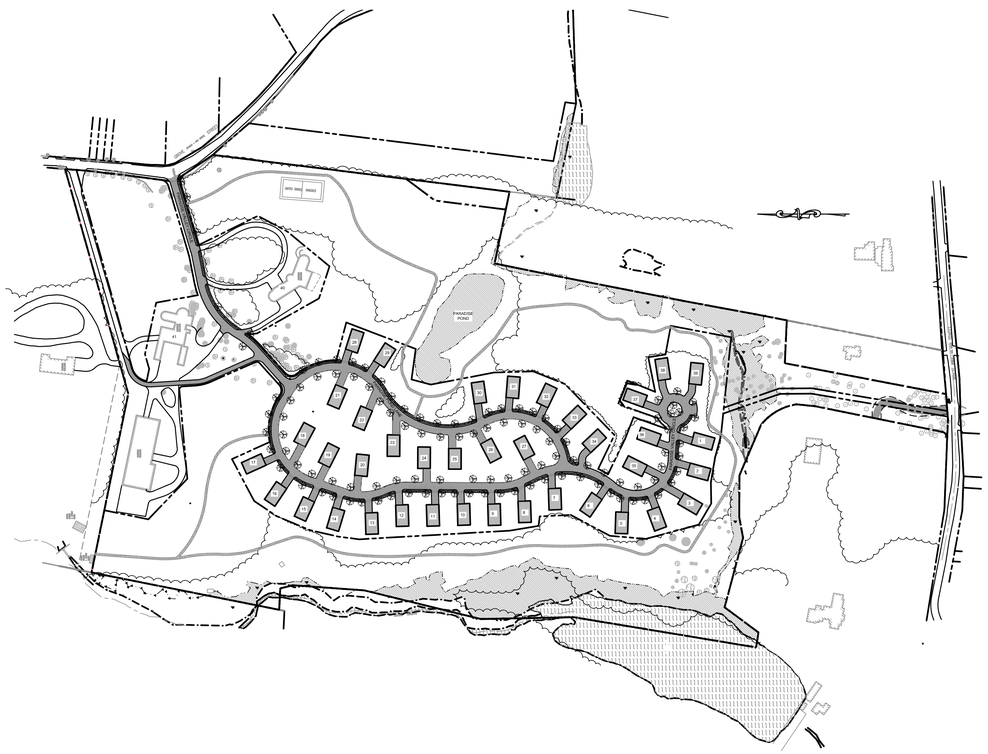
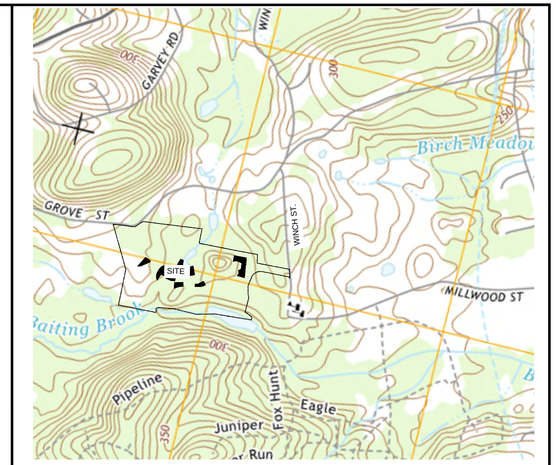
Paradise Valley Club

Grove Street

in

Framingham, Massachusetts





VICINITY MAP
SCALE 1"=1000'

SHEET INDEX

SHEET NO.	DESCRIPTION
T-100	TITLE SHEET
C-100 thru C-103	EXISTING CONDITIONS PLANS
C-200 thru C-203	SITE LAYOUT PLANS
C-300 thru C-303	GRADING, DRAINAGE & EROSION CONTROL PLANS
C-400 thru C-403	SITE UTILITIES PLANS
C-500	EROSION CONTROL NOTES & DETAILS
C-501	SITE DETAILS
C-502	SITE DETAILS
C-503	SITE DETAILS

APPROVED BY THE
FRAMINGHAM PLANNING BOARD

PREPARED FOR

Benchmark Engineering, Corp
120 Quarry Drive
Milford, Massachusetts 01757

Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
MILFORD, MASSACHUSETTS 01757

COMMONWEALTH OF MASSACHUSETTS
SEAN P. MALONE
CIVIL
No. 44204
REGISTERED PROFESSIONAL ENGINEER
12-8-15

OCG
Oak Consulting Group
P.O. Box 1123
Newburyport, MA 01950
Ph. 978.312.3120

TITLE SHEET

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: T-100

EXISTING CONDITIONS NOTES:

1. VERTICAL DATUM REFERS TO NGVD 1929.
2. THE WETLAND BOUNDARIES SHOWN HERON ARE BASED WETLANDS FLAGS SURVEY LOCATED BY GUERRIERE & HANLON AND PROVIDED TO OCG IN THE SPRING OF 2015.
3. EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION SHOWN HERON WAS PROVIDED BY BENCHMARK ENGINEERING.

OWNER REFERENCE

STREET ADDRESS:	1060 GROVE STREET	
OWNER OF RECORD:	MCLAUGHLIN, F MOORE IV & FAFARD, M WINCH MILLWOOD REALTY TRUST II	
ASSESSORS REFERENCE:	PARCEL:	034-54-8981 034-54-8157 034-55-7148 043-63-2498
ZONING:	R-4; OPEN SPACE PRESERVATION DEVELOPMENT	
AREA:	46.8± ACRES	

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FRAMINGHAM PLANNING BOARD

_____
_____
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_____
_____

Site:

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LEGEND

- PROPERTY LINE
- BORDERING VEGETATED WETLAND
- RIVER FRONT TOP OF BANK
- 30' NO DISTURB ZONE
- 125' BUFFER
- 200' RIVER FRONT AREA
- 100-YR FLOODPLAIN
- EXISTING CONTOUR
- EDGE OF PAVEMENT
- STONE WALL
- SIGN
- TREE LINE
- DRAIN
- SEWER
- WATER
- OVERHEAD WIRE
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- FIRE HYDRANT
- GATE VALVE
- UTILITY POLE
- EXISTING TREE
- TEST PIT
- SLOPES > 15%

COMMONWEALTH OF MASSACHUSETTS
SEAN P. MALONE
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No. 44204
REGISTERED PROFESSIONAL ENGINEER
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0 40 80 160
SCALE in FEET
1"=80'

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OVERALL EXISTING CONDITIONS PLAN

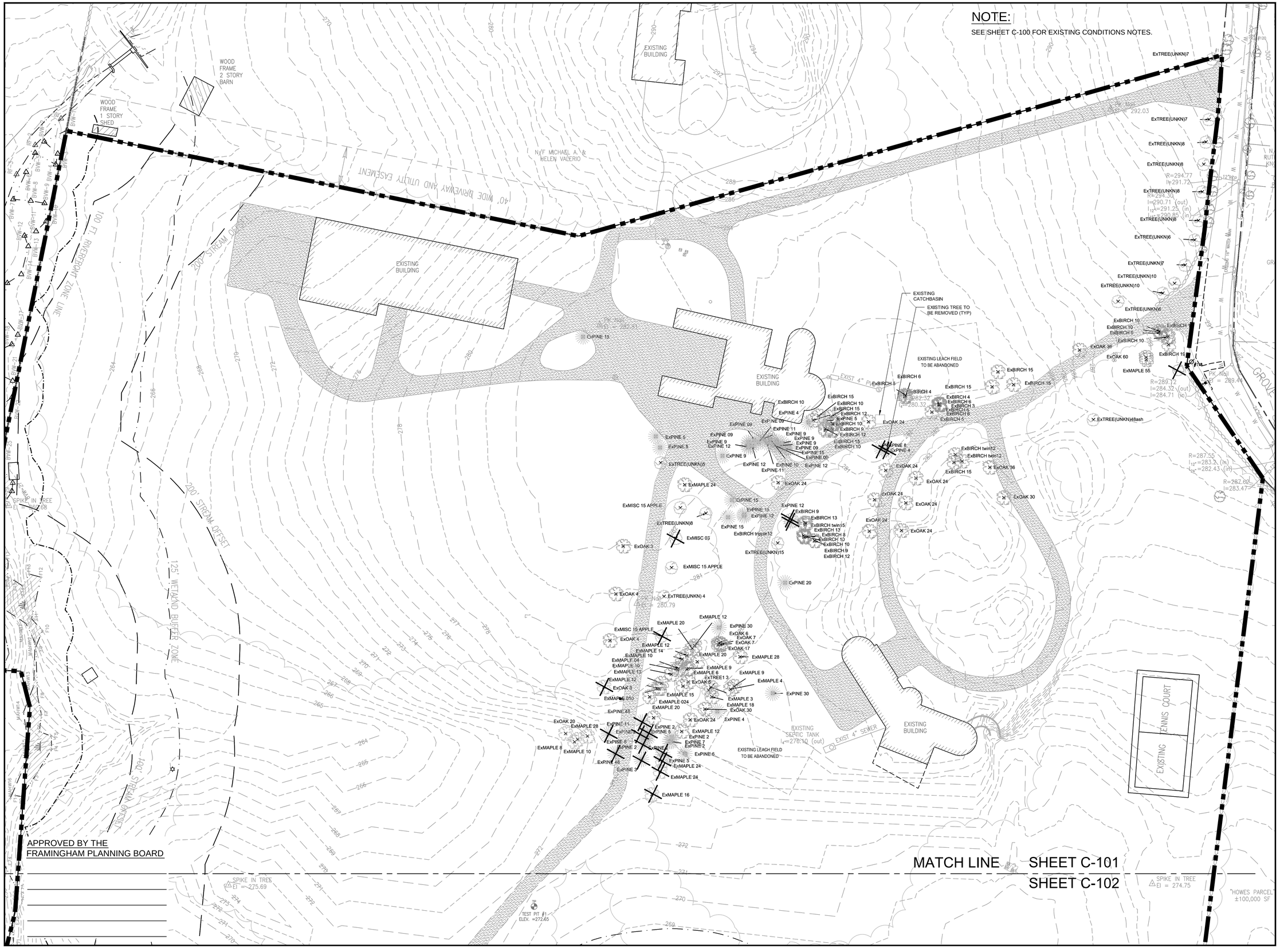
No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: C-100

NOTE:

SEE SHEET C-100 FOR EXISTING CONDITIONS NOTES.



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Site:

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- SEWER MANHOLE
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- GATE VALVE
- UTILITY POLE
- EXISTING TREE
- TEST PIT #2 ELEV. =270.00 — TEST PIT

COMMONWEALTH OF MASSACHUSETTS
SEAN P. MALONE
CIVIL
No. 44204
REGISTERED PROFESSIONAL ENGINEER
12-8-15

0 20 40 80
SCALE in FEET
1"=40'

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EXISTING CONDITIONS PLAN

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015
Sheet: C-101	

MATCH LINE SHEET C-101
SHEET C-102

NOTE:

SEE SHEET C-100 FOR EXISTING CONDITIONS NOTES.

BANTING BROOK

125' WETLAND BUFFER ZONE

30' WETLAND BUFFER ZONE

REMOVE SHEDS

EXISTING TREE TO BE REMOVED (TYP)

REMOVE WALLS

STREAM OFFSET

12" OAK

42" FIR

END OF RIVER

N/F BIAGIO A. & GLORIA CONTE

APPROVED BY THE FRAMINGHAM PLANNING BOARD

MATCH LINE SHEET C-102
SHEET C-103

Site:

PARADISE VALLEY CLUB

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SEAL P. MALONE CIVIL No. 44204 COMMONWEALTH OF MASSACHUSETTS PROFESSIONAL ENGINEER

12-8-15

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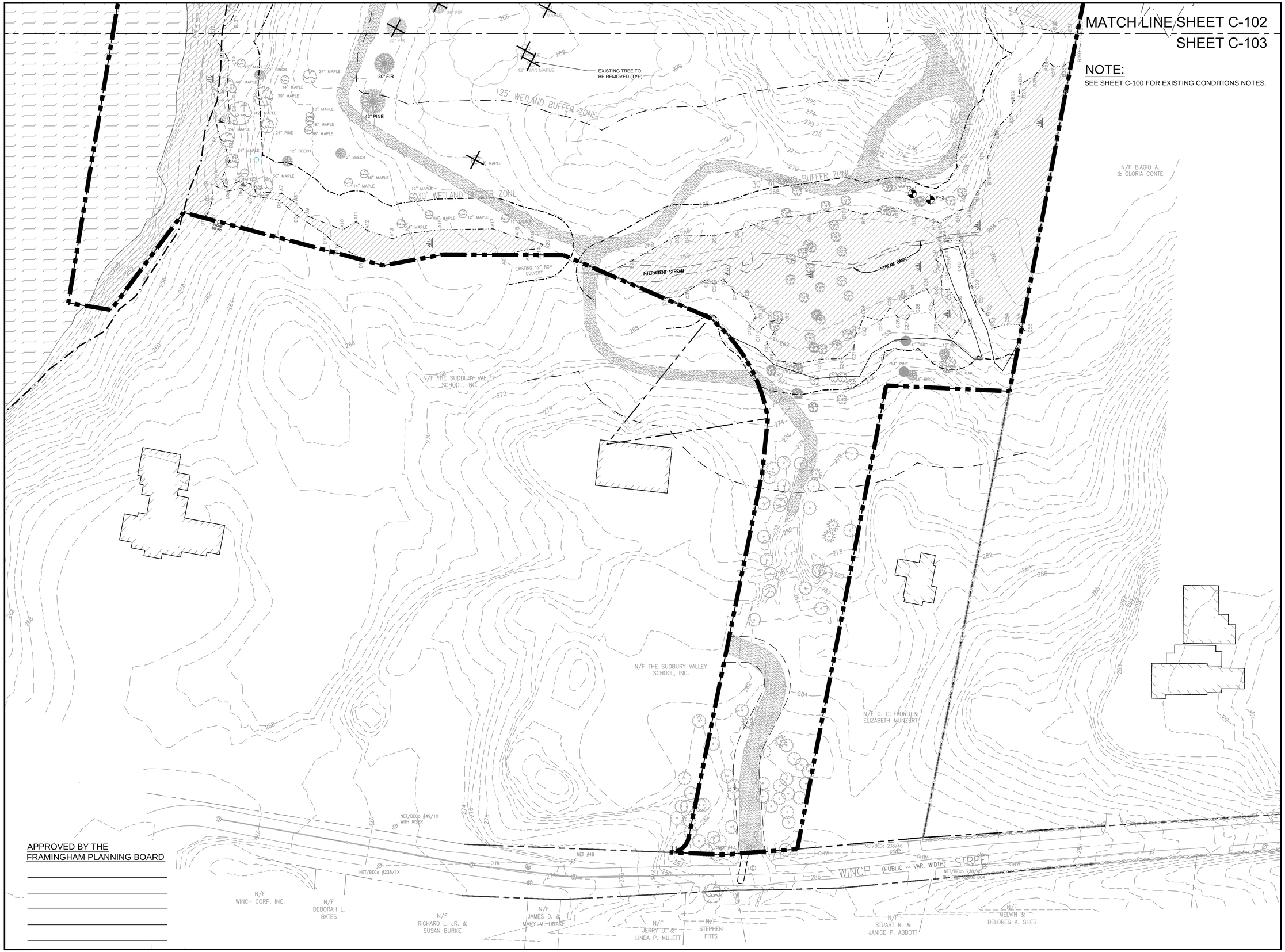
Project: 13005	Date: December 8, 2015

Sheet: C-102

MATCH LINE SHEET C-102
SHEET C-103

NOTE:
SEE SHEET C-100 FOR EXISTING CONDITIONS NOTES.



