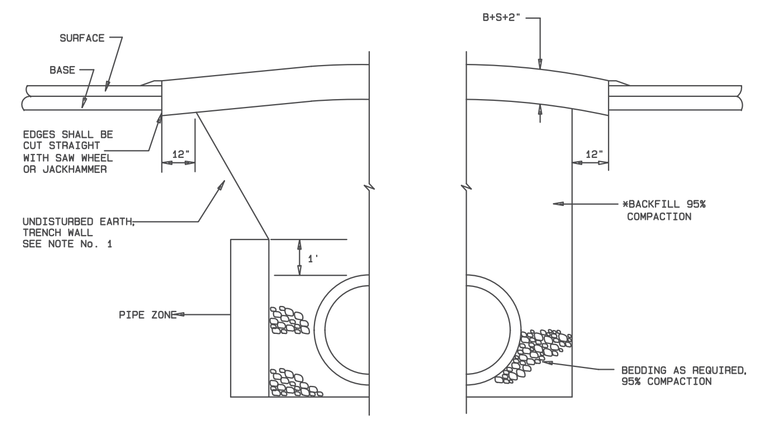
SECTION A–A
THROUGH INVERT DETAIL

SECTION B–B
TERMINAL INVERT DETAIL

GENERAL NOTES

1. FOOTER AND INVERT TO BE NJDOT CLASS "B" CONCRETE.
2. IF WALL CONSTRUCTION OTHER THAN CONCRETE THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER.
3. CASTING TO BE CAMPBELL FOUNDRY NO. 3425 OR EQUIVALENT
4. PROVIDE ALUMINUM LADDER RUNGS 18" O.C.
5. WHEN ADDITIONAL DEPTH IS SCHEDULED WALLS BELOW THE DEPTH OF 8'-0" MEASURED FROM THE INLET GUTTER TO INVERT, SHALL BE 12" THICK IF CONCRETE OR DOUBLE BLOCK IF BLOCK. THE FOUNDATION DIMENSION SHALL BE INCREASED 12" IN WIDTH AND TO 12" IN DEPTH.
6. SLAB TO BE NJDOT CLASS "B" CONCRETE.

TYPE "E" INLET
N.T.S.



TYPICAL SLOPED TRENCH

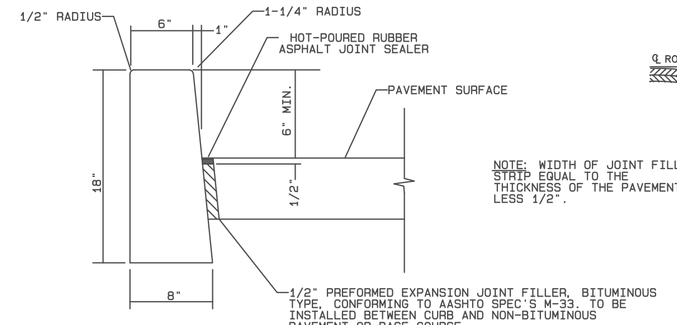
TYPICAL VERTICAL TRENCH

NOTES:

1. TRENCH TO BE SLOPED OR BRACED AND SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES.
2. TACK COAT ALL PAVEMENT SURFACES PRIOR TO INSTALLATION OF NEW PAVEMENT.
3. THE PATCH SHALL BE FULL DEPTH ASPHALT AND EXTEND 12" BEYOND THE EDGE OF TRENCH. DEPTH OF ASPHALT SHALL BE THE DEPTH OF EXISTING BASE PLUS THE DEPTH OF EXISTING SURFACE PLUS (2) INCHES.
4. PIPE ZONE OF TRENCH TO BE BACKFILLED IN SIX (6) INCH LIFTS. THESE SIX (6) INCH LIFTS ARE TO BE HAND TAMPED.
5. TRENCH TO BE BACKFILLED IN TWELVE (12) INCH LIFTS ABOVE PIPE ZONE.
6. BACKFILL TO BE COMPACTED TO 95% IN ACCORDANCE WITH AASHTO T180 AND AASHTO T99. COMPACTION TESTS TO BE PERFORMED EVERY 24" OF VERTICAL TRENCH HEIGHT. HORIZONTAL DISTANCES BETWEEN TESTS NOT TO EXCEED 200'. A MINIMUM OF TWO TESTS TO BE PERFORMED FOR EACH 24' OF VERTICAL TRENCH HEIGHT.

COMPACTION	SOIL (ASTM D2487)
AASHTO T180	ALL "G" & "S" SOILS
AASHTO T99	ML, CL, MH, CH

TYPICAL TRENCH DETAILS
N.T.S.

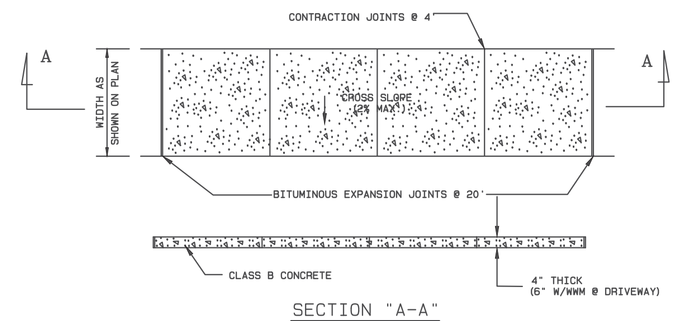


NOTE: WIDTH OF JOINT FILLER STRIP EQUAL TO THE THICKNESS OF THE PAVEMENT LESS 1/2".

