SEASIDE AT SCITUATE

SITE DEVELOPMENT PLAN

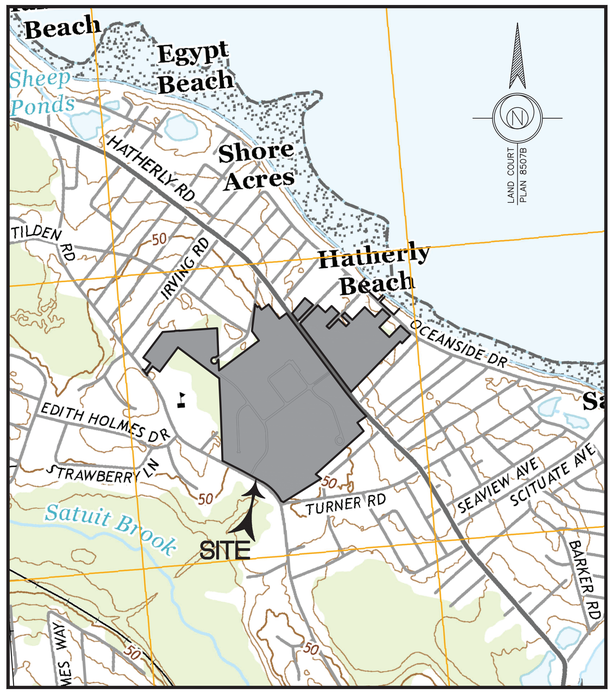
FOR

SENIOR RESIDENTIAL COMMUNITY

TOWN OF SCITUATE, PLYMOUTH COUNTY, MASSACHUSETTS

ZONING INFORMATION

ZONING DISTRICT:	RC – RESIDENTIAL CLUSTER OVERLAY	
DESCRIPTION	REQUIRED	PROVIDED
RC CLUSTER STANDARDS	35' / 2.5 STORIES	<35'
MIN. TRACT SIZE	20 AC.	70.04
MAX. DENSITY	4 UNITS/AC.	0.46
MIN. OUTBOUND SETBACK	60'	60'
MAX. BLDG. HEIGHT	35'/2.5 STORIES	<35'/2.5 STORIES
MAX BLDG. LENGTH	150'	<150'
MAX. UNITS PER BLDG.	7	4
MIN. BLDG SEPARATION	35'	35'
PARKING	2.5 SPACES/UNIT	4 SPACES/UNIT



LOCATION MAP

800 0 400 800 FEET 1600 3200

GRAPHIC SCALE 1 inch = 800 ft.

SHEET INDEX

SHEET NO.	REFERENCE NO.	DESCRIPTION
1	SD01.01	COVER SHEET
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27 – 34	SD08.01 – SD08.08	CONSTRUCTION DETAILS

STREET INDEX

PLAN IDENTIFICATION	STREET NAME
ROAD 'A'	BRAND BOULEVARD
ROAD 'B'	LOIS ANN COURT
ROAD 'C'	WENDY DRIVE
ROAD 'D'	DIANE TERRACE
ROAD 'F'	THELMA WAY
ROAD 'G'	BENJAMIN LANE

OWNER OF RECORD

SUBURBAN REALTY TRUST
C/O BEN GOULSTON
240 WOLCOTT ROAD
CHESTNUT HILL, MA 02467

APPLICANT

TOLL MA LAND III, L.P.
134 FLANDERS ROAD, SUITE 275
WESTBOROUGH, MA 01581

PARCEL DATA

A.P. 34, BLOCK 2, LOTS 2A-F
A.P. 34, BLOCK 3, LOTS 7,9-11*
A.P. 34, BLOCK 4, LOTS 1-4*
A.P. 34, BLOCK 5, LOTS 1-8*
A.P. 34, BLOCK 6, LOTS 13-13C
A.P. 34, BLOCK 15, LOTS 1,8-9*
A.P. 34, BLOCK 17, LOTS 18-21*
A.P. 34, BLOCK 18, LOTS 1-6*
A.P. 39, BLOCK 2, LOTS 1-5*
A.P. 39, BLOCK 3, LOTS 2-4*
A.P. 39, BLOCK 4, LOTS 1-4*
A.P. 39, BLOCK 27, LOT 28
*LETTERED LOTS INCLUSIVE
N/F
BENJAMIN GOULSTON TR.
CERTIFICATE NO. 80702
DEED BK 9982 / PG. 68
TOTAL LOT AREA:
3,051,176 S.F.± OR
70.04 ACRES±

ESE CONSULTANTS
ENGINEERING • PLANNING • SURVEYING • ENVIRONMENTAL
ESE Consultants, Inc.
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Issued	By	Appd.	YY.MM.DD
Revision			

Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
COVER SHEET

Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37908
REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number:	3599		
File Name:	3599-S-COVER		
ESE	Stantec	ESE	2017.03.24
Dsn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD01.01

Revision Sheet

1 of 37

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2017.03.07 7:48 AM By: Jennifer Sands

ORIGINAL SHEET - ARCH D

GENERAL NOTES

1. ALL BASE MAPPING INCLUDING PERIMETER BOUNDARY SURVEY, TOPOGRAPHY, EXISTING SITE FEATURES, EXISTING UTILITIES IN THE VICINITY OF THE SITE AND EXISTING IMPERVIOUS AREAS HAS BEEN COMPLETED BY ESE CONSULTANTS, INC., 134 FLANDERS ROAD, SUITE 275, WESTBOROUGH, MA 01581.
2. SITE LAYOUT, ROADWAY DESIGN, UTILITY DESIGN, LANDSCAPE DESIGN AND SITE GRADING HAS BEEN COMPLETED BY ESE CONSULTANTS, INC. 250 GIBRALTAR ROAD, SUITE 2E, HORSHAM, PA 019044 AND PROVIDED TO STANTEC FOR INCORPORATION INTO THIS PERMITTING PLAN SET.
3. WETLANDS MAPPING AND DELINEATION HAS BEEN COMPLETED BY LEC ENVIRONMENTAL CONSULTANTS, INC., 12 RESNIK ROAD, SUITE 1, PLYMOUTH, MA 02360.
4. ANY GEOTECHNICAL INFORMATION PROVIDED WITHIN THE CONTRACT DOCUMENTS IS BASED ON THE BEST AVAILABLE DATA. IN CASE OF CONFLICT, DISCREPANCIES, OR A LACK OF INFORMATION, THE MORE STRINGENT REQUIREMENTS AND RECOMMENDATIONS FROM SAID REPORT SHALL TAKE PRECEDENCE. THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY IN WRITING OF ANY SUCH CONFLICT OR DISCREPANCY BETWEEN THE GEOTECHNICAL REPORT, THE PLANS AND SPECIFICATIONS, AND THE EXISTING SITE CONDITIONS PRIOR TO PROCEEDING WITH FURTHER WORK.
5. THE EXACT LOCATION OF ALL PROPOSED PIPES, VALVES, FITTINGS, TANKS, PUMPS, ELECTRIC/CONTROL WIRING, ETC. IS TO BE DETERMINED BY THE CONTRACTOR IN THE FIELD.
6. NO FIELD CHANGES SHALL BE MADE IN ANY SPECIFIED WORK OR ANY MATERIALS FOR WHICH SHOP DRAWINGS HAVE BEEN SUBMITTED AND APPROVED WITHOUT PRIOR CONSULTATION OF THE ENGINEER. ANY CHANGES SO MADE WITHOUT CONSENT OF THE PROJECT ENGINEER SHALL, IF DEEMED UNACCEPTABLE, BE PROMPTLY REMOVED FROM THE WORK AT NO EXPENSE TO THE OWNER OF THE PROJECT.
7. ALL DIMENSIONS MUST BE TO FACE OF CURB, EDGE OF PAVEMENT, OR EDGE OF BUILDING, UNLESS OTHERWISE SPECIFIED.
8. ALL DIMENSIONS SHOWN ON THE PLANS MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY ERRORS, OMISSIONS AND CHANGES IN CONDITIONS AT THE SITE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PERFORMING THE RELATED WORK. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR WORK WHICH HAS TO BE REDONE OR REPAIRED DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO CONTRACTOR GIVING ENGINEER WRITTEN NOTIFICATION OF THE SAME AND PRIOR TO CONTRACTOR RECEIVING WRITTEN NOTIFICATION FROM THE ENGINEER.
9. CONTRACTOR MUST REFER TO THE ARCHITECTURAL / BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY / EXIT POINTS, ELEVATIONS, BUILDING DIMENSIONS, AND BUILDING UTILITY LOCATIONS.
10. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL START UNTIL THE CONTRACTOR HAS OBTAINED AND REVIEWED ALL COMMENTS TO THE PLANS, SPECIFICATIONS, AND ANY ADDITIONAL DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH ALL REQUIRED PERMITS, PAY ALL FEES AND PROVIDE ALL BONDS NECESSARY TO COMPLETE THE WORK AS SPECIFIED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PERFORMING ANY NECESSARY ACTS AND PROVIDING ANY MATERIALS REQUIRED IN ORDER TO COMPLY WITH ANY AND ALL TERMS AND CONDITIONS SET FORTH IN ANY PERMITS AND LICENSES. CONTRACTOR SHALL PROVIDE ENGINEER AND OWNER WITH COPIES OF ALL PERMITS AND APPROVALS AND SHALL KEEP COPIES ON-SITE AT ALL TIMES.
11. NOTIFICATION OF CONSTRUCTION: AT LEAST FIVE BUSINESS DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TOWN DEPARTMENTS AND AGENCIES, IN WRITING:
    - DEPARTMENT OF PUBLIC WORKS
    - POLICE DEPARTMENT
    - FIRE DEPARTMENT
    - WATER DEPARTMENT
    - DIG SAFE (1-888-344-7233)
12. THE CONTRACTOR SHALL CONTACT "DIG SAFE" AT 1-888-344-7233, 72 HOURS PRIOR TO ANY EXCAVATION AND/OR SUBSURFACE TESTING TO INFORM THE UTILITY COMPANIES OF ANY EXCAVATION.
13. ALL UTILITIES INTERFERED WITH OR DAMAGED SHALL BE PROPERLY RESTORED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL CAREFULLY BED, TAMP, AND FULLY CONSOLIDATE REFILL MATERIAL AROUND AND UNDER ALL EXISTING UTILITIES ENCOUNTERED OR CROSSED UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
14. ALL OPEN EXCAVATIONS SHALL BE ADEQUATELY SAFEGUARDED BY PROVIDING TEMPORARY BARRICADES, CAUTION SIGNS, LIGHTS AND OTHER MEANS TO PREVENT ACCIDENTS TO PERSONS, AND DAMAGE TO PROPERTY. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE SUITABLE AND SAFE BRIDGES AND OTHER CROSSINGS FOR ACCOMMODATING TRAVEL BY PEDESTRIANS AND WORKMEN. NO EXCAVATIONS SHALL REMAIN OPEN OVERNIGHT.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPROPRIATE SAFETY REGULATIONS. THE CONTRACTORS PARTICULAR ATTENTION IS CALLED TO THE RULES AND REGULATIONS INCLUDED IN PUBLIC LAW 91-596 KNOWN AS THE "OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970" (OSHA).
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, EQUIPMENTS, ACCESSORIES AND APPURTENANCES NECESSARY TO SATISFACTORILY COMPLETE ALL STRIPPING OF TOPSOIL, EXCAVATION OF EARTH AND ROCK, STOCKPILING, REMOVAL OF UNSATISFACTORY MATERIALS, BACKFILLING, FILLING, COMPACTION, AND GRADING, AND ALL INCIDENTAL WORK PERTAINING THERETO.
17. TRENCH EXCAVATION - CONTRACTOR SHALL OBTAIN ALL NECESSARY STATE/LOCAL TRENCH/EXCAVATION PERMITS AND COMPLY WITH ASSOCIATED TRENCH/EXCAVATION SAFETY LAWS. TRENCH EXCAVATION SHALL CONSIST OF THE REMOVAL OF ALL MATERIALS ENCOUNTERED. EXCAVATIONS SHALL BE MADE TO ACCOMMODATE THE ELEVATION, DEPTH OF COVER, OR DETAIL SHOWN ON THE DRAWINGS OR SPECIFIED. TRENCH WIDTHS SHALL BE KEPT TO THE MINIMUM PRACTICABLE BUT SHALL BE AT LEAST TWO FEET WIDE. THE BOTTOM OF THE TRENCHES SHALL BE FIRM AND FREE OF WATER AND SHALL BE ACCURATELY GRADED AND SHAPED TO ALLOW THE REQUIRED BEDDING BENEATH THE BOTTOM OF ALL PIPES INSTALLED.
18. UNSUITABLE MATERIAL - ALL EXCAVATED MATERIAL IS TO BE DISCARDED UNLESS OTHERWISE SUITABLE, AND IF NOT SUITABLE, TO BE REPLACED WITH THE FOLLOWING MATERIAL OR EQUIVALENT, 1/2" TO 3/4" CRUSHED PROCESSED GRAVEL FOR THE BED AND ALSO ABOVE THE ITEMS PLACED IN THE EXCAVATION, FOR A DEPTH NOT LESS THAN SIX (6) INCHES BELOW THE BOTTOM MOST PORTION OF THE ITEM AND FOR A THICKNESS NOT LESS THAN SIX (6) INCHES ABOVE THE TOPMOST PORTION OF THE ITEM.
19. DISPOSAL OF DISCARDED MATERIALS - ALL DISCARDED MATERIALS, RUBBISH, AND DEBRIS THAT ARE DUMPED OR FALL WITHIN THE LIMITS OF THE PROJECT SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR. ALL COSTS ASSOCIATED WITH THE LEGAL DISPOSAL OF EXCESS MATERIALS SHALL BE BORNE BY THE CONTRACTOR. DEBRIS AND UNSUITABLE MATERIAL MUST NOT BE BURIED ON THE SITE.
20. BACKFILL MATERIAL - THE BACKFILL MATERIAL USED SHALL BE OF A QUALITY SATISFACTORY TO THE ENGINEER. AND SHALL BE FREE FROM LARGE OR FROZEN LUMPS OF WOOD, ORGANIC MATTER AND OTHER EXTRANEOUS MATERIAL AND SHALL CONTAIN NO ROCKS OR STONES GREATER THAN 3" DIAMETER.
21. COMPACTION OF BACKFILL - BACKFILL SHALL BE UNIFORMLY DISTRIBUTED IN SUCCESSIVE LAYERS, EACH LAYER BEING THOROUGHLY COMPACTED BEFORE THE SUCCEEDING LAYER IS PLACED. THE ENTIRE WIDTH OF THE TRENCH SHALL BE MECHANICALLY OR HAND TAMPED IN SIX (6) INCH LIFTS, EXTENDING A MINIMUM OF TWO (2) FEET ABOVE THE UTILITY INSTALLATION, AND MECHANICALLY TAMPED THE REMAINDER OF THE FILL IN LIFT DEPTHS NOT GREATER THAN TWO (2) FEET.
22. THE CONTRACTOR SHALL, AT ALL TIMES, CONTROL DUST FROM ROAD SURFACES AND ELSEWHERE WITHIN THE AREA TO THE ENGINEER'S SATISFACTION.
23. DISTURBING EXISTING UTILITIES - SPECIAL CARE SHALL BE EXERCISED DURING EXCAVATION TO AVOID INJURY TO UNDERGROUND STRUCTURES, SUCH AS ELECTRICAL OR CABLES, WATER OR GAS MAINS, PIPES, CONDUITS, MANHOLES, CATCH BASINS, ETC.
24. THE CONTRACTOR SHALL CONTROL ALL SURFACE WATER WITHIN THE WORK AREA. EXCAVATIONS SHALL BE PROTECTED FROM FLOODING BY SURFACE WATER BY USE OF BERMS, DITCHES, OR OTHER SUITABLE MEANS DEEMED APPROPRIATE BY THE CONTRACTOR.
25. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING ACTIVITIES. IF SUBSURFACE WATER IS ENCOUNTERED THE CONTRACTOR IS RESPONSIBLE FOR ALL REMOVAL AND DISPOSAL OF WATER. UPON THE ENCOUNTER OF SUBSURFACE WATER THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER. THE CONTRACTOR SHALL HIRE A PROFESSIONAL ENGINEER TO PREPARE A DEWATERING PLAN WHICH SHALL BE SUBMITTED TO THE ENGINEER AND OWNER FOR REVIEW PRIOR TO THE START OF ANY DEWATERING ACTIVITIES. DISCHARGE OF GROUNDWATER TO WETLANDS OR WATERBODIES IS NOT ACCEPTABLE.
26. THE CONTRACTOR SHALL PREVENT SILTATION OF ANY WATER BODIES AND WETLAND RESOURCE AREAS FROM RUN-OFF AND OR PUMPING OPERATIONS ASSOCIATED WITH THE CONSTRUCTION OPERATIONS, THROUGH THE USE OF HAY BALES, SILTATION FENCES OR OTHER METHODS APPROVED BY THE ENGINEER AND LOCAL CONSERVATION COMMISSION.
27. THE CONTRACTOR SHALL PROSECUTE THE WORK SO THAT NO DAMAGE OCCURS TO ADJACENT UTILITIES, STRUCTURES, PROPERTY, OR ANY OTHER INSTALLATION LOCATED IN OR ADJACENT TO WORK AREAS. DAMAGED UTILITIES SHALL BE REPLACED OR REPAIRED WITH SIMILAR OR BETTER MATERIALS OF THE SAME SIZE AND TO THE REQUIREMENTS OF THE UTILITY OR SITE OWNER. THE CONTRACTOR SHALL HAVE ON SITE THE NECESSARY MANPOWER, MATERIALS, AND EQUIPMENT SUCH AS PUMPS, PIPING, AND THE LIKE AS REQUIRED TO PROTECT AND MAINTAIN UNINTERRUPTED FLOWS IN EXISTING UTILITIES DURING CONSTRUCTION.
28. EXCAVATIONS SHALL BE KEPT FREE FROM WATER, SNOW, AND ICE DURING CONSTRUCTION. BEDDING AND BACKFILL MATERIAL SHALL NOT BE PLACED IN WATER. WATER SHALL NOT BE ALLOWED TO RISE UPON OR FLOW OVER BEDDING AND BACKFILL MATERIAL.
29. THE CONTRACTOR SHALL MAINTAIN ALL BENCHMARKS, MONUMENTS, AND OTHER REFERENCE POINTS AND IF DISTURBED, SHALL HIRE A PROFESSIONAL LAND SURVEYOR TO REPLACE THEM AT NO ADDITIONAL COST TO THE OWNER.
30. THE CONTRACTOR SHALL PROTECT ALL EXISTING SEWERS AND UTILITIES, AND REPAIR OR REPLACE ANY DAMAGED PIPES OR UTILITIES AS PART OF THE CONTRACT WORK.
31. VEHICLE TRAFFIC, VEHICLE PARKING, STOCKPILING OF MATERIALS, AND STORAGE OF EQUIPMENT IS PROHIBITED AT ALL TIMES OVER DRAINAGE AND INFILTRATION BASINS DURING CONSTRUCTION.
32. ALL STRUCTURES SHALL BE DESIGNED FOR H-20 LOADING.
33. CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
34. CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC PLAN FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER IN THE RIGHT OF WAY OR ON SITE, INCLUDING ALL NECESSARY FLAGGERS AND / OR POLICE DETAILS. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S BID PRICE.
35. ALL SIGNING AND PAVEMENT STRIPING MUST CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR LOCALLY APPROVED SUPPLEMENT.

GENERAL UTILITY NOTES

1. EXISTING UTILITY INFORMATION HAS BEEN COMPLETED BY ESE CONSULTANTS, INC., 134 FLANDERS ROAD, SUITE 275, WESTBOROUGH, MA 01581 AND PROVIDED TO STANTEC FOR INCORPORATION INTO THIS PERMITTING PLAN SET.
2. CONTRACTOR TO ADJUST UTILITY ELEMENTS MEANT TO BE FLUSH WITH GRADE (CLEAN-OUTS, UTILITY MANHOLES, CATCH BASINS, INLETS, ETC.) THAT ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
3. ALL WORK TO BE DONE WITHIN PUBLIC RIGHT-OF-WAYS SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF THE TOWN OF SCITUATE AND THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
4. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.
5. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
6. THE CONTRACTOR MUST INSTALL ALL STORM SEWER AND SANITARY SEWER COMPONENTS WHICH FUNCTION BY GRAVITY PRIOR TO THE INSTALLATION OF ALL OTHER UTILITIES.
7. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES, AND BOXES TO THE PROPOSED FINISH SURFACE GRADE
8. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF ALL GAS, ELECTRIC, TELEPHONE, AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
9. CONTRACTOR SHALL MAINTAIN, OR ADJUST TO NEW FINISH GRADE, AS NECESSARY ALL UTILITY AND SITE STRUCTURES SUCH AS: LIGHT POLES, SIGN POLES, MANHOLES, CATCH BASINS, HAND HOLES, WATER AND GAS GATES, HYDRANTS, ETC., FROM MAINTAINED UTILITY AND SITE SYSTEMS, UNLESS OTHERWISE NOTED OR DIRECTED BY OWNER'S REPRESENTATIVE.
10. ANY SITE LIGHTING SHOWN ON THIS PLAN IS FOR COORDINATION PURPOSES ONLY. REFER TO LANDSCAPE PLANS FOR EXACT TYPE AND LOCATION.
11. REFER TO ELECTRICAL PLANS BY UTILITY PROVIDER FOR SECTIONS AND DETAILS OF THE UTILITY DUCT BANK.
12. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION, AT THE CONTRACTOR'S EXPENSE.
13. REFER TO ARCHITECTURAL PLANS FOR PROPOSED LOCATION OF UTILITY SERVICE STUBS AT BUILDING. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRICAL, ETC.)
14. FINAL DESIGN AND LOCATIONS AT THE BUILDING WILL BE PROVIDED BY THE ARCHITECT. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE UTILITY CONNECTIONS WITH THE RESPECTIVE COMPANIES PRIOR TO ANY UTILITY CONSTRUCTION.
15. CONTRACTOR SHALL PROTECT ALL STORMWATER INFRASTRUCTURE FROM EROSION AND SEDIMENT UNTIL THE PROJECT SITE HAS REACHED PERMANENT STABILIZATION BY THE OWNERS REPRESENTATIVE. IN THE EVENT SEDIMENT DOES ENTER THE STORMWATER SYSTEM THE CONTRACTOR SHALL CLEAN AND REMOVE ALL SEDIMENT.
16. THE EXACT LOCATION OF ALL PROPOSED PIPES, VALVES, FITTINGS, HYDRANTS, SERVICES, ETC. IS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
17. THE CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE BETWEEN THE NEW WATER MAIN AND OTHER EXISTING UTILITIES OF AT LEAST SIX (6) INCHES.
18. ALL WATER PIPES ARE TO BE LAID WITH A MINIMUM 5'-0" AND MAXIMUM 5'-6" COVER EXCEPT AS INDICATED OTHERWISE ON THE CONTRACT DRAWINGS, OR AS NEEDED TO AVOID EXISTING UTILITIES.
19. BENDS, TEES, AND HYDRANTS ARE TO BE BACKED WITH CONCRETE THRUST BLOCKS.
20. ALL CEMENT LINED DUCTILE IRON JOINTS AT FITTINGS (CLASS 52,) VALVES, AND HYDRANT LATERALS SHALL BE MECHANICAL JOINT WITH NEOPRENE GASKETS. JOINTS AT OTHER LOCATIONS SHALL BE PUSH-ON TYPE WITH NEOPRENE OR SYNTHETIC RUBBER GASKETS.
21. ALL WATER GATES SHALL OPEN AS PER TOWN WATER DEPARTMENT REQUIREMENTS.
22. ALL WATER PIPES TO BE INSTALLED WITH A MINIMUM TEN (10) FOOT HORIZONTAL SEPARATION FROM ALL DRAINAGE AND SEWAGE GRAVITY AND FORCEMAIN PIPES OR ALL WATER PIPE SHALL BE INSTALLED ABOVE SEWAGE AND DRAINAGE PIPE WITH A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES AS MEASURED FROM THE OUTSIDE OF PIPE. IF THE MINIMUM HORIZONTAL OR VERTICAL SEPARATIONS CANNOT BE OBTAINED THE CONTRACTOR MUST SLEEVE ALL PIPES A MINIMUM OF TEN (10) FEET IN EITHER DIRECTION AND ENCASE IN ALL PIPES IN CONCRETE PER THE DETAILS SHOWN ON THE PLANS. AND PER THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) REQUIREMENTS.
23. THE GRAVITY SEWER LINES SHALL BE 8-INCH SDR-35 PVC EQUIPPED WITH WATERTIGHT JOINTS AND SHALL BE INSTALLED AS STRAIGHT SECTIONS OF PIPE AND SHALL NOT CONTAIN BENDS. GRAVITY SEWER SERVICE CONNECTIONS SHALL BE 4-INCH SCH-40 PVC AND EQUIPPED WITH WATERTIGHT JOINTS. ALL SEWER PIPES SHALL BE INSTALLED IN ACCORDANCE WITH TR-16 GUIDELINES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS, 314 CMR 7.00, SEWER SYSTEM EXTENSION AND CONNECTION PROGRAM, AND TOWN OF SCITUATE SEWER DEPARTMENT REQUIREMENTS.
24. WHEN THERE IS LESS THAN FOUR (4) FEET OF COVER OVER ANY GRAVITY PIPES, RIGID INSULATION SHALL BE INSTALLED IN THE TRENCH ABOVE THE PIPE.
25. GRAVITY SEWERS SHALL BE LAID WITH UNIFORM SLOPE AND STRAIGHT ALIGNMENT BETWEEN MANHOLES. A CLEAN-OUT SHALL BE INSTALLED TO GRADE AT THE END OF ALL GRAVITY SEWAGE COLLECTION PIPES LESS THAN 8" DIAMETER.
26. CLEAN-OUTS TO BE PROVIDED AT ALL BENDS IN GRAVITY SEWER SERVICES.
27. WHEREVER POSSIBLE, SEWER SHALL BE LAID AT A MINIMUM OF AT LEAST TEN (10) FEET, HORIZONTALLY, FROM ANY EXISTING OR PROPOSED WATER MAIN. SHOULD LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET, A SEWER MAY BE LAID CLOSER THAN 10 FEET TO A WATER MAIN IF IT IS LAID IN A SEPARATE TRENCH AND THE ELEVATION OF THE CROWN OF THE SEWER IS AT LEAST EIGHTEEN INCHES (18") BELOW THE INVERT OF THE WATER MAIN. WHENEVER SEWERS MUST CROSS UNDER WATER MAIN, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE CROWN OF THE SEWER IS AT LEAST EIGHTEEN INCHES (18") BELOW THE INVERT OF THE WATER MAIN. WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THIS REQUIREMENT, THE WATER MAIN SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR CONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF THE WATER MAIN SHALL BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. OTHERWISE, IF A MINIMUM OF 18" VERTICAL CLEARANCE CANNOT BE MAINTAINED WHENEVER SANITARY SEWERS PASS BELOW WATER LINES, THEN THE SEWER AND WATER LINES SHALL BE CAREFULLY ENCASED IN CONCRETE FOR A MINIMUM OF TEN FEET (10') FROM THE CROSSING POINT. WHERE SEWER LINES PASS ABOVE WATER SERVICES OR DRAIN LINES, BOTH LINES SHALL BE CAREFULLY ENCASED IN CONCRETE REGARDLESS OF CLEARANCE. BOTH PIPES SHOULD BE PRESSURE TESTED TO ENSURE THAT THEY ARE WATERTIGHT.

GRADING NOTES

1. EXISTING TOPOGRAPHIC INFORMATION COMPILED BY ESE CONSULTANTS, INC. BY PHOTOGRAMETRIC METHODS FROM AERIAL PHOTOGRAPHY PERFORMED IN APRIL 2014.
2. SITE LAYOUT, ROADWAY DESIGN, UTILITY DESIGN, LANDSCAPE DESIGN AND SITE GRADING HAS BEEN COMPLETED BY ESE CONSULTANTS, INC. 250 GIBRALTAR ROAD, SUITE 2E, HORSHAM, PA 019044 AND PROVIDED TO STANTEC FOR INCORPORATION INTO THIS PERMITTING PLAN SET.
3. BASE OF ELEVATIONS ARE REFERENCED TO NGVD 29.
4. WHERE PROPOSED GRADES MEET EXISTING GRADES, CONTRACTOR SHALL BLEND GRADES TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING AND NEW WORK. PONDING AT TRANSITION AREAS WILL NOT BE ALLOWED.
5. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS, STRUCTURES AND PLANTING BEDS.
6. MAXIMUM SLOPE IN DISTURBED AREAS SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
7. ENSURE ALL EXISTING (TO REMAIN), AND PROPOSED MANHOLE COVERS PROPERLY IDENTIFY UTILITY SERVICED.
8. CONTRACTOR SHALL VERIFY EXISTING GRADES AND NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES.
9. BITUMINOUS CONCRETE ELEVATIONS AT CATCH BASINS TO BE 1/4 INCH ABOVE RIM ELEVATION SHOWN FOR CATCH BASIN.
10. CONTRACTOR SHALL ADJUST UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE (CLEAN-OUTS, UTILITY MANHOLES, CATCH BASINS, INLETS, ETC) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
11. SCREENED IMAGES SHOW EXISTING CONDITIONS. WHERE EXISTING CONDITIONS LIE UNDER OR ARE IMPINGED UPON BY PROPOSED BUILDINGS AND/OR SITE ELEMENTS, THE EXISTING CONDITION WILL BE REMOVED, ABANDONED AND/OR CAPPED OR DEMOLISHED AS REQUIRED.
12. ALL DISTURBED SOILS TO REMAIN ON SITE, REFER TO GEOTECHNICAL DRAWINGS AND EARTHWORK SPECIFICATION FOR ADDITIONAL INFORMATION.

SURVEY NOTES

1. PROJECT LOCUS: THE PROPOSED PROJECT INVOLVES WORK OFF HATHERLY ROAD AND TILDEN ROAD, ON ASSESSORS MAP 34, WHICH INCLUDES 67 PARCELS, AND MAP 39, WHICH INCLUDES 42 PARCELS.

   PARCELS:
   - A.P. 34, BLOCK 2, LOTS 2A-F
   - A.P. 34, BLOCK 3, LOTS 7, 9-11*
   - A.P. 34, BLOCK 4, LOTS 1-4*
   - A.P. 34, BLOCK 5, LOTS 1-8*
   - A.P. 34, BLOCK 6, LOTS 13-13C
   - A.P. 34, BLOCK 15, LOTS 1, 8-9*
   - A.P. 34, BLOCK 17, LOTS 18-21*
   - A.P. 34, BLOCK 18, LOTS 1-6*
   - A.P. 39, BLOCK 2, LOTS 1-5*
   - A.P. 39, BLOCK 3, LOTS 2-4*
   - A.P. 39, BLOCK 4, LOTS 1-4*
   - A.P. 39, BLOCK 27, LOT 28
   - *LETTERED LOTS INCLUSIVE

   DEED BOOK / PAGE NUMBER : 9982 / PG. 68

   OWNER : BENJAMIN GOULSTON TR.
2. ALL BASE MAPPING INCLUDING PERIMETER BOUNDARY SURVEY, TOPOGRAPHY, EXISTING SITE FEATURES, EXISTING UTILITIES IN THE VICINITY OF THE SITE AND EXISTING IMPERVIOUS AREAS HAS BEEN COMPLETED BY ESE CONSULTANTS, INC., 134 FLANDERS ROAD, SUITE 275, WESTBOROUGH, MA 01581. TOPOGRAPHIC FEATURES WERE COMPILED USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY PERFORMED IN APRIL 2014.
3. BASE ELEVATIONS ARE REFERENCED TO NGVD 29.
4. WETLANDS MAPPING AND DELINEATION HAS BEEN COMPLETED BY LEC ENVIRONMENTAL CONSULTANTS, INC., 12 RESNIK ROAD, SUITE 1, PLYMOUTH, MA 02360.
5. WETLAND FLAGS WERE DELINEATED ON 5/9/14, 5/12/14 AND 6/12/14 BY LEC ENVIRONMENTAL CONSULTANTS, INC.
6. WETLAND FLAGS WERE LOCATED BY ESE CONSULTANTS, INC.
7. FLOODPLAIN BOUNDARY (CONTOUR 16) WAS ESTABLISHED FROM AERIAL TOPOGRAPHY USING VERTCON TO CONVERT BASE FLOOD ELEVATIONS FROM NAVD88 TO NGVD29 DATUM.
8. THE PROJECT SITE IS LOCATED PARTLY WITHIN ZONE "X" (AREA OF MINIMAL FLOODING) AND WITHIN ZONE AE (EL. 15) AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP FOR THE TOWN OF SCITUATE, MASSACHUSETTS, PLYMOUTH COUNTY, COMMUNITY PANEL NO. 25023C0128K, HAVING AN EFFECTIVE DATE OF NOVEMBER 4, 2016.
9. UNDERGROUND UTILITY LOCATIONS AS SHOWN HEREON ARE TAKEN FROM AVAILABLE RECORD AND FIELD INFORMATION AND ARE APPROXIMATE ONLY. CONTACT DIG-SAFE BEFORE PLANNING ANY CONSTRUCTION. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. STANTEC ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER PUBLIC UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED.

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Revision	By	Appd.	YY.MM.DD

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Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
GENERAL NOTES

Permit-Seal

KEVIN P. KLEIN ENVIRONMENTAL No. 37608 REGISTERED
March 24, 2017

Project Number: 3599
File Name: 3599-S-NOTES

ESE	Stantec	Stantec	2017.03.24
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Drawing No. SD02.01
Revision Sheet

ADA INSTRUCTIONS TO CONTRACTOR

1. ALL ACCESSIBLE (AKA. ADA) PARKING SPACES MUST BE CONSTRUCTED TO MEET THE REQUIREMENTS OF THE 'AMERICANS WITH DISABILITIES ACT' (ADA) CODE 42 U.S.C. 12101 ET. SEQ. AND 42 U.S.C. 4151 ET. SEQ. AND THE REQUIREMENTS OF THE JURISDICTION WHERE THE PROJECT IS TO BE CONSTRUCTED, AND ANY AND ALL AMENDMENTS TO BOTH.

2. THE FOLLOWING COMPONENTS, AS CONSTRUCTED, MUST COMPLY WITH ALL APPLICABLE STATE AND LOCAL ACCESSIBILITY LAWS AND REGULATIONS AND THE CURRENT ADA AND/OR STATE ARCHITECTURAL ACCESS BOARD STANDARDS AND REGULATIONS' BARRIER FREE ACCESS AND ANY MODIFICATIONS, REVISIONS, AND/OR UPDATES. FINISHED SURFACES ALONG THE ACCESSIBLE ROUTE OF TRAVEL FROM PARKING SPACE, PUBLIC TRANSPORTATION, PEDESTRIAN ACCESS, INTER-BUILDING ACCESS TO POINTS OF ACCESSIBLE BUILDING ENTRANCES/EXITS, MUST COMPLY WITH THESE ADA AND/OR ARCHITECTURAL ACCESS BOARD CODE REQUIREMENTS INCLUDING, BUT LIMITED TO THE FOLLOWING:

   2.1. PARKING SPACES AND PARKING AISLES – SLOPE SHALL NOT EXCEED 1:50 (1/4 PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
   2.2. CURB RAMPS – SLOPE MUST NOT EXCEED 1:12 (8.3%) FOR A MAXIMUM OF SIX (6) FEET.
   2.3. LANDINGS – MUST BE PROVIDED AT EACH END OF RAMPS, MUST PROVIDE POSITIVE DRAINAGE, AND MUST NOT EXCEED 1:50 (1/4 PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
   2.4. PATH OF TRAVEL ALONG ACCESSIBLE ROUTE – MUST PROVIDE A 36-INCH OR GREATER UNOBSTRUCTED WIDTH OF TRAVEL (CAR OVERHANGS AND/OR HANDRAILS CANNOT REDUCE THIS MINIMUM WIDTH). THE SLOPE MUST BE NO GREATER THAN 1:20 (5.0%) IN THE DIRECTION OF TRAVEL, AND MUST NOT EXCEED 1:50 (1/4 PER FOOT OR NOMINALLY 2.0%) IN CROSS SLOPE. WHERE PATH OF TRAVEL WILL BE GREATER THAN 1:20 (5.0%), ADA RAMP MUST BE ADHERED TO. A MAXIMUM SLOPE OF 1:12 (8.3%), FOR A MAXIMUM RISE OF 2.5 FEET, MUST BE PROVIDED. THE RAMP MUST HAVE ADA HAND RAILS AND LEVEL LANDINGS ON EACH END THAT ARE CROSS SLOPED NO MORE THAN 1:50 IN ANY DIRECTION (1/4 PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE.
   2.5. DOORWAYS – MUST HAVE A LEVEL LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED AWAY FROM THE DOOR NO MORE THAN 1:50 (1/4 PER FOOT OR 2.0% NOMINALLY) FOR POSITIVE DRAINAGE. THIS LANDING AREA MUST BE NO LESS THAN 60 INCHES (5 FEET) LONG, EXCEPT WHERE OTHERWISE PERMITTED BY ADA STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS.
   2.6. WHEN THE PROPOSED CONSTRUCTION INVOLVES RECONSTRUCTION, MODIFICATION, REVISION, OR EXTENSION OF OR TO ADA COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, CONTRACTOR MUST VERIFY EXISTING ELEVATIONS SHOWN ON THE PLAN. NOTE THAN TABLE 405.2 OF THE DEPARTMENT OF JUSTICE'S ADA STANDARDS FOR ACCESSIBILITY DESIGN ALLOWS FOR STEEPER RAMP SLOPES, IN RARE CIRCUMSTANCES. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER, IN WRITING, OF ANY DISCREPANCIES AND/OR FIELD CONDITIONS THAT DIFFER FROM WHAT IS SHOWN ON THE PLANS BEFORE THE START OF ANY WORK. CONSTRUCTED IMPROVEMENTS MUST FALL WITHIN THE MAXIMUM AND MINIMUM LIMITATIONS IMPOSED BY THE BARRIER FREE REGULATIONS AND THE ADA REQUIREMENTS.
   2.7. THE CONTRACTOR MUST VERIFY THE SLOPES OF CONTRACTOR'S FORMS PRIOR TO THE POURING OF CONCRETE. IF ANY NON-CONFORMANCE IS OBSERVED OR EXISTS, CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO POURING CONCRETE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS TO REMOVE, REPAIR, AND REPLACE NON-CONFORMING CONCRETE AND STRUCTURES.
   2.8. IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION WITH THE LOCAL BUILDING CODE PRIOR TO START OF CONSTRUCTION.