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Site:

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No.	Revision/Issue	Date

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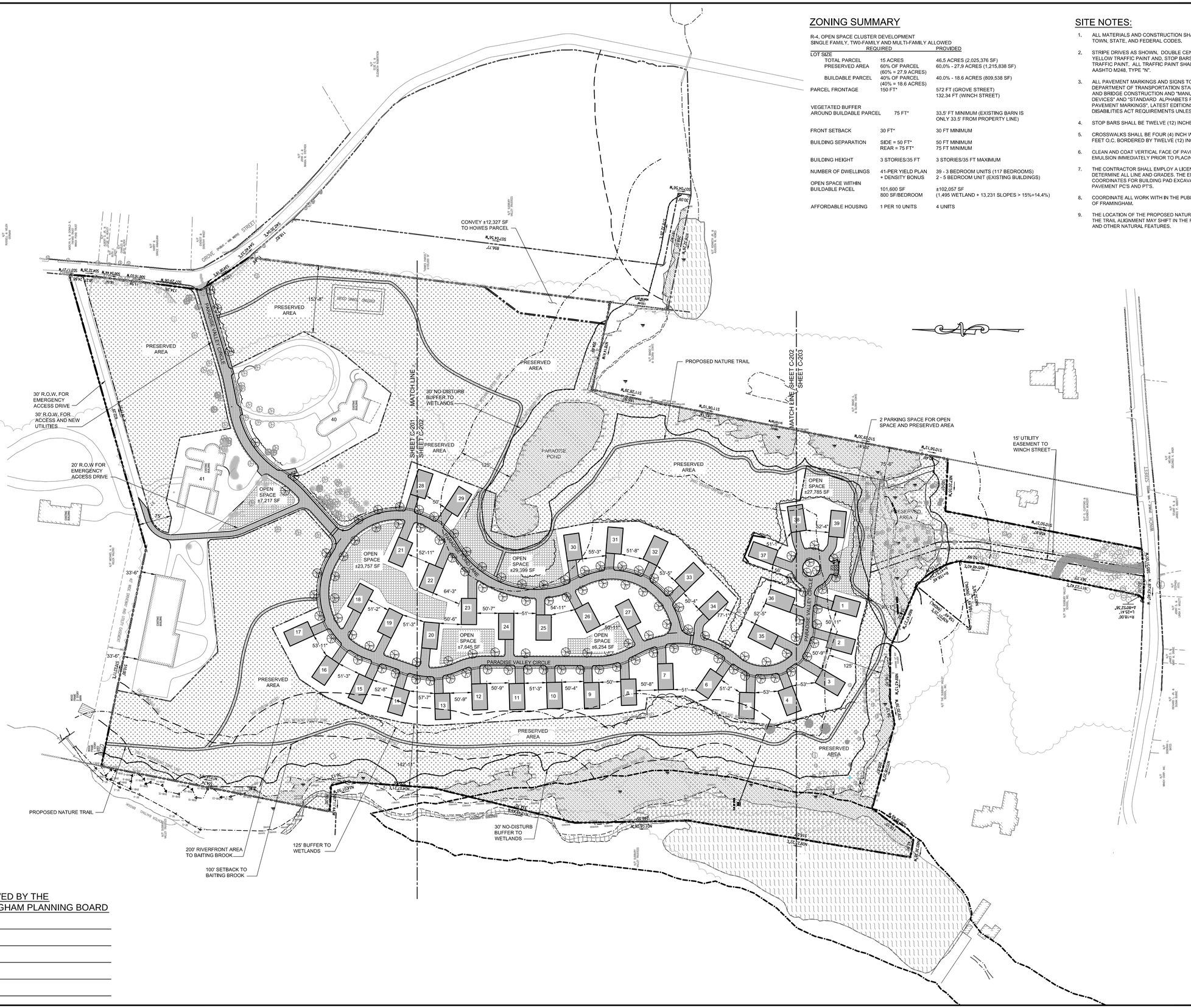
Project: 13005	Date: December 8, 2015

Sheet: C-103



ZONING SUMMARY

R-4, OPEN SPACE CLUSTER DEVELOPMENT
SINGLE FAMILY, TWO-FAMILY AND MULTI-FAMILY ALLOWED

	REQUIRED	PROVIDED
LOT SIZE		
TOTAL PARCEL	15 ACRES	46.5 ACRES (2,025,376 SF)
PRESERVED AREA	60% OF PARCEL (60% = 27.9 ACRES)	60.0% - 27.9 ACRES (1,215,838 SF)
BUILDABLE PARCEL	40% OF PARCEL (40% = 18.6 ACRES)	40.0% - 18.6 ACRES (809,538 SF)
PARCEL FRONTAGE	150 FT*	572 FT (GROVE STREET) 132.34 FT (WINCH STREET)
VEGETATED BUFFER AROUND BUILDABLE PARCEL	75 FT*	33.5' FT MINIMUM (EXISTING BARN IS ONLY 33.5' FROM PROPERTY LINE)
FRONT SETBACK	30 FT*	30 FT MINIMUM
BUILDING SEPARATION	SIDE = 50 FT* REAR = 75 FT*	50 FT MINIMUM 75 FT MINIMUM
BUILDING HEIGHT	3 STORIES/35 FT	3 STORIES/35 FT MAXIMUM
NUMBER OF DWELLINGS	41-PER YIELD PLAN + DENSITY BONUS	39 - 3 BEDROOM UNITS (117 BEDROOMS) 2 - 5 BEDROOM UNIT (EXISTING BUILDINGS)
OPEN SPACE WITHIN BUILDABLE PACEL	101,600 SF 800 SF/BEDROOM	±102,057 SF (1,495 WETLAND + 13,231 SLOPES > 15%=14.4%)
AFFORDABLE HOUSING	1 PER 10 UNITS	4 UNITS

SITE NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE TOWN, STATE, AND FEDERAL CODES.
2. STRIPE DRIVES AS SHOWN. DOUBLE CENTER LINE SHALL BE PAINTED USING YELLOW TRAFFIC PAINT AND, STOP BARS, AND CROSSWALKS USING WHITE TRAFFIC PAINT. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248, TYPE "N".
3. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", LATEST EDITIONS AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
4. STOP BARS SHALL BE TWELVE (12) INCHES WIDE.
5. CROSSWALKS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT THREE (3) FEET O.C. BORDERED BY TWELVE (12) INCH WIDE LINES.
6. CLEAN AND COAT VERTICAL FACE OF PAVEMENT AT SAWCUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
7. THE CONTRACTOR SHALL EMPLOY A LICENSED ENGINEER/SURVEYOR TO DETERMINE ALL LINE AND GRADES. THE ENGINEER IS TO PROVIDE COORDINATES FOR BUILDING PAD EXCAVATION, FIELD LAYOUT AND EDGE OF PAVEMENT PC'S AND PT'S.
8. COORDINATE ALL WORK WITH IN THE PUBLIC RIGHT OF WAYS WITH THE TOWN OF FRAMINGHAM.
9. THE LOCATION OF THE PROPOSED NATURE TRAIL SHOWN IS APPROXIMATE. THE TRAIL ALIGNMENT MAY SHIFT IN THE FIELD IN ORDER TO PRESERVE TREES AND OTHER NATURAL FEATURES.

APPROVED BY THE
FRAMINGHAM PLANNING BOARD

_____
_____
_____
_____
_____

Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
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LEGEND

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- 30' NO DISTURB ZONE
- 125' BUFFER
- 200' RIVER FRONT AREA
- EDGE OF PAVEMENT
- STONE WALL
- SIGN
- PROPOSED CURB
- PROPOSED SIGN
- PROPOSED RETAINING WALL
- PROPOSED SIDEWALK
- PROPOSED ROAD
- PROPOSED TRAIL
- PROPOSED STREET LIGHT
- PROPOSED STREET TREE
- PRESERVED AREA

COMMONWEALTH OF MASSACHUSETTS
SEAN P. MALONE
CIVIL
No. 44204
PROFESSIONAL ENGINEER
12-8-15

0 40 80 160
SCALE in FEET
1"=80'

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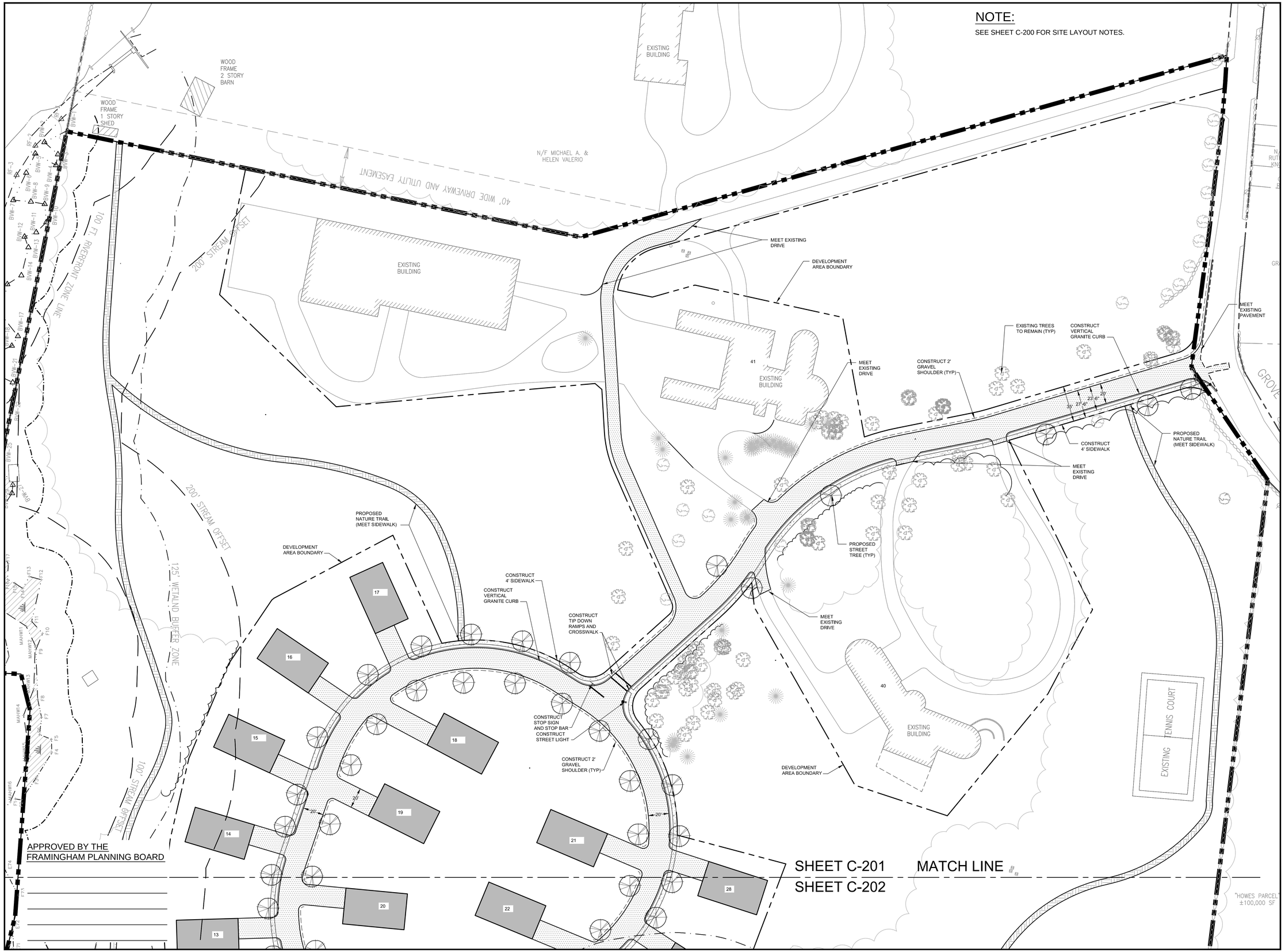
OVERALL SITE LAYOUT PLAN

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: C-200



Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
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- PROPOSED TRAIL
- PROPOSED STREET LIGHT
- PROPOSED STREET TREE

COMMONWEALTH OF MASSACHUSETTS
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0 20 40 80
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SITE LAYOUT PLAN

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: C-201

SHEET C-201 MATCH LINE
SHEET C-202

NOTE:
SEE SHEET C-200 FOR SITE LAYOUT NOTES.