NOTES:

1. CONCRETE TO BE NJDOT CLASS "B" (AIR ENTRAINED).
2. TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED, BITUMINOUS-IMPREGNATED FIBER JOINT FILLER, COMPLYING WITH THE REQUIREMENTS OF AASHTO M-213, RECESSED 1/4" FROM THE FRONT FACE ABD TOP OF THE CURB.
3. DUMMY JOINTS (FORMED) SHALL BE INSTALLED MIDWAY BETWEEN EXPANSION JOINTS.

CONCRETE VERTICAL CURB
N.T.S.



SECTION "A-A"

SIDEWALK NOTES:

1. A PREFORMED, BITUMINOUS EXPANSION JOINT 1/2" THICK, 4" WIDE, AND EXTENDING THE FULL WIDTH OF THE WALK, UNBROKEN, SHALL BE INSTALLED EVERY 20 FEET. CONTRACTION JOINTS SHALL BE INSTALLED EVERY MAXIMUM 4 FEET THE FULL WALK WIDTH.
2. THERE SHALL BE A BROOM FINISH TO ENSURE A SLIP RESISTANT WEARING SURFACE IN ACCORDANCE WITH ADA.

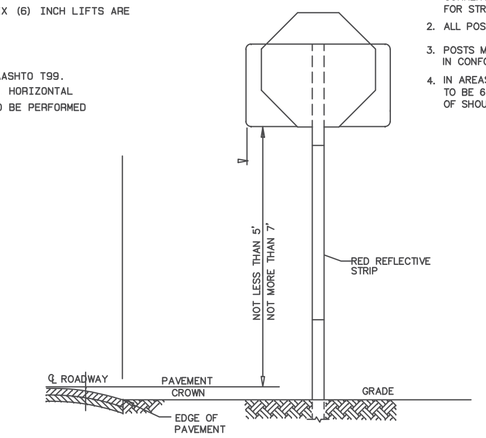
SIDEWALK DETAIL
N.T.S.

ONE WAY SIGN
R6-1
36"x 12"

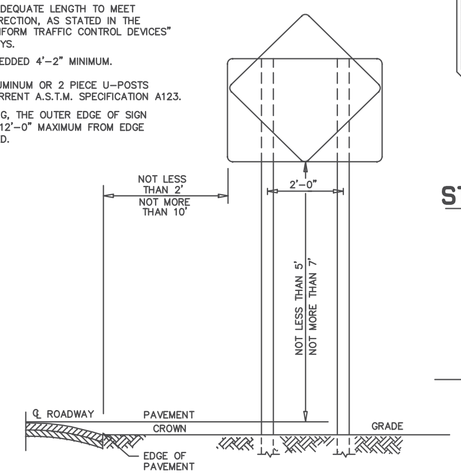
DO NOT ENTER SIGN
R5-1
30"x 30"

NOTES:

1. ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION, AS STATED IN THE CURRENT MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS.
2. ALL POSTS SHALL BE EMBEDDED 4'-2" MINIMUM.
3. POSTS MAY BE STEEL, ALUMINUM OR 2 PIECE U-POSTS IN CONFORMANCE WITH CURRENT A.S.T.M. SPECIFICATION A123.
4. IN AREAS WITHOUT CURBING, THE OUTER EDGE OF SIGN TO BE 6"-0" MINIMUM TO 12'-0" MAXIMUM FROM EDGE OF SHOULDER, AS DIRECTED.



SINGLE POST
30" X 30" OR SMALLER

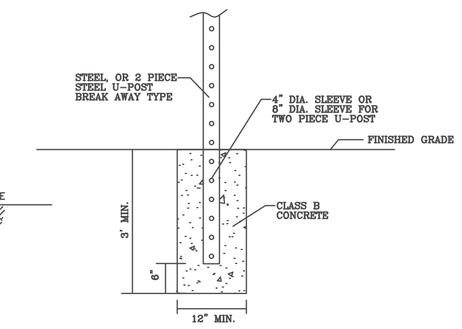


TWIN POST
36" X 36" OR LARGER

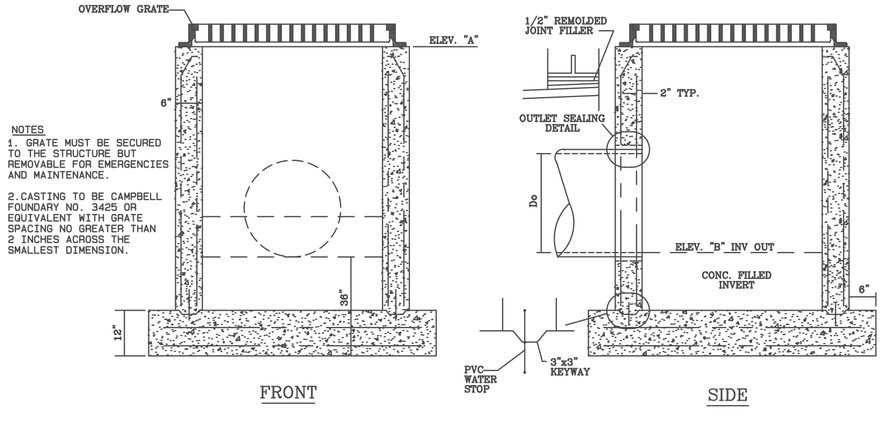
TYPICAL SIGN MOUNTING DETAIL
N.T.S.

R1-1
30"x 30"

STOP SIGN DETAIL
N.T.S.



TYPICAL TRAFFIC SIGN FOOTING DETAIL
N.T.S.