EROSION CONTROL MEASURES

1. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR DISTURBANCE AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
2. HAY BALE SEDIMENT TRAPS SHALL BE INSTALLED AT ALL DRAINAGE STRUCTURES. HAY BALE BARRIERS AND SILTATION FENCES ARE TO BE MAINTAINED AND CLEANED UNTIL ALL DISTURBED AREAS ARE STABILIZED WITH PAVEMENT OR VEGETATION.
3. THE UNDERSIDE OF HAYBALES SHOULD BE KEPT IN CLOSE CONTACT WITH THE EARTH AND RESET AS NECESSARY. REMOVE SEDIMENT WHEN DEPTH IS 6" OR GREATER.
4. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED, AND ACCUMULATED SEDIMENT DISPOSED OF IN AN OFF-SITE LOCATION. ALL DISTURBED AREAS SHALL BE STABILIZED WITH APPROPRIATE GROUND COVER AS SOON AS POSSIBLE.
5. AFTER THE REMOVAL OF TEMPORARY EROSION CONTROL MEASURES, ALL DISTURBED AREAS SHALL RECEIVE 6" OF LOAM AS PER SPECIFICATIONS.
6. FILL MATERIALS SHALL BE FREE OF STUMPS, ROOTS, WOOD, ETC.
7. CLEAN OUT CATCH BASINS, DRAIN MANHOLES, STORM DRAIN PIPES, AND STORMWATER BASINS AFTER COMPLETION OF CONSTRUCTION.
8. SEDIMENT THAT IS COLLECTED IN STRUCTURES SHALL BE DISPOSED OF PROPERLY AND COVERED IF STORED ON-SITE.
9. BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE OF NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY WHEN INSTALLED.
10. DAMAGED OR DETERIORATED ITEMS WILL BE REPAIRED IMMEDIATELY AFTER IDENTIFICATION.
11. THE CONTRACTOR'S SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE, AND REPAIR ACTIVITIES. EROSION CONTROLS SHALL BE INSPECTED AFTER ALL RAINFALL EVENTS AND, AT A MINIMUM, ON A WEEKLY BASIS.
12. THIS PROJECT WILL DISTURB MORE THAN 1 ACRE OF LAND AND WILL REQUIRE A NPDES CONSTRUCTION GENERAL PERMIT FROM THE EPA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) ON SITE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
13. PROPOSED INFILTRATION BASINS SHALL NOT BE USED AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION WITHOUT WRITTEN APPROVAL OF THE OWNER'S REP. TEMPORARY SEDIMENT BASINS SHALL BE LINED WITH NONWOVEN FILTER FABRIC COVERED WITH SIX INCHES (6") OF CRUSHED STONE. PRIOR TO CONSTRUCTION OF INFILTRATION BASIN, THE STONE, FILTER FABRIC AND SEDIMENT SHALL BE REMOVED. BASIN SHALL BE INSPECTED AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO FINAL CONSTRUCTION OF INFILTRATION BASIN.
14. ON ALL SLOPES GREATER THAN 3:1, INSTALL EROSION CONTROL BLANKET.

GENERAL PLANTINGS NOTES:

1. CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING AND WILL CONTINUE UNTIL FINAL WRITTEN ACCEPTANCE OF PLANT MATERIAL.
2. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS, STRUCTURES, AND PLANTING BEDS.
3. MAXIMUM SLOPE WITHIN DISTURBED AREAS SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
4. THE LANDSCAPE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE ALL PLANTINGS SHOWN ON THIS DRAWING.
5. ALL MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
6. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS TO ORIGINAL GRADES BEFORE DIGGING.
7. ALL PLANTS TO BE BALLED IN BURLAP OR CONTAINERIZED.
8. MULCH FOR PLANTED AREAS TO BE AGED PINE BARK: PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS THICKER THAN 1/4 INCH.
9. PLANTING SOIL MIX: LOAM THOROUGHLY INCORPORATED WITH ROTTED MANURE PROPORTIONED 5 C.Y. TO 1 C.Y. OR EQUIVALENT. FERTILIZER ADDED PER RECOMMENDED RATES OF SOILS ANALYSIS.
10. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF ACCEPTANCE.
11. ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE, AT THE NURSERY, AND AT THE SITE.
12. ALL AREAS OF THE SITE WHICH HAVE BEEN DISTURBED AND NOT OTHERWISE DEVELOPED SHALL BE LOAMED AND SEEDED WITH A MINIMUM DEPTH OF 6" TOPSOIL.
13. FINAL SELECTION OF SPECIES SHALL OCCUR AT THE TIME OF PLANT PURCHASE, DEPENDING ON AVAILABILITY. PLANT SIZE AND QUANTITY SHALL NOT CHANGE WITHOUT APPROVAL OF OWNER'S REPRESENTATIVE.

GENERAL CONSTRUCTION SEQUENCING

1. PRE-CONSTRUCTION MEETING WITH OWNER AND OWNER'S ENGINEER PRIOR TO COMMENCING ANY WORK.
2. PLACE CONSTRUCTION SAFETY FENCE AROUND PROPERTY TO LIMIT ACCESS AND PROTECT THE PUBLIC.
3. MOBILIZE TO SITE AND DEVELOP A CONSTRUCTION STAGING AREA APPROVED BY OWNER AND THE ENGINEER.
4. PLACE ENVIRONMENTAL PROTECTION DEVICES INCLUSIVE OF STRAW WATTLES, SILTATION FENCING, AND TEMPORARY STABILIZATION. ESTABLISH SOIL STOCKPILE AREAS AND PLACE SILTATION FENCING AROUND THE STOCKPILE AREAS TO CONTAIN THE SOIL. ALSO, PROVIDE SILT SACKS AT EXISTING DOWN-GRADIENT CATCH BASINS.
5. THE OWNER RESERVES THE RIGHT TO SCHEDULE THE CONTRACTOR TO CONSTRUCT AT ANY LOCATIONS WITHIN THE PROJECT AREA. AT THE SAME TIME THE OWNER MAY SCHEDULE THE SUSPENSION OF CONSTRUCTION AT ANY LOCATION.
6. AFTER THE CONTRACTOR HAS STAKED OUT THE FACILITIES TO BE CONSTRUCTED AND HAS THE APPROVED MATERIALS ON THE JOB, THE OWNER'S ENGINEER SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS IN ADVANCE OF CONSTRUCTION TO ARRANGE INSPECTIONS. THE TOWN OF LINCOLN SHALL BE PROVIDED NOTIFICATION FOR DAILY INSPECTIONS IF REQUIRED. NOTIFY TOWN 2 WEEKS PRIOR TO STARTING CONSTRUCTION.
7. CLEAR AND GRUB WITHIN WORK LIMITS.
8. HAVE A WATER TRUCK ON-SITE TO MINIMIZE FUGITIVE DUST DURING BUILDING DEMOLITION, EXCAVATION, PAVEMENT OR PARKING SURFACE DEMOLITION, SHED FOUNDATION EXCAVATIONS AND GENERAL CONSTRUCTION PROCESSES.
9. FOR THE PROTECTION OF LIFE AND PROPERTY, ALL BACKFILL OPERATIONS SHALL FOLLOW CLOSELY BEHIND ANY OPEN EXCAVATION OR PIPE LAYING. THE CONTRACTOR SHALL ENSURE THAT NO EXCAVATION BE LEFT OPEN, UNGUARDED, OR WATER FILLED DURING ANY PERIOD OF TIME WHEN WORK IS NOT ACTUALLY IN PROGRESS. IT IS THE PURPOSE AND INTENT THAT ALL EXCAVATIONS AND BACKFILLING, INCLUDING CONSOLIDATION OPERATIONS, AND TEMPORARY SURFACING WITHIN AN AREA BE ACCOMPLISHED EXPEDITIOUSLY BEFORE PROCEEDING TO OTHER WORK AREAS.
10. SHOULD DEWATERING BE NECESSARY, THE CONTRACTOR SHALL DESIGN AND INSTALL A DEWATERING FACILITY AS REQUIRED, SEE GENERAL NOTES AND SPECIFICATIONS. CONTRACTOR'S DESIGN SHALL BE APPROVED BY OWNERS ENGINEERING AND LOCAL CONSERVATION COMMISSION AGENT.
11. BACKFILLING WILL ONLY OCCUR IN THE DESIGNATED AREAS, AND EROSION CONTROL PRACTICES SHALL BE SET IN PLACE PRIOR TO BACKFILLING TO ENSURE NO SEDIMENT MIGRATION OFF-SITE OR TO DRAINAGE SYSTEMS DURING THE BACKFILLING PROCEDURE. BACKFILLING SHALL OCCUR IN 6-12 INCH LIFTS, AND SHALL BE COMPACTED TO A DENSITY NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY.
12. EXCAVATE AND REMOVE THE EXISTING PAVED SURFACES TO BE REPLACED, AS NOTED ON THE SITE PLANS, AND SUCH SOILS ARE TO BE USED AS COMMON FILL WHERE ACCEPTABLE TO THE ENGINEER OR TRUCKED AWAY AND DISPOSED OF IN A LEGAL MANNER.
13. ROUGH GRADE PARKING AREAS AND ACCESS WAY SUB GRADE AND REFILL GRAVEL TO MAINTAIN ROAD GRADES.
14. ROUGH GRADE THE GROUND AROUND FOUNDATIONS, PARKING LOT AREAS, RAINGARDENS, AND INFILTRATION BASINS.
15. INSTALL NEW CATCH BASINS, SEDIMENT FOREBAYS, DRAIN PIPES, WATER SERVICE AND OTHER REQUIRED UTILITIES (GAS, ELECTRIC, TELEPHONE/CABLE) TO SCHOOL, HYDRANT, AND INFILTRATION SYSTEMS. INSTALL SILT SACKS ONCE NEW CATCH BASINS ARE INSTALLED.
16. PLACE BINDER FOR ALL PARKING LOT REPLACEMENT AREAS AND ANY NEW PARKING LOT AREAS, AND INSTALL ACCESS WAY AND PARKING LOT GRANITE CURBING.
17. CONSTRUCT SIDEWALKS, RAMPS, AND OTHER PEDESTRIAN FACILITIES AROUND THE BUILDING AND PARKING LOT.
18. PLACE TOPSOIL ON AREAS NOT BEING PAVED OR COMPLETED WITH OTHER FEATURES.
19. INSTALL FINAL LANDSCAPING, INCLUDING HYDROSEEDING OF LOAM AREAS TO BECOME LAWN, LIGHT POLES, WALKWAYS. CONCRETE PADS, AND DUMPSTER PAD CONSTRUCTION.
20. MONITOR ROAD AND TRENCH SETTLEMENT DURING CONSTRUCTION PROCESS.
21. FINALIZE ALL GRADING FOR THE SITE.
22. REMOVE AND PROPERLY DISPOSE OF SILT AND COLLECTED DEBRIS FROM ALL ENVIRONMENTAL PROTECTION DEVICES. CLEAN UP SITE, REMOVE SILT SACKS, CLEAN CATCH BASINS.
23. REMOVE ENVIRONMENTAL PROTECTION DEVICES AFTER RECEIVING APPROVAL FROM THE ENGINEER AND TOWN'S CONSERVATION COMMISSION.
24. DEMOBILIZE FROM SITE.

SITE PREPARATION NOTES

1. WITHIN THE LIMIT OF THE WORK LINE AS NOTED ON THE EROSION AND SEDIMENTATION CONTROL PLAN, REMOVE AND DISCARD ALL CONCRETE PAVEMENT, BITUMINOUS CONCRETE PAVEMENT, BRICK PAVEMENT, TOP SOIL, MULCH, TRASH, DEAD TREES AND STUMPS, SHRUBBERY, CHAIN LINK FENCE POSTS, RAILS, FABRIC, GATES, FOOTINGS AND ALL APPURTENANCES, BOLLARDS, POSTS, CONCRETE FOOTINGS AND FOUNDATIONS, WALLS AND CURBS UNLESS OTHERWISE NOTED.
2. THE OWNER'S REPRESENTATIVE SHALL BE CONSULTED AND WILL REVIEW THE LIMIT OF WORK LINE ON SITE WITH THE CONTRACTOR BEFORE ANY WORK SHALL COMMENCE.
3. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO STARTING WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING CONDITIONS TO REMAIN THAT ARE DUE TO CONTRACTOR OPERATIONS.
5. ALL ITEMS TO BE REMOVED THAT ARE NOT STOCKPILED FOR LATER REUSE ON THE PROJECT OR DELIVERED TO THE OWNER SHALL BE LEGALLY DISPOSED OF OFF SITE BY THE CONTRACTOR.
6. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON THE SURVEY REFERENCED ABOVE. THE CONTRACTOR SHALL CONTACT DIGSAFE AND THE PROPER LOCAL AUTHORITIES OR RESPECTIVE UTILITY COMPANIES TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. ANY DAMAGE DUE TO FAILURE OF THE CONTRACTOR TO CONTACT THE PROPER AUTHORITIES SHALL BE BORNE BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS EFFORTS OF THE DEMOLITION WITH ALL TRADES.
8. THE CONTRACTOR SHALL COORDINATE ALL ADJUSTMENT OR ABANDONMENT OF UTILITIES WITH THE RESPECTIVE UTILITY COMPANY.
9. THE CONTRACTOR SHALL MAINTAIN OR ADJUST TO NEW FINISH GRADE AS NECESSARY ALL UTILITY AND SITE STRUCTURES SUCH AS LIGHT POLES, SIGN POLES, MANHOLES, CATCH BASINS, HANDHOLES, WATER AND GAS GATES, HYDRANTS, ETC., FROM MAINTAINED UTILITY AND SITE SYSTEMS UNLESS OTHERWISE NOTED OR DIRECTED BY THE OWNER'S REPRESENTATIVE.
10. TRAILER, STOCKPILES, AND STAGING AREAS ARE RECOMMENDED AREAS. FINAL LOCATIONS WILL BE DETERMINED BY THE MEANS AND METHODS SELECTED BY THE CONTRACTOR. VARIATIONS FROM THIS PLAN SHALL BE REVIEWED WITH THE OWNER'S REPRESENTATIVE PRIOR TO IMPLEMENTATION.
11. CONTRACTOR SHALL COORDINATE WITH THE LOCAL BOARD OF HEALTH FOR THE REMOVAL OF ANY EXISTING SEPTIC SYSTEM AND ALL CONNECTIONS.
12. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCING CONSTRUCTION

GENERAL DEMOLITION NOTES

1. CONTRACTOR SHALL PERFORM ALL WORK AS PER THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (29 U.S.C. 651 et seq.) AND ANY MODIFICATIONS, AMENDMENTS, AND REVISIONS.
2. IN THE EVENT THE CONTRACTOR DISCOVERS ANY HAZARDOUS MATERIAL, FOR WHICH THE REMOVAL OF IS NOT INCLUDED IN THE PROJECT PLANS AND SPECIFICATIONS, THE CONTRACTOR MUST IMMEDIATELY CEASE ALL WORK AND NOTIFY THE OWNER AND THE ENGINEER.
3. THE CONTRACTOR MUST PROVIDE ALL MEANS AND METHODS NECESSARY FOR THE PREVENTION OF MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES AND ANY OTHER IMPROVEMENTS THAT ARE TO REMAIN ON OR OFF SITE. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL NECESSARY REPAIRS OF DAMAGED STRUCTURES AND IMPROVEMENTS.
4. EXPLOSIVES MUST NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND ALL APPLICABLE GOVERNMENT AUTHORITIES. ALL REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES REQUIRED BY LOCAL AND STATE AUTHORITIES MUST BE IN PLACE.
5. DEMOLITION ACTIVITIES AND EQUIPMENT MUST NOT BE USED OUTSIDE THE LIMITS OF WORK AS SHOWN ON THE DRAWINGS.
6. CONTRACTOR IS RESPONSIBLE FOR THE SAFEGUARD OF OF THE SITE AS NECESSARY DURING DEMOLITION AND CONSTRUCTION ACTIVITIES TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.
7. CONTRACTOR TO MAINTAIN A RECORD SET OF PLANS WHICH MUST ALSO INCLUDE THE LOCATION OF EXISTING UTILITIES THAT HAVE BEEN CAPPED, ABANDONED IN PLACE, OR RELOCATED DUE TO DEMOLITION ACTIVITIES. RECORD DOCUMENT MUST BE TURNED OVER TO ENGINEER UPON PROJECT COMPLETION.

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Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
GENERAL NOTES

Permit-Seal

COMMONWEALTH OF MASSACHUSETTS
KEVIN P. KLEIN
ENVIRONMENTAL
No. 37808
REGISTERED
PROFESSIONAL ENGINEER

March 24, 2017

Project Number: 3599

File Name: 3599-S-NOTES

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Drawing No. SD02.02

Revision Sheet

SEWER MANHOLE TESTING

1. MANHOLE TESTING: THE VACUUM TEST SHALL BE PERFORMED AND THE CONTRACTOR SHALL TAKE ANY AND ALL STEPS NECESSARY TO ASSURE THE ENGINEER THAT THE WATER TABLE IS BELOW THE INVERT OF THE MANHOLE THROUGHOUT THE TEST. ANY AND ALL MEASURES NECESSARY BY THE CONTRACTOR TO LOWER THE GROUND WATER TABLE BELOW THE INVERT OF THE MANHOLE, WILL BE AT THE CONTRACTOR'S COST.

   THE VACUUM TEST FOR FOUR OR FIVE FOOT DIAMETER MANHOLES SHALL BE BASED ON THE FOLLOWING PROCEDURE AND CRITERIA:

   A) ONCE ALL PENETRATIONS ARE SEALED, THE TEST PROCEEDS BY DRAWING AN INITIAL VACUUM PRESSURE OF 10 INCHES HG (I.E., 20 INCH ABSOLUTE).

   B) AFTER REACHING 10 INCHES HG, THE TIME IS RECORDED FOR THE VACUUM PRESSURE TO DROP TO 9 INCHES HG.

   C) IF THE TIME REQUIRED FOR THE VACUUM TO DROP 1 INCH HG (FROM 10 TO 9 INCHES) EXCEEDS THE PRESCRIBED PERIOD STATED BELOW, BASED ON THE MANHOLE DEPTH AND DIAMETER, THE MANHOLE IS ACCEPTABLE.

   FOR 0 TO 10 FOOT DEEP MANHOLES, 2 MINUTES MINIMUM ALLOWABLE
   FOR 10 TO 15 FOOT DEEP MANHOLES, 2-1/2 MINUTES MINIMUM ALLOWABLE
   FOR 15 TO 25 FOOT DEEP MANHOLES, 3 MINUTES MINIMUM ALLOWABLE

2. IF THE PRESSURE DROP EXCEEDS 1 INCH HG IN 2 MINUTES THE MANHOLE SHALL BE REPAIRED AND RETESTED.

3. IF A MANHOLE FAILS TO MEET A MAXIMUM OF 1-INCH HG DROP IN 2 MINUTES AFTER REPAIR, THE MANHOLE SHALL BE WATER EXFILTRATION TESTED AND REPAIRED AS NECESSARY.

4. TESTING USING EITHER AIR OR WATER SHALL BE DONE WHENEVER POSSIBLE PRIOR TO BACKFILLING TO ASSIST IN LOCATING LEAKS. JOINT REPAIRS BY PARGING ARE TO BE DONE ON BOTH OUTSIDE AND INSIDE OF THE JOINT TO ENSURE A PERMANENT SEAL.

GRAVITY SEWER TESTING

1. AIR PRESSURE TESTING IS CONDUCTED BETWEEN TWO (2) CONSECUTIVE MANHOLES, AS DIRECTED BY THE ENGINEER.

2. THE TEST SECTION OF THE SEWER LINE IS PLUGGED AT EACH END. ONE OF THE PLUGS USED AT THE MANHOLE MUST BE TAPPED AND EQUIPPED FOR THE AIR INLET CONNECTION FOR FILLING THE LINE FROM THE AIR COMPRESSOR.

3. ALL SERVICE LATERALS, STUBS, AND FITTINGS INTO THE SEWER TEST SECTION SHOULD BE PROPERLY CAPPED OR PLUGGED, AND CAREFULLY BRACED AGAINST THE INTERNAL PRESSURE TO PREVENT AIR LEAKAGE BY SLIPPAGE AND BLOWOUTS.

4. CONNECT AIR HOLE TO TAPPED PLUGGED SELECTED FOR THE AIR INLET. THEN CONNECT THE OTHER END OF THE AIR HOSE TO THE PORTABLE AIR CONTROL EQUIPMENT WHICH CONSISTS OF VALVES AND PRESSURE GAGES USED TO CONTROL:

   A) THE AIR ENTRY RATE TO THE SEWER TEST SECTION, AND

   B) TO MONITOR THE AIR PRESSURE IN THE PIPE LINE.

   MORE SPECIFICALLY, THE AIR CONTROL EQUIPMENT INCLUDES INCLUDES A SHUT-OFF VALVE, PRESSURE REGULATING VALVE, PRESSURE REDUCTION VALVE AND A MONITORING PRESSURE GATE HAVING A PRESSURE RANGE FROM 0 TO 5 PSI. THE PRESSURE GAGE SHOULD HAVE MINIMUM DIVISIONS OF .10 PSI AND AN ACCURACY OF ±.04 PSI. FIGURE NO. 1 ILLUSTRATES DIAGRAMMATICALLY A TYPICAL CONTROL EQUIPMENT APPARATUS.

5. CONNECT ANOTHER AIR HOSE BETWEEN THE AIR COMPRESSOR (OR OTHER SOURCE OF COMPRESSED AIR) AND THE AIR CONTROL EQUIPMENT. THIS COMPLETES THE TEST EQUIPMENT SET-UP. TEST OPERATIONS MAY COMMENCE.

6. SUPPLY AIR TO THE TEST SECTION SLOWLY, FILLING THE PIPELINE UNTIL A CONSTANT PRESSURE OF 3.5 PSIG IS MAINTAINED. THE AIR PRESSURE MUST BE REGULATED TO PREVENT THE PRESSURE INSIDE THE PIPE FROM EXCEEDING 5.0 PSIG.

7. WHEN A CONSTANT PRESSURE OF 3.5 PSIG IS REACHED, THROTTLE THE AIR SUPPLY TO MAINTAIN THE INTERNAL PRESSURE ABOVE 3.0 PSIG FOR AT LEAST 5 MINUTES. THIS TIME PERMITS THE TEMPERATURE OF THE ENTERING AIR TO EQUALIZE WITH THE TEMPERATURE OF THE PIPE WALL. DURING THIS STABILIZATION PERIOD, IT IS ADVISABLE TO CHECK ALL CAPPED AND PLUGGED FITTINGS WITH A SOAP SOLUTION TO DETECT ANY LEAKAGE AT THESE CONNECTIONS.

   IF LEAKAGE IS DETECTED AT ANY CAP OR PLUG, RELEASE THE PRESSURE IN THE LINE AND TIGHTEN ALL LEAKY CAPS AND PLUGS. THEN START THE TEST OPERATION AGAIN BY SUPPLYING AIR. WHEN IT IS NECESSARY TO BLEED OFF THE AIR TO TIGHTEN OR REPAIR A FAULTY PLUG, A NEW 5-MINUTE INTERVAL MUST BE ALLOWED AFTER THE PIPELINE HAS BEEN REFILLED.

8. AFTER THE STABILIZATION PERIOD, ADJUST THE AIR PRESSURE TO 3.5 PSIG AND SHUT OFF OR DISCONNECT THE AIR SUPPLY. OBSERVE THE GAGE UNTIL THE AIR PRESSURE REACHES 3.0 PSIG. AT 3.0 PSIG, COMMENCE TIMING WITH A STOPWATCH WHICH IS ALLOWED TO RUN UNTIL THE LINE PRESSURE DROPS TO 2.5 PSIG AT WHICH TIME THE STOPWATCH IS STOPPED. THE TIME REQUIRED, AS SHOWN ON THE STOPWATCH, FOR A PRESSURE LOSS OF 0.5 PSIG IS USED TO COMPUTE THE AIR LOSS. MOST AUTHORITIES CONSIDER IT UNNECESSARY TO DETERMINE THE AIR TEMPERATURE INSIDE THE PIPELINE AND THE BAROMETRIC PRESSURE AT THE TIME OF THE TEST.

9. IF THE TIME, IN MINUTES AND SECONDS, FOR THE AIR PRESSURE TO DROP FROM 3.0 TO 2.5 PSIG IS GREATER THAN THAT SHOWN IN TABLE NO. 1 FOR THE DESIGNATED PIPE SIZE, THE SECTION UNDERGOING TEST SHALL HAVE PASSED AND SHALL BE PRESUMED TO BE FREE OF DEFECTS. THE TEST MAY BE DISCONTINUED AT THAT TIME.

10. IF THE TIME, IN MINUTES AND SECONDS, FOR THE 0.5 PSIG DROP IS LESS THAN THAT SHOWN IN TABLE NO. 1 FOR THE DESIGNATED PIPE SIZE, THE SECTION OF PIPE SHALL NOT HAVE PASSED THE TEST; THEREFORE, ADEQUATE REPAIRS MUST BE MADE AND THE LINE RETESTED.

    A) PIPE SIZES WITH THEIR PERSPECTIVE RECOMMENDED MINIMUM TIMES, IN MINUTES AND SECONDS, FOR ACCEPTANCE BY THE AIR TEST METHOD.

    B) FOR EIGHT (8) INCH AND SMALLER PIPE, ONLY: IF, DURING THE 5-MINUTE SATURATION PERIOD, PRESSURE DROPS LESS THAN 0.5 PSIG AFTER THE INITIAL PRESSURIZATION AND AIR IS NOT ADDED, THE PIPE SECTION UNDERGOING TESTS SHALL HAVE PASSED.

    C) MULTI PIPE SIZES: WHEN THE SEWER LINE UNDERGOING TEST IS 8" OR LARGER DIAMETER PIPE AND INCLUDES 4" OR 6" LATERALS, THE FIGURES IN TABLE 1 FOR UNIFORM SEWER MAIN SIZES WILL NOT GIVE RELIABLE OR ACCURATE CRITERIA FOR THE TEST. WHERE MULTI-PIPE SIZES ARE TO UNDERGO THE AIR TEST, THE ENGINEER CAN COMPUTE THE "AVERAGE" SIZE IN INCHES WHICH IS THEN MULTIPLIED BY 38.2 SECONDS. THE RESULTS WILL GIVE THE MINIMUM TIME IN SECONDS ACCEPTABLE FOR A PRESSURE DROP OF 0.5 PSIG FOR THE "AVERAGED" DIAMETER PIPE.

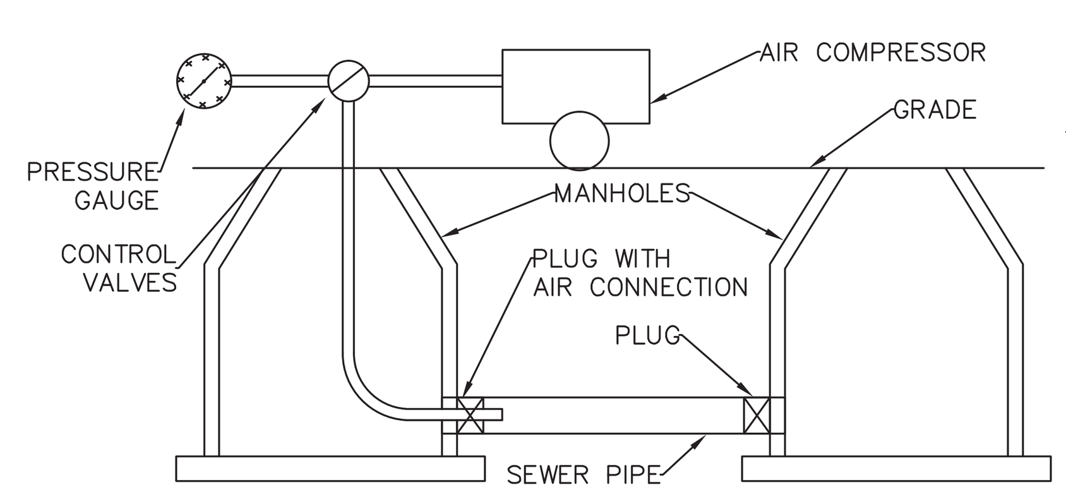

FIGURE 1
TYPICAL AIR TEST EQUIPMENT LAYOUT

TABLE 1
TIME REQUIREMENTS FOR AIR TESTING

PIPE SIZE (INCHES)	TIME	
	MINUTES	SECONDS
4	2	32
6	3	50
8	5	6

(FOR LARGER DIAMETER PIPE USE THE FOLLOWING: MINIMUM TIME IN SECONDS = 462 X PIPE DIAMETER IN FT)

WATER MAIN AND SERVICE TESTING

1. TESTING OF THE NEW WATER MAINS SHALL BE CARRIED OUT IN A MANNER APPROVED BY TOWN WATER DEPARTMENT AND THE ENGINEER. TESTING SHALL BE PERFORMED AT THE EXPENSE OF THE CONTRACTOR.

2. TESTING SHALL BE IN ACCORDANCE WITH AWWA C-600. TESTING SHALL CONSIST OF FILLING EACH SECTION FROM VALVE TO VALVE AND MAINTAINING A HYDROSTATIC TEST PRESSURE. ALL AIR SHALL BE EXPELLED FROM THE LINE PRIOR TO TESTING. THE TEST PRESSURE SHALL BE 150 PSI OR 1.5 TIMES THE WORKING PRESSURE, WHICHEVER IS GREATER. THE TEST DURATION SHALL BE 2 HOURS. ALLOWABLE LEAKAGE SHALL BE BASED ON SECTION 4.1 OF AWWA C-600. ANY DEFECTIVE PIPE, FITTING OR MATERIAL SHALL BE MADE TIGHT OR REMOVED AND REPLACED AT THE EXPENSE OF THE CONTRACTOR AND THE TEST SHALL BE REPEATED.

WATER MAIN & SERVICE DISINFECTION

AFTER AN ACCEPTABLE PRESSURE TEST, THE NEW WATER MAINS SHALL BE CHLORINATED IN ACCORDANCE WITH AWWA C-651. CHLORINE SHALL BE INTRODUCED THROUGH A TAP AT ONE END OF THE PIPELINE WHILE WATER IS WITHDRAWN FROM THE OPPOSITE END. CHLORINE DOSAGE MUST BE SUFFICIENT TO PRODUCE A MINIMUM CHLORINE RESIDUAL IN THE PIPELINE OF 50 mg/l. FOLLOWING A 24-HOUR CONTACT PERIOD, THE TREATED WATER SHALL BE FLUSHED FROM THE MAINS AND SAMPLES TAKEN FOR COLIFORM AND BACKGROUND BACTERIA. MAINS WILL NOT BE ACCEPTED OR APPROVED FOR SERVICE CONNECTIONS UNTIL SAMPLES SHOW ZERO BACTERIA COUNTS. THE CONTRACTOR SHALL RE-DISINFECT AND RE-SAMPLE UNTIL MAINS ARE ACCEPTABLE.

WATER MAIN MATERIALS AND APPURTENANCES

PIPE AND FITTINGS
WATER MAIN SHALL BE 8-INCH DIAMETER CLASS 52, CEMENT LINED DUCTILE IRON PIPE WITH A PRESSURE RATING OF 350 PSI. PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-900. ALL COUPLINGS, FITTINGS, ADAPTERS, VALVES, REDUCERS, WYES, AND TEES SHALL BE COMPATIBLE WITH THE TYPE OF PIPE USED.

LAYING PIPE
EXCAVATIONS SHALL BE MADE TO ACCOMMODATE THE BEDDING MATERIAL. ALL EXCAVATIONS SHALL BE KEPT DRY WHILE PIPE IS BEING LAID AND UNTIL EACH JOINT AND PIPE HAS BEEN VIEWED BY THE ENGINEER AND APPROVAL GIVEN TO COMMENCE BACKFILLING OPERATIONS. ANY PIPE WHICH IS NOT LAID TO GRADE AND ALIGNMENT SHALL BE RE-LAID TO THE SATISFACTION OF THE ENGINEER. NO BLOCKING SHALL BE USED. PIPE SHALL BE INSTALLED IN ACCORDANCE WITH PUBLISHED RECOMMENDATIONS OF THE PIPE MANUFACTURER.

VALVES AND BOXES
GATE VALVES SHALL BE IRON BODY, BRONZE MOUNTED, MECHANICAL JOINT END, EQUIPPED FOR MANUAL OPERATION. THE VALVE WEDGE SHALL BE HIGH STRENGTH CAST IRON ENCAPSULATED IN AN ELASTOMER COMPOUND. A MINIMUM OF TWO O-RINGS SHALL BE LOCATED IN THE STUFFING BOX TO SEAL AGAINST LEAKAGE. VALVES SHALL BE OF THE RESILIENT-SEATED TYPE IN CONFORMANCE WITH THE REQUIREMENTS OF AWWA C-509. VALVES SHALL BE NON-RISING STEM AND SHALL OPEN RIGHT-CLOCKWISE. VALVES SHALL BE EQUIVALENT TO THE TYPE MANUFACTURED BY MEUELLER.

VALVE BOXES SHALL BE PROVIDED FOR BURIED VALVES. VALVE BOXES SHALL BE CAST IRON, TAR COATED, SLIDING TYPE, CONSISTING OF THREE PIECES: A FLANGED BOTTOM PIECE, A TOP PIECE, AND A COVER WITH TWO LIFTING HOLES AND THE WORD "WATER" CAST ON THE TOP.

TAPPING SLEEVE
TAPPING SLEEVES SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY THE AWWA AND BE OF THE SPECIFIC SIZE TO SUIT THE CONDITIONS. TAPPING SLEEVES SHALL BE MECHANICAL JOINT, TWO PART CASTINGS FLANGED ON THE VERTICAL CENTERLINE, AND COME COMPLETE WITH ALL JOINT ACCESSORIES. TAPPING SLEEVES SHALL BE ASSEMBLED AROUND THE MAIN WITHOUT HALTING SERVICE. TAPPING SLEEVES SHALL BE EQUIVALENT TO THE TYPE MANUFACTURED BY CLOW VALVE CO., M&H VALVE CO., OR MUELLER.

TAPPING VALVE
TAPPING VALVES SHALL BE OF THE RESILIENT SEATED GATE TYPE IN CONFORMANCE WITH THE REQUIREMENTS OF AWWA C-509. THE VALVES SHALL BE IRON BODY, BRONZE MOUNTED, TAPPING BY MECHANICAL JOINT ENDS, EQUIPPED FOR MANUAL OPERATION AND SHALL OPEN RIGHT-CLOCKWISE. TAPPING VALVES SHALL BE EQUIVALENT TO THE TYPE MANUFACTURED BY CLOW VALVE CO., M&H VALVE CO., OR MUELLER.

GRANULAR FILL MATERIALS
MATERIALS SHALL CONFORM TO THE COMMONWEALTH OF MASSACHUSETTS "STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES" LATEST EDITION.

SCREENED GRAVEL: HARD, DURABLE, ROUNDED PARTICLES FREE FROM SAND, LOAM, CLAY, EXCESS FINES, AND DELETERIOUS MATERIAL. UNIFORMLY GRADED SUCH THAT NOT LESS THAN 95% WILL PASS A 1/2-INCH SIEVE AND NOT MORE THAN 5% PASS A NO. 4 SIEVE.

BANK RUN GRAVEL: HARD, DURABLE STONE AND COARSE SAND FREE FROM FROST, LOAM, CLAY, AND OTHER DELETERIOUS MATERIAL.

CONCRETE THRUST BLOCKS
CONCRETE UTILIZED FOR THRUST BLOCKS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AND CONFORM TO ASTM C150. CONCRETE THRUST BLOCKS SHALL BE PLACED AT ALL PRESSURE WATER BENDS 11-1/4 DEGREES AND GREATER, AT FITTINGS AND AS DESIGNATED BY THE ENGINEER.

UNDERGROUND TAPE
UNDERGROUND TAPE SHALL BE PROVIDED FOR ALL WATER MAINS AND SERVICES AND SHALL BE 3-INCH WIDE SILVER METAL DETECTABLE TAPE WHICH PERMANENTLY IDENTIFIES THE UNDERGROUND WATER MAIN AND SERVICES. THE TAPE SHALL MEET APWA REQUIREMENTS AND HAVE COLORED STRIPES WITH BLACK PRINT INDICATING "CAUTION BURIED WATER MAIN BELOW".

THE PIPE MARKER TAPE SHALL BE INSTALLED, CENTERED, ALONG THE ENTIRE LENGTH OF THE WATER MAINS AND SERVICES AT A MAXIMUM DEPTH OF 12 INCHES BELOW FINISHED GRADE.

INSPECTION AND ACCEPTANCE
ALL MATERIALS AND CONSTRUCTION ARE SUBJECT TO THE APPROVAL OF THE TOWN WATER DEPARTMENT AND THE ENGINEER. THE CONTRACTOR SHALL NOT COVER ANY WORK PRIOR TO SAID APPROVAL. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING ALL DEFICIENCIES TO THE SATISFACTION OF THE TOWN WATER DEPARTMENT AND ENGINEER. APPROVAL SHALL IN NO WAY AFFECT THE OBLIGATION OF THE CONTRACTOR TO REPAIR SUBSEQUENT DEFICIENCIES.

UNDERGROUND RESIDENTIAL WATER SERVICES:

PIPE
PRESSURE WATER SERVICE CONNECTIONS BETWEEN THE PROPERTY LINE AND THE PRESSURE WATER MAIN IN THE STREET SHALL BE BURIED 1-INCH DIAMETER HIGH DENSITY POLYETHYLENE (HDPE) COPPER TUBE SIZE (CTS) PIPE. EACH SERVICE CONNECTION SHALL INCLUDE A 1-INCH BALL VALVE CURB STOP WITH VALVE BOX AT THE PROPERTY LINE, AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS.

CORPORATION STOPS
CORPORATION STOPS SHALL BE 1-INCH, PART NO. FB1000-4-Q-NL BY FORD METER BOX COMPANY, OR APPROVED EQUAL.

BALL VALVE CURB STOPS
BALL VALVE CURB STOPS SHALL BE 1-INCH, PART NO. B44-444-Q-NL BY FORD METER BOX COMPANY, OR APPROVED EQUAL.

CURB SERVICE BOXES
CURB SERVICE BOXES SHALL BE TAR COATED, CAST IRON, SLIDING TYPE WITH INLAID COVERS. REMOVABLE CAST IRON COVERS SHALL HAVE THE WORD "WATER" CAST IN THE TOP, AND SHALL BE HELD IN PLACE WITH BRONZE BOLTS. SHAFT SHALL BE 2-1/2 INCHES INSIDE DIAMETER WITH EXTENSION RODS, AND BE THE EXTENSION/SLIDE TYPE EXTENDING FROM FOUR FEET (4') TO FIVE FOOT SIX INCHES (5'-6").

WATER METER
A DISC TYPE WATER METER WITH REMOTE READER REGISTERING IN CUBIC FEET SHALL BE FURNISHED BY SCITUATE WATER DEPARTMENT AND SHALL BE INSTALLED.

STORM SEWER MATERIALS AND APPURTENANCES

1. STORM SEWER PIPE MATERIAL TO BE HIGH DENSITY POLYETHYLENE (HDPE). PIPE DIAMETERS TO BE AS SHOWN ON STORM SEWER PIPE CHART ON UTILITY PLANS.