CONSTRUCT 4' SIDEWALK
CONSTRUCT VERTICAL GRANITE CURB
CONSTRUCT 2' GRAVEL SHOULDER
CONSTRUCT STREET TREE (TYP)
CONSTRUCT 2' GRAVEL SHOULDER
CONSTRUCT 4' SIDEWALK
CONSTRUCT VERTICAL GRANITE CURB
CONSTRUCT STOP SIGN AND STOP BAR
CONSTRUCT TIP DOWN RAMPS AND CROSSWALK
CONSTRUCT STREET LIGHT
DEVELOPMENT AREA BOUNDARY
DEVELOPMENT AREA BOUNDARY
CONSTRUCT RETAINING WALL
CONSTRUCT 2' GRAVEL SHOULDER
NATURE TRAIL (TYP)
NATURE TRAIL (MEET EXISTING GRAVEL ROAD)
END OF RIVER
BATTIS BROOK
125' WETLAND BUFFER ZONE
30' BUFFER ZONE
200' RIVER FRONT AREA
125' WETLAND BUFFER ZONE
N/F BIAGIO A. & GLORIA CONTE

APPROVED BY THE FRAMINGHAM PLANNING BOARD

MATCH LINE SHEET C-202
SHEET C-203

Site:

PARADISE VALLEY CLUB

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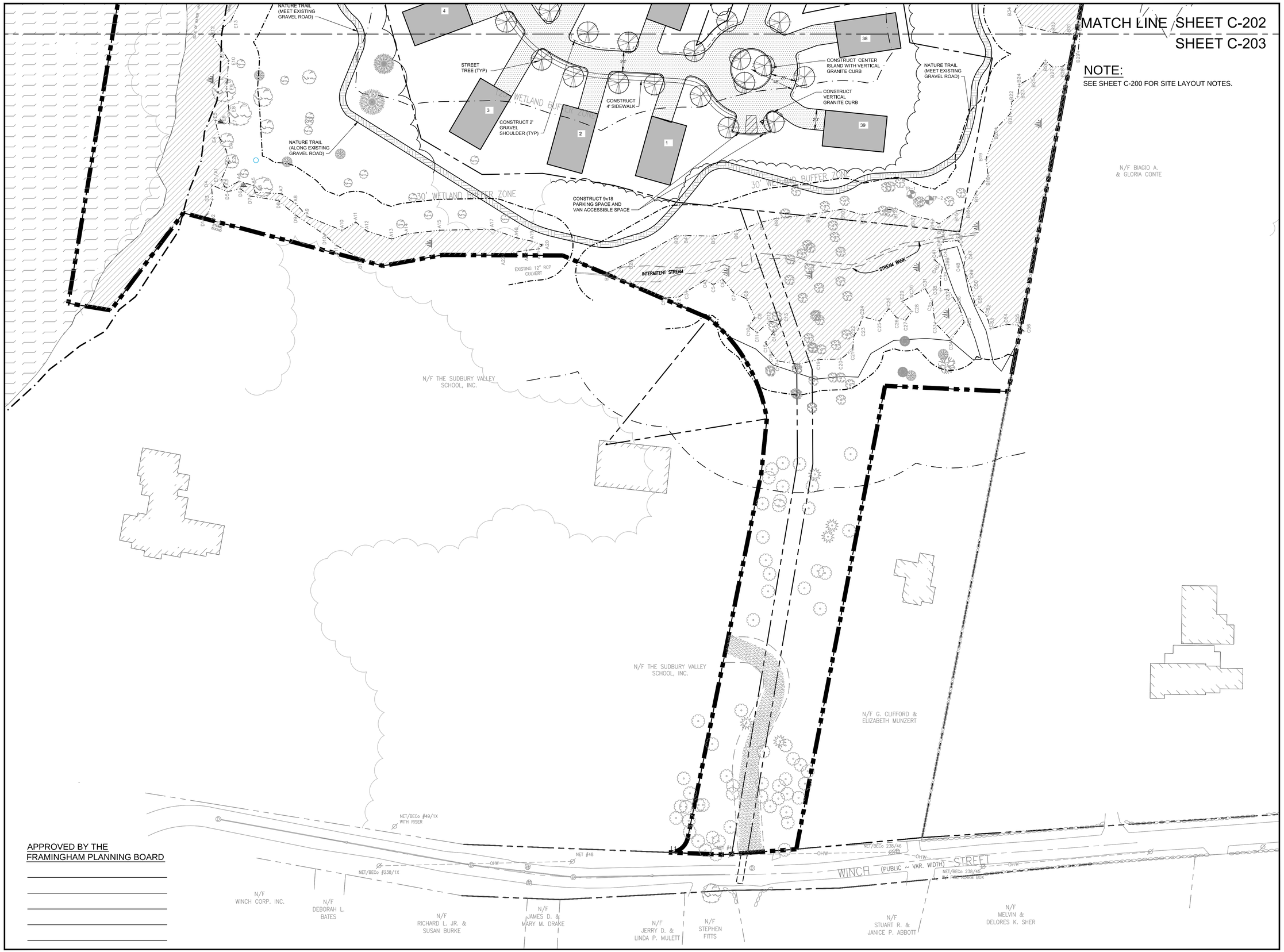

NOTE:

SEE SHEET C-200 FOR SITE LAYOUT NOTES.

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Site:

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12-8-15

0 20 40 80
SCALE in FEET
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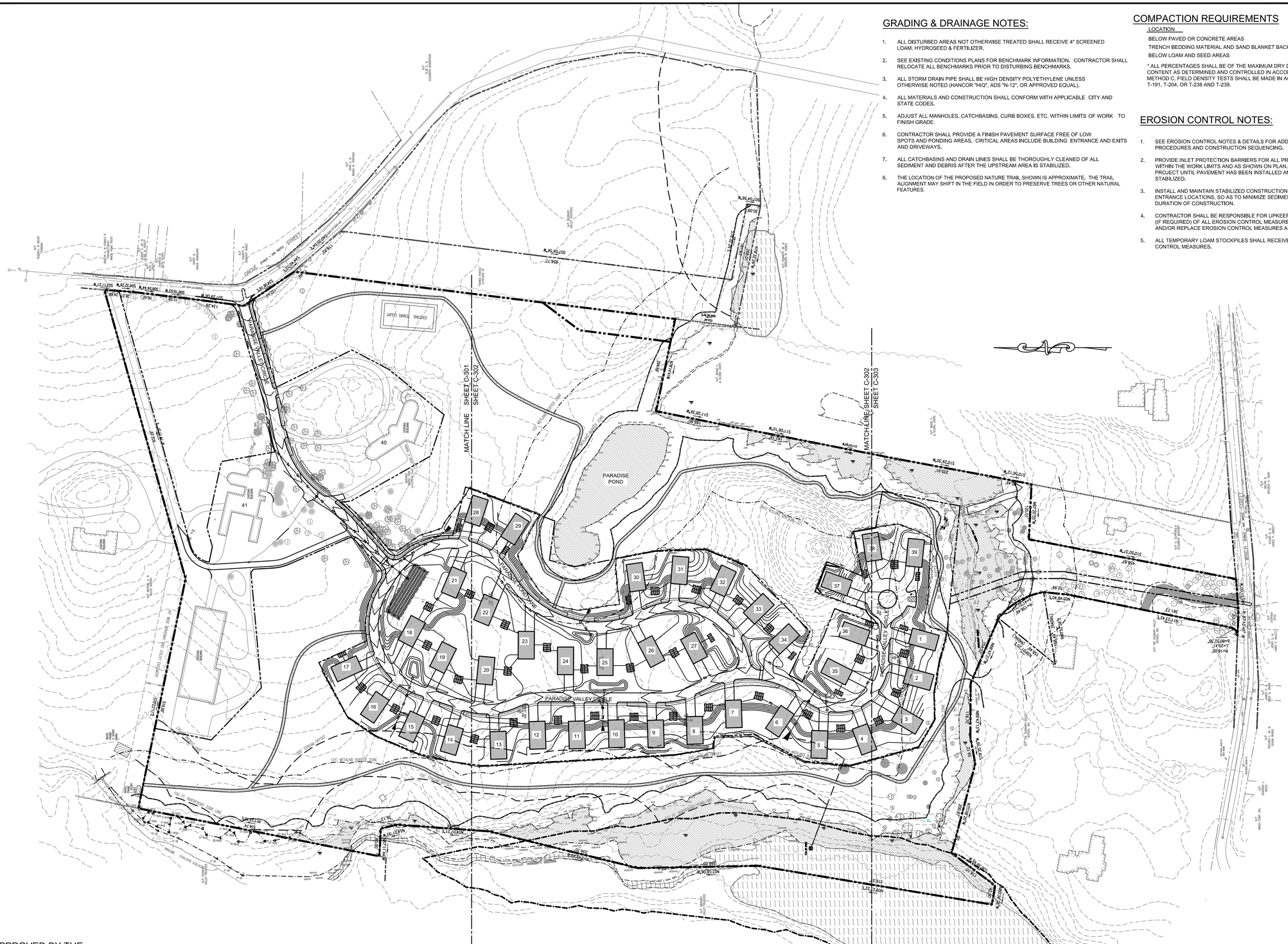
Sheet: C-203



GRADING & DRAINAGE NOTES:

1. ALL DISTURBED AREAS NOT OTHERWISE TREATED SHALL RECEIVE 4" SCREENED LOAM, HYDROSEED & FERTILIZER.
2. SEE EXISTING CONDITIONS PLANS FOR BENCHMARK INFORMATION. CONTRACTOR SHALL RELOCATE ALL BENCHMARKS PRIOR TO DISTURBING BENCHMARKS.
3. ALL STORM DRAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE UNLESS OTHERWISE NOTED (HANCOR "HIQ", ADS "N-12", OR APPROVED EQUAL).
4. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE CITY AND STATE CODES.
5. ADJUST ALL MANHOLES, CATCHBASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
6. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND EXITS AND DRIVEWAYS.
7. ALL CATCHBASINS AND DRAIN LINES SHALL BE THOROUGHLY CLEANED OF ALL SEDIMENT AND DEBRIS AFTER THE UPSTREAM AREA IS STABILIZED.
8. THE LOCATION OF THE PROPOSED NATURE TRAIL SHOWN IS APPROXIMATE. THE TRAIL ALIGNMENT MAY SHIFT IN THE FIELD IN ORDER TO PRESERVE TREES OR OTHER NATURAL FEATURES.

COMPACTION REQUIREMENTS

LOCATION	MINIMUM DENSITY*
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T-191, T-204, OR T-238 AND T-239.

EROSION CONTROL NOTES:

1. SEE EROSION CONTROL NOTES & DETAILS FOR ADDITIONAL EROSION CONTROL PROCEDURES AND CONSTRUCTION SEQUENCING.
2. PROVIDE INLET PROTECTION BARRIERS FOR ALL PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
3. INSTALL AND MAINTAIN STABILIZED CONSTRUCTION ENTRANCE AT ALL CONSTRUCTION ENTRANCE LOCATIONS, SO AS TO MINIMIZE SEDIMENT TRACKING OFFSITE FOR THE DURATION OF CONSTRUCTION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR UPKEEP, MAINTENANCE AND REPLACEMENT (IF REQUIRED) OF ALL EROSION CONTROL MEASURES. CONTRACTOR SHALL REPAIR AND/OR REPLACE EROSION CONTROL MEASURES AS NEEDED.
5. ALL TEMPORARY LOAM STOCKPILES SHALL RECEIVE TEMPORARY EROSION CONTROL MEASURES.

APPROVED BY THE
FRAMINGHAM PLANNING BOARD

_____
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- PROPOSED DRAIN MANHOLE
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- PROPOSED RETAINING WALL
- PROPOSED TRAIL

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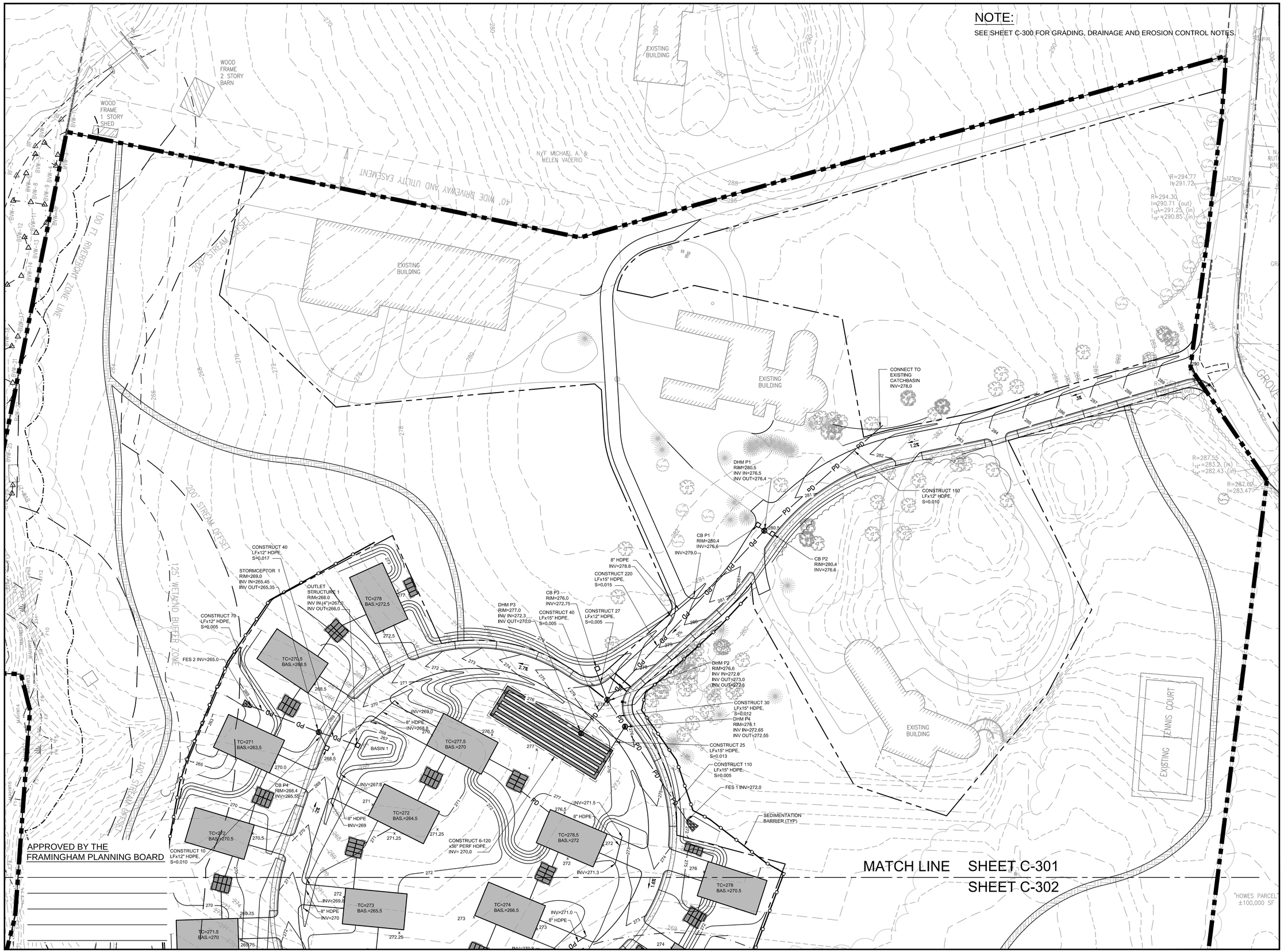
OVERALL GRADING, DRAINAGE & EROSION CONTROL PLAN