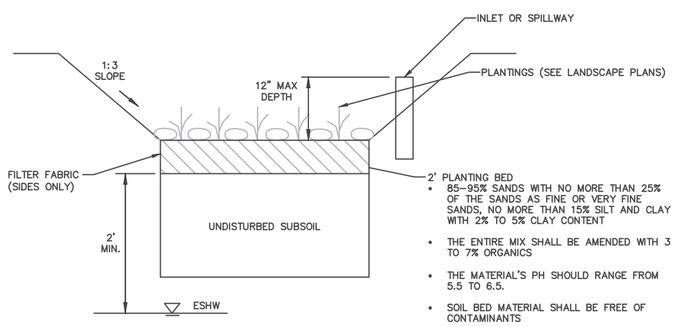


FRONT

SIDE

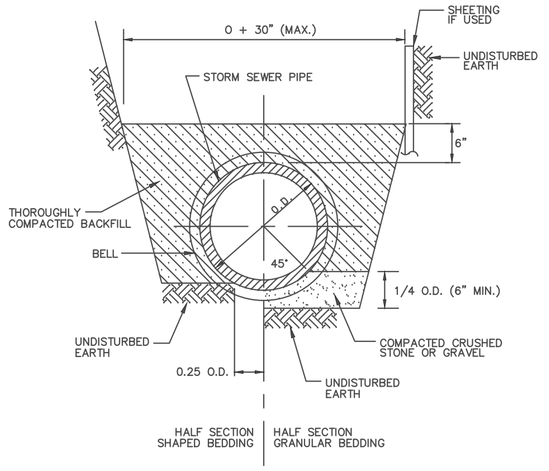
OUTLET STRUCTURE
N.T.S.

	ELEV. A	ELEV. B	Do
O.S.–BG1	69.1 (TYPE A)	64.5	15"
O.S.–BG2 (CB9)	69.1 (TYPE E)	61.75	30"
O.S.–BG3	69.1 (TYPE E)	61.07	30"
O.S.–BG4	68.8 (TYPE A)	61.45	15"



BIORETENTION GARDEN DETAIL
N.T.S.

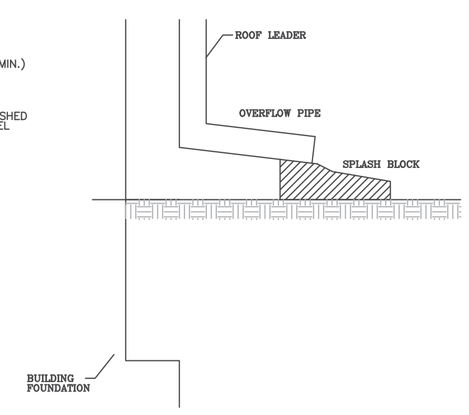
NOTE: NO CONSTRUCTION EQUIPMENT PERMITTED IN THE AREA OF THE GARDEN BOTTOM.



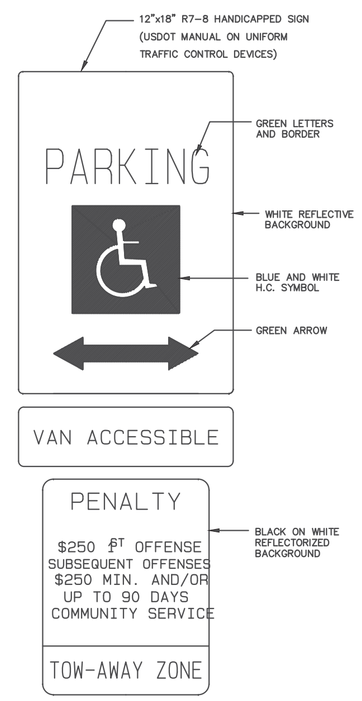
CLASS "C"
ORDINARY BEDDING

FIRST TWO LIFTS – SHOVEL TAMPED
REMAINING LIFTS – USE PEUMATIC TAMPER
IF IN SAND USE VIBRATORY COMPACTOR

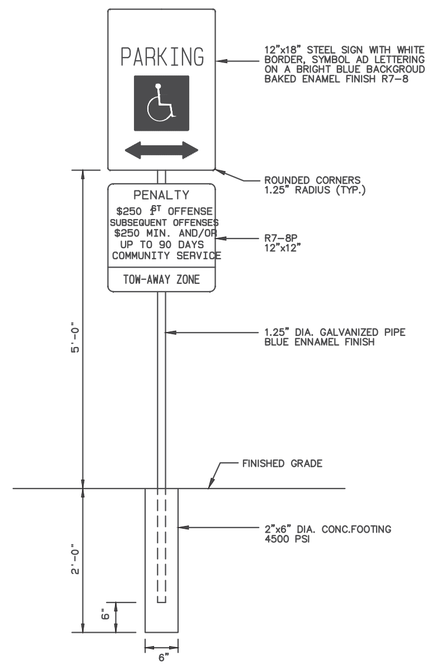
STORM SEWER PIPE BEDDING
N.T.S.



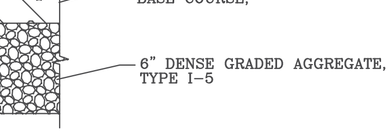
ROOF LEADER DETAIL
N.T.S.



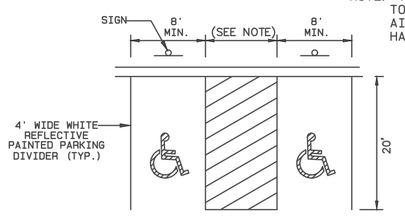
HANDICAPPED SIGN DETAIL
N.T.S.



HANDICAP SIGN MOUNTING DETAIL
N.T.S.



PARKING LOT PAVEMENT SECTION
N.T.S.



NOTE: VAN ACCESSIBLE SPOTS TO HAVE AN 8 FOOT MINIMUM AISLE. ALL OTHER SPOTS SHALL HAVE A 5 FOOT MINIMUM AISLE

HANDICAP PARKING SPACE STRIPING DETAIL
N.T.S.

