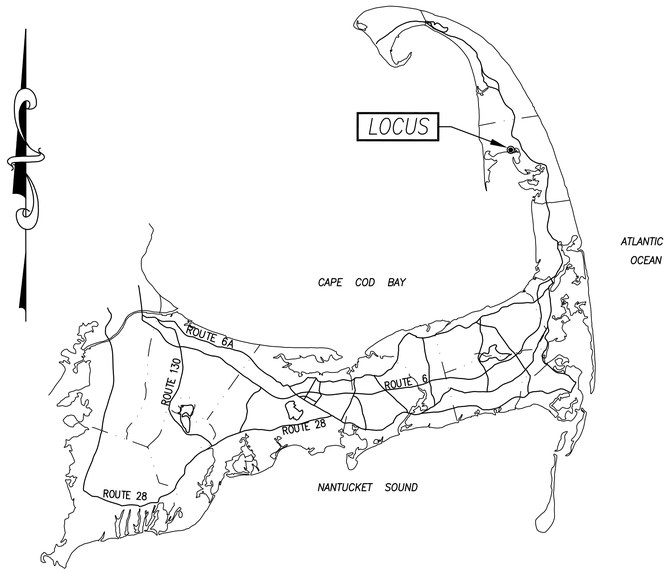
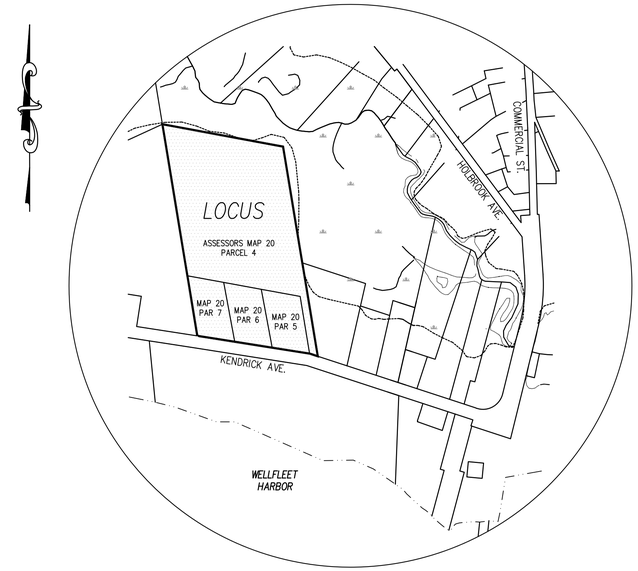


CAPE COD, MASSACHUSETTS
(NO SCALE)



WELLFLEET, MASSACHUSETTS
KEY MAP
(NO SCALE)

OWNER:
TOWN OF WELLFLEET
300 MAIN STREET
WELLFLEET, MA 02667

CIVIL ENGINEER:
COASTAL
engineering co.
260 Cranberry Hwy, Orleans, MA 02653
508.255.6511 P 508.255.6700 F

TOWN OF WELLFLEET
TENNIS COURT COMPLEX

70 KENDRICK AVENUE
WELLFLEET, MASSACHUSETTS
AUGUST 22, 2016

DRAWING INDEX		DATE:	SHEET:
C2.0.1	SITE PREPARATION AND DEMOLITION PLAN	08-22-2016	1 OF 4
C2.1.1	TENNIS COURT RE-CONSTRUCTION AND DRAINAGE IMPROVEMENT PLAN	08-22-2016	2 OF 4
C2.4.1	SITE AND DRAINAGE DETAILS	08-22-2016	3 OF 4
C2.4.2	TENNIS COURT DETAILS	08-22-2016	4 OF 4

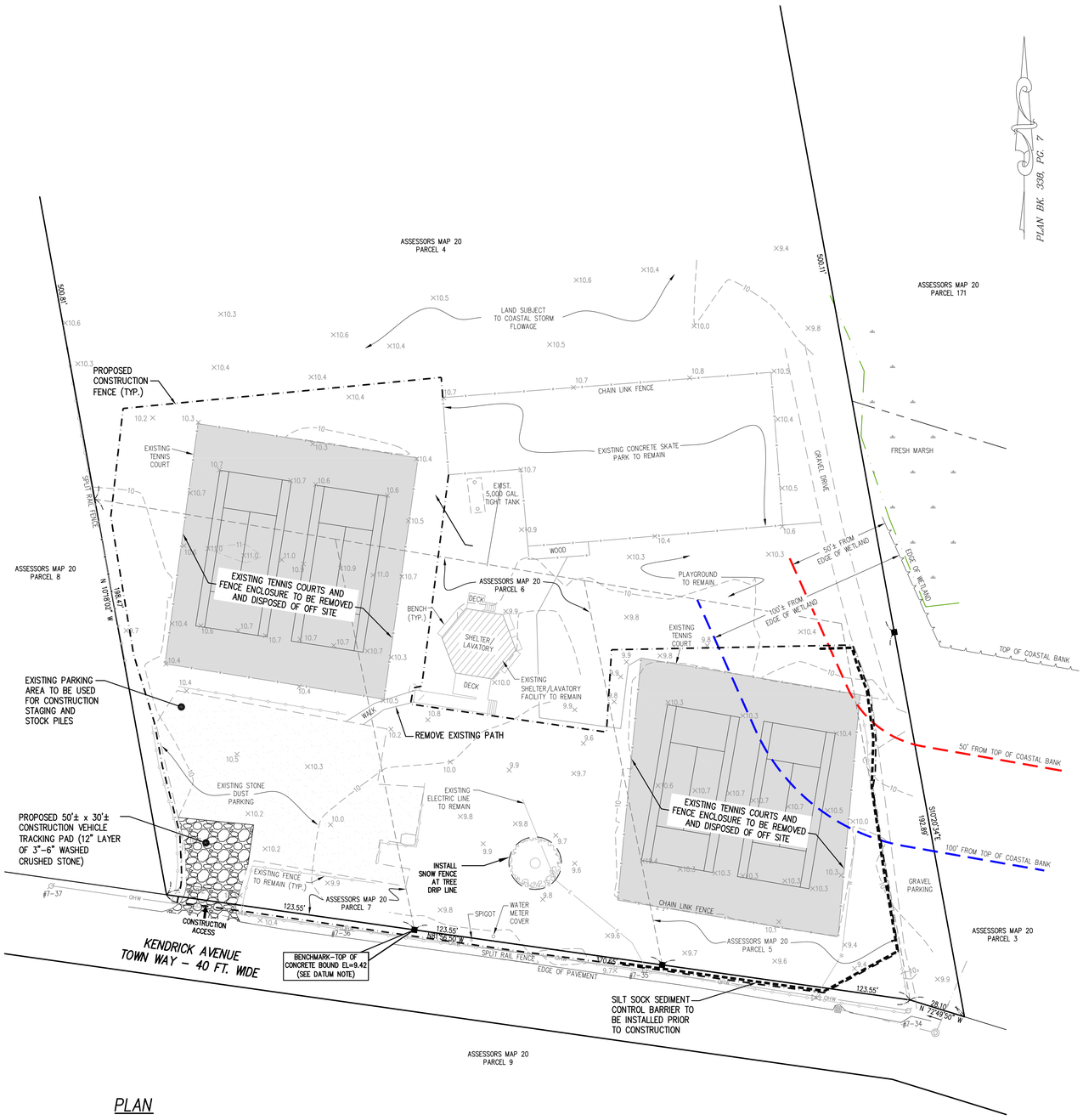
COMMONWEALTH OF MASSACHUSETTS
DAVID J. MICHNIEWICZ
CIVIL
NO. 31493
REGISTERED PROFESSIONAL ENGINEER