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Revision	By	Appd.	YY.MM.DD

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Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
GENERAL NOTES

Permit-Seal

COMMONWEALTH OF MASSACHUSETTS KEVIN P KLEIN ENVIRONMENTAL No. 37808 REGISTERED PROFESSIONAL ENGINEER

MARCH 24, 2017

Project Number: 3599
File Name: 3599-S-NOTES

ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD02.03

Revision Sheet

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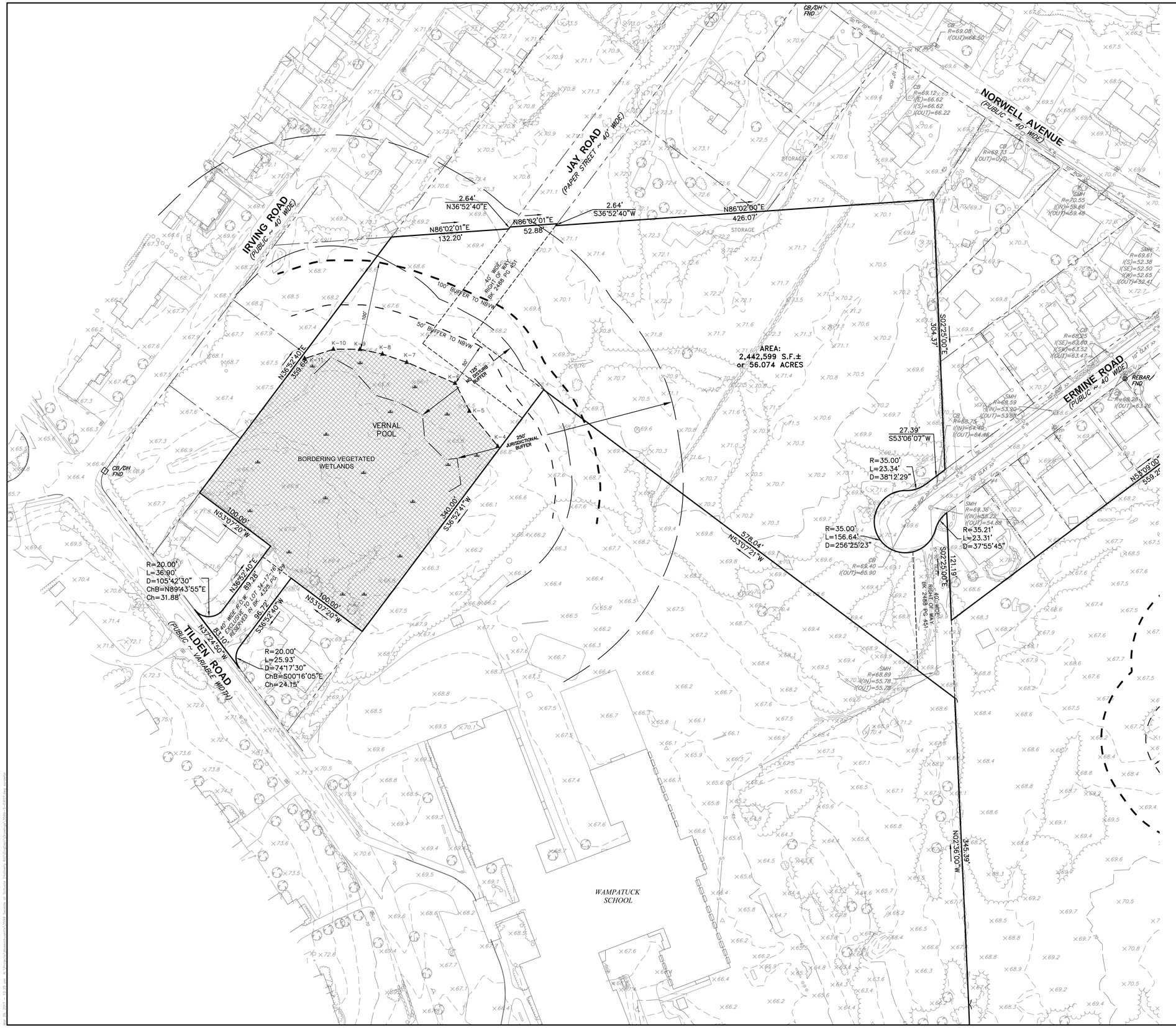
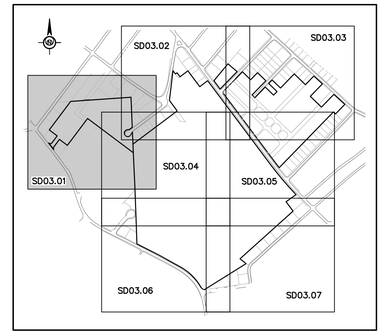
Title
OVERALL SITE PLAN

Project Number: 3599
File Name: 3599-S-OVERALL

ESE	Stantec	ESE	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD03.01
Revision Sheet





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- FEMA FLOOD LINE – ELEV.=16.0
- 100' WETLAND BUFFER
- 50' WETLAND BUFFER
- WETLANDS LIMIT
- WETLAND FLAGS

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50 0 25 50 FEET 100 200
GRAPHIC SCALE 1 inch = 50 ft.

COMMONWEALTH OF MASSACHUSETTS
SHAWN L. CRAWFORD
No. 48852
REGISTERED PROFESSIONAL ENGINEER

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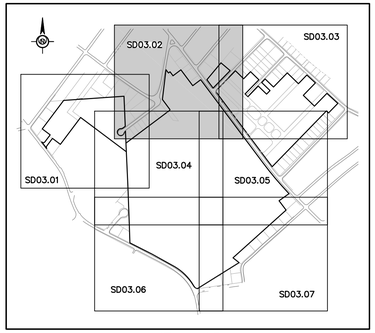
DESCRIPTION	DATE	BY

EXISTING CONDITIONS PLAN
PREPARED FOR
TOLL MA LAND III L.P.
IN
SCITUATE, MASSACHUSETTS

DATE: 3/24/17	SCALE: 1"=50'
CHK'D BY:	DRAWN: SLC
JOB NO.: 3599	FILE NAME: 3599-S-EXIST
DWG. NO.: SD04.01	
SHEET NO.: 6 OF 37	



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NO.	DESCRIPTION	DATE	DRAWN

AREA:
2,442,599 S.F.±
or 56.074 ACRES

ERMINE ROAD
(PUBLIC ~ 40' WIDE)

REBAR/
FND

27.39'
S53°06'07"W

R=35.00'
L=23.34'
D=38°12'29"

R=35.00'
L=156.64'
D=256°25'23"

R=35.21'
L=23.31'
D=37°55'45"

N5°09'00"E
559.20'

S78°04'
N53°07'21"W
578.04'

S02°25'00"E
121.19'

40' WIDE
RIGHT OF WAY
BK 2469 PG 45

N02°36'00"W
345.39'

N02°25'00"W
325.38'

RAINBOW CT.
(PUBLIC ~ 42' WIDE)

CB/DH
FND.

CB
R=60.29

CB
R=60.40

CB
R=68.25
(SE)=63.60
(SW)=63.52
(NW)=63.47

CB
R=68.59
I(IN)=53.90
I(OUT)=53.90

CB
R=68.75
I(IN)=64.40
I(OUT)=64.66

CB
R=68.28
I(OUT)=63.26

SMH
R=69.36'
I(IN)=58.22'
I(OUT)=54.88'

CB
R=69.40
I(OUT)=65.90

SMH
R=68.89
I(IN)=55.78
I(OUT)=55.78

NON-BORDERING
VEGETATED WETLANDS

BORDERING
VEGETATED
WETLANDS

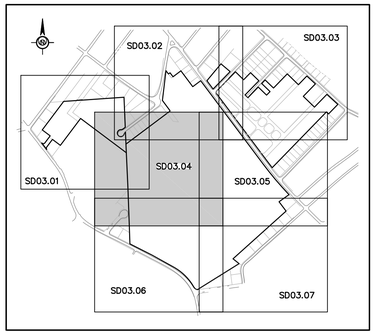
50' BUFFER TO NBVW

100' BUFFER TO NBVW

50' BUFFER TO BVW

100' BUFFER TO BVW

AREA:
2,442,599 S.F.±
or 56.074 ACRES



KEY MAP
N.T.S.

LEGEND

- EXISTING HYDRANT
- EXISTING VALVE
- EXISTING MANHOLE
- EXISTING CURB INLET
- EXISTING INLET
- EXISTING WELLHEAD
- EXISTING STREET LAMP
- EXISTING PRIVATE LAMP
- EXISTING UTILITY POLE & LAMP
- EXISTING SUPPORT POLE
- EXISTING UTILITY POLE
- EXISTING POST
- EXISTING SINGLE POST SIGN
- EXISTING DOUBLE POST SIGN
- EXISTING PRIVATE MAILBOX
- EXISTING PUBLIC MAILBOX
- EXISTING STRUCTURE
- EXISTING MISCELLANEOUS FEATURE
- DEFINED EXISTING TREE LOCATION
- UNDEFINED EXISTING TREE LOCATION
- EXISTING SHRUB
- EXISTING SPOT ELEVATION
- SWAMP
- EXISTING TRAFFIC SIGNAL POLE
- EXISTING FLAG POLE
- HORIZ. & VERT. AERIAL CONTROL
- HORIZ. AERIAL CONTROL
- VERT. AERIAL CONTROL
- EXISTING PROPERTY LINE
- EXISTING TREELINE
- EXISTING BRUSH/SHRUBLINE
- EXISTING WATER
- EXISTING TRAIL
- EXISTING STONEWALL
- EXISTING FENCE
- EXISTING GUIDE RAIL
- EXISTING CONTOURS
- EXISTING CARTWAY
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD WIRES
- EXISTING SANITARY SEWER W/MANHOLE
- EXISTING STORM SEWER W/INLET
- SOILS LINE
- OBSCURED AREA
- FEMA FLOOD LINE – ELEV.=16.0
- 100' WETLAND BUFFER
- 50' WETLAND BUFFER
- WETLANDS LIMIT
- H-5 WETLAND FLAGS

NOTES:

1. THE PROJECT SITE IS LOCATED PARTLY WITHIN ZONE "X" (AREA OF MINIMAL FLOODING) AND WITHIN ZONE AE (EL 15) AS SHOWN ON F.E.M.A. FLOOD INSURANCE RATE MAP FOR THE TOWN OF SCITUATE, MASSACHUSETTS, PLYMOUTH COUNTY, COMMUNITY PANEL NO. 25023C0128K, HAVING AN EFFECTIVE DATE OF NOVEMBER 4, 2016.
2. BASE OF ELEVATIONS ARE REFERENCED TO NGVD 29.
3. TOPOGRAPHIC FEATURES COMPILED BY ESE CONSULTANTS, INC BY PHOTOGRAMETRIC METHODS FROM AERIAL PHOTOGRAPHY PERFORMED IN APRIL 2014.
4. WETLAND FLAGS WERE DELINEATED ON 5/9/14, 5/12/14 AND 6/12/14 BY LEC ENVIRONMENTAL CONSULTANTS, INC.
5. WETLAND FLAGS WERE LOCATED BY ESE CONSULTANTS, INC.
6. FLOODPLAIN BOUNDARY (CONTOUR 16) WAS ESTABLISHED FROM AERIAL TOPOGRAPHY,USING VERTCON TO CONVERT BASE FLOOD ELEVATIONS FROM NAVD88 TO NGVD29 DATUM.

50 0 25 50 FEET 100 200
GRAPHIC SCALE 1 inch = 50 ft.

COMMONWEALTH OF MASSACHUSETTS
SHAWN L. CRAWFORD
No. 48852
REGISTERED PROFESSIONAL ENGINEER

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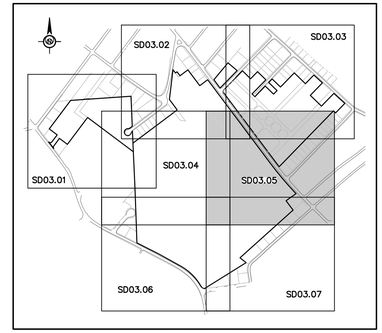
ESE Consultants, Inc.
134 Flanders Road • Suite 275 • Westborough, MA 01581
T: 508-616-6129

NO.	DESCRIPTION	DRAWN	DATE

EXISTING CONDITIONS PLAN
PREPARED FOR
TOLL MA LAND III L.P.
IN
SCITUATE, MASSACHUSETTS

DATE: 3/24/17	SCALE: 1"=50'
CHK'D BY:	DRAWN: SLC
JOB NO.: 3599	FILE NAME: 3599-S-EXIST
DWG. NO.: SD04.04	
SHEET NO.: 9 OF 37	



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50 0 25 50 FEET 100 200
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SHAWN L. CRAWFORD
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COMMONWEALTH OF MASSACHUSETTS

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NO.	DESCRIPTION	DATE

EXISTING CONDITIONS PLAN
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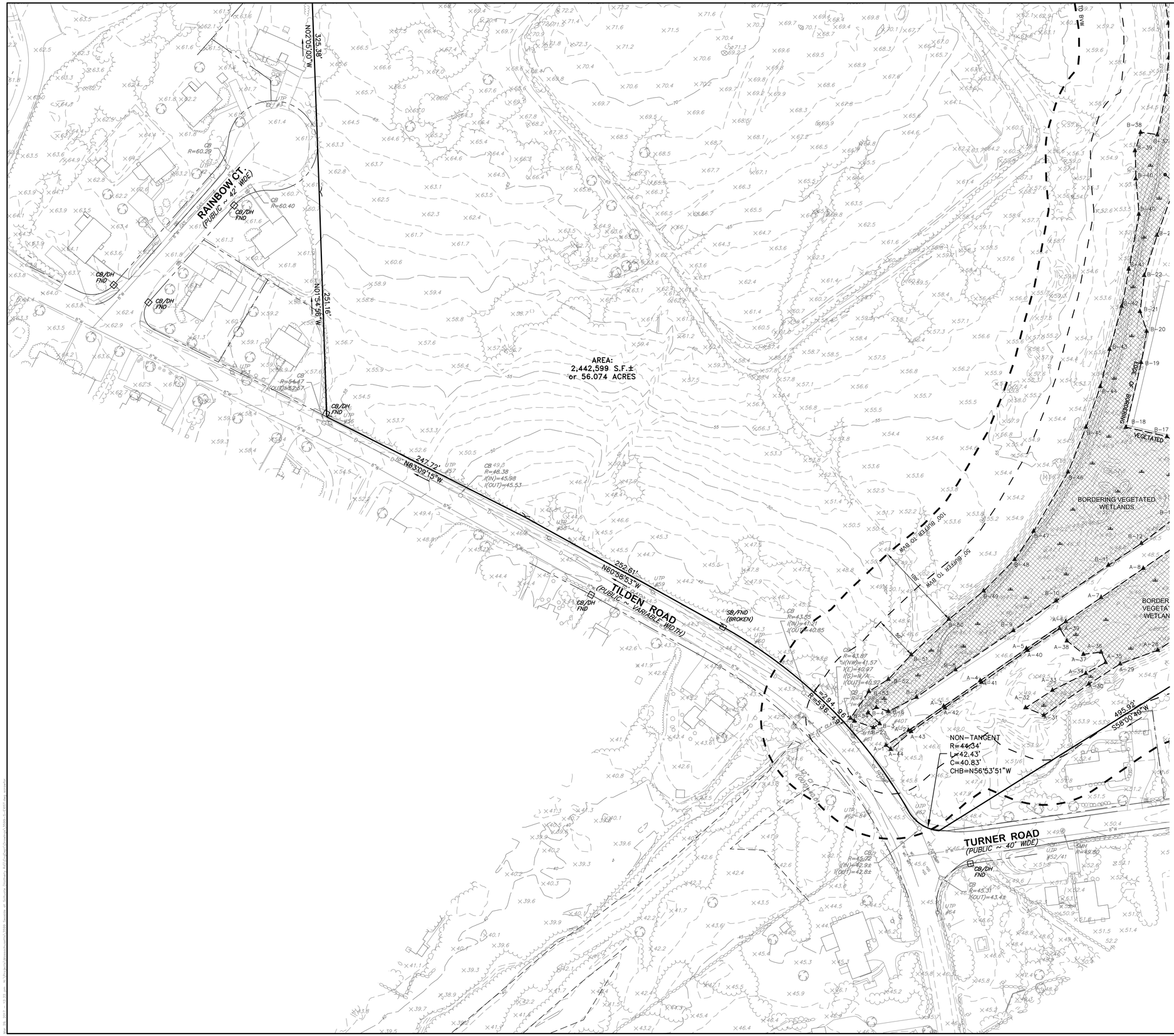
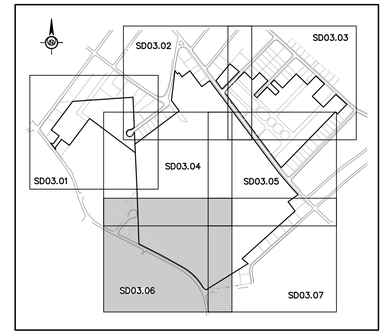
TOLL MA LAND III L.P.
IN
SCITUATE, MASSACHUSETTS

DATE: 3/24/17	SCALE: 1"=50'
CHK'D BY:	DRAWN: SLC
JOB NO.: 3599	FILE NAME: 3599-S-EXIST
DWG. NO.: SD04.05	
SHEET NO.: 10 OF 37	





KEY MAP
N.T.S.

LEGEND

- EXISTING HYDRANT
- EXISTING VALVE
- EXISTING MANHOLE
- EXISTING CURB INLET
- EXISTING INLET
- EXISTING WELLHEAD
- EXISTING STREET LAMP
- EXISTING PRIVATE LAMP
- EXISTING UTILITY POLE & LAMP
- EXISTING SUPPORT POLE
- EXISTING UTILITY POLE
- EXISTING POST
- EXISTING SINGLE POST SIGN
- EXISTING DOUBLE POST SIGN
- EXISTING PRIVATE MAILBOX
- EXISTING PUBLIC MAILBOX
- EXISTING STRUCTURE
- EXISTING MISCELLANEOUS FEATURE
- DEFINED EXISTING TREE LOCATION
- UNDEFINED EXISTING TREE LOCATION
- EXISTING SHRUB
- EXISTING SPOT ELEVATION
- SWAMP
- EXISTING TRAFFIC SIGNAL POLE
- EXISTING FLAG POLE
- HORIZ. & VERT. AERIAL CONTROL
- HORIZ. AERIAL CONTROL
- VERT. AERIAL CONTROL

- EXISTING PROPERTY LINE
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- EXISTING BRUSH/SHRUBLINE
- EXISTING WATER
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- OBSCURED AREA
- FEMA FLOOD LINE – ELEV.=16.0
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- WETLANDS LIMIT
- WETLAND FLAGS

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50 0 25 50 FEET 100 200
GRAPHIC SCALE 1 inch = 50 ft.

COMMONWEALTH OF MASSACHUSETTS
SHAWN L. CRAWFORD
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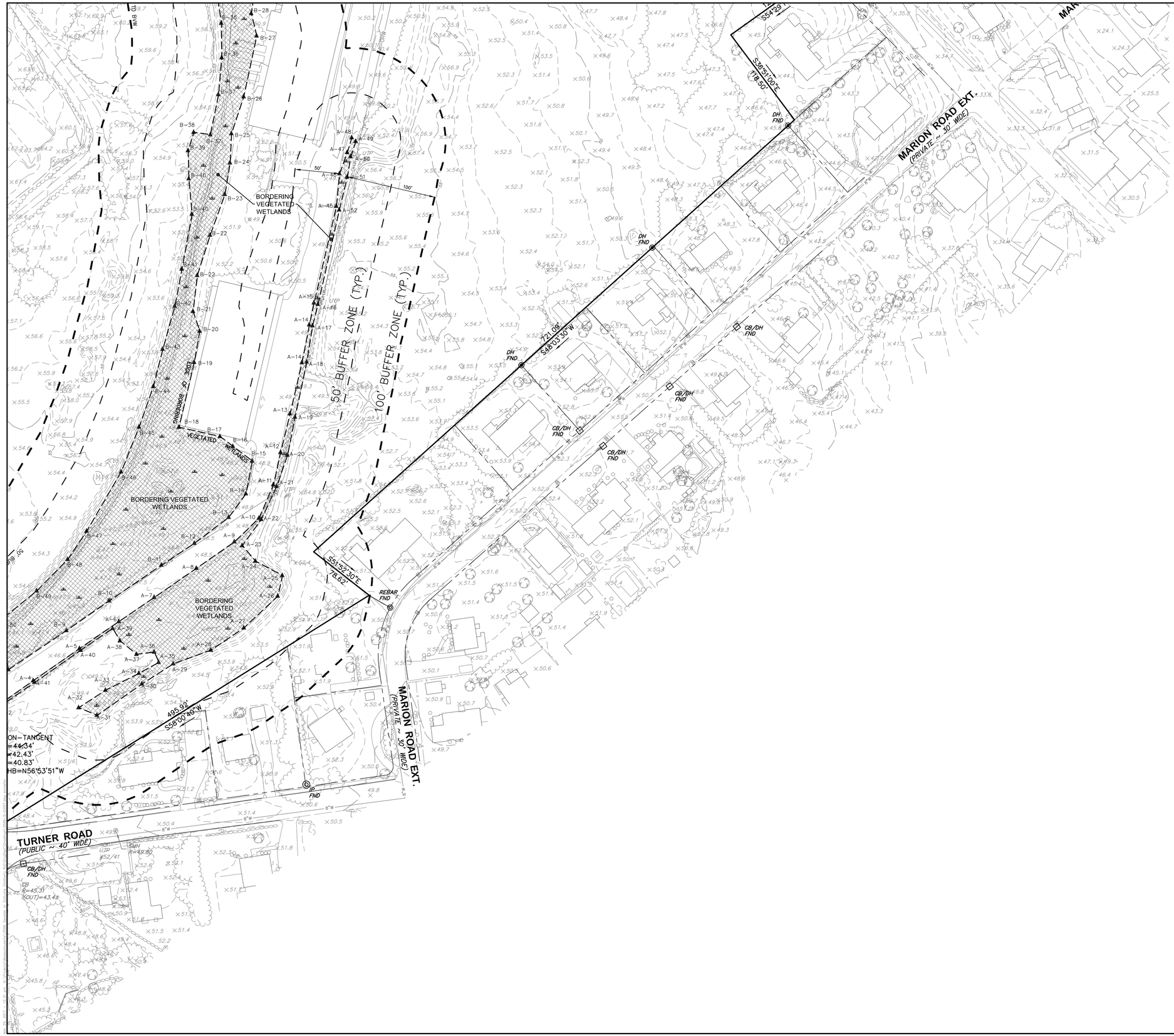
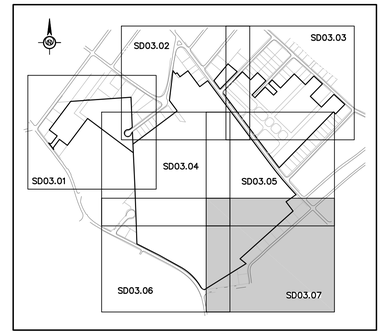
NO.	DESCRIPTION	DATE	DRAWN

EXISTING CONDITIONS PLAN
PREPARED FOR
TOLL MA LAND III L.P.
IN
SCITUATE, MASSACHUSETTS

DATE: 3/24/17	SCALE: 1"=50'
CHK'D BY:	DRAWN: SLC
JOB NO.: 3599	FILE NAME: 3599-S-EXIST
DWG. NO.: **SD04.06**	
SHEET NO.: 11 OF 37	





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- 100.0 EXISTING SPOT ELEVATION
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50 0 25 50 FEET 100 200
GRAPHIC SCALE 1 inch = 50 ft.

SHAWN L. CRAWFORD No. 46852 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

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NO.	DESCRIPTION	DATE	DRWN

EXISTING CONDITIONS PLAN
PREPARED FOR
TOLL MA LAND III L.P.
IN
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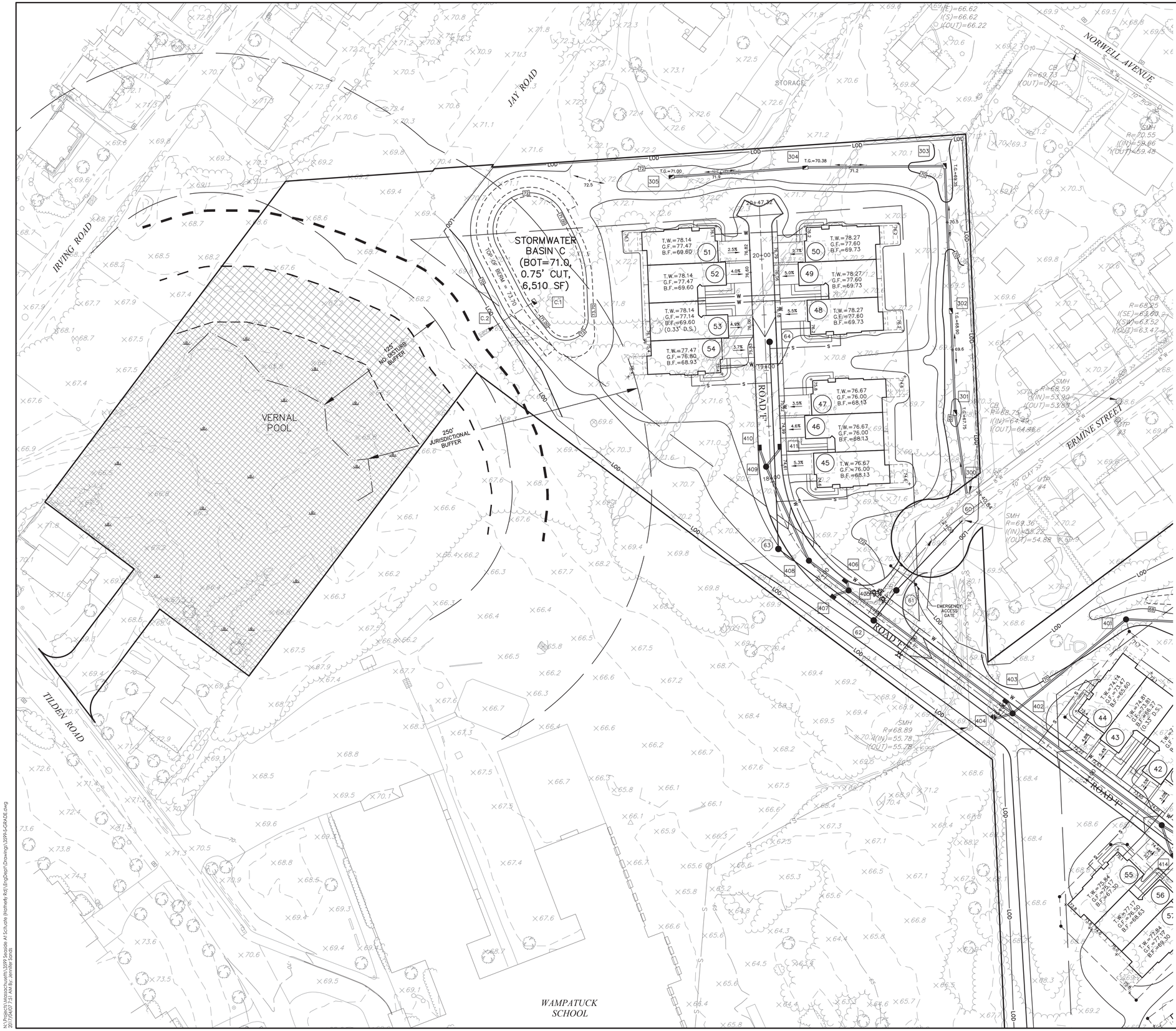
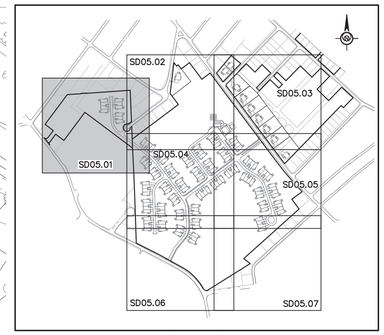
DATE: 3/24/17	SCALE: 1"=50'
CHK'D BY:	DRAWN: SLC
JOB NO.: 3599	FILE NAME: 3599-S-EXIST
DWG. NO.: SD04.07	
SHEET NO.: 12 OF 37	





KEY MAP
N.T.S.

LEGEND

- EXISTING STRUCTURE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATION
- DRAINAGE FLOW ARROW (YARD)
- DRAINAGE FLOW ARROW (CARTWAY)
- PROPOSED TREE LINE
- EXISTING TREE LINE
- PROPOSED 8" WATER LINE W/FIRE HYDRANT, THRUST BLOCK & TEE VALVE
- PROPOSED WATER LATERAL
- EXISTING INLET W/STORM SEWER
- UNDETERMINED (DOWNSTREAM INVERT & LOCATION NOT VERIFIED)
- PROPOSED SANITARY MANHOLE NUMBER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED STORM STRUCTURE NUMBER
- PROPOSED ROAD INLET
- PROPOSED YARD INLET
- PROPOSED ENDWALL
- PROPOSED STORM MANHOLE
- PROPOSED FLARED END SECTION
- PROPOSED ROOF DRAIN
- SITE BUFFER LINE
- PROPOSED CENTER LINE
- STREAM LINE
- PROPOSED PROPERTY LINE
- PROPOSED R.O.W.
- PROPOSED EASEMENT
- EXISTING CARTWAY
- PROPOSED CURB
- PROPOSED 4' WIDE SIDEWALK WITH ACCESS RAMP
- OUTBOUND LINE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RIP-RAP
- PROPOSED LOT/UNIT NUMBER
- T.W. PROPOSED TOP OF WALL ELEVATION
- G.F. PROPOSED GARAGE FLOOR ELEVATION
- B.F. PROPOSED BASEMENT FLOOR ELEVATION
- STOP SIGN
- SPEED LIMIT SIGN
- NO OUTLET SIGN
- PEDESTRIAN CROSSING
- STREET LIGHT
- FEMA FLOOD LINE – ELEV.=16.0
- 100' WETLAND BUFFER
- 50' WETLAND BUFFER
- WETLANDS LIMIT
- TEMPORARY WETLAND IMPACT AREA (3,425± SF)
- PERMANENT WETLAND IMPACT AREA (7,348 SF)
- WETLAND BUFFER RESTORATION AREA (70,000± SF)
- WETLAND REPLICATION AREA (15,066± SF)
- LOD/CFS — LIMIT OF DISTURBANCE & 12" COMPOST FILTER SOCK

40 0 20 40 FEET 80 160
GRAPHIC SCALE 1 inch = 40 ft.

FOR PERMITTING ONLY NOT FOR CONSTRUCTION

Revision	By	Appd.	YY.MM.DD
Issued			

Stantec
146 Main Street Unit 3
Hyannis, Massachusetts 02601-3128
www.stantec.com

Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
GRADING PLAN

Permit-

KEVIN P KLEIN ENVIRONMENTAL No. 37868 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
MARCH 24, 2017

Project Number:	3599		
File Name:	3599-S-GRADE		
ESE	Stantec	ESE	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD05.01
Revision Sheet
13 of 37

N:\Projects\Massachusetts\3599 Seaside At Scituate (Hotherly Rd)\Eng\Dept\Drawings\3599-S-GRADE.dwg
2017/04/07 7:51 AM by Jennifer Sands

ORIGINAL SHEET - ARCH D

KEY MAP
N.T.S.

LEGEND

- EXISTING STRUCTURE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATION
- DRAINAGE FLOW ARROW (YARD)
- DRAINAGE FLOW ARROW (CARTWAY)
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- WETLAND REPLICATION AREA (15,066± SF)
- LOD/CFS — LIMIT OF DISTURBANCE & 12" COMPOST FILTER SOCK

GRAPHIC SCALE
40 0 20 40 FEET 80 160
1 inch = 40 ft.

N:\Projects\Massachusetts\3599 Seaside At Scituate (Hatherly Rd)\Eng\Dept\Drawings\3599-GRADE.dwg
2017/04/07 7:52 AM by Jennifer Sands

ORIGINAL SHEET - ARCH D

Stantec
146 Main Street Unit 3
Hyannis, Massachusetts 02601-3128
www.stantec.com

FOR PERMITTING ONLY NOT FOR CONSTRUCTION

No.	Revision	By	Appd.	YY.MM.DD
	Issued			

Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
GRADING PLAN

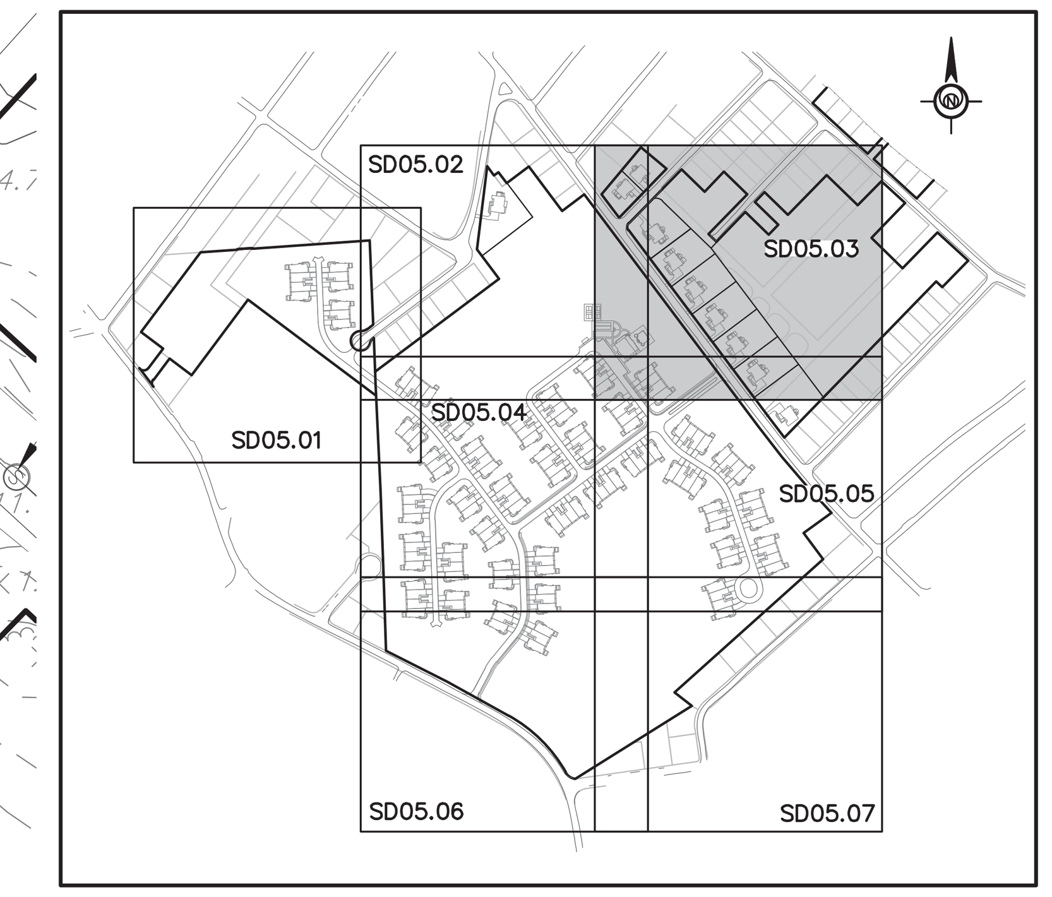
Permit

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37668
REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number: 3599
File Name: 3599-S-GRADE

ESE	Stantec	ESE	2017.03.24
Dsn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD05.02
Revision Sheet



KEY MAP
N.T.S.

LEGEND

EXISTING STRUCTURE
EXISTING CONTOURS
PROPOSED CONTOURS
PROPOSED SPOT ELEVATION
DRAINAGE FLOW ARROW (YARD)
DRAINAGE FLOW ARROW (CARTWAY)
PROPOSED TREE LINE
EXISTING TREE LINE
PROPOSED 8" WATER LINE W/FIRE HYDRANT, THRUST BLOCK & TEE VALVE
PROPOSED WATER LATERAL
EXISTING INLET W/STORM SEWER
UNDETERMINED (DOWNSTREAM INVERT & LOCATION NOT VERIFIED)
PROPOSED SANITARY MANHOLE NUMBER
PROPOSED SANITARY MANHOLE
PROPOSED SANITARY SEWER LATERAL
PROPOSED STORM STRUCTURE NUMBER
PROPOSED ROAD INLET
PROPOSED YARD INLET
PROPOSED ENDWALL
PROPOSED STORM MANHOLE
PROPOSED FLARED END SECTION
PROPOSED ROOF DRAIN
SITE BUFFER LINE
PROPOSED CENTER LINE
STREAM LINE
PROPOSED PROPERTY LINE
PROPOSED R.O.W.
PROPOSED EASEMENT
EXISTING CARTWAY
PROPOSED CURB
PROPOSED 4' WIDE SIDEWALK WITH ACCESS RAMP
OUTBOUND LINE
PROPOSED SPLIT RAIL FENCE
PROPOSED RIP-RAP
PROPOSED LOT/UNIT NUMBER
T.W. — PROPOSED TOP OF WALL ELEVATION
G.F. — PROPOSED GARAGE FLOOR ELEVATION
B.F. — PROPOSED BASEMENT FLOOR ELEVATION
1 — STOP SIGN
2 — SPEED LIMIT SIGN
3 — NO OUTLET SIGN
4 — PEDESTRIAN CROSSING
STREET LIGHT
FEMA FLOOD LINE – ELEV.=16.0
100' WETLAND BUFFER
50' WETLAND BUFFER
WETLANDS LIMIT
TEMPORARY WETLAND IMPACT AREA (3,425± SF)
PERMANENT WETLAND IMPACT AREA (7,348 SF)
WETLAND BUFFER RESTORATION AREA (70,000± SF)
WETLAND REPLICATION AREA (15,066± SF)
LOD/CFS — LIMIT OF DISTURBANCE & 12" COMPOST FILTER SOCK

GRAPHIC SCALE 40 0 20 40 FEET 80 160
1 inch = 40 ft.

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Issued | By | Appd. | YY.MM.DD

Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
GRADING PLAN

Permit-Seal

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37808
REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

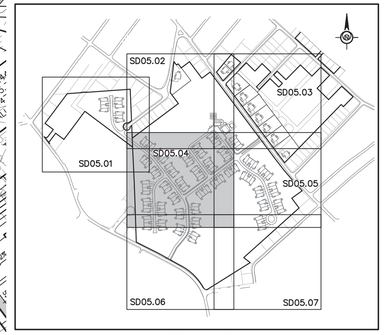
Project Number: 3599
File Name: 3599-S-GRADE

ESE	Stantec	ESE	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD05.03

Revision Sheet

ORIGINAL SHEET - ARCH D



KEY MAP
N.T.S.

LEGEND

- EXISTING STRUCTURE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATION
- DRAINAGE FLOW ARROW (YARD)
- DRAINAGE FLOW ARROW (CARTWAY)
- PROPOSED TREE LINE
- EXISTING TREE LINE
- PROPOSED 8" WATER LINE W/FIRE HYDRANT, THRUST BLOCK & TEE VALVE
- PROPOSED WATER LATERAL
- EXISTING INLET W/STORM SEWER
- UNDETERMINED (DOWNSTREAM INVERT & LOCATION NOT VERIFIED)
- PROPOSED SANITARY MANHOLE NUMBER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED STORM STRUCTURE NUMBER
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- PROPOSED YARD INLET
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- LOD/CFS LIMIT OF DISTURBANCE & 12" COMPOST FILTER SOCK

40 0 20 40 FEET 80 160
GRAPHIC SCALE 1 inch = 40 ft.

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Revision	By	Appd.	YY.MM.DD
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Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Permit

KEVIN P KLEIN
ENVIRONMENTAL
No. 37908
REGISTERED PROFESSIONAL ENGINEER
MARCH 24, 2017

Title
GRADING PLAN

Project Number:	3599		
File Name:	3599-S-GRADE		
ESE	Stantec	ESE	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD05.04
Revision Sheet
16 of 37

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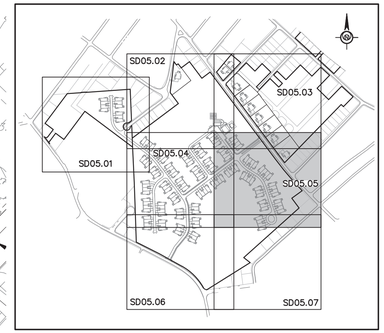
ORIGINAL SHEET - ARCH D



KEY MAP
N.T.S.