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: C-300



Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
MILFORD, MASSACHUSETTS 01757

LEGEND

- PROPERTY LINE
- BORDERING VEGETATED WETLAND
- RIVER FRONT TOP OF BANK
- 125' BUFFER
- 200' RIVER FRONT AREA
- 30' NO DISTURB ZONE
- 100 — INDEX CONTOUR
- EP — EDGE OF PAVEMENT
- STONE WALL
- DRAIN
- CATCH BASIN
- DRAIN MANHOLE
- TP — TEST PIT #2 ELEV. =270.00 — TEST PIT
- 276 — PROPOSED CONTOUR
- X43.5 — SPOT ELEVATION
- PD — PROPOSED DRAIN
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- SEDIMENTATION BARRIER
- PROPOSED RETAINING WALL
- PROPOSED TRAIL

COMMONWEALTH OF MASSACHUSETTS
SEAN P. MALONE
CIVIL
No. 44204
REGISTERED PROFESSIONAL ENGINEER
12-8-15

0 20 40 80
SCALE in FEET
1"=40'

OCG
Oak Consulting Group
P.O. Box 1123
Newburyport, MA 01950
Ph. 978.312.3120

GRADING, DRAINAGE & EROSION CONTROL PLAN

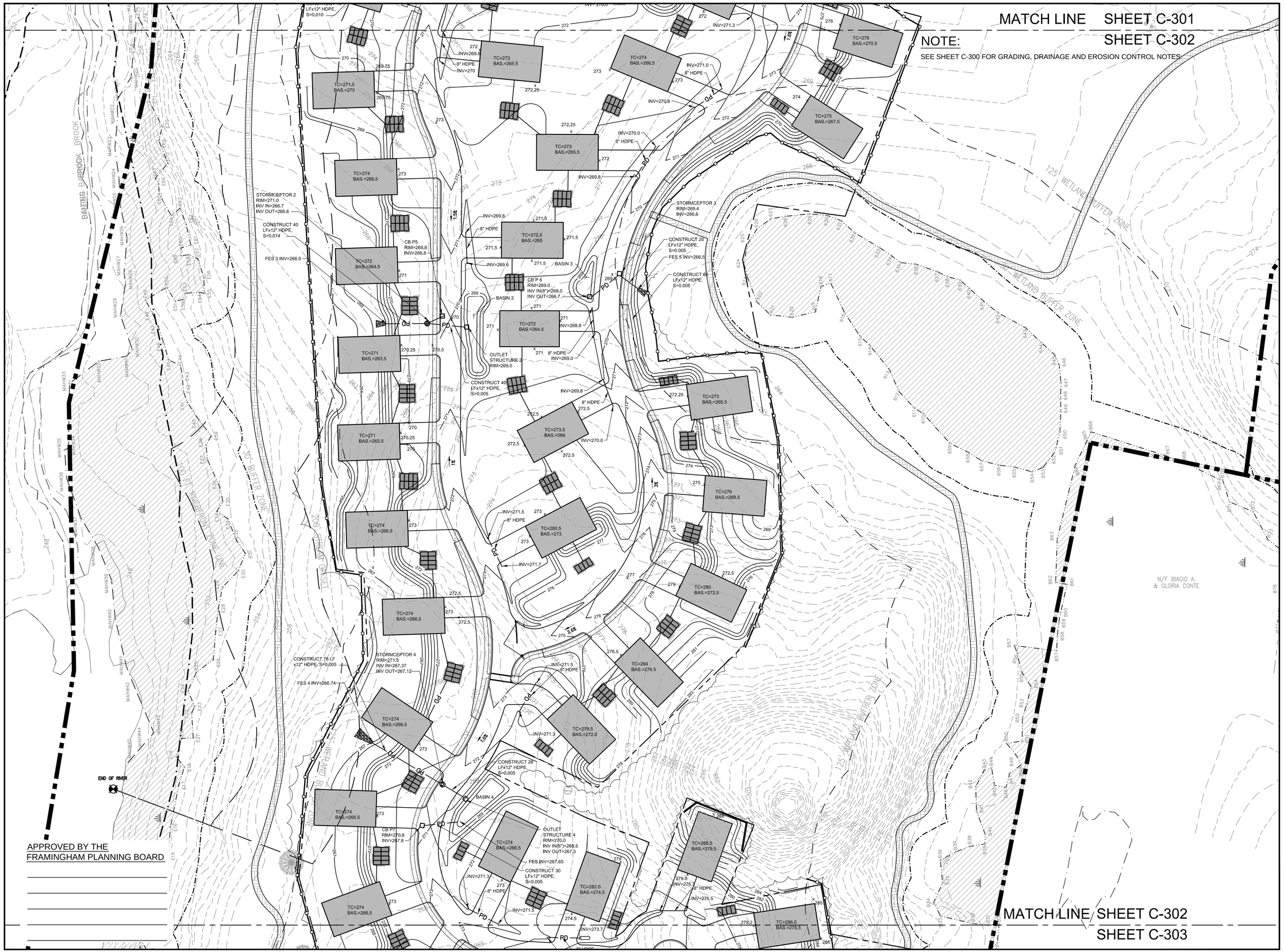
No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: C-301

MATCH LINE SHEET C-301
SHEET C-302

NOTE:
SEE SHEET C-300 FOR GRADING, DRAINAGE AND EROSION CONTROL NOTES.



APPROVED BY THE
FRAMINGHAM PLANNING BOARD

MATCH LINE SHEET C-302
SHEET C-303

Site:

PARADISE VALLEY CLUB

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GRADING, DRAINAGE & EROSION CONTROL PLAN

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	BORDERING VEGETATED WETLAND
	RIVER FRONT TOP OF BANK
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SEAL P. MALONE CIVIL No. 44204 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
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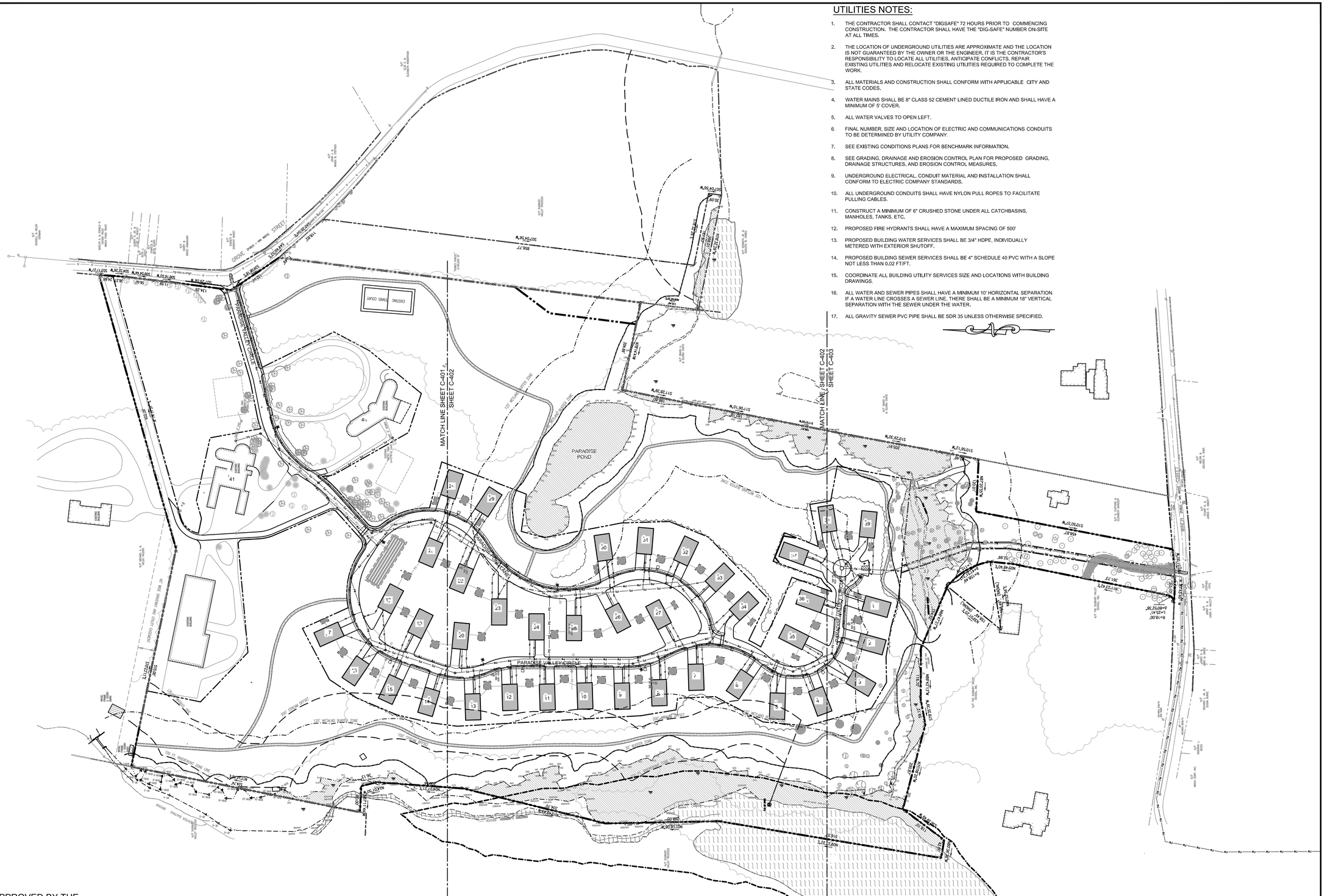

UTILITIES NOTES:

1. THE CONTRACTOR SHALL CONTACT "DIGSAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON-SITE AT ALL TIMES.
2. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
3. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE CITY AND STATE CODES.
4. WATER MAINS SHALL BE 8" CLASS 52 CEMENT LINED DUCTILE IRON AND SHALL HAVE A MINIMUM OF 5' COVER.
5. ALL WATER VALVES TO OPEN LEFT.
6. FINAL NUMBER, SIZE AND LOCATION OF ELECTRIC AND COMMUNICATIONS CONDUITS TO BE DETERMINED BY UTILITY COMPANY.
7. SEE EXISTING CONDITIONS PLANS FOR BENCHMARK INFORMATION.
8. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PROPOSED GRADING, DRAINAGE STRUCTURES, AND EROSION CONTROL MEASURES.
9. UNDERGROUND ELECTRICAL, CONDUIT MATERIAL AND INSTALLATION SHALL CONFORM TO ELECTRIC COMPANY STANDARDS.
10. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
11. CONSTRUCT A MINIMUM OF 6" CRUSHED STONE UNDER ALL CATCHBASINS, MANHOLES, TANKS, ETC.
12. PROPOSED FIRE HYDRANTS SHALL HAVE A MAXIMUM SPACING OF 500'
13. PROPOSED BUILDING WATER SERVICES SHALL BE 3/4" HDPE, INDIVIDUALLY METERED WITH EXTERIOR SHUTOFF.
14. PROPOSED BUILDING SEWER SERVICES SHALL BE 4" SCHEDULE 40 PVC WITH A SLOPE NOT LESS THAN 0.02 FT/FT.
15. COORDINATE ALL BUILDING UTILITY SERVICES SIZE AND LOCATIONS WITH BUILDING DRAWINGS.
16. ALL WATER AND SEWER PIPES SHALL HAVE A MINIMUM 10' HORIZONTAL SEPARATION. IF A WATER LINE CROSSES A SEWER LINE, THERE SHALL BE A MINIMUM 18" VERTICAL SEPARATION WITH THE SEWER UNDER THE WATER.
17. ALL GRAVITY SEWER PVC PIPE SHALL BE SDR 35 UNLESS OTHERWISE SPECIFIED.

APPROVED BY THE
FRAMINGHAM PLANNING BOARD

_____

_____

_____

_____

_____

Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
MILFORD, MASSACHUSETTS 01757

LEGEND

- PROPERTY LINE
- BORDERING VEGETATED WETLAND
- EDGE OF PAVEMENT
- DRAIN
- SEWER
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- SEWER MANHOLE
- FIRE HYDRANT
- GATE VALVE
- UTILITY POLE
- PROPOSED DRAIN
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED UNDERGROUND ELECTRIC & COMMUNICATIONS
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED SEWER MANHOLE
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COMMONWEALTH OF MASSACHUSETTS
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0 40 80 160
SCALE in FEET
1"=80'

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SITE UTILITIES PLAN

No.	Revision/Issue	Date

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Project: 13005	Date: December 8, 2015

Sheet: C-400

NOTE:

SEE SHEET C-400 FOR SITE UTILITIES PLAN.