ISSUED FOR BIDDING

DRAWN BY: MJB
PROJECT NO. C17927.00

Coastal Engineering Co., Inc. © 2016

F:\SDSKPROJ\C17000\C17927\C17927-00\C17927-C3D.dwg Aug 23, 2016 - 12:26pm



PLAN

30 15 0 30 90

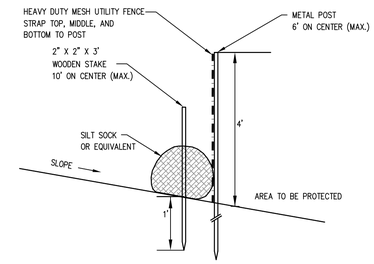
1 inch = 30 ft.

EROSION AND SEDIMENTATION CONTROL NOTES:

1. EROSION AND SEDIMENT CONTROL MEASURES TO BE IN COMPLIANCE WITH TOWN OF WELLFLEET REGULATIONS.
2. EROSION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURE'S SPECIFICATIONS AND GOOD ENGINEERING PRACTICES.
3. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL AND PROTECTION OF OFF SITE AND ON SITE DRAINAGE STRUCTURES UNTIL COMPLETION OF SITEWORK AND ESTABLISHMENT OF STABILIZED VEGETATIVE GROUND COVER.
4. THE CONTRACTOR SHALL PRACTICE GOOD HOUSEKEEPING MEASURES DURING THE DAY TO DAY OPERATION AT THE SITE. THE SITE SHOULD BE POLICED DAILY TO REMOVE ANY LITTER OR DEBRIS.
5. PRIOR TO CONSTRUCTION, INSTALL SEDIMENT BARRIER IN LOCATION(S) SHOWN ON PLANS.
6. TEMPORARY SOIL MATERIAL STOCKPILES SHALL BE SURROUNDED WITH SEDIMENT BARRIER ON THE DOWNGRADIENT SIDE TO PREVENT DISCHARGE OF SEDIMENT FROM SITE. MATERIAL STOCKPILES THAT ARE IN PLACE FOR AN EXTENDED PERIOD OF TIME SHALL BE STABILIZED WITH VEGETATION, MULCHING, EROSION CONTROL BLANKETS, AND OTHER MEASURES THAT ARE NECESSARY TO PREVENT THE DISCHARGE OF SEDIMENT FROM THE PROJECT SITE.
7. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.
8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
9. EXCEPT AS PROVIDED BELOW, STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

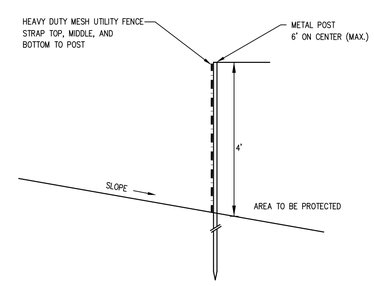
   1. WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS, STABILIZATION MEASURES MUST BE INITITIATED AS SOON AS PRACTICABLE.

   2. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.



SILT SOCK SEDIMENT BARRIER W/ CONSTRUCTION FENCE DETAIL

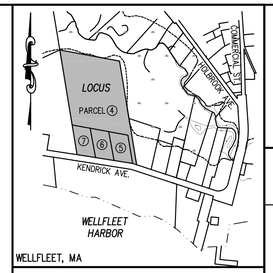
NOT TO SCALE



CONSTRUCTION FENCE DETAIL

NOT TO SCALE

ISSUED FOR BIDDING



WELLFLEET, MA

KEY MAP

NO SCALE

PLAN REFERENCES:

ASSESSORS MAP 20, PARCELS 4,5,6 & 7

PLAN BOOK 338, PAGE 7

REFERENCE PLAN:
SITE PLAN OF LAND
OF LAND IN WELLFLEET
MADE FOR THE TOWN OF WELLFLEET
DATE: MAY 23, 2013
PREPARED BY: SLADE ASSOCIATES, INC.
SCALE: 1" =30'