LEGEND

- EXISTING STRUCTURE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATION
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Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
GRADING PLAN

Permit-Seal

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37546
REGISTERED
PROFESSIONAL ENGINEER
March 24, 2017

Project Number:	3599		
File Name:	3599-S-GRADE		
ESE	Stantec	ESE	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD05.05
Revision Sheet
17 of 37

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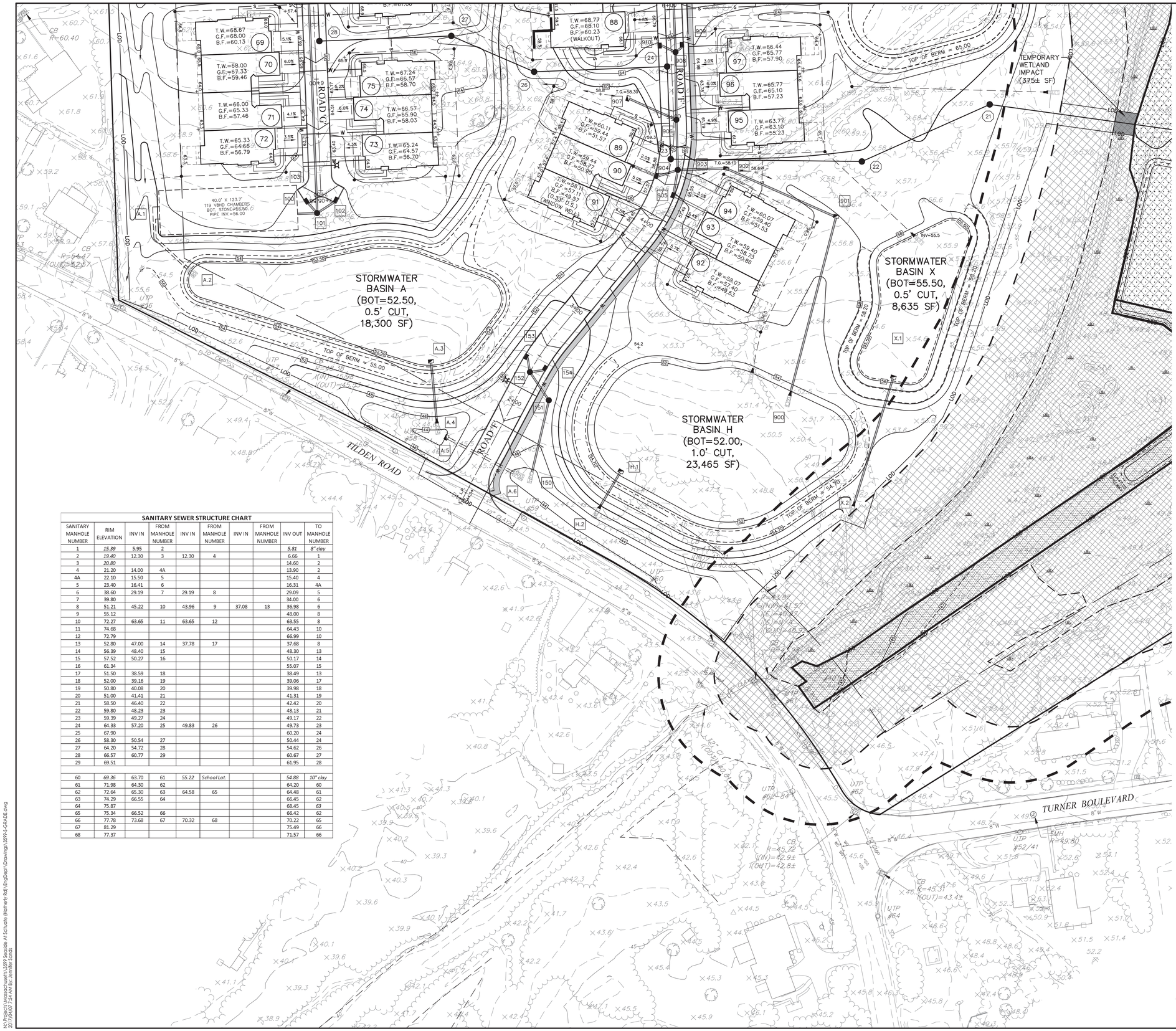

SANITARY SEWER STRUCTURE CHART

SANITARY MANHOLE NUMBER	RIM ELEVATION	INV IN	FROM MANHOLE NUMBER	INV IN	FROM MANHOLE NUMBER	INV IN	FROM MANHOLE NUMBER	INV OUT	TO MANHOLE NUMBER
1	*15.39*	5.95	2					*5.81*	*8" clay*
2	*19.40*	12.30	3	12.30	4			6.66	1
3	*20.80*							14.60	2
4	21.20	14.00	4A					13.90	2
4A	22.10	15.50	5					15.40	4
5	23.40	16.41	6					16.31	4A
6	38.60	29.19	7	29.19	8			29.09	5
7	39.80							34.00	6
8	51.21	45.22	10	43.96	9	37.08	13	36.98	6
9	55.12							48.00	8
10	72.27	63.65	11	63.65	12			63.55	8
11	74.68							64.43	10
12	72.79							66.99	10
13	52.80	47.00	14	37.78	17			37.68	8
14	56.39	48.40	15					48.30	13
15	57.52	50.27	16					50.17	14
16	61.34							55.07	15
17	51.50	38.59	18					38.49	13
18	52.00	39.16	19					39.06	17
19	50.80	40.08	20					39.98	18
20	51.00	41.41	21					41.31	19
21	58.50	46.40	22					42.42	20
22	59.80	48.23	23					48.13	21
23	59.39	49.27	24					49.17	22
24	64.33	57.20	25	49.83	26			49.73	23
25	67.90							60.20	24
26	58.30	50.54	27					50.44	24
27	64.20	54.72	28					54.62	26
28	66.57	60.77	29					60.67	27
29	69.51							61.95	28
60	*69.36*	63.70	61	*55.22*	*School Lat.*			*54.88*	*10" clay*
61	71.98	64.30	62					64.20	60
62	72.64	65.30	63	64.58	65			64.48	61
63	74.29	66.55	64					66.45	62
64	75.87							68.45	*63*
65	75.34	66.52	66					66.42	62
66	77.78	73.68	67	70.32	68			70.22	65
67	81.29							75.49	66
68	77.37							71.57	66

KEY MAP
N.T.S.

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GRAPHIC SCALE 1 inch = 40 ft.
40 0 20 40 FEET 80 160

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Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
GRADING PLAN

Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37908
REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number:	3599		
File Name:	3599-S-GRADE		
ESE	Stantec	ESE	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD05.06
Revision Sheet
18 of 37

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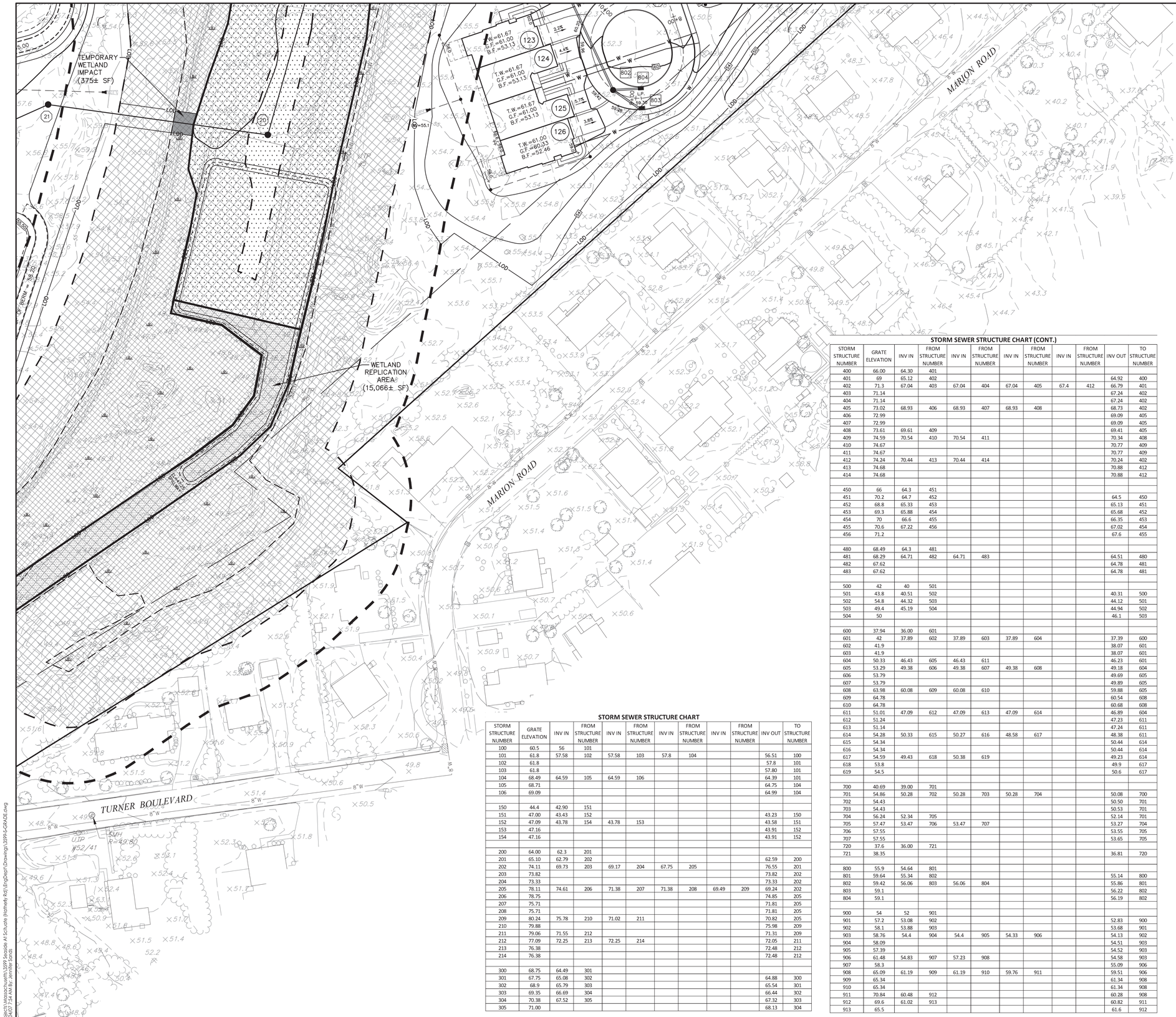
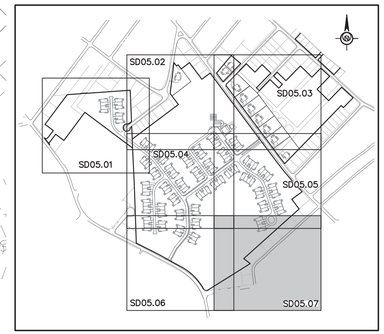
ORIGINAL SHEET - ARCH D





KEY MAP
N.T.S.

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40 0 20 40 FEET 80 160
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STORM SEWER STRUCTURE CHART (CONT.)

STORM STRUCTURE NUMBER	GRATE ELEVATION	INV IN	FROM STRUCTURE NUMBER	INV IN	FROM STRUCTURE NUMBER	INV IN	FROM STRUCTURE NUMBER	INV IN	FROM STRUCTURE NUMBER	INV OUT	TO STRUCTURE NUMBER
400	66.00	64.30	401								
401	69	65.12	402							64.92	400
402	71.3	67.04	403	67.04	404	67.04	405	67.4	412	66.79	401
403	71.14									67.24	402
404	71.14									67.24	402
405	73.02	68.93	406	68.93	407	68.93	408			68.73	402
406	72.99									69.09	405
407	72.99									69.09	405
408	73.61	69.61	409							69.41	405
409	74.59	70.54	410	70.54	411					70.34	408
410	74.67									70.77	409
411	74.67									70.77	409
412	74.24	70.44	413	70.44	414					70.24	402
413	74.68									70.88	412
414	74.68									70.88	412
450	66	64.3	451								
451	70.2	64.7	452							64.5	450
452	68.8	65.33	453							65.13	451
453	69.3	65.88	454							65.68	452
454	70	66.6	455							66.35	453
455	70.6	67.22	456							67.02	454
456	71.2									67.6	455
480	68.49	64.3	481								
481	68.29	64.71	482	64.71	483					64.51	480
482	67.62									64.78	481
483	67.62									64.78	481
500	42	40	501								
501	43.8	40.51	502							40.31	500
502	54.8	44.32	503							44.12	501
503	49.4	45.19	504							44.94	502
504	50									46.1	503
600	37.94	36.00	601								
601	42	37.89	602	37.89	603	37.89	604			37.39	600
602	41.9									38.07	601
603	41.9									38.07	601
604	50.33	46.43	605	46.43	611					46.23	601
605	53.29	49.38	606	49.38	607	49.38	608			49.18	604
606	53.79									49.69	605
607	53.79									49.89	605
608	63.98	60.08	609	60.08	610					59.88	605
609	64.78									60.54	608
610	64.78									60.68	608
611	51.01	47.09	612	47.09	613	47.09	614			46.89	604
612	51.24									47.23	611
613	51.14									47.24	611
614	54.28	50.33	615	50.27	616	48.58	617			48.38	611
615	54.34									50.44	614
616	54.34									50.44	614
617	54.59	49.43	618	50.38	619					49.23	614
618	53.8									49.9	617
619	54.5									50.6	617
700	40.69	39.00	701								
701	54.86	50.28	702	50.28	703	50.28	704			50.08	700
702	54.43									50.50	701
703	54.43									50.53	701
704	56.24	52.34	705							52.14	701
705	57.47	53.47	706	53.47	707					53.27	704
706	57.55									53.55	705
707	57.55									53.65	705
720	37.6	36.00	721								
721	38.35									36.81	720
800	55.9	54.64	801								
801	59.64	55.34	802							55.14	800
802	59.42	56.06	803	56.06	804					55.86	801
803	59.1									56.22	802
804	59.1									56.19	802
900	54	52	901								
901	57.2	53.08	902							52.83	900
902	58.1	53.88	903							53.68	901
903	58.76	54.4	904	54.4	905	54.33	906			54.13	902
904	58.09									54.51	903
905	57.39									54.52	903
906	61.48	54.83	907	57.23	908					54.58	903
907	58.3									55.09	906
908	65.09	61.19	909	61.19	910	59.76	911			59.51	906
909	65.34									61.34	908
910	65.34									61.34	908
911	70.84	60.48	912							60.28	908
912	69.6	61.02	913							60.82	911
913	65.5									61.6	912

STORM SEWER STRUCTURE CHART

STORM STRUCTURE NUMBER	GRATE ELEVATION	INV IN	FROM STRUCTURE NUMBER	INV IN	FROM STRUCTURE NUMBER	INV IN	FROM STRUCTURE NUMBER	INV IN	FROM STRUCTURE NUMBER	INV OUT	TO STRUCTURE NUMBER
100	60.5	56	101								
101	61.8	57.58	102	57.58	103	57.8	104			56.51	100
102	61.8									57.8	101
103	61.8									57.80	101
104	68.49	64.59	105	64.59	106					64.39	101
105	68.71									64.75	104
106	69.09									64.99	104
150	44.4	42.90	151								
151	47.00	43.43	152							43.23	150
152	47.09	43.78	154	43.78	153					43.58	151
153	47.16									43.91	152
154	47.16									43.91	152
200	64.00	62.3	201								
201	65.10	62.79	202							62.59	200
202	74.11	69.73	203	69.17	204	67.75	205			76.55	201
203	73.82									73.82	202
204	73.33									73.33	202
205	78.11	74.61	206	71.38	207	71.38	208	69.49	209	69.24	202
206	78.75									74.85	205
207	75.71									71.81	205
208	75.71									71.81	205
209	80.24	75.78	210	71.02	211					70.82	205
210	79.88									75.98	209
211	79.06	71.55	212							71.31	209
212	77.09	72.25	213	72.25	214					72.05	211
213	76.38									72.48	212
214	76.38									72.48	212
300	68.75	64.49	301								
301	67.75	65.08	302							64.88	300
302	68.9	65.79	303							65.54	301
303	69.35	66.69	304							66.44	302
304	70.38	67.52	305							67.32	303
305	71.00									68.13	304

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Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
GRADING PLAN

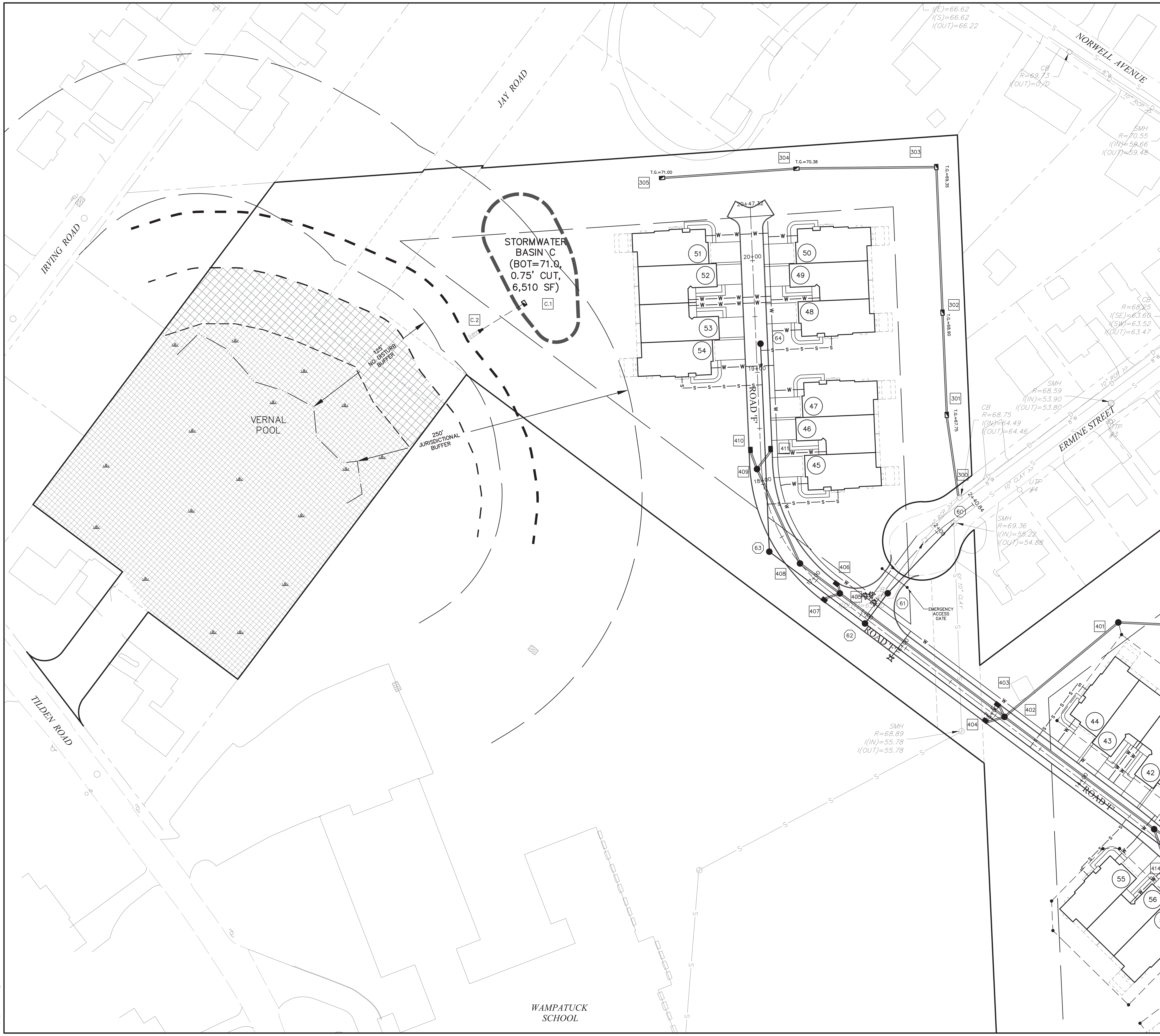
Permit-

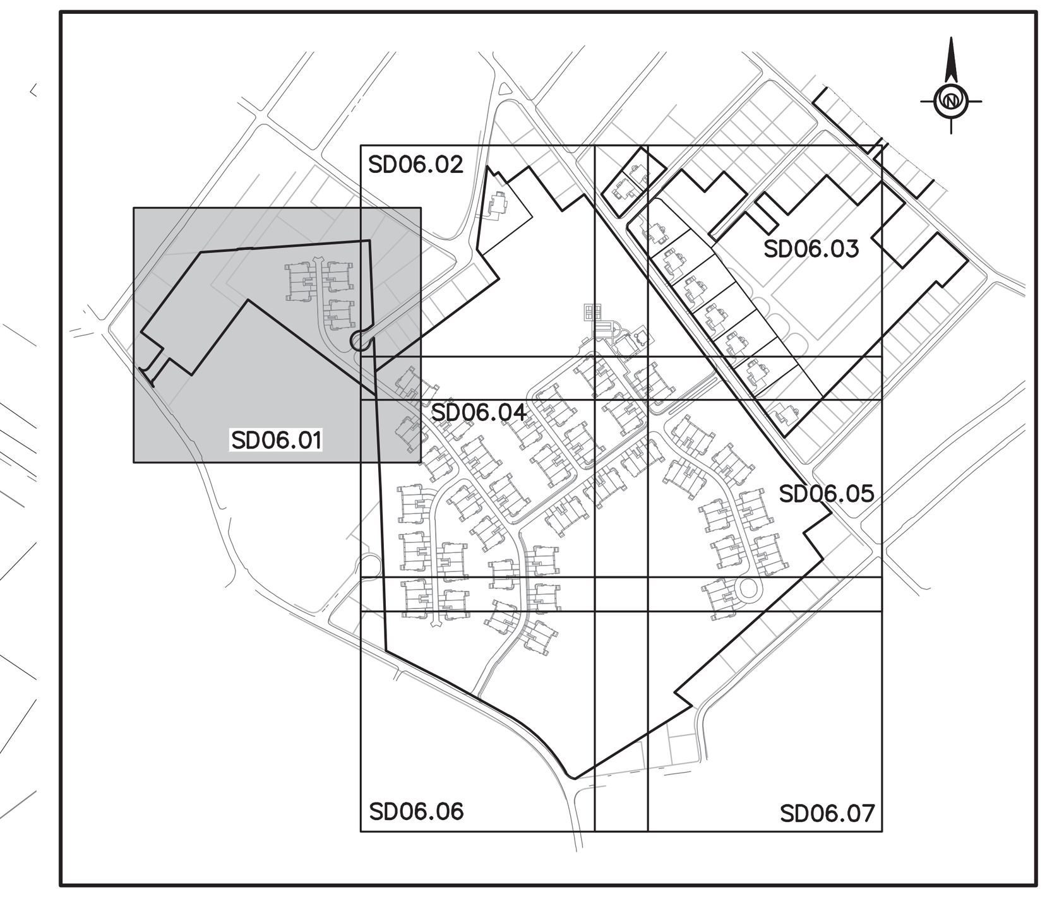
COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37908
REGISTERED PROFESSIONAL ENGINEER
MARCH 24, 2017

Project Number: 3599
File Name: 3599-S-GRADE

ESE	Stantec	ESE	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD05.07
Revision Sheet





KEY MAP
N.T.S.

LEGEND

- PROPOSED 8" WATER LINE W/FIRE HYDRANT, THRUST BLOCK & TEE VALVE
- PROPOSED WATER LATERAL
- EXISTING INLET W/STORM SEWER
- UNDETERMINED (DOWNSTREAM INVERT & LOCATION NOT VERIFIED)
- PROPOSED SANITARY MANHOLE NUMBER
- PROPOSED SANITARY MANHOLE
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- PROPOSED RIP-RAP
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- FEMA FLOOD LINE – ELEV.=16.0
- 100' WETLAND BUFFER
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- WETLANDS LIMIT
- TEMPORARY WETLAND IMPACT AREA
- PERMANENT WETLAND IMPACT AREA
- WETLAND BUFFER RESTORATION AREA
- WETLAND REPLICATION AREA

GRAPHIC SCALE 40 0 20 40 80 160 FEET
1 inch = 40 ft.

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Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
UTILITY PLAN

Permit-Seal
COMMONWEALTH OF MASSACHUSETTS KEVIN P KLEIN ENVIRONMENTAL No. 37808 REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number: 3599
File Name: 3599-S-UTILITY

ESE	Stantec	ESE	2017.03.24
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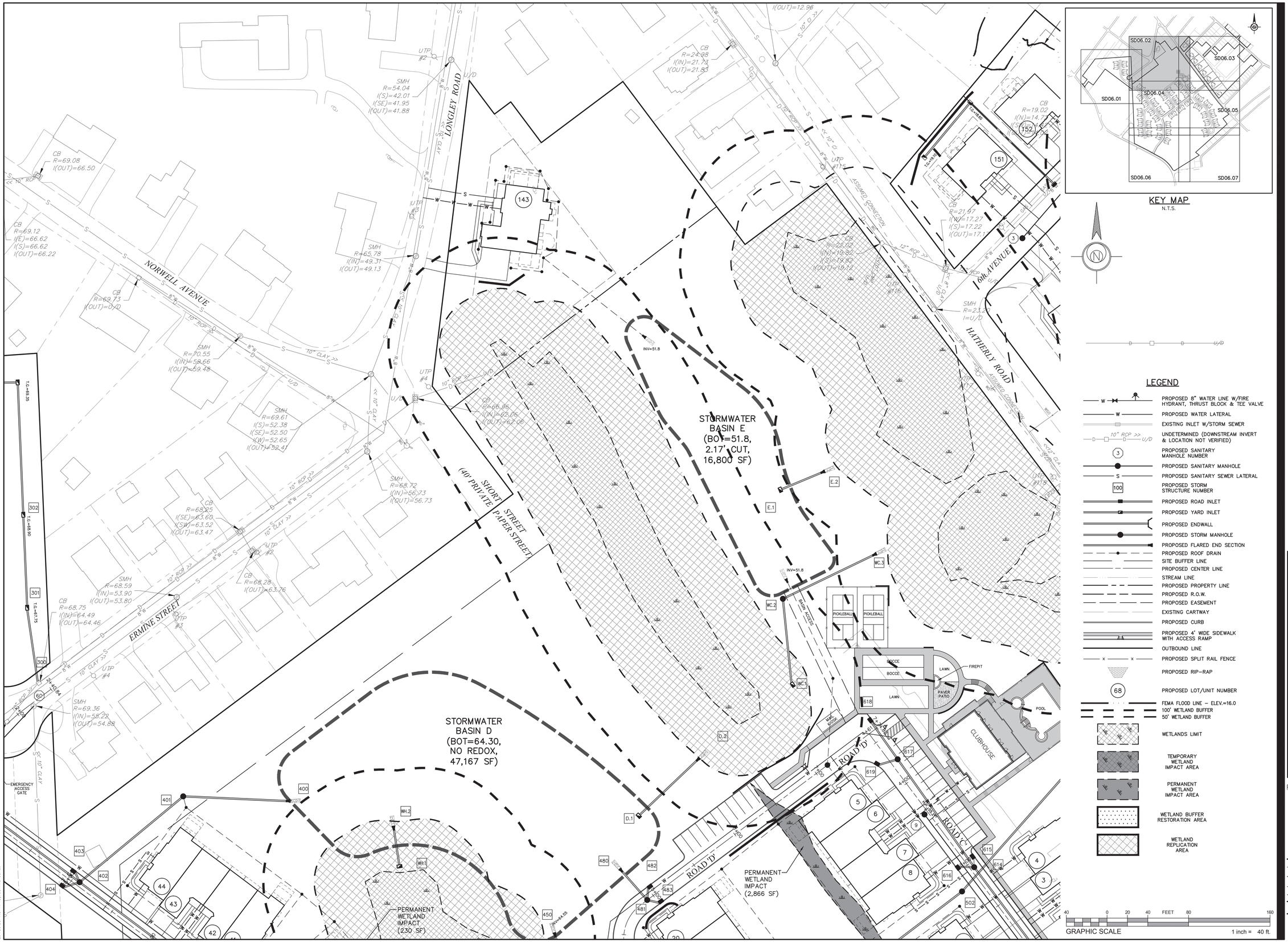
Drawing No. SD06.01
Revision Sheet



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Toll MA Land III L.P.
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SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
UTILITY PLAN

Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37958
REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number:	3599
File Name:	3599-5-UTILITY

ESE	Stantec	ESE	2017.03.24
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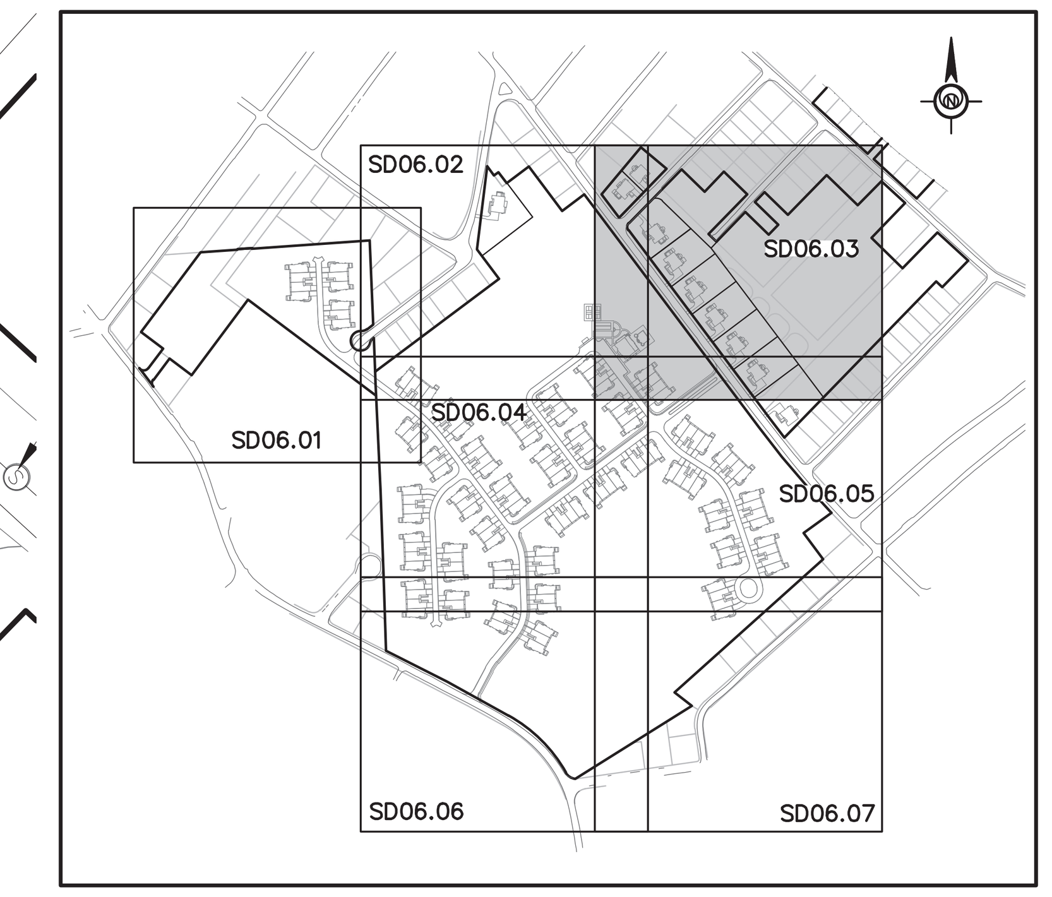
Drawing No. SD06.02

Revision Sheet



KEY MAP
N.T.S.

LEGEND

- PROPOSED 8" WATER LINE W/FIRE HYDRANT, THRUST BLOCK & TEE VALVE
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GRAPHIC SCALE 40 0 20 40 FEET 80 160
1 inch = 40 ft.

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Westborough, MA

SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
UTILITY PLAN

Permit-Seal
COMMONWEALTH OF MASSACHUSETTS KEVIN P KLEIN ENVIRONMENTAL No. 37808 REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number: 3599
File Name: 3599-S-UTILITY

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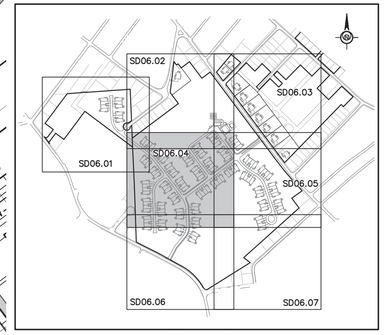

KEY MAP
N.T.S.

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40 0 20 40 FEET 80 160
GRAPHIC SCALE 1 inch = 40 ft.

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Town of Scituate, Plymouth County, Massachusetts

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UTILITY PLAN

Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37908
REGISTERED PROFESSIONAL SCIENTIST
MARCH 24, 2017

Project Number:	3599
File Name:	3599-5-UTILITY

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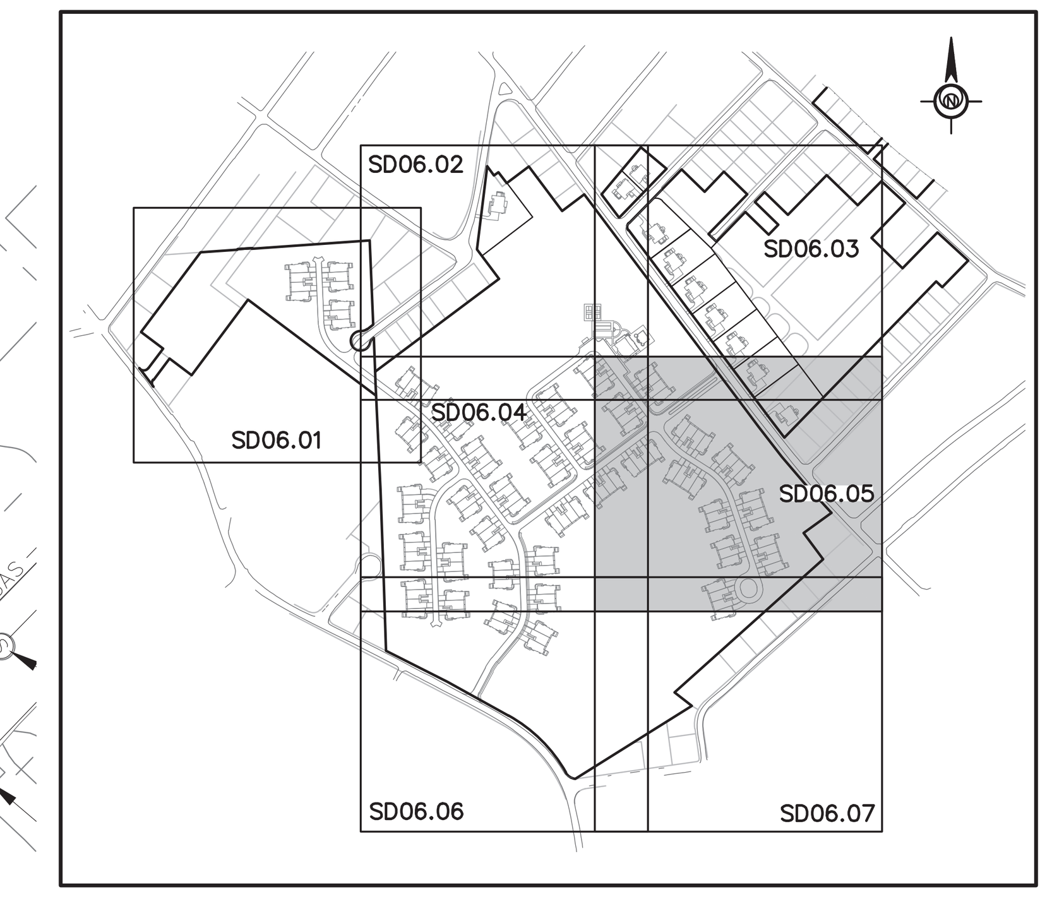

KEY MAP
N.T.S.

GRAPHIC SCALE
40 0 20 40 FEET 80 160
1 inch = 40 ft.

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Westborough, MA

SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
UTILITY PLAN

Project Number: 3599
File Name: 3599-S-UTILITY

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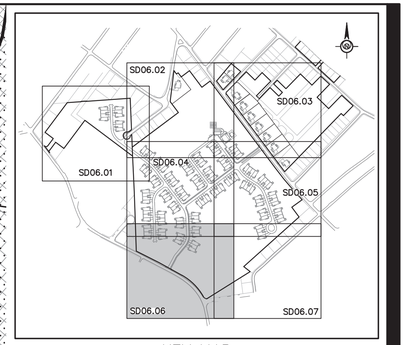

KEY MAP
N.T.S.

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40 0 20 40 FEET 80 160
GRAPHIC SCALE 1 inch = 40 ft.

SANITARY SEWER PIPE CHART

UPSTREAM SANITARY STRUCTURE	UPSTREAM RIM	UPSTREAM INVERT	PIPE LENGTH (FT)	PIPE SLOPE (%)	DOWNSTREAM INVERT	DOWNSTREAM RIM	DOWNSTREAM SANITARY STRUCTURE
29	69.51	61.95	89	1.33%	60.77	66.57	28
28	66.57	60.67	119	5.02%	54.72	64.20	27
27	64.20	54.62	81	5.04%	50.54	58.30	26
26	58.30	50.44	120	0.51%	49.83	64.33	24
25	67.90	60.20	60	5.04%	57.20	64.33	24
24	64.33	49.73	83	0.55%	49.27	59.39	23
23	59.39	49.17	172	0.55%	48.23	59.80	22
22	59.80	48.13	126	1.38%	46.40	58.50	21
21	58.50	42.42	199	0.51%	41.41	51.00	20
20	51.00	41.31	242	0.51%	40.08	50.80	19
19	50.80	39.98	164	0.50%	39.16	52.00	18
18	52.00	39.06	89	0.53%	38.59	51.50	17
17	51.50	38.49	139	0.51%	37.78	52.80	13
16	61.34	55.07	320	1.50%	50.27	57.52	15
15	57.52	50.17	56	3.14%	48.40	56.39	14
14	56.39	48.30	176	0.74%	47.00	52.80	13
13	52.80	37.68	117	0.51%	37.08	51.21	8
12	72.79	66.99	211	1.58%	63.65	72.27	10
11	74.68	64.43	77	1.01%	63.65	72.27	10
10	72.27	63.55	313	5.86%	45.22	51.21	8
9	55.12	48.00	269	1.50%	43.96	51.21	8
8	51.21	36.98	355	2.19%	29.19	38.60	6
7	39.80	34.00	262	1.84%	29.19	38.60	6
6	38.60	29.09	221	5.75%	16.41	23.40	5
5	23.40	16.31	125	0.65%	15.50	22.10	4A
4A	22.10	15.40	256	0.55%	14.00	21.20	4
4	21.20	13.90	314	0.51%	12.30	19.40	2
3	20.80	14.60	74	3.11%	12.30	19.40	2
2	19.40	6.66	130	0.54%	5.95	15.39	1
68	77.37	71.57	125	1.00%	70.32	77.78	66
67	81.29	75.49	181	1.00%	73.68	77.78	66
66	77.78	70.22	218	1.70%	66.52	75.34	65
65	75.34	66.42	367	0.50%	64.58	72.64	62
64	75.87	68.45	186	1.02%	66.55	74.29	63
63	74.29	66.45	107	1.08%	65.30	72.64	62
62	72.64	64.48	34	0.53%	64.30	71.98	61
61	71.98	64.20	86	0.58%	63.70	69.36	60

* ALL PROPOSED SANITARY SEWER MAIN IS 8-INCH DIAMETER

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Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
UTILITY PLAN

Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P. KLEIN
ENVIRONMENTAL
No. 37668
REGISTERED PROFESSIONAL ENGINEER
MARCH 24, 2017

Project Number: 3599
File Name: 3599-SHEET-UTILITY

ESE	Stantec	ESE	2017.03.24
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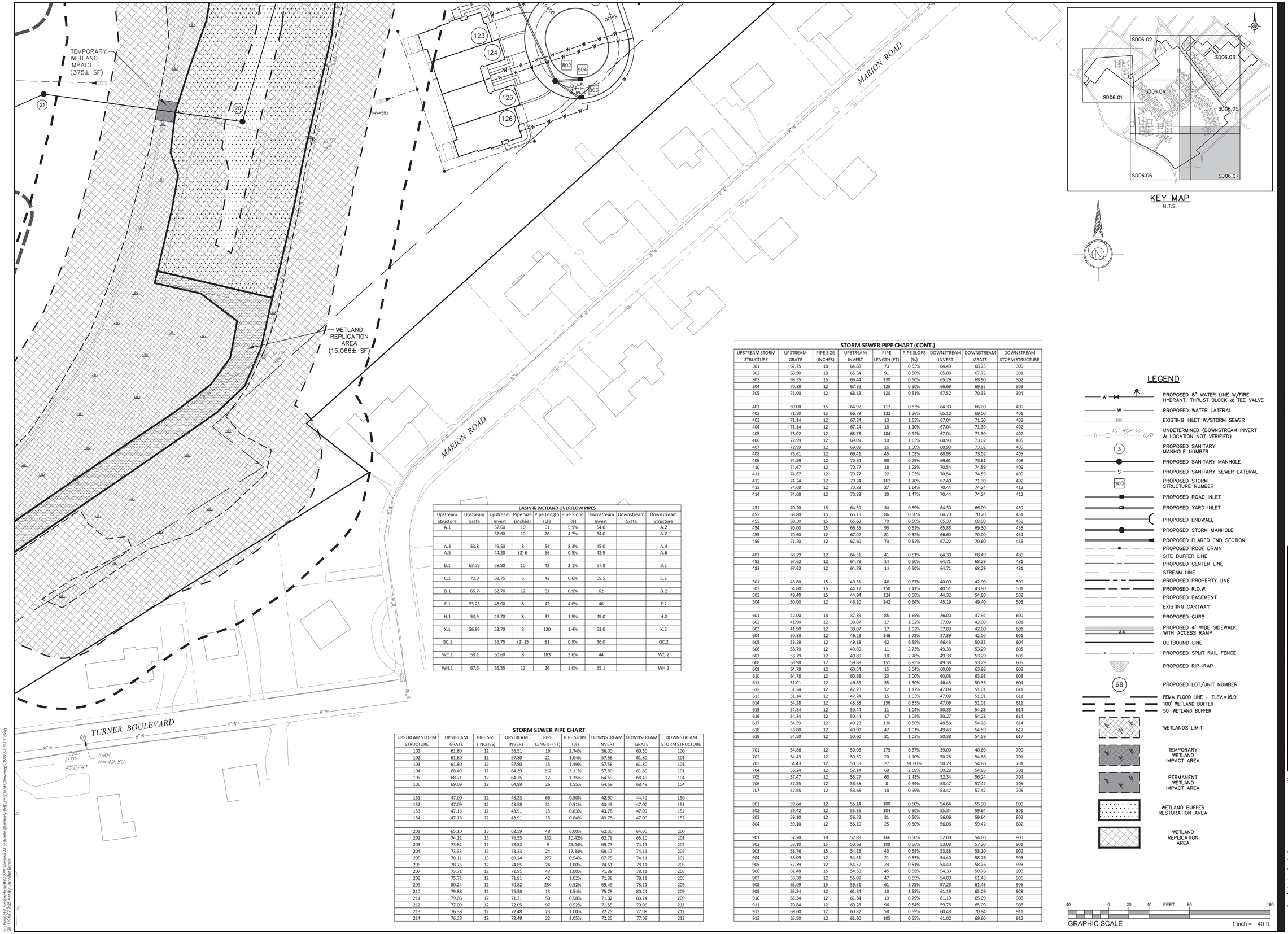

KEY MAP
N.T.S.

