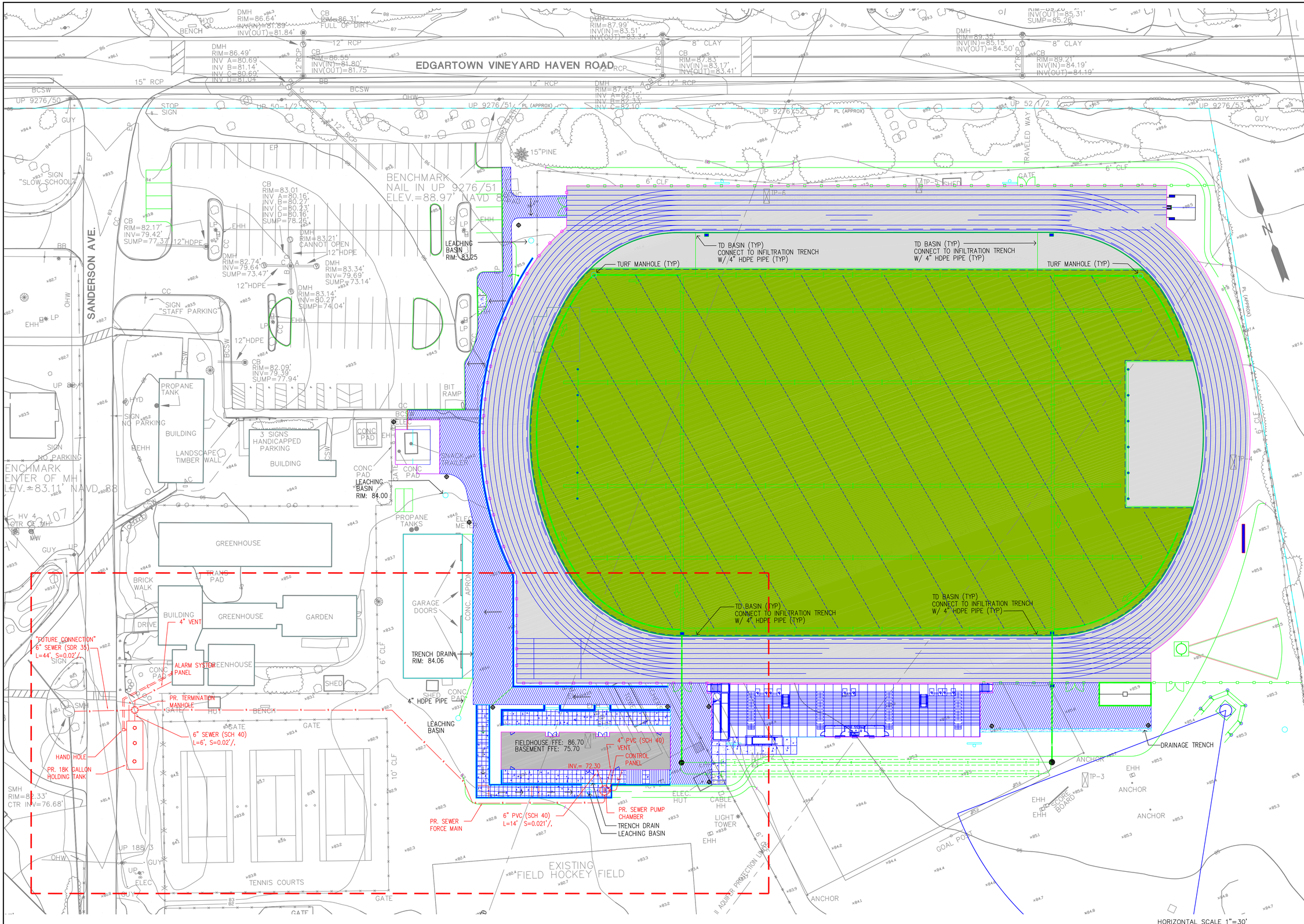

DRW:	DSG:	CHK:	REV.	DESCRIPTION	DATE

SANITARY SEWER HOLDING TANK
SITE PLAN

MARTHA'S VINEYARD REGIONAL HIGH SCHOOL

in

OAK BLUFFS, MA

Prepared For

HUNTRESS SPORTS

17 TEWKSBURY STREET
ANDOVER, MA 01810

Marchionda & Associates, L.P.
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Email: engineering@marchionda.com
Website: www.marchionda.com