FLOOD NOTE:

FLOOD ZONE AE (EL 13) AS SHOWN ON FEMA FIRM PANEL #25001C0241J DATED JULY 16, 2014 (DATUM: NAVD 1988)

DATUM NOTE:

ELEVATIONS SHOWN HEREON ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929)

LEGEND

EXISTING

- BOUND
- CATCH BASIN
- DRAIN MANHOLE
- WATER VALVE
- HYDRANT
- LIGHTPOST
- MISC. SIGN
- POST
- UTILITY POLE
- EDGE OF WETLAND
- CHAINLINK FENCE
- SPLIT RAIL FENCE
- OHW — OVERHEAD UTILITY LINE
- E — ELECTRIC LINE
- T — TELEPHONE LINE
- G — GAS LINE
- W — WATER LINE
- 10 — CONTOUR
- x10.0 — SPOT GRADE

PROPOSED

- SILT SOCK SEDIMENT BARRIER
- CONSTRUCTION FENCE

COASTAL engineering co.
260 Cranberry Hwy. Orleans, MA 02653
508.255.6511 P 508.255.6700 F

NO.	DATE	REVISION	BY

SEAL: COMMONWEALTH OF MASSACHUSETTS DAVID J. MICHNJEWICZ CIVIL NO. 31403 PROFESSIONAL ENGINEER

PROJECT: TOWN OF WELLFLEET TENNIS COURT COMPLEX
70 KENDRICK AVENUE WELLFLEET, MA

SHEET TITLE: SITE PREPARATION AND DEMOLITION

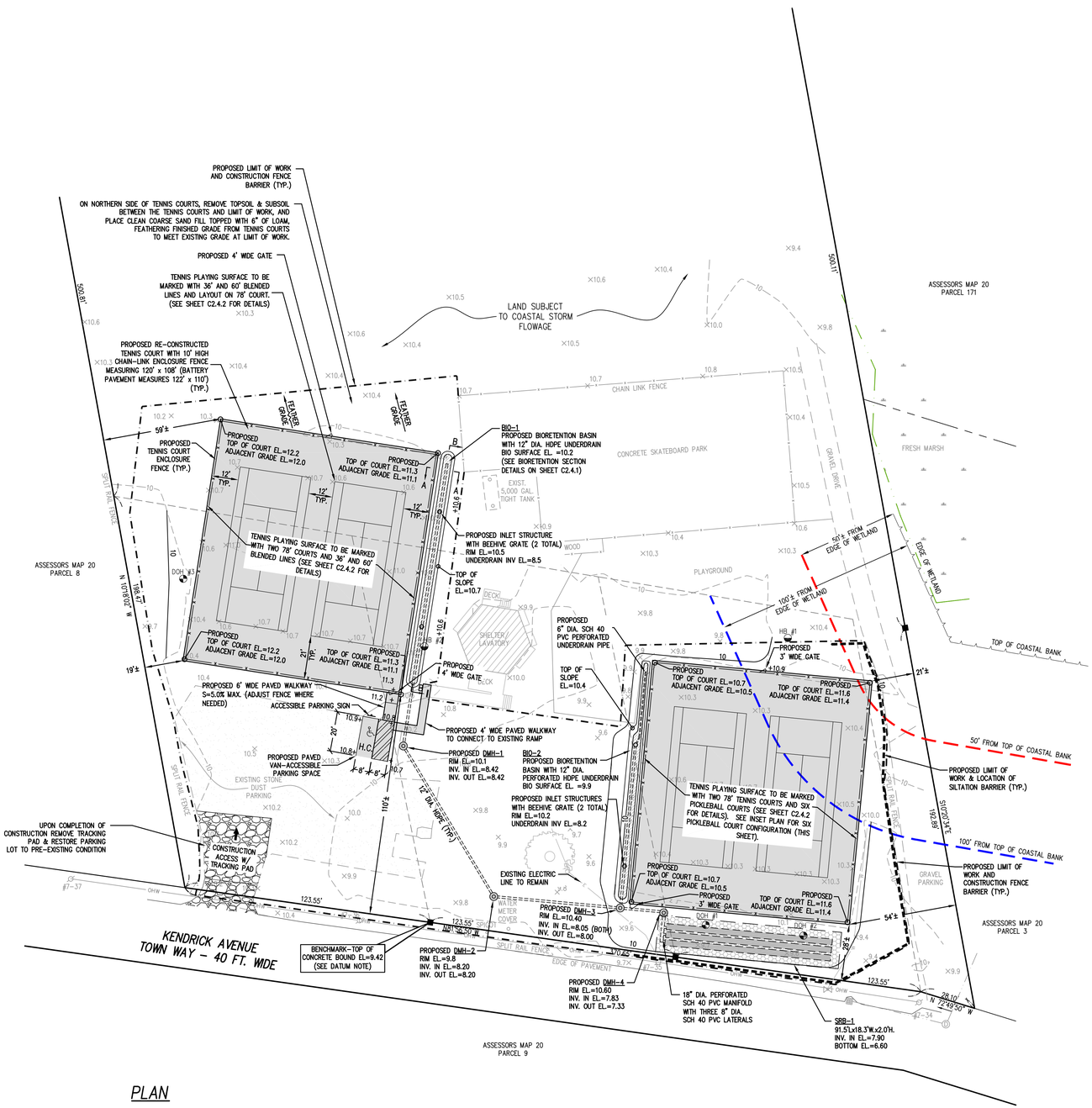
SCALE	AS NOTED
DRAWING FILE	C17927-C3D.dwg
DATE	08-22-2016
DRAWN BY	TLM/MJB/SRK/SRM
CHECKED BY	DJM
PROJECT NO.	C17927.00

C2.0.1

1 OF 4 SHEETS

Coastal Engineering Co., Inc. © 2016

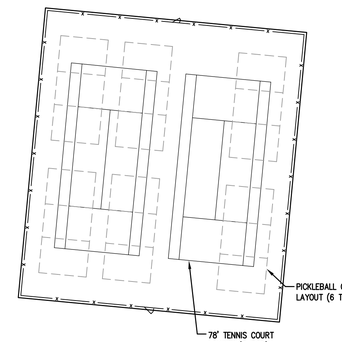
F:\SDSKPROJ\C17000\C17927\C17927-00\C17927-C3D.dwg Aug 23, 2016 - 12:27pm



PLAN

30 15 0 30 90

1 inch = 30 ft.