BASIN & WETLAND OVERFLOW PIPES

Upstream Structure	Upstream Grate	Upstream Invert	Pipe Size (inches)	Pipe Length (LF)	Pipe Slope (%)	Downstream Invert	Downstream Grate	Downstream Structure
A.1		57.60	10	61	5.9%	54.0		A.2
		57.60	10	76	4.7%	54.0		A.2
A.3	53.8	49.50	8	54	8.3%	45.0		A.4
A.5		44.20	(2) 6	66	0.5%	43.9		A.6
B.1	63.75	58.80	10	42	2.1%	57.9		B.2
C.1	72.3	69.75	6	42	0.6%	69.5		C.2
D.1	65.7	62.70	12	81	0.9%	62		D.2
E.1	53.25	48.00	8	42	4.8%	46		E.2
H.1	53.5	49.70	8	37	1.9%	49.0		H.2
X.1	56.95	53.70	8	120	1.4%	52.0		X.2
GC.1		36.75	(2) 15	81	0.9%	36.0		GC.2
WC.1	53.1	50.60	8	183	3.6%	44		WC.2
WH.1	67.6	65.35	12	26	1.0%	65.1		WH.2

STORM SEWER PIPE CHART

UPSTREAM STORM STRUCTURE	UPSTREAM GRATE	PIPE SIZE (INCHES)	UPSTREAM INVERT	PIPE LENGTH (FT)	PIPE SLOPE (%)	DOWNSTREAM INVERT	DOWNSTREAM GRATE	DOWNSTREAM STORM STRUCTURE
101	61.80	12	56.51	19	2.74%	56.00	60.50	100
102	61.80	12	57.80	21	1.04%	57.58	61.80	101
103	61.80	12	57.80	15	1.49%	57.58	61.80	101
104	68.49	12	64.39	212	3.11%	57.80	61.80	101
105	68.71	12	64.75	12	1.35%	64.59	68.49	104
106	69.09	12	64.99	26	1.55%	64.59	68.49	104
151	47.00	12	43.23	66	0.50%	42.90	44.40	150
152	47.09	12	43.58	31	0.51%	43.43	47.00	151
153	47.16	12	43.91	15	0.83%	43.78	47.09	152
154	47.16	12	43.91	15	0.84%	43.78	47.09	152
201	65.10	15	62.59	48	6.00%	62.30	64.00	200
202	74.11	15	76.55	132	10.42%	62.79	65.10	201
203	73.82	12	73.82	9	45.44%	69.73	74.11	202
204	73.33	12	73.33	24	17.33%	69.17	74.11	202
205	78.11	15	69.24	277	0.54%	67.75	74.11	202
206	78.75	12	74.85	24	1.00%	74.61	78.11	205
207	75.71	12	71.81	43	1.00%	71.38	78.11	205
208	75.71	12	71.81	42	1.02%	71.38	78.11	205
209	80.24	12	70.82	254	0.52%	69.49	78.11	205
210	79.88	12	75.98	13	1.54%	75.78	80.24	209
211	79.06	12	71.31	50	0.58%	71.02	80.24	209
212	77.09	12	72.05	97	0.52%	71.55	79.06	211
213	76.38	12	72.48	23	1.00%	72.25	77.09	212
214	76.38	12	72.48	22	1.05%	72.25	77.09	212

STORM SEWER PIPE CHART (CONT.)

UPSTREAM STORM STRUCTURE	UPSTREAM GRATE	PIPE SIZE (INCHES)	UPSTREAM INVERT	PIPE LENGTH (FT)	PIPE SLOPE (%)	DOWNSTREAM INVERT	DOWNSTREAM GRATE	DOWNSTREAM STORM STRUCTURE
301	67.75	18	64.88	73	0.53%	64.49	68.75	300
302	68.90	18	65.54	91	0.50%	65.08	67.75	301
303	69.35	15	66.44	130	0.50%	65.79	68.90	302
304	70.38	12	67.32	125	0.50%	66.69	69.35	303
305	71.00	12	68.13	120	0.51%	67.52	70.38	304
401	69.00	15	64.92	117	0.53%	64.30	66.00	400
402	71.30	15	66.79	132	1.26%	65.12	69.00	401
403	71.14	12	67.24	13	1.53%	67.04	71.30	402
404	71.14	12	67.24	18	1.10%	67.04	71.30	402
405	73.02	12	68.73	184	0.92%	67.04	71.30	402
406	72.99	12	69.09	10	1.63%	68.93	73.02	405
407	72.99	12	69.09	16	1.00%	68.93	73.02	405
408	73.61	12	69.41	45	1.08%	68.93	73.02	405
409	74.59	12	70.34	93	0.79%	69.61	73.61	408
410	74.67	12	70.77	18	1.25%	70.54	74.59	409
411	74.67	12	70.77	22	1.03%	70.54	74.59	409
412	74.24	12	70.24	167	1.70%	67.40	71.30	402
413	74.68	12	70.88	27	1.64%	70.44	74.24	412
414	74.68	12	70.88	30	1.47%	70.44	74.24	412
451	70.20	15	64.50	34	0.59%	64.30	66.00	450
452	68.80	15	65.13	86	0.50%	64.70	70.20	451
453	69.30	15	65.68	70	0.50%	65.33	68.80	452
454	70.00	15	66.35	93	0.51%	65.88	69.30	453
455	70.60	12	67.02	81	0.52%	66.60	70.00	454
456	71.20	12	67.60	73	0.52%	67.22	70.60	455
481	68.29	12	64.51	41	0.51%	64.30	68.49	480
482	67.62	12	64.78	14	0.50%	64.71	68.29	481
483	67.62	12	64.78	14	0.50%	64.71	68.29	481
501	43.80	15	40.31	46	0.67%	40.00	42.00	500
502	54.80	15	44.12	150	2.41%	40.51	43.80	501
503	49.40	15	44.94	124	0.50%	44.32	54.80	502
504	50.00	12	46.10	142	0.64%	45.19	49.40	503
601	42.00	18	37.39	85	1.65%	36.00	37.94	600
602	41.90	12	38.07	17	1.02%	37.89	42.00	601
603	41.90	12	38.07	17	1.02%	37.89	42.00	601
604	50.33	12	46.23	146	5.73%	37.89	42.00	601
605	53.29	12	49.18	42	6.55%	46.43	50.33	604
606	53.79	12	49.69	11	2.73%	49.38	53.29	605
607	53.79	12	49.89	18	2.78%	49.38	53.29	605
608	63.98	12	59.88	151	6.95%	49.38	53.29	605
609	64.78	12	60.54	15	3.04%	60.08	63.98	608
610	64.78	12	60.68	20	3.00%	60.08	63.98	608
611	51.01	12	46.89	35	1.30%	46.43	50.33	604
612	51.24	12	47.23	12	1.17%	47.09	51.01	611
613	51.14	12	47.24	15	1.03%	47.09	51.01	611
614	54.28	12	48.38	156	0.83%	47.09	51.01	611
615	54.34	12	50.44	11	1.04%	50.33	54.28	614
616	54.34	12	50.44	17	1.04%	50.27	54.28	614
617	54.59	12	49.23	130	0.50%	48.58	54.28	614
618	53.80	12	49.90	47	1.01%	49.43	54.59	617
619	54.50	12	50.60	21	1.03%	50.38	54.59	617
701	54.86	12	50.08	179	6.37%	39.00	40.69	700
702	54.43	12	50.50	20	1.10%	50.28	54.86	701
703	54.43	12	50.53	27	91.00%	50.28	54.86	701
704	56.24	12	52.14	69	2.69%	50.28	54.86	701
705	57.47	12	53.27	63	1.48%	52.34	56.24	704
706	57.55	12	53.55	8	0.99%	53.47	57.47	705
707	57.55	12	53.65	18	0.99%	53.47	57.47	705
801	59.64	12	55.14	100	0.50%	54.64	55.90	800
802	59.42	12	55.86	104	0.50%	55.34	59.64	801
803	59.10	12	56.22	31	0.50%	56.06	59.64	802
804	59.10	12	56.19	25	0.50%	56.06	59.42	802
901	57.20	18	52.83	166	0.50%	52.00	54.00	900
902	58.10	15	53.68	108	0.56%	53.08	57.20	901
903	58.76	15	54.13	43	0.58%	53.88	58.10	902
904	58.09	12	54.51	21	0.53%	54.40	58.76	903
905	57.39	12	54.52	23	0.51%	54.40	58.76	903
906	61.48	15	54.58	45	0.56%	54.33	58.76	903
907	58.30	12	55.09	47	0.55%	54.83	61.48	906
908	65.09	15	59.51	61	3.75%	57.23	61.48	906
909	65.34	12	61.34	10	1.58%	61.19	65.09	908
910	65.34	12	61.34	19	0.79%	61.19	65.09	908
911	70.84	12	60.28	96	0.54%	59.76	65.09	908
912	69.60	12	60.82	58	0.59%	60.48	70.84	911
913	65.50	12	61.60	105	0.55%	61.02	69.60	912

LEGEND

- PROPOSED 8" WATER LINE W/FIRE HYDRANT, THRUST BLOCK & TEE VALVE
- PROPOSED WATER LATERAL
- EXISTING INLET W/STORM SEWER
- UNDETERMINED (DOWNSTREAM INVERT & LOCATION NOT VERIFIED)
- PROPOSED SANITARY MANHOLE NUMBER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED STORM STRUCTURE NUMBER
- PROPOSED ROAD INLET
- PROPOSED YARD INLET
- PROPOSED ENDWALL
- PROPOSED STORM MANHOLE
- PROPOSED FLARED END SECTION
- PROPOSED ROOF DRAIN
- SITE BUFFER LINE
- PROPOSED CENTER LINE
- STREAM LINE
- PROPOSED PROPERTY LINE
- PROPOSED R.O.W.
- PROPOSED EASEMENT
- EXISTING CARTWAY
- PROPOSED CURB
- PROPOSED 4' WIDE SIDEWALK WITH ACCESS RAMP
- OUTBOUND LINE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RIP–RAP
- PROPOSED LOT/UNIT NUMBER
- FEMA FLOOD LINE – ELEV.=16.0
- 100' WETLAND BUFFER
- 50' WETLAND BUFFER
- WETLANDS LIMIT
- TEMPORARY WETLAND IMPACT AREA
- PERMANENT WETLAND IMPACT AREA
- WETLAND BUFFER RESTORATION AREA
- WETLAND REPLICATION AREA

40 0 20 40 FEET 80 160

GRAPHIC SCALE 1 inch = 40 ft.

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Revision	By	Appd.	YY.MM.DD
Issued	By	Appd.	YY.MM.DD

Stantec

146 Main Street Unit 3
Hyannis, Massachusetts 02601-3128
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Client/Project
Toll MA Lancl III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
UTILITY PLAN

Permit-Misc

KEVIN P KLEIN
COMMONWEALTH OF MASSACHUSETTS
ENVIRONMENTAL
No. 37808
REGISTERED PROFESSIONAL
March 24, 2017

Project Number: 3599
File Name: 3599-S-UTILITY

ESE	Stantec	ESE	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD06.07

Revision Sheet

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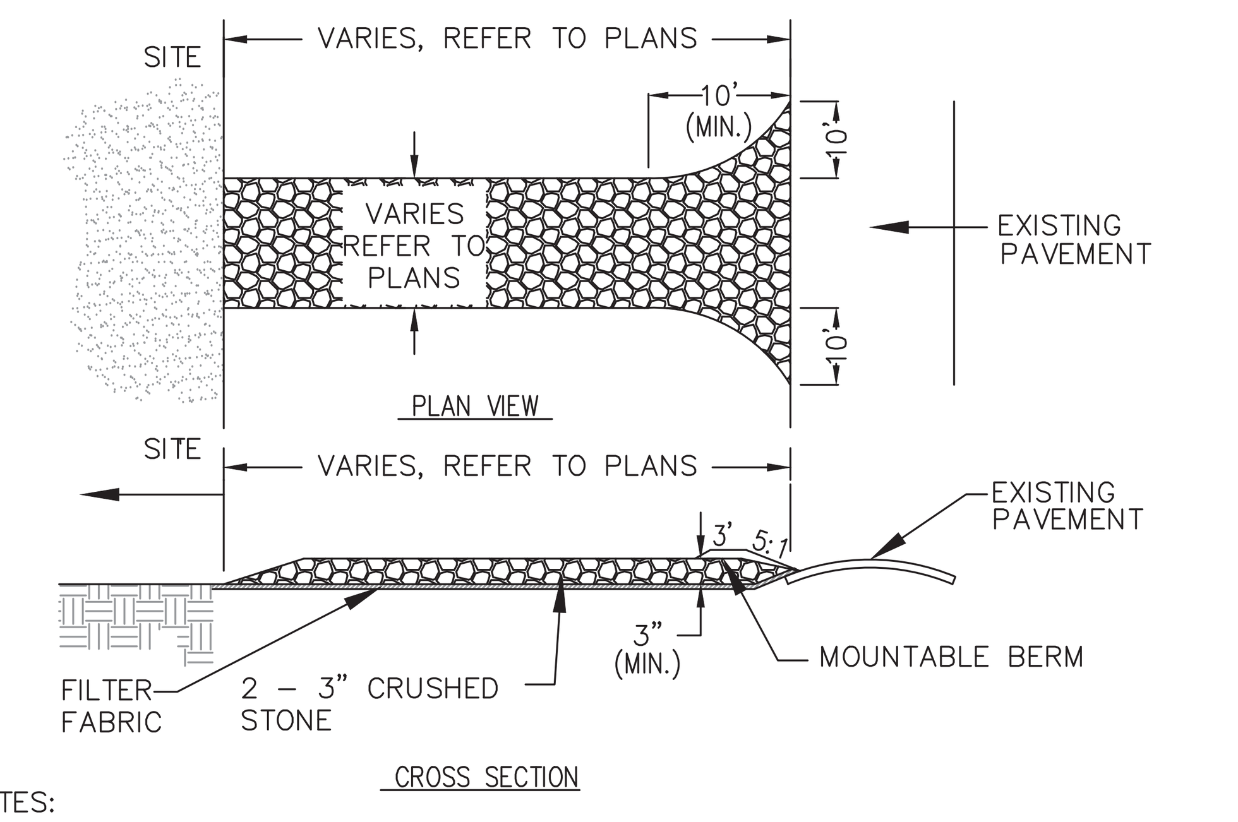
2017/04/07 7:53 AM by Jennifer Sands

ORIGINAL SHEET - ARCH D



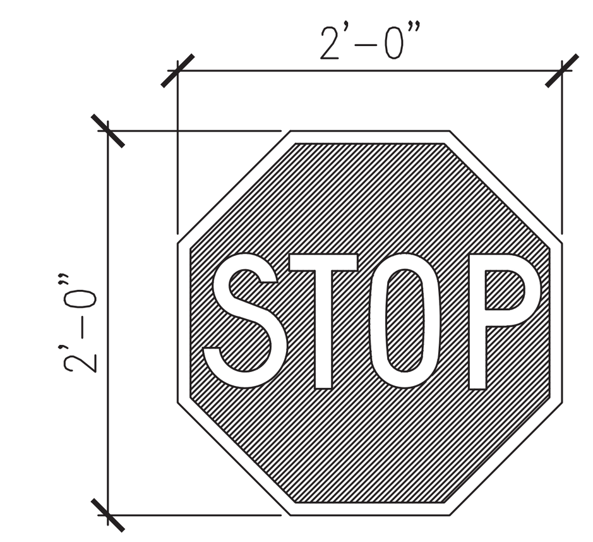
NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.

2. TEMPORARY CONSTRUCTION ACCESS POINTS WILL ALSO CONTAIN TEMPORARY TRUCK WHEEL WASHING AREA TO FURTHER PREVENT TRACKING ONTO EXISTING ROADWAYS.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



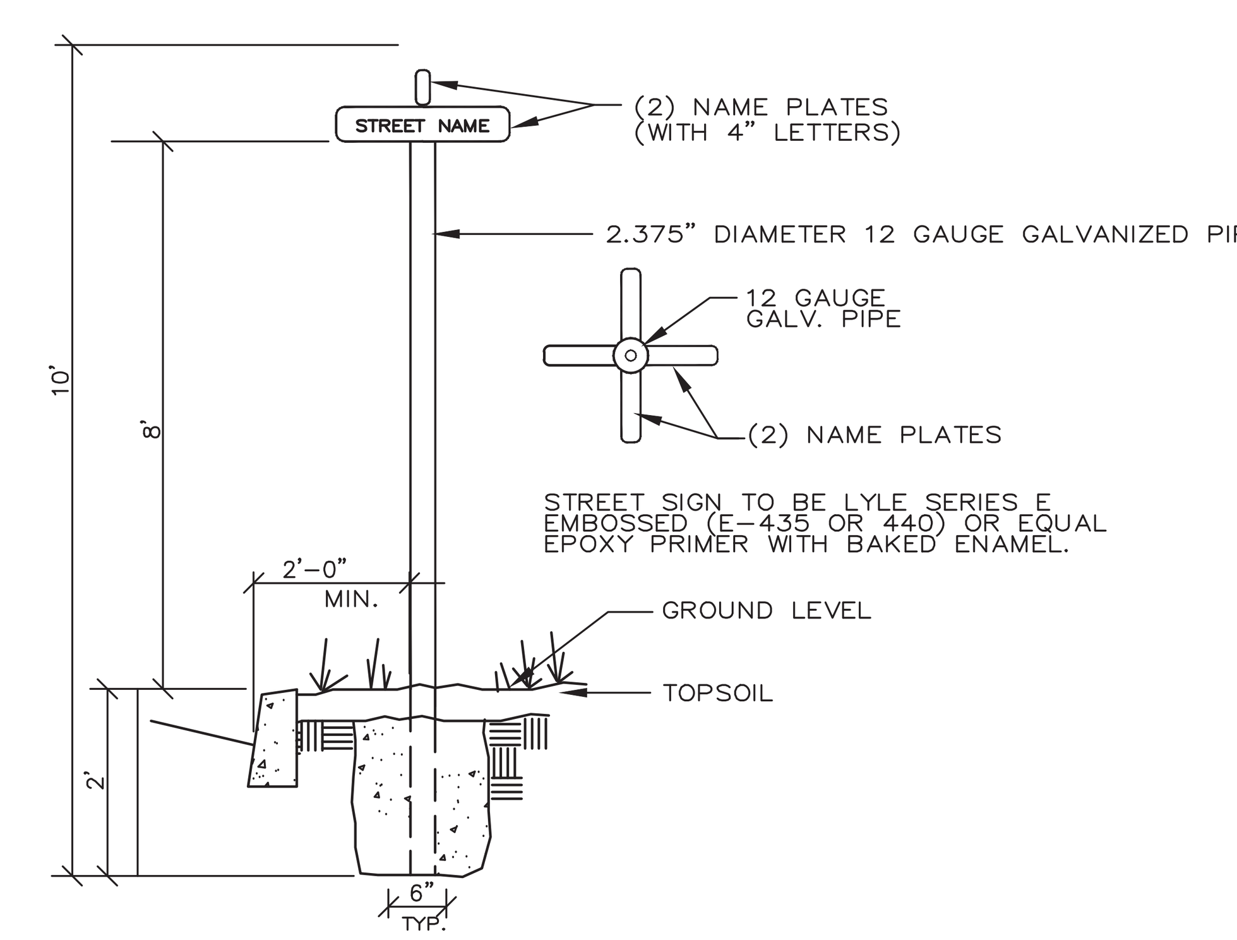
NOTES:

1. SIGN MATERIALS TO BE REFLECTIVE SHEETING ON .080 ALUMINUM AS PER SPECIFICATIONS

2. SIGN SHALL HAVE WHITE LETTERING ON RED FIELD

'STOP' SIGN DETAIL

NOT TO SCALE



STREET SIGN

N.T.S.

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Revision | By | Appd. | YY.MM.DD

Issued | By | Appd. | YY.MM.DD

Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
MISC. ROADWAY DETAILS

Permit-

March 24, 2017

Project Number: 3599

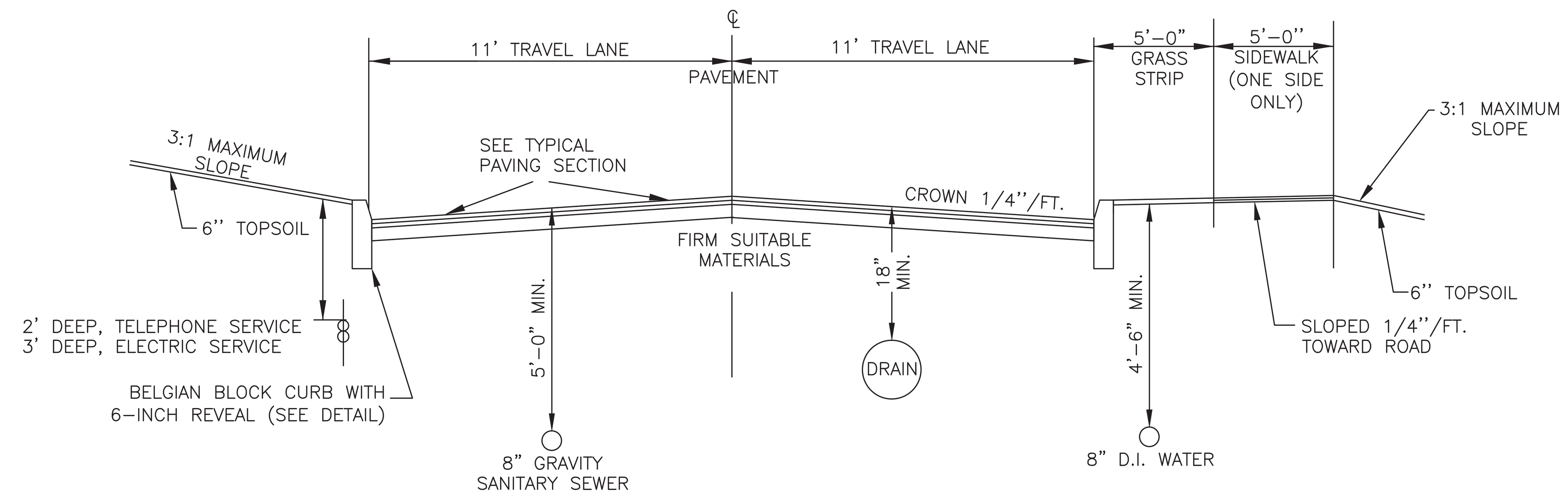
File Name: 3599-S-DETAILS

ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.01

Revision Sheet

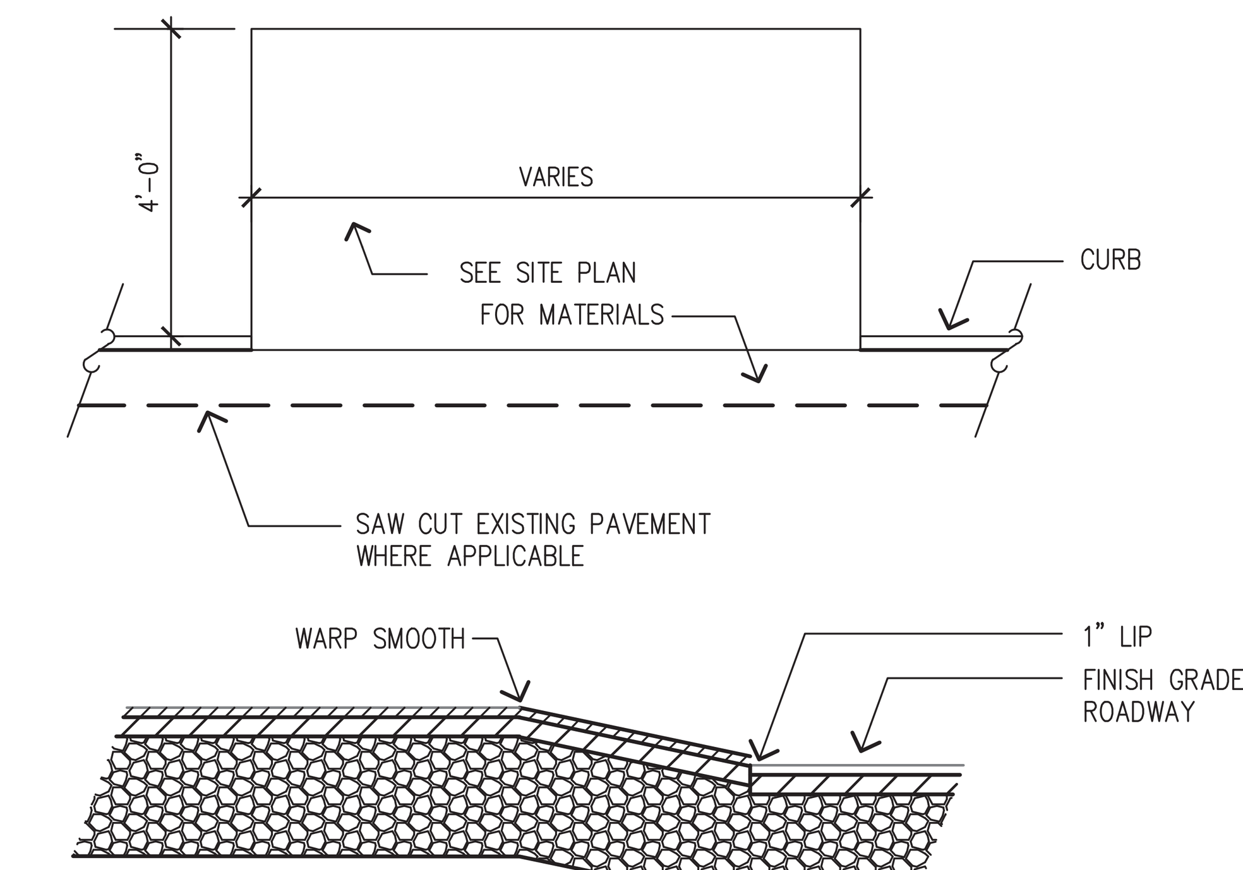
ORIGINAL SHEET - ARCH D



NOTES:
1. THIS CROSS-SECTION APPLIES TO THE FOLLOWING PORTIONS OF PROPOSED ROADS:
   ROAD 'A': STA 4+16 TO STA 10+66
   ROAD 'F': STA 1+00 TO STA 7+77

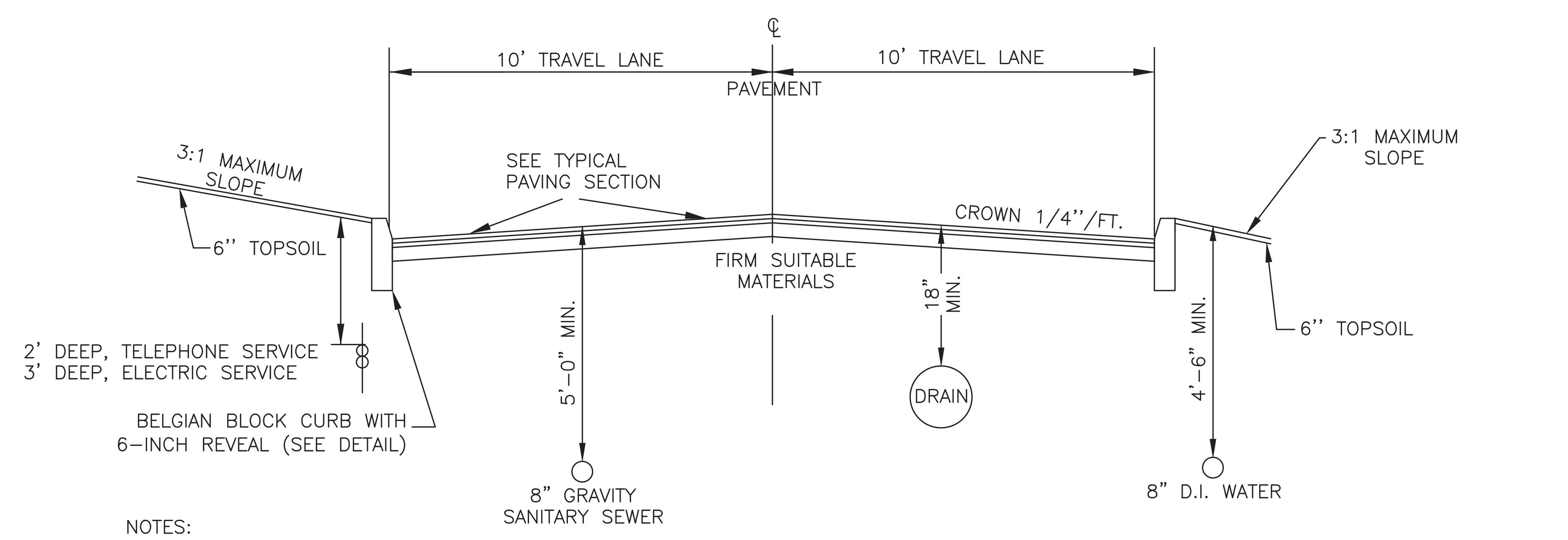
TYPICAL 22' ROADWAY CROSS-SECTION

NOT TO SCALE



DRIVEWAY CURB CUT

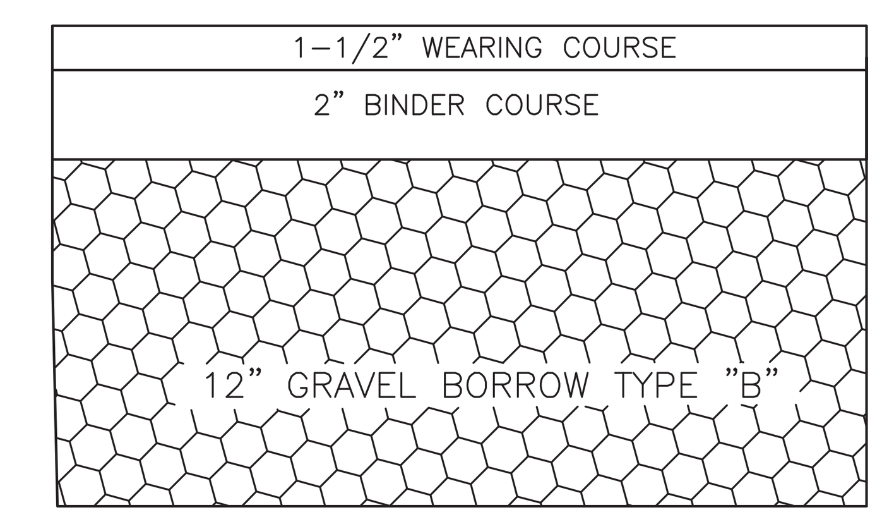
NOT TO SCALE



NOTES:
1. THIS CROSS-SECTION APPLIES TO THE FOLLOWING PORTIONS OF PROPOSED ROADS:
   ALL OF ROADS 'B', 'C', 'D' & 'G'
   ROAD 'F' : STA 7+77 TO STA 20+47
2. SIDEWALK AND PARKING IS PROPOSED IN THE VICINITY OF THE CLUBHOUSE ALONG PORTIONS OF ROAD 'C' AND ROAD 'D'. SEE PLANS FOR LOCATIONS.

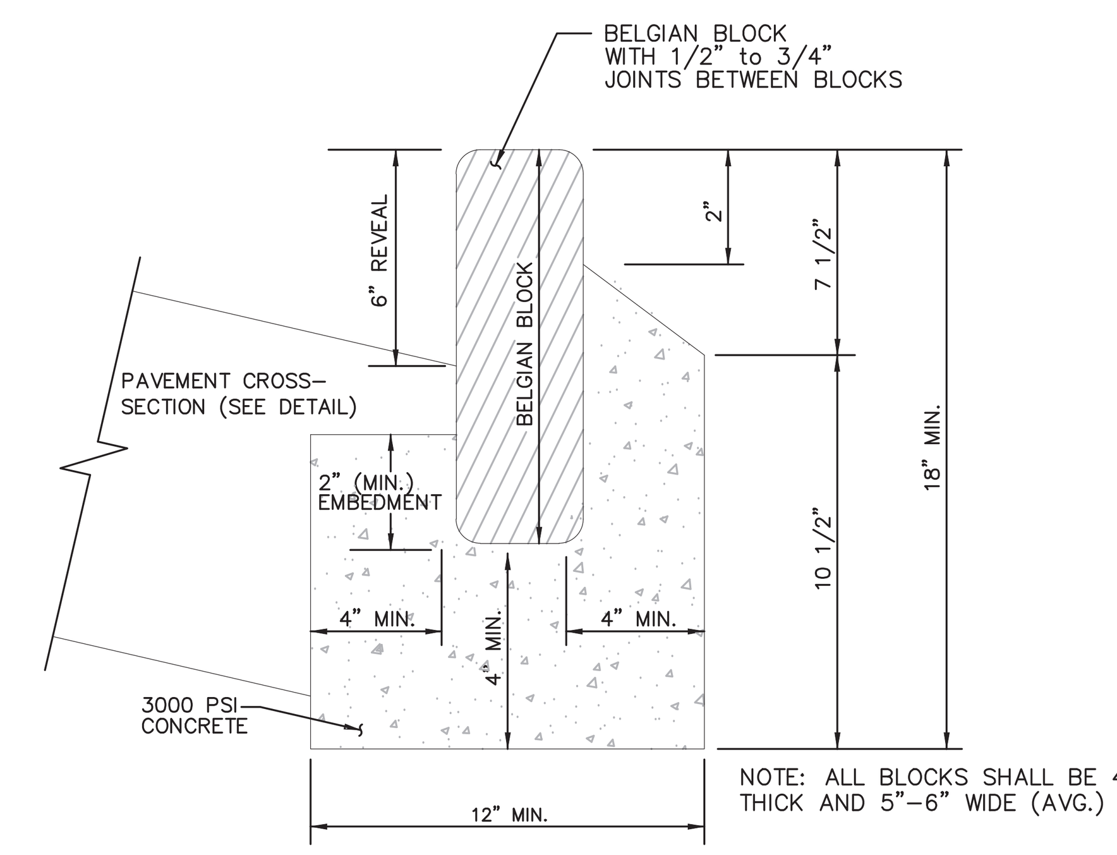
TYPICAL 20' ROADWAY CROSS-SECTION

NOT TO SCALE



TYPICAL ROADWAY PAVING DETAIL

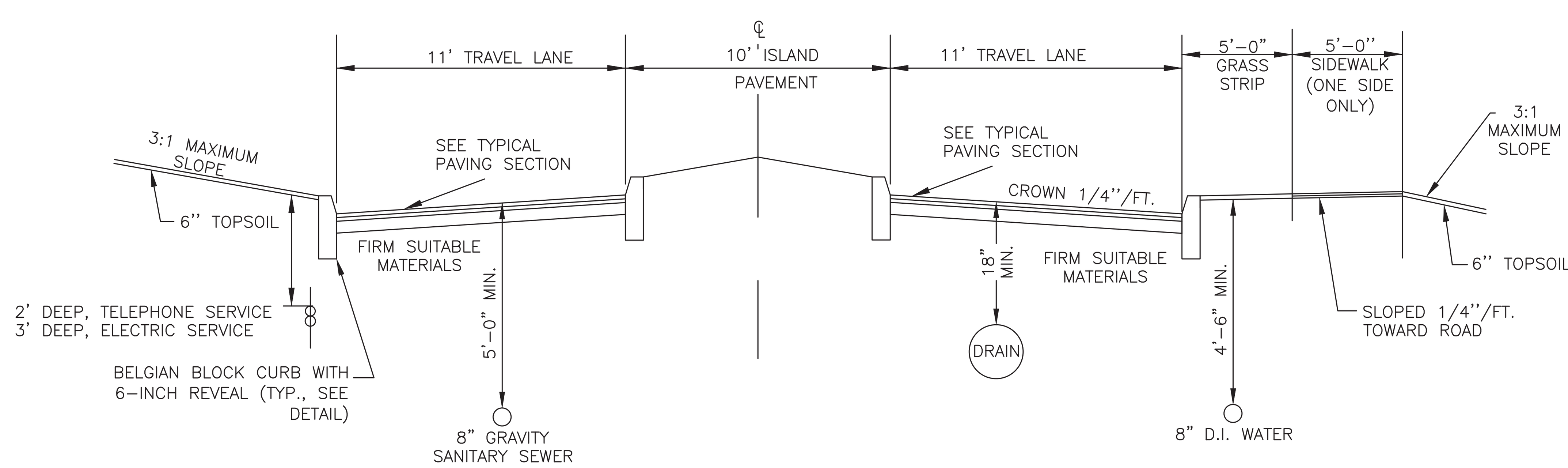
NOT TO SCALE



NOTES:
1. THE JOINTS BETWEEN BLOCKS SHALL BE ½" - ¾" CEMENT MORTAR (1:2) JOINTS RAKED AND POINTED TO ½" NOSE.