WOOD FRAME 2 STORY BARN

WOOD FRAME 1 STORY SHED

EXISTING BUILDING

N/F MICHAEL A. & HELEN VALERIO

40' WIDE DRIVEWAY AND UTILITY EASEMENT

100' RIVERFRONT ZONE LINE

200' STREAM OFFSET

125' WETLAND BUFFER ZONE

100' STREAM OFFSET

R=294.77
I=291.72

R=294.30
I=290.71 (out)
$I_{12"}$=291.25 (in)
$I_{15"}$=290.85 (in)

CONSTRUCT 8" TAPPING SLEEVE AND VALVE ON EXISTING 16" WATER MAIN

CONSTRUCT RELOCATED UTILITY POLE WITH RISERS TO NEW UNDERGROUND ELECTRIC AND TEL/COM

CONSTRUCT 8" DI WATER MAIN

CONSTRUCT UNDERGROUND ELECTRIC AND TEL/COM

SMH P1
(ON EXISTING SEWER)
RIM=282.0
INV IN=280.5
INV OUT=280.4

CONSTRUCT 55 LFx8" PVC, S=0.035

SMH P2
RIM=282.5
INV IN=278.5
INV OUT=278.4

CONSTRUCT HYDRANT

CONSTRUCT 170 LFx8" PVC, S=0.020

SMH P3
RIM=281.1
INV IN=274.9
INV OUT=274.8

CONSTRUCT 195 LFx8" PVC, S=0.005

CONSTRUCT165 LFx8" PVC, S=0.006

R=287.55
$I_{12"}$=283.2 (in)
$I_{24"}$=282.43 (in)

R=287.62
I=283.47

EXISTING SEPTIC TANK
I_4=278.10 (out)

EXIST 4" SEWER

SMH P4
(ON EXISTING SEWER)
RIM=278.5
INV IN=276.0
INV OUT=275.9

EXISTING TENNIS COURT

"HOWES PARCEL" ±100,000 SF

CONSTRUCT 3/4" HDPE WATER SERVICE WITH SHUTOFF (TYP)

CONSTRUCT 4" SCH 40 PVC BUILDING SEWER S=0.02 MIN (TYP)

CONSTRUCT 8" DI WATER MAIN

SMH P5
RIM=277.8
INV IN=273.8
INV OUT=273.7

CONSTRUCT HYDRANT

ELECTRIC TRANSFORMER (TYP)

SMH P9
RIM=269.0
INV IN=265.0
INV OUT=264.9

CONSTRUCT 165 LFx8" PVC, S=0.005

CONSTRUCT 135 LFx8" PVC, S=0.029

CONSTRUCT 8" DI WATER MAIN

SMH P6
RIM=273.8
INV IN=269.8
INV OUT=269.7

SMH P10
RIM=271.3
INV IN=264.0
INV OUT=263.9

CONSTRUCT 3/4" HDPE WATER SERVICE WITH

APPROVED BY THE FRAMINGHAM PLANNING BOARD

MATCH LINE SHEET C-401
SHEET C-402

Site:

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FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
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LEGEND

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- PROPOSED DRAIN MANHOLE
- PROPOSED SEWER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE

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MATCH LINE SHEET C-401
SHEET C-402

NOTE:
SEE SHEET C-400 FOR SITE UTILITIES NOTES.

SMH P10
RIM=271.3
INV IN=264.0
INV OUT=263.9

CONSTRUCT 4" SCH 40 PVC BUILDING SEWER S=0.02 MIN (TYP)

CONSTRUCT HYDRANT

CONSTRUCT 8" DI WATER MAIN

CONSTRUCT 3/4" HDPE WATER SERVICE WITH SHUTOFF (TYP)

CONSTRUCT 8" DI WATER MAIN

CONSTRUCT 300 LFx8" PVC, S=0.014

CONSTRUCT 215 LFx8" PVC, S=0.005

SMH P11
RIM=270.5
INV IN=262.8
INV OUT=262.7

SMH P7
RIM=269.4
INV IN=265.4
INV OUT=265.3

CONSTRUCT 150 LFx8" PVC, S=0.017

CONSTRUCT HYDRANT

CONSTRUCT 190 LFx8" PVC, S=0.025

SMH P12
RIM=271.5
INV IN=261.75
INV OUT=261.65

CONSTRUCT 294 LFx8" PVC, S=0.024

CONSTRUCT 180 LFx8" PVC, S=0.005

SMH P8
RIM=276.5
INV OUT=272.5

CONSTRUCT HYDRANT

ELECTRIC TRANSFORMER (TYP)

SMH P13
RIM=274.3
INV IN=260.75
INV OUT=260.65

CONSTRUCT 195 LFx8" PVC, S=0.005

CONSTRUCT HYDRANT

CONSTRUCT 8" DI WATER MAIN

SMH P14
RIM=273.8
INV IN=259.75
INV OUT=259.65

CONSTRUCT 90 LFx8" PVC, S=0.005

SMH P15
RIM=273.1
INV IN=259.30

END OF RIVER

BANTING BROOK

125' WETLAND BUFFER ZONE

30' BUFFER ZONE

100 FT. RIVERFRONT ZONE LINE

200' STREAM ON SET

N/F BIAGIO A. & GLORIA CONTE

APPROVED BY THE FRAMINGHAM PLANNING BOARD

MATCH LINE SHEET C-402
SHEET C-403

Site:

PARADISE VALLEY CLUB

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MATCH LINE SHEET C-402
SHEET C-403

NOTE:

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CONSTRUCT 90 LFx6" PVC, S=0.005

SMH P15
RIM=273.1
INV IN=259.30
INV OUT=259.20

CONSTRUCT 4" SCH 40 PVC BUILDING SEWER S=0.02 MIN (TYP)

CONSTRUCT 8" DI WATER MAIN

CONSTRUCT 190 LFx6" PVC, S=0.005

CONSTRUCT 3/4" HDPE WATER SERVICE WITH SHUTOFF (TYP)

CONSTRUCT HYDRANT

SEWER PUMP STATION
RIM=277.0
INV IN=258.25

ELECTRIC TRANSFORMER (TYP)

30' WETLAND BUFFER ZONE

CONSTRUCT 4" PVC SEWER FORCE MAIN

EXISTING 12" RCP CULVERT

INTERMITTENT STREAM

STREAM BANK

CONSTRUCT WETLAND CROSSING FOR SEWER AND WATER

CONSTRUCT 8" DI WATER MAIN

N/F BIAGIO A. & GLORIA CONTE

N/F THE SUDBURY VALLEY SCHOOL, INC.

RECONSTRUCT BITUMINOUS DRIVE AFTER UTILITY CONSTRUCTION

N/F G. CLIFFORD & ELIZABETH MUNZERT

NET/BECo #49/1X WITH RISER

CONSTRUCT 4" PVC SEWER FORCE MAIN CONNECT TO EXISTING SEWER ON MILLWOOD STREET

NET #48

NET/BECo #238/1X

EXISTING 8" WATER MAIN

CONSTRUCT 8" TAPPING SLEEVE AND VALVE ON EXISTING 8" WATER

NET/BECo 238/46

WINCH (PUBLIC ~ VAR. WIDTH) STREET

N/F WINCH CORP. INC.

N/F DEBORAH L. BATES

N/F RICHARD L. JR. & SUSAN BURKE

N/F JAMES D. & MARY M. DRAKE

N/F JERRY D. & LINDA P. MULETT

N/F STEPHEN FITTS

N/F STUART R. & JANICE P. ABBOTT

N/F MELVIN & DELORES K. SHER

APPROVED BY THE FRAMINGHAM PLANNING BOARD

_____
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PROJECT NAME AND LOCATION

PARADISE VALLEY CLUB
FRAMINGHAM, MASSACHUSETTS

DESCRIPTION

THE PROJECT CONSISTS OF DEVELOPING AN EXISTING RESIDENTIAL PROPERTY AND HORSE FARM TO A OPEN SPACE PRESERVATION DEVELOPMENT.

SOIL CHARACTERISTICS

THE EXISTING SITE IS PRESENTLY PREDOMINANTLY PASTURE WITH SOME NATIVE VEGETATION. THE UNDERLYING SOILS VARY.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 14 ACRES.

SEQUENCE OF MAJOR ACTIVITIES

1. INSTALL EROSION CONTROLS. CLEAR AND GRUB SITE.
2. CLEARING AND GRUBBING. STRIP AND STOCKPILE TOPSOILS.
3. ROUGH GRADE SITE, CONSTRUCT STORMWATER SYSTEM PROTECT INFILTRATION AREAS FROM SEDIMENTATION.
4. CONSTRUCT MAIN ROADWAYS AND UTILITIES.
5. CONSTRUCT BUILDINGS AND DRIVES WITH BUILDING UTILITIES.
6. CONSTRUCT LANDSCAPING.
7. REMOVE EROSION CONTROLS.

EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES

STABILIZATION: AN AREA SHALL BE CONSIDERED STABILIZED ONCE ONE OF THE FOLLOWING HAS OCCURRED:

A. A MINIMUM OF 85% VEGETATIVE GROWTH HAS BEEN ESTABLISHED
B. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED
C. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES AND DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR MORE THAN THIRTY (30) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 60 DAYS OF INITIAL DISTURBANCE. ALL CUT AND FILL SLOPES AND ROADWAYS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING GRADE. STABILIZATION MEASURES TO BE USED INCLUDE:

A. TEMPORARY SEEDING.
B. MULCHING.
C. STONE RIP RAP.
D. JUTE MATTING.

DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH HAY BALE BARRIERS AND/OR SILT FENCES. ALL STORM DRAIN INLETS SHALL BE PROVIDED WITH BARRIER FILTERS. ALL CATCH BASINS WILL BE COVERED WITH A GEOTEXTILE FABRIC PRIOR TO THE BASE PAVEMENT COURSE BEING PLACED.

OFF SITE VEHICLE TRACKING

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL EGRESSES TO THE SITE AND MAINTAINED FOR THE DURATION OF CONSTRUCTION.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES THE AND SILT FENCES SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN THIRTY (30) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND HAY BALE BARRIERS AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. GENERAL

INSPECTION

1. ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND FOLLOWING ANY STORM EVENT OF 0.5 INCHES OR GREATER.
2. A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
3. THE CONTRACTOR'S SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

MAINTENANCE

1. STABILIZATION OF ALL SWALES, DITCHES AND PONDS IS REQUIRED PRIOR TO DIRECTING FLOW TO THEM.
2. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
3. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE OR HAY BALE BARRIERS WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE FENCE OR BALE.
4. ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
5. TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.

B. FILTERS

DISTURBED CONTRIBUTING AREA SHOULD NOT EXCEED 0.25 ACRES PER 100 LINEAR FEET OF FILTER BARRIER.

1. STRAW/HAY BALES
   A. SHEET FLOW APPLICATIONS
      1. BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
      2. ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED. BALES SHALL BE INSTALLED SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES TO PREVENT DETERIORATION OF THE BINDINGS.
      3. THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR (4) INCHES. AFTER THE BALES ARE STAKED AND CHINKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO FOUR (4) INCHES AGAINST THE UPHILL SIDE OF THE BARRIER. IDEALLY, BALES SHOULD BE PLACED TEN (10) FEET AWAY FROM THE TOE OF SLOPE.
      4. EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST SAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. STAKES OR REBARS SHALL BE DRIVEN DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.
      5. THE GAPS BETWEEN BALES SHALL BE CHINKED (FILLED BY WEDGING) WITH STRAWWHAY TO PREVENT WATER FROM ESCAPING BETWEEN THE BALES.

2. SILT FENCE
   A. SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:

PHYSICAL PROPERTY	TEST	REQUIREMENTS
FILTERING EFFICIENCY	VTM-51	75% MINIMUM
TENSILE STRENGTH AT 20% MAXIMUM ELONGATION*	VTM-52	EXTRA STRENGTH 50 LB/LIN IN (MIN) STANDARD STRENGTH 30 LB/LIN IN (MIN)
FLOW RATE	VTM-51	0.3 GAL/SF/MIN (MIN)

* REQUIREMENTS REDUCED BY 50 PERCENT AFTER SIX (6) MONTHS OF INSTALLATION.

SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX (6) MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES F TO 120 DEGREES F.

B. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED THIRTY-SIX (36) INCHES.
C. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST, WITH A MINIMUM SIX (6) INCH OVERLAP, AND SECURELY SEALED.
D. POSTS SHALL BE SPACED A MAXIMUM OF TEN (10) FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 16 INCHES).
E. A TRENCH SHALL BE EXCAVATED APPROXIMATELY SIX (6) INCHES WIDE AND SIX (6) INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
F. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST ONE (1) INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND NO MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACES.
G. THE "STANDARD STRENGTH" FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND EIGHT (8) INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING
H. WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ITEM (G) APPLYING.
I. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
J. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAS BEEN PERMANENTLY STABILIZED.

3. SEQUENCE OF INSTALLATION

SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.

4. MAINTENANCE
   A. STRAW/HAY BALE BARRIER AND SILT FENCE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
   B. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
   C. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) THE HEIGHT OF THE BARRIER.
   D. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

C. MULCHING

1. TIMING

IN ORDER FOR MULCH TO BE EFFECTIVE, IT MUST BE IN PLACE PRIOR TO MAJOR STORM EVENTS. THERE ARE TWO (2) TYPES OF STANDARDS WHICH SHALL BE USED TO ASSURE THIS.

A. APPLY MULCH PRIOR TO ANY STORM EVENT.

THIS IS APPLICABLE WHEN WORKING WITHIN 100 FEET OF WETLANDS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS, USUALLY BY CONTACTING THE NATIONAL WEATHER SERVICE IN CONCORD, TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.

B. REQUIRED MULCHING WITHIN A SPECIFIED TIME PERIOD.

THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON A AREA, THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.

2. GUIDELINES FOR WINTER MULCH APPLICATION.

WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH.

3. MAINTENANCE

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.

D. VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS FROM EARLY SPRING TO SEPTEMBER 30:

AFTER ROUGH GRADING OF THE SUBGRADE HAS BEEN COMPLETED AND APPROVED, THE SUB GRADE SURFACE SHALL BE SCARIFIED TO A DEPTH OF FOUR INCHES. THEN FURNISH AND INSTALL A LAYER OF LOAM PROVIDING A ROLLED FOUR INCH THICKNESS. ANY DEPRESSIONS WHICH MAY OCCUR DURING ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM, REGRADED AND REROLLED UNTIL THE SURFACE IS TRUE TO THE FINISHED LINES AND GRADES. ALL LOAM NECESSARY TO COMPLETE THE WORK UNDER THIS SECTION SHALL BE SUPPLIED BY THE SITE SUBCONTRACTOR.

ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, DEBRIS, GLASS, STUMPS, LITTER AND OTHER FOREIGN MATERIAL AS WELL AS STONES OVER ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE LOAM AND DISPOSED OF OFF SITE, AND THE LOAM SHALL BE RAKED SMOOTH AND EVEN.

THE LOAM SHALL BE PREPARED TO RECEIVE SEED BY REMOVING STONES, FOREIGN OBJECTS AND GRADING TO ELIMINATE WATER POCKETS AND IRREGULARITIES PRIOR TO PLACING SEED. FINISH GRADING SHALL RESULT IN STRAIGHT UNIFORM GRADES AND SMOOTH, EVEN SURFACES WITHOUT IRREGULARITIES TO LOW POINTS.

SHAPE THE AREAS TO THE LINES AND GRADES REQUIRED. THE SITE SUBCONTRACTOR'S ATTENTION IS DIRECTED TO THE SCHEDULING OF LOAMING AND SEEDING OF GRADED AREAS TO PERMIT SUFFICIENT TIME FOR THE STABILIZATION OF THESE AREAS. IT SHALL BE THE SITE SUBCONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE AREAS DURING THE CONSTRUCTION PERIOD AND REGRADE, LOAM AND RESEED ANY DAMAGED AREAS.

ALL AREAS DISTURBED BY CONSTRUCTION WITHIN THE PROPERTY LINES AND NOT COVERED BY STRUCTURES, PAVEMENT, OR MULCH SHALL BE LOAMED AND SEEDED.

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.

IF REQUIRED, FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER. USE OF FERTILIZER SHOULD BE AVOIDED IN INFILTRATION AREAS.

SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4 1/2 POUNDS AND 5 1/2 POUNDS PER INCH OF WIDTH.

SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH.

HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE. MULCH THAT BLOWS OR WASHES AWAY SHALL BE REPLACED IMMEDIATELY AND ANCHORED USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

THE SITE SUBCONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED, INCLUDING CUTTING, AS SPECIFIED HEREIN AFTER UNDER MAINTENANCE AND PROTECTION.

UNLESS OTHERWISE APPROVED, SEEDING SHALL BE DONE DURING THE APPROXIMATE PERIODS OF EARLY SPRING TO SEPTEMBER 30, WHEN SOIL CONDITIONS AND WEATHER ARE SUITABLE FOR SUCH WORK.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

	POUNDS PER ACRE	GERMINATION MINIMUM	PURITY MINIMUM
GENERAL COVER			
CREEPING RED FESCUE	50	85%	96%
KENTUCKY BLUE GRASS	50	85%	97%
	100		
SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)			
CREEPING RED FESCUE	20	85%	96%
TALL FESCUE	20	85%	96%
RED TOP	2	80%	95%
	42		

IN NO CASE SHALL THE WEED CONTENT EXCEED 1 PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PLANTINGS AFTER SEPTEMBER TO EARLY SPRING AND FOR TEMPORARY PROTECTION OF DISTURBED AREAS:

- FOLLOW ABOVE SLOPE, LOAM DEPTH AND GRADING REQUIREMENTS.
- FERTILIZER SHALL BE SPREAD AND WORKED INTO THE SURFACE AT A RATE OF 300 POUNDS PER ACRE.
- MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
  - WINTER RYE (FALL SEEDING) 2.5 LBS/1,000 S.F.
  - OATS (SPRING SEEDING) 2 LBS./1,000S.F.
  - MULCH 1.5 TONS/ACRE

STABILIZED CONSTRUCTION ENTRANCE

1. SPECIFICATIONS

A. AGGREGATE SIZE: USE TWO (2) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
B. AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES.
C. WIDTH: TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS.
D. LENGTH: AS REQUIRED, BUT NOT LESS THAN FIFTY (50) FEET.
E. GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.

2. MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

WASTE DISPOSAL

A. WASTE MATERIALS

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.

B. HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.

C. SANITARY WASTE

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

ADDITIONAL NOTES FOR WINTER CONSTRUCTION

A) ALL PROPOSED POST-DEVELOPMENT LANDSCAPED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY NOVEMBER 15TH, OR WHICH ARE DISTURBED AFTER NOVEMBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 4:1 AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND.

B) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY NOVEMBER 15TH, OR WHICH ARE DISTURBED AFTER NOVEMBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

C) AFTER NOVEMBER 15TH, ALL TRAVEL SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOWFALL AFTER EACH STORM EVENT

DUST CONTROL

A. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL METHODS SHALL INCLUDE, BUT NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

APPROVED BY THE
FRAMINGHAM PLANNING BOARD

_____
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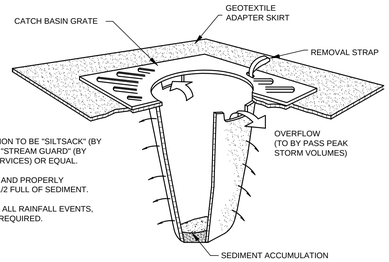
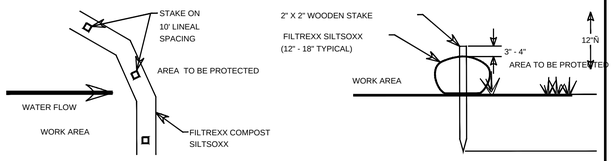
_____
_____



NOTES

1. CATCH BASIN PROTECTION TO BE "SILTSACK" (BY ACF ENVIRONMENTAL) OR "STREAM GUARD" (BY FOSS ENVIRONMENTAL SERVICES) OR EQUAL.
2. INSERT TO BE EMPTIED AND PROPERLY DISPOSED OF WHEN IT IS 1/2 FULL OF SEDIMENT.
3. INSPECT INSERT AFTER ALL RAINFALL EVENTS, REPAIR AND MAINTAIN AS REQUIRED.

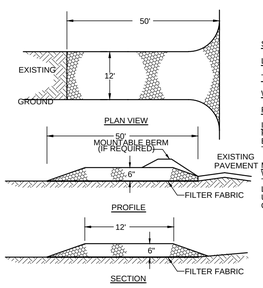
INLET PROTECTION BARRIER
NOT TO SCALE



NOTES:

1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS
2. SILTSOXX COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION REQUIREMENTS.
3. SILTSOXX SHALL BE INSTALLED PERPINDICULAR TO THE SLOPE AND PER MANUFACTURER'S RECOMENDATIONS
4. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

SEDIMENTATION BARRIER
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

STONE SIZE - SEE GRADATION TABLE

LENGTH - 50 FOOT MINIMUM.

THICKNESS - SIX (6) INCHES (MINIMUM).

WIDTH - 12' MINIMUM

FILTER FABRIC - MIRAFI 600X OR APPROVED EQUAL.

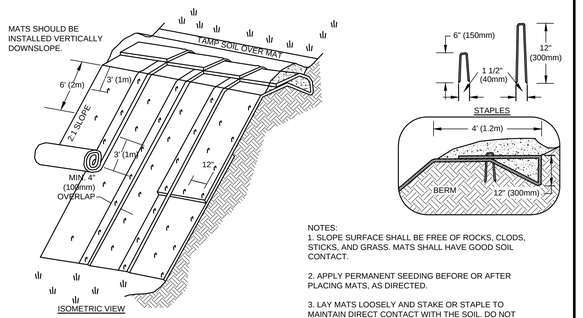
INSTALLATION - THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. A ROAD STABILIZATION FILTER CLOTH CAN BE PLACED ON THE SUBGRADE PRIOR TO THE GRAVEL PLACEMENT TO PREVENT PUMPING. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS.

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

CRUSHED STONE GRADATION TABLE

SIEVE SIZE	% PASSING BY WEIGHT
2 inches	100
1 1/2 inches	90-100
1 inch	20-55
3/4 inch	0-15
3/8 inch	0-5

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS. MATS SHALL HAVE GOOD SOIL CONTACT.

2. APPLY PERMANENT SEEDING BEFORE OR AFTER PLACING MATS, AS DIRECTED.

3. LAY MATS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

EROSION CONTROL MATTING
NOT TO SCALE

Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
MILFORD, MASSACHUSETTS 01757

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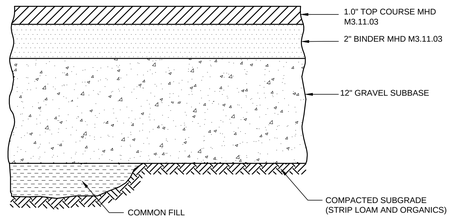
EROSION CONTROL NOTES & DETAILS

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: C-500



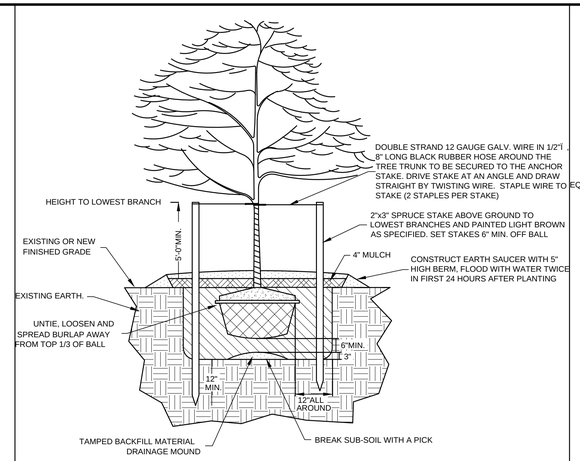
NOTE:

1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.

2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.

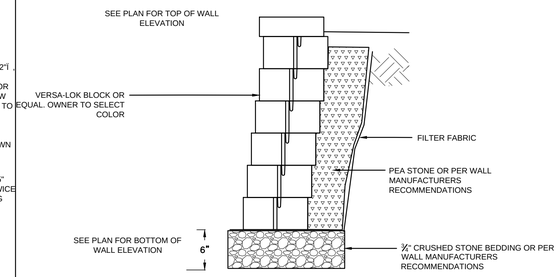
TYPICAL PAVEMENT SECTION

NOT TO SCALE



TYPICAL PLANTING DETAIL

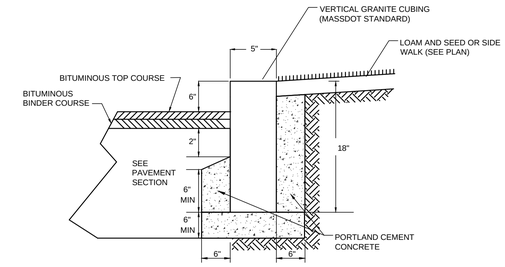
NOT TO SCALE



NOTES:
1. THE INTENT IS TO USE A MANUFACTURED PROPRIETARY WALL SYSTEM. THE CONTRACTOR SHALL SUPPLY A WALL DESIGN BY THE MANUFACTURER AND STAMPED BY A MASSACHUSETTS PROFESSIONAL ENGINEER PRIOR TO CONSTRUCTION.

INTERLOCKING SMALL BLOCK WALL

NOT TO SCALE



NOTES:

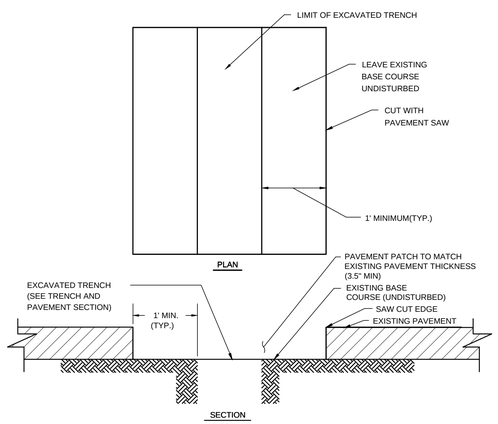
1. CONCRETE TO BE 4,000 PSI.

2. ALL RADII 50' AND SMALLER TO BE CONSTRUCTED USING CURVED SECTIONS.

3. GROUT ALL GAPS BETWEEN CURB STONES

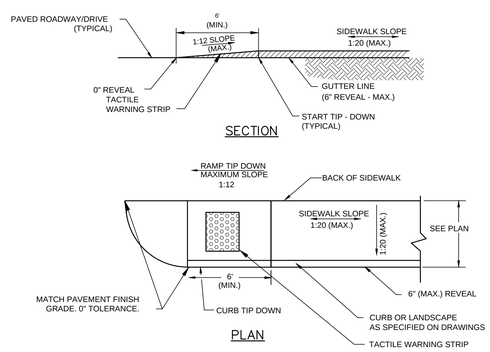
GRANITE CURB

NOT TO SCALE



TRENCH PATCH

NOT TO SCALE

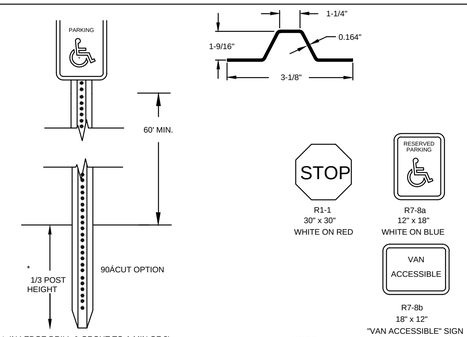


NOTES:

1. SEE SITE PLAN FOR TIP DOWN RAMP AND SIDEWALK WIDTHS AND LOCATIONS.
2. SEE GRADING, DRAINAGE, AND EROSION CONTROL PLANS FOR SIDEWALK SLOPES AND GRADES.