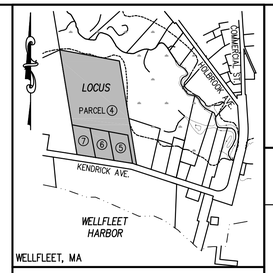
INSET PLAN–EAST COURTS LINE LAYOUT

SCALE: 1" = 30'

NOTES:

1. DISTURBED AREAS OF THE LOT OUTSIDE OF THE TENNIS COURTS AND BIO-RETENTION BASINS SHALL BE REVEGETATED OR OTHERWISE RESTORED TO PRE-PROJECT CONDITION
2. TENNIS COURT PLAYING LINES SHOWN HEREON ARE FOR ILLUSTRATION OF COURT ORIENTATION ONLY. SEE DRAWING SHEET C2.4.2 FOR PLAYING LINE LAYOUT.
3. BIORETENTION AREAS TO BE PROTECTED FROM COMPACTION DURING CONSTRUCTION.
4. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS THAT THE TENNIS COURTS, WHEN RECONSTRUCTED, WILL MEET OR EXCEED THE MINIMUM REQUIREMENTS STIPULATED IN "TENNIS COURTS : A CONSTRUCTION + MAINTENANCE MANUAL 2015"

ISSUED FOR BIDDING



KEY MAP

NO SCALE

PLAN REFERENCES:

ASSESSORS MAP 20, PARCELS 4,5,6 & 7

PLAN BOOK 338, PAGE 7

REFERENCE PLAN:
SITE PLAN OF LAND
OF LAND IN WELLFLEET
MADE FOR THE TOWN OF WELLFLEET
DATE: MAY 23, 2013
PREPARED BY: SLADE ASSOCIATES, INC.
SCALE: 1" =30'

FLOOD NOTE:

FLOOD ZONE AE (EL 13) AS SHOWN ON FEMA FIRM PANEL #25001C0241J DATED JULY 16, 2014 (DATUM: NAVD 1988)

DATUM NOTE:

ELEVATIONS SHOWN HEREON ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929)

LEGEND

EXISTING

- BOUND
- CATCH BASIN
- DRAIN MANHOLE
- WATER VALVE
- HYDRANT
- LIGHTPOST
- MISC. SIGN
- POST
- UTILITY POLE
- EDGE OF WETLAND
- CHAINLINK FENCE
- SPLIT RAIL FENCE
- OHW — OVERHEAD UTILITY LINE
- E — ELECTRIC LINE
- T — TELEPHONE LINE
- G — GAS LINE
- W — WATER LINE
- 10 — CONTOUR
- x10.0 — SPOT GRADE

PROPOSED

- 10 — CONTOUR
- +10.2 — SPOT GRADE

COASTAL engineering co.
260 Cranberry Hwy. Orleans, MA 02653
508.255.6511 P 508.255.6700 F

NO.	DATE	REVISION	BY

SEAL: COMMONWEALTH OF MASSACHUSETTS DAVID J. MICHNIEWICZ CIVIL NO. 31903 PROFESSIONAL ENGINEER

PROJECT: TOWN OF WELLFLEET TENNIS COURT COMPLEX, 70 KENDRICK AVENUE, WELLFLEET, MA

SHEET TITLE: TENNIS COURT RE-CONSTRUCTION AND DRAINAGE IMPROVEMENTS

SCALE	AS NOTED
DRAWING FILE	C17927-C3D.dwg
DATE	08-22-2016
DRAWN BY	TLM/MJB/SRK/SRM
CHECKED BY	DJM

C2.1.1

2 OF 4 SHEETS

PROJECT NO. C17927.00

Coastal Engineering Co., Inc. © 2016

F:\SDSKPROJ\C17000\C17927\C17927-00\C17927-C3D.dwg Aug 23, 2016 - 12:27pm

DEEP OBSERVATION HOLE LOGS

NO SCALE

DATE OF TESTS: JUNE 24, 2013
PERCOLATION RATE : IN DOH #2
3 MIN PER INCH
WITNESSED BY : JOHN G. SCHNAIBLE, CEC

DEEP OBSERVATION HOLE 1 EL. = 9.7±

DEPTH FROM SURFACE	SOIL TEXTURE	SOIL COLOR (MUNSELL)	
0" – 12"	LOAMY SAND	10 YR 6/2	
12" – 84"	FILL SAND MEDIUM W/SILT NODULES	10 YR 5/3	GROUNDWATER ENCOUNTERED AT A DEPTH OF 62"
84" – 90"	FILL MEDIUM SAND	10 YR 4/1 SATURATED	

DEEP OBSERVATION HOLE 2 EL. = 9.6±

DEPTH FROM SURFACE	SOIL TEXTURE	SOIL COLOR (MUNSELL)	
0" – 12"	LOAMY SAND	10 YR 6/2	
12" – 68"	FILL MEDIUM SAND/SILT NODULES	10 YR 5/3	PERC AT 36"
68" – 102"	FILL MEDIUM SAND	10 YR 5/1	GROUNDWATER ENCOUNTERED AT A DEPTH OF 60"