DATE	REVISION	DRAWN	CHECKED	RELEASED

CONSTRUCTION DETAILS

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3
LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.
CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS
RESERVE SPECIALISTS
ARCHITECTS
FWHASSOCIATES.COM
1856 Rt. 9, Toms River, NJ 08755 T: 732.797.3100 F: 732.797.3223

Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

DRAWN BY	DATE
MSM	07/31/22
DESIGNED BY	SCALE
JS	N.T.S.
CHECKED BY	DRAWER NO.
JS	
RELEASED BY	PROJECT NO.
BPM	1221.0031
SHEET NO.	OF
18	20

SIEMENS

Siemens Industry, Inc.
Norcross, Georgia U.S.A.

For use with VC30GRYU and VCSG30GRYUW

Installation Instructions for VersiCharge Electric Vehicle Charging Station Post

Catalog Number: VCPOST

NOTE: This instruction outlines the recommended general procedure for installation by a qualified person, as defined by all local electrical codes and/or the National Electrical Code ®.

PERMITS: Be aware that many areas require special permits and/or utility approvals to install EV charging equipment. Contact your local electrical inspector's office and your local utility prior to beginning work to understand local requirements.

WARRANTY: See Siemens' standard terms and conditions below with regards to warranty of purchase.

www.usa.siemens.com/VersiChargeWarranty

TOUCH UP PAINT: See link below for replacement paint if needed for aesthetic restoration throughout life of post:

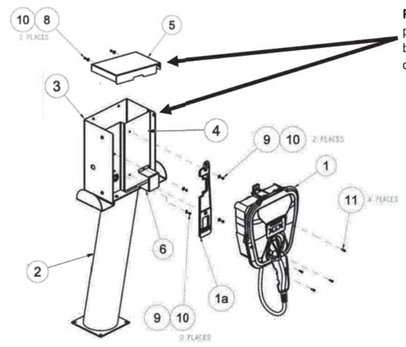
http://www.lowvolumepowder.com/RAL7035-Color-Plate

DANGER Hazardous voltage. Will cause death or serious injury. Disconnect before working on this equipment. This indicates a situation where the present voltage could cause injury or death. Extreme caution is required when servicing or installing the equipment referenced.

DANGER Explosion hazard. This equipment has arcing or sparking parts that should not be exposed to flammable vapors. Use extreme caution and follow instructions carefully.

WARNING This indicates a situation where failure to follow instructions may be a safety hazard or cause equipment malfunction. Use extreme caution and follow instructions carefully.

Applications include any public or private place where Electric Vehicle charging is required. These places may include homes, both single and multifamily, places of business, commercial institutions, etc.



Provision for Padlock (sold separately) optional padlock is used to supplement the connection between the enclosure top and enclosure base at designated location

QTY	DESCRIPTION	ITEM
1	PLASTIC BUSHING, ∅ 3-1/2"	13
1	PLASTIC BUSHING, ∅ 1-3/8"	12
4	#8-32 X 3/4", TAMPER RESISTANT SCREW	11
10	#10 STAINLESS SEALING WASHER	10
8	#10-32 X 3/8", BUTTON HEAD SOCKET CAP SCREW	9
7	#10-32 X 3/8", TAMPER RESISTANT SCREW	8
1	5/32" SECURITY HEX L-KEY	7
1	U-BRACKET	6
1	ENCLOSURE TOP	5
1	ASSEMBLY, - MID-PANEL	4
1	WELDMENT - ENCLOSURE	3
1	WELDMENT - POST	2
	WALL MOUNT BRACKET (INCLUDED WITH VERSICHARGE)	1a
	VERSICHARGE (SOLD SEPERATELY)	1

NOTE: All tamper resistant and button head socket cap screw locations are called out on the image to the left and in the images on page 2. Every location requires a washer to be used under the bolt head. Mounting screw torques are as follows:
Material # 8&9: 12 ±.5 lb-ins
Material # 11: 18 ±.5 lb-ins

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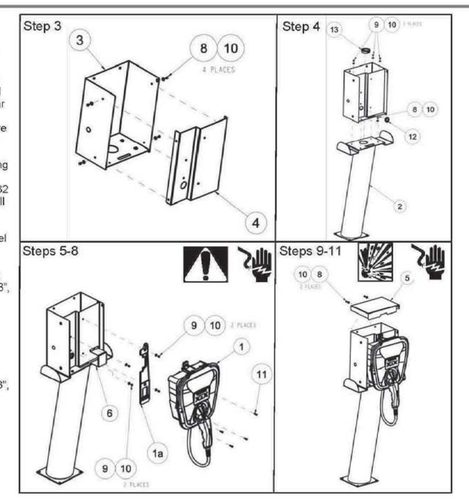
Document # 814852 Rev. 0P

SIEMENS

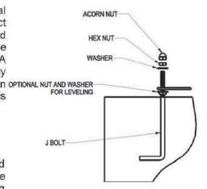
Assembly Instructions

1. Make sure power to the circuit is off before beginning assembly.
2. See last page for mounting the post and leveling instructions below, feed wiring through the post out of circular cutout
3. Attach the mid-panel to the enclosure using qty 4 x #10-32 X 3/8", tamper resistant screws
4. Attach the enclosure to the post using qty 3 x #10-32 X 3/8", button head socket cap screws and qty 1 x #10-32 X 3/8", tamper resistant screw; install bushing, feed wiring into the enclosure and out of the mid-panel
5. Attach the U-bracket to the mid-panel using qty 2 x #10-32 X 3/8", button head socket cap screws
6. Attach the wall mount bracket to the mid-panel using qty 2 x #10-32 X 3/8", button head socket cap screws
7. Hardwire VersiCharge (see "VersiCharge Wiring Instructions" below)
8. Slide the VersiCharge into the wall mount bracket
9. Attach the enclosure top to the enclosure using qty 2 x #10-32 X 3/8", tamper resistant screws, a padlock (sold separately) may be used to supplement connection
10. Replace four cover Phillips closure screws with qty 4 x #8-32 X 3/4", tamper resistant screws
11. Restore power, charger will turn on