VERTICAL BELGIAN BLOCK CURB

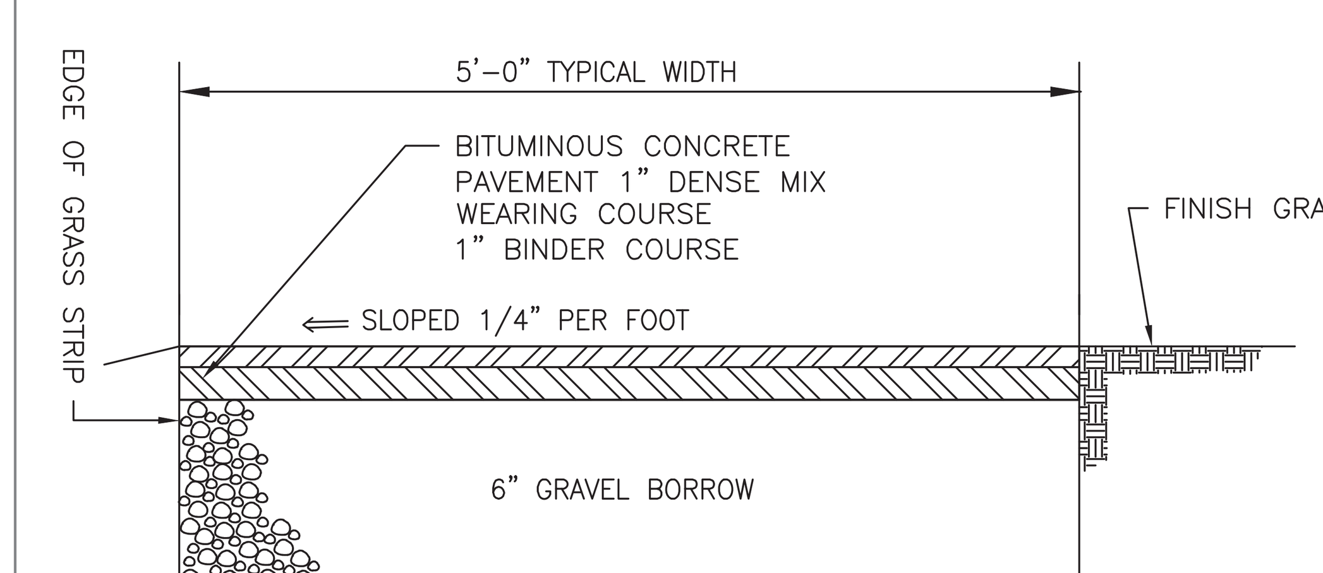
NOT TO SCALE



NOTES:
1. THIS CROSS-SECTION APPLIES TO THE FOLLOWING PORTIONS OF PROPOSED ROADS:
   ROAD 'A': STA 1+00 TO 4+16

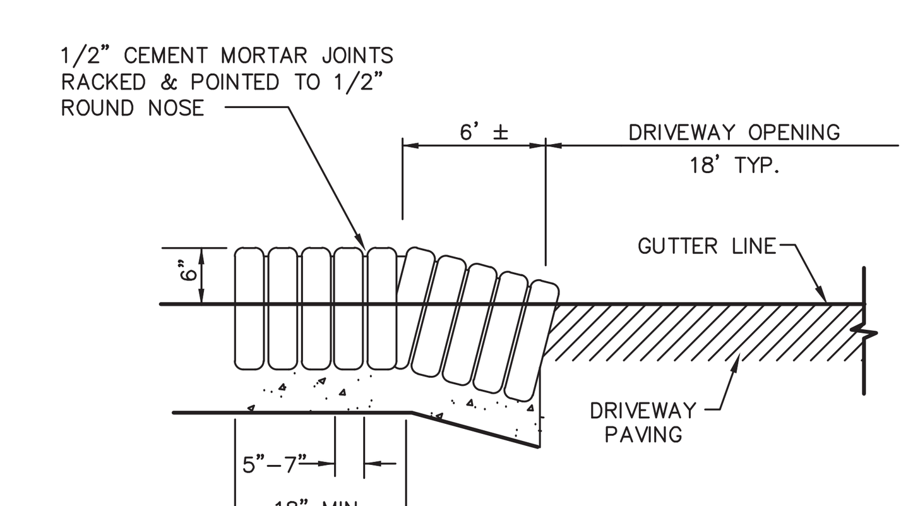
TYPICAL BOULEVARD ENTRANCE ROADWAY CROSS-SECTION

NOT TO SCALE



TYPICAL BITUMINOUS CONCRETE SIDEWALK SECTION

NOT TO SCALE



TYPICAL ELEVATION @ DRIVEWAY/CURB DEPRESSION DETAIL

NOT TO SCALE

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Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
ROADWAY AND CURB DETAILS

Permit-Seal

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37808
REGISTERED PROFESSIONAL ENGINEER

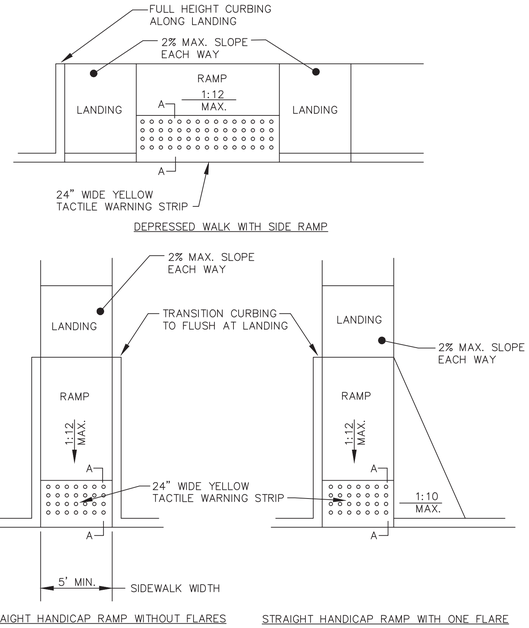
March 24, 2017

Project Number: 3599
File Name: 3599-S-DETAILS

ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

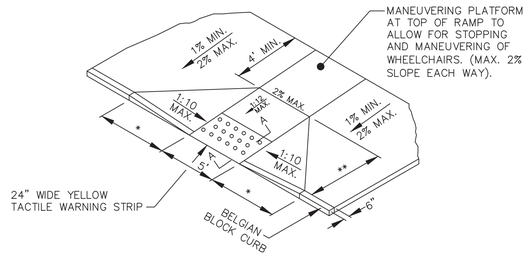
Drawing No. SD08.02

Revision Sheet



VARIATIONS ON STANDARD RAMP ALIGNMENTS

NOT TO SCALE



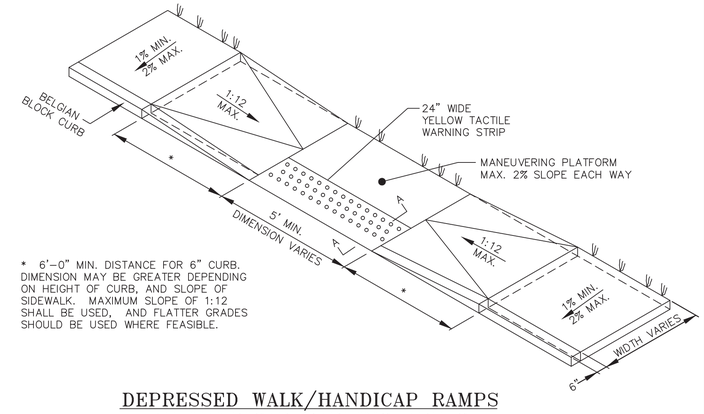
NOTES:

* DIMENSION WILL VARY DEPENDING ON HEIGHT OF CURB, AND SLOPE OF SIDEWALK. MAXIMUM SLOPE OF 1:10 SHALL BE USED, IF SUFFICIENT SPACE IS NOT AVAILABLE TO CONSTRUCT MANEUVERING PLATFORM, THAN SIDE FLARES MUST BE HELD AT 1:12 MAX.

** DIMENSION WILL VARY DEPENDING ON HEIGHT OF CURB AND DESIGNATED LANDING ELEVATIONS. LENGTHEN RAMP AS NECESSARY TO MEET GRADES. RAMP SLOPE CAN NOT EXCEED 1:12.

HANDICAP RAMP WITH FLARES DETAIL

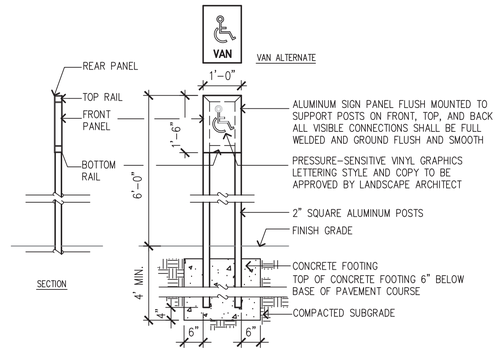
NOT TO SCALE



* 6'-0" MIN. DISTANCE FOR 6" CURB. DIMENSION MAY BE GREATER DEPENDING ON HEIGHT OF CURB, AND SLOPE OF SIDEWALK. MAXIMUM SLOPE OF 1:12 SHALL BE USED, AND FLATTER GRADES SHOULD BE USED WHERE FEASIBLE.

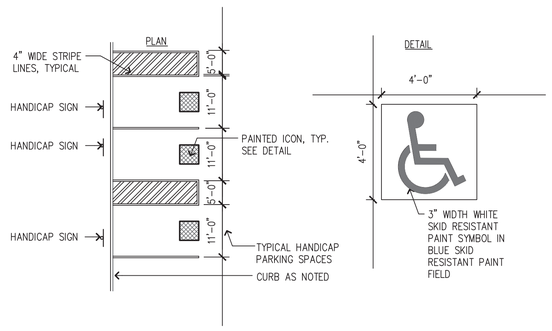
DEPRESSED WALK/HANDICAP RAMPS AT HANDICAP PARKING AREAS

NOT TO SCALE



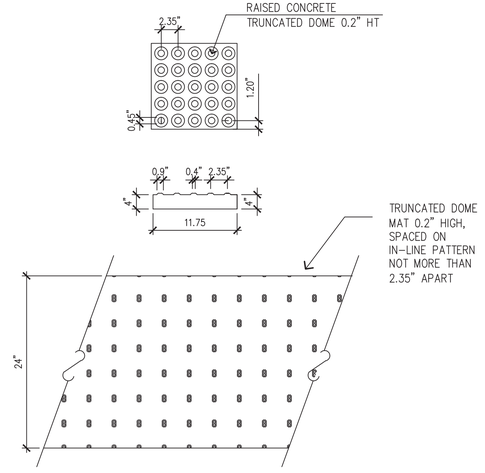
HANDICAP PARKING SIGN

NOT TO SCALE



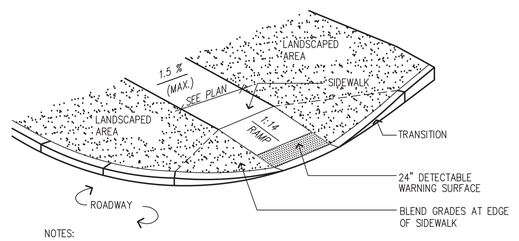
HANDICAP PARKING SPACE LAYOUT

NOT TO SCALE



DETECTABLE WARNING PANEL DETAIL

NOT TO SCALE



NOTES:

1. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
2. DIMENSIONS ARE SUBJECT TO CHANGE IN FIELD. ALL SLOPES AND DIMENSIONS TO COMPLY WITH A.D.A. AND MAAB REQUIREMENTS.
3. PROVIDE EXPANSION JOINT AT TOPS OF RAMP AND AT BACK OF WALK AT INTERFACE OF CURB.
4. PROVIDE HEAVY BROOM FINISH ON RAMP AND SIDE SLOPES PERPENDICULAR TO FLOW OF TRAFFIC.
5. MINIMUM WALK DIMENSIONS ARE FROM BACK OF CURB.
6. TRANSITION CURB LENGTH AS REQUIRED TO MEET CODE.
7. FIXED OBJECTS (i.e. UTILITY POLES, HYDRANTS ETC.) MUST NOT ENCROACH ON ANY PART OF A WHEELCHAIR RAMP, INCLUDING TRANSITION SLOPES.
8. AT NO TIME IS ANY PART OF THE WHEELCHAIR RAMP, EXCLUDING CURB TRANSITIONS, TO BE LOCATED OUTSIDE OF THE CROSSWALK.

CURB CUT AND RAMP IN LANDSCAPED AREA DETAIL

NOT TO SCALE

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Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
ROADWAY / ADA DETAILS

Permit-

KEVIN P. KLEIN
COMMONWEALTH OF MASSACHUSETTS
ENVIRONMENTAL
No. 37908
REGISTERED
March 24, 2017

Project Number:	3599
File Name:	3599-S-DETAILS

ESE	Stantec	Stantec	2017.03.24
Dsn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.03

Revision Sheet

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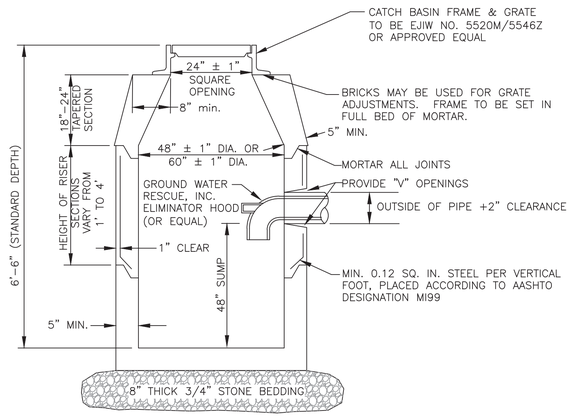
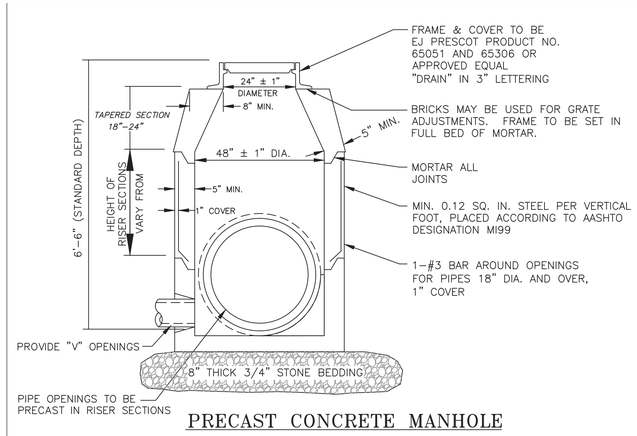
2017/04/07 7:58 AM by Jennifer Sands

ORIGINAL SHEET - ARCH D



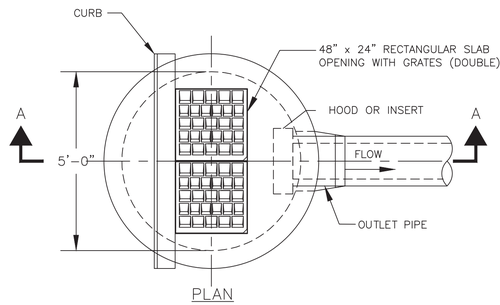
PRECAST CONCRETE CATCH BASIN

NOT TO SCALE



PRECAST CONCRETE MANHOLE

NOT TO SCALE

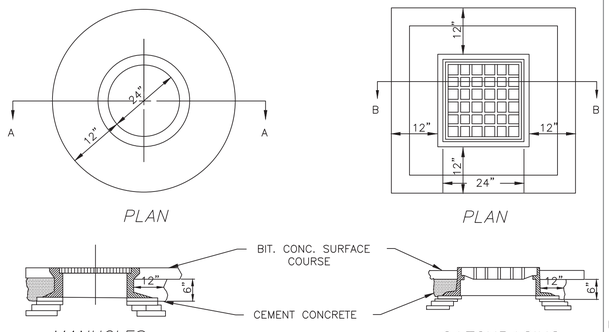


PLAN

SECTION A–A

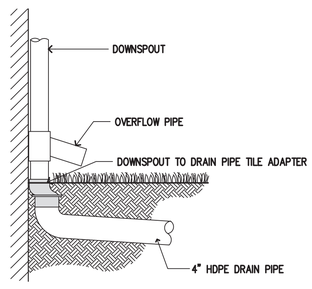
DOUBLE GRATE CONCRETE CATCH BASIN

NOT TO SCALE



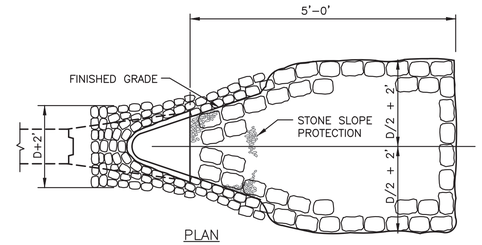
CATCH BASIN GRATE AND CONCRETE COLLARS

NOT TO SCALE

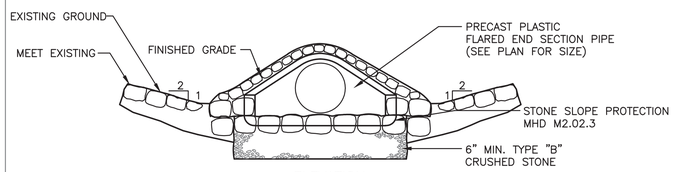


DOWNSPOUT CONNECTION DETAIL

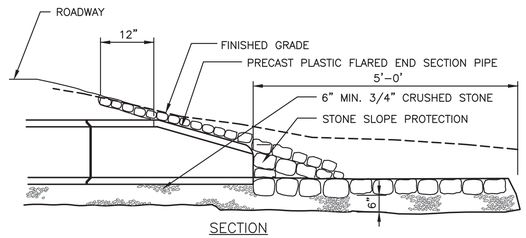
NOT TO SCALE



PLAN



ELEVATION



SECTION

NOTE:
CONSTRUCTION TYPICAL FOR ALL AREAS REQUIRING STONE SLOPE PROTECTION AS DIRECTED BY THE ENGINEER.

FLARED END DETAILS

NOT TO SCALE

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Revision	By	Appd.	YY.MM.DD
Issued	By	Appd.	YY.MM.DD

Stantec

146 Main Street Unit 3
Hyannis, Massachusetts 02601-3128
www.stantec.com

Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
STORMWATER DETAILS

Permit-

KEVIN P KLEIN ENVIRONMENTAL No. 37928 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
March 24, 2017

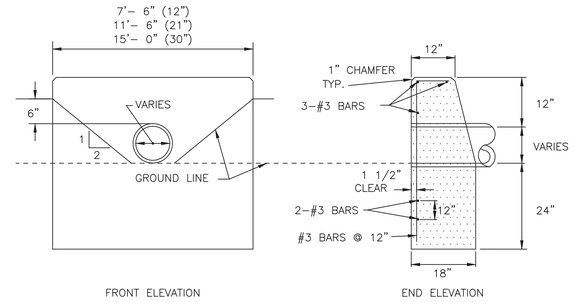
Project Number:	3599		
File Name:	3599-S-DETAILS		
ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.04

Revision Sheet

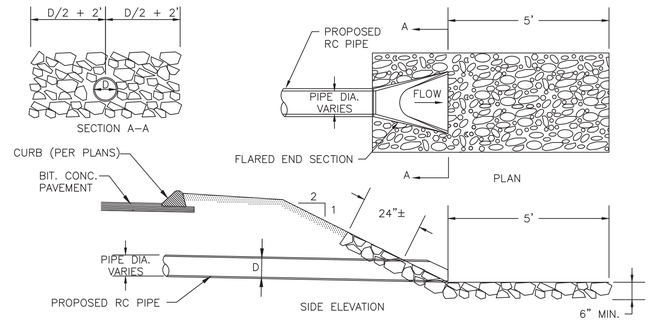
N:\Projects\Massachusetts\3599 Seaside At Scituate (Hatherly Rd)\Eng\Dept\Drawings\3599-S-DETAILS.dwg
2017.03.07 7:34 AM By: Jennifer Karas

ORIGINAL SHEET - ARCH D



END WALL DETAIL

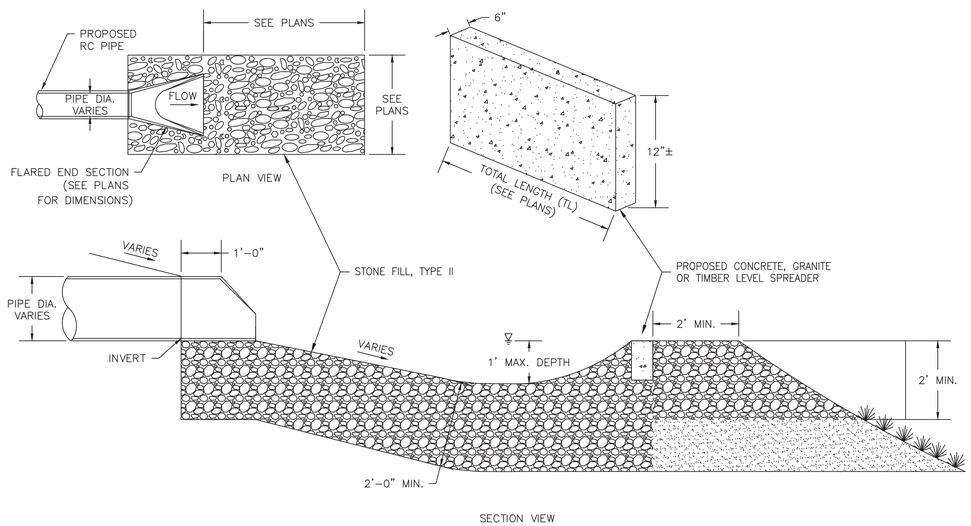
NOT TO SCALE



NOTE:
1. MINIMUM WEIGHT OF STONE = 50 LBS.; MAXIMUM WEIGHT = 125 LBS.
2. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHODS, SEE SPECIFICATION SECTION 258.

FLARED PIPE END AND RIPRAP OUTLET (FOR PIPES 24" AND LESS IN DIAMETER)

NOT TO SCALE



RIPRAP STILLING BASIN WITH LEVEL SPREADER

NOT TO SCALE

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146 Main Street Unit 3
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Issued				

Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
STORMWATER DETAILS

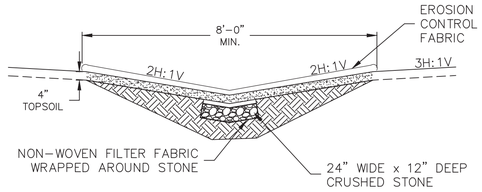
Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P. KLEIN
ENVIRONMENTAL
No. 37908
REGISTERED
PROFESSIONAL ENGINEER
MARCH 24, 2017

Project Number:	3599		
File Name:	3599-S-DETAILS		
ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.05
Revision Sheet

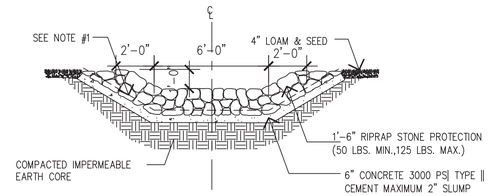
ORIGINAL SHEET - ARCH D



NOTE:
GRASS LINED SWALES ARE TO BE USED EVERYWHERE UNLESS INDICATED OTHERWISE. SWALE SLOPE SHALL MATCH THAT OF ROADWAY PROFILE UNLESS NOTED OTHERWISE ON THE PLANS.

GRASS-LINED SWALE DETAIL

NOT TO SCALE

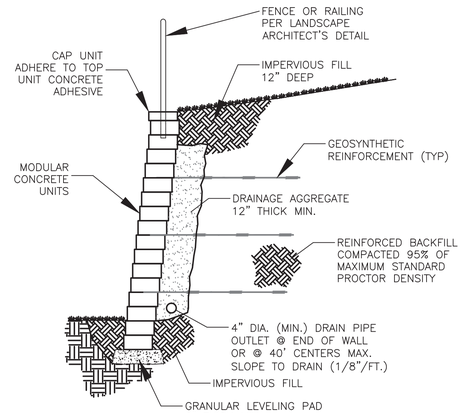


NOTES:

1. HAND SET FIRST LAYER OF RIPRAP INTO CONCRETE TO APPROXIMATELY MID-DEPTH OF THE LAYER.
2. HAND PLACE REMAINING RIPRAP AFTER CONCRETE HAS SET AND CHINK WITH SMALLER STONES.

OVERFLOW RIPRAP SWALE SECTION

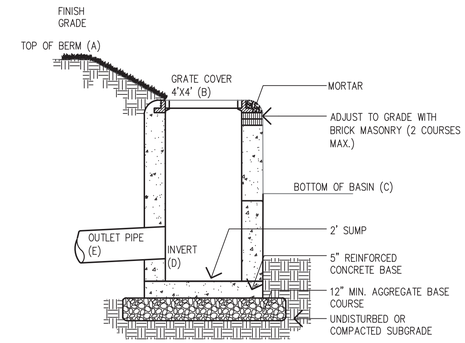
NOT TO SCALE



(FINAL DESIGN TO BE DONE BY STRUCTURAL ENGINEER)

MODULAR BLOCK MSE WALL DETAIL

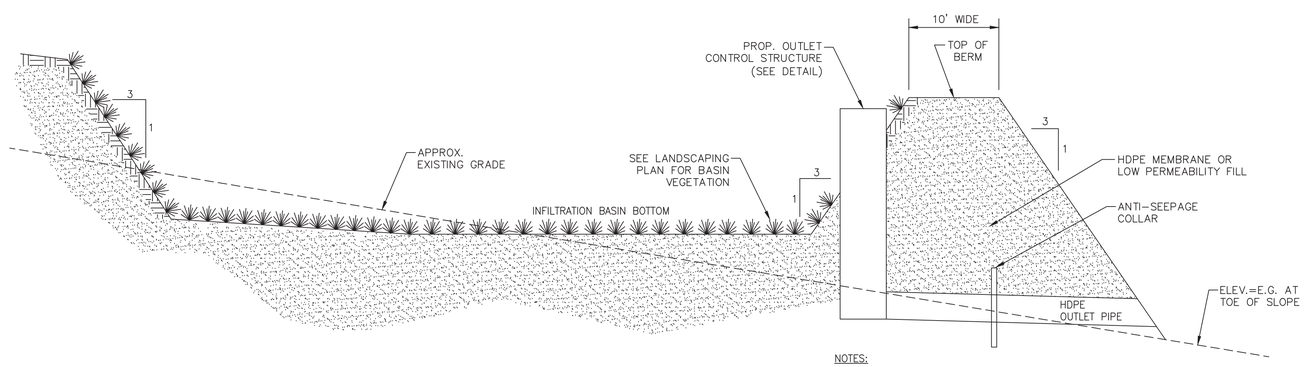
NOT TO SCALE



BASIN	(A) TOP OF BERM	(B) GRATE ELEVATION	(C) BASIN BOTTOM	(D) PIPE INVERT	(E) OUTLET PIPE SIZE
A	55.00	53.80	52.50	49.50	8-INCH
B	65.00	63.75	62.30	58.80	10-INCH
C	73.70	72.30	71.00	69.75	6-INCH
D	67.00	65.70	64.30	62.70	12-INCH
E	54.50	53.25	51.80	48.00	8-INCH
H	54.70	53.50	52.00	49.70	8-INCH
X	58.20	56.95	55.50	53.70	8-INCH

OUTLET CONTROL STRUCTURE

NOT TO SCALE

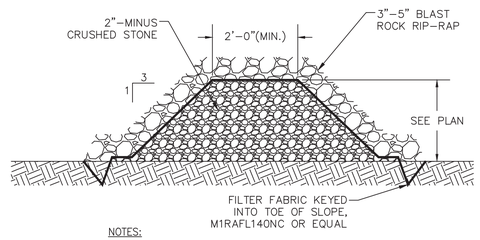


NOTES:

1. PARENT MATERIAL & FILL MATERIAL SOILS SHALL NOT BE COMPACTED TO REDUCE INFILTRATION CAPACITY. IF SOILS WITHIN THE FOOTPRINT OF THE INFILTRATION BASIN ARE COMPACTED, COMPACTED SOILS SHALL BE REMOVED AND REPLACED.
2. ALL TOP SOIL, SUBSOIL AND LOW PERMEABILITY SOILS BELOW BASIN BOTTOM TO BE REMOVED AND REPLACED WITH SAND.

TYPICAL DETENTION/INFILTRATION BASIN SECTION

NOT TO SCALE



NOTES:

1. STONE SHALL BE PLACED MECHANICALLY OR BY HAND. STONE SHALL NOT BE PUMPED DIRECTLY INTO FOREBAY. SEE GRADING AND DRAINAGE PLAN.

CHECK DAM DETAIL

NOT TO SCALE

Stantec

146 Main Street Unit 3
Hyannis, Massachusetts 02601-3128
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No.	Revision	By	Appd.	YY.MM.DD
1	Issued			

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Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
STORMWATER DETAILS

Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37956
REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number: 3599
File Name: 3599-S-DETAILS

ESE	Stantec	Stantec	2017.03.24
Dsn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.06
Revision Sheet

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2017/MAR/07 7:54 AM By: Jennifer Sands

ORIGINAL SHEET - ARCH D

CULTEC RECHARGER® V8HD PRODUCT SPECIFICATIONS

GENERAL

CULTEC RECHARGER V8HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PARAMETERS

1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT (203-775-4416 OR 1-800-428-5832).
2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK POLYETHYLENE.
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMED.
5. THE CHAMBER WILL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
6. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER V8IHD INTERMEDIATE UNIT SHALL BE 32 INCHES (813 mm) TALL, 60 INCHES (1524 mm) WIDE AND 8 FEET (2.44 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER V8IHD SHALL BE 7.5 FEET (2.29 m).
7. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER V8SHD STARTER OR V8EHD END UNIT SHALL BE 32 INCHES (813 mm) TALL, 60 INCHES (1524 mm) WIDE AND 5.08 FEET (1.55 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER V8SHD OR V8EHD SHALL BE 4.58 FEET (1.4 m).
8. THE CULTEC RECHARGER V8SHD STARTER OR V8EHD END UNIT WILL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV® F-110X4 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. THE NOMINAL DIMENSIONS OF EACH SIDE PORTAL WILL BE 15 INCHES (4381 mm) HIGH BY 18.5 INCHES (470 mm) WIDE. MAXIMUM ALLOWABLE OUTER DIAMETER (O.D.) PIPE SIZE IN THE SIDE PORTAL IS 15.3 INCHES (387 mm).
9. THE CULTEC RECHARGER V8IHD INTERMEDIATE UNIT WILL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. THE NOMINAL INSIDE DIMENSIONS OF EACH SIDE PORTAL WILL BE 9.25 INCHES [235 mm] HIGH BY 12.5 INCHES (318 mm) WIDE. MAXIMUM ALLOWABLE OUTER DIAMETER (O.D.) PIPE SIZE IN THE SIDE PORTAL IS 12.25 INCHES (311 mm).
10. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
11. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV F-110X4 FEED CONNECTOR SHALL BE 18 INCHES (457 mm) TALL, 27.5 INCHES (699 mm) WIDE AND 39 INCHES (991 mm) LONG.
12. THE NOMINAL STORAGE VOLUME OF THE RECHARGER V8HD CHAMBER WILL BE 8.679 FT^3 / FT (0.806 m^3 / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER V8SHD STARTER OR V8EHD END SHALL BE 39.779 FT^3 / UNIT (1.126 m^3 / UNIT) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER V8IHD INTERMEDIATE SHALL BE 65.093 FT^3 / UNIT (1.843 m^3 / UNIT) - WITHOUT STONE.
13. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT^3 / FT (0.085 m^3 / m) - WITHOUT STONE.
14. THE NOMINAL STORAGE VOLUME OF THE HVLV F-110X4 FEED CONNECTOR WILL BE 1.968 FT^3 / FT (0.183 m^3 / m) - WITHOUT STONE.
15. THE RECHARGER V8HD CHAMBER WILL HAVE DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNIT'S CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
16. THE END WALL OF THE CHAMBER, WHEN PRESENT, WILL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.
17. THE RECHARGER V8RHD STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. MAXIMUM INLET OPENING ON THE CHAMBER END WALL IS 24 INCHES (600 mm).
18. THE RECHARGER V8SHD STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL END WALL AND ONE PARTIALLY FORMED INTEGRAL END WALL WITH A LOWER TRANSFER OPENING OF 18 INCHES (457 mm) HIGH BY 42 INCHES (1067 mm) WIDE. MAXIMUM INLET OPENING ON THE CHAMBER END WALL IS 24 INCHES (600 mm).
19. THE RECHARGER V8IHD INTERMEDIATE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY OPEN END WALL AND ONE PARTIALLY FORMED INTEGRAL END WALL WITH A LOWER TRANSFER OPENING OF 16 INCHES (406 mm) HIGH X 42 INCHES (1067 mm) WIDE.
20. THE RECHARGER V8EHD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL END WALL AND ONE FULLY OPEN END WALL AND HAVING NO SEPARATE END PLATES OR END WALLS. MAXIMUM INLET OPENING ON THE CHAMBER END WALL IS 24 INCHES (600 mm).
21. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE RECHARGER V8IHD INTERMEDIATE AND ACT AS CROSS FEED CONNECTIONS.
22. THE HVLV F-110X4 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE RECHARGER V8SHD STARTER AND V8EHD END AND ACT AS CROSS FEED CONNECTIONS.
23. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
24. HEAVY DUTY UNITS ARE DESIGNATED BY A COLORED STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
25. THE CHAMBER WILL HAVE A RAISED INTEGRAL CAP LOCATED ON TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
26. THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION ON THE LARGE RIB END.
27. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.
28. MAXIMUM ALLOWED COVER ON TOP OF UNIT SHALL BE 8.0 FEET [2.44 M]

CULTEC HVLV F-110X4 FEED CONNECTOR PRODUCT SPECIFICATIONS

GENERAL

CULTEC HVLV F-110X4 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER V8SHD, V8EHD AND V8RHD STORMWATER CHAMBERS.

CHAMBER PARAMETERS

1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMED.
5. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV F-110X4 FEED CONNECTOR SHALL BE 18 INCHES (457 mm) TALL, 27.5 INCHES (699 mm) WIDE AND 39 INCHES (991 mm) LONG.
6. THE NOMINAL STORAGE VOLUME OF THE HVLV F-110X4 FEED CONNECTOR WILL BE 1.968 FT^3 / FT (0.1828 m^3 / m) - WITHOUT STONE.
7. THE HVLV F-110X4 FEED CONNECTOR CHAMBER SHALL HAVE 5 CORRUGATIONS.
8. THE HVLV F-110X4 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE RECHARGER V8SHD STARTER AND V8EHD END STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
9. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
10. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.

CULTEC HVLV® FC-24 FEED CONNECTOR PRODUCT SPECIFICATIONS

GENERAL

CULTEC HVLV FC-24 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER V8IHD INTERMEDIATE STORMWATER CHAMBERS.

CHAMBER PARAMETERS

1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMED.
5. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT^3 / FT (0.085 m^3 / m) - WITHOUT STONE.
7. THE HVLV FC-24 FEED CONNECTOR CHAMBER SHALL HAVE 2 CORRUGATIONS.
8. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
9. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
10. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.

CULTEC NO. 66™ WOVEN GEOTEXTILE

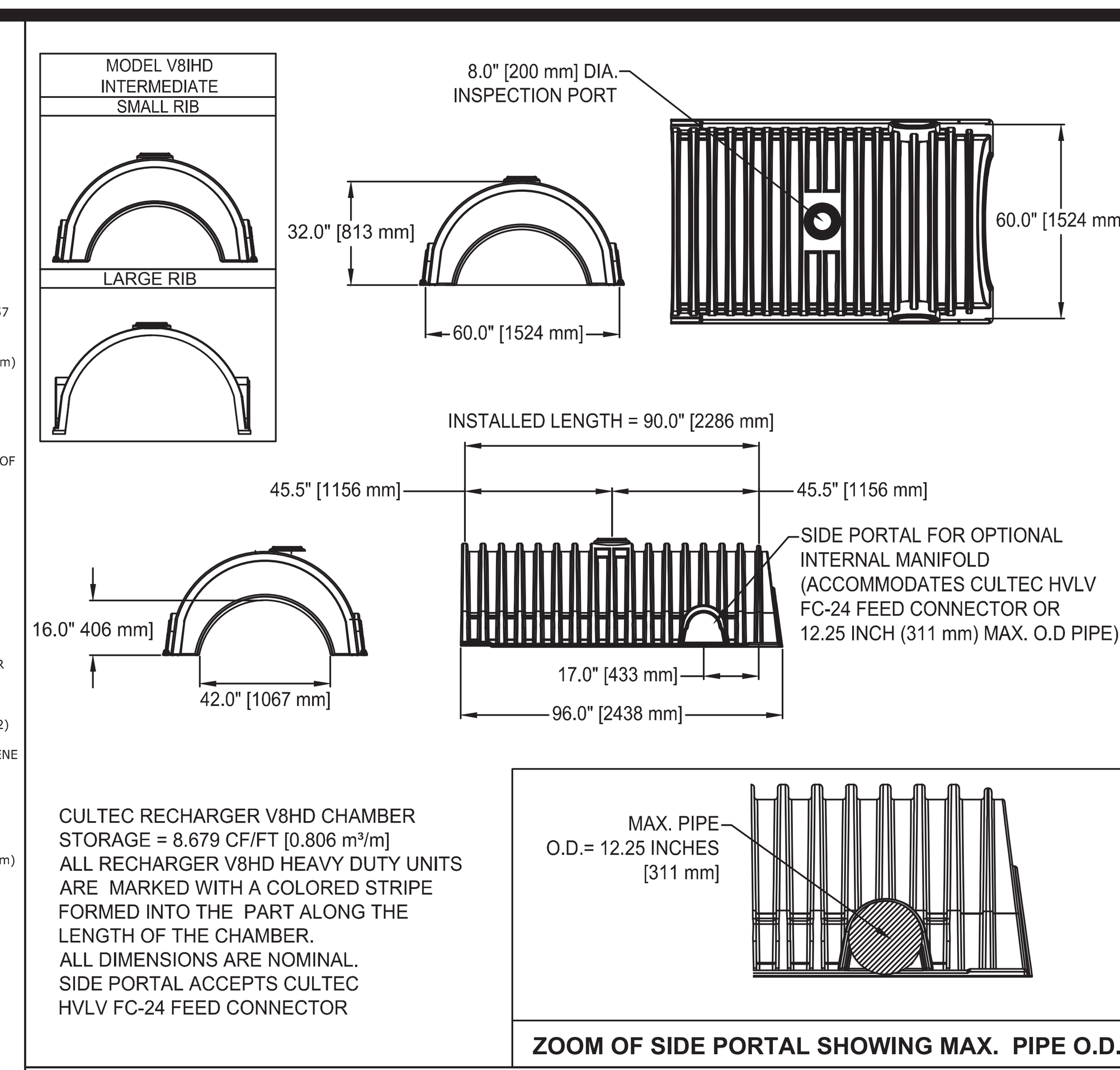
GENERAL

CULTEC NO. 66™ WOVEN GEOTEXTILE IS UTILIZED AS AN UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE.