DEEP OBSERVATION HOLE 3 EL. =10.1±

DEPTH FROM SURFACE	SOIL TEXTURE	SOIL COLOR (MUNSELL)	
0" – 4"	LOAMY SAND	10 YR 3/2	
4" – 12"	LOAMY SAND	10 YR 5/4	
12" – 30"	SAND	10 YR 5/6	
30" – 84"	SILT LOAM GREY	GREY 5/10B	
84" – 102"	MEDIUM SAND W/SILT NODULES	GREY 5/10B	GROUNDWATER ENCOUNTERED AT A DEPTH OF 72"

HAND BORINGS

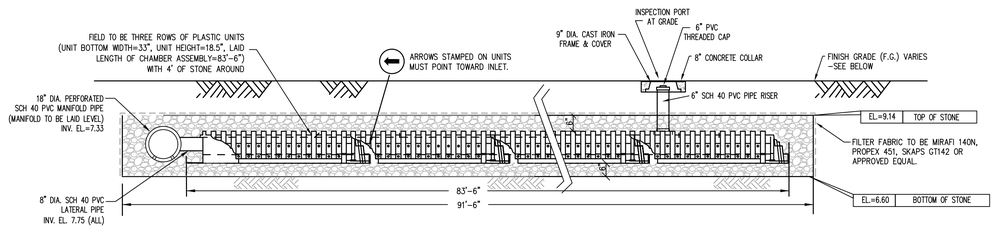
NO SCALE

HAND BORING 1 EL. =10.2±

DEPTH FROM SURFACE	SOIL TEXTURE	
0" – 3"	LOAMY SAND	
3" – 8"	LOAMY SAND	
8" – 30"	SILTY LOAMY	
30" – 36"	SAND	
36" – 42"	SANDY LOAM	GROUNDWATER ENCOUNTERED AT A DEPTH OF 48"
42" – 54"	SILT LOAM	

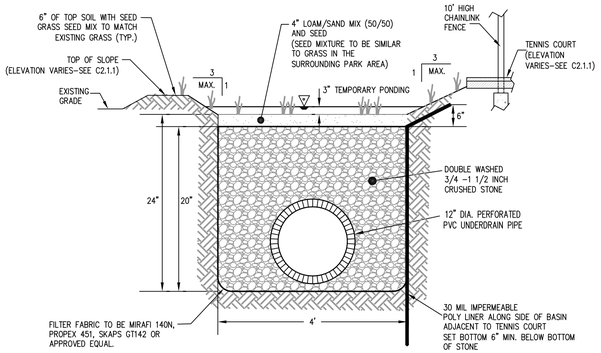
HAND BORING 2 EL. =10.3±

DEPTH FROM SURFACE	SOIL TEXTURE	
0" – 3"	LOAMY SAND	
3" – 12"	LOAMY SAND	
12" – 36"	SAND	
36" – 48"	SANDY LOAM SATURATED	GROUNDWATER ENCOUNTERED AT A DEPTH OF 40"



TYPICAL STORMWATER RECHARGE FIELD

(NOT TO SCALE)

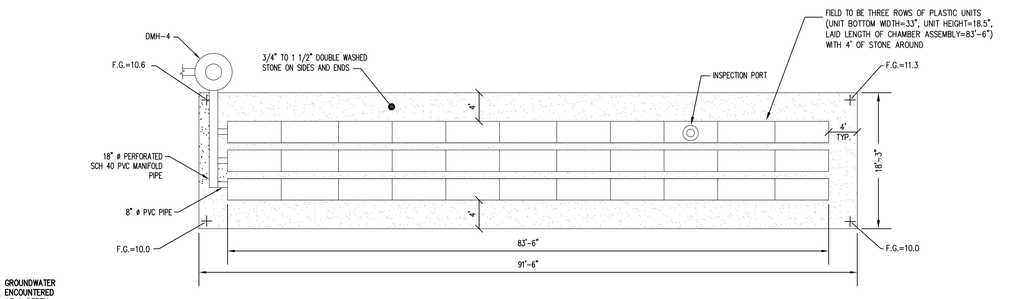


SECTION A–A
TYPICAL DETAIL OF FILTERING BIORETENTION BASINS

NOT TO SCALE

NOTES:

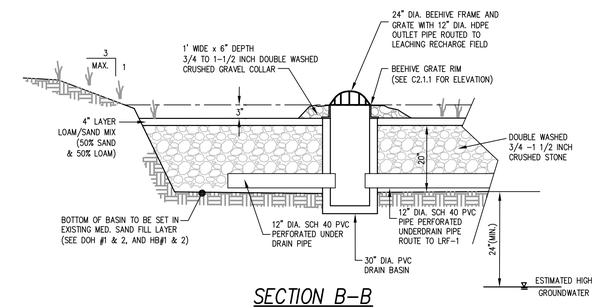
1. TEMPORARY EROSION & SEDIMENT CONTROLS SHALL BE UTILIZED DURING CONSTRUCTION. THE BIORETENTION BASIN SHALL BE KEPT OFF LINE UNTIL THE VEGETATION HAS BEEN ESTABLISHED.
2. BIORETENTION BASINS TO BE PROTECTED FROM COMPACTION DURING CONSTRUCTION



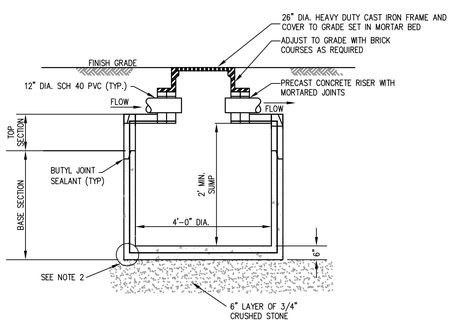
STORMWATER RECHARGE BASIN (SRB–1)