VersiCharge Wiring Instructions

Please consider all safety warnings in the VersiCharge Installation and Operation manual (document # 813776) prior to wiring. The post product is compatible with the VC30GRYU product and the VCSG30GRYUW product. To reduce the risk of fire, connect only to a circuit provided with 40 amperes maximum branch circuit overcurrent protection in accordance with the ANSI/NFPA 70 National Electrical Code. VersiCharge EV charging stations can draw up to 30A at 240 VAC, 50/60 Hz (7.2kW of power). Use 8-8 AWG, 75°C copper wire to connect to supply circuit. Refer to section 3.4 of the VersiCharge Installation and Operations Manual for instruction on removing the cord-and-plug assembly and steps for hardwired installation. Ensure breaker is off during all electrical work.



Leveling

Should the concrete pad not be level, hex nuts and washers may be placed between post and concrete pad. This method will cause a gap between the base of the post and cement, increase conduit height above cement accordingly (minimum of 3"). See next page for post mounting instructions.

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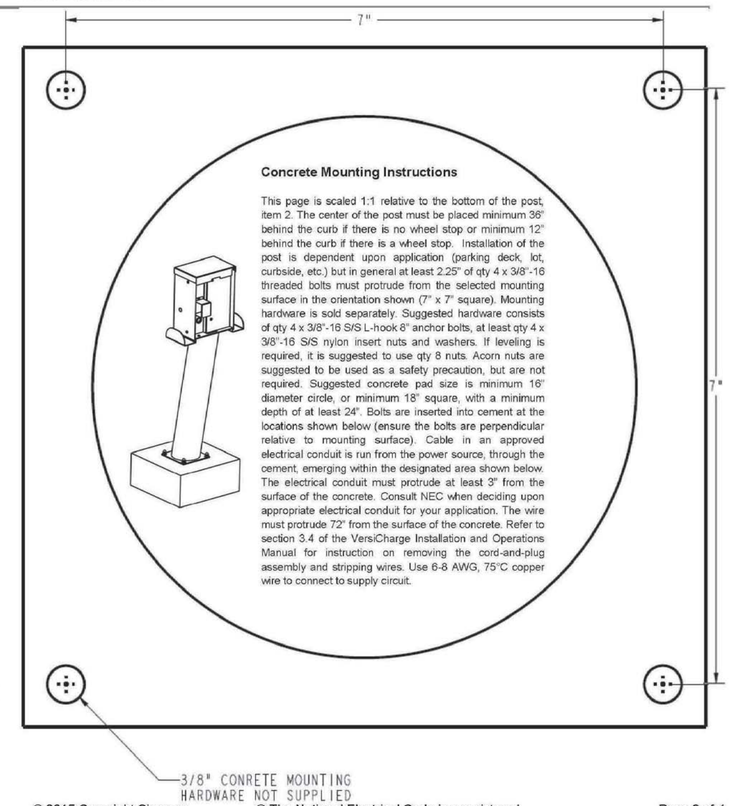

Concrete Mounting Instructions

This page is scaled 1:1 relative to the bottom of the post, item 2. The center of the post must be placed minimum 36" behind the curb if there is no wheel stop or minimum 12" behind the curb if there is a wheel stop. Installation of the post is dependent upon application (parking deck, lot, curbside, etc.) but in general at least 2.25" of qty 4 x 3/8"-16 threaded bolts must protrude from the selected mounting surface in the orientation shown (7" x 7" square). Mounting hardware is sold separately. Suggested hardware consists of qty 4 x 3/8"-16 SIS L-hook 6" anchor bolts, at least qty 4 x 3/8"-16 SIS nylon insert nuts and washers. If leveling is required, it is suggested to use qty 8 nuts. Acorn nuts are suggested to be used as a safety precaution, but are not required. Suggested concrete pad size is minimum 16" diameter circle, or minimum 18" square, with a minimum depth of at least 24". Bolts are inserted into cement at the locations shown below (ensure the bolts are perpendicular relative to mounting surface). Cable in an approved electrical conduit is run from the power source, through the cement, emerging within the designated area shown below. The electrical conduit must protrude at least 3" from the surface of the concrete. Consult NEC when deciding upon appropriate electrical conduit for your application. The wire must protrude 72" from the surface of the concrete. Refer to section 3.4 of the VersiCharge Installation and Operations Manual for instruction on removing the cord-and-plug assembly and stripping wires. Use 6-8 AWG, 75°C copper wire to connect to supply circuit.