SIDEWALK TIP DOWN RAMP

NOT TO SCALE



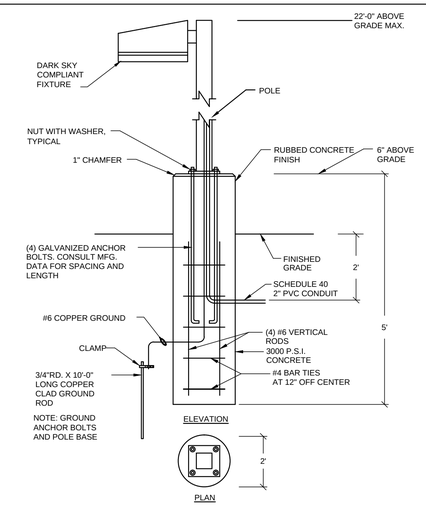
* IN LEDGE DRILL & GROUT TO A MIN OF 2'
* IN EARTH POSTS SHALL BE DRIVEN A MINIMUM OF 30" INTO UNDISTURBED SOIL.

NOTE:
ALL SIGNS TO BE INSTALLED AS INDICATED

LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 3/8" DIAMETER, 1" C C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)
FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

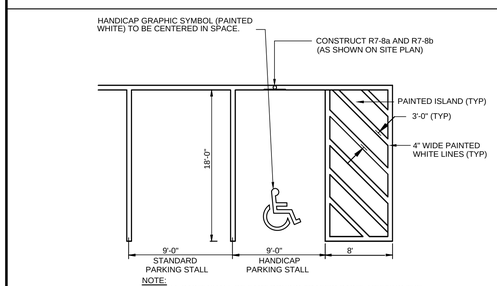
SIGN POST AND LEGEND

NOT TO SCALE



TYPICAL SITE LIGHT

NOT TO SCALE



NOTE:
1. ALL PAINT SHALL BE FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE N. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.

2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WITH DISABILITIES ACT.

PARKING STALL STRIPING

NOT TO SCALE

APPROVED BY THE FRAMINGHAM PLANNING BOARD

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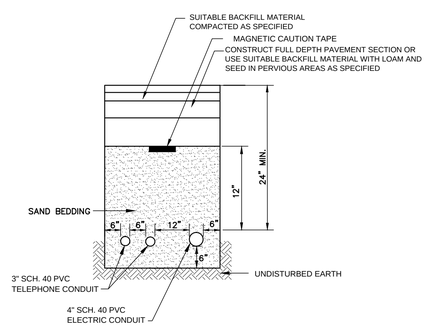
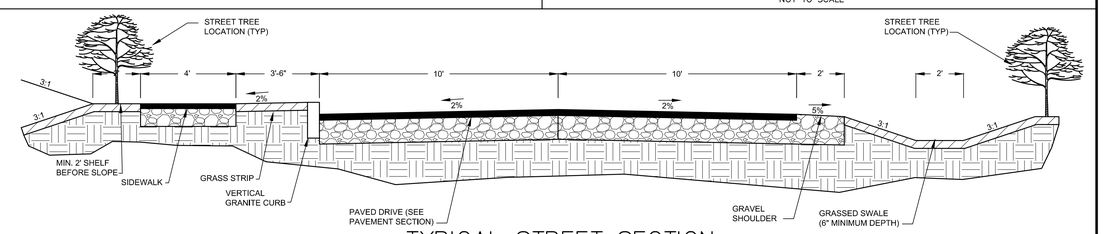


NOTES:

1. FINAL SIZE, LOCATION AND NUMBER OF CONDUITS SHALL BE DETERMINED BY THE SERVICE PROVIDER.

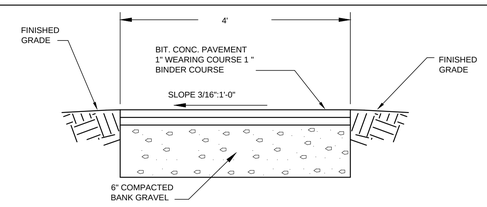
ELECTRIC & COMMUNICATIONS TRENCH

NOT TO SCALE



TYPICAL STREET SECTION

NOT TO SCALE



TYPICAL SIDEWALK SECTION

NOT TO SCALE

Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
MILFORD, MASSACHUSETTS 01757

COMMONWEALTH OF MASSACHUSETTS
SEAN P. MALONE
CIVIL
No. 44604
REGISTERED PROFESSIONAL ENGINEER
12-8-15

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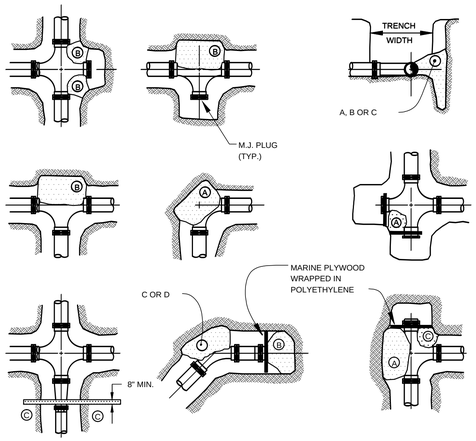
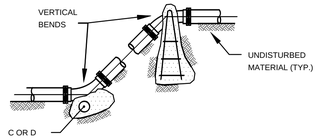
SITE DETAILS PLAN

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: C-501





TEST PRESSURE = 200psi	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL					
	REACTION TYPE	PIPE SIZE				
		4"	6"	8"	10"	12"
	A 90Å	0.89	2.19	3.82	11.14	17.24
	B 180Å	0.65	1.55	2.78	8.38	12.00
	C 45Å	0.48	1.19	2.12	6.02	9.32
	D 22-1/2Å	0.25	0.60	1.06	3.08	4.74
	E 11-1/4Å	0.13	0.30	0.54	1.54	2.38

NOTES:

1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS.
4. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLANDS MUST BE USED, GRIP RING, MEGA-LUG OR STAR GRIP

THRUST BLOCKS

NOT TO SCALE

PARADISE VALLEY CLUB
SEWER PUMP STATION CALCULATIONS

FLOW RATE

BEDROOMS	FLOW PER BEDROOM	SEWER FLOW
127	110	13,970 GALLONS PER DAY

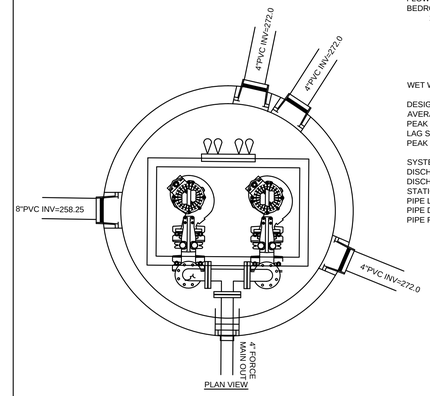
AVERAGE DAILY FLOW	13,970 GPD
AVERAGE FLOW RATE (12HR)	19 GPM
PEAKING FACTOR	6
PEAK FLOW RATE	116 GPM

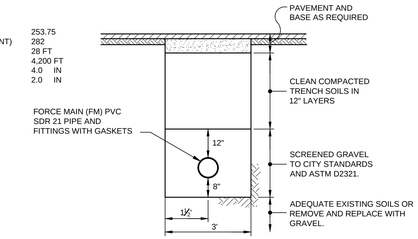
WET WELL SIZING

	DIA.	DEPTH			
DESIGN STORAGE	8 FT	2 FT 752	GALLONS	BOTTOM	253.25
AVERAGE FILL TIME	39	MINUTES		PUMP OFF	253.75
PEAK FILL TIME	6	MINUTES		PUMP ON	255.75
LAG STORAGE	752	GALLONS		LAG PUMP/ALARM ON	256.25
PEAK LAG FILL	6	MINUTES			

SYSTEM CURVE CHART

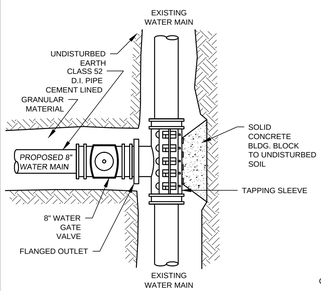
DISCHARGE ELEVATION (STATION)	253.75
DISCHARGE ELEVATION (HIGHEST POINT)	282
STATIC HEAD	28 FT
PIPE LENGTH	4,200 FT
PIPE DIAMETER	4.0 IN
PIPE RADIUS	2.0 IN



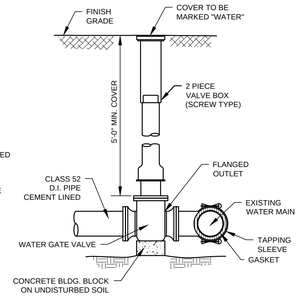


FORCE MAIN TRENCH DETAIL

NOT TO SCALE



PLAN VIEW

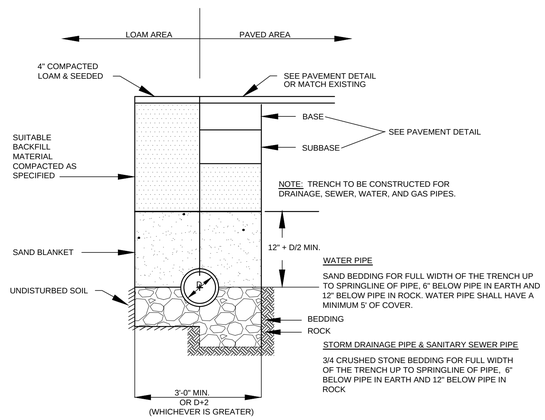


CROSS SECTION VIEW

(TYPICAL GATE VALVE DETAIL)

CONNECT TO EXISTING WATER MAIN

NOT TO SCALE



WATER PIPE

SAND BEDDING FOR FULL WIDTH OF THE TRENCH UP TO SPRINGLINE OF PIPE, 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK. WATER PIPE SHALL HAVE A MINIMUM 5' OF COVER.

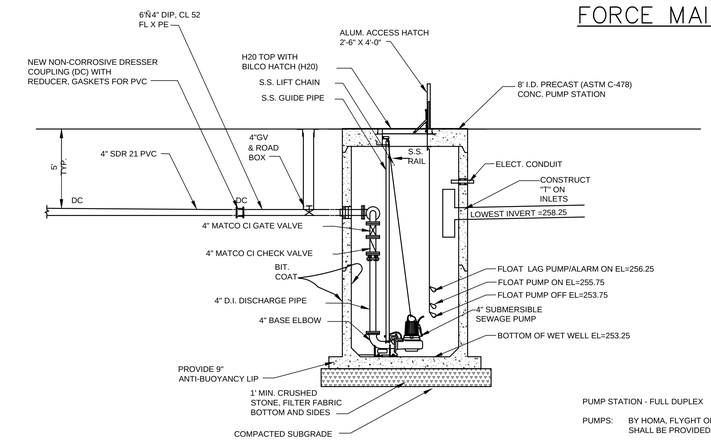
STORM DRAINAGE PIPE & SANITARY SEWER PIPE

3/4 CRUSHED STONE BEDDING FOR FULL WIDTH OF THE TRENCH UP TO SPRINGLINE OF PIPE, 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK

BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

UTILITY TRENCH

NOT TO SCALE



8' DIAMETER WET WELL DESIGN NOTES :

1. CONCRETE MINIMUM DESIGN STRENGTH - 5,000 PSI @ 28 DAYS
2. STEEL REINFORCEMENT -
   ASTM A-615, GRADE 60 REBAR
   ASTM A-185, GRADE 65 WELDED WIRE FABRIC
   1" MINIMUM COVER
3. DESIGN LOADING - AASHTO H-20
4. PIPE SIZES AND LOCATIONS AS REQUIRED
5. JOINTS TO BE SEALED WITH 1" BUTYL RUBBER.
6. ALL HARDWARE SHOWN BUT NOT DIMENSIONED IS FOR VISUAL REFERENCE ONLY - DO NOT SCALE FOR PLACEMENT.

PUMP STATION - FULL DUPLEX

PUMPS: BY HOMA, FLYGHT OR EQUAL. STAINLESS STEEL (SS) RAILS AND LIFT CHAIN, SHALL BE PROVIDED FOR MAINTENANCE AND REPLACEMENT.

CONTROLS: PANEL SHALL BE A MULTI PUMP PANEL MOUNTED IN LOCATION DIRECTED BY OWNER.

ALARM: LIGHT & BUZZER, CONNECTION TO GENERATOR, AND PHONE DIALER FOR REMOTE ALARM SIGNAL.

GENERATOR: PROVIDE PROPANE FUELED GENERATOR.

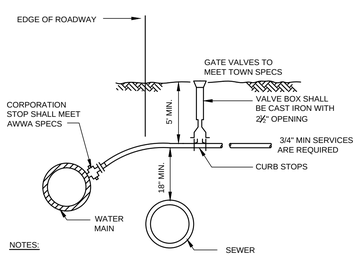
COORDINATE ALL PUMP, CONTROLS, GENERATOR REQUIREMENTS WITH THE MANUFACTURER

NOTES:

1. THE PROPOSED SEWER PUMP STATION DETAILS ARE PROVIDED FOR PLANNING PURPOSES AND TO DEMONSTRATE THE DESIGN INTENT. FINAL PUMP STATION DESIGN SHALL BE COORDINATED WITH THE MANUFACTURER AND PROVIDED TO THE FRAMINGHAM SEWER DEPARTMENT PRIOR TO CONSTRUCTION.