PLAN VIEW

(NOT TO SCALE)



SECTION B–B
TYPICAL DETAIL OF FILTERING BIORETENTION BASINS

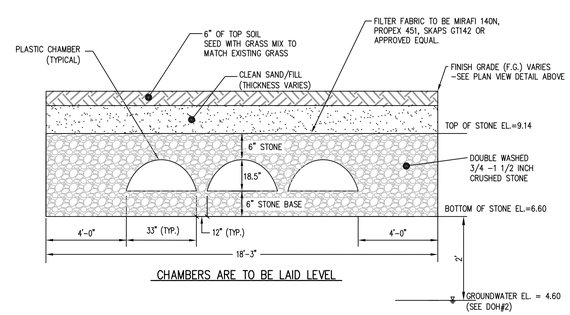


GENERAL NOTES:

1. ALL REINFORCING STEEL MUST CONFORM TO THE LATEST ASTM A185 AND/OR A615 GRADE 60, SPECIFICATION 0.12 SQ. IN/LINEAL FT.
2. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MIN. OF 0.12 SQ. IN/LINEAL FT. (BOTH WAYS)
3. MANHOLE SPECS. CONFORM TO THE LATEST ASTM C478 SPEC. FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS".
4. MORTAR SHALL CONFORM TO SECTION M4.02.15 OF THE MASSACHUSETTS D.P.W. STANDARD SPECS. FOR HIGHWAYS AND BRIDGES.
5. ONE POUR MONOLITHIC BASE SECTION.
6. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS, CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
7. STEPS SHALL BE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC.
8. RED CLAY BRICK SHALL CONFORM WITH SECTION M4.05.2 CLAY BRICK OF MASSACHUSETTS D.P.W. STANDARD SPECS. FOR HIGHWAY AND BRIDGES.
9. PIPE TO MANHOLE CONNECTIONS SHALL BE MADE USING PSX POSITIVE SEAL CONNECTIONS AS MANUFACTURED BY PRESS-SEAL GASKET CORPORATION, OR EQUAL.

DRAINAGE MANHOLE DETAIL

NOT TO SCALE

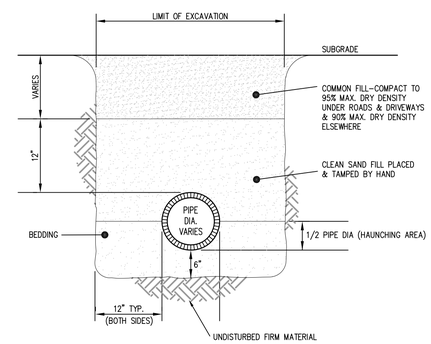


CHAMBERS ARE TO BE LAID LEVEL

TYPICAL SECTION THROUGH STORMWATER RECHARGE BASIN (SRB–1)

(NOT TO SCALE)

NOTE: CHAMBER UNITS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MFG WRITTEN SPECIFICATIONS.



GENERAL NOTES:

1. FINISH GRADE MATERIAL VARIES (SEE SITE PLAN)
2. COMPACT SOIL IN HAUNCHING ZONE TO 85% MAX DRY DENSITY.

UTILITY TRENCH

NOT TO SCALE

ISSUED FOR BIDDING

COASTAL engineering co.
260 Cranberry Hwy, Orleans, MA 02653
508.255.6511 P 508.255.6700 F