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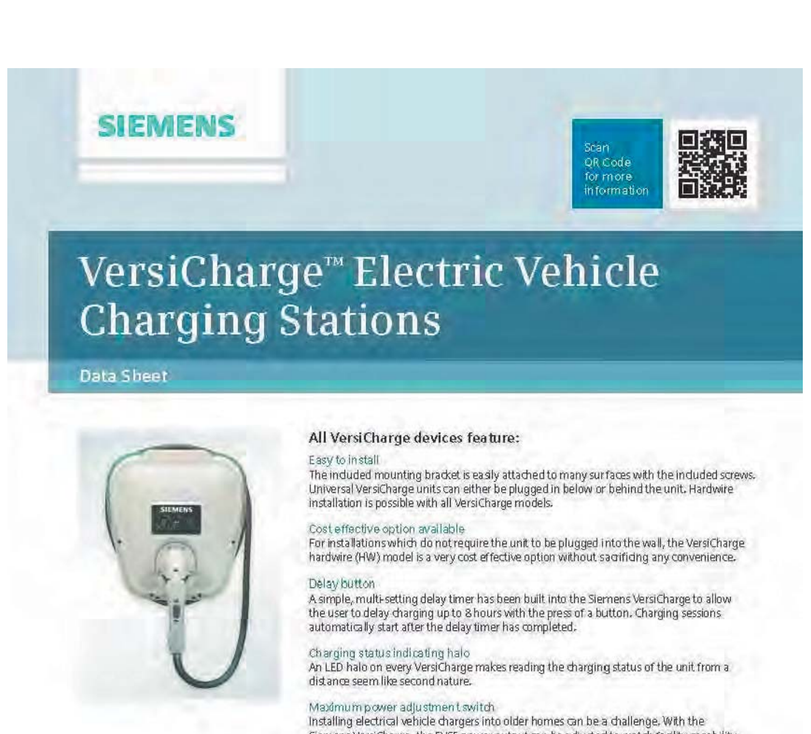

All VersiCharge devices feature:

Easy to install
The included mounting bracket is easily attached to many surfaces with the included screws. Universal VersiCharge units can either be plugged in below or behind the unit. Hardwire installation is possible with all VersiCharge models.

Cost effective option available
For installations which do not require the unit to be plugged into the wall, the VersiCharge hardwire (HW) model is a very cost effective option without sacrificing any convenience.

Delay button
A simple, multi-setting delay timer has been built into the Siemens VersiCharge to allow the user to delay charging up to 8 hours with the press of a button. Charging sessions automatically start after the delay timer has completed.

Charging status indicating halo
An LED halo on every VersiCharge makes reading the charging status of the unit from a distance seem like second nature.

Maximum power adjustment switch
Installing electrical vehicle chargers into older homes can be a challenge. With the Siemens VersiCharge, the EVSE power output can be adjusted to match facility capability. Increments range from a maximum power setting of 7.2 kW down to 1.8 kW.

Designed for the user and the environment
Integrated holster keeps dust and debris out of plug. 60% recycled material with matte finish is rugged, durable, and easy to clean. The SAE J1772 connector is ergonomically designed for user comfort. The 20' cord is easily stored with the integrated cord management system.

Flexible demand response profile
To support advanced demand response programs, all VersiCharge models feature variable amperage demand response and allow consumers to take advantage of utility rate programs. This feature ensures the energy demand from the EVSE can be curtailed with a reduced impact to the end user.

www.usa.siemens.com/VersiCharge

Wall Mounted EVSE

14.5" W x 16.0" H x 6.5" D
(front of unit excluding connector)
15" minimum clearance recommended for connector when inserted

Mounting Bracket

2.5" x 16.9"
Install at a minimum of 18" off the ground

VersiCharge Electric Vehicle Chargers

Part Number	Model	Output Amperage	Color	Feeder Location
VC30000U*	Universal VersiCharge	30 A	Grey	Wall/Bottom/Hardwired
VC30000HW*	Hardwired VersiCharge	30 A	Grey	Hardwired

*XXX denotes a placeholder for color. Currently a light gray color is available (GRY)

Accessories

Part number	Description	Color
VCMNTGBRK	Spare Parts Mounting Bracket	Black

Parameters

	Attribute	Universal Model	Hardwired Model
Essentials	Part Number	VC30000U	VC30000HW
	Amperage	30 Amps*	
	Input voltage	208 - 240 V_{ac}	
	Cord Length	20 ft	14 ft
	Unit Weight	14.5 lbs	12.5 lbs
	Dimensions	14.5" W x 16.0" H x 6.5" D	
	Output power	1.8 kW to 7.2 kW	
	Enclosure	NEMA 4	NEMA 1
	Plug in Installation	Yes (below or behind unit)	No
	Permanent Installation	Yes	Yes
Electrical	Circuit requirement	40 Amps**	
	Input power connections	Line 1, Line 2, Earth Ground	
	Recommended branch breaker	40 Ampere double pole. (Siemens: Q240 plug in type, Q240 bolt on type)	
Mechanical	Connector	SAE J1772	
Safety and Operational	Standards Compliance	UL, SAE J1772, NEC® 625	
	EMC	FCC Part 15 Class B	
	Operating temperature	-30°C to +50°C	
	Storage temperature	-40°C to +60°C	
	Operating humidity	Maximum 95% non condensing	

*Adjustment of amperage output possible via dial in the unit, will effect the power output of charger.