DATE: 4/15/20

...\670-31 MVRHS\SEWER\TIGHT TANK DESIGN.DWG

M. & A. NO.: 670-31 | SCALE: 1"=30'

SHEET 1 OF 2

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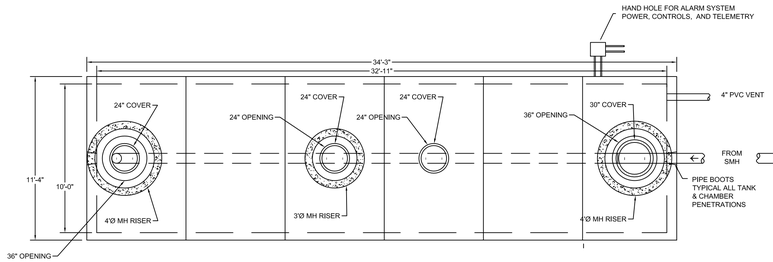
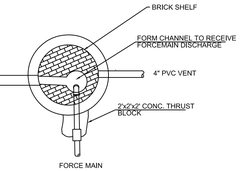


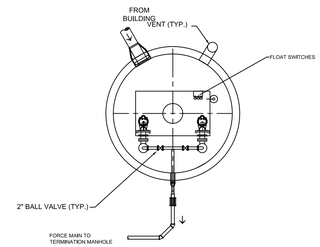
HOLDING TANK
17,000 GALLON TANK
PLAN VIEW

N.T.S.



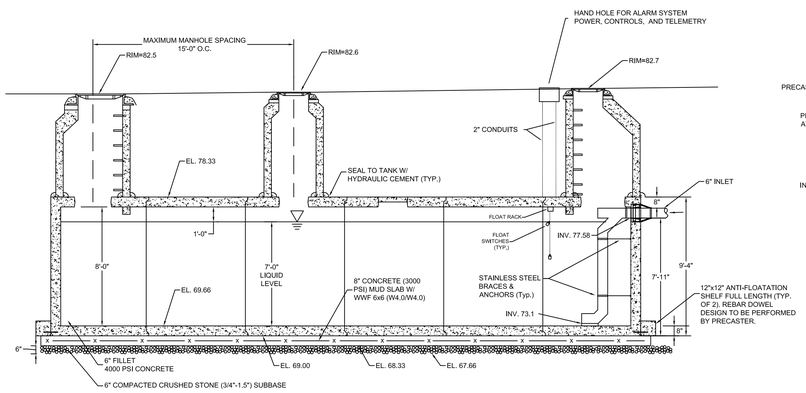
FORCEMAIN TERMINATION SEWER MANHOLE
PLAN VIEW

N.T.S.



PUMP CHAMBER
PLAN VIEW

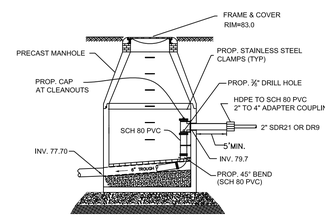
N.T.S.



17,000 GAL. HOLDING TANK DETAIL (TUNNEL TANK)
SECTION VIEW

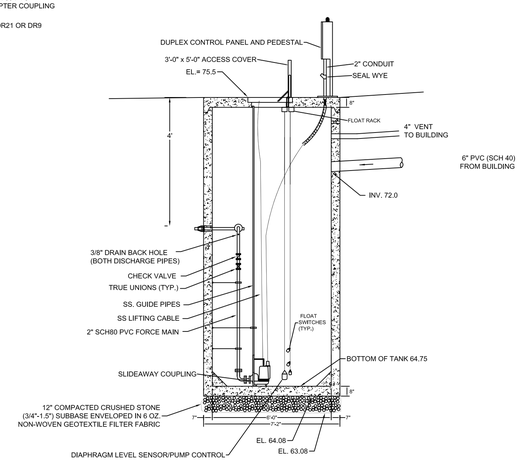
N.T.S.

1. TANK SHALL BE A SHEA CONCRETE PRODUCTS 17,000 GALLON TUNNEL TANK OR APPROVED EQUAL. TANKS SHALL BE INSTALLED TO BE WATERTIGHT.
2. THREE ACCESS COVERS SHALL BE PROVIDED OVER THE INLET & OUTLET TEES. COVERS SHALL BE SET TO FINISHED GRADE BY CONC. RISER SECTIONS OF AT LEAST 36" DIAMETER. ACCESS COVER SHALL BE SIZED AS SHOWN ON THE PLAN VIEW AND SHALL BE H.D. CAST IRON OR APPROVED EQUAL. RISERS SHALL BE WATERTIGHT.
3. ALL TANK ACCESS COVERS SHALL BE BROUGHT TO GRADE.
4. CONCRETE MUD SLAB FOR ALL TUNNEL (VERTICAL SEAM) TANKS SHALL BE 3,000 PSI CONCRETE WITH REINFORCING WELD WIRE FABRIC 6x6 W4.0/W4.0.
5. ALL TANK PIPE PENETRATIONS SHALL BE FITTED WITH FLEXIBLE PIPE BOOTS AND ANNULAR SPACE SEALED ON TANK INTERIOR WITH HYDRAULIC CEMENT.