NO.	DATE	REVISION	BY

SEAL: COMMONWEALTH OF MASSACHUSETTS DAVID J. MICHNIEWICZ CIVIL NO. 31461

PROJECT: TOWN OF WELLFLEET TENNIS COURT COMPLEX, WELLFLEET, MA
70 KENDRICK AVENUE

SHEET TITLE: SITE AND DRAINAGE DETAILS

SCALE	AS NOTED
DRAWING FILE	C17927-DET.dwg
DATE	08-22-2016
DRAWN BY	MAP/TLM/SRK/SRM
CHECKED BY	DJM

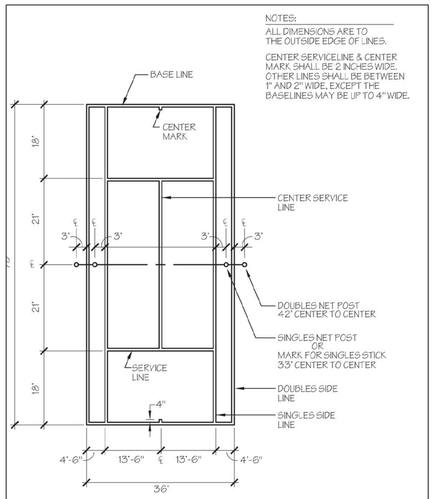
C2.4.1

3 OF 4 SHEETS

PROJECT NO. C17927.00

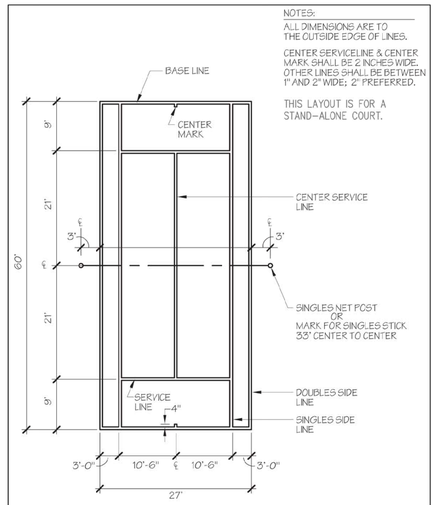
Coastal Engineering Co., Inc. © 2016

F:\DSKPROJ\C17000\C17927\C17927-00\C17927-DET.dwg Aug 23, 2016 - 12:28pm



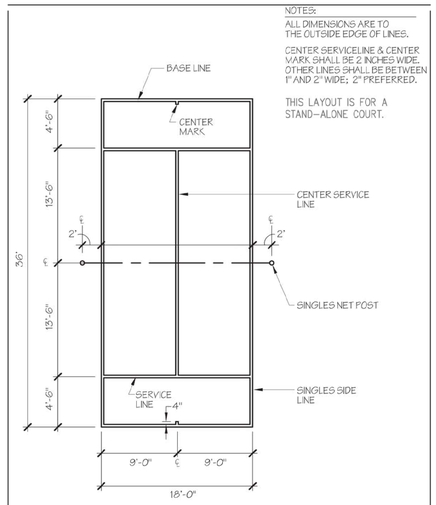
78' COURT – PLAYING LINE LAYOUT

(NOT TO SCALE)



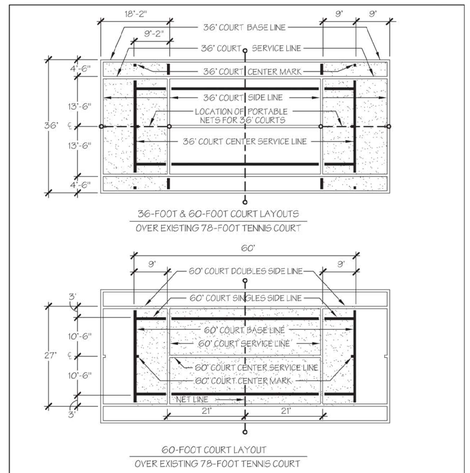
60' COURT – PLAYING LINE LAYOUT

(NOT TO SCALE)



36' COURT – PLAYING LINE LAYOUT

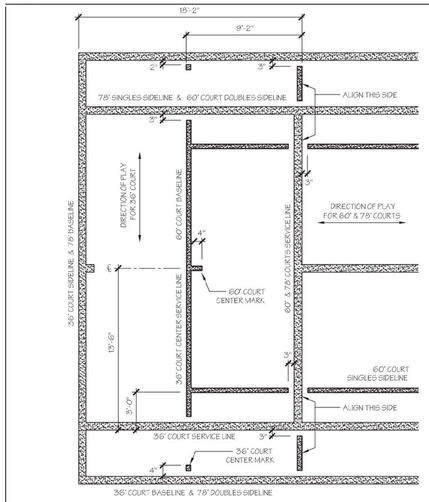
(NOT TO SCALE)



1. 36' AND 60' TENNIS PLAYING LINES SHALL BE TEXTURED LINE PAINT WITHIN THE SAME FAMLY AS THE 78 FOOT COURT COLOR; SHALL TERMINATE 3 INCHES FROM THE 78 FOOT COURT LINE; SHALL BE $1\frac{1}{2}$" WIDE; AND SHALL BE MEASURED TO THE OUTSIDE EDGE OF THE PLAYING LINE WITH EXCEPTION OF THE CENTER LINES WHICH SHALL BE MEASURED OUT-TO-CENTER.

36' & 60' BLENDED LINES ON 78' COURTS

(NOT TO SCALE)

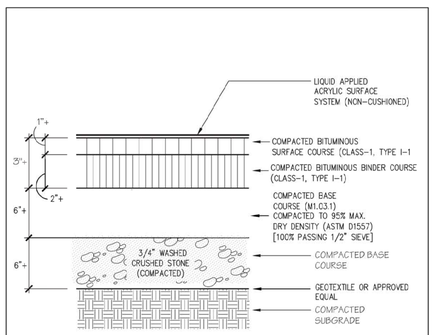


1. 36' and 60' TENNIS PLAYING LINES SHALL BE TEXTURED LINE PAINT WITHIN THE SAME FAMILY AS THE 78 FOOT COURT COLOR; SHALL TERMINATE 3 INCHES FROM THE 78 FOOT COURT LINE; SHALL BE $1\frac{1}{2}$" WIDE; AND SHALL BE MEASURED TO THE OUTSIDE EDGE OF THE PLAYING LINE WITH EXCEPTION OF THE CENTER LINES WHICH SHALL BE MEASURED OUT-TO-CENTER.

2. THE CENTER MARK FOR THE 36 FOOT COURT SHALL BE SET 2 INCHES OFF THE 78 FOOT COURT DOUBLES SIDELINE AND SHALL BE 2 INCHES LONG BY $1\frac{1}{2}$" WIDE.

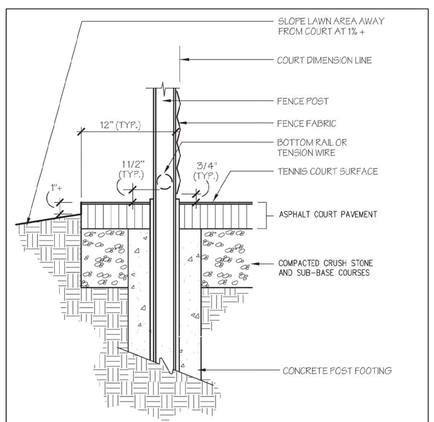
36' & 60' BLENDED LINES – DETAIL

(NOT TO SCALE)



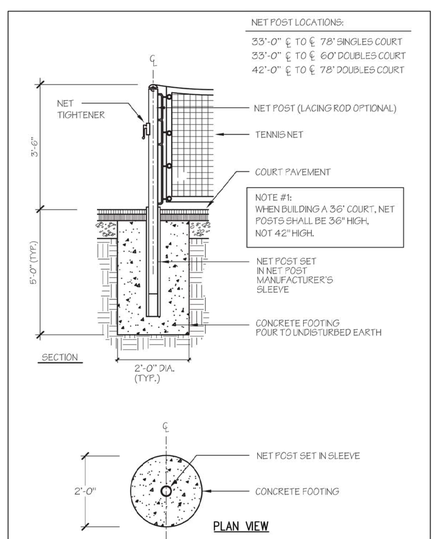
ASPHALT COURT SECTION

(NOT TO SCALE)