SEWER PUMP STATION

NOT TO SCALE



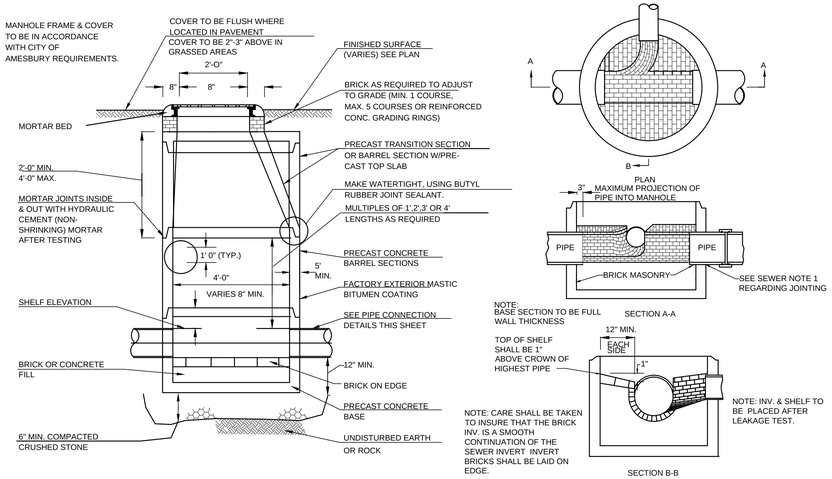
NOTES:

1. WATER SERVICE PIPE SHALL MEET AWWA STANDARD SPECIFICATIONS
2. 1½" AND LARGER SERVICES ARE REQUIRED TO HAVE A SADDLE.

WATER SERVICE CONNECTION

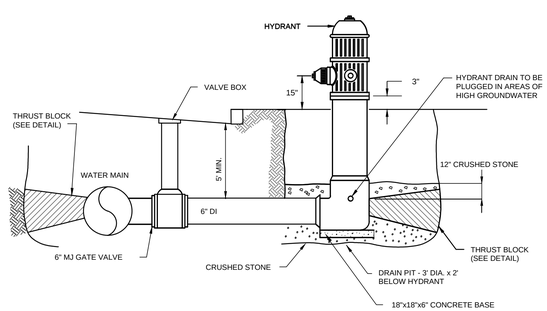
NOT TO SCALE

APPROVED BY THE FRAMINGHAM PLANNING BOARD



TYPICAL SEWER MANHOLE

NOT TO SCALE

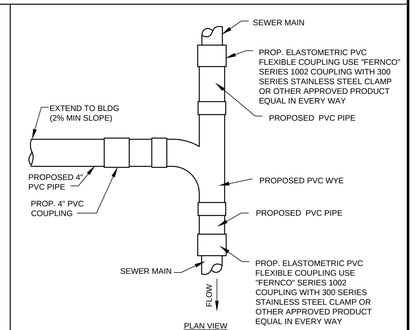


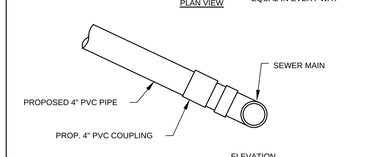
NOTES:

HYDRANT INSTALLATION AND OPERATION, MANUFACTURE AND MODEL, AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE TOWN OF FRAMINGHAM FIRE DEPARTMENTS' RULES AND PROCEDURES.

FIRE HYDRANT

NOT TO SCALE





SEWER CONNECTION

NOT TO SCALE

Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
MILFORD, MASSACHUSETTS 01757

COMMONWEALTH OF MASSACHUSETTS
SEAN P. MALONE
CIVIL
No. 41204
REGISTERED PROFESSIONAL ENGINEER
12-8-15

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Newburyport, MA 01950
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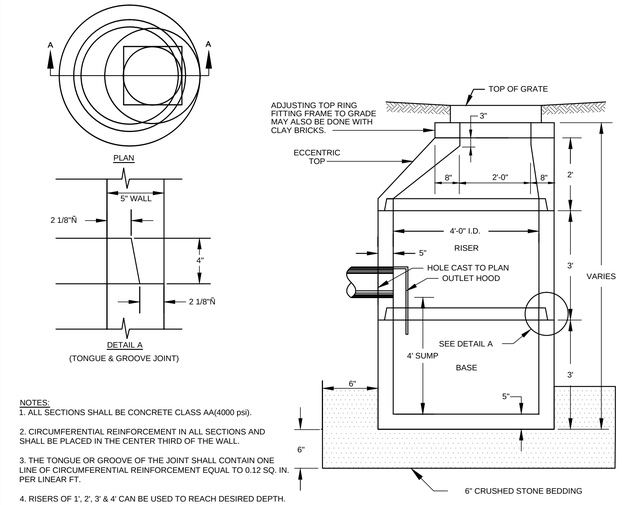
SITE DETAILS PLAN

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet: C-502



NOTES:
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 psi).

2. CIRCUMFERENTIAL REINFORCEMENT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

3. THE TONGUE OR GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.

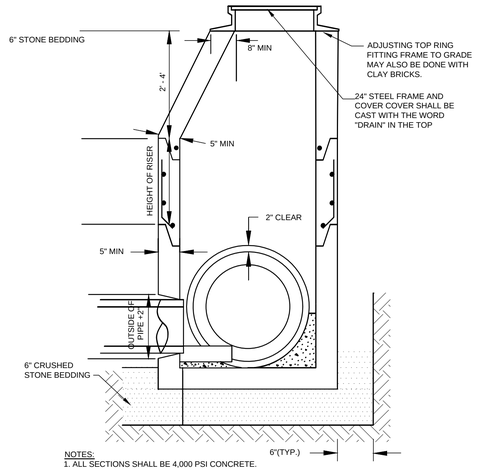
4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.

5. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.

6. CATCH BASIN FRAME AND GRATE SHALL PEDESTRIAN SAFE AND RATED FOR H20 LOADING.

CATCHBASIN

NOT TO SCALE



NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE.

2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

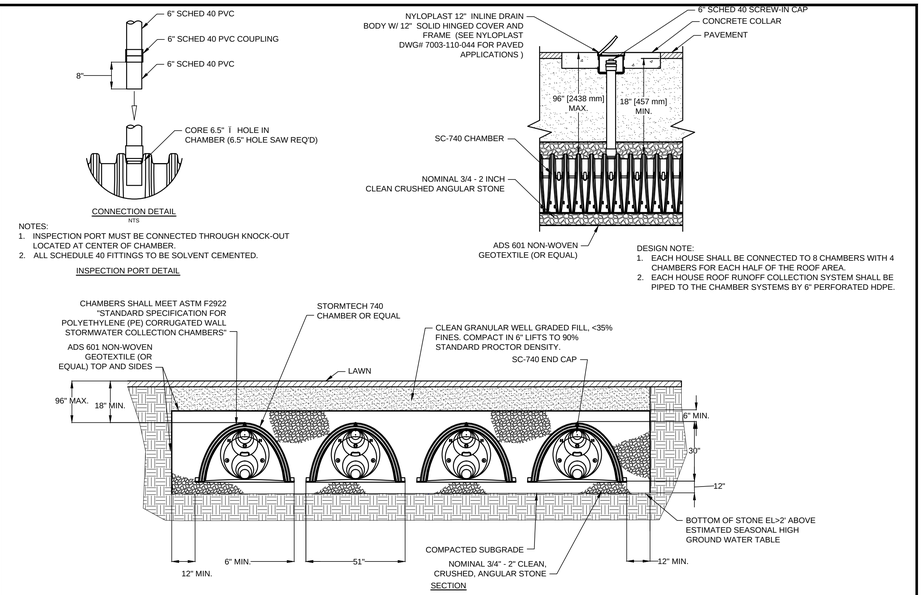
3. THE TOUNGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO .12 SQUARE INCHES PER LINEAR FOOT.

4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.

5. STRUCTURE, FRAME AND COVER SHALL BE DESIGNED FOR H20 LOADING.

DRAIN MANHOLE

NOT TO SCALE



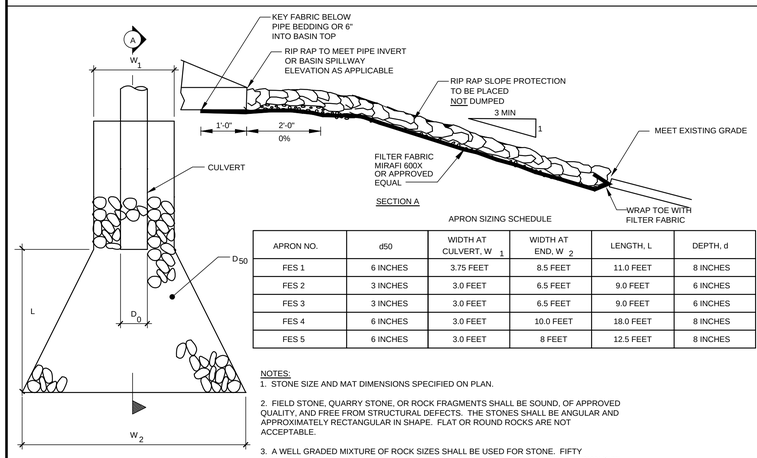
NOTES:
1. INSPECTION PORT MUST BE CONNECTED THROUGH KNOCK-OUT LOCATED AT CENTER OF CHAMBER.
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED.

INSPECTION PORT DETAIL

DESIGN NOTE:
1. EACH HOUSE SHALL BE CONNECTED TO 8 CHAMBERS WITH 4 CHAMBERS FOR EACH HALF OF THE ROOF AREA.
2. EACH HOUSE ROOF RUNOFF COLLECTION SYSTEM SHALL BE PIPED TO THE CHAMBER SYSTEMS BY 6" PERFORATED HDPE.

ROOF RUNOFF INFILTRATION AREA

NOT TO SCALE



APRON SIZING SCHEDULE

APRON NO.	d50	WIDTH AT CULVERT, W_1	WIDTH AT END, W_2	LENGTH, L	DEPTH, d
FES 1	6 INCHES	3.75 FEET	8.5 FEET	11.0 FEET	8 INCHES
FES 2	3 INCHES	3.0 FEET	6.5 FEET	9.0 FEET	6 INCHES
FES 3	3 INCHES	3.0 FEET	6.5 FEET	9.0 FEET	6 INCHES
FES 4	6 INCHES	3.0 FEET	10.0 FEET	18.0 FEET	8 INCHES
FES 5	6 INCHES	3.0 FEET	8 FEET	12.5 FEET	8 INCHES

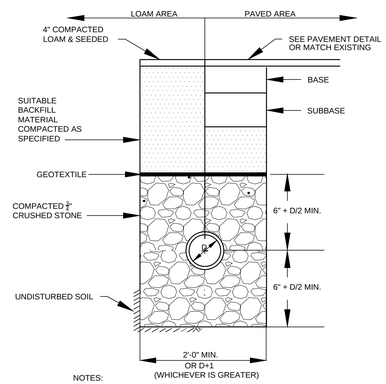
NOTES:
1. STONE SIZE AND MAT DIMENSIONS SPECIFIED ON PLAN.

2. FIELD STONE, QUARRY STONE, OR ROCK FRAGMENTS SHALL BE SOUND, OF APPROVED QUALITY, AND FREE FROM STRUCTURAL DEFECTS. THE STONES SHALL BE ANGULAR AND APPROXIMATELY RECTANGULAR IN SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE.

3. A WELL GRADED MIXTURE OF ROCK SIZES SHALL BE USED FOR STONE. FIFTY PERCENT BY WEIGHT OF THE STONE MIXTURE SHALL BE SMALLER THAN THE MEDIAN SIZE STONE (d50). THE LARGEST STONE SIZE IN THE MIXTURE SHALL BE 1.5 TIMES THE d50 SIZE.

RIP–RAP OUTLET DETAIL

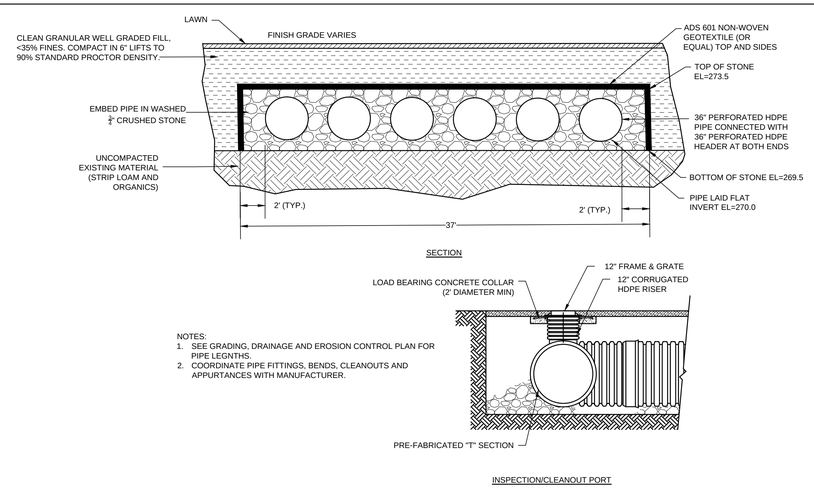
NOT TO SCALE



NOTES:
1. CRUSHED STONE SHALL BE CLEAN AND WASHED.

PERFORATED PIPE TRENCH

NOT TO SCALE



NOTES:
1. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PIPE LEGNTHS.
2. COORDINATE PIPE FITTINGS, BENDS, CLEANOUTS AND APPURTANCES WITH MANUFACTURER.

PIPE INFILTRATION SYSTEM

NOT TO SCALE

APPROVED BY THE
FRAMINGHAM PLANNING BOARD

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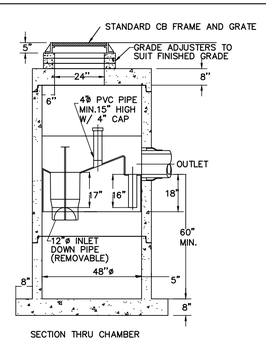
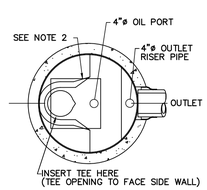


NOTES

1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL PORT.
3. COORDINATE SIZING WITH MANUFACTURER TO MEET MADEP TSS REMOVAL REQUIREMENTS.
4. UNIT SHALL BE INSTALLED AND MAINTAINED PER MANUFACTURER'S RECOMMENDATIONS.



STORMCEPTOR TREATMENT UNIT

NOT TO SCALE

Site:

PARADISE VALLEY CLUB

1060 GROVE STREET
FRAMINGHAM, MASSACHUSETTS

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120 QUARRY DRIVE
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Newburyport, MA 01950
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SITE DETAILS PLAN

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: December 8, 2015

Sheet:

C-503