FORCEMAIN DISCHARGE SEWER MANHOLE
SECTION VIEW

N.T.S.

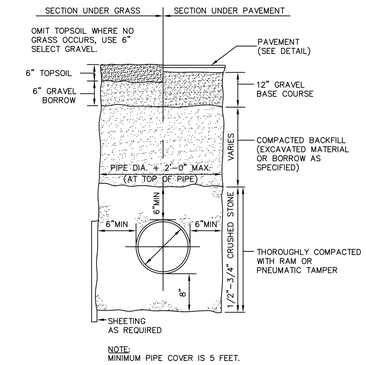


PUMP CHAMBER
SECTION VIEW

N.T.S.

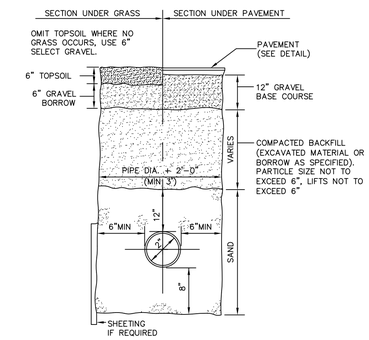
PUMP CHAMBER
INITIAL PUMP CONTROL SETTINGS
HIGH, HIGH ALARM & LAG PUMP ON.....71.50
HIGH ALARM.....69.50
PUMP ON.....67.50
PUMP OFF.....66.50
LOW ALARM.....65.75

PUMP INFORMATION:
BARNES, SERIES SGVF GRINDER PUMP
MODEL 2022L w/ 4.00" IMPELLAR DIA.
2 HP, 3450 RPM
RATED PUMP CAPACITY: 44 GPM @ 33' TDH



NOTE:
MINIMUM PIPE COVER IS 5 FEET.

TYPICAL SEWER TRENCH DETAIL
N.T.S.



NOTE:
MINIMUM PIPE COVER IS 5 FEET.

TYPICAL FORCE MAIN TRENCH DETAIL
N.T.S.

MVRHS Stadium Pump Sizing

CLIENT:	Synthress Sports	COUNTY:	Dukes
DSN BY:	SG	CHK BY:	
COMMENTS:	MVRHS		

DATE: 4/20/20
DATE:

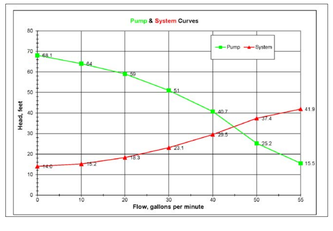
CLEAR CELLS

Elevation at Highest Point	79.7	ft
Elevation at Low Point	65.7	ft
DISCHARGE PIPE		
Discharge Pipe Length	300.0	ft
Equivalent Length of Pipe Fittings	24.1	ft (see tables)
Discharge Pipe Inside Diameter	2.00	in
Hazen-Williams Roughness, C	130	
Other Losses	0.0	ft
Static Head	14.0	ft
Total Discharge Pipe Length	324.1	ft (includes equivalent length of fittings)
Pump Manufacturer	Barnes	
Pump Model #	SGVF	

Hazen-Williams C	
Material	C
Glass	140
Plastic	150
Concrete	120
Copper	130
Fiberglass	150
PE, no joints	150
PVC	150
Steel, Smooth	100
Steel, Scaled	90
Steel, CMP	60

Pump Curve		System Curve	
Flow GPM	Pump Head, ft	Flow GPM	System Head, ft
0	68.1	0	14.0
10	64	10	16.2
20	59	20	18.3
30	51	30	25.1
40	40.7	40	29.5
50	25.2	50	37.4
55	15.5	55	41.9

Head at Operating Point	33.0	ft (intersection of curves from graph below)
Flow at Operating Point	44	gpm (intersection of curves from graph below)
	0.10	cfs
Operating Velocity	4.5	feet/sec
Operating Pressure	14.3	psi



DRW:	DSG:	CHK:	REV.	DESCRIPTION	DATE

SANITARY SEWER HOLDING TANK CONSTRUCTION DETAILS

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DATE: 4/15/20
...\670-31 MVRHS\SEWER\TIGHT TANK DESIGN.DWG
M. & A. NO.: 670-31 | SCALE: AS SHOWN
SHEET 2 OF 2