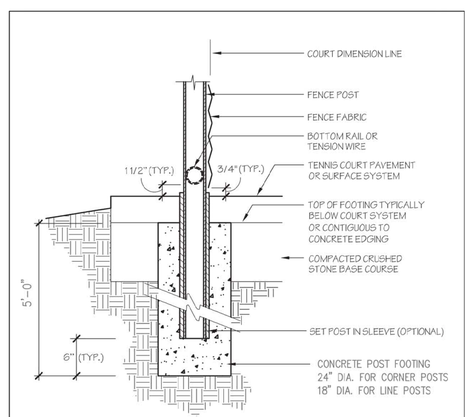
EXTENDED APRON SECTION AT ASPHALT COURT EDGE

(NOT TO SCALE)



TENNIS NET POST FOOTING – CYLINDER SHAPE

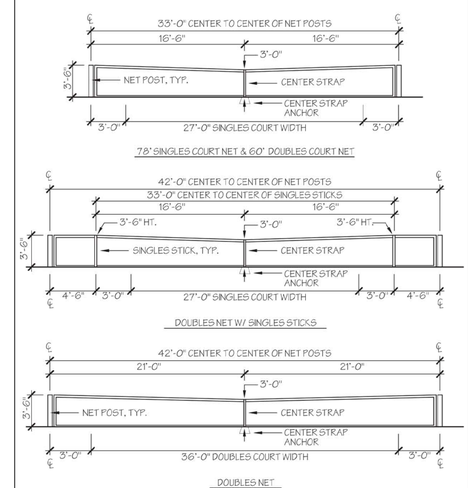
(NOT TO SCALE)



FENCE POSTS SECTIONS – TYPICAL CLF

(NOT TO SCALE)

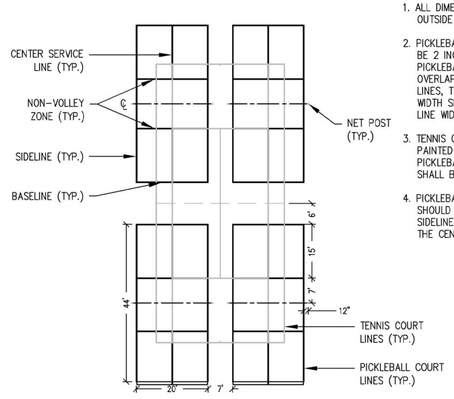
NOTE:
THE NET SHOULD BE INSTALLED WITH A RECOMMENDED TENSION OF 400 LBS. - 450 LBS.



TENNIS NET ELEVATIONS

(NOT TO SCALE)

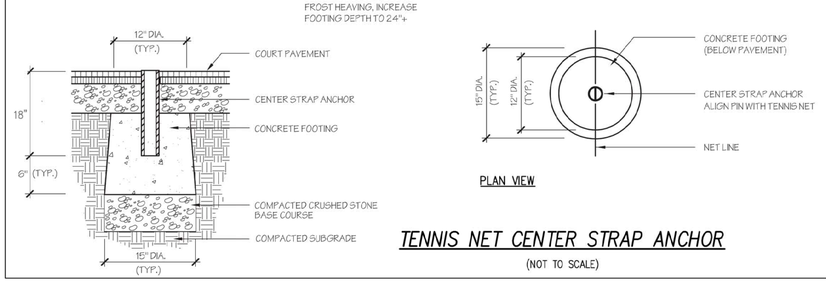
NOTES:
1. ALL DIMENSIONS ARE TO THE OUTSIDE EDGE OF LINES.
2. PICKLEBALL COURT LINES SHALL BE 2 INCHES IN WIDTH. WHERE PICKLEBALL COURT LINES OVERLAP WITH TENNIS COURT LINES, TENNIS COURT LINE WIDTH SHALL DICTATE SHARED LINE WIDTH.
3. TENNIS COURT LINES SHALL BE PAINTED WHITE IN COLOR AND PICKLEBALL COURT LINES SHALL BE PAINTED YELLOW.
4. PICKLEBALL NET HEIGHT SHOULD BE 36 INCHES AT THE SIDELINES AND 34 INCHES AT THE CENTER.



PICKLEBALL COURT LINES ON 78' COURT TYPICAL LAYOUT

(NOT TO SCALE)

NOTE:
IN AREAS SUSCEPTIBLE TO FROST HEAVING, INCREASE FOOTING DEPTH TO 24"+



TENNIS NET CENTER STRAP ANCHOR

(NOT TO SCALE)

ISSUED FOR BIDDING

COASTAL engineering co.
260 Cranberry Hwy, Orleans, MA 02653
508.255.6511 P 508.255.6700 F

NO.	DATE	REVISION	BY

SEAL

COMMONWEALTH OF MASSACHUSETTS
DAVID J. MICHNIEWICZ
CIVIL
NO. 31493

PROJECT
TOWN OF WELLFLEET TENNIS COURT COMPLEX
70 KENDRICK AVENUE WELLFLEET, MA

SHEET TITLE
TENNIS COURT DETAILS

SCALE	AS NOTED
DRAWING FILE	C17927-DET.dwg
DATE	08-22-2016
DRAWN BY	MAP/MJB/SRM
CHECKED BY	

C2.4.2

4 OF 4 SHEETS

PROJECT NO. C17927.00

Coastal Engineering Co., Inc. © 2016

F:\SDSK\PROJ\C17000\C17927\C17927-00\C17927-DET.dwg Aug 23, 2016 - 12:29pm