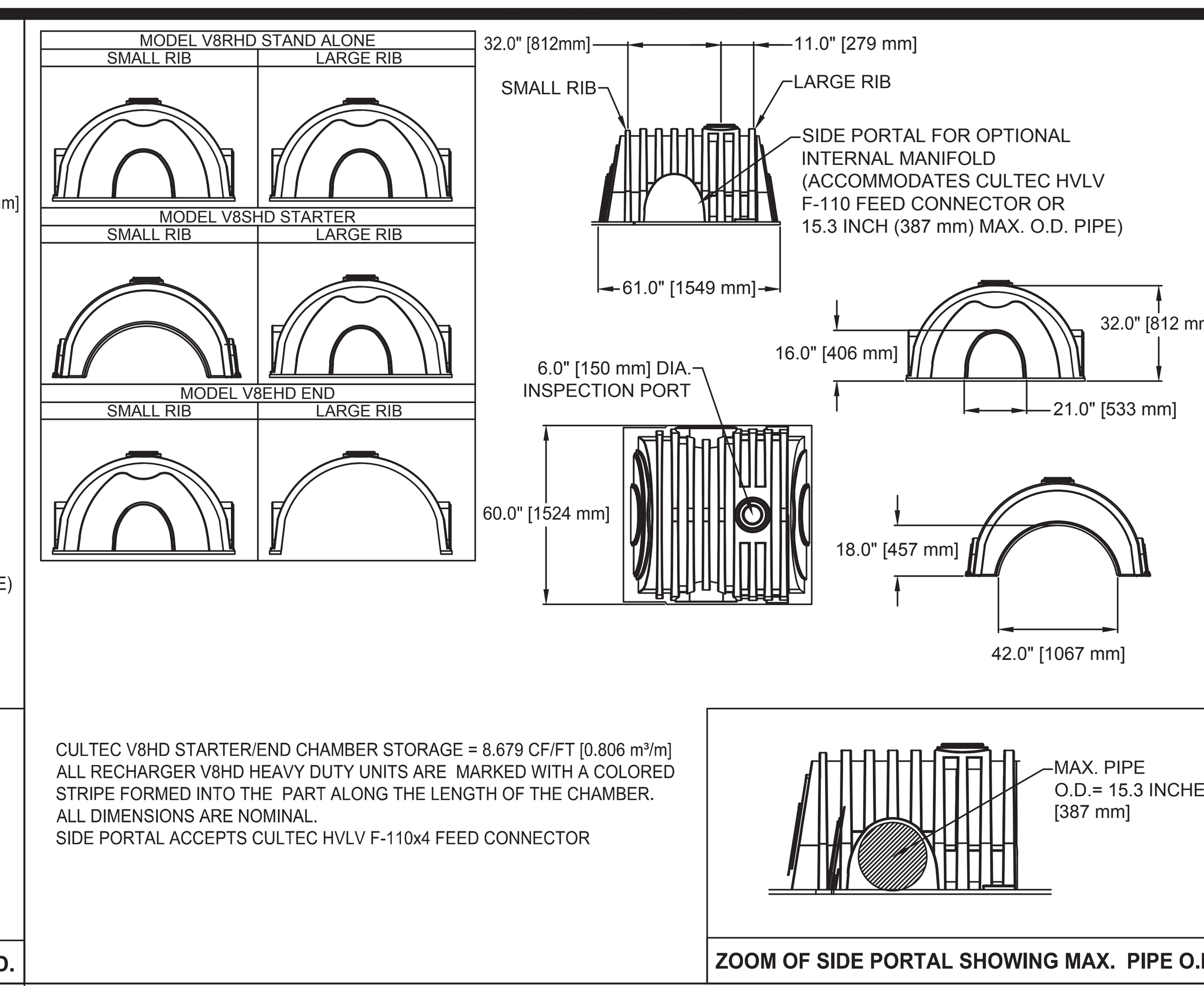
GEOTEXTILE PARAMETERS

1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 315 LBS (1.40KN) PER ASTM D4632 TESTING METHOD.
4. THE GEOTEXTILE SHALL HAVE A TENSILE ELONGATION RESISTANCE OF 15% PER ASTM D4632 TESTING METHOD.
5. THE GEOTEXTILE SHALL HAVE A MULLEN BURST RESISTANCE OF 600PSI (4138 KPA) PER ASTM D3786 TESTING METHOD.
6. THE GEOTEXTILE SHALL HAVE A TEAR RESISTANCE OF 115 LBS (0.51 KN) PER ASTM D4533 TESTING METHOD.
7. THE GEOTEXTILE SHALL HAVE A PUNCTURE RESISTANCE OF 150 LBS (0.66 KN) PER ASTM D4833 TESTING METHOD.
8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 900 LBS (4.00 KN) PER ASTM D6241 TESTING METHOD.
9. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 70% @ 500 HRS. PER ASTM D4355 TESTING METHOD.
10. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.05 SEC-1 PER ASTM D4491 TESTING METHOD.
11. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 4 GPM/FT2 (160 LPM/M2) PER ASTM D4491 TESTING METHOD.
12. THE GEOTEXTILE SHALL HAVE A PERCENT OPEN AREA OF <1% PER CW-02215 TESTING METHOD.
13. THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
14. THE GEOTEXTILE SHALL CONSIST OF A 100% HIGH-TENACITY, SILT-FILM POLYPROPYLENE YARNS.

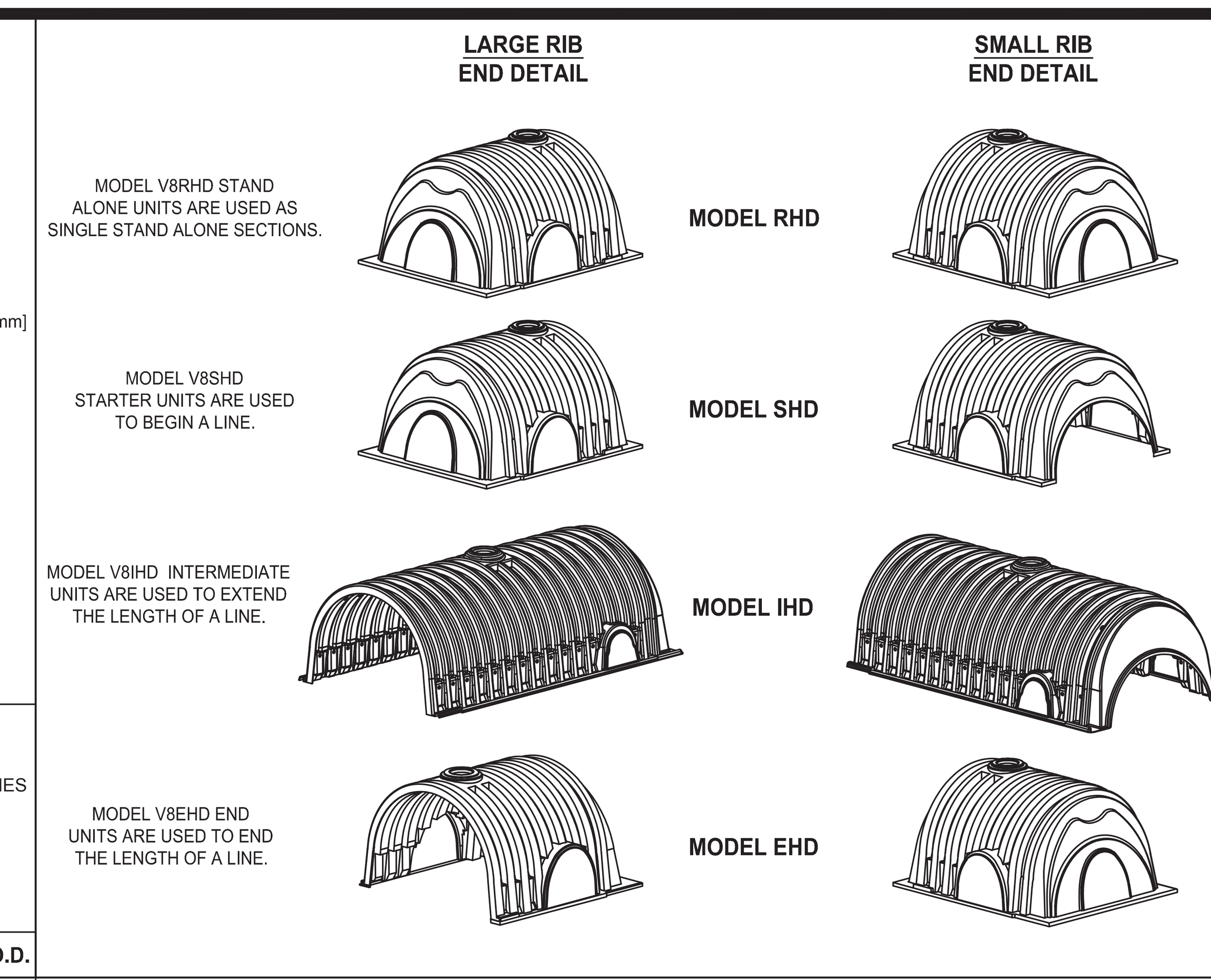
V8HD 1.0 — GENERAL NOTES



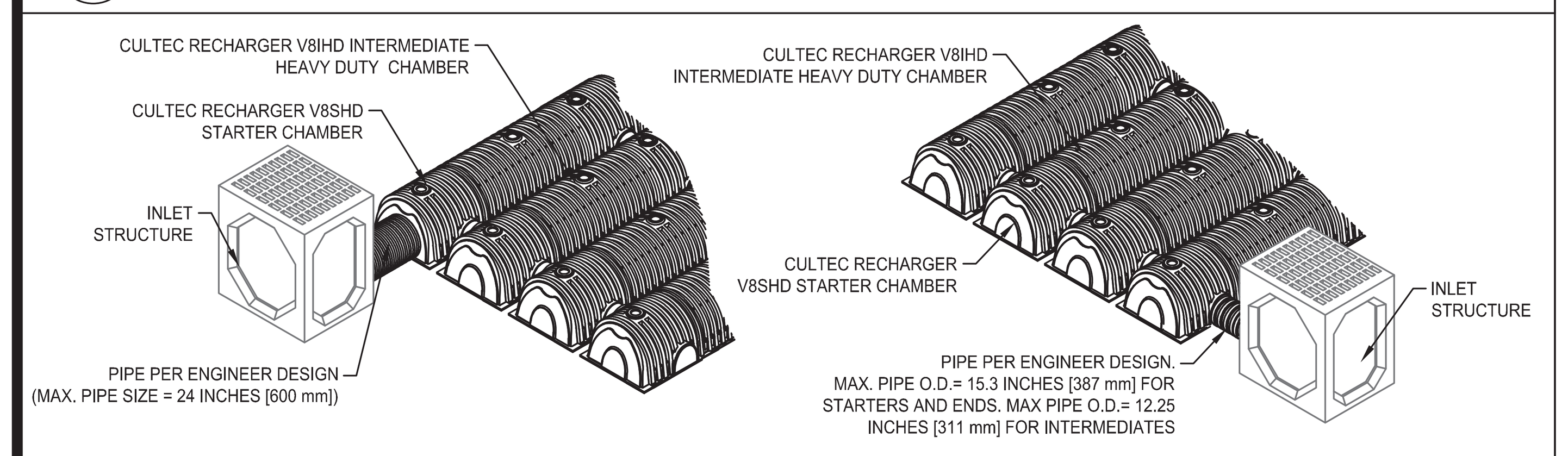
V8HD 2.0 — CULTEC RECHARGER V8IHD THREE VIEW



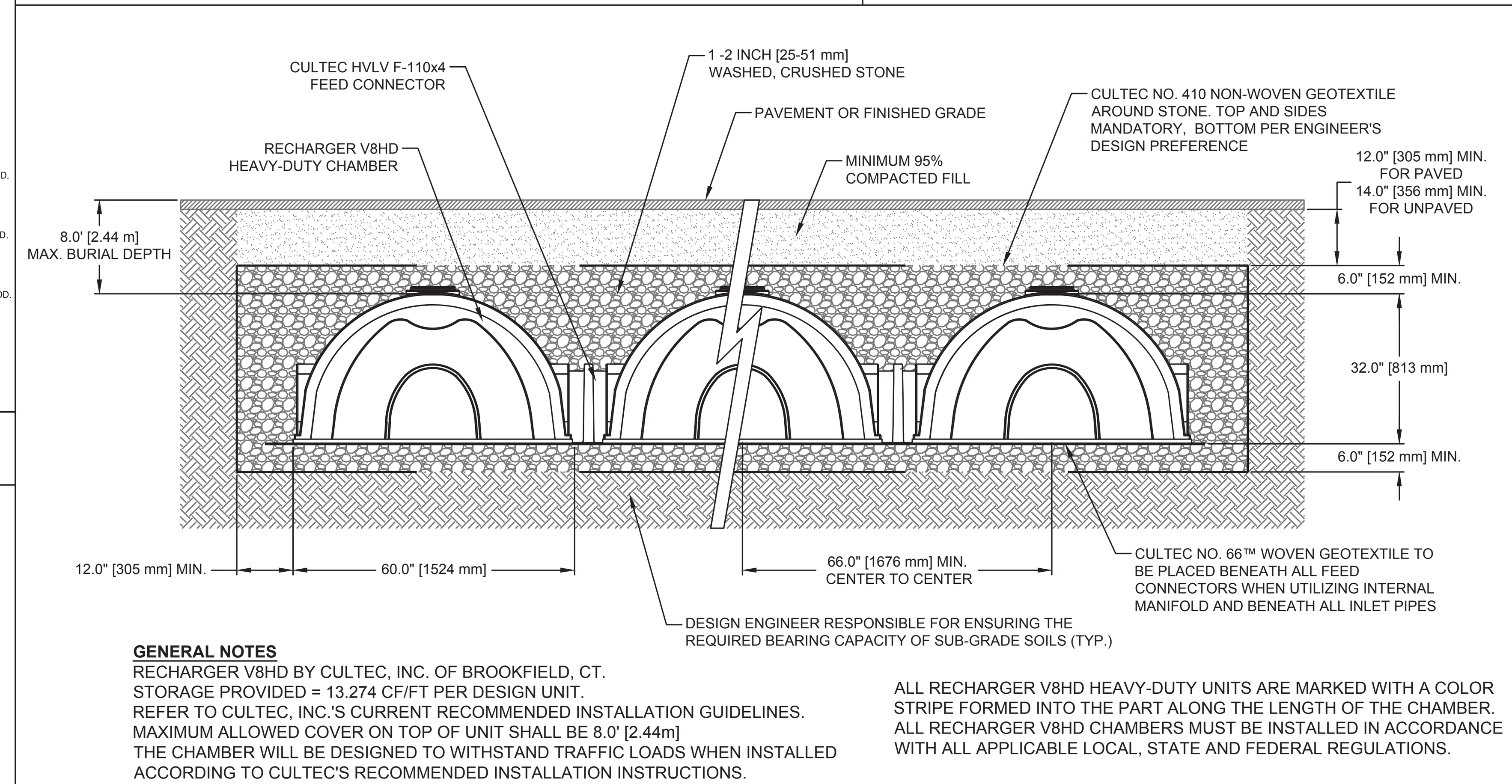
V8HD 3.0 — CULTEC RECHARGER V8RHD, SHD, EHD THREE VIEW



V8HD 4.0 — CULTEC RECHARGER V8HD END DETAIL INFORMATION



V8HD 5.0 — CULTEC TYPICAL INLET CONNECTION

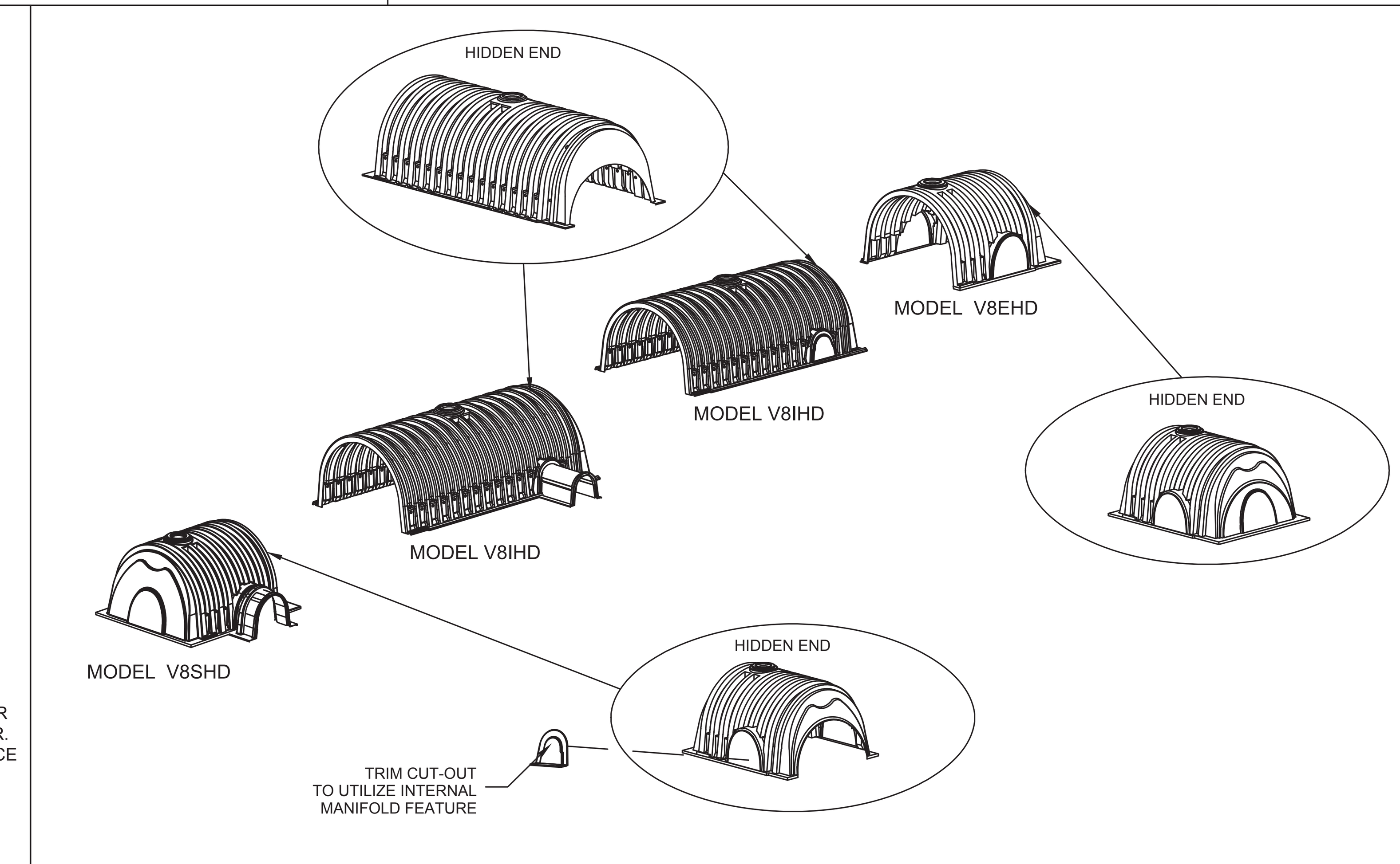


GENERAL NOTES

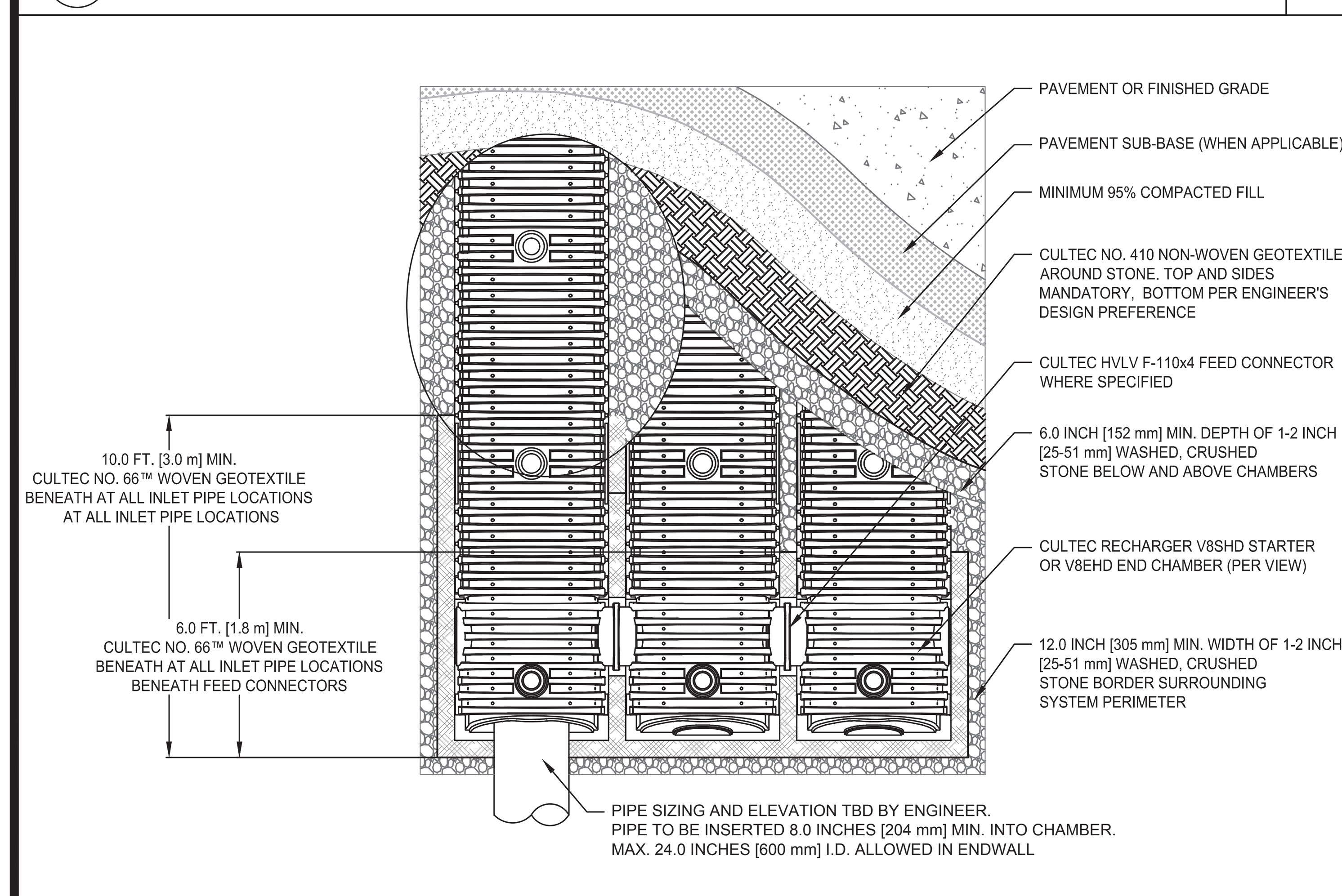
RECHARGER V8HD BY CULTEC, INC. OF BROOKFIELD, CT.
STORAGE PROVIDED = 13.274 CF/FT PER DESIGN UNIT.
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.
MAXIMUM ALLOWED COVER ON TOP OF UNIT SHALL BE 8.0' [2.44m]
THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

ALL RECHARGER V8HD HEAVY-DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER. ALL RECHARGER V8HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

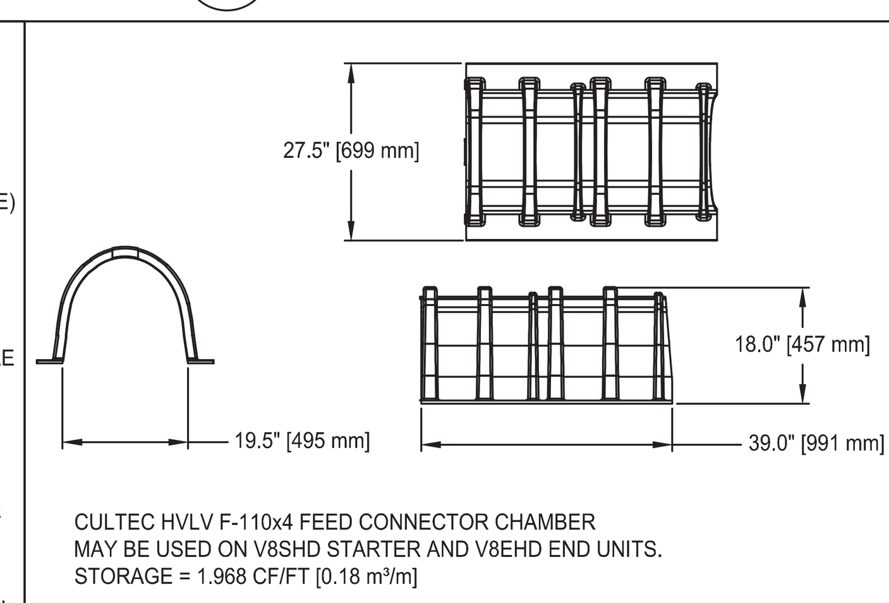
V8HD 6.0 — CULTEC RECHARGER V8HD HEAVY DUTY TYPICAL CROSS SECTION



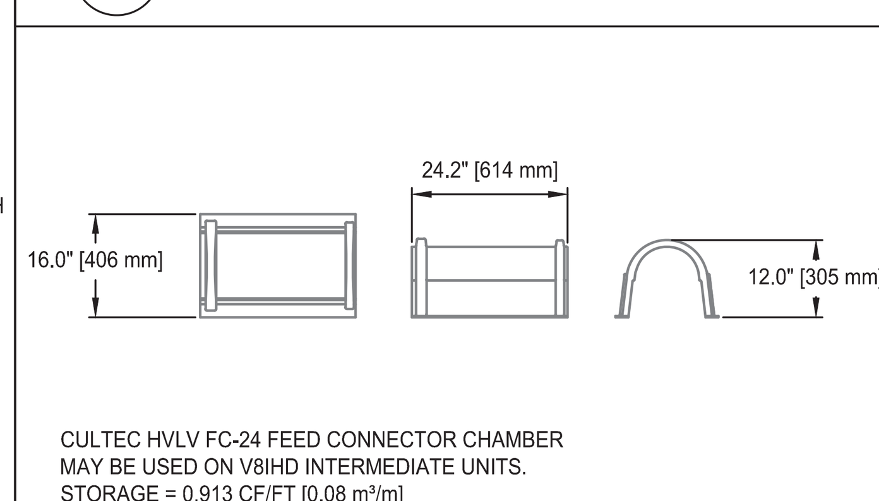
V8HD 7.0 — CULTEC RECHARGER V8HD HEAVY DUTY TYPICAL INTERLOCK



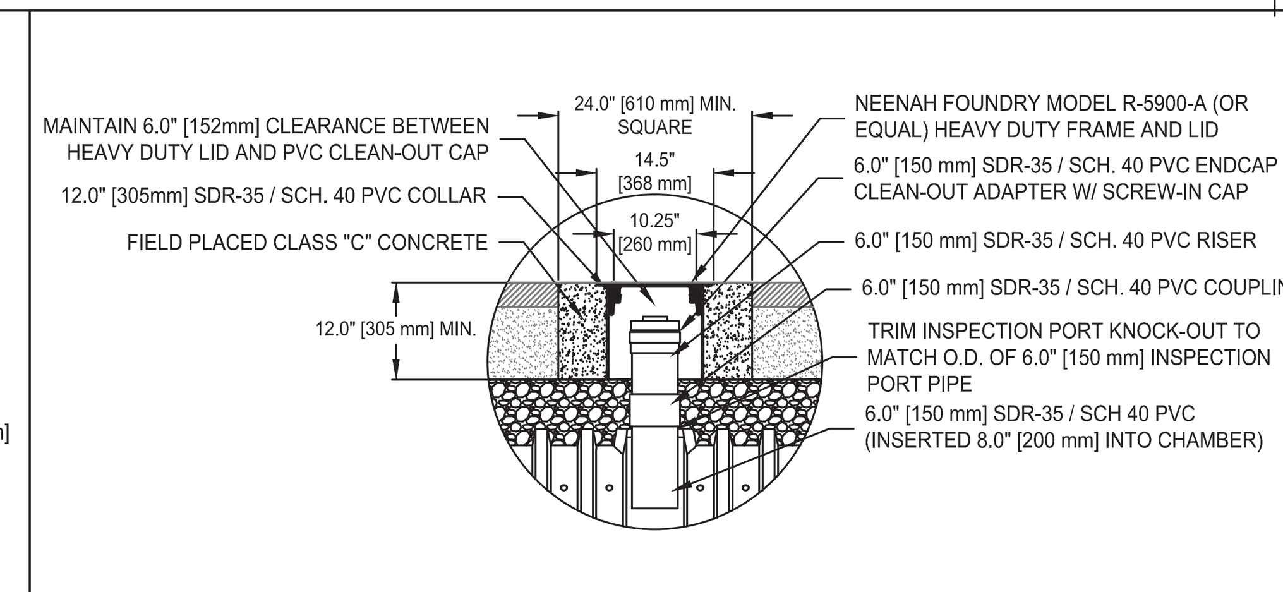
V8HD 8.0 — CULTEC RECHARGER V8HD HEAVY DUTY PLAN VIEW



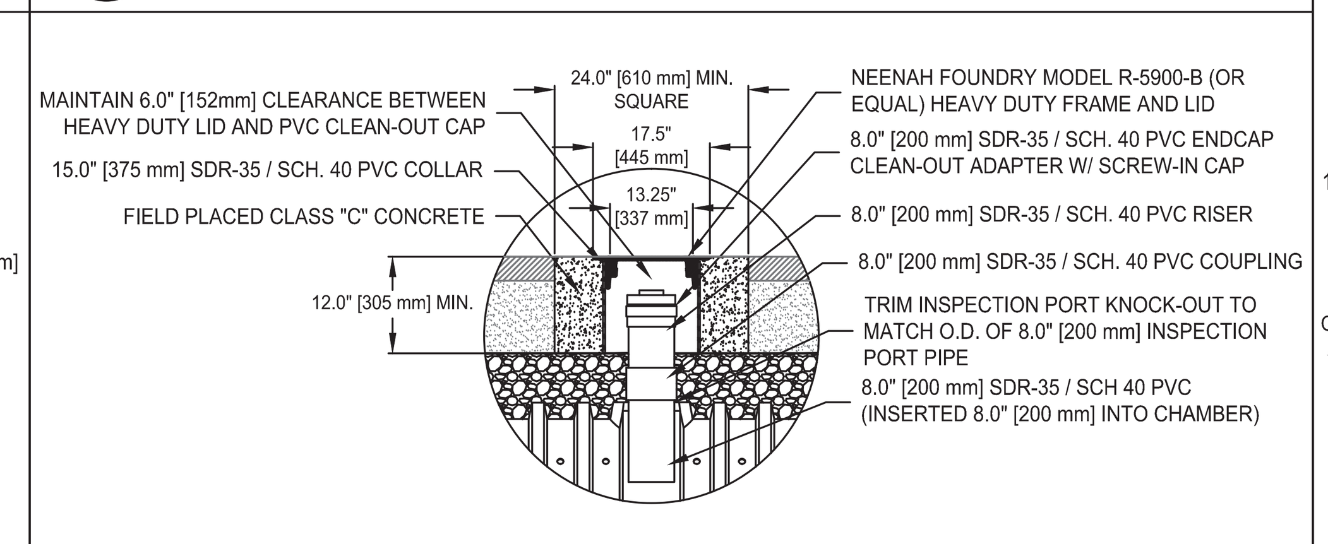
V8HD 9.0 — CULTEC HVLV F-110x4 FEED CONNECTOR THREE VIEW



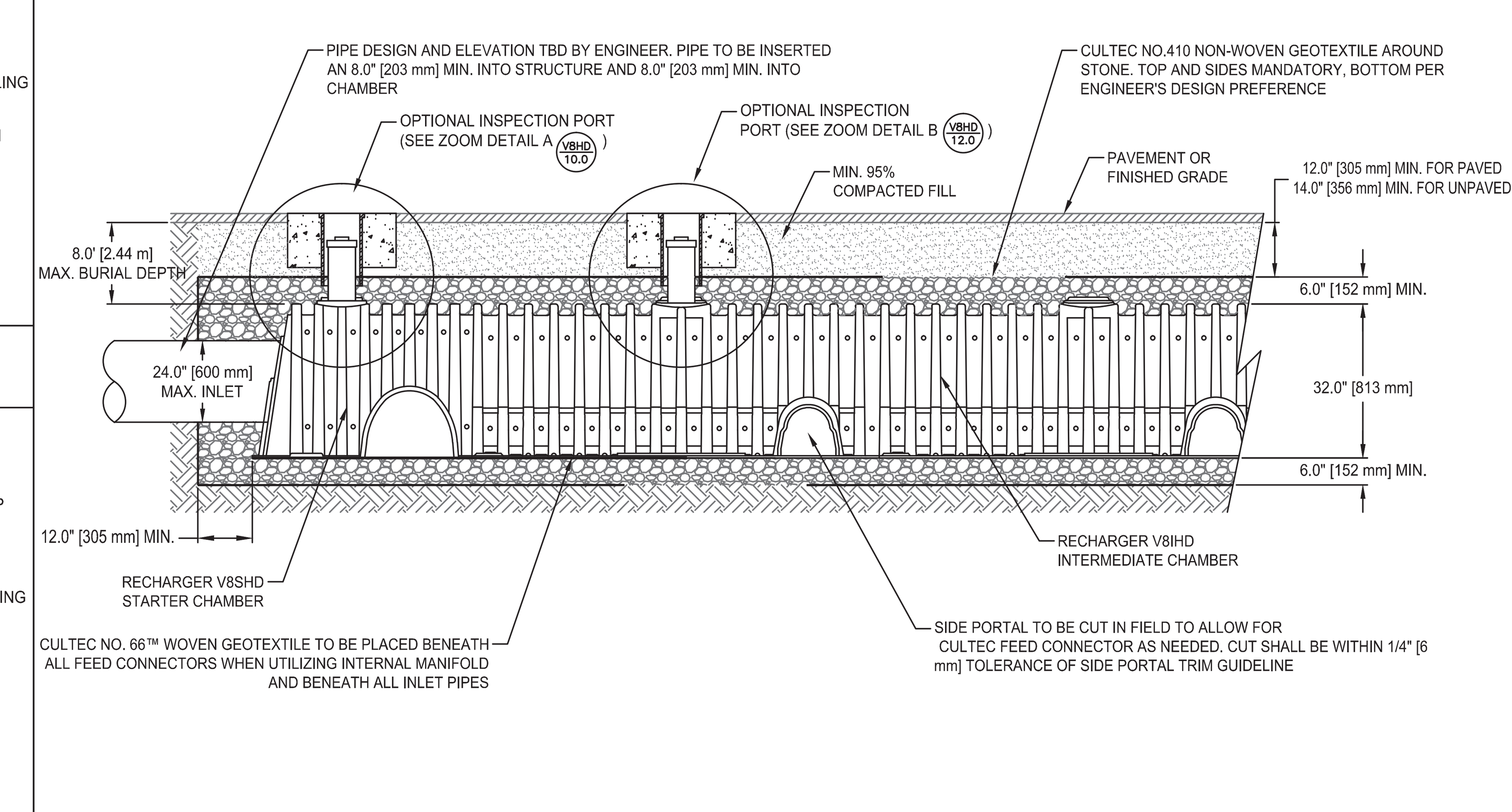
V8HD 11.0 — CULTEC HVLV FC-24 FEED CONNECTOR THREE VIEW



V8HD 10.0 — OPTIONAL INSPECTION PORT- ZOOM DETAIL A



V8HD 12.0 — OPTIONAL INSPECTION PORT- ZOOM DETAIL B



V8HD 13.0 — CULTEC MANIFOLD DETAIL - OPTIONAL INSPECTION PORT DETAIL

CULTEC, Inc.™
Subsurface Stormwater Management Systems
CULTEC
P.O. Box 280
878 Federal Road
Brookfield, CT 06804
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FX: (203) 775-1462
tech@cultec.com

THIS DRAWING WAS PREPARED TO SUPPORT THE DESIGN ENGINEER FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE DESIGN ENGINEER TO ASSURE THAT THE STORMWATER SYSTEM'S DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE CULTEC PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENTS. CULTEC INC. DOES NOT APPROVE PLANS, SIZING, OR SYSTEM DESIGNS. THE DESIGNING ENGINEER IS RESPONSIBLE FOR ALL DESIGN DECISIONS.