Siemens Industry, Inc.
5400 Triangle Parkway
Norcross, GA 30092

1-800-241-4453
info.us@siemens.com

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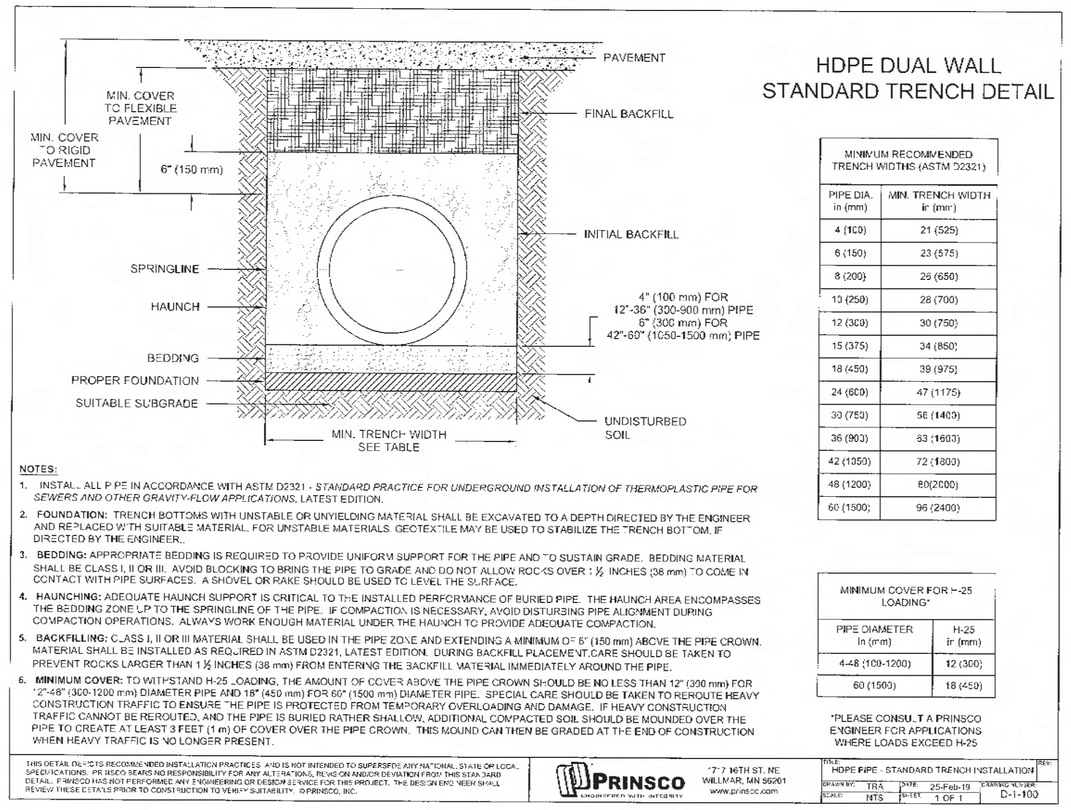


HDPE DUAL WALL STANDARD TRENCH DETAIL

MINIMUM RECOMMENDED TRENCH WIDTHS (ASTM D2321)

PIPE DIA. in (mm)	MIN. TRENCH WIDTH in' (mm')
4 (100)	21 (525)
6 (150)	23 (575)
8 (200)	26 (650)
10 (250)	28 (700)
12 (300)	30 (750)
15 (375)	34 (850)
18 (450)	39 (975)
24 (600)	47 (1175)
30 (750)	58 (1450)
36 (900)	83 (1600)
42 (1050)	72 (1800)
48 (1200)	80(2000)
60 (1500)	96 (2400)

NOTES:

1. INSTALL ALL P IPE IN ACCORDANCE WITH ASTM D2321 - *STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS*, LATEST EDITION.
2. **FOUNDATION:** TRENCH BOTTOMS WITH UNSTABLE OR UNYIELDING MATERIAL SHALL BE EXCAVATED TO A DEPTH DIRECTED BY THE ENGINEER AND REPLACED W TH SUITABLE MATERIAL. FOR UNSTABLE MATERIALS GEOTEXTILE MAY BE USED TO STABILIZE THE "RENCH BOTTOM. IF DIRECTED BY THE ENGINEER..
3. **BEDDING:** APPROPRIATE BEDDING IS REQUIRED TO PROVIDE UNIFORM SUPPORT FOR THE PIPE AND "O SUSTAIN GRADE. BEDDING MATERIAL SHALL BE CLASS I, II OR III. AVOID BLOCKING TO BRING THE PIPE TO GRADE AND DO NOT ALLOW ROCKS OVER ½ INCHES (38 mm) "O COME IN CONTACT WITH PIPE SURFACES. A SHOVEL OR RAKE SHOULD BE USED TO LEVEL THE SURFACE.
4. **HAUNCHING:** ADEQUATE HAUNCH SUPPORT IS CRITICAL TO THE INSTALLED PERFORMANCE OF BURIED PIPE. THE HAUNCH AREA ENCOMPASSES THE BEDDING ZONE UP TO THE SPRINGLINE OF THE PIPE. IF COMPACTION IS NECESSARY, AVOID DISTURBING PIPE ALIGNMENT DURING COMPACTION OPERATIONS. ALWAYS WORK ENOUGH MATERIAL UNDER THE HAUNCH TO PROVIDE ADEQUATE COMPACTION.
5. **BACKFILLING:** C, ASS I, II OR III MATERIAL SHALL BE USED IN THE PIPE ZONE AND EXTENDING A MINIMUM OF 6" (150 mm) ABOVE THE PIPE CROWN. MATERIAL SHALL BE INSTALLED AS REQ..IRED IN ASTM D2321, LATEST EDITION. DURING BACKFILL PLACEMENT, CARE SHOULD BE TAKEN TO PREVENT ROCKS LARGER THAN 1 ½ INCHES (38 mm) FROM ENTERING THE BACKFILL MATERIAL IMMEDIATELY AROUND THE PIPE.
6. **MINIMUM COVER:** TO WITHSTAND H-25 ..OADING, THE AMOUNT OF COVER ABOVE THE PIPE CROWN SHOULD BE NO LESS THAN 12" (300 mm) FOR 12"-48" (300-1200 mm) DIAMETER PIPE AND 18" (450 mm) FOR 60" (1500 mm) DIAMETER PIPE. SPECIAL CARE SHOULD BE TAKEN TO REROUTE HEAVY CONSTRUCTION TRAFFIC TO ENSURE "HE PIPE IS PROTECTED FROM TEMPORARY OVERLOADING AND DAMAGE. IF HEAVY CONSTRUCTION TRAFFIC CANNOT BE REROUTED, AND THE PIPE IS BURIED RATHER SHALLOW, ADDITIONAL COMPACTED SOIL SHOULD BE MOUNDED OVER THE PIPE TO CREATE AT LEAST 3 FEET (1 m) OF COVER OVER THE PIPE CROWN. THIS MOUND CAN THEN BE GRADED AT THE END OF CONSTRUCTION WHEN HEAVY TRAFFIC IS NO LONGER PRESENT.