RECHARGER V8HD
DETAIL SHEET
TRAFFIC APPLICATION

CULTEC RECHARGER® V8HD			
PROJECT NO:	-	DATE:	10/2015
DESIGNED BY:	CULTEC, INC	DRAWN BY:	TECH
SCALE:	N.T.S.	SHEET NO:	1 OF 1

Stantec

146 Main Street Unit 3
Hyannis, Massachusetts 02601-3128
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

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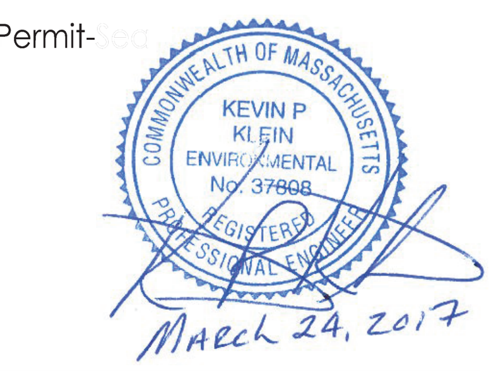
Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
STORMWATER DETAILS

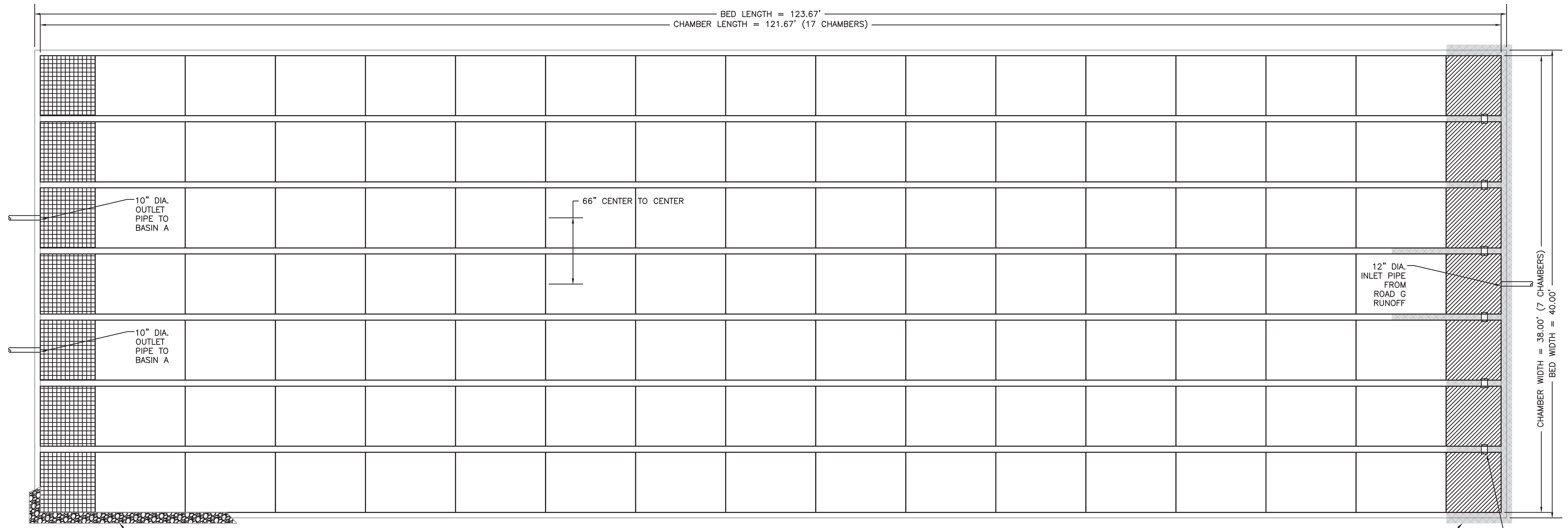
Permit-



Project Number: 3599
File Name: 3599-S-DETAILS

ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.07
Revision Sheet



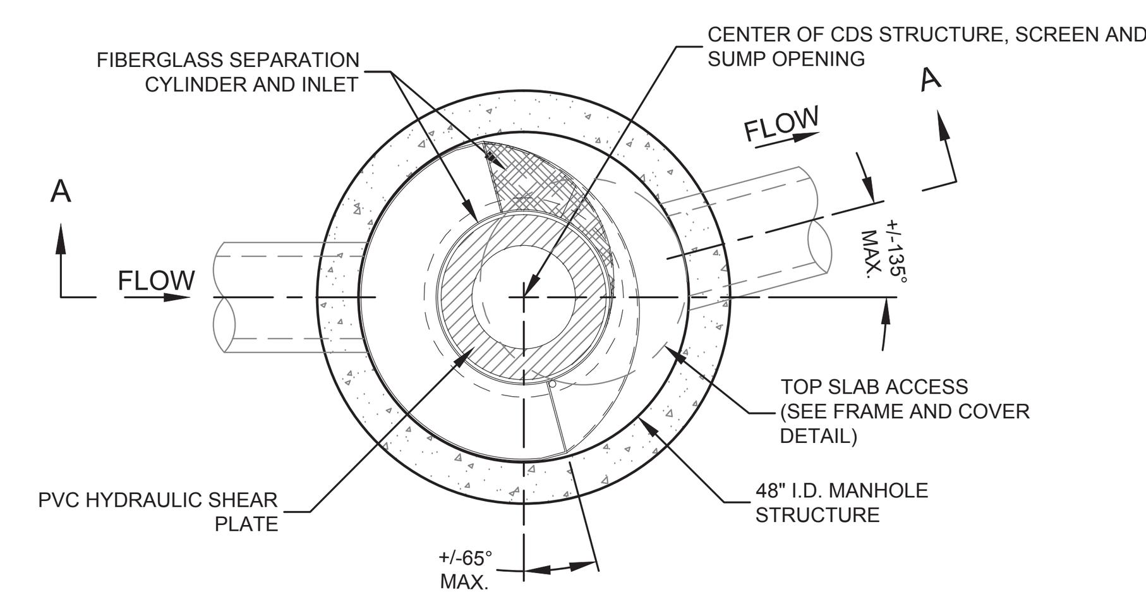
CULTEC RECHARGER® V8HD LEGEND

- RECHARGER V8SHD STARTER
- RECHARGER V8IHD INTERMEDIATE
- RECHARGER V8EHD END
- HVLV F-110x4 FEED CONNECTOR
- CULTEC NO. 20L POLYETHYLENE LINER

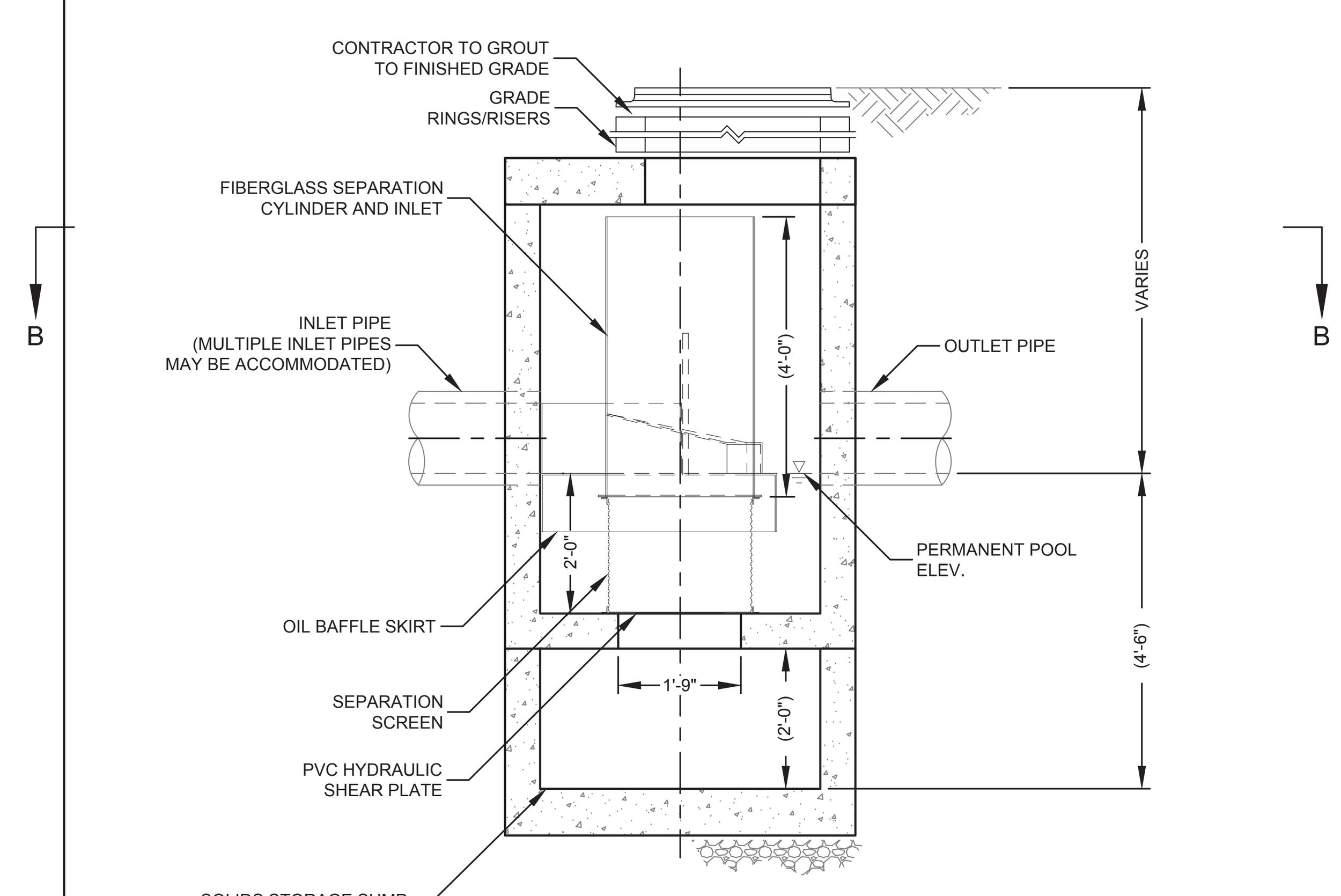
MATERIALS LIST		
RECHARGER V8SHD STARTER	7	PIECES
RECHARGER V8IHD INTERMEDIATE	105	PIECES
RECHARGER V8EHD END	7	PIECES
HVLV F-110x4 FEED CONNECTORS	6	PIECES
CULTEC NO. 410 FILTER FABRIC	1356	SQ. YARDS
CULTEC NO. 20L POLYETHYLENE LINER	40	LINEAL FEET
DOUBLE WASHED STONE	398	CU. YARDS

LAYOUT DETAILS OF PROPOSED LEACHING SYSTEM FOR ROAD G RUNOFF

NOT TO SCALE



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.

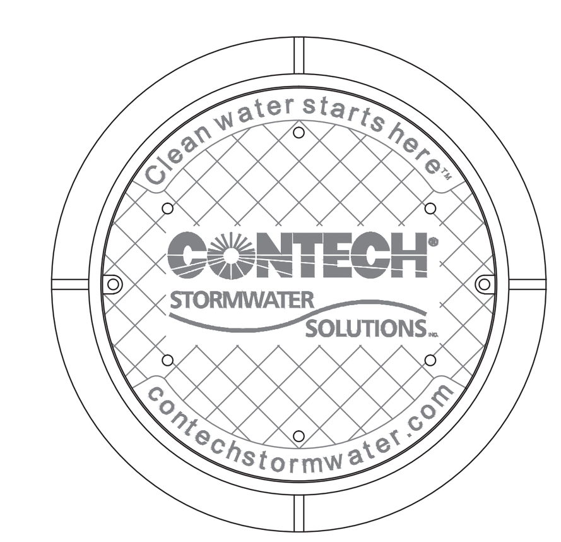
CDS®
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,848; 6,641,720; 6,511,595; 6,581,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS2015-4-C DESIGN NOTES

CDS2015-4-C RATED TREATMENT CAPACITY IS 1.4 CFS, OR PER LOCAL REGULATIONS.

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES



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

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS)			*
PEAK FLOW RATE (CFS)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE. www.contech-cpi.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

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

CONTECH®
CONSTRUCTION PRODUCTS INC.
www.contech-cpi.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
CDS INLINE
STANDARD DETAIL

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Stantec
146 Main Street Unit 3
Hyannis, Massachusetts 02601-3128
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
STORMWATER DETAILS

Permit-Seal

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37808
REGISTERED PROFESSIONAL ENGINEER
MARCH 24, 2017

Project Number: 3599
File Name: 3599-S-DETAILS

ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.08
Revision Sheet

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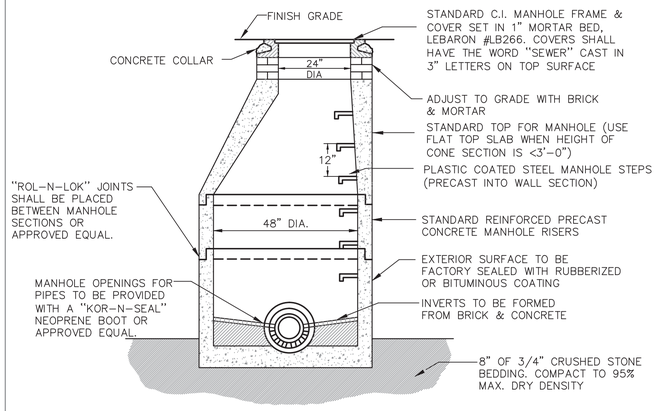
2017/04/07 7:57 AM By: Jennifer Sands

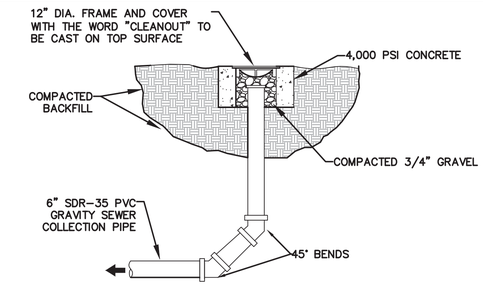
ORIGINAL SHEET - ARCH D



NOTE: THE FLOW CHANNEL THROUGH MANHOLES SHALL BE MADE TO CONFORM IN SHAPE AND SLOPE TO THAT OF THE SEWER ENTERING AND LEAVING THE MANHOLES. THE TOP OF THE FLOW CHANNEL SHALL BE CONSTRUCTED SO THAT UNDER PEAK DESIGN CONDITIONS THE FLOW WILL REMAIN IN THE CHANNEL. THE CHANNEL SHALL BE AT LEAST FULL PIPE DEPTH. WHEN CURVED FLOW CHANNELS ARE REQUIRED, INCREASE MINIMUM SLOPES TO MAINTAIN ACCEPTABLE VELOCITIES. PROVIDE A MINIMUM 0.1-FOOT DROP THROUGH THE MANHOLES.

TYPICAL SEWER MANHOLE

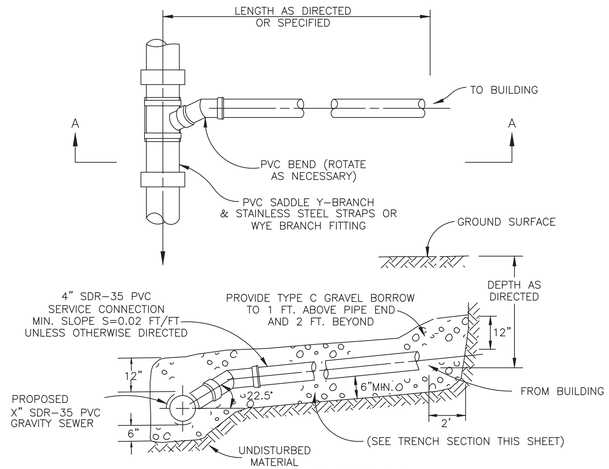
NOT TO SCALE



GRAVITY SEWER CLEANOUT

NOT TO SCALE

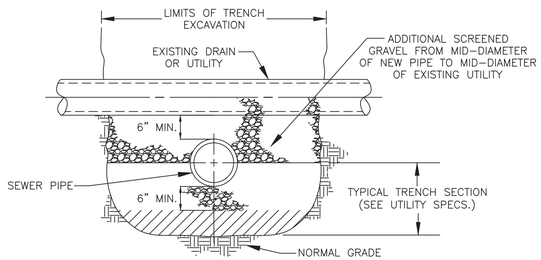
NOTES:
1. A SEWER CLEAN-OUT SHALL BE CONSTRUCTED AT THE ENDS OF EACH 6-INCH GRAVITY COLLECTION SEWER.
2. CONCRETE ENCASEMENT REQUIRED WHEN DIRECTED BY ENGINEER.
3. WHEN CONCRETE ENCASED, PIPE TO BE DUCTILE CAST IRON.



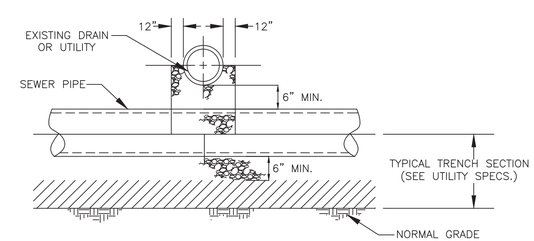
SECTION A-A

SERVICE CONNECTION DETAIL

NOT TO SCALE



LONGITUDINAL SECTION

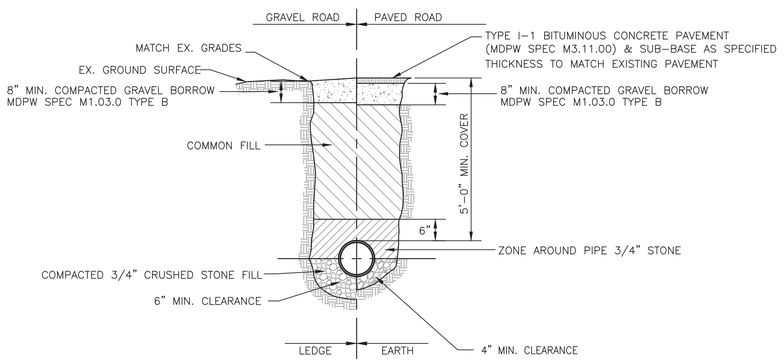


CROSS SECTION

SEWER CROSSING DETAILS

NOT TO SCALE

NOTE:
A MINIMUM OF EIGHTEEN (18) INCHES VERTICAL CLEARANCE SHALL BE MAINTAINED WHENEVER SEWERS PASS BELOW WATER LINES. OTHERWISE, BOTH THE SEWER AND WATER LINES SHALL BE CAREFULLY ENCASED IN CONCRETE FOR A MINIMUM OF TEN FEET FROM THE CROSSING POINT. WHERE SEWER LINES PASS ABOVE WATER LINES, BOTH LINES SHALL BE CAREFULLY ENCASED IN CONCRETE REGARDLESS OF CLEARANCE.



SEWER TRENCH DETAIL

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Hyannis, Massachusetts 02601-3128
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Client/Project
Toll MA Land III L.P.
Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
SANITARY SEWER DETAILS

Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37908
REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number:	3599		
File Name:	3599-S-DETAILS		
ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.09
Revision Sheet

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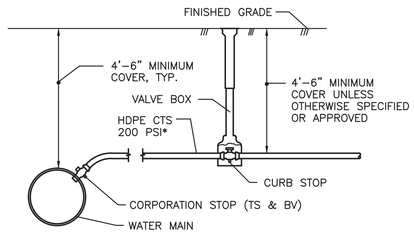
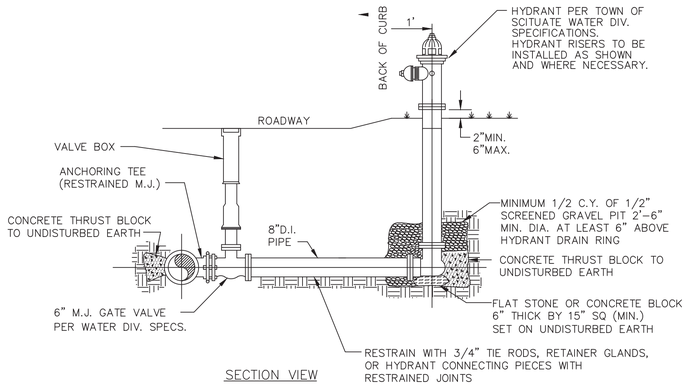
2017/04/07 7:57 AM by Jennifer Sands

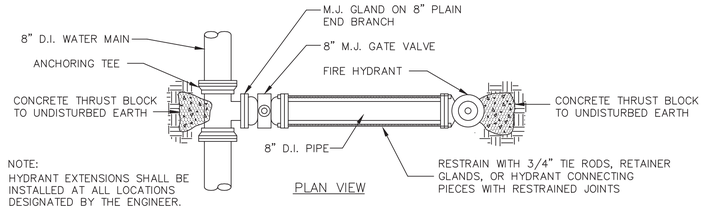
ORIGINAL SHEET - ARCH D



NOTES:
*REFER TO SPECIFICATIONS FOR MATERIAL REQUIREMENTS

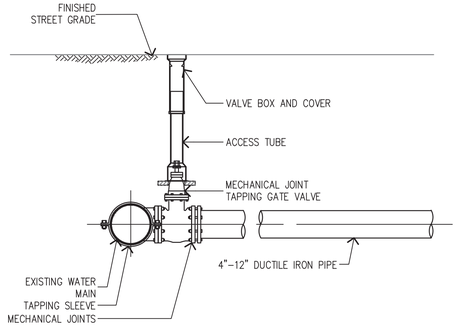
WATER SERVICE DETAIL
NOT TO SCALE



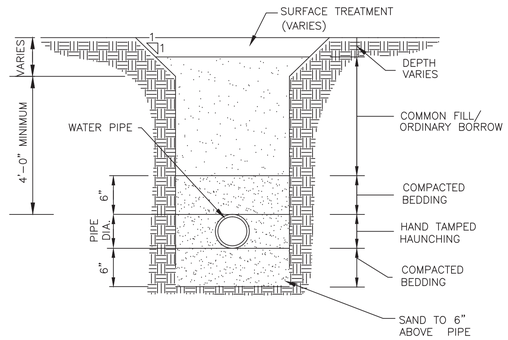


NOTE:
HYDRANT EXTENSIONS SHALL BE INSTALLED AT ALL LOCATIONS DESIGNATED BY THE ENGINEER.

HYDRANT DETAIL
NOT TO SCALE



TAPPING SLEEVE AND VALVE DETAIL
NOT TO SCALE



WATER TRENCH DETAIL
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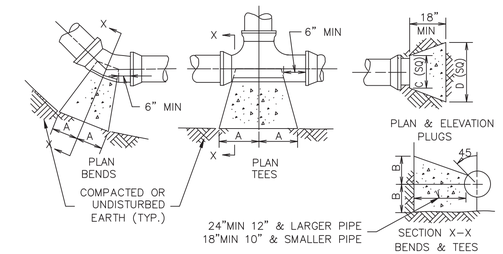
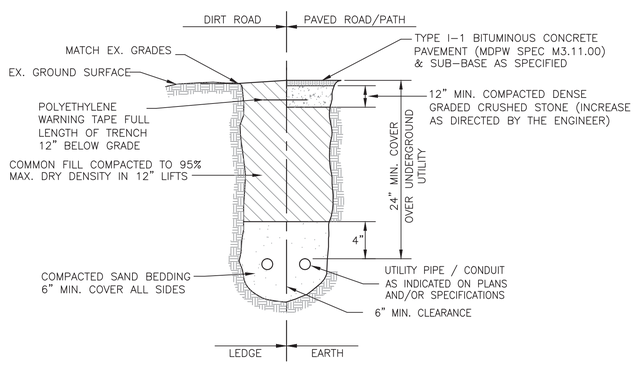


SIZE	1/4 BENDS		1/8 BENDS		1/16 BENDS		TEES		PLUGS	
	A	B	A	B	A	B	A	B	C	D
6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"

THRUST BLOCK DETAIL
NOT TO SCALE



ELECTRIC, TELEPHONE, AND GAS TRENCH DETAIL
NOT TO SCALE

NOTES:
1. ALL BEDDING DIMENSIONS ARE MINIMUM REQUIREMENTS.

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Client/Project
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Westborough, MA
SEASIDE AT SCITUATE
Town of Scituate, Plymouth County, Massachusetts

Title
WATER DETAILS

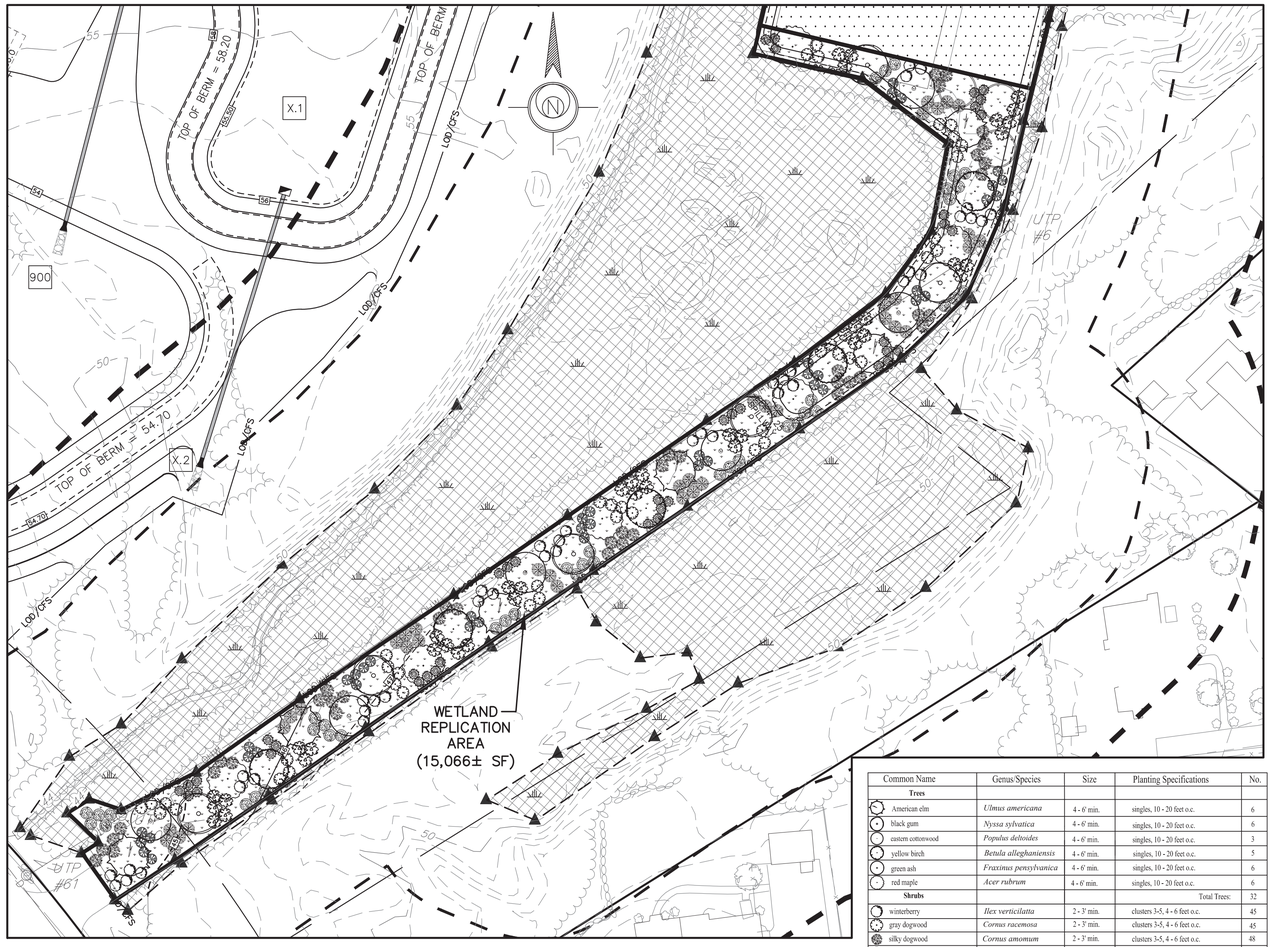
Permit-

COMMONWEALTH OF MASSACHUSETTS
KEVIN P KLEIN
ENVIRONMENTAL
No. 37908
REGISTERED PROFESSIONAL ENGINEER
March 24, 2017

Project Number: 3599
File Name: 3599-S-DETAILS

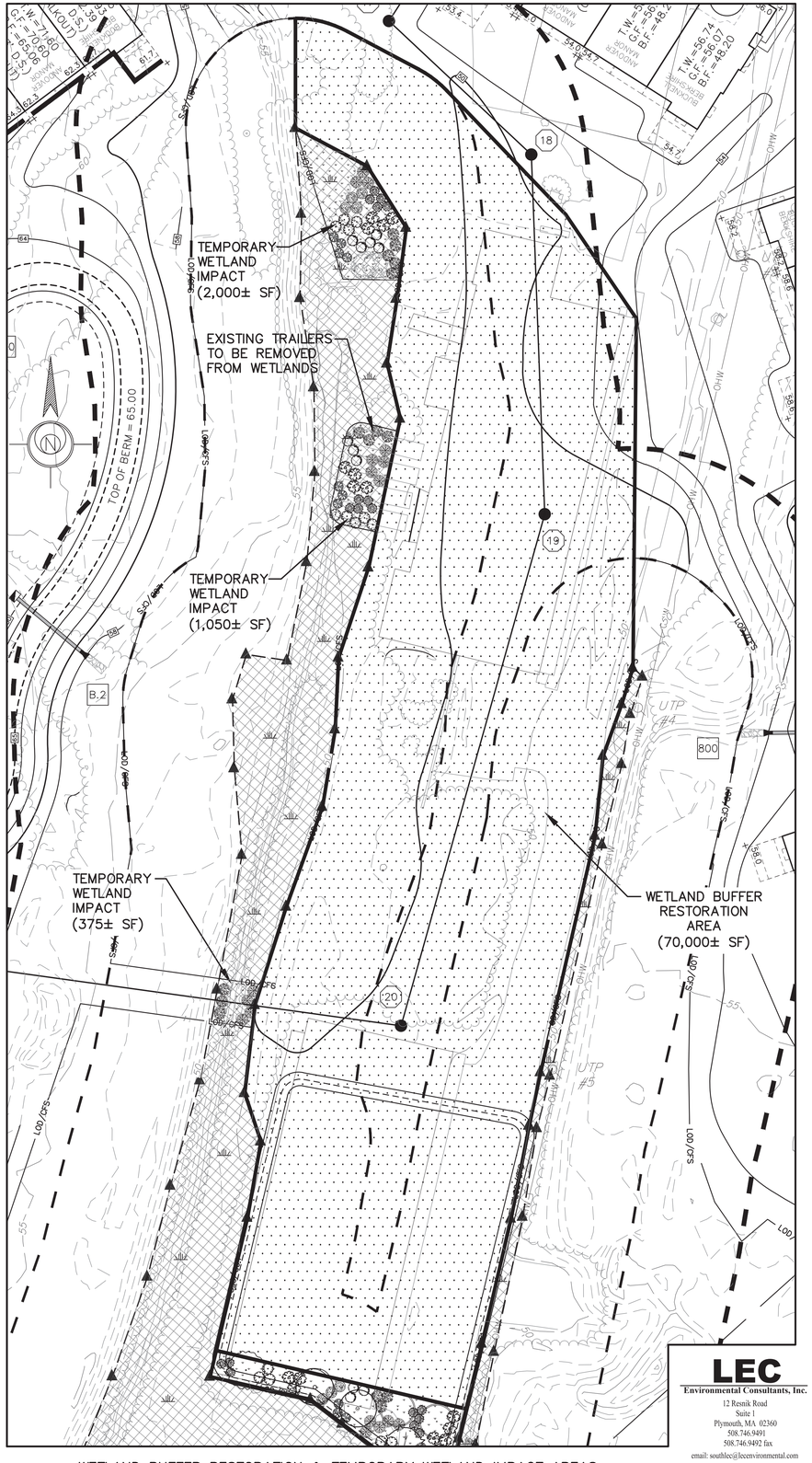
ESE	Stantec	Stantec	2017.03.24
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. SD08.10
Revision Sheet



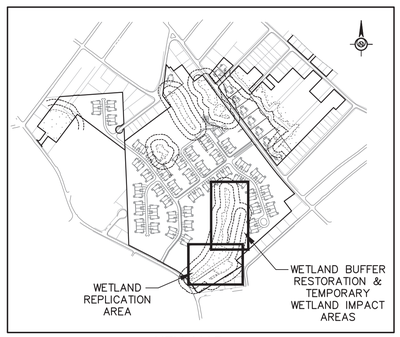
WETLAND REPLICATION AREA

SCALE: 1" = 30'



WETLAND BUFFER RESTORATION & TEMPORARY WETLAND IMPACT AREAS

SCALE: 1" = 30'



KEY MAP

N.T.S.

Common Name	Genus/Species	Size	Planting Specifications	No.
Trees				
American elm	*Ulmus americana*	4 - 6' min.	singles, 10 - 20 feet o.c.	6
black gum	*Nyssa sylvatica*	4 - 6' min.	singles, 10 - 20 feet o.c.	6
eastern cottonwood	*Populus deltoides*	4 - 6' min.	singles, 10 - 20 feet o.c.	3
yellow birch	*Betula alleghaniensis*	4 - 6' min.	singles, 10 - 20 feet o.c.	5
green ash	*Fraxinus pensylvanica*	4 - 6' min.	singles, 10 - 20 feet o.c.	6
red maple	*Acer rubrum*	4 - 6' min.	singles, 10 - 20 feet o.c.	6
Shrubs			Total Trees:	32
winterberry	*Ilex verticillata*	2 - 3' min.	clusters 3-5, 4 - 6 feet o.c.	45
gray dogwood	*Cornus racemosa*	2 - 3' min.	clusters 3-5, 4 - 6 feet o.c.	45
silky dogwood	*Cornus amomum*	2 - 3' min.	clusters 3-5, 4 - 6 feet o.c.	68
highbush blueberry	*Vaccinium corybosum*	2 - 3' min.	clusters 3-5, 4 - 6 feet o.c.	45
arrowwood	*Viburnum dentatum*	2 - 3' min.	clusters 3-5, 4 - 6 feet o.c.	45
nannyberry	*Viburnum lentago*	2 - 3' min.	clusters 3-5, 4 - 6 feet o.c.	45
spicebush	*Lindera benzoin*	2 - 3' min.	clusters 3-5, 4 - 6 feet o.c.	45
wild raisin	*Viburnum cassinoides*	2 - 3' min.	clusters 3-5, 4 - 6 feet o.c.	46
			Total Shrubs:	*364*
			Total:	*396*

Wetland Replication

- The limits of the Wetland Replication Area shall be staked in the field prior to construction and certified to be accurately located by a PLS.
- Mechanical equipment will be used to excavate to a sub-grade elevation approximately 12-inches below the proposed final elevations.
- Approximately 12 inches of organic top soil shall be established in the Wetland Replication Area.
- Final elevations shall mimic existing grades within the adjacent wetland, and be reviewed by the Wetland Scientist to ensure adequate interception of hydrology. The Wetland Scientist may modify final grades, as necessary.
- The proposed soil shall be comprised of clean leaf compost and loam mixture, and shall have approximately 20% organic matter content. The soil shall be inspected by the Wetland Scientist.
- Should an existing organic rich wetland topsoil layer (A or O layer) be present in portions of the replication area, the Wetland Scientist may modify the depth of proposed top soil accordingly.
- Pit and mound micro-topography shall be established in the Wetland Replication Area under the oversight of the Wetland Scientist.
- The native seedmix used shall be approved by the monitoring Wetland Scientist prior to spreading the mix.
- The Wetland Replication Area will be monitored during and following construction, including at the end of the first and second growing seasons by a qualified Wetland Scientist. Monitoring reports describing the relative health of the plantings will be submitted to the Conservation Commission with photographic documentation and recommendations for supplemental plantings, if necessary. The monitoring will include an assessment of the density of the vegetation to ensure 75% coverage by wetland indicator plants within two growing seasons. It is anticipated that opportunistic invasive wetland plants may enter and colonize the planting area, however, efforts will be made to discourage colonization by exotic invasives to the extent practicable during the monitoring period.

Bank/Stream Restoration

- Should the stream be flowing during stream work activity, a small temporary cofferdam (e.g. sandbags, sheet metal etc..) shall be installed across the streambed immediately upgradient of the proposed work activity. Contained water will be pumped downgradient of the work activity limits into the stream.
- Effort shall be made to schedule work on the stream during periods of low water, and when predicted weather conditions are absent of a substantial forecasted rain event during planned work activity.
- Erosion controls within the stream shall be implemented during construction, including staked hay-bales and silt-fence installed across the streambed immediately downgradient of the proposed work. Any necessary dewatering will be carried out using Construction Best Management Practices.
- If necessary, six inch biodegradable coir fiber logs shall be used to restore and/or stabilize the stream banks under the supervision of the monitoring Wetland Scientist. The fiber logs shall be installed/embedded directly on the face of the bank and anchored (e.g. duckbill, earth anchors or wooden stakes). Appropriate biodegradable erosion control netting (e.g. jute) shall be installed and staked according to the manufacturer over any disturbed areas immediately adjacent to the stream channel subject to flow or erosion, or as recommended by the Wetland Scientist Monitor.
- The bottom substrate within the restored channel shall be similar to the composition of the substrate in the adjacent existing stream channel and designed to resist displacement. The proposed stream channel width will be maintained. Effort shall be made stockpile and re-use existing stream substrate when applicable.

30 0 15 30 FEET 60 120

GRAPHIC SCALE 1 inch = 30 ft.

Wetland Replication Seedmixes

Northeast Wetland Diversity Mix

(1 pound will cover 21,750 sq. ft. @ 100+ seeds per sq. ft)

28.82%	*Scirpus atrovirens*	green bulrush
13.05%	*Juncus effusus*	soft rush
12.01%	*Mimulus ringens*	monkey flower
8.35%	*Carex vulpinoidea*	fox sedge
7.83%	*Penthorum sedoides*	ditch stone crop
6.68%	*Glyceria grandis*	reed meadow grass
5.22%	*Scirpus cyperinus*	wool grass
4.18%	*Verbena hastata*	blue vervain
2.09%	*Eupatorium perfoliatum*	boneset
1.57%	*Leersia oryzoides*	rice cut grass
1.48%	*Helenium autumnale*	common sneezeweed
1.36%	*Glyceria canadensis*	Canada mannagrass
0.89%	*Eupatorium maculatum*	Joe pye weed
0.73%	*Aster novae-angliae*	New England aster
0.52%	*Alisma plantago-aquatica*	water plantain
0.47%	*Euthamia graminifolia*	grassleaf goldenrod
0.47%	*Solidago rugosa*	wrinkled goldenrod
0.47%	*Cyperus strigosus*	straw stemmed aster
0.42%	*Aster puniceus*	purple stemmed aster
0.38%	*Cephalanthus occidentalis*	buttonbush
0.36%	*Scirpus tuberaemontanii*	soft stem bulrush
0.35%	*Aster umbellatus*	flat-top white aster
0.31%	*Carex comosa*	bearded sedge
0.26%	*Carex crinita*	fringed sedge
0.24%	*Solidago gigantea*	giant goldenrod
0.24%	*Bidens cernua*	deertongue
0.22%	*Panicum clandestinum*	water parsnip
0.21%	*Sium suave*	small fruited bulrush
0.18%	*Scirpus microcarpus*	nodding beggar-ticks
0.16%	*Cicuta maculata*	water hemlock
0.10%	*Elymus canadensis*	wild rye
0.08%	*Bidens frondosa*	devil's beggar-ticks
0.06%	*Angelica atropurpurea*	purple-stem angelica
0.05%	*Rumex verticillatus*	water dock
0.05%	*Carex lurida*	shallow sedge
0.04%	*Polygonum pensylvanicum*	Pennsylvania smartweed
0.04%	*Asclepias incarnata*	swamp milkweed
0.03%	*Elymus riparius*	riverbank wild rye
0.02%	*Carex lupulina*	hop sedge
0.01%	*Iris versicolor*	blue flag

New England Showy Wildflower Mix

(Application Rate: 5 lbs/acre (8700 Sq. ft./LB)

Creeping Red Fescue	Festuca rubra
Little Bluestem	Schizachyrium scoparium
Indian Grass	Sorghastrum nutans
Partridge Pea	Chamaecristafasciculata
Canada Wild Rye	Elymus canadensis
New York Aster	Aster novae-belgii
Common Milkweed	Asclepias syriaca
Virginia Wild Rye	Elymus virginicus
Ox Eye Sunflower	Heliopsis helianthoides
Black Eyed Susan	Rudbeckia hirta
Wild Senna	Senna hebecarpa
Early Goldenrod	Solidago juncea
Wild Indigo	Baptisia tinctoria
Showy tick-teafoil	Desmodium canadense
Grass Leaved Goldenrod	Euthamia graminifolia
Virginia Mountain Mint	Pycnanthemum virginianum

Buffer Zone Restoration

- If topsoil is absent, approximately 4-6 inches of topsoil (leaf compost and loam mixture) shall be established within the Buffer Zone planting areas.
- Biodegradable netting is recommended on slopes (e.g. 3:1 or greater) within the Restoration Area where applicable or as recommended by the Wetland Scientist Monitor.
- The proposed native seedmix shall be lightly raked into the surface and applied according to the suppliers instructions.
- The New England Showy Wildflower Seedmix or equivalent native wildflower mix approved by the Wetland Scientist monitor shall be spread within the Buffer Zone Mitigation/Restoration Area.

NOTES

- All plantings shall be native varieties with no landscape cultivars proposed.
- Specific placement of shrubs and trees within the planting area approximate and may be adjusted in the field.
- The proposed mitigation work activity shall be monitored by a Wetland Scientist.
- If necessary, any required substitute native shrubs or trees shall be reviewed by the Wetland Scientist prior to installation. Proposed plantings shall be inspected on-site by the Wetland Scientist prior to installation within the replication area.
- Implementation of a watering schedule for the plantings is recommended to ensure establishment, especially during dry periods during the first growing season.

Northeast Wetland Hummock Mix

(1 pound will cover 13,400 sq. ft @ 200 seeds per sq ft)

43.6% *Scirpus atrovirens*	Green Bulrush
19.0% *Juncus effusus*	Soft Rush
33.5% *Carex vulpinoides*	Fox Sedge
1.3% *Leersia oryzoides*	Rice Cut Grass
1.3% *Carex comosa*	Bearded Sedge
0.9% *Carex crinite*	Fringed Sedge
0.2% *Carex lurida*	Shallow Sedge
0.2% *Carex lupulina*	Hop Sedge

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	Issued			

Client/Project
Toll MA Land III L.P.
Westborough, MA

SEASIDE AT SCITUATE

Town of Scituate, Plymouth County, Massachusetts

Title
WETLAND REPLICATION AND RESTORATION DETAILS & NOTES

Permit-Seal

COMMONWEALTH OF MASSACHUSETTS
KEVIN P. KLEIN
ENVIRONMENTAL
No. 3599
REGISTERED
PROFESSIONAL SOIL SCIENTIST
MARCH 24, 2017

Project Number:	3599
File Name:	3599-5-DETAILS-WETLAND

Dwn.	Chkd.	Dsgn.	YY.MM.DD
LEC	Stantec	LEC	2017.03.24

Drawing No. SD08.11

Revision Sheet

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