MINIMUM COVER FOR H-25 LOADING*	
PIPE DIAMETER In (mm)	H-25 In (mm)
4-48 (100-1200)	12 (300)
60 (1500)	18 (450)

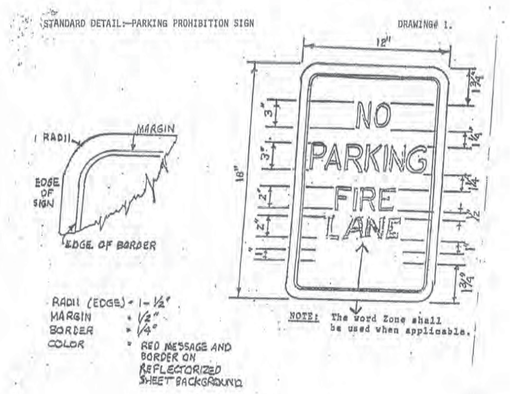
*PLEASE CONSU..T A PRINSCO ENGINEER FOR APPLICATIONS WHERE LOADS EXCEED H-25

THIS DETAIL IS "ES RECOMMENDED INSTALLATION PRACTICES AND IS NOT INTENDED TO SUPERSEDE ANY MATERIAL STATE OR LOCA.. SPECIFICATIONS. PE SIGNS MEANS NO RESPONSIBILITY FOR ANY AUTHORIZATIONS, PLANS OR ANSWERS OR DEVIATIONS FROM THESE STAN DARD DETAILS. PRINSCO IS NOT PERFORMING ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT. THE DESIGN RESPONSIBILITY SHALL REMAIN WITH THESE DETAILS PRIOR TO CONSTRUCTION TO VERIFY SUITABILITY. PRINSCO, INC.

PRINSCO — 7'-7 94TH ST. NE, WILLMAR, MN 56201, www.prinsco.com

DRAWN BY: TRA	DATE: 25-Feb-19	ASSEMBLY NO.:	REV.
SCALE: NTS	SHEET: 1 OF 1	D=1-100	

HDPE PIPE - STANDARD TRENCH INSTALLATION



SIGN FACE:
1. ALL LETTERING SHALL BE UPPER CASE LETTERS OF THE TYPE APPROVED BY THE JOINT COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES.
2. ALL LETTERS SHALL BE SERIES "C" ALPHABET IN ACCORDANCE WITH "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

COLOR AND REFLECTORIZATION:
1. PARKING PROHIBITION SIGN SHALL HAVE RED MESSAGE ON WHITE BACKGROUND.
2. LETTERS, SYMBOLS, AND BORDERS SHALL BE REFLECTORIZED.

GENERAL NOTES:
1. ALL SIGNS SHALL BE ERECTED WITH THE BOTTOM OF THE SIGN NOT LESS THAN 6FT. ABOVE THE PAVEMENT OR GROUND.
2. SPACING OF PARKING PROHIBITION SIGNS SHALL NOT EXCEED 50FT, SPACING SHALL BE IN ACCORDANCE WITH APPROVED PLAN OF AS DIRECTED BY THE FIRE OFFICIAL.
3. SIGNS, SIGN POSTS AND THEIR FOUNDATIONS AND SIGN MOUNTING SHALL BE SO CONSTRUCTED AS TO HOLD SIGNS IN A PROPER AND PERMANENT POSITION, TO RESIST SWAYING IN THE WIND OR DISPLACEMENT BY VANDALISM.
4.

NO PARKING FIRE LANE DETAIL

N.T.S.

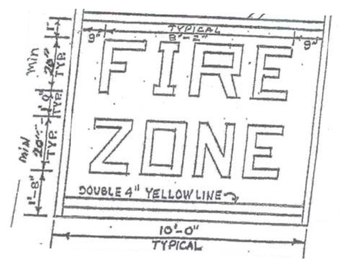
GENERAL NOTES:

YELLOW TRAFFIC PAINT SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF NEW JERSEY HIGHWAY SPECIFICATIONS COLOR WHITE OR YELLOW.

PARKING PROHIBITION SIGNS SHALL BE ERECTED ADJACENT TO PAVEMENT MARKING INDICATING PARKING RESTRICTIONS AS INDICATED ON THE APPROVED PLANS OR AS DIRECTED BY THE FIRE OFFICIAL.

"FIRE ZONE" SHALL BE 4" WIDE UPPER CASE LETTERS

PAVEMENT MARKINGS SHALL BE PAINTED IN ACCORDANCE WITH APPROVED PLANS OR DIRECTED BY THE FIRE OFFICIAL.



PAVEMENT MARKINGS FOR PARKING RESTRICTIONS

DATE	REVISION	DRAWN	CHECKED	RELEASED

CONSTRUCTION DETAILS

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN - PHASE 3

LOT 15.04 ~ BLOCK 44

TAX MAP SHEET NO. 8
SITUATED IN
MANCHESTER TOWNSHIP, OCEAN COUNTY N.J.

FWH ASSOCIATES, P.A.
CIVIL ENGINEERS
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Brian P. Murphy
PROFESSIONAL ENGINEER
N.J. LIC. NO. 42000

DRAWN BY: MSM	DATE: 07/31/22
DESIGNED BY: JS	SCALE: N.T.S.
CHECKED BY: JS	DRAWER NO.
RELEASED BY: BPM	PROJECT NO.: 1221.0031
SHEET NO.: 19	OF: 20